

## DIVISION OF RESOURCES & GEOSCIENCE ADVICE RESPONSE

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Dear Andrew

**Project: Snapper Mine Northern Extension - Modification 7**  
**Stage: Review of Modification Report**  
**Development Application: MP06\_0168-Mod-7**

I refer to your correspondence dated 27 November 2019 inviting the Division of Resources & Geoscience to provide comments on the Snapper Mine Northern Extension - Modification 7 Project (the Project or the Modification) submitted by Tronox Mining Australia Limited (Tronox or the Proponent).

The relevant units internal to the Division have been consulted where required in generating this advice. The Department of Planning, Industry and Environment - Planning & Assessment Division and the Proponent should be aware that matters pertaining to rehabilitation, environmental impacts of final landform design, subsidence, subsidence management, mine operator and safety are not assessed by the Division and advice should be sought from the Resources Regulator.

### Advice overview

The Division has determined that the Project will:

- ensure continued operations at Snapper Heavy Mineral Sands Mine (Snapper Mine) until 2021, allowing a smooth transition to the Atlas Campaspe operation which is due to commence in late in that year.
- extract an additional 8.5 million tonnes (Mt) ore and to produce approximately 170 kilotonnes (kt) of heavy mineral concentrate.
- reduce the number of final depressions (voids) from two to one.
- ensure an appropriate return to the state of A\$2.3 million in royalties (current dollars).
- generate total revenue (value of products produced) of A\$98 million (current dollars).
- provide continued employment for the current workforce of 200 full-time-equivalent personnel at the existing Snapper Mine until 2021.
- utilise existing infrastructure including; equipment, buildings and approved management systems.

## **Resource and Economic Assessment**

Snapper Mine is an open cut mineral sands mine located about 85 kilometres northeast of Wentworth in southwestern NSW. Tronox (ex-Cristal) processes Heavy Mineral sands to produce various heavy mineral concentrates, for transport to their mineral separation plants in Broken Hill and/or Bunbury WA.

The Snapper Mine has operated since 2007 concurrently with Ginkgo Mine which commenced in 2004 and operates under DA 06\_0168 (as modified 6 times). The approval currently allows for mining operations at Snapper Mine until 10 July 2026, producing 14 million tonnes per annum (Mtpa) of ore. Based on the current mining schedule and resource, mining operations will cease in the existing mining area by 2020. Based on this current scheduling, there is a risk of production and employment discontinuity between the cessation of Snapper Mine operations and commencement of Atlas-Campaspe Mine operations.

The Modification includes an extension to the existing/approved mine path to extend operations at the Snapper Mine within the approved total mine life and without increasing the size of the approved surface disturbance area. The identification of additional, comparatively high-grade mineralisation would enable the two dredges at Snapper Mine to extract of an additional 8.5 Mt of ore and to produce approximately 170 kt of heavy mineral concentrate. This would maintain production during the start-up phase of the Atlas-Campaspe operations provide continued employment for the current workforce of 200 full-time-equivalent personnel at the existing Snapper Mine until 2021.

The Snapper deposit is a 13-kilometre-long northwest-striking strand-line deposit consisting of multiple old beach deposits. Various facies are stacked along the ancient beaches and have strike lengths of up to tens of kilometres. Shorter channels and embayments occur along, and sometimes cut the beach facies. Six main mineralised domains (each with different heavy mineral grades and assemblages) are present. Mineralisation in the Project area is mainly comprised of Domains 1, 6 and 20. Domain 1 is very high-grade and appears to represent a high-grade beach location with a high-grade dune developed above and over the back of the beach. Domain 6 is a series of ancient beach and dune deposits developed on the northeastern side of the deposit.

The Proponent has completed resource and reserve estimations for the Project in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC code). 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 for the Project assists in independently assessing the commercial viability of the Project and the proposed mining method.

In view of the constraints outlined in the Proponent's Modification Report and based on the information currently available, the Division considers the Project satisfies section 3A objects of the *Mining Act 1992* and the requirements of clause 15 of the State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007. The Project represents an efficient development and utilisation of mineral resources which will foster significant social and economic benefits.

The Division is satisfied that, should the operational outcomes be achievable, the proposed mine design and mining method submissions adequately recover mineral resources, maximise mining efficiency and will provide an appropriate return to the state.

The resource utilisation, recovery and economic benefits assessment undertaken by the Division is addressed in Attachment A.

### **The requirement for a mining authorisation and royalty liability**

#### *Requirement for a mining lease*

The Division notes that the project is located within existing Exploration Licence 8503 (Act 1992) and is adjacent to the existing operations area of Mining Lease 1621 (Act 1992) each held by the Proponent (see Attachment B).

As Ilmenite, Leucoxene, Rutile and Zircon are prescribed minerals under the *Mining Act 1992* the Proponent is required to apply for appropriate mining title(s) allowing for mineral extraction, such as a mining lease, from the Division to undertake mining. Tronox has advised the Division of their intention to lodge a mining lease application to cover the additional activities required by the Project identified as "additional surface development extent" within Attachment B.

For ancillary mining activities carried out in connection with and in the immediate vicinity of a mining lease (in respect of a mineral), a proponent is required to hold a mining lease for ancillary mining activities or an 'off title' designated ancillary mining activity as defined by clause 7 of the Mining Regulation 2016 (the Regulation). This applies where the activities move beyond the scope of section 73 (Rights under mining lease) and/or section 81 (Surface activities in relation to subsurface leases) of the Act.

#### *Royalty liability*

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

#### **Application of section 65 of the *Mining Act 1992* – development consents under the *Environmental Planning and Assessment Act 1979***

A development application under the *Environmental Planning and Assessment Act 1979* must be approved before a mining lease can be granted. A mining lease will only be granted for activities specified in the development consent.

Section 65 states:

*The Minister must not grant a mining lease over land if development consent is required for activities to be carried out under the lease unless an appropriate development consent is in force in respect of the carrying out of those activities on the land.*

#### **Biodiversity offset assessment**

The Division has no resource sterilisation issues with the current Modification, or the proposed biodiversity offset area as they currently stand at the time of this assessment.

The Division requests that the Proponent consider potential resource sterilisation should any future biodiversity offset areas be considered. The Proponent must consult with the Division's Land Use Assessment team 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.

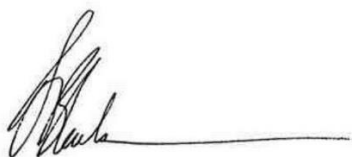
#### **Summary of review**

The Division has determined that should the project be approved; efficient and optimised resource outcomes can be achieved, and any identified risks or opportunities can be effectively regulated through the conditions of mining authorities issued under the *Mining Act 1992*.

The Division requests to review the draft conditions of approval before finalisation and any granting of development consent.

For further enquiries and advice in relation to this matter, please contact Adam W. Banister, Senior Advisor - Assessment Coordination Unit – Resource Assessments on 02 4063 6534 or [assessment.coordination@planning.nsw.gov.au](mailto:assessment.coordination@planning.nsw.gov.au).

Yours sincerely



Dr David Blackmore  
**Director Resource Assessments**  
**Division of Resources & Geoscience**  
18 December 2019

Encl.

Attachment A - Snapper Mine Northern Extension Project - Modification 7 - Resource & Economic Assessment (DOC19/1058171)

Attachment B - Snapper Mine Northern Extension Project - Modification 7 – Diagram (DOC19/1097560)