

22 March 2023

# CARAVEL COPPER PROJECT UPDATE

## MOLYBDENUM CIRCUIT INCLUDED IN THE DEFINITIVE FEASIBILITY STUDY

### HIGHLIGHTS

- **A Molybdenum Recovery Circuit** will form part of the mineral processing flowsheet for the ongoing Caravel Copper Project Definitive Feasibility Study (DFS)
- The Caravel Copper Project Mineral Resource (2021)<sup>1</sup> contains ~83Mlbs (~38kt) of molybdenum (Mo) in association with copper ores
- Analysis indicates Mo recovery of ~60% can be achieved from plant feed grades of between 50ppm Mo (long term) and 70ppm Mo (in the first five years of mining)
- Testwork indicates Mo can be produced as a separate marketable concentrate nominally grading ~50% Mo
- Forecast Mo concentrate supply and demand supports a pricing assumption of ~US\$20/lb, with current prices >US\$30/lb (~US\$66,000/t)<sup>2</sup>

### CARAVEL COPPER PROJECT MOLYBDENUM (MOLY) CIRCUIT

Caravel Minerals (ASX: CVV) is pleased to announce the inclusion of a Molybdenum Recovery Circuit (MRC) in the process flowsheet for the Definitive Feasibility Study (DFS) being undertaken on its 100%-owned Caravel Copper Project, located 120km north-east of Perth in Western Australia.

Test work completed as part of the Caravel Copper Project Pre-Feasibility Study<sup>3</sup> demonstrated encouraging molybdenum recoveries, sufficient to warrant further evaluation as part of the DFS. Strong supply/demand fundamentals for the metal indicate the potential to deliver significant value upside for the Caravel Copper Project for a relatively small incremental capital investment and minor increase in operating cost.

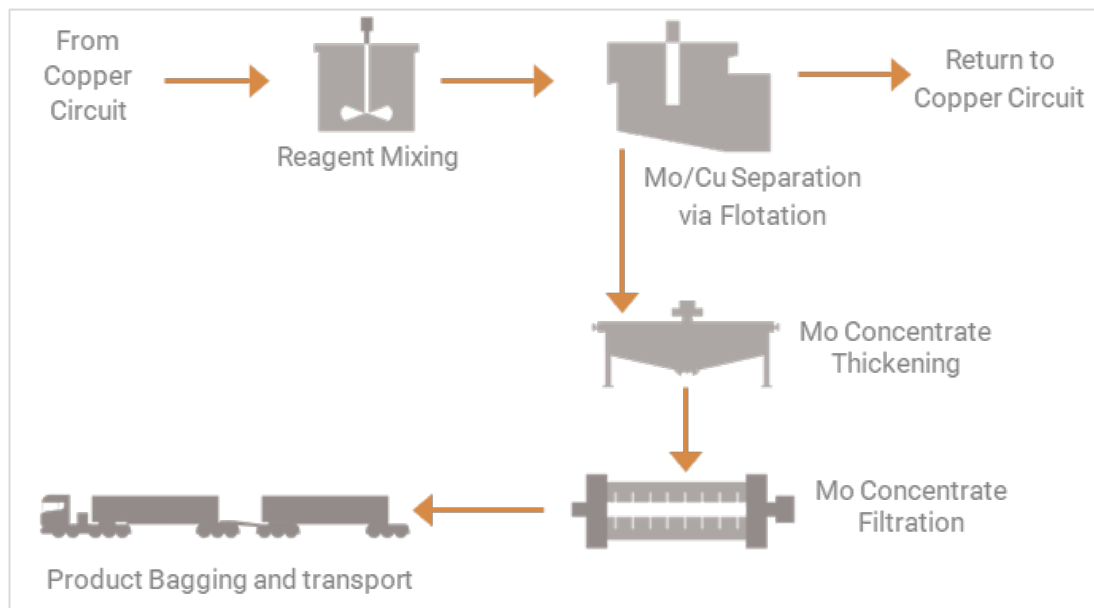
The Caravel Copper Project MRC design and cost was assessed during the Pre-Feasibility Study using data from reference operations, primarily in South America. The analysis was also supported by Project engineering and metallurgical assessments, resulting in provision for an MRC in the processing plant layout.

The MRC design includes flotation of molybdenum concentrate, followed by thickening, and filtering prior to bagging and loading for transport (Figure 1). The MRC would be installed as a final stage within the process plant, thereby providing the ability to operate the MRC based on prevailing molybdenum prices. This is widely practised at similar copper-moly mining operations and, importantly, has no impact on primary copper production.

<sup>1</sup> Refer to ASX release of 23 November 2021 titled "Major Mineral Resource Upgrade – Caravel Copper Project"

<sup>2</sup> <https://www.futuremarketinsights.com/reports/molybdenum-market>

<sup>3</sup> Refer to ASX releases of 12 July 2022 titled "Caravel Copper Project Pre-Feasibility Study Highlights Robust, Executable Project and Reports Maiden Ore Reserve" and of 20 September 2022 titled "Pre-feasibility Study Update - Caravel Copper Project"



*Figure 1: Molybdenum Recovery Circuit in the Caravel Copper Project Flowsheet*

**Commenting on the addition of a Molybdenum Recovery Circuit to the Caravel Copper Project, Managing Director Don Hyma said:**

“With tightening supply/demand fundamentals for molybdenum concentrate and only a small incremental investment needed to capture additional value for the Caravel Project, the decision to include the Molybdenum Recovery Circuit in the initial development is a logical step and adds substantial additional value to the project.

Molybdenum is a valuable by-product to the Project’s mainstream copper concentrate production and is common for this style of development, with precedents in many of the large South American porphyry copper operations.”

This announcement is authorised for release by the Caravel Managing Director, Don Hyma.

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## About Molybdenum

Molybdenum is a metal with a very high melting point (2,622°C) and is widely used to make special steel alloys with high strength, hardness, electrical conductivity and resistance to corrosion and wear. These ‘moly steel’ alloys are commonly used in drilling rods, engine parts, armour plating, heating elements, drills and saw blades.

Other uses for molybdenum include catalysts for the petroleum industry, inks for circuit boards, pigments and electrodes. It is also an essential element for animals and plants and is an important trace element in fertilisers for legume crops.

The main molybdenum ore is molybdenite (molybdenum disulfide). Global mining production is around 300,000t per annum (2021, USGS) with the main production from China (130,000t), Chile (51,000t), USA (48,000t), and Peru (32,000t). Most molybdenum is obtained as a by-product of tungsten and copper production.

Demand for molybdenum continues to grow, with some new applications such as in wind turbines and other high-tech applications. Production growth has been limited with few new mines being developed and recent supply constraints due to reduced mine production. Recent market imbalances have seen Mo prices increase substantially over the past year from averages around USD 20/lb during 2022 to average prices over USD 30/lb in 2023.

### Competent Persons' Statements

*The information in this report that relates to Exploration Results is based on and fairly represents information compiled by Mr Peter Pring. Mr Pring is a Senior Exploration Geologist with Caravel Minerals. Mr Pring is a shareholder of Caravel Minerals and is a member of the Australasian Institute of Mining and Metallurgy. Mr Pring has sufficient experience of relevance to the styles of mineralisation and types of deposits under consideration, and to the activities undertaken to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Pring consents to the inclusion in this report of the matters based on information in the form and context in which they appear.*

*The information in this report that relates to Mineral Resources is based on and fairly represents information compiled by Mr Lauritz Barnes, (Consultant with Trepanier Pty Ltd). Mr Barnes is a shareholder of Caravel Minerals. Mr Barnes is a member of both the Australasian Institute of Mining and Metallurgy and the Australasian Institute of Geoscientists. Mr Barnes has sufficient experience of relevance to the styles of mineralisation and types of deposits under consideration, and to the activities undertaken to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Barnes consents to the inclusion in this report of the matters based on information in the form and context in which they appear.*

### Forward Looking Statements

*This document may include forward looking statements. Forward looking statements include, but are not necessarily limited to, statements concerning Caravel Minerals planned exploration programmes, studies and other statements that are not historic facts. When used in this document, the words such as "could", "indicates", "plan", "estimate", "expect", "intend", "may", "potential", "should" and similar expressions are forward looking statements. Such statements involve risks and uncertainties, and no assurances can be provided that actual results or work completed will be consistent with these forward-looking statements.*

### Previous Disclosure

*The information in this announcement is based on the following Caravel Minerals ASX Announcements, which are available from the Caravel Minerals website [www.caravelminerals.com.au](http://www.caravelminerals.com.au) and the ASX website [www.asx.com.au](http://www.asx.com.au):*

- 25 August 2021 "Bindi Deposit – Updated Geological Model"
- 23 November 2021 "Major Mineral Resource Upgrade – Caravel Copper Project"
- 12 July 2022 "Caravel Copper Project Pre-Feasibility Study Highlights Robust, Executable Project and Reports Maiden Ore Reserve"
- 20 September 2022 "Pre-Feasibility Study Update - Caravel Copper Project"
- 1 March 2023 "Drilling Results – Bindi Copper Deposit"

## ABOUT CARAVEL MINERALS

Caravel Minerals Limited (ASX: CVV) is advancing Definitive Feasibility Studies for the Caravel Copper Project, a large-scale, long-life (>28-year) copper project located 150km north-east of Perth in Western Australia's Wheatbelt region. The Project's PFS (July 2022) and PFS Update (September 2022) demonstrate a robust, executable project generating strong cash flows based on low operating costs, a low life-of-mine strip ratio, bulk mining methods, excellent metallurgy, and low-cost grid power. Using automation and electrification technologies (ACE) for conventional open-pit mining and processing operations, Caravel will produce copper in a clean concentrate to be exported via existing public roads through local ports.