# **Northparkes**



Northparkes is the 2<sup>nd</sup> largest porphyry copper mine in Australia (to Cadia)

22 discoveries to date, of which 9 with proven economics

Endowment 5.5Moz Au and 4.5Mt Cu<sup>2</sup>

First quartile cash costs

ual mine tour: https://m.youtube.com/watch?v=hr43-cwWccM

## Northparkes an expanding and very profitable mine

• Northparkes undergoing mine expansion with life to 2047 from 5 orebodies + PEA/resource upside<sup>1</sup>

- Commenced production in 1994: Reserve 68Mt
- 25 years on: Reserves 133Mt and 483Mt Resources
- · Continued resource expansion and new discoveries
- First underground block cave in Australia
- Vision: "A century of mining together"
- First quartile cash costs supported by efficient caving mining methods & above average grades
  - First underground block cave in Australia
- 2019 new block cave (E26L1N) approved and mill expansion
- E44 satellite skarn deposit at studies and permitting phases for a potential open pit mine and c.20km truck haulage to the existing mill
- History of key project milestone
- 1970's Geopeko recognized the potential for VHMS deposits
  - 1973 discovered outcropping skarn mineralization
  - 1976 two discovery holes: E27 with 2m @ 0.15% Cu & E22 with 2m @ 0.25% Cu
- Rio Tinto acquired an 80% interest in 2000 via acquisition of North
- CMOC acquired 80% from Rio Tinto in 2013 for US\$820m
- In 2020, Triple Flag paid US\$550m for a gold and silver stream

**Northparkes**: Resource, Reserve, Cumulative Production summary<sup>2</sup>



#### Wood Mackenzie 2019 Composite Copper C1 Cash + Sustaining Capex Cost Curve



1. Sourced and adapted from public market presentations, releases and papers.

2. Bespoke Mar'20 request by Richard Schodde from MinEx Consulting for Kincora.. "Endowment" reported on a pre-mined resource basis.

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# Northparkes mine driven by series of porphyry pipes

- Series of narrow but vertically extensive gold rich copper porphyry pipes
- Deposits tend to occur as structurally controlled clusters
- Core of the systems not evident in the top 50 metres

Top 50m

- "Classic" zoned sulphide mineralogy with poorly developed distal pyritic halos – bornite cores
- Bornite hosts the majority of copper mineralization, with majority of gold occurring as inclusions in bornite.
- Chalcopyrite is the dominant copper mineral in the outer regions of the bornite-rich cores

### Northparkes

CMOC (80%) & Sumitomo (20%)

FY'2020FProduction<br/>AISC38.6kt Cu 2<br/>US\$1.34/lb Cu 2Resources3.3Mt Cu and 3.7Moz Au 2Endowment5.5Moz Au and 4.5Mt Cu 2ExpansionStage 1 in execution 1





Schematic geological section (from Pacey et al, 2019)

- E22 discovery (1st DDH): 229m @ 0.61% Cu, 0.67g/t Au<sup>1</sup>
- E26 discovery: 441m @ 0.67% Cu<sup>1</sup>
- 1. Sourced and adapted from public market presentations, releases and papers.
- 2. Bespoke Mar'20 request by Richard Schodde from MinEx Consulting for Kincora.. "Endowment" reported on a pre-mined resource basis.

# Illustration of Northparkes porphyry intrusive system

### Rocks/alteration in/around the core of the intrusive systems/deposits at Northparkes



Zonation with discrete potassic zone to the core of the system/orebody

E48 at Northparkes section - alteration and mineralization



Sericite

Source: "Propylitic alteration and element mobility: The Northparkes Cu-Au System", Adam Pacey, JJ Wilkinson, AJ Boyce & DR Cooke - 2017

### Main deposits & exploration upside

#### • Main deposits

- E22 & E27 surface pits production ceased in 2010 planned block cave under E22
- E26 underground two lifts extracted third under development currently extract ore via sub-level cave
- E48 underground currently extracting from one block cave level
- GRP 314 potential underground
- MJH new discovery in close proximity to existing development at E26
- E44 permitting first potential satellite development project (open pit)

#### Exploration methods

- Regional geophysical data sets (particularly magnetics)
- Geological outcrop mapping and basement lithology (latter via shallow air-core drilling)
- RC drilling testing of favorable geochem & lithology
- Detailed 3D model to refined geological understanding, petrophysics, assist rank targets and identify mineralized trends
- · Diamond drilling for follow up systematically and persistently testing prime terrian

#### • Exploration upside

#### • Eg discovery hole of MJH in 2017: 156m @ 1.32% Cu & 0.68g/t Au

- Lack of deeper drilling (eg drilling >200m only below unknown mineralization)
- · Lack of infill near surface drilling across majority of Northparkes license holding
- Lack of drilling on the western portion of the Northparkes Igneous Complex (near Trundle, held by Kincora)
- Advances in understanding of alkalic porphyry systems worldwide (and in the Macquarie Arc – examples:
  - Recognition of 'wallwork porphyry' mineralization -> GRP314 deposit
  - Recognition of intact/preserved porphyry systems under cover & importance of "red rock" alteration as indicator -> Hopetown prospect
  - Application of trace level multi-element geochemistry



1. Sourced and adapted from public market presentations, releases and papers.

### Northparkes footprint

CMOC & SUMITUMO

Northparkes mining complex

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### Kincora's Trundle project is only brownfield porphyry project held by a listed junior in the Macquarie Arc

Trundle project sits within the same mineral system at the Northparkes mine

 Northparkes underground resources projected to surface. Outline of deposits in blue. Known near surface geochemical anomalies in red (>500pm Cu and/or >0.1g/t Au)

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E44 deposit (development)

### Mordialloc drilling



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0

Trundle Park drilling

Kincora ongoing drilling program
>500pm Cu &/or >0.1g/t Au
Northparkes deposits project to surface
Northparkes prospect
0
5
10km

6

### Northparkes Igneous Complex

Conceptual restoration of the Trundle and Northparkes projects – Trundle the western portion of the intrusive complex



#### Background magnetics (TMI RTP) from minview.geoscience.nsw.gov.au and Conceptual rifting event of the Northparkes caldera for illustrative purposes emphasizing Trundle sitting in a brownfield environment As at December 2021 7 1 Bespoke Mar'20 request by Richard Schodde from MinEx Consulting for Kincora Copper.

