



# Havilah Resources

*Strategic Minerals in South Australia*



**Australia's Next Great Copper Region:**

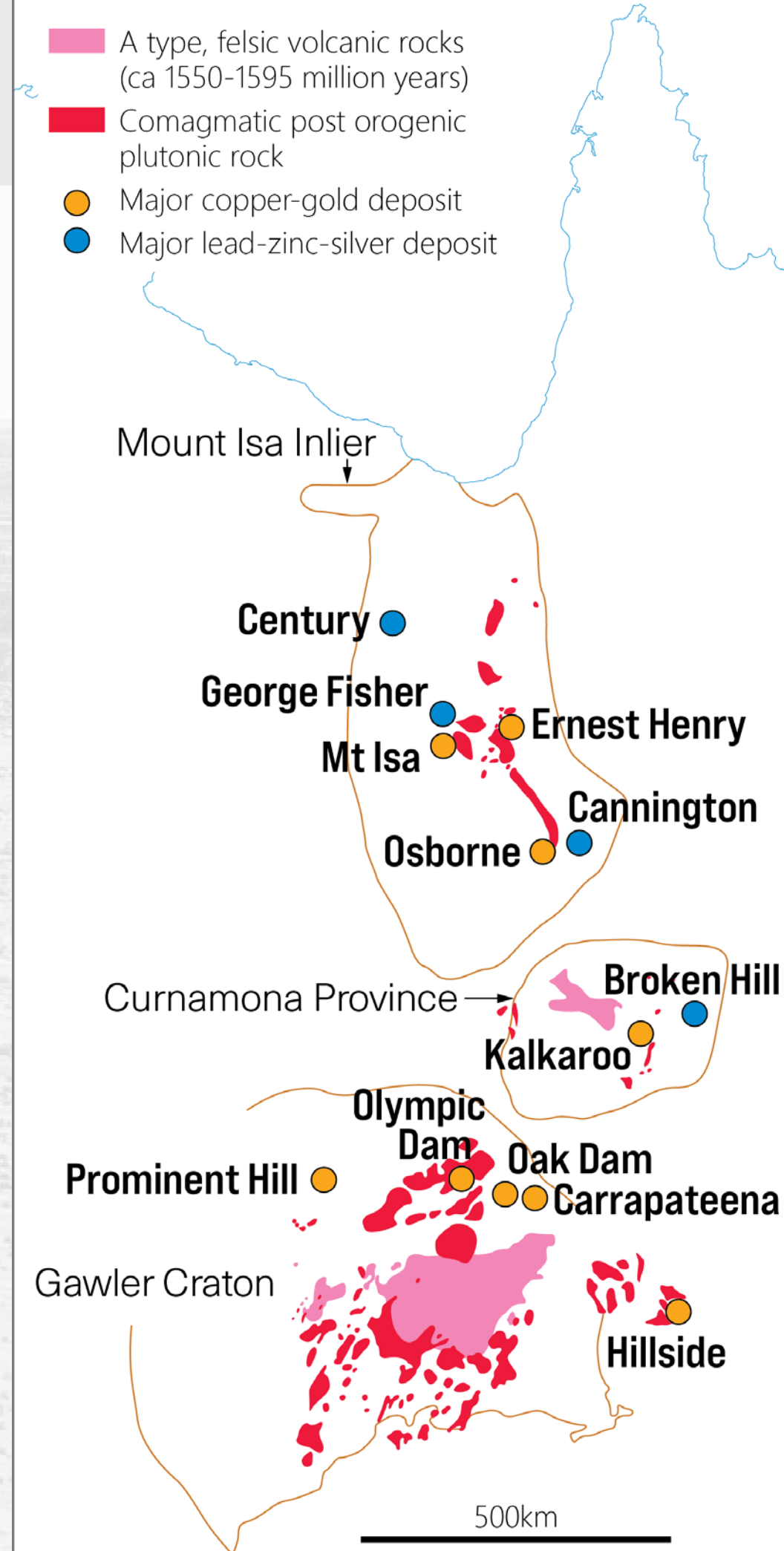
**The Curnamona Province of South Australia**

**Copper to the World Conference 2024**



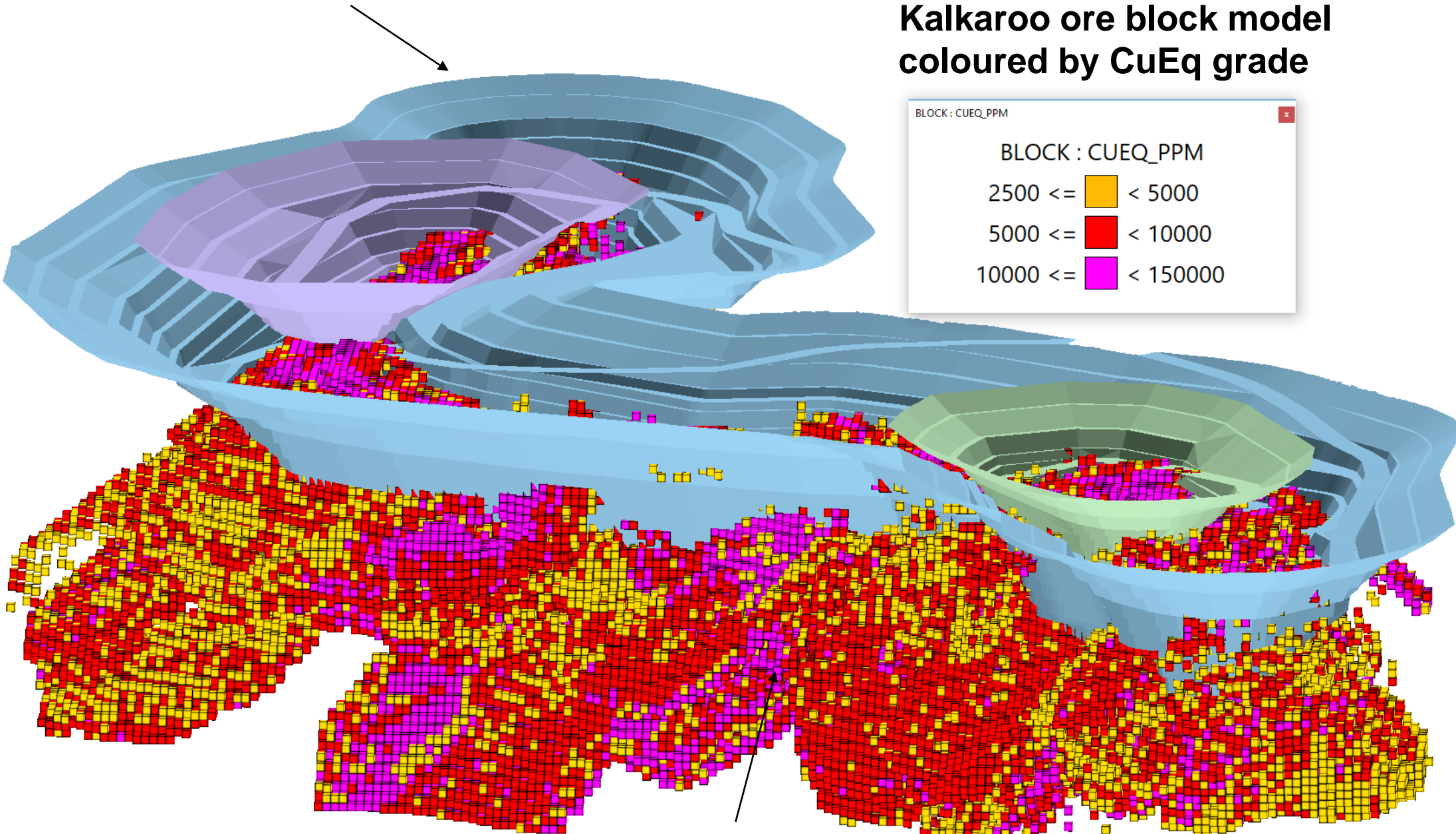
# A major 1.5-1.6 billion year copperbelt

- The Curnamona Province lay on the eastern margin of 'proto Australia' 1.5 billion years ago.
- It formed part of a major mineralised province that included the Mt Isa Inlier in the north and the Gawler Craton in the south.
- The key link between these provinces is an extensive ca. 1.5-1.6 billion year volcano-plutonic event that is believed to have spawned all of Australia's world class copper deposits, namely **Olympic Dam, Mt Isa, Ernest Henry, Prominent Hill, Carrapateena** and **Oak Dam**.
- There are also large lead-zinc-silver deposits at **Mt Isa, Century** and **Broken Hill** of similar age but of uncertain affinity.
- Key question is why there are not yet any world class copper deposits in the Curnamona Province? Critical geological factors for their occurrence are unquestionably favourable, including:
  - A large copper deposit at Kalkaroo, with a current JORC resource of approximately 1.1 Mt copper, 3.1 Moz gold and 23.2 Kt cobalt and considerable expansion upside (see slides 2 and 7).
  - At least eight large copper mineralised systems identified by Havilah drilling, indicating large copper mineralising systems were active in the region (see slide 5).
  - Broken Hill orebody shows that world class orebodies can form in the Curnamona Province.
- Havilah believes the answer lies in a combination of the following four key factors:
  - There is no outcrop. Extensive transported cover along with saline water hides the underlying geology, largely ruling out geochemical sampling and electrical geophysical exploration methods.
  - Insufficient exploration drilling – most of the holes drilled did not test the deeper geology.
  - Mineralisation discovered to date occurs in linear, structurally controlled, dipping, stratabound hosts rather than sub-vertical ironstone hosts, which means it is easy to miss large deposits by drilling outboard of the mineralised subcrop (that is, too far into the hangingwall or footwall).
  - There is extensive mineralisation in the prospective K2 unit and it is often hard to see through the geochemical 'smoke' to identify what are the critical structural controls on mineralisation.



- One of Australia’s larger undeveloped open pit copper deposits on a 0.81% CuEq\* Ore Reserve basis.
- 1.1 million tonnes of copper, 3.1 million ounces of gold and 23,200 tonnes of cobalt in JORC resources (refer to table in slide 7). Associated critical minerals are cobalt, molybdenum, REE and tungsten.
- Classified as a structurally controlled stratabound replacement deposit. Many features in common with Central African Copperbelt deposits - feeder fault structure and reactive carbonate-rich units at a major regional redox boundary.
- Havilah used the excellent data of earlier explorers (Placer, Newcrest, MIM) to develop a 3D conceptual geological model that guided its successful exploration.
- Comprehensive studies by BHP during 2023 demonstrated a robust open pit copper-gold project with no fatal flaws ([refer to ASX announcement 24 April 2024](#), slides 13-15).
- The projected conceptual open pit mine life was increased to more than 20 years.
- For more Kalkaroo project information at [www.havilah-resources-projects.com/Kalkaroo](http://www.havilah-resources-projects.com/Kalkaroo).

**Main Kalkaroo** copper-gold oxide and sulphide conceptual open pit 3 km long, >200m deep, containing 100 Mt Ore Reserve.

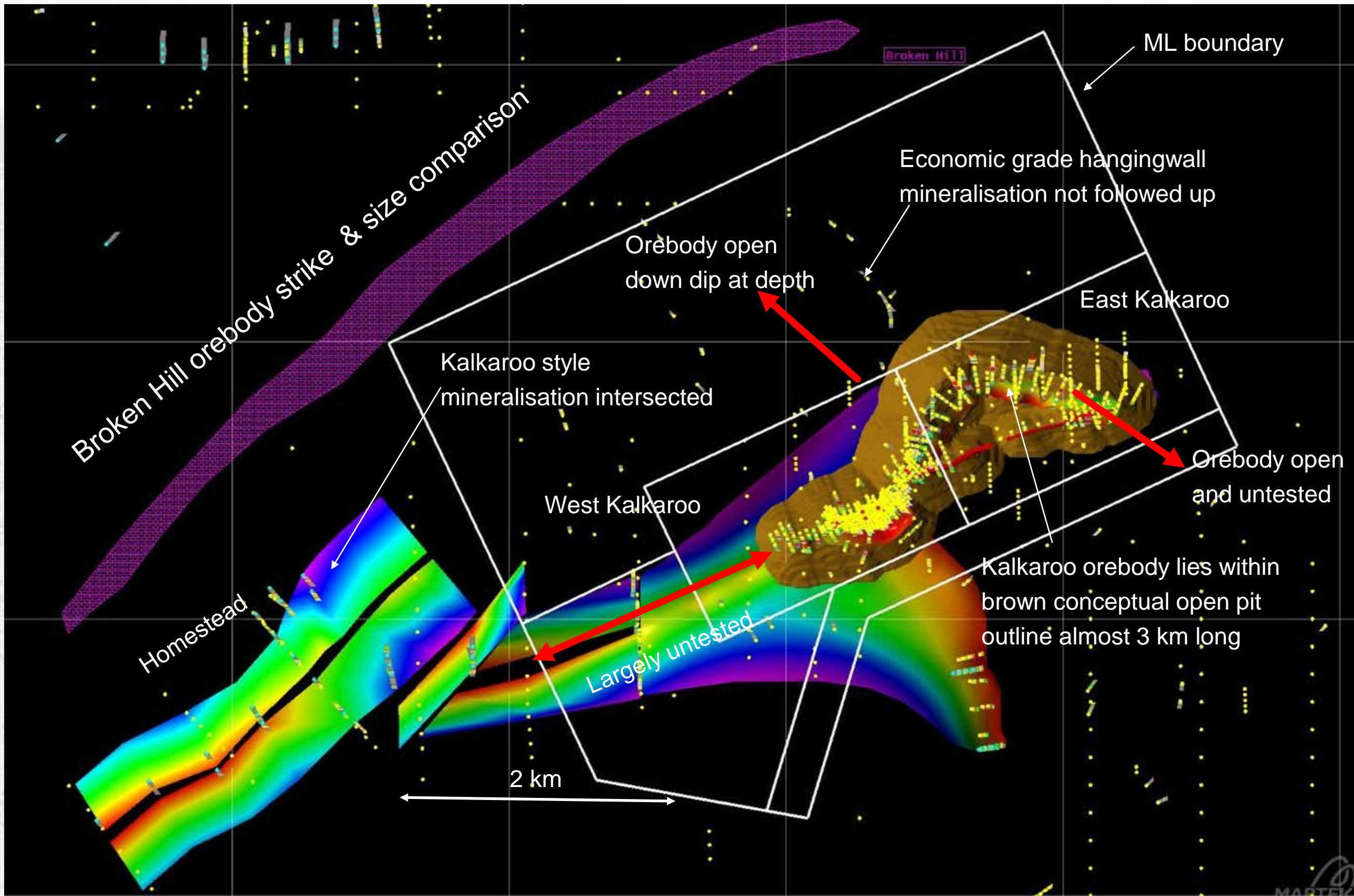


**Kalkaroo ore block model coloured by CuEq grade**

BLOCK : CUEQ_PPM	
2500 <=	< 5000
5000 <=	< 10000
10000 <=	< 150000

Inferred copper sulphide-gold resource lying outside of current Main Kalkaroo open pit design

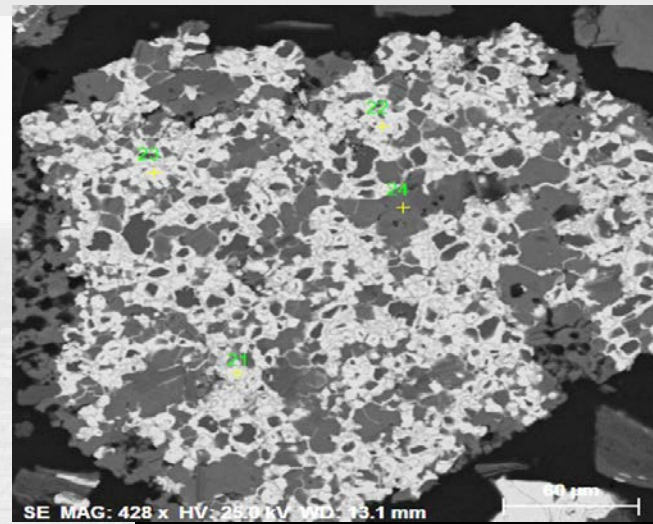
\* CuEq calculation is based on the formula:  $CuEq = Cu \text{ ore reserve grade} + (\text{value } 1g/t \text{ Au} / \text{value of } 1\% \text{ Cu} \times \text{Au ore reserve grade})$ . Assumptions: gold price USD2,350/oz, copper price USD9,858/tonne, overall metallurgical recoveries for saleable gold and copper are the same based on Kalkaroo PFS, ore metal grades are from published Kalkaroo JORC Ore Reserve table (see slide 7).



- Orebody is not closed off by current drilling along strike at the eastern and western ends of the deposit and down dip.
- Space to substantially expand the size of the Kalkaroo orebody within the ML.
- Economic grade hangingwall mineralisation intersected not yet followed up.
- Nearby Homestead prospect has sufficient strike length of the prospective horizon (K2 unit) to potentially host another Kalkaroo-size deposit ([refer to ASX announcement 29 August 2023](#)).
- Associated critical minerals – cobalt, molybdenum, REE and tungsten.

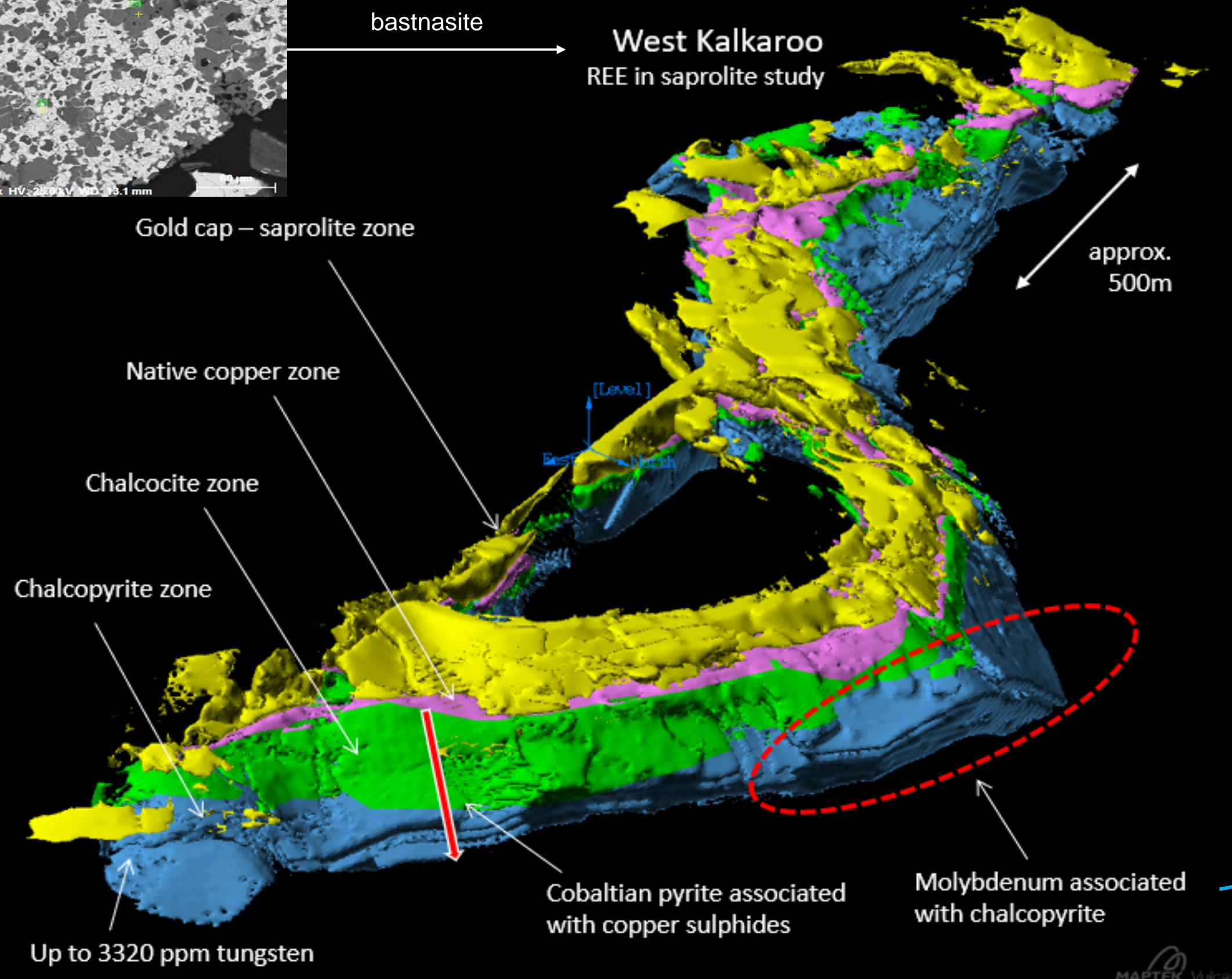
The image on the left shows the considerable untested resource expansion potential (indicated by the red arrows) that lies within the existing granted ML area (white boundary).

(Refer to [ASX announcement of 25 May 2023 for more details](#))



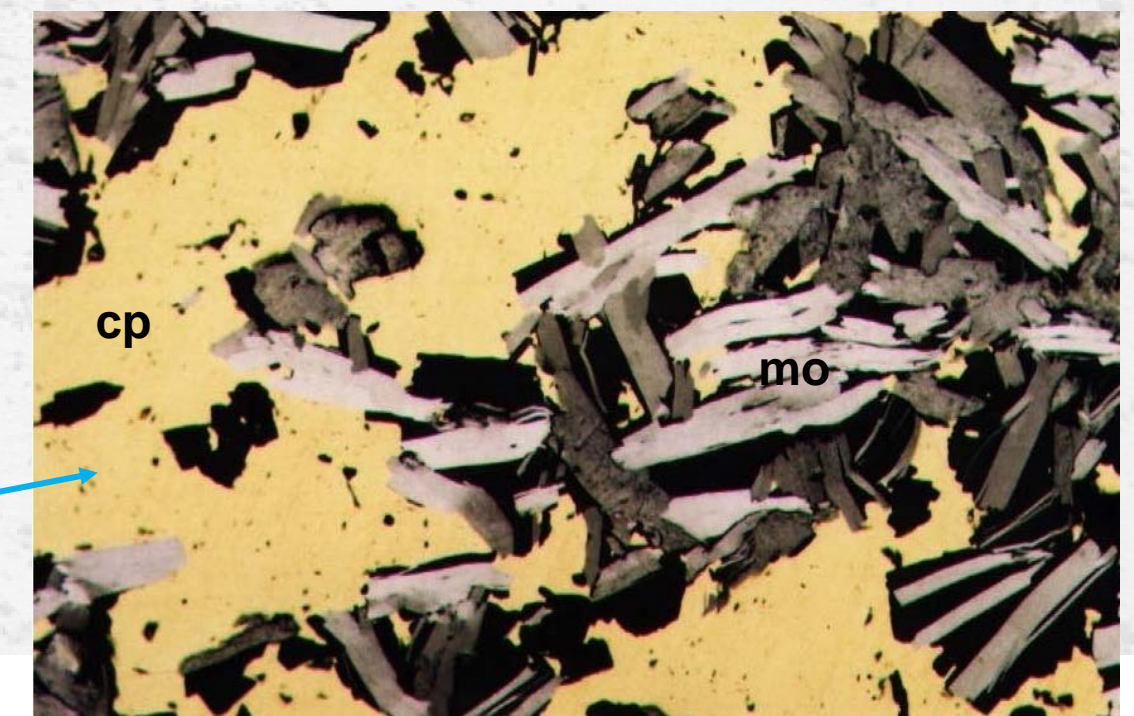
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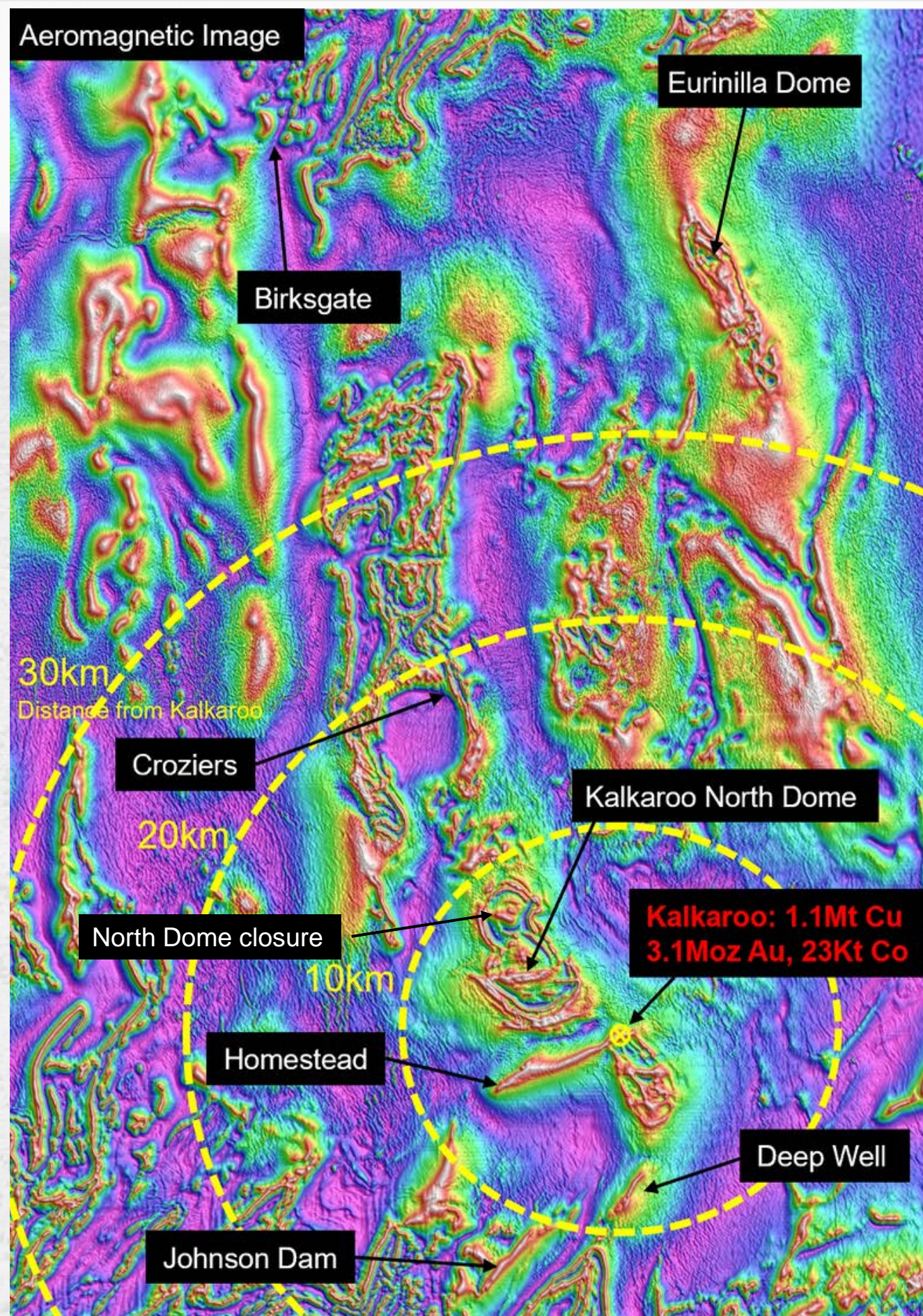
West Kalkaroo  
REE in saprolite study



Critical minerals associated with copper-gold mineralisation at Kalkaroo include:

- **Cobalt** – JORC Inferred Resource of 23,200 tonnes. Contained entirely within pyrite that is associated with the copper sulphide (refer to table in slide 7).
- **Molybdenum** – occurs as frequent molybdenite in late fractures mainly in the central part of the orebody associated with chalcopyrite.
- **REE** – widely distributed both in the weathered zone and within fresh rock. Occurs in the areas of most intense fracturing in proximity to faults.
- **W** – historic drillhole at the eastern end contains up to 3,320 ppm tungsten in high temperature calc-silicate altered zones.





Havilah, driven by an innovative and creative mine-finder mentality, has discovered eight large copper-gold-critical metals mineralised systems in proximity to Kalkaroo, with strong exploration analogies to the Central African Copperbelt.

#### Deep Well prospect ([ASX announcement 9 May 2023](#))

- 19 metres of 0.42% Cu and 206 ppm Co in faulted anticlinal closure.
- > 4 km untested strike of prospective horizon (K2 unit) and fault zone.

#### Johnson Dam prospect ([ASX announcement 17 May 2023](#))

- 22 metres of 0.27% Cu, 15 metres 405 ppm Co, 22 metres of 3,533 ppm TREEO, 6 metres of 3.3 lbs/tonne U3O8 on eastern faulted anticlinal limb. > 3 km untested strike of K2 unit.

#### Homestead prospect ([ASX announcement 29 Aug. 2023](#))

- 27 metres of 0.23% Cu, 3 metres of 5,530 ppm TREEO, 4 metres of 3.3 lbs/tonne U3O8 in extension of West Kalkaroo – faulted anticline. > 5 km untested strike of K2 unit.

#### North Dome prospect ([ASX announcement 16 Nov. 2023](#))

- 54 metres of 0.27% Cu; 60 metres 0.56 g/t Au to end of hole in fault/quartz breccia zone.
- > 5 km untested strike of fault zone.

#### Birksgate prospect ([ASX announcement 15 January 2024](#))

- 10.9 metres of 0.84% Cu, 0.64/g/t Au, 493 ppm Mo plus U and V in MMG JV diamond drilling confirmed by HAV RC drilling more than 1.5 km to the east.
- Mineralised K3 unit target potentially covers an area of >8km<sup>2</sup> in a synclinal structure.

#### Eurinilla Dome prospect ([ASX announcement 8 March 2024](#))

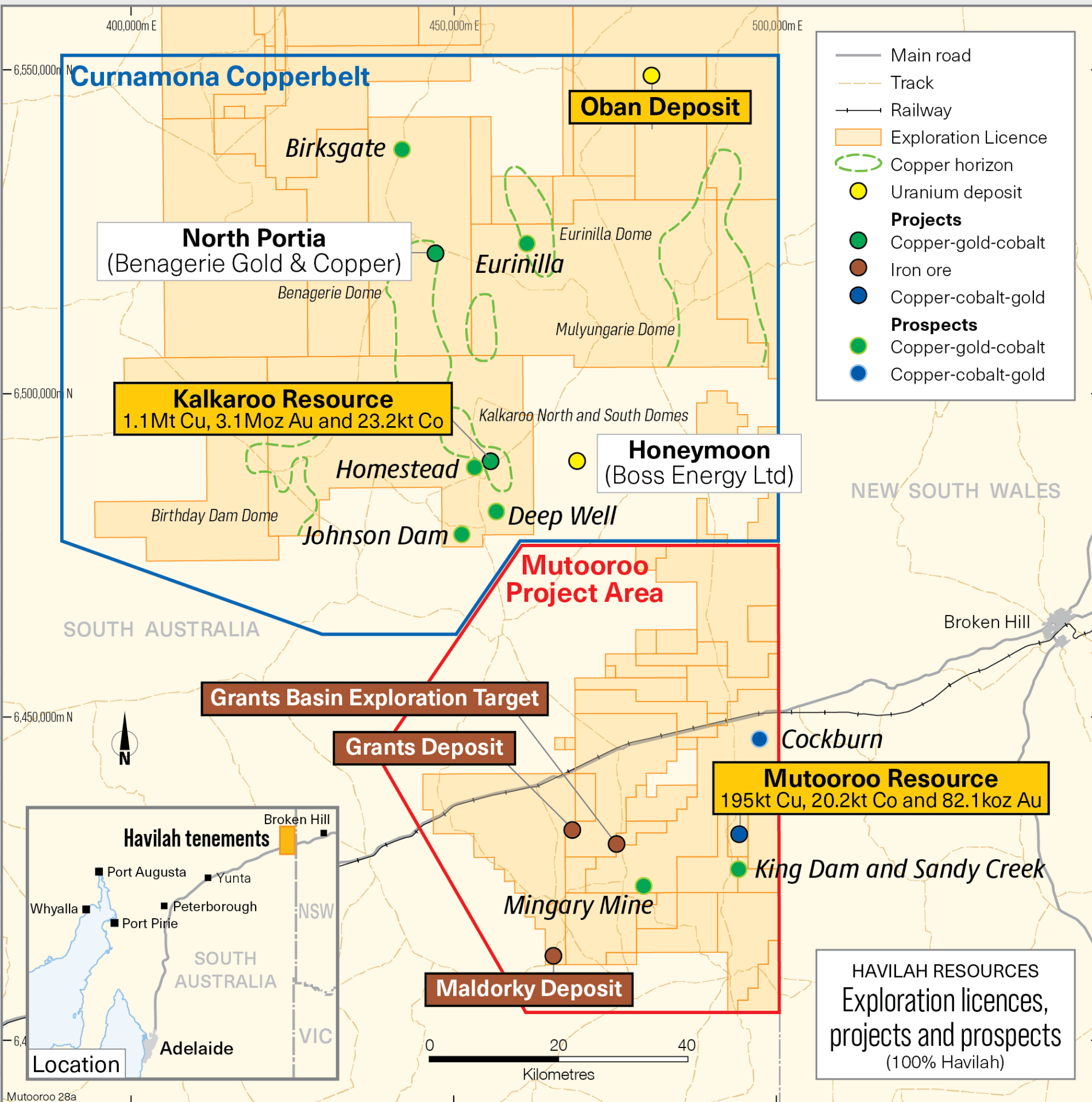
- 32 metres of 1.96% Cu and 0.84 g/t Au including 8 metres of 6.38% Cu and 2.72 g/t Au in supergene zone.
- >20 km prospective strike around the dome.

#### North Dome Closure prospect ([ASX announcement 27 May 2024](#))

- 30 metres of 0.21% Mo and 5 metres of 4.79 g/t Au in K2 unit and widespread low grade Cu, HREE, uranium.
- >12 km of untested prospective strike around the dome.

#### Croziers prospect ([ASX announcement 18 April 2017](#))

- 20 metres of 0.54% Cu plus associated >1000 ppm Nd and W in skarn horizon.
- Abundant magnet REE and economic grade W. > 4 km strike potential in multiple zones.



- Located in low sovereign risk northeastern South Australia, which has mandatory and strictly enforced world's best practice ESG regulations.
- Proximity to main highway and transcontinental railway line and Broken Hill with its established mining infrastructure and skilled workforce.
- Approximately 5 hour drive from Adelaide along the main Sydney highway and 1 hour drive from Broken Hill.
- Potential access to renewable energy sources from existing wind farm and solar farm near Broken Hill.
- Kalkaroo mining development is de-risked and will be expedited by Havilah land ownership, granted mining leases and an existing Native Title Mining Agreement.
- Kalkaroo mining lease is 100% owned by Havilah, with no legacy royalties or other encumbrances.
- Outback pastoral country presents no insurmountable environmental or cultural impediments to mining.



# Copper JORC Ore Reserve and Mineral Resources 2023

## JORC Ore Reserves as at 31 July 2023

Project	Classification	Tonnes (Mt)	Copper %	Gold g/t	Copper tonnes (Kt)	Gold ounces (Koz)
Kalkaroo <sup>1</sup>	Proved	90.2	0.48	0.44	430	1,282
	Probable	9.9	0.45	0.39	44	125
	<b>Total</b>	<b>100.1</b>	<b>0.47</b>	<b>0.44</b>	<b>474</b>	<b>1,407</b>

## JORC Mineral Resources as at 31 July 2023

Project	Classification	Resource Category	Tonnes	Copper %	Cobalt %	Gold g/t	Copper tonnes	Cobalt tonnes	Gold ounces
Mutooroo <sup>2</sup>	Measured	Oxide	598,000	0.56	0.04	0.08			
	<b>Total</b>	<b>Oxide</b>	<b>598,000</b>	<b>0.56</b>	<b>0.04</b>	<b>0.08</b>	<b>3,300</b>	<b>200</b>	<b>1,500</b>
	Measured	Sulphide Copper-Cobalt-Gold	4,149,000	1.23	0.14	0.18			
	Indicated	Sulphide Copper-Cobalt-Gold	1,697,000	1.52	0.14	0.35			
	Inferred	Sulphide Copper-Cobalt-Gold	6,683,000	1.71	0.17	0.17			
	<b>Total</b>	<b>Sulphide Copper-Cobalt-Gold</b>	<b>12,529,000</b>	<b>1.53</b>	<b>0.16</b>	<b>0.20</b>	<b>191,700</b>	<b>20,000</b>	<b>80,600</b>
	<b>Total Mutooroo</b>	<b>13,127,000</b>				<b>195,000</b>	<b>20,200</b>	<b>82,100</b>	
Kalkaroo <sup>3</sup>	Measured	Oxide Gold Cap	12,000,000			0.82			
	Indicated	Oxide Gold Cap	6,970,000			0.62			
	Inferred	Oxide Gold Cap	2,710,000			0.68			
	<b>Total</b>	<b>Oxide Gold Cap</b>	<b>21,680,000</b>			<b>0.74</b>			<b>514,500</b>
	Measured	Sulphide Copper-Gold	85,600,000	0.57		0.42			
	Indicated	Sulphide Copper-Gold	27,900,000	0.49		0.36			
	Inferred	Sulphide Copper-Gold	110,300,000	0.43		0.32			
	<b>Total</b>	<b>Sulphide Copper-Gold</b>	<b>223,800,000</b>	<b>0.49</b>		<b>0.36</b>	<b>1,096,600</b>		<b>2,590,300</b>
		<b>Total Kalkaroo</b>	<b>245,480,000</b>				<b>1,096,600</b>		<b>3,104,800</b>
	Inferred	Cobalt Sulphide <sup>4</sup>	193,000,000		0.012			23,200	
<b>Total All Projects</b>	<b>All Categories (rounded)</b>	<b>258,607,000</b>					<b>1,291,600</b>	<b>43,400</b>	<b>3,186,900</b>

## Footnotes to the JORC Ore Reserve and Mineral Resource Tables

Numbers in tables are rounded. Ore Reserves are a subset of the Mineral Resources.

<sup>1</sup> Details released to ASX: [18 June 2018](#) (Kalkaroo)

<sup>2</sup> Details released to the ASX: [18 October 2010](#) and [5 June 2020](#) (Mutooroo)

<sup>3</sup> Details released to ASX [30 January 2018](#) & [7 March 2018](#) (Kalkaroo)

<sup>4</sup> Note that the Kalkaroo cobalt Inferred resource is not added to the total tonnage



## Cautionary Statement

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It is not recommended that any person makes any investment decision in relation to Havilah or the Kalkaroo project based on this presentation. This presentation should be read in conjunction with the latest Annual Report together with any announcements made by Havilah in accordance with its continuous disclosure obligations arising under the Corporations Act 2001.

This presentation contains certain statements which may constitute 'forward-looking statements'. Such statements are only predictions and are subject to inherent risks and uncertainties which could cause actual values, performance or achievements to differ materially from those expressed, implied or projected in any forward-looking statements.

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Where discovery upside is identified, this is a collective opinion of Havilah's geologists based on their best interpretations of the available data and their experience in the region. Further work may disprove any or all the interpretations and models put forward in this presentation.

## Competent Person's Statement

The information in this presentation that relates to Exploration Results, Mineral Resources and Ore Reserves is based on data compiled by geologist Dr Chris Giles, a Competent Person who is a member of The Australian Institute of Geoscientists. Dr Giles is Technical Director of the Company, a full-time employee and is a substantial shareholder. Dr Giles has sufficient experience, which is relevant to the style of mineralisation and type of deposit and activities described herein to qualify as a Competent Person as defined in the 2012 Edition of 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Dr Giles consents to the inclusion in the presentation of the matters based on his information in the form and context in which it appears.

Information for Ore Reserve & Mineral Resources complies with the JORC Code 2012. Information for the Kalkaroo Ore Reserve & Mineral Resource and the Mutooroo Inferred cobalt & gold Mineral Resources complies with the JORC Code 2012. All other information was prepared and first disclosed under the JORC Code 2004 and is presented on the basis that the information has not materially changed since it was last reported. Havilah confirms that all material assumptions and technical parameters underpinning the reserves and resources continue to apply and have not materially changed. Except where explicitly stated, this presentation contains references to prior exploration results and JORC Mineral Resources, which are cross-referenced to previous ASX announcements made by Havilah. The Company confirms that it is not aware of any new information or data that materially affects the information included in the relevant ASX announcements.