



PEAK  
MINERALS

**UNLOCKING AN  
UNRECOGNISED,  
MAGMATIC SULPHIDE  
SYSTEM**

PEAK MINERALS LIMITED

ASX: PUA

OCTOBER 2021



ers only

# Disclosure and Forward Looking Statements

The information in this presentation that relates to Exploration Targets, Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Ms. Barbara Duggan, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy. Ms. Barbara Duggan is employed by Peak Minerals Ltd to provide technical advice on mineral projects and holds performance rights in the Company.

This ASX announcement contains information extracted from the following reports which are available on the Company's website at [www.peakminerals.com.au](http://www.peakminerals.com.au).

- 29 April 2017 Report for March Quarter
- 29 May 2020 Update of Hargraves Resources
- 11 November 2020 Copper Hills Project Update
- 5 May 2021 CU2 acquisition consolidates emerging copper province
- 06 April 2021 Magmatic copper sulphides intersected at Lady Alma
- 30 November 2015 Red Hill outlook supported by new resource estimate
- 14 September 2020 Geological Data Review completed supports future exploration
- 21 September 2020 Capital Raise and Acquisition
- 8 March 2021 Maiden drilling program at the Copper Hills Project Update
- 11 November 2020 substantial magmatic intrusive system defined at Copper Hills
- 23 August 2021 Ongoing Exploration Programs Continue to Support New Magmatic Sulphide Province

The Company confirms that it is not aware of any new information or data that materially affects the exploration results included in any original market announcements referred to in this report and that no material change in the results has occurred. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements. This presentation has been approved by the Board of Peak Minerals Limited for release.

## Disclaimer

This announcement contains forward-looking statements which are identified by words such as 'anticipates', 'forecasts', 'may', 'will', 'could', 'believes', 'estimates', 'targets', 'expects', 'plan' or 'intends' and other similar words that involve risks and uncertainties. Indications of, and guidelines or outlook on, future earnings, distributions or financial position or performance and targets, estimates and assumptions in respect of production, prices, operating costs, results, capital expenditures, reserves and resources are also forward-looking statements. These statements are based on an assessment of present economic and operating conditions, and on a number of assumptions and estimates regarding future events and actions that, while considered reasonable as at the date of this announcement and are expected to take place, are inherently subject to significant technical, business, economic, competitive, political and social uncertainties and contingencies. Such forward-looking statements are not guarantees of future performance and involve known and unknown risks, uncertainties, assumptions and other important factors, many of which are beyond the control of the Company, the directors and management. We cannot and do not give any assurance that the results, performance or achievements expressed or implied by the forward-looking statements contained in this announcement will actually occur and readers are cautioned not to place undue reliance on these forward-looking statements. These forward-looking statements are subject to various risk factors that could cause actual events or results to differ materially from the events or results estimated, expressed or anticipated in these statements.

# A NEW AND REVITALISED TEAM



Jennifer Neild - CEO

Recently appointed as CEO Jennifer Neild has over 17 years experience working as a geologist in exploration, underground and resource for companies like **Falconbridge Ltd** (now **Glencore plc**), **Newmont** and **Golder Associates**. Most recently she worked at **HiSeis Pty Ltd** as General Manager Interpretation working on dozens of projects around the world in multiple commodities. Working one on one with eminent structural geologists, geochemists and geophysicists has nurtured her understanding of complex mineral systems and targeting through integration of geophysics, geochemistry and structural geology.

Jennifer has a Bachelor of Science in Geology from Laurentian University, with a Masters of Science in Exploration Geophysics from Curtin University.



Barbara Duggan – Chief Geologist

Barbara is a geologist with more than 20 years' experience in mineral exploration from project generation to advanced project stage. She has extensive experience in Canada and Australia working for **Inco Ltd** (now **Vale Ltd**), **BHP** and **Panoramic Resources**. Most recently she worked for **CSA Global** as a Senior Consultant focused on nickel sulphides and magmatic hydrothermal mineral systems including gold, volcanogenic massive sulphides and IOCG's. Barbara specialises in integrated mineral systems targeting at a district to deposit scale using litho-geochemistry, alteration mapping and geophysics. Using these skillsets, Barbara was able to recognize the potential for Greenrocks.

Barbara holds a Bachelor of Science degree in Geology from Queen's University, with a Masters of Science in Geology from UWA. She is a member of the AIG.

ASX CODE  
PUA

SHARES ON  
ISSUE  
1,039.4M (1)

UNLISTED  
OPTIONS  
139.0M (3)

MARKET CAP  
(undiluted)  
\$15.6M (4)

PUAOD ON  
ISSUE  
362.4M (1,2)

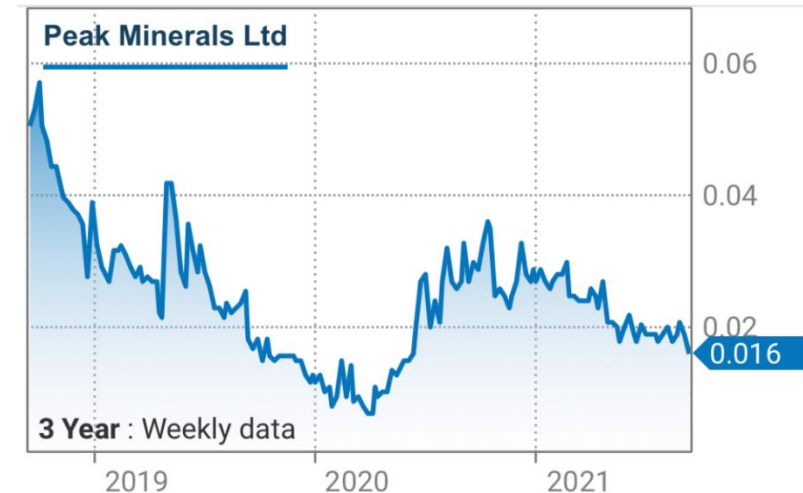
ENTERPRISE  
VALUE  
\$10.7M

(1) Including shares and options to be issued on completion of Placement

(2) PUAOD 30 Dec 22 ex-price \$0.025

(3) Unlisted options (various ex-prices)

(4) Based on Placement price of \$0.015 per share





# Copper Project Portfolio

## WA Copper Projects

### Green Rocks

- Emerging province targeting intrusions previously unrecognized to host magmatic sulphides

### Earaheedy

- Targeting sediment hosted copper, part of RTR:ASX recently discovered zinc/lead system

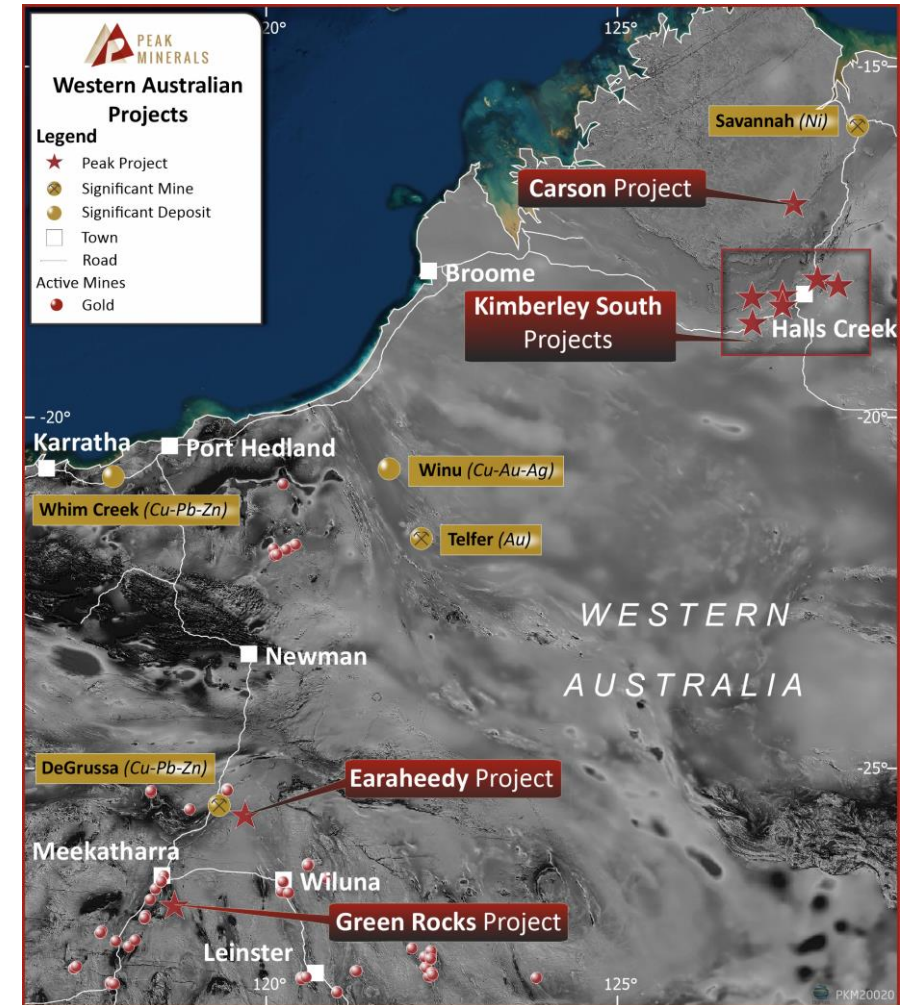
### Kimberley South

6 individual projects targeting:

- Magmatic copper  $\pm$  nickel sulphide mineralisation with many untested by EM
- Mostly surrounded by IGO tenements

### Carson

- Sediment hosted copper potential with over 250km strike
- Historic high grade Cu assays from drilling to pave the way



# Green Rocks Project – Overview



Greenstone belt located southeast of Meekatharra and covering an area of 234 km<sup>2</sup>



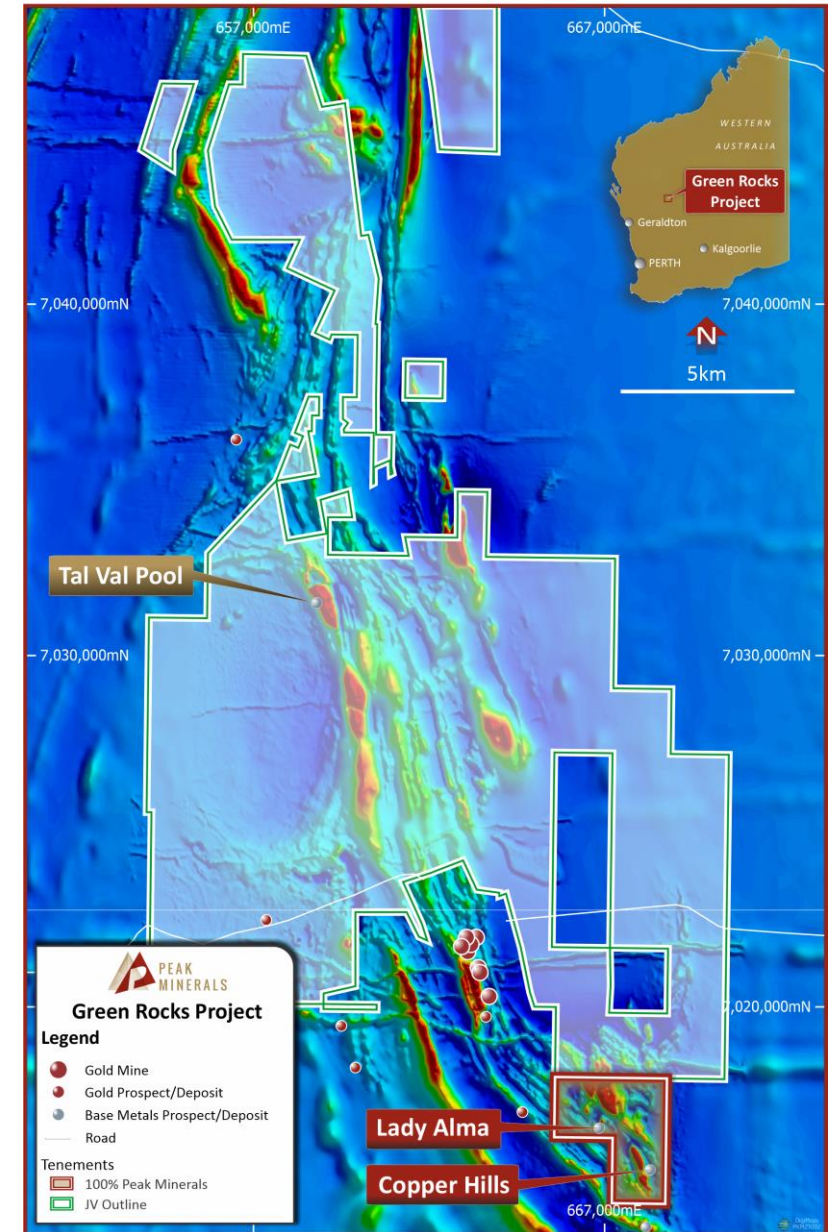
Gravity, geochemistry, drilling and magnetics have identified multiple intrusive bodies within an emerging province



Evidence of mafic-ultramafic “eye-like” intrusions open at depth with associated copper mineralisation



Tenure contains a mineralised structure that extends for over 22 km  
PUA controls the largest land package in this new emerging province





# Where did the Copper come from?

- Over 2.5Moz of gold mined historically with associated copper mineralisation
- Source of copper mineralisation never understood or properly targeted in Meekatharra
- Historically, VMS targeting was completed but the model was incomplete and didn't account for the mineralisation in mafic-ultramafic intrusions
- The hydrothermal, near surface mineralisation is a valid target but it has distracted explorers from the source of the copper mineralization
- Traditionally, magmatic sulphide explorers have focused on the Australian model, targeting komatiitic lava flows
- In 2020, PUA geologists developed the layered intrusion model in this province. Successful discoveries by Chalice (Julimar) and Sirius (Nova-Bollinger) are examples of recent layered intrusion discoveries
- These systems cluster as isolated features along 22 kms of strike
- Currently three mafic-ultramafic intrusions have confirmed magmatic Cu >> Ni mineralisation
- *In-situ* magmatic sulphides do not move far from source, typically within 500 to 1000 m



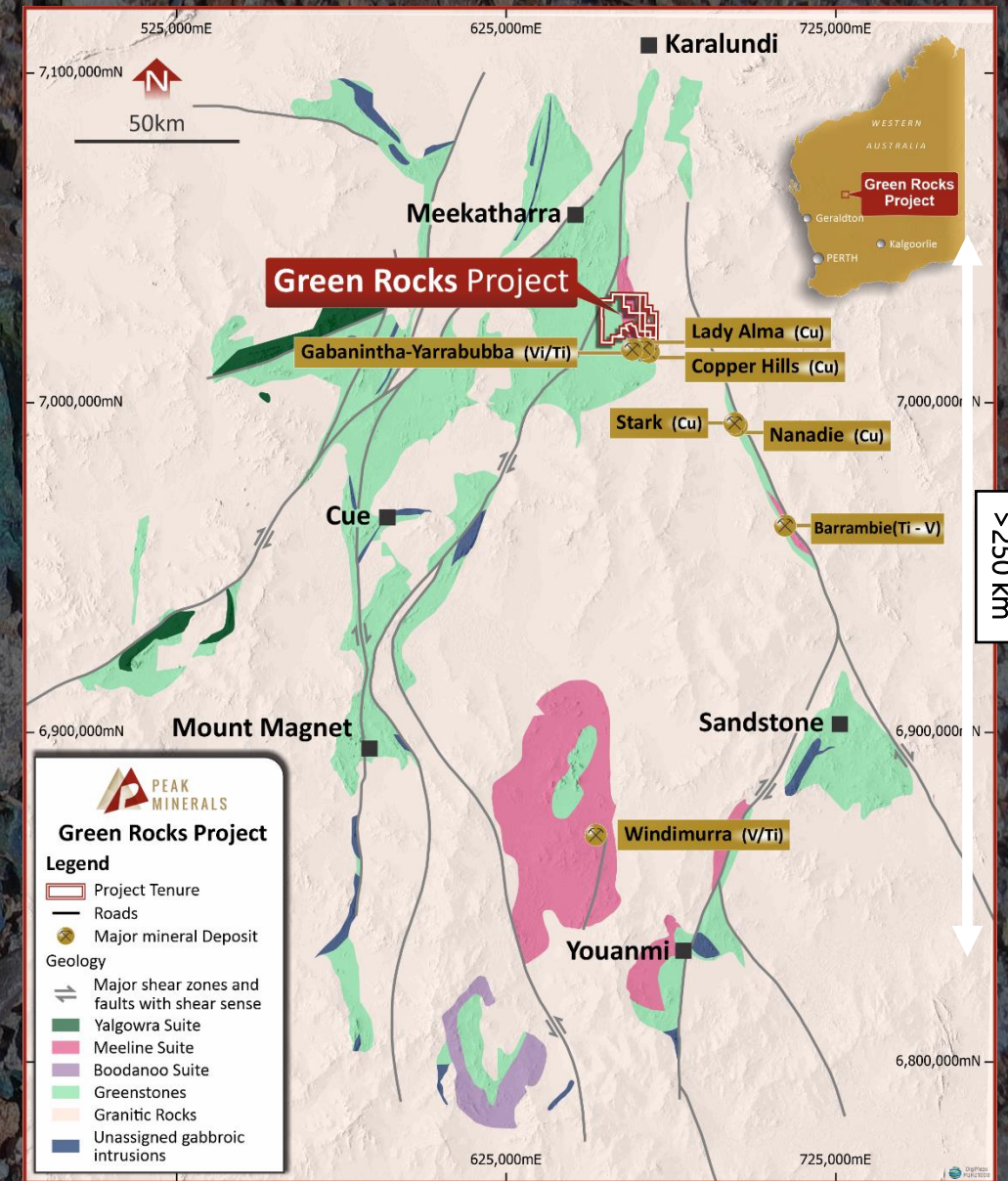
(Grab Sample from Rixon Prospect)



# Green Rocks Project Target Model

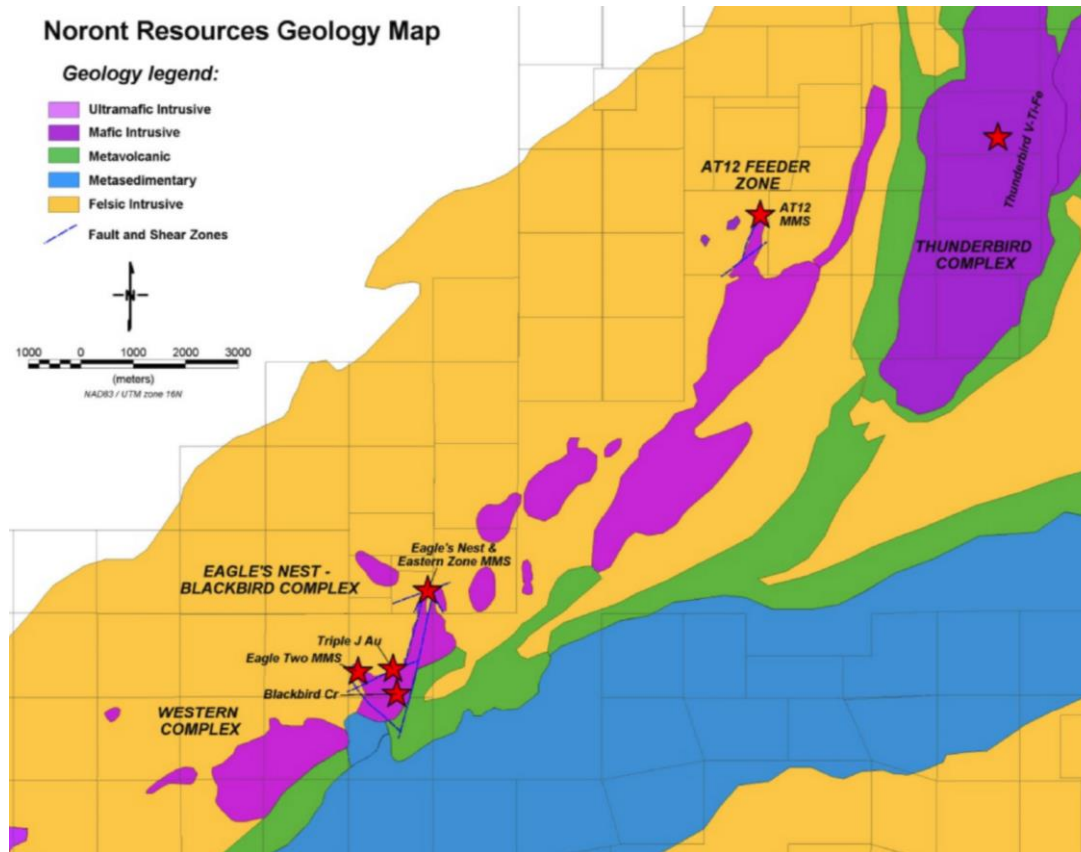
- The project is part of a large magmatic province extending from Meekatharra south to the Windamurra layer intrusive complex
- Lady Alma and Coppers Hills as well as deposits from Windimurra, Nanadie to Gabanintha-Yarrabubba
- Deposits within the Meeline suite consist of Cu, Ni, V-Ti-Fe, and PGE.
- A characteristic part of the copper end member is the presence of magnetite zonation within the system, distal V-Ti-Fe deposits and multiple intrusive bodies.

Is this another Ring of Fire!?

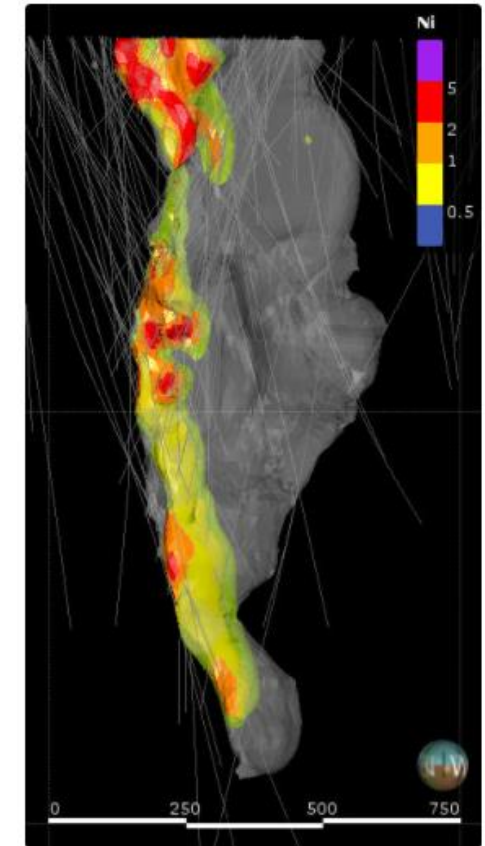


# Green Rocks Project: Noront Resources Eagle's Nest Comparison

- The geological model is based on similarities to Noront Resources Ltd's (TSXV:NOT) Eagle's Nest
- Eagle's Nest is a small intrusion compared to the Thunderbird V-Ti-Fe deposit in the Thunderbird Complex, similar to the Windimurra Igneous Complex
- Noront subject to a takeover war with a bid of C\$325M from BHP which was recently trumped by Andrew Forrest's Wyloo Metals for ~C\$413M



Geological map showing the distribution of mafic-ultramafic intrusions (NI 43-101 Technical report October 19, 2012)

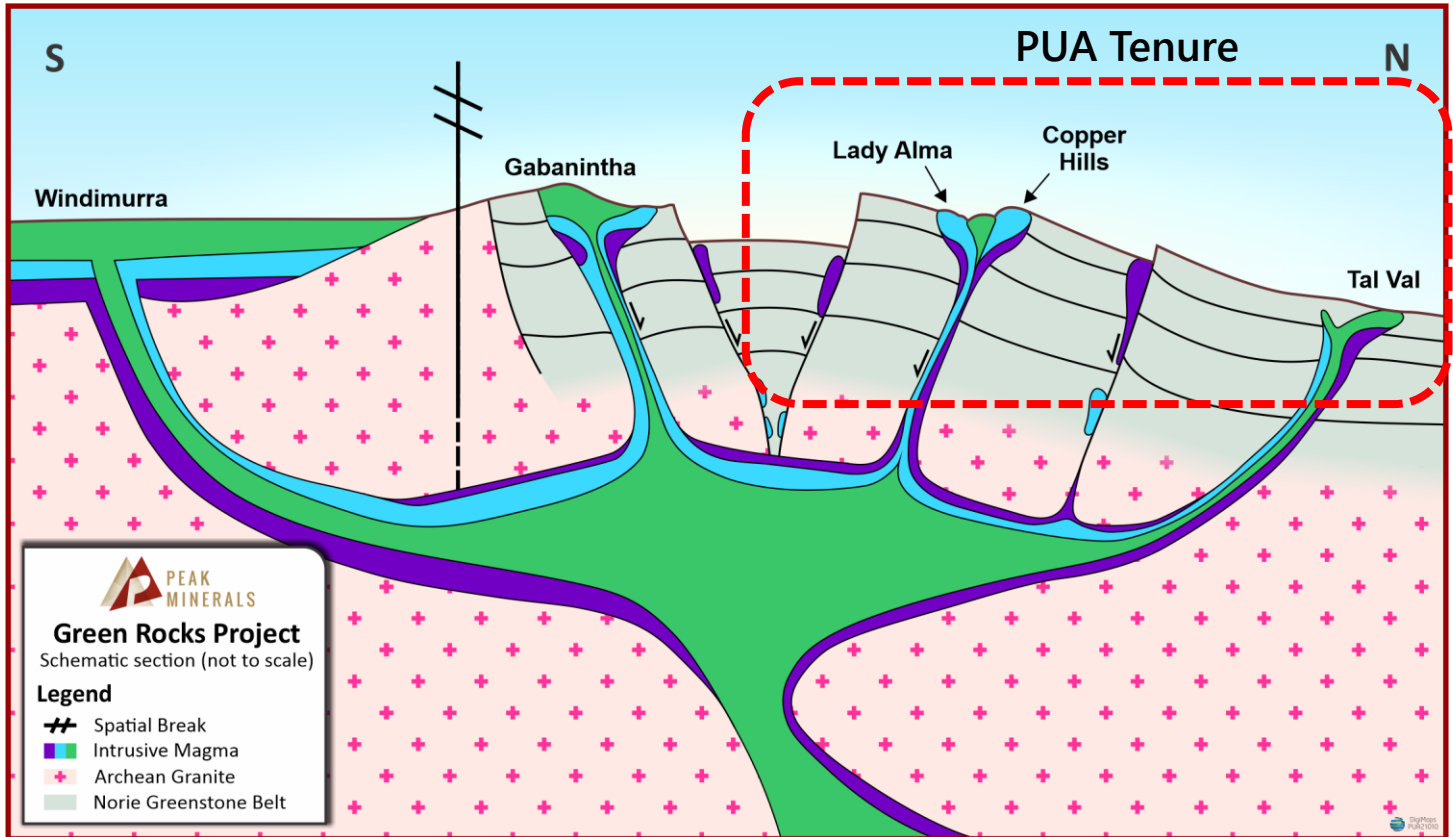


Cross Section of the Eagle's Nest deposit showing Nickel mineralisation (Noront Resources Company Website)



# Green Rocks Project: Geological Model

- Systems are known to cluster with multiple mineralised bodies
- Source of mineralisation from a deep mantle source
- Presence of V-Ti-magnetite deposits are long lived parts of the magmatic plumbing system
- Later pulses of the magmatic system are evidenced by disseminated sulphides above more net textured to semi-massive sulphide mineralisation



# Green Rocks Recent Drilling– Magmatic Sulphide Mineralisation

- Historic drilling intersected multiple zones of sulphides as blebs, veins and breccias often associated with carbonate.
- Presence of these sulphides suggest a deeper source for magmatic sulphide mineralisation
- Historically, only limited testing of samples for nickel and copper were conducted (note the Cu:Ni ratio). Significant results included:
  - 5.49m at 1.78% Cu and 0.14% Ni from 78.88m
    - *Including 0.92m at 6.15% Cu and 0.48% Ni*
  - 4.88m at 1.7% Cu from 68.83m
    - *Including 0.31m at 13.2% Cu and 1.29% Ni*
- Recent drilling by PUA has confirmed the presence of magmatic sulphides with structural information at Lady Alma indicates a NW direction to the main mineralisation

Magmatic sulphides do not travel far from source!



Interstitial magmatic sulphides, PO>CP>>PY

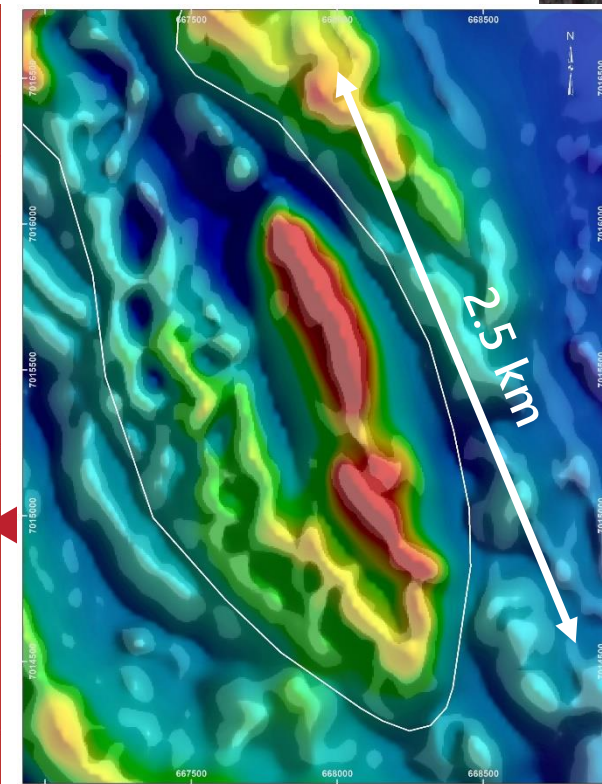
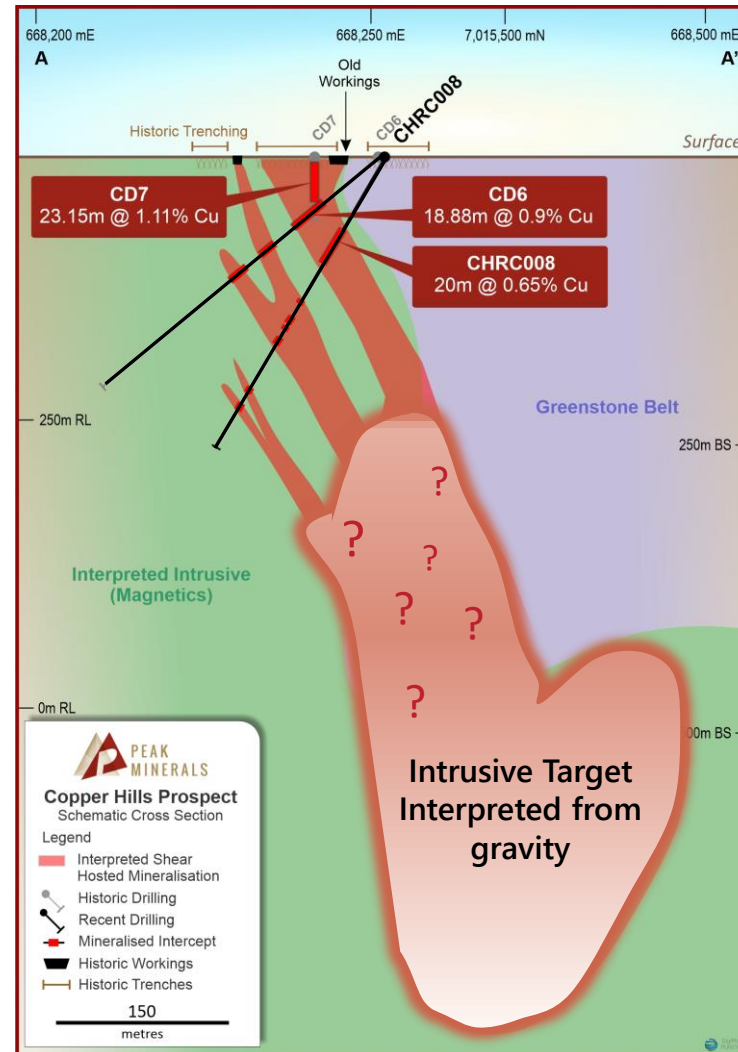


Chalcopyrite in an offset vein.



# Green Rocks: Copper Hills Exploration Update

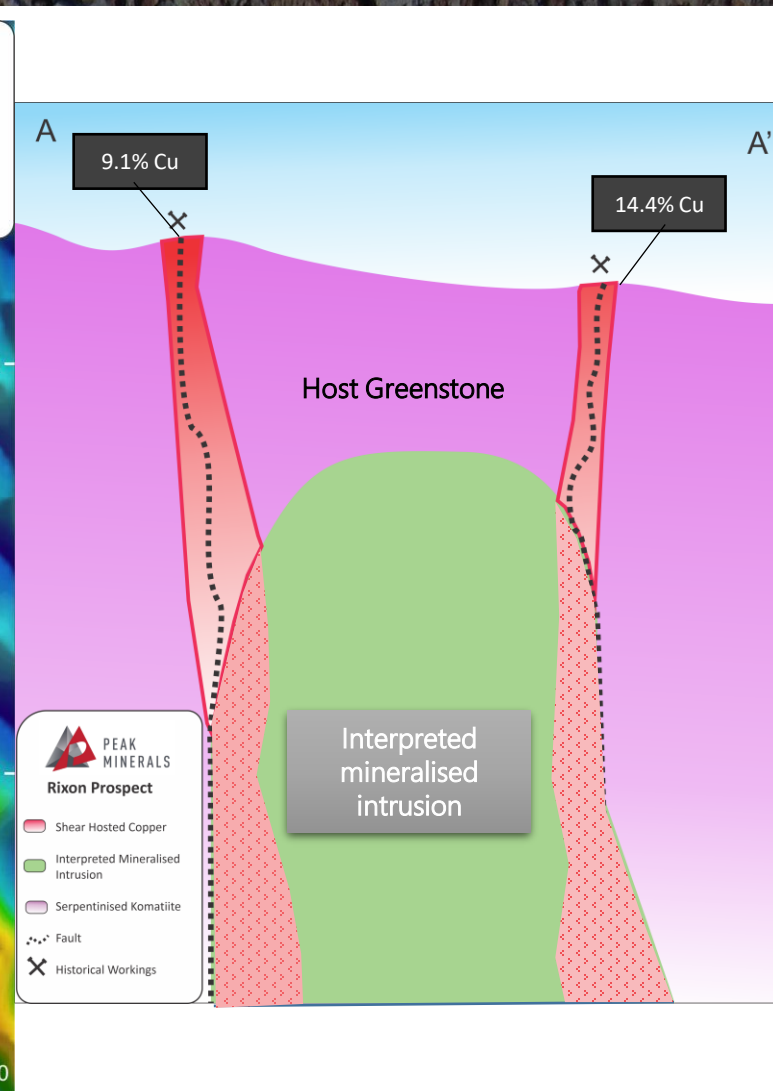
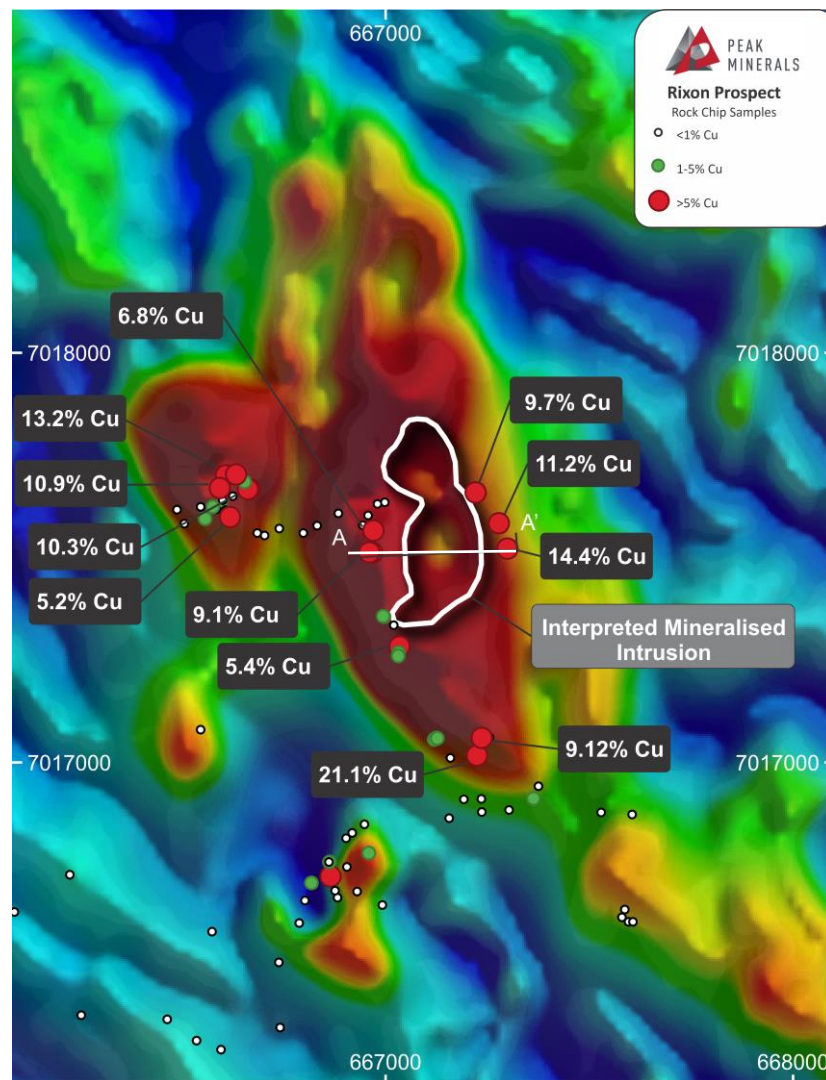
- Shallow RC drilling at Copper Hills Prospect confirms mineralisation over 600 m strike
- Similarities to the Nanadie deposit (owned by Cyprium Resources)
- Sulphide mineralisation identified near surface is interpreted to have leaked up from a deeper source along a shear
- Deeper source supported by gravity data and magnetics



Magnetics image, outline of proposed intrusion in white.

# Rixon: New Cu-Ni targets

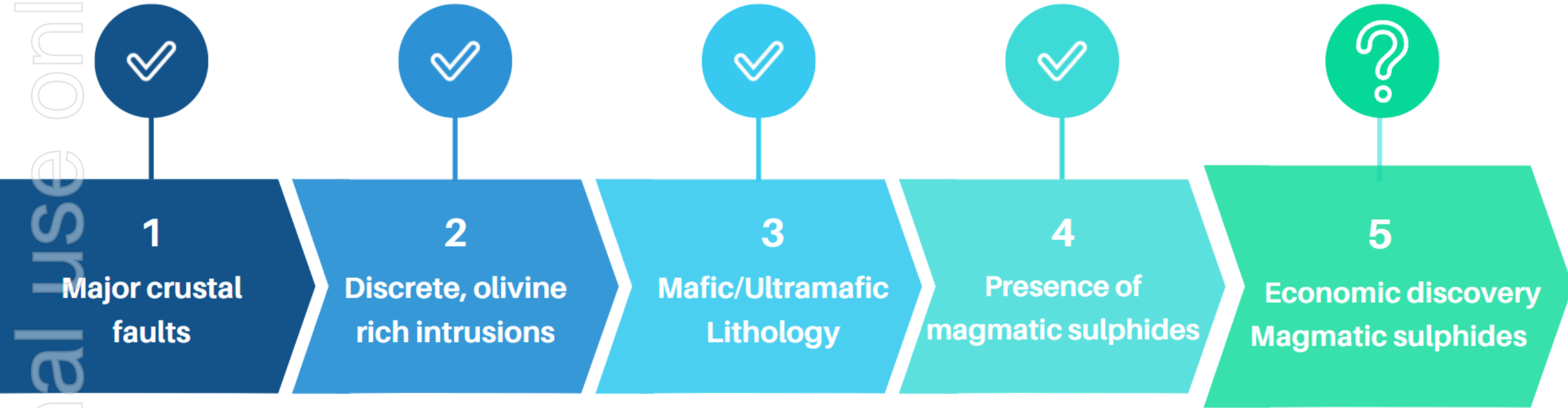
- Multiple large "eye" features have been defined by magnetics and gravity across the land holding
- Follow-up rock chip sampling confirmed significant potential at Rixon:
  - 16 rock chips with grades ranging from 5.0% Cu to 21.1% Cu
- A 300m x 650m central feature at Rixon is thought to represent part of a large buried intrusion, where copper remobilised along shear zones manifests at surface
- Additional geophysical targets are supported by favourable chemistry for magmatic copper sulphide mineralisation





# Green Rocks Magmatic Checklist

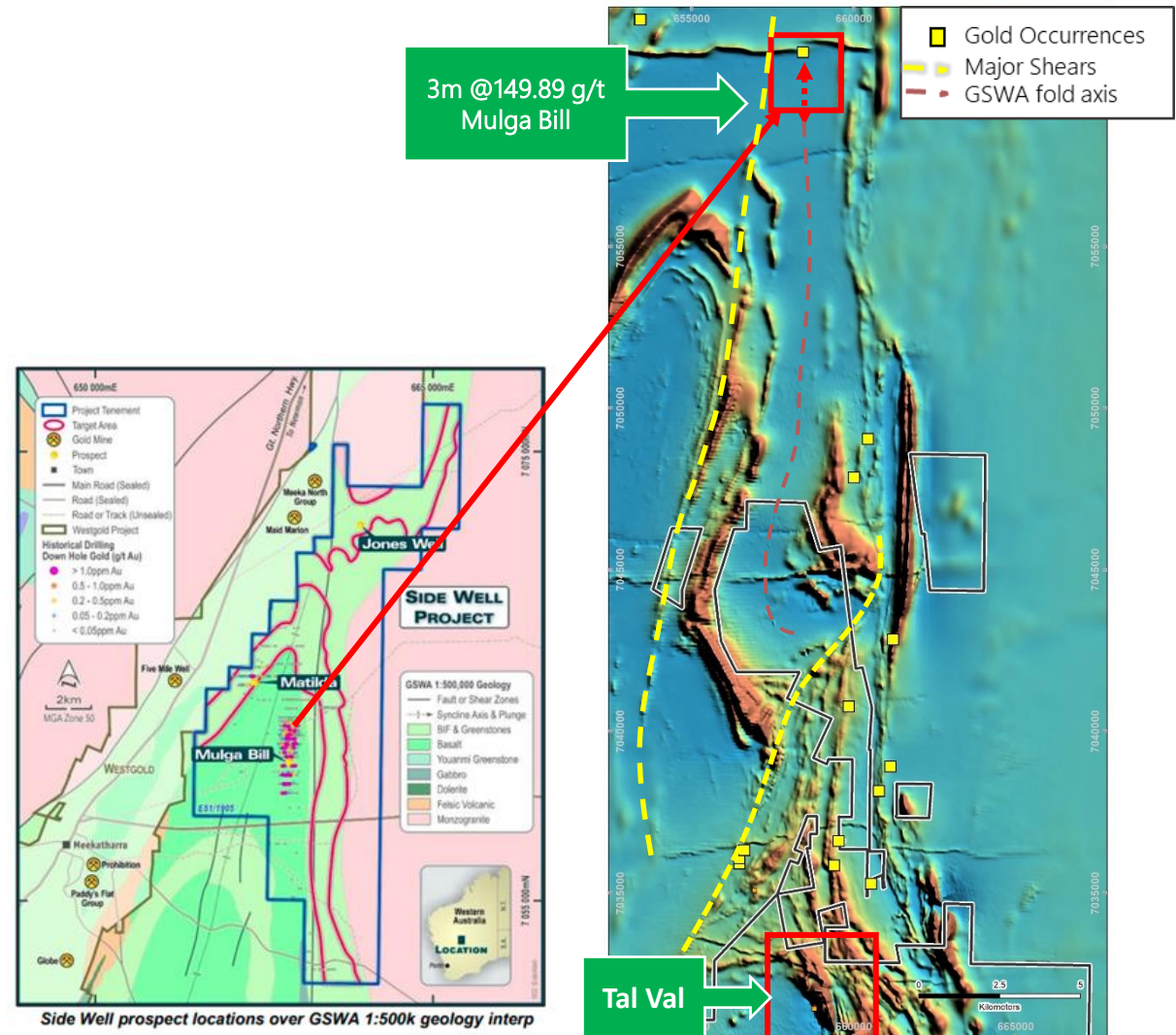
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# Green Rocks: Gold Potential

- Historical sampling and drill programs have recognised anomalous gold values across the tenement package
- Great Boulder Resources Limited (September 2, 2021 ASX announcement) standout result from first 6 holes:
  - 3m @ 149.89g/t Au and 6m @ 24.33 g/t deeper

- ✓ Fluid pathways (deep, long-lived faults)
- ✓ Flexures in stratigraphy (deformation)
- ✓ Favourable Stratigraphy
- ✓ Fluid source
- ✓ E-W trending dykes





# Staged Exploration Strategy



\*Electromagnetics and Induced Polarisation

# OTHER ASSETS



# Overview of Other Assets

- Peak Minerals Limited (ASX: PUA) is executing Western Australian copper focus strategy
- Recently acquired copper portfolio across 3 distinct regions is the company's primary focus with systematic evaluations underway
- Review of HPA asset to maximise shareholder return
- Divestment of NSW gold assets to Vertex Minerals for \$3.5M, to be distributed to PUA shareholders (near finalised)

## PUA's highly prospective assets include

### WA Copper Projects:

1. Earraheedy
2. Carson
3. Kimberley South

### Victoria Alumina Project:

1. Yendon

### NSW Gold Projects:

1. Hargraves
2. Hill End

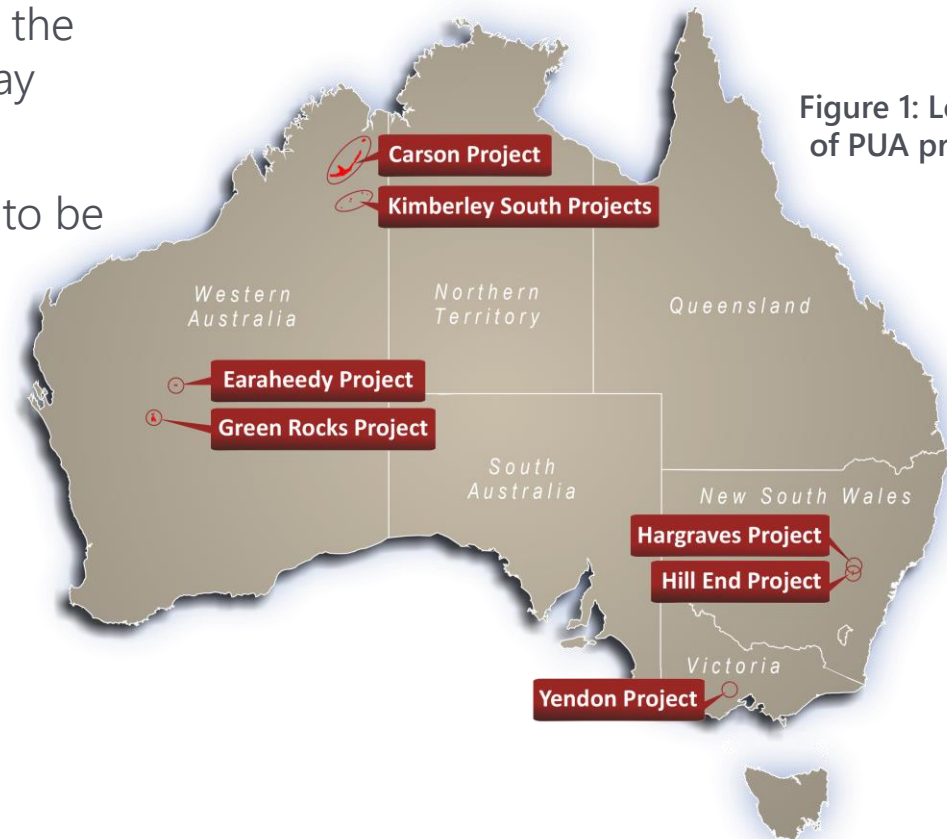


Figure 1: Location of PUA projects.

# Earaheedy Project – Overview



Located 28km SE of Sandfire's DeGrussa Copper Mine and 80km W of Rumble Resources Pb-Zn Chinook Project



Cork Tree Prospect discovered by WMC (BHP) in 1970's and drilled by CRA (Rio Tinto) in 1990's, no drilling since.

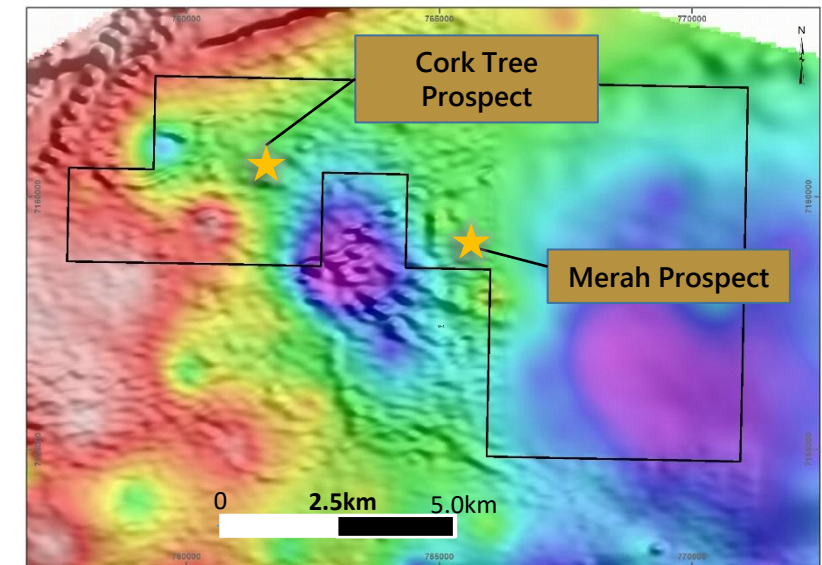
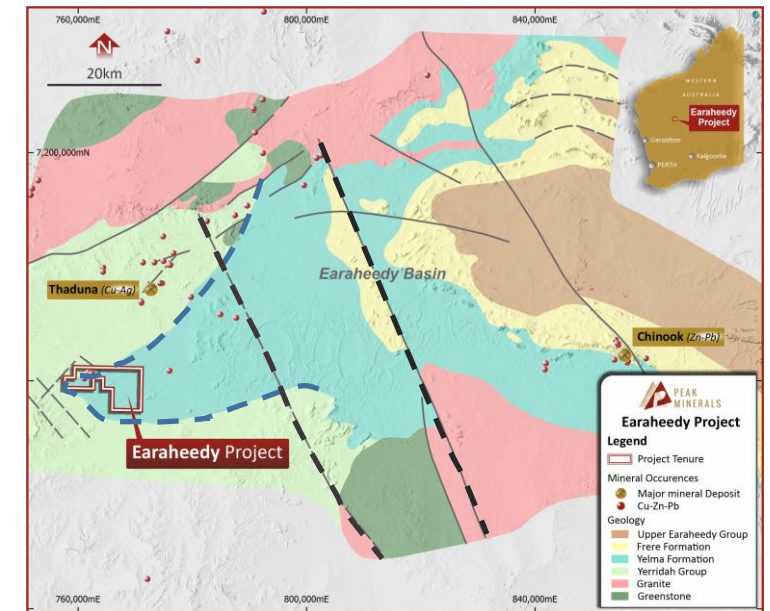


Target mineralisation is sediment hosted copper similar to Sandfire's Enigma and Thaduna copper deposits



Two prospects with near surface copper identified at Cork Tree and Merah within Yelma Formation

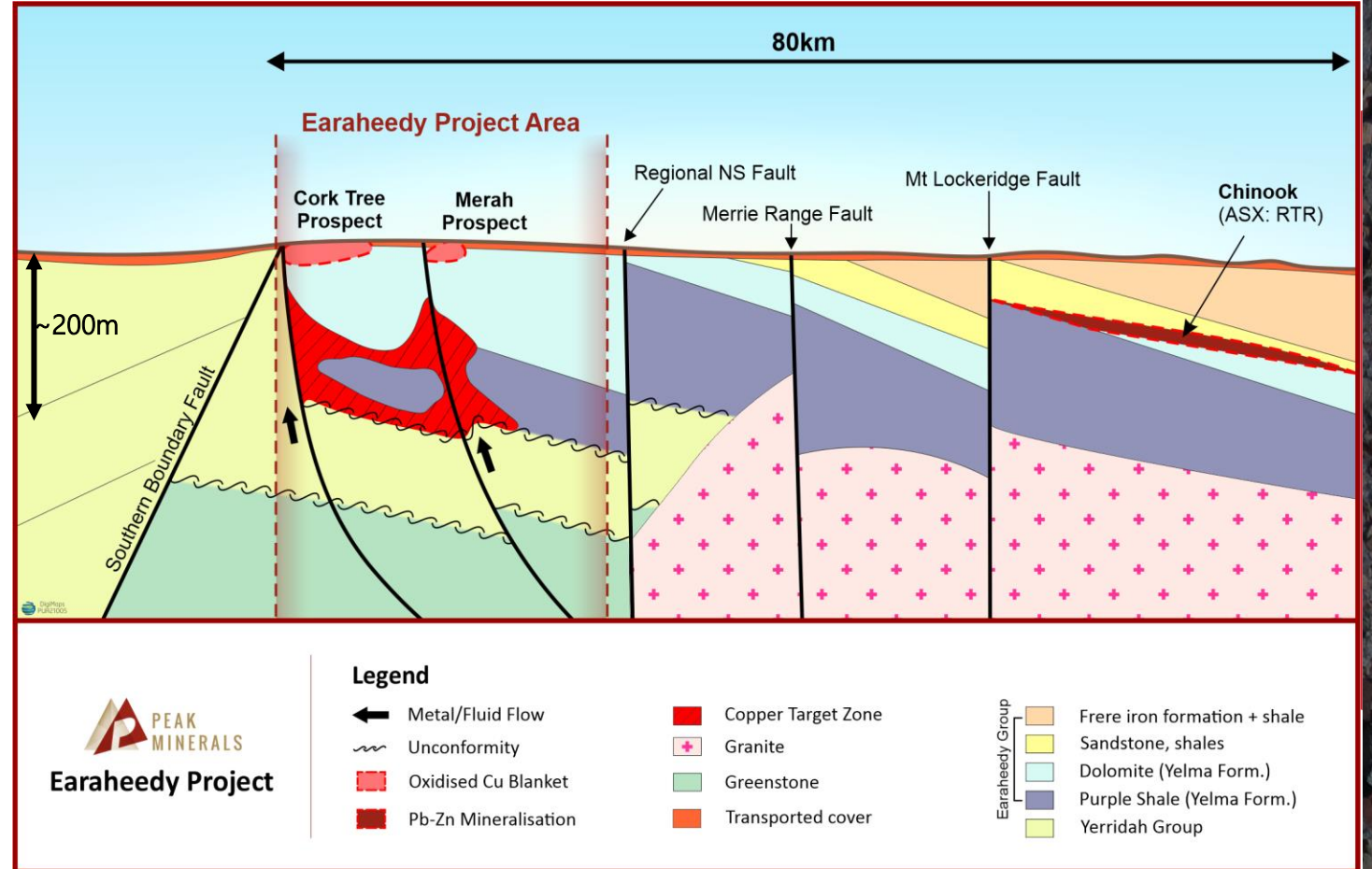
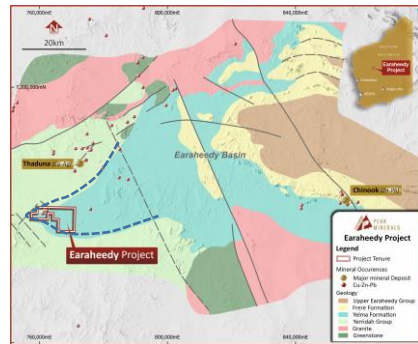
Earaheedy Basin consists of the Yelma Formation (blue), Frere Formation (Yellow) and Upper Earaheedy Group (brown). NNW thrusts indicate repetitions in stratigraphy.





# Earaheedy Project: Conceptual Model

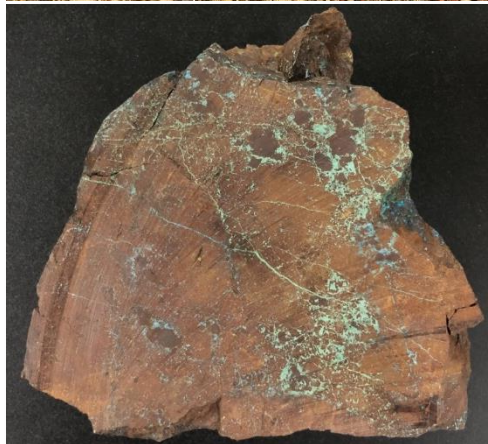
- Underexplored and prospective for sediment-hosted and shear associated Cu mineralisation
- When Cu is being deposited proximal to a structure, Zn and Pb remain in solution and thus are often found in economic concentrations in copper rich basins
- Local analogues such as Mt Isa Cu-Pb-Zn deposit and in Alaska Trilogy-South32 JV Bornite deposits



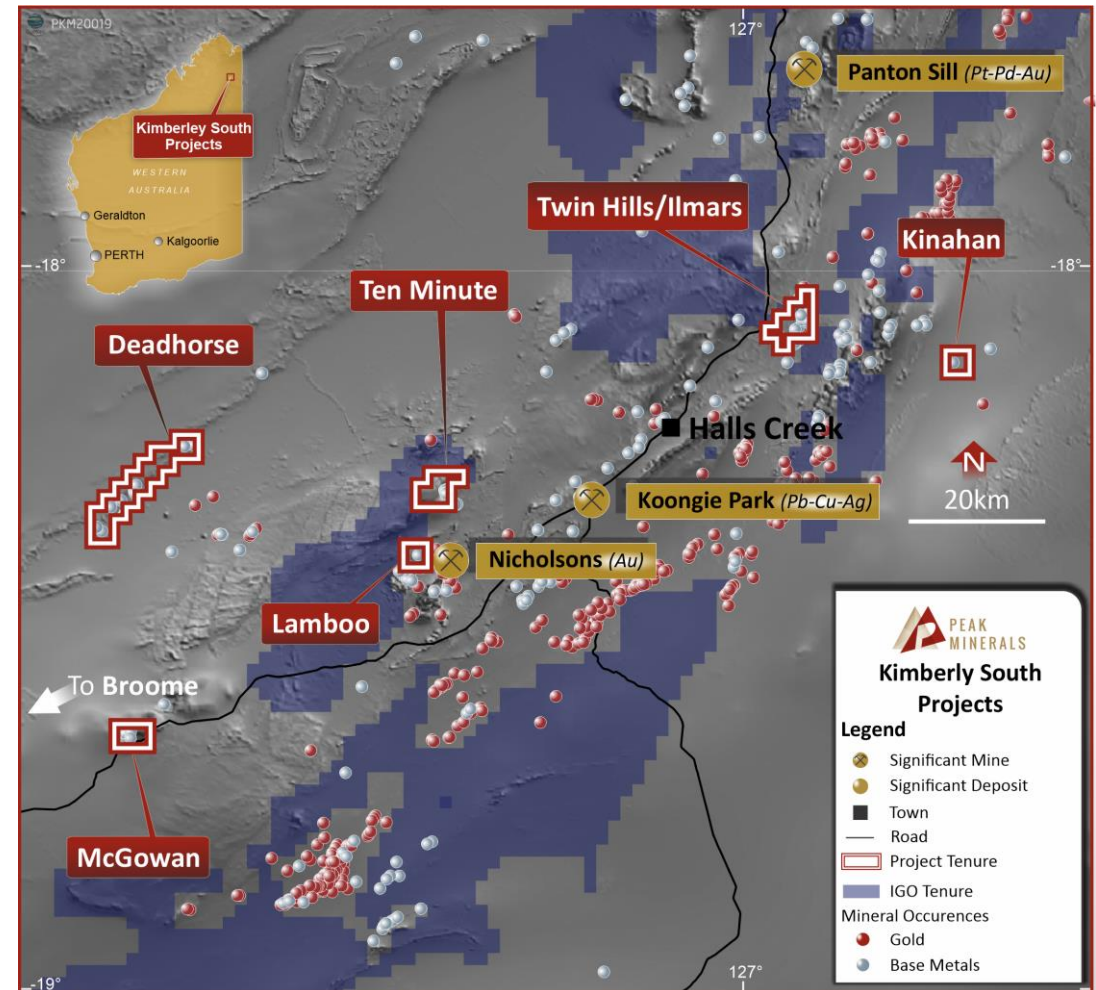


# Kimberley South

- 5 individual projects targeting magmatic copper  $\pm$  nickel sulphides and 1 sedimentary hosted Cu project
- Near surface mineralisation present on multiple projects with little follow up exploration
- Airborne EM conductors present on multiple projects from Geoscience Australia's AusAEM 2019 survey program
- Next program involves ground electromagnetics followed by drilling



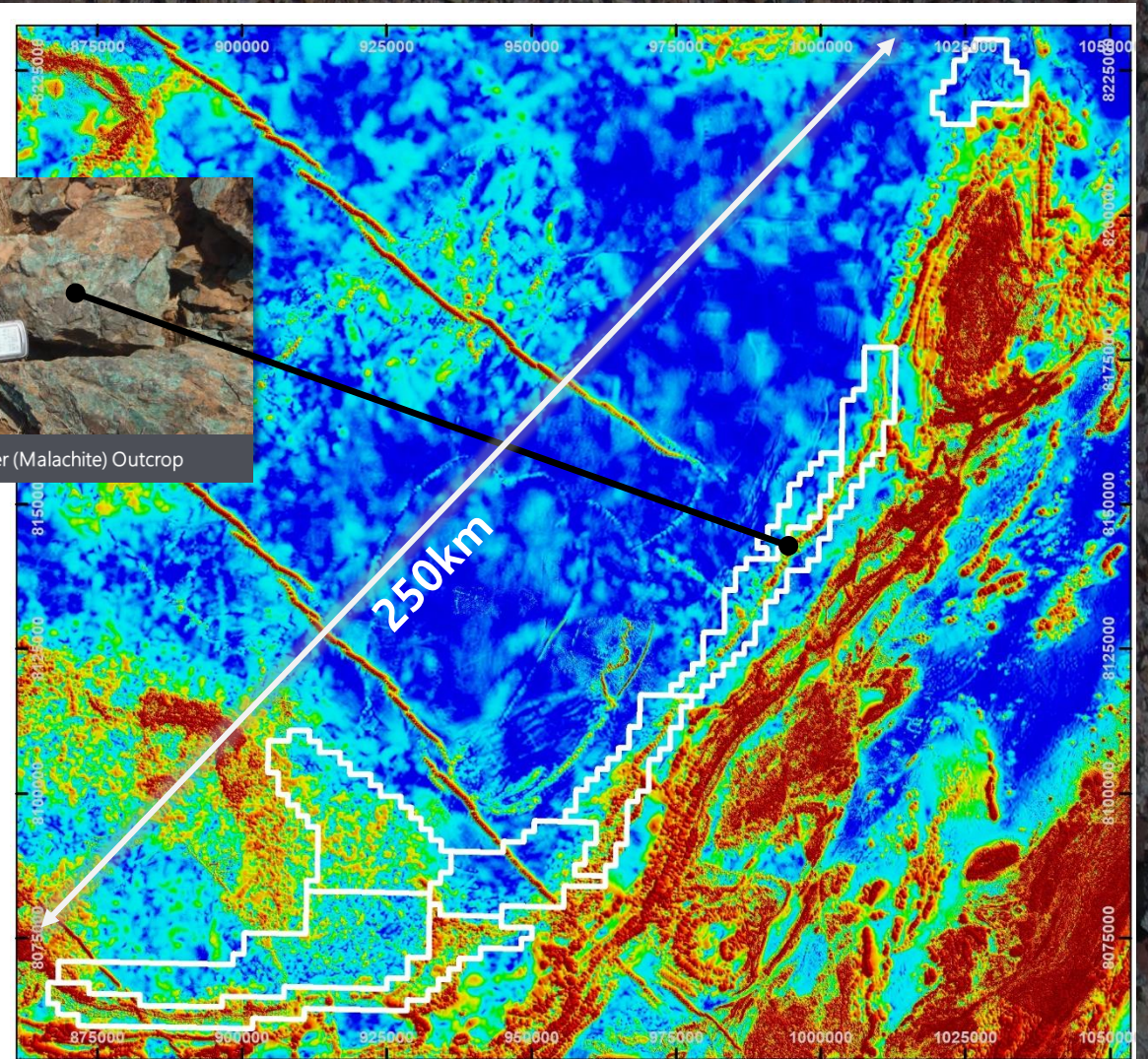
Historic surface samples from McGowan Project





# Carson Project

- Project covers over 800km<sup>2</sup> with ~250km of prospective strike
- Significant historic drill results include:
  - 26.49m at 1.05% Cu from 23.8m
    - *Including 3.05m at 2.12% Cu*
  - 3.81m at 1.92% Cu from 56.39m
  - 10.42m at 0.98% Cu from 115.46m
  - 6.04m at 0.9% Cu from 42.67m
- Sediment hosted style mineralisation akin to Zambian Cu belt target with historic mineralisation within basalt and sandstone lithologies
- Provincial scale project unexplored since the 70's-80s
- Opportunity for a funding partner to properly explore and develop





# Yendon HPA Project

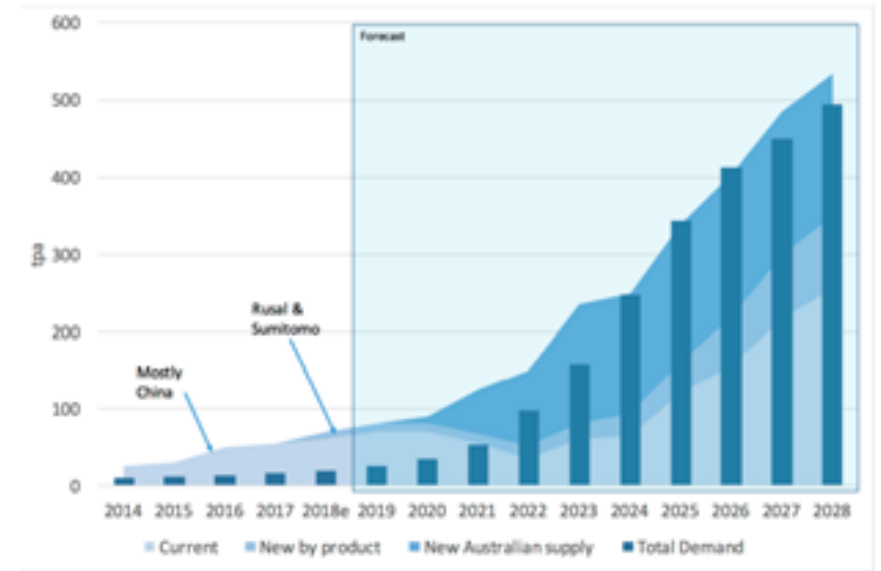
- Yendon is located 17 km SE of Ballarat, Victoria
- PFS Study in 2018 highlights calculations:
  - NPV<sub>10</sub>: USD\$692 M,
  - CAPEX: USD \$229 M
  - IRR of 34%
  - Price assumption was USD\$25,000/t

Assessing for 5N (99.999%) capability

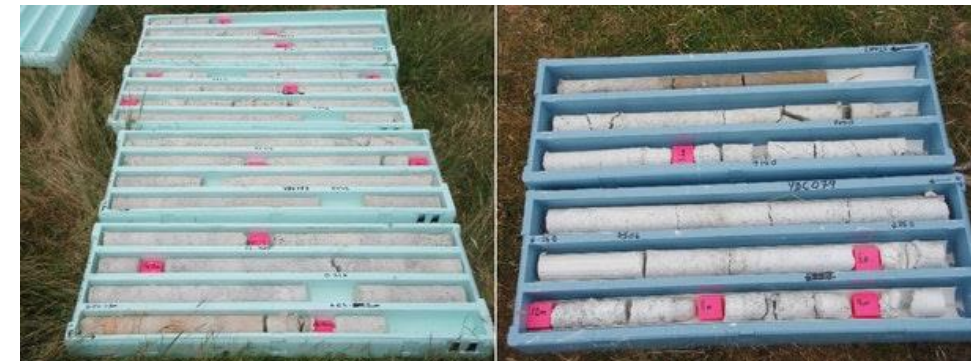
JORC 2012 Kaolin resource of 3.7Mt equivalent to 1.6Mt of 34.7% Kaolin concentrate (ASX: 12 Feb 2018) for 4N HPA (99.99%)

Increasing demand for LED lightbulbs, Li-ion batteries and screens for electronics

Currently subject to strategic review to maximise shareholder returns



Source: CM Group



Core from Yendon





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