



**PETRATHERM LIMITED**

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**ASX: PTR**

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**ASX ANNOUNCEMENT**

**02/12/2022**

## **PTR COMPANY PRESENTATION -**

### *Critical Minerals Portfolio Positioned for Growth*

The following is a presentation by Petratherm Limited's (ASX: **PTR**), Exploration Manager, Peter Reid to the South Australian Exploration and Mineral Resource Conference, held in Adelaide today 2<sup>nd</sup> December 2022. The talk summarises current on ground and future exploration, latest results, and target modelling.

The Company is in a strong position with the uncovering of major high-grade rare earth occurrences at shallow depth in the Northern Gawler Craton of South Australia, with follow up drilling activities currently underway (PTR ASX release 24/11/22).

At Muckanippie, the Company is conducting work over a large anorthosite complex which shows evidence for titanium, magnetite iron, rare earths, and phosphate (PTR ASX release 14/11/22).

In addition, PTR has a strong Iron-Oxide Copper-Gold (IOCG) Project Portfolio in the heartland of the World-Class Olympic Domain of South Australia close to operating mines and recent major discoveries. Targeting work has defined several compelling IOCG targets which PTR anticipates will be drilled in the first half of the 2023 calendar period (PTR ASX release 28/10/22).

This ASX announcement has been approved by Petratherm's Board of Directors and authorised for release by Petratherm's Chairman Derek Carter.

***For further information contact :***

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# CRITICAL MINERALS PORTFOLIO POSITIONED FOR GROWTH

South Australian Exploration & Mining Conference

2 December 2022



ASX: PTR



# COMPLIANCE STATEMENTS

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## JORC Information:

Further details (Including JORC 2012 Code Reporting Tables, where applicable) for the information included in this Presentation can be found in the following Petratherm Limited announcements previously lodged with the ASX:

- Gravity survey identifies high tenor Olympic Dam Style Targets – 12 August 2019
- Gravity Modelling Defines Olympic Dam Style Targets – 15 October 2019
- Prospective Gold Tenement Won in Competitive Bid – 18 October 2019
- Comet Project Tenement (EL 6443) Granted – 14 January 2020
- Quarterly Activities Report December 2019 – 30 January 2020
- Mabel Creek Project – Drilling Results – 12 May 2020
- Mabel Creek Project - Drilling Grant Awarded to test Olympic Dam Style Copper-Gold Targets – 25 June 2020
- New Copper and Gold Project Acquired – 3 December 2020
- Woomera IOCG Project Acquired – 16 June 2021
- Woomera IOCG Project – Regional Gravity Targeting - 1 July 2021
- Mabel Creek Project – Results of Drilling - 27 July 2021
- Petratherm Company Presentation - 1 December 2021
- Drilling uncovers major High-Value Rare Earth Discovery at Comet in the Northern Gawler Craton – 20 April 2022
- Arcoona IOCG Project Won in Competitive Bid – 14 July 2022
- Thick Intervals of Rare Earths Uncovered at Comet – 08 August 2022
- Successful Bid for Muckanippie Rare Earth Project – 19 August 2022
- High Grade Rare Earths Uncovered at Meteor – 29 August 2022
- New Rare Earth Areas Uncovered at Comet – 11 October 2022
- Quarterly Activities / Appendix 5B Cash Flow Report – 28 October 2022
- Muckanippie Project – Tenement Granted - 14 November 2022
- Comet Project – Rare Earth Drilling Operations – 24 November 2022

## Competent Persons Statement:

The information in this report that relates to Exploration Targets and Exploration Results is based on information compiled by Mr Peter Reid, who is a Competent Person, and a Member of the Australian Institute of Geoscientists. Mr Reid is not aware of any new information or data that materially affects the historical exploration results included in this report. Mr Reid is an employee of Petratherm Ltd. Mr Reid has sufficient experience that is relevant to the style of mineralization and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Reid consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

# PROJECTS OVERVIEW

## A STRATEGIC PACKAGE OF REEs, COPPER & GOLD

### Comet REE & Gold Project, S.A.

- Exceptional REE drill intercepts over large areas
- Drill ready advanced Gold Prospects
- Meteor REE Prospect – Nov/Dec 2022 infill drilling towards defining a JORC Resource

### Woomera & Arcoona IOCG Projects

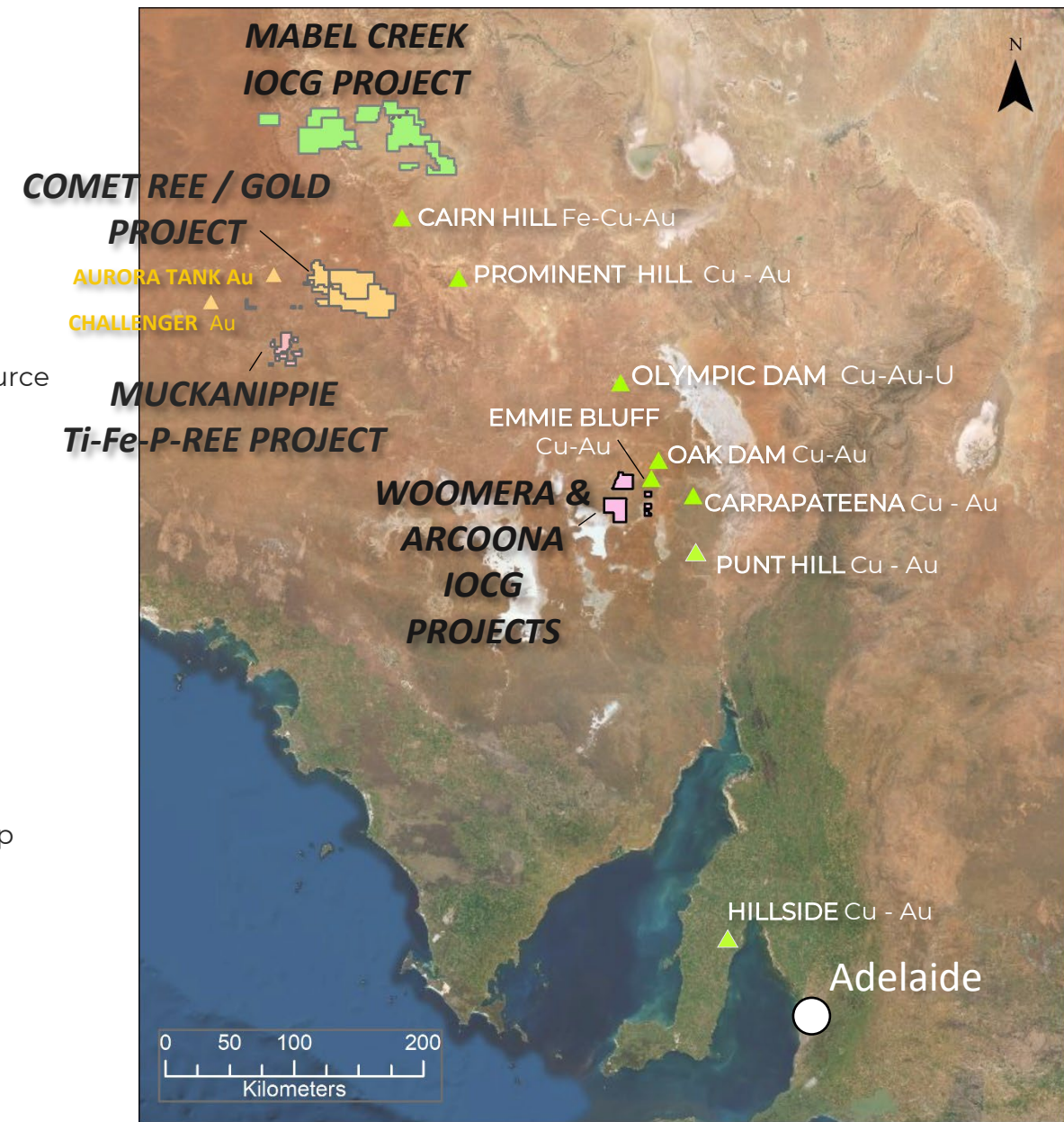
- Close to the Emmie Bluff IOCG discovery and other IOCG mineralisation
- 2 Major IOCG styles of mineralisation targeted + Stratabound Cu-Au-Co in cover
- High calibre drill ready gravity targets – Drilling scheduled for Early 2023

### Mabel Creek IOCG Project

- Large land holding over the northern Olympic Dam Copper-Gold Province
- Drilling to date has defined 2 IOCG Mineral Alteration Systems requiring follow-up

### Muckanippie REE Project

- Major differentiated layered Intrusive Complex with abundant Ti-Fe-P<sub>2</sub>O<sub>5</sub>, REE anomalism
- Early-Stage Project with ground works to begin early 2023



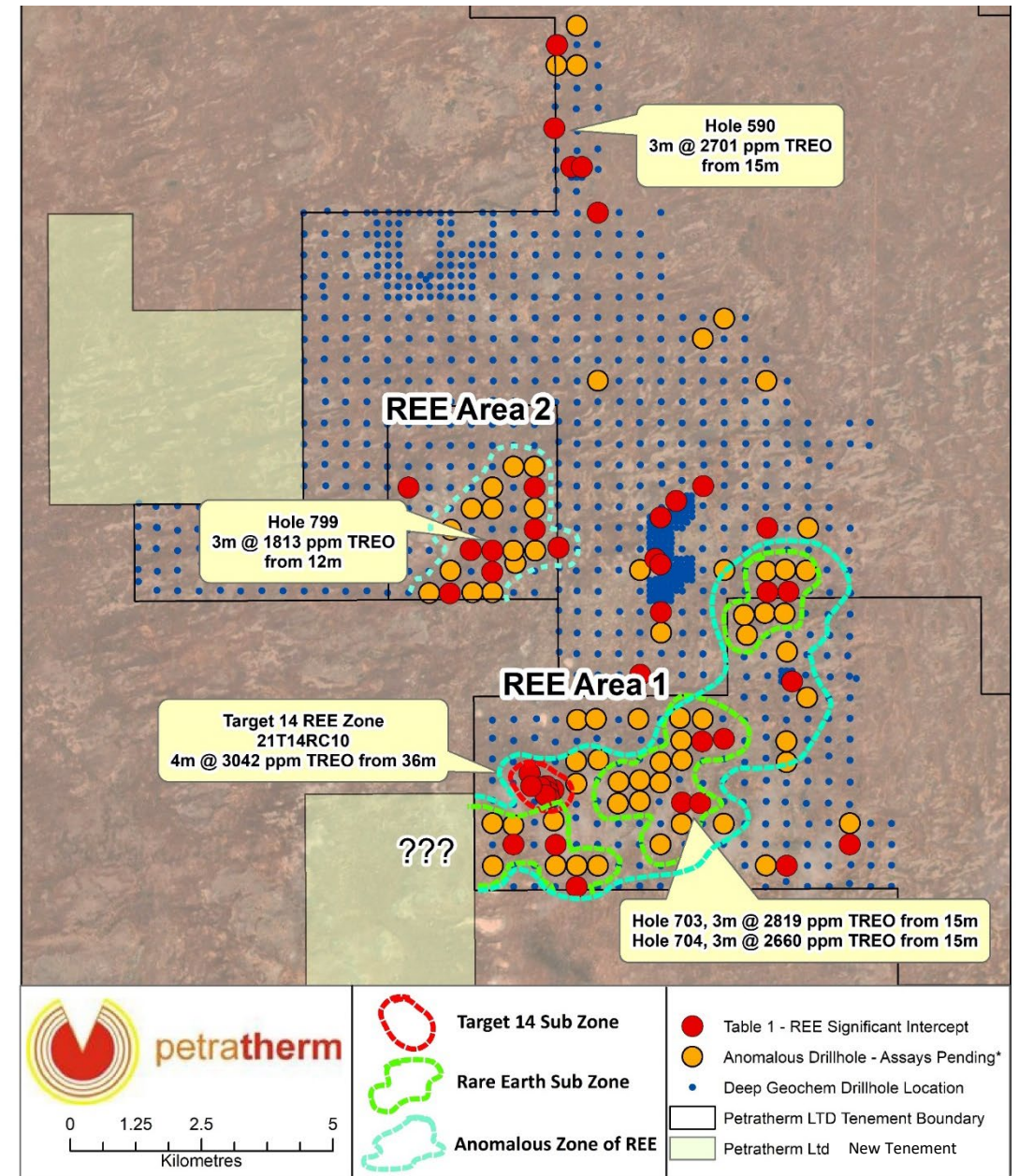


# COMET REE PROJECT

## APRIL 2022 - DRILLING UNCOVERS RARE EARTHS

Hole	Interval	High Value Magnet Rare Earths*
703	3m @ 2,819 ppm TREO from 15m - 18m (EOH)	743 ppm
704	3m @ 2,660 ppm TREO from 15m - 18m (EOH)	702 ppm
590	3m @ 2,701 ppm TREO from 15m - 18m (EOH)	1,016 ppm
799	3m @ 1,813 ppm TREO from 12m - 15m (EOH)	456 ppm
931	3m @ 1,705 ppm TREO from 12m - 15m (EOH)	382 ppm
T14_RC10	4m @ 3,042 ppm TREO from 36m - 40m	814 ppm

(\* Magnet Rare Earths =  $\text{Pr}_6\text{O}_{11}$ ,  $\text{Nd}_2\text{O}_3$ ,  $\text{Tb}_4\text{O}_7$  &  $\text{Dy}_2\text{O}_3$ )



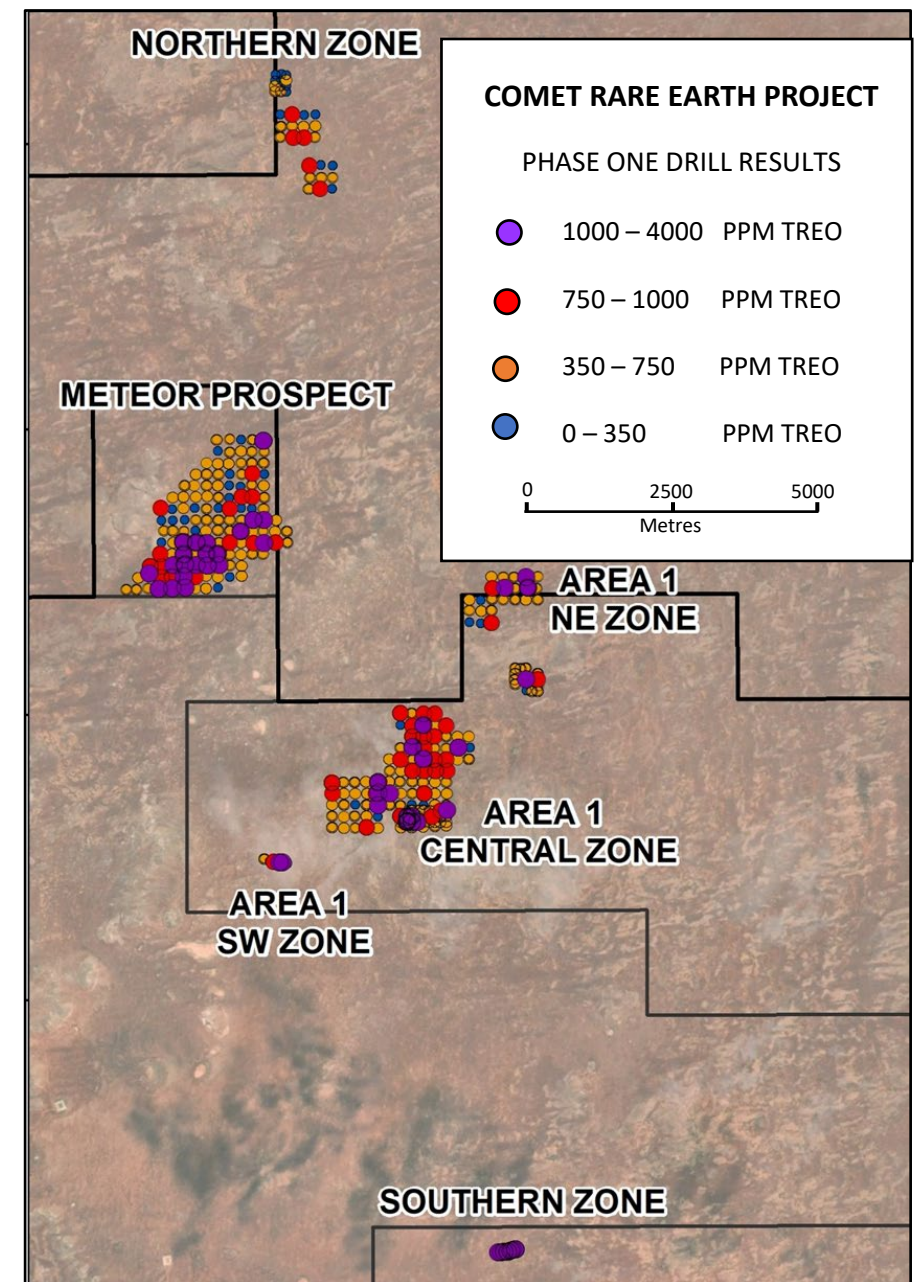
# COMET REE PROJECT

## June-July 2022 – FOLLOW UP AIR CORE DRILLING

- 330 drill holes completed - average hole depth of 30 metres.
- Drill spacing 200 metre by 200 metre grid

### DRILL RESULTS

- *High-Grade REE Mineralisation encountered at METEOR, AREA 1 and SOUTHERN. TREO up to 4,000 ppm recorded*
- *Mineralisation typically starts at Shallow Depth - 3-12 metres*
- *Thick Intercepts from 6 metres to 27 metres*
- *High-Grade Mineralised Zones occur over Significant Areas providing good size potential*
- *High-value Scandium Oxide Credits up to 111 ppm.*

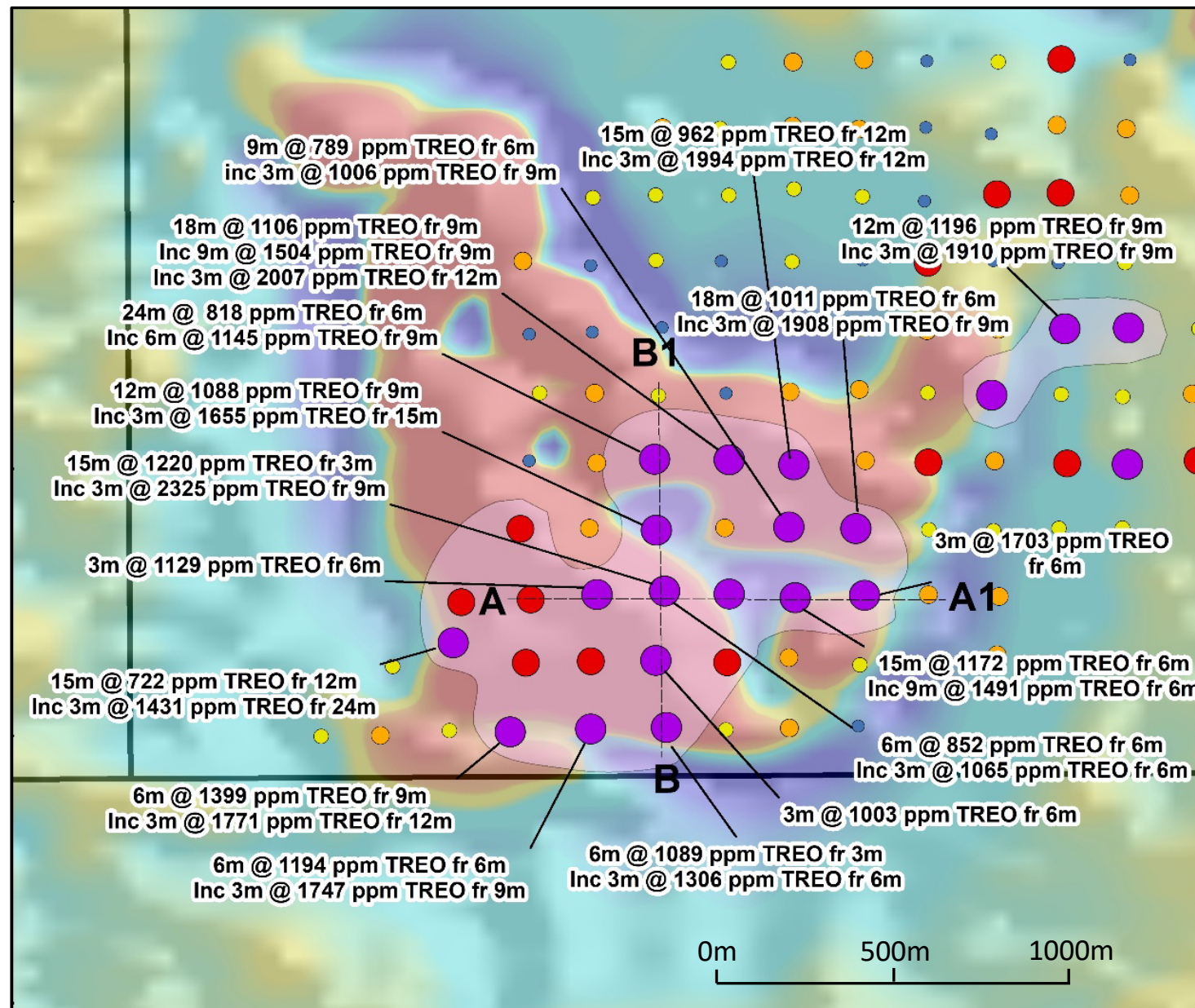


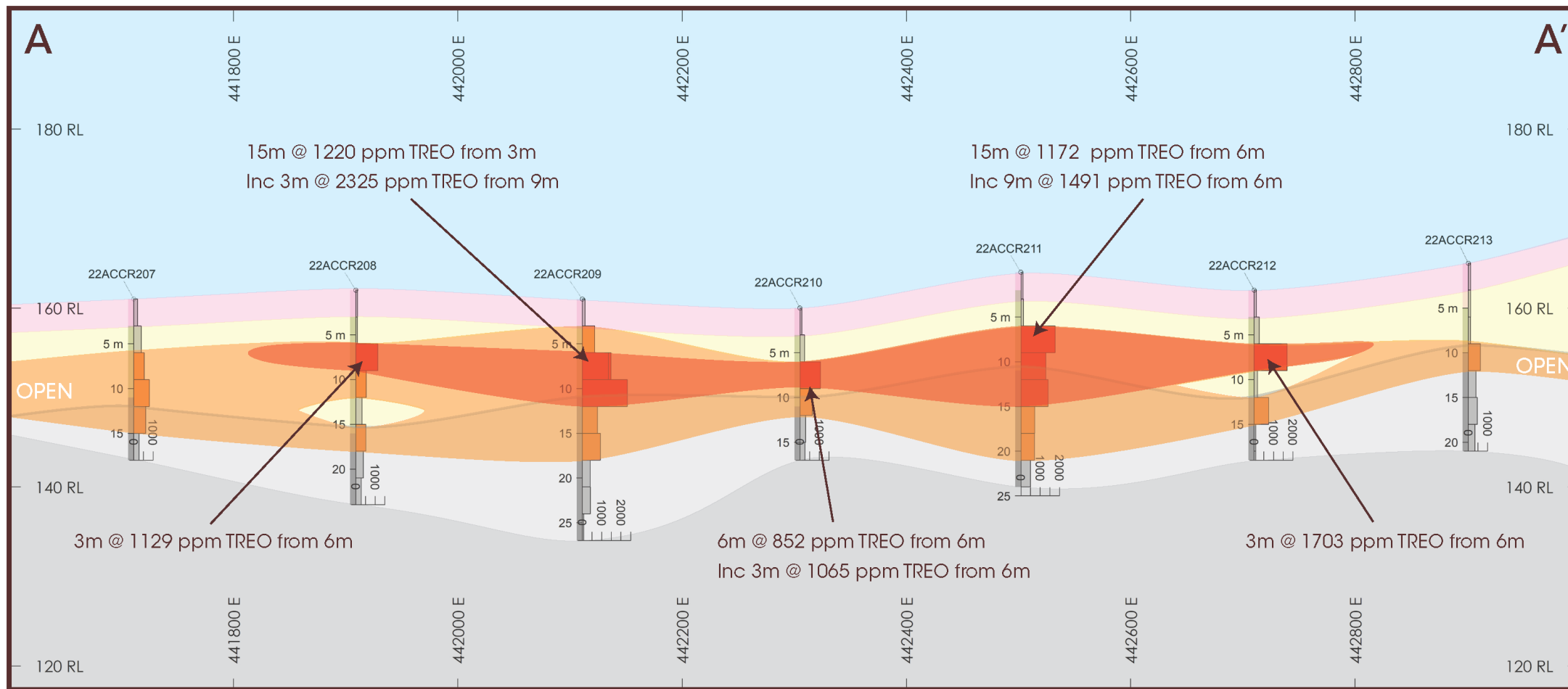


# METEOR REE PROSPECT

## SUMMARY OF DRILLING RESULTS

- High-Grade REE Prospect (> 1000 ppm TREO). High MREO content = 25%
- Mineralisation Starts at Shallow Depth 3-6m
- Ore thickness ranges from 3 to 24m and averages 9-12m.
- Main Prospect currently 1200m by 700m, with other satellite bodies evident and is open on west side.
- *Infill Drilling Nov/Dec 2022*

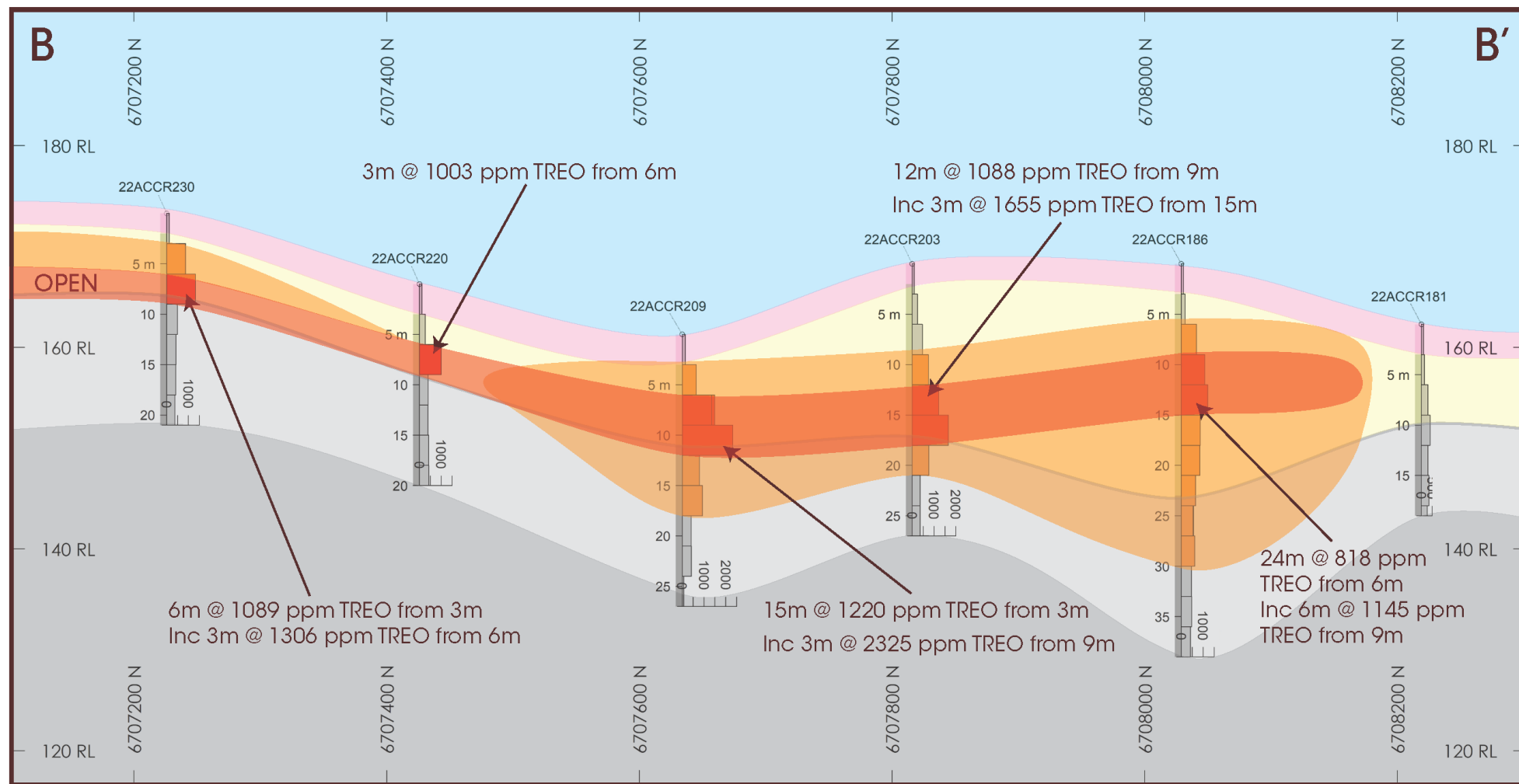




Meteor – W-E Cross Section - High Grade Mineralisation







Meteor – S-N Cross Section - High Grade Mineralisation

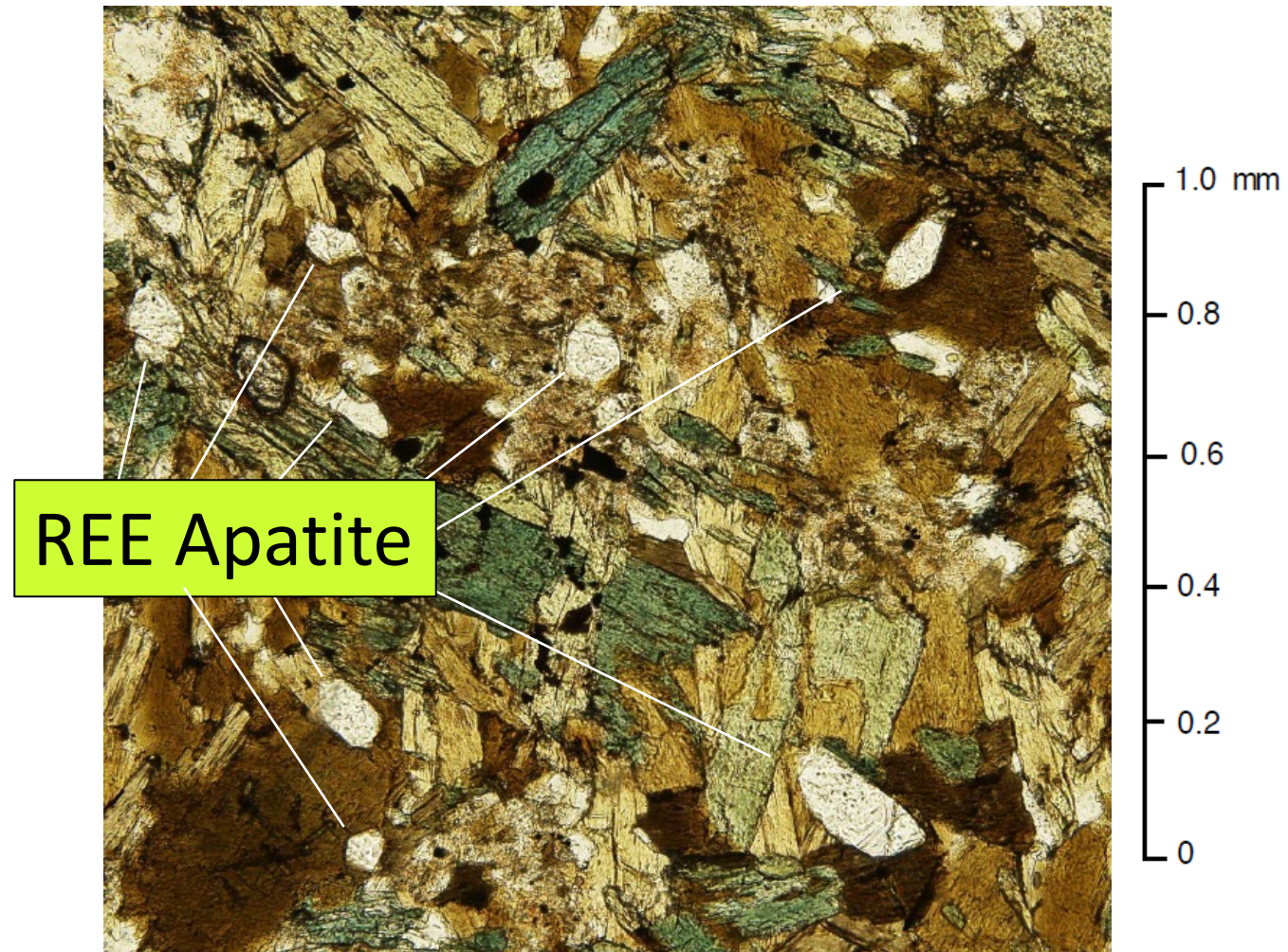


# METEOR - REE SOURCE ROCKS

## Primary REE Mineralisation Potential

- High Magnetic Relief Rocks – Layered Mafic Intrusion
- Diorite with significant rare earth bearing Apatite -Titanite minerals present. Up to 2% Apatite by volume estimated from optical microscopy.
- May be an equivalent aged intrusion to the Muckanippie Anorthosite Complex?

*Drilling of Basement Sequence at Meteor in December to test for Primary REEs!*



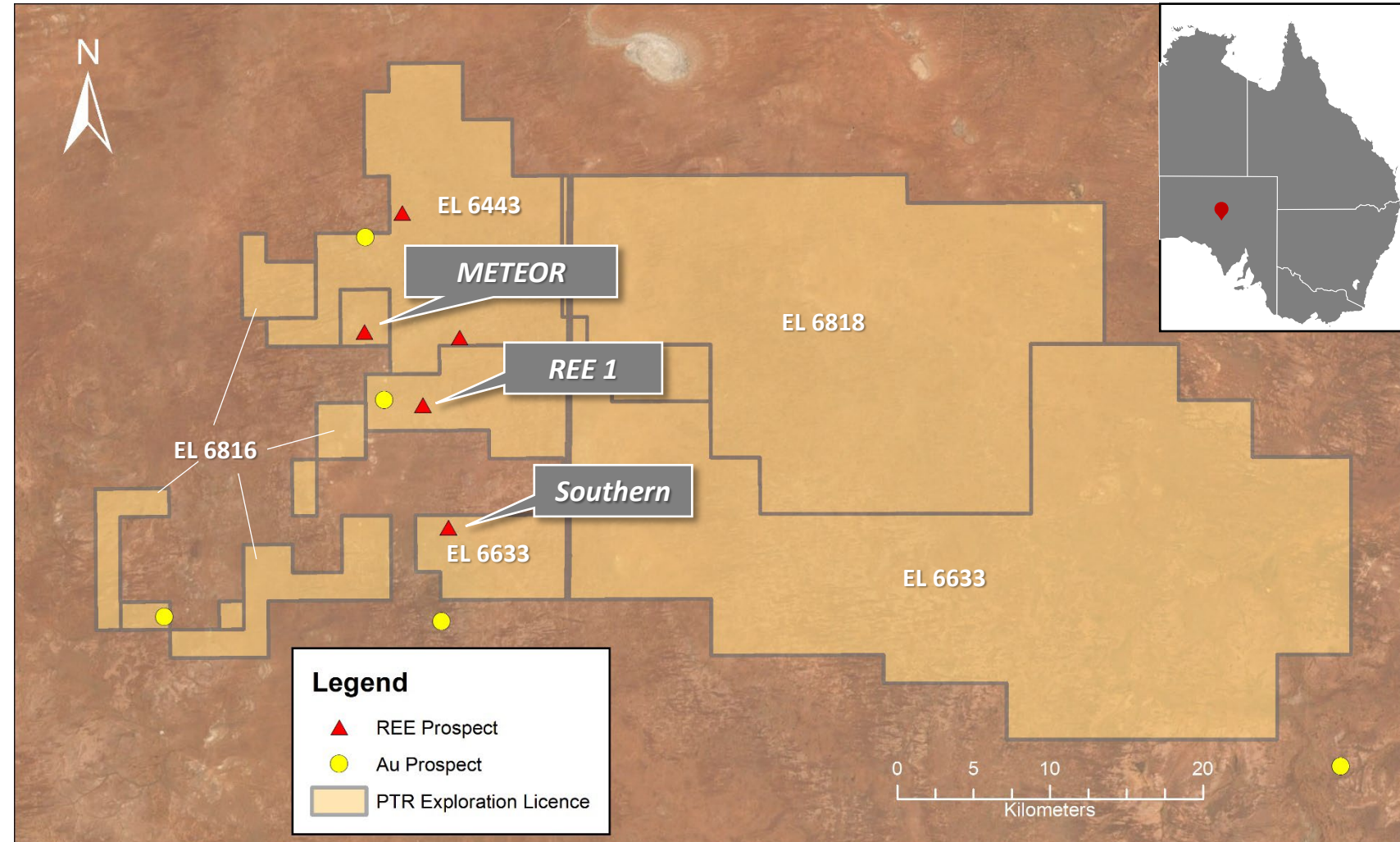
Photomicrograph from drill hole 22ACCR188 (30-32 metres depth). Actinolite (green) and biotite (brown) Note the significant number of small preserved primary apatite crystals ~ 2% of volume (colourless, high relief, stumpy prismatic crystal form).



# COMET REE PROJECT

## SIGNIFICANT GROUND POSITION

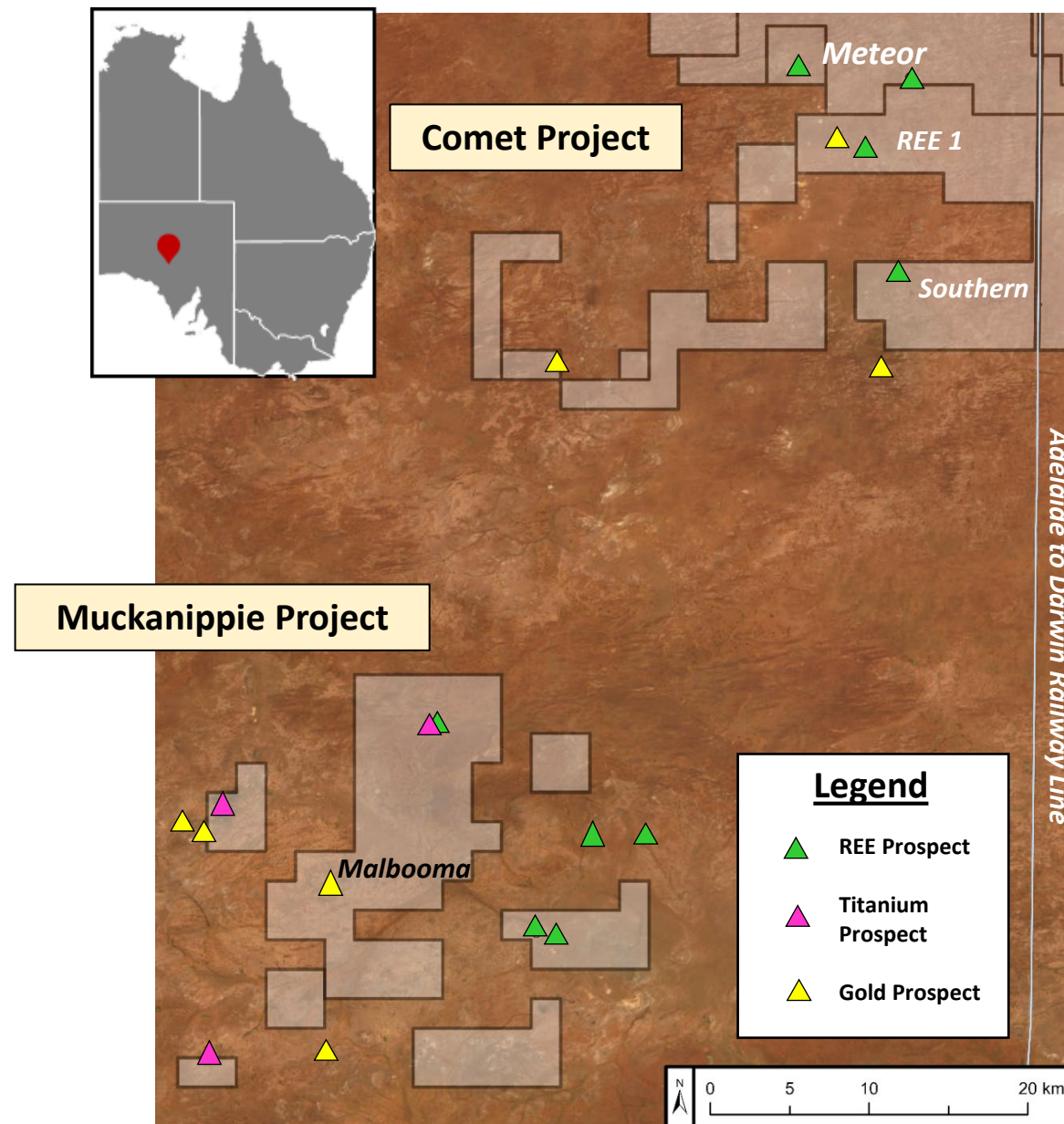
- Strong ground position in the Northern Gawler Craton, totalling 1,915 Km<sup>2</sup>.
- Regional drilling activities to date have tested 130 km<sup>2</sup>, which is just 7 % of the total Project Holding.
- Substantial upside potential for additional new REE discoveries to be made in the surrounding un-explored tenure.



# MUCKANIPPPIE PROJECT

## PROSPECTIVE ANORTHOSITE INTRUSION

- New Project over centre of the highly prospective Muckanippie Anorthosite Complex won through a competitive bid
- Globally anorthosite complexes are a major source of Ti-Fe-P-V ores with some including high concentrations of **rare earths**
- Adelaide to Darwin railway 40 kilometres east of project area offers low-cost connection to markets

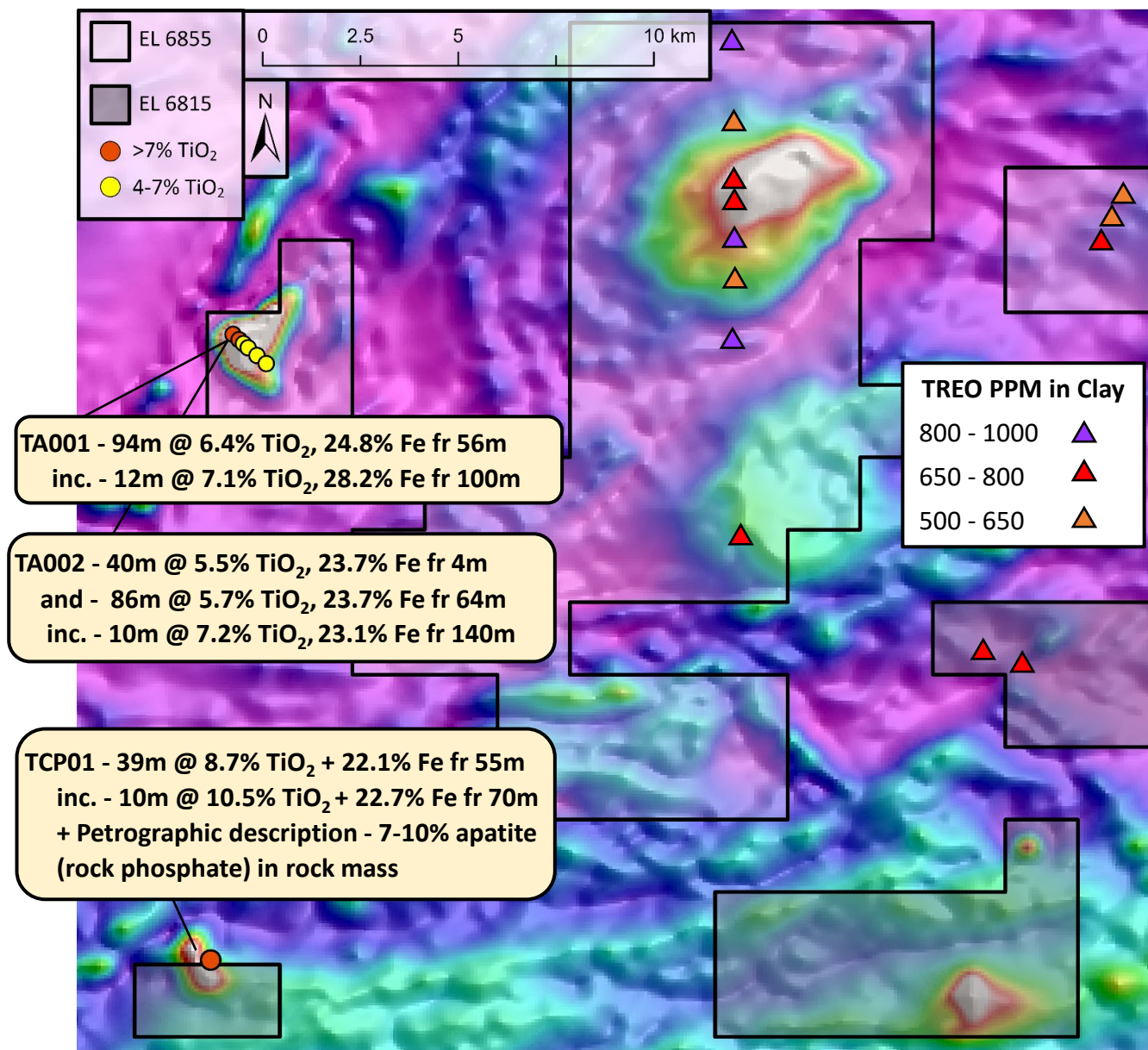




# MUCKANIPPIE PROJECT

## PROSPECTIVE ANORTHOSITE INTRUSION

- Historic drilling of mafic fraction includes substantial **Ti-Fe** mineralisation and **Phosphate** potential. Titanium grades up to 10.5 %  $\text{TiO}_2$  recorded.
- Known mineralization extends from 4 metres to 130 metres depth and remains open. Sparsely drilled and follows a body of approximately 2 kilometres length
- Sampling of historic drill core has additionally highlighted areas of anomalous rare earths up to 1000 ppm Total Rare Earth Oxide (TREO) in the overlying clay profile.





# WOOMERA & ARCOONA IOCG PROJECTS

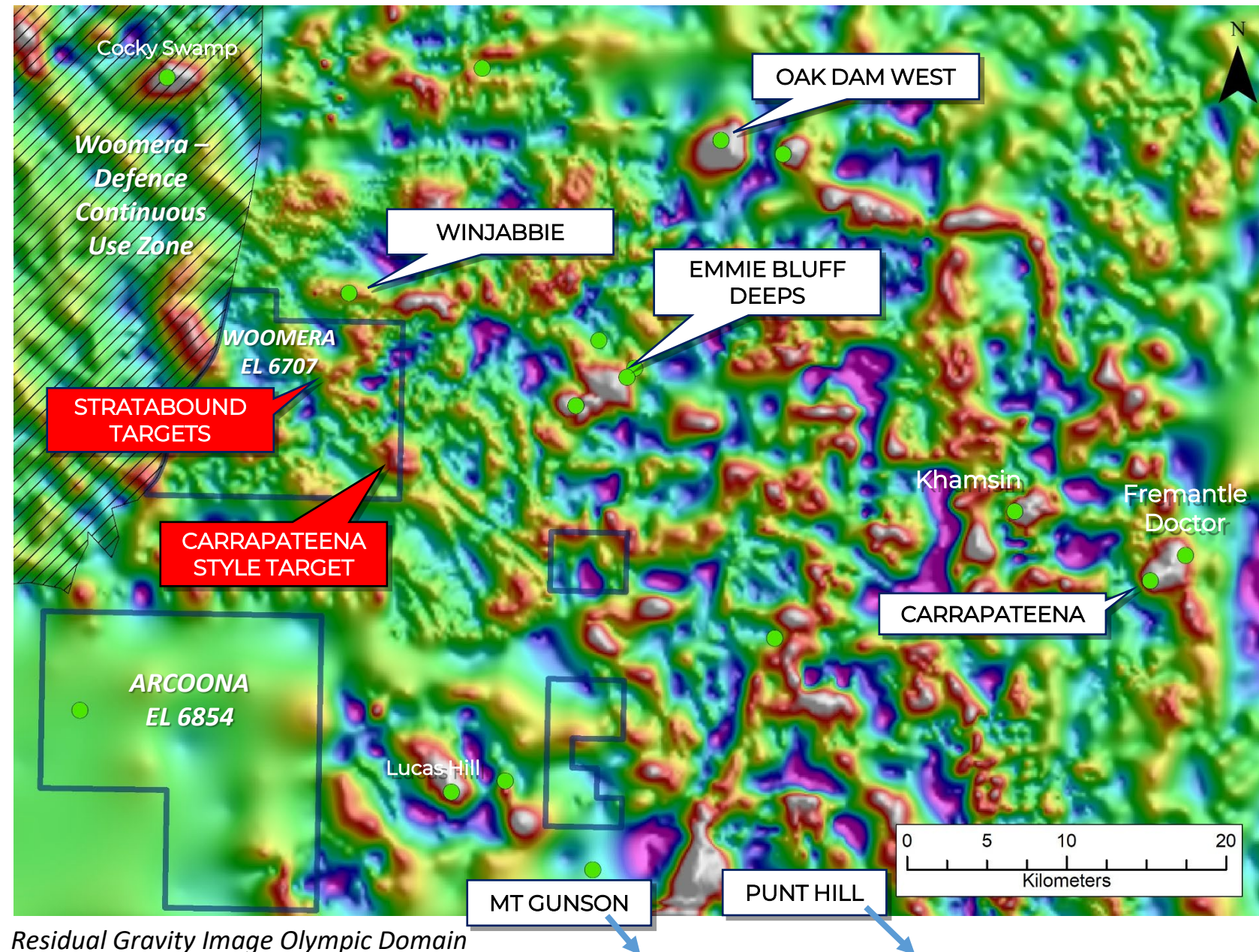
HIGHLY PRIZED TENURE – *IOCG HEARTLAND*

## WOOMERA (EL6707)

- Multiple high priority gravity targets – *3 Target Styles!*
- Native Title Mining Exploration Agreement Completed June 2022
- Drilling of targets scheduled from Q2 2022

## ARCOONA (EL6854)

- One of the last areas where no detailed gravity has been undertaken to explore for IOCG's

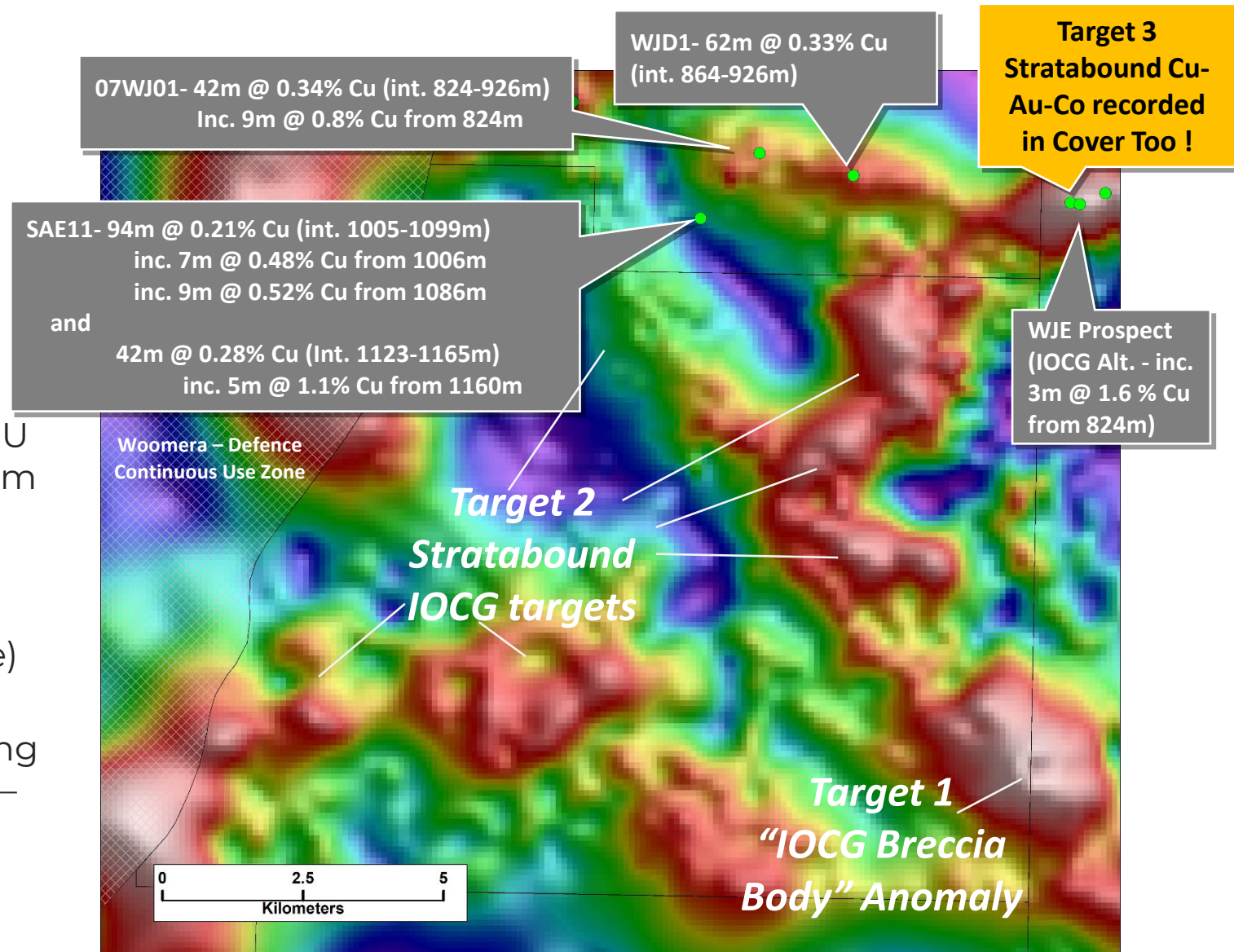




# WOOMERA IOCG PROJECT

## 3 Distinct Styles of Mineralisation !

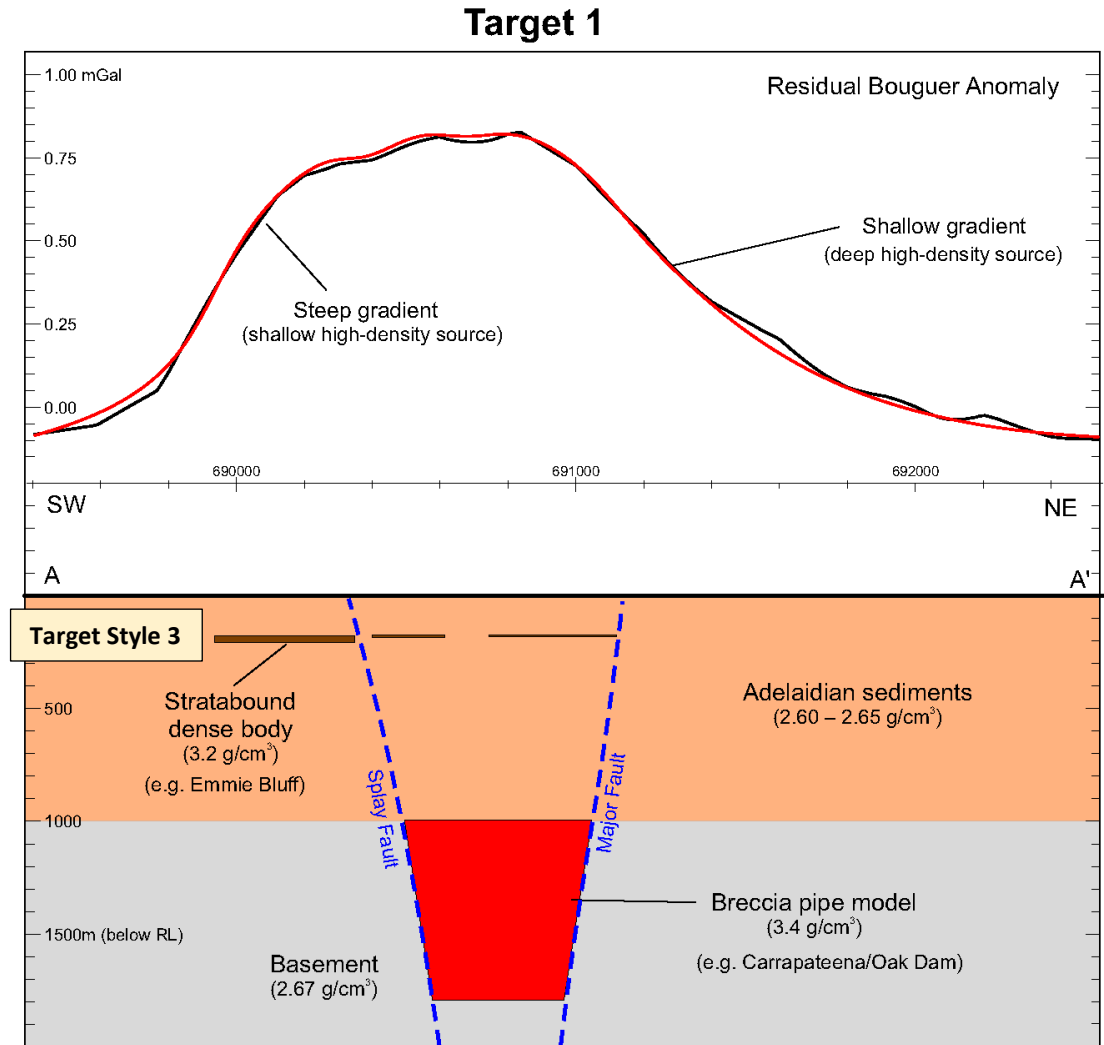
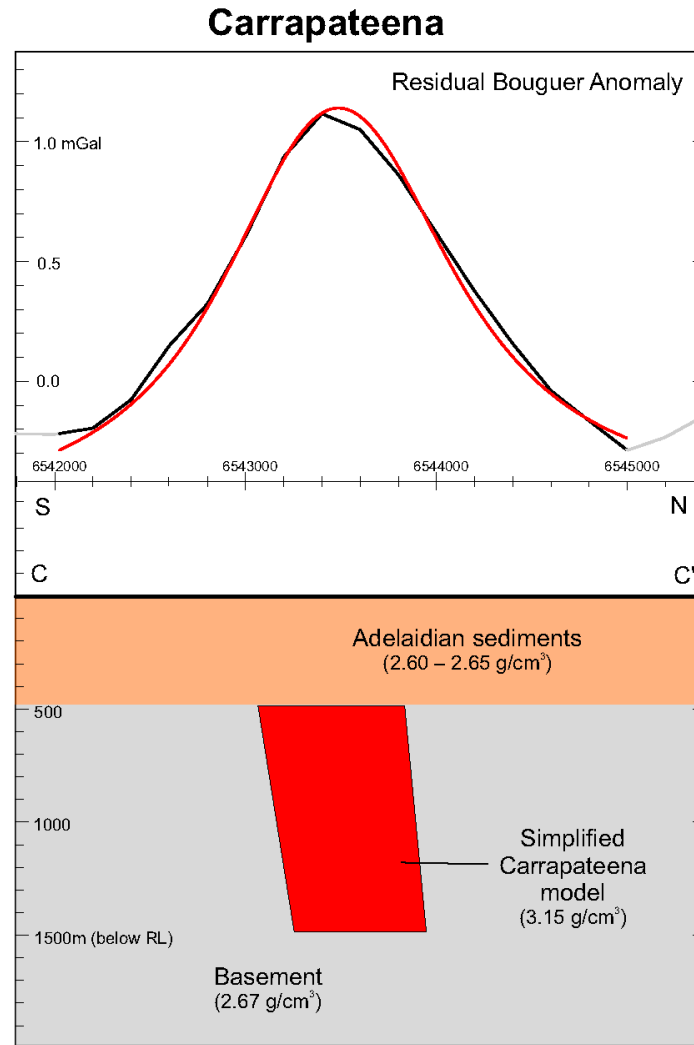
- Target 1 - IOCG Breccia Bodies – Cu-Au-Ag-U (i.e. Olympic Dam / Carrapateena / Oak Dam & Prominent Hill)
- Target 2 - Stratabound IOCG's – Cu-Au-Co (i.e. Emmie Bluff Deeps, Punt Hill & Hillside)
- Target 3 - Stratabound Cu-Au-Co in overlying cover rocks (i.e. Mt Gunson & Emmie Bluff – *potentially remobilised from IOCG basement below !*)



Significant historical IOCG copper intersections adjacent to Petratherm's Woomera Exploration Licence Area overlain on a Residual Gravity Image. High gravity areas may indicate zones of stratabound and breccia mineralization

# WOOMERA IOCG PROJECT – TARGET 1 COMPARISON WITH CARRAPATEENA

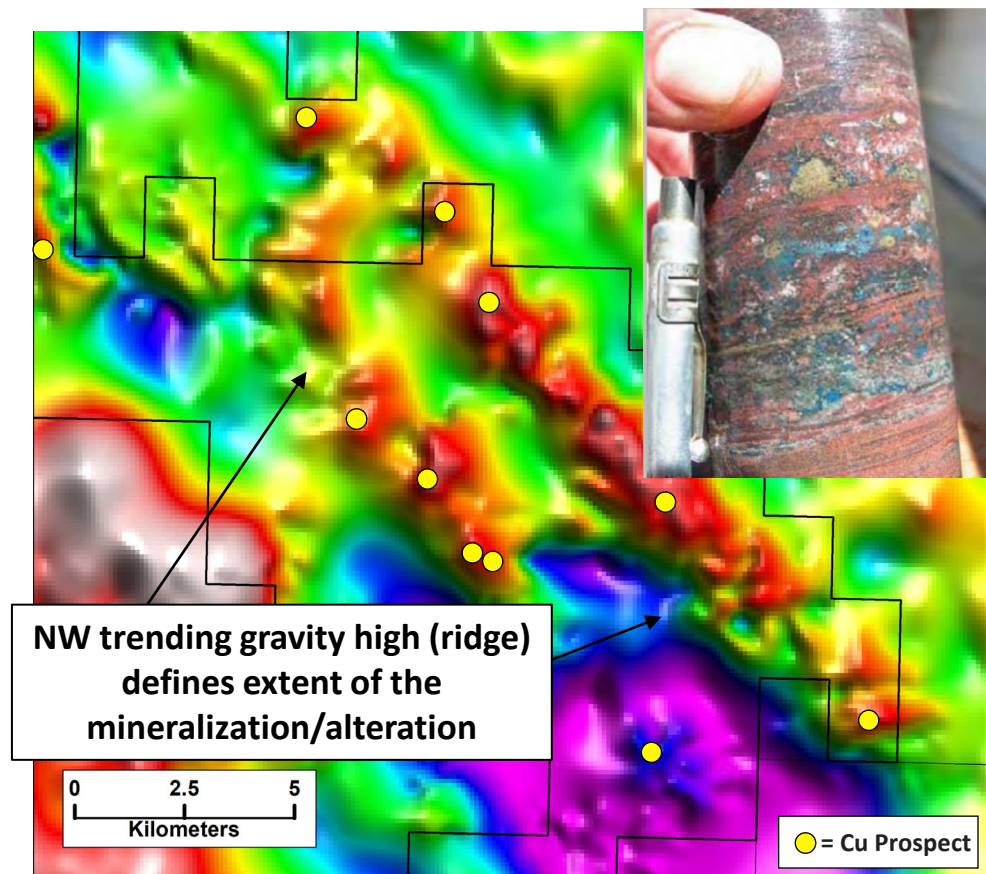
- Target 1 is an IOCG Breccia Body Target – *Displays a Comparable gravity response to the Carrapateena Orebody!*
- Steep gravity gradient on west side of Target 1 may indicate additional shallow Stratabound mineralisation in the overlying cover strata. (*i.e. Emmie Bluff, Mt Gunson Style Cu-Au-Co mineralisation potential also!*)





# TARGET STYLE 2 : STRATABOUND IOCGs – A Potential Game Changer!

Punt Hill IOCG (Red Metals ASX: RDM)

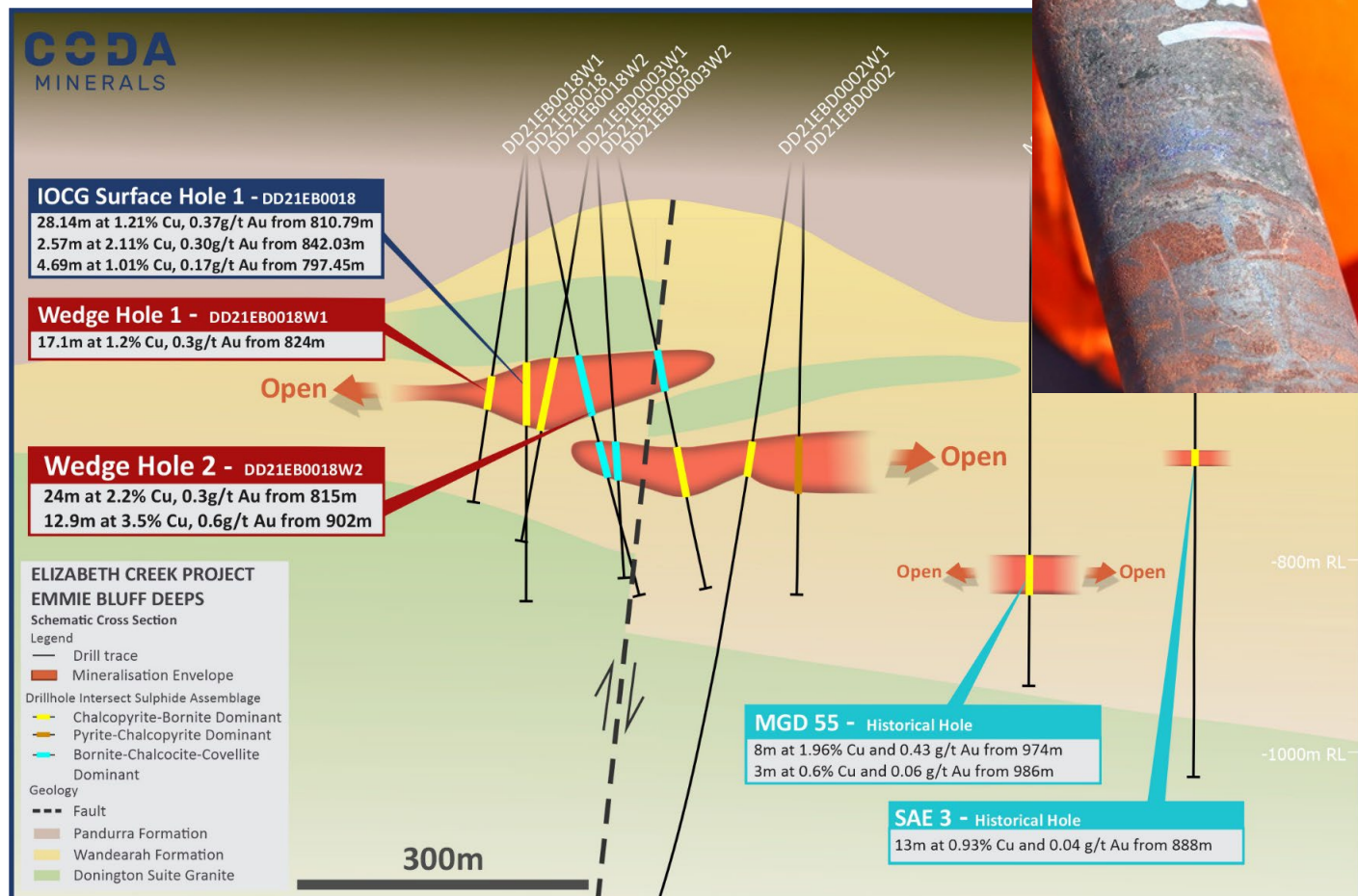


Punt Hill Residual Gravity Image (Source: SA. Govt - SARIG)

i.e. GHDD6 - 159m @ 0.47%Cu, 0.12g/t Au & 5.3g/t Ag, from 846m.

PHDD1402 - 26m @ 1.0 % Cu, 0.23 g/t Au & 8.5 g/t Ag from 969m

Emmie Bluff Deeps (Coda Minerals ASX:COD)

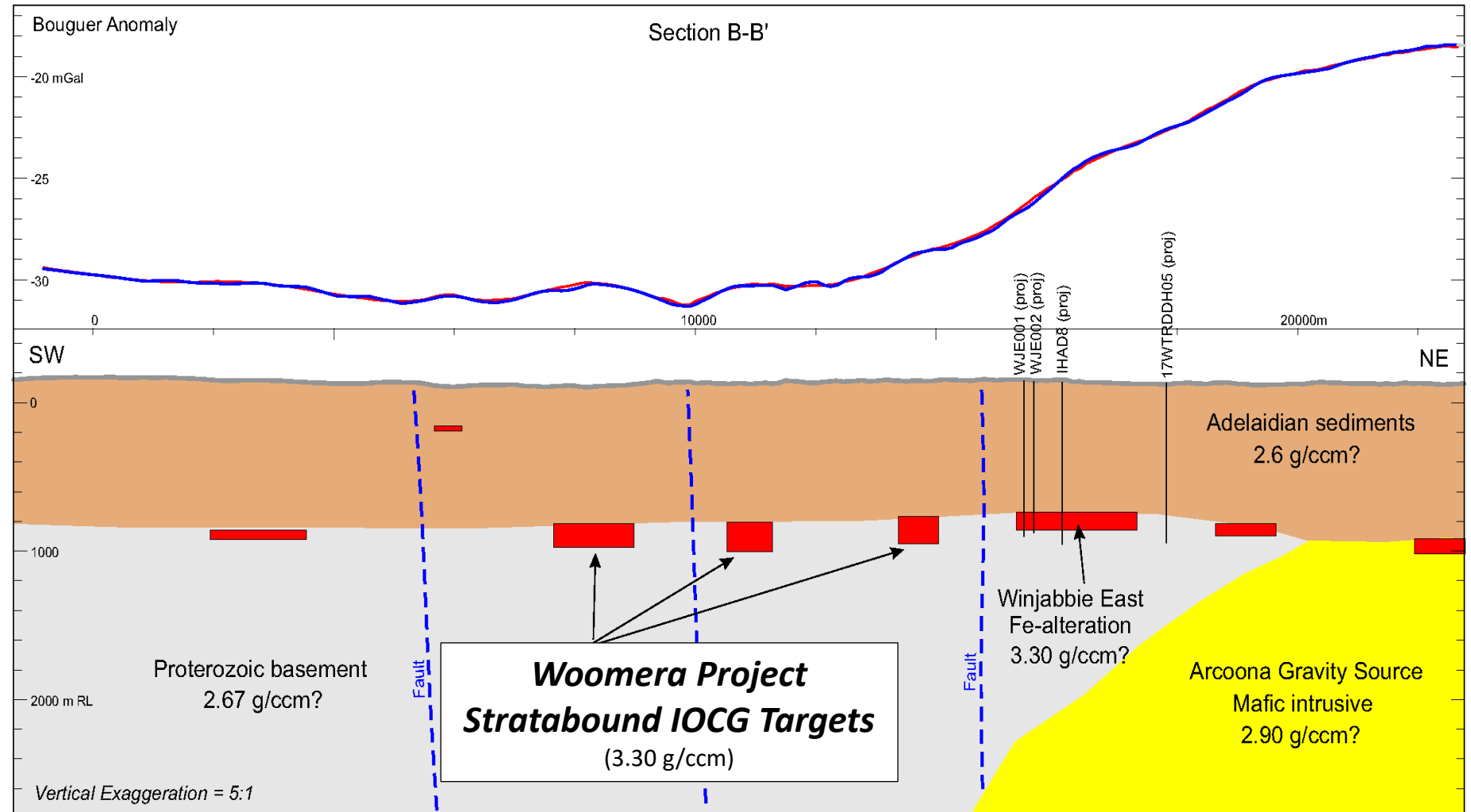


Source: Coda Minerals 06/10/2021 ASX release.

Widespread Evidence for Regional Scale “Stratabound IOCG” Copper Mineralisation across the Olympic Domain

# TARGET STYLE 2: STRATABOUND IOCGs – WOOMERA PROJECT TARGETS

Gravity Profile  
Modelling  
highlights several  
*Stratabound IOCG  
Gravity Targets* on  
the Woomera  
Project Area  
displaying higher  
magnitudes than  
the Winjabbie  
Anomaly





# PETRATHERM: FORWARD PROGRAM

ACTIVE GROUND CAMPAIGN for 2023

**COMET RARE EARTHS** – Infill Prospect and Exploration Drilling / Metallurgical Recovery Studies

**WOOMERA / ARCOONA COPPER-GOLD** - Deep Drilling of Multiple IOCG Targets at Woomera & Geophysical Targeting at Arcoona.

**MUCKANIPPE Ti-Fe-P-REEs** – Geophysical Surveying and Drill Testing of Targets

**MABEL CREEK COPPER-GOLD** – Large scale SQUID EM Surveying of Gravity/Magnetic Targets



Petratherm Senior Project Geologist, Michael Beven, inspecting saprolite clay profile samples, Comet REE Drilling



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