

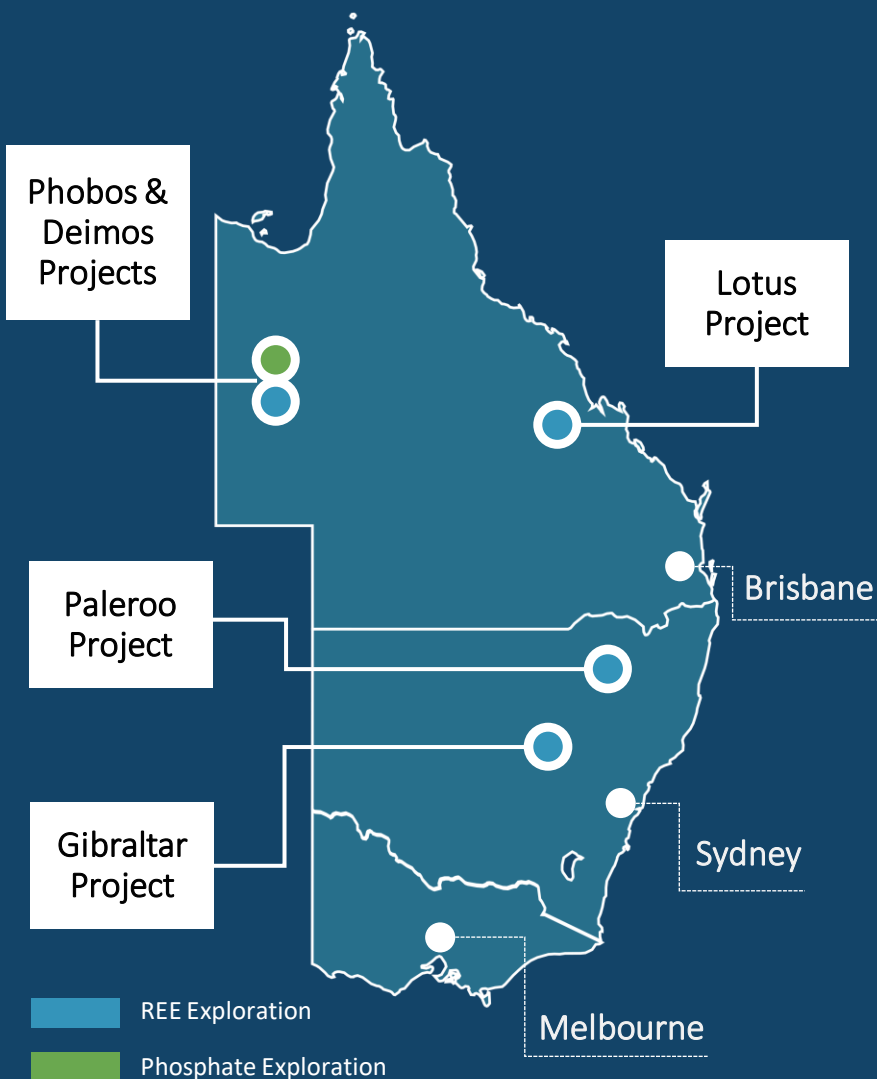


# TREO RESOURCES



A Rare Earth Element, Phosphate & Critical  
Minerals focused Company

# COMPANY OVERVIEW



## Phobos & Deimos Projects - Phosphate and REE

- Two distinct trends identified within the Beetle Creek formation for shallow Phosphate and REE mineralisation
- 2 producing phosphate mines less than 15km away all within the same formation
- Widespread REE potential in phosphorites to benefit from studies outlining near 100% recoveries, hugely outperforming typical clay-hosted REE peers
- Staged development potential focusing initially on low-capex phosphate mining
- Maiden drilling in early-mid 2024 targeting both shallow REEs and phosphate

## Lotus Project - REE

- Within a circular magnetic low anomaly identified by existing surveys – a similar target to Lynas’ Mt Weld
- Cerium and zirconium anomaly at surface immediately within the circular magnetic target
- Targeting a large carbonatite target underneath shallow cover
- Preparations underway for drilling in 2024

## Gibraltar Project - REE

- Hosted within the potential northern extension of ASM’s 75Mt Dubbo Project and Railway discovery
- Radiometric and trachyte anomalies identified for follow up. These anomalies are uniform to those on ASM’s tenure
- Supportive landholders with drilling targeted for 2024

# KEY MANAGEMENT

## Patrick Say

### Director/50% Shareholder

B.Sc. (Hons), MAusIMM

- 20+ year history in the minerals sector
- Led the geological team which delineated the Hillside Cu-Au deposit in South Australia
- Helped to evaluate and acquire the Hog Ranch Gold Project in Nevada, USA for Rex Minerals (ASX:RXM)

## David Palumbo

### Director/50% Shareholder

BCom, CA, GAICD

- Chartered accountant with 15+ years experience across company secretarial & corporate advisory roles
- Currently serves on the Board of Krakatoa Resources (ASX:KTA), Albion Resources Limited (ASX:ALB) and Rubix Resources Limited (ASX:RB6)



# PHOBOS & DEIMOS PROJECTS - OVERVIEW

## Project Location

130km South of Mt Isa in QLD  
Access via the Boulia Mt Isa Hwy

## Ground Position

1193km<sup>2</sup> of tenure in QLD's phosphate rich Georgina Basin

## Exploration Target

The phosphate and REE rich Beetle Creek Formation, and a strong magnetic anomaly at Phobos – Carbonatite source?

## World Class Resources Next Door

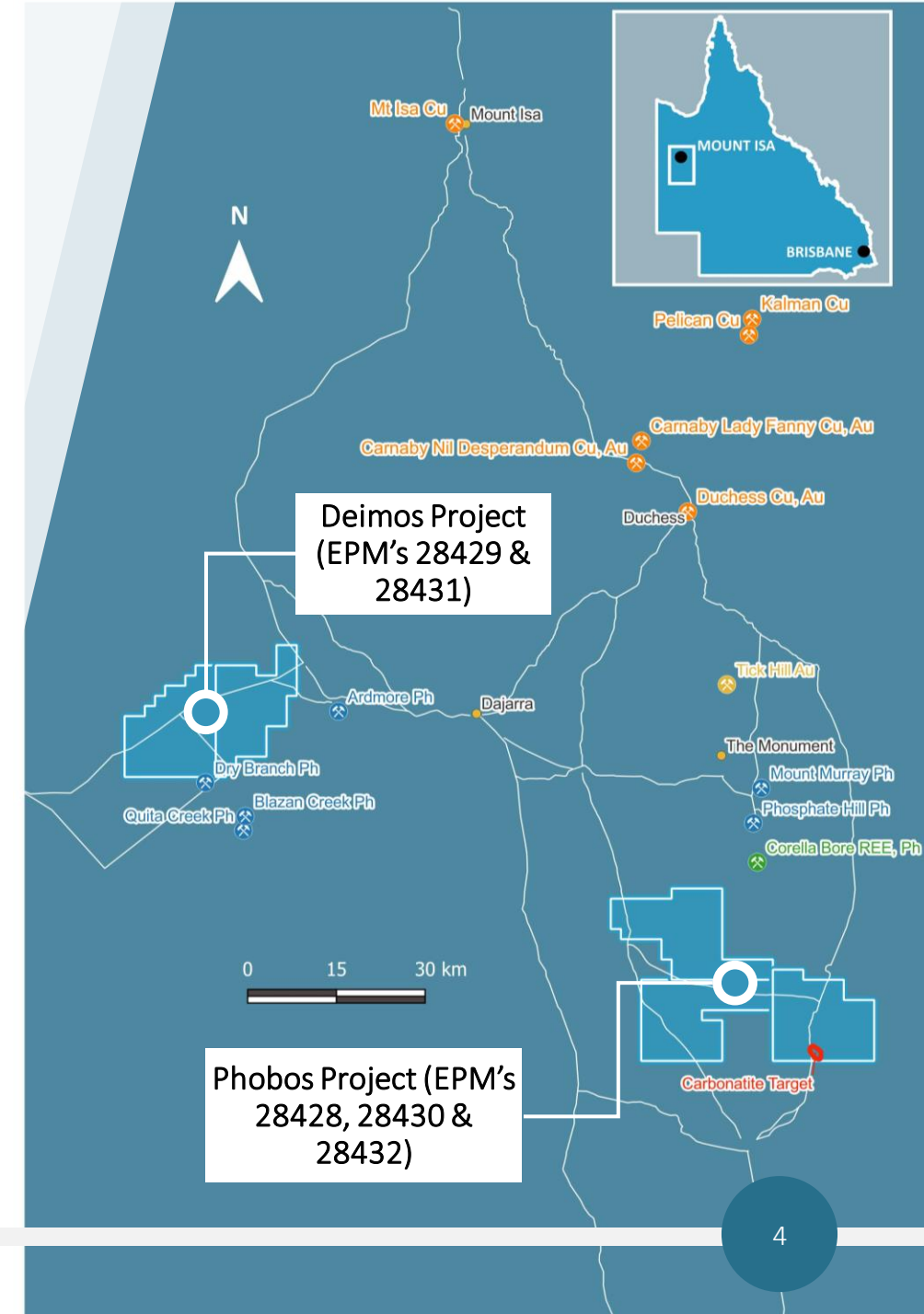
Phobos 13km South of Incitec Pivot's Phosphate Hill Project  
Deimos 9km west of Centrex Metals' Ardmore Phosphate Project

## 5 wholly owned EPM's

EPM28428 - EPM28432 expected to be granted in Q3 or Q4 2023

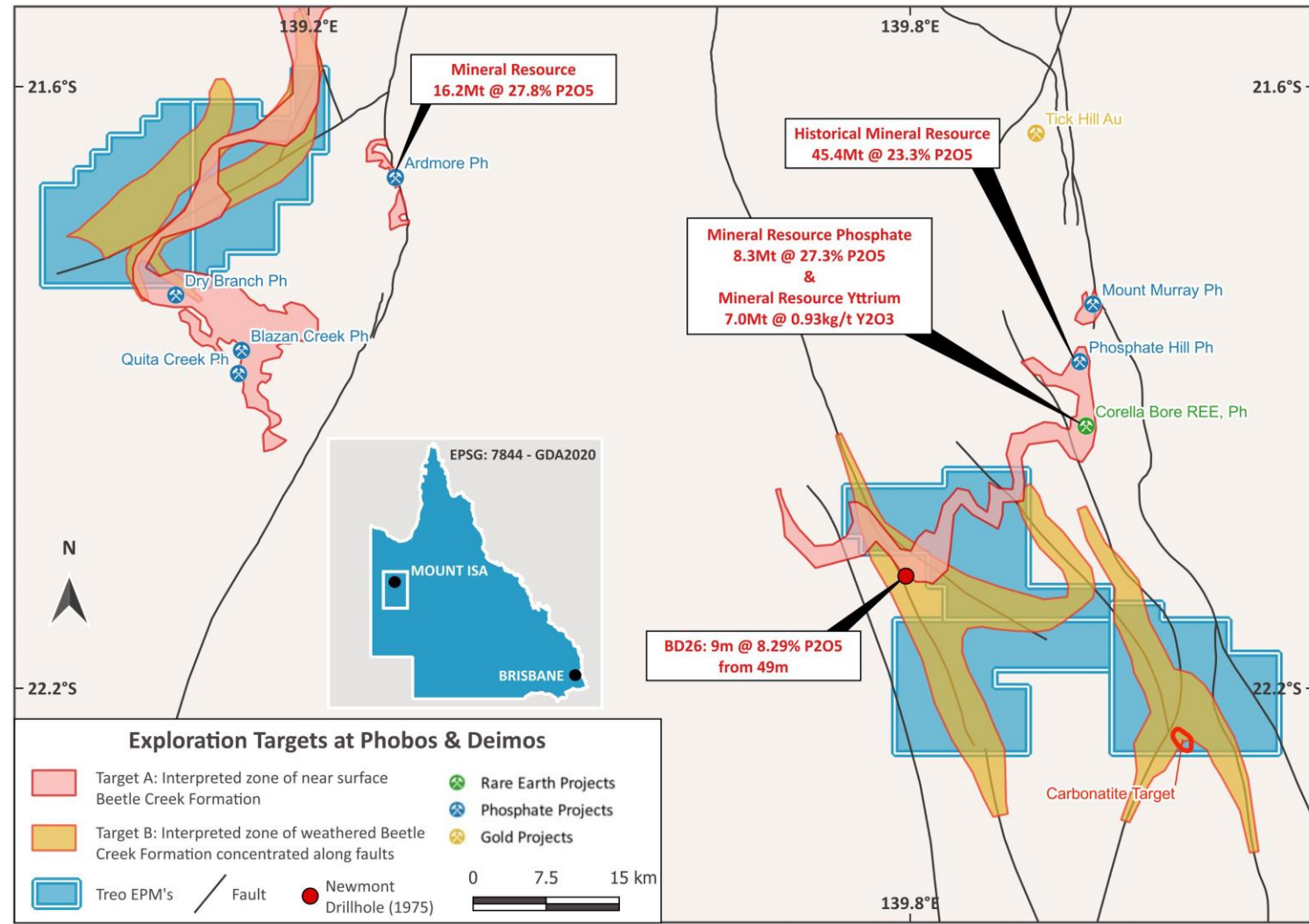
## Traditional Owners

Working towards Native Title & Cultural Heritage Agreements



# PHOBOS & DEIMOS – EXPLORATION FOR DSO PHOSPHATE + REEs

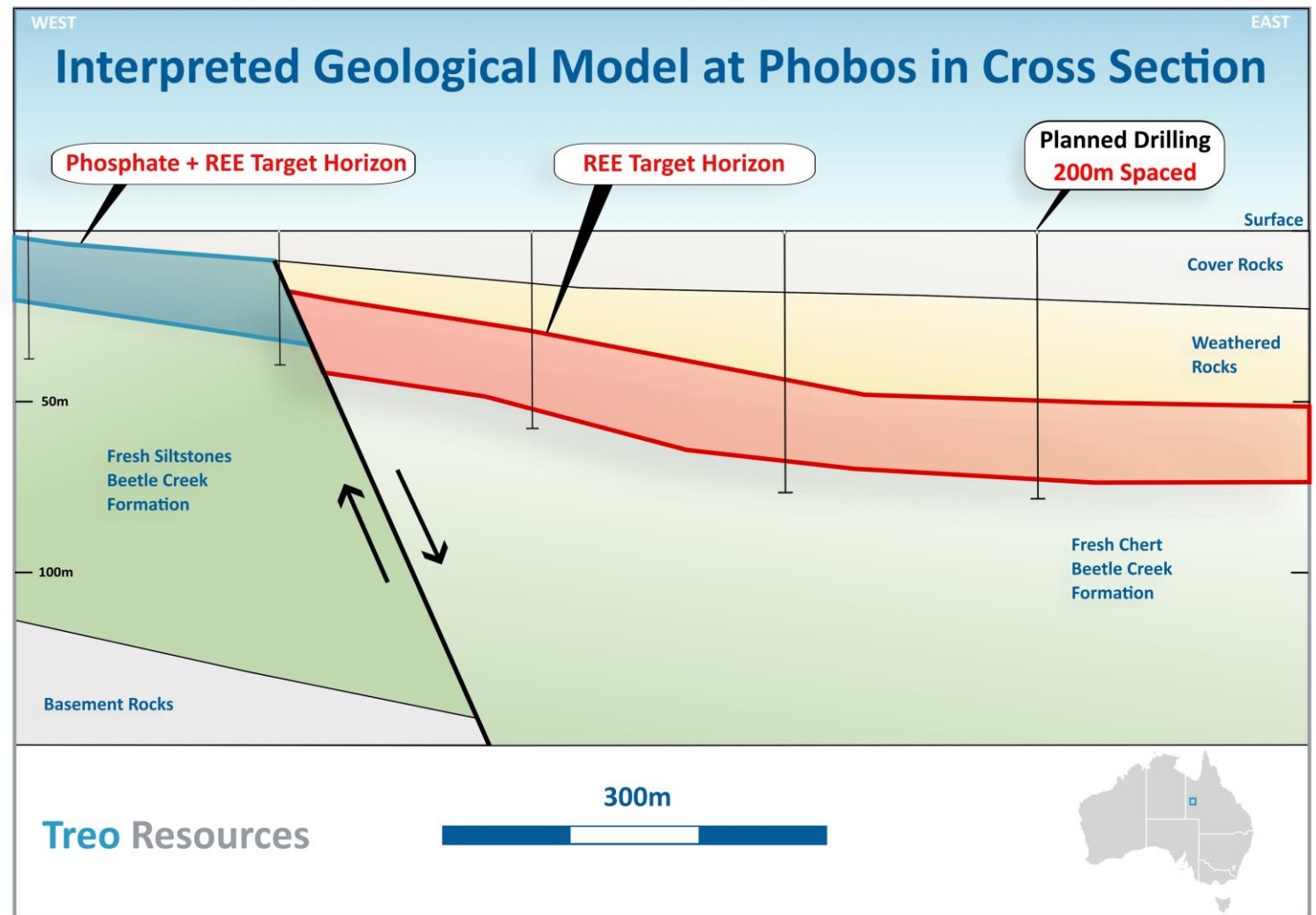
- Belt scale project targeting phosphate and REEs within or above the **Beetle Creek Formation**
- The presence of REEs in phosphorites has been documented at Corella Bore
- Extensive areas of shallow cover and limited drilling
- Modern and focused strategy to assess two target types:
  - **Target A: Phosphate** = near surface DSO phosphate within the Beetle Creek Formation
  - **Target B: REEs** = high-grade REEs along faults within the weathering profile above areas of interpreted Beetle Creek Formation
- Strong evidence of high-grade REE's:
  - Recent unpublished results from Valetich and Grigorescu<sup>1</sup> show strong REE concentrations of up to **2,000ppm TREEY** within the Beetle Creek Formation at both **Ardmore and Phosphate Hill**
  - **Weathering at Ardmore** produces a further upgrade, apparently through residual enrichment concentrated along faults<sup>1</sup>, giving TREEY values in weathered phosphorite of **6,000ppm – 17,000ppm TREEY**
- Is there a Carbonatite source?



<sup>1</sup> Valetich, M and Grigorescu, M., 2020. REE Enrichment in Queensland phosphorite deposits., <https://www.youtube.com/watch?v=XULSvTKILT&t=362s>

# PHOBOS & DEIMOS VALUE PROPOSITION – PHOSPHATE + REEs

- Phosphate and REEs are interpreted to occur in both near surface Beetle Creek Formation and in weathered zones above Beetle Creek Formation
- This presents an opportunity to rapidly drill test a potential concurrent phosphate and REE bearing orebody with shallow (<75m) Aircore or RC drillholes
- We estimate both Projects could be drill tested for under A\$3M within 2 years, with a potential DSO Phosphate + REEs Mineral Resource defined
- Once defined, because of the shallow nature of any potential orebody, the transition to developer could then be made within a relatively short timeframe
- Furthermore, recovery of REEs from phosphorites using known leaching methods in the USA has shown that nearly 100% of their total REE content can be extracted using dilute  $H_2SO_4$  and  $HCl$ <sup>1</sup>
- Therefore, extraction of REEs from phosphorites at Phobos & Deimos could be dramatically cheaper than other REE orebody types



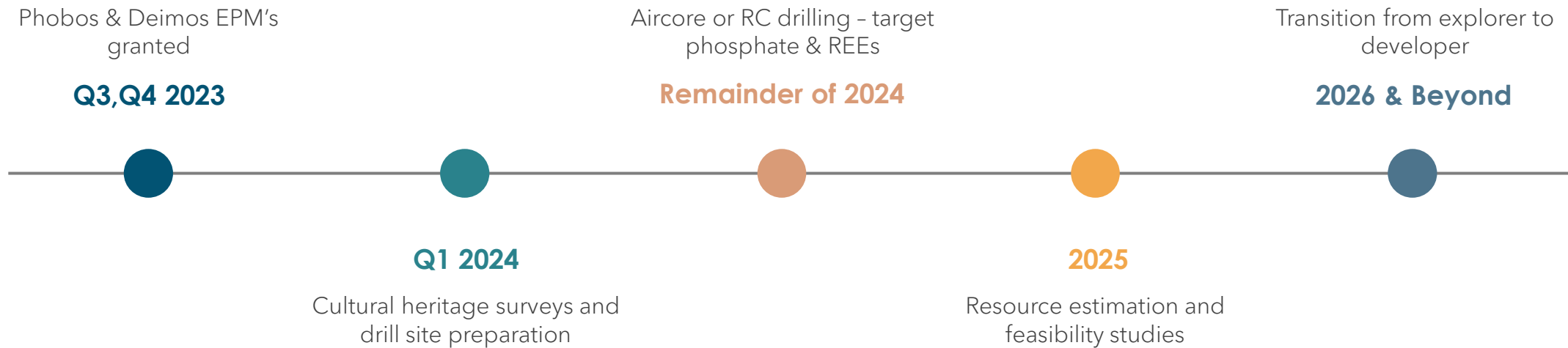
<sup>1</sup> <https://www.sciencedirect.com/science/article/pii/S1342937X14003128?via%3Dihub>

# PHOBOS & DEIMOS – POTENTIAL TO RAPIDLY TRANSITION TO DEVELOPER

Phosphate and REEs are interpreted to occur in both near surface Beetle Creek Formation and in weathered zones above Beetle Creek Formation within 50m to 75m of the surface

This presents an opportunity to rapidly test and then drill out a potential concurrent phosphate and REE bearing orebody

Possible analogy with RareX's Cummins Range Phosphate and REE Project



# LOTUS PROJECT - OVERVIEW

## Project Location

40km east of Middlemount in QLD  
Access via the May Downs Road from Middlemount

## Ground Position

176km<sup>2</sup> of tenure

## Exploration Target

REE-Niobium mineralised carbonatite

## Large Circular Shaped Magnetic Anomaly

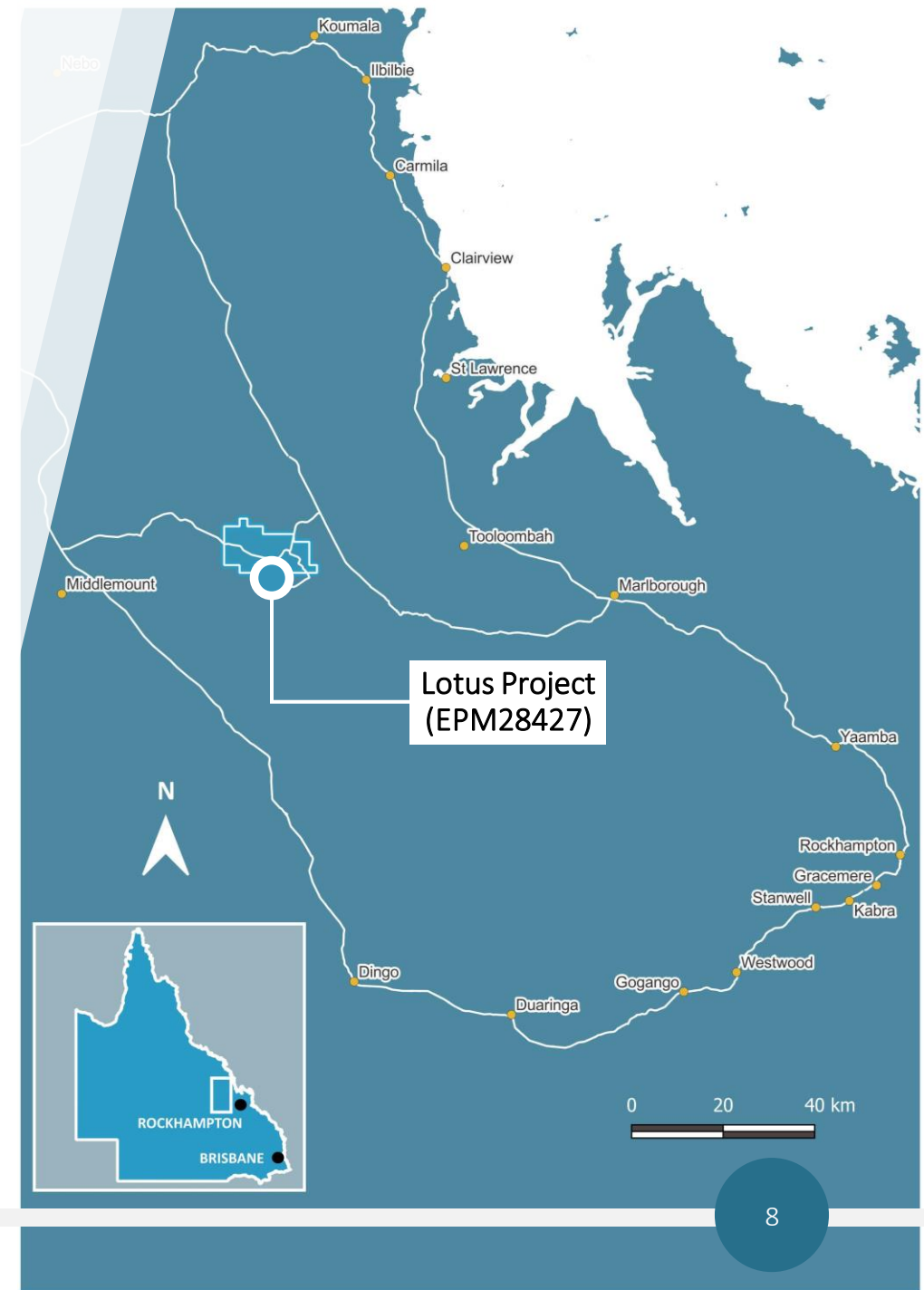
Is this a buried Niobium-REE carbonatite?

## 1 wholly owned EPM

EPM28427 expected to be granted in Q3 or Q4 2023

## Traditional Owners

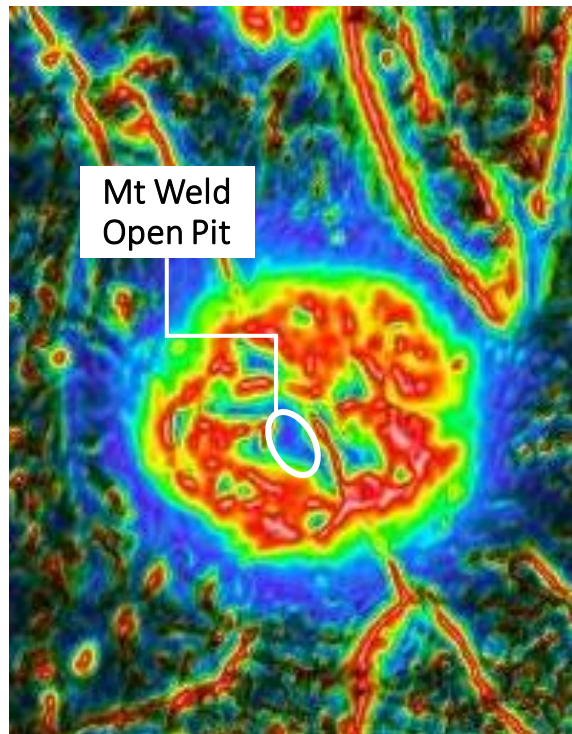
Working towards Native Title & Cultural Heritage Agreement



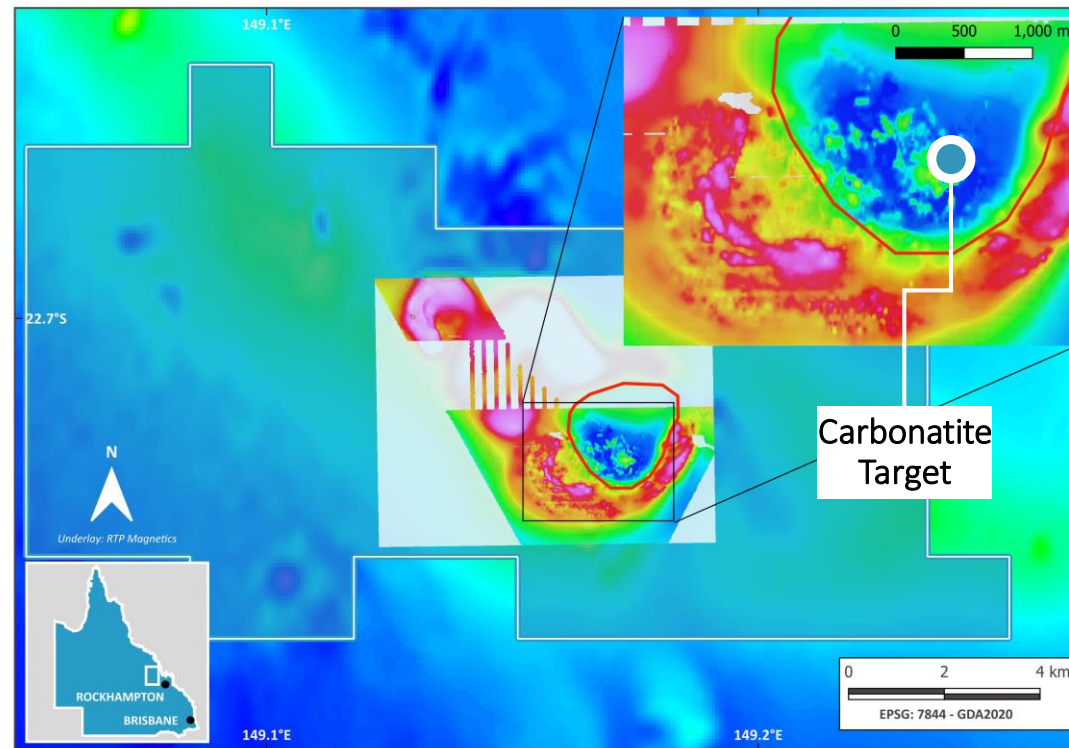


# LOTUS – A MT WELD ANALOGY?

- Many carbonatite bodies occur in association with cylindrical, intrusive bodies & high amplitude gravity with a reduced magnetic response
- Mt Weld, one of the worlds highest grade carbonatite deposits, sits beneath 20-50m of sediments within the reduced magnetic response of a high amplitude gravity anomaly
- Lotus is also located within a reduced magnetic response and the anomaly lies beneath sedimentary cover



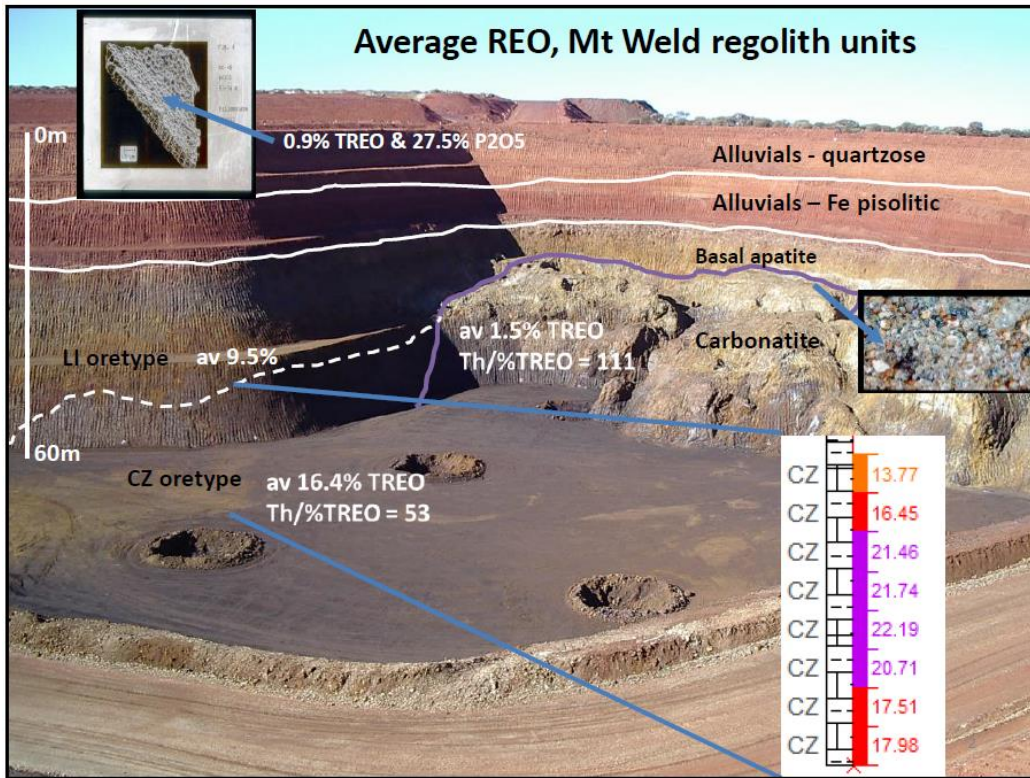
**Mt Weld RTP Magnetic Response**  
Circular magnetic anomaly is 3.6km in diameter



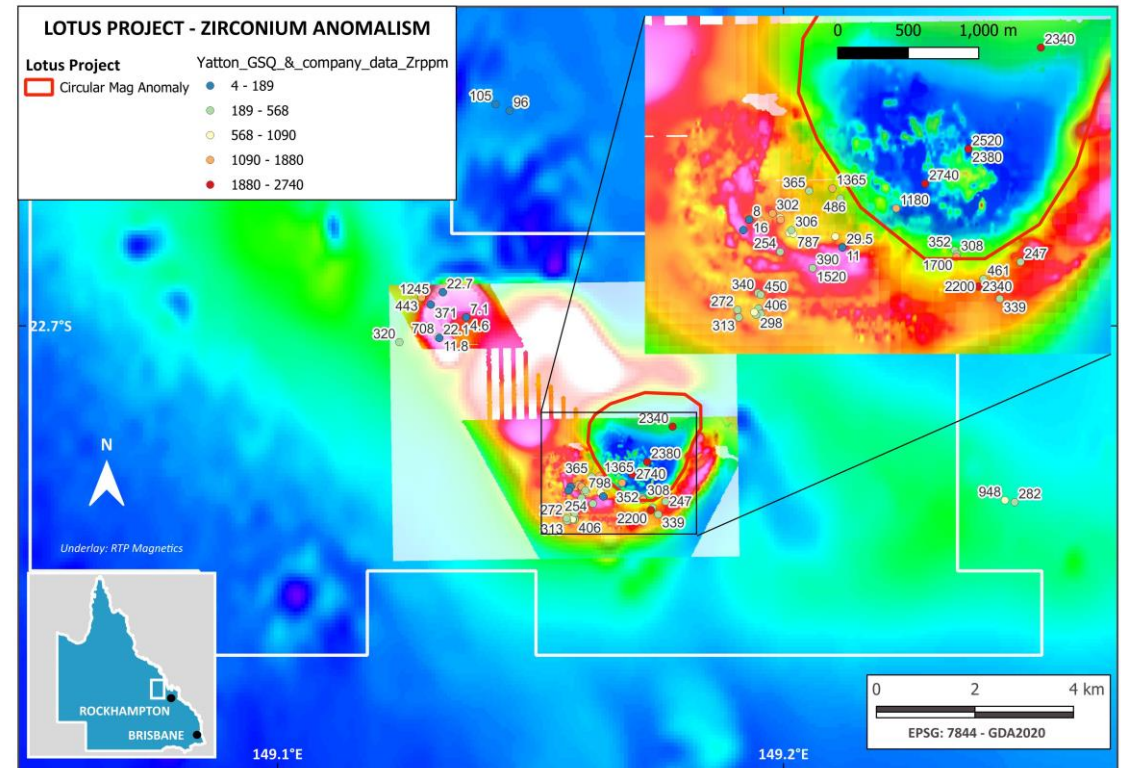
**Lotus Detailed RTP Magnetics over Regional Magnetics**  
Lotus circular magnetic low approx. 2.1km in diameter

# LOTUS – REE & ZIRCONIUM ANOMALISM AT SURFACE

- All the currently known economic REE resources at the Mount Weld deposit are hosted within lateritic regolith above the carbonatite
- The Mt Weld mineralisation consists of high-grade REE's and concentrations of zirconium, niobium and other critical minerals
- **At Lotus, we have a cerium and zirconium anomaly at surface immediately within the circular magnetic target indicating the potential for a weathered carbonatite at depth**



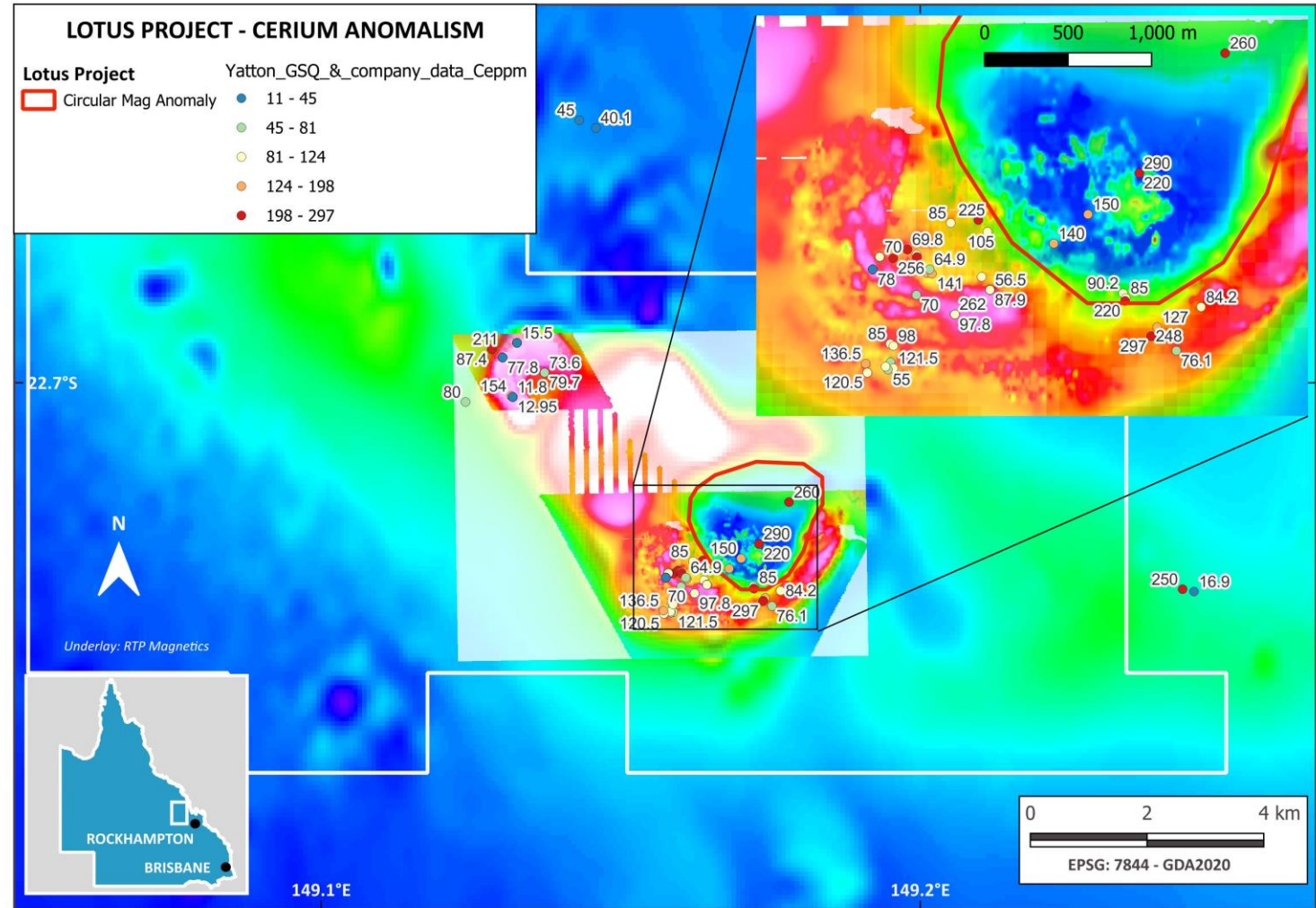
**Mt Weld Regolith and TREO Content**  
Image from Hellman, April 2023



**Lotus Detailed RTP Magnetics and Zirconium Anomalism**  
Zirconium up to 2740ppm within the circular magnetic low

# LOTUS – NEXT STEPS

- Lotus EPM expected to be granted in Q3 to Q4 2023
- Finalise Native Title and Cultural Heritage Agreement
- 2024: Complete ground gravity survey to firm up drill targets
- 2024: Complete on ground soil sampling to firm up drill targets
- 2024: Commence an RC drill program to:
  - Test the targets generated by gravity and soil surveys
  - Systematically test the circular magnetic anomaly



Lotus Detailed RTP Magnetism and Cerium Anomalism  
 Cerium up to 290ppm within the circular magnetic low

# GIBRALTAR PROJECT - OVERVIEW

## Project Location

5km south of Dubbo in NSW

Access via paved Obley Road from Dubbo

## Ground Position

122km<sup>2</sup> of tenure

## Proximal to World Class Critical Minerals Project

Gibraltar lies immediately north of ASM's Dubbo Project

## Exploration Target

Alkaline igneous rocks rich in REEs & critical minerals

## Multiple Outcropping Targets

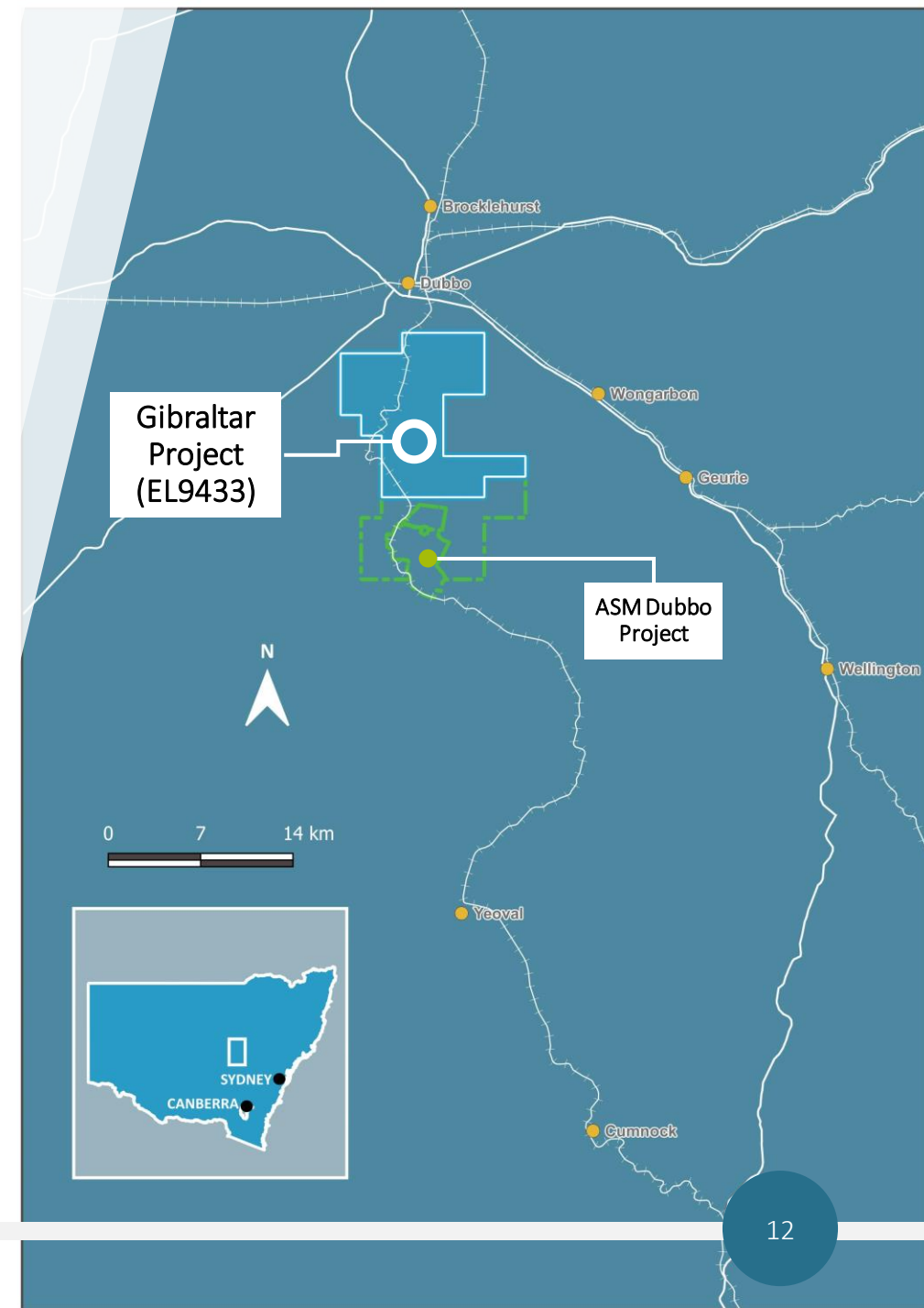
Several outcropping alkaline igneous targets at surface

## 1 wholly owned EL

EL9433 granted in June 2022

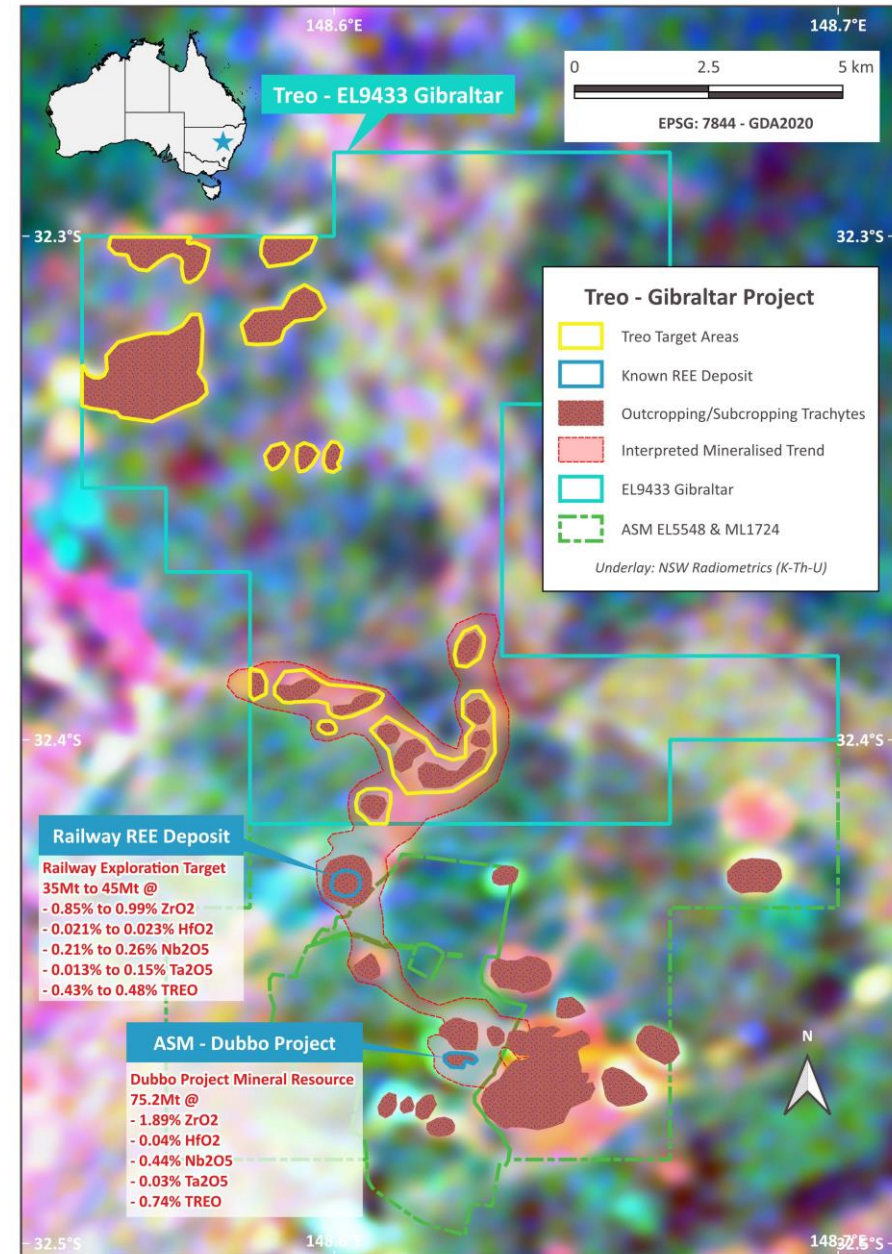
## Land Access

Many landowners have been approached with all verbally approving land access to explore



# GIBRALTAR PROJECT – SEARCHING FOR THE NEXT CRITICAL MINERALS OREBODY

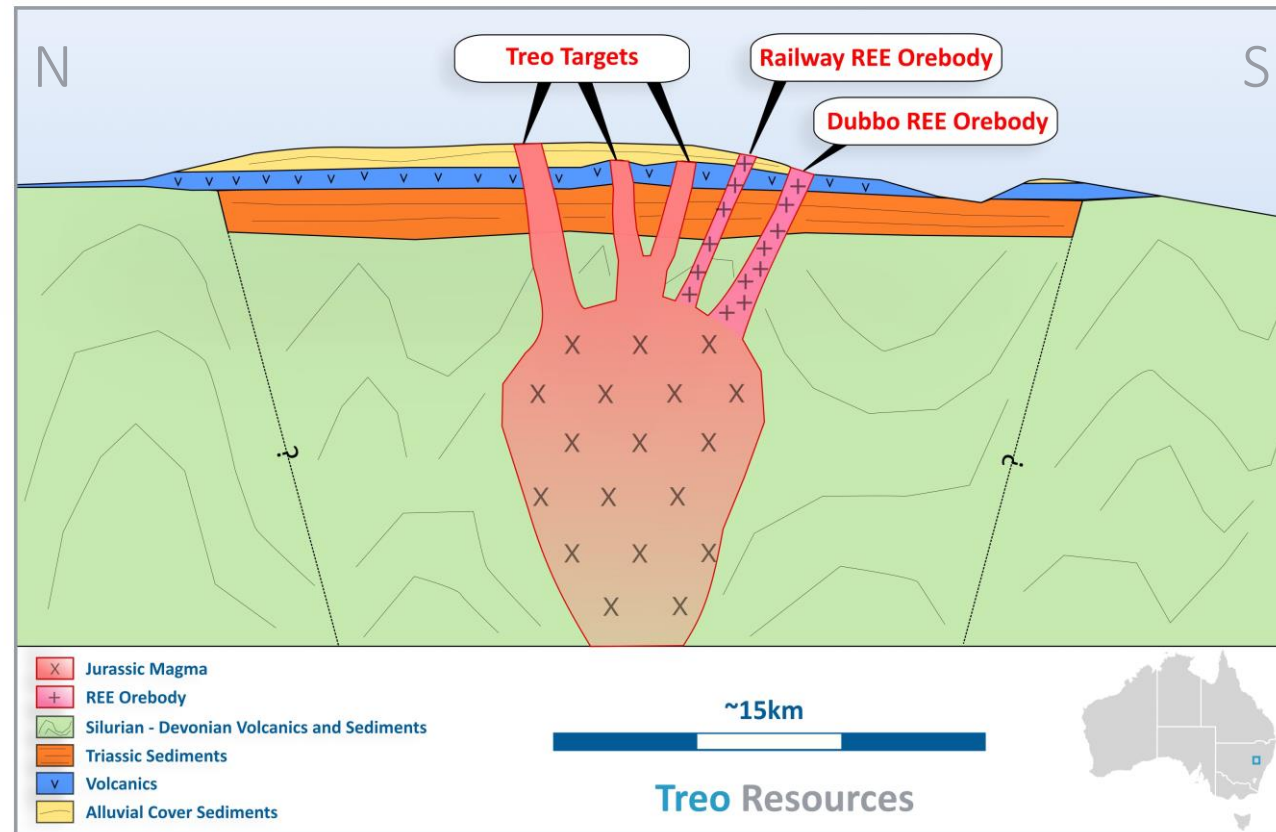
- Gibraltar has had no historical exploration for REE & Critical Minerals
- Past exploration by ASM (and parent Alkane) has focused on development of the Dubbo Project (named the Toongi orebody)
- Limited regional exploration – **only 9 drillholes at the Railway Deposit**
- Results highlight the prospectivity of the region:
  - **RWRC002: 65m @ 0.99% ZrO<sub>2</sub>, 0.26% NbO<sub>2</sub>, & 0.46% TREO from 3m**
- The mineralised trend is interpreted to potentially continue north into Gibraltar
- Numerous trachyte and radiometric anomalies identified for investigation
- Targets = alkaline igneous rocks (Trachytes) outcropping at surface or intruding older Napperby Formation cover sediments
- **Trachytes in our tenure are the same trachytes as the Dubbo and Railway REE orebodies**
- We have also identified a number of alkaline targets underneath shallow alluvial cover



# GIBRALTAR – NEXT STEPS

- pXRF/soils and/or rock chip geochemistry program over key target areas
- Follow up shallow drilling of anomalous zones and outcropping alkaline igneous rocks

## Geological Model



### Interpreted Geological Model at Gibraltar

We're targeting alkaline igneous rocks (trachytes) outcropping at surface or intruding older cover sediments

# PALEROO PROJECT - OVERVIEW

## Project Location

40km northeast of Narrabri in NSW  
Access via paved Killarney Gap Road from Narrabri

## Ground Position

68km<sup>2</sup> of tenure

## Geological Proximity

EL9517 covers an area on the western edge of the New England Orogen

## Exploration Target

Alkaline igneous rocks rich in REEs & niobium

## Multiple Outcropping Targets

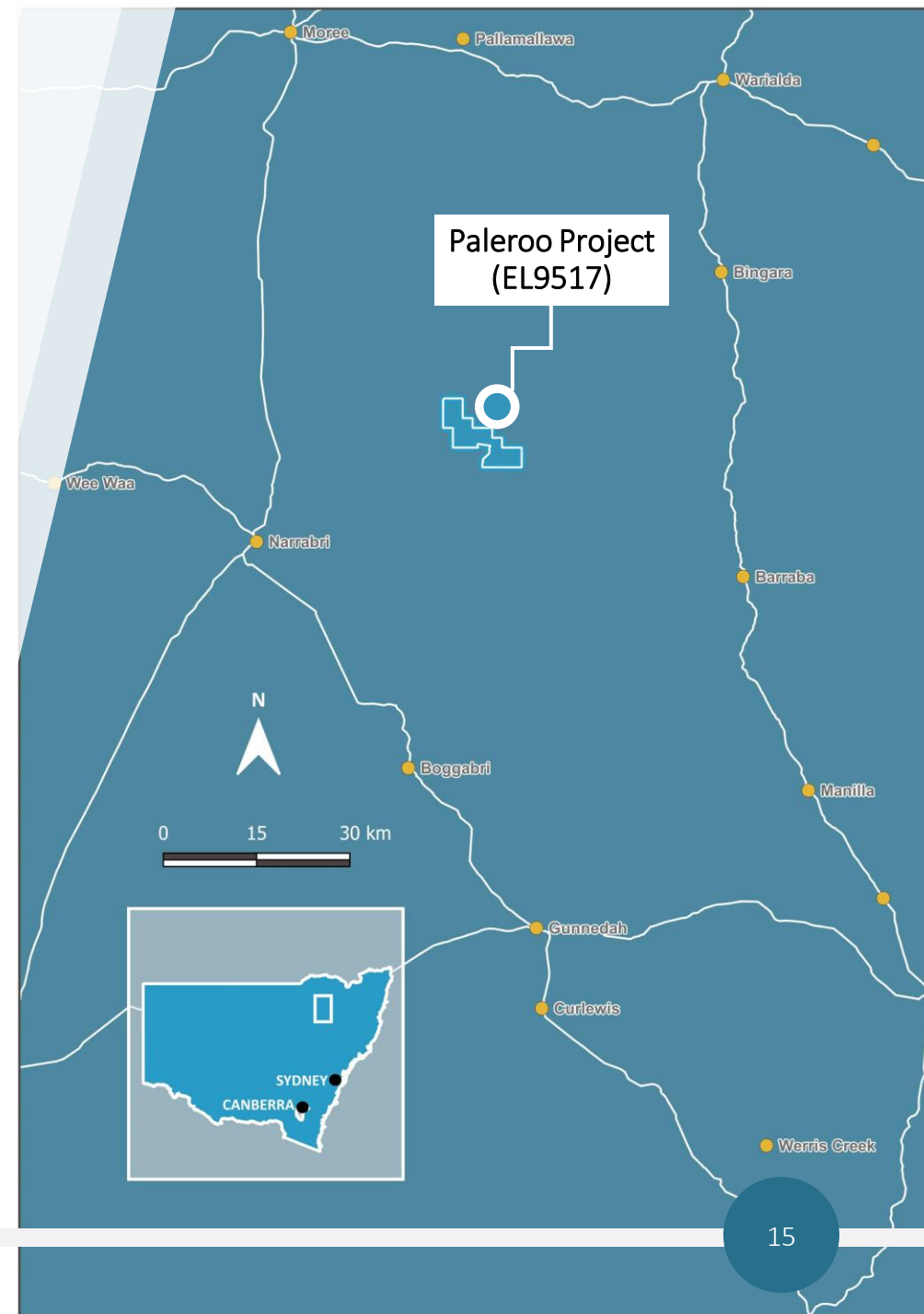
Several outcropping alkaline igneous targets at surface

## 1 wholly owned EL

EL9517 granted in February 2023

## Land Access

All landowners have been approached with all verbally approving land access to explore

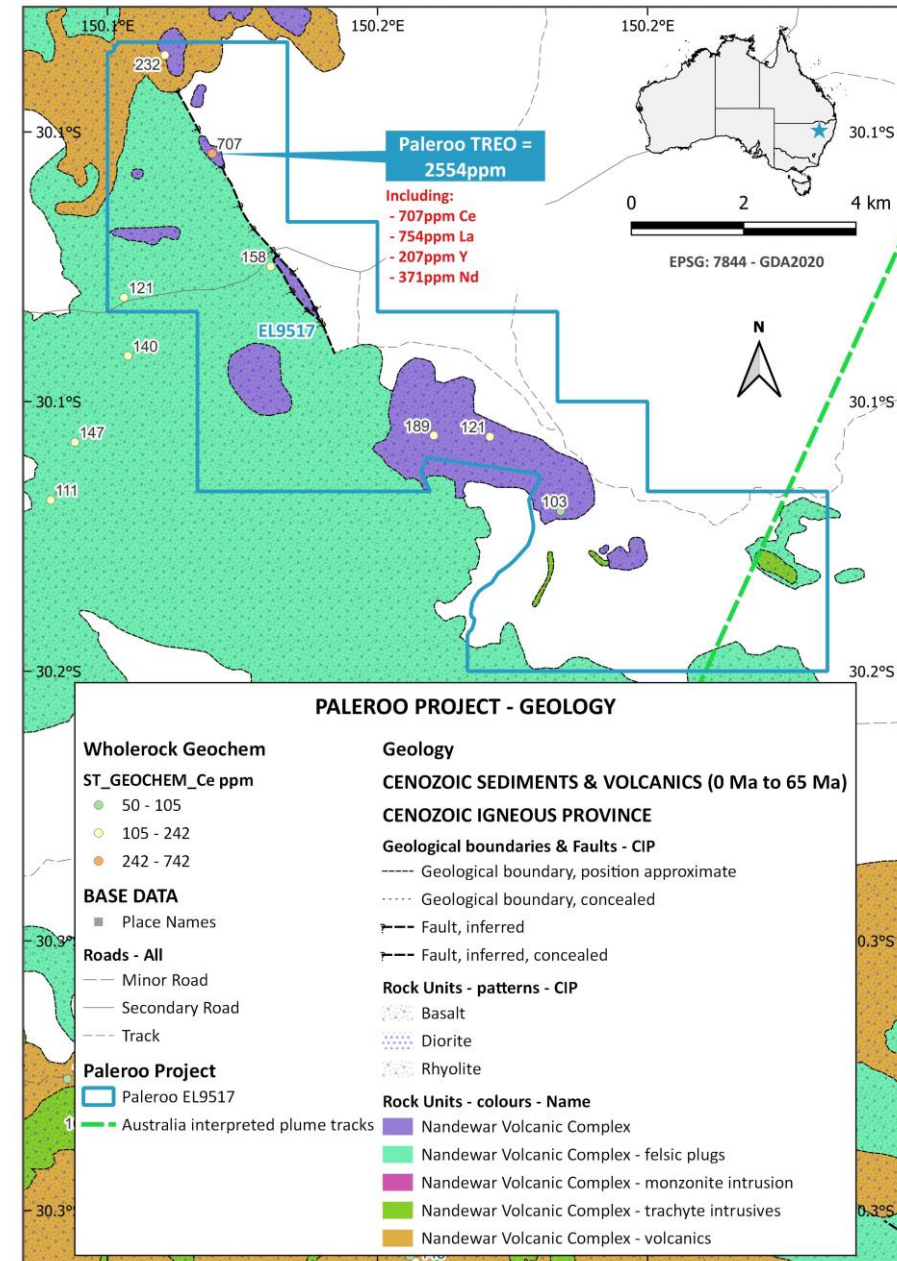


# PALEROO PROJECT – REE’s & NIOBIUM

- The Paleroo Project corresponds closely with **10 anomalous REE, Niobium and Zirconium** wholerock geochemistry samples taken within and around the Project area
- **1 sample taken** within an alkaline igneous rock from the Nandewar Volcanic Complex, contained a **TREO content of 2554ppm**
- A number of REE’s were not analysed for & further increases in TREO content may be expected
- Niobium anomalism is spread throughout the Project area, concentrated within outcrops of alkaline igneous rocks up to 289ppm Nb
- Target areas lie within the corridor of a continent scale interpreted plume track

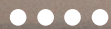
## Next Steps

- On ground truthing and regional geochemical sampling





# THANK YOU



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