



"We believe that Mount Ridley has discovered a large RARE EARTH ELEMENT deposit and are pursuing its delineation and development apace.

"This aligns with the actions of many countries as we move to implement "green" strategies to limit Climate Change and its effect".

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The information contained in this presentation that relates to exploration strategy or to exploration results is based on information generated by Mount Ridley, and compiled by, or reviewed by, Mr David Crook who is a Member of the Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists. Mr Crook has sufficient experience which is relevant to the activities reported herein to qualify as a Competent Person as defined in the 2012 edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Minerals Resources and Ore Reserves. Mr Crook consents to the inclusion in the presentation the matters based on his information in the form and context in which it appears

Mount Ridley confirms that it is not aware of any new information or data that materially affects the information included in the original announcements to ASX and that all material assumptions and technical parameters underpinning the exploration results continue to apply and have not materially changed. 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 announcement.

- 2 August 2021. "REE Potential Unveiled at Mount Ridley."
- 13 September 2021. "REE Targets Extended."
- 21 October 2021. "Encouraging Rare Earth Extraction Results."
- 2 August 2022. "Excellent Drilling Results Expand Rare Earth Mineralisation Footprint at the Mt Ridley Project."
- 6 October 2022. "Highest grades to date returned from Mt Ridley Rare Earth Project, Mineralised footprint extended to more than 1,200km²."
- 14 February 2023. "Thick, shallow and high grade REE mineralisation discovered at the new Jody and Marvin Prospects."
- 30 March 2023. "Resource drilling commences on 30km long Mia - Marvin Zone at the Mount Ridley REE Project."
- 10 May 2023. "Coincident High-Grade Rare Earth Elements and Geophysical Anomalies at Mia Prospect"
- 25 May 2023. "Drilling update for the Mia REE Prospect"
- 06 July 2023. "Excellent Beneficiation Test Results Lift REE Grades"
- 21 September 2023. "Leach tests achieve up to 85% recovery of Magnet REE"
- 6th October 2023. "Drilling confirms continuity at Mount Ridley REE Project".

These announcements may be found at:
<https://mtridleymines.com.au/announcements/>

The World's Largest REE Mine Bayan Obo



Inner Mongolia



The Bayan Obo mine - Inner Mongolia - is the world's biggest REE mine both by recoverable reserves and production.

It accounts for more than 40% of the total known REE reserves in the world and nearly half of the global rare earth production.



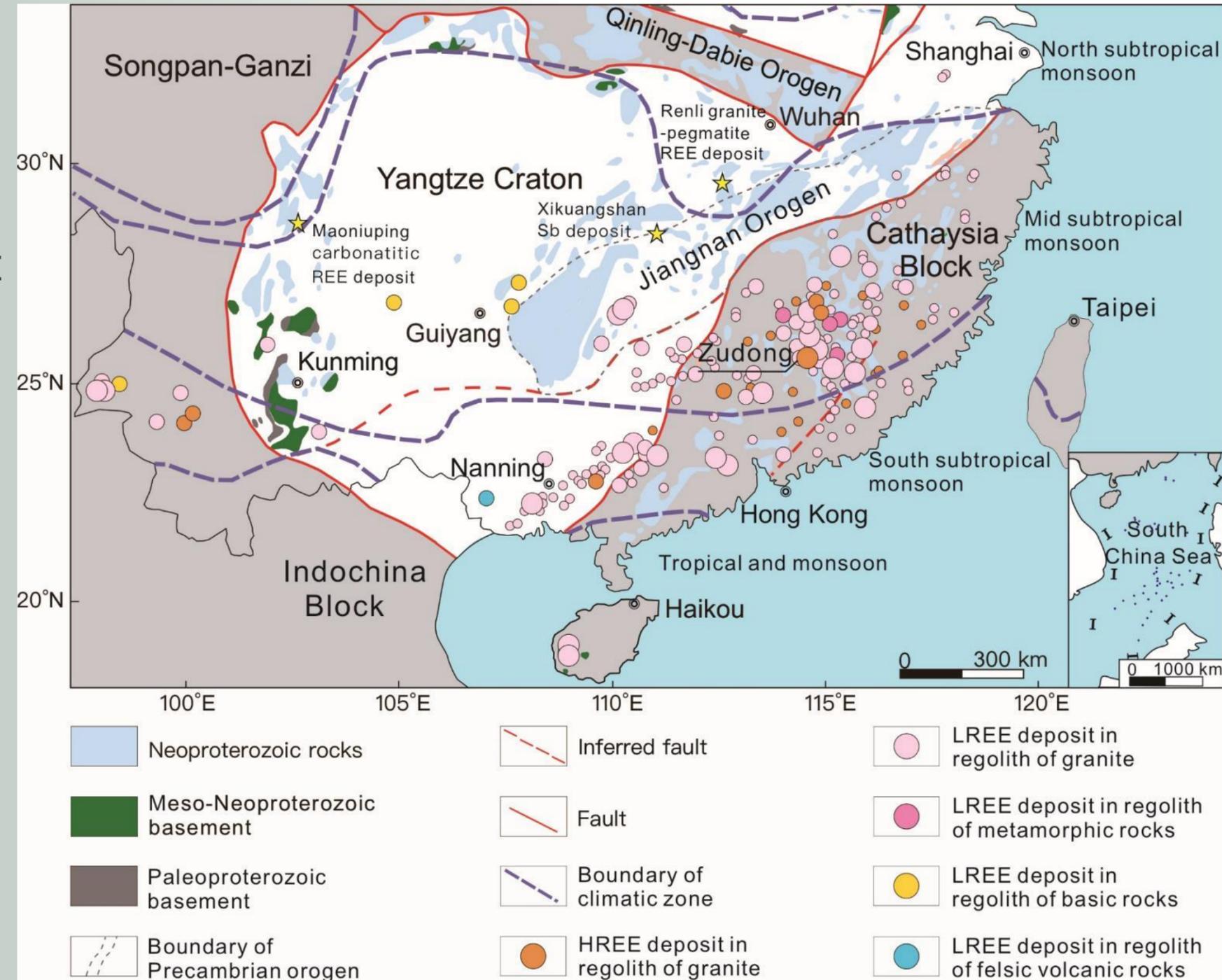
Rare Earth Element Production



China produced 210,000 tonnes of REO equivalent in 2022 and is the world's largest producer. Includes 19,150t from ionic adsorption clays.

Chinese REE business is fully integrated, has a 30-year head start on the rest of the world, and is increasing its down-stream share

- USA 43,000t
- Australia 18,000t
- Myanmar 12,000t
- Rest of World 17,000t
- Total 300,000t



Compiled from Li et al. (2017); Wang et al. (2018); Yang et al. (2021); Zhao et al. (2022) and Zhu et al. (2022)

Introduction

- 🎯 China produces over 60% of global REE, processes over 80% and manufactures over 90% of REE products.
- 🎯 There is a call from the EU and USA to locate supplies of REE (and other Strategic Metals) outside of China to mitigate an effective monopoly.
- 🎯 REE applications include in the EV Automotive industry, Clean Energy generation and use, Military and Digital Technologies.
- 🎯 Western world clay-hosted deposits have the potential to disrupt the supply of REE both from China (and potentially hard rock deposits with complex flow sheets).



Esperance REE District

- 🎯 The Esperance REE District has the hallmarks of such a disruptive system - hosting large volumes of clay-hosted REE mineralisation.
- 🎯 Importantly, sited in a first world jurisdiction and close to established major infrastructure.
- 🎯 Grades compare very favourably with other 'clay' projects world-wide.
- 🎯 Initial metallurgical tests are very positive.



Esperance REE District



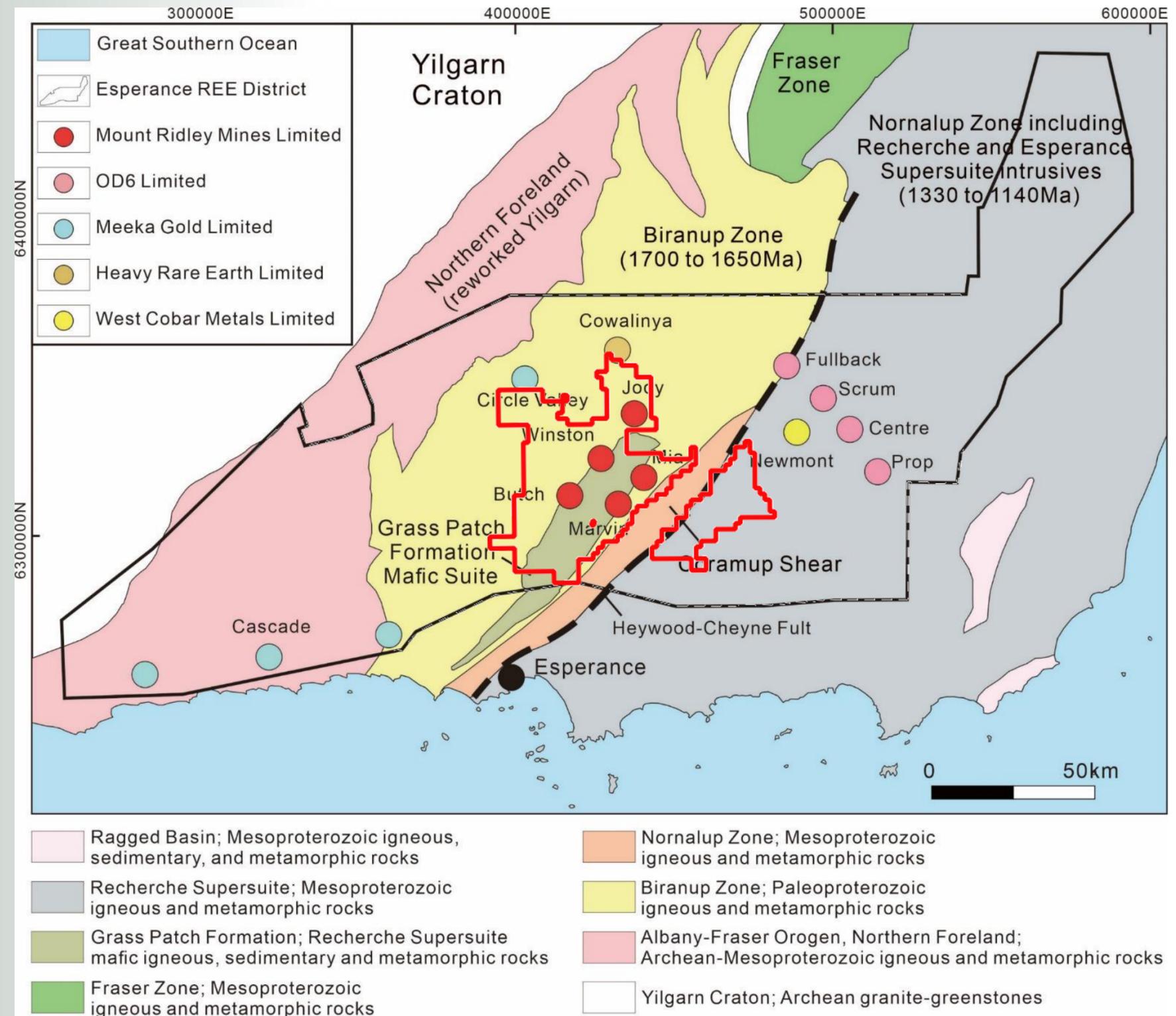
Clay-hosted REE mineralisation was first recognised in 2012¹ at the Newmont Prospect



Mount Ridley was the first new mover, causing a tenement rush in the District.



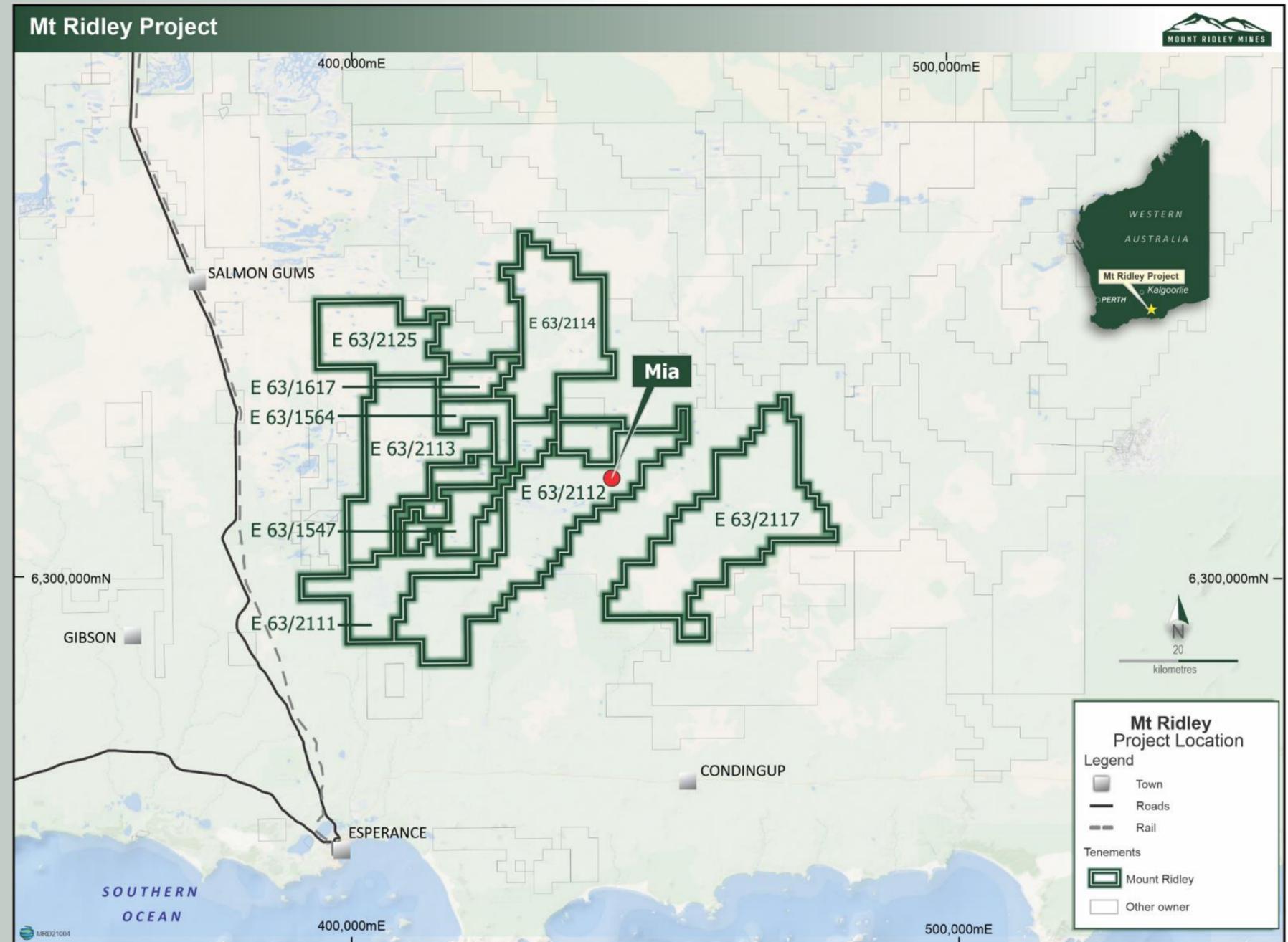
There are >5 companies taking a collaborative approach to exploration and metallurgy in the Esperance REE District now.



1. Rodgers, K.A., 2014

Geology based on Spaggiari C.V., et al 2014

Mount Ridley REE Project



Mount Ridley increased its existing ground position to 3400km².

Clay REE associated with Mafic and Felsic clays – Felsics preferred.

Mount Ridley policy to explore vacant crown land, not cultivated land.

Important infrastructure associated with the town of Esperance includes sealed roads, deep water port, airport, water, gas and electricity.

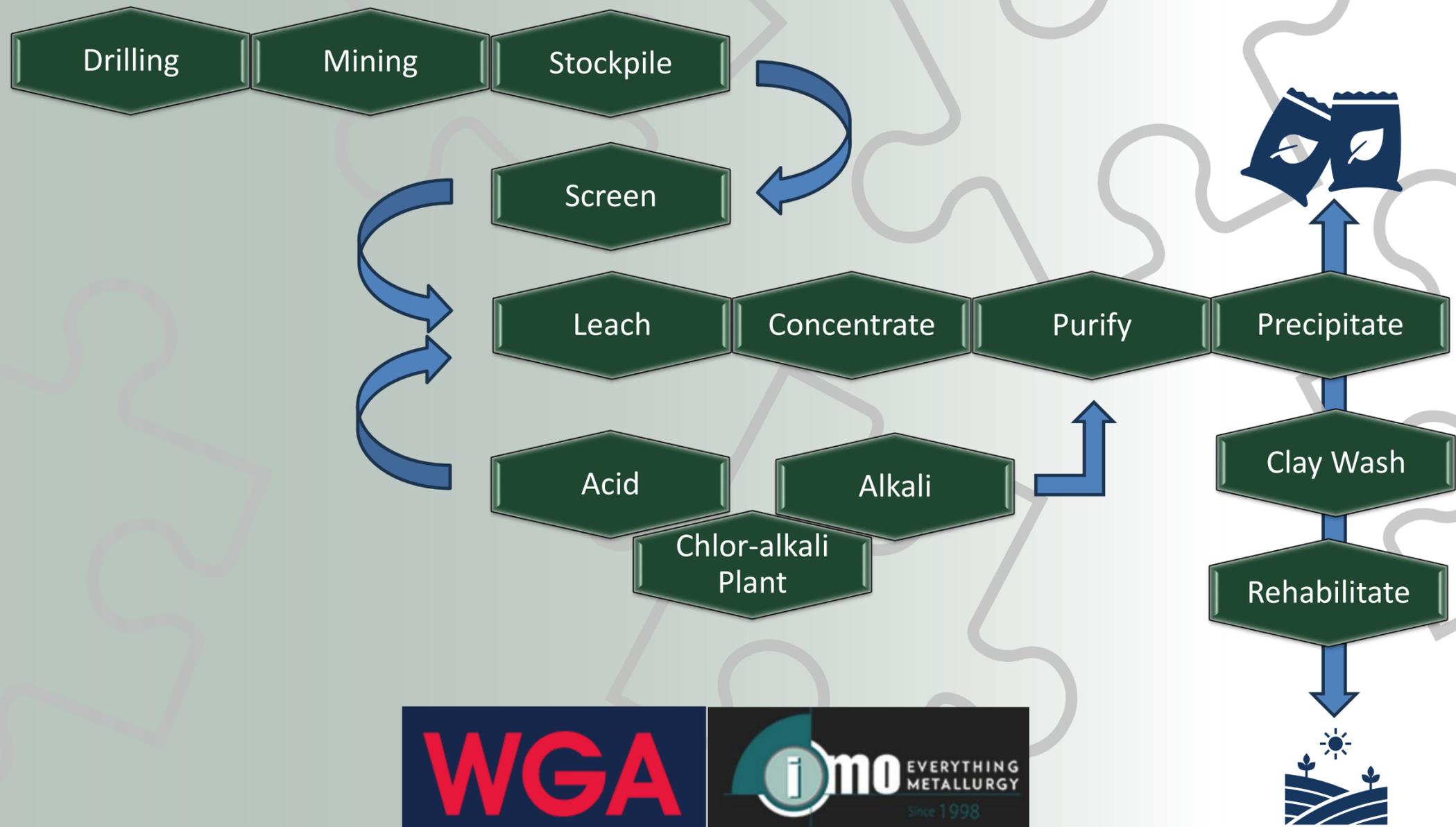
Mount Ridley REE Project Study Parts

RESOURCES

MINING

PROCESSING

REHABILITATION



FREE DIG MINING

LOG WASHER TO SLURRY
SIMPLE SCREEN
BENEFICIATION

NO FLOATATION
NO HIGH TEMPERATURE
CRACKING
NO HP-HT LEACH

CHLOR-ALKALI PLANT
GENERATES ACID AND
ALKALI

Drilling towards Resources

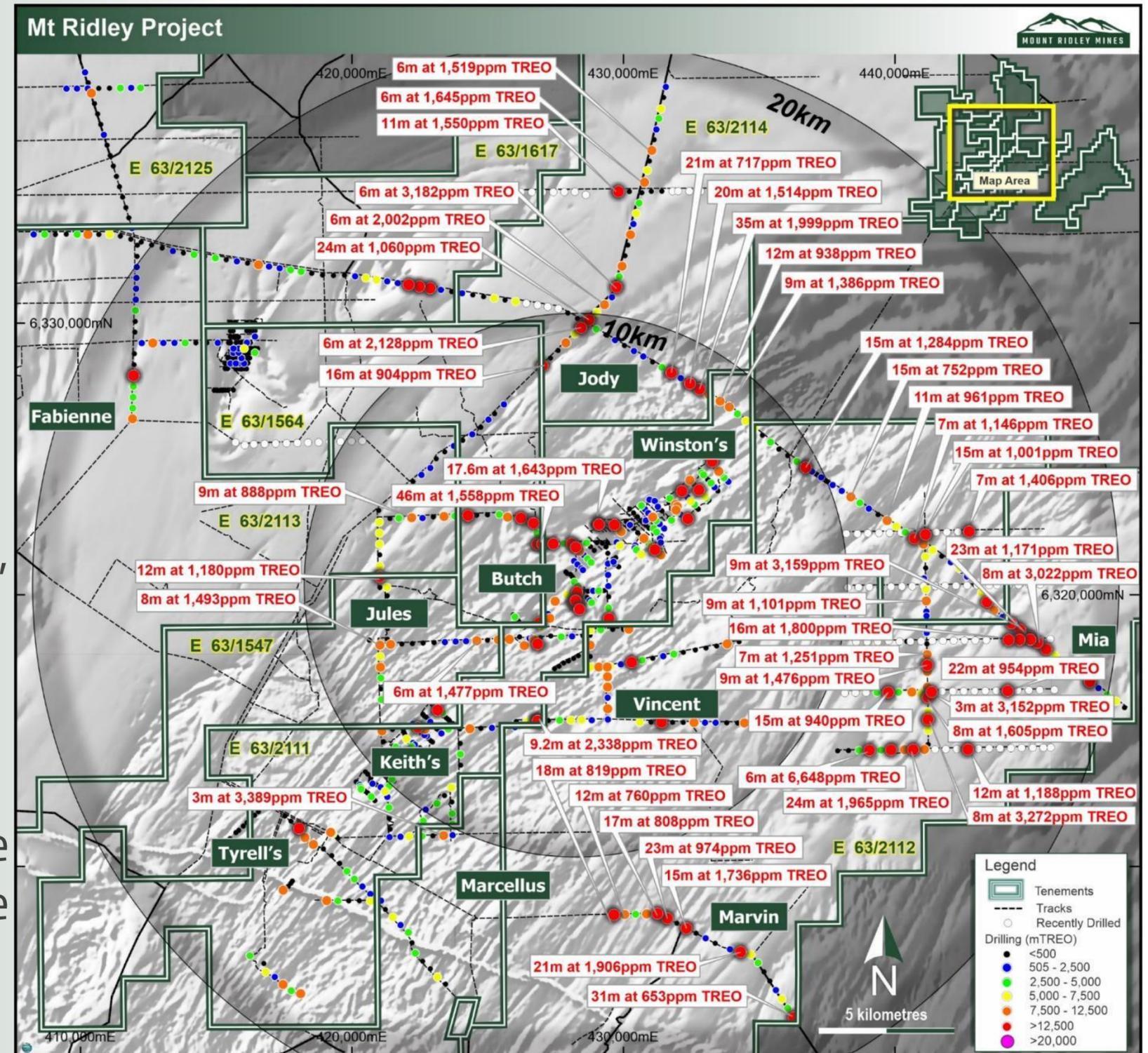
Over 1,100 holes for 50,000m evaluated for REE.

Very wide-spread mineralisation intersected throughout 1,200km² area tested.

Each phase of drilling has returned higher grades, with Mia intersections averaging:

- >1,400 ppm at 700 ppm cut-off,
- containing 25% MagREO.

MRD focus moved to the Mia Prospect where mineralisation is between 6 and 41m true thickness.

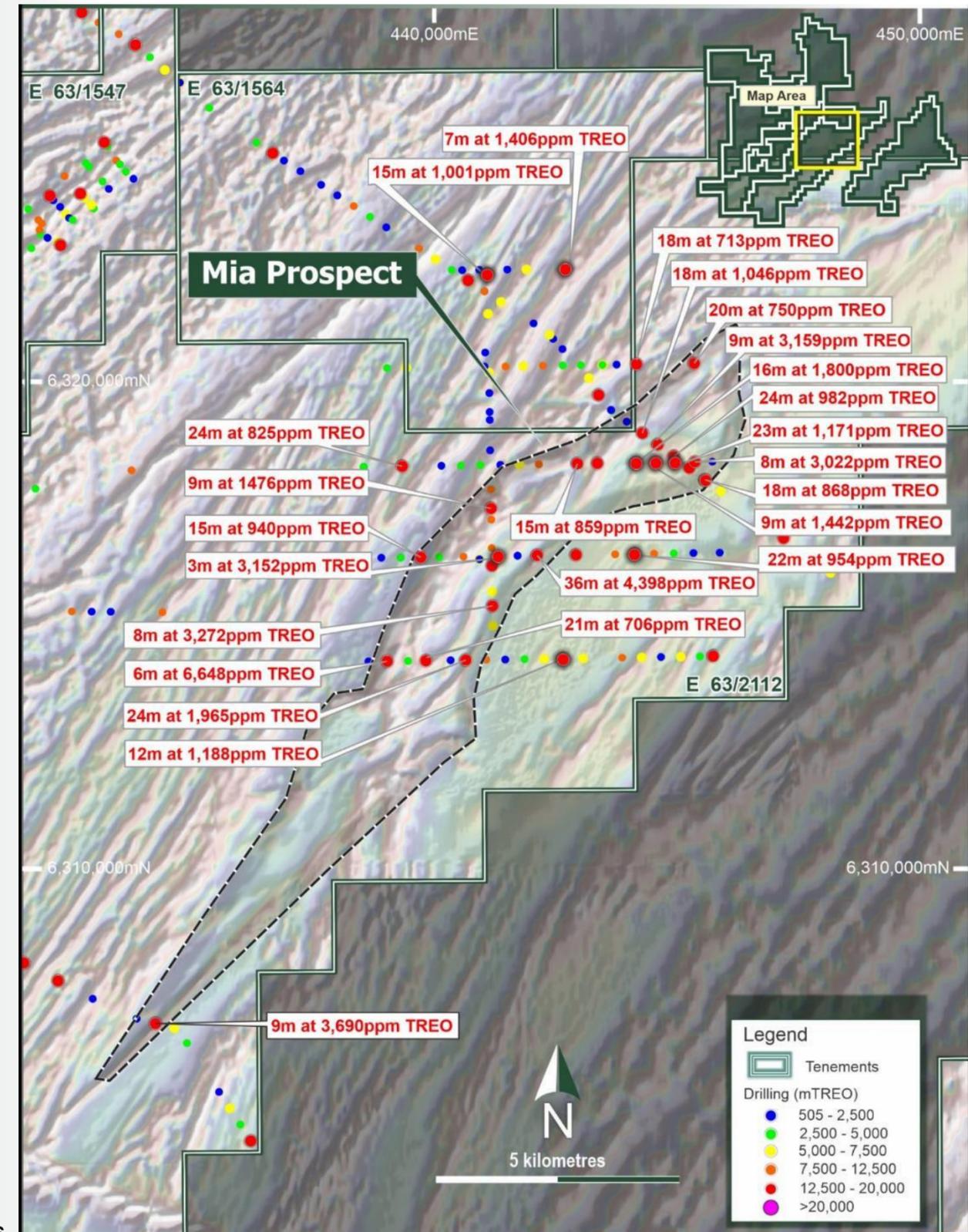


Drilling towards Resources

- 41m at 3,970 ppm TREO (23% MagREO)
- 22m at 2160 ppm TREO (23% MagREO)
- 24m at 1,965 ppm TREO (23% MagREO)
- 21m at 1,906ppm TREO (18% MagREO)
- 15m at 2,120 ppm TREO (16% MagREO)
- 18m at 1,386 ppm TREO (23% MagREO)
- 16m at 1,800ppm TREO (23% MagREO)
- 8m at 3,022 ppm TREO (33% MagREO)
- 8m at 3,272 ppm TREO (31% MagREO)
- 26m at 1,780 ppm TREO (23% MagREO)

MagREO means the sum of Dy2O3, Nd2O3, Pr6O11 and Tb4O7.

1 Refer to ASX: MRD announcements, listed in Notes.



Drilling towards Resources

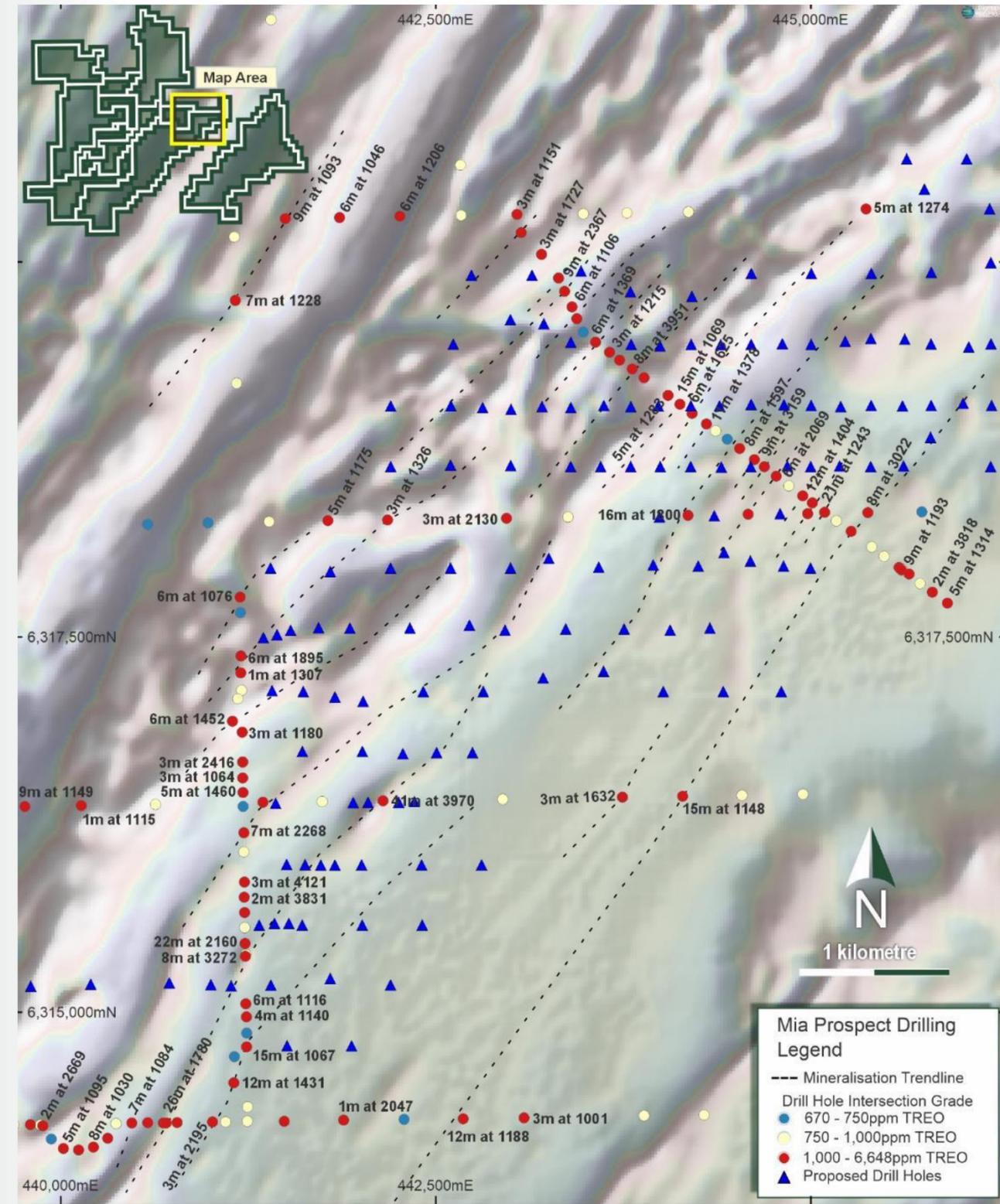


Of all Mia intersections >700ppm:

the average grade is >1,400ppm TREO before beneficiation (1,400ppm TREO projected to become >2,200ppm TREO after beneficiation)

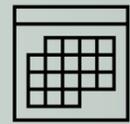
- This contains 25% or ~370ppm MagREO before beneficiation (~600ppm MagREO post beneficiation),
- 83% of the potential value is derived from MagREO

Infill drilling has resumed – 150 holes before Christmas



1 Refer to ASX: MRD announcements, listed in Notes.

Metallurgical tests of Mia samples



Beneficiation: Test results indicate a projected grade upgrade of approximately 160% through simple screening, with over 80% of the TREO contained within 50% of the original sample mass.

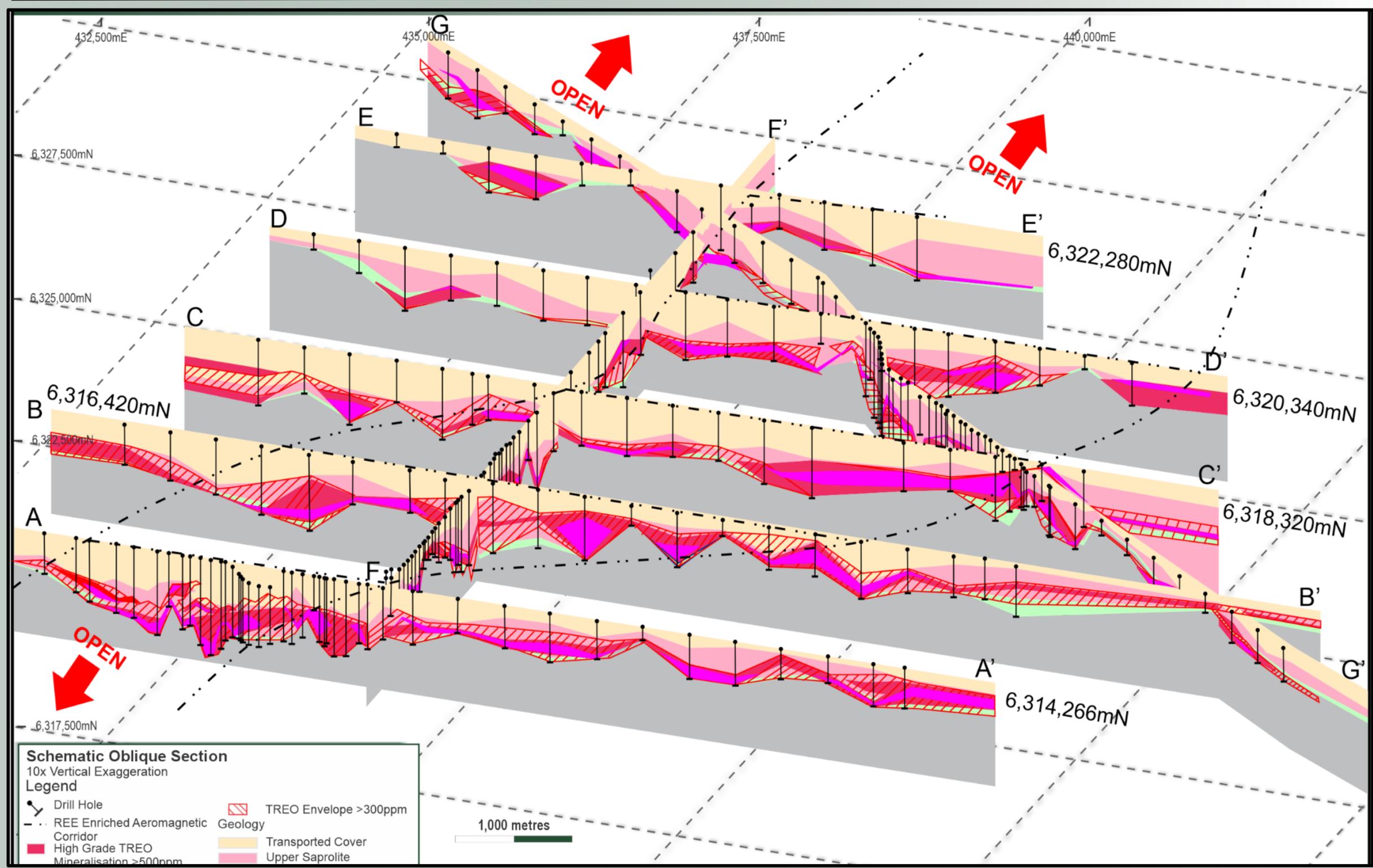


Extraction: Sighter test rates of up to 85% of high value magnet rare earths (MagREO), and overall to 72% extraction of TREO achieved.



STACKED SECTIONS THROUGH THE MIA PROSPECT

Mineralisation corridor is >10km x 3km

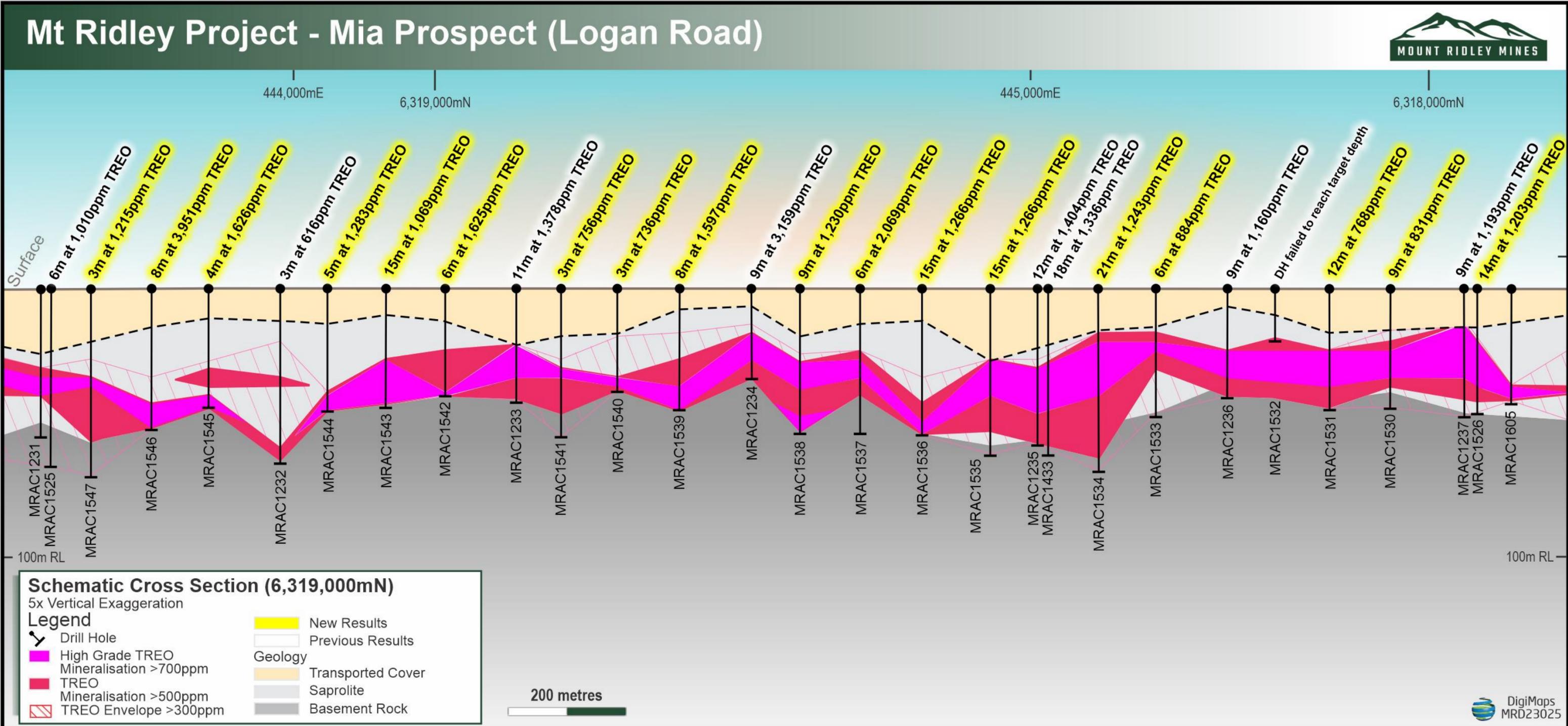


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SECTIONS THROUGH THE MIA PROSPECT

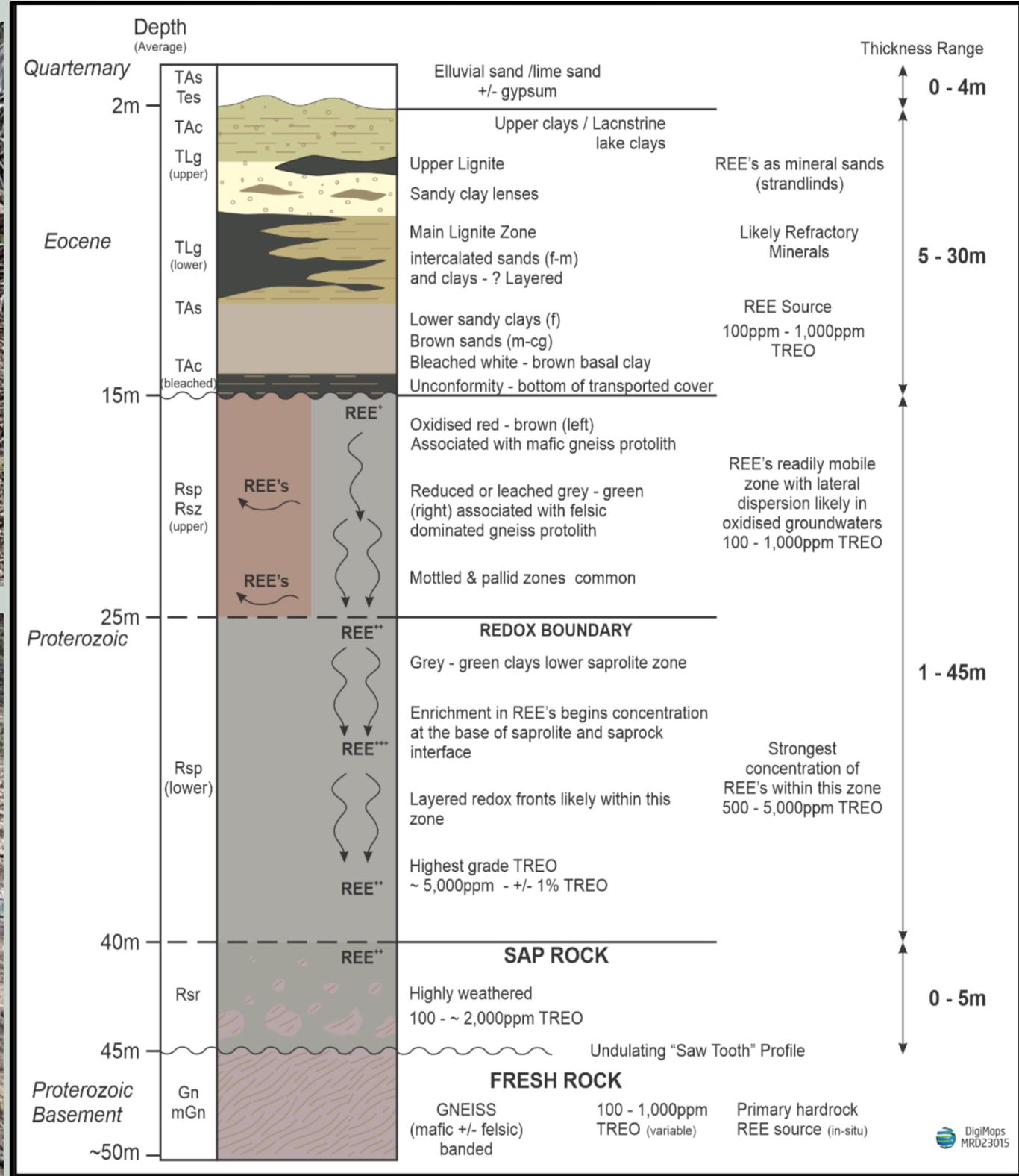
Section shown is 2 km wide.

Assayed holes 100m apart.



CLAY-HOSTED REE MINERALISATION AT THE MIA PROSPECT

Work in progress: Clay species – SWIR, XRD, FTIR



CORPORATE OVERVIEW

Diverse set of skills



Board



Peter Christie
Non-Executive Chairman
Accountant & Governance



Simon Mitchell
Non-Executive Director
Geologist & Corporate



Guy Le Page
Non-Executive Director
Geologist & Corporate

Consultants



David Crook
Technical Manager
Geologist & Corporate



Jonathan Busing
Company Secretary/CFO
Accountant & Governance

Share Price	Shares on Issue
0.2c	7,785m
Market Capitalisation	Options ¹
\$15.56m	1,061m
Cash (18/10/2023)	Performance Rights ²
\$2.1m	290m

¹ MRDAA: 436m Options (exp. 31-Dec-25, ex. 0.5c); MRDAB: 625m Options (exp. 31-Dec-25, ex. 0.3c)

² Held by the Board of Directors, Management, Staff and Consultants

SUMMARY

The pieces are coming together



ACHIEVEMENTS

Weighted Average TREO grade over 1,400 ppm TREO (700 ppm cut-off)

High Value MagREO grade at 25% = 80% of value

Ability to beneficiate which substantially increases the grade – projection 160% (i.e. 1,400ppm TREO projected to become >2,200ppm TREO, ~600ppm MagREO)

Hydrochloric Acid leach sighter tests at 25kg/tonne extracted 85% of MagREO in beneficiated samples.

OUTLOOK

Resource drilling in progress to increase drilling density to 400m spaced lines.

New samples for slurry testing to better estimate acid consumption.

Also Note

Proximate to deep-water port, highway, rail, gas pipeline, renewable energy and airport

3,400km² tenements with 32,600m drilling confirming widespread mineralisation

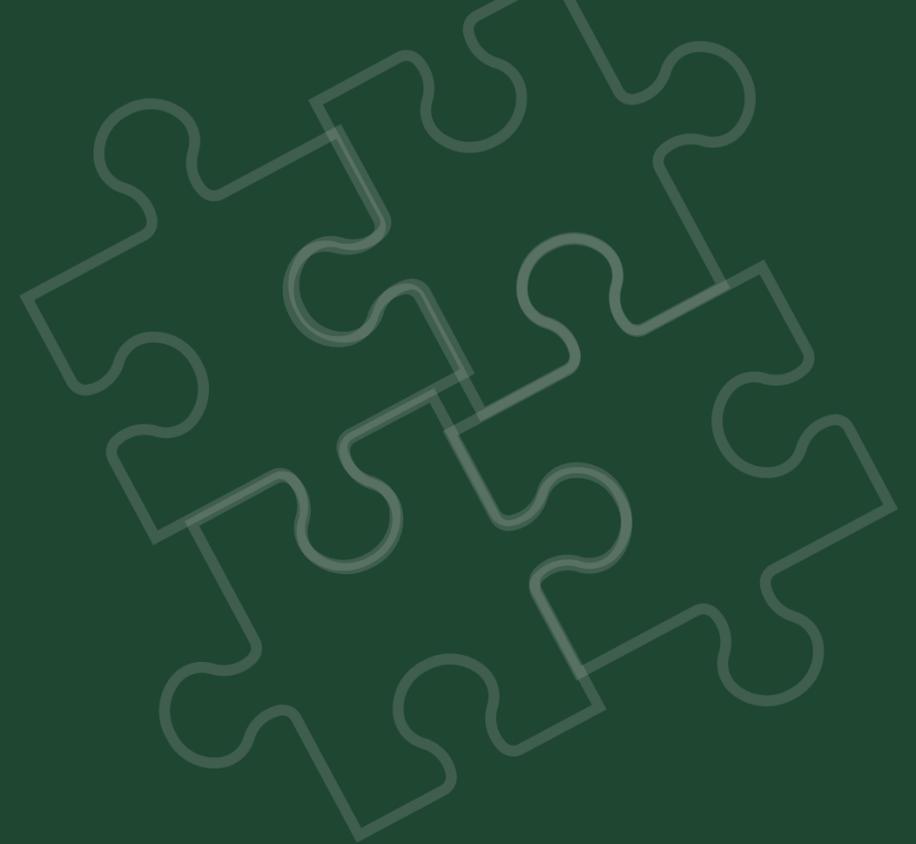
Predominantly located on Crown land

Increase in demand for CREO presents need for supply outside China

Chinese clay-hosted REE production plateaued

\$15m market cap provides leverage for success

Contact Information



+61 8 6165 8858



info@mtridleymines.com.au



mtridleymines.com.au



**Ground Floor, 168 Stirling Hwy
Nedlands, WA 6009**



- REE refers to 14 rare earth elements: cerium (Ce), dysprosium (Dy), erbium (Er), europium (Eu), gadolinium (Gd), holmium (Ho), lanthanum (La), lutetium (Lu), neodymium (Nd), praseodymium (Pr), samarium (Sm), terbium (Tb), thulium (Tm), ytterbium (Yb), plus yttrium (Y)
- REO means the rare earth element converted to its element oxide equivalent using the factors provided at [Element-to-stoichiometric oxide conversion factors - JCU Australia](#). TREO means the sum of the 15 REO.
- Critical or CREO means Critical Rare Earth Oxides; the sum of Dy_2O_3 , Eu_2O_3 , Nd_2O_3 , Tb_4O_7 , plus Y_2O_3
- Light REO or LREO means Light Rare Earth Oxides; the sum of La_2O_3 , CeO_2 , Pr_6O_{11} , Nd_2O_3 , Sm_2O_3 , Eu_2O_3 .
- Heavy REO or HREO means Heavy Rare Earth Oxides; the sum of Gd_2O_3 , Tb_4O_7 , Dy_2O_3 , Ho_2O_3 , Er_2O_3 , Tm_2O_3 , Yb_2O_3 , Lu_2O_3 , Y_2O_3 .
- Rogers, KA, 2014) Esperance Project - Exploration Licences E63/1415, E63/1469, E63/1496, E69/2783, E69/2784, E69/2944 and E69/3010. Combined Annual Technical Report for the Period 6 May 2013 to 5 May 2014. WAMEX A102910. 161p.
- Smithies, RH, Spaggiari, CV, Kirkland, CL, Maier, WD. 2014. Geochemistry and petrogenesis of igneous rocks in the Albany-Fraser Orogen. In: Spaggiari, CV and Tyler, I. Eds. GSWA Record 2014/6, Albany-Fraser Orogen Seismic and MT Workshop: Extended Abstracts: 77-88.
- Spaggiari, CV, Kirkland, CL, Pawley, MJ, Smithies, RH, Wingate, MTD, Doyle, MG, Blenkinsop, TG, Clark, C, Oorschot, CW, Fox, LJ and Savage, J. 2011, The geology of the east Albany-Fraser Orogen —

Also refer to Mount Ridley Mines Limited announcements to ASX

notes