



Australian Critical Rare Earth Minerals

Full Drill Program Summary

2 December 2022

ASX | OD6



Important Information



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Competent Person Statement

The information contained in this presentation that relates to exploration results is based on and fairly represents information and supporting documentation prepared Mr Jeremy Peters, Director of Burnt Shirt Pty Ltd. Mr Peters is a Fellow of the Australasian Institute of Mining and Metallurgy and a Chartered Professional Geologist and Mining Engineer of that organisation. Mr Peters has sufficient experience relevant to the style of mineralisation and type of deposits under consideration, and to the activity which he has undertaken to qualify as a Competent Person as defined in the JORC Code. Mr Peters consents to the inclusion of the matters based on his information in the form and context in which the exploration results and supporting information are presented in this presentation.

No New Information

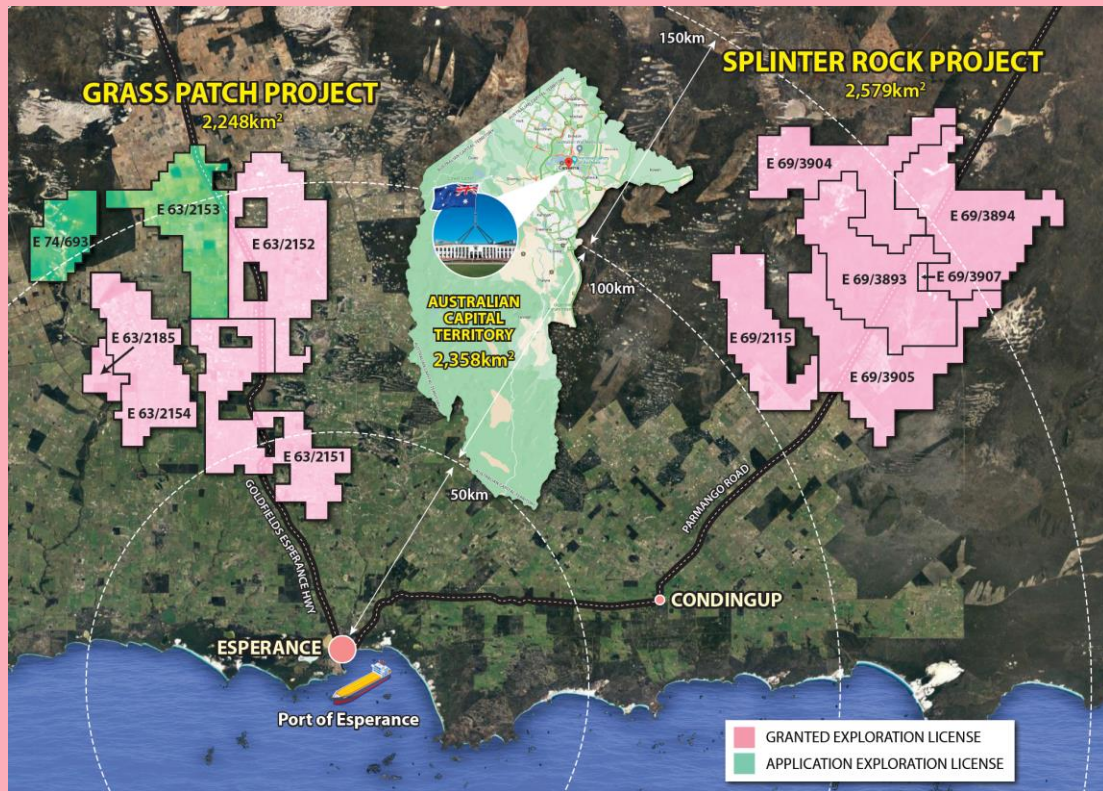
This document contains information extracted from ASX market announcements reported in accordance with the 2012 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" (2012 JORC Code) and available for viewing at <https://www.od6metals.com.au/investors/asx-announcements/>. OD6 confirms that it is not aware of any new information or data that materially affects the information included in any original ASX market announcement.

Massive Landholding – Bigger than the ACT

Substantial 4,828 km² tenement package of **Clay Hosted Rare Earth** Projects

Close to **existing port, sealed roads** and essential infrastructure

Excellent concentrations of **neodymium (Nd) and praseodymium (Pr)**, which are essential elements needed for the green economy



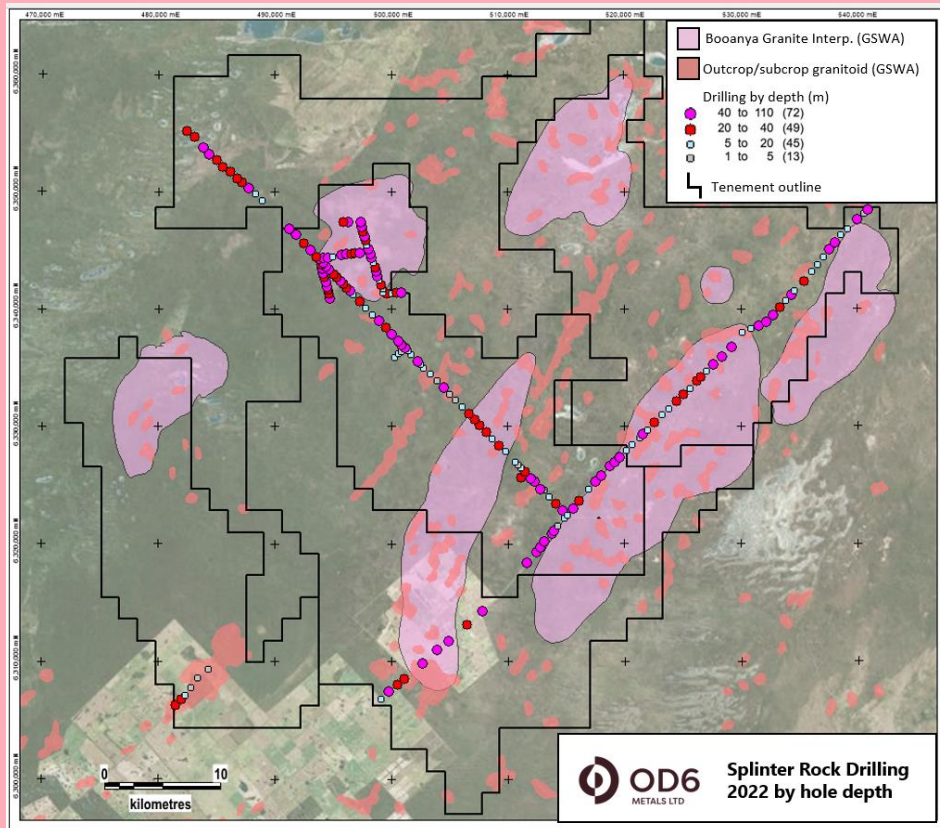
Splinter Rock Drilling Completed October 2022

The clay rare earth mineral enrichment is considered to be formed from weathering of the granites in the area

The completed drill program comprised:

- **5,862m drilling**
- **Average depth of 32.7m**
- **Drill spacing between 200m, 400m and 800m**
- **across 100km of drill lines**

Refer to Drilling Complete at Splinter Rock REE Project, (ASX announcement 3 October 2022).



Highlights - All Assay Results Received to Date



- **Outstanding assay results returned** from the completed **179-hole program**
- **High-grade** clay-hosted rare earths confirmed, with **large thicknesses over extensive areas**
- **Grades up to 6,729 ppm** Total Rare Earth Oxides (TREO)
- **Six significant prospects** defined, each prospect extends between **4 to 13 km** along drill-lines
- **Scrum and Prop Prospects significantly expanded in multiple directions and on additional perpendicular and/or parallel drill lines**, each prospect extends between **6 x 4km and 13 x 5km** respectively
- **High value Nd+Pr** oxides (NdPr) represent an **average of 20.4% of TREO grade**
- **High value Magnet Rare Earth Oxides** represent an **average of 21.9% of TREO grade**
- **Heavy Rare Earth Oxides** represents an average of **11.9% of TREO grade**
- **Extensive clay thickness** for the Prospects which vary **between 10-30m and up to 80m**
- **41%** of holes assayed have grades greater than **750ppm TREO**
- All assays using **4-acid soluble digestion** (i.e. does not assay for resistate non-acid soluble REE minerals)

Significant Intersections >750ppm TREO

- **18 metres** at 2,249ppm TREO (24.4% Magnet REO) from 21 metres (SRAC0042)
- **17 metres** at 2,162ppm TREO (21.5% Magnet REO) from 15 metres (SRAC0091)
- **18 metres** at 2,170ppm TREO (5.2% Magnet REO) from 33 metres (SRAC0150)
- **14 metres** at 2,059ppm TREO (23 % Magnet REO) from 21 metres (SRAC0023)
- **29 metres** at 1,842ppm TREO (20.7% Magnet REO) from 57 metres (SRAC0081)
- **27 metres** at 1,716ppm TREO (22.2% Magnet REO) from 18 metres (SRAC0033)
- **13 metres** at 1,691ppm TREO (24% Magnet REO) from 27 metres (SRAC0086)
- **29 metres** at 1,585ppm TREO (24.4% Magnet REO) from 27 metres (SRAC0151)
- **11 metres** at 1,575ppm TREO (24.6% Magnet REO) from 33 metres (SRAC0039)
- **15 metres** at 1,455ppm TREO (23.6% Magnet REO) from 21 metres (SRAC0069)
- **21 metres** at 1,446ppm TREO (22.6% Magnet REO) from 18 metres (SRAC0056)
- **12 metres** at 1,337ppm TREO (23.2% Magnet REO) from 30 metres (SRAC0075)
- **21 metres** at 1,273ppm TREO (23.4% Magnet REO) from 24 metres (SRAC0082)
- **27 metres** at 1,188ppm TREO (25.2% Magnet REO) from 36 metres (SRAC0070)
- **20 metres** at 1,106ppm TREO (22.7% Magnet REO) from 36 metres (SRAC0072)
- **39 metres** at 1,060ppm TREO (22% Magnet REO) from 24 metres (SRAC0080)
- **30 metres** at 1,079ppm TREO (24.6% Magnet REO) from 6 metres (SRAC0022)
- **33 metres** at 926ppm TREO (23.4% Magnet REO) from 27 metres (SRAC0039)

Drill assay results have revealed

- **outstanding high TREO grade zones**
- **over extensive thicknesses**
- **close to surface**
- **with excellent concentrations of Magnetic Rare Earths**

Significant Intersections >300ppm TREO

- **21 metres** at 2,029ppm TREO (24.2% Magnet REO) from 18 metres (SRAC0042)
- **29 metres** at 1,842ppm TREO (20.7% Magnet REO) from 57 metres (SRAC0081)
- **20 metres** at 1,623ppm TREO (23.2% Magnet REO) from 15 metres (SRAC0023)
- **30 metres** at 1,576ppm TREO (22.1% Magnet REO) from 15 metres (SRAC0033)
- **21 metres** at 1,446ppm TREO (22.6% Magnet REO) from 18 metres (SRAC0056)
- **27 metres** at 1,400ppm TREO (23.2% Magnet REO) from 18 metres (SRAC0149)
- **21 metres** at 1,273ppm TREO (23.4% Magnet REO) from 24 metres (SRAC0082)
- **41 metres** at 1,262ppm TREO (24.1% Magnet REO) from 15 metres (SRAC0151)
- **30 metres** at 1,203ppm TREO (21% Magnet REO) from 30 metres (SRAC0063)
- **30 metres** at 1,079ppm TREO (24.6% Magnet REO) from 6 metres (SRAC0022)
- **29 metres** at 1,073ppm TREO (23.4% Magnet REO) from 28 metres (SRAC0075)
- **39 metres** at 1,060ppm TREO (22% Magnet REO) from 24 metres (SRAC0039)
- **48 metres** at 943ppm TREO (24.4% Magnet REO) from 30 metres (SRAC0070)
- **33 metres** at 926ppm TREO (23.4% Magnet REO) from 27 metres (SRAC0077)
- **80 metres** at 918ppm TREO (13.5% Magnet REO) from 15 metres (SRAC0150)
- **46 metres** at 800ppm TREO (22.5% Magnet REO) from 6 metres (SRAC0028)
- **32 metres** at 842ppm TREO (23% Magnet REO) from 24 metres (SRAC0072)

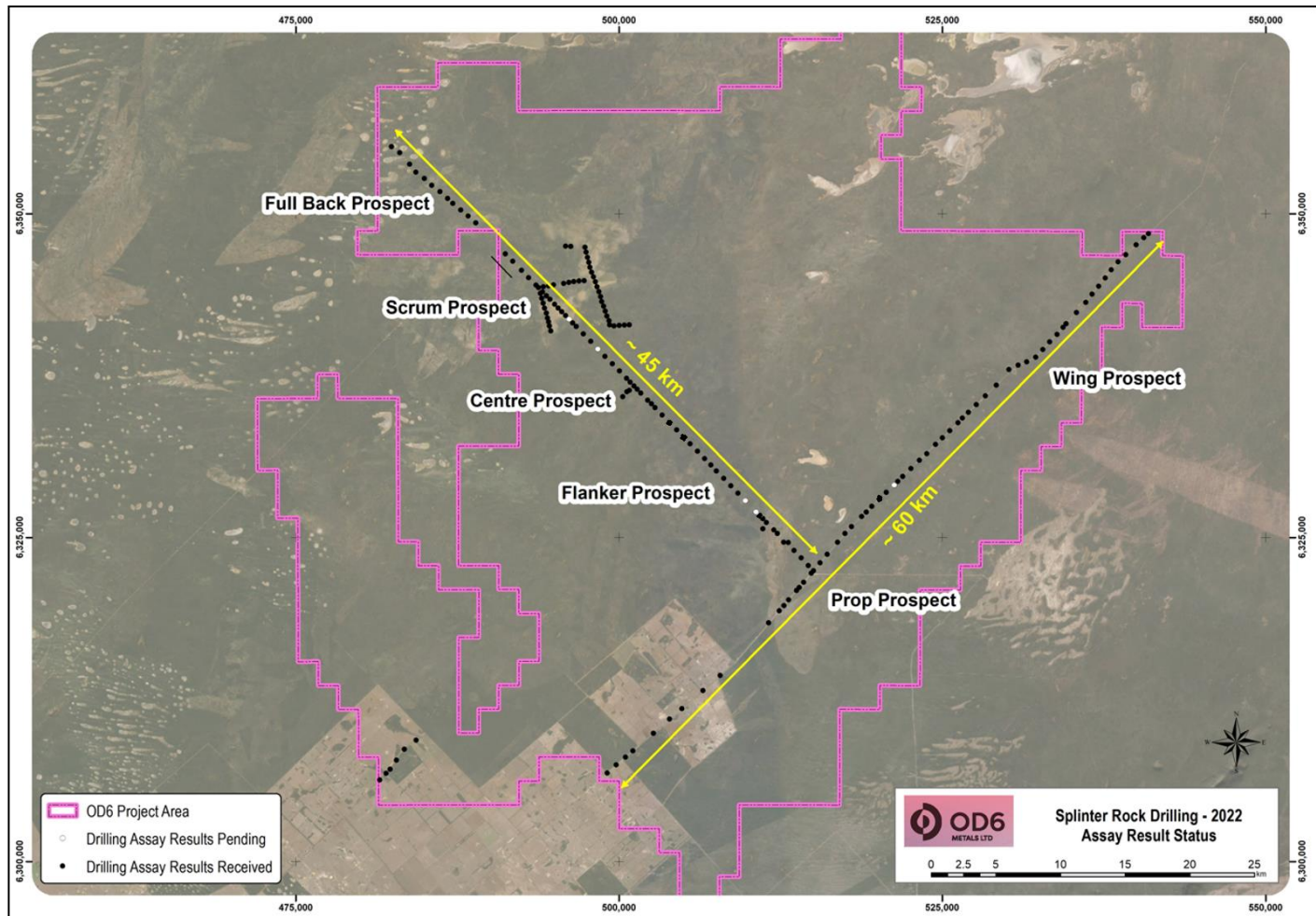
Drill assay results have revealed

- excellent grades above a 300ppm TREO cut off
- over extensive thicknesses
- close to surface
- with excellent concentrations of Magnetic Rare Earths

TREO (Total Rare Earth Oxide) = $\text{La}_2\text{O}_3 + \text{CeO}_2 + \text{Pr}_6\text{O}_{11} + \text{Nd}_2\text{O}_3 + \text{Sm}_2\text{O}_3 + \text{Eu}_2\text{O}_3 + \text{Gd}_2\text{O}_3 + \text{Tb}_4\text{O}_7 + \text{Dy}_2\text{O}_3 + \text{Ho}_2\text{O}_3 + \text{Er}_2\text{O}_3 + \text{Tm}_2\text{O}_3 + \text{Yb}_2\text{O}_3 + \text{Lu}_2\text{O}_3 + \text{Y}_2\text{O}_3$

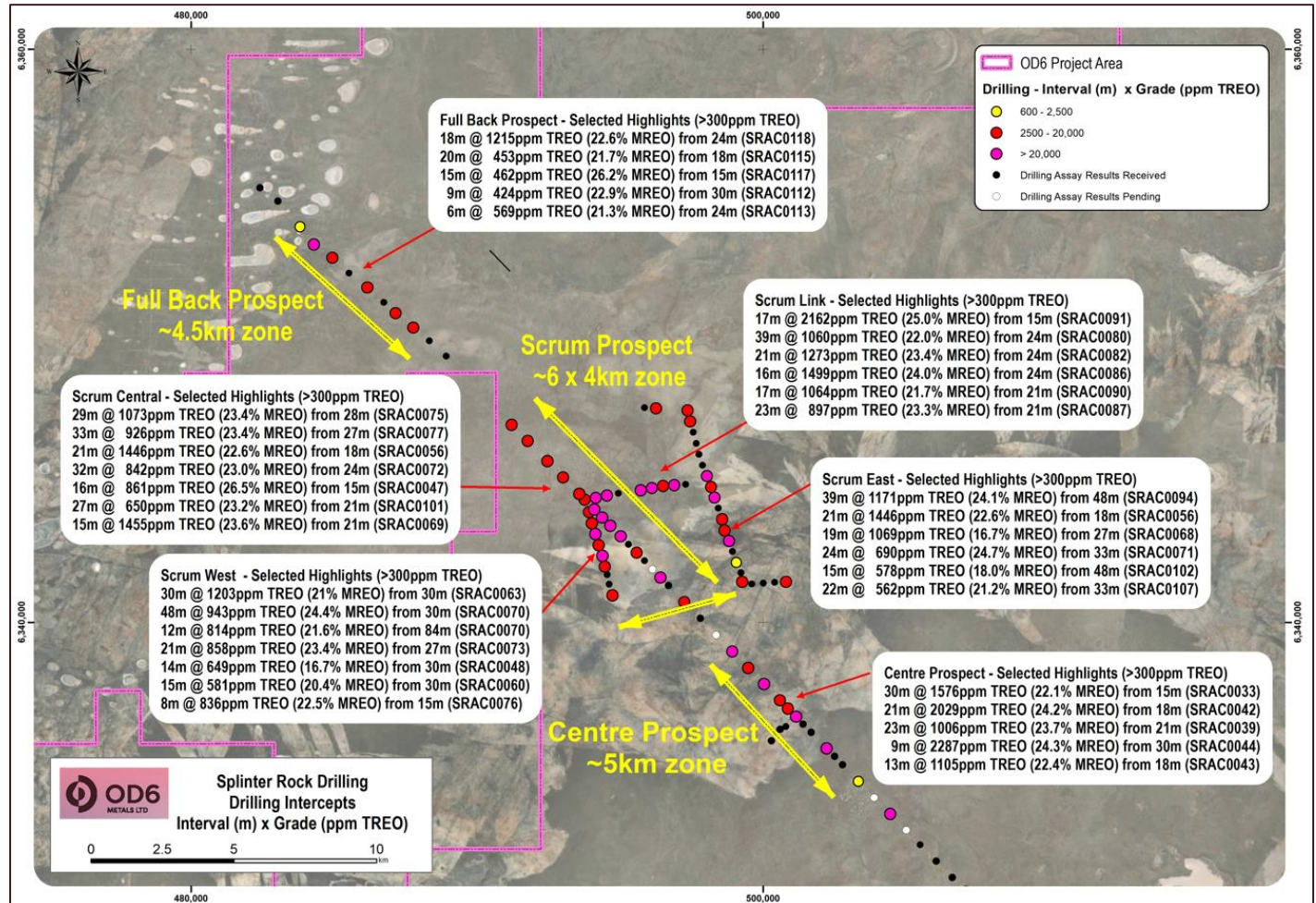
Magnet REO (Magnet Rare Earth Oxide) = $\text{Nd}_2\text{O}_3 + \text{Pr}_6\text{O}_{11} + \text{Tb}_4\text{O}_7 + \text{Dy}_2\text{O}_3$ % Magnet REO = $\text{Mag REO} / \text{TREO}$

Assay results
have been
received for
the completed
179-hole
program, with
6 Significant
Prospects
Identified



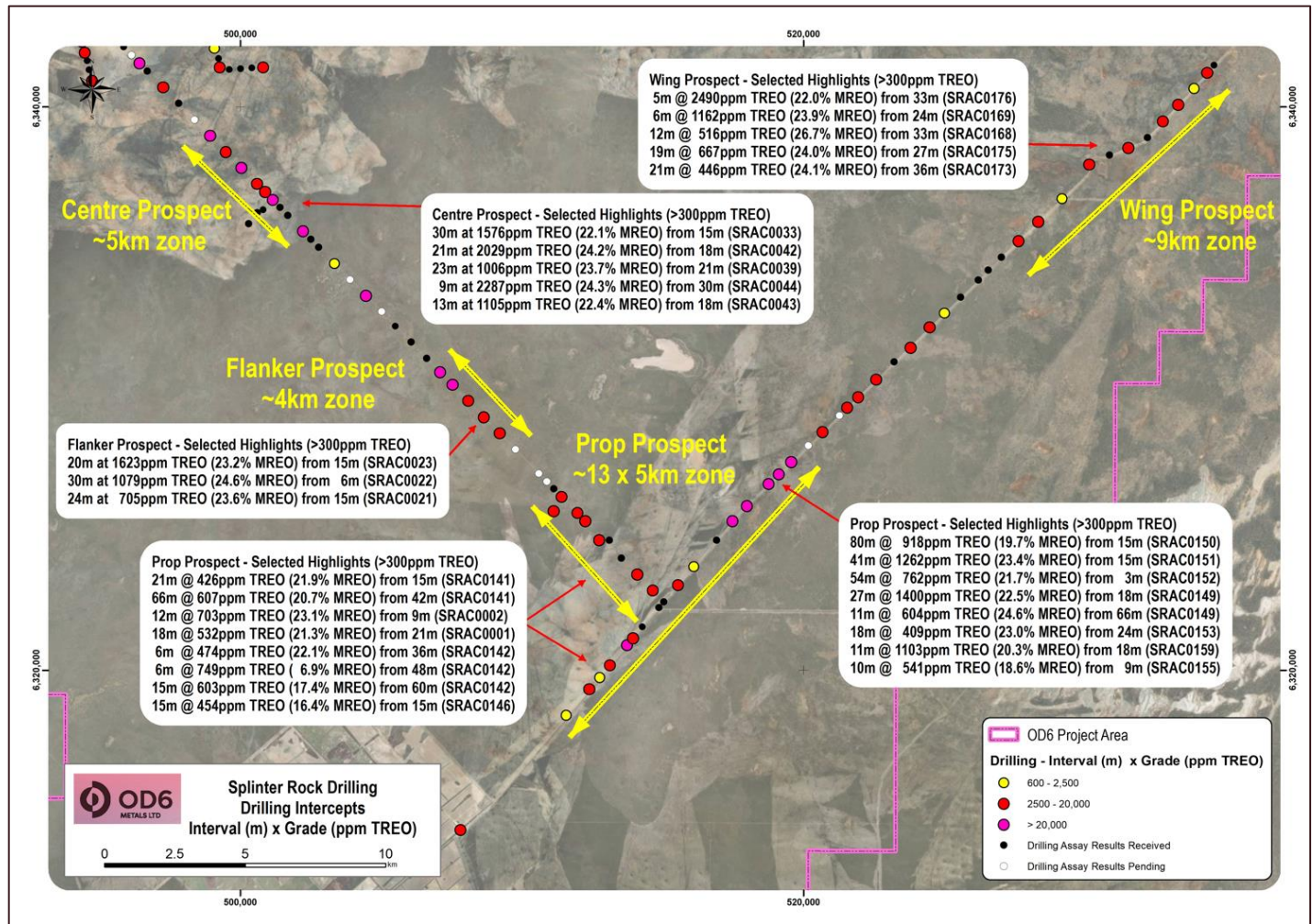
Each Prospect shown is over 4km wide

Scrum covers an extensive 6 x 4km zone



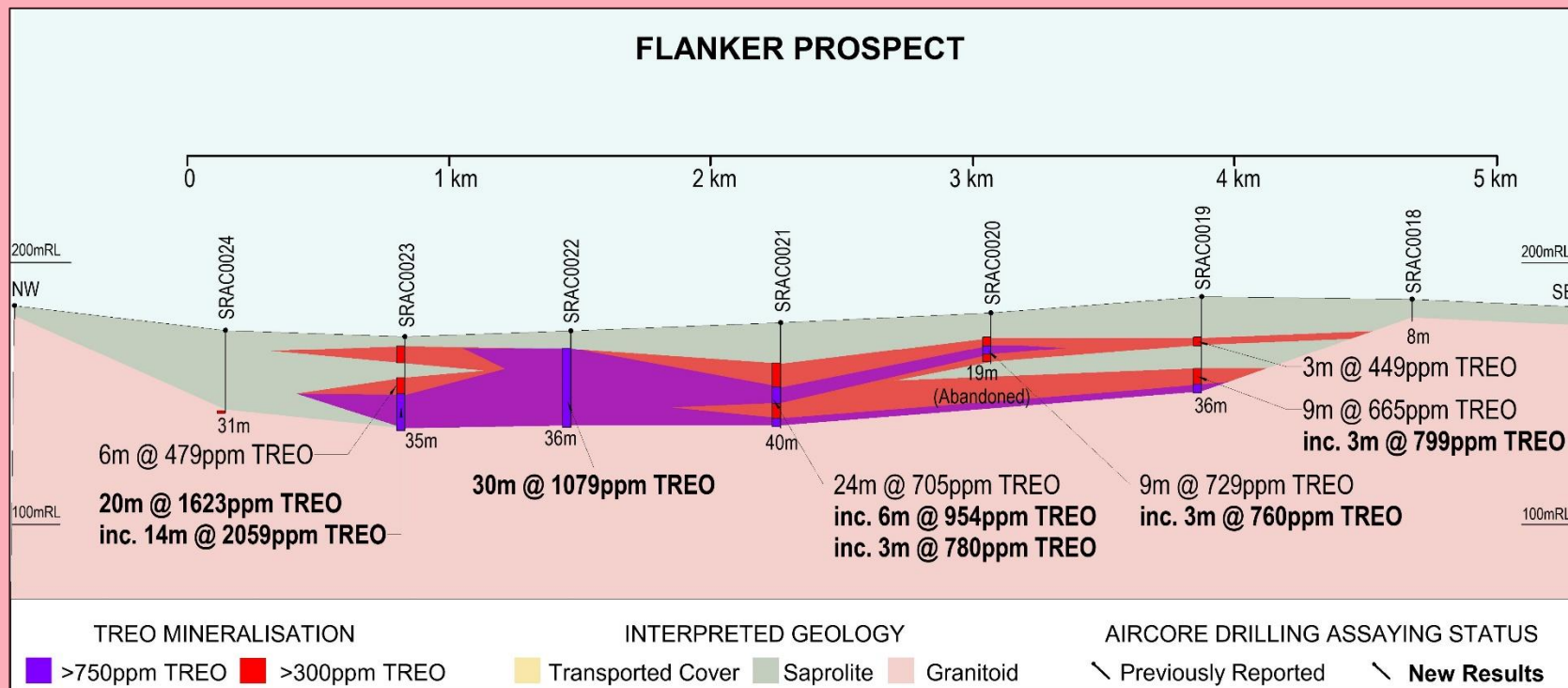
Each Prospect shown is over 4km wide

Prop covers a sizeable 13 x 5km zone



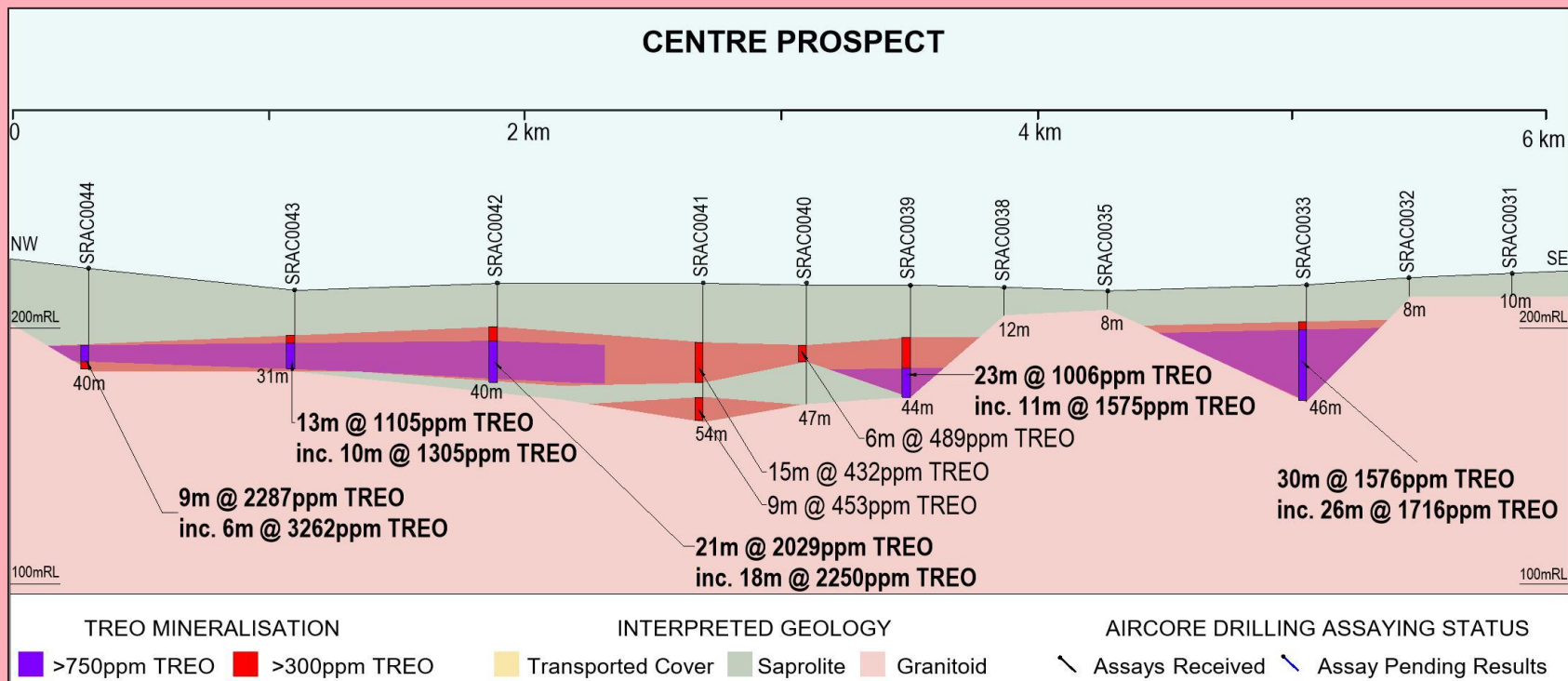
Splinter Rock – Flanker Prospect

Clay hosted rare earths are **20-30m thick** with assays up to **1,623ppm TREO**



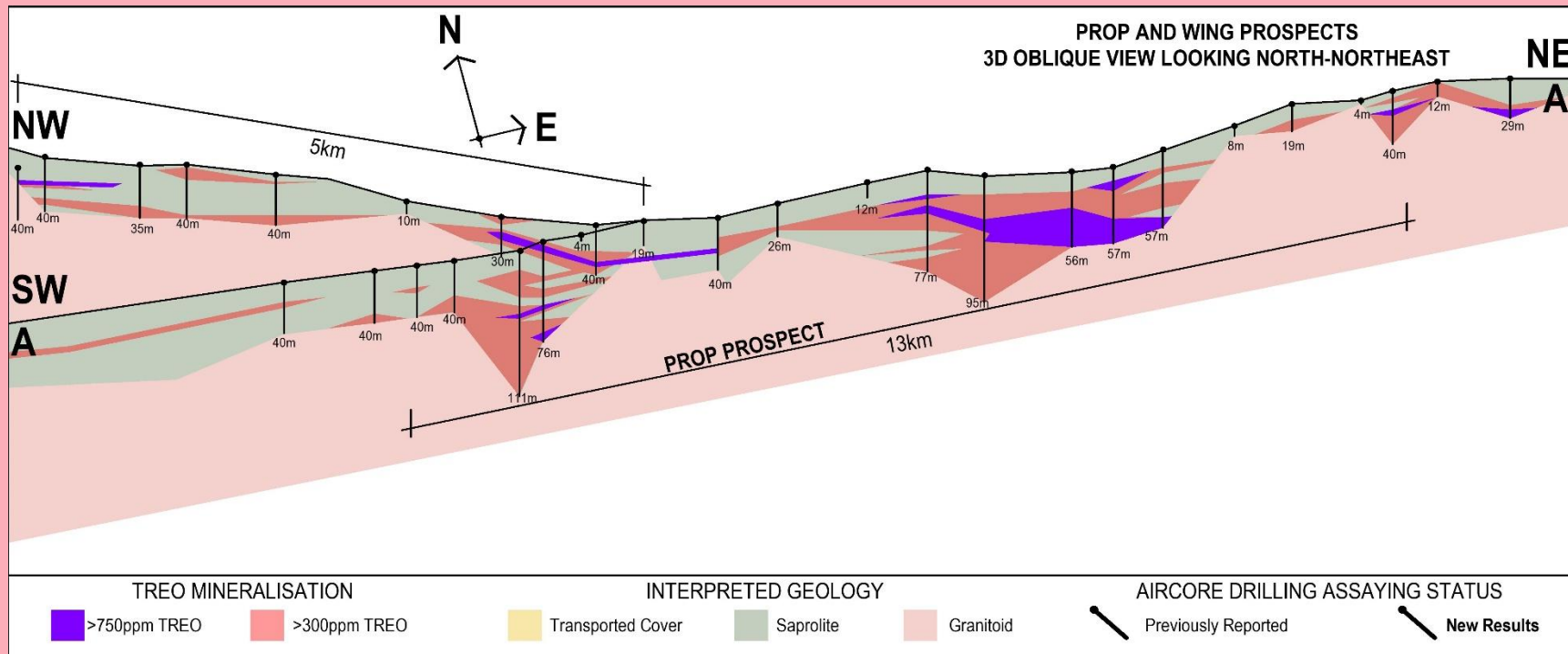
Splinter Rock – Centre Prospect

Clay hosted rare earths are **10-30m thick** with assays up to **3,262ppm TREO**



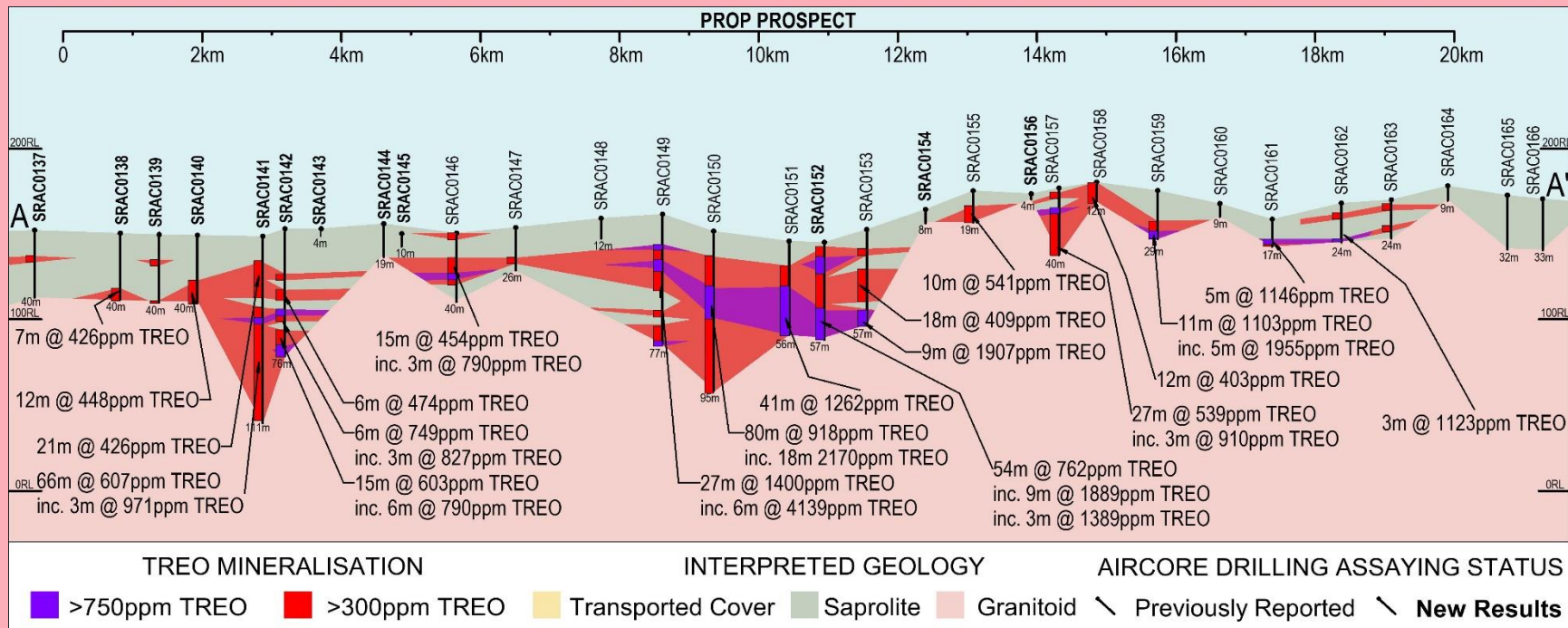
Splinter Rock – Prop Prospect (3D View)

Prop covers a sizeable **13 x 5km zone with thickness up to 80m**



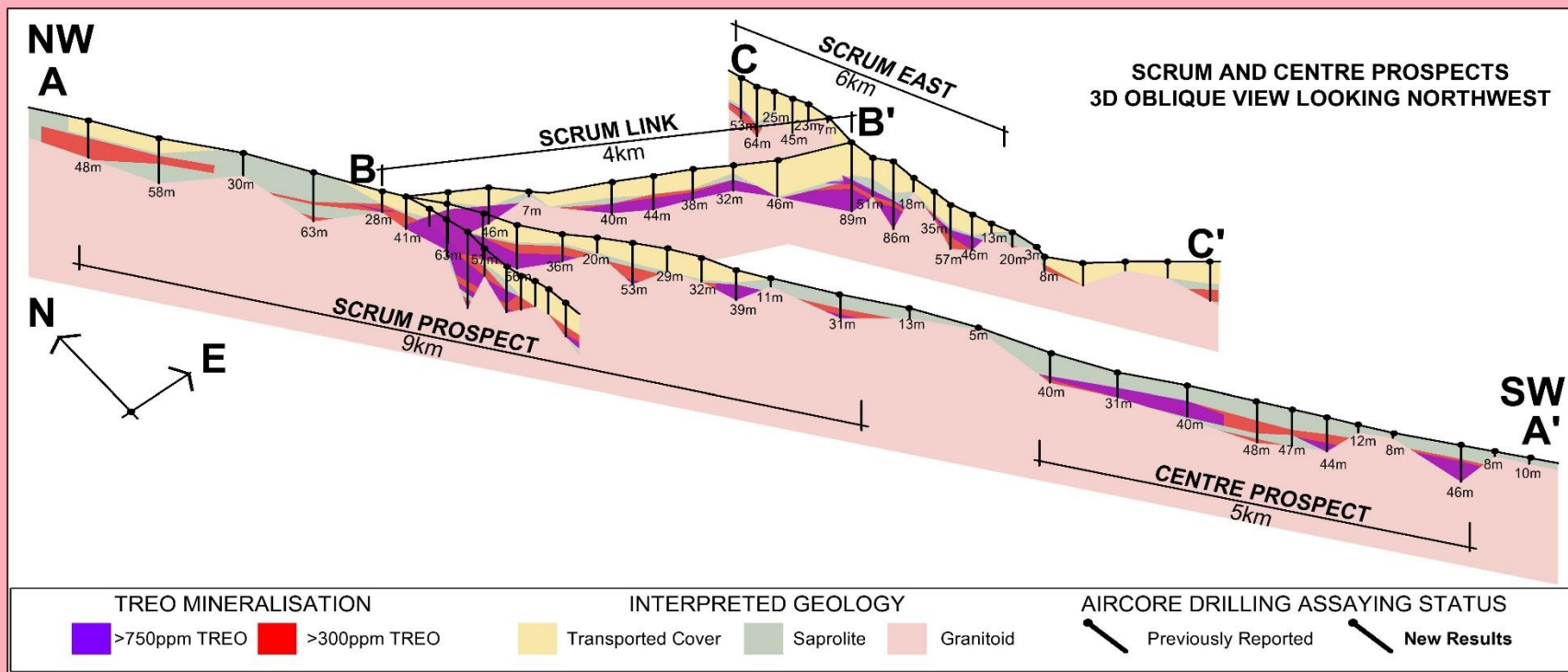
Splinter Rock – Prop Prospect

Clay hosted rare earths are **10-80m thick** with assays up to **4,139ppm TREO**



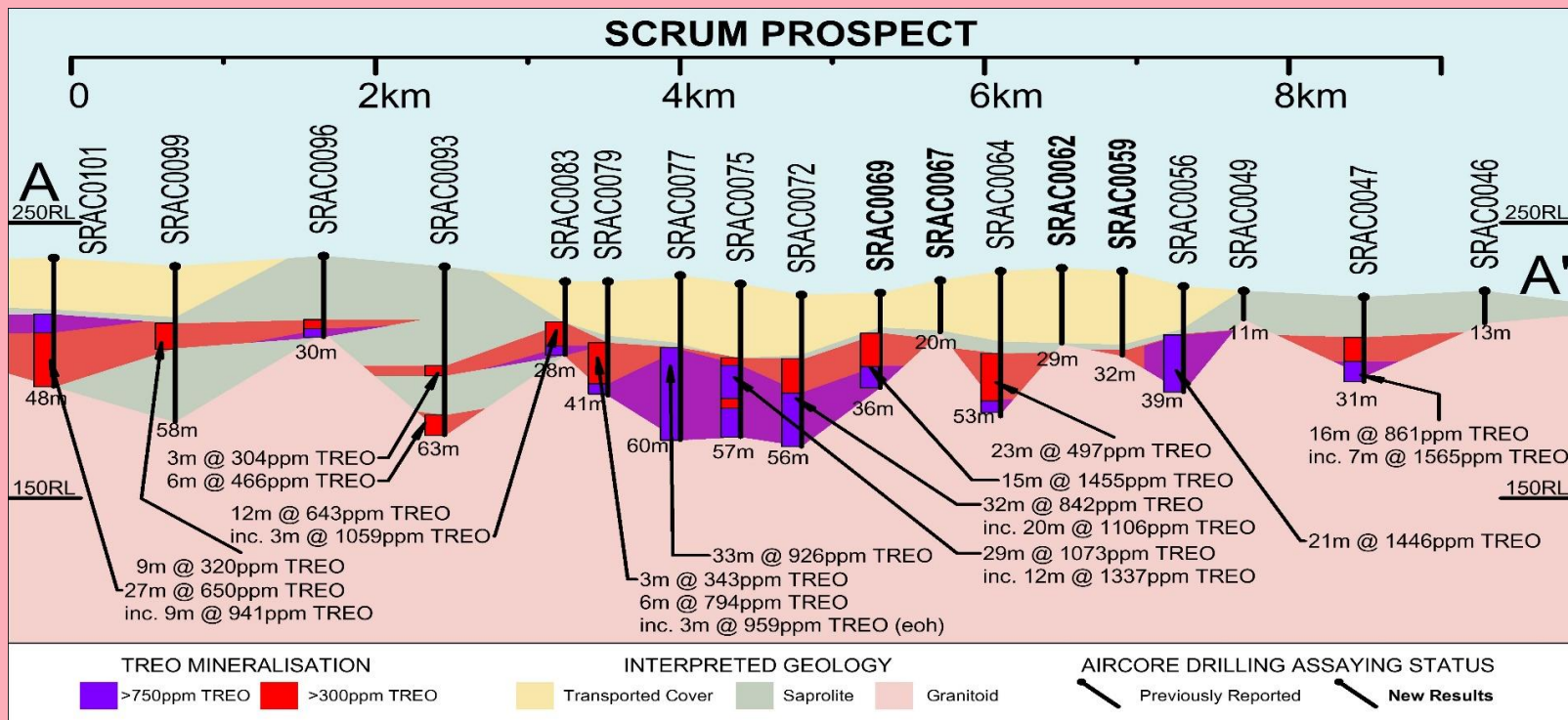
Splinter Rock – Scrum Prospect (3D View)

Scrum covers an extensive **6 x 4km zone with thickness up to 48m**



Splinter Rock – Scrum Prospect (NW-SE Line)

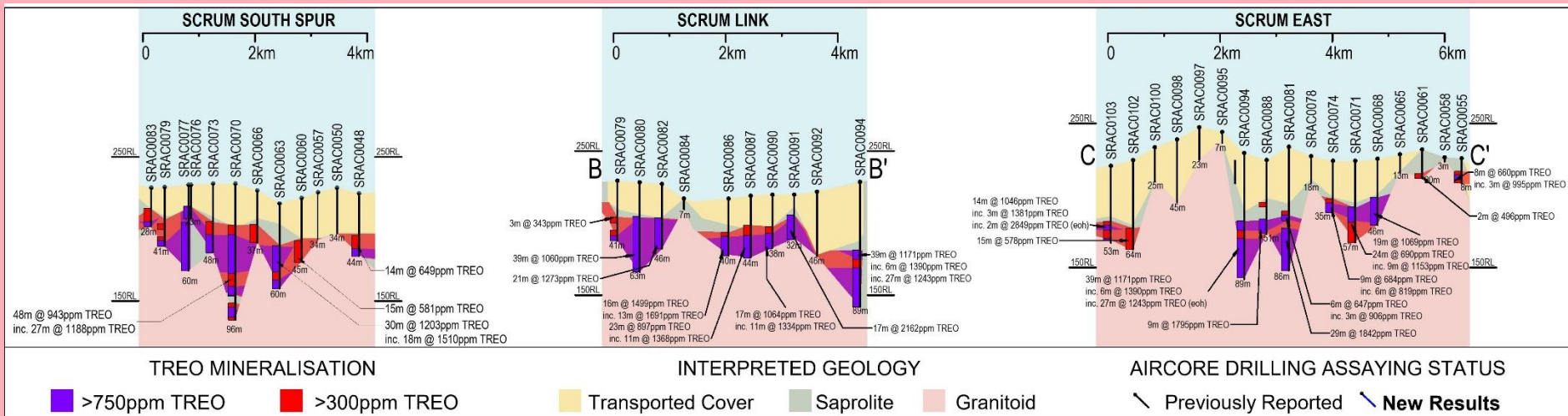
Clay hosted rare earths are **12-33m thick** with assays up to **1,565ppm TREO**



Splinter Rock – Scrum Prospect

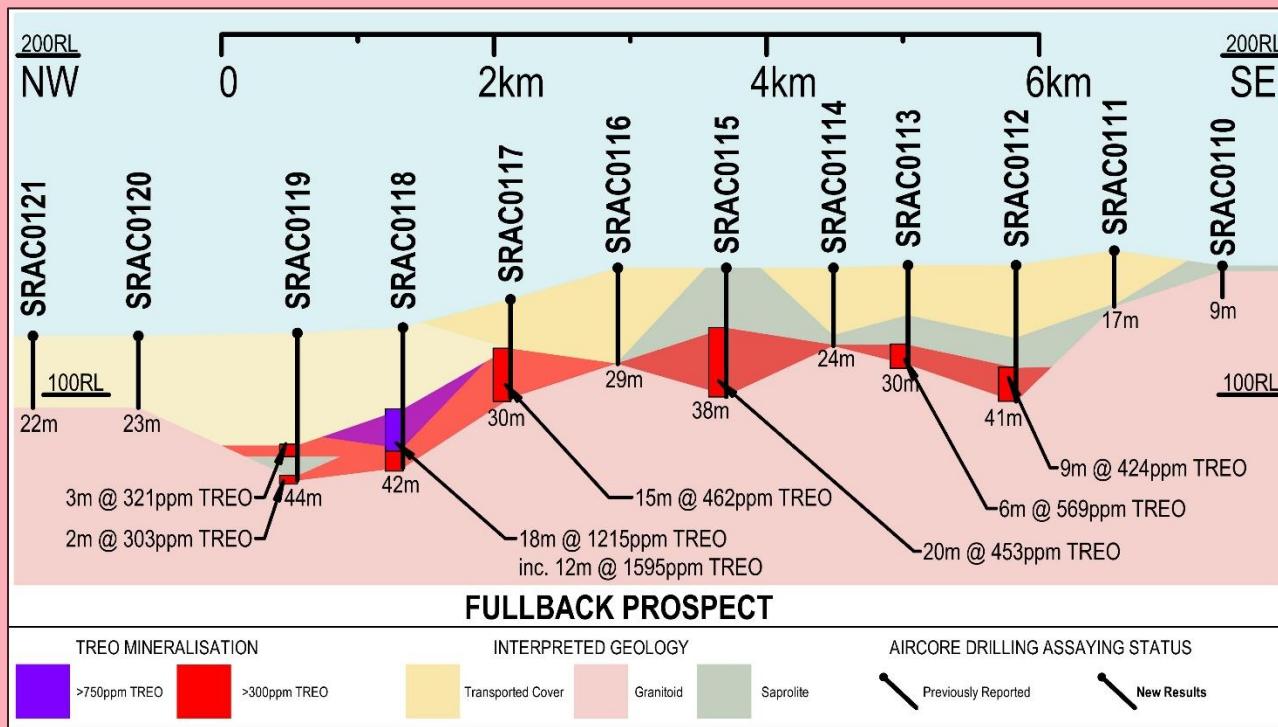
Scrum has three additional drill lines completed to date each 4km in length

Clay hosted rare earths are **10-48m thick** with assays up to **2,162ppm TREO**



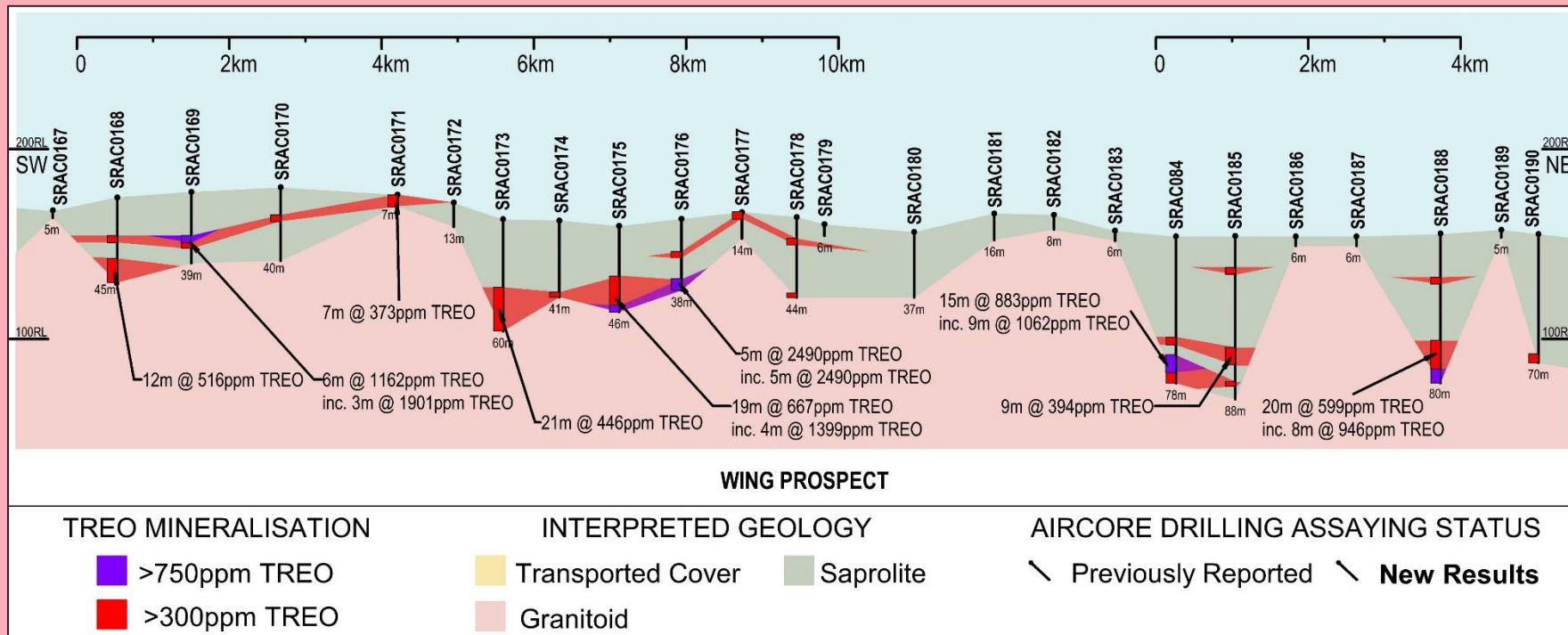
Splinter Rock – Full Back Prospect

Clay hosted rare earths are **5-20m thick** with assays up to **1,595ppm TREO**



Splinter Rock – Wing Prospect

Clay hosted rare earths are **5-21m thick** with assays up to **2,490ppm TREO**



Airborne Electromagnetics – Clay Mapping

Airborne geophysics survey across Splinter Rock and Grass Patch are nearing completion

Aiming to identify and map clay locations, expanse, depth and thickness across all granted OD6 Tenements

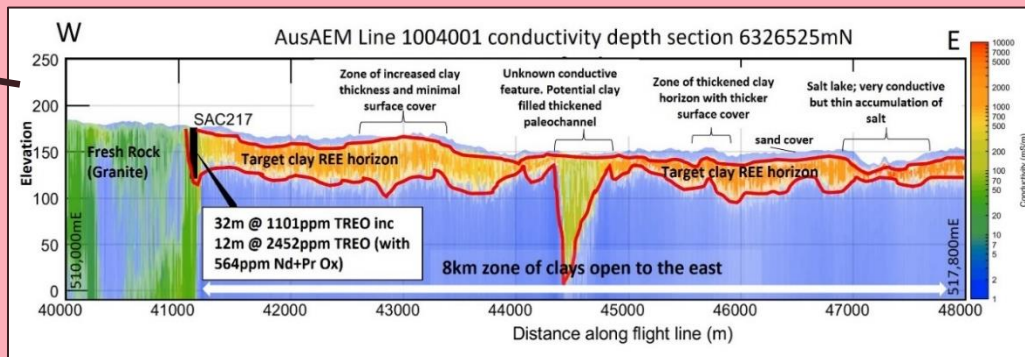
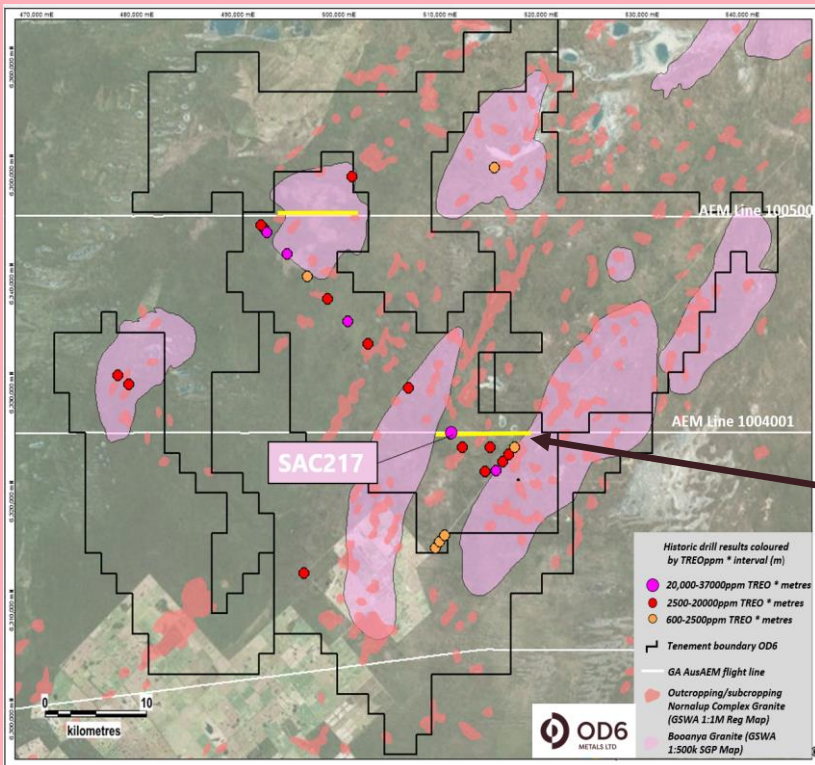
Analysis of data to be undertaken during Q1 2023



Initial Clay Mapping Success at Splinter Rock

CSIRO and OD6 Metals are collaborating on techniques to improve rare earth exploration

- Identified clays of 10-50m in thickness
- Clays zones of multiple kms in length
- Enables future targeted drilling of shallow, thick clay horizons



Preliminary metallurgical testwork by other companies with similar styles of clay REE in the region have demonstrated that REE can be extracted by potentially low-cost acid extraction methods similar to those used in China^{1&2}

OD6 geo-metallurgical testwork to Commence in Q4 2022

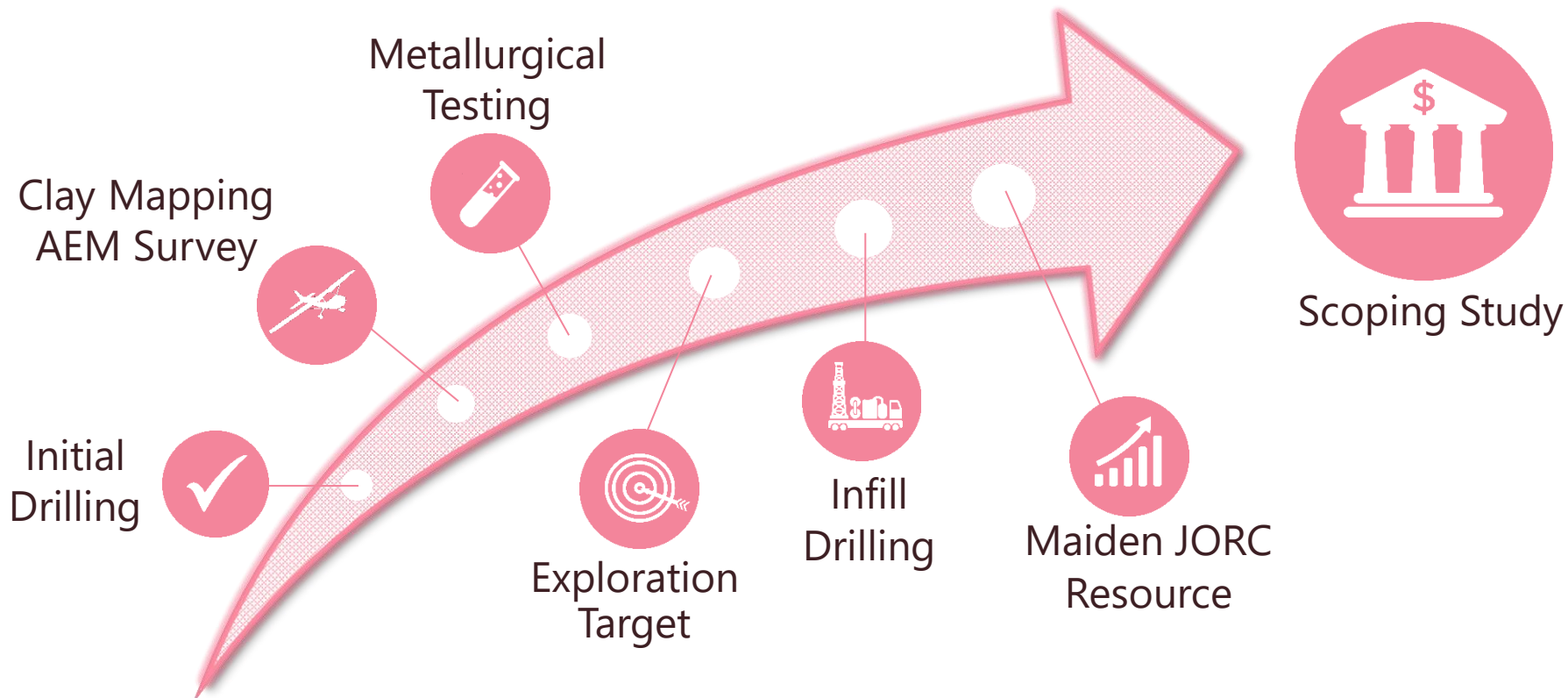
- ANSTO leaching trials and recovery optimization
- CSIRO Hylogging and XRD
- Mineralogy
- Investigate upgrade opportunities eg size by assay

Refer to Independent Geological Report in the Company Prospectus for further information, (ASX announcement "Prospectus" 20 June 2022).

1. There has been no metallurgical test work on the drillholes within the OD6 tenements directly, but there has been test work by projects in the region by Salazar and Mt Ridley Mines Ltd. Refer to reference list in Independent Geological Report in the Company Prospectus

2. Wang, D-H *et al*, 2018. Exploration and research progress on ion-adsorption type REE deposit in Southern China. *China Geology*, 3, 415-424

Splinter Rock Work Program





Brett Hazelden
MD & CEO



“The previously defined Scrum and Prop Prospects now have multiple, perpendicular and/or parallel drill lines and each cover an area of between 6 x 4km and 13 x 5km respectively. The additional drill lines provide an added dimension to these prospects, with results continuing to return clay thicknesses between 10 to 30m, which are also close to surface. These are vast areas.

Our Airborne Electromagnetic Survey is nearing completion and once the data has been fully assessed we expect to confirm additional, untested future drill targets.

We are staggered with the scale implied by our exploration at Splinter Rock to date and the potential that is unfolding before us. Our attention now turns to prioritising our six defined prospects for advancement in the next phase of exploration drilling. We are working towards delineation of a potential Mineral Resource Estimate that optimises key economic factors such as metallurgical recoveries, acid consumption, depth of the shallow cover, stripping ratio, head grade and mineralised thickness.”

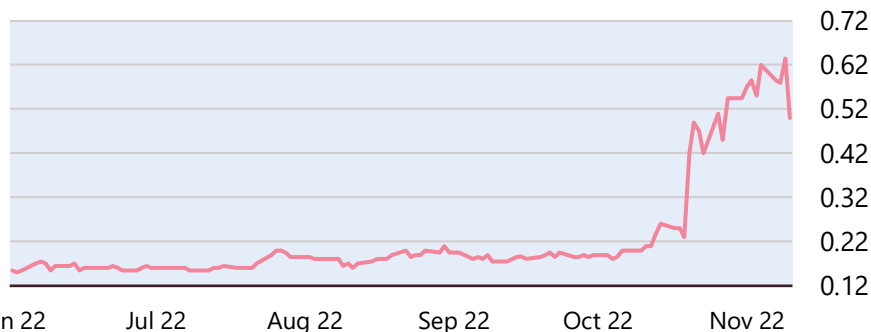
Corporate Snapshot

Capital Structure

ASX: OD6

Price per share ¹	A\$0.50
Total number of shares on issue ²	102.45M
Performance rights and options ²	32.70M
Market capitalisation (undiluted) ¹	A\$51.22M
Cash ²	A\$7.08M
Debt ²	A\$0.00M
Enterprise value ¹	A\$44.14M

Share Price History



Notes: 1. As at 1 December 2022, 2. As at 30 September 2022



Dr Darren Holden
NON-EXECUTIVE CHAIR



Mr Brett Hazelden
MANAGING DIRECTOR

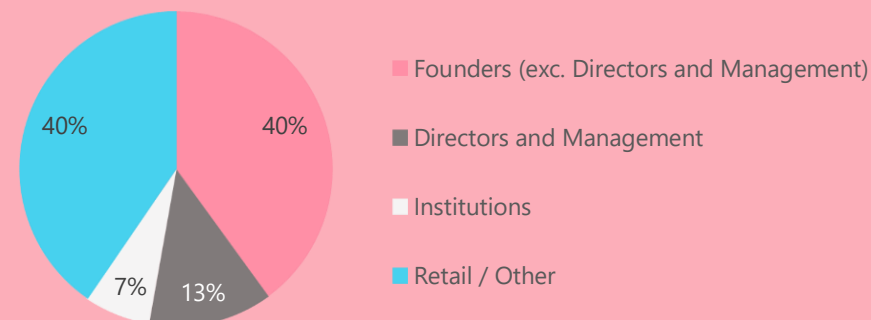


Mr Piers Lewis
NON-EXECUTIVE DIRECTOR



Dr Mitch Loan
NON-EXECUTIVE DIRECTOR

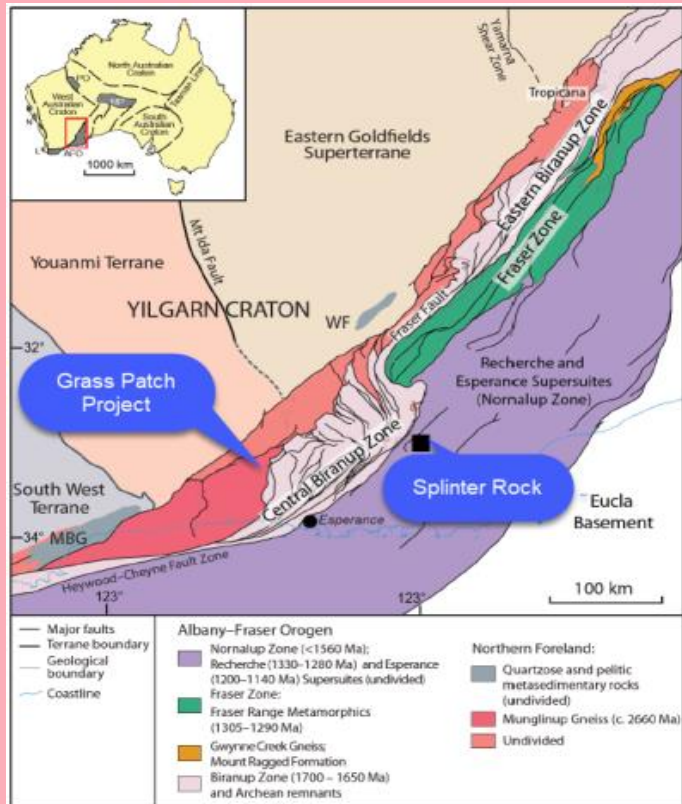
Register Detail



Key Highlights

- ✓ **Explosion in demand for critical rare earth minerals**
- ✓ **Drilling has confirmed thick, near surface, high grade clay hosted rare earth elements across 6 Significant Prospects**
- ✓ **Airborne geophysics aiming to map clay locations, expanse, depth and thickness across all granted OD6 Tenements**
- ✓ **Strong potential for globally-significant REE resource definition across a 45 x 60km target area**
- ✓ **Close proximity to Esperance port, town and roads**
- ✓ **Low carbon “Green Rare Earth” potential**
- ✓ **Well funded with over \$7M cash in the bank at end of Sept Quarter**

ADDITIONAL INFORMATION

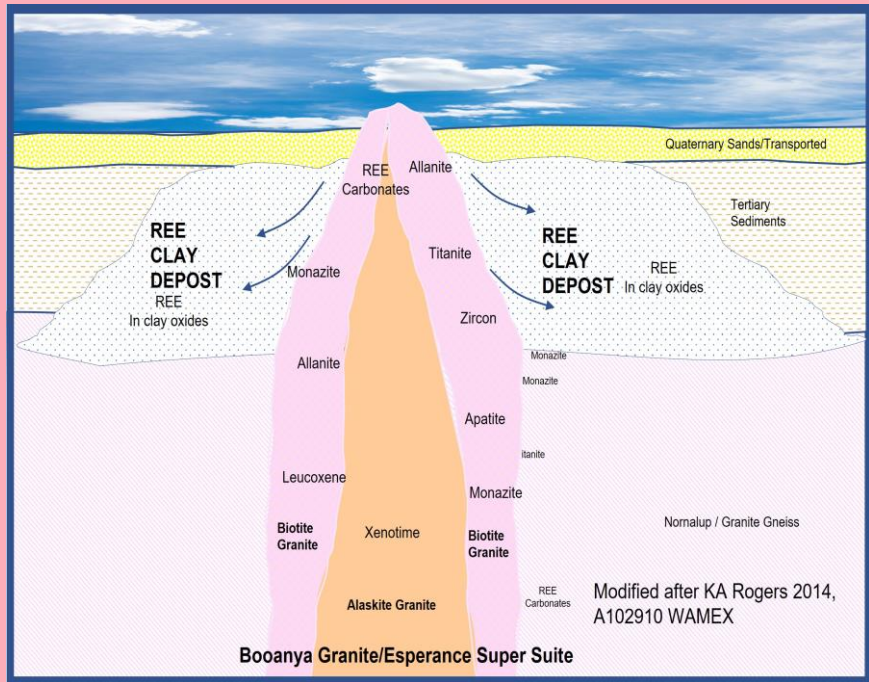


Yilgarn Tectonic plate boundary zone, intruded by granitoids
~1.2B years ago

Glaciation ~250 million years ago resulted in deep weathering

Recent highly acidic ground water and topographic differences may have mobilized REEs into the groundwater.

Metallogenic Model



The clay rare earth mineral enrichment is considered to be formed from weathering of the granites in the area

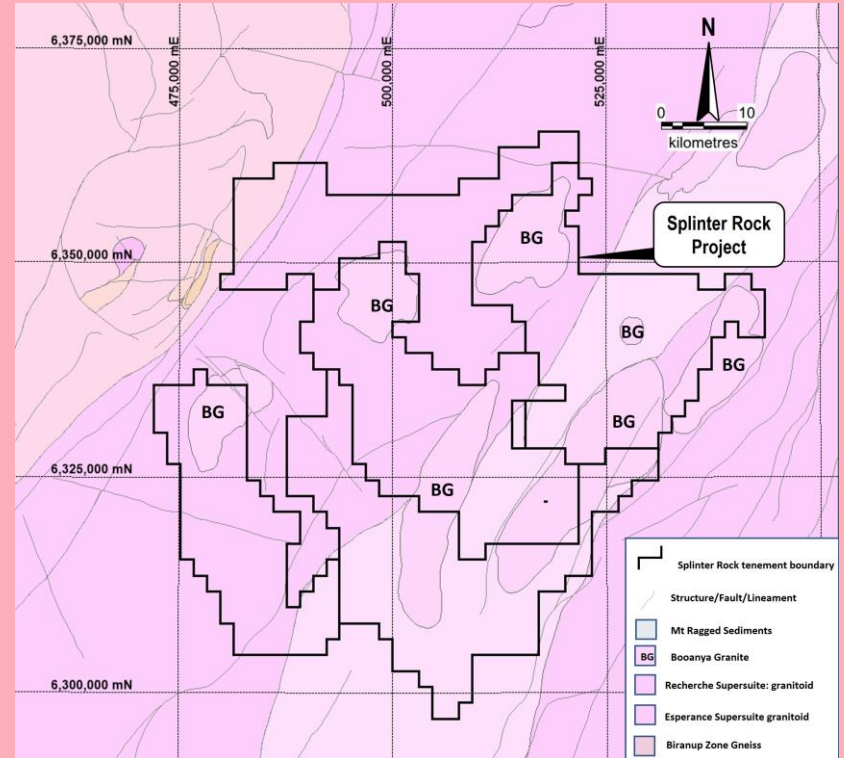
REE bearing minerals such as monazite and xenotime have weathered to clay and phosphates such as rhabdophane (hydrous REE minerals potentially dissolvable in acid)

Project Geology

The Splinter Rock tenure and exploration model has targeted Booanya granites

They are described in Geoscience Australia's database as "heavily enriched in REE"

The strong enrichments in REE distinguishes granites of the Booanya Suite from all other granite groups of the Albany–Fraser Orogen

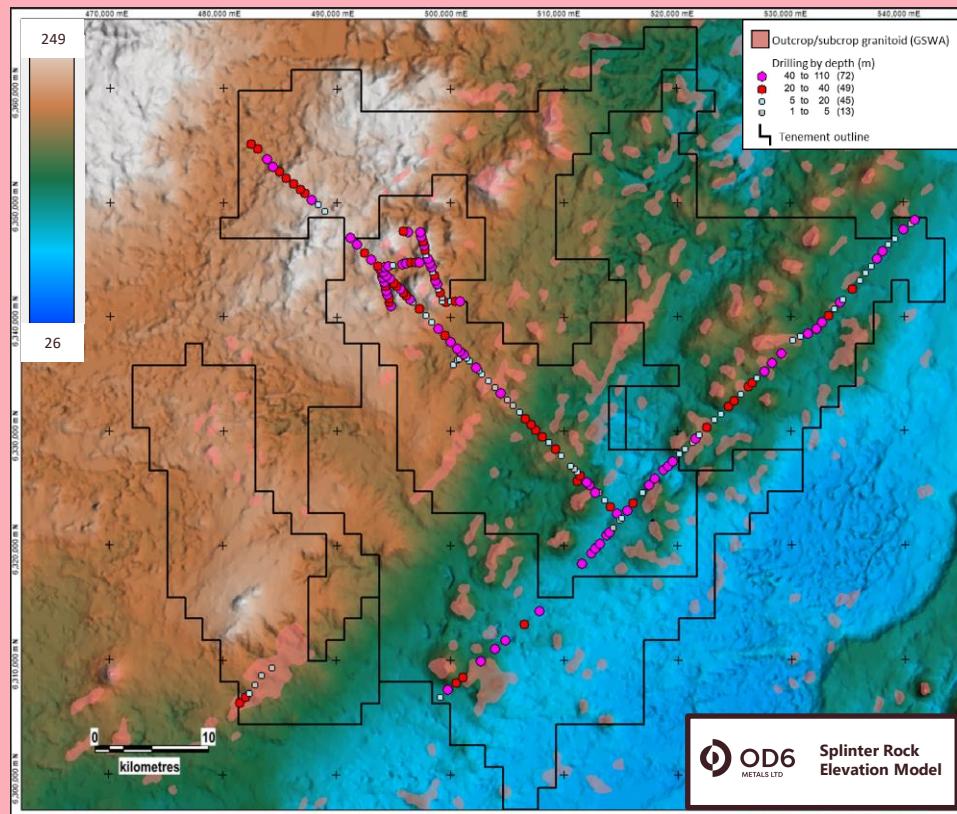


Refer to Independent Geological Report in the Company Prospectus for further information, (ASX announcement "Prospectus" 20 June 2022).

Source Smithies, R.H., Spaggiari, C.V., Kirkland, C.L. Building the crust of the Albany-Fraser Orogen: Constraints from Granite Geochemistry. Geological Survey of Western Australia. Report 150, 2015

Elevation Change

The significant elevation change called the “Ravensthorpe Ramp” may be a key exploration driver of potential clay types, deposition thickness, grade and future REE recoveries



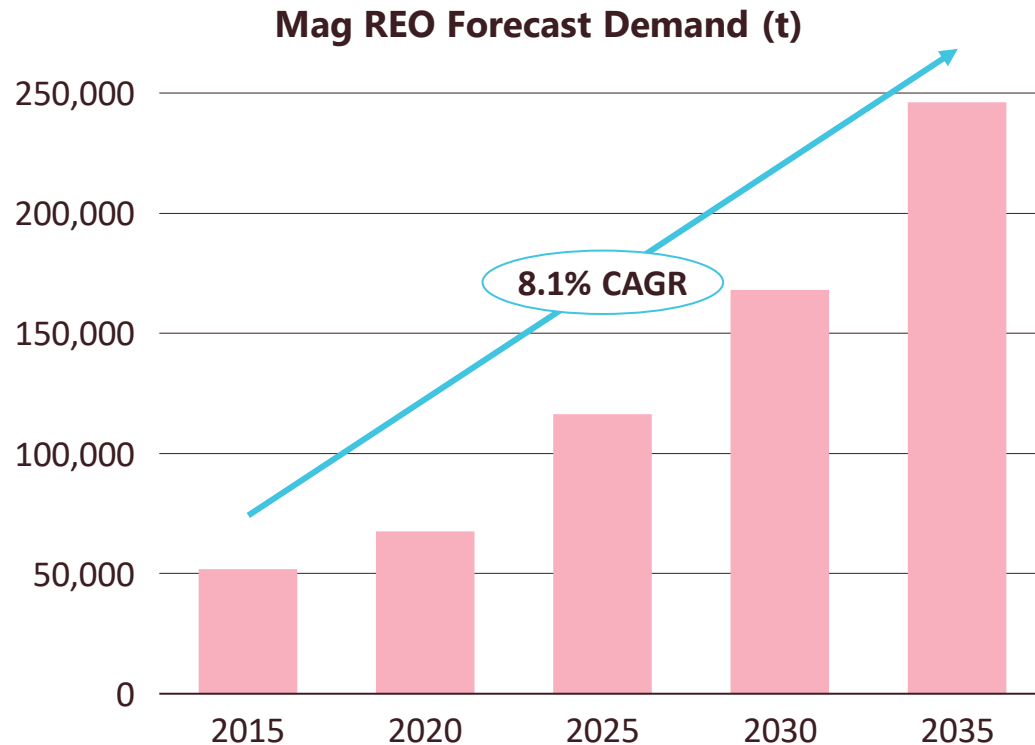
Insatiable Demand for Rare Earth Magnets

Transition from carbon to renewable economy is creating a forecast **explosion in demand for critical rare earth magnet metal oxides**

Compound annual growth rate of 8.1% for Mag REO

Mag REO (Magnetic Rare Earth Oxide) = $\text{Pr}_6\text{O}_{11} + \text{Nd}_2\text{O}_3 + \text{Tb}_4\text{O}_7 + \text{Dy}_2\text{O}_3$

Source: Adamas Intelligence, June 2022



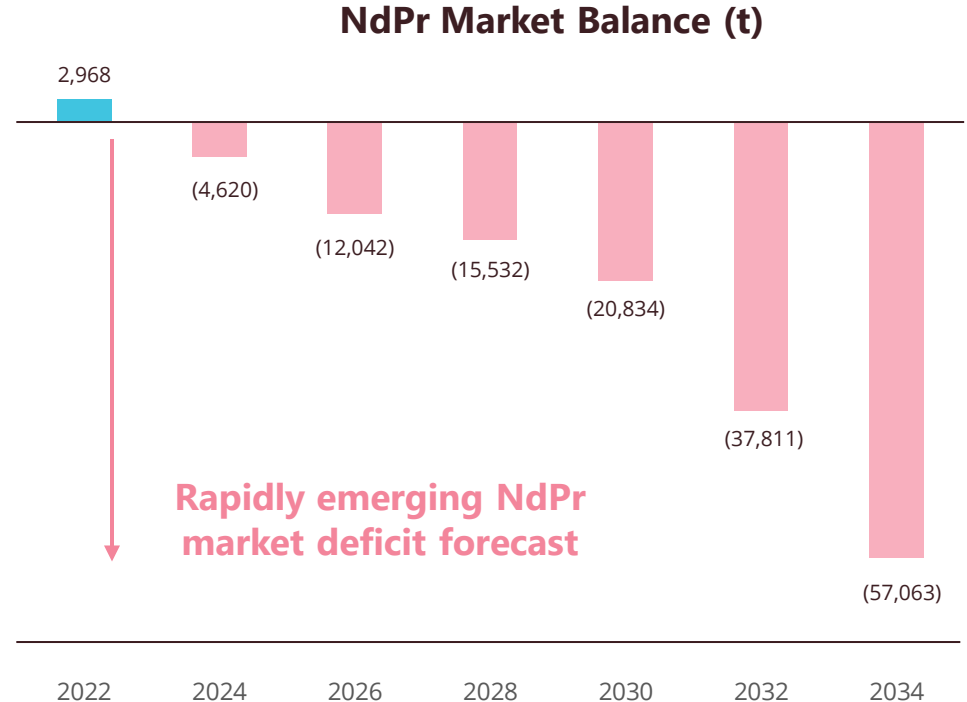
Growing NdPr Rare Earth Supply Deficit

Analysts expect significant NdPr supply deficits as demand grows

Demand underpinned by growth from EVs, wind power and consumer electronics

NdPr = Two of the critical rare earth elements Neodymium (Nd) and Praseodymium (Pr), which are used to make permanent magnets in electric vehicles, electricity generators (wind turbines) and consumer electronics. They represent the major value and revenue sources from Rare Earth Element production.

Source: Adamas Intelligence, June 2022

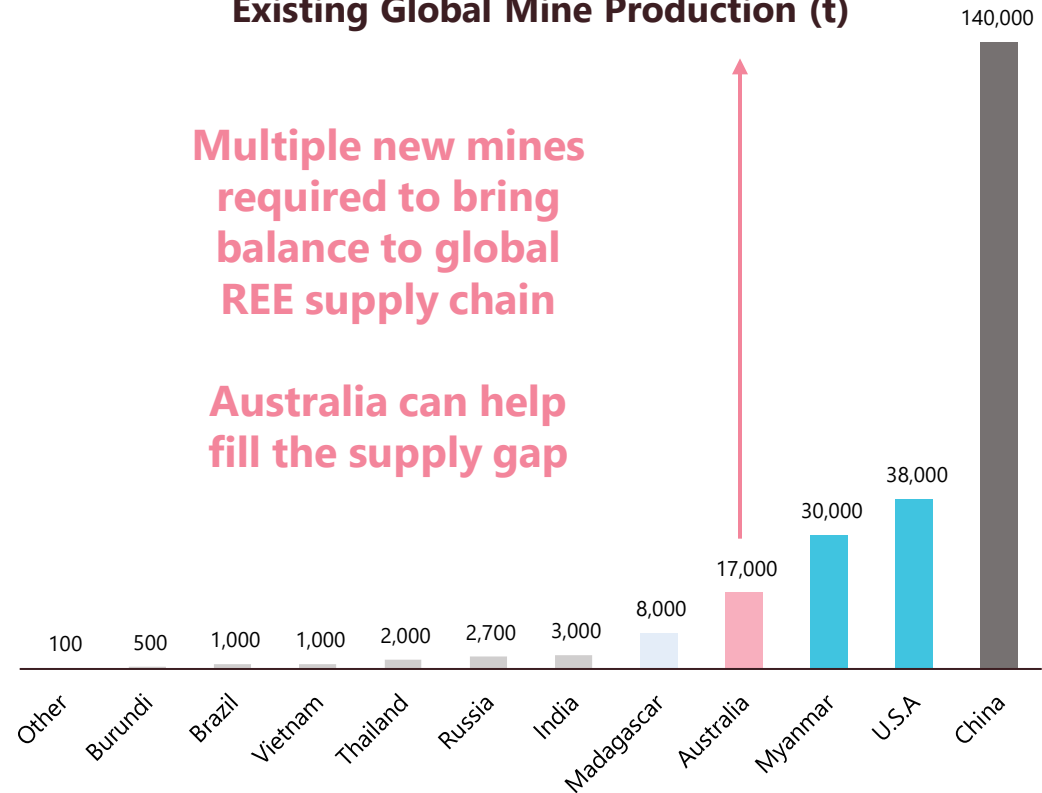


New Australian Supply Needed

Mine concentration is a significant risk to the global supply chain

Diversity of supply now a priority for governments and corporations with Australia well placed to provide additional capacity

Existing Global Mine Production (t)



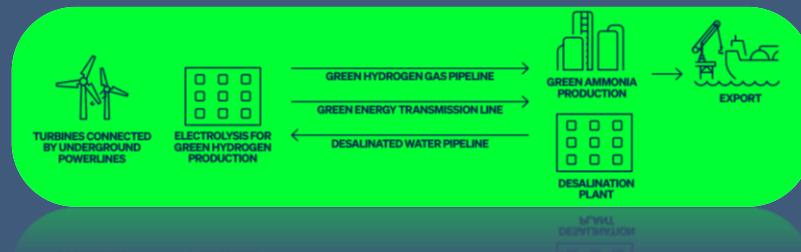
Low Carbon Rare Earth Production Potential

The urgency to lower global emissions is driving a rapid ramp up in demand for green energy globally

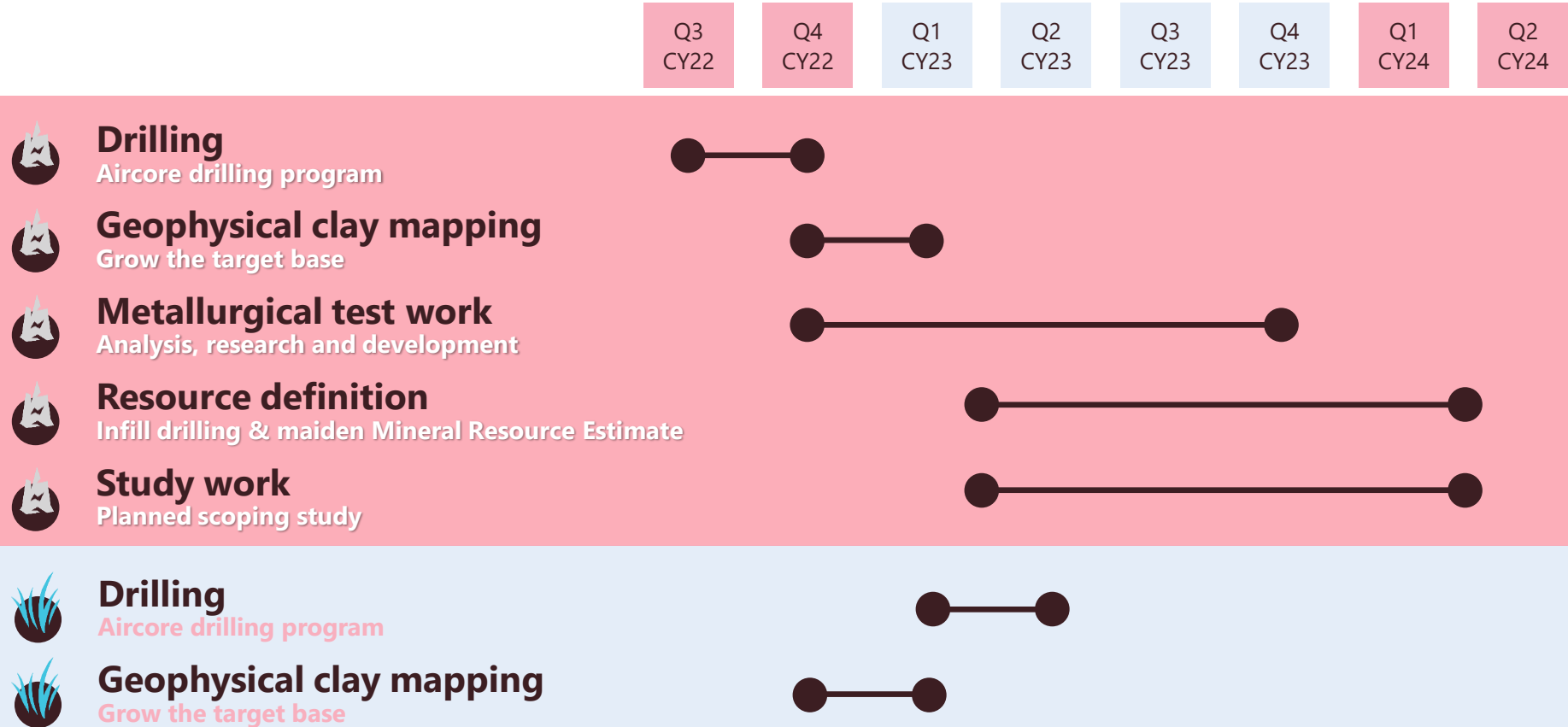
Esperance earmarked as a potential location for a major renewable energy and hydrogen hub

**Using wind, solar + green hydrogen
= Potential Green Rare Earth**

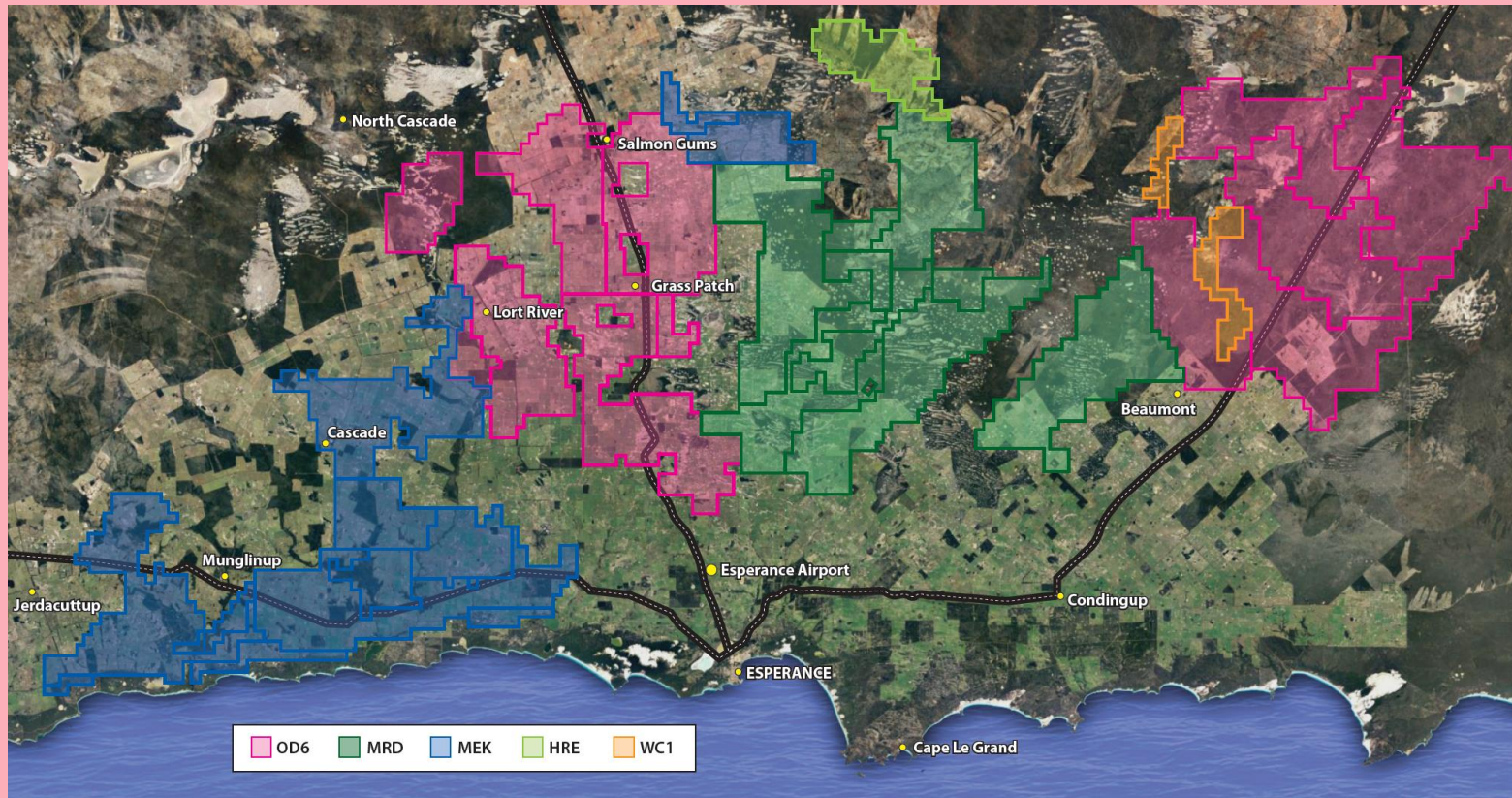
Fortescue Future Industries assessing South East Western Australia (Esperance Region) as a priority location for development of a green hydrogen hub¹



Planned Work Program



Emerging Clay Hosted Rare Earth Province





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