



## ANNOUNCEMENT

4 SEPTEMBER 2023

### Presentation : SYBELLA REO DISCOVERY

Please find the attached presentation titled:

**Sybella REO Discovery: A potential new source of the “critical” rare earth elements neodymium and praseodymium in Northwest Queensland.**

This announcement was authorised by the Board of Red Metal. For further information concerning Red Metal’s operations and plans for the future please refer to the recently updated web site or contact Rob Rutherford, Managing Director at:

Phone +61 (0)2 9281-1805  
[www.redmetal.com.au](http://www.redmetal.com.au)

A handwritten signature in black ink, appearing to read "Rob Rutherford".

Rob Rutherford  
Managing Director

A handwritten signature in black ink, appearing to read "Russell Barwick".

Russell Barwick  
Chairman



ASX:RDM

## Sybella REO Discovery

A potential new source of the “critical” rare earth elements neodymium and praseodymium in Northwest Queensland

September 2023

This Presentation was Authorised by the Board of Red Metal.

## Caution Regarding Forward-Looking Statements

This Presentation contains forward-looking statements which are identified by words such as 'may', 'could', 'potential for', 'scope for', 'believes', 'expects', or 'intends' and other similar words that involve risks and uncertainties.

These statements are expressed in good faith and believed to have a reasonable basis, and are based on a number of assumptions regarding future events and actions that, as at the date of this Presentation, are expected to take place.

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 the Company's management.

The Company cannot and does not give any assurance that the results, performance or achievements expressed or implied by the forward-looking statements contained in this Presentation will actually occur and investors are cautioned not to place undue reliance on these forward-looking statements.

The Company has no intention to update or revise forward-looking statements, or to publish prospective financial information in the future, regardless of whether new information, future events or any other factors affect the information contained in this Presentation, except where required by law.

These forward-looking statements are subject to various risk factors that could cause the Company's actual results to differ materially from the results expressed or anticipated in these statements.

## Competent Persons Statement

The information in this report that relates to Exploration Results is based on and fairly represents information and supporting documentation compiled by Mr Robert Rutherford, who is a member of the Australian Institute of Geoscientists (AIG). Mr Rutherford is the Managing Director of the Company. Mr Rutherford has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking 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" (the JORC Code). Mr Rutherford consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

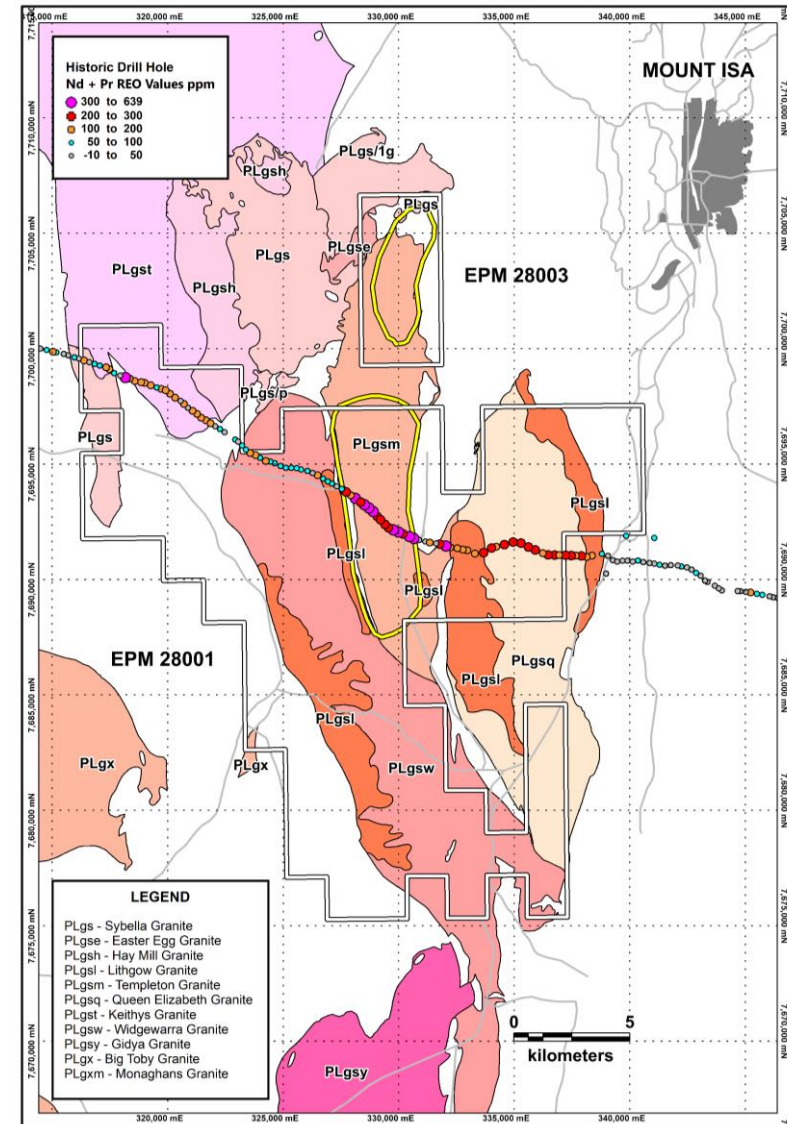
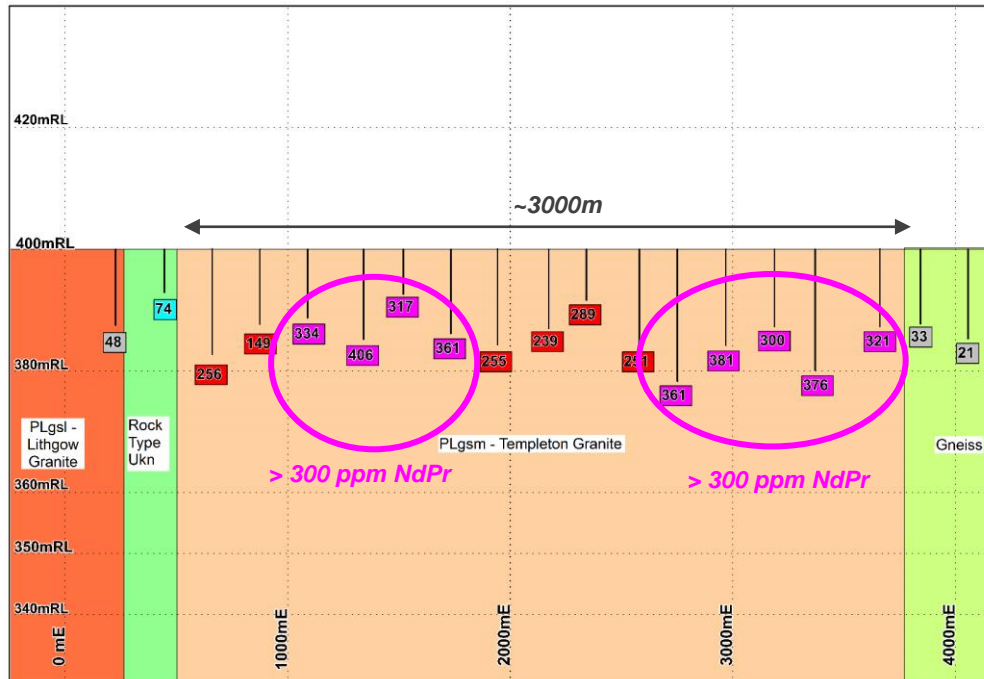
## New REO deposit style in Northwest Queensland

- Drilling and preliminary metallurgical tests outline potential for new weak-acid soluble, rare earth oxide (REO) deposit type
- Scope for extraction using bulk mining and simple metallurgical processing

## Results show weak-acid soluble REO minerals in favourable low-acid consuming granite host rock

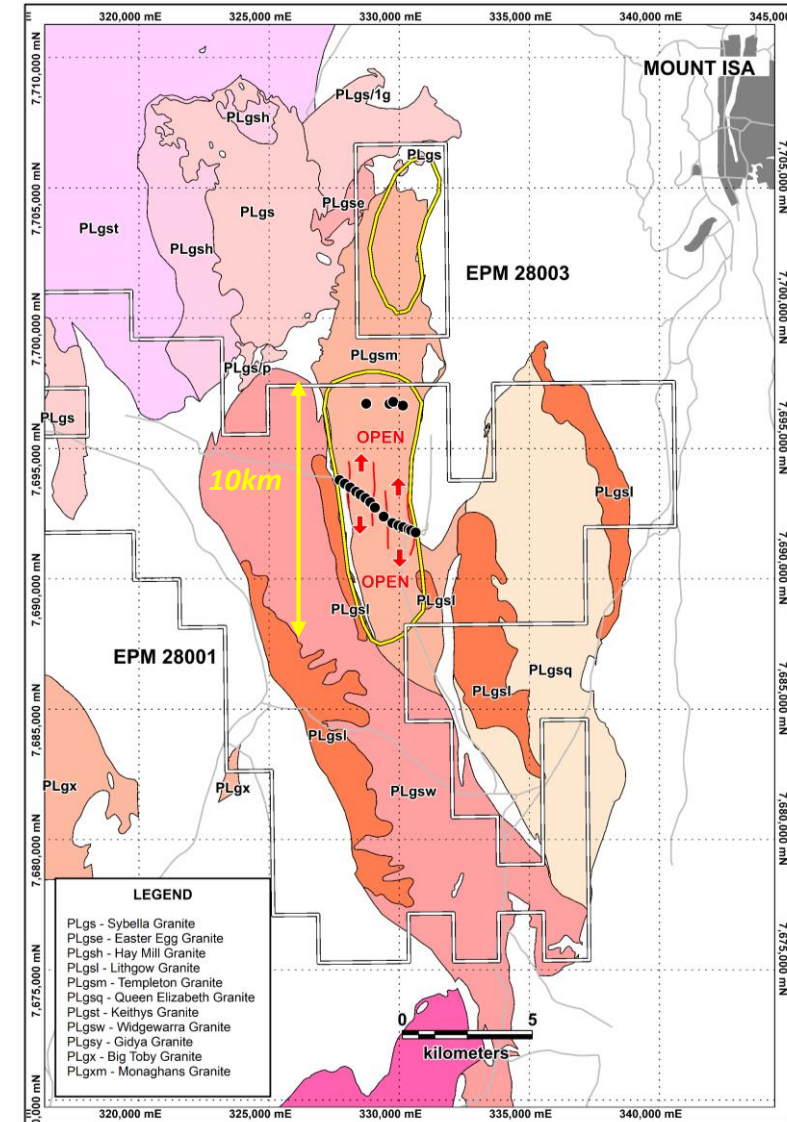
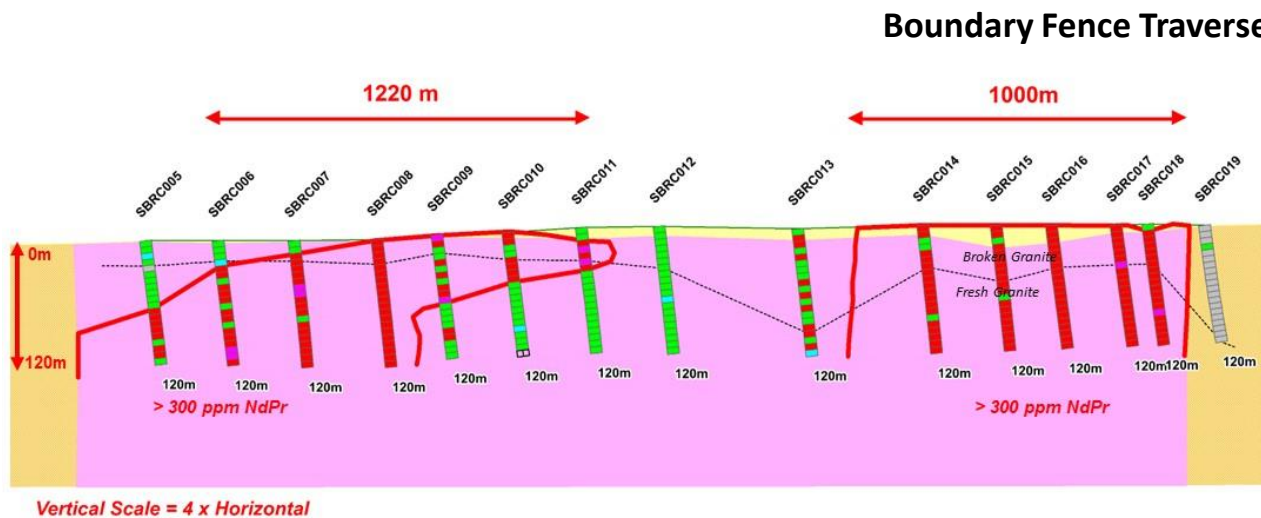
- Just 20 kilometres southwest of Mount Isa
- Bulk of REE's in soluble fluoro-carbonate minerals
- Proof-of-concept drilling show two REO zones each about 1km wide
- REO mineralisation at surface, open along 14km trend, open at depth (offering vast tonnage potential)
- Localised higher grade zones
- Positive proof-of-concept leach test, but more detailed work needed
- Low-uranium, low-thorium granite host rock
- Excellent infrastructure options

- End of hole assays from shallow shot holes drilled by Geoscience Australia along a historic seismic traverse all ended in REO mineralisation at about 10-20 metres

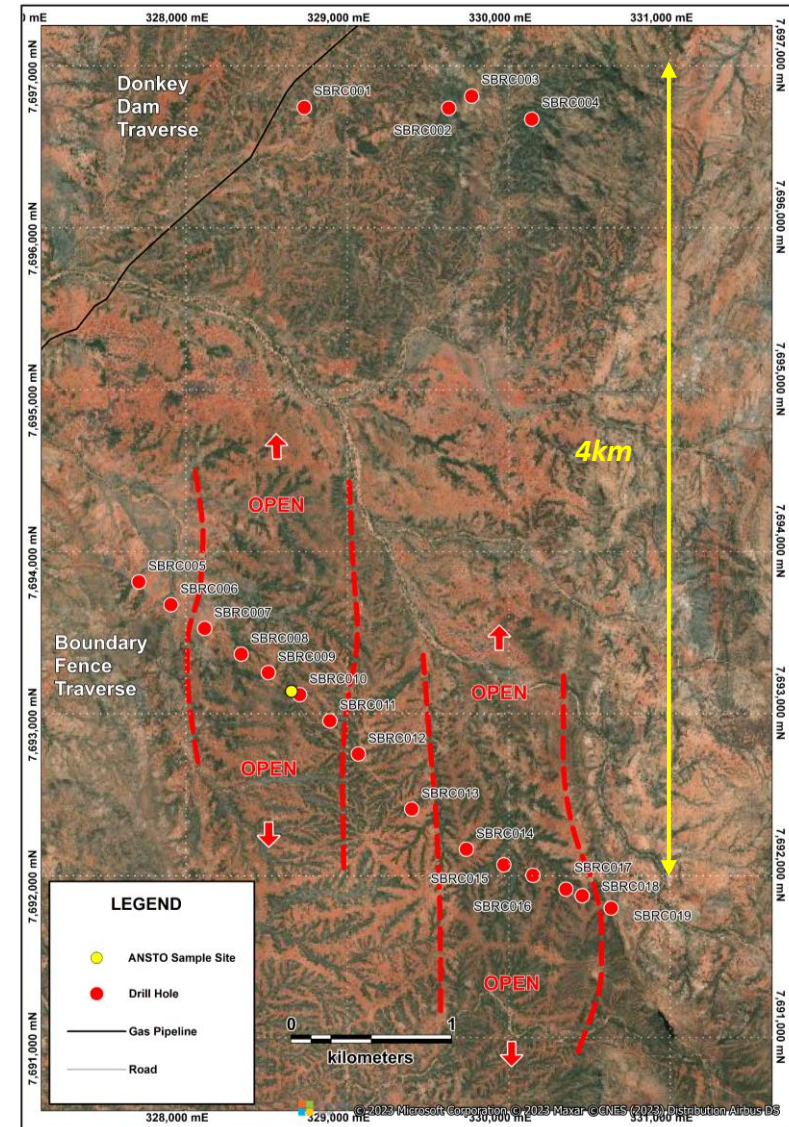
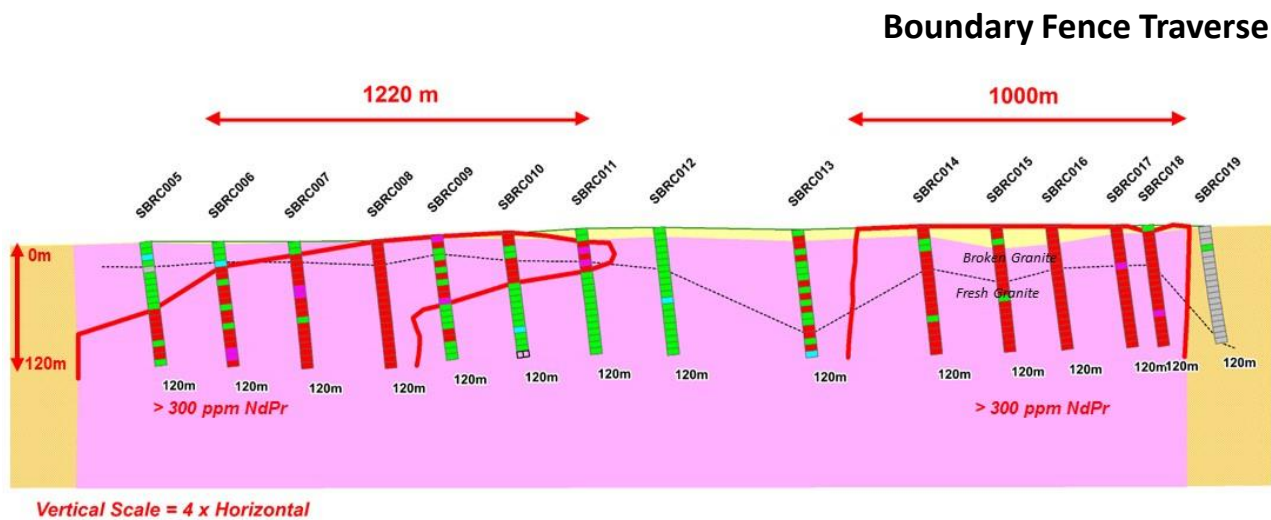




- Proof-of-concept drilling by Red Metal highlights two separate REO mineralised zones each about 1000m wide
- Open along strike north and south and at depth
- Plus localised higher grades in breccia zones

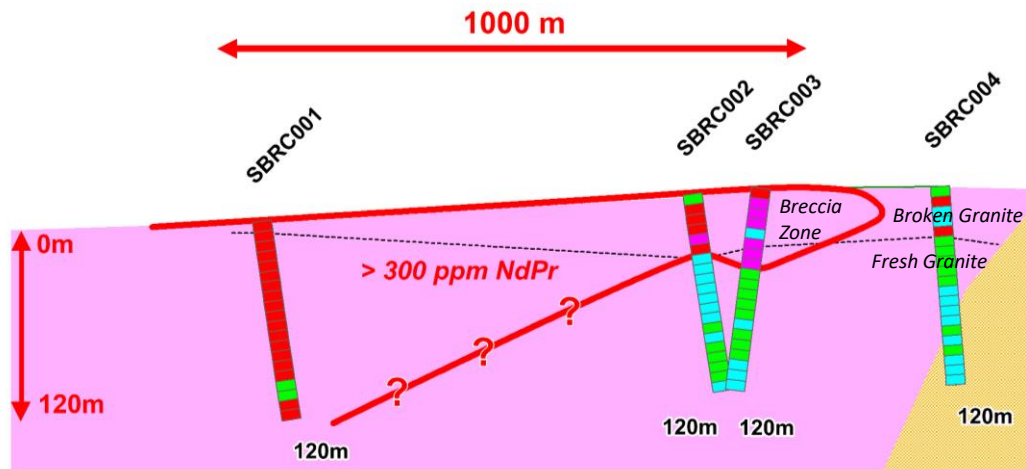
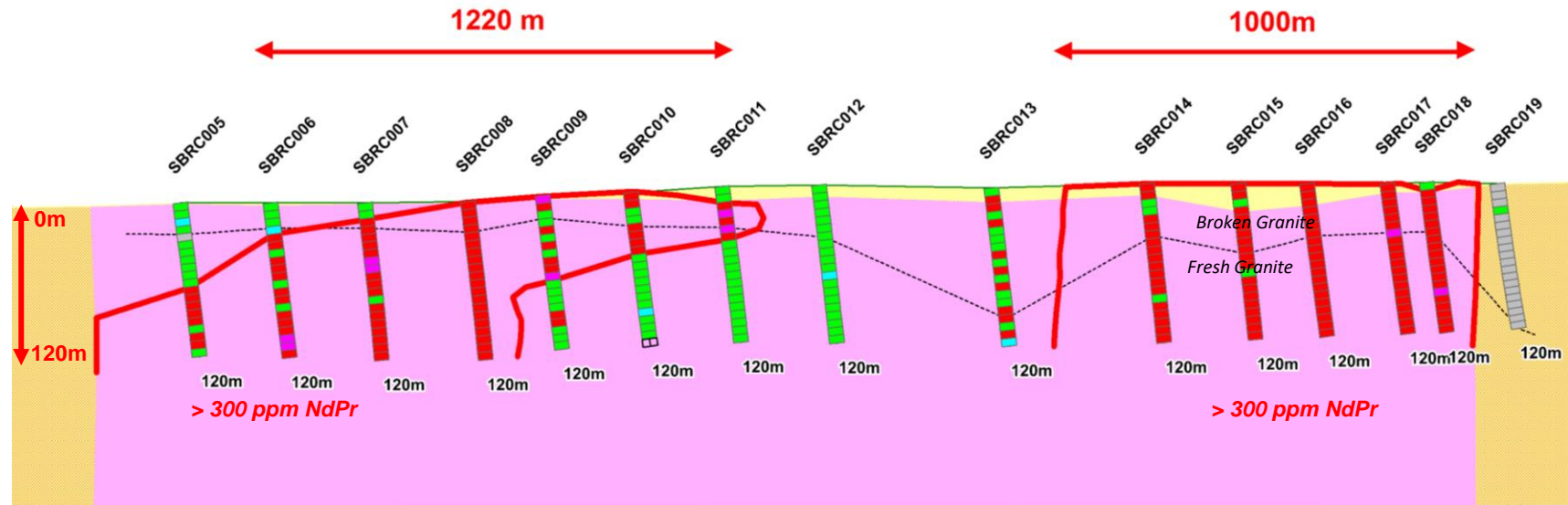


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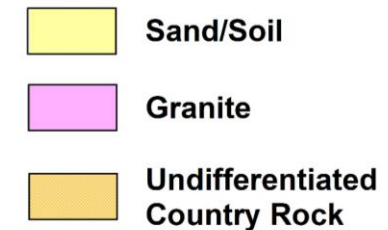
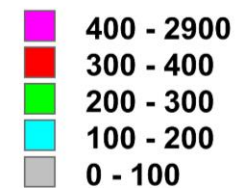


### Boundary Fence Traverse



### Donkey Dam Traverse

#### Nd + Pr ppm



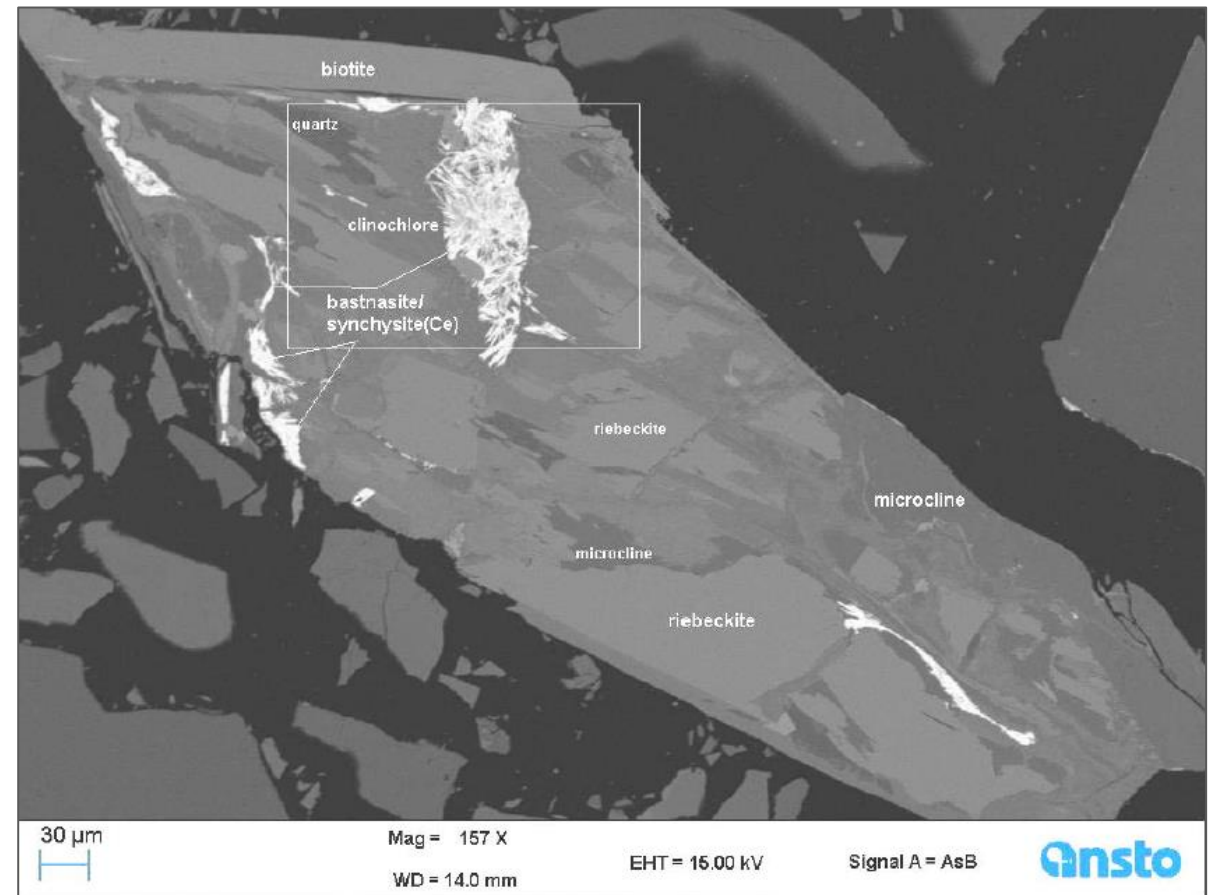


Hole ID	From	To	Intercept	TREO+Y ppm	Pr <sub>6</sub> O <sub>11</sub> ppm	Nd <sub>2</sub> O <sub>3</sub> ppm	Y <sub>2</sub> O <sub>3</sub> ppm	Dy <sub>2</sub> O <sub>3</sub> ppm	NdPr ppm
SBRC018	6	120 (EOH)	114	1,723	74	262	179	32	336
SBRC017	0	120 (EOH)	120	1,710	74	261	168	30	335
SBRC016	0	120 (EOH)	120	1,724	76	264	164	29	340
SBRC015	0	120 (EOH)	120	1,962	75	261	147	27	336
SBRC014	0	120 (EOH)	120	1,655	74	258	126	24	332
SBRC011	12	36	24	2,028	91	292	161	29	383
SBRC010	0	48	48	1,538	70	241	130	24	312
SBRC009	0	66	66	1,685	78	262	126	23	340
SBRC008	0	120 (EOH)	120	1,774	78	261	145	26	340
SBRC007	12	120 (EOH)	108	1,820	81	273	161	28	354
SBRC006	24	120 (EOH)	96	1,745	77	255	166	27	332
SBRC005	66	120 (EOH)	54	1,592	70	240	148	27	311
SBRC003	0	48	48	4,155	177	621	512	82	798
SBRC002	6	36	30	1,781	80	280	138	24	361
SBRC001	0	120 (EOH)	120	1,728	75	256	164	27	331

Refer ASX: RDM announcement dated 21/08/2023

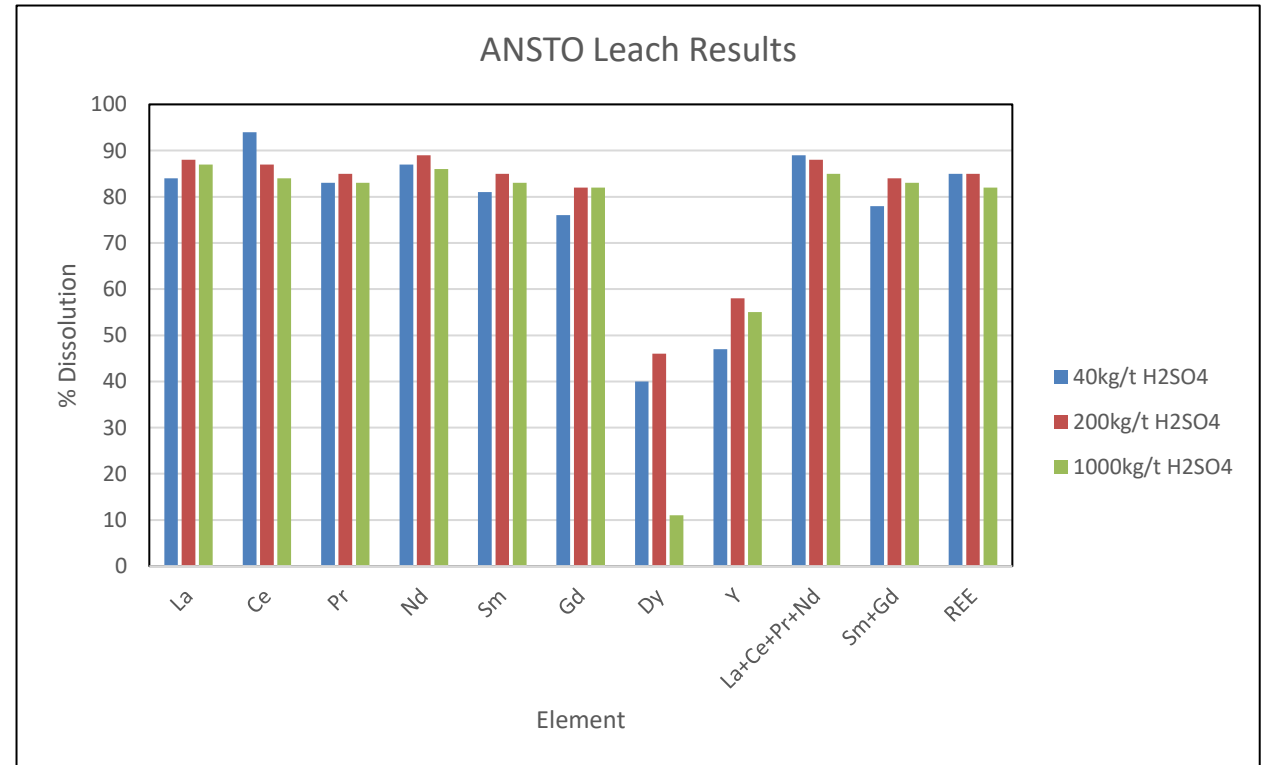
### Positive proof-of-concept test by ANSTO

- Soluble rare earth fluoro-carbonate mineralogy (**bastnasite and synchite**)
- High recoveries of “critical” REO’s neodymium and praseodymium (80-90%) in moderate acid leach solution (40kg/t sulphuric acid, 70 degree centigrade, 6 hours)
- Subject to more detailed follow-up work



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### Scope for low cost open pit mining

- Starts at surface, 1000m wide
- Very low strip ratio

### Potential for simple low-cost processing

- Bulk of REE's in soluble fluoro-carbonate minerals
- Favourable low-acid consuming granite host rock
- Low uranium and thorium contaminants

### Great infrastructure

- 20km southwest of Mount Isa
- Skilled work force
- In view of the smelter and acid plant
- Gas pipeline traverses exploration licence



REE enriched granite outcrop in foreground Mount Isa smelter and acid plant in background

# Examples of Other Giant Granite-Hosted, Weak-Acid Soluble Deposit Types



Morenci Mine: Soluble Copper in Weathered Granitic Porphyry Host

Copper as chalcocite in weathered granitic porphyry

- Morenci Mine (USA)

Uranium as uraninite in granite

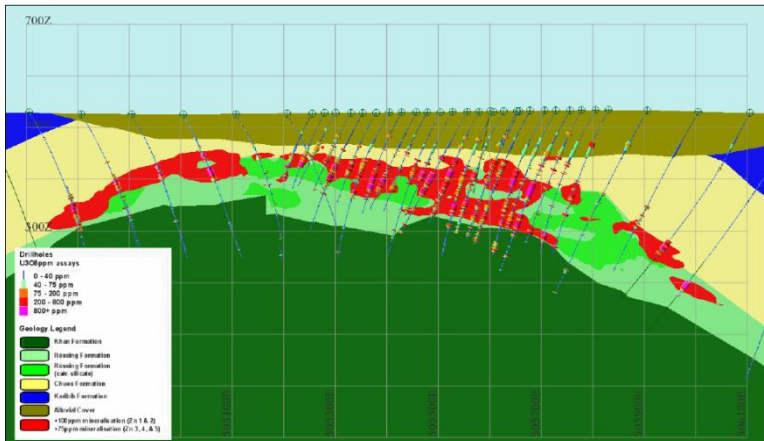
- Rossing Mine (Namibia)
- Hsuab Mine (Namibia)
- Typically 300-600ppm U<sub>3</sub>O<sub>8</sub>/100ppm COG

REO's as fluoro-carbonate in granite

- Sybella (Australia) ????

Key advantages of known granite-hosted giants

- Large metal inventory
- Consistent metallurgical/low complexity
- Unreactive granitic host rock
- Lower reagent consumption
- Simple bulk tonnage open-pit mining
- Low strip ratio's
- Lower contaminants
- Low cost producers
- Very low grades can be mined
- Long mine lives



Husab Section: Soluble Uranium in Granite Host

### Bench-scale metallurgical tests

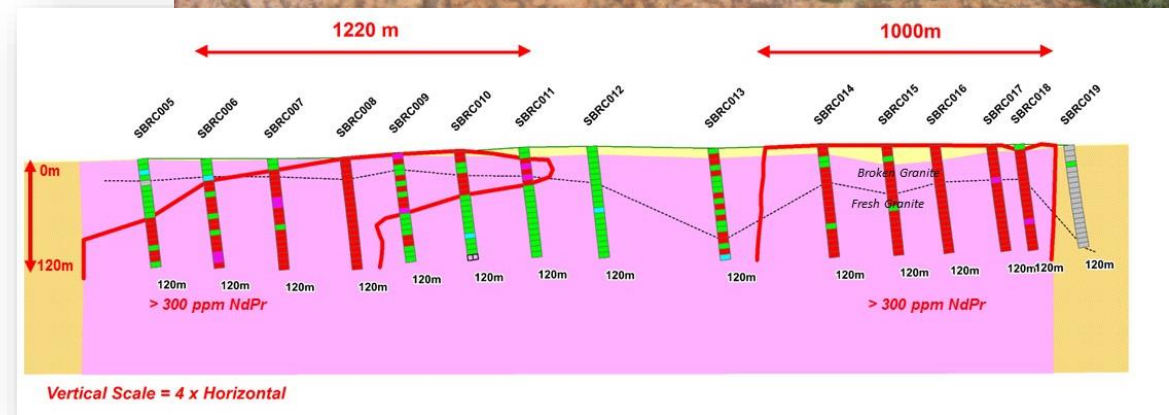
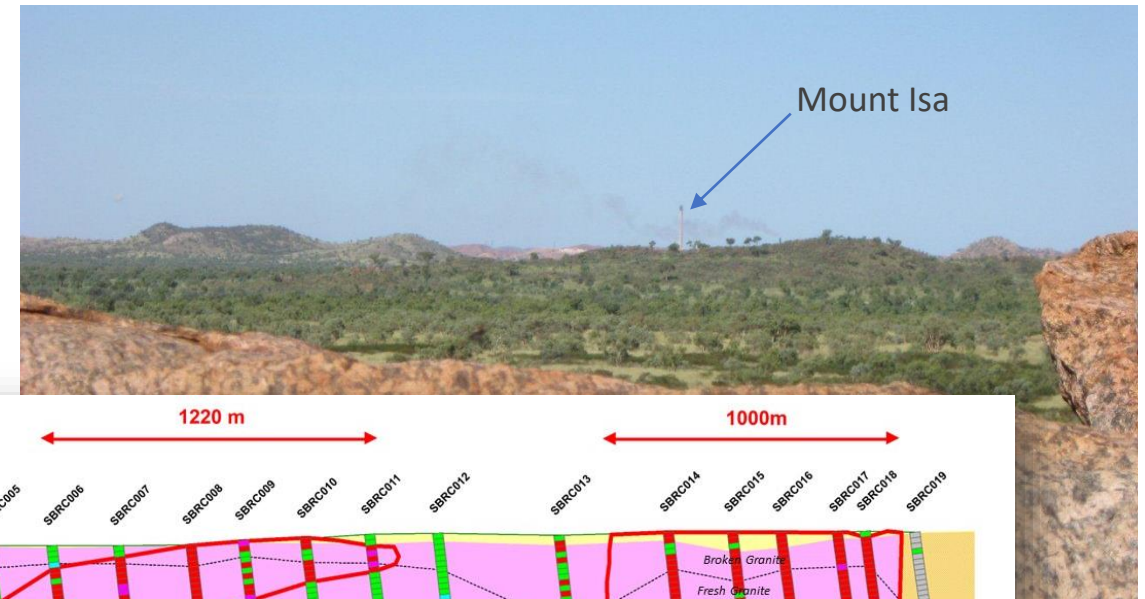
- Leach tests
- Grind sizes
- Bond Work Index
- Any mineralogical variation

### Step-out drilling

- Bulk resource definition
- Extent of higher grade breccia zones

### Assess alternative funding options

- Critical metals grants QLD or Federal governments
- R&D
- End users





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