ALVO MINERALS

Active Brazilian Critical Minerals Explorer

Bluebush Ionic Adsorption Clay (IAC) REE Investor Webinar

November 2023

Bluebush IAC REE Project Highlights

Exceptional TREO grades- 6m @ 2,537ppm with +20% MREO's in preliminary Auger drilling
Results pending on >130 auger holes

Bluebush held privately since 2004. Serra Verde discovered in ~2011
Exploration Accelerating- Confidence Growing

Large footprint of prospective ground **(>120km^2)**
Agreement to **earn-in into up to 100%,** Bluebush- no Royalty

Same granite that hosts Serra Verde- **only operating IAC project outside of China**

Bluebush:

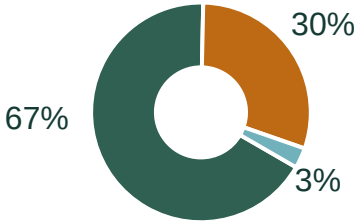
- **IAC Mineralisation- up to 83% MREO Extractions**
- **Saprolite depth up to 28m**
- **6m@ 2,537ppm TREO**
- **High % of MREO's**

Serra Verde :

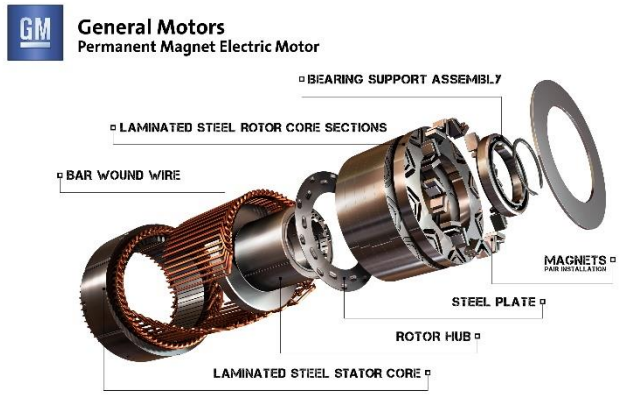
- **Resource: 911Mt @ 1,200ppm**
- **Reserve: 350Mt @ 1,500ppm**
- **High % of valuable REE's**
- **Commencing production CY23**

EV Permanent Magnets NEED Specific REEs

EV Rare Earth Permanent Magnet Motor



- Iron - Boron
- NdPr
- DyTb

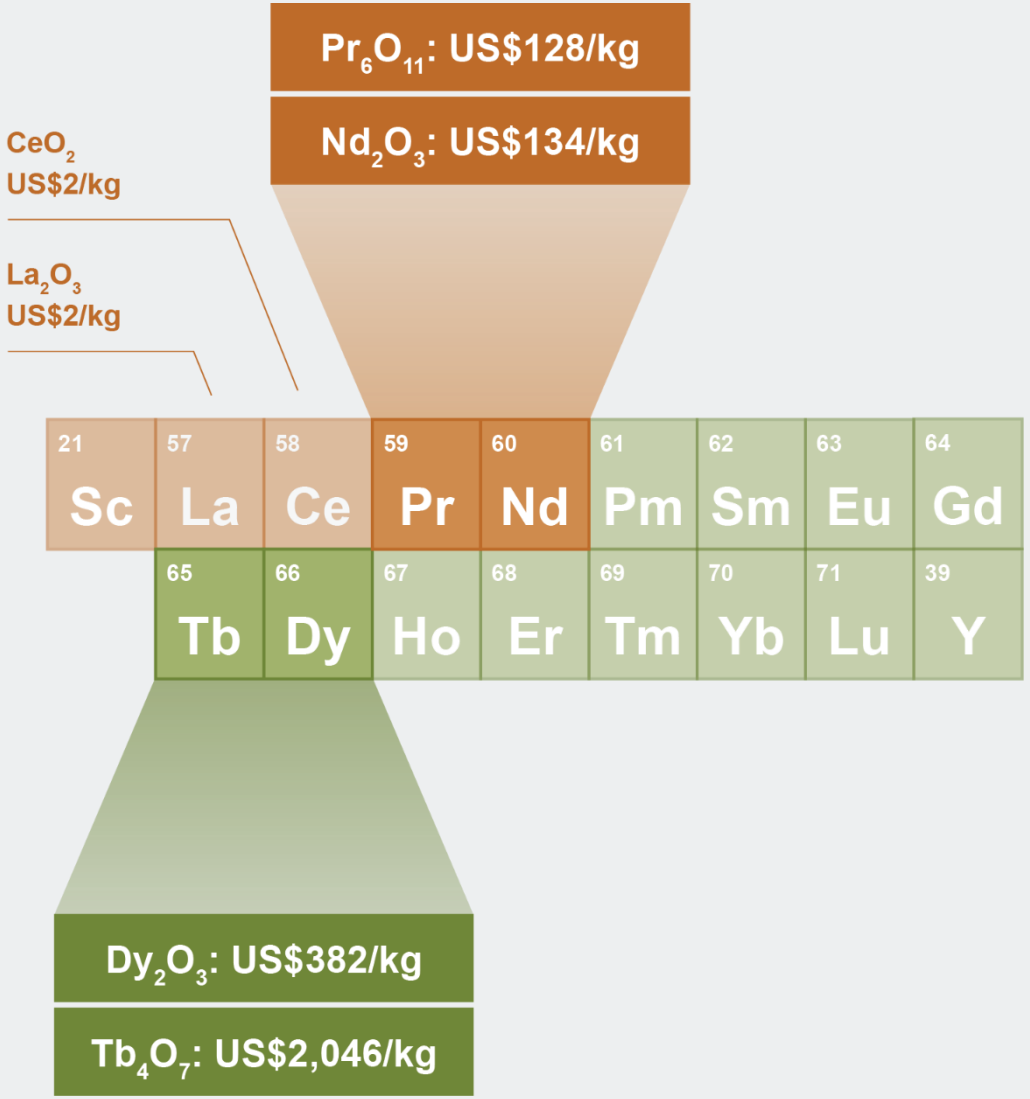


Primarily used for Electric vehicles

Highest efficiency and lowest cost: Battery costs reduced by 30% (lower lithium, cobalt & nickel content).

Compact: Lower size and weight.

Strength: Highest torque density.



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Sources; International Renewable Energy Agency; General Motors; Stanford Magnets
Price data sourced from USGS 2021 Rare Earths Update, Statista and Goldman Sachs Rare Earths Update 6 July 2023

ALV – ASX Brazilian IAC Peers

Brazil is emerging as the most important IAC jurisdictions globally

Alvo is adjoining and in the same geological setting as Serra Verde, the only IAC REE project operating outside of China globally

Project	Bluebush	Serra Verde	Calderia	Monte Alto[1]	Colossus
Mineral Reserve (IAC)	No	350Mt @ 1,500ppm TREO	No	No	No
Mineral Resource Estimate (IAC)	No	911Mt @ 1,200ppm TREO	409Mt @ 2,626ppm TREO	485Mt @ 1,071ppm TREO	No
Ionic Adsorption Clay Testwork Completed	Yes	Yes	Yes	Yes	Yes
Feasibility Study Completed	No	Yes	No	No	No
Operating	No	Yes	No	No	No
Market Capitalisation (A$M)[2]	**23**	**N/A**	**505**	**313**	**60**

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1. Based on IPO Pathfinder Prospectus (IAC) 2. Market capitalisations as at last close 8/11/2023

Bluebush IAC REE Project

Confirmed ionic adsorption clay (**IAC**) using standard ammonium sulphate solution at pH4 (ambient temperature)-

- Extractions up to 83% MREO (ave 56%)

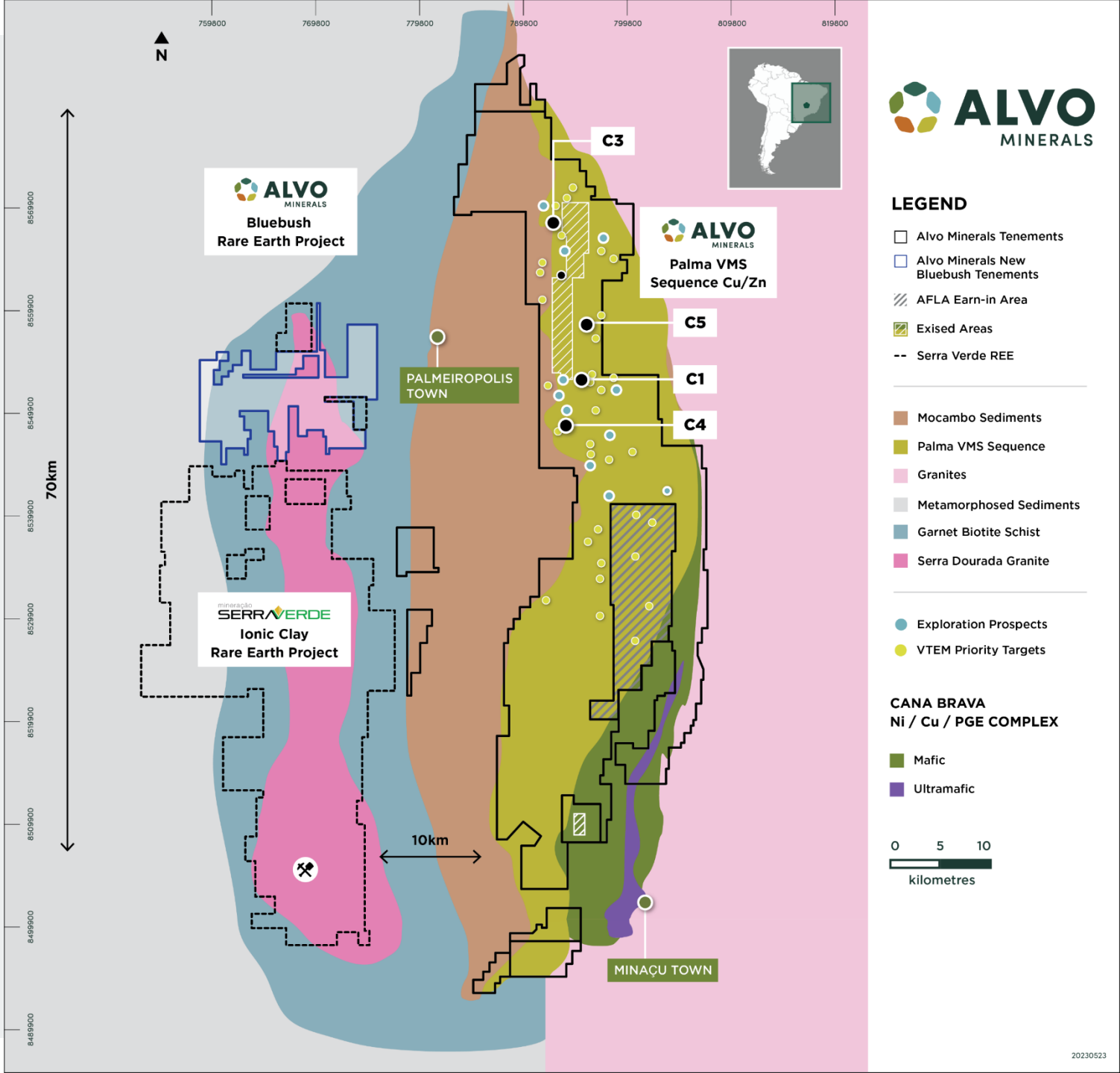
High-grade zone of 6m @ 2,537ppm TREO (21% MREO) inc. 3m @ 3,415ppm TREO (24%) to EOH

Saprolite depth profile confirmed up to 28m

120km^2 landholding adjoining Serra Verde (SV) and Alvo's Palma Project

- Bluebush is in the same geological setting as SV
- SV is only *commissioning* IAC* project outside of China

Truck mounted auger drilling to rapidly progress exploration



Bluebush IAC REE Project – Confirmed Ionic

Excellent extraction of REE using industry standard dilute ammonium sulphate solution (AMSUL)

- **pH 4 (less acidic than OJ)**
- **Ambient temperature**

High-value magnet rare earths (MREO's) extracted :

- Nd: up to 89%, average 60%
- Pr: up to 86%, average 57%
- Dy: up to 53%, average 37%
- Tb: up to 69%, average 48%
- MRE: up to 83%, average 56%

Met samples will be tested to further optimise recovery ratios

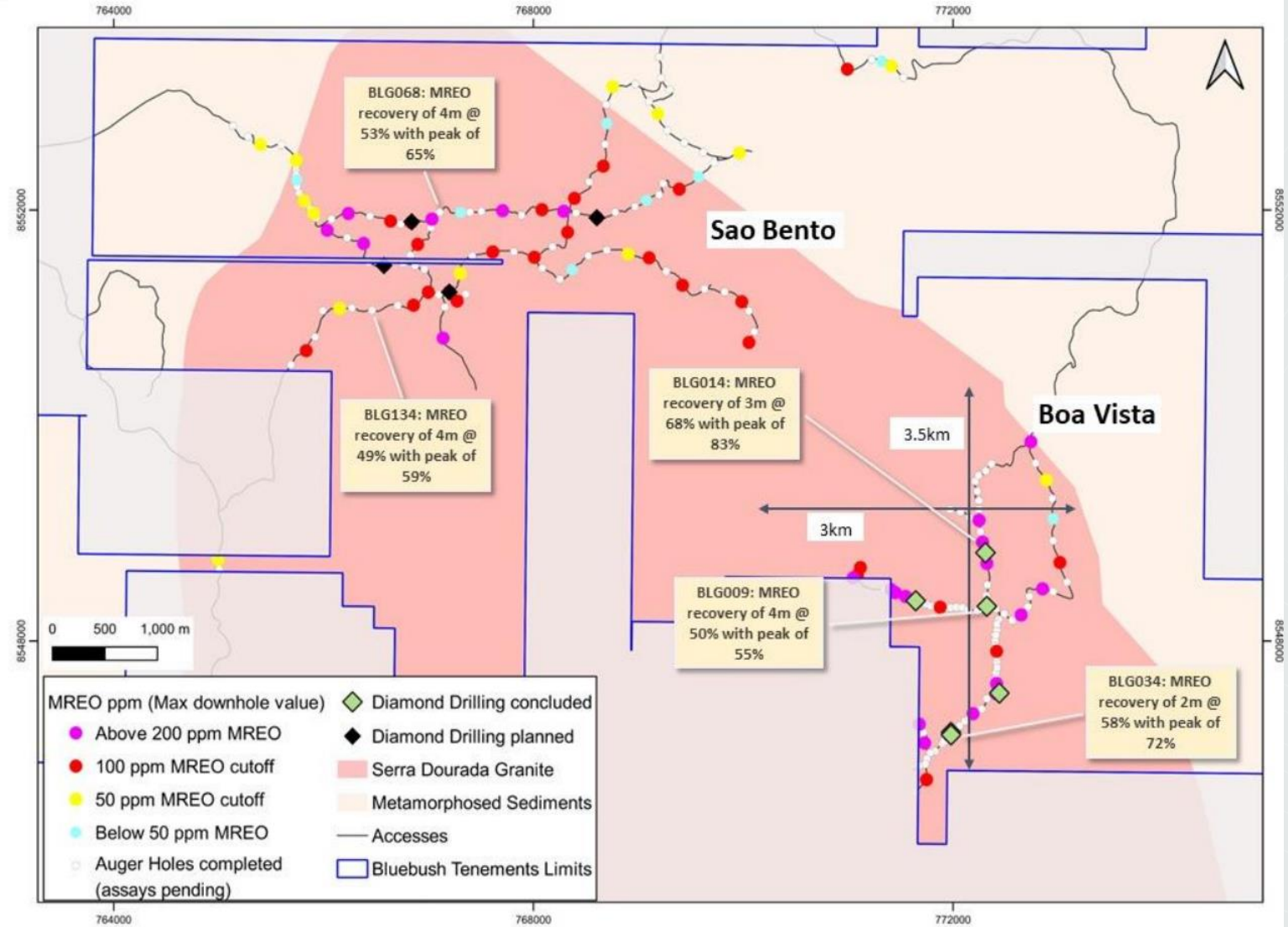


Figure 1: *Bluebush Ionic Clay MREO Project metallurgical test results, auger drill results and completed drilling*

Bluebush IAC REE Project – Auger Drilling

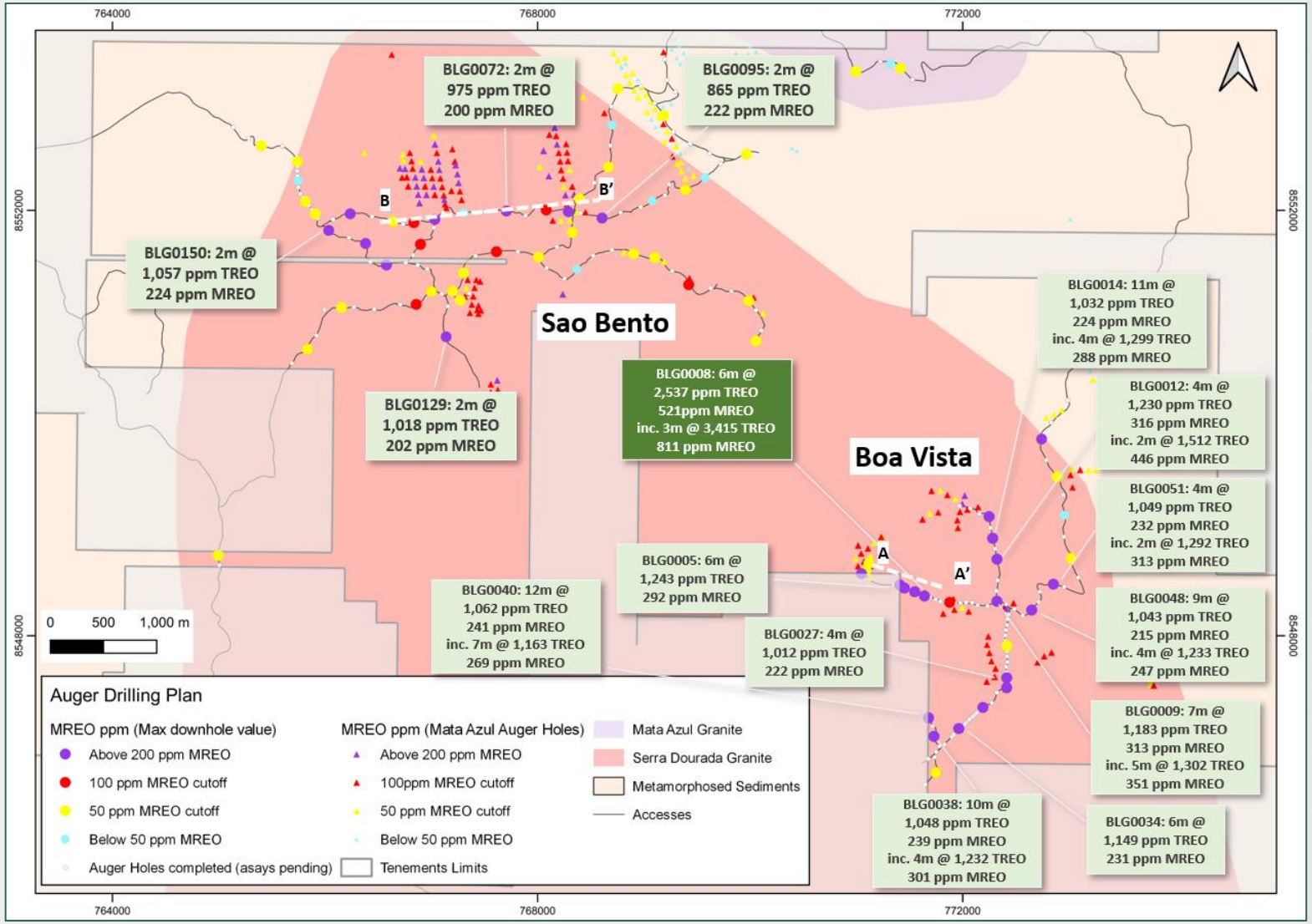
210 auger holes drilled to date
>130 assays pending

Exceptional MREO values so far;

- 6m @ 2,537ppm TREO (21%) to EOH from 0m; inc. **3m @ 3,415ppm TREO (24% MREO) to EOH from 3m**
- 4m @ 1,230ppm TREO (26% MREO) to EOH from 0m; inc. **2m @ 1,512ppm TREO (29% MREO) to EOH from 4m**

Follow-up truck mounted auger drilling commenced targeting highest grade MREO zones

Hand-held auger drilling commenced targeting untested regional prospects towards the centre of the granite



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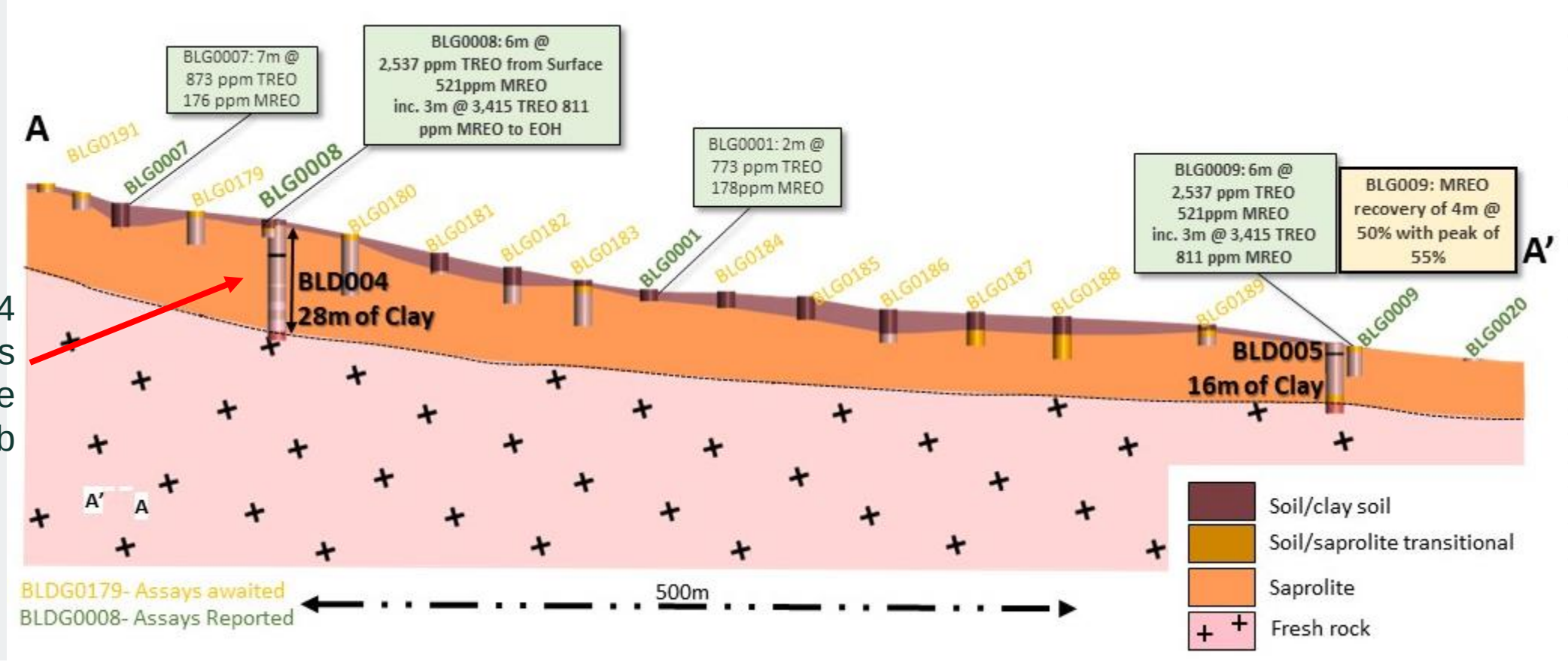
Bluebush IAC REE Project – Diamond Drilling

Diamond hole BLD004 hit 28m of clay

Drilled 4m east of Auger hole BLG008, started in mineralisation and ended in 3,779ppm TREO (26% MREO)

Diamond drilling significantly extended previously understood saprolite depth profile
Diamond drilling ongoing in combination with Loupe Portable Electromagnetic surveys -mapping the saprolite across Bluebush

BRLDH004 assay results prioritised at the lab



The Palma VMS Project

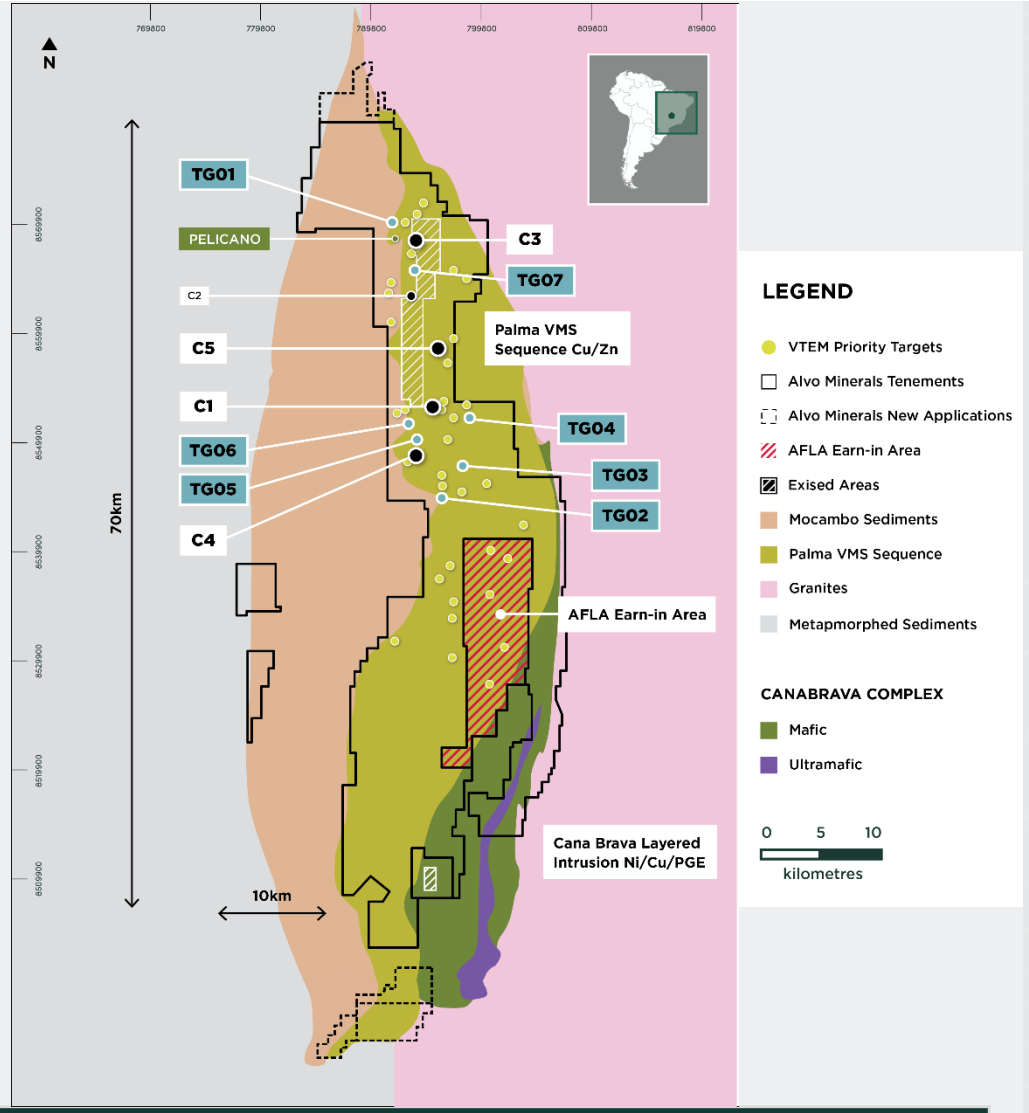
Palma Project is a high-grade, Cu-Zn rich VMS ***district scale*** opportunity in Brazil - largely idle for over 30 years (1970's)

VMS targets occur in clusters - ***Dominant land position*** (>850km^2) with >70km of prospective strike – **new C4 VMS discovery**

JORC MRE of 4.6Mt @ 1.0% Cu, 3.9% Zn, 0.4% Pb & 20g/t Ag - ***Historical drilling only to be updated in Q4 CY2023 (>23,000m of drilling)***

Alvo's drill results continue to exceed expectations on grade and thickness compared to existing MRE:

- **36.0m @ 4.2% CuEq^ or 10.2% ZnEq^ - C3**
- **23.2m @ 5.5% CuEq or 13.4% ZnEq - C3**
- **19.7m @ 4.7% CuEq or 11.41% ZnEq - C3**
- **16.0m @ 6.4% CuEq or 15.57% ZnEq - C3**
- **21.8m @ 4.8% CuEq or 11.72% ZnEq - C1**



JORC 2012 Inferred Mineral Resource					
Prospect	**Tonnes (Mt)**	**Cu (%)**	**Zn (%)**	**Pb (%)**	**Ag (g/t)**
C1	1.80	0.8	3.2	0.8	15
C3	2.80	1.1	4.3	0.2	23
Total	**4.60**	**1.0**	**3.9**	**0.4**	**20**

*The NSR cut-off of USD$60/t has been calculated using the following prices: 2.90$/lb Cu, 1.04$/lb Zn, 0.79$/lb Pb, 24.5$/oz Ag and assuming recoveries of 90% for all metals in sulphide and 45% for all metals in oxides.

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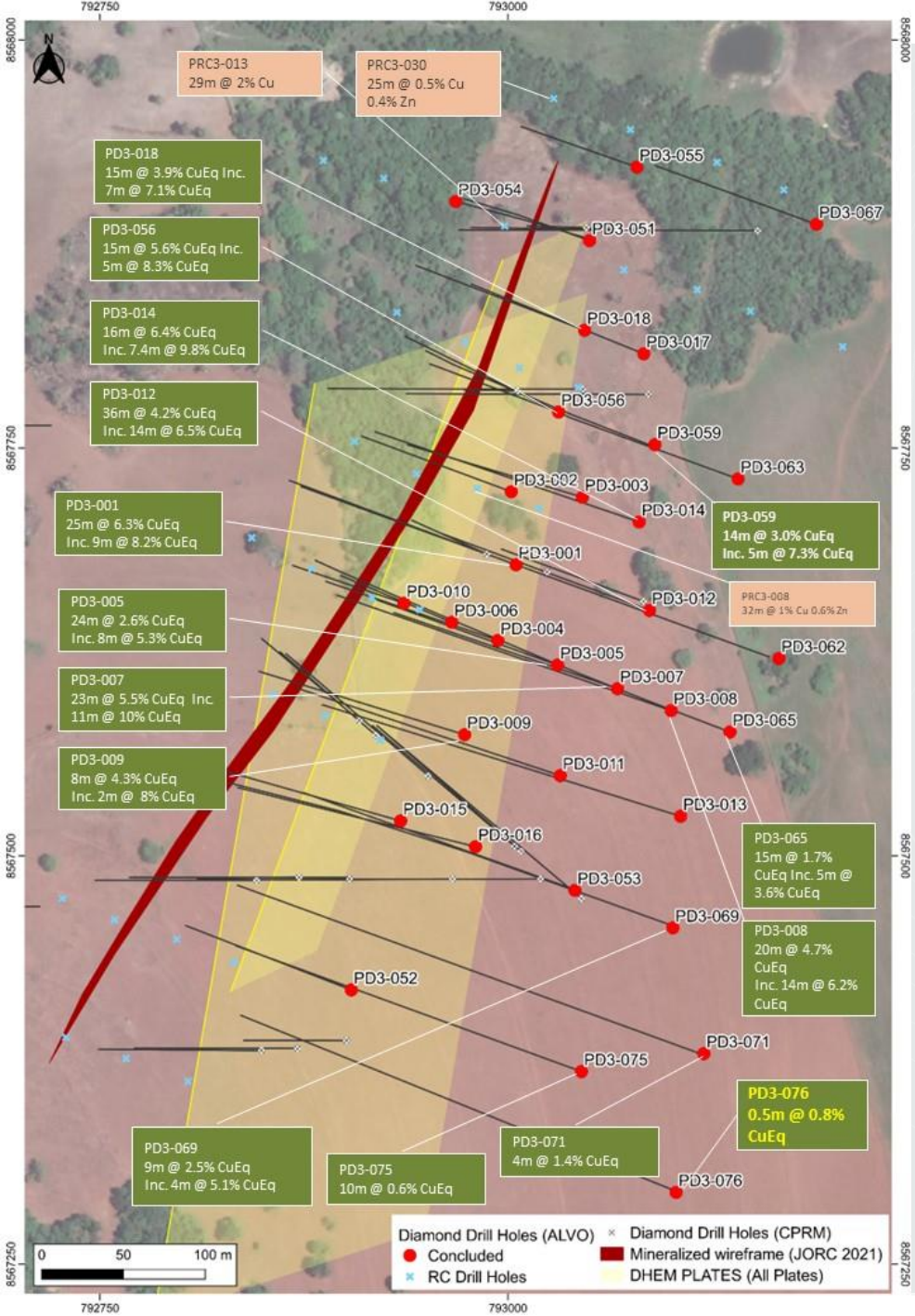
C3 Deposit: High-grade Cu-Zn

JORC Resource of **2.8Mt @ 1.1% Cu, 4.3% Zn, 0.2% Pb & 23g/t Ag based on historic drilling only**

Exceptional intercepts will grow the resource

- PD3-001: **25.0m @ 6.3% CuEq or 15.34% ZnEq**
- PD3-007: 23.2m @ 5.5% CuEq or 13.4% ZnEq
  - Inc. 10.6m @ 10.1% CuEq or 24.73% ZnEq
- PD3-008: 19.7m @ 4.7% CuEq or 11.41% ZnEq
- PD3-012: **36m @ 4.2% CuEq or 10.20% Eq**
- PD3-014: 16.0m @ 6.4% CuEq or 15.57% ZnEq
  - Inc. **7.4m@ 9.8% CuEq or 23.81% ZnEq**
- PD3-018: 15.0m @ 3.9% CuEq or 9.51% ZnEq

Updated MRE in Q4 CY2023



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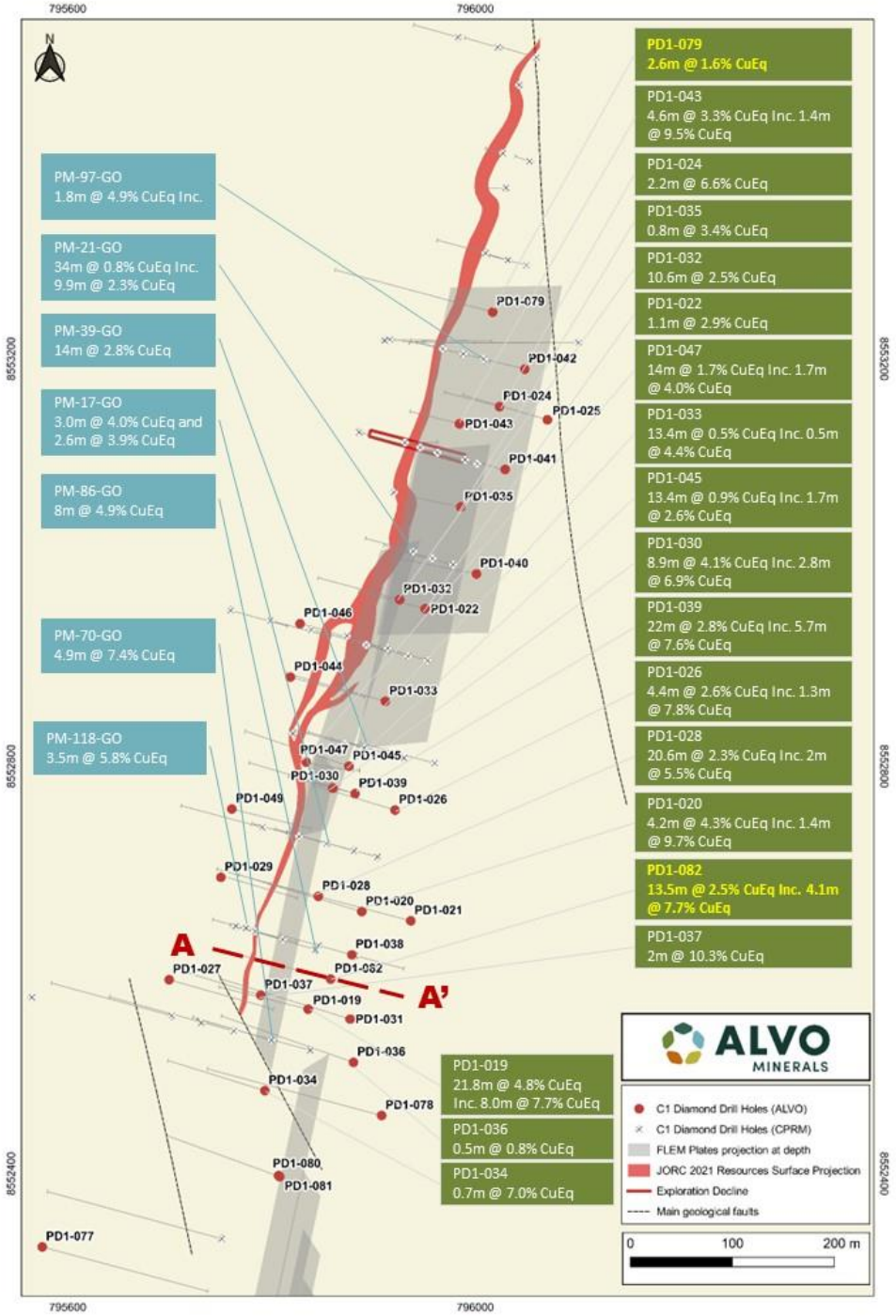


C1 Deposit: Shallow, High-grade

JORC Resource **of 1.8Mt @ 0.8% Cu, 3.2% Zn, 0.8% Pb & 15g/t Ag based on historical drilling only**

1.2km mineralised strike – open at depth and along strike

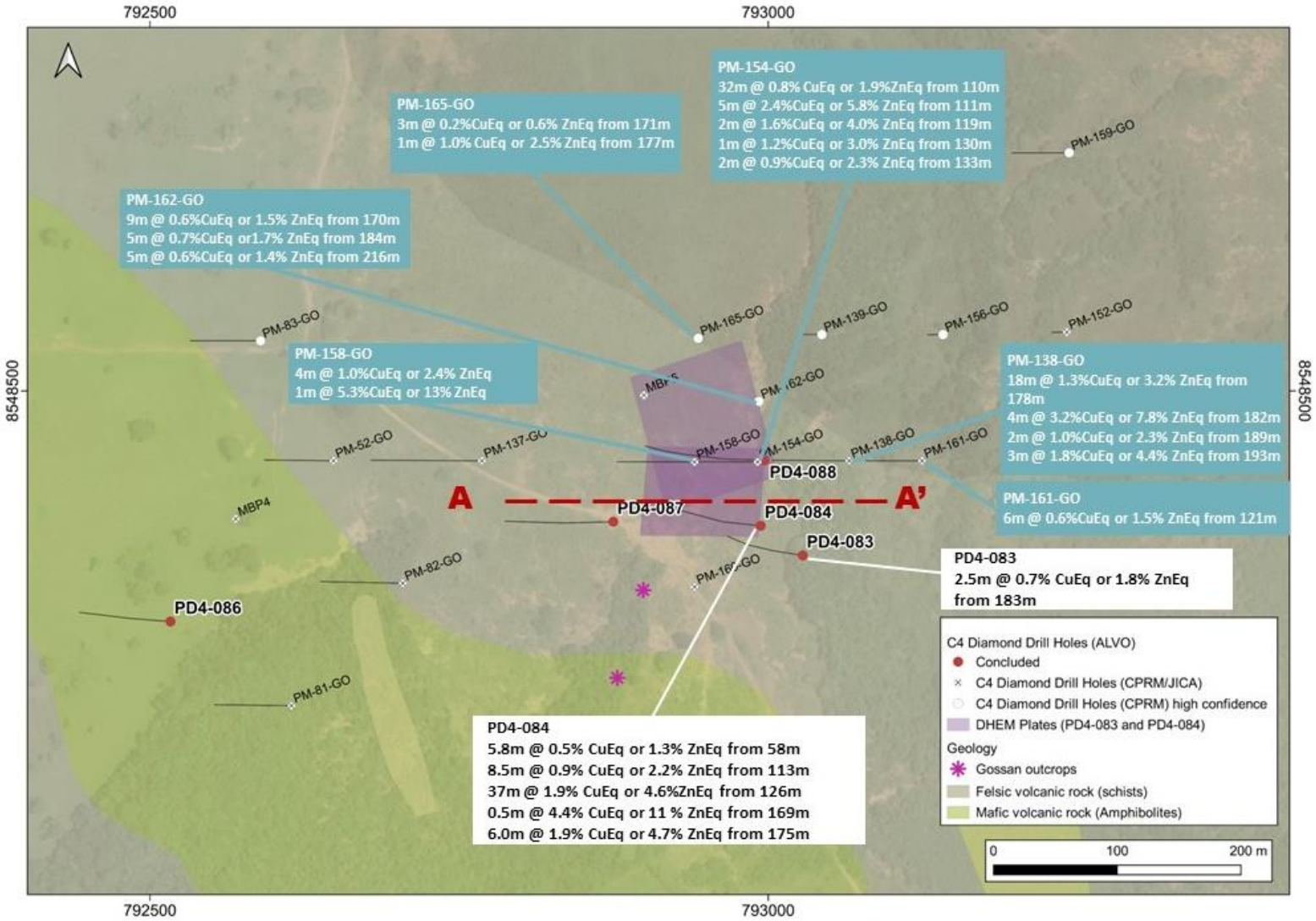
Exceptional intercepts will grow the resource

- PD1-019: **21.8m @ 4.8% CuEq^ or 11.72% ZnEq** from 142m
  Inc. **8.0m @ 7.7% CuEq or 18.80% ZnEq** from 149m
- PD1-030: **8.9m @ 4.1% CuEq or 10.07% ZnEq** from 64m
  Inc. **2.8m @ 6.9% CuEq or 16.76% ZnEq** from 64m
- PD1-028: **20.6m @ 2.3% CuEq or 5.72% ZnEq** from 84m
  Inc. **2.1m @ 5.5% CuEq or 13.53% ZnEq** from 103m
- PD1-029: **6.2m @ 2.9% CuEq or 7.16% ZnEq** from 105m
- PD1-082: **13.5m @ 2.5% CuEq or 6.17% ZnEq** from 112m

Updated MRE in Q4 CY2023

C4 - “Brownfields VMS Discovery”

Discovery hole PD4-084 is the widest Intercept ever at Palma



Discovery hole at C4 VMS Prospect

- **PD4-084: 37m @ 1.9% CuEq** or **4.6% ZnEq** from 127m
  - Inc. **2m @ 3.6% CuEq** or **8.8% ZnEq** from 132m
  - Inc. **4m @ 2.8% CuEq** or **6.9% ZnEq** from 157m
- **PD4-084: 6m @ 1.9% CuEq** or **4.7% ZnEq** from 176m

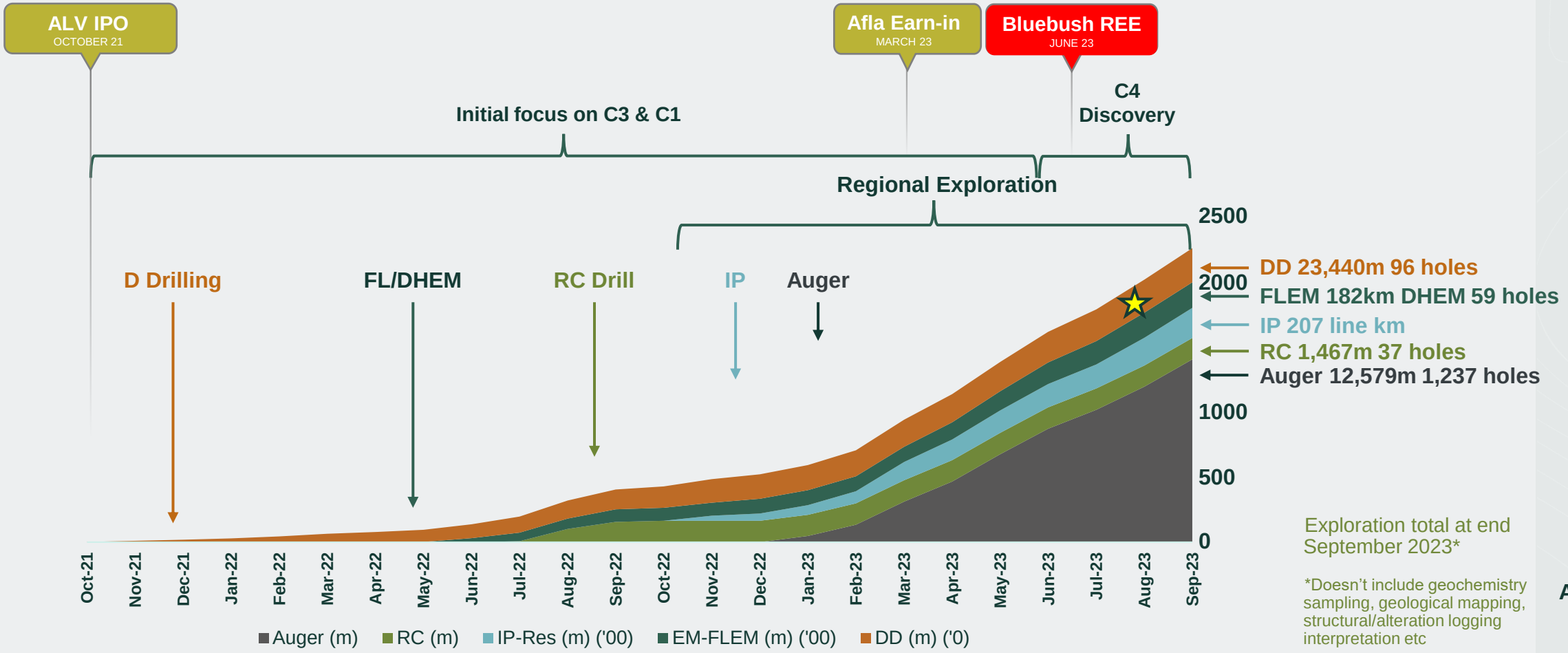
5km SW of C1 Deposit

Drilling is ongoing using DHEM, FLEM and IP to refine drill targets

Potential for near-term resource

Alvo: The Active Brazilian Explorer

- Over 23,000m of Diamond Drilling conducted since Oct 2021
- Almost 10,000 core samples collected
- Extensive geological logging, geophysical surveys & studies of physical properties



Exploration total at end September 2023*

*Doesn't include geochemistry sampling, geological mapping, structural/alteration logging interpretation etc

Advancing Critical Minerals in Brazil

	Q4 23	Q1 24	Q2 24	Q3 24
BLUEBUSH REE				
Auger drilling	●	●	●	●
Metallurgical Testwork		●	●	●
Diamond drilling/Geophysics/Exploration	●	●	●	●
Decision on Bluebush REE Due Diligence	★			
PALMA – C4 PROSPECT				
Maiden diamond drilling	●			
PALMA - C1 & C3 PROSPECT				
DHEM surveys on phase 1 & 2 drill holes	●			
PALMA REGIONAL EXPLORATION				
FLEM and IP to refine discovery targets	●	●	●	●
Mapping, soil sampling and auger drilling at early-stage targets areas	●	●	●	●
Cana Brava Ni Exploration Geochem and Geophysics		●		
Diamond drilling of mature regional targets		●	●	
TECHNICAL STUDIES				
Metallurgical test work – C1, C3, C4		●		
Geotech review of C3 + C1 diamond drilling	●			
Mineral Resource Expansion – C1, C3, C4??	●	● C4?		

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Corporate Overview- Framework for Discovery

93.1 million

Low Shares On Issue

Exploration success can materially impact share price

$3.0 million[1]

Funded for Exploration

Addition of prospective ionic clay REE expanding the Project footprint

60% Top 20

Quality Share Register

Held by Board (18%), RCF (9%), Paragon (6%), Strata (6%) & Lowell (5%)

$20.3 million[2]

Attractive Enterprise Value

For quality of the mineral resource base and exploration upside potential

Board and Management

Alvo's board has significant minerals exploration and mining experience in Brazil and around the world.

Graeme Slattery
Non-Exec Chairman
Lawyer

Rob Smakman
Managing Director
Geologist

Beau Nicholls
Non-Exec Director
Geologist

Experienced team in Brazil to manage exploration activities.

Julio Liz
Exploration Manager

Luiz Noronha
Administration Manager

1 Cash balance as at 30 September 2023
2 EV based on Mkt cap $23.3M (Share Price $0.250 on 8 November 2023)

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Mr Mortimer has sufficient experience 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 JORC Code 2012. Mr Mortimer is responsible for the geological modelling and resource evaluation sections of the Mineral Resource Estimate. Mr Smakman is a full-time employee of Alvo Minerals and has sufficient experience 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 JORC Code 2012. Mr Smakman is responsible for the site visit report and sampling sections of the Mineral Resource Estimate. Alvo confirms that it is not aware of any new information or data that materially affects the information included in the original IGR. Alvo confirms that the form and context in which the Competent Persons’ findings are presented have not been materially modified from the original IRG. All material assumptions and technical parameters underpinning the estimates in the report continue to apply and have not materially changed. The IGR referred to above may be viewed and downloaded from the Company’s website www.alvo.com.au.

^Copper & Zinc Equivalent Calculation: The copper & zinc equivalent grades (CuEq & ZnEq) are based on copper, zinc, silver, lead and gold prices of US$7,782/t Copper, US$3,189/t Zinc, US$1,980/t Lead, US$19.30/oz Silver, and US$1,696/oz ((price deck based on 3-month LME as 7/11/22) Recoveries of 81%, 83%, 70%, 50% and 50% respectively,(recoveries based on ASX Metallurgical testwork released 9 November 2022). The copper (and zinc) equivalent calculation is as follows: Cu Eq = Cu grade% * Cu recovery + ((Pb grade % * Pb recovery % * (Pb price $/t/Cu price$/t)) + (Zn grade % * Zn recovery % * (Zn price $/t/Cu price $/t)) + (Ag grade g/t /31.103 * Ag recovery % * (Ag price $/oz/Cu price $/t) + (Au grade g/t /31.103 * Au recovery % * (Au price $/oz/Cu price $/t). For ZnEq swap Cu and Zn in previous equation. Reported on 100% Basis.

Thank you

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Managing Director

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Two Highly Prospective Projects in Brazil

Strong community and political support

Access to multiple hydroelectricity options

Multiple rail options accessing ports and smelters

Sealed roads to project

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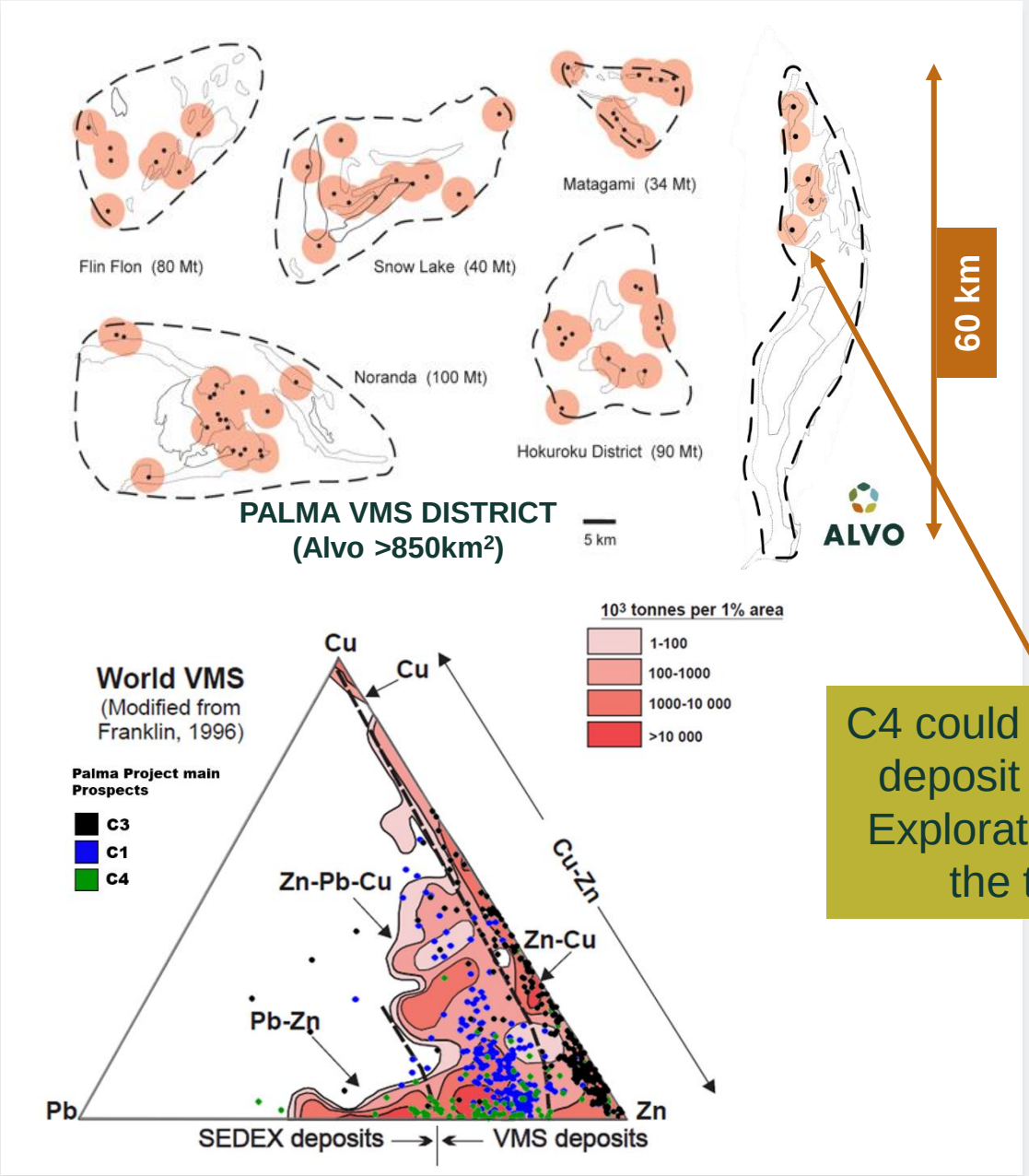
Palma: A new VMS camp

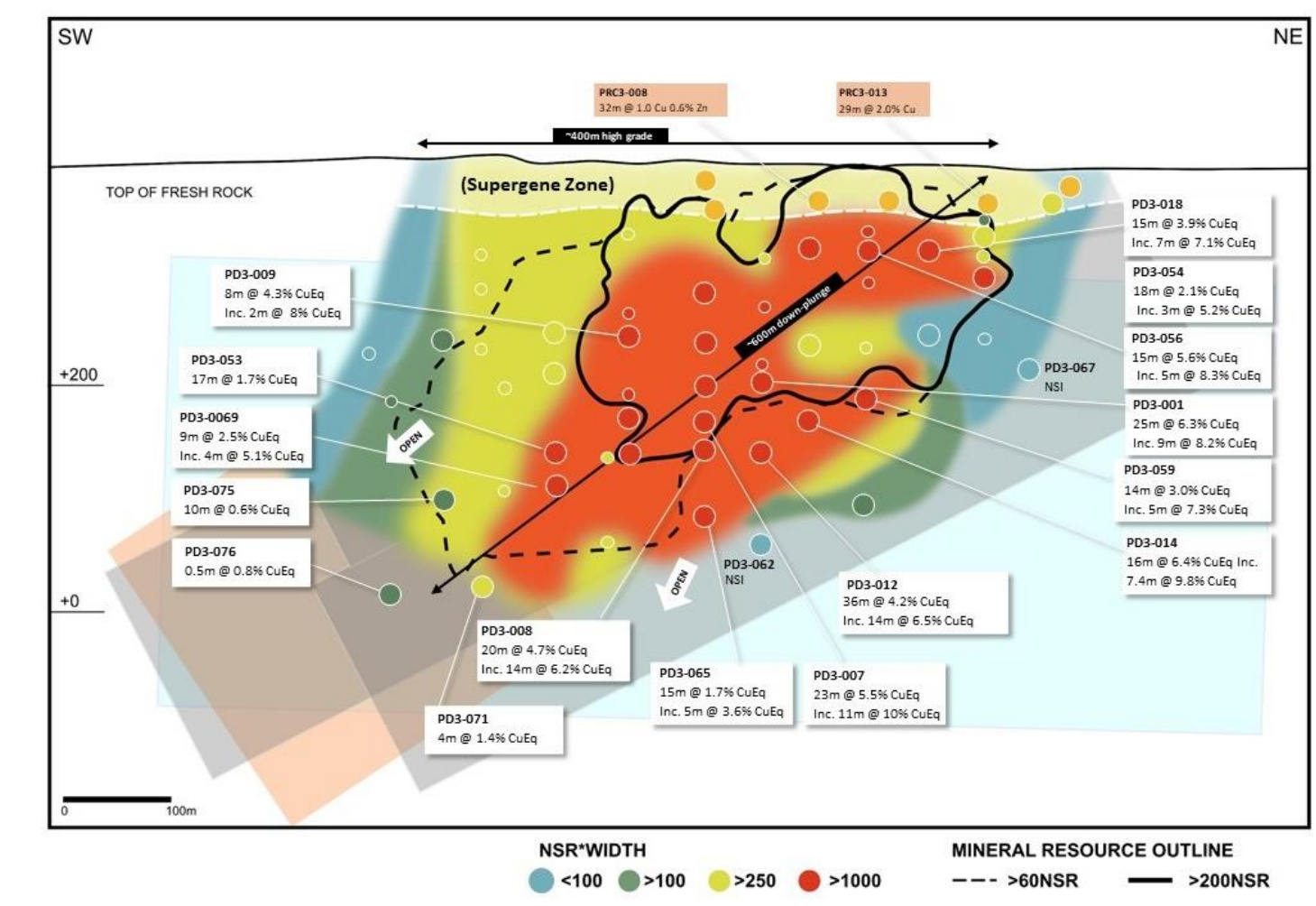
- Volcanogenic Massive Sulphide (VMS) deposits occur in clusters that define MAJOR mining camps
- VMS are important global sources of Cu, Zn, Pb, Ag and Au
- **Palma has the right rocks to become a new VMS camp – new discoveries only possible with Exploration- ALVO is ACTIVE Geophysics, Geochem + Drilling Underway**
- Only outcropping mineralisation was drilled in the 1980s- multiple areas to be tested
- Alvo has a dominant land position in the district with >850km^2
- Palma is defined as Bi-Modal Mafic- the most common of the VMS styles
    - Common examples include Kidd Creek, Flin Flon, Noranda, San Nicholas (Mexico) and Preiska (RSA)

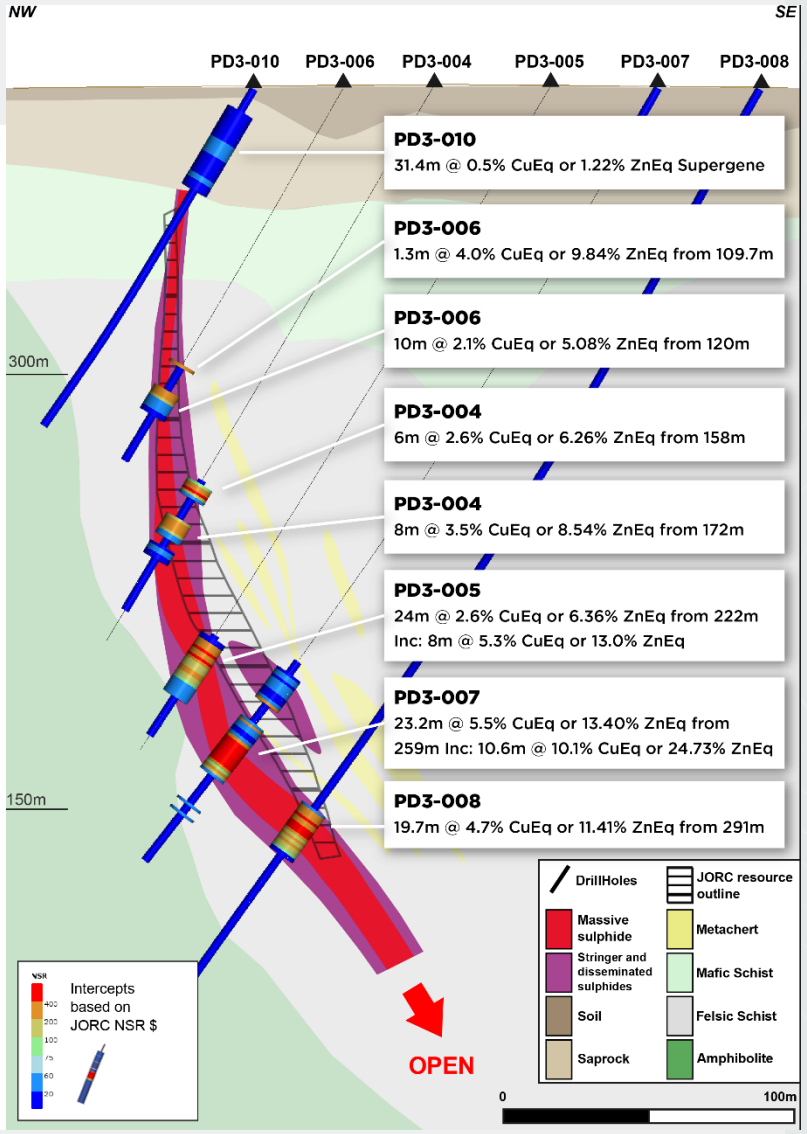


C4 could be the next deposit at Palma. Exploration across the tenure

Maps and diagrams modified after Galley et al., 2007

C3 Prospect: Thick and High Cu Grades





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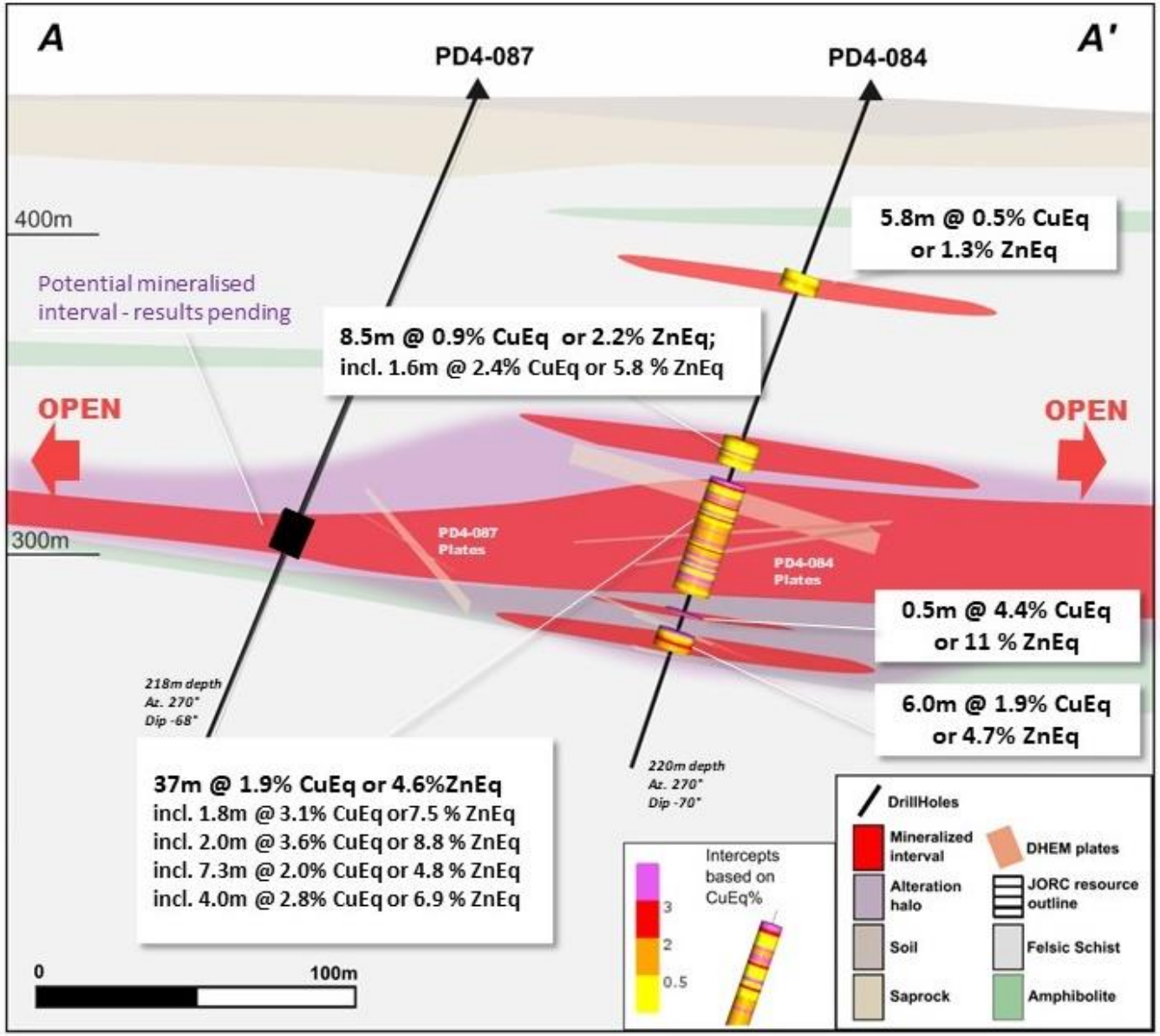
C4- “Brownfields VMS Discovery”

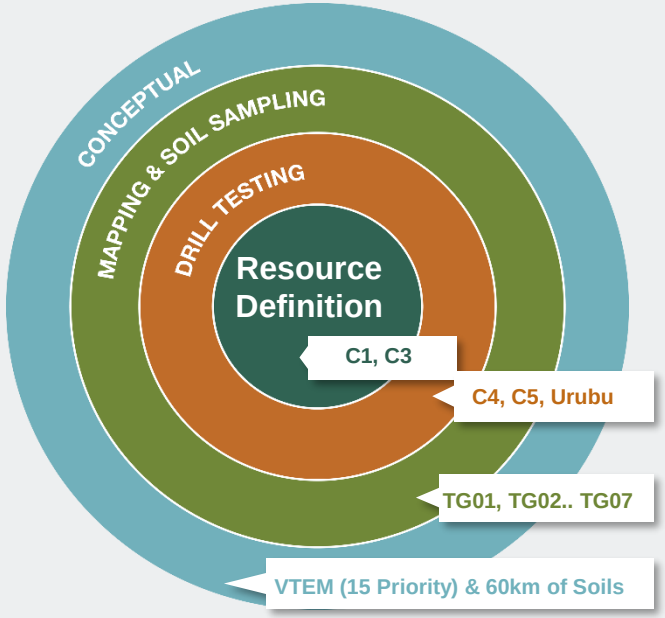
Mineralisation within a Broad Alteration Halo



- C4 located only 5km SW from C1
- If drilling continues to intercept broad mineralised zones, C4 could be quickly added to an updated MRE (currently underway at for C1 and C3)
- Drilling at PD4-088 (results pending) has intercepted multiple, potentially mineralised horizons within a 160m alteration envelope
- Interpreted horizontal mineralisation- interpreted as ‘true width’
- Drilling is ongoing- DHEM and FLEM and IP ongoing to refine targeting

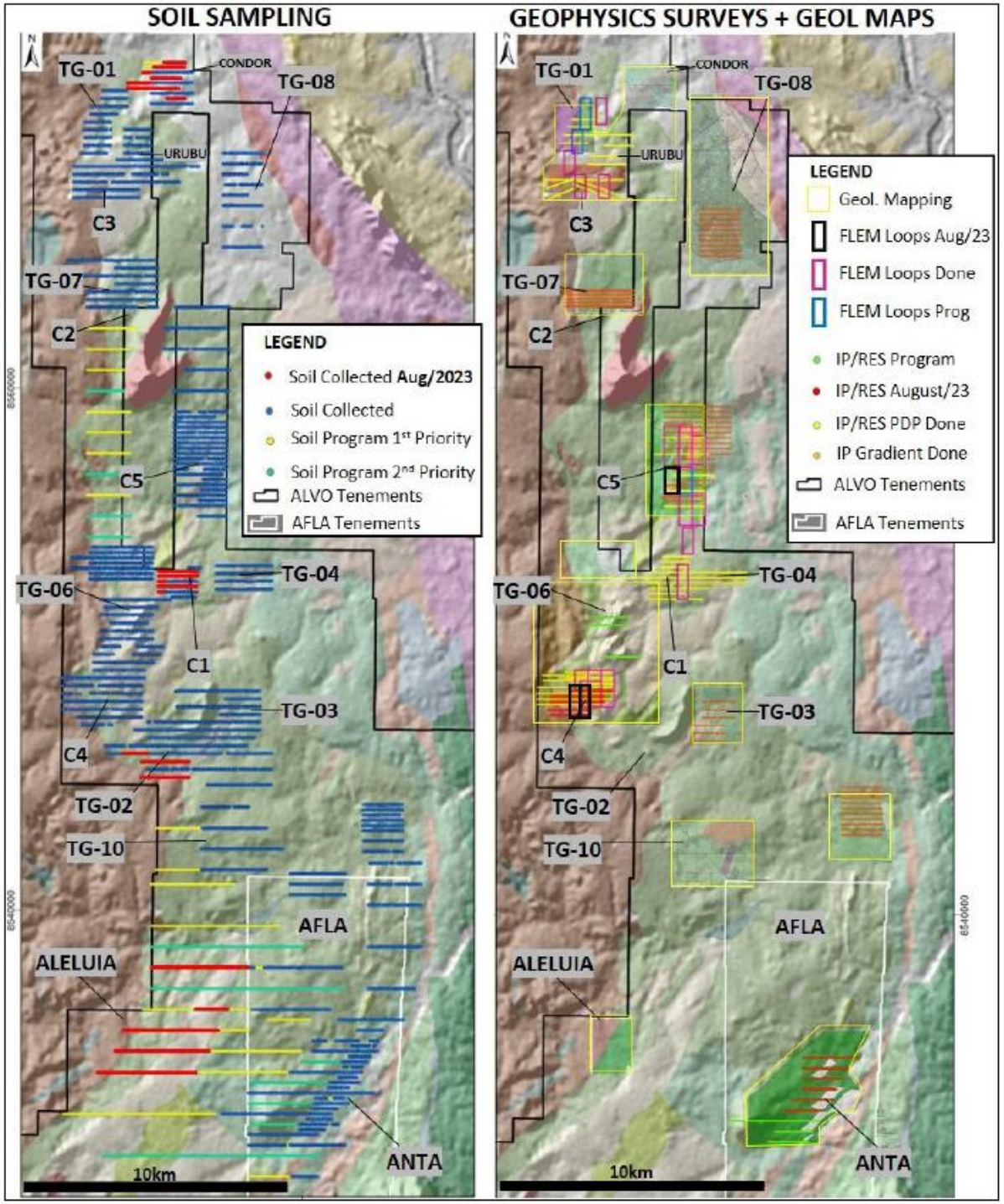
Palma Exploration

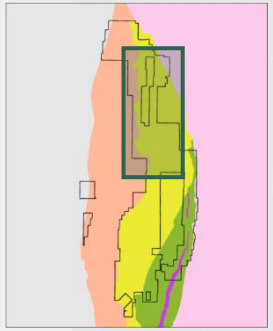
Multi-Discipline, Multi-Target-Driving towards Diamond drill testing



Resource Definition
Drill Testing
Mapping, Geochem, Geophysics
Conceptual

Alvo VTEM Targets



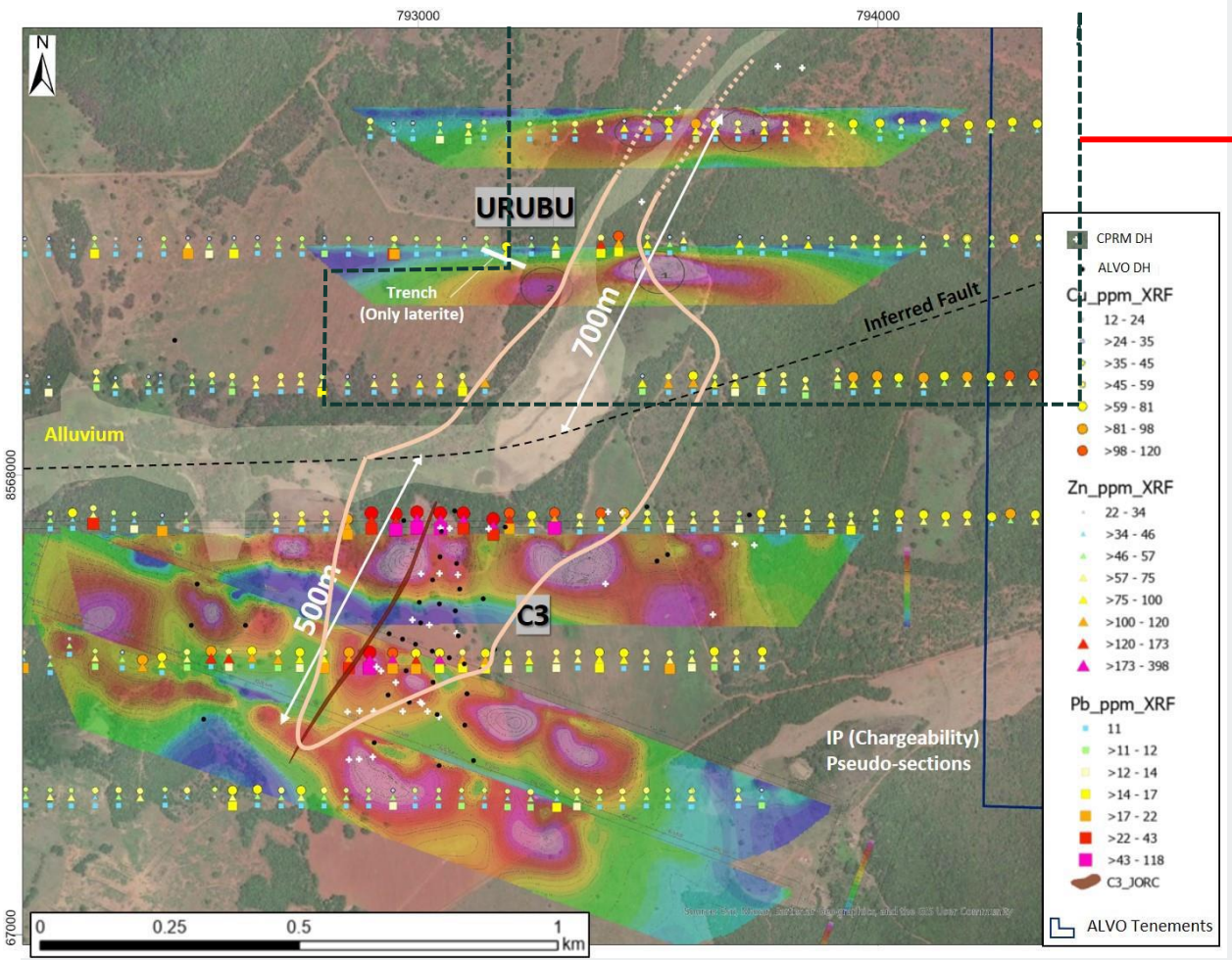


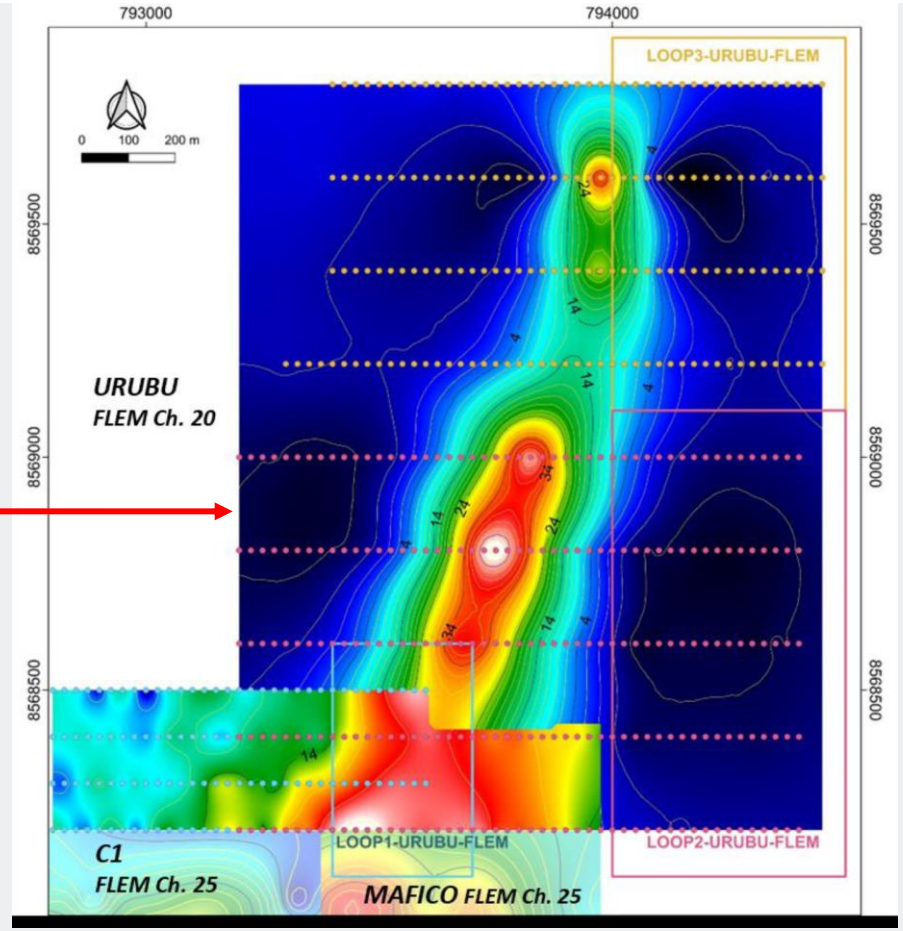
0 5
kilometres

ASX:ALV

Urubu Prospect- extension of C3?

Urubu (Vulture) has coincident soils and IP chargeability, FLEM survey has confirmed a conductor of similar conductivity thickness to C3





FLEM survey indicates a thickness/conductivity similar to C3 (~1,000 siemens)

Additional Soils and Auger drilling planned before drill decision

Inversion of FLEM underway – conductive plate mapping and potential to map the E-W fault

ALVO MINERALS

ASX:ALV

C5: Exploration

C5 exploration is one of multiple advanced prospects

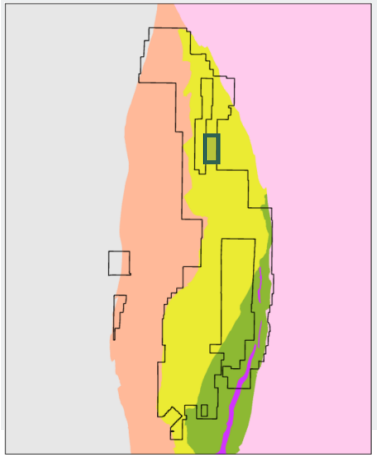
- CPRM completed soils and a single (mineralised) drillhole (not located)
- 3 coincident elongated Cu/Zn/Pb anomalies- each > 1km

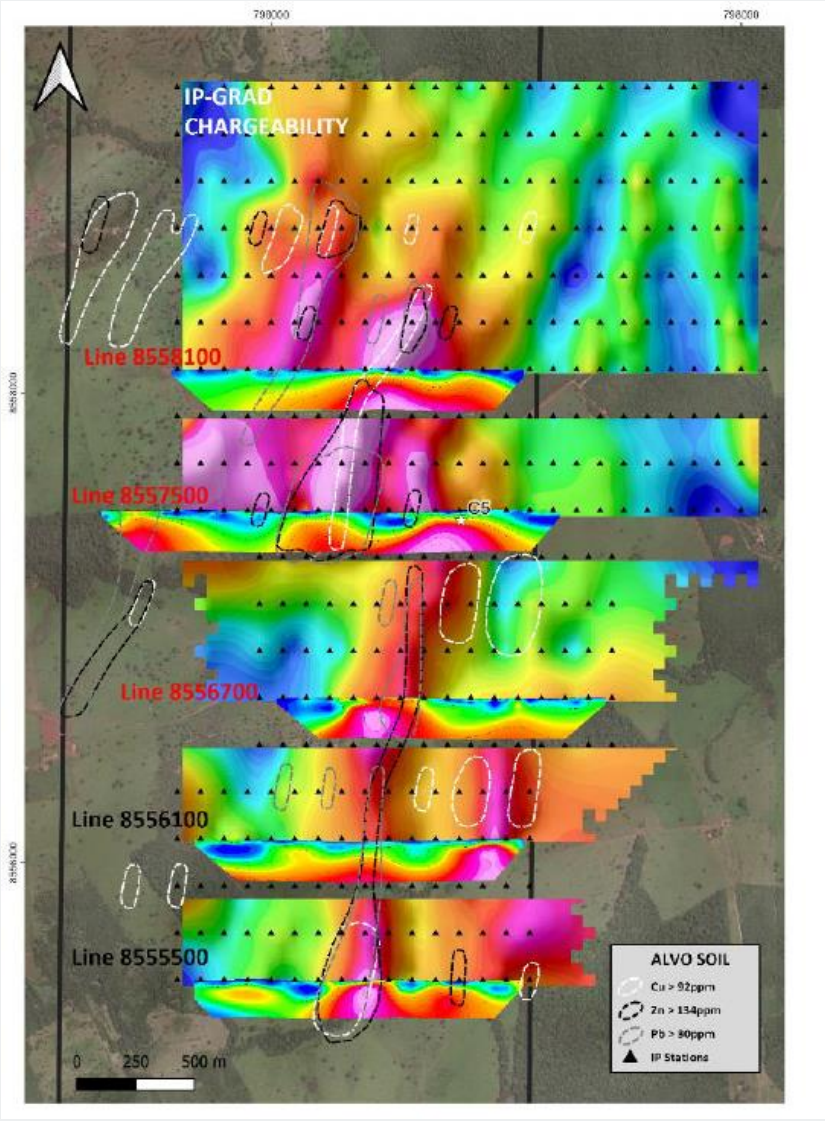
Alvo completed 800 x 50m soils- infill to 400 x 50m confirmed soil anomalies

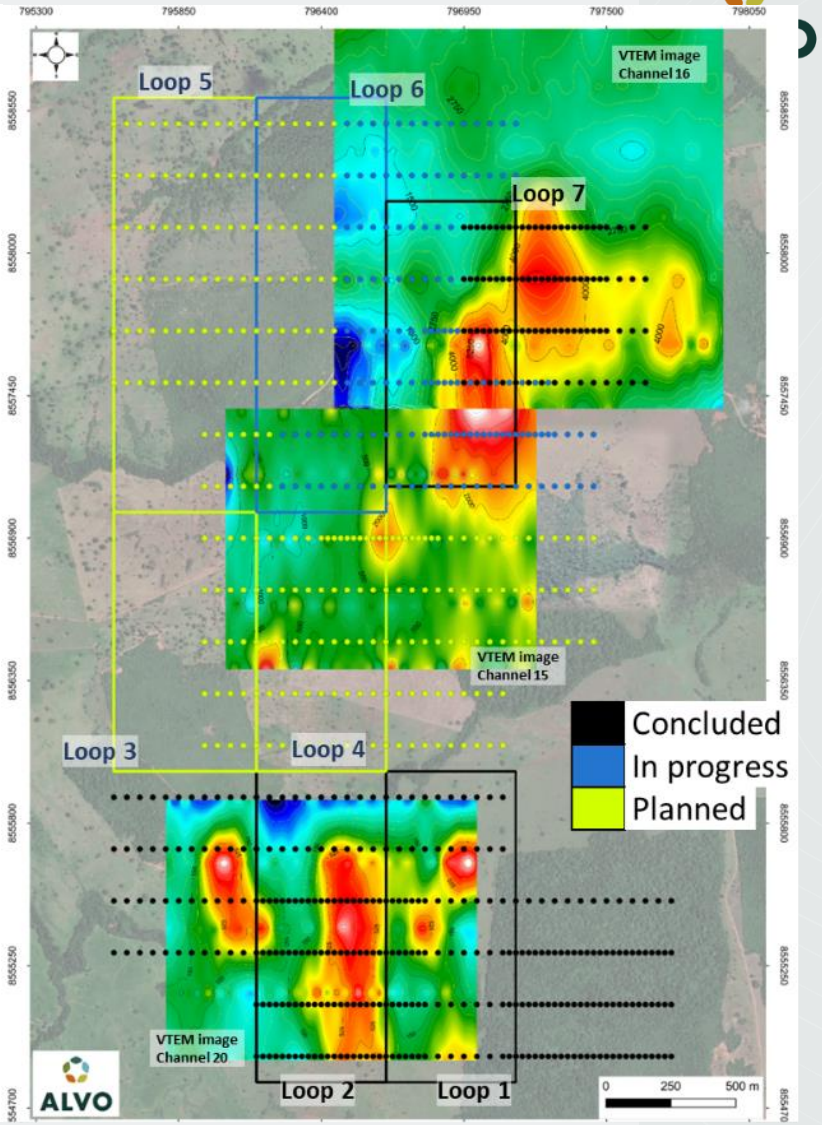
IP survey complete strong coincident chargeability/resistivity anomalies on southern and northern soils

FLEM underway 5 loops for 15km

Drilling to be planned based on results...







Notes