www.belararox.com.au ASX: BRX

# **ASX** ANNOUNCEMENT

18 May 2023

# Porphyry Prospectivity Confirmed with Additional TMT Targets Identified

#### **Key Highlights**

- A Satellite Aster and Sentinel 2 study at the Toro, Malambo and Tambo project confirms hydrothermal alteration.
- Eleven prospective targets have been identified.
- The targets are likely to represent surface expressions of high-sulphidation epithermal and/or porphyry-style mineral systems.
- Targets have been ranked for prospectivity based on spectral imagery and geological interpretation.
- The high-priority targets show similar spectral characteristics to observed hydrothermal alteration and silicification at Filo del Sol.
- Additional targets are being considered for an expanded exploration program for the TMT project.

**Belararox Ltd (ASX:BRX) (Belararox or the Company)**, an advanced mineral explorer focused on high-value clean energy metals, has identified 11 prospective targets based on satellite spectral imagery processed by Fathom Geophysics and the geological interpretation completed on the Toro-Malambo-Tambo ("TMT") project by Independent Hydrothermal Systems Specialist, Dr Steve Garwin.

The TMT project is located in an area where exploration activities have been closing the underexplored gap between the [i] El Indo Metallogenic Belt, which contains the Veladero and Pascua Lima deposits, and the [ii] Maricunga Metallogenic Belt, which contains the Filo del Sol and Josemaria deposits [refer to **Figure 1**]. Hydrothermal alteration has been used as a vector for deposits in the region [refer to **Figure 15 on page 17**].

#### **Chief Technical Consultant - Argentina, Jason Ward, commented:**

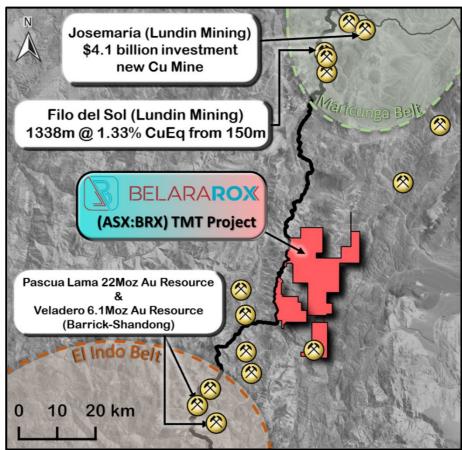
"This satellite spectral study has confirmed the presence of hydrothermal alteration at the three main targets at Toro, Malambo and Tambo, and also identified eight additional target areas. We look forward to following up these targets with geological mapping and sampling once our Environmental Permits are granted".

# **Belararox's Managing Director, Arvind Misra, commented:**

"When we first acquired the TMT Project, I said how delighted I was as we expected it to enable BRX to pursue exploration activities in a highly prospective region in Argentina. While we still have a way to go, the identification of 11 prospective targets with surface expressions is a strong first step in the TMT Project meeting our expectations".

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**Figure 1:** The location of the Toro-Malambo-Tambo ("TMT") project relative to the El Indo Metallogenic Belt and the Maricunga Metallogenic Belt<sup>[1]</sup>

# **ASTER and Sentinel-2 Satellite Spectral Study – Rationale for Targeting**

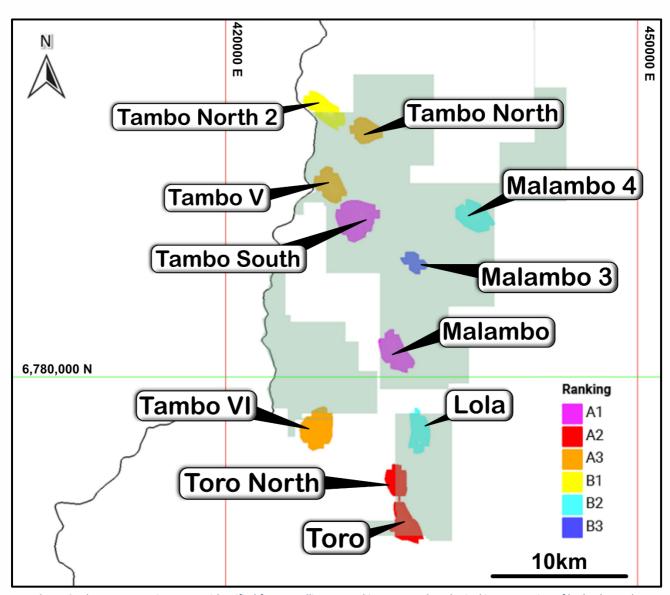
The study (Garwin, 2023) utilised two (2) different multispectral spaceborne datasets [i] Advanced Spaceborne Thermal Emission and Reflection Radiometer ("ASTER") and [ii] Sentinel-2. Multispectral image sensors simultaneously capture image data within multiple wavelength ranges (bands) across the electromagnetic spectrum. Each band is commonly described by the band number and the band wavelength centre position. Geological interpretation is then based on the responses displayed in the imagery against known surface hydrothermal alteration and/or surface geology associated with key mineral deposits. Fathom Geophysics (Core & Core, 2023) processed the ASTER and Sentinel-2 data for use in the study.

Eleven (11) prospective targets were identified from the satellite spectral imagery with geological interpretation completed on the TMT project by Independent Hydrothermal Systems Specialist Dr Steve Garwin. The 11 prospective targets have been ranked for prospectivity based on spectral response and geological interpretation, resulting in the delineation of prospective targets that show potential for high-sulphidation epithermal mineral systems and / or porphyry-style mineral systems. The selected targets have been ranked for prospectivity across six (6) categories with the A-class category considered to be of higher potential than the B-class; the targets within each class are prioritised from 1 (highest) to 3 (lowest) [refer to Figure 2 on page 3].

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Regionally the major deposits have an association with the spectral imagery and the interpreted linear zones of hydrothermal alteration (iron-oxide, kaolinite, & muscovite - phyllic alteration). Known gold and copper deposits are typically located along or near structural lineament intersections, a key North-South structural corridor associated with hydrothermal alteration is circled in red and is displayed in **Figure 3 on page 4.** 

[1] = Source data (Filo Mining Corp., 2020), (E& MJ Engineering and Mining Journal, 2021), & (Barrick Gold Corporation, 2023)



**Figure 2:** Eleven prospective targets identified from satellite spectral imagery and geological interpretation of hydrothermal alteration zones [Modified from (Garwin, 2023)]

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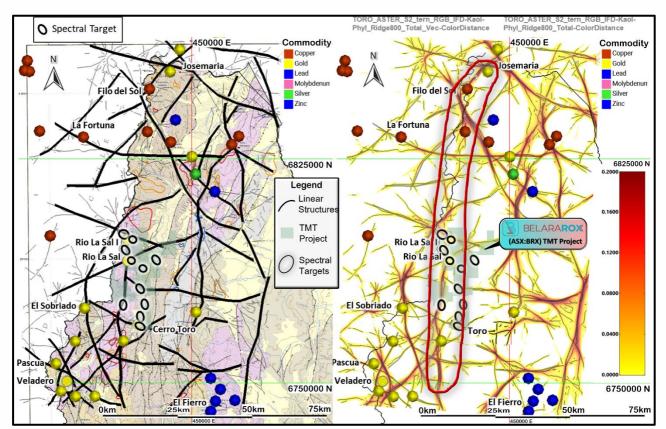


Figure 3: TMT satellite spectral study area, showing major deposits, TMT spectral target areas, satellite-derived, linear zones of iron-oxide –kaolinite – phyllic alteration (wavelength – 800m) and the metallogenic map for NW Argentina. Left hand image – Metallogenic map and summary of major satellite-deduced, linear alteration zones (bold black lines). Right hand image – Linear alteration features coloured by intensity from yellow to red. A major north-south trending structural corridor associated with hydrothermal alteration runs through the TMT project tenures (red polygon); branching off this corridor are inferred structures that have the potential to act as pathways for satellite-inferred hydrothermal alteration. [Modified from (Garwin, 2023)]

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The prospective TMT targets are based on spectral imagery and the interpreted linear zones of alteration (iron-oxide, kaolinite and phyllic alteration). The 11 prospective targets are displayed with these interpreted zones of hydrothermal alteration in **Figure 4**.

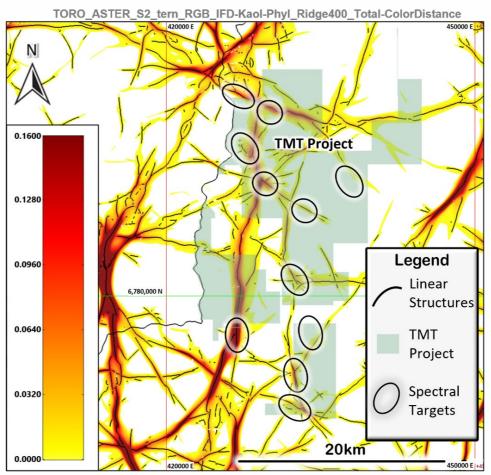


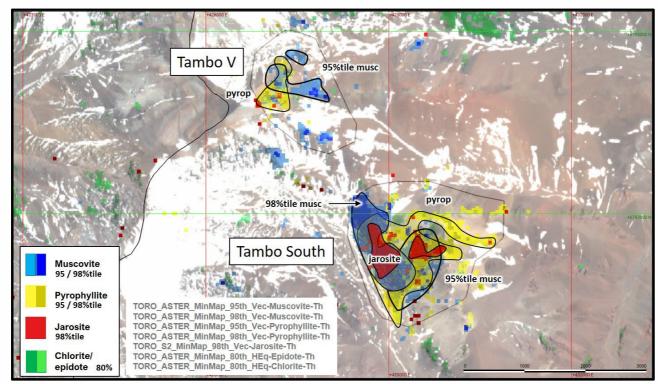
Figure 4: The 11 prospective targets are displayed with the satellite-deduced (ASTER and Sentinel-2), zones of iron-oxide – kaolonite – phyllic alteration in the TMT tenement area [Modified from (Garwin, 2023)]

# Tambo South and Tambo V – Multiple A-Class Priority Targets

The prospective targets Tambo South and Malambo have been assigned A1 priority and Tambo V have been assigned A3 priority [refer to Figure 2 on page 3]. The targets lie along a north-northwesterly-trending zone of ASTER-deduced hydrothermal alteration, characterized by jarosite (a hydrous sulfate of potassium and ferric iron), pyrophyllite and muscovite (Figure 5 on page 6). These alteration minerals are common in the upper portions of porphyry and epithermal systems. Snow cover potentially masks part of the mineral systems at Tambo South, so fieldwork will aid in the confirmation of the scale of hydrothermal alteration at this location.

In the Argentinean-Chilean Andes, areas of high thermal response are associated with silica-rich alteration. The alteration centre at Tambo South and Tambo V is characterized by an elevated thermal response, consistent with silica-rich hydrothermal alteration / residual quartz, which is consistent with the development of advanced argillic alteration above a potential porphyry centre. The potential exists for both high-sulfidation epithermal and porphyry-style Cu-Au-Ag mineralization in this target area [refer to **Figure 6 on page 6**].

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**Figure 5**: Prospective targets Tambo South (A1 priority) and Tambo V (A3 priority) displayed with ASTER-derived interpreted alteration extents and true colour Sentinel-2 image [Modified from (Garwin, 2023)]

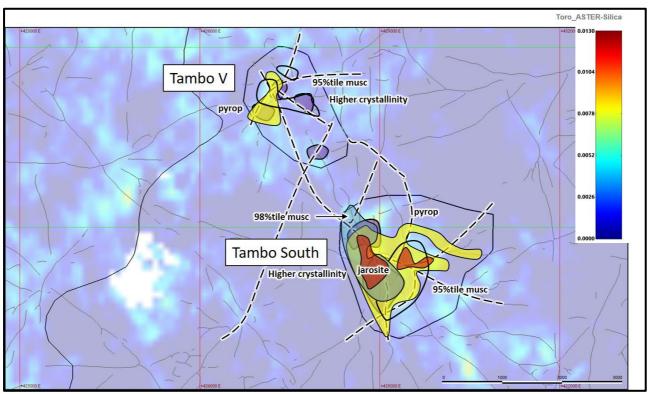


Figure 6: Prospective targets Tambo South (A1 priority) and Tambo V (A3 priority) displayed with inferred hydrothermal alteration zones (refer to Figure 5) and the ASTER thermal response (higher response typically coincides with higher silica content). The dashed lines dashed lines indicate inferred structures (faults and fracture zones) that are believed to control hydrothermal alteration and metals distribution. [Modified from (Garwin, 2023)]

# Malambo – A-Class Priority Target

The Malambo (A1 priority) is interpreted to contain strong linear zones of iron-oxide –kaolinite – phyllic alteration (wavelength – 100m) and several zones of ASTER interpreted (i) pyrophyllite-jarosite alteration associated with muscovite alteration zones surrounded by (ii) Chlorite – epidote alteration [refer to **Figure 7**].

The dashed lines in **Figure 7** represent inferred structures (faults and fracture zones) that could control hydrothermal alteration and metals distribution. The NNW-trending structural control is evident, as are NW-, NE- and E- trending cross-structures.

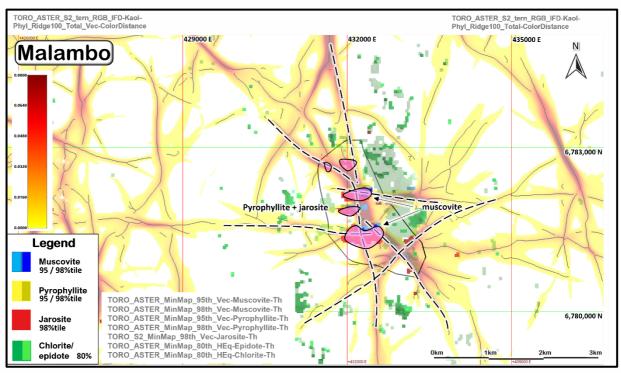
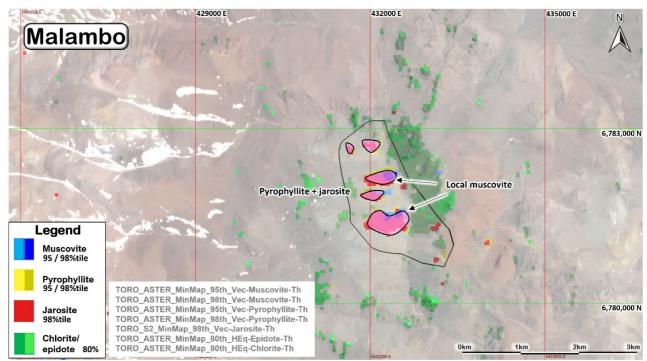


Figure 7: The Malambo target area, showing processed ASTER interpretation for linear zones of Fe-oxide, kaolinite and phyllic alteration and ASTER / Sentinel-2 mineral models. The dashed lines dashed lines indicate inferred structures (faults and fracture zones) that could control hydrothermal alteration and metals distribution. [Modified from (Garwin, 2023)]

Malambo indicates a strong potential for hosting a porphyry-style deposit, showing several anomalous pyrophyllite-jarosite zones that lie along an inferred north-northwesterly-trending structural corridor. The abundance of pyrophyllite and minor amounts of muscovite is consistent with the exposure of the upper portions of an intrusive / porphyry system [refer to **Figure 13 on page 11**].

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**Figure 8:** Malambo prospective target displayed with ASTER-derived mineral models and true colour Sentinel-2 image [Modified from (Garwin, 2023)]

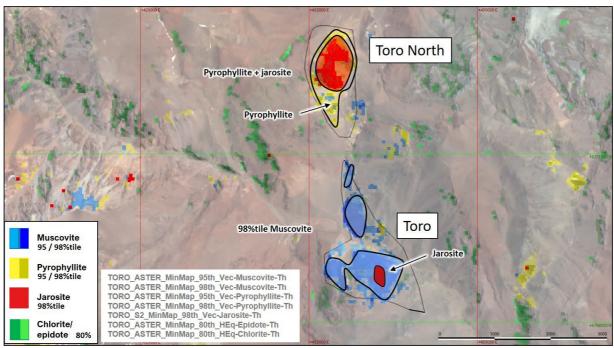
# **Toro – A-Class Priority Targets**

Two (2) interpreted anomalies exist at the Toro area. The Toro and Toro North prospective targets are given A2 priority. Both targets contain strong linear zones of iron-oxide – kaolinite – phyllic alteration (wavelength – 100m) and zones of intersection. The two (2) major targets are characterised by a northern pyrophyllite-jarosite centre (Toro North) and a southern muscovite-(joarsite)-dominant centre (Toro). The style of alteration and the geometry of Toro target is consistent with a proximal setting to a centre of a porphyry-style mineralised system [refer to **Figure 9 on page 9**].

The Toro target geological interpretation is consistent with the information obtained from historical exploration reporting (Votorantim Metai Argentina S.A., 2013), identifying "D" type veins in the southernmost drillholes and a breccia unit with high gold mineralisation that remains untested in the southern sector of Toro.

The Toro North target has no historical drill holes and, based on the interpreted jarosite alteration, it is highly prospective for sulphide mineralisation.

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**Figure 9**: Toro and Toro North prospective targets displayed with ASTER-derived mineral models and true colour Sentinel-2 image [Modified from (Garwin, 2023)]

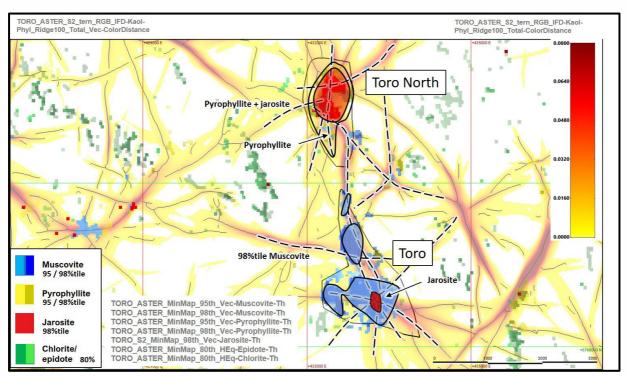


Figure 10: Toro and Toro North targets showing processed ASTER interpretation for linear zones of Fe-oxide, kaolinite and phyllic alteration and ASTER / Sentinel-2 mineral models. The dashed lines indicate inferred structures (faults and fracture zones) that could control hydrothermal alteration and metals distribution. [Modified from (Garwin, 2023)]

## **Additional Prospective Targets**

This ASX Release deals with the key prospective targets from the 11 prospective targets ranked for prospectivity based on spectral imagery and geological interpretation. Displayed in **Figure 2 on page 3** are the additional prospective targets for high-sulphidation mineral systems and/or porphyry-style mineral systems. The additional prospective targets will be evaluated at a future date.

# **Comparisons with Nearby Deposits**

## Filo del Sol deposit – Geological Analogue

The Filo del Sol deposit has an estimated Total Mineral Resource of 644Mt @ an average grade of 0.31% Cu, 0.32g/t Au, & 10.1 g/t Ag with cut-off grade varying for elements, oxide, sulphide, and AuEq, refer to source document for the cut-off grade (Ausenco Engineering Canada Inc, 2023). The Filo del Sol deposit is associated with oxide & sulphide ores that are strongly associated with siliceous alteration (mapped silica and residual quartz), surrounded by quartz-alunite alteration [refer to **Figure 11**]. Identification of highly siliceous rock units and other alteration types in a spatial association similar to Filo del Sol is a key methodology to identify prospective targets across the TMT project.

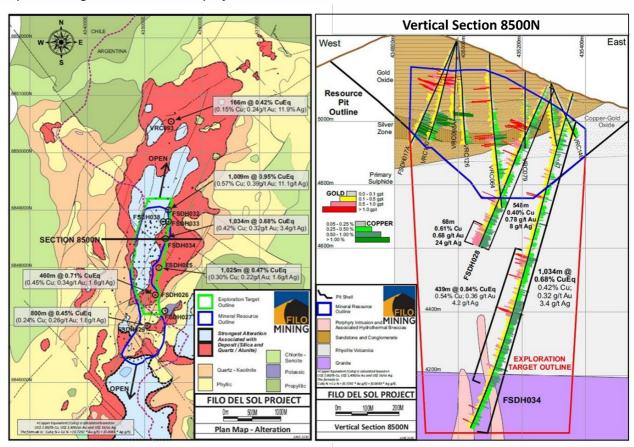


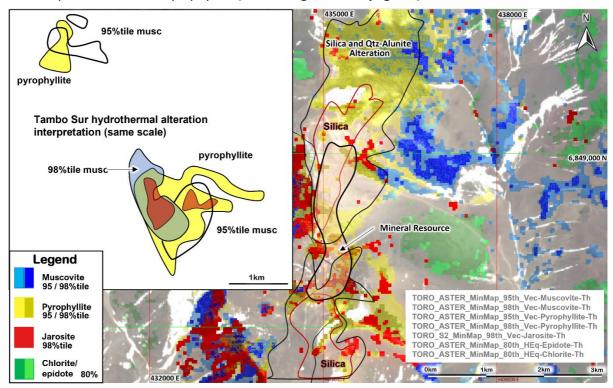
Figure 11: Filo del Sol mapped Hydrothermal Alteration and Interpreted Cross-Section [Sourced from (Filo Mining Corp., 2020)]

The Filo del Sol Cu-Au-Ag deposit has been used as a geological analogue since it shows a similar response to the siliceous alteration (silica and residual quartz) and similar regional structural features, with N-S major lineament crosscut by a NW-SE structure. The targets Tambo South and Tambo V appear to be located in the same interpreted linear zones of alteration (iron-oxide, kaolinite, & phyllic alteration) as the alteration associated with the Filo del Sol Mineral Resource [refer to **Figure 12 on page 11**].

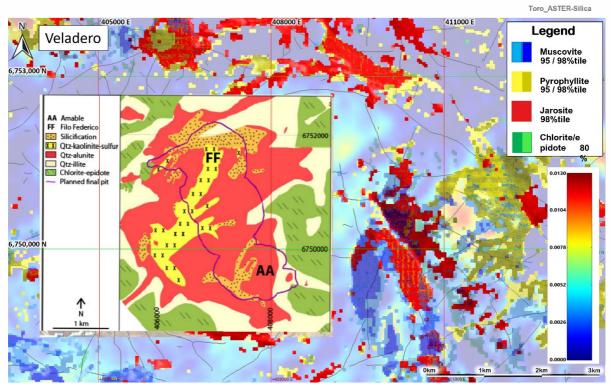
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#### Veladero - Geological Analogue

The Veladero deposit displayed clear links between the ASTER thermal image and the surface-mapped silica / residual quartz alteration (as presented by Holly, 2011) with the final pit predominantly targeting the surface ASTER interpreted Jarosite & Pyrophyllite [refer to **Figure 13 on page 11**].



**Figure 12:** Filo del Sol alteration extent from surface mapping compared to the processed ASTER interpretation with a scaled insert of the interpreted alteration extent of the Tambo South and Tambo V prospective targets [refer to Figure 5 for the Tambo South and Tambo V processed ASTER interpretation] [Modified from (Garwin, 2023)]



**Figure 13:** Veladero processed ASTER Interpretation with a geological insert of Hydrothermal Alteration [Insert sourced from Holley (2012)] [Modified from (Garwin, 2023)]

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# Conclusions of the Satellite Spectral Study are summarized below:

- Regional Cu-Au and Au-Ag-(Zn) deposits predominantly related to porphyry- and epithermal-systems.
  - Miocene to Pliocene high-sulfidation and intermediate-sulfidation epithermal and porphyry deposits are common in the region.
- Majority of mineralization associated with Neogene volcanic- and intrusive-complexes, faults and geological lineaments.
  - The area is characterized by hydrothermal alteration that is visible using Google Earth and Landsat imagery.
  - Regional N- and NW-trending lineaments are defined by topography, geology and hydrothermal alteration; these arc-cross structures extend through Argentina and Chile, and localize many large Cu-Au-Ag deposits.
- Satellite-derived (ASTER and Sentinel-2) data delineate hydrothermal alteration and known deposits.
  - Majority of the deposits lie along zones of Fe-oxide –kaolinite phyllic alteration and near the intersection of alteration zones of multiple orientations; N-, NW- and NE-trends are most common.
  - Mineral models for muscovite, pyrophyllite (+kaolinite), jarosite, chlorite and epidote show zonation and provide vectors to the hotter portions of known ore systems (e.g., Filo del Sol and Veladero), and characterize TMT prospects (Tambo V, Malambo, Toro and others).
  - Zones of increased muscovite crystallinity typically provide vectors towards the hotter portions of the ore system.
  - An elevated ASTER thermal response coincides with increased silica / residual quartz alteration and defines the central portions of high-sulfidation epithermal systems (e.g., Veladero).
- Eleven areas of interest / exploration targets are delineated on the basis of satellite spectral results.
  - The targets are classified and ranked on the basis of the complexity and intensity of the features created from the spectral data, processed by Fathom Geophysics (2023).
  - Total of seven A-class targets and four B-class targets; prioritized from 1 (highest) to 3 (lowest) within each target class.
  - The most compelling targets occur in Tambo South (A1), Tambo V (A3), Malambo (A1) and Toro (A2).
  - Additional anomalies are recognized in Tambo North and Tambo North 2 (A3 and B1),
    Malambo 3 (B3), Malambo 4 (B2), and Lola (B2); A high-priority area, Tambo VI (A3) lies adjacent (external) to the southern boundary of Tambo Sur VI.
- Case-studies provide comparison of Filo del Sol + Veladero to Tambo North, Malambo and Toro.
  - Filo del Sol Cu-Au-Ag resource is characterized by abundant silica (high thermal response), pyrophyllite and jarosite with flanking muscovite of higher crystallinity and intersecting linear zones of Fe-oxide – kaolinite – phyllic alteration.
  - Veladero resource associated with high silica and flanking pyrophyllite, muscovite and jarosite that lie along linear zones of Fe-oxide – kaolinite – phyllic alteration.
  - Tambo South target is characterized by a muscovite-pyrophyllite-jarosite zone of high muscovite crystallinity and elevated thermal response (silica) that sits at the intersection of linear Fe-oxide-clay-mica zones of multiple orientations.
  - Malambo shows several pyrophyllite-jarosite zones and subordinate muscovite of high crystallinity that occur near the intersection of linear zones of Fe-oxide-clay-mica alteration with no significant thermal response (i.e., silica-deficient alt.)

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- Toro shows two centers: 1) pyrophyllite-jarosite to the north and 2) muscovite (highly crystalline), pyrophyllite and jarosite to the south; both target areas are characterized by the intersection of linear zones of Fe-oxide-clay-mica alteration.
- Historic drilling in the southern target at Toro shows Ag-Zn-bearing intermediate-sulfidation epithermal mineralization and an increase in Cu values towards the south, where an inferred 500 x 300m lithocap is characterized by muscovite-pyrophyllite-jarosite.
- The western portion of the southern Toro target contains a 500 x 200m (NW-elongate) breccia pipe, with disseminated enargite and chalcopyrite; drill-road trench results of 12m @ 0.27% Cu, 24 m of 0.5% Cu and 8 m of 0.45% Cu.

# **Next Steps**

- Upgrading historical data to a level of compliance with the 2012 JORC standard.
- Advance the EIAs.
- Engage geophysical contractors.
- Plan exploration field work.
- Mapping and sampling over the TMT Project.

This announcement has been authorised for release by the Board of Belararox.

# SHAREHOLDER ENQUIRIES

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# **About Belararox Limited (ASX: BRX)**

Belararox is a mineral explorer focused on securing and developing resources to meet the surge in demand from the technology, battery and renewable energy markets. Our projects currently include the potential for zinc, copper, gold, silver, nickel and lead resources.

# **Projects**

Belara is the company's flagship project located in New South Wales approximately 50km south-east of Dubbo in the East Lachlan Orogen. The project hosts an inferred mineral resource of 5Mt @ 3.41% ZnEq and two historical mines from which mineralisation is yet to be constrained along strike and at depth.

To complement its flagship project, the company recently acquired the highly prospective TMT base metal project with copper-gold porphyry potential in Argentina's San Juan Province.

Belararox also holds the Bullabulling project which is a 49km2 tenement package in Western Australia's Eastern Goldfields, prospective for gold and lithium. The project is surrounded by notable lithium projects and prospects including Future Battery Minerals' (ASX:FBM) Kangaroo Lithium Project, the historical Ubini Mine and the Red Panda Prospect.

#### **Competent Person Statement**

The information in this announcement to which this statement is attached relates to Exploration Results and is based on information compiled by Jason Ward. Mr Ward is director of Condor Prospecting and is a Competent Person who is a Fellow and Chartered Professional of the Australasian Institute of Mining and Metallurgy. Mr Ward has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration, and to the exploration techniques being used 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". Mr Ward has consented to the inclusion in this announcement of the matters based on his information in the form and context in which it appears. Mr Ward is one of the project vendors and currently director of Fomo Venture No 1 Pty Ltd.

#### **Forward Looking Statements**

This report contains forward looking statements concerning the projects owned by Belararox Limited. Statements concerning mining reserves and resources and exploration interpretations may also be deemed to be forward looking statements in that they involve estimates based on specific assumptions. Forward-looking statements are not statements of historical fact and actual events, and results may differ materially from those described in the forward-looking statements as a result of a variety of risks, uncertainties and other factors. Forward looking statements are based on management's beliefs, opinions and estimates as of the dates the forward - looking statements are made and no obligation is assumed to update forward looking statements if these beliefs, opinions and estimates should change or to reflect other future developments.

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# **Appendix A – Supplementary Maps**

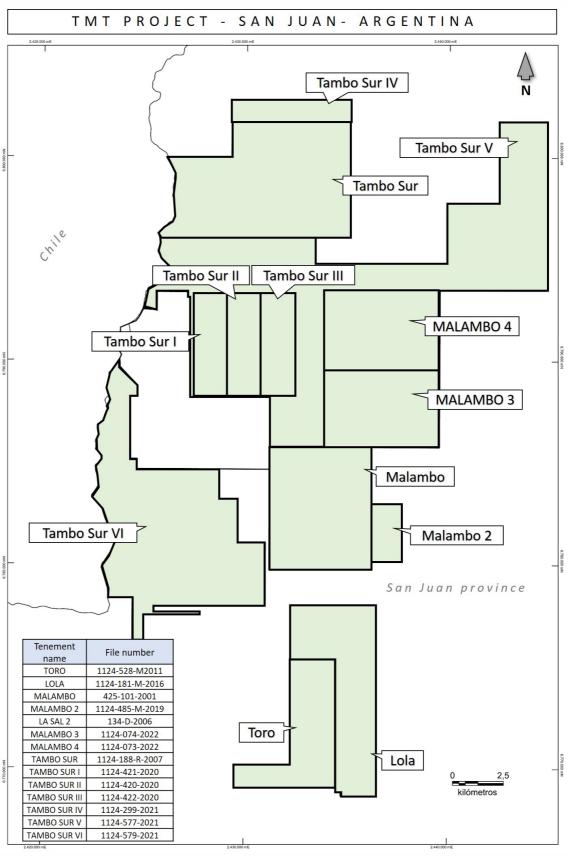


Figure 14: Toro-Malambo-Tambo ("TMT") project tenures

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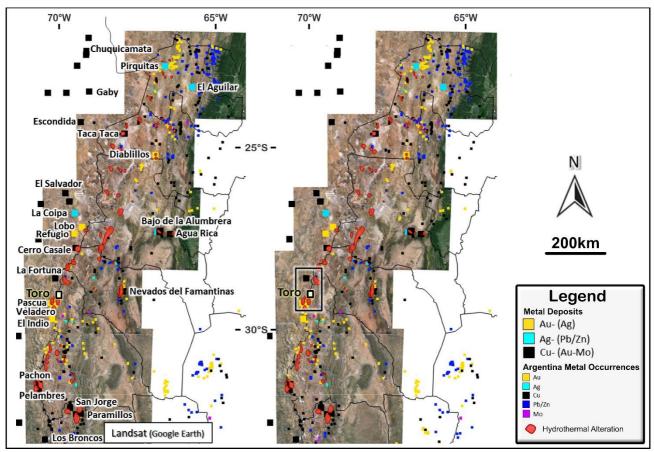


Figure 15: Regional view of hydrothermal alteration associated with Andean deposits in proximity to the Toro-Malambo-Tambo ("TMT") project.