

Brazilian Rare Earths Limited: High-Grade Tantalum Assays at Monte Alto Project

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Sydney, Australia - [Brazilian Rare Earths Ltd.](#) (ASX:BRE) is pleased to announce high-grade tantalum assays from the hard rock ultra-high grade REE-Nb-Sc-U mineralisation at the Monte Alto project in Bahia, Brazil. High-grade tantalum assays of up to 880ppm were returned, with a weighted average tantalum grade of 305ppm. The reported tantalum assays are from 29 diamond core holes totalling 4,663 meters for which BRE has previously reported REE-Nb-Sc-U assay results.

- Assay results confirm high-grade tantalum mineralisation of up to 880ppm at the Monte Alto project
- Weighted average tantalum grade over 472 meters of diamond core intercepts was 305ppm
- Tantalum is recognised as a critical mineral by both the USA and EU, essential for semiconductors, capacitors, super-alloys and medical devices
- Monte Alto has recorded exceptional rare earth grades of up to 39.1% TREO, with key elements up to 68,341ppm NdPr, 2,837ppm dysprosium, 544ppm terbium, 15,031ppm niobium, 352ppm scandium, 880ppm tantalum and 5,191ppm uranium
- Of the 50 critical minerals identified by the United States as vital to economic and national security, 18 are found in high concentrations in the ultra-high-grade hard rock mineralisation

Significant tantalum intercepts from Monte Alto diamond drilling include:

- 13.2m at 610ppm Ta₂O₅ from 53.5m (MADD0042)
- 5.4m at 542ppm Ta₂O₅ from surface (SD0003)
- 18m at 503ppm Ta₂O₅ from 23m (MADD0044)
- 19.8m at 506ppm Ta₂O₅ from 104.2m (MADD007)
- 7m at 501ppm Ta₂O₅ from surface (MADD002)
- 11.7m at 467ppm Ta₂O₅ from 0.7m (MADD003)
- 6m at 455ppm Ta₂O₅ from 51.5m (SD0008)
- 23m at 360ppm Ta₂O₅ from 84m (MADD0010)
- 47.1m at 344ppm Ta₂O₅ from 137.6m (MADD0099)

Tantalum Market Applications

Tantalum is a rare, heat and corrosion resistant metal vital for modern electronics, including semiconductors and capacitors, superalloys and medical devices.

The electronics market is the largest demand driver for tantalum as it is a key element for manufacturing capacitors and high-power resistors used in smartphones, laptops and automotive electronics. In addition, tantalum is used for semi-conductors for thin-film resistors and as a diffusion barrier in copper wiring.

In the aerospace and defence sectors, tantalum is essential in aerospace alloys for jet engine components and gas turbines, enhancing performance at high temperatures. Tantalum is biocompatible and is used for orthopaedic implants and diagnostic equipment in the medical sector.

Tantalum Market Size and Pricing

The U.S. Geological Survey (USGS) estimates that the global mine production of tantalum in 2023 was ~2,400 tonnes. The largest producer of tantalum was the Democratic Republic of Congo (DRC) with a market share of 40%, followed by Rwanda at 22% and Brazil at 15%.

China dominates the processing of tantalum and is currently responsible for over 50% of global tantalum processing capacity. Kazakhstan accounts for nearly 15% of global processing capacity and the United States 5% capacity share.

In 2023, the USGS estimated that the average price of tantalum concentrate was \$190 per kg of contained

Ta₂O₅ content (tantalum concentrates ~32% Ta₂O₅).

Global Supply Chain Risks

Tantalum's strategic importance is recognised by both the United States and European Union, which classify it as a critical mineral vital for their technology sectors, defence capabilities and economic growth.

The United States and European Union classification:

- United States: Tantalum is a critical mineral essential for economic and national security in the "Critical Minerals List" published by the U.S. Department of the Interior.
- European Union: Tantalum is recognised in the EU's list of Critical Raw Materials due to its high economic importance and supply risk.

The tantalum market faces supply chain vulnerabilities with geopolitical instability in key producing regions like the DRC and Rwanda, along with ethical concerns related to conflict minerals, illegal mining and changing international trade policies.

In 2024, the United States applied U.S. Section 301 tariffs of 25% on tantalum imports, under Section 301 of the Trade Act of 1974, from countries identified with unfair trade practices.⁶ The U.S. Department of Defense also restricts procurement of tantalum oxides, metals, and alloys sourced from adversarial foreign suppliers.

Monte Alto Project

The Monte Alto ultra-high-grade hard rock REE-Nb-Sc-Ta-U mineralisation is mostly covered by an extensive surface deposit of high-grade monazite sand in free-dig saprolite.

This high-grade monazite sand deposit extends from surface to depths of ~75 meters and is interpreted to have been formed from extensive weathering of the ultra-high grade basement rock (with rare earth and other elements weathered into a stable monazite mineral sand). The maiden JORC-compliant inferred resource estimate for the Monte Alto monazite sand deposit, completed in May 2023, stands at 25.2 million tonnes at 1% total rare earth oxides (TREO). Notably, this includes a very high-grade monazite zone containing 4.1 million tonnes at 3.2% TREO.

Monazite, a phosphate-based rare earth mineral, typically contains 50-60% total rare earth elements, including valuable neodymium and praseodymium assemblages. Monazite concentrates are internationally traded, with prices reaching US\$5,759 per tonne as of September 30, 2024 (Shanghai Metals Market, 54% min, CIF).

The ultra-high-grade hard rock mineralisation at Monte Alto contains excellent grades of tantalum, neodymium, praseodymium, dysprosium, terbium, niobium, scandium, and uranium. Furthermore, the hard rock mineralisation also has highly significant grades of the valuable heavy rare earth elements gadolinium, lutetium, and erbium, alongside very high grades of the heavy rare earth element yttrium.

Apart from uranium, all these elements are classified as 'critical' by both the USA and EU due to their strategic importance and the vulnerability of global supply chains. Of the 50 critical minerals or elements identified by the United States as vital to economic and national security, 18 are found in high concentrations in the ultra-highgrade mineralisation at Monte Alto.

Next Steps

- Regional Monte Alto 'district' exploration update
- First phase metallurgical study results
- Assays pending for 8,009m of diamond drilling at the Monte Alto project
- Exploration drilling at Sulista and Pele projects for high-grade monazite sands and ultra-high grade REE-Nb-Sc-Ta-U mineralisation

*To view tables and figures, please visit:
<https://abnnewswire.net/lnk/DQF54L37>

About Brazilian Rare Earths Limited:

Brazilian Rare Earths Limited (ASX:BRE) is an Australian company, rapidly advancing its Tier 1 rare earth

project in Northeast Brazil.

Company exploration to date has discovered and delineated a globally significant, district-scale mineral province containing large volumes of both heavy and light rare earths critical to advanced industries and applications that will deliver a green energy transition.

The Company is led by a team of experienced mining executives and geologists with hundreds of years of cumulative experience in finding, developing, and operating mineral assets to generate value across a wide variety of jurisdictions, and commodities throughout the globe.

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