

Brazilian Rare Earths Limited: Exploration Drilling Underway at Pele Project

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Sydney, Australia - [Brazilian Rare Earths Ltd.](#) (ASX:BRE) confirms the discovery of high-grade REE-Nb-Sc-U mineralisation across large, weathered outcrops at the Pele project, located ~60km southwest of the Monte Alto project. The Pele project is a district-scale exploration area that covers a cumulative ~16km chain of intense geophysical anomalies. The latest exploration program returned a range of excellent exploration results, including high-grade rare earth assays from extensive hard rock outcrop mineralisation at Target 1, large-scale geophysical anomalies, and high-grade monazite sand mineralisation from shallow auger drillholes.

- Successful exploration at the Pele project has confirmed the key pathfinders of intense anomalies with high-grade monazite sand mineralisation extending over large areas, and identified a series of high priority drill targets at Pele Target 1 and Target 2

- Ground reconnaissance at Pele Target 1, that includes over 18 line-km of gamma surveys, has discovered three large outcropping zones of weathered REE-Nb-Sc-U mineralisation, with outcrop widths of over ~20m, along a highly prospective ~1km trendline strike

- A total of 61 hard rock REE-Nb-Sc-U outcrop samples across Pele Target 1 returned high-grade assays of up to 10.4% TREO with 12,798ppm NdPr, 402ppm DyTb, 3,759ppm Nb₂O₅ and 910ppm U₃O₈ (R590)

- In light of these compelling results, a +5,000m maiden diamond drilling program at Pele Target 1 is now underway to target ultra-high grade REE-Nb-Sc-U mineralisation at depth

- Additionally, new assay results from the historical Rio Tinto drillholes at Pele identified shallow, high-grade monazite sand 'pathfinder' mineralisation over an extensive ~13km corridor at Pele Targets 2 and 4

- High-grade monazite sand results at Pele Target 2 define a high-priority exploration target area of over 8km in strike and 1km in width, and a ~20 line-km of gamma survey was executed over this area

- Results from the Pele Target 2 gamma line survey highlight extensive geophysical anomalies, combined with high-grade rare earth mineralised intercepts. Three parallel high intensity geophysical trendlines currently cover a target area of ~1.8km²

- The district-scale Pele project is highly prospective for ultra-high grade REE-Nb-Sc-U mineralisation, and has a total exploration target area that is over ~30 times larger than the Monte Alto project

Brazilian Rare Earths' MD and CEO, Bernardo da Veiga commented:

'The latest ground-based exploration at Pele Target 1 has rapidly delineated the largest strike of weathered REE-Nb-Sc-U outcrops since exploration commenced at the Rocha da Rocha province. The discovery of a massive trendline of outcropping rare earth mineralisation is a high priority diamond drill target and, together with confirmed exploration pathfinders present across the larger Pele project, underpins our confidence to expedite a diamond drill program for potential high-grade rare earth mineralisation at depth.'

Pele Target 1

Pele Target 1 is in the southern zone of the Pele project and is defined by an intense geophysical anomaly (Figure 3*) with a target exploration area of ~1km by ~0.5km, or similar dimensions to the Monte Alto project. A systematic gamma spectrometry survey over Pele Target 1 delineated the largest expanse of weathered REE-Nb-Sc-U outcrops found since exploration commenced at the Rocha da Rocha rare earth province. A strong combination of positive exploration pathfinders accelerated plans for a diamond drilling program for REE-Nb-Sc-U mineralisation at depth, and exploration drilling is now underway.

Since the initial discovery at Pele Target 1, the BRE exploration team has quickly advanced systematic ground reconnaissance with outcrop mapping and sampling, and a large ~18 line-km gamma survey. The ground exploration program has identified three extensive outcrop zones of weathered hard rock REE-Nb-Sc-U mineralisation which is controlled within a granitic gneiss host rock. The linear sequence of

hard rock REE-NbSc-U mineralised outcrops covers a highly prospective ~1km trendline.

At the northern end of this trendline, a grab sample of an intensively weathered outcrop returned an assay grade of 20.7% TREO from an elevation of 580 metres above sea level (masl). At the middle the outcropping trendline, a grab sample returned an assay grade of 8% TREO from a large ~20m wide outcrop of coarse grained highly weathered REE-Nb-Sc-U mineralisation. At the southern end of Pele Target 1, a total of 61 grab samples from highly weathered outcrops recorded assay grades up to 10.4% TREO at a higher elevation of 810 masl. This linear sequence of outcropping discoveries suggests that the REE-Nb-Sc-U mineralisation may extend over a vertical range of ~230m within the granite gneiss host rock.

The intense weathering of the surface outcrops at Pele Target 1, with a cluster of assay grades from 4% TREO to 8% TREO, appears to be formed via a gossan-style weathering process of the ultra-mafic fresh REE-Nb-ScU mineralisation that may be at depth.

A total of 61 grab samples from large weathered REE-Nb-Sc-U outcrops returned assay grades up to 10.4% TREO (R590), 12,798ppm NdPr (R590), 430ppm DyTb (R620), 5,010ppm Nb2O5 (R615) and 506ppm Sc2O3 (R623) and 1,035ppm U3O8 (R630).

The linear and vertical extent of these outcropping discoveries indicates a highly prospective REE-Nb-Sc-U mineralisation target at Pele Target 1, that may include a larger depth extension at the southern end of the trendline. The width of the surface hard rock outcrops at the southern zone are up to ~20m.

Significant assays from the grab samples of the highly weathered REE-Nb-Sc-U outcrops at the southern zone at Pele Target 1 include:

- 10.4% TREO, 12,798ppm NdPr, 402ppm DyTb, 3,759ppm Nb2O5, 910ppm U3O8 (R590)
- 7.8% TREO, 8,923ppm NdPr, 352ppm DyTb, 2,799ppm Nb2O5, 202ppm Sc2O3, 1,035ppm U3O8 (R630)
- 7.4% TREO, 8,850ppm NdPr, 413ppm DyTb, 2,655ppm Nb2O5, 190ppm Sc2O3, 823ppm U3O8 (R632)
- 6.5% TREO, 6,558ppm NdPr, 259ppm DyTb, 1,634ppm Nb2O5, 58ppm Sc2O3, 756ppm U3O8 (R638)
- 6.4% TREO, 9,512ppm NdPr, 403ppm DyTb, 3,785ppm Nb2O5, 457ppm Sc2O3, 965ppm U3O8 (R631)
- 6.1% TREO, 7,182ppm NdPr, 360ppm DyTb, 2,217ppm Nb2O5, 152ppm Sc2O3, 597ppm U3O8 (R639)
- 6.0% TREO, 6,632ppm NdPr, 270ppm DyTb, 2,723ppm Nb2O5, 480ppm Sc2O3, 575ppm U3O8 (R628)
- 5.9% TREO, 11,317ppm NdPr, 430ppm DyTb, 1,667ppm Nb2O5, 277ppm Sc2O3, 412ppm U3O8 (R620)

At the southern end of Pele Target 1, geological mapping identified highly weathered REE-Nb-Sc outcrop mineralisation with dimensions of ~200m long and ~15m wide along a north-east trending zone that also recorded overlapping high gamma readings from the ground survey.

At the middle of Pele Target 1, a high-grade sample of saprolite REE-Nb-Sc-U mineralisation was collected from a large ~20m wide hard rock outcrop in a road cut which returned assay grades of:

- 8.0% TREO, 2,537ppm NdPr, 128ppm DyTb, 1,329ppm Nb2O5, 1,255ppm U3O8 (R586)

The saprolite mineralisation had visible, primary and coarse-grained textures that is interpreted to potentially represent the underlying bedrock.

This REE-Nb-Sc-U outcrop is associated with a ~350m NNE oriented trendline of intense anomalies identified and measured by the ground geophysical survey, with gamma particle counts of up to 39,000 CPS. To the north of this outcrop, the trend bifurcates into three parallel target zones that were mapped across the outcrop trendline.

Approximately 320m to the north, a grab sample of saprolite REE-Nb-Sc-U mineralisation returned the highest TREO grade from Pele Target 1:

- 20.7% TREO, 3,008ppm NdPr, 146ppm DyTb, 1,063ppm Nb2O5, 975ppm U3O8 (R588)

This outcropping mineralisation was intensely weathered and notable for a materially lower ratio of heavy rare earths (HREO) to TREO at 0.6%, relative to 1.2% recorded at R586, and an average of ~5% at the southern zone of Pele Target 1. The depletion of HREO at this weathered surface outcrop suggests that

deeper mineralisation may have potentially higher TREO grades.

Pele Target 2, 3, 4 and 5

The larger exploration target zones of Pele Targets 2, 3, 4 and 5 are located across the large eastern and western limbs of the regional Tres Bracos syncline. These exploration target areas have extensive chains of intense geophysical anomalies recurring in broad linear trendlines.

The latest results returned from the Rio Tinto auger drill hole re-assay program continued to identify high-grade monazite sand mineralisation across the Pele project area. The latest assay results were from a total of 420 auger drillholes (~5,156m) and returned grades up to 2.3% TREO, 4,780ppm NdPr and 113ppm DyTb. A complete list of the new assay results from the historical auger drillholes is provided in Appendix C*.

It is important to note that the historical auger holes were shallow, widely spaced, and targeted bauxite mineralisation within the upper laterite layer. The average historical auger drill hole was drilled to a depth of ~12 meters, and as noted with the Sulista project's historical auger holes, this drill hole depth is unlikely to penetrate the depleted rare earth mottled zone that has experienced deep weathering. A large portion of the rare earth intercepts finished in mineralisation and the next phase of priority exploration will focus on testing the highly prospective deeper regolith zone.

To put this into context, nearly ~80% of the high-grade monazite sand resource at the Monte Alto project is below a depth of greater than ~10m, highlighting that the historical shallow auger drill holes at the Pele project (and Sulista project) have yet to fully explore the important saprolite horizon.

An analysis of the grade profile of BRE drilled auger holes from the Monte Alto and Sulista projects highlight the prospectivity of the deeper saprolite zone. Figure 11* below highlights the historical relationship versus the average depth of auger drill holes at the Pele and Sulista projects.

Pele Target 2

Pele Target 2 is defined by an extensive chain of intense geophysical anomalies across the western limb of the regional Tres Bracos syncline. These anomalies define a potential exploration area with a strike of ~8km and up to ~1km in width. Pele Target 2 is a highly prospective exploration area that is ~16 times larger than the Monte Alto project (Figure 1*) and larger than any of the current exploration targets across the Rocha da Rocha rare earth province.

Geophysics highlighted extensive gamma and magnetic anomalies over a ~4km strike at the northern end of the Pele Target 2 exploration area (Figure 13*: Pele Target 2). Historical, widely spaced auger drill re-assays also confirmed the presence of shallow, high-grade rare earth monazite sand mineralisation and these (previously reported) results included:

- 2.0m at 1.1% TREO from 9m, with 2,181ppm NdPr and 68ppm DyTb, within:
21.5m at 0.3% TREO from 0.5m, 472ppm NdPr and 16ppm DyTb (AMBX1492 - open at depth)

- 1.5m at 1.0% TREO from 11m, with 5,177ppm TREO, 1,796ppm NdPr, and 75ppm DyTb, within:
12.5m at 0.2% TREO from 0m, 418ppm NdPr and 18ppm DyTb (AMBX1499 - open at depth)

This combination of strong exploration pathfinders underpinned a decision by the BRE exploration team to expedite a ~20 line-km of surface gamma lines over this target area (Figure 14*). The results of this survey have defined the largest gamma particle count (CPS) anomaly identified to date, which is comprised of three parallel high intensity trends that cover ~0.5km².

The results of these gamma line surveys highlight an extensive gamma anomaly over an area of +1.8km². This area is a high priority exploration target for the BRE auger drill teams and they will soon be mobilised to drill this highly prospective target area at depth, and with closer drill spacing, than the historical shallow auger holes.

In addition, BRE's ground reconnaissance teams will now extend the gamma survey lines southward to cover the remainder of the high intensity anomalies over the full extent of Pele Target 2.

Exploration Next Steps - Pele Project

The priority exploration activities at the Pele project include:

Target 1: +5,000m Diamond drilling program targeting ultra-high grade REE-Nb-Sc-U mineralisation

Target 2: Mobilise auger teams to drill into the deeper saprolite zone across the priority anomaly zones, and

extend the gamma line survey southward to cover the high intensity anomalies

Target 3: Exploration reconnaissance teams to conduct initial vehicle-based gamma surveys

Target 4: Exploration teams to conduct geological survey and conduct initial vehicle-based gamma surveys

Target 5: Targeted reconnaissance on open ground at the central intense gamma anomaly

*To view tables and figures, please visit:

<https://abnnewswire.net/lnk/89P1N470>

About Brazilian Rare Earths Limited:

[Brazilian Rare Earths Ltd.](#) (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.

Source:

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