BRAZILIAN CRITICAL MINERALS

EMA FIELD TRIAL DELIVERS EXCEPTIONALLY HIGH ISR RARE EARTH LEACHING GRADES ABOVE 3,000 PPM

Field trial returns very high rare earth grades and rapid leaching efficiency reinforcing project scalability using simple low cost in-situ leaching with sector leading CAPEX of US$55M

Highlights

- **Exceptionally high-grade pregnant leach solution (PLS) recovered from all ISR holes peaking** at 3,510 ppm TREO achieved during field pilot trials
- All extraction holes achieved grades (leached and recovered) **significantly higher than the original in-situ mineralised grades. Key highlights include;**
  - **Hole H1-F9 averaged 2,281 ppm TREO** including an **outstanding 929 ppm MREO** over 10 days of ISR leaching
  - **Hole H1-F6 averaged 1,639 ppm TREO** including **737 ppm MREO** over 11 days of ISR leaching
  - **Hole H1-F9 averaged 45 ppm DyTb** over 10 days of leaching, the most important elements in high performance permanent magnets
- **Composition of the Magnet elements (MREO) within the (TREO) averaged 40%** across all holes reported, defining the Ema project as one of the richest MREO deposits supporting a premium basket price
- **High in-situ field leaching efficiencies deliver extremely rich PLS** achieved using environmentally friendly magnesium sulfate leaching agent
- **Very high-grade samarium averaging ~100ppm and >5.0% of TREO,** with samarium–cobalt magnets the most widely used in defense and aerospace
- **Ema CAPEX US$55M** and **US$498M NPV @ US$74/kg NdPr** (current spot price)

BCM defined an upfront CAPEX of only **US$55M** in its scoping study released in February 2025. Work is ongoing on multiple fronts, including the bankable feasibility study, multiple offtake agreement discussions, completion of the pilot field trials, conversations with the regulators on permits and introductions with potential project financiers.

To view the video of MD, Andrew Reid, discussing this announcement, click on the link below

https://braziliancriticalminerals.com/link/rvJQYr

Brazilian Critical Minerals Limited (**ASX: BCM**) ("**BCM**" or the "**Company**") is pleased to announce the latest and final laboratory results from rare earths leached via in-situ recovery (ISR) from the first of two pilot field trial areas at the Ema project.

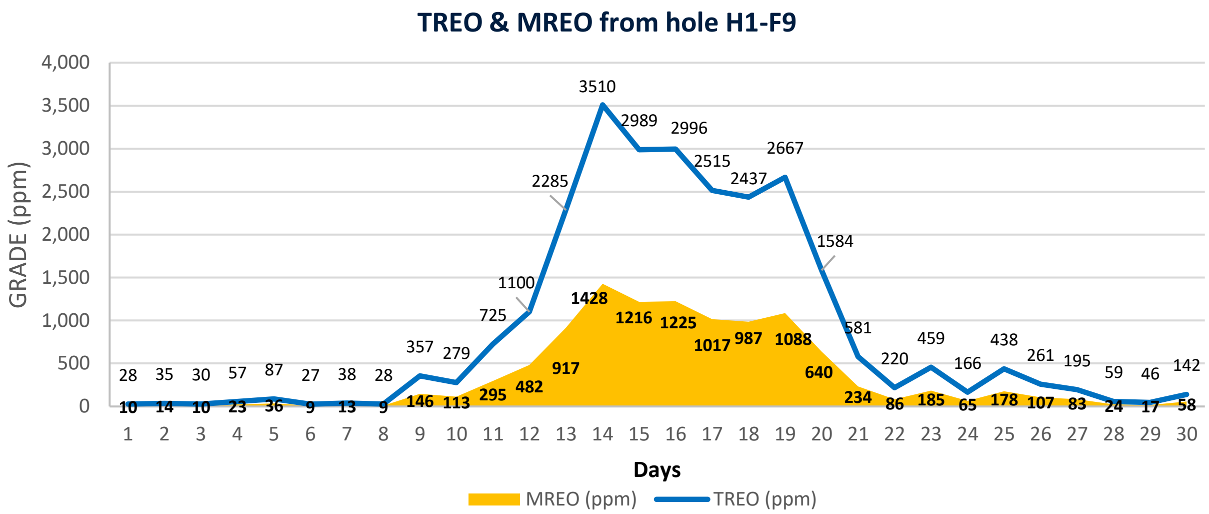

Figure 1. Pregnant liquor solution (PLS) grades extracted from monitoring hole H1-F9 located in the optimal path of solution flow from the field trial. MREO grades average 40% of the TREO values.

Significant Results

The injection of magnesium sulphate ($MgSO_4$) has been completed in the first of two field pilot trials, with the water-wash flushing phase now well underway. Final laboratory assays confirm high-tenor grades across all holes from which PLS was extracted (Table 1). Notably, the TREO grades feature an exceptional concentration of magnet rare earth elements (MREO), averaging 40% across all leaching results.

This unusually high proportion of magnet elements, coupled with strong leaching efficiency and elevated rare earth concentrations in the PLS, has enabled the achievement of extremely high-grade MREO values, with some leaching periods exceeding 1,000 ppm. These results match or surpass MREO grades from projects operating with up to five times higher in-situ head grades—yet often with CAPEX requirements many times greater.

Table 1. Data Comparison of Field Trial ISR vs ANSTO ISR Column Test TREO and MREO values.

Hole ID	Day (from)	Day (to)	No. Days	Avg MREO (ppm)	Avg TREO (ppm)	MREO:TREO %
H1-F9	9	27	19	552	1,356	41%
including	**12**	**20**	**10**	**929**	**2,281**	**41%**
H1-F8	11	35	25	114	293	37%
including	**18**	**24**	**7**	**262**	**657**	**39%**
H1-F7	12	34	23	280	672	41%
including	**16**	**25**	**10**	**408**	**959**	**42%**
H1-F6	35	47	13	669	1,538	43%
including	**37**	**47**	**11**	**737**	**1,639**	**43%**
ANSTO	6	13	7	855	2,382	36%

Andrew Reid, Managing Director, commented:

"These latest rare earth results are quite extraordinary. The close similarities in the way that the mineralisation in the field behaves compared to the lab tests is remarkable.

The Ema field trial results display an incredibly high composition of the key magnet elements through both the light and heavy elements (combined 40%) being the most widely used in rare earth end-products. Remarkably the PLS solution also contains >5% samarium being the key foundation element in many military and aerospace magnet applications, making it a truly unique rare earth assemblage.

BCM has conclusively demonstrated the ability to leach high-tenor rare earth elements directly from the ground through very simplistic in-situ techniques, without the need for high CAPEX or complex processing equipment.

The grades achieved and the timelines for leaching mirror very closely column tests completed by ANSTO (released in March 2025) and tests conducted over many months in laboratories in Brazil.

The pilot field trials have been a resounding success in every aspect. Every part of the leaching process from solution injection, rapidly permeating solution through the clays to leaching high-grade rare earths into solution is now without peer in the western world.

With these operational milestones complete, we now embark on further de-risking events by completing the bankable feasibility study, solidify offtake agreements and work with the regulators regarding the mine and environmental permits.

None of the above would be possible without the dedicated team in the field over the last few months, proving that economically leaching rare earths via cheap ISR is a mission possible."

Leaching profile similar to ANSTO testwork

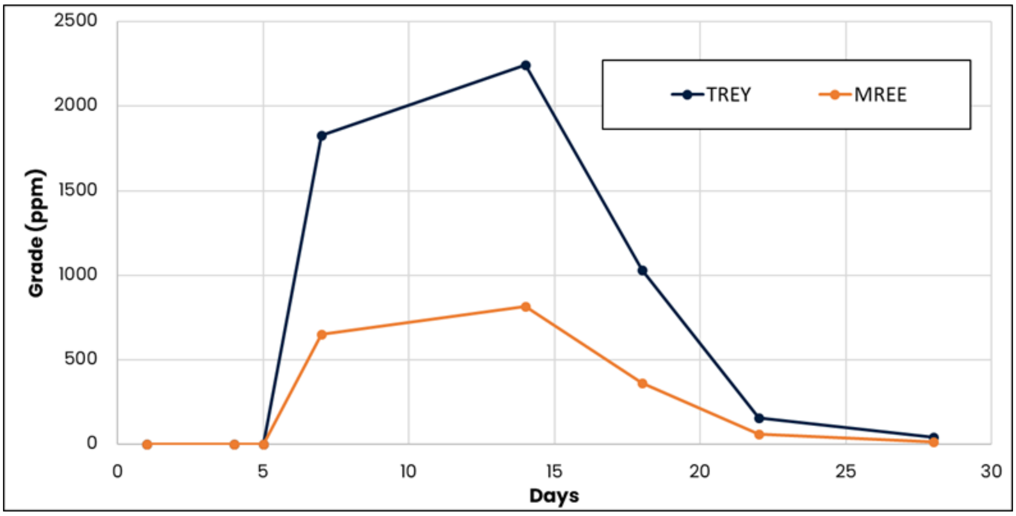

Figure 2. Solution concentration of rare earth elements in (ppm) over the 28-day test period from ANSTO ISR column test. (refer **ASX 10 March 2025**)

The field pilot trial PLS solution and the ANSTO column ISR PLS returned very similar leaching profiles and sustained elevated TREO and MREO grades, reinforcing the Company's confidence in scaling the Ema project towards full production. The ANSTO column test results (refer **ASX 10 March 25**) achieved the following recovery results when compared to the scoping study baseline parameters;

Table 2. Recovery comparison of ANSTO ISR column test vs Scoping Study parameters

	TREY (%)	MREE (%)
Scoping Study Recoveries	**48**	**62**
ANSTO Column Recoveries	**62**	**74**

Given the comparable TREO and MREO grades in Figure 1 and 2, along with the consistent leaching patterns and timelines, a similar level of recovery can reasonably be expected to the ANSTO recoveries in Table 2. A final drill hole, to be drilled in the centre of the leaching area over the coming months, will help determine final grade values.

Background In-situ mineralised grades

As part of the pilot field trial, BCM drilled a single resource hole at the position of H1-F7 within the field trial area prior to the injection of any solution. Table 3. displays the results of the grades returned from the SGS laboratory in Brazil.

Once the field trial water washing is complete a final hole will be drilled as a check of the grades leached to the data listed below.

Table 3. Assays returned from resource hole drilled within first pilot field location.

Hole ID	Depth (from)	Depth (to)	TREO (ppm)
H1-F7	0	1	**348**
	1	2	**559**
	2	3	**598**
	3	4	**495**
	4	5	**438**
	5	6	**646**
	6	7	**537**
	7	8	**595**
	8	9	**594**
	Average		**534**

Field Trials Hugely Successful

BCM has successfully achieved all of it's objectives initially established with its ISR pilot field trials over the last several months;

- Injected a low strength (0.5M) $MgSO_4$ solution;
- Rapidly decreased the pH of the clay zone to the target zone required to leach rare earths over short distances of leaching;
- Achieved fast reactivity of the $MgSO_4$ solution, resulting in rapid leaching of the rare earths into solution;
- Maintained a constant high flow rate of solution through the clays, indicating strong permeability;
- Maintained a steady and elevated increase in $MgSO_4$ solution levels throughout the clay zone indicative that a solid impermeable basement exists;
- Extracted very high PLS grades from the test area; and
- Precipitated the rare earths from solution.

Monitoring hole H1-F9 was positioned within the optimal position downslope of the injection wells to intercept the solution flow through the clays. PLS extracted from this hole resulted in grades over 6 times higher than the in-situ grades recovered from a drill hole, drilled prior to the commencement of leaching at the same position as H1_F7 (Table 1.)

The ability to concentrate much higher grades in the PLS compared to the mineralisation grade in-situ(averaging only 534ppm TREO) is due to a number of reasons, including the leach chemistry, choice of lixiviant (reagent), pH, and temperature, which all affect dissolution rates.

Importantly, lower natural concentrations of rare earths in the deposit can give rise to much richer PLS grades (Figure 1.), as there is no direct relationship between in-situ grades and solution grades due to variations in leaching efficiencies.

Flow rates and contact time also play an important role, with more controlled leaching often yielding higher grades in PLS, due to good hydraulic control and good confinement of the leaching solution which prevents loss or dilution of the solution, maintaining higher PLS grades.

Additional Monitoring Holes

In addition to hole H1-F9 which was located in the optimal position or pathway of the ISR solution flow, 3 other holes H1-F8, H1-F7 and H1-F6 were also drilled (Figure 3). Each of these 3 monitoring/extraction holes showed similar trends of recording high tenor TREO in solution, albeit at lower intensities in places than H1-F9 (Figure 4/5/6). Upon commercial production, the entire leaching area will be saturated with $MgSO_4$ similar to hole H1-F9.

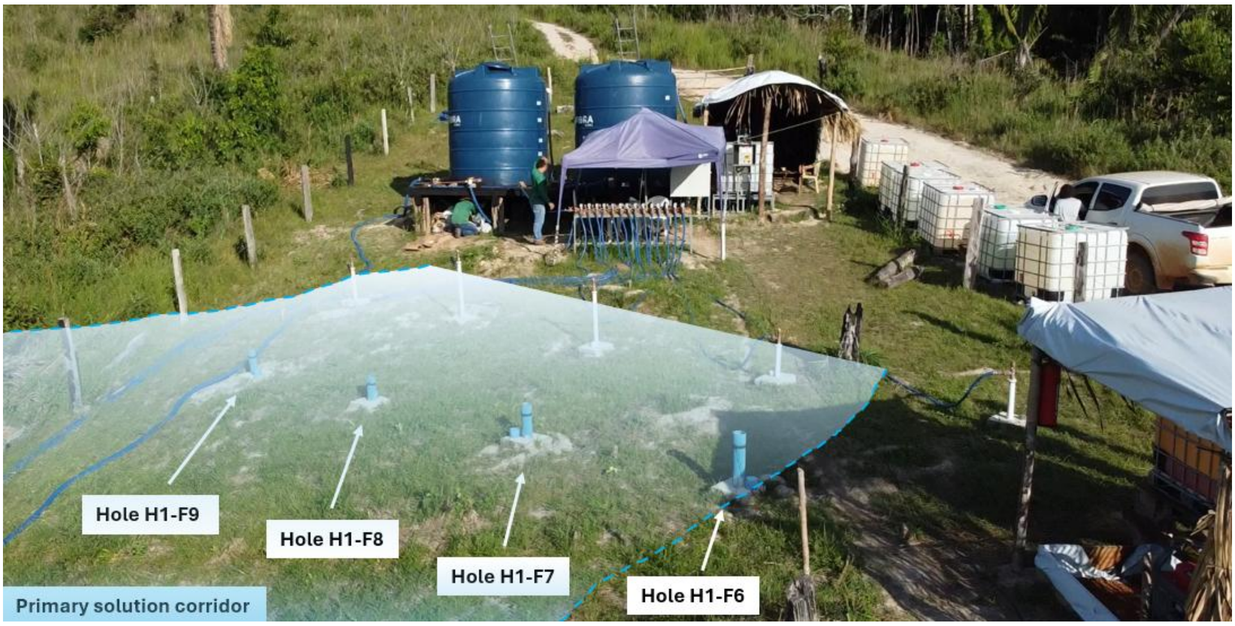

Figure 3. Field pilot trial and set out showing distribution of monitoring holes H1-F9, H1-F8, H1-F7 and H1-F6.

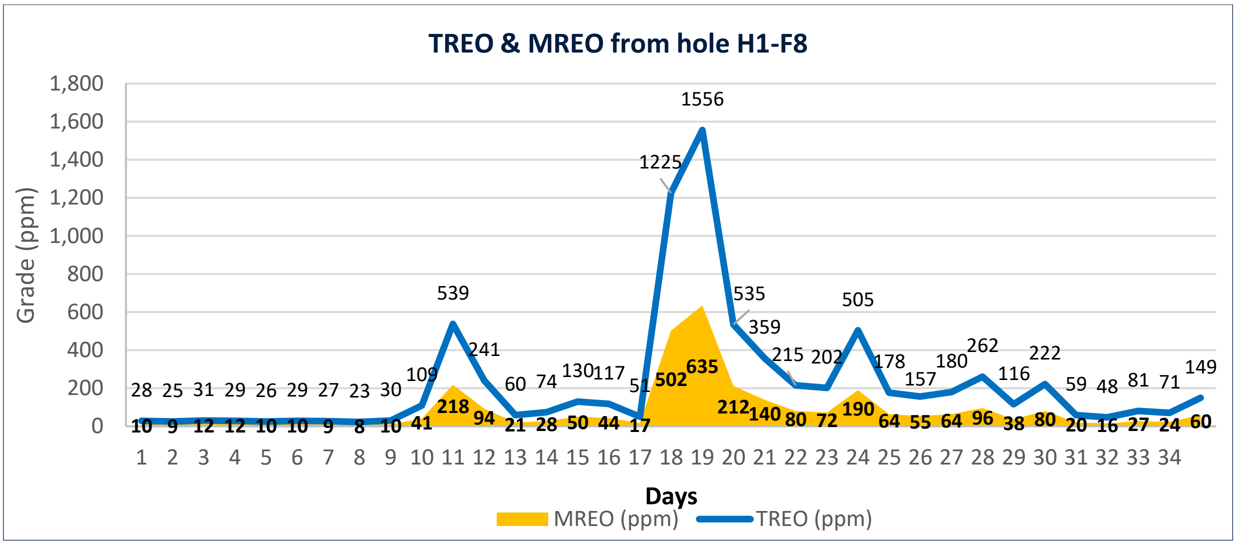

Figure 4. Field monitoring holes H1-F8 showing distribution of TREO and MREO leached.

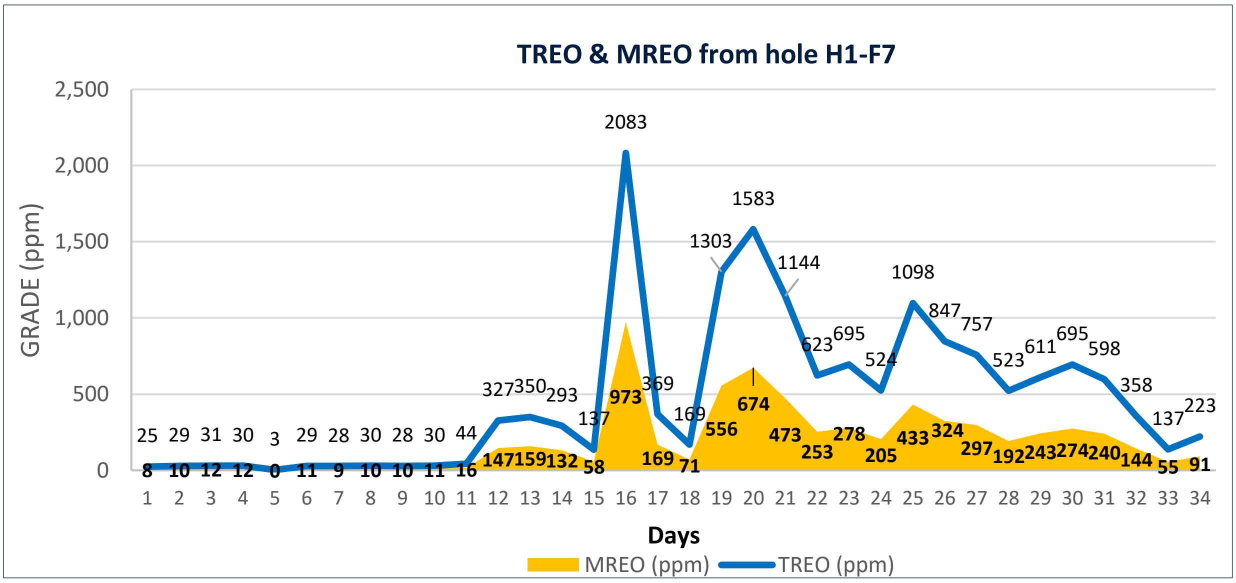

Figure 5. Field monitoring holes H1-F7 showing distribution of TREO and MREO leached.

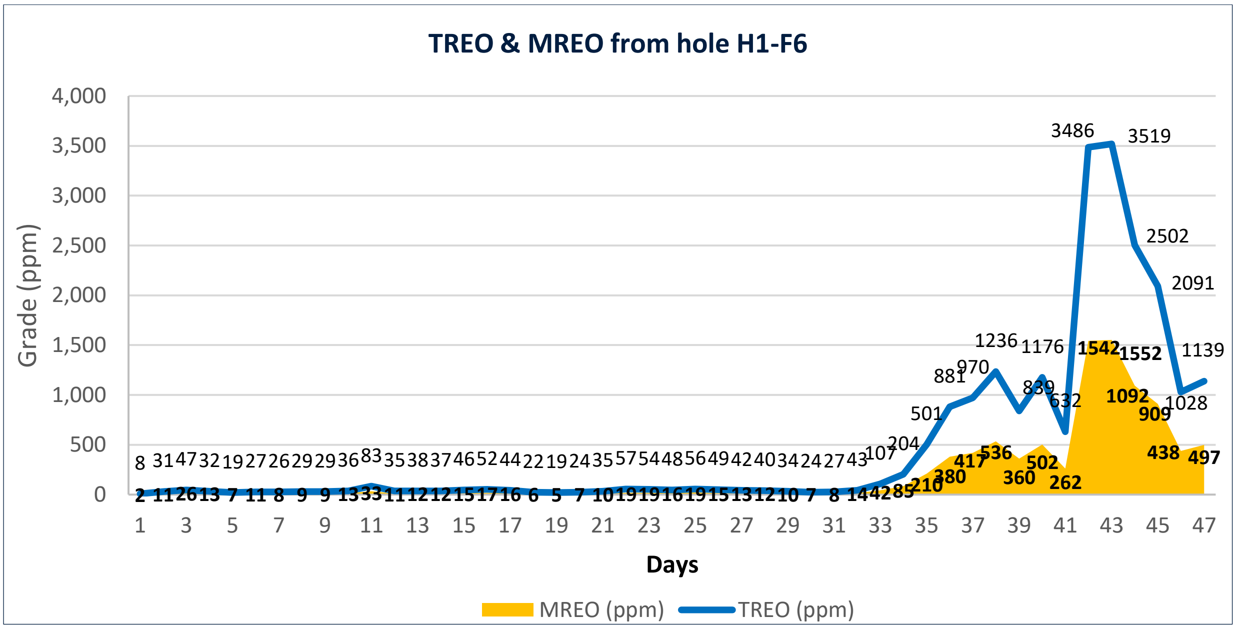

Figure 6. Field monitoring holes H1-F6 showing distribution of TREO and MREO leached.

Table 4. Distribution of rare earth elements by hole. Results have been averaged over the leaching period as per table 1.

Basket Composition	Field Leaching Results			
Oxide	H1-F6	H1-F7	H1-F8	H1-F9
La2O3	36.3%	33.2%	30.9%	33.8%
CeO2	7.6%	12.8%	15.3%	7.3%
Pr6O11	**8.5%**	**8.2%**	**7.7%**	**7.9%**
Nd2O3	**33.7%**	**32.3%**	**29.6%**	**30.7%**
Sm2O3	4.8%	4.7%	4.8%	4.9%
Eu2O3	0.6%	0.6%	0.7%	0.8%
Gd2O3	2.3%	2.3%	2.4%	3.0%
Tb4O7	**0.2%**	**0.3%**	**0.3%**	**0.4%**
Dy2O3	**1.0%**	**0.9%**	**1.2%**	**1.7%**
Ho2O3	0.2%	0.2%	0.4%	0.3%
Er2O3	0.4%	0.4%	0.8%	0.8%
Tm2O3	0.2%	0.2%	0.4%	0.2%
Yb2O3	0.5%	0.5%	0.7%	0.8%
Lu2O3	0.1%	0.2%	0.4%	0.2%
Y2O3	3.6%	3.3%	4.4%	7.3%
MREO %	**43.5%**	**41.7%**	**38.8%**	**40.7%**
TREO %	**100%**	**100%**	**100%**	**100%**

References

[1]Brazilian Critical Minerals (ASX:BCM) – Ema Rare Earths Scoping Study confirms low CAPEX and OPEX 26th February 2025

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

Enquiries

For more information please contact:

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Brazilian Critical Minerals Limited (BCM) is a mineral exploration company listed on the Australian Securities Exchange.

Its major exploration focus is Brazil, in the Apuí region, where BCM has discovered a world class Ionic Adsorbed Clay (IAC) Rare Earth Elements deposit. The Ema IAC project is contained within the 781 km² of exploration tenements within the Colider Group and adjacent sediments.

BCM has defined an indicated and inferred MRE of 943Mt of REE's with metallurgical recoveries averaging 68% MREO, representing some of the highest for these types of deposits anywhere in the world.

The Company has converted the MRE central portion from Inferred into the Indicated category with an extensive drill program during 2024 which has underpinned the scoping study and economic analysis released in February 2025.

BRAZILIAN CRITICAL MINERALS

Ema REE Global Mineral Resource Estimate @COG 500ppm TREO

JORC Category	cut-off ppm TREO	Tonnes Mt	TREO ppm	NdPr ppm	DyTb ppm	MREO ppm	MREO: TREO %
Indicated	500	248	759	176	16	192	25
Inferred	500	695	701	165	16	181	26
Total	**500**	**943**	**716**	**168**	**16**	**184**	**26**

The information in this announcement relates to previously reported exploration results and mineral resource estimates for the Ema Project released by the Company to ASX on 22 May 2023, 17 July 2023, 19 July 2023, 31 July 2023, 13 Sep 2023, 19 Oct 2023, 06 Dec 2023, 06 Feb 2024, 22 Feb 2024, 13 Mar 2024, 02 Apr 2024, 08 Oct 2024 19 Nov 2024, 21 Jan 2025, 17th Feb 2025, 26th Feb 2025, 10th March 2025, 13th March 2025, 28th April 2025, 27th May 2025 and 28th May. The Company confirms that is not aware of any new information or data that materially affects the information included in the above-mentioned releases.

Competent Person Statement

The information in this announcement that relates to exploration results is based on information compiled by Mr. Antonio de Castro, BSc (Hons), MAusIMM, CREA, who acts as BCM´s Senior Consulting Geologist through the consultancy firm, ADC Geologia Ltda. Mr. de Castro has sufficient experience which is relevant to the type of deposit under consideration and to the reporting of exploration results and analytical and metallurgical test work to qualify as a competent person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr. Castro consents to the report being issued in the form and context in which it appears.

Appendix 1: Table 1 Ema project – JORC Code (2012 Edition) metallurgical sampling techniques and data.

Item	JORC code explanation	Comments
Sampling Techniques	• Nature and quality of sampling. • Include reference to measures taken to ensure sample representativity and the appropriate calibration of any measurement tools or systems used.	• Exploration results are based on solution samples extracted during ISR field trials conducted by WSP with support of BCM´s exploration team. • The data presented is based on solution collected from the monitoring holes after percolation through soils and saprolite, mined by in-situ techniques.

Item	JORC code explanation	Comments
	• Aspects of the determination of mineralisation that are Material to the Public Report.	• Sampling and measurements were supervised by the Chief Metallurgist and WSP´s hydrogeologist. • Sample was extracted from deep wells drilled down to bedrock basement whereby solution was pumped to the surface for collection and further analysis • Solution samples were tested for pH with a probe called Incoterm brand pen-type digital pH meter, after calibration. • Rare Earths + impurities were precipitated by the addition of sodium carbonate. • These results are specific for the tracer test area.
Drilling Techniques	• Drill type (eg core. reverse circulation. open-hole hammer. rotary air blast. auger. Bangka. sonic. etc) and details (eg core diameter. triple or standard tube. depth of diamond tails. face-sampling bit or other type. whether core is oriented and if so. by what method. etc).	• All auger holes in the test area were drilled with 6” bit. • The deep injection holes in H1 area were the only ones cased with 2” sliced PVC pipes, all others were cased with sliced 4” PVC pipes. • Coarse gravel sand was inserted between the pipes and the edges of the holes to create the filter zone. • Cement around the collars were built to prevent running waters from rain to contaminate the underground water. • Holes drilled are not included in any Mineral Resource Estimation.
Drill Sample Recovery	• Method of recording and assessing core and chip sample recoveries and results assessed. • Measures taken to maximise sample recovery and ensure representative nature of the samples. • Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	• n/a.
Logging	• Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation. mining studies and metallurgical studies. • Whether logging is qualitative or quantitative in nature. Core (or costean. channel. etc) photography. • The total length and percentage of the relevant intersections logged.	• n/a
Sub-Sampling Techniques and	• If core. whether cut or sawn and whether quarter. half or all core taken.	• n/a

Item	JORC code explanation	Comments
Sampling Procedures	• If non-core. whether riffled. tube sampled. rotary split. etc and whether sampled wet or dry. • For all sample types. the nature. quality and appropriateness of the sample preparation technique. • Quality control procedures adopted for all sub-sampling stages to maximise representativity of samples. • Measures taken to ensure that the sampling is representative of the in-situ material collected. including for instance results for field duplicate/second-half sampling. • Whether sample sizes are appropriate to the grain size of the material being sampled.	
Quality of Assay Data and Laboratory Tests	• The nature. quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. • For geophysical tools. spectrometers. handheld XRF instruments. etc. the parameters used in determining the analysis including instrument make and model. reading times. calibrations factors applied and their derivation. etc. • Nature of quality control procedures adopted (eg standards. blanks. duplicates. external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established	• The filtered solution samples were assayed using a Varian ICP-OES instrument (model Vista MPX710), calibrated using Specsol certified standards for each of the rare earth elements. Quality control is conducted using a standard reference sample previously prepared from Ema mineralisation and assayed by SGS in Vaspasiano, Brazil. The reference sample is read for each element before and after running each assay batch. Any batches in which the standard sample result plots outside two standard deviations from the established value are re-run. • The assaying methodology is in line with industry standard and is considered appropriate for rare earth solutions. The technique is considered to be total.
Verification of Sampling and Assaying	• The verification of significant intersections by either independent or alternative company personnel. • The use of twinned holes. • Documentation of primary data. data entry procedures. data verification. data storage (physical and electronic) protocols. • Discuss any adjustment to assay data.	• n/a
Location of Data Points	• Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys). trenches. mine workings and other locations used in Mineral Resource estimation. • Specification of the grid system used. • Quality and adequacy of topographic control.	• The UTM WGS84 zone 21S grid datum is used for current reporting. The drill holes collar locations were picked up by a licensed surveyor using a Trimble total station (+/-5cm), referenced to a government survey point.

Item	JORC code explanation	Comments
Data Spacing and Distribution	• Data spacing for reporting of Exploration Results. • Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. • Whether sample compositing has been applied.	• n/a
Orientation of Data in relation to Geological Structure	• Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known. considering the deposit type. • If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias. this should be assessed and reported if material.	• n/a
Sample security	• The measures taken to ensure sample security.	• The solution samples sealed in plastic bags were sent directly to Catalão by airfreight and courier to the laboratory. The Company has no reason to believe that sample security poses a material risk to the integrity of the assay data.
Audit or Reviews	• The results of any audits or reviews of sampling techniques and data.	• The sampling techniques and data have been reviewed by the Competent Person and are found to be of industry standard.

JORC (2012) Table 1 - Section 2: Reporting of Exploration Results

Criteria	JORC code explanation	Commentary
Mineral Tenement and Land Tenure Status	• Type. reference name/number. location and ownership including agreements or material issues with third parties such as joint ventures. partnerships. overriding royalties. native title interests. historical sites. wilderness or national park and environmental settings. • The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	• The EMA and EMA EAST leases are 100% owned by BCM with no issues in respect to native title interests. historical sites. wilderness or national park and environmental settings. • The company is not aware of any impediment to obtain a licence to operate in the area.
Exploration done by Other Parties	• Acknowledgment and appraisal of exploration by other parties.	• No exploration by other parties has been conducted in the region.
Geology	• Deposit type. geological setting and style of mineralisation.	• The REE mineralisation at EMA is contained within the tropical lateritic weathering profile developed on top of felsic rocks. rhyolites as per the Chinese deposits. • The REE mineralisation is concentrated in the weathered profile where it has dissolved from the primary mineral. such as monazite and xenotime. then adsorbed on to the neo-forming fine particles of aluminosilicate clays (e.g. kaolinite. illite. smectite). • This adsorbed iREE is the target for extraction and production of REO.

Drill Hole Information	• A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:
	  ◦ easting and northing of the drill hole collar
	  ◦ elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar
	  ◦ dip and azimuth of the hole
	  ◦ down hole length and interception depth
	  ◦ hole length.
	• If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the
		• Auger locations and diagrams are presented in this announcement.
		• Details are tabulated in the announcement.

Criteria	JORC code explanation	Commentary
	report. the Competent Person should clearly explain why this is the case.	
Data aggregation methods	• In reporting Exploration Results. weighting averaging techniques. maximum and/or minimum grade truncations (eg. cutting of high grades) and cut-off grades are usually Material and should be stated. • Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low-grade results. the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail. • The assumptions used for any reporting of metal equivalent values should be clearly stated.	• REE grades reported refer to solution collected to monitor the ISR process. • No metal equivalent values are reported.
Relationship between mineralization widths and intercepted lengths	• These relationships are particularly important in the reporting of Exploration Results. • If the geometry of the mineralisation with respect to the drill hole angle is known. its nature should be reported. • If it is not known and only the down hole lengths are reported. there should be a clear statement to this effect (eg 'down hole length. true width not known').	• REE grades reported refer to solution collected to monitor the ISR process. • Mineralisation orientation is assumed to be flat.
Diagrams	• Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include. but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	• Maps and tables of the auger hole's location and target location are inserted.
Balanced reporting	• Where comprehensive reporting of all Exploration Results is not practicable. representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	• REE grades reported refer to solution collected to monitor the ISR process.

Criteria	JORC code explanation	Commentary
Other substantive exploration data	• Other exploration data. if meaningful and material. should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density. groundwater. geotechnical and rock characteristics; potential deleterious or contaminating substances.	• No other significant exploration data has been acquired by the Company.
Further Work	• The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling). • Diagrams clearly highlighting the areas of possible extensions. including the main geological interpretations and future drilling areas. provided this information is not commercially sensitive.	• Additional metallurgical test work with magnesium sulphate leach. • Extraction of PLS for streamline precipitation and impurity removals at ANSTO. • Detail topography survey with LIDAR for mine planning • Geophysics survey, Electro resistivity to define the saprolite/fresh rock boundary and faults in the rock.