

# Viridis Mining and Minerals Limited: Scoping Study Confirms Colossus as Premier Rare Earth Project Globally

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Sydney, Australia - [Viridis Mining & Minerals Ltd.](#) (ASX:VMM) is pleased to announce the results of the Scoping Study ('Study') for its flagship Colossus Project in Pocos De Caldas, Brazil. Viridis engaged Hatch, an independent professional services firm with rare earth engineering expertise, to lead the Study.

## Highlights

- The Colossus project ('Colossus' or 'Project') demonstrates outstanding economics based on a 20-year Life of Mine ('LoM'), at both current spot pricing and long-term average forecast price ('Base Case'):

- o Pre-tax NPV8 of approximately US \$1.43 billion (AUD \$2.26 billion)C | Based on a conservative longterm average forecast price assumption of US \$90/kg NdPr for its Base Case.

- o Pre-tax NPV8 of approximately US \$719 million (AUD \$1.13 billion) | Based on a spot price of \$60/kg NdPr for its Current Spot Case.

- o Annual EBITDA of approximately US \$114 million (AUD \$180 million) at spot price of \$60/kg NdPr.

- The long-term forecast price assumption of \$90/kg NdPr is notably lower than forecasts from leading independent rare earth pricing agencies (Project Blue and Adamas) and those adopted by industry peers. This highlights the Project's robust financial fundamentals and resilience through the cycle.

- Colossus demonstrates financial robustness, capable of withstanding fluctuations in the rare earth element ('REE') market while maintaining a strong pre-tax NPV8 of approximately US \$719 million, even based on the current depressed spot NdPr price of US \$60/kg.

- Colossus superior project economics are defined by the Project's industry-leading:

- o Resource and Mine Plan: Designed with a focus on MREOA grade rather than highest TREOB grades.

Leading to a superior LoM average basket value of US \$30/kg at Current Spot Pricing. Underpinned by the highest global grade of MREO Measured and Indicated resource.

- o Low Costs: The true ionic adsorption resource properties support a simple flowsheet using 0.3M AMSUL pH4.5 solution, delivering the high "Ore to MREC" Metallurgical Recoveries<sup>2,3</sup>. Leading to significant costsavings, with LoM average C1 OPEX of US \$6.0/kg TREO and AISC of US \$8.8/kg TREO.

- o Following an exhaustive metallurgical work program by ANSTO and with inputs from Viridis and other consultants, Hatch has prepared a detailed Scoping Study assessment with the following key metrics:

- o A mining and production facility designed to process 5Mtpa (dry) of rare earth ore.

- o Initial capital expenditure of approximately US \$287M (excluding contingency). Project capital costs have been assessed to AACE Class 5 Estimate.

- o Average C1 OPEX across LoM of approximately US \$6.0/kg TREO.

- o Average All-In Sustaining Cost ('AISC') across LoM of approximately US \$8.8/kg TREO.

- o Annual production across the LoM of 9.5ktpa TREO and 3.5ktpa MREO comprising 36% NdPr Oxides and 2% DyTb Oxides.

- Exceptional mixed rare earth carbonate ('MREC') product set to deliver high-value and high-quality products to the rare earth market:

- o High concentration of MREO in ore-feed and subsequent MREC has resulted in superior basket values.

- o Low levels of radionuclides and other impurities, returning <1% for Northern Concessions ('NC') and 0.7% for Southern Complex ('SC') - positions Colossus as a supplier of a superior product for downstream refineries, ensuring strong market demand and the potential for premium payabilities compared to industry peers.

- Outstanding upside potential to improve initial Scoping Study results:

- o Significant high-grade resource expansion upside with only 13% of total landholding included in current JORC compliant resource of 493Mt at 2508ppm TREO and 601ppm MREO.

- o Scoping Study mine plan includes only 20% of the Global Mineral Resources base and only considers the Measured and Indicated resources of two project areas - Northern Concessions and Cupim South (Cupim South being hosted in the Southern Complex).

- o Potential to extend the current 20-year mine life or expand future processing capacity and production by capturing more Mineral Resources in the mine plan or through further exploration success.

- o Potential for higher grade MREO feed to further improve financial returns e.g. Tamoyo Concession hosts the highest MREO resource at an average 770ppm MREO.

- o Process and metallurgical optimisation to be investigated in the following study phases.

- o Further operating and capital cost optimisation opportunities will be explored in H1 2025 alongside downstream separation test work into individual final oxide products.

- Exceptional Environmental and Sustainability credentials:

- o The Environmental Impact Assessment Report has been submitted, and the Cooperation Agreement was signed with the State Government of Minas Gerais and the Municipality of Pocos de Caldas.

- o Secured the critical Certificate of Regularity for Land Use and Occupation from the Municipality of Pocos de Caldas, a legal pre-requisite required by the Environmental Agency of Minas Gerais ('FEAM') to issue the Preliminary License.

- o Colossus Project utilises a straightforward and sustainable extraction and beneficiation process to minimise environmental impact and optimise resource use. This method ensures efficient recovery of REEs while generating inert waste.

- o Low carbon footprint via access to 100% renewable grid power from existing hydro and solar sources.

- De-risked and shortest pathway to production

- o The critical path runs through the environmental approval process. With unwavering support from the state and local government representatives, environmental permitting remains on track per the Colossus development timeline.

- o The local community in Pocos de Caldas is highly supportive of mining, with the region already home to established bauxite, alumina and clay mines, as well as chemical plants. The area benefits from well developed infrastructure, including paved roads and a skilled, mining-focused workforce.

- o Nameplate production is planned for 2028.

Chief Executive Officer, Rafael Moreno commented:

"These results affirm Colossus as one of the most significant and financially robust rare earth development projects globally, underpinned by its world-class resource quality, high MREO grades and unique metallurgical characteristics. Rare earths are critical for the global energy transition, defence applications, and modern technology, yet assessing the true value of a rare earth project remains complex.

Since acquiring the Project 18 months ago, we've remained committed to transparency, systematically demonstrating the building blocks of Colossus - drilling, resource definition, metallurgical testing, ESG and engineering - culminating in the release of our Scoping Study. This study highlights the exceptional economic value of Colossus, driven by a two-decade high-grade mine plan, industry leading recoveries, and a cost-effective, environmentally friendly flowsheet that has redefined the cost curve for rare earth projects globally.

The disruptive nature of Colossus as a true ionic adsorption clay project underscores its ability to deliver low capital intensity, competitive operating costs, and long-term sustainability. Notably, the Project's robust economics ensure it can generate substantial returns even at the current cyclically low rare earth prices without relying on inflated market forecasts.

As discussions with financiers and potential offtake partners advance, our focus remains on maintaining a solid foundation to navigate project financing confidently in today's pricing environment. With very few assets globally capable of thriving in such conditions, we are wellpositioned to capitalise on the burgeoning rare earth market.

Looking ahead, we are aggressively progressing along our development timeline. With the recent submission of our Environmental Impact Assessment, we have begun preparing our Installation License application, a critical milestone for the project. We are also working toward completing our Pre-Feasibility Study, a key step in advancing our financing and offtake discussions."

## SCOPING STUDY OVERVIEW

The Study is based on the updated Mineral Resource Estimate, announced by Viridis on 22 January 2025, and assesses the development of an initial 5Mtpa rare earth production facility with a 20-year mine life. It draws on the Measured and Indicated mineral resources identified from only the Northern Concessions and the Cupim South section of the Southern Complex, which make up less than 13% of the total tenement package held by Viridis and only 20% of the global JORC resource of 493Mt.

The Study confirms that the Colossus Project has the potential to be one of the highest-margin and lowest-cost rare earth producers globally, capable of delivering outstanding economic returns through commodity cycles. Key drivers of the Project's competitive cost structure include:

- o Largest and Highest MREO grade Measured and Indicated resource globally, which supports a 20-year feed profile of MREO greater than 936ppm MREO.
- o Designing the pits and mine scheduling with a focus on MREO contents and MREO:TREO ratio rather than prioritising the highest TREO grades, leading to an outstanding 28% MREO:TREO ratio across the LoM feed - which is the key ratio in determining the basket sale value and operational margins.
- o A truly unique ionic absorption REE mineralisation, which has repeatedly shown to improve recoveries while using a more neutral pH solution - enabling industry-leading recoveries through cheaper, simple, low-cost AMSUL processing flowsheet with fewer impurities in the final MREC product.
- o Low-cost and environmentally friendly flowsheet, leveraging 100% renewable grid power, skilled local labour, and existing infrastructure access.

Based on these factors, the Study estimates a highly competitive AISC of US \$8.8/kg TREO over the 20-year LoM evaluation period. Figure 1\* illustrates the projected cost positioning of the Colossus Project within the 2025 rare earth industry cost curve for MREC and highlights that it is anticipated to be the lowest-known cost producer globally.

\*To view tables and figures, please visit:  
<https://abnnewswire.net/lnk/94WAN3K0>

## About Viridis Mining and Minerals Ltd:

Viridis Mining and Minerals Limited (ASX:VMM) is a resource exploration and development company with assets in Brazil, Canada and Australia. The Company's Projects comprise:

- The Colossus Project, which the Company considers to be prospective for Rare Earth Elements;
- The South Kitikmeot Project, which the Company considers to be prospective for gold;
- The Boddington West Project, which the Company considers to be prospective for gold;
- The Bindoon Project, which the Company considers to be prospective for nickel, copper and platinum group elements; and
- The Poochera and Smoky Projects, which the Company considers to be prospective for kaolinhalloysite;

and

- The Ytterby and Star Lake Projects, which the Company considers prospective for Rare Earth Elements

Source:

Viridis Mining and Minerals Ltd

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