

Tests at new Wyoming rare earths mining project indicate low mining, processing costs

written by Raj Shah | December 16, 2022

Project critical to ending US dependence on China

December 16, 2022 ([Source](#)) – (OTCQB: ARRNF and ASX: ARR), American Rare Earths Ltd, reported that its Halleck Creek rare earths elements project in Albany County, Wyoming, USA, metallurgical tests have paved the way for a potentially low-cost mining and processing operation using conventional technology.

The company, which is also progressing the La Paz REE project in Arizona, is positioning itself to be a key player in the North American supply chain for the renewable future. US Government policy now supports the revival of the American rare earths industry in order to decrease dependence on Chinese supply.

Highlights

The metallurgical tests, conducted by Wood Australia, show that Halleck Creek has favourable characteristics on a number of counts. These are:

- **Low ore strength: the ore can be liberated easily, with the ore strength ranking in the lowest 14th percentile of more than 1,300 deposits globally. This requires minimal energy use.**
- **Ore abrasiveness is below average.**
- **The ore will require less coarse grinding at the processing plant, meaning another level of energy**

expenditure and the opportunity to increase capacity.

- **These factors will make possible a simplified flow sheet reflecting lower capital cost outlays.**

Managing Director Chris Gibbs said that one of the major costs in any processing plant is within the crushing and grinding circuit. "These test results indicate there could be significant energy savings due to the ore softness. Simply put, the easier the ore is to crush and grind, the lower our operating costs will be. It will also enable higher throughput rates and efficiencies as the comminution circuit is so often the limiting factor for plant capacity. And, apart from energy savings, the less abrasive ore will lead to reduced wear and tear."

Under the guidance of Wood Australia, Nagrom Laboratories concluded the Feed Characterisation/Comminution module of the test work program. This included SMC Testing Pty Ltd (SMC) that produces data used for the sizing of SAG mills and was originally designed to support Mine-to-Mill studies.

The SMC test work results indicate low ore competency which would translate to low specific energy consumption in a SAG mill. Compared to SMCs global database of over 1300 deposits, Halleck Creek was rated in the 14th percentile for ore competency. The Bond abrasion index test returned a value of 0.24, which is below the average of Wood Australia's database. The Bond ball mill work index test result of 15.6 kWh/t is close to average hardness relative to Wood's database.

The combination of values suggest that Halleck Creek ore should be suitable for processing in a SAG-Ball mill configuration without the need for pebble crushing and could also be processed in a single stage SAG mill. Other modes of grinding, such as high-pressure grinding mills and vertical roller mills may also be considered down track when sufficient sample mass is

available for testing.

Next Steps

With oversight from Wood Australia, test work is currently underway on additional steps in the process flow sheet. This includes magnetic separation test work currently underway at Nagrom Laboratories in Perth, Western Australia. The Company will then transition to flotation testing of WHIMS magnetics at Auralia Metallurgy, to assess the potential for further upgrading. Testing will then commence on the leach process using Watts & Fisher's proprietary leach technology.

The Company will continue to provide updates on metallurgical test work as results come to hand.

This market announcement has been authorised for release to the market by the Board of American Rare Earths Limited.

Chris Gibbs
CEO & Managing Director

Forward-Looking Statements

This press release contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements involve known and unknown risks, uncertainties, and other important factors that could cause the Company's actual results, performance, or achievements or industry results to differ materially from any future results, performance, or achievements expressed or implied by these forward-looking statements. These statements are subject to a number of risks and uncertainties, many of which are beyond American Rare Earths Limited's control.

Concurrently, this press release contains forward-looking statements within the meaning of the U.S. Securities Act of

1933, as amended, and U.S. Securities Exchange Act of 1934, as amended, including, but not limited to, statements regarding the potential development, economic feasibility, resource, grade and other mineralization characteristics, and drilling and exploration methods that may be utilized in potential exploration of the Company's projects. When used in this press release, the words "potential," "plans," "indicate," "expect," "intend," "hopes," "believe," "may," "will," "if," "possible," "anticipate" and similar expressions are intended to identify forward-looking statements. Although, not all forward-looking statements contain such identifying words. These statements involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance, or achievements of the Company to be materially different from any future results, performance or achievements expressed or implied by such statements. Such factors include, among others, uncertainty of mineralized material and mineral resource estimates, risks to projected and estimated economics not reflecting actual economic results due to the uncertainty of mining processes, potential non-uniform sections of mineralized material, potential mining hazards and accidents, changes in equipment and labor costs, changes in projected mineral prices and demand, competition in the mining industry, risks related to project development determinations, the inherently hazardous nature of mining-related activities, potential effects on the Company's operations of environmental regulations, risks due to legal proceedings, liquidity risks and risks related to uncertainty of being able to raise capital on favorable terms or at all, as well as those factors discussed in filings with the Australian Securities Exchange. Any forward-looking statements included in this press release are made only as of the date of this release. Except as required by law, the Company assumes no obligation to publicly update any forward-looking statements. The Company cannot assure you that the projected results or events will be

achieved.

Cautionary Note to US Investors

The United States Securities and Exchange Commission (“SEC”) limits disclosure for U.S. reporting purposes to mineral deposits that a company can economically and legally extract or produce and that are compliant with SEC Industry Guide 7. Investors are cautioned, that where a Resource has not been specifically published, not to assume that any part or all of the proposed projects contains any mineral deposits that will ever be converted into resources or that any inferred mineral resource or measured and indicated resources exists or is economically or legally mineable. The proposed projects do not contain any known proven or probable ore reserves or mineral resource compliant with SEC Industry Guide 7 reporting standards. Investors are urged to consider closely the disclosures set forth in the Company’s latest reports filed with the ASX.

Competent Persons Statement:

The information in this document is based on information compiled by Mr Greg Henderson. Mr Henderson is a Senior Process Consultant at Wood Australia. Mr Henderson is a Fellow of the Australian Institute of Mining and Metallurgy (AUSIMM), number 109007, and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 JORC Code. Mr Henderson consents to the inclusion in the report of the matters based upon the information in the form and context in which it appears.

About American Rare Earths Ltd

American Rare Earths Limited (ASX: ARR, OTCQB: ARRNF, FSE: 1BHA)

is an Australian company listed on the ASX and cross listed in the US and Germany with assets in the growing rare earth metals sector of the United States of America, emerging as an alternative international supply chain to China's market dominance of a global rare earth market expected to expand to US\$20 billion by the mid-2020s. The Company's mission is to supply Critical Materials for Renewable Energy, Green Tech, Electric Vehicles, National Security, and a Carbon-Reduced Future.

American Rare Earths is one of the few listed companies with exposure to the rapidly expanding US market, developing its 100% owned magnet metals projects, La Paz in Arizona, and Halleck Creek in Wyoming. Both have potential to be among the largest rare earths deposits in North America. The company is concurrently evaluating other exploration opportunities while collaborating with US Government supported R&D to develop a sustainable domestic supply chain for the renewable future.

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