RAMACO

Independent Interim Report Confirms Commercial and Technical Feasibility of Ramaco's Brook Mine Rare Earth Deposit

Project would be only primary source mine for gallium, germanium, and scandium in the world

LEXINGTON, Ky., Dec. 4, 2024 /PRNewswire/ -- Ramaco Resources, Inc. (NASDAQ: METC, METCB) ("Ramaco Resources" or the "Company") is pleased to announce that Fluor Corporation ("Fluor") in its interim preliminary techno-economic analysis of Ramaco's Brook Mine projects that the development is both commercially and technologically feasible. The mine holds a large unconventional deposit of rare earth elements and critical minerals sourced from coal and carbonaceous ore.

Key Highlights:

- *Ramaco seeks to extract valuable rare earth elements ("REE") and critical minerals from unconventional coal and carbonaceous ore deposits contained at the mine, which has been called one of the largest unconventional deposits of these elements in the world by the U.S. Department of Energy's National Energy Technology Laboratory ("NETL").*
- *Ramaco retained Fluor to conduct both a preliminary techno-economic study of the Brook Mine, as well as a follow-on more complete scoping study.*
- *Substantial metallurgical and chemical testing of the deposit by independent third-party laboratories is ongoing, and will be finalized in Q1 2025. Fluor will then complete their final preliminary techno-economic report upon receipt and analysis of that data in Q1. A subsequent full scoping study is anticipated in Q2 2025. Economic projections will be provided upon completion of the studies.*
- *From its interim preliminary analysis, which is subject to receipt and analysis of complete testing results and data, Fluor concludes the Brook Mine project is both* technologically *and commercially feasible.*
- *Preliminary financial modelling from Fluor indicates both potentially strong economics and financial returns, even at a lower level of capital investment than required at traditional hard rock REE mines, which typically contain deposits which are both harder to mine and radioactive to process.*
- *Preliminary findings indicate that the elements of scandium, gallium and germanium oxides account for approximately 70% of potential revenue. Fluor indicates that the Brook Mine would be the only primary source mine for these elements in the world.*
- *On December 2, gallium and germanium were banned for export to the United States by China, which controls approximately 95% and 60% respectively of these critical materials used globally.*
- *Scandium, gallium, germanium together with magnetic rare earth elements (neodymium, praseodymium, dysprosium and terbium) constitute over 95% of potential revenue, but only roughly one third of the deposit.*
- *The Brook mine plan will seek to high-grade the extraction process to focus primarily on mining these higher value oxide products.*
- *The Company continues to work with Fluor to evaluate planning and design of a commercial pilot plant, with construction on track to begin in the second half of 2025.*

The results of the preliminary assessment by Fluor provide momentum and independent validation for Ramaco to continue its current development plans for the Brook Mine carbon ore, REE and critical mineral deposit. Unlike conventional REE deposits that often require complex and costly processing, as well as the handling of radioactive material, the Brook Mine deposit uniquely consists of soft, non-radioactive, friable rock associated with coal.

This minimizes the energy-intensive processes typically associated with hard rock mining, which should facilitate a more efficient extraction at lower capital intensity than REEs found in hard rock mines. This should also support a streamlined flow sheet, reducing operational complexity and potentially lower overall capital and operational costs.

"This initial report marks an important milestone in Ramaco's pursuit of making the development of its Brook Mine deposit into a far-reaching critical materials commercial business. Yet much work still remains on this potentially transformational road for us," said Randall Atkins, Chairman and CEO of Ramaco Resources. "Importantly, this analysis from a recognized independent firm validates our continued pursuit of the development of this potentially valuable and nationally strategic deposit."

"We envision that the full commercial, technical and economic contours of this project will evolve over the next several months with the release of the final techno-economic report and then the scoping study. This Spring we will be expanding further coal mining and initiating process development of the project. We will continue to provide regular updates to our investors as we transition forward in the creation of our emerging rare earth and critical mineral business."

About Ramaco Resources, Inc.

Ramaco Resources, Inc. is an operator and developer of high-quality, low-cost metallurgical coal in southern West Virginia, and southwestern Virginia and a developing producer of coal, rare earth and critical minerals in Wyoming. Its executive offices are in Lexington, Kentucky, with operational offices in Charleston, West Virginia and Sheridan, Wyoming. The Company currently has four active metallurgical coal mining complexes in Central Appalachia and one coal mine and rare earth development near Sheridan, Wyoming in the initial stages of production. In 2023, the Company announced that a major deposit of primary magnetic rare earths and critical minerals was discovered at its mine near Sheridan, Wyoming. Contiguous to the Wyoming mine, the Company operates a carbon research and pilot facility related to the production of advanced carbon products and materials from coal. In connection with these activities, it holds a body of roughly 60 intellectual property patents, pending applications, exclusive licensing agreements and various trademarks. News and additional information about Ramaco Resources, including filings with the Securities and Exchange Commission, are available at https://www.ramacoresources.com. For more information, contact investor relations at (859) 244-7455.

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