Magnesium Is the Test of America's Critical Minerals Revival

written by Jack Lifton | November 5, 2026
Where are the minerals?

That is the question I would like to ask the federal government and the American mining industry after years of announcements about billions of dollars in financing to restore domestic critical mineral production. We have been told about mineral discoveries, resource estimates, feasibility studies, demonstration plants, government grants, loans, price guarantees, and proposed processing facilities. What we have not seen is a corresponding increase in the actual physical production of minerals and metals by American industry.

Washington is financing the promise of American mineral production faster than American industry is demonstrating its ability to deliver it.

The United States Geological Survey reports that the value of American nonfuel mineral production increased from $82.3 billion in 2020 to approximately $112 billion in 2025. That sounds impressive until we remember that mineral production value is not the same as quantity produced. Inflation and rising commodity prices account for much of the increase. The dollar value of American mining output has grown substantially, but the evidence of comparable growth in physical production is much less convincing.

A mine does not produce more copper because copper prices rise. A gold mine does not produce more gold because investors are

willing to pay more for it. And a critical minerals company does not become a producer because the federal government has agreed to finance its proposed facilities.

Production is a physical event, not a financial projection.

A mineral must be extracted, processed, and refined when necessary, and converted into a form that meets an actual customer’s specifications. That customer must then be willing to buy the material at a price that lets the producer remain in business. Until those events occur, we are discussing proposed production, not an operating industry.

The American government’s current critical minerals strategy assumes that financing new mining and processing capacity will create new productive industries. Sometimes it will. But money cannot substitute for proven metallurgy, experienced operators, reliable equipment, qualified products, or customers. Nor can it make an intrinsically uneconomic process competitive merely by reducing the cost of capital.

The question for investors is therefore not how much money Washington has committed to American mining. It is how much additional commercially saleable material American industry is producing as a consequence of that financing.

I believe restoring American primary magnesium production offers us an unusually clear opportunity to answer that question. Magnesium is abundant, its chemistry is well understood, its industrial applications are established, and the United States once possessed a substantial domestic magnesium industry. We are not attempting to discover a new mineral resource. We are trying to recover an industrial capability we once had and later lost.

If federal financing, private capital, and modern process technology cannot restore the competitive American production of

magnesium metal and its alloys, then we should seriously question how quickly those same financial mechanisms can establish entirely new domestic industries for the much more complex rare earths and other critical minerals.

The magnesium industry may therefore provide the most revealing test of whether America's critical minerals policy is creating productive industrial capability or simply financing its promise.

Top 5 Companies in the North American Magnesium Supply Chain

A magnesium-bearing ore, a tonne of primary metal and a finished aircraft casting represent three different businesses. These five publicly listed companies show where North America already has industrial capacity and where developers are still trying to build it. The ranking uses total company market capitalization in U.S. dollars, based on November 4, 2026 closing figures where available and that day's exchange rates.

1. Industrias Peñoles, S.A.B. de C.V. (BMV: PE&OLES) | US$16.56 billion

At Química del Rey in Ocampo, Coahuila, Peñoles already produces magnesium compounds at industrial scale. The complex turned out **76,217 tonnes of magnesium oxide and 65,925 tonnes of magnesium sulfate in 2025**. Magnesium oxide output rose 13.6% from 2024, helped by recovering demand for several grades, particularly the refractory grade used by steel and cement producers. That material goes into bricks that line high-temperature furnaces and kilns.

The operation also illustrates how one chemical business can

supply another. Peñoles makes magnesium oxide using residual brine from its sodium sulfate operation and dolomite from its La Esmeralda mine. Química del Rey's contribution to the regional supply chain is a line of magnesium compounds that industrial customers already buy in volume.

2. Magellan Aerospace Corporation (TSX: MAL) | US$1.38 billion

Magellan shows what happens further down the chain, where magnesium alloys become aircraft parts. Its Haley, Ontario, foundry specializes in large, complex precision sand castings, including engine cases and helicopter transmission housings. Its Glendale, Arizona, facility makes smaller castings, including accessory gearbox housings and covers. Magellan can also machine and assemble castings within its own manufacturing network. Haley foundry and Glendale foundry.

In 2023, Magellan announced a long-term agreement extension with Collins Aerospace to supply complex magnesium and aluminum castings for military and commercial aircraft programs. The agreement gives the magnesium supply discussion a concrete customer and a set of parts that North American foundries already know how to make.

3. TETRA Technologies, Inc. (NYSE: TTI) | US$914.35 million

TETRA and Magrathea are testing whether Arkansas brine can support commercial production of primary magnesium metal. In June, their Arkansas Magnesium joint venture reported producing metal of **more than 99.9% purity** from Smackover brine sourced from TETRA's acreage in Lafayette County. Magrathea used its electrolytic process to produce the sample, which met ASTM B92 specifications for primary magnesium.

The partners bring different pieces of the proposed operation. TETRA supplies the brine resource and an industrial site at its Evergreen chemical campus, while Magrathea supplies the process technology. The June result established that the Arkansas feedstock could yield metal that meets the specification. The next commercial test is whether the first plant, which was in engineering when the result was announced, can achieve that quality consistently at scale.

4. Latrobe Magnesium Limited (ASX: LMG) | US$36.2 million

Latrobe's U.S. plans now have a proposed address. In October, the Australian-listed company signed a **nonbinding** letter of intent to buy roughly 250 acres at the Colleton Megasite in Walterboro, South Carolina, for US$5 million. The proposed plant would produce **50,000 tonnes of primary magnesium metal a year**. The land proposal provides for 120 days of due diligence, with an option to extend that period.

Latrobe's October quarterly report also disclosed letters of intent covering 32,000 tonnes of potential annual sales, equivalent to 64% of planned capacity. The next milestones are a definitive land purchase agreement, committed financing and firm customer contracts. Those are the steps that would turn the proposed capacity into a project customers could plan around.

5. West High Yield (W.H.Y.) Resources Ltd. (TSXV: WHY | FSE: W0H) | US$23.8 million

West High Yield's Record Ridge project near Rossland, British Columbia, would enter the supply chain as a mine selling magnesium-rich serpentine ore. The project reviewed by the Impact Assessment Agency of Canada envisaged annual production of approximately **63,500 tonnes of magnesium-bearing ore**. In

March, the company signed a definitive forward sales agreement with U.S.-based Galaxy Trade and Technology for ore from the proposed mine. Downstream processing remains a longer-term part of the company’s plans.

Record Ridge received its provincial Mines Act permit in October 2025 and a highway access permit in June 2026. A September timber-cutting licence moved it closer to site preparation. In that update, West High Yield said it was still pursuing an environmental authorization and would have to post the balance of its reclamation security and satisfy other pre-disturbance conditions before clearing could begin.