

SEG 2026 Conference in Salt Lake City, United States

Reestablishing an Underground Stockpile for Critical Minerals

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In the late 1930s, the anticipated disruption of global mineral supply chains by war spurred the United States to secure essential mineral supplies. In support of this, the US Geological Survey (USGS) and the US Bureau of Mines developed a list of essential minerals with vulnerable supply chains and devised a Strategic Minerals Development Program for (1) stockpiling mined commodities during peacetime and (2) establishing an “underground stockpile” of mineral deposits which could be mined during wartime. The “underground stockpile” concept involved characterizing large but non-commercial deposits where mining could be underway within 2 years, with mined stockpiles covering demand in the meantime. Although mined and processed materials stockpiles continue as the National Defense Stockpile (NDS), non-commercial deposit definition ended after the war. Today, the increased vulnerability of global mineral supply chains highlights the need for new plans to secure domestic critical minerals. The NDS can meet near-term demand but meeting multiyear demand is an unresolved problem. The original “underground stockpile” is no longer a viable solution, as developing new mines takes far longer than the 2 years envisioned in the 1930s. One alternative is to identify inactive critical mineral mines that can be brought back into production on short notice. Many legacy mines left ore in the ground, along with infrastructure, as operations ended due to economics rather than a lack of resources. Although some legacy mines are coming back into production, a significant fraction remain non-commercial. Targeted studies could identify sites which remain viable and provide information needed to bring these mines into production in the event of a national emergency. These investments could establish a new “underground stockpile” and, as mining technology advances, lay the foundation for future commercial operations. The USGS and other Federal, State, and private industry partners are well-positioned to develop this concept.