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Senate Committee on Energy and Natural Resources
Hearing to Examine Opportunities to Counter the People's Republic of China's Control of Critical Mineral Supply Chains
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I. Introduction

I want to start by thanking the Committee for highlighting mineral security issues and your work to create an environment in which the U.S. mining industry can succeed in safely and responsibly providing the raw materials our nation requires for our national defense, economic well-being and energy security.

A lack of access to economically viable mineral deposits and a lengthy, inefficient federal permitting system have resulted in our unsustainable dependence on foreign countries for nearly 50 essential minerals and has empowered our adversaries to strategically weaponize mineral supply chains against us. These supply chain concerns have led to bipartisan acknowledgement of the need for more domestic mineral production.

Although we may need to obtain some minerals from our allies, we must responsibly utilize our own resources whenever possible. The surging global demand for minerals and raw materials means other countries will be competing for the same limited supplies, which will challenge our ability to obtain minerals from abroad.

Americans and the environment lose when we offshore our mining and mineral requirements. It makes no sense to create mining jobs elsewhere, import minerals from countries with inferior environmental protection and worker health and safety standards, and to generate CO2 by shipping minerals from faraway places.

Because hardrock mineral deposits are rare geologic phenomena, it is imperative that mineralized lands remain accessible to responsible mineral exploration and development. Mines can only be developed in those few places where economically viable deposits were formed, and geologists have discovered them. We cannot choose where they are located or move the mineral deposits from areas of competing interests. The answer must be facilitating greater investment in environmentally safe and innovative technologies within the U.S. and developing clean and safe domestic mines where these valuable mineral deposits are found. The U.S. must strive for mineral independence if we are to compete in the future world economy and demand for minerals.

Currently, more than half of federal lands are off-limits or severely restricted to mining. Further restricting access to mineral resources threatens our mineral security and chills investment. If we cannot invest in mineral exploration, we cannot discover that rare, "needle in a haystack" deposit. According to the National Academy of Science, only 1 in 1,000 prospects become a producing mine. This highlights the importance of allowing and promoting mineral exploration across our country.

It takes 10 years or more of drilling, geological analysis, baseline studies, project feasibility evaluations, and hundreds of millions of dollars of investment to advance a prospect from exploration to the *start* of mine permitting. Permitting the mine then takes at least several more years – and even longer if the project is litigated, which happens all too often and can add years before any ore can be produced.

Because it often takes two decades to get from exploration to production, minimizing the land access and permitting obstacles that impede domestic exploration and mining is imperative.

For the past 18 months, we have worked closely and in good faith with the Biden administration's Interagency Working Group on Mining Regulations, Laws and Permitting ("IWG"). We viewed the IWG process, and development of the report[1] released earlier this month, as an opportunity to identify ways to eliminate some of the current barriers to discovering and developing minerals on public lands.

Unfortunately, the IWG's report includes no recommendations that would encourage exploration and production of domestic minerals. While some of the recommendations in the report are intended to improve permitting processes, many of the proposed revisions would fundamentally change how mines are permitted, rights are created to explore for and develop minerals, and portend significant implementation challenges.

The Mining Law recommendations in the IWG report will make exploration and mine development harder because they eliminate security of land tenure and burden future mines with a confiscatory royalty. The conversion of mining claims into mineral leases may result in a blanket takings of property rights in violation of the Fifth Amendment. It's notable that the IWG admits that the report's Mining Law recommendations are likely to interfere with the administration's clean energy objectives stating, "...the transition to [a leasing system] could be complex administratively and complicate new exploration and developments efforts [that] may, in turn, cause short-term delays in efforts to meet clean energy and climate goals." (IWG Report, Page 99).

AEMA would like to thank Senator Cortez Masto for her September 12, 2023 news release highlighting the problems with the Mining Law recommendations on the IWG Report: "...these recommendations to impose new taxes and change the mining claims process would make it harder to create new mining projects in the U.S. at a time when too many companies are sourcing these materials from Communist China." We agree with Senator Cortez Masto. Given the skyrocketing demand for critical minerals, now is an especially bad time to upend this land tenure law and eliminate confidence in our country's system of property rights.

The Nation acknowledges the urgency of increasing domestic mineral production, strengthening our supply chains, and reducing our reliance on foreign minerals. However, the IWG Report, BLM's proposed Conservation and Landscape Health rule, CEQ's proposed amendment to NEPA regulations, among other proposals, would put more lands off-limits to mining, make mineral exploration and development more difficult, and increase our dependency on China and other countries for critical minerals.

II. Background on Hardrock Mining

American miners continue to play an indispensable role in building and defending our Nation. From foundations to roofs, power plants to wind farms, roads and bridges to communications grids and data storage centers, America's infrastructure begins and ends with minerals and mining.

[1] https://www.doi.gov/sites/doi.gov/files/mriwg-report-final-508.pdf

Minerals are also essential to fighting climate change, and for zero-emission technologies such as wind turbines, solar panels, storage batteries and EVs. As these technologies are deployed in ever-greater numbers, the demand for minerals is skyrocketing, and our Nation must do more to keep up. The International Energy Agency ("IEA") published a report at the end of July 2022 titled "Global Supply Chains of EV Batteries," and noted that demand for EV batteries will increase from 340 GWh today to about 3500 GWh by the year 2030. To meet that demand, 50 new lithium mines, 60 more nickel mines and 17 more cobalt mines would need to come into production.[2]

Congress has taken note of this surge in demand, and through the Infrastructure Investment and Jobs Act of 2021 and the Inflation Reduction Act, has decided that it is inappropriate, unwise and dangerous to rely on hostile, untrustworthy or unstable countries to supply our country's minerals. Notably, the Inflation Reduction Act contains provisions requiring automakers to source significant portions of their EV batteries and components from domestic supply chains, or from countries with which the U.S. has free trade agreements. In this regard, Congress has sent a clear message – **Now is the time to get serious about building a reliable mineral supply chain**. The U.S. mining industry stands ready to help build that supply chain right here in America.

AEMA members take great pride in finding and producing the metals and other important minerals America needs for national and economic security, as well as the materials people use in their everyday lives. We are proud of our members' contributions across the communities and regions where they operate, many of which are rural areas facing significant economic and social development challenges. Notably, the U.S. mining industry is the safest, most environmentally responsible mining industry in the world. Our members have repeatedly demonstrated that mining and protecting the environment are compatible, as mineral producers make possible the development of society's basic needs and consistently minimize modern society's impacts on the environment.

The challenge of finding and developing mineral resources in the U.S., or anywhere in the world, is very difficult because mineral deposits are geologically rare and hard to discover because most deposits are buried by tens to hundreds of feet of soil and rocks. Exploration and mining projects must undergo multiple lengthy stages of development. First, there is the initial identification of deposits that hold potentially developable mineral reserves. To this point, the U.S. has only explored and mapped the mineral potential on approximately 12 percent of our country's lands. The USGS estimates that it would take more than 10 years just to find and map all domestic resources, using modern technologies, with at least another 7 to 10 years to get those resources to market. Importantly, mining companies often do most of this work themselves and cover all the investments needed to advance a potential mineral deposit towards an operating mine. No taxpayer monies are used to discover mineral deposits and develop them into mines that produce the raw materials needed to build and maintain our society, that employ people at high-paying jobs, and that pay local, state, and federal taxes.

It is also important to recognize that many federal lands across the western U.S. already have been closed to exploration and mining. Further restrictions would inevitably prevent mineral

[2] https://iea.blob.core.windows.net/assets/4eb8c252-76b1-4710-8f5e-867e751c8dda/GlobalSupplyChainsofEVBatteries.pdf

discovery and mining in areas where there is insufficient information to determine where critical and strategic minerals exist and could potentially be developed. There is no clear reasoning for such harmful restrictions, which limit our ability to extract our Nation's critical and strategic minerals where they may be located and have the potential to be discovered if these lands were not off limits to exploration and development.

AEMA's members operate their respective exploration and mining activities in a responsible manner through a wide range of social and environmental conditions across the U.S. Their operations are subject to extensive federal, state and local permitting processes providing ample opportunity to ensure resource protection. To meet our imminent metal and mineral needs, the Congress and the administration should be focusing on how to expand areas that should be open to potential mining and exploration activities, instead of looking for ways to restrict regions from exploration.

After a potential deposit is identified, which often takes years of exploration-level permitting to ascertain, mining companies must determine a path to confirm the nature and scale of any developable resources. They must identify the amount of additional exploration necessary to properly define the mineral deposit, gain approvals to conduct further studies, and then explore and report on the exploration results. Defining the deposit generally requires multiple years of drilling to establish the extent and quality of any valuable mineralization. This process can take up to several decades for large and complex orebodies. Exploration drilling and associated activities require significant investment, especially since they are often undertaken in geographically remote and challenging areas where access and infrastructure are limited. It is worth noting that only about 1 in every 1,000 prospective exploration targets has the potential to become a producing mine.[3] It's also noteworthy that a single deposit is rarely confined to one tenure type—that is, it may consist of a combination of federal tenure, private tenure or even State lands where any successful operation could, for example, provide a revenue stream to the school children of that State.

In the event a mineable resource is defined, the work continues for mining companies to determine whether there is an economically feasible mine development scenario. This generally involves preparation of a Feasibility Study, sometimes preceded by a Pre-Feasibility Study, and requires several additional years to produce information sufficient to support a mine investment decision. Multiple years of baseline data collection and analysis are often undertaken to provide information for the feasibility work as well as for future permitting. While mining companies may start their pre-permitting work early, including at the exploration stage through Feasibility Study preparation, they often do not submit formal applications until a developable project is identified through the Feasibility Study.

Thus, while it is easy to focus on a single part of the mineral development process, it is important to recognize all of the crucial stages involved with development of an operating mine. When projects require 15-20 years, or more, to take a potential mineral resource to the point of mine construction, any government action that could lengthen this process or create disincentives, or create risk to the security of tenure, should be carefully weighed in terms of its ramifications. Moreover, even when a project has matured through the permitting process, litigation and other actions that jeopardize or delay further development of ancillary facilities at mine sites can have

[3] https://burgex.com/improving-mineral-exploration/#:~:text=The%20success%20rates%20are%20low,producing%20mine%20(at%20best).

severe consequences. Based on current trends and impediments that would arise from implementation of many of the recommendations in the IWG Report, the next domestic mining project to help fill this Nation's critical needs could be decades away from providing any substantial benefit.

III. Efficient Mine Permitting is Needed – the CEQ Phase 2 Proposal is a Step Backwards

Effective implementation of the Infrastructure Investment and Jobs Act of 2021 (also known as the Bipartisan Infrastructure Law) is dependent on the critical and strategic minerals and materials that our members mine. However, according to a 2021 report by the Wilson Center:

The U.S. faces a troubling scenario when it comes to the supply chain for critical minerals. Rapidly increasing demand, under-developed national resources, intense international competition, and years of neglect in this issue area place the U.S. at a distinct disadvantage vis-à-vis China in securing access to the metals and Rare Earth Elements that are vital for the energy transition and for geopolitical ambitions.

Most notably, we are failing to develop infrastructure or minerals projects in a timeframe that would allow the U.S. to achieve its ambitious clean energy objectives, reduce our reliance on China and other adversaries for strategic minerals, and strengthen our minerals supply chains. This is largely due to lengthy permitting delays and uncertainties which place the U.S. at a competitive disadvantage for purposes of attracting investments in mineral development.

The permitting of comparable mining projects in Australia and Canada, which have similar environmental standards and practices as the U.S., takes between two and three years, compared to the seven to ten years, or more, required to permit a mine in the U.S. Given the comprehensive scope and effectiveness of U.S. environmental protection laws and the federal land management agencies' regulations governing mineral projects, these delays do not yield any substantive environmental benefits, as mining is governed by exhaustive federal and state environmental, ecological, reclamation, and financial assurance laws and regulations to ensure operations are fully protective of public health and safety, the environment, and wildlife. U.S. mining is arguably the most heavily regulated mining industry in the world, making U.S. mines the cleanest and safest mines in the world. However, the delays contribute significantly to the additional costs and risks that project proponents are required to bear. The adverse impacts stemming from permitting delays extend far beyond corporate boardrooms – as they hurt local communities that must wait for the jobs, tax revenues, and other investments and socioeconomic benefits associated with exploration and mining.

There are real world consequences caused by permitting delays. The unpredictable nature of delays, alone, can reduce a typical mining project's value by more than one-third, or as much as one-half before production even begins. The challenges of our federal environmental review and permitting processes, and how they adversely affect our supply chain of critical minerals, were recently detailed as part of the aforementioned Wilson Center report.[4] Just last month, S&P Global published a report entitled "Inflation Reduction Act: Impact on North America metals and mineral markets,[5] which identified protracted permitting as a key factor in the shortage of

[4] https://www.wilsoncenter.org/sites/default/files/media/uploads/documents/critical_minerals_supply_report.pdf
[5] https://cdn.ihsmarkit.com/www/prot/pdf/0823/Impact-IRA-Metals-Minerals-Report-FINAL-August2023.pdf

critical minerals, stating: "extended and uncertain timelines for permitting in the U.S. and around the world are a major obstacle to bringing new [copper] supply online to narrow that shortfall." This report cites the complexity of lengthy, multi-agency permitting processes and post-permit litigation risks as the primary reasons that permitting is so difficult and fraught with uncertainties.

Domestic permitting delays halt investments in U.S. mining projects. Yet, our Nation needs these investments to remain competitive and to improve our supply chain independence. According to the USGS' Mineral Commodity Summaries 2023, our country's import dependence for key mineral commodities has doubled over the past two decades, with the U.S. now 100 percent import-reliant for 15 of its key minerals and more than 50 percent import-reliant for an additional 36 key mineral commodities. This foreign reliance continues despite the existence of significant mineral deposits of many of these commodities within our borders. Moreover, U.S. mineral import reliance continues to increase as mineral demand from essential industries, such as energy and transportation, soars. Notably, the World Bank sees mineral demand for advanced energy technologies jumping by nearly 500 percent by the year 2050.[6] Copper demand alone may rise as much as 350 percent by 2050, according to one estimate.[7]

AEMA wants to emphasize that it is not the rigor of substantive environmental protection laws and regulations that is a problem. Our members' projects are designed and operated with state-of-the-art environmental safeguards, and all our mining projects are fully bonded, and are carefully reclaimed when mineral exploration and mining activities are complete. Instead, it is the duplicative and bureaucratic federal permitting process – and associated litigation and administrative delays – that have caused major problems. For mine projects that involve federal permits and authorizations, the National Environmental Policy Act ("NEPA") process consistently causes lengthy federal permitting delays and frequently results in subsequent litigation.

In recognizing the challenges associated with NEPA, the impacts of litigation must be considered because lawsuits are frequently the final step of the NEPA process for many projects. Typically, it is the agencies' NEPA analyses and decisions and the federal permits for hardrock mining projects which are litigated in federal courts. Because NEPA litigation is so common, at least two to three years, or more, of litigation can exacerbate delays of proposed mining projects. While some level of litigation risk is a reality we will always have in the U.S., the mining industry faces consistent and unnecessary litigation hurdles based on the fact that NEPA policies and procedures are developed and implemented on an agency-by-agency, project-by-project basis. This project-by-project approach leads to inconsistencies that make various courts the arbiters of compliance and causes confusion across the industry as to how NEPA should be applied. Costly and time-consuming lawsuits burden projects and federal agencies and hurt communities waiting for jobs, tax revenues and other project-related benefits to materialize.

Unfortunately, the White House Council on Environmental Quality's Phase 2 NEPA proposal is a step in the wrong direction. While it adopts, as it must, elements of the Fiscal Responsibility Act ("FRA"), its provisions run contrary to the intent of the FRA, which is to create less complexity and unpredictability in the review process, not more. The proposed rule would make

[6] https://pubdocs.worldbank.org/en/961711588875536384/Minerals-for-Climate-Action-The-Mineral-Intensity-of-the-Clean-Energy-Transition.pdf
[7] (https://www.sciencedirect.com/science/article/abs/pii/S0959378016300802

dramatic changes to how NEPA is implemented and, in most cases, increase the complexity of the analysis that agencies will need to perform, delaying decision-making, driving increased litigation, and ultimately blocking the construction of much-needed projects. What is striking in the proposed rule is that there is virtually no recognition of how each new or changed requirement would be implemented at the local level and how critical project timelines could be adversely impacted. The proposed rule includes no new provisions that would streamline or simplify the NEPA process and repeals provisions of the 2020 Rule that were intended to shorten permitting time frames and discourage litigation. The proposed rule adopts the time limits from the FRA, but gives agencies no tools to meet those requirements and imposes no consequences if they fail. Moreover, it creates new substantive mandates and unnecessarily changes wording in a manner that will create fodder for litigation and further delays of projects.

Finally, it should be noted that advancing metal and mineral projects towards development is a costly and time-consuming process. Where the federal government is involved, evaluation of a mineral project requires experienced and well-trained personnel resources who understand a project's complexities, including the local and national importance of projects as well as concerns about their potential social, cultural, and environmental effects. The burden of balancing these complexities is often shouldered by inadequately staffed agencies or inexperienced staff in U.S. Army Corps of Engineers district offices, BLM field offices, and Forest Service ranger districts.

What has been notably lacking in this administration is any recognition of the negative social and environmental implications of not allowing domestic mining projects to move forward, and of agencies not having the resources or education necessary to timely evaluate mining projects. We believe this information and education is an essential part of the decision-making process if our country has any hope of meeting its long-term mineral needs. Congress appropriates dollars to encourage mineral development and speed permitting, but those dollars never turn into new project managers, mining engineers, geologists, hydrologists, or other well-trained resource specialists in the field.

IV. Recommendations in the IWG Report will Exacerbate our Dependence on Foreign Minerals

Since 1970, Congress has consistently and repeatedly recognized that minerals and mining are essential to all facets of our economy, society, and national defense. The Mining Law, as amended (30 U.S.C. 21a et seq.), the Mining and Minerals Policy Act of 1970 (30 U.S.C. § 21(a)) ("MMPA"), the National Materials and Minerals Research Policy Act of 1980 (30 U.S.C. §§ 1601-1605) ("MMPRDA"), the Infrastructure Investment and Jobs Act of 2021 (30 U.S.C. §§ 1607, et seq.) (also known as the Bipartisan Infrastructure Law) ("IIJA"); and the Inflation Reduction Act of 2022 (H.R. 5376) ("IRA") all direct the Executive Branch agencies to respond to the Nation's need for domestic minerals (see e.g., 30 U.S.C. §§ 21a and 1602) and direct the Department of the Interior ("DOI") to streamline the permitting processes for domestic mineral development. IIJA Section 40206; IRA § 13401.

Unfortunately, the IWG's report begins with the false narrative that U.S. miners receive some kind of bargain by operating on federal lands and that they operate freely under historic laws dating back 150 years – mostly notably in reference to the Mining Law. Neither of these

statements is accurate, and they ignore the fact that the Mining Law is an essential land rights or land tenure law. There are many land use and environmental statutes, as well as amendments, regulations, and policies that have been enacted or promulgated since the Mining Law, all of which regulate mineral activities subject to the Mining Law. Nevertheless, throughout these many decades of amendments to the Mining Law, Congress has preserved its basic premises: self-initiation and security of land tenure for U.S. citizens in the public domain. This preservation of statutory property rights has enabled strictly regulated, responsible mining to be developed on federal lands. These mines must employ effective environmental protection measures and comply with stringent permitting requirements. Today's mining companies are held to the highest environmental protection, reclamation, financial assurance, and worker health and safety standards.

The IWG acknowledges that the U.S. mining industry's environmental protections are strong, and that neither mining regulations nor financial assurance requirements need to be changed. Many of the report's recommendations are focused on social responsibility issues. While acknowledging we can always do better, for a long time the mining industry has been committed to meaningful, respectful dialogue and engagement with Tribes and local communities to improve projects and bring a variety of benefits to stakeholders. It is our recommendation that the federal government follow suit and improve their own consultation processes. Undermining the basic mineral and property rights statutes that promote exploration and provide security of land tenure will not improve the permitting process.

Given our Nation's need for a strong domestic supply, and the proven benefits that modern mining provides to local communities, the federal government should not consider adding restrictions or making changes to the Mining Law (and its basic property rights provisions) in ways that would discourage or disincentivize mineral development that requires tens of millions of dollars in high-risk investments to make a discovery. Changes such as the imposition of a royalty burden, if not carefully thought through, could result in many mining projects becoming cost-prohibitive and therefore will not be able to attract project financing. More draconian changes, like imposition of a leasing system on claim holders, could preclude most if not all future metals mining on federal lands.

Developing new federal restrictions or federal programs could yield years of policy and implementation uncertainties. These uncertainties are likely to disincentivize investment in exploration and push exploration and mining companies away from U.S. mineral development opportunities instead of helping them increase domestic investments.

A. Leasing Proposal

The Mining Law[8] governs property rights and the process by which U.S. citizens may explore for and obtain hardrock mineral rights on western public domain lands. This legal framework should not be changed. Under this Act, our citizens may take their own initiative to explore for minerals that could potentially discover a mineral deposit that can become a successful mine. Once a deposit is identified, exploration and mineral development activities are subject to environmental protection mandates and permitting approvals, put in place by our country's federal and state agencies and mandated under our system of cooperative federalism.

[8] General Mining Act of 1872 § 1, 17 Stat. 91.

The central purpose of the Mining Law is to provide certainty with respect to obtaining the necessary property interests and land rights on public domain lands that are still open to mineral entry. In fact, an essential component of this law is the protection and security of tenure claimants rely on to justify large expenditures when locating and developing valuable mineral deposits on public lands. Replacing the Mining Law with a leasing system would eliminate this self-initiation and security of land tenure crucial to motivate and enable mining claimants and miners to search for mineral deposits across public domain lands. In fact, most leasing systems add years and layers of unpredictability (primarily due to governments and their agencies) to the ability of miners to acquire, own or develop any discovered mineral deposits. This unpredictability disincentivizes investment in the exploration and production of U.S. minerals and would result in shifting investment overseas. In this regard, leasing system proposals resembling those in bills introduced in the 117th Congress to overhaul the Mining Law would directly conflict with the Biden administration's claimed policies to increase domestic critical mineral production.

The system already implemented under the Mining Law is an effective way for the public to benefit from private-sector investment in the exploration and development of hardrock mineral deposits. This self-initiation process leverages private-sector investment in a way that develops minerals, including most critical minerals, creates jobs, results in widespread tax revenues, and feeds our country's mineral supply chains. Instead of U.S. taxpayers, or the federal government, shouldering the risks of exploration and development, those burdens are carried completely by the private sector. Self-initiation enables prospectors and geologists to pursue their theories about where mineral deposits exist and ultimately identify and delineate promising mineral targets. This process requires a lot of expertise together with trial and error. In fact, as indicated above, the National Research Council/ National Academy of Science has stated that 1,000 mineral targets must be identified in order for a single hardrock deposit to become a mine.[9]

By contrast, a leasing system would discourage investment in exploration and development of hardrock minerals. It would shift the burdens of exploration and development from the private sector to the government and U.S. taxpayers, and it would result in a loss of revenues to the country. In this regard, the current mining claim system generates annual maintenance fees for both developed and undeveloped claims, recently resulting in more than $100 million in annual revenues for the U.S. treasury.[10] Under a new leasing system, there would be no such fees collected for undeveloped mining claims or areas, and a drop-off in new exploration targets, mining claims, and potential mines would result in a significant decrease in federal revenues.

Notably, recent legislative attempts in the 117th Congress and in previous sessions to change the Mining Law into a leasing system copied the hardrock leasing program previously implemented for federally acquired lands.[11] This 75-year-old system has a proven track record of being both impractical and unproductive in terms of exploration, mineral production and generation of meaningful royalty revenues. If such a program were to be implemented for hardrock minerals across western public domain lands, it would destroy the self-initiation process and the security of land tenure needed to incentivize private exploration for minerals. Instead of private investment, the federal government would be required to decide when and where geologists look

[9] Hardrock Mining on Federal Lands, page 24.
[10] https://www.blm.gov/sites/default/files/docs/2022-07/Public_Land_Statistics_2021_508.pdf, page 160.
[11] The Minerals Leasing Act for Acquired Lands of 1947, 30 U.S.C. §§ 351-359

for minerals and how long developers should operate their mines. These governmental conditions and restrictions would bottle-neck the supply of critical minerals and diminish incentives for any mineral investment in federal lands. Our country's supply chains would be negatively affected, and there would be an increased reliance on foreign minerals. Unlike the leasing systems currently set-up for coal, oil and gas (which work because most of these deposits are already discovered in relatively well-understood geologic settings), hardrock development requires ongoing exploration in geologically complex terrains and costly geological work to find and identify the grade, depth, size and economic viability of each hardrock deposit. Then, even once a deposit has been sufficiently defined through drilling and exploration, it often requires hundreds of millions or even billions of dollars to develop and build the mining and processing facilities required for the extraction and processing of hardrock minerals.

Hardrock mineral deposits are very different from oil, gas, and coal deposits because, most hardrock mineral deposits occur in areas with much more complex and diverse geology. Additionally, hardrock deposits typically have unique geologic, geochemical, and metallurgical characteristics which make each valuable mineral deposit different and result in many deposits being difficult to discover and develop. Generally, neither the federal government nor the mineral prospector knows beforehand where hardrock mineral deposits are located, and they need flexibility to explore large swaths of potentially mineralized zones. This unpredictability is one of the reasons that hardrock leasing on acquired lands has failed, even though there is promising geology on acquired lands.

In his July 2021 testimony before the Subcommittee on Energy and Mineral Resources, U.S. House of Representatives, Jim Cress provided a detailed and informative discussion of the many reasons why the federal hardrock mineral leasing program on acquired lands has failed. Some of the reasons he identified for failure include the following:

- The hardrock mineral leasing program was not designed to promote discovery and development of hardrock minerals;
- The hardrock mineral leasing program contains no rights of self-initiation or rights to mine any discovered minerals;
- Prospecting licenses or permits require prior consent from the surface management agency, are typically multi-year efforts to obtain through a NEPA process, are limited to two years with a maximum four-year discretionary extension to make the "discovery", and are restricted to 2,560 acres per permit and a 20,480-acre per person/company per state limit; and
- Hardrock mining leases are limited to a primary term of 20 years, which is not long enough to develop and mine most deposits. This artificial time constraint is not in the public's best interest. A mining lease must provide security of tenure for as long as it takes to develop and mine a deposit.

In October 2021 testimony before this Committee, Barrick General Counsel Rich Haddock explained how the principles of security of tenure and self-initiation were essential to the continued viability of the domestic minerals industry and how important those principles are to continued investment in exploration in the U.S.

A recent situation which highlights industry security of tenure concerns with the existing leasing scheme on acquired lands is the Biden administration's decision to cancel the Twin Metals

mineral leases in the Superior National Forest in Minnesota. This cancellation vividly illustrates the risks associated with a leasing system and its lack of security of tenure, as the government used its discretion to cancel leases on acquired federal lands after the mining company invested hundreds of millions of dollars to explore and develop mineral deposits under its leasehold acreage.[12] This rescission of leasehold rights clearly demonstrates the perils of relying on a mineral leasing scheme. Adoption of such mineral leasing procedures, and the implementation of blanket control by the federal government over mineral rights on western public domain lands, would similarly eliminate any security of tenure that is essential for the exploration, discovery, and development of hardrock minerals.

Based on the current extraordinary demand for minerals to build clean energy infrastructure, to power EVs, and to electrify the Nation, this is an exceptionally inappropriate time to make sweeping changes to the land tenure system in the Mining Law. Even if a satisfactory leasing scheme were implemented that provided security of tenure, this is the wrong time to seek such changes because, as noted in the IWG report, the transition from claims to leases would impede the administration's clean energy objectives. Eliminating or phasing out mining claims and substituting a leasing system would dramatically slow mineral exploration and development, thereby amplifying our current supply-chain challenges. The net result would be reduced mineral production during a multi-year transition period and an increased reliance on foreign minerals.

It is also worth noting that the U.S. Constitution prohibits governmental "takings" of mining claim rights without just compensation.[13] A taking occurs if there is (1) an "actual" taking by the government, whereby it physically or legislatively confiscates property interests, or (2) a "regulatory" taking whereby legislation or regulations deprive the private owner of its economically reasonable use of the property. Whenever government action constitutes a taking — even a partial taking — it is required to pay the property owner just compensation or fair market value to cover the loss. Courts have consistently ruled that mining claim rights are protected under the Fifth Amendment. [14]

To avoid constitutional takings claims, and the attendant risks of litigation and potential damages, any leasing scheme implemented by the federal government for hardrock minerals would have to be limited in nature and include savings or grandfather clauses so that the law does not adversely affect the rights of current mining claim owners. Otherwise, any reduction to the actual property interests held by these mining claim owners, including the imposition of lease term limits or transformation of mining claims into leases, would trigger Fifth Amendment takings concerns.[15] For a fuller discussion of these constitutional taking issues, attached hereto as Attachment 1 is AEMA's July 2021 white paper entitled "Mining Law Fifth Amendment Takings Analysis" which more thoroughly discusses the protected rights and interests held by mining claim holders and those who have relied on the Mining Law.

Another recent threat to the future of mining on U.S. public lands is the U.S. Ninth Circuit Court of Appeals decision in litigation challenging the Forest Service's approval of the Rosemont

[12] Twin Metals Minnesota has invested over $500 million to develop a world-class critical minerals deposit containing nickel, cobalt, copper, platinum, and palladium, all of which have essential clean energy applications. https://www.mprnews.org/story/2022/02/15/mn-dnr-suspends-environmental-review-of-controversial-twin-metals-mine-proposal
[13] U.S. CONST. amend. V ("[N]or shall private property be taken for public use, without just compensation.").
[14] See attached American Exploration & Mining Association July 2021 white paper entitled "Mining Law Fifth Amendment Takings Analysis."
[15] See supra note.

Mine, Rosemont Copper Company's proposed Arizona copper mine. The court's decision incorrectly restricts the rights to use public lands for certain ancillary purposes to develop claims that contain a discovery of a valuable mineral deposit and interprets the Mining Law in a manner that could interfere with claim owners' Mining Law rights to use public lands to explore for and develop minerals.

The Rosemont ruling incorrectly required consideration of land tenure in the Forest Service's permitting review. The land tenure status has no bearing on or relevance to the environmental impacts assessed and any required mitigation for such impacts. BLM's and the Forest Service's regulations govern all aspects of locatable mineral activities to ensure all mineral activities comply with environmental protection mandates and to confirm that all mining facilities are reasonably incident to the mining project. Claim status is irrelevant in determining the applicability of these regulations.

We therefore strongly support the bipartisan Mining Regulatory Clarity Act (S.1281). This bill clearly recognizes that maintaining certainty in security of land tenure is essential for mining to occur on public lands and is especially important in light of the skyrocketing demand for minerals.

B. Hardrock Royalty Proposal

For many years, the mining industry has presented testimony in hearings before Congress explaining why a gross royalty structure, like that used in the federal oil and gas royalty program, is unworkable for hardrock minerals and would lead to significantly less mining on federal lands. This testimony demonstrates that using coal, oil, and gas royalty programs as a template for a hardrock royalty would be impractical due to the different geologic characteristics of oil, gas, and coal as compared to hardrock minerals.[16] Moreover, oil, gas, and coal are more abundant than hardrock mineral deposits, making these energy minerals easier to find, develop, and produce. By comparison, discovering and developing a hardrock mineral deposit takes much longer and requires a much larger investment.

Additionally, the raw minerals produced at most hardrock mines are not salable, as they must undergo costly processing steps to create a product that can be sold. Although federal royalties for oil, gas, and coal are often referred to as gross royalties, these are actually more comparable to a net royalty in that they are based on the value of the *marketable* products extracted from the well or a mine (See Attachment 3, at 5). If a workable federal hardrock royalty is desired, that royalty should only be effective at the point in time when value-added steps have created a marketable product from the mine. Then the costs incurred by the mine operator to produce the marketable product would need to be deducted in the royalty calculation.

Although the federal government, through the Mining Law, has made land available for mineral exploration, it currently contributes nothing to the immense costs and efforts required to find, produce, and process valuable hardrock minerals. Without relying on federal subsidies, mining companies invest their own funds in a way that greatly benefits federal taxpayers at the end of

[16] See, e.g., Hearing to Examine and Consider Updates to the Mining Law of 1872, Senate Committee on Energy and Natural Resources, Statement of Rich Haddock, (Oct. 5, 2021); Testimony of Katie Sweeney, Executive Vice President and General Counsel, National Mining Association (Oct. 5, 2021).

these processes, creating valuable minerals from their raw unusable state in the ground. Despite the costs and daunting odds against discovering a valuable mineral deposit and development of a mine, the Mining Law stimulates self-initiated private-sector investment in a way that transforms undeveloped federal land into mining operations and results in jobs, taxes, and critical minerals the country needs.

A gross royalty is also inappropriate because it has a very different effect on mining investment than a net royalty, especially during price cycles. Royalties assessed on gross proceeds discourage investment by raising economic risks and increasing the initial outlay required to commence operations. As a result, projects subject to gross royalties generally require higher pre-tax and after-tax rates of return to accommodate this increased risk. By comparison, net royalties have a smaller effect on the variability of after-tax rates of return and are less of a deterrent to ongoing investment.

When commodity prices decrease, the rate of return required to justify mining investment increases more dramatically under a gross royalty than under a net royalty. Because most mine operating costs are fixed, a gross royalty takes a bigger piece out of the mine's reduced income during periods of low commodity prices. A gross royalty is especially problematic during times of low commodity prices because it causes a greater reduction in cash flow during periods when profits are already depressed. During low commodity price cycles, low-grade ores often become uneconomic to mine and process and become waste which is not processed or not mined at all. This shortens the life of the mine and reduces the total amount of minerals (including critical minerals) produced from the mine. In this way, gross royalties would contribute to premature mine closures with the effect of lost jobs; reduced local, state, and federal tax revenues; decreased royalty payments; and business losses for the mine's vendors and suppliers. Moreover, a gross royalty could render some valuable discoveries uneconomic to mine implicating takings issues and exacerbating our country's reliance on foreign minerals.

By comparison, a net proceeds or net income royalty would not force mines to operate at a loss because the royalty owed is automatically reduced during periods of low prices, and it increases again when prices start to rise. A net royalty would allow mining operations to continue during periods of low commodity prices and also enable maximum recovery of low-grade ore during periods with higher prices. Because mineral demand is cyclical and commodity prices fluctuate, a net royalty provides a better incentive to explore for minerals on federal lands in spite of variable mineral demand and commodity price cycles.

If the federal government were to impose a royalty burden on existing mining claims (or rights already vested under the Mining Law), such an imposition would trigger Fifth Amendment takings concerns, similar to those that would result from a leasing scheme. As discussed above and in Attachment 1, the seizure or reduction of any privately held property interest constitutes an actual (per se) taking and requires compensation under the U.S. Constitution. This concept applies to partial actual takings, which take a portion of the overall property rights, and it applies to seized reductions of the claim holder's net revenue interests (the basic purpose behind imposition of any royalty burden). In fact, the Fifth Amendment's restriction against actual partial takings has been applied to mining claims on multiple occasions, not only in federal actions, but cases where the government's power of eminent domain has been exercised to condemn easements or right of ways through mining claims. To avoid constitutional takings issues, and the attendant risks of litigation and potential damages, any royalty scheme

implemented by the federal government would have to be limited to future mining claims and avoid imposing royalty burdens on the existing property rights of current mining claim owners and their successors in interest. See Attachment 1 for a complete analysis of these constitutional takings issues.

C. Placing More Lands Off Limits to Mining

Another serious problem with the IWG report is the recommendation that BLM should use land use planning to pre-identify lands that are suitable and unsuitable for mining analogous to the processes that BLM has previously used to identify suitable and unsuitable solar and wind energy development zones. We strongly disagree with this approach. If these zones were identifiable using available information and without the expensive and time-consuming mineral exploration drilling that is necessary to prove a discovery, mining companies would already be working in these areas.

Similarly, the BLM's proposed Conservation and Landscape Health Rule fundamentally violates the Federal Land Policy and Management Act ("FLPMA") in multiple ways, including illegally adding "conservation" as a "use" when Congress did not include it in FLPMA's specific list of uses (FLPMA Section 103(l)); redefining key terms already defined by Congress in FLPMA, "multiple use" and "sustained yield" (FLPMA Section 103(c and h)); contorting the scope and definition of "areas of critical environmental concern" beyond FLPMA's scope and using current administration "conservation," "restoration," and "ecosystem resilience" policies to impermissibly withdraw public lands from public use in violation of FLPMA § 204. The BLM proposal would unlawfully *de facto* withdraw lands from mineral entry as § 6102.4(a)(4) "would preclude the BLM, subject to valid existing rights and applicable law, from authorizing other uses of the leased lands that are inconsistent with the authorized conservation use." 88 Fed. Reg. at 19591. This violates FLPMA's requirements and express limitations on withdrawing lands from mineral entry.

Under FLPMA, BLM must balance all multiple uses; it cannot pick and choose which land use directives to emphasize and which ones to subordinate or pre-emptively deny. Given our Nation's need for a strong domestic mineral supply, and the proven benefits that modern mining provides to local communities, the federal government should not consider adding restrictions that would discourage or disincentivize mineral development. Now is the time for BLM to stop subverting Congressional mandates and, instead, work to facilitate the development of the critical resources that are needed now and available on America's public lands, for national security and the economic well-being of all Americans. Because BLM lacks the authority to reduce the scope of allowable multiple uses on public lands, BLM cannot proceed with the Proposed Rule and should withdraw it immediately.

V. AML Funding Options Need Not Rely on Royalties or New Fees

With respect to Abandoned Mine Land ("AML") reclamation funding, amending the Mining Law to impose new fees or royalties is not the only way to create an AML reclamation fund. Recognizing the importance of developing a funding source to reclaim hardrock AML sooner rather than later, AEMA points to the annual claim maintenance fees and service fees (together, "Claim Holding Fees") already paid by mining claim holders as a potentially significant source of funding. Annually, BLM collections exceed the cost for BLM to administer the Mining Law.

For example, BLM's 2020 Public Lands Statistics Report shows BLM collected $69,420,974 in Mining Law fees in Fiscal Year 2020 and Congress appropriated $40,196,000 for Mining Law Administration program operations, including the cost to administer the mining claim fee program, with the excess of $29,224,974 deposited to the general fund.[17] Similarly, in Fiscal Year 2021, BLM collected hardrock mining fees of $100,820,256 and was authorized to retain $39,696,000 for Mining Law Administration program operations, including the cost to administer the mining claim fee program, with the excess of $61,124,256 deposited to the general fund.[18] Congress has provided no directive to use these excess Claim Holding Fees for public land management but could easily direct them towards AML efforts. We are pleased that the IWG report recommends using excess claim fees not needed to pay for BLM"s administration of the Mining Law program to help fund an AML reclamation program.

Section 40704 of the Infrastructure Investment and Jobs Act established a new abandoned hardrock mine reclamation fund to jumpstart abandoned mine cleanups. Additionally, there are at least eight states that generate revenue to work on abandoned hardrock mines. Revenue sources include mine license taxes and royalties on oil and gas, hardrock mines, and other mineral extraction, and other sources such as the state general fund.[19] If these funds were pooled with the federal Claim Holding Fees and spent efficiently, much could be accomplished. For example, the federal agency-Colorado model of collaboration on a watershed approach could be deployed uniformly nationwide to maximize efficient use of resources.[20] Nevertheless, liability issues still often prevent public-private partnerships from capitalizing on these initiatives on a wider scale. By passing Good Samaritan legislation, Congress can begin to remove these common hurdles and achieve faster results.

AEMA has a number of other suggestions to generate AML reclamation funding. For example, a ***voluntary*** mitigation system could be established to enable new mine applicants or existing operators to fund reclamation of AMLs in which they had no prior ownership or involvement in the regions where they operate. Any voluntary reclamation activities could further be considered as "sustainability credits" or social license credits to "offset" and be included in the overall evaluation of environmental and social impacts of new mining development projects. For such an approach to work, the federal and/or state agencies would need to maintain a list or "pool" of AML sites or eligible projects to which the funding or reclamation work could be directed in order to prioritize where the AML reclamation work would be performed. Additionally, to enable actual reclamation work, Congress must enact Good Samaritan legislation to eliminate liability for conducting such voluntary reclamation work.

Most legacy sites have environmental impacts because environmental laws did not exist at the time of historic mining operations, and waste management practices were at best rudimentary at most old mine sites. Environmental impacts also resulted from the limited mineral processing technologies that were historically available that left behind residual metals that were unrecoverable at the time that are now leaching out of old mine wastes and contaminating ground water and surface water at some AML sites. Robust environmental laws are now in place throughout the U.S., and mineral processing technologies have advanced over the years. The

[17] https://www.blm.gov/sites/blm.gov/files/docs/2021-08/PublicLandStatistics2020.pdf, Table 3-32, page 158.
[18] https://www.blm.gov/sites/default/files/docs/2022-07/Public_Land_Statistics_2021_508.pdf, Table 3-32, page 160.
[19] GAO Report: "Abandoned Hardrock Mines, Information on Number of Mines, Expenditures, and Factors That Limit Efforts to Address Hazards," at 29-30.
[20] *See Id.* at 36-37.

result is that what was a "waste" historically may now have recoverable mineral value with today's technologies. Studies done at Idaho National Labs, Los Alamos National Labs, with the Critical Minerals Institute, among others, have documented that there are rare earth element ("REE") deposits and other critical minerals at a number of AML sites. Accordingly, the remining and reprocessing of mine tailings and waste could serve both to reclaim some or all of an AML site and result in the responsible production of valuable minerals. "Waste" deposits at certain AML sites could hold sufficient mineral reserves that little or no additional funding would be required if remining and reprocessing options, along with liability relief for legacy issues, were available. Again, Good Samaritan legislation to relieve liability concerns is needed to enable most such remining and reprocessing opportunities.

For over two decades, starting with the "Good Samaritan Abandoned or Inactive Mine Waste Remediation Act", S. 1787, introduced by Senator Baucus in 1999, the mining industry has advocated for bi-partisan legislation to facilitate AML cleanup by addressing the Clean Water Act and CERCLA liability issues that are a serious barrier to Good Samaritan AML cleanup efforts. AEMA has actively worked with numerous members of Congress, EPA, non-profit organizations such as Trout Unlimited, the Western Governors Association, the National Mining Association, and industry members to build coalitions to craft workable legislation to facilitate AML cleanups.

AEMA thus strongly supports S. 2781, the current Good Samaritan legislation that Senators Heinrich and Risch introduced this month in the Senate Environment and Public Works Committee. That legislation establishes a pilot program for fifteen Good Samaritan remediation projects of orphan mine sites on federal, state, tribal and private lands. The pilot program is limited to orphaned sites (i.e., sites without a liable responsible owner or operator). This pilot program targets environmentally lower risk projects and involves activities designed to result in partial or complete remediation of the orphan mine site, improving or enhancing water quality or site-specific soil quality, or otherwise protecting human health and the environment. EPA and the BLM and Forest Service would coordinate application review and permitting, with EPA leading the non-public land projects and the BLM and Forest Service leading projects in their respective land management areas.

Under this proposed program, applications must document baseline site conditions and include a detailed remediation plan. For projects on federal public lands, reprocessing of materials is only allowed if the federal land management agency has approved reprocessing as part of the remediation plan, and the proceeds are used to defray costs of remediation. Any remaining proceeds must be deposited into a Good Samaritan Mine Remediation Fund, which is also established by this legislation. The fifteen AML remediation pilot projects authorized in this bipartisan bill would begin to pave the way towards addressing liability issues at AML sites. We strongly urge Congress to pass S. 2781.

VI. Addressing Workforce Issues

Our nation faces another critical shortage that jeopardizes our ability to produce the necessary quantity of these minerals efficiently, safely, and sustainably: a lack of college graduates sufficiently skilled in the key geological and engineering disciplines (mining, metallurgical, mineral processing, and geological) needed to design, build, and operate mines and mineral processing facilities. The mineral exploration, extraction and processing industry struggles to

hire qualified engineers and scientists who specialize in these disciplines, and the shortage grows more acute each year. Enrollment in the Nation's 14 accredited mining schools has been declining in the last several years. Currently only about 600 students are enrolled in the mining education programs nationwide. In comparison, many thousands of students graduate from Chinese mining schools annually. Nearly three quarters of industry executives said this talent shortage is holding them back from discovering and delivering on production targets and strategic objectives, according to a survey by global consultancy McKinsey & Company.

We must strengthen our domestic schools that offer the degree programs vital to upstream mineral development and production, as well as to mid- and downstream manufacturing of products that use those minerals. Therefore, we applaud your leadership in revitalizing university-level mining programs through the Mining Schools Act of 2023 (S. 912), and we urge the full Senate's timely consideration of the bill.

VII. Conclusion

Our domestic mining industry faces many barriers that serve as disincentives to mineral exploration, development and investment. The protracted mineral exploration and mine permitting processes are fraught with uncertainties, take too long, and cost too much. This is a bipartisan problem, spanning multiple administrations. Moreover, it is often noted that the U.S. has become a less attractive jurisdiction for investment; it is not necessary to "follow the money," as the saying goes, when one can simply count the permit applications. Congress has repeatedly and recently enacted bi-partisan directives to correct this problem that the agencies, unfortunately, have ignored.

On August 9, 2022, *E&E Daily* reported "The number of [mine plan] applications over the last decade has declined almost every year since 2011, suggesting the matter is more complex than merely which president — and political party — is in charge of the federal government. Last year, BLM only received 32 new mine applications — a far cry from the 72 applications it received in 2011." It is no surprise then, as the BLM and the Forest Service receive fewer applications, they issue fewer approvals.

The perennial push to overhaul the laws and regulations governing hardrock mining in the U.S. sends strong and continual signals that mining is not welcome here. These factors, paired with relentless and costly litigation, impede investment in U.S. mineral exploration and development and adversely affect proposed minerals projects. The looming and constant specter of unfavorable legislative proposals raises persistent uncertainty about U.S. mining policies. This overall picture of perceived instability and unpredictability makes companies reluctant to invest the hundreds of millions (and sometimes billions) of dollars necessary to explore for minerals on our lands and develop mines. The importance of keeping public lands open to mining by maintaining the current mining claim system and reducing uncertainties cannot be overstated.

Stability and predictability incentivize investment and development. Yet, AEMA is concerned about upheaval as the IWG ponders replacing the existing mining claim system with a leasing system that would not only chase off investment, it would almost completely halt domestic production of minerals–even in a best-case scenario–while agencies figure out how to implement a new regime of laws and regulations. This comes at a time when energy transitions are

generating skyrocketing demand for battery minerals like lithium, manganese, cobalt, nickel and graphite, and demand for many other critical minerals and materials is on the rise as well.

Realizing efficiencies in the permitting process would also incentivize exploration for and development of domestic minerals. Just as investment flees uncertainty, investors will always prefer faster returns. The current lengthy permitting process in the U.S. is a significant disincentive that makes it less attractive for companies to pursue U.S. minerals projects when similar projects can be permitted in Australia and Canada in a fraction of the time. It is also important to note that streamlining of the permitting process can be accomplished without weakening our country's environmental laws and regulatory standards.

We look forward to working constructively with you to seize upon this generational opportunity to ensure Made in America includes "Mined in America," and to ensure that minerals are derived from U.S. mines that use state-of-the-art environmental protection measures, put a premium on worker health and safety, and are committed to the communities in which they operate.

Sincerely,

Mark Compton
Executive Director