Wednesday, May 21, 2025, to testify at the hearing entitled "Examining Ways to Enhance Our Domestic Critical Mineral Supply Chains

Additional QFRS to Alex Herrgott, CEO, Permitting Institute,

The Honorable Buddy Carter (R-GA)

1. China dominates global critical mineral processing, refining nearly 80% of cobalt, over 60% of lithium, and more than 90% of rare-earth magnets. Even if the U.S. could source all needed raw materials domestically, we would still rely on China for refining. Fortunately, American companies like Phoenix Tailings are pioneering zero-waste, nonhazardous refining technologies to change that.

In your written testimony you provided examples of missed opportunities in the form of case studies of stalled, shuttered, or restricted projects in the U.S. Can you expand upon a few of these examples and lessons learned as a result?

Yes.
Over the past 20 to 30 years, the United States has repeatedly identified, studied, and advanced critical mineral projects that ultimately did not move forward—not because the resources were not there, and not because the impacts could not be evaluated, but because the permitting process did not produce a timely or durable decision.

That pattern goes directly to the issue you raised. Even where the United States can identify and advance domestic resources, it remains dependent on foreign processing—particularly in China—when projects cannot move from review to construction on a predictable timeline. As reflected in my testimony and supporting materials, the United States has spent decades advancing energy and industrial policy without aligning the permitting system required to deliver the underlying materials.

Across the project record, the same outcome appears repeatedly—and it is not driven by geology, technology, or capital. Projects enter the system with a defined pathway, invest years in technical work and environmental analysis, and then encounter a process that extends beyond its original scope, shifts in ways that are not predictable at the outset, or fails to produce a final decision at all. In some cases, projects are stopped before review is completed. In others, they complete the process but are delayed, remanded, or reversed after the fact. And in still others, they are approved only after timelines and costs expand well beyond what was necessary to evaluate the impacts.

The missed opportunities reflected in the project record are not isolated, and they are not limited to a particular mineral, region, or administration. They follow a consistent pattern that shows up across projects at different stages of development—from early scoping, to full Environmental Impact Statements, to post-decision litigation and withdrawal. The examples that follow are not intended to be exhaustive, but they are representative of how the system is functioning in practice.

The consequence is not simply delay. It is the repeated loss of projects that were otherwise capable of moving forward.

Core Lessons from the Project Record
The project record points to several recurring lessons.

1. Delay is often driven by process instability, not simply process length.
   Across multiple projects, delay was not driven by unresolved impacts—it was driven by the rules changing midstream. Projects entered review under one set of expectations and were then shifted to a different track, with new analytical requirements layered on after work had already been completed. Sponsors were not working toward a known standard—they were reacting to a moving one. In several cases, the level of review was elevated after the applicant had already built its compliance strategy around a different pathway, forcing rework that did not change the outcome. Analytical requirements were introduced sequentially rather than defined upfront, which meant completion of one task only triggered another. That is not a function of environmental risk—it is a function of process design. The result is that timelines expand not because projects are more complex, but because the process does not hold still long enough to reach a conclusion.

2. Completion of environmental review does not reliably produce finality.
   Reaching major milestones—Draft EIS, Final EIS, permit issuance, even Records of Decision—did not end the process in many cases. Projects were delayed, remanded, withdrawn, or reopened after those milestones were achieved, often based on issues that had already been analyzed in the record. That breaks the core expectation that there is an endpoint to the process. In practice, sponsors cannot treat completion of review as a transition point into construction—they have to treat it as another phase of uncertainty. In several cases, decisions were reversed or revisited without new underlying environmental information, which undermines confidence in the process itself. This creates a situation where the question is no longer whether a project can meet the standard, but whether meeting the standard will matter. The issue is not just how long review takes. It is that the process does not consistently produce a decision that holds.

3. The greatest bottleneck is often not extraction, but processing and refining.
   The United States has not struggled to find minerals. It has struggled to convert them into usable materials. Mining is only the first step, and in many cases it is the least constrained step. Processing and refining—where materials are turned into battery-grade chemicals, magnet metals, and industrial inputs—face overlapping permitting requirements that are often more complex than extraction. These facilities trigger air, water, waste, and chemical regulatory regimes simultaneously, often across multiple jurisdictions with no unified timeline. As a result, even where extraction is viable, the midstream becomes the choke point. This is why Mountain Pass still relies on foreign processing and why multiple domestic projects have shifted processing work overseas. The issue is not just capacity—it is the inability to permit that capacity at scale and on time.

4. Timing has strategic consequences in critical minerals.
   These projects do not exist in a vacuum. They are tied to financing cycles, offtake agreements, processing partnerships, and broader industrial buildout timelines. When permitting extends beyond those windows, the outcome changes. Capital leaves, partners walk, and projects stall or move elsewhere. That is not theoretical—it is reflected directly in the project record. In several cases, projects lost federal funding eligibility, private investment, or downstream agreements because the permitting timeline could not be aligned with development needs. Meanwhile, competing jurisdictions—and particularly China—continued to build processing capacity during the same period. Delay, in this context, is not neutral. It directly affects where supply chains develop and who controls them. Over time, those missed windows compound into long-term strategic disadvantage.

For Congress, the practical implication is straightforward: any serious effort to strengthen domestic critical mineral supply chains must address not only whether projects enter review, but whether review is bounded, coordinated, and capable of producing a timely and durable decision.

The examples that follow are not presented as standalone case studies. Each one reflects how these same dynamics—process instability, lack of finality, midstream bottlenecks, and timing—play out in practice across different minerals, regions, and stages of development. Some show how projects were delayed because the review pathway changed midstream. Others show what happens after review is completed and decisions do not hold. Others highlight the disconnect between extraction and processing, where resources are identified but cannot be converted into usable materials. And across all of them, timing is the constant—projects that extended beyond their development window and, as a result, did not move forward.

1. Process instability (rules changing midstream):

Rover Critical Minerals Project (NV), Pan Mine Phase 2 Expansion (NV), Cortez Hills Deep Expansion (NV), Round Top Rare Earth Project (TX)

In these projects, the primary driver of delay was not the time required to conduct environmental review—it was the fact that the review pathway itself changed after the process had already begun.

At Rover, the project entered under an Environmental Assessment and was later elevated to an Environmental Impact Statement without a change in project footprint or baseline data, adding roughly 2–3 additional years of review tied to re-scoping and new modeling requirements. At Pan Mine, a similar escalation occurred over a jurisdictional wetland determination that was ultimately resolved in favor of the original analysis, but only after 18–24 months of additional review and redesign costs. Cortez experienced repeated reopening of cultural consultation and modeling requirements during the EIS phase, adding multiple years of iterative analysis without a stable endpoint. At Round Top, the project shifted from an EA to a full EIS and then entered an extended phase of radiological and long-term geochemical modeling, pushing total review time toward nearly a decade.

In each case, the delay is not simply the length of the process. It is that the applicant could not rely on a fixed standard. Work was completed, then redefined, then expanded, without a clear endpoint.

2. Lack of finality (completion does not produce a durable decision):

PolyMet / NewRange (MN), Resolution Copper (AZ), Ambler Mining District Access (AK), Stibnite Gold Project (ID)

These projects show that even when the process is completed, it does not reliably result in a stable outcome.

PolyMet completed a full Environmental Impact Statement over approximately 10+ years, received permits, and then entered another 8+ years of litigation and remand, effectively restarting portions of the analysis. Resolution Copper reached a Final EIS after roughly 8 years, only to have it withdrawn, delaying the project further without a new technical finding. Ambler completed a full EIS and received a Record of Decision in 2020, then was returned to supplemental review and ultimately reversed in 2024, extending the process to more than 13 years without implementation. Stibnite completed a Draft EIS in 2020 after 4 years of work, but has remained in extended review with supplemental analysis for another 4+ years, with no final decision.

In each case, the project did what the process required. The process did not produce a durable answer.

3. Midstream bottleneck (processing and refining constraints):

Mountain Pass (CA), Bear Lodge (WY), Bokan Mountain (AK), Sheep Creek (MT), Round Top (TX)

These projects show that even when resources exist and mining is viable, the inability to permit or align processing and refining capacity prevents the supply chain from developing.

Mountain Pass operates as the only rare earth mine in the United States, yet historically relied on foreign processing due to constraints on domestic separation and expansion permitting. Bear Lodge and Bokan both advanced through 5–7 years of review but never reached a final decision, halting not just mining but domestic rare earth processing pathways. Sheep Creek experienced more than 2 years of delay in pilot and processing approvals, forcing early-stage separation work to move to Canada. Round Top, which includes on-site processing, has remained in review for approximately 9+ years, with expanded modeling requirements tied specifically to processing components.

In these cases, the bottleneck is not finding the mineral. It is converting it into a usable form.

4. Timing and loss of opportunity (delay changes outcome):

Twin Metals (MN), Donlin Gold (AK), Goldrush (NV), Red Dog Expansion (AK), Pinyon Plain (AZ)

These projects show that delay is not neutral—it determines whether a project can move forward at all.

Twin Metals spent more than a decade in pre-permitting and scoping, only to have its leases canceled before completing review, eliminating the project entirely. Donlin Gold completed a full EIS over 6 years, but extended timelines disrupted financing and construction sequencing, leaving the project in prolonged pre-development. Goldrush required approximately 6 years of EIS work plus roughly 4 additional years of delay to start, deferring as much as $500 million in projected revenue. Red Dog's expansion required approximately 8 years of supplemental review, adding roughly $18 million in additional costs and forcing phased development instead of full expansion. Pinyon Plain, originally permitted in the 1980s, required more than 12 years of re-

review and litigation to restart, including multi-year delays tied to hydrological modeling and cultural consultation.

In each case, the project did not fail because it could not be permitted. It failed—or was materially altered—because the timeline extended beyond the window in which it could be executed.