Alaska Hardrock Mining Policy

Recommendations Based on a Comparison of State Laws and Regulations

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(Updated June 2025)

Cover image from the National Parks Service.

Contents

SUMMARY

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Recommendations Based on a Comparison of State Laws and Regulations

Hardrock mining is an important economic activity in the United States, providing valuable non-fuel metals and minerals needed for technology, infrastructure, and industry. However, it can also have significant negative impacts on the environment and local communities. Thus, effective regulation of hardrock mining activities is paramount to the mitigation of such negative externalities.

Alaska, like many hardrock mineral-producing states, is grappling with how to support the industry while ensuring adequate environmental, economic, and social protections. The problem is compounded when considering the many unique characteristics of Alaska and its hardrock mining industry—the remoteness and lack of infrastructure for mining sites, abundant surface and groundwater, thawing permafrost and other climate-related challenges, subsistence and cultural resources of local communities and Tribes, threatened wildlife and habitat, and more. A valuable starting point to address this issue is to look to laws and policies of other hardrock mineral-producing states for examples to help strengthen Alaska's regulatory framework.

This report describes the environmental, economic, and social regulation of hardrock mining of Alaska and five other mineral-producing states to demonstrate the different approaches the states have taken, and provide recommendations for the improvement of hardrock mining law and policy in Alaska based on those varied approaches. A scorecard has been developed for each state to illustrate the strength of their hardrock mining laws and policies. While the list of recommendations is not exhaustive and does not constitute legal advice, it serves as an informational basis to strengthen aspects of Alaska's hardrock mining regulatory framework.

This report's analysis highlights the need for increased efforts to enhance Alaska's hardrock mining regulations to ensure better environmental and social protections, along with responsible economic development. While the state's existing laws and policies lay a foundation for regulating hardrock mining activities, there are notable areas for improvement. **Environmental policies may be strengthened though various improvements to water use and treatment standards, protections for salmon, and consideration of climate change. Economic policies may be improved though the removal of exemptions and strengthening of financial assurances. And social safeguards may be enhanced to support environmental review and ensure public and Tribal participation so that the valuable insights of those who will be most affected by mining projects are taken into consideration.** By recognizing these areas for improvement, Alaska can take steps to strengthen environmental and social safeguards, and improve economic impacts of hardrock mining activities within the state.

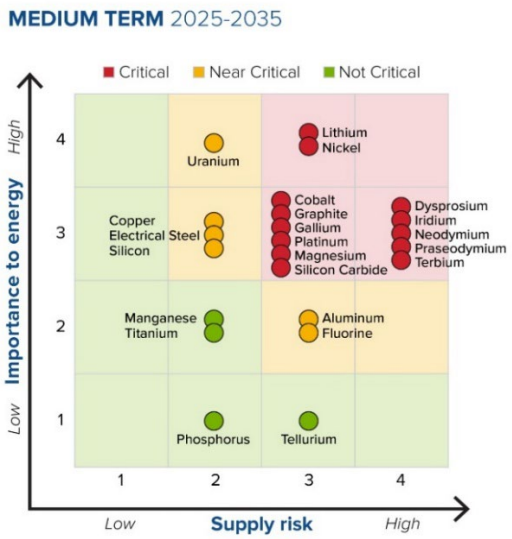
INTRODUCTION

Overview of Hardrock Mining

Hardrock mining is the process of uncovering and extracting non-fuel minerals and metals from solid ores or eroded deposits in streambeds.[1] It is most often a large-scale industrial activity that involves several stages: exploration, drilling and blasting, transport, processing, and reclamation. Depending on the depth and size of the deposit, hardrock mining is often conducted in underground or open-pit mines.

The most commonly mined minerals and metals include copper, gold, iron ore, lead, molybdenum, phosphate rock, platinum, potash, silver, uranium, and zinc.[2] "Critical" minerals and materials (those that are deemed essential to economic or national security, particularly in the energy sector) are also of interest and include cobalt, dysprosium, graphite, lithium, magnesium, nickel, platinum, and more.[3]

It should be noted that there is debate concerning how to balance the growing need for certain minerals to power clean energy and other technologies with the significant environmental and social impacts of hardrock mining, while also ensuring responsible extraction practices and equitable access to resources.



Medium-term (2025–2035) criticality matrix[4]

Impacts of Hardrock Mining

Hardrock mining, like many industrial activities, can have both positive and negative impacts. These can vary depending on factors such as type of mining, scale, technology used, and management practices. Laws and policies are in place to mitigate certain risks, to varying degrees of success.

In general, hardrock mining provides valuable resources used in industrial development and various technologies, and can support economic growth and employment, government revenue, infrastructure development, and export and trade, though there can also be negative externalities to these benefits. Hardrock mining, especially when involving valuable minerals like gold or copper, can also have significant short- and long-term environmental impacts, including soil contamination, water and air pollution, habitat destruction, and waste generation. Various social impacts also can occur, including worker and public health risks, disruption to or displacement of local communities, and cultural impacts.

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[1] *Hardrock Mining Overview*, EPA, https://www3.epa.gov/npdes/pubs/overview.htm (last visited Dec. 17, 2024).
[2] *Hardrock Mining Overview*, EPA, https://www3.epa.gov/npdes/pubs/overview.htm (last visited Dec. 17, 2024).
[3] *What Are Critical Materials and Critical Minerals?*, U.S. Dep't of Energy, https://www.energy.gov/cmm/what-are-critical-materials-and-critical-minerals (last visited Dec. 17, 2024).
[4] *What Are Critical Materials and Critical Minerals?*, U.S. DEP'T OF ENERGY, https://www.energy.gov/cmm/what-are-critical-materials-and-critical-minerals (last visited Dec. 17, 2024).

Hardrock Mining in Alaska

Hardrock mining has historically been an important facet of Alaska's economy, largely beginning with the Alaska Gold Rushes of 1897 to 1904.[5] Mining expanded throughout the 1900s with the discovery of other valuable minerals such as copper, lead, zinc, and more gold. Modern hardrock mining in Alaska continues, with new projects focusing on gold, copper, and other minerals, though environmental and social impacts and the high cost of operation in remote areas pose challenges for the industry.

Mining activities in Alaska began far before Alaska was even considered a state.[6] As such, the early laws governing the region were federal mining laws extended to Alaska as a territory.[7] These laws governed some basic aspects of mining, including the organization of mining districts, and recording and holding claims. As the federal government established agencies like the Bureau of Land Management and the Forest Service, more comprehensive regulations emerged. In 1913, Alaska's first territorial legislature enacted legislation implementing restrictions on claim sizes.[8] Other forms of state regulation, especially environmental management, came even more slowly.

Today, Alaska and other hardrock mineral-producing states face the challenge of supporting the industry and production of certain minerals while developing a framework of adequate environmental, economic, and social regulations. The reality is that hardrock mining is a resource intensive and environmentally destructive activity, with complicated externalities to be considered. Continuing to improve protective regulations is an important part of ensuring hardrock mining activities are conducted responsibly.

Red Dog Mine area, photo © Brook Kintz

Purpose of Report

This report sets forth and compares the laws and policies regulating hardrock mining activities of Alaska to those of five other hardrock mineral-producing states in order to evaluate Alaska's environmental, economic, and social frameworks. A scorecard has been developed for each state to illustrate and compare the strength of their hardrock mining laws and policies. The analysis provides the foundation for several recommendations to strengthen Alaska's regulatory scheme to improve environmental and social protections, as well as economic considerations related to hardrock mining.

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[5] *See The Stampede North: The Alaska Gold Rushes, 1897-1904*, Nat'l Park Serv., https://www.nps.gov/articles/alaska-goldrush-national-historic-landmarks.htm (last visited Dec. 17, 2024).

[6] While Alaska was purchased in 1867, it was not granted statehood until 1959.

[7] Nat'l Park Serv., Golden Places: The History of Alaska-Yukon Mining (2008), https://www.nps.gov/parkhistory/online_books/yuch/golden_places/chap10.htm.

[8] Nat'l Park Serv., Golden Places: The History of Alaska-Yukon Mining (2008), https://www.nps.gov/parkhistory/online_books/yuch/golden_places/chap10.htm.

STATE POLICY PROFILES

This report describes the environmental, economic, and social regulations relevant to hardrock mining in six states: Alaska, Arizona, California, Colorado, Minnesota, and Nevada. The states included in this report were selected based on overall mining scale, hardrock minerals extracted, and natural resources implicated by mining activities (e.g., water resources). While Alaska's natural resources, economic positioning, and demographics make it unique in many ways, the states selected are each able to provide insight into potential opportunities for Alaska to position itself more competitively as a leader in environmental protection, economic investment, and community resilience.

Desktop research and analysis for this report was conducted from July through December 2024. The book *Hard Rock Mining: State Approaches to Environmental Protection* (Environmental Law Institute, 1996), also served as a foundational reference material for this work.

Alaska

Overview of Hardrock Mining in Alaska

Mining began in Alaska in the mid-1800s with the discovery of gold in rivers and streams.[9] The first major mine opened in 1882 and was, at the time, the largest hardrock gold mine in the world.[10] Alaska currently has five major hardrock mines,[11] leads the nation in zinc production, and is still a major producer of gold.[12] Mining activities in the state also produce sand and gravel for construction, crushed stone, and gemstones.[13] In 2020, the value of Alaska's mineral industry totaled $3.2 billion.[14] Alaska's reserves hold 3.5% of the world's gold, 3% of the world's zinc, 1.6% of the world's lead, 1.5% of the world's silver, and 0.3% of the world's copper.[15]

Key Agencies, Laws, and Regulations

Hardrock mining activities in Alaska on non-federal lands are primarily managed by the Alaska Department of Natural Resources (ADNR), the Alaska Department of Environmental Conservation (ADEC), and the Alaska Department of Fish and Game (ADF&G). ADNR leads the Large Mine Permitting Team, which coordinates the permitting process across various agencies. Additionally, ADNR is responsible for managing water rights (both appropriations and reservations). ADEC is primarily responsible for administration and oversight of permits regarding pollution into waterways, including Section 401 certifications and Alaska Pollutant Discharge Elimination System (APDES) permits, as well as solid waste permits. ADF&G is responsible for administering permits related to fish, wildlife, and designated state lands such as state game refuges and critical habitat areas.

Mining is regulated through a wide assortment of state laws and regulations. Key among them is Alaska Statutes Title 27: Mining, which includes Alaska's Mining Reclamation Statute, and regulations promulgated pursuant to this title. Additionally, Alaska Statutes Title 46: Water, Air, Energy, and Environmental Conservation and its associated regulations govern many of the relevant permitting processes, including those relevant to water, air, and waste management.

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[9] *History of Mining in Alaska*, Alaska Miners Ass'n, https://www.alaskaminers.org/mining-history-in-ak (last visited Dec. 12, 2024).
[10] *History of Mining in Alaska*, Alaska Miners Ass'n, https://www.alaskaminers.org/mining-history-in-ak (last visited Dec. 12, 2024). The Treadwell Mine began gold production near Juneau and ran until 1922, yielding nearly $70 million in gold.
[11] The five major hardrock mines in Alaska are Fort Knox (gold), Greens Creek (silver, zinc, gold, and lead), Kensington (gold), Pogo (gold), and Red Dog (zinc, lead and silver). *Major Mines in Alaska*, Alaska Miners Ass'n, https://www.alaskaminers.org/major-mines (last visited Dec. 12, 2024).
[12] *The Mineral Industry of Alaska*, U.S. Geological Survey, https://www.usgs.gov/centers/national-minerals-information-center/mineral-industry-alaska (last visited Dec. 12, 2024).
[13] *The Mineral Industry of Alaska*, U.S. Geological Survey, https://www.usgs.gov/centers/national-minerals-information-center/mineral-industry-alaska (last visited Dec. 12, 2024).
[14] *Alaska's Mineral Industry Stats*, Alaska Dep't of Nat. Res. Geological & Geophysical Surveys, https://dggs.alaska.gov/pubs/minerals (last visited Dec. 12, 2024).
[15] *Alaska's Mineral Industry Stats*, Alaska Dep't of Nat. Res. Geological & Geophysical Surveys, https://dggs.alaska.gov/pubs/minerals (last visited Dec. 12, 2024).

Environmental Laws and Regulations

Permits and Approvals Required

Mine permitting on non-federal lands in the state is led by the Large Mine Permitting Team (LMPT) which was developed by the State of Alaska to coordinate permitting processes.[16] The LMPT is led by the ADNR Office of Project Management and Permitting.[17] Other relevant agencies include the ADEC, ADF&G, Alaska Department of Transportation and Public Facilities, as well as federal agencies and local governments.[18]

Mine permitting is managed through the Application for Permits to Mine in Alaska (APMA) packet.[19] This application is a compilation of the many state and federal permits that are required for each project. Each APMA is submitted to ADNR, who reviews each application for completeness and distributes it to the other agencies.[20] It is designed to satisfy requirements to obtain permits and approvals from ADNR Division of Mining, Land and Water, ADNR Office of History and Archaeology, ADEC, ADF&G, as well as relevant federal agencies. It typically includes a Plan of Operations, Reclamation Plan, Waste Management Plan, reclamation and closure cost estimates, monitoring and management plans, and baseline study reports.[21]

Land Use Permits

Mining activities taking place on state mining claims, prospecting sites, or the Nome public mining areas[22] must obtain a Miscellaneous Land Use Permit (MLUP), an Approved Plan of Operations, or other written authorization.[23] Mining activities located on state upland leases require either an approved plan of operations or other written authorization.[24]

An MLUP is required for geophysical exploration for minerals subject to lease on state mining claims, prospecting sites, or the Nome Public Mining Areas.[25] Such permits are granted for a specified term of up to five years and may be extended by one year for any number of consecutive years.[26] Upon consideration of a permit application that involves shoreland, tideland, or submerged lands adjacent to

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[16] *Large Mines Program*, Alaska Dep't of Nat. Res. Division of Mining, Land and Water, https://dnr.alaska.gov/mlw/mining/large-mines/ (last visited Dec. 12, 2024). Non-federal lands in Alaska that utilize state permitting include state, Mental Health Trust, Native corporation, and private lands.
[17] Alaska Stat. § 38.05.020(b)(9).
[18] Alaska Stat. § 38.05.020(b)(9); Alaska Department of Natural Resources, Permitting Large Mine Projects in Alaska (2024), https://dnr.alaska.gov/mlw/mining/large-mines/pdf/Permitting-Large-Projects-in-Alaska-2024.pdf.
[19] Alaska Department of Natural Resources, 2024 Application for Permits to Mine in Alaska, https://dnr.alaska.gov/mlw/forms/apma/2024/pdf/2024-APMA-Full-Application.pdf (2024). This application applies to placer mining, hardrock exploration, and suction dredging operations.
[20] Alaska Department of Natural Resources, 2024 Application for Permits to Mine in Alaska, https://dnr.alaska.gov/mlw/forms/apma/2024/pdf/2024-APMA-Full-Application.pdf (2024).
[21] Alaska Department of Natural Resources, Permitting Large Mine Projects in Alaska (2024), https://dnr.alaska.gov/mlw/mining/large-mines/pdf/Permitting-Large-Projects-in-Alaska-2024.pdf.
[22] The Nome mining district is an active gold mining area and the site of the historic Nome Gold Rush of 1899-1909.
[23] Alaska Department of Natural Resources, 2024 Application for Permits to Mine in Alaska, https://dnr.alaska.gov/mlw/forms/apma/2024/pdf/2024-APMA-Full-Application.pdf (2024).
[24] Alaska Department of Natural Resources, 2024 Application for Permits to Mine in Alaska, https://dnr.alaska.gov/mlw/forms/apma/2024/pdf/2024-APMA-Full-Application.pdf (2024).
[25] Alaska Admin. Code tit. 11, § 96.010.
[26] Alaska Admin. Code tit. 11, § 96.040(c).

an upland owner's property, the department will give notice to the upland owner.[27] The department also has discretion to give public notice of any application at the applicant's cost.[28]

An operation that intends to conduct mineral exploration or development activities that would require a land use permit may instead file a plan of operation for approval.[29] The plan must demonstrate compliance with all applicable performance standards or permit conditions, and must address the areas to be mined, plans for settling ponds, tailings disposal, overburden storage, water diversions, access routes, and reclamation plans.[30] The plan must be submitted at least 50 days before operations are proposed to begin, and must be approved by ADNR after consultation with ADF&G, ADEC, and other affected agencies.[31] The plan may cover up to a 10 year period, and may be extended if the approved work is not complete by the end of the period.[32] There are no public participation requirements, but ADNR often issues a "courtesy" public notice.[33]

"Other written authorization" may also be sufficient authorization for surface uses including the building or use of surface structures or other improvements.[34] When determining whether to approve a surface use, the department will consider property access, remoteness, security, existing authorized surface uses, and planned and current level of activities.[35]

Water Permits

Discharges into Alaska's water resources are largely regulated by programs implemented under the federal Clean Water Act (CWA). Additionally, state law regulates water appropriations, use, and reservations.

CWA Section 401 Certifications:
Alaska's CWA Section 401 program is administered by ADEC Division of Water.[36] Under this program, most waters are regulated as Tier 2, which are waters of quality that exceeds the levels necessary to support the goals of the CWA.[37] Under Alaska's antidegradation policy, if water quality exceeds levels necessary to support "propagation of fish, shellfish, and wildlife and recreation in and on the water," the quality must be maintained.[38] However, exceptions are provided for short-term variances, deposit zones, and mixing zones if the lower water quality is "necessary to accommodate important economic or social development in the area where the water is located."[39] When submitting a permit application for a

[27] Alaska Admin. Code tit. 11, § 96.030(c).
[28] Alaska Admin. Code tit. 11, § 96.030(c).
[29] Alaska Admin. Code tit. 11, § 86.150.
[30] Alaska Admin. Code tit. 11, § 86.800(b).
[31] Alaska Admin. Code tit. 11, § 86.800(e).
[32] Alaska Admin. Code tit. 11, § 86.800(d).
[33] Alaska Department of Natural Resources, Permitting Large Mine Projects in Alaska (2024), https://dnr.alaska.gov/mlw/mining/large-mines/pdf/Permitting-Large-Projects-in-Alaska-2024.pdf.
[34] Alaska Admin. Code tit. 11, § 86.145(a)(2).
[35] Alaska Admin. Code tit. 11, § 86.145(a)(2).
[36] *Wetlands and 401 Certification of 404 Permits*, Alaska Dep't of Env't Conservation Division of Water, https://dec.alaska.gov/water/wastewater/stormwater/permits-approvals/wetlands/ (last visited Dec. 12, 2024).
[37] Alaska Admin. Code tit. 18 § 70.016(c) ("Tier 2 is presumed for all water as the default protection level for all parameters").
[38] Alaska Admin. Code tit. 18 § 70.015(a)(2).
[39] Alaska Admin. Code tit. 18 § 70.015(a)(2)(A). ADEC routinely authorizes large mixing zones to allow for the discharge of pollutants into Tier 2 waters.

discharge into Tier 2 water, the applicant must complete either a social importance analysis[40] or an economic importance analysis.[41] Under such circumstances, discharges may be permitted that lower the water quality so long as minimum water quality standards are not violated.[42]

Tier 3 waters, which are of even higher quality, are defined in regulation: "If a high quality water constitutes an outstanding National resource, such as a water of a National or State park or wildlife refuge or a water of exceptional recreational or ecological significance, the quality of that water must be maintained and protected."[43] Once a water is designated as a Tier 3 water, no additional degradation is allowed.[44] However, Alaska does not currently have a Tier 3 designation process.[45] Over the past fifteen years, the legislature has proposed various designation processes. Most recently, legislation has been introduced that would provide for state waters to be designated as an Outstanding National Resource Water only by the legislature in statute.[46]

Alaska Pollutant Discharge Elimination System:

ADEC assumed authority for the state's wastewater and discharge permitting and compliance program in 2012.[47] All facilities that discharge to surface or marine waters of Alaska are required to obtain an Alaska Pollutant Discharge Elimination System (APDES) permit prior to discharging.[48] Mine discharges are required to meet both applicable New Source Performance Standards and state water quality standards, whichever limitation is more stringent.[49]

After ADEC receives a complete APDES application, the agency will prepare a draft permit. Public notice must be provided and the agency must allow at least 30 days for public comments.[50] During that period, any interested person may submit a written request for a public hearing.[51] The agency is directed to hold a public hearing where it finds that the number of requests indicate a "significant degree of public interest" in the draft permit.[52] The agency also has the discretion to hold a public hearing if it finds there is good reason.[53]

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[40] Alaska Admin. Code tit. 18 § 70.016(c)(5)(A). The analysis must include one or more of the following areas: (i) community services provided; (ii) public health or safety improvements; (iii) infrastructure improvements; (iv) education and training; (v) cultural amenities; (vi) recreational opportunities.

[41] Alaska Admin. Code tit. 18 § 70.016(c)(5)(B). The analysis must include one or more of the following areas: (i) employment, job availability, and salary impacts; (ii) tax base impacts; (iii) expanded leases and royalties; (iv) commercial activities; (v) access to resources; (vi) access to a transportation network.

[42] Alaska Admin. Code tit. 18 § 70.016(c)(7).

[43] Alaska Admin. Code tit. 18 § 70.015(a)(3).

[44] Alaska Admin. Code tit. 18 § 70.015(a)(3).

[45] At least six waterbodies have been nominated to the agency for Tier 3 designation, and none of these nominations have been processed. Evan Erickson, *Alaska House Bill Seeks Highest Level of State Protection for Kuskokwim River*, KYUK (Mar. 13, 2024), https://www.kyuk.org/politics/2024-03-13/alaska-house-bill-seeks-highest-level-of-state-protection-for-kuskokwim-river.

[46] Alaska House Bill No. 95, An Act Relating to Designation of State Water as Outstanding National Resource Water (2024).

[47] Alaska Stat. § 46.03.020(12); Alaska Stat. § 46.03.050; *Alaska Pollutant Discharge Elimination System Program History*, Alaska Dep't of Env't Conservation Division of Water, https://dec.alaska.gov/water/apdes-history (last visited Dec. 12, 2024).

[48] Alaska Stat. § 46.03.100(a); Alaska Admin. Code tit. 18 § 83.105(a).

[49] Alaska Department of Natural Resources, Permitting Large Mine Projects in Alaska (2024), https://dnr.alaska.gov/mlw/mining/large-mines/pdf/Permitting-Large-Projects-in-Alaska-2024.pdf. Most of the New Source Performance Standards were established in the 1970's and have not been adequately updated to keep pace with technological innovations and improvements.

[50] Alaska Admin. Code tit. 18 § 83.120(b).

[51] Alaska Admin. Code tit. 18 § 83.120(h).

[52] Alaska Admin. Code tit. 18 § 83.120(l).

[53] Alaska Admin. Code tit. 18 § 83.120(l).

Recent Enforcement Activity

The Niblack Project is a copper, gold, zinc, and silver mining exploration project on Prince of Wales Island. Niblack Mining Corp. first received exploration permits in 2007. Sulfide rock was present in the exploration area, and original plans required the rock to be segregated and temporarily stored on a lined and covered pad on the surface.[54] However, a 2008 inspection showed that the operation had used a thinner backslope liner material and placed a thinner protective fill in the bedding below the liner.[55] When exploration concluded in the fall of 2008, a new owner placed the project into temporary closure and requested the state's permission to leave the rock pile uncovered.[56] The state agreed.[57]

In the time since that decision was made, the site's ownership changed hands again, the rock has dropped in pH, and toxic metals have begun leaching from the exposed rock surfaces.[58] The land discharge system originally put in place was deemed too expensive, and in its place ADEC issued an APDES permit that authorizes polluted water to be directly discharged into marine waters.[59]

CWA Section 404 Primacy:

Alaska is exploring assumption of permitting authority under CWA Section 404, which is currently administered by the U.S. Army Corps of Engineers.[60] ADEC is statutorily obligated to "take all actions necessary to receive federal authorization of a state program for the department and the Department of Natural Resources to administer and enforce a dredge and fill permitting program."[61] The Alaska Legislature approved funding for ADEC to prepare a feasibility study, which was presented during the 2023 legislative session and recommends state assumption of the program.[62] However, the Dunleavy Administration did not request program funding during the 2024 legislative session.[63]

Water Appropriation:

A significant amount of water may not be appropriated without first obtaining a permit to appropriate, a certificate of appropriation, or a temporary water use authorization.[64] A significant amount of water is quantified as the consumptive use of 5,000 gallons of water from a single source in a single day,

[54] Niblack Construction/Exploration Project, Application for Department of Army Corps Engineers Permit Filed in Conjunction With Nationwide Permit POA-2006-511-D (Jan. 2007), https://dnr.alaska.gov/mlw/mining/large-mines/niblack/pdf/apacoe.pdf.
[55] Alaska Dep't of Env't Conservation, Field Inspection Report: Niblack Mining Company (May 19, 2008), https://dnr.alaska.gov/mlw/mining/large-mines/niblack/pdf/20080507ir.pdf.
[56] Aaron Brakel, *Niblack: Agency Mismanagement and an Acid Rock Problem*, Southeast Alaska Conservation Council (Oct. 12, 2022), https://seacc.org/ravencall-niblack-agency-mismanagement-and-an-acid-rock-problem.
[57] Aaron Brakel, *Niblack: Agency Mismanagement and an Acid Rock Problem*, Southeast Alaska Conservation Council (Oct. 12, 2022), https://seacc.org/ravencall-niblack-agency-mismanagement-and-an-acid-rock-problem.
[58] Aaron Brakel, *Niblack: Agency Mismanagement and an Acid Rock Problem*, Southeast Alaska Conservation Council (Oct. 12, 2022), https://seacc.org/ravencall-niblack-agency-mismanagement-and-an-acid-rock-problem.
[59] Aaron Brakel, *Niblack: Agency Mismanagement and an Acid Rock Problem*, Southeast Alaska Conservation Council (Oct. 12, 2022), https://seacc.org/ravencall-niblack-agency-mismanagement-and-an-acid-rock-problem.
[60] *Alaska's CWA Sec. 404 Dredge and Fill Permitting Program Development*, Alaska Dep't of Env't Conservation Division of Water, https://dec.alaska.gov/water/wetlands-404/ (last visited Dec. 12, 2024).
[61] Alaska Stat. § 46.03.020(14).
[62] *Alaska's CWA Sec. 404 Dredge and Fill Permitting Program Development*, Alaska Dep't of Env't Conservation Division of Water, https://dec.alaska.gov/water/wetlands-404/ (last visited Dec. 12, 2024).
[63] The legislature refused to fund the assumption of the § 404 program in 2012 and again in 2022 and 2024.
[64] Alaska Admin. Code tit. 11 § 93.040(a).

recurring consumptive use of more than 500 gallons per day from a single source for more than 10 days of a year, or the non-consumptive use of more than 30,000 gallons per day from a single source.[65]

Water rights applications are generally subject to public notice requirements.[66] Notice must be published in a newspaper local to the potential water appropriation and on the Alaska Online Public Notice System.[67] The notice must state that within 15 days of notice, those who have objections may file written objections with ADNR.[68] ADNR has discretion to decide whether to hold hearings upon giving due notice.[69]

Permit to Appropriate Water:
A permit to appropriate water will be granted if the appropriation will not violate the rights of prior appropriator, the diversion mechanism is adequate, the proposed water use is beneficial, and the proposed appropriation is in the public interest.[70] There are eight factors to be considered in determining whether an appropriation is in the public interest: (1) benefit to the applicant, (2) effect on economic activity, (3) effect on fish and game resources and public recreational opportunities, (4) effect on public health, (5) effect of loss of alternate uses of water that might be made, (6) harm to other persons, (7) intent and ability of applicant to complete the appropriation, and (8) effect on access to navigable or public water.[71] The maximum duration for such a permit is 10 years for mining water use.[72]

Once a permittee establishes the full amount of water that it uses beneficially and has "substantially" complied with all the permit conditions, a certificate of appropriation of water will be issued that establishes the right to such water.[73] The certificate may be subject to conditions considered necessary to protect the public interest, including those such as maintaining a specific quantity of water at a particular point on a stream to protect fish and wildlife habitat, or metering and reporting requirements.[74]

Temporary Water Use Permit:
Before a person may temporarily use a significant amount of water, they must obtain a temporary water use permit.[75] Mining operations typically obtain such permits for exploration activities. This permit allows for water use for a period of time not to exceed five consecutive years, with one potential extension for good cause for a period less than five years.[76] The authorization will specify the quantity of water to be used, but there are no limitations on the volume of water that may be applied for.[77]

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[65] Alaska Admin. Code tit. 11 § 93.035(b).
[66] Alaska Admin. Code tit. 11 § 93.080
[67] Alaska Admin. Code tit. 11 § 93.080(1), (2).
[68] Alaska Stat. § 46.15.133(a).
[69] Alaska Stat. § 46.15.133(c).
[70] Alaska Admin. Code tit. 11 § 93.120(a); Alaska Stat. § 46.15.080(a).
[71] Alaska Stat. § 46.15.080(b).
[72] Alaska Admin. Code tit. 11 § 93.120(b)(5).
[73] Alaska Admin. Code tit. 11 § 93.130; Alaska Dep't of Nat. Res. Division of Mining, Land and Water, Fact Sheet: Water Rights in Alaska (2021), https://dnr.alaska.gov/mlw/cdn/pdf/factsheets/water-rights-in-alaska.pdf.
[74] Alaska Admin. Code tit. 11 § 93.130(c).
[75] Alaska Stat. § 46.15.155; Alaska Admin. Code tit. 11 § 93.210.
[76] Alaska Admin. Code tit. 11 § 93.210(a), (c).
[77] Alaska Admin. Code tit. 11 § 93.220.

Temporary water use permits are not subject to public review and comment; however, agency notice is sent to the ADF&G and ADEC.[78]

Water Reservation:

A water reservation sets aside water necessary to protect a lake level or stream flow in support of identified purposes: fish and wildlife habitat, migration, and propagation; recreation and parks; navigation and transportation; or sanitation and water quality.[79] The state, state agencies and political subdivisions, federal agencies, or any individual person may apply for a water reservation.[80] A reservation is limited to a time period of three years, with potential extensions of up to two years for good cause shown.[81] A high level of technical detail is required for a reservation, as the application requires justification of the need for the proposed water reservation, as well as identification and description of the methodology, data, and data analysis used to substantiate the need for the requested reservation.[82] Reservations are reviewed at least once every 10 years to determine whether the purpose and need for the reservation still exist, whether the circumstances of the reservation have changed, and whether additional research and analysis are necessary.[83] At the time of this report's drafting, ADNR is considering updating the water reservation regulations and undertaking a scoping process to gather public input before drafting proposed updates for public review.[84] Specific questions the agency is looking for responses to include "Should additional information be required to justify the need or a reservation of water?" and "Should only State resource agencies … hold the certificate of a reservation of water?"[85]

Water reservations are subject to public notice requirements.[86] Notice will be published in a newspaper local to the potential water reservation and on the Alaska Online Public Notice System.[87] The notice will state that within 15 days of notice, those who have objections may file written objections with the agency.[88] The agency has discretion to decide whether to hold hearings upon giving due notice.[89] Additionally, notice will be provided to the ADF&G, ADEC, other federal or state agencies managing land nearby, and local jurisdictions.[90]

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[78] Alaska Stat. § 46.15.155(d)("The commissioner is not required to provide public notice under AS 46.15.133 of a proposed authorization for temporary use of water; however, the commissioner shall request comment on an application for temporary use of water from the Department of Fish and Game and the Department of Environmental Conservation.").
[79] Alaska Stat. § 46.15.145(a).
[80] Alaska Admin. Code tit. 11 § 93.141.
[81] Alaska Admin. Code tit. 11 § 93.142(b)(4), (d).
[82] Alaska Dep't of Nat. Res. Division of Mining, Land and Water, Application for Reservation of Water, https://dnr.alaska.gov/mlw/cdn/pdf/forms/Application-for-Reservation-of-Water.pdf (last visited Dec. 12, 2024).
[83] Alaska Admin. Code tit. 11 § 93.147(a), (b).
[84] *Revisions to Water Management Regulations*, Alaska Dep't of Nat. Res. Division of Mining, Land and Water, https://dnr.alaska.gov/mlw/water/regrevision/ (last visited Dec. 12, 2024). Revisions will be subject to public notice and comment.
[85] *Revisions to Water Management Regulations*, Alaska Dep't of Nat. Res. Division of Mining, Land and Water, https://dnr.alaska.gov/mlw/water/regrevision/ (last visited Dec. 12, 2024).
[86] Alaska Admin. Code tit. 11 § 93.080.
[87] Alaska Admin. Code tit. 11 § 93.080(1), (2).
[88] Alaska Stat. § 46.15.133(c).
[89] Alaska Stat. § 46.15.133(c).
[90] Alaska Admin. Code tit. 11 § 93.145(a).

Dam Safety Certification:
Certificates of approval are necessary to construct, modify, repair, operate, or abandon a jurisdictional dam, which may include tailings dams, water supply dams, and water diversion dams.[91] An application must include design and construction packages, as well as post-construction documentation.[92] A certificate will be issued after ADNR reviews the application documents and determines the proposed dam action may be conducted "without unreasonable risk to life or property."[93] ADNR will specify certificate terms and conditions such as maximum or minimum filling rates, normal and maximum reservoir water elevations, and due dates and frequencies for inspections as necessary to protect life and property.[94]

Wildlife Permits

Fish Habitat Permit:
The state's Anadromous Fish Act requires notification and permit approval from the ADF&G for actions that "use, divert, obstruct, pollute, or change the natural flow or bed of a specified river, lake, and stream."[95] Such a permit will be granted unless the plans are "insufficient for the proper protection of fish and game."[96] Mining activities that may require this permit include culvert and bridge installations, water withdrawals, stream crossings, dams, and stream diversions and destruction. ADF&G has not promulgated any regulations pursuant to this law.

The Anadromous Fish Act applies to waters that are included in the Anadromous Waters Catalog.[97] However, not all waterways in Alaska have yet been surveyed for potential inclusion in the catalog.[98] It is estimated that the streams, rivers, and lakes included in the catalogue represent less than 50% of those actually used by anadromous species, leaving an additional 20,000 additional waterbodies that have not yet been included.[99]

Fishway permits may be issued when a water is not yet included in the Anadromous Waters Catalog.[100] If ADF&G "considers it necessary," mining operations with dams or other obstructions that interfere with a stream used by fish must provide a "durable and efficient" fishway that is "kept open, unobstructed, and supplied with a sufficient quantity of water to admit freely the passage of fish through it."[101]

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[91] Alaska Admin. Code tit. 11 § 93.171(a). Jurisdictional dams are defined as "an artificial barrier, and its appurtenant works, which may impound or divert water and which)A) has or will have an impounding capacity at maximum water storage elevation of 50 acre-feet and is at least 10 feet in height measured from the lowest point at either the upstream or downstream toe of the dam to the crest of the dam; (B) is at least 20 feet in height measured from the lowest point at either the upstream or downstream toe of the dam to the crest of the dam; or (C) poses a threat to lives and property as determined by the department after an inspection." Alaska Stat. § 46.17.900(3).
[92] Alaska Admin. Code tit. 11 § 93.171(a).
[93] Alaska Admin. Code tit. 11 § 93.173(a).
[94] Alaska Admin. Code tit. 11 § 93.173(i).
[95] Alaska Stat. § 16.05.871(b).
[96] Alaska Stat. § 16.05.871(d).
[97] Alaska Stat. § 16.05.871(a).
[98] *Anadromous Waters Catalog*, Alaska Dep't of Fish and Game, https://www.adfg.alaska.gov/sf/SARR/AWC/ (last visited Dec. 12, 2024).
[99] *Anadromous Waters Catalogue,* Alaska EPSCoR, https://catalog.epscor.alaska.edu/dataset/anadromous-waters-catalog (last visited Dec. 12, 2024).
[100] Alaska Stat. § 16.05.841.
[101] Alaska Stat. § 16.05.841.

Special Area Permits:
The state legislature has designated 32 state game refuges, critical habitat areas, and wildlife sanctuaries known as Special Areas.[102] A Special Area Permit is required for mining activities that are proposed within a state refuge, sanctuary, or critical habitat.[103] Specific activities that are subject to these permits include natural resource exploration, development, production, or associated activities, water diversions or withdrawals, and waste disposal, among others.[104] The permit will be granted so long as the use or activity is consistent with the protection of fish and wildlife and the purpose for which the Special Area was established, the use or activity doesn't unduly interfere with public use of the resources of the Special Area, and any adverse effects on either fish and wildlife or public use is mitigated.[105] To meet this standard, permit conditions may be included, such as placing seasonal use restrictions, requiring reporting, and requiring the posting of a performance bond.[106]

Fish Transport or Aquatic Resource Permit:
An Aquatic Resource Permit is required from ADF&G if fish are to be captured or transported from a dewatered mine or construction site.[107] A permit will be granted for the proposed activity if the agency determines that the activity will not adversely affect the health and perpetuation of "native, wild, or enhanced stocks of aquatic organisms, fisheries, and research, management, monitoring, or enforcement activities."[108] The permit will be denied if the proposed plans are not adequate to protect the continued health and perpetuation of such organisms and activities.[109] However, terms and conditions may be attached for the activities to meet the standard for the issuance of the permit.[110] Additionally, conditions such as designating release locations, providing methods of collection, transport, holding, or release, and reporting requirements may be prescribed to protect against disease, genetic change, or other biological disturbances.[111]

Waste Permits

Waste Management:
No action may be taken that results in the disposal or discharge of solid or liquid waste material into the waters or onto the land of the state without prior authorization.[112] Such waste discharges are typically

[102] *Special Area Permits*, Alaska Dep't of Fish and Game, https://www.adfg.alaska.gov/index.cfm?adfg=uselicense.areas (last visited Dec. 12, 2024).
[103] Alaska Admin. Code tit. 5 § 95.420.
[104] Alaska Admin. Code tit. 5 § 95.420(a).
[105] Alaska Admin. Code tit. 5 § 95.430.
[106] Alaska Admin. Code tit. 5 § 95.720.
[107] *Fish, Amphibian, & Aquatic Plants Permits*, Alaska Dep't of Fish and Game, https://www.adfg.alaska.gov/index.cfm?adfg=otherlicense.aquatic_resource (last visited Dec. 12, 2024); Alaska Department of Natural Resources, Permitting Large Mine Projects in Alaska (2024), https://dnr.alaska.gov/mlw/mining/large-mines/pdf/Permitting-Large-Projects-in-Alaska-2024.pdf. A person may not "collect, transport, possess, propagate, export from the state, or release into the waters or the lands of the state, any aquatic organism" without a permit. Alaska Admin. Code tit. 5 § 41.005.
[108] Alaska Admin. Code tit. 5 § 41.030.
[109] Alaska Admin. Code tit. 5 § 41.030(3).
[110] Alaska Admin. Code tit. 5 § 41.030(2).
[111] Alaska Admin. Code tit. 5 § 41.050.
[112] Alaska Stat. § 46.03.100(a).

regulated through an integrated waste management permit,[113] which covers solid waste management[114] and wastewater disposal.[115] Immediately after receiving a complete application for an integrated waste management permit, ADEC will provide two notices in a local newspaper and utilize other media the agency deems appropriate to achieve "sufficient" public notice, including posting the notice to the Alaska Online Public Notice System.[116] The notice will include information on the proposed activity, instructions on how to receive more information, including a copy of the application upon request, and a statement that written comments may be submitted to the agency within thirty days of notice publication.[117] Terms and conditions will be attached to the permit to the extent the agency considers necessary, including operating, monitoring, and reporting requirements, as well as the posting of a performance bond.[118]

Solid Waste:
Tailings from hardrock mines that have been amalgamated or chemically treated are subject to regulations prescribed for waste disposal permits, monofills, user fees, and monitoring and corrective action requirements.[119] Once waste disposal has begun, the owner and operator are responsible until ADEC grants approval to terminate post-closure care.[120]

Wastewater:
To dispose of wastewater, the state must approve a plan and issue an APDES permit, if such a permit is required under those regulations.[121] However, a plan alone may be approved in lieu of a permit if ADEC determines that the plan meets the regulatory requirements set forth for a permit and finds that "the system is protective of public health, public and private water systems, and the environment."[122]

Air Permits

Air emissions in Alaska are regulated by statutes and regulations pursuant to the federal Clean Air Act (CAA). The state's air permitting program is administered by the ADEC's Division of Air Quality.[123] Whether a permit is required depends on the source location, total emissions, and changes in

[113] "The department may issue an integrated waste management and disposal authorization covering multiple related or unrelated waste management or disposal activities to be conducted at a facility, including generation, treatment, storage, and disposal of solid or liquid waste. An integrated waste management and disposal authorization may include […] a water-quality-related certification required by 33 U.S. 1341 for the discharge of dredged or fill materials or of pollutants to surface waters from point sources." ALASKA STAT. § 46.03.100(d).
[114] ALASKA ADMIN. CODE tit. 18 §§ 60, 60.200.
[115] ALASKA ADMIN. CODE tit. 18 § 72.
[116] ALASKA ADMIN. CODE tit. 18 § 15.050(a); ALASKA STAT. § 46.03.110(b).
[117] ALASKA ADMIN. CODE tit. 18 § 15.050(b); ALASKA STAT. § 46.03.110(b).
[118] ALASKA ADMIN. CODE tit. 18 § 15.090.
[119] "Except when the only chemical being used is a flocculent to enhance settling, tailings from hardrock mines, and tailings from placer mines that have been amalgamated or chemically treated, are subject to 18 AAC 60.010 – 18 AAC 60.265, 18 AAC 60.400 – 18 AAC 60.495, 18 AAC 60.700 – 18 AAC 60.730, and 18 AAC 800 – 18 AAC 60.860 as necessary to prevent a violation of the air quality standards in 18 AAC 50 or the water quality standards in 18 AAC 70. The department will, in its discretion, incorporate applicable provisions of this chapter into a wastewater permit issued under 18 AAC 72 or a solid waste disposal permit issued under this chapter." ALASKA ADMIN. CODE tit. 18 § 60.455.
[120] ALASKA ADMIN. CODE tit. 18 § 60.270(a).
[121] ALASKA ADMIN. CODE tit. 18 § 72.010(a).
[122] ALASKA ADMIN. CODE tit. 18 § 72.010(b).
[123] *Permit Information*, ALASKA DEP'T OF ENV'T CONSERVATION DIVISION OF AIR QUALITY, https://dec.alaska.gov/air/air-permit/info (last visited Dec. 12, 2024).

emissions.[124] There are two categories of permits: Title I, which deals with air construction permits and minor sources, and Title V, which is operating permits.

Air Quality Control Permit to Construct and Minor Permits (Title I):
An owner or operator must have a construction permit before construction of a new major stationary source can begin.[125] There are three types of permits, of which the owner or operator must obtain one or more of: a prevention of significant deterioration permit, a nonattainment area major stationary source permit, or a construction permit for a major source of hazardous air pollutants.[126]

For a major source application within a nonattainment area, the application must demonstrate that the emissions will be controlled to the lowest achievable emissions rate and that actual emissions from other stationary sources within the nonattainment area will compensate for the expected increase.[127] Additionally, the applicant must demonstrate that the benefits of construction "will significantly outweigh the environmental and social costs incurred, considering factors such as alternative sites, sizes, production processes, and environmental control techniques."[128]

Air Quality Control Permit to Operate (Title V):
Title V operating permits are required for all major sources. The permit must generally be consistent with federal standards.[129] This includes standards for case-by-case maximum achievable control technology for major sources of hazardous air pollutants.[130]

Monitoring Requirements

The most common scenario under which monitoring would be required under a permit is if it is included as a condition of compliance by the relevant state agency, as it generally is not mandated by regulation. The only permitting program under which monitoring is always required is solid waste disposal. Generally, facilities that require a solid waste management permit must conduct groundwater monitoring in accordance with prescribed standards.[131]

Reclamation:
If ADNR determines that a proposed reclamation plan does not fully comply with the statutory requirements, the agency may still approve the plan with monitoring and/or reporting conditions.[132] Additionally, operators must provide access to the mining operation for the purpose of inspecting or monitoring compliance with the reclamation plan.[133]

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[124] Alaska Department of Natural Resources, Permitting Large Mine Projects in Alaska (2024), https://dnr.alaska.gov/mlw/mining/large-mines/pdf/Permitting-Large-Projects-in-Alaska-2024.pdf.
[125] Alaska Admin. Code tit. 18 § 50.302(a).
[126] Alaska Admin. Code tit. 18 § 50.302(a).
[127] Alaska Admin. Code tit. 18 § 50.311(b)(1)(A).
[128] Alaska Admin. Code tit. 18 § 50.311(b)(3).
[129] Alaska Admin. Code tit. 18 § 50.326(a) (permit must be consistent with 40 C.F.R. Part 71, as adopted by reference in 18 AAC 50.040).
[130] Alaska Admin. Code tit. 18 § 80.321.
[131] Alaska Admin. Code tit. 18 § 60.820.
[132] Alaska Admin. Code tit. 11 § 97.320(b).
[133] Alaska Admin. Code tit. 11 § 97.340(b).

Special Area Permits:
Special Area Permits may be subject to reporting and monitoring conditions at the discretion of the agency to provide for the proper protection and management of fish and wildlife.[134]

Water:
ADEC may require surface water monitoring of a facility under a waste disposal permit or authorization.[135] Such monitoring is required if the agency determines that the solid waste stored or disposed of at the permitted facility increases the risk of "constituents of concern" to be present in surface run-off, other liquid discharge from the facility, or in nearby surface water that receives run-off or discharge.[136] If an operation is required to conduct monitoring activities, regulations include requirements for how a surface monitoring plan should be developed, including how to establish a sampling location and flow conditions under which monitoring is required.[137] After a program is established, the approved plan must be complied with while the operation is active and throughout the post-closure monitoring period.[138]

Generally, groundwater monitoring is required for facilities that have a solid waste disposal permit.[139] To comply, facilities must install a groundwater monitoring system and conduct two years of initial sampling to establish background conditions.[140] The system must be either certified by a qualified groundwater scientist or approved by ADEC as meeting regulatory standards.[141] Once the initial monitoring has been completed, the facility must continue to monitor at a frequency determined by ADEC, based on factors including the hydrogeologic characteristics of the area, the volume and characteristics of the leachate, the nature of the groundwater, proximity to groundwater, and the practicable capability to remediate.[142]

Closure and Reclamation Requirements

Reclamation Plan:
Mining operations may not begin until a reclamation plan has been approved by the commissioner of natural resources.[143] The reclamation plan must be submitted at least 45 days before the proposed start of mining,[144] and must include the following elements: (a) the number of acres to be mined each year; (b) property boundaries and relationship to reclamation work; (c) tailings or spoil disposal areas; (d) estimated amount of waste mined each year; and (f) description of reclamation measures to comply with reclamation performance standards.[145] If ADNR is not satisfied that the plan complies with all statutory requirements, the agency may still approve the plan with the inclusion of reclamation-specific monitoring, reporting, or performance conditions.[146] A plan may be approved for up to 10 years, and if the plan exceeds one year, the commissioner may require the submission of annual reports that include the total acreage and volume of mineral mined in that year, the total acreage reclaimed in that year, and

[134] Alaska Admin. Code tit. 5 § 95.720(a)(5), (6).
[135] Alaska Admin. Code tit. 18 § 60.810(a).
[136] Alaska Admin. Code tit. 18 § 60.810(a).
[137] Alaska Admin. Code tit. 18 § 60.810(f).
[138] Alaska Admin. Code tit. 18 § 60.810(h).
[139] Alaska Admin. Code tit. 18 § 60.820.
[140] Alaska Admin. Code tit. 18 § 60.825(g).
[141] Alaska Admin. Code tit. 18 § 60.825(b)(2).
[142] Alaska Admin. Code tit. 18 § 60.825(d)(4).
[143] Alaska Stat. § 27.19.030(a).
[144] Alaska Admin. Code tit. 11 § 97.300(a).
[145] Alaska Admin. Code tit. 11 § 97.310(b).
[146] Alaska Admin. Code tit. 11 § 97.320(b).

a statement as to whether the reclamation plan is on schedule.[147] There are no public participation requirements, but ADNR often issues a "courtesy" public notice.[148]

Small Mine Exception:
Operations that do not exceed five acres are exempt from the reclamation planning requirements.[149] In order to obtain an exemption, the miner must file a letter of intent with ADNR that states the total acreage and volume of material to be mined, the total acreage to be reclaimed, and the reclamation measures to be used.[150] Additionally, the miner must submit an annual reclamation statement, which must include the total acreage and volume of material mined that year, the total acreage reclaimed, and the specific reclamation measures used.[151]

Reclamation Standard:
Under the Alaska Reclamation Statute, mining operations must be conducted "in a manner that prevents unnecessary and undue degradation of land and water resources."[152] Additionally, reclamation must occur "as contemporaneously as practicable with the mining operation to leave the site in a stable condition."[153]

Stable condition is defined as "the rehabilitation, where feasible, of the physical environment of the site to a condition that allows for the reestablishment of renewable resources on the site within a reasonable period of time by natural processes."[154] Regulations adopted pursuant to this statute provide land reclamation performance standards and generally require waterborne soil erosion to return to pre-mining levels within one year of reclamation completion and revegetation to be achieved within five years of reclamation completion.[155] Additionally, reclamation performance standards require the following:

- Remove or dispose of buildings, structures, and scrap/debris.[156]
- Stabilize and seal openings to underground mine workings to ensure protection of the public, wildlife, and environment.[157]
- Neutralize and reclaim heap leach operations.[158]
- Reclaim mined areas with potential to generate acid rock drainage in a manner that prevents the generation of acid rock drainage or prevents offsite discharge of acid rock drainage.[159]
- If mining from a watercourse, reestablish a stabled bed and bank profile.[160]

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[147] Alaska Admin. Code tit. 11 § 97.320(a).
[148] Alaska Department of Natural Resources, Permitting Large Mine Projects in Alaska (2024), https://dnr.alaska.gov/mlw/mining/large-mines/pdf/Permitting-Large-Projects-in-Alaska-2024.pdf.
[149] Alaska Stat. § 27.19.050. While small mine operators are exempt from meeting reclamation plan requirements, they are not exempt from actually completing reclamation in accordance with the proper standards. Small mines are also exempt from reclamation financial assurance requirements.
[150] Alaska Stat. § 27.19.050(b).
[151] Alaska Stat. § 27.19.050(c).
[152] Alaska Stat. § 27.19.020.
[153] Alaska Stat. § 27.19.020.
[154] Alaska Stat. § 27.19.100(7).
[155] Alaska Admin. Code tit. 11 § 97.200(a)(1).
[156] Alaska Admin. Code tit. 11 § 97.210.
[157] Alaska Admin. Code tit. 11 § 97.220.
[158] Alaska Admin. Code tit. 11 § 97.230.
[159] Alaska Admin. Code tit. 11 § 97.240.
[160] Alaska Admin. Code tit. 11 § 97.250 ("A stable bed and bank profile is one that will not substantially alter river currents or change erosion and deposition patterns downstream.").

Hazardous Substance Spills:
As soon as a person in charge of a mining operation has knowledge of any hazardous substance discharge, they must report it to ADEC.[161] To enable this reporting, a placard with ADEC's contact information must be posted in tank trucks containing more than 500 gallons of a hazardous substance and facilities with total storage capacity in excess of 1,000 gallons of a hazardous substance.[162] Immediately after becoming aware of a discharge or release of hazardous substances, a responsible person must control the discharge or release and seek approval of cleanup and disposal plans to be used for that release.[163] Such a plan must only provide for the lowest practicable level of contamination to be achieved and any "imminent and substantial threat" to human welfare or the environment to be abated.[164] However, the immediate cleanup and plan requirements may be waived by ADEC if in its discretion it determines that containment or cleanup is either not technically feasible or would result in a greater threat to human welfare or the environment than the discharge or release itself.[165]

Economic Laws and Regulations

Financial Assurances

Reclamation:
Financial assurance is required in an amount "not to exceed an amount reasonably necessary to ensure the faithful performance of the requirements of [a mine's] approved reclamation plan."[166] The ADNR Commissioner sets the amount of the financial assurance.[167] If the miner is operating with a multi-year reclamation plan, the miner is responsible for ensuring that the bond amount is sufficient at all times to cover any area to be mined during the current year, plus any mined area in a previous year that has yet to be reclaimed.[168]

There are multiple forms of financial assurance that have been designated as acceptable.[169] Miners may provide: (a) a performance bond that consists of either a corporate surety bond or a personal bond accompanied by a letter of credit, certificate of deposit, or deposit of cash or gold; (b) a bond or financial guarantee with another government agency that satisfies the requirements of ADNR; or (c) a general performance bond that is written in favor of a state agency of Alaska, requires reclamation to Alaska's statutory and regulatory standards, is no less than $750 per acre of mined area of funds exclusively for the purpose of reclamation.[170] All forms of assurance must remain in effect until reclamation is completed in accordance with the applicable standards.[171]

Additionally, a statewide bonding pool is available as an alternative to individual financial assurance.[172] To participate in the pool, a miner pays a deposit of 15% of the total bond amount that would be required under individual bonding procedures and a nonrefundable fee of 5% of the total bond amount

[161] Alaska Admin. Code tit. 18 § 75.300.
[162] Alaska Admin. Code tit. 18 § 75.305(a).
[163] Alaska Admin. Code tit. 18 § 75.310(a).
[164] Alaska Admin. Code tit. 18 § 75.310(c)(1).
[165] Alaska Admin. Code tit. 18 § 75.310(b).
[166] Alaska Stat. § 27.19.040(a).
[167] Alaska Stat. § 27.19.040(a).
[168] Alaska Admin. Code tit. 11 § 97.415(b).
[169] Alaska Admin. Code tit. 11 § 97.400.
[170] Alaska Admin. Code tit. 11 § 97.400.
[171] Alaska Admin. Code tit. 11 §§ 97.400, 97.405, 97.410.
[172] Alaska Stat. § 27.19.040(b); Alaska Admin. Code tit. 11 § 97.425.

for that year.[173] The bonding pool may be used by ADNR to pay reclamation costs that have not been paid by the miner nor their surety despite reasonable efforts to recover costs from the miner and their surety.[174] ADNR is not authorized to undertake reclamation expenditures beyond the balance of the bonding pool.[175] Bonding to a certain amount does not set a limit on a miner's potential liability.[176] The miner remains liable for the full costs of reclamation, regardless of the amount of the reclamation bond or bonding pool contributions.[177]

"Bad actor" provision: A miner who has violated a permit or an approved reclamation plan and does not comply with an order from the commissioner of natural resources forfeits the financial assurance and is liable to the state in a civil action for the full amount of reclamation and administrative costs incurred by the state.[178] The commissioner also may suspend or revoke permits or approvals of operations not being conducted under the approved reclamation plan and deny future permits.[179] A miner wo has forfeited a financial assurance or been held liable in a civil action may only conduct future mining operations after posting a reclamation risk assessment fee equal to five times the amount of financial assurance required for the operation.[180]

Small Mine Exception:
Operations that do not exceed five acres are exempt from reclamation financial assurance requirements.[181] In order to obtain an exemption, the miner must file a letter of intent with ADNR that states the total acreage and volume of material to be mined, the total acreage to be reclaimed, and the reclamation measures to be used.[182] Additionally, the miner must submit an annual reclamation statement, which must include the total acreage and volume of material mined that year, the total acreage reclaimed, and the specific reclamation measures used.[183]

Closing Solid Waste Disposal Facility or Treatment Works:
Proof of financial responsibility is required to cover the cost of closing a solid waste disposal facility or treatment works and the cost of post-closure monitoring.[184] Self-insurance, insurance, surety, or other guarantee that is approved by ADEC may all be utilized to comply with this condition.[185]

[173] Alaska Admin. Code tit. 11 § 97.425(b).
[174] Alaska Admin. Code tit. 11 § 97.440(b).
[175] Alaska Admin. Code tit. 11 § 97.440(b).
[176] Alaska Admin. Code tit. 11 § 97.430.
[177] Alaska Admin. Code tit. 11 § 97.430.
[178] Alaska Stat. § 27.19.070(a).
[179] Alaska Stat. § 27.19.070(b).
[180] Alaska Stat. § 27.19.070(c).
[181] Alaska Stat. § 27.19.050(a).
[182] Alaska Stat. § 27.19.050(b).
[183] Alaska Stat. § 27.19.050(c).
[184] Alaska Admin. Code tit. 18 § 60.265.
[185] Alaska Admin. Code tit. 18 § 60.265.

Leasing and Rentals

There are three types of mining locations on state lands: mining claims, leasehold locations, and prospecting sites.[186] While a mining claim conveys an immediate property right to mine, a leasehold location must first be converted into an upland mining lease before mining operations can begin.[187] State lands are designated for leasehold location if other valuable resources may be present or if the surface has already been put to another use to mitigate resource conflicts.[188]

Holders of mining claims, leasehold locations, prospecting sites, and mining leases are required to pay an annual rental.[189] The rental amount is determined based on the number of years since a mining claim or leasehold location was first located, with the rent increasing as time goes on and ranging from $40 to $825.[190]

Production Royalties

The holder of a mining claim, leasehold location, or mining lease are required to pay royalties on all minerals produced from state land.[191] Royalty payments are in exchange for the continued right to extract and possess the minerals produced.[192] The production royalty is 3% of net income as calculated under the mining tax statute and regulations.[193] If a claim or lease holder is jointly developing state and non-state land in a single operation, income will be segregated in a manner consistent with the holder's method of record-keeping.[194]

The state constitution dedicates 25% of all mineral lease rentals, royalties, and royalty sale proceeds to the Alaska Permanent Fund.[195] Alaska law further mandates that 50% of earnings from leases after 1979 be deposited into the fund.[196] The Alaska Permanent Fund is managed by the Alaska Permanent Fund Corporation and is used to pay out the Permanent Fund Dividend and support state services. The Permanent Fund Dividend is a dividend paid directly to Alaska residents based on the amount available for distribution from the Permanent Fund earnings account.[197]

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[186] *Mineral Property Management*, Alaska Dep't of Nat. Res. Division of Mining, Land and Water, https://dnr.alaska.gov/mlw/mining/mpm/ (last visited Dec. 12, 2024).
[187] *Mineral Property Management*, Alaska Dep't of Nat. Res. Division of Mining, Land and Water, https://dnr.alaska.gov/mlw/mining/mpm/ (last visited Dec. 12, 2024). While a mining claim conveys a property right to mine, the right is subject to permit requirements and other such limitations as discussed in this report.
[188] *Mineral Property Management*, Alaska Dep't of Nat. Res. Division of Mining, Land and Water, https://dnr.alaska.gov/mlw/mining/mpm/ (last visited Dec. 12, 2024).
[189] Alaska Stat. § 38.05.211; *see Trustees for Alaska v. State of Alaska*, 736 P.2d 324 (1987) (requiring the state to charge lessee a payment of rent or royalties on mining leases).
[190] Alaska Admin. Code tit. 11 § 86.221.
[191] Alaska Stat. § 38.05.212; Alaska Admin. Code tit. 11 § 86.760.
[192] Alaska Dep't of Nat. Res. Division of Mining, Land and Water, Fact Sheet: Production Royalty (2022), https://dnr.alaska.gov/mlw/cdn/pdf/factsheets/production-royalty.pdf.
[193] Alaska Stat. § 38.05.212; Alaska Admin. Code tit. 11 §§ 86.760, 86.769.
[194] Alaska Admin. Code tit. 11 § 86.766.
[195] Alaska Const. art. IX, §15; Alaska Stat. § 37.13.010(a)(1).
[196] Alaska Stat. § 37.13.010(a)(2).
[197] *Department of Revenue Announces 2024 Permanent Fund Dividend Amount and Energy Relief,* State of Alaska (Sept. 19, 2024), https://dor.alaska.gov/department-of-revenue/news-detail/2024/09/19/department-of-revenue-announces-2024-permanent-fund-dividend-amount-and-energy-relief.

Taxation Scheme

Mining licenses are issued by the Alaska Department of Revenue as the state's way of tracking income tax obligations.[198] Alaska levies an annual tax on mining net income and royalties received in connection with mining activities in the state.[199] There is no tax if the net income is less than $40,000.[200] Net income between $40,000 and $50,000 is taxed at a rate of 3%.[201] Net income between $50,000 and $100,000 is taxed $1,500 plus 5% of the amount over $50,000.[202] Net income over $100,000 is taxed $4,000 plus 7% of the amount over $100,000.[203] New mines are exempt from paying the mining license tax for three and a half years from the beginning of production.[204]

Deductible expenses from gross revenue to determine net revenue include: operating costs (wages, transportation, consumables, equipment, spare parts, power, administration, IT, post production permitting, legal, bonding); cost of supplies; cost of contract services; interest; royalties; capital costs, including interest on capital invested; depletion allowance; and state corporate income tax, local taxes, and fees.[205] Depletion is included as an allowable deduction from gross income, and is calculated as a percentage of gross income. For metal mines, depletion is calculated as 15%, but may not exceed 50% of the mining operation's net income.[206]

Exploration Incentive Credits

Exploration credits will be granted for eligible costs that are incurred for the purpose of "determining the existence, location, extent, or quality of a locatable or leasable mineral or coal deposit, regardless of whether the land is state-owned land."[207] Eligible activities include geophysical surveys, exploration hole drilling, underground exploration, and sampling conducted prior to the commencement of a new mine.[208] There is a credit limit of $20 million per mining operation, and the credit must be applied within 15 tax years or royalty payment periods.

Social Laws and Regulations

Public Participation

While many permits under Alaska law have notice and comment periods for public participation, there is no overarching process that guarantees meaningful public engagement in project development processes. Rather, opportunities are limited to individual permits' notice and comment regulations.

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[198] *Mining License Tax*, Alaska Dep't of Revenue, https://tax.alaska.gov/programs/programs/index.aspx?60610 (last visited Dec. 12, 2024). Such licenses are not issued for exploration activities.
[199] *Mining License Tax*, Alaska Dep't of Revenue, https://tax.alaska.gov/programs/programs/index.aspx?60610 (last visited Dec. 12, 2024).
[200] Alaska Stat. § 43.65.010(c).
[201] Alaska Stat. § 43.65.010(c).
[202] Alaska Stat. § 43.65.010(c).
[203] Alaska Stat. § 43.65.010(c).
[204] Alaska Stat. § 43.65.010(a).
[205] Alaska Admin. Code tit. 15 §§ 65.125, 65.120.
[206] Alaska Stat. § 43.65.010(e)(2).
[207] Alaska Stat. § 27.30.010.
[208] Alaska Stat. § 27.30.010.

Many permits, like the fish habitat permit, Special Area permit, and fish transport permit, have no public notice requirements at all. Others agency actions, like the establishment of water rights or water reservations, require public notice and provide that objections may be submitted within fifteen days of the notice. Others, like waste and APDES permits, require public notice and allow 30 days for public comment. Additionally, there are many circumstances under which the relevant agency has the discretion to allow for public participation in some manner. For example, ADNR is "not required to provide public notice" of proposed temporary use of water authorizations.[209] However, this language is not directly prohibitive. Further, there are various circumstances when an agency has discretion to hold a public hearing, including consideration of water reservation applications and when there is a "significant degree of public interest" in a draft APDES permit.

Alaska has a statutorily required online public notice system that is maintained on the state's website.[210] Most public notices required under state law and regulations are required to be posted on this website in addition to publication in a newspaper local to the potential action.

Tribal Consultation

It is the policy of the state to interact with Alaska Tribes on a government-to-government basis in recognition of their sovereignty.[211] However, there is no requirement for state agencies to consult with Tribes when making a decision or taking an action that could impact Tribal interests.

In 2018, Governor Walker issued Administrative Order No. 300 which directs state agencies to designate a Tribal liaison to support the development of a written plan to address consultation and collaboration engagement with Alaska Tribes, Tribal organizations, the Alaska Native community, and the Truth, Racial Healing, and Transformation endeavor.[212] These plans are required to include steps for facilitating the government-to-government relationship between the agency and Alaska Tribes.[213]

In 2022, the state passed legislation that provided for state recognition of federally recognized Tribes.[214] The legislation provides that "the state recognizes all tribes in the state that are federally recognized."[215] In doing so, the state recognizes the "special and unique" relationship between the federal government and federally recognized tribes in the state. However, it does not go so far as to recognize a particular relationship between the state itself and such tribes. Additionally, the legislation does not create a tribal consultation requirement.

Cultural Resources Review

All activities that require a permit from the state must comply with the Alaska Historic Preservation Act, which provides the Alaska Office of History and Archaeology and the State Historic Preservation Office an opportunity to survey the affected area to determine if the area contains historic, prehistoric, or

[209] Alaska Stat. § 46.15.155(d).
[210] Alaska Stat. § 44.62.175.
[211] Governor Mike Dunleavy, Administrative Order No. 300 (Sept. 23, 2018).
[212] Governor Mike Dunleavy, Administrative Order No. 300 (Sept. 23, 2018). Plans could not be located for ADNR nor ADEC through the course of research for this report.
[213] Governor Mike Dunleavy, Administrative Order No. 300 (Sept. 23, 2018).
[214] Alaska Stat. § 01.15.100.
[215] Alaska Stat. § 01.15.100.

archeological resources.[216] Such resources include "deposits, structures, ruins, sites, buildings, graves, artifacts, fossils, or other objects of antiquity which provide information pertaining to the historical or prehistorical culture of people in the state as well as to the natural history of the state."[217] While such a survey is not required, if ADNR determines that such resources are present, the proposed activities cannot begin until the necessary investigation, recording, and salvage work has been completed.[218] This work must be conducted as "expeditiously" as possible to avoid unduly hindering a project.[219] If resources are discovered throughout the course of the project, ADNR must be notified and it must survey the area and identify possible resources.[220] If ADNR fails to respond within 90 days, the project sponsor may request permission from the governor to proceed without ADNR's involvement.[221]

[216] ALASKA STAT. § 41.35.070.
[217] ALASKA STAT. § 41.35.230(2).
[218] ALASKA STAT. § 41.35.070(c).
[219] ALASKA STAT. § 41.35.070(c).
[220] ALASKA STAT. § 41.35.070(d).
[221] ALASKA STAT. § 41.35.070(e).

Arizona

Overview of Hardrock Mining in Arizona

In 2021, Arizona ranked first among all states for non-fuel mineral resource production with an output valued at $10 billion.[222] Arizona's top five non-fuel mineral resources produced in order of value includes copper, sand and gravel, molybdenum, cement, and crushed stone.[223] Other minerals produced in Arizona include lead, zinc, gold, silver, gypsum, lime, turquoise, and peridot.[224] Arizona also has economically significant uranium deposits.[225] In 2020, Arizona copper accounted for 74% of total United States copper production.[226]

Key Agencies, Laws, and Regulations

The Arizona Geological Survey provides mining data, evaluation, and assistance relating to mining development to the federal, state, and local governments, industry, and the public.[227] The Arizona Department of Water Resources (ADWR) manages appropriations of surface water under Title 45, Chapter 1, Ariz. Rev. Stat.,[228] withdrawal and use of groundwater under Title 45, Chapter 2, Ariz. Rev. Stat.,[229] and supervision of dams under Title 45, Chapter 6, Ariz. Rev. Stat.[230] The Arizona Department of Environmental Quality (ADEQ) administers aquifer protection permits under the Aquifer Protection Permit Program,[231] consistency review under the Federal CWA Section 303,[232] water quality certification under CWA Section 401,[233] and discharges under the Arizona Pollution Discharge Elimination System.[234] Reclamation of private and state lands is regulated by the Arizona State Mine Inspector through the Mined Land Reclamation Act.[235] The Arizona Game and Fish Department consults in the mine permitting process to minimize wildlife impacts.[236]

[222] Ariz. Mining Ass'n and Ariz. Rock Products Ass'n, Arizona Mining & Rock Products: Economic Impact (Feb. 2, 2022), https://www.azmining.org/wp-content/uploads/2024/09/7-AMA-ARPA-Impact-Feb-22-2.pdf.
[223] Ariz. Mining Ass'n and Ariz. Rock Products Ass'n, Arizona Mining & Rock Products: Economic Impact (Feb. 2, 2022), https://www.azmining.org/wp-content/uploads/2024/09/7-AMA-ARPA-Impact-Feb-22-2.pdf.
[224] Ariz. Mining Ass'n and Ariz. Rock Products Ass'n, Arizona Mining & Rock Products: Economic Impact (Feb. 2, 2022), https://www.azmining.org/wp-content/uploads/2024/09/7-AMA-ARPA-Impact-Feb-22-2.pdf.
[225] *Mining in Arizona*, Ariz. Geological Survey, https://www.azgs.arizona.edu/minerals/mining-arizona (last visited Dec. 12, 2024).
[226] U.S. Geological Survey, Mineral Commodity Summaries: Copper (Jan. 2021).
[227] U.S. Dep't of Interior, Arizona Mining Permitting Guide 14 (2017).
[228] U.S. Dep't of Interior, Arizona Mining Permitting Guide 53-54 (2017).
[229] U.S. Dep't of Interior, Arizona Mining Permitting Guide 55-56 (2017).
[230] U.S. Dep't of Interior, Arizona Mining Permitting Guide 57-59 (2017).
[231] U.S. Dep't of Interior, Arizona Mining Permitting Guide 100-10 (2017).
[232] U.S. Dep't of Interior, Arizona Mining Permitting Guide 102-03 (2017).
[233] U.S. Dep't of Interior, Arizona Mining Permitting Guide 104-05 (2017).
[234] U.S. Dep't of Interior, Arizona Mining Permitting Guide 106-09 (2017).
[235] U.S. Dep't of Interior, Arizona Mining Permitting Guide 16-22 (2017).
[236] U.S. Dep't of Interior, Arizona Mining Permitting Guide 160 (2017).

Environmental Laws and Regulations

Permits and Approvals Required

Water Permits

CWA § 402: Arizona Pollutant Discharge Elimination System:
Under the Arizona Pollutant Discharge Elimination System (AZPDES), implementing the federal CWA Section 402(b), a person cannot discharge a pollutant without a permit from ADEQ or the U.S. Environmental Protection Agency (EPA).[237] An AZPDES permit is required for all existing and new sources of pollution governed by the CWA.[238] AZPDES covers waters of the United States (WOTUS) and non-WOTUS protected surface waters.[239]

Mining point sources that result in discharges of pollutants require a permit.[240] However, there are some relevant exclusions, such as "[d]ischarges from conveyances for stormwater runoff from mining operations . . . composed entirely of flows from conveyances or systems of conveyances, including pipes, conduits, ditches, and channels, used for collecting and conveying precipitation runoff and that are not contaminated by contact with or that has not come into contact with, any overburden, raw material, intermediate products, finished product, byproduct, or waste product located on the site of the operations."[241]

Allowable discharges from mining operations can generally be classified as either stormwater or mine drainage.[242] Mine drainage is "any water drained, pumped, or siphoned from a mine."[243] Stormwater includes "runoff which does not come into contact with other mine drainage."[244] Both categories of discharges are required to comply with established Arizona Water Quality Standards.[245] However, discharges of mine drainage are also subject to technology-based effluent guidelines.[246]

Two types of AZPDES permits can be issued: individual and general permits. Individual permits are tailored to an individual facility, while general permits cover multiple facilities within a specified category.[247] Mining operations that discharge only stormwater may apply for coverage under a general permit, while discharge of mine drainage or mine drainage mixed with stormwater requires an individual permit.[248] ADEQ has the discretion to determine which type of permit would be most appropriate.[249]

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[237] Ariz. Rev. Stat. § 49-255.01.
[238] U.S. Dep't of Interior, Arizona Mining Permitting Guide 10 (2017).
[239] Ariz. Dep't of Env't Quality, Arizona Pollutant Discharge Elimination System (AZPDES) Fact Sheet 5 (Mar. 2020, modified Sept. 2021).
[240] Ariz. Admin. Code § R18-9-A902(B).
[241] Ariz. Admin. Code § R18-9-A902(G)(7).
[242] U.S. Dep't of Interior, Arizona Mining Permitting Guide 108 (2017).
[243] U.S. Dep't of Interior, Arizona Mining Permitting Guide 108 (2017); See 40 C.F.R. § 440.132(h).
[244] U.S. Dep't of Interior, Arizona Mining Permitting Guide 108 (2017).
[245] U.S. Dep't of Interior, Arizona Mining Permitting Guide 108 (2017).
[246] U.S. Dep't of Interior, Arizona Mining Permitting Guide 108 (2017); 40 C.F.R. § 440.
[247] U.S. Dep't of Interior, Arizona Mining Permitting Guide 109 (2017).
[248] U.S. Dep't of Interior, Arizona Mining Permitting Guide 109 (2017).
[249] U.S. Dep't of Interior, Arizona Mining Permitting Guide 109 (2017).

Individual AZPDES Permits:
Owners or operators must apply for an individual AZPDES permit at least 180 days before the date of discharge or a later date if granted.[250] Application requirements for discharges other than stormwater include information on the operator, information of the facility, and information on the effluent and where it may flow.[251] Once an owner or operator has submitted a complete application, the Director of ADEQ (the Director) then issues a permit upon determining that an applicant complies with the law.[252] If the Director decides to deny the permit application, written notice must include the reason for denial, the applicant's right to appeal the denial, and the applicant's right to request an informal settlement conference.[253] The Director's decision takes effect 30 days.[254]

An individual permit lasts for a "fixed term of not more than five years."[255] It can also be reissued or continued beyond its expiration date.[256] Individual permit holders can request transfer, and automatic transfer can happen under some circumstances.[257] Individual permits can be modified under certain conditions.[258] The Director can also grant variances under certain circumstances.[259]

The Director may terminate an individual permit under the following circumstances: (1) if the permit holder fails to comply with any permit condition; (2) if the permit holder fails to disclose all relevant facts; or (3) if the permitted activity endangers human health or the environment and can only be regulated by permit modification or termination.[260] In all cases, notice must be provided to the permit holder. [261]

General Permits:
Relevant for hardrock mining operations, AZPDES allows for the De Minimis General Permit and the Mining Multi-Sector General Permit for mining industries that have stormwater runoff.[262] Under a general permit, the owner or operator must file a Notice of Intent unless exempt.[263] A person authorized to discharge under a general permit may be required to apply and obtain an individual permit.[264] General permits are effective "for a fixed term of not more than five years."[265] However, if a general permit is not reissued before the expiration date, the current permit will be administratively continued and remain in force until the permit is reissued.[266] General permits are subject to certain rules regarding transfer and change of ownership.[267] General permits have the same modification, revocation, and reissuance standards as individual permits.[268]

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[250] ARIZ. ADMIN. CODE § R18-9-B901(A).
[251] ARIZ. ADMIN. CODE § R18-9-B901(B).
[252] ARIZ. ADMIN. CODE § R18-9-B903(B).
[253] ARIZ. ADMIN. CODE § R18-9-B903(C).
[254] ARIZ. ADMIN. CODE § R18-9-B903(C).
[255] ARIZ. ADMIN. CODE § R18-9-B904(A).
[256] ARIZ. ADMIN. CODE § R18-9-A904(B), (C).
[257] ARIZ. ADMIN. CODE § R18-9-B905.
[258] ARIZ. ADMIN. CODE § R18-9-B906(A), (B).
[259] ARIZ. ADMIN. CODE § R18-9-B907.
[260] ARIZ. ADMIN. CODE § R18-9-B906(C).
[261] ARIZ. ADMIN. CODE § R18-9-B906(C).
[262] *Permitting Unit*, ARIZ. DEP'T OF ENV'T QUALITY, https://azdeq.gov/SWPPermitting (last updated Jul. 30, 2024).
[263] ARIZ. ADMIN. CODE § R18-9-C901(B)-(D).
[264] ARIZ. ADMIN. CODE § R18-9-C902.
[265] ARIZ. ADMIN. CODE § R18-9-C903.
[266] ARIZ. ADMIN. CODE § R18-9-C903.
[267] ARIZ. ADMIN. CODE § R18-9-C904.
[268] ARIZ. ADMIN. CODE § R18-9-C905.

Standards for Issuance or Denial:
For all permit types, the Director shall not issue a permit for discharge to a WOTUS under the following conditions.[269] First, the conditions of the permit do not comply with AZPDES rules and regulations or the CWA.[270] Second, "the imposition of conditions cannot ensure compliance with the applicable water quality requirements from Arizona or an affected state or tribe, or a federally promulgated water quality standard."[271] Third, "in the judgment of the Secretary of the U.S. Army, acting through the Chief of Engineers, the discharge will substantially impair anchorage and navigation in or on any navigable water."[272] Fourth, "a new source or a new discharger if the discharge from its construction or operation will cause or contribute to the violation of a water quality standard."[273] Fifth, the Director shall not issue a permit for discharge to non-WOTUS protected surface water if the permit or conditions violate or do not provide for compliance with Arizona law.[274]

CWA Section 401 Certification:
Certification of waiver of CWA Section 401 is required for any federal license or permit that authorizes any activity that may result in any discharge from a point source into WOTUS.[275] The Water Quality Certification becomes part of the federal license or permit and is valid for the same time period.[276]

CWA Section 404:
Under CWA Section 404, any person or entity proposing a project that will result in discharge of dredged or fill materials into WOTUS must obtain a Section 404 permit from the Army Corps of Engineers.[277] There is no state assumption of Section 404 in Arizona.[278]

Arizona Aquifer Protection Permit Program (APP):
Under the Aquifer Protection Permit Program (APP), "[a]ny person who discharges or who owns or operates a facility that discharges shall obtain an aquifer protection permit from the director."[279] Mining explorations and operations often require an APP permit.[280] Relevant discharging facilities subject to permitting under the APP include "[s]urface impoundments, including holding, storage settling, treatment or disposal pits, ponds and lagoons," "[s]olid waste disposal facilities except for mining overburden and wall rock that has not been and will not be subject to mine leaching operations," land treatment facilities, "[f]acilities that add a pollutant to a salt dome formation, salt bed formation, dry well or underground cave or mine," mine tailings piles and ponds, mine leaching operations, and underground water storage facilities.[281] The APP provides both individual and group permits.

[269] ARIZ. ADMIN. CODE § R18-9-A903(A).
[270] ARIZ. ADMIN. CODE § R18-9-A903(A).
[271] ARIZ. ADMIN. CODE § R18-9-A903(A).
[272] ARIZ. ADMIN. CODE § R18-9-A903(A).
[273] ARIZ. ADMIN. CODE § R18-9-A903(A).
[274] ARIZ. ADMIN. CODE § R18-9-A903(B).
[275] *Clean Water Act § 401 Water Quality Certification*, ARIZ. DEP'T OF ENV'T QUALITY, https://azdeq.gov/cwa401 (last updated Jan. 10, 2024).
[276] *Clean Water Act § 401 Water Quality Certification*, ARIZ. DEP'T OF ENV'T QUALITY, https://azdeq.gov/cwa401 (last updated Jan. 10, 2024).
[277] U.S. DEP'T OF INTERIOR, ARIZONA MINING PERMITTING GUIDE 112 (2017).
[278] *Clean Water Act § 404 Assumption*, ARIZ. DEP'T OF ENV'T QUALITY, https://azdeq.gov/cwa-404 (last updated Sept. 14, 2023).
[279] ARIZ. REV. STAT. § 49-241(A).
[280] ARIZ. ADMIN. CODE § R18-9-A201.
[281] ARIZ. REV. STAT. § 49-241(B)(1)-(8).

There are a number of exemptions to the permitting requirements under the APP. The Director may exempt classes or categories of facilities from the APP on finding "either that there is no reasonable probability of degradation of the aquifer or that aquifer water quality will be maintained and protected because the discharges from the facilities are regulated under other federal or state programs that provide the same or greater aquifer water quality protection as provided by [the APP]."[282] There are also some relevant statutory exemptions. "Mining overburden returned to the excavation site, including any common material that has been excavated and removed from the excavation site and that has not been subjected to any chemical or leaching agent or process of any kind" is exempted.[283] "Leachate resulting from the direct, natural infiltration of precipitation through undisturbed regolith or bedrock if pollutants are not added to the leachate as a result of any material or activity placed or conducted by man on the ground surface" is exempted.[284] "Surface impoundments used solely to contain storm runoff, except for surface impoundments regulated by the Federal CWA or Article 3.1 of [the APP]" are exempted.[285] Lastly, closed facilities are exempted.[286]

Individual APP Permits:
The application for an individual APP permit has a variety of requirements. Applicants must provide information on the design of the discharge facility, a description of how the facility will be operated, existing and proposed pollutant control measures, the use of water from aquifers in the discharge impact area, the existing quality of the water in the aquifers in the discharge impact area, and the characteristics of the pollutants discharged by the facility.[287] An applicant must also provide a hydrogeologic study defining and characterizing the discharge impact area, [288] any other relevant federal or state permits issued to the applicant,[289] and a closure strategy including any post-closure monitoring and maintenance.[290] However, "[f]or the purposes of evaluating an applicant's financial competence for closure, the director may consider a closure strategy and cost estimate rather than a detailed closure plan."[291] The Director also requires applicants to provide evidence that the facility complies with other applicable laws and regulations, cost estimates for the facility's full life cycle, an applicable fee, technical information, and a contingency plan.[292] Furthermore, with the exception of government applicants, "the applicant or permittee shall demonstrate financial responsibility to cover the estimated costs to close the facility and, if necessary, to conduct post-closure monitoring and maintenance by providing to the director for approval a financial assurance mechanism or combination of mechanisms." [293] A variety of mechanisms are available to meet this requirement.[294] The permittee must maintain its demonstration of financial responsibility for the duration of the permit.[295]

[282] ARIZ. REV. STAT. § 49-250(A).
[283] ARIZ. REV. STAT. § 49-250(B)(5).
[284] ARIZ. REV. STAT. § 49-250(B)(9).
[285] ARIZ. REV. STAT. § 49-250(B)(10).
[286] ARIZ. REV. STAT. § 49-250(B)(11).
[287] ARIZ. REV. STAT. § 49-243(A)(1)-(10).
[288] ARIZ. REV. STAT. § 49-243(A)(1)-(10).
[289] ARIZ. REV. STAT. § 49-243(A)(1)-(10).
[290] ARIZ. ADMIN. CODE § R18-9-A209(C).
[291] ARIZ. REV. STAT. § 49-243(N)(2).
[292] ARIZ. ADMIN. CODE § R18-9-A201(B) (compliance, cost estimates, applicable fee); § R18-9-A202 (technical information); § R18-9-A204 (contingency plan).
[293] ARIZ. ADMIN. CODE § R18-9-A203(B)-(C).
[294] ARIZ. ADMIN. CODE § R18-9-A203(B)-(C).
[295] ARIZ. REV. STAT. § 49-243(N)(4).

Consolidated and General Permits:
The consolidation of individual permits or coverage of an entire facility is allowed under the APP.[296] "The director may issue a single area-wide permit applicable to facilities under common ownership and located in a contiguous geographic area in lieu of an individual permit for each facility."[297]

In addition, the Director may issue a general permit for a class of facilities if certain conditions apply.[298] There are four general permit types, which may require the filing of a Notice of Intent to Discharge and receipt of a Discharge Authorization before discharging.[299] The types of general permit that are potentially applicable to hardrock mining facilities include Type 2: Intermediate Stockpiles at Mining Sites,[300] Type 3: Non-Stormwater Impoundments at Mining Sites,[301] and Type 3: Constructed Wetlands to Treat Acid Rock Drainage at Mining Sites.[302]

Each type has different requirements for discharge. Type 2 facilities must meet the applicable general requirements and the specific terms for the class of permit, provide a Notice of Intent to Discharge, and pay the fee.[303] Type 3 facilities must meet the applicable general requirements and the specific terms for the class of permit, provide a Notice of Intent to Discharge, receive a Written Discharge Authorization, and pay the fee. [304]

For general permits, "[u]nless a Discharge Authorization under a general permit is transferred, revoked, or expired, a person may discharge under the general permit for the authorization period."[305] For Type 2 site, the duration of the general permit is seven years; and for the relevant Type 3 sites, the duration is five years. [306] While general permits can be transferred, there are some requirements.[307]

Temporary Individual Permits:
Temporary individual permits are available under the APP for either a pilot project to develop data for a full APP application or for a facility with a discharge lasting no more than six months.[308] Temporary individual permit applications require the same preliminary application information as a regular individual permit.[309] A temporary individual permit lasts one year unless it is renewed; it can only be renewed once. [310] In addition, the public participation requirements are postponed for no more than 30 days from the date on the individual permit. [311]

Standards for Issuance or Denial:
Under the APP, for individual permits, facilities must meet the best available demonstrated control technology (BADCT) standard. A permit shall be issued if the owner or operator demonstrates that the

[296] Ariz. Admin. Code § R18-9-107.
[297] Ariz. Rev. Stat. § 49-243(P).
[298] Ariz. Rev. Stat. § 49-245.
[299] Ariz. Admin. Code § R18-9-A301(A).
[300] Ariz. Admin. Code § R18-9-C302.
[301] Ariz. Admin. Code § R18-9-D304.
[302] Ariz. Admin. Code § R18-9-D306.
[303] Ariz. Admin. Code § R18-9-A301(A)(2), (3).
[304] Ariz. Admin. Code § R18-9-A301(A)(2), (3).
[305] Ariz. Admin. Code § R18-9-A303.
[306] Ariz. Admin. Code § R18-9-A303.
[307] Ariz. Admin. Code § R18-9-A304(B).
[308] Ariz. Admin. Code § R18-A210.
[309] Ariz. Admin. Code § R18-A210.
[310] Ariz. Admin. Code § R18-A210.
[311] Ariz. Admin. Code § R18-A210.

facility will be designed, constructed, and operated "as to ensure the greatest degree of discharge reduction achievable through application of the best available demonstrated control technology, processes, operating methods or other alternatives, including, where practicable, a technology permitting no discharge of pollutants."[312] An individual APP permit is "valid for the operation life of the facility and any period during which the facility is subject to a post-closure plan"[313] An individual permit shall be issued if the director of ADEQ determines that the applicant will comply with applicable APP laws and regulations.[314] The director of ADEQ must issue their decision within the applicable timeframe.[315] In addition, the director may expedite the processing of a permit for a new facility that meets certain criteria.[316]

A permit for a facility may be denied "if the director [of ADEQ] determines that the applicant is incapable of fully carrying out the terms and conditions of the permit, including any conditions that require monitoring or installing and maintaining discharge control measures."[317] If the application is denied, the applicant has the right to appeal and the right to request an informal settlement conference.[318] In addition, the director of ADEQ must provide reason for denial with reference to the statute or rule on which denial is based.[319]

The director of ADEQ may also amend an individual permit based upon request or the director's initiative.[320] In addition, the director of ADEQ is required to amend a permit in certain circumstances.[321] The director may amend a permit for transfer to a new owner or operator.[322]

Appropriations of Surface Water:

Appropriation of water for mining purposes is a recognized beneficial use in Arizona and requires an application for a permit to appropriate.[323] An application for a permit to appropriate has some general requirements.[324] These requirements include information about the applicant and information about the appropriation and use.[325] An application for appropriation for mining purposes also has specific requirements, including information about the location and character of the mines and the methods of supplying and utilizing the waters.[326] In addition, if reservoir construction is contemplated, the applicant must also comply with specific requirements for reservoir permits.[327]

[312] ARIZ. REV. STAT. § 49-243(B)(1).
[313] ARIZ. ADMIN. CODE § R18-A201F.
[314] ARIZ. ADMIN. CODE § R18-9-A201(G).
[315] ARIZ. ADMIN. CODE tit. 18, art. 5, table 10.
[316] ARIZ. REV. STAT. § 49-243(Q).
[317] ARIZ. REV. STAT. § 49-243(N).
[318] ARIZ. ADMIN. CODE § R18-9-A201(G)(2).
[319] ARIZ. ADMIN. CODE § R18-9-A201(G)(2).
[320] ARIZ. ADMIN. CODE § R18-A211(A).
[321] ARIZ. ADMIN. CODE § R18-A211(B).
[322] ARIZ. ADMIN. CODE § R18-A212.
[323] U.S. DEP'T OF INTERIOR, ARIZONA MINING PERMITTING GUIDE 53 (2017).
[324] ARIZ. REV. STAT. § 45-152(A).
[325] ARIZ. REV. STAT. § 45-152(A).
[326] ARIZ. REV. STAT. § 45-152(B)(5).
[327] ARIZ. REV. STAT. § 45-161.

Permit applications must be approved by the director.[328] Permits are assessed based on potential conflicts with vested water rights, potential threats to public safety, and potential threats to public interest and welfare.[329]

Withdrawal and Use of Groundwater:
Outside of active management areas, groundwater may be used for any reasonable and beneficial use.[330] Inside active management areas, groundwater may be withdrawn and used only in accordance with the allocation and use concepts within Arizona's Groundwater Code.[331] To obtain groundwater rights for mining operations, an owner or operator must obtain a Groundwater Withdrawal Permit with some exceptions.[332] Groundwater Withdrawal Permits are issued for a specific duration and amount of water, and there is a specific category for mineral extraction and metallurgical processing.[333] A permit to withdraw groundwater for the extraction and processing of minerals must be issued if the applicant meets certain conditions, such as demonstrating a lack of adequate surface water.[334]

Construction or Alteration of Dams:
"It is unlawful to construct, repair, operate, maintain, enlarge, remove or alter any dam except upon approval of the director."[335] A dam is "[a]ny artificial barrier, including appurtenant works for the impounding or diversion of water except those barriers for the purpose of controlling liquid borne material, 25 or more feet in height or the storage capacity of which will be more than 50 acre feet, but does not include any such barrier which is or will be less than six feet in height, regardless of storage capacity, or which has or will have a storage capacity not in excess of 15 acre feet, regardless of height."[336] The director has some ability to enforce remedial actions when a dam is determined to be dangerous.[337]

Wildlife Permits

While there are no state wildlife permits issued for mining, Arizona's Fish and Game Department acts as a consultant in the mine permitting process to minimize project impacts to wildlife resources.[338]

Waste Permits

Hazardous and Solid Waste:
Under Arizona's Pollution Prevention Program, mining and metallurgical operations that are also large quantity hazardous waste generators or that are required to submit a "Form R" toxic chemical release report are subject to annual toxic data reporting.[339]

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[328] ARIZ. REV. STAT. § 45-153(A).
[329] ARIZ. REV. STAT. § 45-153(A).
[330] U.S. DEP'T OF INTERIOR, ARIZONA MINING PERMITTING GUIDE 55 (2017).
[331] U.S. DEP'T OF INTERIOR, ARIZONA MINING PERMITTING GUIDE 55 (2017); *see* ARIZ. REV. STAT. §§ 45-401 – 45-704 (Groundwater Code).
[332] U.S. DEP'T OF INTERIOR, ARIZONA MINING PERMITTING GUIDE 55 (2017).
[333] U.S. DEP'T OF INTERIOR, ARIZONA MINING PERMITTING GUIDE 55 (2017); *See* ARIZ. REV. STAT. § 45-514.
[334] ARIZ. REV. STAT. § 45-514.
[335] ARIZ. REV. STAT. § 45-1202.
[336] ARIZ. REV. STAT. § 45-1201.
[337] ARIZ. REV. STAT. § 45-1212.
[338] U.S. DEP'T OF INTERIOR, ARIZONA MINING PERMITTING GUIDE 160 (2017).
[339] ARIZ. REV. STAT. § 49-962 (Supp. 1994-1995).

Air Permits

If a mining operation has a boiler and generator, it may need an air quality individual permit.[340] In addition, an installation permit is required for new mines before installing, replacing, or making a major alteration to any machine, equipment, or other device that may cause air pollution.[341]

Design and Performance Standards

Aquifer Protection Permit Program:

Individual Permits:
Under the Aquifer Protection Permit Program (APP), facilities must meet a best available demonstrated control technology (BADCT) standard. A permit must be issued if the owner or operator demonstrates that the facility will be designed, constructed, and operated "as to ensure the greatest degree of discharge reduction achievable through application of the best available demonstrated control technology, processes, operating methods or other alternatives, including, where practicable, a technology permitting no discharge of pollutants."[342] In determining BADCT, "the director shall take into account any treatment process contributing to the discharge, site specific hydrologic and geologic characteristics and other environmental factors, the opportunity for water conservation or augmentation and economic impacts of the use of alternative technologies, processes or operating methods on an industry-wide basis."[343]

The director can set BADCT by rule for a class of facilities which provides a presumption that, if applicants incorporate the controls established in the BADCT rule, the applicant has demonstrated the requirements.[344] For example, the director has established BADCT by rule for sewage treatment facilities.[345]

Applicants must demonstrate either "[t]hat pollutants discharged will in no event cause or contribute to a violation of aquifer water quality standards at the applicable point of compliance for the facility" or "[t]hat no pollutants discharged will further degrade at the applicable point of compliance the quality of any aquifer that at the time of the issuance of the permit violates the aquifer quality standard for that pollutant."[346]

[340] *Permit(s) Needed for Mining*, Ariz. Dep't of Env't Quality, https://www.azdeq.gov/permits-needed-mining (last updated Sept. 17, 2024).
[341] Ariz. Rev. Stat. § 49-426 (Supp. 1994-1995).
[342] Ariz. Rev. Stat. § 49-243(B)(1).
[343] Ariz. Rev. Stat. § 49-243(B)(1).
[344] Ariz. Rev. Stat. § 49-243.01.
[345] Ariz. Admin. Code § R18-9-B201.
[346] Ariz. Rev. Stat. § 49-243(B)(2)-(3).

General Permit:
Under a general permit, the standard applicants must demonstrate is meeting the best management practices appropriate to the class of discharges to be regulated.[347] For Type 2: Intermediate Stockpiles at Mining Sites, these include design and operational requirements.[348] For both Type 3: Non-Stormwater Impoundments at Mining Sites and Type 3: Constructed Wetlands to Treat Acid Rock Drainage at Mining Sites, these include design, construction, installation, and operational requirements.[349]

Monitoring Requirements

Aquifer Protection Permit Program:
Under the APP, monitoring may be required to assure compliance with APP conditions and with applicable Aquifer Water Quality Standards.[350] If monitoring is required, the director must specify the type, method, frequency, and technical requirements.[351] A permit holder must engage in any and all monitoring and recordkeeping requirements as required in their individual permit.[352] "The director shall consider and may prescribe in the permit" certain compliance-related requirements.[353] These can include monitoring requirements, record keeping and reporting requirements, contingency plan requirements, discharge limitations, compliance schedule requirements, "closure requirements and, for a facility that cannot achieve clean closure, post-closure monitoring and maintenance requirements," "alert levels that, when exceeded, may require adjustments of permit conditions or appropriate actions as are required by the contingency plans," or other terms and conditions as the director deems necessary to ensure compliance with the APP.[354] However, a permit holder can apply for a temporary emergency waiver of any imposed requirements.[355]

There are also some additional reporting and recordkeeping requirements for certain general permits,[356] and some general permit facilities may be inspected as part of a review for discharge authorization.[357]

In addition, the APP prescribes some specific reporting and recording keeping requirements. A permit holder "shall notify the Department within five days after becoming aware of a violation of a permit condition or that an alert level was exceeded. The permittee shall inform the department whether the contingency plan . . .was implemented."[358] The permittee must also submit a written report to the department within 30 days of becoming aware of a violation of a permit condition.[359] In addition, the permittee must notify the director within five days of the permittee's filing of bankruptcy or order or judgment against the permittee for violation of any environmental statute or rule.[360]

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[347] Ariz. Rev. Stat. § 49-246.
[348] Ariz. Admin. Code § R18-9-C302(C).
[349] Ariz. Admin. Code § R18-9-D304(C), (D); Ariz. Admin. Code § R18-9-D306(C), (D).
[350] Ariz. Admin. Code § R18-9-A206(A)(1).
[351] Ariz. Admin. Code § R18-9-A206(2).
[352] Ariz. Admin. Code § R18-9-A206(B).
[353] Ariz. Rev. Stat. § 49-243(K)(1)-(8).
[354] Ariz. Rev. Stat. § 49-243(K)(1)-(8).
[355] Ariz. Rev. Stat. § 49-251.
[356] Ariz. Admin. Code §§ R18-9-D304(E), (F), D306(E), (F).
[357] Ariz. Admin. Code § R18-9-A301(C)(1).
[358] Ariz. Admin. Code § R18-9-A207(A).
[359] Ariz. Admin. Code § R18-9-A207(B).
[360] Ariz. Admin. Code § R18-9-A207(C).

Mined Land Reclamation Act:
Under the MLRA, the state mine inspector may enter and inspect an exploration operation or mining facility to determine compliance with MLRA.[361]

Closure and Reclamation Requirements

Aquifer Protection Permit Program:
In order to close a facility under the APP, the owner or operator must notify the director of their intent to permanently cease activity. [362] Within 90 days of this notification, the owner or operator must submit a closure plan. [363] The closure plan should include a site investigation plan, closure design, an estimate of cost of closure, and a schedule for implementation[364] Within 60 days of the submittal of a closure plan, director shall determine whether closure plan is adequate (clean closure). [365] If the closure plan is adequate, the director shall send a letter of approval, and no aquifer protection permit shall be required.[366] However, if the closure plan is not adequate, the owner or operator must submit an application for an aquifer protection permit or request to modify a current permit in order to address closure activities.[367]

There are also additional requirements for general permits.[368] There are both general requirements and requirements specific to each type.[369]

Mined Land Reclamation Act (MLRA):
The MLRA requires that the state mine inspector approve a reclamation plan and financial assurance mechanism for a mining exploration or operation before an owner or operator may make a surface disturbance of more than five contiguous acres.[370] However, nothing in the MLRA "shall prevent an owner or operator of an exploration operation or mining unit from creating a surface disturbance of five contiguous acres or less."[371] In addition, no notice or approval of a reclamation plan or financial assurance is needed before creating a surface disturbance pursuant to "a remedial action in response to an emergency or to a government order to prevent or mitigate an actual or potential release of pollutants into the environment."[372] If the operation is located in part or in whole on federal land, the owner or operator can request supersedure of federal reclamation requirements.[373]

Exploration operations are "activities that create surface disturbances outside a mining facility and that are conducted to determine the presence, location, extent, depth or grade of minerals, including

[361] Ariz. Rev. Stat. § 27-1021.
[362] Ariz. Rev. Stat. § 49-252.
[363] Ariz. Rev. Stat. § 49-252.
[364] Ariz. Admin. Code § R18-9-A209(B)(3).
[365] Ariz. Rev. Stat. § 49-252.
[366] Ariz. Rev. Stat. § 49-252.
[367] Ariz. Rev. Stat. § 49-252.
[368] Ariz. Admin. Code § R18-9-A306.
[369] Ariz. Admin. Code § R18-9-A306.
[370] Ariz. Rev. Stat. § 27-921.
[371] Ariz. Rev. Stat. § 27-923.
[372] Ariz. Rev. Stat. § 27-925.
[373] Ariz. Admin. Code § R11-2-204.

constructing access roads and drill pads."[374] A mining unit or mining operation is "an individual portion of a mining facility that encompasses one or more surface disturbances."[375]

The state mine inspector must approve any substantial changes made to a reclamation plan.[376] Changes that are not substantial only require an owner or operator to amend the plan and modify the financial assurance as necessary.[377] These non-substantial changes include new surface disturbances that can be reclaimed in a manner that is substantially similar to the manner of reclamation included in the approved plan, changes in the specific techniques for reclamation, changes in location, and configuration or acreage of surface disturbances unless the changes substantially affect the reclamation measures.[378] In addition, a reclamation plan may be transferred if the owner or operator notifies the state mine inspector.[379] The transfer may be denied if the transferee is not capable of operating in compliance with the MLRA.[380]

Standards for Approval or Denial of a Plan:
There are some standards that apply to both exploration operations and mining operations. First, if a reclamation plan is denied, the owner or operator may request a hearing.[381] Second, the state mine inspector must notify the operator whether a plan is complete or not within 30 days of receiving the plan.[382] Third, the state mine inspector must give reasons for an incomplete designation or denial and include recommendations for correcting incomplete or unacceptable parts of the plan.[383] The owner or operator then has 90 days to refile unless another time frame is agreed upon.[384]

For exploration operations, the state mine inspector must approve the plan within 60 days of receiving the plan if the plan meets the necessary requirements.[385] Operations may begin once both of the following occur: (1) upon approval or 90 days after the inspector receives a reclamation plan if the inspector fails to notify that plan is incomplete or denied; (2) financial assurance has been submitted.[386] Approval of a reclamation plan is renewable annually.[387]

For mining operations, the state mine inspector must approve or deny a plan within 120 days from receiving the complete plan.[388] The inspector must approve a plan if it provides for reclamation measures for surface disturbances that are "[n]ecessary to achieve a safe and stable condition suitable for the post-mining land use objectives stated in the reclamation plan," and "compatible with good engineering practices regarding erosion control and seismic activity for the applicable seismic zone."[389] In making this determination, the inspector "shall consider the technical and economic practicability of the proposed reclamation measures" as well as site-specific circumstances and proposed post-mining land

[374] ARIZ. REV. STAT. § 27-901(4).
[375] ARIZ. REV. STAT. § 27-901(10).
[376] ARIZ. REV. STAT. § 27-927.
[377] ARIZ. REV. STAT. § 27-927(D).
[378] ARIZ. REV. STAT. § 27-927(D).
[379] ARIZ. REV. STAT. § 27-928(A).
[380] ARIZ. REV. STAT. § 27-928(B).
[381] ARIZ. REV. STAT. § 27-933.
[382] ARIZ. REV. STAT. § 27-952(A); ARIZ. REV. STAT. § 27-972(A).
[383] ARIZ. REV. STAT. § 27-952(B); ARIZ. REV. STAT. § 27-972(C).
[384] ARIZ. REV. STAT. § 27-952(B); ARIZ. REV. STAT. § 27-972(C).
[385] ARIZ. REV. STAT. § 27-953.
[386] ARIZ. REV. STAT. § 27-954.
[387] ARIZ. REV. STAT. § 27-955.
[388] ARIZ. REV. STAT. § 27-972(B).
[389] ARIZ. REV. STAT. § 27-973(A).

use objectives.[390] An operator may begin a new mining unit upon both approval of plan or 150 days after the inspector receives a plan if no notice of denial or incompleteness and financial assurance has been submitted.[391]

Plan Requirements:
Operators must pay a submission fee based on "the reasonable direct costs to process, review and approve or deny the plan, but the submission fee shall not exceed three dollars per acre of surface disturbance covered by the plan."[392]

For exploration operations, the plan must identify where operations will be conducted and state the reclamation measures that will be taken.[393] An operator may submit a single plan covering all new and existing exploration operations in the state.[394]

For mining operations, the plan must include information on the operator and the land, proposed reclamation measures, a tentative schedule, and estimated costs of reclamation for the purposes of determining financial assurance.[395] The plan must also include both procedures to aid revegetation consistent with post-mining land use objective[396] and maps of surface disturbances with certain indicators.[397] The reclamation plan remains in effect until reclamation is complete and financial assurance is released.[398]

Reclamation Standards and Requirements:
If practicable, the surface disturbance should be reclaimed concurrently with an exploration operation or at a mining unit. [399] However, if concurrent reclamation is not practicable, reclamation must be initiated within two years after completing the exploration operation or mining unit, within two years after cessation of mining activity, or as required by applicable federal law.[400] However, this timeline can be extended for up to three subsequent five-year periods if the operation is likely to resume.[401] Cessation of mining for the purposes of the MLRA includes all of the following: the person conducting mining activity has gone out of business, no mining activity has taken place within one year from the most recent filed annual status report, the extension of the time to begin reclamation has expired, and the inspector has made written determination that the mine has been abandoned.[402]

Under the MLRA, variances from any rule or plan condition are allowed if the variance will not endanger public safety or be inconsistent with reclamation plan approval criteria.[403] In addition, the inspector may

[390] ARIZ. REV. STAT. § 27-973(B).
[391] ARIZ. REV. STAT. § 27-976.
[392] ARIZ. REV. STAT. § 27-934.
[393] ARIZ. REV. STAT. § 27-951.
[394] ARIZ. REV. STAT. § 27-951.
[395] ARIZ. REV. STAT. § 27-971(B).
[396] ARIZ. ADMIN. CODE § R11-2-501(A).
[397] ARIZ. ADMIN. CODE § R11-2-501(B).
[398] ARIZ. ADMIN. CODE § R11-2-502.
[399] ARIZ. REV. STAT. § 27-926(A).
[400] ARIZ. REV. STAT. § 27-926(A).
[401] ARIZ. REV. STAT. § 27-926(B).
[402] ARIZ. ADMIN. CODE § R11-2-207.
[403] ARIZ. REV. STAT. § 27-931; *see* ARIZ. REV. STAT. § 27-973 (reclamation plan approval criteria).

approve innovative reclamation or other measures if those measures can reasonably be expected to achieve post-mining land use objectives in the plan.[404]

For exploration operations, the plan must cover access roads, holes, drill pads, mud pits, trenches and pits, and cleared areas.[405] Under the plan, the operator must provide for the restriction of public access to open-pits or trenches[406] and removal of trash and other materials that pose a threat to public safety, create a public nuisance, or are inconsistent with the plan.[407]

For mining operations, the post-mining land use objective in the plan need not be the same as the use that existed before the mining facility[408] Under the plan, the operator must provide for certain measures to conserve soil unless one or more factors is met.[409] Reclamation activities must be designed to reduce hazards to public safety to the extent technically and economically practicable.[410] Mining units must be reclaimed to stable condition for erosion and seismic activity.[411] The reclamation of a road "that is not included in the approved reclamation plan as part of the approved post-mining land use shall begin once the road is no longer needed for operations, reclamation, or monitoring." [412] Mining operators must submit an annual status report.[413]

There are several permissible exclusions for mining operations under the MLRA. First, plans can exclude "any provision for reclaiming open[-]pits, rock faces or subsidence areas through backfilling or returning material to the open[-]pit, rock face or subsidence area from which it was extracted if it is impracticable and if public access to the open[-]pit, rock face or subsidence area, including any surrounding unstable areas or walls, is restricted by fencing or other institutional controls"[414] In addition, "[b]uildings and other structures may remain after reclamation if adequate measures are taken to protect public safety."

Hazardous Substance Spills:

For the release of a hazardous substance that could impact public health or the environment, operators must immediately notify local authorities if evacuation of local areas is advisable, immediately notify the ADEQ Emergency Response Unit, immediately notify the National Response Center, and take reasonable steps to ensure releases to do not recure or spread.[415] Within 15 days after an incident, the operator must submit a written report to ADEQ that includes information on the generator; the date, time, and type of incident; the name and quantity of material involved; the extent of injuries, if any; an assessment of actual or potential hazards to public health or the environment; and estimated quantity and disposition of recovered material from the incident.[416]

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[404] ARIZ. REV. STAT. § 27-931(D).
[405] ARIZ. REV. STAT. § 27-953.
[406] ARIZ. ADMIN. CODE § R11-2-401.
[407] ARIZ. ADMIN. CODE § R11-2-402.
[408] ARIZ. REV. STAT. § 27-973(C).
[409] ARIZ. REV. STAT. § 27-974.
[410] ARIZ. ADMIN. CODE § R11-2-601.
[411] ARIZ. ADMIN. CODE § R11-2-602.
[412] ARIZ. ADMIN. CODE § R11-2-603.
[413] ARIZ. ADMIN. CODE § R11-2-504.
[414] ARIZ. REV. STAT. § 27-975(A).
[415] ARIZ. DEP'T OF ENV'T QUALITY, PUB. NO. FS-23-04, EMERGENCY PROCEDURES AND SPILL REPORTING REQUIREMENTS FACT SHEET, https://static.azdeq.gov/wpd/hazwaste/emerprod_spillreport.pdf.
[416] ARIZ. DEP'T OF ENV'T QUALITY, PUB. NO. FS-23-04, EMERGENCY PROCEDURES AND SPILL REPORTING REQUIREMENTS FACT SHEET, https://static.azdeq.gov/wpd/hazwaste/emerprod_spillreport.pdf.

Economic Laws and Regulations

Financial Assurances

Mined Land Reclamation Act:
A financial assurance mechanism for exploration or mining must be approved by the state mine inspector before making a surface disturbance of more than five contiguous acres.[417] The financial assurance may be provided in a variety of forms: surety bond, certificate of deposit, trust fund with pay-in period, letter of credit, insurance policy, certificate of self-insurance, cash deposit with the state treasurer, evidence of ability to meet a corporate financial test or corporate guarantee, annuities, and additional mechanisms that are acceptable to the inspector.[418] Specific rules apply to each form.[419]

In addition, the financial assurance may be provided by the owner, operator, or any third party, or any combination.[420] The operator must submit the mechanism within 60 days after plan approval, and the inspector must take final action within 30 days of receiving the mechanism.[421]

There are a number of exceptions and modifications that apply. Financial assurance that duplicates financial assurance required under other state or federal laws is not required under the MLRA.[422] In addition, "[a]n owner or operator may provide financial assurance under [the MLRA] on an incremental basis for planned surface disturbances described in the reclamation plan."[423] The "amount [of the incremental assurance] shall be equal to or greater than the estimated cost of reclamation for surface disturbances created during that increment."[424] Further, "[w]henever [two] or more persons or entities are named as owners or operators in a single exploration operation or mining unit, the owners or operators may limit the scope of their individual financial assurances so long as their financial assurances, in total, assure performance of all conditions and requirements of the Act, this Chapter, and the approved reclamation plan."[425]

Cost of Reclamation and Amount of Mechanism:
The MLRA proscribes certain calculation requirements for the cost estimate.[426] These include that all activities in the reclamation plan must be addressed in estimating the cost of executing the plan.[427] In addition, the inspector must review the operator's cost estimate and determine if it is adequate. [428] If the cost estimate is not adequate, the reclamation plan is considered incomplete.[429] Each financial mechanism must provide the amount in current dollars equal to the cost to perform the approved reclamation measures in the plan and continued care and monitoring for revegetation for no more than

[417] Ariz. Rev. Stat. § 27-921.
[418] Ariz. Rev. Stat. § 27-991(B).
[419] Ariz. Admin. Code § R11-2-804 – 812.
[420] Ariz. Admin. Code § R11-2-815.
[421] Ariz. Rev. Stat. § 27-992(A).
[422] Ariz. Rev. Stat. § 27-994.
[423] Ariz. Rev. Stat. § 27-995.
[424] Ariz. Admin. Code § R11-2-814.
[425] Ariz. Admin. Code § R11-2-816.
[426] Ariz. Rev. Stat. § 27-992(B).
[427] Ariz. Admin. Code § R11-2-802(A).
[428] Ariz. Admin. Code § R11-2-802(C).
[429] Ariz. Admin. Code § R11-2-802(C).

three growing seasons with certain exceptions.[430] The inspector must adjust the amount of financial assurance every five years or as often as necessary.[431]

The MLRA allows for blanket financial assurance. "A single financial assurance mechanism covering [two] or more mining units or facilities may be provided by an owner or operator instead of separate financial assurances for each unit or facility. If an owner or operator provides a single financial assurance mechanism, it shall demonstrate the financial ability to fulfill the aggregate reclamation costs of the mining units or facilities covered by the single financial assurance mechanism."[432]

For exploration operations, the operator must provide financial assurance of $2,000/acre of new surface disturbance, unless the inspector approves a cost estimate less than this amount. [433] In addition, an operator may provide a single mechanism for all its exploration operations in the state.[434]

The operator can apply and receive a release of all or part of the financial assurance.[435] The application must describe the reclamation measures performed, describe the planned surface disturbances not conducted, and contain a cost estimate of costs not performed.[436] However, the financial assurance is subject to forfeiture under certain conditions.[437]

Aquifer Protection Permit Program (APP):
The APP requires a demonstration of financial capability.[438] An applicant for an individual permit "shall demonstrate financial capability to construct, operate, close, and ensure proper post-closure care of the facility."[439] Many different mechanisms are accepted to cover this financial assurance obligation.[440]

Leasing and Rentals

In Arizona, mineral leases for state lands are issued for a period of 20 years with a preferred right to renew the lease for an additional term of 20 years.[441] Mineral leases grant an exclusive right to conduct mining operations on the land covered in the lease.[442] In applying for a mineral lease, an owner or operator must submit a Mineral Development Report (MDR).[443] The MDR is a document comprised of a geological evaluation, economic feasibility, environmental assessment, mine operations plans, and reclamation and closure plans.[444]

[430] ARIZ. REV. STAT. § 27-992(C).
[431] ARIZ. REV. STAT. § 27-992(D).
[432] ARIZ. ADMIN. CODE § R11-2-803.
[433] ARIZ. REV. STAT. § 27-993.
[434] ARIZ. REV. STAT. § 27-993.
[435] ARIZ. REV. STAT. § 27-996.
[436] ARIZ. REV. STAT. § 27-996(A).
[437] ARIZ. ADMIN. CODE § R11-2-818 – 821.
[438] ARIZ. ADMIN. CODE § R18-9-A203(B).
[439] ARIZ. ADMIN. CODE § R18-9-A203(B).
[440] ARIZ. ADMIN. CODE § R18-9-203(C).
[441] U.S. DEP'T OF INTERIOR, ARIZONA MINING PERMITTING GUIDE 20 (2017).
[442] U.S. DEP'T OF INTERIOR, ARIZONA MINING PERMITTING GUIDE 20 (2017).
[443] U.S. DEP'T OF INTERIOR, ARIZONA MINING PERMITTING GUIDE 20 (2017).
[444] U.S. DEP'T OF INTERIOR, ARIZONA MINING PERMITTING GUIDE 20 (2017).

An owner or operator must pay an application fee of $500 for each mineral lease application.[445] In addition, the lessee is also required to pay for an appraisal of the property, typically between $5,000 and $8,000.[446] Rents and royalties are based on this appraisal.[447]

Production Royalties

In Arizona, the state charges royalties in the form of rents for mining on state lands.[448] "Rents are typically assessed at 5[%] of land value while production royalties range from [2%] to [8%] of gross mineral values."[449] "A minimum annual royalty, based on the proposed production, is required."[450]

Taxation Scheme

Mining operations are subject to a taxation privilege tax under the mining classification.[451] However, this tax only applies to non-metal minerals mining including oil, natural gas, limestone, sand, gravel, shale, clay, gypsum, building stone, cinders, and flux.[452] In addition, mining operations are subject to severance taxes.[453] A severance tax is an excise tax levied on natural resources "severed" from the earth.[454] The amount of the severance tax is determined by multiplying the net severance base by 2.5%.[455] The net severance base is 50% of the difference between the gross value of production and the production costs.[456]

Water Quality Fee Fund

Under the Aquifer Protection Permit (APP) program, fees collected pursuant to the program are deposited in the water quality fee fund.[457]

Social Laws and Regulations

Public Participation

Aquifer Protection Permit Program (APP):
The APP requires notification of individual permit applications, preliminary and final decisions on individual and temporary permits, closure plans, significant permit amendments, permit revocations, and clean closure approvals.[458] Public notice requirements do not apply to general permits.[459] ADEQ will provide written notification to county public health or environmental services departments, agencies at

[445] U.S. Dep't of Interior, Arizona Mining Permitting Guide 20 (2017).
[446] U.S. Dep't of Interior, Arizona Mining Permitting Guide 20 (2017).
[447] U.S. Dep't of Interior, Arizona Mining Permitting Guide 20 (2017).
[448] U.S. Dep't of Interior, Arizona Mining Permitting Guide 20 (2017).
[449] U.S. Dep't of Interior, Arizona Mining Permitting Guide 20 (2017).
[450] U.S. Dep't of Interior, Arizona Mining Permitting Guide 20 (2017).
[451] Ariz. Dep't of Revenue, Pub. 613, Mining/Nonmetal (Revised Feb. 2017).
[452] Ariz. Dep't of Revenue, Pub. 613, Mining/Nonmetal (Revised Feb. 2017).
[453] U.S. Dep't of Interior, Arizona Mining Permitting Guide 178 (2017).
[454] U.S. Dep't of Interior, Arizona Mining Permitting Guide 178 (2017).
[455] Ariz. Rev. Stat. § 42-5202.
[456] Ariz. Rev. Stat. § 42-5202.
[457] Ariz. Rev. Stat. § 49-210.
[458] Ariz. Admin. Code § R18-9-108.
[459] Ariz. Admin. Code § R18-9-108.

any level of government that may be affected by the permit action, and any person who requested in writing to be notified. [460] In addition, for all requests for a determination that there will be no migration of pollutants from a facility, "[t]he director shall provide public notice and an opportunity for public comment,"[461] and "[a] public hearing may be held at the discretion of the director if sufficient public comment warrants a hearing."[462]

In addition, annually, the fee schedule for APP applications is made available to the public on request and on ADEQ's website; and a list of the names and locations of the facilities that have filed APP applications, with the status of each application, is available to the public on request.[463]

The issuance of a preliminary decision requires notice, comment, and possibly a public hearing.[464] ADEQ must "publish a Notice of Preliminary Decision regarding the issuance or denial of a significant permit amendment or a final permit determination in one or more newspapers of general circulation where the facility is located." [465] ADEQ must also notify all commenters or attendees of a public hearing the final permit determination. [466] ADEQ is required to accept written comments from the public before a significant permit amendment or a final permit determination is made.[467] The comment period lasts 30 days, and the department must respond in writing to all comments submitted.[468] In addition, ADEQ "shall provide notice and conduct a public hearing to address a Notice of Preliminary Decision . . . if: significant public interest in a public hearing exists," or significant new issues or information has been brought to the attention of the department. However, public participation requirements do not apply to general permits.

Mined Land Reclamation Act (MLRA):

The MLRA has some notice requirements for a proposed reclamation plan or substantial change to an approved reclamation plan.[469] In addition, any person who may be adversely affected may file a written objection within 15 days after last notice publication.[470] However, the objection must be limited to whether the plan meets the criteria for approval in the MLRA.[471] Further, any person who may be adversely affected may request a public hearing.[472] If there is sufficient public interest, the inspector may hold a public hearing.[473]

The MLRA also has some requirements related to the public disclosure of information. "The state mine inspector shall make available to the public any records, reports or information obtained or prepared by the inspector, unless a notice accompanying the information or any part of the information states that the information is a trade secret or is otherwise confidential to the party's competitive position."[474] "If

[460] ARIZ. ADMIN. CODE § R18-9-108.
[461] ARIZ. REV. STAT. § 49-241(C).
[462] ARIZ. REV. STAT. § 49-241(C).
[463] ARIZ. REV. STAT. § 49-241(D).
[464] ARIZ. ADMIN. CODE § R18-9-109.
[465] ARIZ. ADMIN. CODE § R18-9-109.
[466] ARIZ. ADMIN. CODE § R18-9-109.
[467] ARIZ. ADMIN. CODE § R18-9-109.
[468] ARIZ. ADMIN. CODE § R18-9-109.
[469] ARIZ. REV. STAT. § 27-929(A).
[470] ARIZ. REV. STAT. § 27-929(B).
[471] ARIZ. REV. STAT. § 27-929(C).
[472] ARIZ. REV. STAT. § 27-929(B).
[473] ARIZ. REV. STAT. § 27-929(D).
[474] ARIZ. REV. STAT. § 27-930.

the inspector, on his own or following a request for disclosure, disagrees with the trade secret or confidential notice, the inspector may request the attorney general to seek a court order authorizing disclosure."[475]

AZPDES:

For individual permits under AZPDES, the Director must provide notice that a draft permit has been prepared or that an application has been tentatively declined.[476] General permits require notice of draft permit in the Arizona administrative register.[477] The Director also must provide notice about final permit determinations.[478] Under AZPDES, the comment period begins on the publication date of notice and extends 30 days, but can be extended further. [479] Comments can be made by any interested person.[480] The Director may have a public hearing if significant public interest in a hearing or significant issues or information brought to the attention of the Director that was not considered previously.[481]

[475] ARIZ. REV. STAT. § 27-930(B).
[476] ARIZ. ADMIN. CODE § R18-9-A907(A).
[477] ARIZ. ADMIN. CODE § R18-9-A907(B).
[478] ARIZ. ADMIN. CODE § R18-9-A909(E).
[479] ARIZ. ADMIN. CODE § R18-9-A908(A).
[480] ARIZ. ADMIN. CODE § R18-9-A908(A).
[481] ARIZ. ADMIN. CODE § R18-9-A908(B).

California

Overview of Hardrock Mining in California

California is one of the largest mining states in the United States,[482] with deposits including gold, boron, and lithium.[483] As of 2018, California had 739 mines producing 23 different commodities, generating $7.3 billion in labor income, $13.6 billion in GDP, and nearly 100,000 direct and indirect jobs.[484]

Key Agencies, Laws, and Regulations

The primary laws governing hardrock mining in California are the Surface Mining and Reclamation Act (SMARA) and the Porter-Cologne Water Quality Act. SMARA provides the state's comprehensive surface mining and reclamation policy and encourages production, conservation, and protection of the state's mineral resources. The Porter-Cologne Water Quality Act sets design, monitoring, and other requirements for mining waste including waste piles, surface impoundments, and tailings ponds. Additionally, the Alquist-Priolo Earthquake Fault Zoning Act and the Seismic Hazards Act address the threats posed by seismic activity.

Mining in California is regulated by a multiplicity of local and state agencies, boards, and governmental actors. Key among them are the California Department of Conservation (CDC), California State Mining and Geology Board (CSMGB), California Department of Water Resources (CDWR), California State Water Board (CSWB), and California Department of Fish and Game (CDFG). The CDC is responsible for SMARA administration and implementation of state policy promulgated by the CSMGB. The CDWR houses the Dam Safety Division, and the CDFG manages the permitting of stream alterations and diversions. The CSWB is the primary agency for regulating water quality and quantity and manages permitted discharges.

Environmental Laws and Regulations

Permits and Approvals Required

Land Use Permits

Exploration Permit:
Before geophysical and geological surveys on state land may be conducted, an exploration permit must be obtained.[485] The permit application must include a description and map of the lands involved, the name, address, and status of citizenship of the applicant, a description of the proposed survey methods, the dates when the survey will begin and end, and the purpose of the survey.[486]

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[482] *The Golden State: A Closer Look at Mining in California*, Mining (May 12, 2021), https://www.mining.com/web/the-golden-state-a-closer-look-at-mining-in-california/.
[483] *The Mineral Industry of California*, U.S. Geological Survey, https://www.usgs.gov/centers/national-minerals-information-center/mineral-industry-california (last visited Dec. 12, 2024); Nina Raffio, *'Lithium Valley': Inside California's 'White Gold' Rush* (Dec. 7, 2023), https://today.usc.edu/salton-sea-lithium-valley-white-gold/.
[484] *The Golden State: A Closer Look at Mining in California*, Mining (May 12, 2021), https://www.mining.com/web/the-golden-state-a-closer-look-at-mining-in-california/.
[485] Cal. Code Regs. tit. 2, § 2100; Cal. Pub. Res. Code § 6212.2, 6826.
[486] Cal. Code Regs. tit. 2, § 2100.

Permit to Mine:
Surface mining operations regulated by the Surface Mining and Reclamation Act include the "activities" associated with mining, including removing overburden, open-pit mining, auger mining, dredging, quarrying, surface work incident to an underground mine, in situ processes, production and disposal of mining waste, and exploration and prospecting activities.[487] The application information is specified in the local ordinances subject to the general requirements of SMARA.[488] The operator must submit an application for permit, a reclamation plan, and financial assurances for review by the lead agency.[489] The permit applies to the entire operation.

Water Permits

CWA Section 401 Certifications:
In California, water quality certifications are administered by the State Water Resources Control Board and nine Regional Water Quality Control Boards. California's water quality standards are found in the Water Quality Control Plans adopted by the State Water Resources Control Board and the Regional Boards.[490] Public notice must be provided at least 21 days before action is taken on an application, and the lead water board has discretion as to whether to hold a public hearing.[491]

California's anti-degradation policy applies to surface water and groundwater of quality that meets or exceeds water quality objectives. Where the existing water quality is higher than required, it must be maintained unless the change is consistent with the maximum benefit to the public, it will not unreasonably affect present and anticipated beneficial uses of such water, and will not result in a violation of water quality standards.[492] Additionally, such permitted wastes are required to meet waste discharge requirements that will result in the best practicable treatment or control of the discharge necessary to assure that a pollution or nuisance will not occur and the highest water quality consistent with the maximum benefit to the people of the state will be maintained.[493]

[487] CAL. PUB. RES. CODE § 2735.
[488] CAL. DEP'T OF CONSERVATION, SMARA FAQS, https://www.conservation.ca.gov/dmr/publications/Documents/SMARA%20FAQ.pdf (last visited Dec. 12, 2024) ("City and county "lead agencies" adopt ordinances for land use permitting and reclamation procedures which provide the regulatory framework under which local mining and reclamation activities are conducted. The State Mining and Geology Board (SMGB) reviews these lead agency ordinances to determine whether each ordinance meets or exceeds the California surface mining and reclamation procedures established pursuant to SMARA. If the SMGB determines that a lead agency is not in compliance with SMARA, the SMGB has the authority to exercise any of the powers of that lead agency with respect to surface mining and reclamation, except for permitting authority. The SMGB promulgates regulations to clarify and interpret the SMARA's provisions, and also serves as a policy and appeals board.").
[489] CAL. PUB. RES. CODE § 2770.
[490] *Water Quality Standards, Plans, and Policies*, CAL. WATER QUALITY MONITORING COUNCIL (last updated Apr. 1, 2016), https://www.mywaterquality.ca.gov/water_quality_standards/index.html; CAL. WATER CODE § 13240.
[491] CAL. CODE REGS. tit. 23, § 3858.
[492] STATE WATERS RESOURCES CONTROL BOARD, RESOLUTION NO. 68-16, STATEMENT OF POLICY WITH RESPECT TO MAINTAINING HIGH QUALITY OF WATERS IN CALIFORNIA (Oct. 28, 1968).
[493] STATE WATERS RESOURCES CONTROL BOARD, RESOLUTION NO. 68-16, STATEMENT OF POLICY WITH RESPECT TO MAINTAINING HIGH QUALITY OF WATERS IN CALIFORNIA (Oct. 28, 1968).

There are currently two Outstanding National Resource Waters designated in California: Lake Tahoe and Lake Mono. Lake Tahoe was designated by the EPA.[494] Lake Mono was designated in 1994 when the CSWB adopted Decision 1631, recognizing the outstanding ecological significance of the lake.[495]

California NPDES Program:
The federally approved NPDES program is implemented through the Porter-Cologne Water Quality Act.

CWA Section 404 Primacy:
California does not have and is not currently pursuing assumption of the CWA Section 404 program.

Dam Safety:
The Division of Dam Safety in the Department of Water Resources is responsible for assuring the safety of dams. An operator needs written approval to construct a dam 25 feet or higher, or that will impound 50 acre-feet or more.[496] Detailed design drawings and site information must be submitted.[497] No application may be approved in fewer than 10 days, but approval or disapproval must occur as soon as practicable thereafter.[498] The process is subject to California Environmental Quality Act (CEQA) review, which may be done by the lead agency in the review of the overall mining project.[499] After approval, the Division must be notified at least 10 days before dam construction begins.[500] Upon completion of construction, the operator must notify the Division and provide copies of as-built drawings and testing information.[501] The Division must inspect the dam and issue a certificate of approval if it is found to be safe.[502] A certificate of approval is required to begin impounding the water, tailings, etc.[503] The certificate of approval may include additional terms and conditions as required by the Division.[504]

Water Appropriations:
Anyone who intends to appropriate water must first file an application with the appropriate water board.[505] An application is reviewed for substantial compliance with the requirements of the California Water Code.[506] Substantial compliance is defined as a "good faith attempt to conform to the rules and regulations of the board and to the law, and the information submitted and the form of submission are sufficient in view of the particular circumstances to fulfill the purpose of the requirements."[507] When deciding on an application, the state policy is to reduce the volume of the appropriation to the extent reasonable where water is available through reuse or reclamation.[508]

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[494] *About Lake Tahoe*, ENV'T PROT. AGENCY, https://www.epa.gov/lake-tahoe/about-lake-tahoe (last visited Dec. 12, 2024).
[495] Cal Water Resources Control Board, Mono Lake Basin Water Right Decision 1631: Decision and Order Amending Water Right Licenses to Establish Fishery Protection Flows in Streams Tributary to Mono Lake and to Protect Trust Resources at Mono Lake and in the Mono Lake Basin (Sept. 28, 1994).
[496] CAL. WATER CODE § 6002.
[497] CAL. WATER CODE § 6202-6206; CAL. CODE REGS. tit. 23, § 310.
[498] Cal. WATER CODE § 6263.
[499] CAL. CODE REGS. tit. 23, § 310(f).
[500] CAL. WATER CODE § 6267.
[501] CAL. WATER CODE § 6350.
[502] CAL. WATER CODE §§ 6354, 6355.
[503] CAL. WATER CODE § 6355.
[504] CAL. WATER CODE § 6357.
[505] CAL. CODE REGS. tit. 23, § 650.
[506] CAL. CODE REGS. tit. 23, § 675.
[507] CAL. CODE REGS. tit. 23, § 675.
[508] CAL. CODE REGS. tit. 23, § 651.

Wildlife Permits

California Endangered Species Act:
The California Endangered Species Act protects plant and animal species at risk of extinction. Plant and animal species may be designated as threatened or endangered under the Act after going through the formal listing process managed by the California Fish and Game Commission.[509] Currently, there are approximately 250 listed species,[510] including coho salmon and chinook salmon.[511] A protected species may not be imported into the state, exported out of the state, taken (e.g., killed), possessed, purchased, or sold without a permit.[512] There are specific provisions for Chinook salmon as an experimental population under the federal Endangered Species Act.[513]

Lake and Streambed Alteration Agreements:
No one may "substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material […] where it may pass into any rivers, stream, or lake" before providing written notification to the Department of Fish and Wildlife.[514] If the Department finds that the activity may "substantially adversely affect an existing fish or wildlife resource," then an Alteration Agreement is required and must include reasonable measures necessary to protect the resource.[515]

Waste Permits

Waste Discharges:
Chapter 15 of the Porter-Cologne Water Quality Act concerns waste discharges to land that may affect the waters of the state.[516] It covers waste piles, surface impoundments, and tailings ponds.[517]

An operator must submit a Report of Waste Discharge to the Regional Water Quality Control Board before engaging in any discharge of mining waste to land. The report must contain information on "waste characteristics, geologic and climatologic characteristics of the unit and the surrounding region, installed features, operation plans for waste containment, precipitation and drainage controls, and closure and post[-]closure maintenance plans."[518] The operator must also submit a report on the characteristics of the waste that could affect its potential to cause pollution, including test results to assess hazard and toxicity, information concerning acid-generating potential and persistence of toxins after disposal, and the potential for long-term acid mine drainage, discharge or leaching of heavy metals, or the release of other hazardous substances."[519]

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[509] CAL. FISH & GAME CODE § 2070.
[510] *Threatened and Endangered Species*, CAL. DEP'T OF FISH AND WILDLIFE, https://wildlife.ca.gov/Conservation/CESA (last visited Dec. 12, 2024).
[511] CAL. DEP'T OF FISH AND WILDLIFE, STATE AND FEDERALLY LISTED ENDANGERED AND THREATENED ANIMALS OF CALIFORNIA (Oct. 2024).
[512] CAL. FISH & GAME CODE § 2080.
[513] CAL. FISH & GAME CODE §§ 2080.2 – 2080.4. An experimental population is a geographically-described group that is isolated from other existing populations of the species. This designation allows NOAA Fisheries and the U.S. Fish & Wildlife Service to reestablish self-sustaining populations in regions outside of the species' current range.
[514] CAL. FISH & GAME CODE § 1602.
[515] CAL. FISH & GAME CODE § 1602.
[516] Although Chapter 15 is predicated upon discharges of "waste", the regional boards take the position that it gives them authority to regulate "process" ponds and other units that may pose a threat to water quality. "Waters of the state" means any surface water or groundwater within the boundaries of the state.
[517] CAL. WATER CODE § 13050(q)(1).
[518] CAL. CODE REGS. tit. 23, § 2590(a).
[519] CAL. WATER CODE § 13260(k).

A Report of Waste Discharge must be submitted at least 120 days before any potential discharge.[520] After reviewing the report and requesting additional information or testing if needed, the Regional Water Quality Control board issues draft waste discharge requirements that prescribe the design, construction, and operation of the waste units; the monitoring program; financial assurance; and closure and post-closure plans.[521]

In issuing final waste discharge requirements, the regional board must determine that the proposed discharge is "consistent with a waste management strategy that prevents the pollution or contamination of the waters of the state, particularly after closure of any waste management unit for mining waste."[522]

Air Permits

Air quality regulation and permitting is directly administered by Air Pollution Control Districts, subject to oversight by the State Air Resources Board. The districts establish permit requirements for operations "that may cause the issuance of air contaminants."[523] The standards vary district by district but must comport with the district's air quality management plan, the state implementation plan, and the requirements of the federal Clean Air Act.

Design and Performance Standards

Surface Mining and Reclamation Practice:
California's Code of Regulations includes a set of minimum acceptable practices that must be implemented throughout surface mining operations.[524]

- Soil Erosion Control: The removal of vegetation and overburden shall be minimized, management of stockpiles of overburden and minerals shall reduce erosion, and erosion control facilities shall be utilized where necessary.
- Water Quality and Watershed Control: Settling ponds shall be constructed to prevent sedimentation, and operations shall substantially prevent siltation of groundwater recharge areas.
- Protection of Fish and Wildlife Habitat: All reasonable measures shall be taken to protect such habitat.
- Disposal of Mine Waste Rock and Overburden: Permanent piles must be stable and not restrict natural drainage without provisions for diversion.
- Erosion and Drainage: Grading and revegetation design shall minimize erosion and convey surface runoff to natural drainage courses or water storage basins.
- Resoiling: When a reclamation plan calls for resoiling, coarse hard mine waste shall be leveled, covered with a layer of finer material, and topped with a soil layer.

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[520] *Waste Discharge Requirements*, CAL. WATER BOARDS, https://www.waterboards.ca.gov/rwqcb7/water_issues/programs/chapter_15/permit_assistance_wdr.html (last visited Dec. 12, 2024).
[521] *Waste Discharge Requirements*, CAL. WATER BOARDS, https://www.waterboards.ca.gov/rwqcb7/water_issues/programs/chapter_15/permit_assistance_wdr.html (last visited Dec. 12, 2024).
[522] CAL. WATER CODE § 13263.1.
[523] CAL. HEALTH & SAFETY CODE § 42300.
[524] CAL. CODE REGS. tit. 14, § 3503.

- Revegetation: When a reclamation plan calls for revegetation, available research on revegetation methods and species with strong survival characteristics for the site shall be used.[525]

Suction Dredging:
The use of any vacuum or suction dredge equipment is currently unlawful in California rivers, streams, and lakes.[526] Such activities will continue to be unlawful until the CDFG completes an environmental review of existing suction dredge mining regulations,[527] it has filed a certified copy of new regulations, and such regulations fully mitigate all identified significant environmental impacts.[528]

Monitoring Requirements

SMARA:
SMARA requires the lead agency to conduct an annual inspection to verify compliance with the approved reclamation plan.[529] Inspections must be conducted within six months after a mining operation files an annual notice giving its operating status as required by law.[530] The inspection need not be made by a state employee, but may be made by a state licensed geologist, civil engineer, landscape architect, or forester who is experienced in land reclamation and who has not been employed by the operation being inspected during the preceding 12 months.[531] The operator must pay for the inspection.[532] Within 30 days after completion of the inspection, the lead agency must notify the director, provide the department and the operator with a copy of the inspection form, and identify any violations.[533]

To assure that agencies are apprised of the ongoing condition of mining operations, since 1990 SMARA has required every mining operation "of any kind or character" to file an annual report that gives its status, total acres disturbed and reclaimed the previous year, proof that it has been inspected, copies of its approved reclamation plan, and other information.[534]

Recent Enforcement Activities

In the spring of 2024, the Division of Mine Reclamation issued an enforcement notification announcing heightened enforcement efforts under SMARA.[535] The agency identified two enforcement priorities: issuing administrative penalties to operators that fail to submit Annual Reports and/or associated fees, and reviewing and inspecting operations that fail to submit adequate and timely financial assurance cost estimates and financial assurance mechanisms.[536]

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[525] Cal. Code Regs. tit. 14, § 3503.
[526] *Suction Dredge Permits*, Cal. Dep't of Fish and Wildlife, https://wildlife.ca.gov/Licensing/Suction-Dredge-Permits (last visited Dec. 12, 2024); Cal. Fish & Game Code § 5653.1.
[527] Ordered by the court in the case of *Karuk Tribe of California et al. v. California Department of Fish and Game et al.*, Alameda County Superior Court Case No. RG 05211597.
[528] Cal. Fish & Game Code § 5653.1.
[529] Cal. Pub. Res. Code § 2774(b).
[530] Cal. Pub. Res. Code § 2774(b).
[531] Cal. Pub. Res. Code § 2774(b).
[532] Cal. Pub. Res. Code § 2774(b).
[533] Cal. Pub. Res. Code § 2774(b).
[534] Cal. Pub. Res. Code § 2207.
[535] Cal. Dep't of Conservation, 2024-06, Division of Mine Reclamation Enforcement Notification (June 10, 2024).
[536] Cal. Dep't of Conservation, 2024-06, Division of Mine Reclamation Enforcement Notification (June 10, 2024).

Each year, mining owners and operators are required to submit an annual report[537] that includes information on the mining's operation status, proof of financial assurances, the total acreage reclaimed during the previous year and the total unreclaimed disturbed acreage remaining, and the total production during the previous year, among other information.[538] The reporting fees are held in the Mine Reclamation Account, which is used to comply with SMARA. Such activities include the classification of areas with mineral resources of statewide significance, reclamation plan and financial assurance review, mine inspection, and enforcement.[539] Penalty fees of not more than $5,000 per day are assessed against an operator who fails to submit a report or pay the annual fees.[540]

Waste Monitoring:

Most monitoring is conducted under the mine waste program. Neither SMARA nor its regulation specify monitoring requirements, though local ordinances and reclamation plans may include monitoring.

There are regulatory requirements for both groundwater and surface water monitoring programs. For all monitoring programs, there must be a sufficient number of background monitoring points at appropriate locations and depths to represent the quality of water that has not been affected by a release.[541] All monitoring systems must be designed and certified by a registered geologist or civil engineer.[542]

There are specific requirements provided for detection monitoring programs, evaluation monitoring programs, and corrective action programs.[543] Detection monitoring systems must have enough monitoring points to provide the best assurance of the earliest possible detection of a release to either surface waters or groundwater, depending on the monitoring system.[544] Evaluation monitoring programs must have enough monitoring points to provide data to evaluate changes in water quality due to a waste release, and corrective action systems must have enough monitoring points to provide the data necessary to evaluate compliance with the appropriate water quality protection standard and to evaluate the effectiveness of the corrective action program.[545] Similar requirements are in place for a monitoring system designed for unsaturated zones.[546]

Specific protections are provided for groundwater monitoring systems. All monitoring wells must be constructed and operated appropriately to maintain the integrity of the bore hole and protect against contamination through the bore hole and annular space.[547]

[537] CAL. PUB. RES. CODE § 2207.
[538] CAL. PUB. RES. CODE § 2207.
[539] CAL. PUB. RES. CODE § 2207.
[540] CAL. PUB. RES. CODE § 2774.1.
[541] CAL. CODE REGS. tit. 23, § 2550.7. For groundwater monitoring systems, background monitoring points shall yield samples from the uppermost aquifer.
[542] CAL. CODE REGS. tit. 23, § 2550.7.
[543] CAL. CODE REGS. tit. 23, § 2550.7.
[544] CAL. CODE REGS. tit. 23, § 2550.7.
[545] CAL. CODE REGS. tit. 23, § 2550.7.
[546] CAL. CODE REGS. tit. 23, § 2550.7.
[547] CAL. CODE REGS. tit. 23, § 2550.7.

Closure and Reclamation Requirements

Reclamation Standards:
California's Code of Regulations provides performance standards for a variety of reclamation activity impacts, including standards for wildlife habitat; revegetation; backfilling, regrading, slope stability, and recontouring; drainage, diversion structures, waterways, and erosion control; stream protection, including surface and groundwater; and tailing and mine waste management.[548] Such standards apply to each surface mining operation to the extent they are consistent with required mitigation measures identified in conformance with CEQA, provided that such mitigation is at least as stringent.[549]

Where an applicant demonstrates that an exception to these standards is necessary based on the approved end use of the land, the lead agency may approve a different standard. Under such circumstances, the approved reclamation plan shall identify "verifiable, site-specific standards for reclamation." While such standards may be more stringent than the regulatory standards, "in no case may the lead agency approve a reclamation plan which sets any standard which is less stringent than the comparable standard."[550]

Reclamation Plan:
Mining activities cannot begin until a reclamation plan has been approved.[551] The permit to mine application must include a reclamation plan that provides the name and address of the operator; the anticipated quantity and type of minerals to be extracted; the proposed dates of initiation and termination of the operation; the proposed maximum depth of the operation; the size and legal description of the area to be affected; the general and specific geology of the area; the location of all streams, roads, railroads, and utility facilities within or adjacent to the lands; the location of proposed access roads; and the names and addresses of all surface and mineral owners.[552] The plan must also describe the mining method and the mining schedule, which must provide for the earliest possible initiation of reclamation of disturbed lands on which activities have been completed.[553] Additionally, the plan must identify the postmining land use and provide evidence that all landowners have been notified of proposed use.[554]

The plan must describe how reclamation will be accomplished, including "a description of the manner in which known contaminants will be controlled and mining waste will be disposed," a description of the rehabilitation of streambed channels and banks, an assessment of the effect of the plan on future mining in the area, a statement of responsibility for completing the reclamation specified in the plan, and such other information as may be required by local ordinance.[555] The plan must be based on the characteristics of the property and surrounding area, including overburden type, soil stability, topography, geology, climate, streams, and mineral commodities, and must establish site-specific criteria for evaluating compliance.[556] The reclamation plan must also consider public health and safety given the

[548] CAL. CODE REGS. tit. 14, §§ 3703-3713.
[549] CAL. CODE REGS. tit. 14, § 3700.
[550] CAL. CODE REGS. tit. 14, § 3700.
[551] CAL. PUB. RES. CODE § 2770.
[552] CAL. PUB. RES. CODE § 2772.
[553] CAL. PUB. RES. CODE § 2772.
[554] CAL. PUB. RES. CODE § 2772.
[555] CAL PUB. RES. CODE § 2772.
[556] CAL PUB. RES. CODE § 2773.

present and expected use of the land, the effect of alternate reclamation site conditions, temporary stream or watershed diversions, steepness of slopes, and disposition of old equipment.[557]

Hazardous Substance Spills:
As soon as a person has knowledge of a release or threatened release, they must immediately notify the California Governor's Office of Emergency Services (OES).[558] In addition to the notification requirement, there are also substantive planning requirements. Businesses that handle hazardous material or a mixture containing a hazardous material at a quantity equal to or greater than 500 pounds, 55 gallons, or 200 cubic feet of gas are required to establish and implement a business plan that addresses emergency response procedures for a release or threatened release of hazardous materials.[559] The plan must include: providing immediate notification to local emergency personnel, OES, and facility personnel needed to respond; identifying local emergency medical assistance for potential accidents; mitigation, prevention, or abatement of hazards to persons, property, and the environment; notification and evacuation of the facility; and identification of areas vulnerable to seismic activity.[560] The plan must also include a training program that includes methods for safe handling of hazardous material, procedures for coordinating with local emergency response organizations, and the use of emergency response equipment and supplies.[561]

Economic Laws and Regulations

Financial Assurances

Reclamation:
Financial assurance was discretionary with lead agencies until a 1990 amendment to SMARA made it mandatory for new operations permitted on or after January 1, 1991, and for all existing operations by January 1, 1992. Now, the lead agency must require an operator to post financial assurance to assure that reclamation is performed in accordance with the approved reclamation plan.[562] Financial assurance may take the form of surety bonds, irrevocable letters of credit, trust funds, other forms specified by the board that the lead agency reasonably determines are adequate, or a combination of such.[563] Financial assurances must remain in effect for the duration of the surface mining operation and until reclamation is completed.[564]

The amount of financial assurance shall be based on: "(1) an analysis of the physical activities and materials necessary to implement the approved reclamation plan; (2) the lead agency's unit costs, or costs for third party contracting, for each of these activities, if applicable; (3) the number of units of each of these activities, if applicable; (4) a contingency amount not to exceed 10% of the reclamation costs."[565] Estimated costs shall be reviewed and adjusted, if necessary, once each year "to account for

[557] CAL. CODE REGS. tit. 14, § 3502.
[558] CAL. CODE REGS. tit. 19, § 2631.
[559] CAL. CODE REGS. tit. 19, §§ 5030.2, 5030.9.
[560] CAL. CODE REGS. tit. 19, § 5030.9.
[561] CAL. CODE REGS. tit. 19, § 5030.10.
[562] CAL. PUB. RES. CODE §§ 2770, 2773.1.
[563] CAL. CODE REGS. tit. 14, § 3803; CAL. PUB. RES. CODE § 2773.1. Government operators may also utilize pledges of revenue or budget set asides as forms of financial assurance mechanisms.
[564] CAL. PUB. RES. CODE § 2773.1.
[565] CAL. CODE REGS. tit. 14, § 3804.

new lands disturbed by surface mining operations, inflation, and reclamation of lands accomplished in accordance with the approved reclamation plan."[566]

If the lead agency has evidence that an operator may be financially incapable of completing reclamation in accordance with the approved reclamation plan, the lead agency will conduct a public hearing to determine the operator's capability.[567] Notice will be provided to the operator at least 30 days in advance.[568] If the hearing does not find in favor of the operator's capability,[569] the lead agency must: (1) notify the operator that it intends to forfeit the financial insurance; and (2) use the proceeds from the forfeited financial assurance mechanisms to conduct reclamation in accordance with the approved plan.[570] The operator remains liable for any reclamation costs in excess of the financial assurance amount.[571]

Special requirements are in place for surface mine operations mining gold, silver, copper, or other metallic minerals within one mile of any Native American sacred site and located within an area of special concern. A lead agency may not approve a reclamation plan or financial assurances for such an operation unless the reclamation requires that all excavations be backfilled and graded to achieve the original contours of the land prior to mining and to grade all mined materials in excess of what can be placed back into excavated areas over the project site to achieve the original contours of the mined lands.[572] The financial assurance cost estimates must be sufficient to provide for this required backfilling and grading.[573]

Waste Management:
Waste discharge requirements must require the discharger to obtain and maintain financial assurances for corrective action for all known or reasonably foreseeable releases from hazardous waste discharge management units.[574] This requires adequate financial assurance coverage to address the largest release being reliably detected.[575]

Leasing and Rentals

Lands that are subject to lease by the state include those containing known deposits of minerals and those embraced in a prospecting permit that is not subject to a preferential lease.[576] Leases may be issued for a term of 20 years, with an option to renew for successive periods of 10 years.[577] The lease shall include an annual rental "not less than fair market value."[578] Every month, lessees are required to

[566] CAL. PUB. RES. CODE § 2773.1.
[567] CAL. PUB. RES. CODE § 2773.1, CAL. CODE REGS. tit. 14, § 3812.
[568] CAL. CODE REGS. tit. 17, § 3813.
[569] CAL. CODE REGS. tit. 17, § 3815 (criteria for determining financial capability).
[570] CAL. PUB. RES. CODE § 2773.1.
[571] CAL. PUB. RES. CODE § 2773.1.
[572] CAL. PUB. RES. CODE § 2773.3.
[573] CAL. PUB. RES. CODE § 2773.3.
[574] CAL. CODE REGS. tit. 23, §§ 2550.0, 2521.
[575] CAL. WATER BOARDS, CHAPTER 15 TECHNICAL NOTE #8: CORRECTIVE ACTION COVERAGE KNOWN OR REASONABLY FORESEEABLE, WHICHEVER IS GREATER (Dec. 2, 1993).
[576] CAL. CODE REGS. tit. 2, § 2200.
[577] CAL. CODE REGS. tit. 2, § 2201.
[578] CAL. PUB. RES. CODE § 6895(b).

submit a form that states the work performed and the amount, quality, and value of all minerals produced, shipped, or sold during the preceding month.[579]

There are special protections in place for state waters subject to tidal influence. Neither the State Lands Commission nor a local trustee of granted public trust lands shall grant a lease or issue a permit for the extraction of hard minerals from state waters subject to tidal influence.[580]

Production Royalties[581]

Under a preferential lease, the lease shall provide for payment of either a royalty of not less than 10% of the gross value of all mineral production from the leased lands or a percentage of the net profits derived from mineral extraction operations under the lease.[582] The royalty may be either in money or in kind, at the option of the State Lands Commission.[583] Under a negotiated or competitive lease, the lease must provide for either a royalty in money or in kind or a percentage of net profits.[584]

Taxation Scheme

Mineral properties are taxable as real property and are subject to the same tax laws as all real property in the state. However, Rule 469: Mining Properties, is a tax rule that applies specifically to the assessment of mineral properties.[585] This rule is an interpretation of existing statutes and case law with respect to the assessment of mineral properties.

When valuing taxable property, California considers the right to explore for minerals and the right to produce minerals as taxable rights.[586] Rule 469 provides that "it is the right to explore, develop, and produce that is being valued and not the physical quantity of resources present on the valuation date."[587] The right to explore for minerals is taxable to the extent it has a separate value from the rights to develop and produce.[588]

Lithium Valley

Located in the Eastern Coachella Valley and the Imperial Valley is what has been dubbed "Lithium Valley"—an emerging global hotspot for lithium, which is often touted as a critical component

Salton Sea Region

[579] Cal. Code Regs. tit. 2, § 2205.
[580] Cal. Pub. Res. Code § 6900.
[581] U.S. Gov't Accountability Off., GAO B-330854, Hardrock Mining: Updated Information on State Royalties and Taxes (2019).
[582] Cal. Pub. Res. Code § 6895.
[583] Cal. Pub. Res. Code § 6895.
[584] Cal. Pub. Res. Code § 6897.
[585] Cal. Board of Equalization, Property Tax Rules, Rule 469: Mining Properties.
[586] Cal. Board of Equalization, Property Tax Rules, Rule 469: Mining Properties.
[587] Cal. Board of Equalization, Property Tax Rules, Rule 469: Mining Properties.
[588] Cal. Board of Equalization, Property Tax Rules, Rule 469: Mining Properties.

of clean energy technologies.[589] Governor Newsom's Lithium Valley Vision is outlined in the Governor's budget summary and commits to advancing economic development incentives for the clean energy sector though:

- Providing incentives to advance the clean energy market in California.
- Providing Californians a share of the benefit from these projects.
- Developing labor standards that deliver community benefits, economic development, and labor opportunities.[590]

The Governor's administration committed to working with the Legislature, the Lithium Valley Commission, and local and community partners to develop a revenue sharing model and a fund that benefits Californians.[591] The Lithium Valley Commission was legislatively established in 2020 to explore opportunities and challenges presented by lithium extraction.[592]

Social Laws and Regulations

Public Participation

Procedures for review of mining permit applications are specified by local ordinance.[593] Under SMARA, permit procedures require at least one hearing.[594] They are also subject to CEQA procedures as discussed below.

CEQA:
Under CEQA, any project that a state or local agency proposes to approve "which may have a significant effect on the environment" must be preceded by an environmental impact report (EIR).[595] The EIR must identify alternatives to the proposed action, information on environmental impacts, and feasible mitigation measures.[596]

Detailed information provided by the applicant and available to the lead agency must be considered in preparing an initial study to determine whether an EIR is warranted. A lead agency may determine not to prepare an EIR if it adopts a negative declaration.[597] A negative declaration must be based on a determination that either there is no substantial evidence that the project may have a significant effect on the environment, or that all potentially significant effects identified by the initial study have been avoided or mitigated by revisions to the project plans.[598]

There is a public review process for both negative declarations and EIRs. The public is guaranteed no less than 20 days for review and comment upon a negative declaration, and no less than 30 days upon a draft

[589] Lithium is currently one of 35 minerals the federal government considers vital to the nation's security and economic prosperity. *Lithium Valley: Powering Our Clean Energy Transition*, Dep't of Energy (Oct. 20, 2022) (photograph).
[590] Gov. Gavin Newsom, Governor's Budget Summary 88-89 (2022-2023).
[591] Gov. Gavin Newsom, Governor's Budget Summary 88-89 (2022-2023).
[592] *Lithium Valley Vision*, Cal. Energy Comm'n, https://www.energy.ca.gov/programs-and-topics/programs/lithium-valley-vision (last visited Dec. 12, 2024).
[593] Cal. Pub. Res. Code § 2774.
[594] Cal. Pub. Res. Code § 2774 ("The ordinances shall establish procedures requiring at least one public hearing.").
[595] Cal. Pub. Res. Code § 21151.
[596] Cal. Pub. Res. Code § 21100.
[597] Cal. Pub. Res. Code § 21080.
[598] Cal. Pub. Res. Code § 21080.

EIR.[599] The EIR process requires consultation with affected agencies, and express findings with respect to issues such as endangered species, archaeological resources, and other specific matters within the purview of such agencies.[600] If the draft EIR or proposed negative declaration is submitted to the State Clearinghouse for review by other agencies, the review period shall be at least 45 days and 30 days, respectively.[601]

Where a completed EIR identifies one or more significant effects on the environment, an agency may not approve the project unless mitigation measures are taken, or unless specific economic, social, or other considerations make mitigation measures or project alternatives infeasible.[602]

In practice, not all mining operations have been determined to require an EIR. However, in 1990 the legislature enacted a provision requiring lead agencies to prepare an EIR for any open-pit operation subject to SMARA that uses a cyanide heap leaching process.[603]

Tribal Consultation

Assembly Bill 52 (AB 52):
AB 52, passed in 2014, modified CEQA to require tribal consultation.[604] Consultation is defined as:

> The meaningful and timely process of seeking, discussing, and considering carefully the views of others, in a manner that is cognizant of all parties' cultural values and, where feasible, seeking agreement. Consultation between government agencies and Native American Tribes shall be conducted in a way that is mutually respectful of each party's sovereignty. Consultation shall also recognize the Tribes' potential needs for confidentiality with respect to places that have traditional tribal cultural significance.[605]

AB 52 requires consultation with all California Native American Tribes on the Native American Heritage Commission list, which includes both state and federally recognized tribes.[606] AB 52 requires lead agencies to provide notice of the opportunity to consult to tribes which are traditionally and culturally affiliated with the geographic area of the proposed project and have affirmatively requested to be placed on the lead agency's notification list.[607] The statute mandates that agencies notify tribes within 14 days of determining that a project application is complete or deciding to undertake a project.[608] The notification must be written and must include a brief description of the proposed project, the project's location, the lead agency's contact information, and a notice that the Tribe has 30 days to respond and, if they choose, request consultation.[609] The lead agency must begin the actual consultation process within

[599] CAL. PUB. RES. CODE § 21091.
[600] CAL. PUB. RES. CODE § 21091.
[601] CAL. PUB. RES. CODE § 21091. The State Clearinghouse is a division of the Governor's Office of Planning and Research and coordinates the State-level review of environmental documents prepared pursuant to CEQA.
[602] CAL. PUB. RES. CODE § 21081.
[603] CAL. PUB. RES. CODE § 21151.7.
[604] Assembly Bill No. 52, Native Americans: California Environmental Quality Act (2014).
[605] CAL. GOV'T CODE § 65352.4.
[606] CAL. PUB. RES. CODE § 21080.3.1.
[607] CAL. PUB. RES. CODE § 21080.3.1.
[608] CAL. PUB. RES. CODE § 21080.3.1(d).
[609] CAL. PUB. RES. CODE § 21080.3.1(b), (d).

30 days of a tribe's request for consultation.[610] Consultation must be initiated prior to the release of a negative declaration or EIR.[611]

AB 52 further provides that if a Tribe specifically requests consultation regarding the presence of significant impacts to Tribal Cultural Resources (TCRs), alternatives to the project, or measures to mitigate any significant TCR impacts, then the Tribal consultation must include a discussion of the requested topics.[612] Discretionary topics of consultation under AB 52 include the type of environmental review necessary, the significance of TCRs or the project's impacts on TCRs, and the Tribe's recommendations for appropriate alternatives and preservation or mitigation measures.[613]

AB 52 consultation is complete when either of the following occurs: (a) parties "agree to measures to mitigate or avoid a significant effect," if a significant impact exists, or (b) either party "acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached."[614] The consultation obligation is also considered fulfilled when a tribe timely requests consultation but then fails to provide comments to the lead agency or otherwise fails to engage in the consultation process.[615] Once the AB 52 consultation process concludes, the lead agency may certify the relevant project's environmental impact report or adopt a mitigated negative declaration if the project will significantly impact an identified tribal cultural resource.[616]

Any mitigation measures agreed upon during AB 52 consultation must be "recommended for inclusion in the environmental document;"[617] however, the statute indicates that an agency is not necessarily required to include nor adopt any specific mitigation measure in its final plans. AB 52 does require that Tribal expertise about TCRs be included as evidence of significant impact in TCR impact assessments.[618] Regardless of whether an agreement as to preservation or mitigation has been reached, if a significant TCR impact exists, then the EIR must discuss mitigation measures and feasible alternatives that would avoid or substantially reduce the impact.[619] Where a project may cause a substantial adverse change to a TCR and mitigation measures are not identified in the consultation process, agencies may consider the following example mitigation measures, if feasible, to avoid or minimize significant adverse impacts to the TCR:

- Avoidance and preservation of the resources in place, including planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.[620]
- Treating the resource with culturally appropriate dignity considering the tribal cultural values and meaning of the resource, including protecting the TCR's cultural character and integrity, traditional use, and confidentiality.[621]

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[610] CAL. PUB. RES. CODE § 21080.3.1(e).
[611] CAL. PUB. RES. CODE § 21080.3.1.
[612] CAL. PUB. RES. CODE § 21080.3.2(a).
[613] CAL. PUB. RES. CODE § 21080.3.2(a).
[614] CAL. PUB. RES. CODE § 21080.3.2(b).
[615] CAL. PUB. RES. CODE § 21080.3.2(d)(2).
[616] CAL. PUB. RES. CODE § 21080.3.2(d)(1).
[617] CAL. PUB. RES. CODE § 21082.3(a).
[618] Assembly Bill No. 52, Native Americans: California Environmental Quality Act (2014) § 1(b)(4).
[619] CAL. PUB. RES. CODE § 21080.3.2(b).
[620] CAL. PUB. RES. CODE § 21080.3.2(b)(1).
[621] CAL. PUB. RES. CODE § 21080.3.2(b)(2).

- Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.[622]

State Agency Policies:
Issued by Governor Jerry Brown in 2011, Executive Order B-10-11 requires all state agencies and departments to implement effective government-to-government consultation with California Indian Tribes.[623] This executive order, in combination with the requirements under AB 52, form the basis of many state agencies' tribal consultation policies. Most state agencies, including the California Environmental Protection Agency, the State Water Resources Control Board, and the California Fish and Game Commission each have agency policies that guide their consultation with tribes.

Cultural Resources Review

CEQA requires consideration of impacts to (1) historical resources, (2) unique archaeological resources, and (3) tribal cultural resources. Projects that may cause a "substantial adverse change" in the significance of either a historical resource or a tribal cultural resource are projects that may have a significant impact on the environment under CEQA.[624] Additionally, agencies are required to determine whether projects would have effects on unique archaeological resources.[625]

[622] CAL. PUB. RES. CODE § 21080.3.2(b)(3).
[623] Gov. Brown, Exec. Order B-10-11 (Sept. 19, 2011).
[624] CAL. PUB. RES. CODE §§ 21084.1, 21084.2.
[625] CAL. PUB. RES. CODE § 21083.2.

Colorado

Overview of Hardrock Mining in Colorado

In 2022, Colorado ranked 19th in U.S. non-fuel mineral production value and produced an estimated $1.81 billion.[626] Colorado mines metals including gold and molybdenum, the two of which had an estimated production value of $804 million combined.[627] In addition, Colorado was the third largest producer of gold in the United States after Nevada and Alaska.[628] Colorado is also a current or past producer of zinc, copper, tungsten, fluorspar, and vanadium and contains deposits of titanium, niobium, REE, and potentially lithium.[629]

Key Agencies, Laws, and Regulations

There are two major laws regulating mining in Colorado: the Water Quality Control Act (WQCA) and the Mined Land Reclamation Act (MLRA). The WQCA regulates dredge and fill permits and pollution and stormwater discharge permits, and is administered by the Water Quality Control Division. The MLRA regulates the reclamation permitting system, and is administered by the Division of Reclamation, Mining, and Safety's Mined Land Reclamation Board.

Environmental Laws and Regulations

State Permits and Approvals Required

Land Use Permits

Mined Land Reclamation Act (MLRA):
Mining operations must obtain a permit under the MLRA.[630] A permit is issued for the life of the mining operation if the operator complies with the conditions of the permit and with the MLRA and associated regulations.[631] Smelting, refining, cleaning, preparation, transportation, and other off-site operations not conducted on affected land do not require a reclamation permit.[632]

Limited Impact Operations:
Persons desiring to conduct mining operations on five acres or less can file an application for a permit to conduct limited-impact mining operations.[633] However, in situ leach mining or designated mining operations cannot obtain a limited impact operations permit.[634] The application must contain information on the operator and the landowner, a statement that operations will be conducted pursuant

[626] Colo. Geological Survey, IS-86 Colorado Mineral and Energy Industry Activities 2022-2023 (2024).
[627] Colo. Geological Survey, IS-86 Colorado Mineral and Energy Industry Activities 2022-2023 (2024).
[628] Colo. Geological Survey, IS-86 Colorado Mineral and Energy Industry Activities 2022-2023 (2024).
[629] Colo. Geological Survey, IS-86 Colorado Mineral and Energy Industry Activities 2022-2023 (2024).
[630] Colo. Rev. Stat. § 34-32-109(1).
[631] Colo. Rev. Stat. § 34-32-109(5).
[632] 2 Colo. Code Regs. § 407-1.2.1.
[633] Colo. Rev. Stat. § 34-32-110(1)(a)(III).
[634] Colo. Rev. Stat. § 34-32-110(1)(a)(III).

to the conditions on the permit and the MLRA, a map and information on the affected land, information on the operation, and measures to be taken to reclaim any affected land.[635]

In addition, persons desiring to conduct mining operations on less than 10 acres that will result in the extraction of less than 70,000 tons of mineral or overburden per calendar year can also file an application for a permit to conduct limited impact mining operations.[636] However, in situ leach mining or designated mining operations cannot obtain a limited impact operations permit.[637] The application must contain information on the operator, information on the landowner, a statement that operations will be conducted pursuant to the conditions on the permit and the MLRA, a map and information on the affected land, information on the operation, and measures to be taken to reclaim any affected land.[638]

Applicants for a limited impact operations permit must also pay a fee and file a financial warranty in the amount determined by the board.[639] The board will release the financial warranty or portion thereof after the completion of reclamation or portion thereof.[640]

The office will process and take final action on applications for limited operations permits within 30 days.[641] If the office fails to take action on an application within 30 days, the permit is "deemed approved" and must be issued upon receipt of the financial warranty.[642] In addition, the limited operations permit can be converted to a regular permit.[643]

Regular Permits:
Mining operations that do not qualify for a limited operations permit, a special operations permit, or a designated mining operations permit must apply for a regular permit.[644] A regular reclamation permit authorizes the operator to engage in the mining operations described in the application for the life of the mine.[645] The application must consist of the application form, a reclamation plan, a map of the affected land, and the application fee.[646] The application form must include information on the land and landowner, information on the applicant and operator, information on the operation, and a "timetable estimating the periods of time which will be required for the various stages of the mining operation."[647] Regular permits can be both amended and renewed if the operator follows specified procedures.[648]

"Bad actor" provision: For in situ leach mining operations, the applicant must certify that no violations of any environmental protection laws, rules or permits exist.[649] If the applicant cannot so certify, the applicant must provide the board or office with additional information.[650]

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[635] Colo. Rev. Stat. § 34-32-110(1)(a)(III).
[636] Colo. Rev. Stat. § 34-32-110(2)(a).
[637] Colo. Rev. Stat. § 34-32-110(2)(a).
[638] Colo. Rev. Stat. § 34-32-110(2)(a).
[639] Colo. Rev. Stat. § 34-32-110(3).
[640] Colo. Rev. Stat. § 34-32-110(4).
[641] Colo. Rev. Stat. § 34-32-110(6).
[642] Colo. Rev. Stat. § 34-32-110(6).
[643] Colo. Rev. Stat. § 34-32-110(7).
[644] Colo. Rev. Stat. § 34-32-109(3).
[645] Colo. Rev. Stat. § 34-32-112(1).
[646] Colo. Rev. Stat. § 34-32-112(1).
[647] Colo. Rev. Stat. § 34-32-112(2).
[648] Colo. Rev. Stat. § 34-32-112(8).
[649] Colo. Rev. Stat. § 34-32-112(2)(i).
[650] Colo. Rev. Stat. § 34-32-112(2)(i).

Designated Mining Operations:
A designated mining operation is a mining operation at which "[t]oxic or acidic chemicals used in extractive metallurgical processing are present on site; [a]cid- or toxic-forming materials will be exposed or disturbed as a result of mining operations; or [u]ranium is developed or extracted, either by in situ leach mining or by conventional underground or open mining techniques."[651] An operator can apply for an exemption to designation as a designated mining operation on showing that "toxic or acidic chemicals are not stored or used on-site and that acid- or toxic-producing materials will not be used, stored, or disturbed in quantities sufficient to adversely affect any person, any property, or the environment."[652] Designated mining operations must adopt an environmental protection plan that provides for protection of human health, property, or the environment.[653]

An application for an in situ leach mining operation must include "a baseline site characterization and a plan for ongoing monitoring of the affected land and affected surface and groundwater."[654] The prospective applicant must confer with the office on this prior to submitting an application.[655] The board or office may "retain an independent third-party professional expert to oversee baseline site characterization, monitor field operations, or review any portion of the information collected, developed, or submitted by an applicant or prospective applicant" to be paid for by the applicant or prospective applicant.[656] In addition, a prospective applicant must also "design and conduct a scientifically defensible groundwater, surface water, and environmental baseline characterization and monitoring plan for the proposed mining operation."[657]

Prospecting Operations:
Under the MLRA, "any person desiring to conduct prospecting shall, prior to entry upon the lands, file with the board a notice of intent to conduct prospecting operations."[658] Prospecting refers to "the act of searching for or investigating a mineral deposit."[659] The notice must include a fee and information on the prospector, information on the operation, a description of the lands, the date of the start of operation, and measures to be taken to reclaim any affected land.[660] After filing the notice of intent to conduct prospecting, the prospector must provide a financial warranty.[661]

In General:
The board must set a date for the consideration of an application within 90 days after the filing of an application.[662] At that time, the board must approve or deny the application or refer the application for a hearing.[663] If action on the application is not completed within this period, the permit will be considered approved and must be issued upon the presentation of the warranties.[664] Applicants must file both a

[651] Colo. Rev. Stat. § 34-32-103(3.5).
[652] Colo. Rev. Stat. § 34-32-112.5(2).
[653] Colo. Rev. Stat. § 34-32-116.5(1); Colo. Rev. Stat. § 34-32-103(4.9).
[654] Colo. Rev. Stat. § 34-32-112.5(5)(a).
[655] Colo. Rev. Stat. § 34-32-112.5(5)(a).
[656] Colo. Rev. Stat. § 34-32-112.5(5)(a).
[657] Colo. Rev. Stat. § 34-32-112.5(5)(b).
[658] Colo. Rev. Stat. § 34-32-113(1).
[659] Colo. Rev. Stat. § 34-32-103(12).
[660] Colo. Rev. Stat. § 34-32-113(2).
[661] Colo. Rev. Stat. § 34-32-113(4)(a).
[662] Colo. Rev. Stat. § 34-32-115(1).
[663] Colo. Rev. Stat. § 34-32-115(1).
[664] Colo. Rev. Stat. § 34-32-115(3).

performance and a financial warranty before a permit may be issued.[665] A performance warranty consists of a written promise to the board by the operator to comply with all requirements of the MLRA and associated regulations.[666] A financial warranty consists of a written promise to the board by the operator to be responsible for reclamation costs of the amount specified by the board.[667]

The board or office must grant a permit if the application complies with the requirements of the MLRA and associated regulations. In addition, the board or office must grant a permit if the application is complete and the financial warranty has been provided, the operator has paid the required fee, the mining operation and reclamation plan comply with all applicable laws, and the mining operation "will not adversely affect the stability of any significant, valuable, and permanent manmade structures located within two hundred feet of the affected land" unless there is an agreement between the operator and structure owner, the mining operation is located on lands open to mining, and the reclamation plan conforms to the requirement in the MLRA.[668] For designated mine operations, the operator must also show an environmental protection plan has been submitted and conforms to the MLRA for permit approval.[669]

"Bad actor" provision: No permit for new mining operations can be granted to any operator found to be in violation of the MLRA with respect to any operation in Colorado.[670]

In addition, for in situ leach mining operations, the board may deny a permit "based on scientific or technical uncertainty about the feasibility of reclamation" and must "deny such a permit if the applicant fails to demonstrate that reclamation can and will be accomplished in compliance" with the MLRA.[671] The board also must deny a permit for in situ leach mining if the applicant "fails to demonstrate by substantial evidence that it will reclaim all affected groundwater" according to a variety of standards.[672] A permit for in situ leach mining may be denied by the board for other reasons as well.[673]

Water Permits

Water Quality Control Act (Dredge and Fill Permits under CWA Section 404):
In the wake of the Supreme Court's decision in *Sackett v. EPA*,[674] in May 2024, Colorado enacted a new permitting law for dredge and fill activities.[675] Under the new law, the Colorado Department of Public Health and Environment's Water Quality Control Division will create a new dredge and fill permitting

[665] COLO. REV. STAT. § 34-32-117(1).
[666] COLO. REV. STAT. § 34-32-117(2).
[667] COLO. REV. STAT. § 34-32-117(3)(a).
[668] COLO. REV. STAT. § 34-32-115(4).
[669] COLO. REV. STAT. § 34-32-115(4).
[670] COLO. REV. STAT. § 34-32-120.
[671] COLO. REV. STAT. § 34-32-115(5).
[672] COLO. REV. STAT. § 34-32-115(5).
[673] COLO. REV. STAT. § 34-32-115(5).
[674] *Sackett v. Env't Prot. Agency*, 598 U.S. 651 (2023) (ruling that the Clean Water Act's definition of "waters of the United States" is limited to bodies of water that have a continuous surface connection to other covered waters, effectively narrowing the scope of the federal Clean Water Act and limiting protections for certain wetlands and streams).
[675] *Gov. Jared Polis Signs Legislation to Protect Colorado's Wetlands and Streams, Provide Regulatory Certainty for Businesses and Individuals*, COLO. DEP'T OF PUB. HEALTH & ENV'T (May 30, 2024), https://cdphe.colorado.gov/press-release/gov-jared-polis-signs-legislation-to-protect-colorados-wetlands-and-streams-provide.

program.[676] The permitting program must be approved by Colorado's Water Quality Control Commission by December 31, 2025; and upon approval, the division will administer and enforce it.[677]

Under the new law, except when conducting an exempted activity, no person may discharge dredge or fill material into state waters without first obtaining coverage under a general or individual permit.[678] State waters are "any and all surface and subsurface waters that are contained in or flow in or through this state, including wetlands, but does not include waters in sewage systems, waters in treatment works of disposal systems, waters in potable water distribution systems, and all water withdrawn for use until use and treatment have been completed."[679] Notwithstanding this definition, a permit is not required for discharge of dredged or fill materials into certain types of waters.[680]

Water Quality Control Act (Colorado Discharge Permit System):
Under the Colorado Water Quality Control Act, "[n]o person shall discharge any pollutant into any state water from a point source without first having obtained a permit from the division for such discharge, and no person shall discharge into a ditch or man-made conveyance for the purpose of evading the requirement to obtain a permit under this article."[681] Hardrock mining activities are permitted within the Commerce and Industry Sector category.

In addition, a permit is required for discharges of stormwater from mining operations that have been contaminated with or come into contact with "any overburden, raw material, intermediate products, finished products, byproducts or waste products located on the site of such operations."[682] Any person may petition the division to require a permit for a stormwater discharge that contributes to a violation of a water quality standard or is a "significant contributor of pollutants to state waters."[683] However, "[t]he Division may not require a permit for discharges of stormwater runoff from mining operations . . . composed entirely of flows which are from conveyances or systems of conveyances (including but not limited to pipes, conduits, ditches, and channels) used for collecting and conveying precipitation runoff and which are not contaminated by contact with or that have not come into contact with, any overburden, raw material, intermediate products, finished product, byproduct or waste products located on the site of such operations."[684]

An applicant must apply for a new permit, other than a general permit, at least 180 days prior to a discharge.[685] Applicants for a general permit must follow the deadlines specified in the general permit.[686] Applications, must contain a description of the activities that require a permit, information on the facility or operation, information on the owner or operator, a map of the source, information on the discharge

[676] *Gov. Jared Polis Signs Legislation to Protect Colorado's Wetlands and Streams, Provide Regulatory Certainty for Businesses and Individuals*, COLO. DEP'T OF PUB. HEALTH & ENV'T (May 30, 2024), https://cdphe.colorado.gov/press-release/gov-jared-polis-signs-legislation-to-protect-colorados-wetlands-and-streams-provide.
[677] *Gov. Jared Polis Signs Legislation to Protect Colorado's Wetlands and Streams, Provide Regulatory Certainty for Businesses and Individuals*, COLO. DEP'T OF PUB. HEALTH & ENV'T (May 30, 2024), https://cdphe.colorado.gov/press-release/gov-jared-polis-signs-legislation-to-protect-colorados-wetlands-and-streams-provide.
[678] COLO. REV. STAT. § 25-8-205.1(8)(a).
[679] COLO. REV. STAT. § 25-8-103(19).
[680] COLO. REV. STAT. § 25-8-205.1(8)(d).
[681] COLO. REV. STAT. § 25-8-501(1).
[682] 5 COLO. CODE REGS. § 1002-61.3(2)(e).
[683] 5 COLO. CODE REGS. § 1002-61.3(2)(g)(ii).
[684] 5 COLO. CODE REGS. § 1002-61.3(2)(c).
[685] 5 COLO. CODE REGS. § 1002-61.4(1)(c).
[686] 5 COLO. CODE REGS. § 1002-61.4(1)(d).

and receiving waters, a list of certain active permits and approvals, and any additional necessary information requested by the division.[687] In addition, the applicant must submit any information that it wants the division to review regarding the economic reasonableness of possible permit conditions.[688] Mining applicants must submit additional specified information.[689] Applicants must also pay the applicable permit fees.[690] Applicants are encouraged to schedule a pre-application conference and site inspection with the division.[691]

The division must begin reviewing an application within 45 days of receipt; and within 90 days after receipt, the division must notify the applicant whether the application is complete.[692] If the application is incomplete, the division can request additional information.[693] The division has 180 days to make a final decision; however, the period can be extended to allow the applicant to submit additional information for review.[694] The division may make site visits if necessary to evaluate the discharge relevant to the application.[695]

A permit becomes effective and final 30 days after the permit is issued or on a later date specified by the division.[696] If the division has not issued or denied a permit within 180 days after receipt of the permit application, a temporary permit must be issued or a previous permit must be extended if applicable.[697] Permits are issued for a term of either 10 years, the length allowable under federal law, or another length of time determined by the division to be appropriate.[698]

The division must issue a permit after determining the provisions of the WQCA and CWA, and associated regulations have been met with respect to the application and proposed permit.[699] However, the division must not issue a permit when the EPA Regional Administrator has objected, when anchorage or navigation in the waters of the United States would be substantially impaired, when the imposition of conditions cannot ensure compliance with applicable water quality requirements, or when a new source or new discharger will contribute to the violation of water quality standards.[700]

Final permit decisions may be challenged by the applicant or any other person affected or aggrieved by the final decision, and an adjudicatory hearing can be had within 30 days of the final decision.[701] Permits can be transferred to another party if notice is provided to the division and the transfer meets certain requirements.[702] In addition, "a permit may be modified, suspended, or terminated in whole or in part during its term for reasons determined by the [d]ivision."[703]

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[687] 5 Colo. Code Regs. § 1002-61.4(1)(j).
[688] 5 Colo. Code Regs. § 1002-61.4(1)(l).
[689] 5 Colo. Code Regs. § 1002-61.4(2); 5 Colo. Code Regs. § 1002-61.4(3)(b); 5 Colo. Code Regs. § 1002-61.4(4); 5 Colo. Code Regs. § 1002-61.4(7).
[690] Colo. Rev. Stat. § 25-8-502(1.1)(b)(III).
[691] 5 Colo. Code Regs. § 1002-61.5(1)(b).
[692] 5 Colo. Code Regs. § 1002-61.5(1)(c).
[693] 5 Colo. Code Regs. § 1002-61.5(1)(c).
[694] 5 Colo. Code Regs. § 1002-61.5(1)(c).
[695] 5 Colo. Code Regs. § 1002-61.5(1)(e).
[696] 5 Colo. Code Regs. § 1002-61.6(d).
[697] 5 Colo. Code Regs. § 1002-61.6(e).
[698] 5 Colo. Code Regs. § 1002-61.1(4).
[699] 5 Colo. Code Regs. § 1002-61.8(1)(a).
[700] 5 Colo. Code Regs. § 1002-61.8(1)(b).
[701] 5 Colo. Code Regs. § 1002-61.7(a).
[702] 5 Colo. Code Regs. § 1002-61.8(3)(e).
[703] 5 Colo. Code Regs. § 1002-61.8(8)(a).

Owner or operators can make a request for a variance with respect to a permit condition.[704] A request for a variance must be made within 30 days after the issuance of the final permit, within 30 days of new facts becoming available, or upon application to the commission for good cause shown.[705] The division must issue a decision on the variance request within 90 days.[706]

Mined Land Reclamation Act (No Perpetual Treatment):
Under a 2019 amendment to the MLRA, a reclamation plan for a new or amended permit "must demonstrate, by substantial evidence, a reasonably foreseeable end date for any water quality treatment necessary to ensure compliance with applicable water quality standards."[707]

However, the board may approve a reclamation plan that lacks substantial evidence upon two conditions. First, "the new or amended permit includes an environmental protection plan and reclamation plan adequate to ensure compliance with applicable water quality standards."[708] Second, the board must make a determination that for an amended reclamation plan, "the water quality impacts that have occurred or are occurring for which no reasonably foreseeable end date for water quality treatment can be established were either unforeseen at the time of approval of the reclamation plan or existing at a mine site permitted before January 1, 2019" and "for a new or amended reclamation plan that was previously mined but was not permitted as of January 1, 2019, that existing water quality conditions do not meet applicable water quality standards and no reasonably foreseeable end date for water quality treatment can be established."[709] In addition, the board may approve a new reclamation plan that lacks substantial evidence if "a permit application is submitted and the reclamation plan is limited to reclamation of already-mined ore or other waste materials, including mine drainage or runoff, as part of a cleanup."[710]

Wildlife Permits

While Colorado does not have any wildlife permits required for hardrock mining, Colorado Parks and Wildlife consults with project managers at the Colorado Division of Reclamation, Mining, and Safety (DRMS) as well as mine operators to assess impacts on wildlife, review mining operations and reclamation plans, and make project-specific recommendations for avoiding, minimizing and mitigating impacts on wildlife.[711] In addition, DRMS also employees a number of Environmental Protection Specialists who work to ensure that mining is conducted so that environmental impacts to water, air, land, wildlife and local communities are minimized.[712]

[704] COLO. REV. STAT. § 25-8-401(5)(a).
[705] COLO. REV. STAT. § 25-8-401(5)(a).
[706] COLO. REV. STAT. § 25-8-401(5)(b).
[707] COLO. REV. STAT. § 34-32-116(7)(g)(II).
[708] COLO. REV. STAT. § 34-32-116(7)(g)(III).
[709] COLO. REV. STAT. § 34-32-116(7)(g)(III).
[710] COLO. REV. STAT. § 34-32-116(7)(g)(IV).
[711] *Energy Development and Land Use*, Colo. PARKS & WILDLIFE, https://cpw.state.co.us/energy-development-and-land-use#4257225834-3640323278 (last visited Dec. 19, 2024).
[712] *Expertise*, Colo. DIV. OF RECLAMATION, MINING, AND SAFETY, https://drms.colorado.gov/about-us/expertise (last visited Dec. 19, 2024).

Waste Permits

Facilities, including mining operations, that treat, store, or dispose of hazardous waste must have a hazardous waste permit for the active life of the unit, including the closure period.[713] Hazardous waste permitting is governed by the federal Resource Conservation and Recovery Act (RCRA).[714]

Permitting of solid waste sites and facilities is a joint effort between the local governing body (county or municipality) and the Colorado Department of Public Health and Environment.[715] Permits are generally required for solid waste landfills, waste impoundments, water treatment plant sludge disposal sites, medical waste treatment, storage and/or disposal facilities, composting facilities and onsite disposal of regulated asbestos-contaminated soil.[716] A mining operator acting pursuant to a reclamation permit that contains an approved plan of reclamation may dispose of solid waste generated by such operations within the permitted area for such operations without obtaining a permit.[717]

Air Permits

Air Quality Control Act:
Air quality permitting concerning mining operations is primarily focused on fugitive particulate emissions.[718] Fugitive particulates from mining, haul roads, haul trucks, tailings piles and ponds, blasting, and other activities that may be incidental to mining must be controlled.[719] The AQCA is Colorado's federally approved air program under which all existing and new sources are required to obtain emissions permits.[720]

Design and Performance Standards

Water Quality Control Act:
Overall, each permit must contain terms and conditions deemed by the division to be necessary to ensure compliance with applicable control regulations, water quality standards, and state and federal law.[721] In general, conditions to be set forth in permits include location, quantity, and quality characteristics of the permitted discharge; effluent limitations, standards, and conditions; monitoring requirements; and changes and specifications for the facility if applicable.[722]

The WQCA sets the minimum effluent limitations and standards for each permit.[723] Technology-based effluent limitations minimums include state effluent limitations and certain EPA effluent limitations

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[713] *Hazardous Waste Permits*, Colo. Dep't of Pub. Health & Evn't, https://cdphe.colorado.gov/hm/haz-waste-permits (last visited Dec. 19, 2024).
[714] *Hazardous Waste Management*, Colo. Dep't of Pub. Health & Evn't, https://cdphe.colorado.gov/hm/hazwaste (last visited Dec. 19, 2024).
[715] *Solid Waste Permitting, Registrations and Certifications*, Colo. Dep't of Pub. Health & Evn't, https://cdphe.colorado.gov/hm/swpermitting (last visited Dec. 19, 2024).
[716] *Solid Waste Permitting, Registrations and Certifications*, Colo. Dep't of Pub. Health & Evn't, https://cdphe.colorado.gov/hm/swpermitting (last visited Dec. 19, 2024).
[717] Colo. Rev. Stat. § 30-20-102(4).
[718] McElfish et. al., Hardrock Mining: State Approaches to Environmental Protection (1996).
[719] McElfish et. al., Hardrock Mining: State Approaches to Environmental Protection (1996).
[720] McElfish et. al., Hardrock Mining: State Approaches to Environmental Protection (1996).
[721] 5 Colo. Code Regs. § 1002-61.8(3)(f).
[722] 5 Colo. Code Regs. § 1002-61.8(3)(b).
[723] 5 Colo. Code Regs. § 1002-61.8(2).

standards and criteria.[724] The Division may also exercise best professional judgment in establishing effluent limitations on a case-by-case basis for individual permits when necessary for compliance with the CWA.[725]

Where the effluent limitations required above will not provide sufficient treatment to meet water quality standards, the division will define more stringent effluent limitations based on water quality standards in accordance with The Basic Standards and Methodologies for Surface Water and The Basic Standards for Groundwater.[726] The WQCA regulations also set out wasteload allocation and trading requirements and intake credit requirements.[727] All permit effluent limitations, standards, and prohibitions must be established for each outfall or discharge point of the permitted facility with certain exceptions.[728]

For production-based limitations, calculation of any permit limitations, standards, or prohibitions must be based upon a reasonable measure of actual production of the facility rather than upon the designated production capacity.[729]

The permittee must "at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee as necessary to achieve compliance with the conditions of this permit. Proper operation and maintenance include effective performance and adequate laboratory and process controls, including appropriate quality assurance procedures."[730] In addition, the permittee must "take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment."[731]

Monitoring Requirements

Water Quality Control Act:
The owner or operator must establish and maintain records, make reports, maintain and use monitoring methods and equipment, and sample discharges.[732] In addition, the division has the power "to enter and inspect at any reasonable time and in a reasonable manner any property, premise, or place for the purpose of investigating any actual, suspected, or potential source of water pollution, or ascertaining compliance or noncompliance with any control regulation or any order promulgated" under the WQCA.[733]

Mined Land Reclamation Act:
The MLRA includes some reporting requirements. On the anniversary date of the permit, the operator must submit a map of current disturbances to affected land, a report describing the affected land and the surrounding area, and an annual fee.[734] For limited impact operations, operators must submit an

[724] 5 Colo. Code Regs. § 1002-61.8(2)(a); *see* 5 Colo. Code Regs. § 1002-63 (state effluent limitations).
[725] 5 Colo. Code Regs. § 1002-61.8(2)(a).
[726] 5 Colo. Code Regs. § 1002-61.8(2)(b)(i).
[727] 5 Colo. Code Regs. § 1002-61.8(2)(c)-(d).
[728] 5 Colo. Code Regs. § 1002-61.8(2)(e).
[729] 5 Colo. Code Regs. § 1002-61.8(2)(f)(ii)(A).
[730] 5 Colo. Code Regs. § 1002-61.8(3)(g).
[731] 5 Colo. Code Regs. § 1002-61.8(3)(h).
[732] Colo. Rev. Stat. § 25-8-304.
[733] Colo. Rev. Stat. § 25-8-306(1).
[734] Colo. Rev. Stat. § 34-32-116(3)-(4).

annual fee and a map or sketch of the affected acreage and the acreage reclaimed to date.[735] In addition, operators must notify the office as soon as practicable of any failure or imminent failure of certain conditions that may harm persons, property, or the environment.[736]

The MLRA also allows the board or the office to "enter upon the lands of the operator at all reasonable times for the purpose of inspection."[737]

Closure and Reclamation Requirements

Mined Land Reclamation Act:

Under the MLRA, the reclamation plan must include satisfaction of all general requirements for the type of reclamation proposed by the operator.[738] Reclamation is required on all the affected land.[739] In general, the reclamation plan must include a description of the types of reclamation proposed, an explanation of how the reclamation plan meets the requirements of the MLRA, a proposed schedule indicating when and how reclamation will be implemented, and a map of all the proposed affected land.[740] The reclamation plan must also show "the depth and thickness of the ore body or deposit to be mined and the thickness and type of the overburden to be removed."[741]

The MLRA provides a number of general requirements that reclamation plans must conform to. These general requirements address grading, earth dams necessary to impound water, acid-forming or toxic-producing material, refuse, revegetation, overburden and topsoil, disturbances to hydrologic balance, slides, surface areas of affected land, post-mining land use, forest planting, access roads, public use, reclamation for grazing, reclamation for agriculture or horticulture, and reclamation for other uses."[742] In addition, all reclamation must be completed with reasonable diligence.[743]

The operator must also conduct reclamation concurrently with mining operations to the extent practicable.[744] Overall, each reclamation plan must be completed within five years from the date when the operator advises the board that reclamation has commenced; however, the board can grant the operator additional time as necessary.[745]

For all uranium extraction operations using in situ leach mining or recovery methods, the operator must reclaim all affected ground water for all water quality parameters identified in the baseline site characterization.[746] In addition, reclamation of groundwater for in site leach mining must begin immediately when either certain groundwater standards are not met, or the production operations cease.[747]

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[735] Colo. Rev. Stat. § 34-32-116(6).
[736] Colo. Rev. Stat. § 34-32-121.5.
[737] Colo. Rev. Stat. § 34-32-121.
[738] Colo. Rev. Stat. § 34-32-112(3).
[739] Colo. Rev. Stat. § 34-32-112(3).
[740] Colo. Rev. Stat. § 34-32-112(3).
[741] Colo. Rev. Stat. § 34-32-112(5).
[742] Colo. Rev. Stat. § 34-32-116(7)(a)-(p).
[743] Colo. Rev. Stat. § 34-32-116(7)(q).
[744] Colo. Rev. Stat. § 34-32-116(7)(q).
[745] Colo. Rev. Stat. § 34-32-112(7).
[746] Colo. Rev. Stat. § 34-32-112(8).
[747] Colo. Rev. Stat. § 34-32-112.5(5)(d).

Hazardous Substance Spills:
For all hazardous substance incidents, local emergency response agencies must be notified.[748] For a release of any chemical into waters of the state of Colorado, the operator must report the incident to the Colorado Department of Public Health and Environment (CDPHE) immediately.[749] "Written notice to CDPHE must follow within five days of the incident.[750] Unpredictable failure of air pollution control or process equipment that results in the violation of emission control regulations should be reported CDPHE by 10 a.m. of the following working day, followed by a written notice explaining the cause of the occurrence and describing action that has been or is being taken to correct the condition causing the violation and to prevent such excess emissions in the future."[751] In addition, if emergency conditions cause excess emissions, the operator must provide notice to CDPHE no later than noon of the next working day and provide written notice within one month.[752]

Economic Laws and Regulations

Financial Assurances

Mined Land Reclamation Act:
Under the MLRA, no permit may be issued until the Mined Land Reclamation Board receives a financial warranty.[753] A financial warranty consists of a written promise to the board by the operator to be responsible for reclamation costs up to the amount specified by the board.[754] Financial warranties may be provided by the operator, any third party, or a combination.[755] Any instrument offered as a financial warranty must "provide that the board may recover any necessary costs, including attorney fees, it incurs in foreclosing on or realizing any collateral used to secure such financial warranty if such financial warranty is forfeited."[756] Special rules apply to designated mining operations[757] and prospecting.[758]

Proof of financial responsibility can consist of a surety bond, a letter of credit, a certificate of deposit, a deed of trust or security agreement, assurance in other forms, or proof that the operator is a department, division, or unit of state or municipal government.[759] In addition, the board may accept interests in real and personal property as financial warranties.[760] The board may refuse to accept the form of financial warranty if "[t]he value of the financial warranty offered is dependent upon the success, profitability, or continued operation of the mine; or [t]he board determines that the financial warranty offered cannot reasonably be converted to cash within [180] days of forfeiture."[761]

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[748] Colo. Office of Emergency Preparedness & Response, Environmental Spill Reporting Guidance (updated June 2018), https://drive.google.com/file/d/1vqdR4JjnNdNFHCp5WWORcRa4f71bkM-c/view.
[749] Colo. Rev. Stat. § 25-8-601.
[750] 5 Colo. Code Regs. § 1002-61.8(5)(d).
[751] Colo. Office of Emergency Preparedness & Response, Environmental Spill Reporting Guidance (updated June 2018), https://drive.google.com/file/d/1vqdR4JjnNdNFHCp5WWORcRa4f71bkM-c/view; 5 Colo. Code Regs. § 1001-2.
[752] 5 Colo. Code Regs. § 1001-5.
[753] Colo. Rev. Stat. § 34-32-117(1).
[754] Colo. Rev. Stat. § 34-32-117(3)(a).
[755] Colo. Rev. Stat. § 34-32-117(3)(a).
[756] Colo. Rev. Stat. § 34-32-117(3)(e).
[757] Colo. Rev. Stat. § 34-32-117(3)(d).
[758] Colo. Rev. Stat. § 34-32-113(4)(a).
[759] Colo. Rev. Stat. § 34-32-117(3)(f).
[760] Colo. Rev. Stat. § 34-32-117(3)(b).
[761] Colo. Rev. Stat. § 34-32-117(3)(c).

Financial warranties must be maintained in good standing for the life of the permit.[762] Financial warrantors providing proof of financial responsibility in certain forms must annually file with the board a certification by an independent auditor that the financial warrantor continued to meet all applicable requirements and notify the board within 60 days of any net loss incurred in any quarterly period.[763]

Within 60 days of receiving a notice of completion from the operator, the board or office must inspect the lands and reclamation described in the notice to determine if the operator has complied with all applicable requirements.[764] "If the board or office finds that the operator has successfully complied with any or all requirements of this article, it shall release all performance and financial warranties applicable to said requirements."[765] If the operator has not successfully complied, the board or office must advise the operator of this within 60 days.[766] If the office fails to conduct an inspection or fails to advise the operator of deficiencies within the applicable time periods, then all financial warranties "shall be deemed released as a matter of law."[767] In addition, an operator may be released from liability on reclamation and receive applicable financial warranties where a successor assumes liability for reclamation and files appropriate financial warranty.[768]

Financial warranties are subject to forfeiture under certain circumstances.[769] The board must notify the operator and all financial warrantor whenever the board has reason to believe that a financial warranty is subject to forfeiture.[770] Forfeiture decisions are subject to a right to a hearing and are appealable.[771]

Leasing and Rentals

In Colorado, mineral leases on state lands are usually issued through direct negotiation and subject to a review and approval process that takes a minimum of 60 days.[772] Leases are typically issued for a five- or 10-year primary term, and annual rentals are $3 per acre.[773]

Production Royalties

Advance minimum royalty and production royalty are determined at the time the lease is issued.[774] The minimum royalty and production royalty are based on the mineral being mined, potential for production, and location of mined property.[775]

[762] Colo. Rev. Stat. § 34-32-117(6)(a).
[763] Colo. Rev. Stat. § 34-32-117(6)(b)-(c).
[764] Colo. Rev. Stat. § 34-32-117(5)(a).
[765] Colo. Rev. Stat. § 34-32-117(5)(b).
[766] Colo. Rev. Stat. § 34-32-117(5)(c).
[767] Colo. Rev. Stat. § 34-32-117(5)(d).
[768] Colo. Rev. Stat. § 34-32-119.
[769] Colo. Rev. Stat. § 34-32-118(1).
[770] Colo. Rev. Stat. § 34-32-118(2).
[771] Colo. Rev. Stat. § 34-32-118(2).
[772] *Mining*, Colo. State Land Board, https://slb.colorado.gov/lease/mining (last visited Dec. 12, 2024).
[773] *Mining*, Colo. State Land Board, https://slb.colorado.gov/lease/mining (last visited Dec. 12, 2024).
[774] *Mining*, Colo. State Land Board, https://slb.colorado.gov/lease/mining (last visited Dec. 12, 2024).
[775] *Mining*, Colo. State Land Board, https://slb.colorado.gov/lease/mining (last visited Dec. 12, 2024).

Taxation Scheme

Metallic minerals are subject to the Metallic Minerals Severance Tax.[776] "There shall be levied, collected, and paid for each taxable year a tax upon the severance from the earth in this state of all metallic minerals as to all such severance occurring on and after January 1, 1978. Such tax shall be levied against every mining operation engaged in the severance of metallic minerals and shall be based upon the gross income of such mining operation." [777] The severance tax rate for taxable years commencing on or after July 1, 1999, is for the first $19,000,000 in gross income, no severance tax, and for gross income exceeding $19,000,000, 2.25%.[778]

Emergency Response Cash Fund

The MLRA created the Emergency Response Cash Fund, which is funded by grants and donations.[779]The fund is used to respond to emergencies or provide emergency reclamation.[780]

Social Laws and Regulations

Public Participation

Water Quality Control Act:
The Water Quality Control Act requires public notice of draft permits and permit rationale, as well as decisions to deny permits.[781] Public notice must include circulation in a relevant newspaper, transmission to any relevant states or relevant interstate agencies, and transmission to any persons who requested notice.[782] In addition, public notice must be given of the final issuance or denial of a permit.[783]

Interested persons may submit written comments on the permit application and draft permit.[784] The comment period lasts 30 days from the date of notice of permit application and draft permit, but can be extended.[785] In addition, if a public hearing is held on the application and draft permit, the public comment will close 60 days from the date of notice.[786] Furthermore, the agency may establish a responsive period for public comment so that persons can respond to material filed during the initial comment period.[787] The responsive comment period will last at least 10 days following the close of the initial comment period.[788] The agency may also reopen the public comment period to expedite the

[776] *Metallic Minerals Severance Tax*, Colo. Dep't of Revenue, https://tax.colorado.gov/metallic-minerals (last visited Dec. 12, 2024).
[777] *Metallic Minerals Severance Tax*, Colo. Dep't of Revenue, https://tax.colorado.gov/metallic-minerals (last visited Dec. 12, 2024).
[778] *Metallic Minerals Severance Tax*, Colo. Dep't of Revenue, https://tax.colorado.gov/metallic-minerals (last visited Dec. 12, 2024).
[779] Colo. Rev. Stat. § 34-32-122(3).
[780] Colo. Rev. Stat. § 34-32-122(3).
[781] 5 Colo. Code Regs. § 1002-61.5(2)(b)-(c).
[782] 5 Colo. Code Regs. § 1002-61.5(2)(e).
[783] 5 Colo. Code Regs. § 1002-61.6(c).
[784] 5 Colo. Code Regs. § 1002-61.5(2)(d).
[785] 5 Colo. Code Regs. § 1002-61.5(2)(d).
[786] 5 Colo. Code Regs. § 1002-61.5(2)(d).
[787] 5 Colo. Code Regs. § 1002-61.5(2)(d)(i)(B).
[788] 5 Colo. Code Regs. § 1002-61.5(2)(d)(i)(B).

decision-making process.[789] If new questions or issues concerning the comment period arise, the comment period may be reopened or extended, a responsive comment period may be established, or a new or revised draft permit may be prepared.[790]

Interested persons may also request a public meeting.[791] A request for a public meeting must be filed within 30 days of public notice and state the interest of the party and why a meeting is warranted.[792] The agency must hold a meeting if "there is a significant degree of public interest" within 60 days after public notice.[793] Public notice for a meeting must be circulated at least as widely as was the original public notice.[794]

In general, permit applications, draft permits, and related information are public information and must be available to the public for inspection and copying.[795] However, any confidential information or information relating to a trade secret must not be publicly disclosed.[796] The burden of proof lies with the person seeking to protect their information.[797]

Mined Land Reclamation Act:
The applicant must cause notice of the filing of an application for a reclamation permit to be published "in a newspaper of general circulation in the locality of the proposed mining operation once a week for four consecutive weeks, commencing not more than ten days after the filing of said application with the board or the office."[798] The applicant must also provide notice to all owners of record of the affected land, all owners of record of immediately adjacent land, and any other persons designated by the Mined Land Reclamation Board that might be affected by the proposed mining operation.[799] Applicants of in situ leach operations must also notify all owners of record of lands within three miles of the affected land.[800]

Any person has the right to file comments on an application for a permit within 20 days after the last publication of notice.[801] In addition, for good cause shown in the comments, the board, in its discretion, may hold a hearing.[802]

All applications and information shared with the board or office must be made available for inspection by the public.[803] However, information shared with the board or office marked confidential will not be a matter of public record absent a written release from the operator or until such mining operation has been terminated.[804] For in situ leach mining, "the design and operation of the baselined characterization and monitoring plan . . . together with all information collected in accordance with the plan, shall be a

[789] 5 Colo. Code Regs. § 1002-61.5(2)(d)(i)(C).
[790] 5 Colo. Code Regs. § 1002-61.5(2)(d)(ii).
[791] 5 Colo. Code Regs. § 1002-61.5(2)(d).
[792] 5 Colo. Code Regs. § 1002-61.5(3)(a).
[793] 5 Colo. Code Regs. § 1002-61.5(3)(a).
[794] 5 Colo. Code Regs. § 1002-61.5(3)(b).
[795] 5 Colo. Code Regs. § 1002-61.5(4)(a).
[796] 5 Colo. Code Regs. § 1002-61.5(4)(b).
[797] 5 Colo. Code Regs. § 1002-61.5(4)(b).
[798] Colo. Rev. Stat. § 34-32-110(10)(b).
[799] Colo. Rev. Stat. § 34-32-110(10)(c).
[800] Colo. Rev. Stat. § 34-32-110(10)(c).
[801] Colo. Rev. Stat. § 34-32-114.
[802] Colo. Rev. Stat. § 34-32-114.
[803] 2 Colo. Code Regs. § 407-1.3(1).
[804] Colo. Rev. Stat. § 34-32-112(9).

matter of public record."[805] For prospecting operations, all information unless confidential provided to the board in a notice of intent to conduct prospecting is a matter of public record.[806]

Tribal Consultation

Colorado does not have any laws requiring consultation between state agencies and tribes. However, the Colorado Commission of Indian Affairs developed a State-Tribal Consultation Guide which provides "suggestions about how to conduct meaningful Tribal-State Consultations."[807] In addition, there are two state agencies, Colorado Department of Health Care Policy and Financing and Colorado Department of Public Health and Environment, who have Tribal Consultation Agreements to work on a government-to-government basis with the Ute Mountain Ute and Southern Ute Indian Tribes on health and health care related issues.[808]

Cultural Resources Review

Under Colorado's Register of Historic Places law, properties nominated or accepted for inclusion on the state register of historic places are protected from any action by a state agency until a determination is made concerning the effect of the action on the properties.[809] The state historic society must conduct a review of the potential effects of the proposed action on the properties, and comments made by the society that include specific recommendations to prohibit or alter all or some aspects of the proposed action must be implemented by the agency.[810] In addition, if an agency action may adversely affect a property that is fifty or more years old, the agency should seek the society's determination as to whether the property is of historical significance.[811] The agency must contact the society at the earliest stages of planning or consideration of a proposed action.[812]

[805] Colo. Rev. Stat. § 34-32-112.5(5)(c).
[806] Colo. Rev. Stat. § 34-32-113(3).
[807] Colo. Comm'n of Indian Affairs, State-Tribal Consultation Guide: An Introduction for Colorado State Agencies to Conducting Formal Consultations with Federally Recognized American Indian Tribes 4 (2014).
[808] Colo. Comm'n of Indian Affairs, State-Tribal Consultation Guide: An Introduction for Colorado State Agencies to Conducting Formal Consultations with Federally Recognized American Indian Tribes 13 (2014).
[809] Colo. Rev. Stat. § 24-80-104.
[810] Colo. Rev. Stat. § 24-80-104.
[811] 8 Colo. Code Regs. § 1504-5(8).
[812] 8 Colo. Code Regs. § 1504-5(8).

Minnesota

Overview of Hardrock Mining in Minnesota

Minnesota is the largest producer of iron ore and taconite in the United States.[813] While most of the high-grade natural iron ore has already been mined, advances in technology have allowed for the processing of taconite, which is a lower grade iron ore.[814] To date, Minnesota has only seen the mining of ferrous minerals, including iron ore and taconite.[815] However, manganese, copper, nickel, palladium, and titanium exist in mineable quantities and there are current development efforts that would diversify the state's mined materials.[816]

Key Agencies, Laws, and Regulations

In Minnesota, mining activities are primarily governed by Minnesota Statutes, Chapter 93, which includes the Mineland Reclamation Act. Regulations pursuant to this chapter address standards for the issuance of permits to mine, address water appropriations and use, and set specific reclamation standards, among others.

The two primary agencies engaged in the permitting process are the Minnesota Department of Natural Resources (MDNR), which leads the mine permitting process and environmental reviews under the Minnesota Environmental Policy Act, and the Minnesota Pollution Control Agency (MPCA), which is primarily responsible for water and waste permitting.

Environmental Laws and Regulations

Permits and Approvals Required

Land Use Permits

Permit to Mine:
A mining operation may not be carried out unless a permit to mine has been obtained from MDNR.[817] There are two types of permits: ferrous[818] and nonferrous.[819]

The application must include a proposed reclamation plan, public liability insurance that is sufficient to compensate anyone who may be harmed as a result of the mining or reclamation activities, the application fee, financial assurance if required, and an advertisement of ownership that must be

[813] *Mining in Minnesota*, MINN. DEP'T OF NAT. RES., https://www.dnr.state.mn.us/education/geology/digging/mining.html (last visited Dec. 12, 2024).
[814] *Mining in Minnesota*, MINN. DEP'T OF NAT. RES., https://www.dnr.state.mn.us/education/geology/digging/mining.html (last visited Dec. 12, 2024).
[815] *Mining in Minnesota*, MINN. DEP'T OF NAT. RES., https://www.dnr.state.mn.us/education/geology/digging/mining.html (last visited Dec. 12, 2024).
[816] *Mining in Minnesota*, MINN. DEP'T OF NAT. RES., https://www.dnr.state.mn.us/education/geology/digging/mining.html (last visited Dec. 12, 2024).
[817] MINN. STAT. § 93.481.
[818] MINN. R. § 6130.
[819] MINN. R. § 6132.

published in a local newspaper before the application is filed.[820] Within 120 days, the agency will either grant or deny the application unless a contested case hearing is required.[821] If granted, the permit shall be granted for the term necessary for the completion of the proposed mining operation, including reclamation or restoration.[822]

A permit is generally irrevocable unless substantial construction is not begun within three years or the permittee consents to conditions imposed by the commissioner necessary for the protection of the public interest. A permit may be modified or revoked if the permittee breaches the terms or conditions of the permit, if modification or cancellation is necessary to protect public health and safety, or if modification or cancellation is necessary to protect public interests in lands or waters against injury that is not expressly authorized by a permit. Additionally, a permit may be suspended in an emergency to "protect the public health or safety or to protect public interests in lands or waters against imminent danger of substantial injury in any manner or to any extent not expressly authorized by the permit, or to protect persons or property against such danger."[823] The agency may also require the permittee to take preventative or remedial measures as necessary to protect against such harm.[824]

Water Permits

Minnesota NPDES & State Disposal System Permits:[825]
Any industrial facility that proposes to discharge pollutants into surface or groundwaters of the state must apply for a permit with the MPCA.[826] Such a permit may be inclusive of a national pollutant discharge elimination system (NPDES) or a state disposal system (SDS).[827]

The application must include an antidegradation assessment that includes an analysis of alternatives to avoid net increases in loading or other causes of degradation.[828] If there are no "prudent and feasible" alternatives, the application must include an assessment of existing uses and existing water quality.[829] If alternatives are not available and the waters at issue are of existing high water quality, the application must discuss an analysis of alternatives that minimize degradation through prevention, treatment, or loading offsets, design considerations and constraints of the least degrading alternatives, and comparisons of previously authorized causes of degradation, existing water quality to anticipated water quality, and existing and expected economic conditions and social services.[830] The agency may not authorize degradation unless it issues a finding that it is necessary to accommodate "important economic or social change."[831]

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[820] MINN. STAT. § 93.481.
[821] MINN. STAT. §§ 93.481, 93.483 (procedures for a contested case).
[822] MINN. STAT. § 93.481.
[823] MINN. STAT. § 93.481.
[824] MINN. STAT. § 93.481.
[825] MINN. STAT. § 115.
[826] *Wastewater Permits*, MINN. POLLUTION CONTROL AGENCY, https://www.pca.state.mn.us/business-with-us/wastewater-permits (last visited Dec. 12, 2024).
[827] MINN. STAT. § 115.542.
[828] MINN. R. § 7050.0280.
[829] MINN. R. § 7050.0280.
[830] MINN. R. § 7050.0280; MINN. R. § 7050.0265 (Antidegradation Standards When Changes in Existing Water Quality are Reasonably Quantifiable); MINN. R. § 7050.0270 (Antidegradation Standards When Changes in Existing Water Quality are not Reasonably Quantifiable).
[831] MINN. R. § 7050.0265 (Antidegradation Standards When Changes in Existing Water Quality are Reasonably Quantifiable); MINN. R. § 7050.0270 (Antidegradation Standards When Changes in Existing Water Quality are not Reasonably Quantifiable).

The agency will prepare a written preliminary antidegradation determination based on a review of the application materials.[832] The determination will be included in a public notice of the application, which will be circulated within the local area.[833] A 30-day comment period will be provided, during which a person may also submit a petition for a public informational meeting or a contested case hearing.[834]

Recent Enforcement Activities

In the spring of 2023, the MPCA imposed a civil penalty of $16,750 along with corrective actions against Cleveland-Cliffs Minorca Mine, Inc., an iron ore mine in northern Minnesota.[835] The agency found that the mine leaked wastewater, construction runoff, and tailings materials into half an acre of land that included a nearby wetland and had unpermitted construction runoff in the spring of 2023.[836] In addition to the penalty fees, the mine was required to update its tailings pipeline inspection and maintenance plan to include semi-annual pipe wall thickness testing and to develop an environmental screening checklist to address environmental requirements prior to beginning construction or maintenance projects.[837]

CWA Section 401 Certifications:

CWA Section 401 certifications require an antidegradation assessment.[838] The applicant must provide the same information necessary for an NPDES or SDS permit, but may also propose compensatory mitigation to preserve existing uses and the level of water quality necessary to protect the existing uses where there is a physical alteration.[839] A proposed compensatory mitigation plan must include a description of existing uses and the level of water quality necessary to protect existing uses of the surface waters that will be impacted, a description of existing uses and the level of water quality necessary to protect existing uses of the surface waters where mitigation will occur, a description of how compensatory mitigation will preserve existing uses, a monitoring and reporting proposal, and a description of how the compensatory mitigation will be maintained.[840]

The agency will prepare a written preliminary antidegradation determination based on a review of the application materials.[841] The determination will be included in a public notice of the application, which will be circulated within the local area.[842] A comment period will be provided for a minimum of 10 days,

[832] Minn. R. § 7050.0280.
[833] Minn. R. § 7050.0280; Minn. R. § 7001.0100.
[834] Minn. R. § 7050.0280; Minn. R. § 7001.0100; Minn. R. § 7001.0110.
[835] *Cleveland-Cliffs Minorca Mine Inc. fined $16,750 for Industrial Wastewater Violations at Virginia Facility*, Minn. Pollution Control Agency (July 3, 2024), https://www.pca.state.mn.us/news-and-stories/cleveland-cliffs-minorca-mine-inc-fined-16750-for-industrial-wastewater-violations-at-virginia.
[836] *Cleveland-Cliffs Minorca Mine Inc. fined $16,750 for Industrial Wastewater Violations at Virginia Facility*, Minn. Pollution Control Agency (July 3, 2024), https://www.pca.state.mn.us/news-and-stories/cleveland-cliffs-minorca-mine-inc-fined-16750-for-industrial-wastewater-violations-at-virginia.
[837] *Cleveland-Cliffs Minorca Mine Inc. fined $16,750 for Industrial Wastewater Violations at Virginia Facility*, Minn. Pollution Control Agency (July 3, 2024), https://www.pca.state.mn.us/news-and-stories/cleveland-cliffs-minorca-mine-inc-fined-16750-for-industrial-wastewater-violations-at-virginia.
[838] Minn. R. § 7050.0285.
[839] Minn. R. § 7050.0285.
[840] Minn. R. § 7050.0285.
[841] Minn. R. § 7050.0285.
[842] Minn. R. § 7050.0285; Minn. R. § 7001.0100.

though the duration will be established by the agency on a case-by-case basis after considering the scope, nature, and potential impacts on water quality.[843]

Minnesota has a significant number of designated Outstanding National Resource Waters, including Lake Superior, portions of the Mississippi River, and lake trout lakes.[844] Before identifying or establishing additional outstanding resource value waters, the agency must provide an opportunity for a public hearing.[845]

CWA Section 404 Primacy:
Minnesota has explored assumption of the CWA Section 404 program dating back to 1989.[846] Most recently, assessments on the feasibility, benefits, and costs of assumption were completed between 2017 and 2022.[847] In 2021, the legislature passed a law requiring the Minnesota Environmental Quality Board to submit a report on additional funding necessary to secure 404 assumption and to fully implement the state-assumed program.[848] The state has also identified what regulatory changes would be necessary to secure assumption, including establishing a permitting program, establishing procedures to ensure state water quality standards are met, and improvements to the state's permitting and data infrastructure.[849]

Permit to Mine – Wetlands Program:
Wetlands may not be impacted as part of a project for which a permit to mine is required except as provided for by MDNR.[850] As such, when a mine may affect a wetland, a wetland replacement plan is required.[851] For mining operations permitted after July 1, 1993, the mining and reclamation operating plans in the permit to mine must include an approved wetland replacement plan.[852] The replacement plan must meet the detailed replacement standards that address replacement ratios, ecological suitability and sustainability, upland buffers, siting, and timing of the replacement.[853] It must also satisfy the regulatory replacement wetland construction standards, which includes design requirements, like water control structure standards and native, noninvasive vegetation treatment, and design considerations, such as emulating the hydrology and vegetation of the wetland condition.[854] Mining companies are often approved to restore wetlands to mitigate or replace wetland impacts, creating a restored wetland site.[855]

[843] MINN. R. § 7050.0285; MINN. R. § 7001.1440.
[844] MINN. R. § 7050.0335.
[845] MINN. R. § 7050.0335.
[846] *404 Assumption*, MINN. BOARD OF WATER AND SOIL RESOURCES, https://bwsr.state.mn.us/404-assumption (last visited Dec. 12, 2024).
[847] *404 Assumption*, MINN. BOARD OF WATER AND SOIL RESOURCES, https://bwsr.state.mn.us/404-assumption (last visited Dec. 12, 2024).
[848] MINN. ENV'T QUALITY BOARD, MINNESOTA FEDERAL CLEAN WATER ACT SECTION 404 ASSUMPTION – REPORT ON FUNDING ESTIMATES (2022).
[849] MINN. ENV'T QUALITY BOARD, MINNESOTA FEDERAL CLEAN WATER ACT SECTION 404 ASSUMPTION – REPORT ON FUNDING ESTIMATES (2022).
[850] MINN. R. § 8420.0930. MDNR is the approving authority for activities associated with projects requiring permits to mine (8420.0200); *see also* MINN. R. § 6132.2000.
[851] MINN. R. § 8420.0930.
[852] MINN. R. § 8420.0930.
[853] MINN. R. § 8420.0522. Financial assurance must also be provided to the local government unit for wetland replacement that is not done in advance.
[854] MINN. R. § 8420.0528.
[855] *Permit to Mine – Wetlands Program*, MINN. DEP'T OF NAT. RES., https://www.dnr.state.mn.us/lands_minerals/mineland_reclamation/wetlands.html (last visited Dec. 12, 2024).

Permit to Change the Course, Current, or Cross-Section of Public Waters:
MDNR's goal is to "ensure that alterations of public waters for mining or reclamation of mining areas will minimize adverse environmental effects, preserve water resources to the maximum extent feasible and practical, and encourage the planning of future land and water utilization while at the same time promoting the orderly development of mining and the use of sound mining practices."[856] In furtherance of this goal, permits are required before an entity may alter public waters to facilitate mining of iron ore and other metals.[857] Permit applications must demonstrate why mining without drainage, diversion, or control of public waters is not feasible or economical.[858]

The agency may not issue a permit that harms air, water, land, or other natural resources "so long as there is a feasible and prudent alternative consistent with the reasonable requirements of the public health, safety, and welfare."[859] However, if the agency can justify a major change, compensation may be provided for, including restoring degraded waters and creating replacement water areas.[860] Whenever mining activities in the beds of public waters will have a detrimental effect on the physical and biological character of said waters, measures to compensate shall be required in the permit.[861] Specific standards are prescribed for actions such as excavation of public waters, structures in public waters, and construction of bridges, culverts, intakes, and outfalls.[862]

Water Appropriation and Use Permits:
MDNR has the authority to issue water-use permits for the diversion, drainage, control, or use of waters of the state for mining iron ore and other metals.[863] Such a permit may only be granted if the agency determines that the proposed water modification is necessary to mine substantial deposits of metals and that there is not another "feasible and economical" method, the interests of the public in lands or waters will not be substantially impaired, public health or safety will not be endangered, and the proposed mining operation will be in the public interest.[864] The permit will be granted for the term reasonable and necessary for the completion of the proposed mining operations, and may include conditions that are necessary and practicable for restoring the waters to their former condition after the mining is complete.[865]

In addition to the detailed application required for all water use permits,[866] applications for mining and the processing of metallic minerals must include additional information, including:

- All plans and specifications regarding withdrawal, use, storage, and disposal of waters of the state;
- Details of the rates, volumes, and source of water to be appropriated and consumed in the processing, including all losses such as uncontrolled seepage, evaporation, plant losses, and discharge volumes;

[856] MINN. R. § 6115.0280.
[857] MINN. R. § 6115.0280.
[858] MINN. R. § 6115.0280.
[859] MINN. R. § 6115.0250.
[860] MINN. R. § 6115.0250.
[861] MINN. R. § 6115.0280.
[862] MINN. R. § 6115.0190 – 6115.0272.
[863] MINN. STAT. § 103G.297.
[864] MINN. STAT. § 103G.297.
[865] MINN. STAT. § 103G.297.
[866] MINN. R. § 6115.0660.

- Criteria used in estimating the proposed appropriation, distribution, and discharge based on climatic averages and extremes;
- Details of the sources, rates, and volumes of water released from the mining operations involved; and
- Details of the hydrologic and hydraulic impacts and effects of the operation on the watershed(s) including changes in basins, watercourses, and groundwater systems.[867]

The agency's allocation of water will be based on water quality requirements, the impact of the appropriation on those requirements, and the water supply sources located within reasonable distance to the site. Additionally, the permittee will be required to utilize available surplus water from preexisting mining operations or facilities whenever feasible and practical.[868] The permit will remain in effect subject to the permit's provisions and conditions.

Additionally, temporary permits may be granted for a one-time, nonrecurring appropriation of waters of the state for not more than 12 months.[869] Extensions may be granted, but the permit may not remain in force for more than two years.[870]

Dams:

There are three classifications of dams based on the hazard that would result were it to fail.[871] Class I dams are those where failure may result in any loss of life or serious hazard; damage to health, main highways, high-value industrial or commercial properties, major public utilities; or serious direct or indirect economic loss to the public.[872] Class II dams are those where failure may result in possible health hazard or probable loss of high-value property; damage to secondary highways, railroads, or public utilities; or limited direct or indirect economic loss to the public.[873] Class III dams are those where failure would result in property losses restricted mainly to rural buildings and local and township roads.[874]

For each new proposed dam, an application must be filed with MDNR.[875] The application must include a preliminary report, which shall provide a statement setting forth the impact of the dam on the environment, maps, a report on surface conditions, cross-sections of the dams, logs of borings in the foundation and borrow areas, preliminary design assumptions, a preliminary cost estimate, future plans for the ultimate project size, and a description of other activities and elements related to the dam.[876] If the preliminary report is accepted and agreed to by the agency, the applicant shall submit a final design report.[877]

Approval or denial of the permit must be based on "potential hazards to the health, safety, and welfare of the public and the environment including probable future development of the area downstream or upstream."[878] The agency must determine that the proposal is sufficient in demonstrating quantifiable

[867] Minn. R. § 6115.0720.
[868] Minn. R. § 6115.0720.
[869] Minn. R. § 6115.0750.
[870] Minn. R. § 6115.0750.
[871] Minn. R. § 6115.0340.
[872] Minn. R. § 6115.0340.
[873] Minn. R. § 6115.0340.
[874] Minn. R. § 6115.0340.
[875] Minn. R. § 6115.0410.
[876] Minn. R. § 6115.0410.
[877] Minn. R. § 6115.0410.
[878] Minn. R. § 6115.0410.

benefits, technical stability, storage capacity capable of handling the design flood, and compliance with prudent, current environmental practice.[879] Additionally, Class I dam proposals must demonstrate a lack of other feasible and practical alternative sites, and economic hardship that would have a major adverse effect on the area; and Class II dam proposals must demonstrate a lack of other feasible and practical alternative sites, and that the dam will benefit the population or socioeconomic base of the area.[880]

Wildlife Permits

Endangered Species:
Minnesota's endangered species statute imposes restrictions, a permit program, and exemptions pertaining to species designated as endangered or threatened. It is unlawful to "take, import, transport, purchase, sell, dispose, or possess" a listed species without a permit.[881] Permits may be issued if the harm caused is outweighed by the social and economic benefits of the otherwise prohibited act.[882] The killing of a listed species for this purpose may only be permitted after other alternatives have been evaluated and rejected.[883]

Waste Permits

State Disposal Systems:
MPCA regulates treatment facilities for industrial water in Minnesota. State Disposal System (SDS) is a permit program that regulates water discharges to the ground surface or subsurface to protect groundwater. A disposal system may not be constructed or operated until plans and specifications for the system have been submitted to MPCA and the agency has granted a written permit.[884] Additionally, hazardous or radioactive waste disposal systems cannot be located or operated "in any place or in any manner that can reasonably be expected to cause the pollution of potable water."[885]

Air Permits

Air permits are issued by MPCA to comply with state and federal requirements. Air permits issued identify emission sources at each mining facility and place limits on those emissions where necessary. Air permits issued to mining operations control emissions from crushing and handling of rock, combustion sources, and fugitive dust from material handling, unpaved roads, and tailings basins.[886]

Some facilities that are not covered by federal permits must still obtain state permits that regulate minor sources of air emissions. Such state permits include registration permits for facilities with low actual emissions compared to potential emissions[887] and capped emissions permits for non-complex facilities

[879] MINN. R. § 6115.0410.
[880] MINN. R. § 6115.0410.
[881] MINN. R. § 6212.1800; MINN. STAT. § 84.0895.
[882] MINN. STAT. § 84.0895.
[883] MINN. R. § 6212.2100.
[884] MINN. STAT. § 115.07(a). MPCA may waive the submission of plans and specifications.
[885] MINN. STAT. § 115.065.
[886] *Mining Permits*, MINN. POLLUTION CONTROL AGENCY, https://www.pca.state.mn.us/business-with-us/mining-permits (last visited Dec. 12, 2024).
[887] MINN. R. § 7007.1110 – 7007.1130

that do not qualify for a registration permit and do not require site-specific permit conditions.[888] Additionally, a state general permit for non-metallic mineral processing is currently available.[889]

Monitoring Requirements

Water Use:
All permittees are required to measure and keep monthly and yearly records of the amount of water used or appropriated.[890] Pursuant to this requirement, each installation for using water must have a measurement device or utilize a measurement method that quantifies the volume of withdrawal to within 10% of actual withdrawal.[891]

Closure and Reclamation Requirements

Minnesota has separate regulatory reclamation standards for taconite and iron ore and nonferrous metallic mineral mining. Both sets of standards are very detailed and address considerations such as buffers, waste management, air pollution, and vegetation.

Nonferrous Metallic Mineral Mining Reclamation Standards:

- Siting: Mining activities must be conducted on sites that minimize adverse impacts on natural resources and the public.[892] There are also many areas where mining is either prohibited or restricted, including the Boundary Waters Canoe Area Wilderness, national parks and monuments, and state parks and wilderness areas.[893] Where there is flexibility in site selections, impacts to the public and natural resources, risk of injury and damage, and conflicts with natural and heritage sites should all be minimized.[894]
- Buffers: Existing terrain, vegetation, and revegetated berms must be utilized to diminish mining impacts.[895] Buffers must be in place before construction begins.[896]
- Reactive Mine Waste: Mine waste must be characterized before an application for a permit to mine is submitted and must be continually studied throughout the life of the mining operation.[897] A reactive mine waste storage facility must be designed by professional engineers registered in Minnesota.[898]
- Pitwalls: The overburden portion of pitwalls must be structurally sound and promote progressive reclamation.[899]

[888] MINN. R. § 7007.1140 – 7007.1147
[889] MINN. R. 7007.1100 (regulations for establishing general permits); *Non-Metallic Mineral Processing General Permit*, MINN. POLLUTION CONTROL AGENCY, https://mn.gov/elicense/a-z/?id=1083-230919#/list/appId//filterType//filterValue//page/1/sort//order/.
[890] MINN. R. § 6115.0750.
[891] MINN. R. § 6115.0750.
[892] MINN. R. § 6132.2000.
[893] MINN. R. § 6132.2000.
[894] MINN. R. § 6132.2000.
[895] MINN. R. § 6132.2100.
[896] MINN. R. § 6132.2100.
[897] MINN. R. § 6132.2200.
[898] MINN. R. § 6132.2200.
[899] MINN. R. § 6132.2300.

- Storage Piles: Storage piles must minimize hydrologic impacts, enhance vegetation, be structurally sound, control erosion, promote progressive reclamation, and recognize the conservation of the mineral resources.[900]
- Tailings Basins: Tailings basins must be structurally sound, control air emissions, minimize hydrologic impacts, promote progressive reclamation, and enhance the survival and propagation of vegetation.[901]
- Heap and Dump Leaching Facilities: Such facilities must be structurally sound, minimize hydrologic impacts, promote progressive reclamation, and minimize the release of substances that adversely impact other natural resources.[902]
- Vegetation: Vegetation must be utilized to control erosion, screen mining areas from noncompatible uses, and provide for subsequent land uses.[903] After three growing seasons, there must be 90% ground cover of all required areas, and within 10 growing seasons, an area must have a vegetative community similar to that of an approved reference area.[904]
- Dust Suppression: Dust must be controlled using techniques such as water spray, vegetation, and anchored mulches.[905] Limited chemical binders may be used as a last alternative.[906]
- Air Overpressure and Ground Vibrations from Blasting: The effects from such activities must not be injurious to human health or welfare and property outside of the mining areas.[907]
- Subsidence: Hazardous conditions resulting from subsidence must be minimized.[908] If subsidence occurs, ground control surveys must be conducted and affected areas must be contoured or filled.[909]
- Corrective Action: If violations of the permit to mine are observed, corrective action must be taken immediately.[910] The permitee is required to notify MDNR if it is aware of a violation or a threat to human safety or natural resources.[911] If the permitee fails to comply, the commissioner may assess civil penalties or suspend, revoke, or modify the permit.[912]
- Closure and Post-closure Maintenance: The mining area must be closed in a manner that renders it stable, free of hazards, and maintenance free.[913] Hydrologic impacts and release of substances that adversely impact other natural resources must be minimized.[914]

<u>Taconite and Iron Ore Reclamation Standards:</u>

- Siting: Mining activities must be conducted on sites that minimize adverse impacts on the environment and the public.[915] Where there is flexibility in site selections, impacts to the public and natural resources, risk of injury and damage, and conflicts with natural and heritage sites

[900] Minn. R. § 6132.2400.
[901] Minn. R. § 6132.2500.
[902] Minn. R. § 6132.2600.
[903] Minn. R. § 6132.2700.
[904] Minn. R. § 6132.2700.
[905] Minn. R. § 6132.2800.
[906] Minn. R. § 6132.2800.
[907] Minn. R. § 6132.2900.
[908] Minn. R. § 6132.3000.
[909] Minn. R. § 6132.3000.
[910] Minn. R. § 6132.3100.
[911] Minn. R. § 6132.3100.
[912] Minn. R. § 6132.3100.
[913] Minn. R. § 6132.3200.
[914] Minn. R. § 6132.3200.
[915] Minn. R. § 3160.1000.

should all be minimized.[916] Exclusion and avoidance areas are identified, including the Boundary Waters Canoe Area, protected river districts, and within 300 feet of any state designated trout stream.[917]

- In-mine Disposal: Mining activities shall maximize the use of past, present, and future mining areas to minimize land disturbance and reduce the loss of nonmineral resources.[918] As such, in-mine disposal of mine waste may be required.[919]
- Buffers and Barriers: To improve a mining operation's compatibility with surrounding non-mining uses, buffering must be implemented before operations begin and natural terrain or vegetation must be utilized to minimize noise, air pollutants, traffic, and erosion.[920]
- Sloping and Landform Design: Landforms must complement nearby terrain, minimize adverse water quality and quantity effects on receiving waters, enhance vegetation, be structurally sound, control erosion, promote early and progressive reclamation, and encourage prompt conversion from mining to the land's subsequent use.[921]
- Runoff: Watershed modifications must be minimized.[922] As such, runoff must be discharged without injury to life, property, or natural resources.[923]
- Examination by Engineer: When mine waste is deposited on areas with unstable foundations, an engineer must examine the foundation and design the landforms to be stable.[924]
- Design, Construction, and Operation of Tailings Basins: Tailings basins must maximize tailings storage, be drained in a manner consistent with stockpile design and construction standards, and minimize dust generation by maximizing the area of permanently reclaimed tailings.[925]
- Vegetation: Vegetation must be established to control erosion, minimize leaching of toxic substances, screen mining areas for noncompatible uses, and provided wildlife habitat.[926] Vegetation is required in specific areas, including surface overburden stockpiles, tailings basins, and exposed soils adjacent to water reservoirs.[927] Other measures may be taken as necessary, including using vegetation to control wind erosion, dust, and water quality.[928] After three growing seasons, there must be 90% ground cover of all required areas, and within 10 growing seasons, an area must have a vegetative community similar to that of an approved reference area.[929]
- Air Pollution: Avoidable dust must be controlled through techniques like water spray, chemical binders, anchored mulches, vegetation, and enclosure and containment.[930]
- Blasting: Effects of air pressure and ground vibrations must be limited to not injure human health, welfare, or property outside of the mining area.[931]

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[916] MINN. R. § 3160.1100.
[917] MINN. R. § 6130.1200; MINN. R. § 6130.1300.
[918] MINN. R. § 6130.1400.
[919] MINN. R. § 6130.1400.
[920] MINN. R. § 6130.1500.
[921] MINN. R. § 6130.2000.
[922] MINN. R. § 6130.2200.
[923] MINN. R. § 6130.2200.
[924] MINN. R. § 6130.2300.
[925] MINN. R. § 6130.3000.
[926] MINN. R. § 6130.3500.
[927] MINN. R. § 6130.3600.
[928] MINN. R. § 6130.3600.
[929] MINN. R. § 6130.3600.
[930] MINN. R. § 6130.3700.
[931] MINN. R. § 6130.3800.

- Subsidence and Surface Displacement: Hazardous conditions resulting from slumping, heaving, or subsidence must be mitigated.[932] If subsidence occurs, ground surveys should be conducted and affected areas should be redressed after subsidence has ceased.[933]
- Surface Overburden and Stockpiles: Specifications are provided for the design and construction of overburden and stockpiles.[934] Included in these standards is the requirement that, to the extent possible, all runoff and drainage control measures must be designed to withstand a 100-year frequency, 24-hour duration storm, and collecting runoff in a settling basin if it is likely to cause violations of water quality standards.[935]
- Deactivation and Release: The mining area must be deactivated so it is nonpolluting, stable, free of hazards, minimizes the need for fencing, has current land use and future land use potential, and is maintenance free to the maximum extent possible.[936] At least two years before any portion of the mining area is deactivated, proposed subsequent uses must be proposed based on factors like compatibility of adjacent uses, needs of the area, and pollution of air and water.[937] The majority of closure activities must be conducted within three years of deactivation.[938]

Hazardous Substance Spills:

The MPCA must be notified immediately when more than five gallons of petroleum or any amount of any other substance is released into the environment that could pollute waters of the state.[939] In addition to the notification requirement, there are specific preparedness requirements for certain owners and operators, including those who own or operate facilities containing 1,000,000 gallons or more of hazardous substance in tank storage at any time.[940] Such an owner or operator must "maintain a level of preparedness that ensures that effective response can reliably be made to worst case discharges."[941] This includes maintaining adequate response personnel and equipment.[942] Additionally, such an owner or operator is required to prepare and maintain a prevention and response plan for a worst case discharge.[943] The plan must be consistent with the national or area contingency plans developed under the Oil Pollution Act of 1990, and must describe measures taken to prevent discharges, the individuals responsible for implementing response actions, and the characteristics of potential worst case discharges, among other others.[944]

Economic Laws and Regulations

Financial Assurances

The Commissioner of Natural Resources has the authority to require a bond or other financial assurance that they deem necessary, and such financial assurance must be reviewed annually.[945] Regulations have

[932] Minn. R. § 6130.4000.
[933] Minn. R. § 6130.4000.
[934] Minn. R. § 6130.2700; Minn. R. § 6130.2500; Minn. R. § 6130.2800; Minn. R. § 6130.2400; Minn. R. § 6130.2600.
[935] Minn. R. § 6130.2100.
[936] Minn. R. § 6130.4100.
[937] Minn. R. § 6130.4100.
[938] Minn. R. § 6130.4100.
[939] Minn. Stat. § 115.061.
[940] Minn. Stat. § 115E.03.
[941] Minn. Stat. § 115E.03.
[942] Minn. Stat. § 115E.03.
[943] Minn. Stat. § 115E.04.
[944] Minn. Stat. § 115E.04.
[945] Minn. Stat. § 93.49.

been promulgated with respect to both ferrous metallic mineral mining and nonferrous metallic mineral mining.

Ferrous Metallic Mineral Mining:
At any point during the pendency of a permit application, during the mining operation, or following the completion of the mine but before the release of the permittee, a performance bond may be required if the operator has failed to perform any required reclamation measure.[946] A performance bond may also be required if there is reasonable doubt that the operator will be financially able to comply with the requirements of the permit.[947] In the event a performance bond is required, the amount will be equal to the estimated cost of satisfactorily reclaiming all of the lands disturbed and unreclaimed up to the date of the bond review and will be conditioned on performance within a time period established based on actions necessary to correct the deficiency or noncompliance.[948] When a bond is required, the operator may also provide assignable bonds of equal value, a lien against real or personal property at its wholesale value, or other security or assurances accepted by MDNR.[949]

Nonferrous Metallic Mineral Mining:
The financial assurance is designed to ensure there is a source of funds to be used if the permitee fails to perform reclamation activities or corrective action if the permitee does not comply with the design and operating criteria in the permit.[950] In submitting an application for a permit to mine, the applicant must include an estimate of costs necessary to implement a contingency reclamation plan.[951] Additionally, if a corrective action plan is required, the permittee must submit the costs to perform the corrective action.[952] All costs must be updated annually.[953]

While specific forms of reclamation assurance mechanisms are not prescribed, assurance must meet the following criteria: be sufficient to cover the costs of the contingency reclamation plan and corrective action, be available and payable to the agency when needed, be fully valid, binding, and enforceable, not be dischargeable through bankruptcy, and be approved by the agency.[954]

"Bad actor" provision: In 2023, a bill was introduced in the Senate that would provide for the denial and revocation of nonferrous mining permits, licenses, or leases to a bad actor.[955] Activities that would qualify an applicant as a bad actor include violating state, federal, Tribal, or foreign environmental protection laws, being subject to sanctions resulting from the violation of an environmental law or regulation, or having been convicted of violating a state, federal, Tribal, or foreign law against bribery or

[946] MINN. R. § 6130.6000.
[947] MINN. R. § 6130.6000.
[948] MINN. R. § 6130.6000.
[949] MINN. R. § 6130.6000.
[950] MINN. R. § 6132.1200.
[951] MINN. R. § 6132.1200; MINN. R. § 6132.1300 (A contingency plan must identify reclamation activities that would be implemented by the permitee if operations ceased in the next calendar year.).
[952] MINN. R. § 6132.1200.
[953] MINN. R. § 6132.1200.
[954] MINN. R. § 6132.1200.
[955] SF 1190, Revisor No. 23-01015, Denial and Revocation of Nonferrous Mining Permit, License, or Lease to Bad Actors Authorization (introduced Feb. 2, 2023).

corruption.[956] Those affiliated with a business concern of that nature would also be prohibited from obtaining a lease to mine nonferrous ore.[957]

Leasing and Rentals

MDNR has the authority to execute leases to prospect for ores and conduct mining activities.[958] Generally, such leases are issued through a public sale, which requires notice to be published in the State Register and the Environmental Quality Board (EQB) Monitor at least 90 days before the proposed sale.[959] Public notice must also be provided in a local newspaper.[960] The agency accepts applications and bids preceding the public sale.[961]

A negotiated lease may be entered into when the agency finds that it would be in the best interest of the state and the taconite iron ore at issue is adjacent to ore already controlled by the applicant, the lands are primarily valuable for their natural iron ore content, or the applicant holds a majority of the mineral interests in the lands and ownership is shared with the state.[962] The state reserves the right to reject any or all applications for a negotiated lease.[963]

Minimum rental rates for iron ore are established in the statutory lease form.[964] The rental cost begins at $1,250 for the first year and $5,000 per year for the remainder of the lease term.[965] If the lease is designated as a taconite iron ore mining lease, the rental shall begin at $400 and increase to $1,600 per year for the term of the lease.[966]

Production Royalties

Royalty rates are prescribed in the statutory lease form.[967] The rate is determined by the product in question. The rates generally begin at either $0.15 or $0.18 per ton and are increased by a percentage rating from 1% to 4.5% if the concentration of iron exceeds 25.49%.[968] The operator must make quarterly payments and quarterly statements that state the amount of iron ore removed and the corresponding royalty due.[969]

[956] SF 1190, Revisor No. 23-01015, Denial and Revocation of Nonferrous Mining Permit, License, or Lease to Bad Actors Authorization (introduced Feb. 2, 2023).
[957] SF 1190, Revisor No. 23-01015, Denial and Revocation of Nonferrous Mining Permit, License, or Lease to Bad Actors Authorization (introduced Feb. 2, 2023).
[958] MINN. STAT. §§ 93.14, 93.15.
[959] MINN. STAT. § 93.16.
[960] MINN. STAT. § 93.16.
[961] MINN. STAT. § 93.17.
[962] MINN. STAT. § 93.1925.
[963] MINN. STAT. § 93.1925.
[964] MINN. STAT. § 93.20.
[965] MINN. STAT. § 93.20.
[966] MINN. STAT. § 93.20.
[967] MINN. STAT. § 93.20.
[968] MINN. STAT. § 93.20.
[969] MINN. STAT. § 93.20.

Taxation Scheme

Production tax, occupation tax, and county taxes are assessed against mining operations. The production tax is a severance tax paid on iron concentrates.[970] It is the largest tax paid by the ferrous mining industry and is paid in lieu of property taxes.[971] The production tax is $3.345 per taxable ton, and an additional $0.03 per ton is imposed for each 1% that the iron content exceeds 72%.[972]

The occupation tax applies to both ferrous and nonferrous minerals and is paid in lieu of the corporate franchise tax on mining activities and is determined using gross income.[973] Gross income from mining is based on the value of products produced after processing but before any stockpiling, transportation, or marketing costs.[974]

Aggregate material taxes and other taconite and iron ore ad valorem taxes are administered at the county level.[975] These other ad valorem taxes are assessed on auxiliary mining lands, unmined taconite, unmined natural iron ore, taconite railroads, and severed mining interests.[976]

Funding Activities

Taconite Economic Development Fund: The Taconite Economic Development Fund is designed to support the local mining industry. Each iron ore producer is eligible for a tax rebate which must be matched dollar for dollar.[977] These funds are held in an individual taconite economic development fund for each producer, and money is released for workforce development, concurrent reclamation, plant and stationary mining equipment, facilities, or for research and development.[978]

Taconite Area Environmental Protection Fund: The Taconite Environmental Protection Fund was established to reclaim, restore, and enhance the areas of northeast Minnesota located within the taconite assistance area that are adversely affected by the environmentally damaging operations involved in the taconite mining process and to promote the economic development of the area.[979] The fund's purposes are to initiate studies into environmental problems and remedial actions; reclamation, restoration, or reforestation of mine lands not otherwise provided for by state law; local economic development projects; monitoring of health related problems among miners; and public works projects.[980]

Department of Iron Range Resources and Rehabilitation: The Department of Iron Range Resources and Rehabilitation is an economic development agency that uses proceeds from taconite mining to invest in Minnesota's Iron Range. The Department is instructed to utilize its funding to address

[970] Minn. Dep't of Revenue, 2024 Mining Tax Guide (Oct. 2024).
[971] Minn. Dep't of Revenue, 2024 Mining Tax Guide (Oct. 2024).
[972] Minn. Dep't of Revenue, 2024 Mining Tax Guide (Oct. 2024).
[973] Minn. Dep't of Revenue, 2024 Mining Tax Guide (Oct. 2024).
[974] Minn. Dep't of Revenue, 2024 Mining Tax Guide (Oct. 2024).
[975] Minn. Dep't of Revenue, 2024 Mining Tax Guide (Oct. 2024).
[976] Minn. Dep't of Revenue, 2024 Mining Tax Guide (Oct. 2024).
[977] Minn. Dep't of Iron Range Resources & Rehabilitation, Taconite Economic Development Fund (2020), https://mn.gov/irrrb/assets/FY2020%20TEDF_tcm1047-390998.pdf.
[978] Minn. Dep't of Iron Range Resources & Rehabilitation, Taconite Economic Development Fund (2020), https://mn.gov/irrrb/assets/FY2020%20TEDF_tcm1047-390998.pdf.
[979] Minn. Stat. § 298.223.
[980] Minn. Stat. § 298.223.

"distress and unemployment" by taking action to develop remaining resources and provide vocational training and rehabilitation.[981] A significant portion of the Department's work is grant and loan making. Applications must be evaluated based on statutorily provided criteria, which include job creation and retention goals and the extent to which the proposed project is expected to impact the economic climate of the region.[982]

Social Laws and Regulations

Public Participation

The Minnesota Environmental Policy Act (MEPA) established an environmental review process that serves to provide the public with access to decision makers, maintain public awareness of environmental concerns, and encourage accountability in decision making.[983] MDNR is most commonly the lead agency for purposes of MEPA review.[984] There are two levels of environmental review: an environmental assessment worksheet (EAW) which informs whether an environmental impact statement (EIS) is required.[985] Mandatory EAW categories include storage facilities, metallic mineral mining and processing, nonmetallic mineral mining, industrial facilities, air pollution sources, hazardous waste facilities, solid waste facilities, wastewater treatment facilities, and water uses.[986] Similar categories qualify as mandatory EIS categories.[987]

Public notice and comment periods must be provided for both environmental review documents. In addition to publication in local newspapers, the primary medium through which public notice is provided is the EQB Monitor, which is a weekly online publication announcing environmental review documents and public comment periods for projects undergoing the MEPA process.[988]

The EAW must be published though the EQB Monitor and in at least one newspaper of general circulation local to the project.[989] The lead agency must also provide a press release that includes the name and location of the project, a brief description of the project, the location where copies of the EAW are available for review, the date the comment period expires, and the procedure for providing public comment.[990] There is a thirty-day period for public review and comment that begins on the day the EAW availability notice is published in the EQB Monitor.[991] Additionally, the lead agency may hold

[981] MINN STAT. § 298.22.
[982] MINN STAT. § 298.22.
[983] MINN. R. § 4410.0300.
[984] *Mining Permits*, MINN. POLLUTION CONTROL AGENCY, https://www.pca.state.mn.us/business-with-us/mining-permits (last visited Dec. 12, 2024).
[985] MINN. R. §4410.1000 *et seq.* (Environmental Assessment Worksheet); MINN. R. §4410.2000 *et seq*. (Environmental Impact Statement); MINN. R. §4410.1700(3) ("the [responsible government unit] shall base its decision regarding the need for an EIS on the information gathered during the EAW process and the comments received on the EAW").
[986] MINN. R. § 4410.4300 (includes diversion, realignment, or channelization of any designated trout stream).
[987] MINN. R. § 4410.4400.
[988] *EQB Monitor,* MINN. ENV'T QUALITY BOARD, https://www.eqb.state.mn.us/eqb-monitor (last visited Dec. 12, 2024).
[989] MINN. R. § 4410.1500.
[990] MINN. R. § 4410.1500.
[991] MINN. R. § 4410.1600.

one or more public meetings if it determines that such a meeting is necessary or useful.[992] If a public meeting is held, reasonable public notice must be provided.[993]

The Draft EIS must be made available for public review and comment, and the lead agency must hold an informational meeting in the county where the project is proposed.[994] Publication must be done through the EQB Monitor as well as a press release submitted to at least one local newspaper.[995] The informational meeting must be at least 15 days after the notice of availability is published, and the lead agency must continue to accept public comments for at least 10 days after the meeting is conducted.[996]

Tribal Consultation

Executive Order 19-24 and the state's government-to-government statute provide the framework for Tribal consultation in Minnesota.

Executive Order 19-24 requires state agencies to implement Tribal consultation policies in consultation with Minnesota Tribal governments.[997] The order also requires state agencies to engage in ongoing consultation with Tribal governments related to matters that have Tribal implications and to designate a Tribal liaison to ensure government-to-government consultation is maintained and to serve as a point of contact for Tribes.[998]

Minnesota's government-to-government statute defines consultation as "the direct and interactive involvement of the Minnesota Tribal governments in the development of policy on matters that have Tribal implications. Consultation is the proactive, affirmative process of identifying and seeking input from appropriate Tribal governments and considering their interest as a necessary and integral part of the decision-making process."[999] The statute also provides specific consultation duties that state agencies must fulfill.[1000] Such duties include maintaining an ongoing relationship, considering input gathered from consultation in their decision-making, and conducting consultation in a timely and meaningful way.[1001]

MPCA and MDNR both have consultation policies pursuant to these authorities. MPCA's Policy on Consultation and Coordination with Indian Tribal Governments provides a framework for consultation and coordination with Tribes regarding environmental regulations, standards, and issues where actions and decisions may directly affect Tribal interests.[1002] MDNR implements consultation requirements by:

- Consulting and collaborating with Tribal governments.
- Implementing policies to guide DNR staff in their interactions with Tribal governments.
- Having DNR staff attend tribal-state relations training.

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[992] MINN. R. § 4410.1600.
[993] MINN. R. § 4410.1600.
[994] MINN. R. § 4410.2600.
[995] MINN. R. § 4410.2600.
[996] MINN. R. § 4410.2600.
[997] Governor Tim Walz, Executive Order 19-24, Affirming the Government to Government Relationship Between the State of Minnesota and Minnesota Tribal Nations: Providing for Consultation, Coordination, and Cooperation (Apr. 4, 2019).
[998] Governor Tim Walz, Executive Order 19-24, Affirming the Government to Government Relationship Between the State of Minnesota and Minnesota Tribal Nations: Providing for Consultation, Coordination, and Cooperation (Apr. 4, 2019).
[999] MINN. STAT. § 10.65.
[1000] MINN. STAT. § 10.65.
[1001] MINN. STAT. § 10.65.
[1002] Minn. Pollution Control Agency, Policy on Consultation and Coordination with Indian Tribal Governments (Sept. 2013).

- Developing training about native nations and native governance, and related resources for DNR Staff.
- Tracking issues and topics that arise in communications from Tribal governments to the DNR to identify trends or themes in need of attention.
- Reporting on Tribal Relations Work Team activities to DNR leadership.[1003]

Cultural Resources Review

Minnesota has three statutes that aim to avoid, reduce, or mitigate adverse impacts to historic and archaeological resources. The Minnesota Historic Sites Act requires state agencies to consult with the Minnesota Historical Society if a project will impact properties listed in the National or State Register of Historic Places.[1004] The Minnesota Field Archaeology Act requires state agencies to consult the Minnesota Historical Society and the Office of the State Archaeologist when projects on public lands will impact known or suspected archaeological sites.[1005] The Minnesota Private Cemeteries Act requires state agencies to cooperate with the Office of the State Archaeologist and the Indian Affairs Council when known or suspected burial grounds may be affected.[1006]

[1003] *Tribal Relations at DNR*, MINN. DEP'T OF NAT. RES., https://www.dnr.state.mn.us/aboutdnr/tribal-relations.html (last visited Dec. 12, 2012).
[1004] MINN. STAT. §§ 138.661 – 138.669.
[1005] MINN. STAT. §§ 138.31 – 138.42.
[1006] MINN. STAT. § 307.08.

Nevada

Overview of Hardrock Mining in Nevada

In 2021, Nevada led the United States in gold production, contributing 74% of the U.S. gold production.[1007] Nevada also produces silver, barite, copper, diatomite, dolomite, gypsum, lapidary and gemstones, limestone, lithium compounds, magnesium compounds, molybdenite, perlite, salt, silica sand, specialty clays, and specialty aggregates.[1008] In 2021, over $9.7 billion in mineral commodities excluding construction aggregates were produced in Nevada.[1009]

Key Agencies, Laws, and Regulations

Several state agencies regulate hardrock mining activities in Nevada. The Nevada Bureau of Water Pollution Control handles discharge permitting under NPDES.[1010] The Nevada Division of Water Resources administers water appropriation permits and dam construction permits.[1011] The Nevada Bureau of Mining Regulation and Reclamation handles Water Pollution Control Permits for mining operations, handles state groundwater permitting, and administers mining reclamation permitting under the Mined Land Reclamation Act.[1012] The Nevada Bureau of Air Pollution Control administers Nevada's Air Quality Law.[1013] The Nevada Department of Wildlife handles the protection of wildlife, dredging permits, and industrial artificial pond permits.[1014]

[1007] Nev. Comm'n on Mineral Resources, Nevada Minerals Industry Fact Sheet (2021), https://minerals.nv.gov/uploadedFiles/mineralsnvgov/content/Programs/Mining/MiningForms/MinIndFctSht2021_20230718LH.pdf.
[1008] Nev. Comm'n on Mineral Resources, Nevada Minerals Industry Fact Sheet (2021), https://minerals.nv.gov/uploadedFiles/mineralsnvgov/content/Programs/Mining/MiningForms/MinIndFctSht2021_20230718LH.pdf.
[1009] Nev. Comm'n on Mineral Resources, Nevada Minerals Industry Fact Sheet (2021), https://minerals.nv.gov/uploadedFiles/mineralsnvgov/content/Programs/Mining/MiningForms/MinIndFctSht2021_20230718LH.pdf.
[1010] Nev. Bureau of Mines and Geology, Special Pub. L-6, State and Federal Permits Required in Nevada Before Mining or Milling Can Begin 4-5 (last updated June 2018), https://ndep.nv.gov/uploads/documents/201806_SPL6.pdf.
[1011] Nev. Bureau of Mines and Geology, Special Pub. L-6, State and Federal Permits Required in Nevada Before Mining or Milling Can Begin 6-7 (last updated June 2018), https://ndep.nv.gov/uploads/documents/201806_SPL6.pdf.
[1012] Nev. Bureau of Mines and Geology, Special Pub. L-6, State and Federal Permits Required in Nevada Before Mining or Milling Can Begin 3 (last updated June 2018), https://ndep.nv.gov/uploads/documents/201806_SPL6.pdf.
[1013] Nev. Bureau of Mines and Geology, Special Pub. L-6, State and Federal Permits Required in Nevada Before Mining or Milling Can Begin 2 (last updated June 2018), https://ndep.nv.gov/uploads/documents/201806_SPL6.pdf.
[1014] Nev. Bureau of Mines and Geology, Special Pub. L-6, State and Federal Permits Required in Nevada Before Mining or Milling Can Begin 7 (last updated June 2018), https://ndep.nv.gov/uploads/documents/201806_SPL6.pdf.

Environmental Laws and Regulations

Permits and Approvals Required

Land Use Permits

Mined Land Reclamation Act (MLRA):
Exploration Projects:
Under the MLRA, no person can engage in an exploration project without a valid permit.[1015] An "exploration project" refers to "all activities conducted in [Nevada] by a person on or beneath the surface of the land for the purpose of, or in connection with, determining the presence, location, extent, depth or grade of any mineral."[1016] Projects that are limited to a surface disturbance of less than five acres in a calendar year do not require a permit.[1017] The application for an exploration permit requires information on the applicant, an exploration map, information on the prospecting and excavation techniques, and whether in good standing in relation to reclamation of exploration projects.[1018] The application must also include a complete plan for reclamation, the estimate of the cost of executing the reclamation plan, an agreement to assume responsibility for reclamation, and the payment of a fee.[1019] A permit for an exploration project is valid for the life of the project, unless it is suspended or revoked.[1020]

An exploration project permit shall not be issued if the applicant or any person who has a controlling interest in the applicant has defaulted on any obligation relating to reclamation or is not in good standing with an agency related to reclamation of an exploration project.[1021] However, a permit may be issued if the applicant has cured the default or the applicant demonstrates that any conditions that led to the default have been remedied and that such conditions no longer exist.[1022]

An interim permit for an exploration project conducted on private land may be issued if an operator requests an interim permit, the project contains a disturbance that is greater than five acres but less than 20 acres within a one-mile radius of the center of the project, the project employs best management practices during operation and reclamation, the operator files an exploration project permit application, the operator provides acceptable surety, the operator pays the applicable fee, and the operator is not currently in violation of or noncompliant with the MLRA.[1023] Similar requirements apply to interim permits for exploration on federal public lands.[1024] If an operator receives an interim permit, the operator may proceed with the exploration project while the Division of Environmental Protection processes the application for a permit.[1025] An interim permit remains in effect until a final permit is issued or denied or the interim permit is revoked or suspended.[1026]

[1015] Nev. Rev. Stat. § 519A.180.
[1016] Nev. Admin. Code § 519A.035.
[1017] Nev. Admin. Code § 519A.035.
[1018] Nev. Rev. Stat. § 519A.190(1).
[1019] Nev. Admin. Code § 519A.125.
[1020] Nev. Admin. Code § 519A.130.
[1021] Nev. Rev. Stat. § 519A.190(2).
[1022] Nev. Rev. Stat. § 519A.190(3).
[1023] Nev. Admin. Code § 519A.135(1).
[1024] Nev. Admin. Code § 519A.135(2).
[1025] Nev. Admin. Code § 519A.135(3).
[1026] Nev. Admin. Code § 519A.135(4)

Mining Operations:
Under the MLRA, no person shall engage in a mining operation without a valid permit.[1027] A "mining operation" refers to "all activities conducted in [Nevada] by a person on or beneath the surface of land for the purpose of, or in connection with, the development or extraction of any mineral."[1028] "Small mine operations," where a person disturbs less than five acres of land in any calendar year,[1029] do not require a mining operation permit.[1030] The application for a permit must include information on the applicant, whether the applicant is in good standing in relation to the reclamation of exploration projects, payment of the applicable fee, an agreement to assume responsibility for reclamation, a bond or surety, and a plan for reclamation.[1031] The application must also include a completed checklist with information relating to the plan for reclamation and relating to the mining operation.[1032] A mining operation permit is "valid for the life of the operation unless it is suspended or revoked by the Division."[1033]

The Division shall not issue a permit if the applicant or any person who has a controlling interest in the applicant has defaulted on any obligation relating to reclamation or is not in good standing with an agency related to reclamation of a mining operation.[1034] However, the Division may issue a permit if the applicant has cured the default or the applicant demonstrates that any conditions which led to the default have been remedied and that such conditions no longer exist.[1035]

Small Mining Operations:
Small mining operations are those where a person disturbs less than five acres of land in any calendar year.[1036] Operators of small mining operations must submit to the Division a map of the operation, an estimate of the acreage affected, a proposed postmining use of the land, and a description of the manner in which the postmining use of the land will be attained by reclamation.[1037] This information and documentation must be submitted before surface disturbance.[1038] If five or more acres "will be affected by a small mining operation in a calendar year, the operator of the small mining operation must, before such land is affected, obtain a permit for a mining operation."[1039]

General Provisions:
Within 15 days after receiving the application, the Division must review the application and notify the applicant if additional information is required.[1040] If so, the Division must state what additional information is required.[1041] For exploration projects on private land, the Division must prepare and issue a draft of a permit or notice of intent to deny, the grounds for denial if applicable, and public notice within 30 days after finishing its completeness review of the application.[1042] For mining operations on private land, the Division must prepare and issue a draft of a permit or notice of intent to deny, the

[1027] Nev. Rev. Stat. § 519A.200.
[1028] Nev. Admin. Code § 519A.045.
[1029] Nev. Rev. Stat. § 519A.120.
[1030] Nev. Admin. Code § 519A.045.
[1031] Nev. Rev. Stat. § 519A.210(1).
[1032] Nev. Rev. Stat. § 519A.220.
[1033] Nev. Admin. Code § 519A.145.
[1034] Nev. Rev. Stat. § 519A.190(2).
[1035] Nev. Rev. Stat. § 519A.190(3)(b).
[1036] Nev. Rev. Stat. § 519A.120.
[1037] Nev. Admin. Code § 519A.410(1).
[1038] Nev. Admin. Code § 519A.410(2).
[1039] Nev. Admin. Code § 519A.410(3).
[1040] Nev. Admin. Code § 519A.165(1).
[1041] Nev. Admin. Code § 519A.165(2).
[1042] Nev. Admin. Code § 519A.180(1).

grounds for denial if applicable, and public notice within 60 days after finishing its completeness review of the application.[1043]

The Division shall issue a final permit or a denial within 15 days after the close of the period for submitting comments and information if a public hearing is required or after the receipt of a complete application and payment of the required fees if a public hearing is not required.[1044] If a permit is denied, the Division must notify the applicant of the reasons for the denial and the time within which an appeal must be brought.[1045] A permit becomes effective on receipt of the surety.[1046] A permit can be transferred under certain conditions.[1047]

A permit can be suspended or revoked for noncompliance with the MLRA and its regulations or noncompliance with an approved plan for reclamation.[1048] The revocation or suspension is effective "not later than 30 days after the operator is sent written notice by the Division setting forth the facts or conduct warranting the revocation or suspension."[1049]

Water Permits

Water Pollution Control Law:

Under Nevada's Water Pollution Control Law (WPCL), no person can "discharge from any point source any pollutant into any waters of the State" except as authorized by a permit.[1050] "Waters of the State" include "all waters situated wholly or partly within or bordering upon this State" including both surface and underground bodies or accumulations of water.[1051] Mining facilities, which include all portions of a mining operation such as the mine, waste rock piles, ore piles, beneficiation process components, processed ore disposal sites, and all associated buildings and structures,[1052] require a Water Pollution Control Permit.[1053] In addition, construction or material modification of a process component at a facility also requires a permit.[1054]

Before submitting a permit application for a mining facility, the prospective applicant must meet with a representative of the State Department of Conservation and Natural Resources to discuss the facility and the site.[1055] The prospective applicant may also submit any technical document required to be submitted with the application for preapplication review.[1056]

To obtain a permit to construct, operate, and permanently close a facility, the owner or operator must submit a written application and the appropriate fee.[1057] The application must include information on

[1043] Nev. Admin. Code § 519A.180(1).
[1044] Nev. Admin. Code § 519A.175(1).
[1045] Nev. Admin. Code § 519A.175(3).
[1046] Nev. Admin. Code § 519A.175(2).
[1047] Nev. Admin. Code § 519A.215.
[1048] Nev. Admin. Code § 519A.220.
[1049] Nev. Admin. Code § 519A.220.
[1050] Nev. Rev. Stat. § 445A.465(1)(a).
[1051] Nev. Rev. Stat. § 445A.415.
[1052] Nev. Admin. Code § 445A.359.
[1053] Nev. Bureau of Mining Regulation and Reclamation, Guidance Document: Facilities for Which a Mining Permit is Required (2020), https://ndep.nv.gov/uploads/land-mining-regs-docs/20201009_WhenA_WPCP_IsRequired_ADA.pdf.
[1054] Nev. Admin. Code § 445A.392(1).
[1055] Nev. Admin. Code § 445A.391.
[1056] Nev. Admin. Code § 445A.3915.
[1057] Nev. Admin. Code § 445A.394(1).

the applicant, facility, site, owner, and operator.[1058] In addition, the application must contain an assessment of the area of review, meteorological report, engineering design report, operating plans, and report of the sample analysis.[1059] The operating plan must include plans for monitoring the facility, management of waste rock, responding to emergencies, a temporary closure plan, and a tentative permanent closure plan.[1060] If the facility is located in an area where the temperature does not exceed zero degrees Celsius for 30 days or more, a seasonal closure plan for the process components must be prepared.[1061] "The failure or the inability to define adequately site conditions, process materials and the probable characteristics of the waste in the application for a permit may result in the Department requiring a higher standard of engineered containment or monitoring, or both."[1062] However, the Department may grant a permit that allows a lower level of engineered containment if certain conditions are met.[1063]

Applications must be submitted at least 165 days before construction is initiated.[1064] Within 30 days after receiving an application for a permit, the Department must notify the applicant whether the application is procedurally complete.[1065] After a determination that an application is procedurally complete, within 90 days the Department must determine whether the application is technically complete.[1066] At this time, the Department must also prepare and issue either a draft permit or a notice of intent to deny the application, a fact sheet, and a public notice.[1067] The 90-day period can be extended if necessary.[1068] Within 15 days after the end of the 30-day public comment period, the final permit must be issued or notice must be provided to the applicant of the reasons that the final permit will not be issued at that time.[1069]

A permit may be issued for a maximum term of five years, but the permit holder may apply for renewal by submitting an application to renew at least 120 days before the existing permit expires.[1070] In addition, a permit may be transferred to a new owner or operator if the transfer follows certain procedural requirements.[1071] A new application is required when a permit holder's production increases, or process modifications or facility expansions result in new or increased discharges.[1072] Any person aggrieved by the issuance, denial, renewal, suspension, or revocation of a permit; or the issuance, modification or rescission of any other order, may appeal to the State Environmental Commission.[1073] A permit may be revoked, modified, or suspended in whole or in part for cause.[1074]

Permits shall not be issued for discharges of any radiological, chemical or biological warfare agent, or high-level radioactive waste, which "would substantially impair anchorage and navigation," "would result

[1058] Nev. Admin. Code § 445A.394(2).
[1059] Nev. Admin. Code § 445A.394(2).
[1060] Nev. Admin. Code § 445A.398.
[1061] Nev. Admin. Code § 445A.399.
[1062] Nev. Admin. Code § 445A.393.
[1063] Nev. Admin. Code § 445A.415.
[1064] Nev. Admin. Code § 445A.394(3).
[1065] Nev. Admin. Code § 445A.400.
[1066] Nev. Admin. Code § 445A.401.
[1067] Nev. Admin. Code § 445A.401.
[1068] Nev. Admin. Code § 445A.401.
[1069] Nev. Admin. Code § 445A.408.
[1070] Nev. Admin. Code §§ 445A.409, 445A.420(1).
[1071] Nev. Admin. Code § 445A.419.
[1072] Nev. Rev. Stat. § 445A.505(2).
[1073] Nev. Rev. Stat. § 445A.605.
[1074] Nev. Rev. Stat. § 445A.600.

in the degradation of existing or potential underground sources of drinking water," "is inconsistent with an applicable areawide plan for management of the treatment of waste," or "the Director determines is inconsistent with the regulations and guidelines adopted by the Commission." [1075]

Appropriation of Public Water:
A permit is required to appropriate any public waters or to change the place of diversion, manner of use, or place of use of water already appropriated.[1076] Each permit application must contain information on the applicant, information on the source, and information on the use.[1077] For mining purposes, the application must also contain "the proposed method of applying and utilizing the water."[1078]

Dam Construction Permit:
Construction, reconstruction, or alteration of a dam requires a permit from the State Engineer within the Division of Water Resources of the Nevada Department of Conservation and Natural Resources to appropriate, store, and use the water impounded or diverted by the dam. [1079] The permittee must notify, and if the dam is above a certain size, get approval from, the State Engineer prior to constructing, reconstructing, or altering a dam in any way.[1080] In addition, "[i]n the construction of a dam, or the alteration or enlargement of a dam, the owner shall conform with the provisions of law for the installation of fishways over or around dams and for the protection and preservation of fish in streams obstructed by dams."[1081]

Wildlife Permits

A wildlife permit is required to develop or maintain certain bodies of water. Any "[o]perator of a mining operation which develops or maintains an artificial body of water containing chemicals directly associated with the processing of ore, must first obtain a permit from the Department[of Wildlife] authorizing the development or maintenance of the body of water."[1082] The permit requires the payment of a fee not more than $125.[1083] The permit holder must also pay an assessment, not more than $10,000/year for each permit.[1084]

The Department must issue or deny the permit within 30 days.[1085] If the Department denies the permit, it must list reasons for denial, and the applicant can appeal the denial.[1086] The Permit may be valid for up to five years.[1087]

[1075] Nev. Rev. Stat. § 445A.490.
[1076] Nev. Rev. Stat. § 533.325.
[1077] Nev. Rev. Stat. § 533.335.
[1078] Nev. Rev. Stat. § 533.340(4).
[1079] Nev. Rev. Stat. § 535.010.
[1080] Nev. Rev. Stat. § 535.010.
[1081] Nev. Rev. Stat. § 535.020.
[1082] Nev. Rev. Stat. § 502.390.
[1083] Nev. Rev. Stat. § 502.390(2).
[1084] Nev. Rev. Stat. § 502.390(4).
[1085] Nev. Rev. Stat. § 502.390(2).
[1086] Nev. Rev. Stat. § 502.390(2).
[1087] Nev. Rev. Stat. § 502.390(2).

Waste Permits

The Nevada Division of Environmental Protection is responsible for the permitting of hazardous waste treatment, storage, disposal, and other hazardous waste management facilities within the state of Nevada.[1088] A mining operator may be required to obtain permits before operating a solid waste system[1089] or constructing hazardous waste facilities.[1090]

A solid waste management system is the process of storing, collecting, transporting, processing, recycling, and disposal of solid waste.[1091] A mining operation may not operate a disposal site until it has obtained a permit from the State Environmental Commission.[1092] However, "industrial solid waste" does not include waste generated by the mining, and oil and gas industries.[1093]

Nevada's hazardous waste regulations are based on the federal Resource Conservation and Recovery Act (RCRA). Solid waste from the extraction, beneficiation, and processing of ores and minerals are included under the state's definition of hazardous waste to the extent they are regulated pursuant to RCRA.[1094] A permit is required to construct, alter, or operate a facility that treats, stores, or disposes of regulated hazardous wastes.[1095] However, hazardous substances provisions related to state inspections and state agency action to prevent hazards do not apply to mining activities.[1096]

Air Permits

Under Nevada's Air Quality Law, an owner or operator of any proposed stationary source must submit an application to obtain an appropriate permit before commencing construction or operation.[1097] The air quality permitting program is primarily relevant to fugitive dust and emissions from rock dumps, heaps, and tailings impoundments, and volatilization from beneficiation operations.[1098] In addition, ambient air quality standards must be met at the boundary of the land or the mining claim.

Nevada also has the Nevada Mercury Control Program (NMCP).[1099] Under the NMCP, mercury emissions controls are required on thermal units located at precious metal mines.[1100] Owners or operators who operate, construct, or modify a thermal unit that emits mercury must apply for and obtain a Mercury Operating Permit to Construct.[1101] Permittees are subject to the Nevada maximum achievable control

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[1088] *Hazardous Waste*, Nev. Div. of Evn't Prot., https://ndep.nv.gov/land/waste/hazardous-waste-management (last visited Dec. 19, 2024).
[1089] Nev. Rev. Stat. §§ 444.440 – 444.465.
[1090] Nev. Rev. Stat. §§ 459.400 – 459.600.
[1091] Nev. Rev. Stat. § 444.500.
[1092] Nev. Rev. Stat. § 444.553.
[1093] Nev. Admin. Code § 444.585.
[1094] Nev. Rev. Stat. § 459.465
[1095] Nev. Rev. Stat. § 459.515; *see* NAC §§ 444.842 – 444.976.
[1096] Nev. Rev. Stat. § 459.558(1) ("the provisions of NRS 459.560 and 456.565 that concern hazardous substances do not apply […] to mining […] activities."); *See* Nev. Rev. Stat. § 459.560 (inspections) *and* Nev. Rev. Stat. § 459.560 (Actions to prevent practice or act whch constitutes hazard to human health, public safety or environment).
[1097] Nev. Rev. Stat. § 445B.300.
[1098] Nev. Admin. Code § 445B.395.
[1099] *Nevada Mercury Control Program (NMCP)*, Nev. Division of Env't Protection, https://ndep.nv.gov/air/nevada-mercury-control-program-nmcp (last visited Dec. 12, 2024).
[1100] *Nevada Mercury Control Program (NMCP)*, Nev. Division of Env't Protection, https://ndep.nv.gov/air/nevada-mercury-control-program-nmcp (last visited Dec. 12, 2024).
[1101] Nev. Admin. Code § 445B.3625.

technology (NvMACT) standard.[1102] The NvMACT is the "standard, method of control or any other limitation which is applied to" an existing, new, or modified thermal unit that emits mercury and which is "designed to reduce the level of mercury emissions" and "determined by the Director[of the State Department of Conservation and Natural Resources] to be the maximum degree of reduction of mercury emissions that is achievable for the thermal unit that emits mercury."[1103] There is a de minimis exception for mercury emissions from a thermal unit that the Director determines are insufficient to require compliance.[1104]

Design and Performance Standards

Water Pollution Control Law:
The Water Pollution Control Law (WPCL) requires that each permit must ensure compliance with effluent limitations, standards of performance for new sources, standards for pretreatment, standards for injections for fluids through a well, and any more stringent limitations developed by the State Department of Conservation and Natural Resources.[1105] In addition, each permit must specify the average and the maximum daily or other appropriate qualitative limitations for the level of pollutants.[1106] Further, no facility may degrade groundwater to the extent that that the concentration of a constituent exceeds drinking water standards or a numerical limit set by the Department, or the concentration of WAD cyanide exceeds 0.2 mg/L.[1107]

For discharges into waters whose quality is higher than the applicable standards, the following design standards apply. "If the discharge will be from a point source, the highest and best degree of waste treatment available under the existing technology, consistent with the best practice in the particular field under the conditions applicable, and reasonably consistent with the economic capability of the project or development" applies.[1108] "If the discharge will be from a diffuse source, such measures, methods of operation or practices as are reasonably calculated or designed to prevent, eliminate or reduce water pollution from the source, under the circumstances pertaining to the particular place, in order to achieve control over water pollution which is reasonably consistent with the economic capability of the project or development" applies.[1109]

The permit holder must submit a report to the Department for review and approval "[w]ithin 30 days after completing construction on a new process component or monitoring system specified in the permit or materially modifying an existing process component or monitoring system specified in the permit."[1110]

The Department has established minimum design criteria required for each process component and site and operating conditions and the minimum contaminant control technologies.[1111] In addition, "[b]ased on site characterization, best engineering judgment will be applied by the Department to determine the degree to which any designs must provide more or may provide less protection through engineered

[1102] Nev. Admin. Code § 445B.3629.
[1103] Nev. Admin. Code § 445B.3629.
[1104] Nev. Admin. Code § 445B.3613.
[1105] Nev. Rev. Stat. § 445A.500.
[1106] Nev. Rev. Stat. § 445A.500.
[1107] Nev. Admin. Code § 445A.424(b).
[1108] Nev. Rev. Stat. § 445A.565(2)(a).
[1109] Nev. Rev. Stat. § 445A.565(2)(b).
[1110] Nev. Admin. Code § 445A.427.
[1111] Nev. Admin. Code § 445A.432(1).

containment than the minimum design criteria."[1112] The Department has developed universal requirements of minimum design criteria, including for leach pads and other nonimpounding surfaces; ponds; vats, tanks, and other containers that confine process fluids; tailings impoundments; and liners.[1113]

Monitoring Requirements

Water Pollution Control Law:
The WPCL requires that mining facilities have a monitoring plan that is designed to monitor the quality of all ground and surface water that may be affected by the facility.[1114] In addition, the type, number, and location of the monitoring points must be described in the plan.[1115] Baseline data must be collected before the operation of the facility.[1116] If the Department determines that there has been a variation in a parameter or element being monitored, the holder of the permit must conduct and submit an evaluation.[1117] Based on the evaluation, the Department may require the immediate shut down of the process component and initiate cleanup activities, allow continued operation with concurrent cleanup activities, allow continued operation with postponed cleanup activities, or determine that no remedial action is warranted.[1118] Post-closure monitoring must not exceed 30 years unless the Department determines that chemical stabilization, source removal, or mitigation has not been achieved during the post-closure monitoring period.[1119]

The Department must "determine the extent and complexity to which the holder of a permit must monitor individual process components for the release of contaminants after reviewing site and process controlled design conditions."[1120] In addition, the Department may require observation, recording, and reporting measures.[1121] Permit holders whose production increases, or whose process modifications or facility expansion results in the infiltration of contaminants to underground waters must report the contamination.[1122] In order to enforce the WPCL, the Director or an authorized representative may enter premises, access and copy records, inspect equipment and methods, or access or sample discharges.[1123]

Mined Land Reclamation Act:
Under the MLRA, each operator must annually submit a report relating to the status and production of all mining operations and exploration projects.[1124] In addition, the agency "may inspect an exploration project or mining operation to determine if it is in compliance with the terms and conditions of a permit and the status of activities for reclamation."[1125]

[1112] Nev. Admin. Code § 445A.432(2).
[1113] Nev. Admin. Code § 445A.433-438.
[1114] Nev. Admin. Code § 445A.440(1).
[1115] Nev. Admin. Code § 445A.440(1).
[1116] Nev. Admin. Code § 445A.440(3).
[1117] Nev. Admin. Code § 445A.441.
[1118] Nev. Admin. Code § 445A.441(2).
[1119] Nev. Admin. Code § 445A.446(4).
[1120] Nev. Admin. Code § 445A.442.
[1121] Nev. Rev. Stat. § 445A.660.
[1122] Nev. Rev. Stat. § 445A.505(3).
[1123] Nev. Rev. Stat. § 445A.655.
[1124] Nev. Rev. Stat. § 519A.260(1).
[1125] Nev. Admin. Code § 519A.395.

Closure and Reclamation Requirements

Water Pollution Control Law:
Under the WPCL, if there is an unplanned temporary closure of one or more processing requirements, the permit holder must follow certain procedures including notifying the agency within 30 days after the closure begins.[1126]

The WPCL also lays out certain procedures for permanent closure of a facility. Plans for permanent closure are required for all sources at a facility.[1127] Permanent closure must be initiated following the request of the permit holder, for a facility which is under a temporary closure, no later than at the end of one renewal of a five-year permit, when the end of the design life of that process component is reached, or for an underground mine which has the potential to degrade the waters of the State, before the elimination of safe access to the mine.[1128] Permanent closure is complete when certain requirements "have been achieved and all other sources at the facility have been stabilized, removed or mitigated."

These requirements include that the holder of a permit must institute "appropriate procedures to ensure that all mined areas do not release contaminants that have the potential to degrade the waters of the State."[1129] In addition, open-pit mines "must, to the extent practicable, be free-draining or left in a manner which minimizes the impoundment of surface drainage and the potential for contaminants to be transported and degrade the waters of the State."[1130] Further, underground mines "must, to the extent practicable, be left in a manner which minimizes the inflow and outflow of water through the openings to the mine on the surface of the land."[1131] Bodies of water that result from mine pits penetrating the water table must not create an impoundment that has the potential to degrade groundwater or to adversely affect the health of human, terrestrial, or avian life.[1132] However, the holder of a permit can apply to establish a beneficial use with a lower level of protection than otherwise required to protect the health of human, terrestrial, or avian life.[1133] Furthermore, the permit holder must follow certain requirements related to the stabilization of spent ore.[1134] In addition, upon termination of the active use of a tailings impoundment, "representative samples of the material deposited in the impoundment must be collected and characterized." The tailings also "must be stabilized during the final closure of a facility so as to inhibit the migration of any contaminant that has the potential to degrade the waters of the State."

Mined Land Reclamation Act:
Under the MLRA, a plan for reclamation must be included with a permit application for both exploration projects and mining operations. A permit holder must not depart from an approved plan unless in an emergency.[1135] When preparing the reclamation plan, the applicant must consider the pre-mining and postmining use of the land; the technical and economic practicability of the proposed techniques for reclamation, the effectiveness of the proposed activities for reclamation in ensuring public safety, the annual precipitation of the area and its effect on revegetation and the potential for erosion, the existing

[1126] Nev. Admin. Code § 445A.445.
[1127] Nev. Admin. Code § 445A.447(1).
[1128] Nev. Admin. Code § 445A.446(1).
[1129] Nev. Admin. Code § 445A.429(1).
[1130] Nev. Admin. Code § 445A.429(2).
[1131] Nev. Admin. Code § 445A.429(3).
[1132] Nev. Admin. Code § 445A.429(4).
[1133] Nev. Admin. Code § 445A.429(5).
[1134] Nev. Admin. Code § 445A.430.
[1135] Nev. Rev. Stat. § 519A.230(6).

and proposed postmining topography in relation to the potential for erosion, the potential for degradation of surface water or groundwater quality resulting from the proposed activities for reclamation, the visual impact of the reclamation, any other criteria which may affect the applicability of a particular activity for reclamation, including types of soil and the physical and chemical characteristic of the soil, and whether the disturbance was created before or after September 19, 1990.[1136]

"Reclamation activities, particularly those relating to the control of erosion, must be conducted simultaneously with the mining operation to the extent practicable, and otherwise must be initiated promptly upon the completion or abandonment of the mining operation in any area that will not be subject to further disturbance."[1137] "The Division may approve any appropriate method of reclamation for exploration projects and mining operations if the method is consistent" with the MLRA and associated regulations.[1138] Overall, abandonment of a site must "be conducted in a manner which ensures public safety, encourages techniques to minimize adverse visual effects and establishes a safe and stable condition suitable for the productive postmining use of the land."[1139]

Reclamation measures must be provided for vegetative cover if appropriate[1140] and for the reclamation of all land disturbed to a stability comparable to that of adjacent areas.[1141] The MLRA also contains special requirements for the reclamation of pit lakes.[1142] An applicant may request an exception for the reclamation of open-pits and rock faces which may not be feasible to reclaim.[1143] During operations, if practicable and necessary for the postmining use of the land, "sufficient topsoil, if available, must be removed during the creation of a disturbance and stockpiled for use in future reclamation."[1144] During reclamation, the creations of a depression which may form a pond "must be avoided unless the pond is part of the postmining use of the land."[1145]

"The Division may, if appropriate, request an operator of an exploration project to reclaim" roads and drill pads, drill holes, and trenches and pits with certain methods.[1146] In addition, "the Division may, if appropriate, require an operator of a mining operation to reclaim" roads and drill pads, drill holes, waste and development rock piles, dams for tailings ponds, impoundments for tailings, heaps from leaching, solution ponds, buildings, foundations, facilities, structures, and other equipment, open-pit mines, and underground mines with certain methods.[1147]

If land cannot be reclaimed concurrently with an exploration project or mining operation, reclamation must be initiated within two years after the completion or abandonment of the exploration project or mining operation, within three years after a temporary closure of an exploration project or mining operation, or as required by a federal land management agency.[1148] However, the Division may grant one

[1136] Nev. Admin. Code § 519A.260.
[1137] Nev. Rev. Stat. § 519A.230(1)(a).
[1138] Nev. Admin. Code § 519A.335.
[1139] Nev. Admin. Code § 519A.315.
[1140] Nev. Rev. Stat. § 519A.230(1)(b).
[1141] Nev. Rev. Stat. § 519A.230(1)(c).
[1142] Nev. Rev. Stat. § 519A.230(3)-(5).
[1143] Nev. Rev. Stat. § 519A.230(2).
[1144] Nev. Admin. Code § 519A.325(1).
[1145] Nev. Admin. Code § 519A.325(2).
[1146] Nev. Admin. Code § 519A.340.
[1147] Nev. Admin. Code § 519A.345.
[1148] Nev. Admin. Code § 519A.285(1).

or more three-year extensions.[1149] "Once initiated, final reclamation activities must be completed as set forth in an approved plan for reclamation, unless the exploration project or mining operation is reactivated."[1150] An operator cannot depart from an approved plan without approval from the Division or in the case of an emergency.[1151]

Hazardous Substance Spills:
All significant or threatened releases of a hazardous material require emergency notification to government agencies, first to local emergency response, second to National Response Center, third to Nevada Division of Environmental Protection, and lastly to the Nevada State Emergency Response Commission.[1152] In addition, some spills of any pollutant, hazardous waste, or contaminant must be reported.[1153] A spill of any quantity that affects a water way within Nevada must be reported, regardless of the quantity.[1154] In addition, spills of a quantity equal to or greater than that which must be reported to the National Response Center must also be reported to NDEP, and any spill that threatens a vulnerable resource must be reported to NDEP.[1155]

Economic Laws and Regulations

Financial Assurances

Mined Land Reclamation Act:
Under the MLRA, a permit applicant must provide a bond or surety guaranteeing reclamation.[1156] The surety can be in the form of a trust fund, a bond, an irrevocable letter of credit, insurance, a corporate guarantee, a cash deposit, or any combination of these.[1157] Specific rules apply to each form.[1158] In addition, an "applicant for a permit for an exploration project may provide a statewide surety for all projects conducted within the State of Nevada."[1159]

The amount of the bond must be sufficient to ensure reclamation of the entire area to be affected by the operator's project or operation, or a "portion of the area to be affected if, as a condition of the issuance of the permit, filing additional surety is required before the operator disturbs land not covered by the initial surety."[1160] In addition, the amount must be based on "an estimate of the cost of executing the plan for reclamation which would be incurred by the state or federal agency having jurisdiction over the land."[1161] The estimate of the cost must be based either on "[t]he costs of equipment rental, operation and labor which are appropriate for the geographic area undergoing reclamation and which would otherwise be incurred by a third-party contractor who performed the reclamation; [e]stimated costs

[1149] Nev. Admin. Code § 519A.285(2).
[1150] Nev. Admin. Code § 519A.285(3).
[1151] Nev. Admin. Code § 519A.290.
[1152] *Hazardous Materials Spill or Release Notifications*, Nev. Emergency Response Comm'n, https://serc.nv.gov/Resources/report-a-spill/ (last visited Dec. 12, 2024).
[1153] Mark Kaminski, P.E., Presentation for the NvRWA Conference, Spill Reporting Guidelines (Mar. 16, 2017), https://ndep.nv.gov/uploads/water-opcert-dw-training-docs/2017_NDEP_Spill_Hotline_Presentation_-NvRWA_Conference.pdf.
[1154] Mark Kaminski, P.E., Presentation for the NvRWA Conference, Spill Reporting Guidelines (Mar. 16, 2017), https://ndep.nv.gov/uploads/water-opcert-dw-training-docs/2017_NDEP_Spill_Hotline_Presentation_-NvRWA_Conference.pdf.
[1155] Nev. Admin. Code § 445A.3473.
[1156] Nev. Rev. Stat. § 519A.210(1).
[1157] Nev. Admin. Code § 519A.350.
[1158] Nev. Admin. Code § 519A.350.
[1159] Nev. Admin. Code § 519A.355.
[1160] Nev. Admin. Code § 519A.360(1).
[1161] Nev. Admin. Code § 519A.360(2).

provided by an outside contractor; or [a]ny other method which is acceptable" to the federal land management agency, if applicable.[1162] All activities in the plan for reclamation and that are required by the MLRA or associated regulations must be considered in estimating the cost of reclamation.[1163] Activities not included in the plan for reclamation or not required under the MLRA or associated regulations must not be considered in estimating the cost of reclamation.[1164]

Once the operator submits documentation on the cost of executing the plan for reclamation, the Division of Environmental Protection must review the operator's estimate and determine if the estimate is "reasonably sufficient to conduct all required reclamation."[1165] If the estimate is insufficient, the application for a permit shall be considered incomplete.[1166]

The operator must periodically review the amount of the surety to determine whether it is still adequate to execute the plan for reclamation.[1167] The operator then must notify the Division or appropriate federal land management agency of the results of the review and request an increase or decrease in the surety to execute the reclamation plan.[1168]

The Division may release the surety in whole or in part at the request of the operator.[1169] However, the entire surety must not be released until all permit requirements have been fulfilled with some exceptions.[1170] These exceptions include that a portion of the surety may be released when the requirements for reclamation have been fulfilled for a discrete activity or part of a disturbance, that 60% of the surety must be released upon completion of the earthwork if revegetation is part of the plan for reclamation, and that the full surety must be released to the original operator upon transfer of a permit to a new operator and acceptable surety received from the new operator.[1171] In addition, part of a surety may be released "if the operator demonstrates that the remaining surety is sufficient to ensure completion of the required reclamation."[1172]

Within 30 days after receiving a request for release of a surety, the agency holding the surety must "inspect the permitted exploration project or mining operation to determine whether the operator has fulfilled the requirements of his or her permit."[1173] Based on this inspection, the agency must either release the surety or portion of the surety requested or notify the operator that the requested surety will not be released, providing the reasons why and the measures necessary to satisfy the requirements of the permit.[1174] A denial of a request for release may be appealed.[1175] The surety can be forfeited in certain cases.[1176]

[1162] Nev. Admin. Code § 519A.360(3).
[1163] Nev. Admin. Code § 519A.360(4).
[1164] Nev. Admin. Code § 519A.360(5).
[1165] Nev. Admin. Code § 519A.370(1).
[1166] Nev. Admin. Code § 519A.370(2).
[1167] Nev. Admin. Code § 519A.380(1).
[1168] Nev. Admin. Code § 519A.380(2).
[1169] Nev. Admin. Code § 519A.385(1).
[1170] Nev. Admin. Code § 519A.385(2).
[1171] Nev. Admin. Code § 519A.385(2).
[1172] Nev. Admin. Code § 519A.385(3).
[1173] Nev. Admin. Code § 519A.385(4).
[1174] Nev. Admin. Code § 519A.385(4).
[1175] Nev. Admin. Code § 519A.385(5).
[1176] Nev. Admin. Code § 519A.390.

Leasing and Rentals

Mined Land Reclamation Act:
Under the MLRA, a mining operator must pay a yearly fee of $1.50 for each acre of public land administered by a federal agency and $5.50 for each acre of privately owned land.[1177]

Production Royalties

Nevada has a lease-specific royalty.[1178] The rate and base determination are also lease-specific.[1179]

Taxation Scheme

In Nevada, revenue generated from the extraction of mineral resources are subject to the Nevada Net Proceeds of Minerals Tax.[1180] "The tax is based on the actual production of minerals from all operating mines, oil and gas wells, and geothermal operations in Nevada for the prior calendar year."[1181] The tax base is calculated based on the net proceeds.[1182] Allowable deductions can include "costs related to mining, processing, and transporting the minerals."[1183]

Social Laws and Regulations

Public Participation

Water Pollution Control Law:
Under the WPCL, "[NDEP] shall notify each interested person, appropriate governmental agency and affected Indian tribe of each complete application for a permit."[1184] Further, at least 30 days before the issuance or denial of a permit for a mining facility, the Department must provide public notice "in a manner intended to inform interested and potentially interested persons."[1185] In addition, "[i]f an application is made to discharge from a point source into any waters of this State which flow directly or ultimately into an irrigation reservoir upstream from which are located urban areas in two or more counties and if each county has a population of 55,000 or more, the Department must give notice of the application to each city, county, unincorporated town and irrigation district located downstream from the point of discharge."[1186] If a final permit is issued, the Department must issue "a final statement responding to the comments received on the matter."[1187]

[1177] Nev. Rev. Stat. § 519A.260.
[1178] U.S. Gov't Accountability Off., GAO B-330854, Hardrock Mining: Updated Information on State Royalties and Taxes (2019).
[1179] U.S. Gov't Accountability Off., GAO B-330854, Hardrock Mining: Updated Information on State Royalties and Taxes (2019).
[1180] *Net Proceeds of Minerals Tax*, Nev. Dep't of Taxation, https://tax.nv.gov/tax-types/net-proceeds-of-minerals-tax/ (last visited Dec. 12, 2024).
[1181] *Net Proceeds of Minerals Tax*, Nev. Dep't of Taxation, https://tax.nv.gov/tax-types/net-proceeds-of-minerals-tax/ (last visited Dec. 12, 2024).
[1182] *Net Proceeds of Minerals Tax*, Nev. Dep't of Taxation, https://tax.nv.gov/tax-types/net-proceeds-of-minerals-tax/ (last visited Dec. 12, 2024).
[1183] *Net Proceeds of Minerals Tax*, Nev. Dep't of Taxation, https://tax.nv.gov/tax-types/net-proceeds-of-minerals-tax/ (last visited Dec. 12, 2024).
[1184] Nev. Rev. Stat. § 445A.590.
[1185] Nev. Admin. Code § 445A.402.
[1186] Nev. Rev. Stat. § 445A.500(3).
[1187] Nev. Admin. Code § 445A.407.

The applicant or any interested person may submit written comments on the draft permit within 30 days of notice being given.[1188] In addition, the applicant or any interested person may "request a public hearing on any application for a permit during the 30 days allowed for public comment."[1189] The Department must schedule a public hearing if it determines that there is "a significant degree of public interest in the matter."[1190] Further, the Department may schedule a public hearing on its own initiative.[1191] Notice for a hearing must be provided at least 30 days in advance.[1192]

A minor modification to an existing permit does not require new public notice.[1193] However, a major modification to an existing permit, including the extension of the permit term, requires public notice.[1194]

In addition, any records, reports, or information obtained by the Department must be available to the public unless confidential or entitled to protection as a trade secret.[1195]

Mined Land Reclamation Act:
Under the MLRA, the Division must provide public notice online, by mail, and in a manner intended to inform interested persons at least 30 days before the issuance of a draft permit or a notice of intent to deny a permit for an exploration project or mining operation conduction on privately owned land.[1196] Notice requirements do not apply to permits on federal land or land comingled with a federal lead agency.[1197]

Within 30 days after notice is published, any person may submit written comments.[1198] The Division must issue a statement responding to comments at the time it issues a final permit.[1199] The statement must include any provisions that have been changed from the draft permit to the final permit with the reasons for the change, a response to all significant comments and information, and state that "any person aggrieved by the Division's decision may appeal the decision."[1200]

Within 30 days after notice is published, the operator or any person directly affected by the application may request a public hearing.[1201] The Division must schedule a public hearing on an application for a permit if a "person who is directly affected by the application for a permit requests the hearing and the Division determines that the request is reasonable and there is a significant degree of public interest in the matter" or if necessary.[1202] Notice for a public hearing must be provided at least 30 days before the hearing.[1203]

[1188] Nev. Admin. Code § 445A.403(2).
[1189] Nev. Admin. Code § 445A.403(1).
[1190] Nev. Admin. Code § 445A.404(1).
[1191] Nev. Admin. Code § C 445A.404(2).
[1192] Nev. Rev. Stat. § 445A.595.
[1193] Nev. Admin. Code § 445A.416.
[1194] Nev. Admin. Code § 445A.417.
[1195] Nev. Rev. Stat. § 445A.665.
[1196] Nev. Admin. Code § 519A.185(1).
[1197] Nev. Admin. Code § 519A.185(3).
[1198] Nev. Admin. Code § 519A.190.
[1199] Nev. Admin. Code § 519A.210(1).
[1200] Nev. Admin. Code § 519A.210.
[1201] Nev. Admin. Code § 519A.190.
[1202] Nev. Admin. Code § 519A.195.
[1203] Nev. Admin. Code § 519A.200.

The Division may make information contained in the application available to the public unless the operator shows that the information is protected as a trade secret.[1204]

Tribal Consultation

Policy to Promote Collaboration Between State Agencies and Indian Tribes:
The Nevada Indian Commission's policy provides the minimum requirements for consultation between state agencies and Tribes.[1205] The policy applies to all state agencies that develop or implement a state agency action with Tribal implications.[1206] Under the policy, state agencies are required to invite Tribes to consult on a government-to-government basis whenever there is a state agency action with Tribal implications.[1207] The policy lays out consultation requirements for designating points of contact for Tribal consultation, determining whether consultation is appropriate, providing notice of consultation, conducting the consultation, maintaining a record of consultation, implementing the final agency action, and resolving disputes.[1208]

Cultural Resources Review

Under Nevada law, any person who disturbs or discovers the cairn or grave of a native Indian through inadvertence while engaged in a lawful activity such as mining, logging or farming must immediately report the discovery and the location of the Indian burial site to the Nevada Office of Historic Preservation.[1209] All artifacts and human remains associated with the site will then either be preserved in place, reinterred at another location, or returned to the closest culturally affiliated Indian tribe.[1210] In addition, civil and criminal penalties may be brought against any person who knowingly and willfully removes, mutilates, defaces, excavates, injures or destroys a historic or prehistoric site or resource on state land.[1211] The Office of Historic Preservation also works with BLM to implement the National Historic Preservation Act.[1212]

[1204] Nev. Admin. Code § 519A.170.
[1205] Nev. Indian Commission, Policy to Promote Collaboration Between State Agencies and Indian Tribes (2023).
[1206] Nev. Indian Commission, Policy to Promote Collaboration Between State Agencies and Indian Tribes (2023).
[1207] Nev. Indian Commission, Policy to Promote Collaboration Between State Agencies and Indian Tribes (2023).
[1208] Nev. Indian Commission, Policy to Promote Collaboration Between State Agencies and Indian Tribes (2023).
[1209] Nev. Rev. Stat. § 383.170.
[1210] Nev. Rev. Stat. § 383.170.
[1211] Nev. Rev. Stat. § 383.435
[1212] State Protocol Agreement between the Bureau of Land Management, Nevada, and the Nevada State Historic Preservation Officer for Implementing the National Historic Preservation Act (revised Dec. 22, 2014), https://www.blm.gov/sites/blm.gov/files/NV%20Protocol.pdf.

STATE POLICY SCORECARDS

Methodology

The following scorecards are intended to illustrate the strength of each state's hardrock mining laws and regulations set forth in the preceding state policy profiles.[1213] The laws and regulations were organized into environmental, economic, and social categories. Environmental laws and regulations covered include land use permits, water permits, wildlife permits, waste permits, air permits, design and performance standards, monitoring requirements, and closure and reclamation requirements. The strength of the environmental laws and regulations were ranked based on the guidelines below, assessing the degree to which they conserve environmental resources at various hardrock mining stages. Economic laws and regulations covered include financial assurances, leasing and rentals, production royalties, and taxation scheme regulations. The strength of the economic laws and regulations were ranked based on the guidelines below, assessing the degree to which they ensure economic accountability and safeguards. Social laws and regulations covered include public participation, Tribal consultation, and cultural resources review mechanisms and requirements. The strength of the social laws and regulations were ranked based on the guidelines below, assessing the degree to which they ensure social engagement and transparency and/or government-to-government consultation.

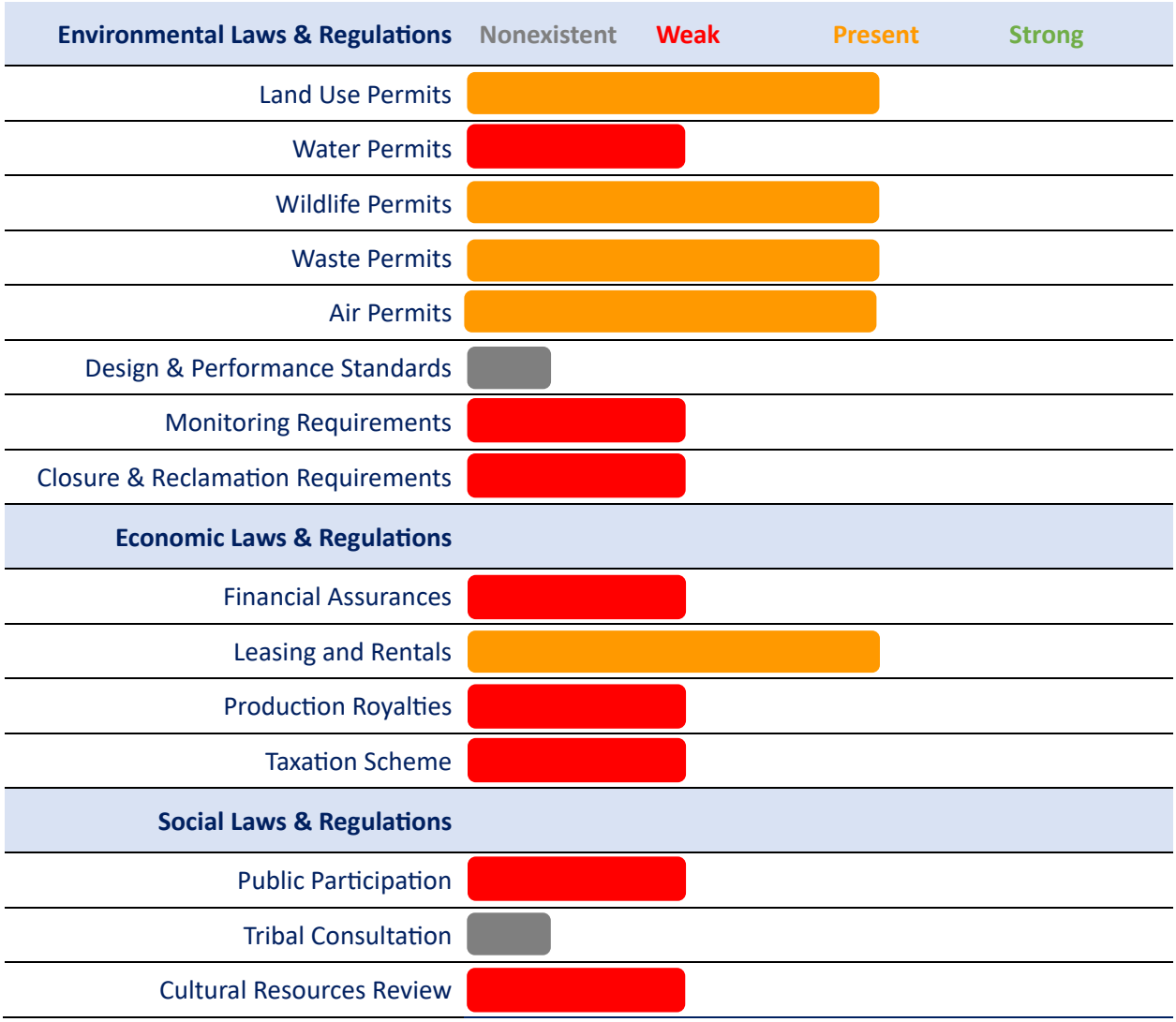
State laws and policies were ranked based on the following guidelines.

Policy Scorecard Key

- **Strong**: The law or regulation is comprehensive or robust. It incorporates environmental, economic, or social objectives, and has a significant positive impact on environmental conservation, economic responsibility, or social engagement.
- **Present**: The law or regulation is in place, though it may have room for improvement. It meets basic environmental, economic, or social objectives, but there may be areas where it lacks thoroughness or needs additional support to achieve environmental conservation, economic responsibility, or social engagement outcomes.
- **Weak**: The law or regulation is in place, but lacks critical components. It has significant gaps, exemptions, or is otherwise limited in terms of meeting environmental conservation, economic responsibility, or social engagement objectives.
- **Nonexistent**: There is no state law or regulation in place. The absence of a law or regulation is clear, and there is no formal state structure or framework addressing the need.

[1213] The scorecard methodology is limited in the following ways. The analysis in the state policy profile section does cover implementation or enforcement effectiveness, and therefore the scoring is limited to the laws and regulations as written. The analysis also covers individual laws and policies relevant to hardrock mining for each state so to inform standalone policy recommendations.

ALASKA



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Weak: The law or regulation is in place, but lacks critical components. It has significant gaps, exemptions, or is otherwise limited in terms of meeting environmental conservation, economic responsibility, or social engagement objectives.

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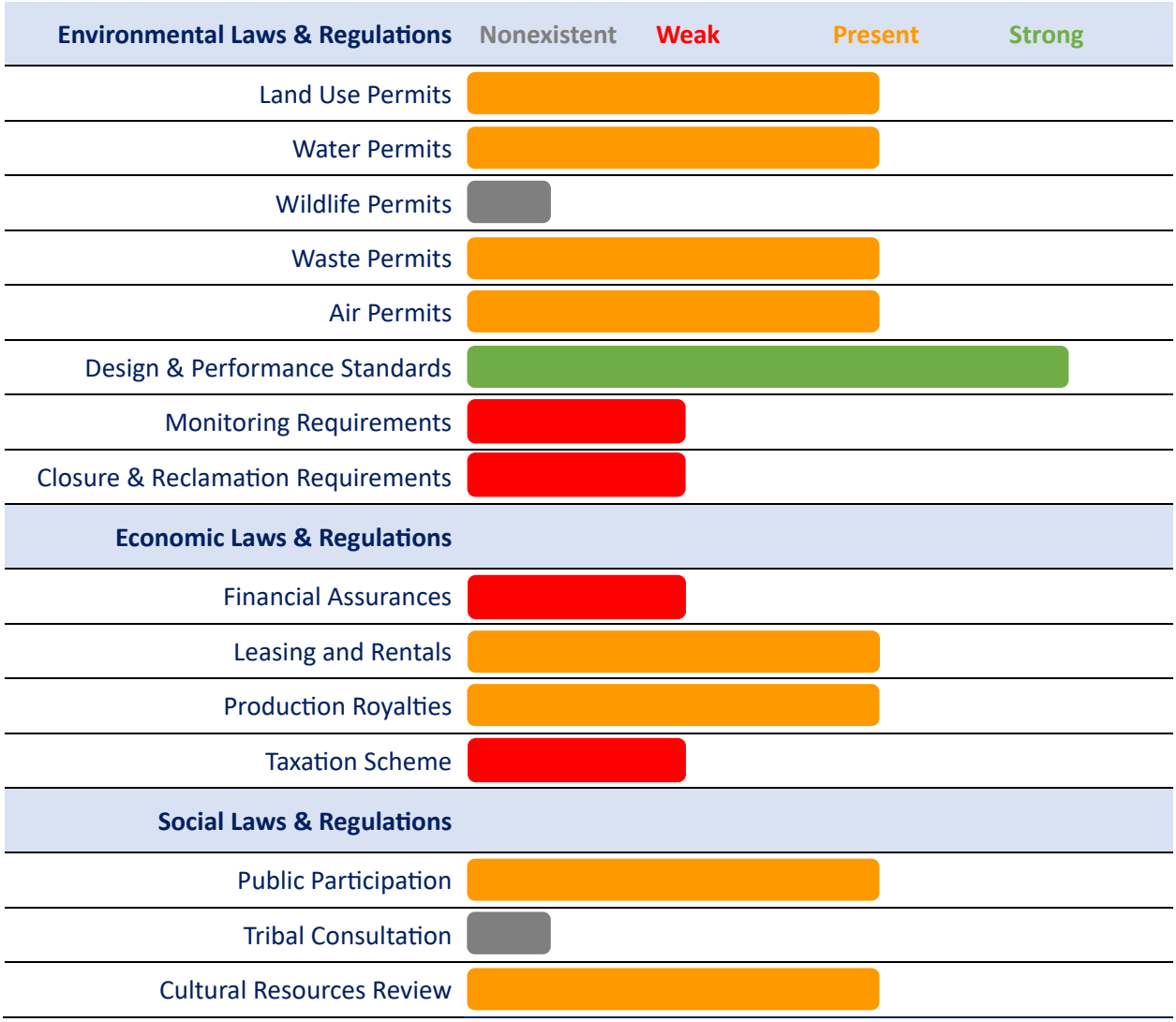
ARIZONA



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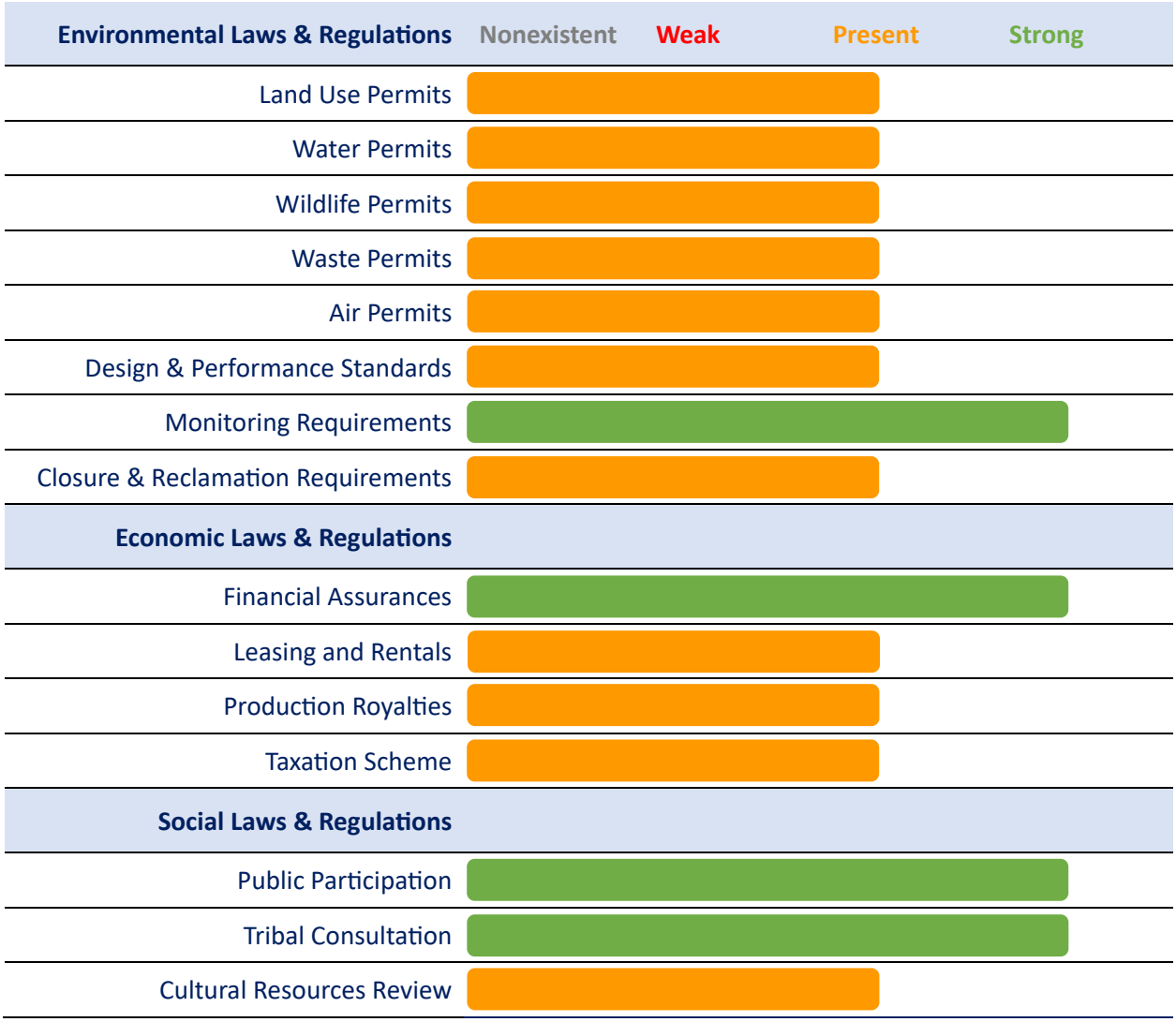
CALIFORNIA



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Nonexistent: There is no state law or regulation in place. The absence of a law or regulation is clear, and there is no formal state structure or framework addressing the need.

COLORADO

Environmental Laws & Regulations	Nonexistent	Weak	Present	Strong
Land Use Permits			■	
Water Permits			■	
Wildlife Permits		■		
Waste Permits			■	
Air Permits			■	
Design & Performance Standards			■	
Monitoring Requirements			■	
Closure & Reclamation Requirements			■	
Economic Laws & Regulations				
Financial Assurances			■	
Leasing and Rentals			■	
Production Royalties			■	
Taxation Scheme			■	
Social Laws & Regulations				
Public Participation			■	
Tribal Consultation	■			
Cultural Resources Review			■	

Strong: The law or regulation is comprehensive or robust. It incorporates environmental, economic, or social objectives, and has a significant positive impact on environmental conservation, economic responsibility, or social engagement.

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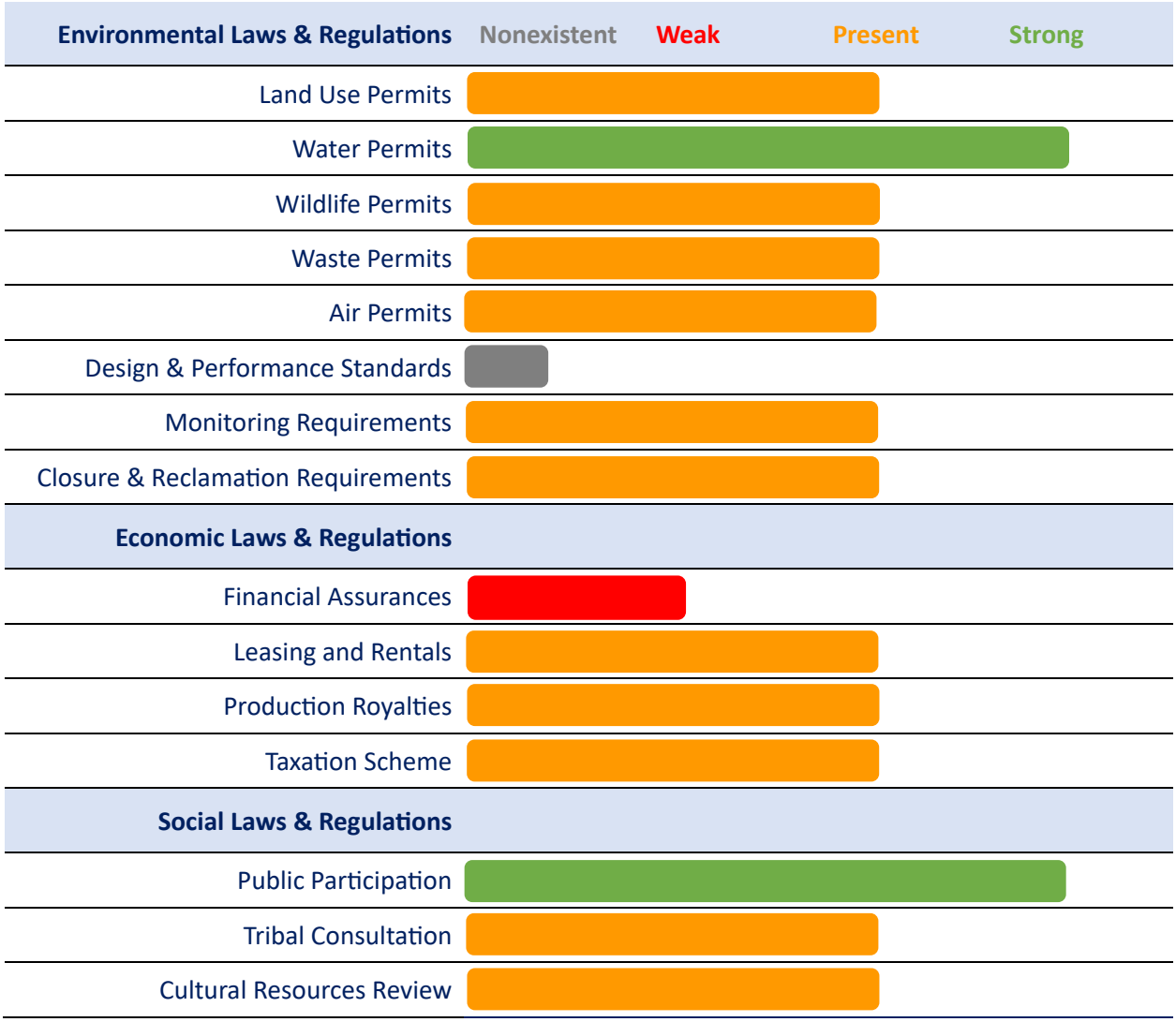
MINNESOTA



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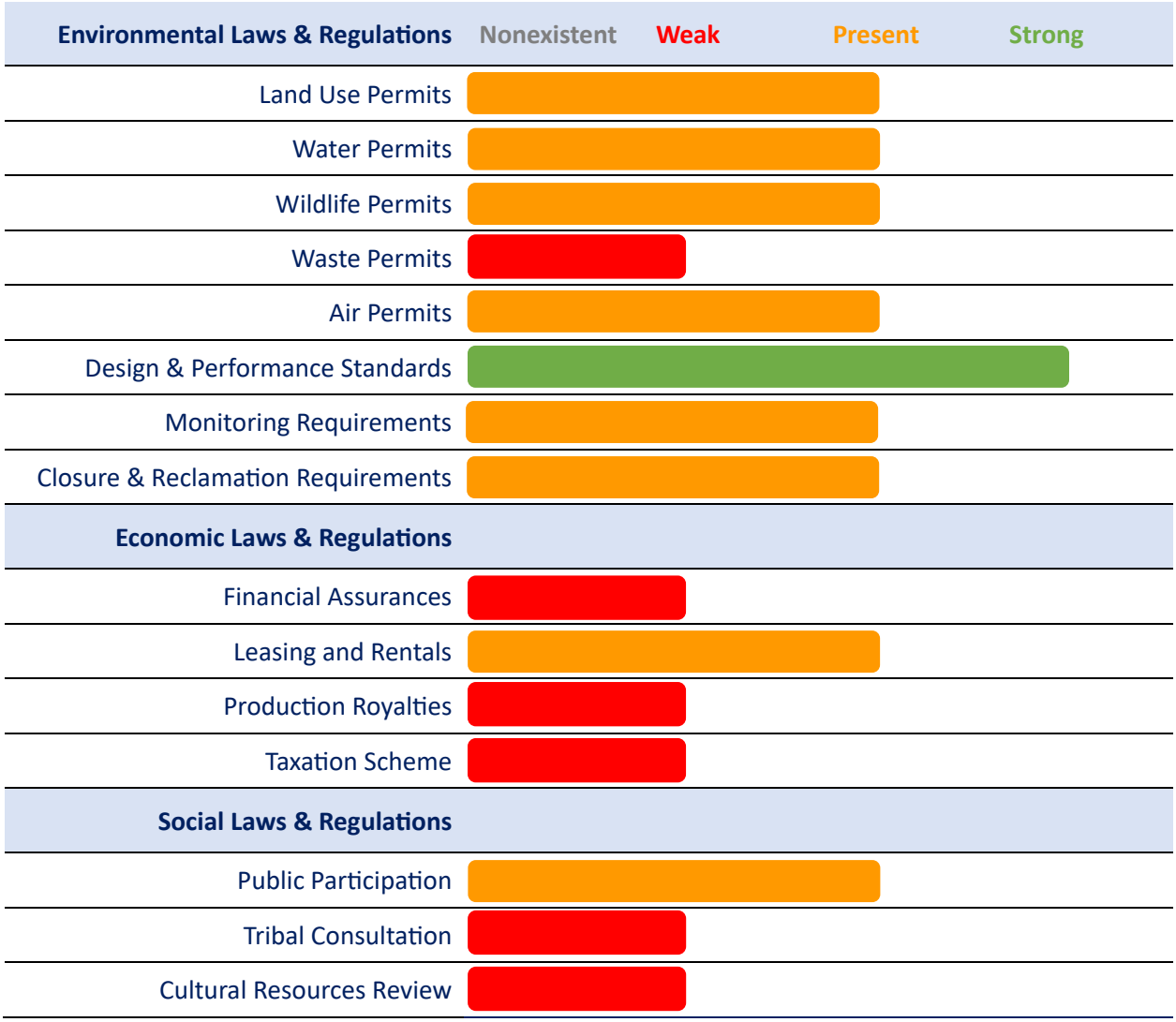
NEVADA



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POLICY RECOMMENDATIONS FOR ALASKA

The following recommendations address ways in which Alaska could strengthen hardrock mining laws and policies to support environmental, economic, and social frameworks. This report does not provide an exhaustive list of possible improvements to Alaska's framework. Rather, it highlights key areas where Alaska's regulatory frameworks leave the state vulnerable to environmental, economic, and social harms.

Environmental Policy Recommendations

Recalibrate Water Reservation and Appropriation Mechanisms

Alaska is relatively unique in that it provides a process through which water can be reserved for environmental preservation purposes. However, there is a significant imbalance between the ease of securing a water appropriation right compared to the difficulty of obtaining a water reservation. Easing the water reservation process and imposing more stringent standards for the obtainment of a water appropriation would strengthen the environmental protections afforded by Alaska's water management framework.

A water reservation application requires a high level of technical detail, including a justification of the need for the proposed reservation as well as identification and description of the methodology, data, and data analysis used to substantiate the need for the requested reservation.[1214] On the other hand, the application to establish a right to appropriate does not require an intensive environmental analysis before it may be granted. While the agency must consider the effect of the appropriation on fish and game resources, and public health and recreational analysis, such considerations are weighed against the economic benefits.[1215] Additionally, the burden on the applicant is much lower, as they need only provide information on the volume they wish to appropriate and are not required to justify the appropriation. Further, an applicant need only "substantially" comply with all permit conditions.[1216] This water appropriation scheme could be enhanced to achieve conservation objectives by establishing an environmental standard that must be satisfied for a permit to be issued; requiring water recycling or reuse; and requiring full compliance with permit conditions.

Establish an Environmental Standard

Currently, an appropriation will be granted if it will not violate the rights of prior appropriator, the diversion mechanism is adequate, the proposed water use is beneficial, and the proposed appropriation is in the public interest.[1217] While environmental factors are considered in analyzing the public interest, they are evaluated in conjunction with many other factors.[1218] Establishing an environmental standard that must be satisfied in order to obtain an appropriation would require environmental considerations to be prioritized in the permitting process. For example, Minnesota law provides that a water appropriation permit may only be granted if the if the agency determines that the proposed water

[1214] ALASKA DEP'T OF NAT. RES., APPLICATION FOR RESERVATION OF WATER, https://dnr.alaska.gov/mlw/cdn/pdf/forms/Application-for-Reservation-of-Water.pdf (last visited Dec. 13, 2024).
[1215] ALASKA STAT. § 46.15.080.
[1216] ALASKA ADMIN. CODE tit. 11, § 93.130; ALASKA DEP'T OF NAT. RES. DIVISION OF MINING, LAND AND WATER, FACT SHEET: WATER RIGHTS IN ALASKA (2021), https://dnr.alaska.gov/mlw/cdn/pdf/factsheets/water-rights-in-alaska.pdf.
[1217] ALASKA ADMIN. CODE tit. 11, § 93.120; ALASKA STAT. § 46.15.080.
[1218] ALASKA STAT. § 46.15.080.

modification is necessary to mine substantial deposits of metals and that there is not another "feasible and economical" method, the interests of the public in lands or waters will not be substantially impaired, public health or safety will not be endangered, and the proposed mining operation will be in the public interest.[1219]

Require Water Recycling or Reuse

Another element of a water appropriation scheme that helps limit the impact of appropriations is requiring a reduction in appropriations to the extent water is available through reuse or reclamation, as is the policy in California.[1220] A similar practice is adhered to in Minnesota, where the permittee is required to utilize available surplus water from preexisting mining operations or facilities whenever feasible and practical.[1221]

Require Full Compliance with Permit Conditions

Requiring full compliance with permit conditions, rather than "substantial" compliance, would strengthen the environmental protections afforded by the permit.

Improve Water Quality Protections

Alaska's water quality policies could be strengthened to preserve water quality levels. While improvements would be beneficial for all waters, such initiatives could also be targeted specifically towards salmon ecosystems. Improved water quality preservation can be achieved by eliminating antidegradation policy exceptions and establishing an administrative process for the designation of Tier 3 waters.

Remove Anti-Degradation Policy Exceptions

Currently, Alaska's antidegradation policy provides exceptions for short-term variances for activities such as mixing zones after a social or economic analysis is conducted.[1222] As a result, water degradation is frequently permitted. Eliminating such exceptions would require ADEC to maintain water quality levels.

Another way that Alaska's anti-degradation policy could be strengthened would be by implementing an alternatives analysis. In Minnesota, an application must include an antidegradation assessment that includes an analysis of alternatives to avoid net increases in loading or other causes of degradation.[1223] Mandating an alternatives analysis requires the applicant to go through the process of documenting alternative approaches. While it is more procedural than substantive as it does not require a particular outcome, such an analysis is deeply informative for both permit decisionmakers as well as the public. Informing the public is generally a best practice, and because the public has an opportunity to submit comments for APDES permit applications, an alternatives analysis would strengthen the public's ability to thoroughly comment on the environmental impacts of the discharge permitted under the draft permit.

[1219] Minn. Stat. § 103G.297.
[1220] Cal. Code Regs. tit. 23, § 651.
[1221] Minn. R. § 6115.0720.
[1222] Alaska Admin. Code tit. 18, § 70.015.
[1223] Minn. R. § 7050.0280.

Establish Outstanding National Resource Waters Designation Process

Water quality can also be protected by designating waters as Tier 3, or Outstanding National Resource Waters (ONRW), as no degradation of such waters is permitted. Alaska does not currently have a designation process but is exploring the option of a legislative-based process. However, an administrative process would place the decision in the hands of those with technical expertise in water management. There are two components that should be incorporated into an administrative designation process: (1) a nomination process that allows the public to recommend waters to be considered for designation, and (2) public notice and an opportunity for public comment during the designation process. Such elements would allow for the incorporation of public input throughout the designation process. In Minnesota, which has a significant number of designated ONRWs, the agency is required to provide an opportunity for a public hearing before identifying or establishing an additional ONRW.[1224] This promotes transparency and accountability through the decision-making process and provides the public with an opportunity to provide input.

Strengthen Salmon Protections

Salmon communities benefit from increasingly conservation-oriented policies of the water appropriation system and water quality regulation. Additionally, Alaska's Fish Habitat Permit presents a unique opportunity to strengthen an already existing program designed to protect anadromous fish. Because salmon are anadromous species, waters critical to salmon spawning are designated in the state's Anadromous Waters Catalog, and activities in such designated waters require special permit approval.[1225] However, only 50% of Alaska's waters have been catalogued.[1226] This leaves a significant portion of salmon spawning habitat vulnerable to development. Additionally, the necessary permits are granted relatively freely. The default is for the permit to be granted, unless the plans are insufficient to protect fish and game.[1227]

Clarify and Strengthen Protection Standard

The law establishing this permit is relatively sparce, and the program would benefit from an increased level of detail with regards to wildlife protection standards. Specifically, there is an opportunity to define "insufficient for the proper protection of fish and game" as a stringent environmental standard. This phrase could be supplemented by requiring specific technical measurements to be satisfied, or by using more precise language to reduce flexibility in an agency's ability to decide whether the standard has been satisfied.

Invest in Cataloguing Anadromous Waters

Currently, it is believed that only half of the waters used by anadromous species have been catalogued in the Anadromous Waters Catalog.[1228] As such, it is estimated that at least an additional 20,000 anadromous water bodies in Alaska have not been identified, leaving them vulnerable to development

[1224] MINN. R. § 7050.0335.
[1225] ALASKA STAT. § 16.056.871.
[1226] *Anadromous Waters Catalog*, ALASKA EPSCOR, https://catalog.epscor.alaska.edu/dataset/anadromous-waters-catalog (last visited Dec. 13, 2024).
[1227] ALASKA ADMIN. CODE tit. 5, § 41.030.
[1228] *Anadromous Waters Catalog*, ALASKA EPSCOR, https://catalog.epscor.alaska.edu/dataset/anadromous-waters-catalog (last visited Dec. 13, 2024).

without the protections of the Fish Habitat Permit process. Completing the catalogue would afford all anadromous waters in Alaska the protections of this permit process.

Consider Climate Change Impacts

The mining landscape in Alaska is shifting, both literally and metaphorically, as a result of climate change.[1229] Alaska is warming at a much more rapid rate than the lower 48 states, and the melting permafrost presents geotechnical challenges for infrastructure stability[1230] and changes water management strategies as increased thaw results in higher natural levels of dissolved minerals and other particles in waterbodies.[1231]

While the mining of certain "critical" minerals has been presented as a solution to a changing climate due to their use in clean energy technologies, unfettered mining activities in pursuit of such materials is not an adequate solution. Rather, decisions about all mining activities must be made with adequate consideration given to the environmental and social consequences of such activities. Additionally, approaches such as recycling and reuse of already extracted materials, alternative technological developments, and energy storage innovations must also be pursued.

Retain Federal Primacy Over CWA Section 404 Permits

Alaska is currently seeking assumption of permitting authority under Section 404 of the Clean Water Act.[1232] However, state administration of the program would result in fewer environmental review activities, fewer opportunities for public engagement, and increased state costs. As such, the Section 404 program should continue to be administered by the U.S. Army Corps of Engineers.[1233]

If the state has been delegated authority to issue Section 404 permits, then that permit, when issued on lands where there is no federal jurisdiction, no longer serves as a federal nexus that will trigger the environmental analysis process and corresponding public participation opportunities under NEPA. Because Alaska does not have a state NEPA equivalent, there is no framework to fill the gaps left by the absence of the NEPA analysis. As such, there would be no requirement that the state conduct an analysis of the environmental impacts of a proposed project. There would also be no public participation opportunities during the course of a project's development other than those prescribed under other permit processes. This would also result in a loss of Tribal consultation, as Alaska does not currently have Tribal consultation requirements. Without a government-to-government consultation process in place, there would be no formal opportunity for Tribes to provide traditional ecological knowledge and comment on the impacts of the projects on subsistence resources, among other insights.

[1229] Anne Tolvanen et al., *Mining in the Arctic Environment – A Review From Ecological, Socioeconomic and Legal Perspectives,* 233 J. Env't Mgmt. 832-44 (2019).
[1230] Rick Mills, *Arctic Mines Face Thawing Permafrost Disaster*, Mining (Mar. 22, 2021), https://www.mining.com/web/arctic-mines-face-thawing-permafrost-disaster/.
[1231] Nathaniel Herz, *As Arctic Warming Accelerates, Permafrost Thaw Hits Red Dog Mine with $20 Million Bill*, Alaska Public Media (Sept. 1, 2020), https://alaskapublic.org/2020/09/01/as-arctic-warming-accelerates-permafrost-thaw-hits-red-dog-mine-with-20-million-bill/.
[1232] *Alaska's CWA Sec. 404 Dredge and Fill Permitting Program Development*, Alaska Dep't of Env't Conservation Division of Water, https://dec.alaska.gov/water/wetlands-404/ (last visited Dec. 13, 2024).
[1233] Only two states have assumed authority over Section 404 permitting: Michigan and New Jersey.

It is also very expensive to administer the Section 404 program. When the program is administered by a federal agency, that agency is responsible for the cost. When the program is delegated to a state, the state assumes the cost. Costs include establishing a new unit of state government that is estimated to require 32 permanent positions and cost $4.8 million per year.[1234]

Establish In-perpetuity Water Treatment Law

Currently, Alaska does not have a law addressing in-perpetuity water treatment. Alaska could consider adopting a law prohibiting in-perpetuity water treatment. Colorado currently has such a law. In addition, the U.S. Department of the Interior-led Interagency Working Group on Mining Laws, Regulations, and Permitting also recommended prohibiting mine operations that would result in perpetual water treatment.[1235]

Under a 2019 amendment to Colorado's Mined Land Reclamation Act, a reclamation plan for a new or amended permit "must demonstrate, by substantial evidence, a reasonably foreseeable end date for any water quality treatment necessary to ensure compliance with applicable water quality standards.[1237] However, the board may approve a reclamation plan that lacks substantial evidence upon two conditions. First, "the new or amended permit includes an environmental protection plan and reclamation plan adequate to ensure compliance with applicable water quality standards."[1238] Second, the board must make a determination that for an amended reclamation plan, "the water quality impacts. that have occurred or are occurring for which no reasonably foreseeable end date for water quality treatment can be established were either unforeseen at the time of approval of the reclamation plan or existing at a mine site permitted before January 1, 2019" and "for a new or amended reclamation plan that was previously mined but was not permitted as of January 1, 2019, that existing water quality conditions do not meet applicable water quality standards and no reasonably foreseeable end date for water quality treatment can be established."[1239] In addition, the board may approve a new reclamation plan that lacks substantial evidence if "a permit application is submitted and the reclamation plan is limited to reclamation of already-mined ore or other waste materials, including mine drainage or runoff, as part of a cleanup."[1240]

New Mexico also has a law addressing perpetual treatment: Before a permit can be issued, the state's Energy, Minerals and Natural Resources Department must find that "the mining operation is designed to meet without perpetual care all applicable environmental requirements."[1236]

[1234] *Alaska's CWA Sec. 404 Dredge and Fill Permitting Program Development*, Alaska Dep't of Env't Conservation Division of Water, https://dec.alaska.gov/water/wetlands-404/ (last visited Dec. 13, 2024).
[1235] Interagency Working Group on Mining Laws, Regulations, and Permitting, Recommendations to Improve Mining on Public Lands 130 (2023).
[1236] N.M. Stat. Ann. § 69-36-12(B)(4).
[1237] Colo. Rev. Stat. § 34-32-116(7)(g)(II).
[1238] Colo. Rev. Stat. § 34-32-116(7)(g)(III).
[1239] Colo. Rev. Stat. § 34-32-116(7)(g)(III).
[1240] Colo. Rev. Stat. § 34-32-116(7)(g)(IV).

Economic Policy Recommendations

Remove Reclamation Financial Assurance Exceptions for Small Mines

Under Alaska's reclamation laws, operations that do not exceed five acres are exempt from reclamation financial assurance requirements.[1241] Instead, a miner must file a letter of intent with the Alaska Department of Natural Resources (ADNR) that states the total acreage and volume of material to be mined, total acreage to be reclaimed, and reclamation measures to be used.[1242] This information must also be updated and submitted in an annual reclamation statement.[1243] Financial assurance and an approved reclamation plan are only required for subsequent mining operations if the miner fails to adequately reclaim a mining operation.[1244]

Alaska could remove or modify the small mine exception to help ensure adequate financial assurance for reclamation of such operations from the start.[1245] California, for example, does not provide for a small mine exception under the Surface Mining and Reclamation Act. In the alternative, Alaska could modify its small mine exception to provide more protection without removing it entirely. Under the Mined Land Reclamation Act in Colorado, for example, a separate permit is required for "limited impact" mining operations. However, unlike Alaska's current law, Colorado law requires that limited impact mining operations provide financial assurance and submit information on measures to be taken to reclaim any affected land.

Overall, removing the financial assurance exception for small mines will better ensure that operations under five acres are fully reclaimed. If operators are required to post financial assurance, either the operator will undertake reclamation to receive the release of the assurance mechanism, or the state may use the forfeited mechanism to conduct reclamation itself.

Strengthen Financial Assurances

Remove Bond Pool Option

Under Alaska's reclamation laws, a state bond pool is available as an alternative to individual financial assurance.[1246] To participate in the pool, the miner pays a deposit of 15% of the total bond amount that would be required under individual bonding procedures and a nonrefundable fee of 5% of the total bond amount for that year.[1247] The bond pool may be used by ADNR to pay reclamation costs that have not been paid by the miner nor their surety despite reasonable efforts to recover costs from the miner and their surety.[1248] ADNR is not authorized to undertake reclamation expenditures beyond the balance of the bond pool.[1249] Bonding to a certain amount does not set a limit on potential liability.[1250] The miner

[1241] ALASKA STAT. § 27.19.050(a).
[1242] ALASKA STAT. § 27.19.050(b).
[1243] ALASKA STAT. § 27.19.050(c).
[1244] ALASKA STAT. § 27.19.050(d).
[1245] *See* NAT'L WILDLIFE FED., HARDROCK RECLAMATION BONDING PRACTICES IN THE WESTERN UNITED STATES SUMMARY REPORT (2000).
[1246] ALASKA STAT. § 27.19.040; ALASKA ADMIN. CODE tit. 11, § 97.425.
[1247] ALASKA ADMIN. CODE tit. 11, § 97.425.
[1248] ALASKA ADMIN. CODE tit. 11, § 97.440.
[1249] ALASKA ADMIN. CODE tit. 11, § 97.440.
[1250] ALASKA ADMIN. CODE tit. 11, § 97.430.

remains liable for the full costs of reclamation, regardless of the amount of the reclamation bond or pool contributions.[1251]

Alaska could remove the option of a bond pool as an alternative and instead require individual financial assurance. Because bond pools are typically financed at reduced rates compared to other traditional suretyship arrangements, "issues can arise when a company's liabilities exceed or require too much of the bond pool, thus preventing the pool's ability to cover any other liabilities of the other participating companies."[1252] Bond pools are particularly susceptible to problems during industry-wide downturns, where participants in the pool are likely to make multiple claims in a short time period.[1253] Eliminating the bond pool option would bring Alaska in line with California, Colorado, Minnesota, and Nevada, all of which require individual financial assurance for most mining operations.

Overall, removing the option of a bond pool as a financial assurance mechanism will better ensure that the state has the money to conduct full reclamation when necessary, especially during industry-wide downturns or other times where many companies default on their reclamation responsibilities within a short time of each other.

Require Annual Updates

Under Alaska's current reclamation law, if the miner is operating with a multi-year reclamation plan, the miner is responsible for ensuring that the bond amount is sufficient at all times to cover any area to be mined during the current year, plus any mined area in a previous year that has yet to be reclaimed.[1254]

Alaska could instead shift the burden to require that the reclamation agency ensure the bond is sufficient, and review and adjust the financial assurance regularly. California, Minnesota, and Arizona all have similar requirements. Under California law, estimated reclamation costs must be reviewed and adjusted, if necessary, once each year "to account for new lands disturbed by surface mining operations, inflation, and reclamation of lands accomplished in accordance with the approved reclamation plan."[1255] Under Minnesota law, evidence of financial assurance must be reviewed annually.[1256] Under Arizona law, the inspector must adjust amount of financial assurance every five years or as often as necessary.[1257]

Overall, Alaska should shift the burden of confirming the bond is sufficient from the operator to the agency because the agency is better positioned and incentivized to assess the status of reclamation and the bond's sufficiency neutrally and accurately.[1258]

[1251] ALASKA ADMIN. CODE tit. 11, § 97.430.
[1252] Jason Malone and Tim Winslow, *Financial Assurance: Environmental Protection as a Cost of Doing Business*, 93 N.D. L. REV. 1 (2018).
[1253] Jason Malone and Tim Winslow, *Financial Assurance: Environmental Protection as a Cost of Doing Business*, 93 N.D. L. REV. 1 (2018).
[1254] ALASKA ADMIN. CODE tit. 11 § 97.415(b).
[1255] CAL. PUB. RES. CODE § 2773.1.
[1256] MINN STAT. § 93.481; MINN STAT. § 93.49.
[1257] ARIZ. REV. STAT. § 27-992(D).
[1258]

Exact Fees

Currently, Alaska law does not include any specific fees for any minerals. Alaska could consider adding a fee for certain minerals, something that California currently requires.[1259] Under California law, gold has a fee of $5 per ounce, and silver has a fee of $0.10 per ounce, with a minimum of $100 and maximum of $10,000. California's fee system does not provide for any deductions or limitations. Overall, adopting a fee system can serve to compensate for negative externalities from the extraction or use of minerals, serve as another form of rent payment for using state land, and/or serve as another form of royalty payment for extracting a public non-renewable resource.

Base Severance Taxes on Gross Income

Currently, hardrock mining taxes in Alaska are assessed at 3% to 7% of the taxpayer's net income over $40,000 with some deductions and limitations.[1260] Alaska could instead assess taxes based on gross value or gross income instead of net income. Arizona, Colorado, and Minnesota all assess their hardrock mining-related taxes based at least in part on gross income. Overall, an assessment based on gross income instead of net income would better compensate the state for the loss of a public non-renewable resource.

Remove Royalty Deductions

Under current Alaska law, Alaska allows deductions from the royalties collected by the state for overhead and operating expenses, development expenses incurred after mine reaches production stage, depreciation, some taxes, and certain losses and direct mining expenses, and more.[1261] Alaska could consider removing these deductions. For example, Arizona does not allow any deductions from its royalty calculations. Overall, removing deductions would lead to better compensation to the state for the loss of a public non-renewable resource.

Social Policy Recommendations

Establish State Review Framework

Environmental review and public participation are key to ensuring a responsible and equitable decision-making process. As such, Alaska could establish a process that provides for comprehensive environmental review, including full disclosure of impacts and consideration of alternatives, and public participation opportunities throughout the mining project development process. This is particularly important for projects that do not have a federal hook that triggers the National Environmental Policy Act (NEPA) process. States often implement such a framework through so-called "state NEPA" laws. Both California and Minnesota have such laws that apply to hardrock mining projects and can serve as examples to inform the development of an Alaskan environmental review framework.

Environmental review requirements ensure that a comprehensive review is conducted before a project may be permitted. The California Environmental Quality Act (CEQA), for example, provides that any project a state or local agency proposes to approve that "may have a significant effect on the

[1259] U.S. Gov't Accountability Off., GAO B-330854, Hardrock Mining: Updated Information on State Royalties and Taxes (2019).
[1260] U.S. Gov't Accountability Off., GAO B-330854, Hardrock Mining: Updated Information on State Royalties and Taxes (2019).
[1261] U.S. Gov't Accountability Off., GAO B-330854, Hardrock Mining: Updated Information on State Royalties and Taxes (2019).

environment" must be preceded by an environmental impact report (EIR).[1262] The EIR must identify alternatives to the proposed action, information on environmental impacts, and feasible mitigation measures.[1263] In Minnesota, similarly to NEPA, there are two levels of environmental review: an environmental assessment worksheet (EAW) and an environmental impact statement (EIS).[1264] An EAW informs whether an EIS is required, and the responsible government unit shall base its decision regarding the need for an EIS on the information gathered during the EAW process and the comments it received on the EAW.[1265]

In both California and Minnesota, these reports must be made available to the public. In California, the public is guaranteed no less than 30 days for review and comments on draft EIRs.[1266] In Minnesota, an EAW must be published, and a 30-day period for public review and comment must be provided.[1267] A draft EIS must be made available for public review and comment, and the lead agency must hold an informational meeting in the county where the project is proposed.[1268] The informational meeting must be at least 15 days after the notice of availability is published, and the lead agency must continue to accept public comments for at least 10 days after the meeting is conducted.[1269] In addition to enhancing transparency in the decision-making process, these public participation requirements also strengthen the process by increasing the breadth and depth of information available to decision-makers.

Require Tribal Consultation

Alaska does not currently have any Tribal consultation requirements at the state level. However, Tribal consultation is an important component to fostering government-to-government relations and ensuring just land and resource management.

Therefore, Alaska could establish a requirement that state agencies and/or local governments engage in Tribal consultation when taking an action or making a decision that may impact Tribal interests and develop a framework for meaningful consultation pursuant to that requirement.

California, Minnesota, and Nevada each require consultation between state agencies and Tribes where the state agency takes an action that may impact Tribal interests. In California and Minnesota, this requirement is rooted in state laws and executive orders that require state agencies to develop their own Tribal consultation policies through which they satisfy their Tribal consultation duties.[1270] These plans must include elements such as early notification, meaningful engagement, respect for Tribal sovereignty, and considering Tribal input gathered from consultation in decision-making. In Nevada, state law directed the Nevada Indian Commission to develop a policy to promote collaboration between state agencies and Tribes. The policy provides the minimum standards for consultation between state

[1262] CAL. PUB. RES. CODE § 21151.
[1263] CAL. PUB. RES. CODE § 21100.
[1264] MINN. R. §4410.1000 *et seq.* (Environmental Assessment Worksheet); MINN. R. §4410.2000 *et seq*. (Environmental Impact Statement).
[1265] MINN. R. §4410.1700(3).
[1266] CAL. PUB. RES. CODE § 21091.
[1267] MINN. R. § 4410.1600.
[1268] MINN. R. § 4410.2600.
[1269] MINN. R. § 4410.2600.
[1270] Assembly Bill No. 52, Native Americans: California Environmental Quality Act (2014); Gov. Brown, Exec. Order B-10-11 (Sept. 19, 2011); MINN. STAT. § 10.65; Governor Tim Walz, Executive Order 19-24, Affirming the Government to Government Relationship Between the State of Minnesota and Minnesota Tribal Nations: Providing for Consultation, Coordination, and Cooperation (Apr. 4, 2019).

agencies and Tribes, including designating points of contact for Tribal consultation, providing early and adequate notice of consultation opportunities, developing protocol in collaboration with an affected Tribe, and maintaining consultation records that include a summary of Tribal input received and an explanation of how Tribal input impacted the state agency's decision.[1271]

The development of any Tribal consultation requirements or policies should be done in consultation with Tribes. In Nevada, for example, the statute specifically directed the Nevada Indian Commission to consult with representatives of Tribes while developing the policy. However, general best practices for Tribal consultation to be considered include maintaining a Tribal Liaison; investing in an ongoing relationship between the agency and Tribes; establishing mutual understanding, respect, and trust; providing cultural trainings; and beginning consultation early in the project development process.[1272] Such details should be provided for in the legal mechanism requiring Tribal consultation, as well as agency-specific policies.

The international standard for Tribal consultation requires that **free, prior, and informed consent** be obtained before adopting and implementing an action or decision that may affect an interested Tribe.[1273] This standard requires that the consent be free from coercion or manipulation, be sought sufficiently in advance of the action and be respectful of the time requirements of the Tribe's consensus process, and be made with a comprehensive understanding of the project and its potential impacts.

Extend Comment Periods

Written public comments are an important mechanism through which the public at large can provide input on a governmental decisions or actions. By inviting comments, state authorities gain valuable feedback, including expertise, concerns, and suggestions that may improve the proposed decision or action. This process can also bring light potential flaws, consequences, or alternatives that may not have been previously considered. As such, it is important that state agencies provide enough information and time for the public to meaningfully comment. This requires agencies to provide the public with access to the same materials being considered by decision makers and enough time to thoughtfully respond to the issues presented. This includes being thoughtful about scheduling around holidays or other events that may inhibit the public's ability to participate. Additionally, when the agency is making its decision, it should have sufficient time after the comment period has closed to appropriately consider the comments and incorporate them into its decision as appropriate.

Alaska's comment periods for permits range from around 15 to 30 days. Of the states surveyed in this report, the typical comment period length is 30 days. At the federal level, comment periods generally range between 30 to 60 days, with agencies scheduling comment periods up to 180 days for complex rulemakings.

Colorado's Water Quality Control Act provides one of the most comprehensive frameworks for public comments. Under the act, a comment period lasts 30 days from the date of notice of permit application

[1271] Nev. Indian Commission, Policy to Promote Collaboration Between State Agencies and Indian Tribes (2023).
[1272] Nat'l Ass'n of Tribal Historic Preservation Officers, Tribal Consultation: Best Practices in Historic Preservation (2005).
[1273] *Consultation and Free, Prior and Informed Consent (FPIC)*, OHCHR and Indigenous Peoples, https://www.ohchr.org/en/indigenous-peoples/consultation-and-free-prior-and-informed-consent-fpic# (last visited Dec. 13, 2024).

and draft permit.[1274] If a public hearing is held on the application and draft permit, the public comment will last 60 days.[1275] Furthermore, the agency may establish a responsive period of 10 days for public comment so that persons can respond to material filed during the initial comment period.[1276] The agency also has the discretion to extend or reopen a comment period if new questions or issues arise.[1277]

Require Hearings

Hearings are important tools for enabling public participation in permitting and project development processes, as they provide a forum for the public to give spoken comment. They increase government transparency and accountability and afford the public an opportunity to voice their opinions on a proposed action and educate decision makers.

Alaska law currently has three provisions that grant agencies discretion as to whether to hold a public hearing: in the consideration of APDES permit applications, water appropriation applications, and water reservation applications. While hearings for APDES permits must be held where there is a "significant degree of public interest" in the drafted permit, the agency also has the discretion to hold a hearing if it finds there is good reason.[1278] For water appropriations and reservations, the agency has total discretion.[1279]

Given the benefits of public hearings, the discretion for whether to hold a hearing could be eliminated, and ADEC could be required to hold a hearing in each of these instances. Under California's Surface Mining and Reclamation Act (SMARA), for example, mining permit and reclamation plan and financial assurance procedure ordinances require at least one public hearing. Requiring public hearings at pivotal stages of the mining permit review process helps to ensure public participation, gather information, and, as stated above, improve transparency and accountability. In Alaska, this is particularly important for APDES permits and water appropriation, which are currently granted under regulatory schemes that do not adequately consider conservation objectives. Holding public hearings when considering applications of this nature would allow the public an opportunity to advocate for environmentally protective measures.

[1274] 5 Colo. Code Regs. § 1002-61.5(2)(d).
[1275] 5 Colo. Code Regs. § 1002-61.5(2)(d).
[1276] 5 Colo. Code Regs. § 1002-61.5(2)(d)(i)(B).
[1277] 5 Colo. Code Regs. § 1002-61.5(2)(d)(ii).
[1278] Alaska Admin. Code tit. 18, § 83.120.
[1279] Alaska Stat. § 46.15.133.

CONCLUSION

This report sought to investigate and compare the laws and policies regulating hardrock mining activities of Alaska to those of other hardrock mineral-producing states to evaluate Alaska's environmental, economic, and social frameworks. As demonstrated by this report's analysis, additional efforts are needed to strengthen Alaska's regulatory scheme to effectively provide for environmental and social protections, as well as responsible economic development. While the state's current laws and policies provide a foundation for the regulation of hardrock mining activities, there are significant gaps in the manner in which environmental protection and public participation are prioritized in decision making. By recognizing these opportunities for improvement, Alaska positions itself to strengthen its environmental protections and address the economic and social impacts of the industrial activity on the state.

Alaska's environmental laws and policies are unique to other states analyzed in this report, as there are wildlife programs like the Fish Habitat Permit that are designed to protect anadromous species. However, environmental permitting programs frequently lack environmentally protective standards. In addition, Alaska's economic laws and regulations do not adequately support responsible economic development. With significant deductions allowed under the state's taxation and royalty schemes, as well as a lack of updates to ensure reclamation bonding remains sufficient over time, the state does not maximize the economic benefits of the industry's activities in Alaska and renders itself vulnerable to insufficiently reclaimed operations. Alaska's social laws and regulations also provide a significant opportunity for improvement, as there is no Tribal consultation requirement, and the state lacks a framework for public participation outside of individual permitting processes.

In addition to identifying weaknesses in Alaska's regulatory frameworks, this report also identifies recommendations through which the state can strengthen its management of mining activities. Such recommendations largely draw from strong programs present in other states, which can serve as examples for Alaska. While the identified recommendations are a non-exhaustive list, their implementation would provide for a more environmentally protective regulatory framework that better serves the economic and social needs of the state.