



441 G St. N.W.
Washington, DC 20548

B-330854

July 16, 2019

The Honorable Tom Udall
Ranking Member
Subcommittee on the Interior, Environment, and Related Agencies
Committee on Appropriations
United States Senate

Subject: *Hardrock Mining: Updated Information on State Royalties and Taxes*

Dear Senator Udall:

This responds to your request for us to update certain information in a 2008 GAO report on the types of royalties that 12 western states assess on hardrock mining operations.¹ These states charge royalties for hardrock minerals extracted from state-owned lands.² By contrast, the federal government, under the General Mining Act of 1872,³ does not charge royalties for hardrock minerals extracted from public domain lands.⁴

To respond to your request, we reviewed our prior report and to update that information, we employed a methodology similar to what we used in 2008. We examined the relevant statutes

¹ GAO, *Hardrock Mining: Information on State Royalties and Trends in Mineral Imports and Exports*, GAO-08-849R (Washington, D.C.: July 21, 2008). Our recent work on issues related to hardrock mining includes GAO, *Hardrock Mining: Trends in U.S. Reliance on Imports for Selected Minerals*, GAO-19-434R (Washington, D.C.: May 30, 2019) and GAO, *Hardrock Mining: Availability of Selected Data Related to Mining on Federal Lands*, GAO-19-435R (Washington, D.C.: May 16, 2019). The 12 states addressed in our 2008 report and this letter are Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

² In addition, most of these states impose taxes, such as severance taxes, mine license taxes, or resource excise taxes, on hardrock mining that occurs on any land. A severance tax is generally a tax or fee imposed on the extraction of natural resources; a mine license tax is generally a tax assessed in conjunction with a mine license for the privilege of mining; and a resources excise tax is generally a tax imposed on the extracting or processing of natural resources.

³ General Mining Act of 1872, ch. 152, 17 Stat. 91 (May 10, 1872) (codified as amended in scattered sections of title 30, United States Code). Under U.S. law, minerals are classified as leasable, saleable, or locatable. Leasable minerals include, oil, gas, coal, phosphate, sodium, potassium, sulphur, and gilsonite. Mineral Leasing Act of 1920, ch. 85, 41 Stat. 437 (Feb. 25, 1920) (codified at 30 U.S.C. § 181). Saleable minerals include common sand, stone, and gravel. Multiple Use Mining Act of 1955, ch. 375, 69 Stat. 367 (July 23, 1955) (codified at 30 U.S.C. § 601). Locatable minerals are those that are not leasable or saleable, such as copper, lead, zinc, nickel, magnesium, gold, silver, gems, mica, fluorspar, perlite, tungsten, uranium, and certain limestones and gypsum. In this letter, we refer to "locatable minerals" as "hardrock minerals."

⁴ The Bureau of Land Management is authorized to lease hardrock minerals on acquired lands, which are lands or interests in lands, including mineral estates, which the United States obtained through purchase, gift, or condemnation. Mining operators must pay small fees on some claims. For instance, for unpatented mining claims (*i.e.*, those that have not been conveyed by the federal government to the operator), fees include a one-time location fee of \$37 and an annual maintenance fee of \$155. In fiscal year 2017, the Bureau of Land Management collected \$65 million in such fees.

and regulations on hardrock mining cited therein to determine if they had changed. We also researched any new provisions and reviewed case law for any significant changes in the interpretation of the statutes and regulations. When we needed clarification about specific state issues, we contacted state officials responsible for managing state lands. To develop a broader perspective, we also interviewed individuals knowledgeable about state royalties and taxes, and we consulted academic and industry sources to aid us in understanding whether there had been other important changes in this area of law since 2008. We spoke with individuals in government, academia, private law practice, and a trade association. Finally, we reviewed publications by academics, the Congressional Research Service, the World Bank, and the Council of State Governments. We conducted the work supporting this letter in accordance with applicable legal professional standards and all relevant requirements of GAO's quality assurance framework, which assure that our work is objective, accurate, reliable, and independent.

This letter, like our 2008 report, presents information on both royalties and taxes. Although there are important distinctions between the two, both royalties and taxes permit the government to share in the value of mine production.⁵ And although states may use similar names for royalties and taxes, there can be wide variations in their forms and rates. As we did in 2008, here we place royalties and taxes into one of four categories:⁶

- *Unit-based* royalties and taxes are typically assessed as a dollar rate per quantity or weight of mineral produced or extracted, and do not allow for deductions of mining costs.
- *Gross revenue* royalties and taxes are typically assessed as a percentage of the value of the mineral extracted and do not allow for deductions of mining costs. To determine mineral value, states often use the actual sales price. In other instances, a state may calculate the mineral value on the basis of a reference price, such as the price of the mineral traded in a commodities exchange like the New York Mercantile Exchange. We refer to these royalties as “gross revenue with reference price.”
- *Net smelter returns* royalties and taxes are assessed as a percentage of the value of the mineral, but with deductions allowed for the costs of transporting and processing the mineral (mill, smelter, or treatment costs). However, extraction costs are not deductible. For these royalties and taxes, value may also be determined on the basis of a reference price. A common variation of the net smelter returns royalty or tax includes a standard deduction rate (such as a percentage of the value of the mineral) intended to represent the mining costs and any other allowed deductible costs.
- *Net proceeds* royalties and taxes are assessed as a percentage of the net proceeds (or profit) of the sale of the mineral with deductions for various mining costs. The particular

⁵ For this reason, we referred to taxes as “functional royalties” in our 2008 report. Royalties are a share of the product or profit derived from real property, reserved by the property owner in exchange for the right to extract a resource. Taxes are charges imposed by a government on persons, entities, transactions, or property. *Black's Law Dictionary* 1528, 1685 (10th ed. 2014).

⁶ In some cases, a royalty or tax generally fits into one of these four categories, but with some differences. In 2008 and here, we identify these royalties or taxes as “modified.”

deductions allowed vary widely from state to state, but may include costs of extraction, processing, transportation, capital, marketing, and insurance. A common variation of the net proceeds royalty or tax includes a standard deduction rate (such as a percentage of the value of the mineral) intended to represent the mining costs and any other allowed deductible costs.

As detailed in Enclosures I and II, we determined that since our 2008 report, there have been only minor changes to royalties and taxes assessed by the 12 western states in our review. Enclosure I shows the types of royalties and taxes that the 12 states assess. Enclosure II contains 12 tables, one table for each state, showing the types of royalties and taxes, as well as rates, deductions, and limitations, imposed by each individual state. The changes are as follows:

- Alaska and Arizona adjusted the lists of minerals to which two of their state taxes apply.
- Utah previously credited rent paid by mining operators against the royalty it collected for certain hardrock minerals mined from state lands. It no longer does so.
- Wyoming lifted a suspension of its mining severance tax on certain uranium production and thus now imposes this tax on uranium production.

If you have any questions regarding these matters, please contact me at (202) 512-6417 or SawtelleS@gao.gov. Assistant General Counsel Gregory Marchand, Deputy Assistant General Counsel Richard Johnson, Senior Attorney Antoinette Capaccio, Staff Attorney Juan Garay, and Senior Analyst Ulana Bihun also made key contributions to this letter.

Sincerely yours,



Susan D. Sawtelle
Managing Associate General Counsel

Enclosures - 2

Enclosure I: Royalty and Tax Types on Hardrock Mining in Twelve Western States, 2019

Twelve western states—Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming—charge royalties on hardrock mining on state lands, and most also impose taxes on hardrock mining activity generally. This Enclosure shows the types of royalties and taxes that the 12 states assess.

ROYALTIES AND TAXES ASSESSED ON HARDROCK MINING IN WESTERN STATES, 2019

State	Land or Activity Type	Unit-based	Gross revenue	Net smelter returns	Net proceeds
ALASKA	State lands				•
	Mining activity generally				•
ARIZONA	State lands		•		
	Mining activity generally		•		•
CALIFORNIA	State lands ^a			•	•
	Mining activity generally	•			
COLORADO	State lands ^b				
	Mining activity generally	•	•		
IDAHO	State lands		•	•	
	Mining activity generally				•
MONTANA	State lands ^c			•	
	Mining activity generally	•	•	•	
NEVADA	State lands ^d				
	Mining activity generally				
NEW MEXICO	State lands			•	
	Mining activity generally		•	•	•
OREGON	State lands	•	•		
	Mining activity generally				
UTAH	State lands ^e		•		
	Mining activity generally				•
WASHINGTON	State lands			•	
	Mining activity generally		•		
WYOMING	State lands	•	•		
	Mining activity generally			•	

Source: GAO analysis of prior report (GAO, *Hardrock Mining: Information on State Royalties and Trends in Mineral Imports and Exports*, GAO-08-849R (Washington, D.C.: July 21, 2008)), state statutes, regulations, expert literature, and interviews of selected experts. Sales, use, and property taxes are excluded. Royalties and taxes often apply only to specific minerals.

^a California also has lease-specific royalties for minerals extracted from state lands.

^b Colorado has lease-specific royalties for minerals extracted from state lands.

^c Montana also has lease-specific royalties for nonmetallic minerals extracted from state lands.

^d Nevada has lease-specific royalties for minerals extracted from state lands.

^e Utah's royalty on beryllium did not fit into one of our four categories and so is not shown on this chart. Specifically, Utah's royalty on beryllium is based on mining costs rather than product quantity, weight, value, or proceeds.

Enclosure II: Royalty and Tax Details, Hardrock Mining in Twelve Western States, 2019

Twelve western states—Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming—charge royalties on hardrock mining on state lands, and most also impose taxes on hardrock mining activity generally. This Enclosure shows the types of royalties and taxes, as well as rates, deductions, and limitations.

Table 1: ROYALTIES AND TAXES ASSESSED ON HARDROCK MINING OPERATIONS IN ALASKA, 2019

Alaska	Type of mines/minerals assessed	Type of royalty or tax	Royalty or tax rate	Royalty or tax deductions and limitations
State lands				
Production royalty ^a	Minerals locatable under federal law as of January 3, 1959	Modified net proceeds <i>Rate determination:</i> Statutory, uniform	<i>Current rate and base:</i> 3% of taxpayer's net income from mine	<i>Deductions:</i> Overhead and operating expenses, development expenses incurred after mine reaches production stage, depreciation, some taxes, and certain losses and direct mining expenses, among other things <i>Limitations:</i> Subject to exploration incentive credit; rents credited toward royalties
Mining activity generally				
Mining license tax ^b	Includes valuable metals, ores, minerals, and gypsum (but not oil, gas, <u>marketable earth, quarry rock, or sand and gravel</u>)	Modified net proceeds <i>Rate determination:</i> Statutory, progressive ^c	<i>Current rate and base:</i> 3% to 7% of taxpayer's net income over \$40,000 from all mines in state, less depletion, ^d plus royalty received in connection with mining property in the state	<i>Deductions:</i> Overhead and operating expenses, development expenses incurred after mine reaches production stage, depreciation, some taxes, and certain losses and direct mining expenses, among other things <i>Limitations:</i> Exemption for mine's first 3.5 years; subject to exploration incentive credit

Source: GAO analysis of prior report, (GAO, *Hardrock Mining: Information on State Royalties and Trends in Mineral Imports and Exports*, GAO-08-849R (Washington, D.C.: July 21, 2008)), state statutes, regulations, expert literature, and interviews with selected experts. Amendments requiring additions to tables since our 2008 report are underscored and amendments requiring deletions from tables since our 2008 report are footnoted.

^a Alaska Stat. §§ 27.30.050, 38.05.185, .212, 43.65.060 (West 2019); Alaska Admin. Code tit. 11, § 86.760 (West 2019); Alaska Admin. Code tit. 15, §§ 65.120, .125 (West 2019).

^b Alaska Stat. §§ 43.65.010, .060, 27.30.050 (West 2019); Alaska Admin. Code tit. 15, §§ 65.120, .125 (West 2019).

^c A progressive tax is a tax structured so that the effective tax rate increases more than proportionately as the tax base increases. *Black's Law Dictionary* 1687 (10th ed. 2014).

^d Depletion is a percentage that varies by mineral. Alaska Stat. § 43.65.010(e) (West 2019).

Table 2: ROYALTIES AND TAXES ASSESSED ON HARDROCK MINING OPERATIONS IN ARIZONA, 2019

Arizona	Type of mines/minerals assessed	Type of royalty or tax	Royalty or tax rate	Royalty or tax deductions and limitations
State lands				
Royalty—minerals ^a	All metallic ore minerals and industrial minerals other than common variety minerals (e.g., stone, gravel, clay, sand)	Gross revenue with reference price <i>Rate determination:</i> Statutory minimum, lease-specific	<i>Current rate and base:</i> Market royalty rate; at least 2% of gross value of all minerals produced and sold determined by published price quotation (or, where unavailable, appraisal of fair market price); where processing is performed after mineral is extracted, it shall be deemed produced and sold when concentrate or cathode results from that processing	<i>Deductions:</i> None identified <i>Limitations:</i> None identified
Mining activity generally				
Severance tax—metallic minerals ^b	Metalliferous minerals (copper, gold, silver, molybdenum or other metal or any ore or substance containing such metals, including turquoise)	Net proceeds <i>Rate determination:</i> Statutory, uniform	<i>Current rate and base:</i> 2.5% of net severance base, which is 50% of the difference between gross value of production and production costs; gross value of production is sale price (or price from last reporting period, if no sale) multiplied by the number of recoverable units of the mineral	<i>Deductions:</i> Production costs, generally those incurred in mining and processing until point of sale; includes depreciation and property taxes; does not include severance tax and depletion, or corporate expenses and income tax <i>Limitations:</i> None identified
Transaction privilege tax—mining classification ^c	Includes limestone and any nonmetalliferous mineral product, <u>compound, or combination of nonmetalliferous mineral products</u>	Modified gross revenue <i>Rate determination:</i> Statutory, uniform	<i>Current rate and base:</i> 3.125% of the tax base, which is the gross proceeds of sales or gross income derived from the business, and includes the value of the entire product mined, quarried, or produced for sale, profit, or commercial use in the state ^d	<i>Deductions:</i> Certain taxes including municipal and Indian sales or transaction privilege taxes <i>Limitations:</i> None identified

Source: GAO analysis of prior report, (GAO, *Hardrock Mining: Information on State Royalties and Trends in Mineral Imports and Exports*, GAO-08-849R (Washington, D.C.: July 21, 2008)), state statutes, regulations, expert literature, and interviews with selected experts. Amendments requiring additions to tables since our 2008 report are underscored and amendments requiring deletions from tables since our 2008 report are footnoted.

^a Ariz. Rev. Stat. §§ 27-231, -234, -271 (2019).

^b Ariz. Rev. Stat. §§ 42-5201–5202, -5204 (2019); gross proceeds or income from retail sales are not subject to the severance tax, but are taxed under the transaction privilege tax.

^c Ariz. Rev. Stat. §§ 42-5002, -5010, -5072 (2019); sales that are taxed under the retail classification (5 percent) are not subject to the mining classification tax.

^d“Gross income” means the gross receipts of a taxpayer derived from trade, business, commerce, or sales and the value proceeding or accruing from the sale of tangible personal property or services, or both, and without any deduction on account of losses. “Gross proceeds of sales” means the value proceeding or accruing from the sale of tangible personal property without any deduction on account of the cost of property sold, expense of any kind, or losses, but cash discounts allowed and taken on sales are not included as gross income. Retail tax does not apply to sale of precious metal bullion or monetized bullion. Ariz. Rev. Stat. §§ 42-5001, -5159 (2019).

Table 3: ROYALTIES AND TAXES ASSESSED ON HARDROCK MINING OPERATIONS IN CALIFORNIA, 2019

California	Type of mines/minerals assessed	Type of royalty or tax	Royalty or tax rate	Royalty or tax deductions and limitations
State lands				
Production royalty ^a	Minerals except oil, gas, and geothermal resources	Net smelter returns, net proceeds, or lease-specific <i>Rate determination:</i> Statutory minimum, lease-specific	<i>Current rate and base:</i> (1) <i>Preferential lease:</i> either (a) a royalty, in money or in kind, of not less than 10% of the gross value of all mineral production less charges including transportation and processing costs; or (b) a percentage of net profits; (2) <i>negotiated or competitive lease:</i> either (a) a royalty in money or in kind or (b) a percentage of net profits ^b	<i>Deductions:</i> For gross value, approved charges associated with transporting or processing the state's share <i>Limitations:</i> None identified
Mining activity generally				
Fee on gold and silver ^c	Gold and silver	Unit-based <i>Rate determination:</i> Statutory, uniform	<i>Current rate and base:</i> \$5 per ounce of gold, \$0.10 per ounce of silver, with a minimum of \$100 and a maximum of \$10,000	<i>Deductions:</i> Not applicable <i>Limitations:</i> None identified

Source: GAO analysis of prior report, (GAO, *Hardrock Mining: Information on State Royalties and Trends in Mineral Imports and Exports*, GAO-08-849R (Washington, D.C.: July 21, 2008)), state statutes, regulations, expert literature, and interviews with selected experts. Amendments requiring additions to tables since our 2008 report are underscored and amendments requiring deletions from tables since our 2008 report are footnoted.

^a Cal. Pub. Res. Code §§ 6895, 6897 (West 2019).

^b Prior to applying for a lease, an operator with a prospecting permit must pay a royalty of 20 percent on gross value of minerals sold. Cal. Pub. Res. Code § 6896 (West 2019).

^c Cal. Pub. Res. Code § 2207 (West 2019).

Table 4: ROYALTIES AND TAXES ASSESSED ON HARDROCK MINING OPERATIONS IN COLORADO, 2019

Colorado	Type of mines/minerals assessed	Type of royalty or tax	Royalty or tax rate	Royalty or tax deductions and limitations
State lands				
Royalty ^a	Minerals generally	Lease-specific <i>Rate determination:</i> Lease-specific	<i>Current rate and base:</i> Lease-specific	<i>Deductions:</i> Lease-specific <i>Limitations:</i> Lease-specific
Mining activity generally				
Severance tax— metallic minerals ^b	Metallic minerals; all other minerals except molybdenum, oil, gas, coal, oil shale, rock, sand, gravel, stone products, earths, limestone, carbon dioxide, and dolomite	Modified gross revenue <i>Rate determination:</i> Statutory, uniform above income exclusion	<i>Current rate and base:</i> 2.25% of gross income above \$19 million a year, where gross income is the value of ore right after removal from mine and does not include value added by treatment or marketing, or income from extraction or processing of ores or minerals from waste or residue of previously processed ores	<i>Deductions:</i> Any value added after mining (e.g., crushing, transporting, etc.) <i>Limitations:</i> None identified
Severance tax— molybdenum ^c	Molybdenum ore	Unit-based <i>Rate determination:</i> Statutory, uniform above exclusion	<i>Current rate and base:</i> \$0.05 per ton above 625,000 tons per calendar quarter	<i>Deductions:</i> Not applicable <i>Limitations:</i> None identified

Source: GAO analysis of prior report, (GAO, *Hardrock Mining: Information on State Royalties and Trends in Mineral Imports and Exports*, GAO-08-849R (Washington, D.C.: July 21, 2008)), state statutes, regulations, expert literature, and interviews with selected experts. Amendments requiring additions to tables since our 2008 report are underscored and amendments requiring deletions from tables since our 2008 report are footnoted.

^a Colo. Rev. Stat. § 36-1-113 (West 2019), Email from Minerals Field Technician, Colorado State Board of Land Commissioners, to Senior Attorney, GAO, June 11, 2019.

^b Colo. Rev. Stat. §§ 39-29-102, -103 (West 2019).

^c Colo. Rev. Stat. §§ 39-29-102, -104 (West 2019).

Table 5: ROYALTIES AND TAXES ASSESSED ON HARDROCK MINING OPERATIONS IN IDAHO, 2019

Idaho	Type of mines/minerals assessed	Type of royalty or tax	Royalty or tax rate	Royalty or tax deductions and limitations
State lands				
Royalty—general ^a	Includes gold, silver, lead, zinc, antimony, and copper	Net smelter returns (most minerals) <i>Rate determination:</i> Statutory minimum; uniform rate (base varies)	<i>Current rate and base:</i> 5% of value of mineral produced and saved; market value or actual price, whichever is higher; gross receipts earned or received at point of sale of first marketable minerals	<i>Deductions:</i> None identified <i>Limitations:</i> Rents are credited toward royalties
Royalty—riverbed mineral leases ^b	Gold extracted from submerged state lands	Gross revenue <i>Rate determination:</i> Statutory minimum; uniform rate (base varies)	<i>Current rate and base:</i> 5% of value of mineral produced and saved; market value or actual price, whichever is higher	<i>Deductions:</i> None identified <i>Limitations:</i> Rents are credited toward royalties
Mining activity generally				
Mining license tax ^c	Includes gold, silver, lead, zinc, and copper	Net proceeds <i>Rate determination:</i> Statutory, uniform	<i>Current rate and base:</i> 1% of net value of royalties paid or ore mined or extracted; taxpayer may select either of two methods of computation	<i>Deductions:</i> (1) U.S. Internal Revenue Service method: deductions include costs of mining, processing, and depletion; ^d (2) U.S. Dept. of the Interior method: deductions include costs of mining, transport, and depletion <i>Limitations:</i> None identified

Source: GAO analysis of prior report, (GAO, *Hardrock Mining: Information on State Royalties and Trends in Mineral Imports and Exports*, GAO-08-849R (Washington, D.C.: July 21, 2008)), state statutes, regulations, expert literature, and interviews with selected experts. Amendments requiring additions to tables since our 2008 report are underscored and amendments requiring deletions from tables since our 2008 report are footnoted.

^a Idaho Code § 47-701, -704 (2019); Email from Bureau Chief—Endowment Leasing, Idaho Department of Lands, to Senior Analyst, GAO, May 13, 2019.

^b Idaho Code § 47-704 (2019); Email from Bureau Chief—Endowment Leasing, Idaho Department of Lands, to Senior Analyst, GAO, May 13, 2019.

^c Idaho Code §§ 47-1201, -1202 (2019); Email from Bureau Chief—Endowment Leasing, Idaho Department of Lands, to Senior Analyst, GAO, May 13, 2019.

^d Depletion is an accounting method used to reflect the actual physical reduction of natural resources in asset value. See e-mail from Bureau Chief, Endowment Leasing, Idaho Department of Lands, to Senior Analyst, GAO, May 13, 2019.

Table 6: ROYALTIES AND TAXES ASSESSED ON HARDROCK MINING OPERATIONS IN MONTANA, 2019

Montana	Type of mines/minerals assessed	Type of royalty or tax	Royalty or tax rate	Royalty or tax deductions and limitations
State lands				
Royalty— Metalliferous Mines ^a	Metalliferous minerals (including gold, silver, lead, zinc, copper, platinum, and iron) or gems (precious or semiprecious)	Net smelter returns <i>Rate determination:</i> Statutory minimum, regulatory range, lease-specific	<i>Current rate and base:</i> 5% to 8% of returns, but no less than 5% of the fair market value; ^b returns are the net amount received by the shipper after deducting reasonable transportation costs to closest feasible point of sale, smelting charges and deductions, and other treatment costs	<i>Deductions:</i> Reasonable transportation costs to closest feasible point of sale, smelting charges and deductions, and other treatment costs; costs of producing or treating at mine not deductible <i>Limitations:</i> None identified
Royalty—nonmetallic minerals ^c	Nonmetallic minerals (including limestone and mica, but not including coal, oil, or gas)	Lease-specific <i>Rate determination:</i> Statutory standards, lease-specific	<i>Current rate and base:</i> Lease-specific, based on gross value by either weight or cubic measurement	<i>Deductions:</i> None identified <i>Limitations:</i> None identified
Mining activity generally				
Mining license tax— metal mine ^d	Gold, silver, copper, lead, or any other metal or metals or precious or semiprecious gems or stones of any kind	Net smelter returns <i>Rate determination:</i> Statutory, uniform within each category	<i>Current rate and base:</i> Percentage of gross value, less first \$250,000, as follows: gold, silver, or any platinum-group metal processed concentrates shipped to a refinery—1.6%; mineral concentrates shipped to smelter, mill, or reduction works—1.81%; gross value is receipts received from sale of concentrates or metals extracted or produced from mines or recovered from smelting, milling, reduction, or treatment of such ores; ^e “receipts received” is defined as the payment received, less allowable deductions	<i>Deductions:</i> Treatment and refinery charges; costs of transportation from mine or mill to smelter or other processor; quantity, price, impurity, and penalty charges; and interest <i>Limitations:</i> None identified

Mining license tax ^f — micaceous mines	Vermiculite, perlite, kerrite, maconite, or any other micaceous minerals	Unit-based <i>Rate determination:</i> Statutory, uniform	<i>Current rate and base:</i> \$0.05 per ton of concentrate mined, extracted or produced	<i>Deductions:</i> Not applicable <i>Limitations:</i> None identified
Resource indemnity and groundwater assessment tax ^g	Includes any precious stones or gems, gold, silver, copper, lead, uranium, vermiculite, limestone, or other nonrenewable, merchantable products	Metals—net smelter returns; Selected minerals— gross revenue with reference price <i>Rate determination:</i> Statutory, uniform within each category	<i>Current rate and base:</i> Default rate: \$25 plus 0.5% – 1% of gross value > \$5,000; garnets: \$25 plus 1% of gross value > \$2,500; limestone: \$25 plus 10% of gross value > \$250; vermiculite: \$25 plus 2% of gross value > \$1,250; gross value generally defined as market value of merchantable minerals extracted; for some minerals, gross value is fixed by statute, with reference to a price index; for metals and gems, gross value is receipts received (see license tax)	<i>Deductions:</i> Generally, none; metals and gems as outlined above under license tax <i>Limitations:</i> Exemption for those who have paid the license tax for metal mines

Source: GAO analysis of prior report, (GAO, *Hardrock Mining: Information on State Royalties and Trends in Mineral Imports and Exports*, GAO-08-849R (Washington, D.C.: July 21, 2008)), state statutes, regulations, expert literature, and interviews with selected experts. Amendments requiring additions to tables since our 2008 report are underscored and amendments requiring deletions from tables since our 2008 report are footnoted.

^a Mont. Code Ann. §§ 77-3-101, 77-3-116 (2019); Mont. Admin. R. 36.25.607 (2019).

^b Fair market value is defined as the value of the minerals or gems in raw crude form as recovered at the mine site. Mont. Admin. R. 36.25.607(2) (2019).

^c Mont. Code Ann. § 77-3-204 (2019).

^d Mont. Code Ann. §§ 15-37-101 – 15-37-103 (2019); Mont. Code Ann. § 15-23-801 (2019).

^e If a person has sold or otherwise disposed of any of a mine's products at a price substantially below the true market price of the product at the time and place of sale or disposal, then the Montana Department of Revenue shall generally compute the gross value of such product based upon the quotations of the price of the mine's product in New York City. Mont. Code Ann. § 15-37-105 (2019).

^f Mont. Code Ann. § 15-37-201 (2019).

^g Mont. Code Ann. §§ 15-23-516 – 15-23-518 (2019); 15-37-102; 15-38-103 – 15-38-104, 15-38-113, 15-38-127 – 15-38-129 (2019).

Table 7: ROYALTIES AND TAXES ASSESSED ON HARDROCK MINING OPERATIONS IN NEVADA, 2019

Nevada	Type of mines/minerals assessed	Type of royalty or tax	Royalty or tax rate	Royalty or tax deductions and limitations
State lands				
Royalty ^a	Minerals generally	Lease-specific <i>Rate determination:</i> Lease-specific	<i>Current rate and base:</i> Lease-specific	<i>Deductions:</i> None identified <i>Limitations:</i> None identified

Source: GAO analysis of prior report, (GAO, *Hardrock Mining: Information on State Royalties and Trends in Mineral Imports and Exports*, GAO-08-849R (Washington, D.C.: July 21, 2008)), state statutes, regulations, expert literature, and interviews with selected experts. Amendments requiring additions to tables since our 2008 report are underscored and amendments requiring deletions from tables since our 2008 report are footnoted.

^a Nev. Rev. Stat. §§ 322.050, .060 (2019).

Table 8: ROYALTIES AND TAXES ASSESSED ON HARDROCK MINING OPERATIONS IN NEW MEXICO, 2019

New Mexico	Type of mines/minerals assessed	Type of royalty or tax	Royalty or tax rate	Royalty or tax deductions and limitations
State lands				
Royalty on special minerals ^a	Includes precious or semiprecious stones, uranium, thorium, plutonium, and any other material determined by the Atomic Energy Commission ^b to be peculiarly essential to the production of fissionable materials	Net smelter returns <i>Rate determination:</i> Statutory minimum, lease-specific	<i>Current rate and base:</i> No less than 5% of gross returns, which shall be based on the arm's-length sales price of the produced minerals less the actual and reasonable transportation and smelting or reduction costs up to 50% of gross returns and shall include all premiums, bonuses, and other consideration of any kind received by the lessee	<i>Deductions:</i> Actual and reasonable transportation and smelting or reduction costs, up to 50% of gross returns <i>Limitations:</i> None identified
Royalty (other) ^c	Minerals other than special minerals	Net smelter returns <i>Rate determination:</i> Statutory minimum, lease-specific	<i>Current rate and base:</i> Not less than 2% of gross returns, which shall be based on the arm's length sales price of the produced minerals, less the actual and reasonable transportation and smelting or reduction costs up to 50% of gross returns, and shall include all premiums, bonuses, and other consideration of any kind received by the lessee	<i>Deductions:</i> Actual and reasonable transportation and smelting or reduction costs, up to 50% of gross returns <i>Limitations:</i> None identified
Mining activity generally				
Severance tax—copper, lead, zinc, gold, silver ^d	Copper, lead, zinc, gold, and silver	Net proceeds/standard deduction <i>Rate determination:</i> Statutory, uniform within each category	<i>Current rate and base:</i> Copper 0.5%; gold and silver 0.2%; lead and zinc 0.125% of taxable value, which is defined as gross value less rental or royalty payments to state or federal governments; gross value: copper, lead, and zinc = 66.67% of sales value from published price data; gold = sales value from published price data; silver = 80% of sales value from published price data	<i>Deductions:</i> Deductions for calculation of gross value: standard deduction of 50% of sales value for hoisting, crushing, loading, processing, and beneficiation <i>Limitations:</i> None identified

Severance tax— Molybdenum ^e	Molybdenum	Net proceeds/ standard deduction <i>Rate determination:</i> Statutory, uniform	<i>Current rate and base:</i> 0.125% of taxable value, which is gross value less rental or royalty payments to state or federal governments; gross value is value of molybdenum in concentrates shipped from mine, but in no event less than the value that <i>bona fide</i> sales which reflect current market conditions would yield for same quantity contained in concentrates at mine site	<i>Deductions:</i> Deductions for calculation of gross value: standard deduction of 50% of the value for hoisting, crushing, loading, processing, and beneficiation <i>Limitations:</i> None identified
Severance tax— uranium ^f	Uranium	Net proceeds <i>Rate determination:</i> Statutory, uniform	<i>Current rate and base:</i> 3.50% of taxable value; taxable value is 50% of sales price of content of U ₃ O ₈	<i>Deductions:</i> None identified <i>Limitations:</i> None identified
Severance tax— general provisions ^g	Other metalliferous and nonmetalliferous minerals	Default—Gross revenue When posted market price is available or mineral requires processing before sale —Net smelter returns <i>Rate determination:</i> Statutory, uniform within each category	<i>Current rate and base:</i> 0.125% of taxable value, which is defined as the gross value less rental and royalty payments to state or federal governments; gross value is sales value at first marketable point; however, where a posted field or market price is available, it shall be used, and for those products that must be processed or beneficiated before sale, gross value is sales value after deducting freight charges from point of severance to point of first sale and cost of processing or beneficiation	<i>Deductions for calculation of gross value:</i> (1) Default is no deductions; (2) where posted field or market price is used, costs of hoisting, crushing, and loading necessary to place the product in marketable form and place are deductible, up to 50%; (3) for products that must be processed or beneficiated before sale, freight charges from point of severance to point of first sale and cost of processing or beneficiation may be deducted <i>Limitations:</i> None identified
Resources excise tax (severers and processors) ^h	Metalliferous and nonmetalliferous mineral products other than oil, natural gas, liquid hydrocarbon, carbon dioxide, helium, or nonhydrocarbon gas	Modified gross revenue <i>Rate determination:</i> Statutory, uniform within each category	<i>Current rate and base:</i> Molybdenum 0.125% of taxable value; all other natural resources excepting potash 0.75% of taxable value; taxable value is value after severing or processing	<i>Deductions:</i> Royalties paid; proceeds from sales to state, federal government, or nonprofit organizations <i>Limitations:</i> Only one tax (severers or processors) is imposed on a given mineral product

Source: GAO analysis of prior report, (GAO, *Hardrock Mining: Information on State Royalties and Trends in Mineral Imports and Exports*, GAO-08-849R (Washington, D.C.: July 21, 2008)), state statutes, regulations, expert literature, and interviews with selected experts. Amendments requiring additions to tables since our 2008 report are underscored and amendments requiring deletions from tables since our 2008 report are footnoted.

^a N.M. Stat. Ann. § 19-8-22 (2019); N.M. Code R. § 19.2.2 (2019).

^b The Atomic Energy Commission was a predecessor agency to the U.S. Department of Energy.

^c N.M. Stat. Ann. §§ 19-8-22 (2019); N.M. Code R. § 19.2.2 (2019).

^d N.M. Stat. Ann. §§ 7-26-4 – 26-5 (2019).

^e N.M. Stat. Ann. §§ 7-26-4 – 26-5 (2019).

^f N.M. Stat. Ann. §§ 7-26-4, 26-7 (2019).

^g N.M. Stat. Ann. §§ 7-26-2, 26-4 – 26-5 (2019).

^h N.M. Stat. Ann. §§ 7-25-3 – 25-5, 25-7 (2019); there is also a service tax, which essentially imposes the severer's tax on a nonowner severer where the product is not otherwise taxed by the resource excise tax. N.M. Stat. Ann. § 7-25-6 (2019).

Table 9: ROYALTIES AND TAXES ASSESSED ON HARDROCK MINING OPERATIONS IN OREGON, 2019

Oregon	Type of mines/minerals assessed	Type of royalty or tax	Royalty or tax rate	Royalty or tax deductions and limitations
State lands				
Royalty—metallics and uranium ^a	Metallic minerals removed in quantities greater than 10 yards per year ^b	Gross revenue <i>Rate determination:</i> Regulatory; uniform	<i>Current rate:</i> 5% of gross value of minerals at the mine mouth	<i>Deductions:</i> None identified <i>Limitations:</i> Rent (\$1 per acre per year) is credited against annual royalties
Royalty—Nonmetallics ^c	Nonmetallic minerals removed in quantities greater than 10 yards per year	Unit-based <i>Rate determination:</i> lease-specific	<i>Current rate and base:</i> A rate per ton to be determined by the Director of the Division of State Lands to be fair and reasonable under the particular lease	<i>Deductions:</i> Not applicable <i>Limitations:</i> Rent (\$1 per acre per year) is credited against annual royalties

Source: GAO analysis of prior report (GAO, *Hardrock Mining: Information on State Royalties and Trends in Mineral Imports and Exports*, GAO-08-849R (Washington, D.C.: July 21, 2008)), state statutes, regulations, expert literature, and interviews with selected experts. Amendments requiring additions to tables since our 2008 report are underscored and amendments requiring deletions from tables since our 2008 report are footnoted.

^a Or. Rev. Stat. § 273.780 (2019); Or. Admin. R. §§ 141-071-0400, -0600, -0610, -0620 (2019).

^b Certain exceptions are listed at Or. Rev. Stat. § 273.785 (2019).

^c Or. Rev. Stat. § 273.780 (2019); Or. Admin. R. §§ 141-071-0400, -0600, -0610 (2019).

Table 10: ROYALTIES AND TAXES ASSESSED ON HARDROCK MINING OPERATIONS IN UTAH, 2019

Utah	Type of mines/minerals assessed	Type of royalty or tax	Royalty or tax rate	Royalty or tax deductions and limitations
State lands				
Royalty ^a	Classified minerals, including metalliferous, gemstone, and gypsum	Gross revenue <i>Rate determination:</i> Regulatory, uniform within each category	<i>Current rate and base:</i> Percentages of actual compensation received including all payments, bonuses, and allowances, plus the value of all services, payments-in-kind, and all other monetary or nonmonetary compensation as follows: metalliferous, fissionable—8%; metalliferous, non-fissionable—4%; gypsum—5%; gemstone—10% (subject to annual minimum of \$5 per acre)	<i>Deductions:</i> None <i>Limitations:</i> None identified ^b
Mining activity generally				
Severance tax on metals and metalliferous minerals ^c	Ore, metal, or other substance containing 57 listed minerals, including gold, iron, mercury, nickel, and uranium extracted from all lands; does not include gem stones, potash, sand and gravel, oil, gas, and coal, among others	Net proceeds/standard deduction <i>Rate determination:</i> Statutory, uniform	<i>Current rate and base:</i> 2.6% of taxable value, which is the gross proceeds of sale (sale of yellowcake in the case of a sale of uranium concentrates), less \$50,000 per year per mine and standard deduction	<i>Deductions:</i> Metal, 70% deduction is applied; ore (raw materials with metals content less than 15%) shipped or sold out of state, 20% deduction is applied <i>Limitations:</i> None identified
Severance tax—beryllium ^d	Beryllium	Other (cost-based) <i>Rate determination:</i> Statutory, uniform	<i>Current rate and base:</i> 2.6% of taxable value; taxable value is 125% of direct mining costs.	<i>Deductions:</i> None identified <i>Limitations:</i> None identified

Source: GAO analysis of prior report, (GAO, *Hardrock Mining: Information on State Royalties and Trends in Mineral Imports and Exports*, GAO-08-849R (Washington, D.C.: July 21, 2008)), state statutes, regulations, expert literature, and interviews with selected experts. Amendments requiring additions to tables since our 2008 report are underscored and amendments requiring deletions from tables since our 2008 report are footnoted.

^a Utah Admin. Code r. 652-20-200, -1000 (2019); Email from Assistant Director of Mining, State of Utah School and Institutional Trust Lands Administration, to Senior Analyst, GAO, May 21, 2019. Royalties may be readjusted in leases with readjustment clause. Utah Admin. Code r. 652-20-4000 (2019).

^b Our 2008 report noted that rent paid was credited against royalties. That information has been deleted from this table based on an amendment to Utah Admin. Code r. 652-20-1000 (2019).

^c Utah Code Ann. §§ 59-5-201 – 203 (West 2019).

^d Utah Code §§ 59-5-202 – 203 (West 2019).

Table 11: ROYALTIES AND TAXES ASSESSED ON HARDROCK MINING OPERATIONS IN WASHINGTON, 2019

Washington	Type of mines/minerals assessed	Type of royalty or tax	Royalty or tax rate	Royalty or tax deductions and limitations
State lands				
Royalty ^a	Valuable minerals and specified materials (except rock, gravel, sand, silt, coal, or hydrocarbons)	Net smelter returns <i>Rate determination:</i> Regulatory, uniform	<i>Current rate and base:</i> 5% of gross receipts, which are receipts paid, earned, or received at the point of sale of first marketable valuable mineral(s) produced, subject to deduction	<i>Deductions:</i> Limited to transportation costs which are part of the development plan approved by the state Department of Natural Resources <i>Limitations:</i> None identified
Mining activity generally				
Business tax ^b	Mineral products	Gross revenue <i>Rate determination:</i> Statutory, uniform	<i>Current rate and base:</i> 0.48% of value of products and byproducts extracted for use or sale	<i>Deductions:</i> None identified <i>Limitations:</i> None identified

Source: GAO analysis of prior report, (GAO, *Hardrock Mining: Information on State Royalties and Trends in Mineral Imports and Exports*, GAO-08-849R (Washington, D.C.: July 21, 2008)), state statutes, regulations, expert literature, and interviews with selected experts. Amendments requiring additions to tables since our 2008 report are underscored and amendments requiring deletions from tables since our 2008 report are footnoted.

^a Wash. Rev. Code § 79.14.300 (2019); Wash. Admin. Code §§ 332-16-035, -155; the royalty may be revised upon renewal of a mining contract, by reference to then existing law. Wash. Rev. Code § 79.14.42 (2019).

^b Wash. Rev. Code §§ 82.04.100, .230 (2019).

Table 12: ROYALTIES AND TAXES ASSESSED ON HARDROCK MINING OPERATIONS IN WYOMING, 2019

Wyoming	Type of mines/minerals assessed	Type of royalty or tax	Royalty or tax rate	Royalty or tax deductions and limitations
State lands				
Royalty—uranium ^a	Uranium	Gross revenue <i>Rate determination:</i> Regulatory (default rates) and lease-specific, progressive ^b	<i>Current rate and base:</i> 2.5% to 3% of total sales value, depending on average price of yellowcake and gross yearly sales realization (default)	<i>Deductions:</i> None identified <i>Limitations:</i> None identified
Royalty—zeolite ^c	Zeolite	Unit-based <i>Rate determination:</i> Regulatory (default rates) and lease-specific, progressive ^d	<i>Current rate and base:</i> \$0.55 to \$0.60 plus per ton, depending on average sale price for bulk zeolite products (default)	<i>Deductions:</i> Not applicable <i>Limitations:</i> None identified
Royalty—metallic and nonmetallic rocks and minerals generally ^e	Metallic and nonmetallic rocks and minerals other than oil and gas, coal, trona/sodium, uranium, bentonite, and zeolite	Gross revenue (default) and unit-based royalty (minimum) <i>Rate determination:</i> Regulatory (default and minimum rates) and lease-specific, progressive ^f	<i>Current rate and base:</i> Default rates are 5% to 10%, based on sales value per ton; minimum is \$0.50/ton	<i>Deductions:</i> None identified <i>Limitations:</i> None identified
Mining activity generally				
Mining severance tax—uranium ^g	Uranium	Modified net smelter returns/standard deduction <i>Rate determination:</i> Statutory, uniform	<i>Current rate and base:</i> 4% ^h of value of gross product, which is fair market value of minerals at mouth of mine, not including processing; fair market value is calculated by multiplying sales of yellowcake less royalties, <i>ad valorem</i> production taxes, and severance taxes; the result is multiplied by the industry factor	<i>Deductions:</i> Industry factor provides a standard deduction and is an average of all uranium producers' ratios of total mining costs to total mining and processing costs incurred to produce yellow cake <i>Limitations:</i> None identified
Mining severance tax—other ⁱ	Valuable deposits other than coal, oil and gas, trona, bentonite, uranium, and sand and gravel	Modified net smelter returns <i>Rate determination:</i> Statutory, uniform	<i>Current rate and base:</i> 2% of the value of the gross product, which is fair market value of minerals at mouth of mine, not including any processing	<i>Deductions:</i> None identified <i>Limitations:</i> None identified

Source: GAO analysis of prior report, (GAO, *Hardrock Mining: Information on State Royalties and Trends in Mineral Imports and Exports*, GAO-08-849R (Washington, D.C.: July 21, 2008)), state statutes, regulations, expert literature, and interviews with selected experts. Amendments requiring additions to tables since our 2008 report are underscored and amendments requiring deletions from tables since our 2008 report are footnoted.

^a 060.0002.21 Wyo. Code R. § 7 (West 2019).

^b A progressive tax is a tax structured so that the effective tax rate increases more than proportionately as the tax base increases. *Black's Law Dictionary* 1687 (10th ed. 2014). Royalties in Wyoming are based on lease terms but default rates apply unless specifically authorized by the state Board of Land Commissioners.

^c 060.0002.23 Wyo. Code R. § 7 (West 2019).

^d See note b above.

^e Wyo. Stat. Ann. § 36-6-101 (West 2019); 060.0002.24 Wyo. Code R. § 7 (West 2019); under certain circumstances, the state Board of Land Commissioners can reduce a royalty after the mine is operating.

^f See note b above.

^g Wyo. Stat. Ann. §§ 39-14-503, -504 (West 2019).

^h Our 2008 report noted a suspension of this tax for certain uranium production between January 1, 1995, and March 31, 2009, but that information has been deleted from this table based on an amendment to Wyo. Stat. Ann. § 39-14-505 (West 2019).

ⁱ Wyo. Stat. Ann. § 39-14-703 (West 2019).