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HARDROCK MINING

Information on State Royalties and the Number of Abandoned Mine Sites and Hazards

Statement of Robin M. Nazzaro, Director
Natural Resources and Environment

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Highlights

Highlights of GAO-09-854T, a testimony before the Committee on Energy and Natural Resources, U.S. Senate

Why GAO Did This Study

The General Mining Act of 1872 helped open the West by allowing individuals to obtain exclusive rights to mine billions of dollars worth of gold, silver, and other hardrock (locatable) minerals from federal lands without having to pay a federal royalty. However, western states charge royalties so that they share in the proceeds from the hardrock minerals extracted from their lands. For years, some mining operators abandoned land used in their mining operations, creating environmental and physical safety hazards. To curb further growth in the number of abandoned hardrock mines on federal lands, in 1981, the Department of the Interior's Bureau of Land Management (BLM) began requiring mining operators to reclaim BLM land disturbed by these operations.

What GAO Recommends

This testimony focuses on the (1) royalties states charge and (2) number of abandoned hardrock mine sites and hazards. It presents information from two GAO reports: *Hardrock Mining: Information on Abandoned Mines and Value and Coverage of Financial Assurances on BLM Land*, GAO-08-574T (Mar. 12, 2008) and *Hardrock Mining: Information on State Royalties and Trends in Imports and Exports*, GAO-08-849R (July 21, 2008). GAO, among other steps, reviewed state statutes and regulations on royalties on hardrock mining operations and asked 12 western states and South Dakota to provide information on the number of abandoned mine sites and associated features in their states using a consistent definition.

View GAO-854T or key components.
For more information, contact Robin M. Nazzaro at (202) 512-3841 or nazzaror@gao.gov.

What GAO Found

Twelve western states that GAO reviewed assess royalties on hardrock mining operations on state lands. The 12 western states are Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming. In addition, each of these states, except Oregon, assesses taxes that function like a royalty, which GAO refers to as functional royalties, on the hardrock mining operations on private, state, and federal lands. The royalties the states assess often differ depending on land ownership and the mineral being extracted. For example, for private mining operations conducted on federal, state, or private land, Arizona assesses a functional royalty of 1.25 percent of net revenue on gold mining operations, and an additional royalty of at least 2 percent of gross value for gold mining operations on state lands. The actual amount assessed for a particular mine may depend not only on the type of royalty, its rate, and exclusions, but also on other factors, such as the mine's location relative to markets.

To estimate abandoned hardrock mine sites in the 12 western states and South Dakota, we developed a standard definition for these mine sites and asked the states to report the number of mine sites and estimate the number of features at these sites that pose physical safety hazards and the number of sites with environmental degradation. Using this definition that GAO provided, states reported that there are at least 161,000 abandoned hardrock mine sites in their states, and these sites have at least 332,000 features that may pose physical safety hazards and at least 33,000 sites that have degraded the environment.

An Abandoned Mine Shaft in Oregon on BLM Land

Source: BLM.

Mr. Chairman and Members of the Committee:

I am pleased to be here today to discuss our 2008 work on state royalties on hardrock minerals and the number of abandoned hardrock sites and hazards—two issues that are central to the debate on reforming the General Mining Act of 1872.[1]

As you know, since the passage of the General Mining Act of 1872, mine operators have extracted billions of dollars worth of silver, gold, copper, and other hardrock (locatable) minerals from federal lands without having to pay a royalty.[2] Most of these lands are managed by the Department of the Interior's Bureau of Land Management (BLM) and the U.S. Department of Agriculture's Forest Service. Assessing a royalty on hardrock minerals could compensate the public for hardrock minerals extracted from federal lands, as more recently enacted laws require for oil, gas, and other minerals.

The vast majority of the federal lands where hardrock mining operations occur are in 12 western states.[3] These western states have statutes governing hardrock mining operations on lands in their state. However, unlike the federal government, these states charge royalties that allow them to share in the proceeds from hardrock minerals extracted from state-owned lands. In addition, most of these states charge taxes, such as severance taxes, mine license taxes, or resource excise taxes, on hardrock

[1]GAO, *Hardrock Mining: Information on State Royalties and Trends in Mineral Import and Exports*, GAO-08-849R (Washington, D.C.: July 21, 2008); and GAO, *Hardrock Mining: Information on Abandoned Mines and Value and Coverage of Financial Assurances on BLM Land*, GAO-08-574T (Washington, D.C.: Mar. 12, 2008). We also testified on these issues in 2009; see GAO, *Hardrock Mining: Information on Types of State Royalties, Number of Abandoned Mines, and Financial Assurances on BLM Land*, GAO-09-429T (Washington, D.C.: Feb. 26, 2009)

[2]Under U.S. mining laws, minerals are classified as locatable, leasable, or saleable. Locatable minerals include those minerals that are not leasable or saleable, for example, copper, lead, zinc, magnesium, gold, silver, and uranium. Only locatable minerals continue to be "claimed" under the Mining Act. For the purposes of this report, we use the term "hardrock minerals" as a synonym for "locatable minerals." Leasable minerals include, for example, oil, gas, and coal. The Mineral Leasing Act of 1920, 41 Stat. 437 (codified at 30 U.S.C. § 181) created a leasing system for coal, gas, oil and other fuels, and chemical minerals. Saleable minerals include, for example, common sand, stone, and gravel. In 1955, the Multiple Use Mining Act of 1955, 69 Stat. 367 (codified at 30 U.S.C. § 601) removed common varieties of sand, stone, and gravel from development under the Mining Act.

[3]The 12 western states are Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

mining operations that occur on private, state, and federal lands. For the purposes of this report, we use the term "functional royalty" to refer to taxes that function like a royalty in that they permit the state to share in the value of the mine's production. Although states may use similar names for the functional royalties they assess, there can be wide variations in their forms and rates.

In addition to the lack of a requirement for hardrock mining operators to pay royalties, prior to 1981, BLM did not require them to reclaim the federal land they used. Consequently, hardrock mining operators have left thousands of acres of federal land disturbed through mineral exploration, mining, and mineral processing. Some of these disturbed abandoned mine lands pose serious environmental and physical safety hazards. These hazards include environmental hazards such as toxic or acidic water that contaminates soil and groundwater or physical safety hazards such as open or concealed shafts, unstable or decayed mine structures, or explosives. Cleanup costs for these abandoned mines vary by type and size of the operation.[4]

My testimony today focuses on the (1) royalties states currently charge on hardrock mining operations and (2) number of abandoned hardrock mine sites and number of associated hazards.

To address these objectives, we interviewed staff at BLM and the Forest Service; examined agency documents and data; and reviewed relevant legislation and regulations. To identify the types of royalties, including functional royalties, that the 12 western states assess on hardrock mining operations, we reviewed state statutes and regulations, as of March 2008, pertaining to royalties on hardrock mining operations. To aid in understanding general patterns in state royalties, we consulted academic and industry sources and then we categorized each royalty according to how it is assessed. To assess the number of abandoned hardrock mine sites, we asked the 12 western states and South Dakota[5]—which have significant numbers of abandoned hardrock mining operations—to

[4]For purposes of this testimony, cleanup refers to the mitigation of environmental impacts at mine sites, such as contaminated water, and the reclamation of land disturbed by hardrock operations.

[5]South Dakota was included because it has a significant number of abandoned hardrock mines and has been included in previous studies estimating the number of abandoned hardrock mines.

determine the number of these mine sites in their states. We asked the states to use a consistent definition, which we provided, in estimating the number of abandoned mine sites and associated features that pose a significant hazard to public health and safety and the number of sites that cause environmental degradation.[6] We specified that states should only include hardrock (also known as locatable), non-coal sites in this estimate. From these data, we estimated the number of features that pose physical safety hazards and the number of sites with environmental hazards in the 12 western states and South Dakota. We also summarized six selected studies by federal agencies and organizations to document differences in estimates, definitions, and methodologies. This testimony is based on prior GAO reports whose work was conducted in accordance with generally accepted government auditing standards.[7]

The 12 Western States Assess Multiple Types of Royalties, with Differences in Types and Rates Based on the Mineral Extracted and Land Ownership

Twelve western states assess royalties on the hardrock mining operations on state lands. In addition, each of these states, except Oregon, assesses taxes that function like a royalty, which we refer to as functional royalties, on the hardrock mining operations on private, state, and federal lands. To aid in the understanding of royalties, including functional royalties, the royalties are grouped as follows:

- *Unit-based* is typically assessed as a dollar rate per quantity or weight of mineral produced or extracted, and does not allow for deductions of mining costs.
- *Gross revenue* is typically assessed as a percentage of the value of the mineral extracted and does not allow for deductions of mining costs.
- *Net smelter returns* is assessed as a percentage of the value of the mineral, but with deductions allowed for costs associated with transporting and processing the mineral (typically referred to as mill, smelter, or treatment costs); however, costs associated with extracting the mineral are not deductible.
- *Net proceeds* is assessed as a percentage of the net proceeds (or net profit) of the sale of the mineral with deductions for a broad set of mining costs. The particular deductions allowed vary widely from state to state, but may include extraction costs, processing costs,

[6] We defined an abandoned hardrock mine site as all associated facilities, structures, improvements, and disturbances at a distinct location associated with activities to support a past operation under the general mining laws.

[7] GAO-09-429T, GAO-08-849R, and GAO-08-574T.

transportation costs, and administrative costs, such as for capital, marketing, and insurance.[8]

Royalties, including functional royalties, often differ depending on land ownership and the mineral being extracted, as the following illustrates:

- For private mining operations conducted on federal, state, or private lands, Arizona assesses a net proceeds functional royalty of 1.25 percent on gold mining operations, and an additional gross revenue royalty of at least 2 percent for gold mining operations on state lands.
- Nine of the 12 states assess different types of royalties for different types of minerals. For example, Wyoming employs three different functional royalties for all lands: (1) net smelter returns for uranium, (2) a different net smelter returns for trona—a mineral used in the production of glass, and (3) gross revenue for all other minerals.

Furthermore, the royalties the states assess often differ in the allowable exclusions, deductions, and limitations. For example, in Colorado, a functional royalty on metallic mining excludes gross incomes below $19 million,[9] whereas in Montana a functional royalty on metallic mining is applied on all mining operations after the first $250,000 of revenue.[10]

Finally, the actual amount assessed for a particular mine may depend not only on the type of royalty, its rate, and exclusions, but also on such factors as the mineral's processing requirements, mineral markets, mine efficiency, and mine location relative to markets, among other factors.

Appendix I contains information on royalties the 12 western states assess on hardrock mining operations, with details on rates, royalty type, and deductions and limitations.

[8]For a full discussion of the definition and formula for each type of royalty, see GAO-08-849R.

[9]Under Colorado tax laws, gross income is the value of ore immediately after its removal from the mine and does not include any value added subsequent to mining by any treatment processes.

[10]That is, the Montana royalty is assessed on the gross value of product, less first $250,000. Gross value is the receipts received from the sale of concentrates or metals extracted from mines or recovered from the smelting, milling, reduction, or treatment of such ores. Receipts received is defined as the payment received, less allowable deductions.

Using a Consistent Definition, States Reported at Least 161,000 Abandoned Hardrock Mine Sites, with Many Posing Hazards

To estimate abandoned hardrock mine sites in the 12 western states and South Dakota, we developed a standard definition for these mine sites.[11] In developing this definition, we consulted with mining experts at the National Association of Abandoned Mine Land Programs; the Interstate Mining Compact Commission; and the Colorado Department of Natural Resources, Division of Reclamation, Mining and Safety, Office of Active and Inactive Mines. We defined an abandoned hardrock mine site as a site that includes all associated facilities, structures, improvements, and disturbances at a distinct location associated with activities to support a past operation, including prospecting, exploration, uncovering, drilling, discovery, mine development, excavation, extraction, or processing of mineral deposits locatable under the general mining laws. We also asked the states to estimate the number of features at these sites that pose physical safety hazards and the number of sites with environmental degradation.

Using this definition, states reported to us the number of abandoned sites on all lands in their states and we calculated a total of at least 161,000 abandoned hardrock mine sites in their states. At these sites, on the basis of state data, we estimated that at least 332,000 features may pose physical safety hazards, such as open shafts or unstable or decayed mine structures. Furthermore, we estimated that at least 33,000 sites have degraded the environment, by, for example, contaminating surface and ground water or leaving arsenic-contaminated tailings piles.[12] Table 1 shows our estimate of the number of abandoned hardrock mine sites in the 12 western states and South Dakota, the number of features that pose significant public health and safety hazards, and the number of sites with environmental degradation.

[11]It has been difficult to determine the number of abandoned hardrock mine sites from existing studies in part because there is no standard definition for a hardrock mine site. For example, six studies we reviewed relied on different definitions, and estimates varied widely from study to study. For a full discussion of these six studies, see GAO-08-574T, app. III.

[12]Tailings are a combination of fluid and rock materials that are left behind after the minerals are extracted. Tailings are often disposed of in a nearby pile.

Table 1: State Estimates of the Number of Abandoned Hardrock Mine Sites, Features That Pose Significant Public and Safety Hazards, and Sites With Environmental Degradation, in 12 Western States and South Dakota, as of October 1, 2007

State	Estimated number of abandoned hardrock (non-coal, locatable) mine sites	Estimated number of features that pose a significant hazard to public health and safety	Estimated number of sites with environmental degradation
Alaska	469	235	99
Arizona	50,000	59,400	9,900
California	47,084	164,795	5,200
Colorado	7,300	17,000	150
Idaho	7,100	Not reported	Not reported
Montana	6,000	6,000-22,000	331
Nevada	16,000	51,000	150
New Mexico	800	15,000	200-300
Oregon	3,823	Not reported	140
South Dakota	950	Not reported	Not reported
Utah	17,000	17,000	17,000
Washington	3,629	1,608	50
Wyoming	956	519	437
Total	**161,111**	**332,557-348,557**	**33,657-33,757**

Source: GAO analysis of state-reported data.

Notes: While states used our definition to provide data on the estimated number of mine sites and features, these data have two key limitations: (1) the methods and sources used to identify and confirm abandoned sites and hazardous features vary substantially by state and (2) states have markedly different data systems and requirements for recording data on abandoned mines. For complete information on these limitations, see GAO-08-574T.

Regarding federal lands, BLM and the Forest Service have had difficulty determining the number of abandoned hardrock mines on the lands they manage. In September 2007, the agencies reported an estimated 100,000 abandoned mine sites,[13] but we found problems with this estimate. For example, the Forest Service had reported that it had approximately 39,000 abandoned hardrock mine sites on its lands. However, this estimate includes a substantial number of non-hardrock mines, such as coal mines, and sites that are not on Forest Service land. At our request, the Forest Service provided a revised estimate of the number of abandoned hardrock mine sites on its lands, excluding coal or other non-hardrock sites. According to this estimate, the Forest Service may have about 29,000

[13]BLM and Forest Service, *Abandoned Mine Lands: A Decade of Progress Reclaiming Hardrock Mines* (September 2007).

abandoned hardrock mine sites on its lands. That said, we still have concerns about the accuracy of the Forest Service's recent estimate because it identified a large number of sites with "undetermined" ownership, and therefore these sites may not all be on Forest Service lands.

BLM has also acknowledged that its estimate of abandoned hardrock mine sites on its lands may not be accurate because it includes sites on its lands that are of unknown or mixed ownership (state, private, and federal) and a few coal sites. In addition, BLM officials said that the agency's field offices used a variety of methods to identify sites in the early 1980s, and the extent and quality of these efforts varied greatly. For example, they estimated that only about 20 percent of BLM land has been surveyed in Arizona. Furthermore, BLM officials said that the agency focuses more on identifying sites closer to human habitation and recreational areas than on identifying more remote sites, such as in the desert. Table 2 shows the Forest Service's and BLM's most recent available estimates of abandoned mine sites on their lands.

Table 2: BLM's and the Forest Service's Most Currently Available Estimated Number of Abandoned Mines on Their Lands, by State

State	Estimated number of abandoned mine sites on BLM land[a]	Estimated number of abandoned mine sites on Forest Service land[b]	Total
Alaska	6,000	830	6,830
Arizona	22,000	2,183	24,183
California	11,500	6,248	17,748
Colorado	2,500	2,605	5,105
Idaho	400	4,635	5,035
Montana	1,016	3,899	4,915
Nevada	9,000	1,613	10,613
New Mexico	3,000	989	3,989
Oregon	3,400	2,427	5,827
South Dakota	Not reported	503	503
Utah	10,000	697	10,697
Washington	Not reported	1,956	1,956
Wyoming	2,000	336	2,336
Total	**70,816**	**28,921**	**99,737**

Source: GAO analysis of BLM and Forest Service data.

[a]These data are from BLM's Abandoned Mine Land Inventory and Remediation Report, BLM/NV/GI-97/004, November 1996.

[b]These data are from the U.S. Geological Survey's analysis of data in the Mineral Resources Data System (of which the Mineral Availability System/Mineral Industry Locator System is now a part), revised by the Forest Service as of November 2007.

Mr. Chairman, this concludes my prepared statement. I would be happy to respond to any questions that you or Members of the Committee may have.

Contact and Staff Acknowledgments

Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this testimony. For further information about this testimony, please contact Robin M. Nazzaro, Director, Natural Resources and Environment (202) 512-3841 or Nazzaror@gao.gov. Key contributors to this testimony were Andrea Wamstad Brown (Assistant Director); Jeffrey B. Barron; Elizabeth Beardsley; Casey L. Brown; Kristen Sullivan Massey; Rebecca Shea; and Carol Herrnstadt Shulman.

Appendix I: Types of Royalties, Including Functional Royalties, Assessed on Hardrock Mining Operations in 12 Western States

Table 3: Alaska

Alaska	Type of mines/minerals assessed	Type of royalty	Royalty rate	Royalty deductions and limitations
State lands				
Production royalty[a]	Minerals locatable under U.S. General Mining Act (excludes coal, sodium, potassium, oil, and gas) extracted from mining claims, leaseholds, or leases on state land	Modified net proceeds *Rate determination:* Statutory	*Rate type:* Uniform *Current rate:* 3% *Base:* Mine's net income	*Deductions:* Overhead and operating expenses, development costs properly charged to expense, depreciation, some taxes, losses sustained, among other things *Limitations:* Subject to exploration incentive credit
All lands				
Mining license tax[b]	Valuable metals, ores, minerals, asbestos, gypsum, coal, marketable earth, or stone (but not oil and gas) extracted from all mines (including that on federal, state, and private lands)	Modified net proceeds *Rate determination:* Statutory	*Rate type:* Progressive *Current rate:* 3% to 7% *Base:* Taxpayer's net income from all mines in state, less depletion; depletion is percentage that varies by mineral	*Deductions:* Overhead and operating expenses, development costs properly charged to expense, depreciation, some taxes, losses sustained, among other things *Limitations:* Exemption for first 3.5 years of new mine; subject to exploration incentive credit

Source: GAO analysis of state statutes and regulations, March 2008.

[a]Alaska Stat. § 38.05. 185, § 38.05.212, § 27.30, § 43.65.; Alaska Admin. Code tit. 11, § 86, art. 9; Alaska Admin. Code tit. 11, § 86.760.

[b]Alaska Stat. §§ 43.65.010, 43.65.060 (definitions) 27.30.030; Alaska Admin. Code tit. 15, § 65.

Table 4: Arizona

Arizona	Type of mines/minerals assessed	Type of royalty	Royalty rate	Royalty 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) extracted from state lands	Gross revenue royalty with reference price *Rate determination:* Statute delegates determination to the State Land Commissioner, subject to statutory standard and minimum	*Rate type:* Case by case *Current rate:* Market royalty rate; at least 2% of gross value *Base:* Gross value determined by quantity and published prices (or, where unavailable, appraisal of fair market price). Where processing is performed after the mineral is extracted, the mineral shall be deemed produced and sold when the concentrate or cathode results from that processing.	*Deductions:* None specified in law or regulation *Limitations:* None identified in statute or regulation
All lands				
Severance tax—metallic minerals[b]	Metalliferous minerals ("copper, gold, silver, molybdenum or other metal or any ore or substance containing such metals including turquoise") extracted from federal, state or private land	Net proceeds royalty *Rate determination:* Statutory	*Rate type:* Uniform rate *Current rate:* 2.5% on net severance base (effectively 1.25% of net revenue) *Base:* Net severance base is 50% of difference between gross value of production and production costs. Gross value of production is the sale price (or price from last period, if no sale) multiplied by the number of recoverable units of the mineral.	*Deductions:* Production costs; generally the costs incurred in mining and processing until the point of sale (e.g., primary crusher, reduction works, or delivery of leach liquor to precipitation or solvent extraction facility); includes depreciation and property taxes; does not include severance tax and depletion, as well as corporate expenses and income tax (e.g., these are not deductible). *Limitations:* None identified in statute or regulation

Arizona	Type of mines/minerals assessed	Type of royalty	Royalty rate	Royalty deductions and limitations
Transaction privilege tax—mining classification[c]	Oil, natural gas, limestone, sand, gravel, or any other nonmetalliferous mineral product extracted from all lands; applies to persons in the business of mining, quarrying, or producing for sale, profit, or commercial use any nonmetalliferous mineral product.	Modified gross revenue royalty *Rate determination:* Statutory	*Rate type:* Uniform rate *Current rate:* 3-1/8% of the tax base *Base:* The tax base is the “gross proceeds of sales or gross income derived from the business,” “the value of the entire product mined, quarried or produced for sale, profit or commercial use in this state.”[d]	*Deductions:* Municipal and Indian sales taxes *Limitations:* None identified in statute or regulation

Source: GAO analysis of state statutes and regulations, March 2008.

[a]Ariz. Rev. Stat. § 27-231 et seq.

[b]Ariz. Rev. Stat. § 42-5201 to -5204; 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. §§ 42-5010, 42-5072, 42-5001-02; 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 of tangible personal property or services. “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. Retail tax does not apply to sale of precious metal bullion or monetized bullion.

Table 5: California

California	Type of mines/minerals assessed	Type of royalty	Royalty rate	Royalty deductions and limitations
State lands				
Production royalty[a]	Minerals except oil, gas, and other hydrocarbons extracted from leases and prospecting permits on state lands	Modified gross revenue royalty or net proceeds royalty *Rate determination:* Statute delegates choice of type and rate determination, subject to a minimum, to State Land Commission	*Rate type:* Case by case *Current rate:* (1) Preferential lease. At the option of the Commission, either (a) a royalty, in money or in kind, of not less than 10% of the gross value of all mineral production from the leased lands, or (b) a percentage, to be determined by the Commission, of the net profits derived from mineral extraction operations under the lease. (2) Negotiated leases. At the option of the Commission, "a royalty in money or in kind or a percentage of the net profits." (3) Competitively bid leases. Bidding on the basis of "cash bonus, royalty rate, net profit, or other single biddable factor." *Base:* Gross value or net profits (except for competitively bid leases) (the terms are not defined in the code or in regulations.)	Deductions*: For gross value*, approved charges associated with transporting or processing the state's share *Limitations:* None identified in statute or regulation
All lands				
Fee on gold and silver[b]	Gold and silver extracted from all lands	Unit-based royalty *Rate determination:* Statutory	*Rate type:* Uniform rate *Current rate:* $5 per ounce gold, $0.10 per ounce silver *Base:* Ounces of gold/silver mined	*Deductions:* None identified in statute or regulation *Limitations:* None identified in statute or regulation

Source: GAO analysis of state statutes and regulations, March 2008.

[a]Cal. Pub. Res. Code § 6895-97; Royalties are also assessed on any minerals extracted under a prospecting permit (prior to a lease). The permit royalty is 20 percent.

[b]Cal. Pub. Res. Code § 2207(d)(4)(b)(i); Cal. Code Regs. tit. 14, § 3698.

Table 6: Colorado

Colorado	Type of mines/minerals assessed	Type of royalty	Royalty rate	Royalty deductions and limitations
State lands				
Royalty—general; gems, specimens, and placer minerals[a]	All minerals; includes construction materials, natural oil and gas, oil shale, coal, and geothermal resources	Gross revenue royalty *Rate determination:* Statute delegates to Board of Land Commissioners ("such royalty upon the product as the board may determine")	*Rate type:* Case by case; generally uniform for gems category *Current rate:* No general rate; gems, specimens, and placer minerals, 7% *Base:* Gross revenue of mineral at the mine	*Deductions:* None identified in statute or regulation *Limitations:* None identified in statute or regulation
Royalty—gold and silver[b]	Gold and silver extracted from state lands	Either gross revenue or net proceeds *Rate determination:* Statute delegates to Board of Land Commissioners ("such royalty upon the product as the board may determine")	*Rate type:* Uniform *Current rate:* 5% of gross value or 10% of net value *Base:* Either gross value or net value	*Deductions:* For gross value, none identified in statute or regulation; for net value, as specified in lease *Limitations:* None identified in statute or regulation
Royalty—uranium[c]	Uranium extracted from state lands	Gross revenue royalty *Rate determination:* Statute delegates to Board of Land Commissioners ("such royalty upon the product as the board may determine")	*Rate type:* Progressive *Current rate:* 5% to over 12% depending on the published price per pound of yellowcake (U3O8); rate increases as price increases *Base:* Gross value	*Deductions:* None identified in statute or regulation *Limitations:* None identified in statute or regulation
All lands				
Severance tax—metallic minerals[d]	Metallic minerals; all minerals except molybdenum, oil, gas, coal, oil shale, rock, sand, gravel, stone products, earths, limestone, carbon dioxide, dolomite extracted from all mines/lands	Modified gross revenue royalty[f] *Rate determination:* Statutory	*Rate type:* Uniform rate above income exclusion *Current rate:* 2.25% *Base:* Gross income above \$19M / year. Gross income is "the value of ore immediately after its removal from the mine, and does not include any value added subsequent to mining by any treatment processes."	*Deductions:* Any value added after mining (e.g., crushing, transportation, etc.) *Limitations:* Subject to credit for amount of the royalty, up to 50% of the severance tax
Severance tax—molybdenum[e]	Molybdenum ore extracted from all mines/lands	Unit-based royalty *Rate determination:* Statutory	*Rate type:* Uniform above exclusion *Current rate:* \$0.05 per ton above 625,000 tons per quarter Base: Not applicable	*Deductions:* None identified in statute or regulation *Limitations:* None identified in statute or regulation

Source: GAO analysis of state statutes and regulations, March 2008.

[a]Colo. Rev. Stat. § 36-1-113 and correspondence, State of Colorado, Mar. 27, 2008.

[b]Colo. Rev. Stat. § 36-1-113 and correspondence, State of Colorado, Mar. 27, 2008.

[c]Colo. Rev. Stat. § 36-1-113 and correspondence, State of Colorado, Mar. 27, 2008.

[d]Colo. Rev. Stat. § 39-29-102, 103.

[e]Colo. Rev. Stat. § 39-29-102, 104.

fThe gross revenue royalty can function much like a net smelter returns royalty depending on how the gross revenue is measured and the deductions allowed.

Table 7: Idaho

Idaho	Type of mines/minerals assessed	Type of royalty	Royalty rate	Royalty deductions and limitations
State lands				
Royalty—general[a]	Phosphate, sodium, asbestos, gold, silver, lead, zinc, copper, antimony, geothermal resources, and all other minerals extracted from state lands	Net smelter returns royalty (most minerals) *Rate determination:* Statute delegates to Board of Land Commissioners subject to standard of "fair and in the interest of the state," with a statutory minimum of 2.5%	*Rate type:* Uniform *Current rate:* 5% *Base:* 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	*Deductions:* Reasonable transportation costs to closest feasible point of sale, smelter or treatment costs for material that requires additional processing to obtain marketable minerals after being mined and removed from leased land *Limitations:* Rental payments are credited toward the royalties
Royalty—riverbed mineral leases[b]	Gold extracted from submerged state lands	Gross revenue royalty *Rate determination:* Statute delegates to Board of Land Commissioners subject to standard of "fair and in the interest of the state," with a statutory minimum of 2.5%	*Rate type:* Uniform *Current rate:* 5% *Base:* Value of mineral produced and saved; market value or actual price, whichever is higher	*Deductions:* None identified in statute or regulation *Limitations:* Rental payments are credited toward the royalties
All lands				
Mining license tax[c]	Quartz, gold, silver, copper, lead, zinc, coal, phosphate, limestone, and other metals and minerals extracted from all mines	Net proceeds royalty *Rate determination:* Statutory	*Rate type:* Uniform *Current rate:* 1% *Base:* Net value of ore; taxpayer may select either of two methods of computation[d]	*Deductions:* (1) Internal Revenue Service method - deductions include costs of mining and processing, and depletion[e] (2) Interior method—deductions include costs of mining and transportation, and depletion *Limitations:* None identified in statute or regulation

Source: GAO analysis of state statutes and regulations, March 2008.

[a]Idaho Code § 47-701 et seq; correspondence, State of Idaho Minerals Program, Mar. 25, 2008; at present, there is no production from hardrock mineral leases in Idaho.

[b]Idaho Code § 47-701 et seq. Idaho Admin. Code r. 20.03.05.001 et seq.; State of Idaho Minerals Program, Mar. 25, 2008.

[c]Idaho Code §§ 47-1201, 47-1202, 47-1205; State of Idaho Minerals Program, Mar. 25, 2008.

[d]Depletion is an accounting method used to reflect the actual physical reduction of natural resources in asset value; two-thirds of the tax is placed into an abandoned mine reclamation fund.

[e]Referencing an Internal Revenue Service method and an Interior method.

Table 8: Montana

Montana	Type of mines/minerals assessed	Type of royalty	Royalty rate	Royalty deductions and limitations
State lands				
Royalty—Metalliferous Mines[a]	Metalliferous minerals (including gold, silver, lead, zinc, copper, platinum, iron, and all other metallic minerals) or gems (sapphires, rubies, and other stones commonly known as "precious stones" or "semiprecious stones")	Gross revenue or net smelter returns *Rate determination:* Statute requires royalty, and delegates to Board of Land Commissioners subject to standard of "a royalty which shall, together with other considerations to be paid by the mining lessee, constitute the full market value of the leasehold interest," and a minimum percentage.	*Rate type:* Case by case, within direction of statute *Current rate:* 5% to 8% of returns, but no less than 5% of the fair market value *Base:* Fair market value is defined as the value of the minerals or gems in raw crude form as recovered at the mine site. Returns are defined as the net amount received by the shipper after deducting reasonable transportation costs to the closest feasible point of sale, smelting charges and deductions, and other treatment costs.	*Deduction:* (Note: For returns, any cost of producing or treating at the mine is not included as a deduction) *Limitation:* None identified in statute or regulation
Royalty—non metallic minerals[b]	Nonmetallic minerals (not including coal, oil, or gas)	Lease-specific *Rate determination:* Statute requires royalty, and delegates to Board of Land Commissioners subject to certain bases and the standard that the rates shall be as would be charged by private owners under similar circumstances, or as in the determination of the board is fair and reasonable.	*Rate type:* Case by case, within direction of statute *Current rate:* Not available *Base:* Gross value by either weight or cubic measurement	*Deductions:* Not applicable *Limitations:* Not applicable

Montana	Type of mines/minerals assessed	Type of royalty	Royalty rate	Royalty deductions and limitations
All lands				
Mining license tax—metal mine[c]	Gold, silver, copper, lead, or any other metal or metals or precious or semiprecious gems or stones of any kind extracted from all mines on state lands	Net smelter returns royalty *Rate determination:* Statutory	*Rate type:* Uniform within each category *Current rate:* Precious and base metal processed concentrates shipped to a refinery— 1.6%; mineral concentrates shipped to smelter, mill, or reduction works—1.81% *Base:* Gross value of product, less first $250,000; Gross value is the receipts received from the sale of concentrates or metals extracted from mines or recovered from the smelting, milling, reduction, or treatment of such ores. Receipts received is defined as the payment received, less allowable deductions.	*Deductions:* Treatment and refinery charges; costs of transportation from the mine or mill to the smelter, roaster, or other processing facility, quantity, price, impurity and penalty charges; and interest *Limitations:* None identified in statute or regulation
Mining license tax—micaceous mines[d]	Vermiculite, perlite, kerrite, maconite, or any other micaceous minerals extracted from all mines on state lands	Unit-based *Rate determination:* Statutory	*Rate type:* Uniform *Current rate:* $0.05 per ton *Base:* Not applicable	*Deductions:* Not applicable *Limitations:* None identified in statute or regulation
Resource indemnity and groundwater assessment tax[e]	Any precious stones or gems, gold, silver, copper, coal, lead, petroleum, natural gas, oil, uranium, talc, vermiculite, limestone, or other nonrenewable, merchantable products extracted from all mines on state lands	Metals—net smelter returns royalty; Selected minerals—revenue royalty with reference price *Rate determination:* Statutory	*Rate type:* Uniform within each category *Current rate:* Default rate: 0.5% of gross value > $5,000; garnets: 1% of gross value > $2,500; Limestone: 10% of gross value > $250; vermiculite: 2% of gross value > $1,250; talc: 4% of gross value > $625 *Base:* Gross value, defined as the market value of any merchantable mineral extracted. For several minerals, the gross value is fixed by the statute, with reference to a price index. For metals and gems, the gross value is the receipts received (see above under License Tax).	*Deductions:* Generally, none; metals and gems—as outlined above under License Tax *Limitations:* None identified in statute or regulation

Source: GAO analysis of state statutes and regulations, March 2008.

[a]Mont. Code Ann. § 77-3-101 et seq; Mont. Admin. R. 36.25.601-617.

[b]Mont. Code Ann. § 77-3-201-211.

[c]Mont. Code Ann. §§ 15-37-101 et seq.; Mont. Code Ann. §§ 15-23-801.

[d]Mont. Code Ann. § 15-37-201.

[e]Mont. Code Ann. § 15-38-101-136; persons who have paid the license tax for metal mines are exempt from this tax.

Table 9: Nevada

Nevada	Type of mines/minerals assessed	Type of royalty	Royalty rate	Royalty deductions and limitations
State lands				
Royalty[a]	Minerals extracted from state lands	Lease-specific *Rate determination:* Statute delegates broad authority for lease of public lands to Administrator of the Division of State Lands, for such terms and consideration as the Administrator of the Division of State Lands may determine reasonable based upon the fair market value	*Rate type:* Case by case *Current rate:* Not available *Base:* Not available	*Deductions:* None identified in statute or regulation *Limitations:* None identified in statute or regulation
All lands				
Extraction/ severance tax[b]	Ores, coal, oil, gas, or other mineral substances, but not sand and gravel extracted from all lands	Net proceeds royalty *Rate determination:* Statutory	*Rate type:* Progressive (tax rate increases as mining efficiency increases, and maximum rate imposed at threshold proceeds level) *Current rate:* 2% to 5%; rate is progressive based on the ratio of net proceeds to gross proceeds (seven steps between <10% and >50%). Also: If net proceeds over $4M then at 5%; if below $4M, and the county tax ad valorem is more than 2%, then that rate shall be the minimum tax. *Base:* Net proceeds defined as gross value less deductions. Gross value of mineral product is defined as the proceeds of the sale of the product (applies to all minerals including any reduction, beneficiation, or any treatment used by the producer to obtain a commercially marketable mineral product).	*Deductions:* Deductions include extraction costs, processing, refining and sale costs, transportation from the mine to place of processing and sale, marketing costs, operating costs, royalties, reclamation costs, and certain administrative overhead costs; taxes and liability insurance costs are not deductible *Limitations:* None identified in statute or regulation

Source: GAO analysis of state statutes and regulations, March 2008.

[a]Nev. Rev. Stat. §§ 322.010-322.075; in practice, there are no current state lands mineral leases because Nevada owns very little available land.

[b]Nev. Rev. Stat. Ch. 362; Nev. Admin. Code Ch. 362.

Table 10: New Mexico

New Mexico	Type of mines/minerals assessed	Type of royalty	Royalty rate	Royalty deductions and limitations
State lands				
Royalty (general)[a]	Minerals other than common salt, oil and gas, coal, shale, clay, gravel, building stone and building materials, potassium, sodium, phosphorus and other minerals of similar occurrence, and their salts and compounds; and excepting rare earths, etc., extracted from public lands over which the Commissioner of Public Lands has jurisdiction[j]	Net smelter returns royalty *Rate determination:* Delegated to Commissioner of Public Lands with statutory minimum	R*ate type:* Case by case, subject to statutory minimum *Current rate:* As determined by the Commissioner, but not less than 2% *Base:* Gross returns shall be based on the arm's length sales price of the produced minerals (from the smelter, mill, reduction process, or other sale) (including all premiums, bonuses, and other consideration of any kind received by the lessee for the minerals produced).	Deductions: *Reasonable transportation* and smelting or reduction charges, up to 50% of gross returns *Limitations:* None identified in statute or regulation
Royalty on selected minerals, such as uranium, and gems[b]	Rare earths, precious stones or semiprecious stones, uranium, thorium, plutonium, and any other mineral designed by the Atomic Energy Commission to be peculiarly essential to the production of fissionable materials extracted from all public lands over which the Commissioner of Public Lands has jurisdiction[j]	Net smelter returns royalty *Rate determination:* Delegated to Commissioner of Public Lands with statutory minimum of 5%	*Rate type:* Case by case subject to statutory minimum *Current rate:* Not available; no less than 5% *Base:* Gross returns shall be based on the arm's-length sales price of the produced minerals (from the smelter, mill, reduction process, or other sale) and shall include, if applicable, all premiums, bonuses, and other consideration of any kind received by the lessee for the minerals produced.	*Deductions:* Reasonable transportation and smelting or reduction charges, up to 50% of gross returns *Limitations:* None identified in statute or regulation
Royalty on selected minerals and salts[c]	Potassium, sodium, phosphorus, and other minerals of similar occurrence and their salts and compounds, including chlorides, sulphates, carbonates, borates, silicates, nitrates, and any and all other salts and compounds; except sodium chloride extracted from all public lands over which the Commissioner of Public Lands has jurisdiction[j]	Gross revenue royalty *Rate determination:* Statute delegates to Commissioner to grant leases; leases must contain a royalty, to be established by regulation[k]	*Rate type:* Case by case, within direction of statute, and for selected minerals, subject to a minimum *Current rate:* Not available *Base:* Gross value of the product after processing	*Deductions:* None identified in statute or regulation *Limitations:* None identified in statute or regulation

New Mexico	Type of mines/minerals assessed	Type of royalty	Royalty rate	Royalty deductions and limitations
All lands				
Severance tax—general provisions[d]	All metalliferous and nonmetalliferous minerals extracted from all lands	Where posted market price available—Net smelter returns royalty Default—Gross revenue royalty Where mineral requires processing before sale—Net smelter returns royalty *Rate determination:* Statutory	*Rate type:* Uniform *Current rate:* 0.125% (1/8) *Base:* Taxable value is defined as the gross value less rental and royalty payments to state or federal governments. Gross value is the sales value of the severed and saved product at the first marketable point; however, where posted field or market price is available, it shall be used.	*Deductions:* Deductions for calculation of gross value: (1) The default is no deductions (2) Where posted field or market price is used, the costs of hoisting, crushing, and loading necessary to place the severed product in marketable form and place are deductible, up to 50% of the posted field or market price (3) For products that must be processed or beneficiated before sale, the freight charges from the point of severance to the point of first sale and the cost of processing or beneficiation may be deducted *Limitations:* None identified in statute or regulation
Severance tax—copper, lead, zinc, gold, silver[e]	Copper, lead, zinc, gold, and silver extracted from all lands	Net proceeds royalty *Rate determination:* Statutory	*Rate type:* Uniform within several categories *Current rate:* Copper 1/2%; gold and silver 1/5% ; lead and zinc 1/8% *Base:* Taxable value = 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	*Deductions:* Deductions for calculation of gross value: Standard deduction of 50% of sales value for hoisting, crushing, loading, processing, and beneficiation *Limitations:* None identified in statute or regulation
Severance tax—Molybdenum[f]	Molybdenum extracted from all lands	Net proceeds royalty/standard deduction *Rate determination:* Statutory	*Rate type:* Uniform *Current rate:* 0.125% (1/8) *Base:* Taxable value is the gross value less rental or royalty payments to State or U.S. Gross value is the value of molybdenum in concentrates shipped from mine.	*Deductions:* Deductions for calculation of gross value: Standard deduction of 50% of the value *Limitations:* None identified in statute or regulation

New Mexico	Type of mines/minerals assessed	Type of royalty	Royalty rate	Royalty deductions and limitations
Severance tax—potash[g]	Potash or potash products extracted from all lands	Net proceeds *Rate determination:* Statutory	*Rate type:* Uniform *Current rate:* 2.5% *Base:* Taxable value is the gross value less rental or royalty payments to state or federal governments; gross value: (1) for potash requiring processing or beneficiation, 33-1/3% of sale proceeds or value (2) otherwise, 40% of the posted field or market price.	*Deductions:* Actual cost of hoisting, crushing, and loading, up to 50% of market price *Limitations:* None identified in statute or regulation
Severance tax—uranium[h]	Uranium extracted from all lands	Net proceeds royalty[i] *Rate determination:* Statutory	*Rate type:* Uniform *Current rate:* 3.50% on taxable value (effectively 1.75% on revenue) *Base:* Taxable value is 50% of sales price of the content of uranium oxide.	*Deductions:* None identified in statute or regulation *Limitations:* None identified in statute or regulation
Resources excise tax (severers and processors)[i]	Metalliferous and nonmetalliferous extracted from all lands	Modified gross revenue royalty *Rate determination:* Statutory	*Rate type:* Uniform within several categories *Current rate:* Default 0.75%; Potash 0.5% (severers) or 0.125% (processors); Molybdenum 0.125% *Base:* Taxable value, which is the value after severing or processing	*Deductions:* Royalties paid to state or federal governments; proceeds from sales to the State, U.S., tribes, or nonprofit organizations *Limitations:* The Resources Excise Tax imposes a resources tax on severers and a processors tax on processors; however, only one of the two taxes is imposed on a given mineral product. If the mineral is mined and processed in state, only the processors tax is paid.

Source: GAO analysis of state statutes and regulations, March 2008.

[a]N.M. Stat. Ann. § 19-8-14, -22; N.M. Admin. Code § 19.2.2; if a lease is renewed to a fourth term (where minerals have not yet been discovered), advance royalties are due on a per acre basis.

[b]N.M. Stat. Ann. § 19-8-14, -22; N.M. Admin. Code § 19.2.2.

[c]N.M. Stat. Ann. § 19-8-4, § 19-8-6; N.M. Admin. Code § 19.2.3.2, 19.2.3.12.

[d]N.M Stat. Ann. § 7-26-1 et seq.

[e]N.M Stat. Ann. § 7-26-4, -5.

[f]N.M. Stat. Ann. § 7-26-4, -5.

[g]N.M Stat. Ann. § 7-26-4.

[h]N.M. Stat. Ann. § 7-26-7, § 7-26-4(I).

[i]N.M. Stat. Ann. § 7-25-1-9; there also is 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.

[j]For example, granted to New Mexico from the United States in the New Mexico enabling act.

[k]Regulation provides that royalties will be established by the Commissioner on a negotiated basis. The regulation establishes minimum royalties for potassium chloride and sulfates, but the Commissioner may issue a lease at a reduced rate upon a showing of good cause.

[l]Although structured like a gross revenue royalty, the taxable value discount of 50% makes the royalty function more like a net proceeds royalty with standard deduction.

Table 11: Oregon

Oregon	Type of mines/minerals assessed	Type of royalty	Royalty rate	Royalty deductions and limitations
State lands				
Royalty—metallics and uranium[a]	Metallic minerals removed in quantities greater than 10 yards per year extracted from on-shore state-owned lands[c]	Gross revenue royalty *Rate determination:* Statute delegates rules and conditions of leases to the Department of State Lands; regulations specify rate	*Rate type:* Uniform *Current rate:* 5% *Base:* Gross value of minerals at the mine mouth	*Deductions:* None specified in statute or regulation *Limitations:* Rent ($1 per acre per year) is credited against annual royalties
Royalty—Non-metallics[b]	Nonmetallic minerals removed in quantities greater than 10 yards per year extracted from on-shore state-owned lands	Unit-based *Rate determination:* Statute delegates rules and conditions of leases to the Department of State Lands; regulations do not specify terms for leases of nonmetallic minerals, and delegate determination of royalty to Director subject to "fair and reasonable" standard.	*Rate type:* Case by case *Current rate:* A rate per ton to be determined by the Director to be fair and reasonable under the particular lease *Base:* Not applicable	*Deductions:* Not applicable *Limitations:* Rent ($1 per acre per year) is credited against annual royalties

Source: GAO analysis of state statutes and regulations, March 2008.

[a]OR Rev Statute § 273.775 thru 790; Or. Admin. R. § 141-071-0400 et seq, -0610, -0620.

[b]OR Rev Statute § 273.775 thru 790; Or. Admin. R. § 141-071-0400 et seq, -0610.

[c]State statute provides for royalties for use of stream bed materials, but prohibits leases of submersible and submerged lands for hardrock mineral mining.

Table 12: Utah

Utah	Type of mines/minerals assessed	Type of royalty	Royalty rate	Royalty deductions and limitations
State lands				
Royalty[a]	Classified minerals, including metalliferous, potash, phosphate, gemstone/fossil, gypsum, gilsonite, and others extracted from mines on lands and mineral estates owned or held in trust by the state	Gross revenue royalty *Rate determination:* Statute requires a royalty on every mineral lease; directs Division of Forestry, Fire and State Lands to issue rules specifying the basis upon which the royalty shall be computed	*Rate type:* Uniform within each category *Current rate:* metalliferous metals, fissionable (e.g., uranium)—8%; Metalliferous metals, non-fissionable—4%; potash, phosphate, gypsum —5%; gemstone/fossil—10% (subject to annual minimum of $5 per acre); gilsonite—10% (additional categories are listed in the regulation) *Base:* Actual compensation received (plus value of any services, in-kind, and other non-monetary compensation)	*Deductions:* None *Limitations:* Rent paid is credited against royalty
All lands				
Severance tax on metals and metalliferous minerals[b]	Ore, metal, or other substance containing gold, iron, mercury, nickel, uranium, or other of 57 listed metals; does not include gem stones, potash, sand and gravel, oil, gas, and coal, and others extracted from all lands	Net proceeds royalty/standard deduction *Rate determination:* Statutory	R*ate type:* Uniform *Current rate:* 2.6% of the taxable value *Base:* For minerals other than uranium, the taxable value is defined as the gross proceeds from sale, less exemption of first $50,000/year/mine, then reduced by standard percentage deduction. For uranium, the gross proceeds is the amount received for the sale of yellowcake.	*Deductions:* Metal, 70% deduction is applied; ore (raw materials with metals content less than 15%) shipped or sold out of state, 20% deduction is applied *Limitations:* None identified in statute or regulation
Severance tax—beryllium[c]	Beryllium	Other[d](cost-based) *Rate determination:* Statutory	*Rate type:* Uniform within several categories *Current rate:* 2.6% of the taxable value *Base:* Taxable value is 125% of the direct mining costs	*Deductions:* Not applicable *Limitations:* None identified in statute or regulation

Source: GAO analysis of state statutes and regulations, March 2008.

[a]Utah Code Ann. § 65A-6-1, 2; Utah Admin. R. R652-20-200, 1000, 4000; correspondence, State of Utah SITLA, Mar. 25-26, 2008; royalties may be readjusted in leases with readjustment clause.

[b]Utah Code Ann. § 59-5-201, 203; Utah Admin. R. R865-16R.

[c]Utah Code Ann. § 59-5-201-203; Utah Admin. R. R865-16R.

[d]We categorized this royalty as other because it does not fit into the four categories.

Table 13: Washington

Washington	Type of mines/minerals assessed	Type of royalty	Royalty rate	Royalty deductions and limitations
State lands				
Royalty[a]	Valuable minerals and specified materials (except rock, gravel, sand, silt, coal, or hydrocarbons) extracted from mines on lands and mineral estates owned or held in trust by the state	Modified gross revenue royalty *Rate determination:* Statute requires production royalty on all leases (mining contracts); delegates to Board of Natural Resources	*Rate type:* Uniform *Current rate:* 5% *Base:* "Gross receipts" are receipts paid, earned, or received, at the point of sale of the first marketable valuable mineral(s) produced, subject to deduction.	*Deductions:* Limited to transportation costs which are part of the development plan approved by the department *Limitations:* None identified in statute or regulation
All lands				
Business tax[b]	All (coal, oil, natural gas, ore, stone, sand, gravel, clay, mineral, or other natural resource product) extracted from all lands	Gross revenue royalty *Rate determination:* Statutory	*Rate type:* Uniform *Current rate:* 0.48% *Base:* The value of products and byproducts extracted for use or sale	*Deductions:* None identified in statute or regulation *Limitations:* None identified in statute or regulation

Source: GAO analysis of state statutes and regulations, March 2008.

[a]Wash. Rev. Code §§ 79.14.300 et seq, .410, .420; Wash Admin. Code § 333.16155; the royalty may be revised upon renewal of a mining contract, by reference to then existing law.

[b]Wash. Rev. Code § 82.04.100, 230; extractors also may be subject to a retail or wholesaler tax; however, the extracting tax is credited against any retail/wholesale liability, effectively voiding it based on current rates.

Table 14: Wyoming

Wyoming	Type of mines/minerals assessed	Type of royalty	Royalty rate	Royalty deductions and limitations
State lands				
Royalty—general[a]	Metallic and nonmetallic rocks and minerals extracted from state lands	Default gross revenue royalty provided in regulation *Rate determination:* Statute delegates to Board of Land Commissioners to establish in rules and regulations for mineral leases[h]	*Rate type:* Progressive (default rates), case by case *Current rate:* Minimum $0.50/ton. Default rates are 5% to 10%, based on the sales value per ton *Base:* Sales value, which is total consideration received for state production	*Deductions:* None identified in statute or regulation *Limitations:* None identified in statute or regulation
Royalty—trona[b]	Trona/sodium extracted from state lands	Gross revenue royalty provided in regulation *Rate determination:* Statute delegates to Board of Land Commissioners to establish in rules and regulations for mineral leases. Regulations provide the royalty "shall be based on the terms of the particular lease agreement," but that specified default rates shall apply unless specifically authorized by the board.	*Rate type:* Uniform (default), case by case *Current rate:* 6% (default) *Base:* Gross sales value of the soda ash and sodium byproducts sold, which is total consideration received for state production	*Deductions:* None identified in statute or regulation *Limitations:* None identified in statute or regulation
Royalty—uranium[c]	Uranium extracted from state lands	Lease-specific, with default gross revenue royalty provided in regulation *Rate determination:* Statute delegates to Board of Land Commissioners to establish in rules and regulations for mineral leases. Regulations provide the royalty "shall be based on the terms of the particular lease agreement," but that specified default rates shall apply unless specifically authorized by the board.	*Rate type:* Progressive (default rates), case-by-case *Current rate:* 2.5% to 3%, based on the average price of yellowcake based on gross yearly sales realization (default) *Base:* Sales value, which is total consideration received for state production	*Deductions:* None identified in statute or regulation *Limitations:* None identified in statute or regulation

Wyoming	Type of mines/minerals assessed	Type of royalty	Royalty rate	Royalty deductions and limitations
Royalty—zeolite[d]	Zeolite extracted from state lands	Lease-specific, with default unit-based provided in regulation *Rate determination:* Statute delegates to Board of Land Commissioners to establish in rules and regulations for mineral leases. Regulations provide the royalty “shall be based on the terms of the particular lease agreement,” but that specified default rates shall apply unless specifically authorized by the board.	*Rate type:* Progressive (default rates), case by case *Current rate:* $0.55 to $0.60+ per ton, depending on the average sale price for bulk zeolite products (default) *Base:* Tons of mineral production	*Deductions:* None identified in statute or regulation *Limitations:* None identified in statute or regulation
All lands				
Mining severance tax—general[e]	All “other valuable deposits” (other than coal, oil and gas, trona, bentonite, uranium, and sand and gravel) extracted from all lands	Gross revenue royalty[i] *Rate determination:* Statutory	*Rate type:* Uniform *Current rate:* 2% *Base:* Value of the gross product, which is the fair market value of the minerals at the mouth of the mine, after extraction.	*Deductions:* None identified in statute or regulation *Limitations:* None identified in statute or regulation

Wyoming	Type of mines/minerals assessed	Type of royalty	Royalty rate	Royalty deductions and limitations
Mining severance tax—uranium[f]	Uranium extracted from all lands	Modified net smelter returns royalty/standard deduction *Rate determination:* Statutory	*Rate type:* Uniform; progressive under currently active provision *Current rate:* The statutory tax rate is 4%. However, the tax is suspended for all uranium production occurring between January 1, 1995, and March 31, 2009, except for uranium production beginning with the month that follows 6 consecutive months at which the spot market price per pound of nonenriched uranium concentrate is at least $14.00 (according to specified indices). In such case, the tax is 1% to 4% depending upon the spot market price. *Base:* Value of the gross product, which is the fair market value of the minerals at the mouth of the mine, after extraction, and not including any processing. Fair market value is calculated by multiplying the individual producer's sales value of yellow cake less all royalties, ad valorem production taxes, and severance taxes; multiplied by the industry factor.	*Deductions:* The 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. *Limitations:* None identified in statute or regulation
Mining severance tax—trona[g]	Trona extracted from all lands	Modified net smelter returns royalty/standard deduction *Rate determination:* Statutory	*Rate type:* Uniform *Current rate:* 4% *Base:* Fair market value is that at the mouth of the mine, and not including any processing.	*Deductions:* The value for tax purposes is the fair market value of soda ash at the plant (f.o.b.) multiplied by the industry factor (32.5%) divided by the individual producer's trona-to-soda ash ratio less exempt royalties (the industry factor divided by ration represent a percentage deduction). *Limitations:* None identified in statute or regulation

Source: GAO analysis of state statutes and regulations, March 2008.

[a]Wyo. Stat. § 36-6-101; Wyo. Admin. Code Land LC Ch. 24 § 2, § 7; under certain circumstances, the board can reduce a royalty after the mine is operating.

[b]Wyo. Stat. § 36-6-101; Wyo. Admin. Code Land LC Ch. 20 § 2, § 7(a).

[c]Wyo. Stat. § 36-6-101; Wyo. Admin. Code Land LC Ch. 21 § 2, § 7(a).

[d]Wyo. Stat. § 36-6-101; Wyo. Admin. Code Land LC Ch. 23 § 2, § 7(a).

[e]Wyo. Stat. Tit. 39, ch. 14, art. 7; Wyo. Stat. § 39-14-701 et seq.

[f]Wyo. Stat. § 39-14-503.

[g]Wyo. Stat. § 39-14-301 et seq.

[h]Regulations provide the royalty "shall be based on the terms of the particular lease agreement," but that specified default rates shall apply unless specifically authorized by the board, and subject to a minimum.

[i]For minerals requiring processing before sale (i.e., at the mouth of the mine), the royalty would function similar to a net smelter returns in which the cost of processing is deducted.

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