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June 7th, 2019

Idaho Department of Lands
Attn: Eric Wilson - Rulemaking
300 N. 6th St., Suite 103
Boise, ID 83702

Submitted via email: rulemaking@idl.idaho.gov

**RE: Idaho Conservation League's comments following May 22nd and 29th 2019
meeting re: Rules Governing Exploration, Surface Mining, and Closure of
Cyanidation Facilities – IDAPA 20.03.02; Docket No. 20-0302-1901**

Dear Mr. Wilson:

Thank you for the opportunity to provide comments following the Idaho Department of Land's (IDL or "the Department") rulemaking meetings on May 22nd and May 29th, 2019, discussing the Rules Governing Exploration, Surface Mining, and Closure of Cyanidation Facilities – IDAPA 20.03.02.

Since 1973, the Idaho Conservation League has been Idaho's leading voice for clean water, clean air and wilderness—values that are the foundation for Idaho's extraordinary quality of life. The Idaho Conservation League works to protect these values through public education, outreach, advocacy and policy development. As Idaho's largest state-based conservation organization, we represent over 30,000 supporters, many of whom are interested in ensuring that mines in Idaho are adequately regulated so as to ensure the protection of Idaho's water quality, public health, and aquatic species.

Our detailed comments follow this letter. Please contact me at 208-345-6933 ext. 23 or awalkins@idahoconservation.org if you have any questions regarding our comments or if we can provide you with any additional information on this matter.

Sincerely,

Austin Walkins
Senior Conservation Associate

Jonathan Oppenheimer
Government Relations Director

*RE: Idaho Conservation League's comments following the May 22nd and May 29th 2019
meeting re: Rules Governing Exploration, Surface Mining, and Closure of Cyanidation
Facilities – IDAPA 20.03.03; Docket No. 20-0302-1901*

120.04 and 121.04 Contingency and Indirect Costs

In order to ensure that financial assurances for reclamation costs realistically account for inflation and third-party contracting, we recommend consideration of the following guidelines recommended by the Center for Science in Public Participation, and/or required/recommended by the USFS, BLM or the state of Nevada via their Standardized Reclamation Cost Estimator. In addition, the indirect costs included at 120.04 should mirror those at 121.03.

<u>INDIRECT COST GUIDELINES</u>				
Recommended Percentage of Reclamation Costs				
	CSP2¹	USFS²	BLM³	SCRE⁴
Contractor Profit	10%	15% - 30%	10%	10%
Scope/Bid Contingency	10%	14% - 50%	4% - 10%	4% - 10%
Mobilization/Demobilization	0% - 10%	0% - 10%	---	Direct Cost
Engineering & Construction Plans	8%	2% - 10%	4% - 8%	4% - 8%
Performance Bond Cost	5%	3%	3%	3%
Liability Insurance			1.5% of Labor	1.5% of Labor
State Sales Tax on Direct Costs	---	0% - 5%	---	---
Agency Administration	10%	4% - 14%	6% - 10% + 1.26% - 2.1%	6% - 10% + 1.26% - 2.1%
Annual Inflation	3%	1% - 6%	---	---
	=====	=====	=====	=====
Total Indirect Costs	46% - 56%	39% - 128%	29% - 44%	29% - 44%
References:				
¹ Hardrock Reclamation Bonding Practices in the Western United States, James R. Kuipers, PE, Center for Science in Public Participation, February 2000.				
² Training Guide for Reclamation Bond Estimation and Administration, for Mineral Plans of Operation Authorized and Administered Under 36 CFR 228A, USDA Forest Service, Minerals and Geology Management, April 2004.				
³ BLM Handbook H-3809-1, Surface Management Handbook, Department of Interior, Bureau of Land Management, September 17, 2012.				
⁴ Nevada Standardized Reclamation Cost Estimator (SRCE), 2015, http://www.nvbond.org/				

Complete List:

Contingency; Mobilization/Demobilization; Engineering Redesign; Engineering Procurement & Construction Management; Contractor Profit; Agency Administration; Annual Inflation

Contingency costs are meant to address the errors that exist in every estimate resulting from the use of assumptions and conceptual information rather than actual measurement of work to be performed.

Contract Administration refers to all costs of the preparation and administration of oversight, design, construction or other contracts needed to accomplish closure and other operating plan requirements.

Agency Administration is all work performed by agency personnel and associated overhead costs of administrative work in support of agency closure of a mine (above and beyond that normally budgeted through appropriation).

122.06 Corporate Guarantees

The Idaho Conservation League recognizes that House Bill 141 included corporate guarantees as an acceptable form of financial assurance. However, the legislation also requires the Idaho Board of Land Commissioners and IDL to secure funds, commitments or other sureties “in the amount necessary for the board or a third party to perform the reclamation activities required in this chapter.” As a result, it is imperative that IDL properly condition the use and application of Corporate Guarantees in such a manner as to minimize the potential for default or exhaustion of funds and to protect Idaho taxpayers from the same.

Metals markets are inherently unstable and the State of Idaho has a fiduciary responsibility to protect its citizens from exposure to insecure financial assurances. For context, the Nevada BLM state office, which according to the U.S. Government Accountability Office (GAO) had \$200 million in Corporate Guarantees as of 2004¹, considers corporate guarantees as “not effective” for minimizing losses to the federal government. The GAO’s report on BLM Financial Assurances for Hardrock Mining² also noted the following:

“...financial assurances were not adequate because financial assurance providers went bankrupt and could not pay all the reclamation costs they guaranteed. For three of these [Nevada] operations—Paradise Peak, County Line, and MacArthur Mine—an operator used corporate guarantees totaling \$4.2 million to guarantee

¹ See: HARDROCK MINING: BLM Needs to Better Manage Financial Assurances to Guarantee Coverage of Reclamation Costs (June 2005)

² See *Id.*

part of the estimated reclamation costs. However, these corporate guarantees lost all their value when the operator went bankrupt.”

A more recent GAO report (2018) on financial assurances³ interviewed stakeholders in state agencies and the Department of Interior’s Office of Surface Mining Reclamation and Enforcement. Stakeholders concluded the following with regards to self-bonding (i.e. – Corporate Guarantees).

“Self-bonding presents a risk to the government because it is difficult to (1) ascertain the financial health of an operator, (2) determine whether the operator qualifies for self-bonding, and (3) obtain a replacement for existing self-bonds when an operator no longer qualifies. In addition, some stakeholders said that the risk from self-bonding is greater now than when the practice was first authorized under the Surface Mining Control and Reclamation Act (SMCRA).

The 2018 GAO report on financial assurances provides guidance on when self-bonding would be appropriate, noting:

“To remain qualified for self-bonding, operators must, among other requirements, do one of the following: have an “A” or higher bond rating, maintain a net worth of at least \$10 million, or possess fixed assets in the United States of at least \$20 million. In addition, the total amount of self-bonds any single operator can provide shall not exceed 25 percent of its tangible net worth in the United States.”

These GAO reports highlight the risks associated with Corporate Guarantees, further stressing the fact that flexibility and discretion over the approval of Corporate Guarantees is essential in order to best protect Idaho taxpayers and the environment.

Based on concern over the fact that mines will not be generating revenue and are unlikely to have significant cash reserves or working assets, it is inappropriate to cover post-closure and water treatment costs via a Corporate Guarantee.

Certified audited financial statements should be required to satisfy the criteria for consideration of Corporate Guarantees at 122.06 (c)(i-iii). During the May 22, 2019 meeting, ICL and the IMA reached consensus that operators with fixed assets of at least \$20 million must meet a minimum threshold of a ratio between liabilities to net worth of 2x or less. This should have been reflected in Draft #4 of the rule and should be reflected in the notes. No differing opinions were offered during the rulemaking discussion.

We also recommend that operators meet a minimum bond rating of AAA. Contrary to assertions by others at the meeting that lower bond ratings may be appropriate, we are very concerned about potential inclusion of B ratings (including BBB+, BBB, BBB-,

³ See Federal and State Agencies Face Challenges in Managing Billions in Financial Assurances (March 2018).

Baa1, Baa2 and Baa3. According to bond rating categories BBB and Baa1,2 and 3 bonds “may be unreliable over time”, “have speculative fundamentals”, or are “not attractive investments...[with] little assurance of long-term payments.” (See <https://investinganswers.com/dictionary/b/bond-rating>).

Because of the challenges associated with enforcing provisions of forfeiture of corporate guarantees and the inherent liabilities that the state may incur, we again recommend prohibition on the use of corporate guarantees for corporations with more than 10% of their assets in a foreign country. After all, in the event that a corporation forfeits their corporate guarantee, the costs to the state of Idaho for recovery and compensation could be significantly higher if foreign corporations and international litigation is required.

We appreciate the inclusion of language that requires the corporation to immediately notify IDL in the event that its financial fitness falls below the criteria established in 122.06. That said, as the 2018 GAO report noted, it can be difficult for a corporation to “obtain a replacement for existing self-bonds when an operator no longer qualifies...” for a corporate guarantee. IDL should identify how realistic it would be for a company who is unable to satisfy the financial fitness tests to secure financial assurance via a trust or bond. As a result, the thresholds for financial fitness for securing a corporate guarantee should be further tightened.

We urge inclusion of a clause, as proposed in 122.06(i) that provides discretionary authority to the IDL Director to accept or reject a corporate guarantee. While the financial fitness test included at 122.06 (e) provides for consideration of a variety of factors, there could be other considerations, liabilities, pending legal action or other valid reasons for rejection of a corporate guarantee. Ultimately, the Director must provide sufficient rationale for his or her decision, and based on the relatively high risk that the State of Idaho could incur via the acceptance of a corporate guarantee, a commensurate degree of discretion is warranted.

Water Management or Treatment - §140.03

We support the inclusion of section §140.03 Water Management or Treatment in these rules and believe it is a critical component of the final rule. This section is vital for any operations on state and/or private land, which would not be subject to the requirements specified by the National Environmental Policy Act (NEPA). Furthermore, we support the inclusion of this material so that IDL can collect appropriate financial assurances on all aspects of a mining operation, not the least of which being the management or treatment of water on site.

Incorporating Cost of Inflation in Financial Assurances

We feel it would be appropriate for the department to codify in rule that financial assurances will be adjusted to reflect rising costs due to inflation. There are multiple sections (§120.06; §155) that require reviews of financial assurances and mining operations; however, these sections do not explicitly call out the need to adjust cost due to inflation. Listing inflation in either of these sections ensures that the Department will be able to collect adequate financial assurances to sufficiently reclaim a site, if need arise, and the cost of reclamation will not be passed on to citizens.

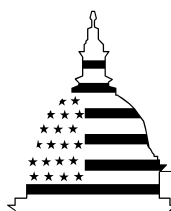
GAO

Report to the Ranking Minority Member,
Committee on Homeland Security and
Governmental Affairs, U.S. Senate

June 2005

HARDROCK MINING

BLM Needs to Better Manage Financial Assurances to Guarantee Coverage of Reclamation Costs



G A O

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Highlights of [GAO-05-377](#), a report to the Ranking Minority Member, Committee on Homeland Security and Governmental Affairs, U.S. Senate

Why GAO Did This Study

Since the General Mining Act of 1872, billions of dollars in hardrock minerals, such as gold, have been extracted from federal land now managed by the Department of the Interior's Bureau of Land Management (BLM). For years, some mining operators did not reclaim land, creating environmental, health, and safety risks. Beginning in 1981, federal regulations required all operators to reclaim BLM land disturbed by these operations. In 2001, federal regulations began requiring operators to provide financial assurances before they began exploration or mining operations. GAO was asked to determine the (1) types, amount, and coverage of financial assurances operators currently use; (2) extent to which financial assurance providers and others have paid to reclaim land not reclaimed by the operator since BLM began requiring financial assurances; and (3) reliability and sufficiency of BLM's automated information system (LR2000) for managing financial assurances for hardrock operations.

What GAO Recommends

GAO recommends that BLM strengthen its management of financial assurances by requiring its state office directors to develop an action plan for ensuring operators have adequate financial assurances and improving the reliability and sufficiency of LR2000. Interior did not concur with the recommendations; GAO believes they are needed to ensure adequate financial assurances.

www.gao.gov/cgi-bin/getrpt?GAO-05-377.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Robin M. Nazzaro at (202) 512-3841 or nazzaror@gao.gov.

HARDROCK MINING

BLM Needs to Better Manage Financial Assurances to Guarantee Coverage of Reclamation Costs

What GAO Found

According to GAO's survey of BLM state offices, as of July 2004, hardrock operators were using 11 types of financial assurances, valued at about \$837 million, to guarantee reclamation costs for existing hardrock operations on BLM land. Surety bonds, letters of credit, and corporate guarantees accounted for most of the assurances' value. However, these financial assurances may not fully cover all future reclamation costs for these existing hardrock operations if operators do not complete required reclamation. BLM reported that, as of July 2004, some existing hardrock operations do not have financial assurances and some have no or outdated reclamation plans and/or cost estimates, on which financial assurances should be based.

BLM identified 48 hardrock operations on BLM land that had ceased and not been reclaimed by operators since it began requiring financial assurances. BLM reported that the most recent cost estimates for 43 of these operations totaled about \$136 million, with no adjustment for inflation; it did not report reclamation cost estimates for the other 5 operations. However, as of July 2004, financial assurances had paid or guaranteed \$69 million and federal agencies and others had provided \$10.6 million to pay for reclamation, leaving \$56.4 million in reclamation costs unfunded. Financial assurances were not adequate to pay all estimated costs for required reclamation for 25 of the 48 operations because (1) some operations did not have financial assurances, despite BLM efforts in some cases to make the operators provide them; (2) some operations' financial assurances were less than the most recent reclamation cost estimates; and (3) some financial assurance providers went bankrupt. Also, cost estimates may be understated for about half of the remaining 23 operations because the estimates may not have been updated to reflect inflation or other factors.

BLM's LR2000 is not reliable and sufficient for managing financial assurances for hardrock operations because BLM staff do not always update information and LR2000 is not currently designed to track certain critical information. Specifically, staff have not entered information on each operation, and for those operations that are included, the information is not always current. Also, LR2000 does not track some critical information—operations' basic status, some types of allowable assurances, and state- and county-held financial assurances. Given these limitations, BLM's reliance on LR2000 to manage financial assurances is mixed: headquarters does not always rely on it and BLM state offices' reliance varies. To compensate for LR2000's limitations, some BLM offices use informal record-keeping systems to help manage hardrock operations and financial assurances. BLM has taken some steps and identified others to improve LR2000 for managing financial assurances for hardrock operations.

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Abbreviations

ALIS	Alaska Land Information System
BLM	Bureau of Land Management
CERCLA	Comprehensive Environmental Restoration, Compensation, and Liability Act of 1980
LR2000	Legacy Rehost 2000
RAMS	Restoration of Abandoned Mine Sites

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United States Government Accountability Office
Washington, D.C. 20548

June 20, 2005

The Honorable Joseph I. Lieberman
Ranking Minority Member
Committee on Homeland Security and Governmental Affairs
United States Senate

Dear Senator Lieberman:

The General Mining Act of 1872 encouraged development of the West by allowing individuals¹ to stake claims and obtain exclusive rights to gold, silver, copper, and other valuable hardrock mineral deposits on land belonging to the United States. Since then, thousands of operators² have extracted billions of dollars worth of hardrock minerals from land now managed by the Department of the Interior's Bureau of Land Management (BLM)—the agency that manages the largest amount of federal land.³ However, some operators did not reclaim BLM land disturbed by hardrock operations related to exploration, mining, and mineral processing when their operations ceased. These operators left BLM with many thousands of acres of disturbed land, some of which posed environmental and health and safety risks.

The Federal Land Policy and Management Act of 1976 states that the Secretary of the Interior shall take any action required to prevent the “unnecessary or undue degradation” of public land and its resources. BLM has developed and revised regulations and issued policy under this provision. Specifically, BLM issued regulations, effective in 1981, that require all operators to reclaim BLM land disturbed by their hardrock operations. For plan-level operations—those disturbing over 5 acres of land or those in certain designated areas, such as the national wild and scenic rivers system—operators were to have a BLM-approved plan that

¹Individuals include citizens and people declaring an intention to become citizens.

²For simplicity in this report, we refer to claimants and operators as operators. An operator is the person who conducts operations in connection with exploration, mining, and processing hardrock minerals on BLM land. Both the claimant and operator are responsible for reclamation.

³BLM manages about 261 million acres, most of which are located in 12 western states, including Alaska. Other federal agencies, such as the Department of Agriculture's Forest Service, also manage federal land available for hardrock operations. For simplicity in this report, we refer to BLM-managed land as BLM land.

documented all the anticipated hardrock activities and all required reclamation. For notice-level operations—those causing a surface disturbance of 5 acres or less—operators were to submit notices that informed BLM of the operators’ intentions, but these notices did not require BLM’s approval. Plans have to be approved and notices received by BLM before the operators begin exploration or mining operations. Also, to guarantee that reclamation costs are paid, these regulations stated that BLM could require plan-level operators to provide bonds or other financial assurances in an amount specified by BLM, taking into consideration the estimated cost of reasonable stabilization and reclamation of the disturbed land.⁴ BLM also could require notice-level operators with a history of noncompliance with federal regulations to submit a plan of operation and thus notice-level operators could be required to provide financial assurances. Through a formal agreement, BLM can designate a state agency as responsible for managing some or all hardrock requirements, including financial assurances.⁵ Operators have used a variety of types of financial assurances, ranging from funded assurances, such as cash and negotiable U.S. securities, to corporate guarantees, which are promises to complete reclamation that are backed only by the financial strength of the operator. Despite having the regulatory authority to do so, BLM rarely required operators to provide financial assurances throughout the 1980s.⁶

In August 1990, BLM issued a policy instructing BLM officials to require operators to provide financial assurances for all plan-level operations and for notice-level operations if the operators had a record of noncompliance with federal regulations.⁷ BLM generally limited financial assurances to

⁴The regulations stated that in lieu of a bond, the operator (1) could deposit in a federal depository account of the United States, directed by BLM, cash or negotiable U.S. securities or (2) show evidence of an existing bond provided for the operation pursuant to state law or regulations.

⁵Financial assurances could have been payable to either BLM or the designated state agency, depending on the terms of the agreement between BLM and the state, which are to coordinate efforts and avoid duplication of financial assurances and other requirements. These agreements may establish joint federal-state program management and enforcement of hardrock operations on BLM land or assign primary responsibility for management to either BLM or the state.

⁶GAO, *Importance of Financial Guarantees for Ensuring Reclamation of Federal Lands*, GAO/T-RCED-89-13 (Washington, D.C.: Mar. 7, 1989).

⁷BLM Instruction Memorandum No. 90-582, *Modification of Bonding Policy for Plans of Operation Authorized by 43 CFR 3809* (Aug. 14, 1990).

\$1,000 per acre for exploration and \$2,000 per acre for mining operations. However, BLM required operators using leaching chemicals, such as cyanide and sulfuric acid, to extract minerals from ore and required operators with a record of noncompliance to provide financial assurances to cover all estimated reclamation costs for hardrock operations. For these operations, BLM was to estimate the cost of reclamation and add to it the reasonable administrative costs that would be incurred if reclamation were done under contract. However, BLM did not further specify the types of financial assurances that could or could not be used.

Concerns about the types of financial assurance and the lack of financial assurances requirements for all notice-level operations, among other things, prompted BLM to establish new regulations in 2001. The new regulations require operators to include reclamation plans and cost estimates in the notices and plans of operation that they submit to BLM for acceptance or approval. The new regulations require that before exploration or mining operations begin, operators must provide financial assurances to cover all estimated reclamation costs for both notice- and plan-level hardrock operations. In addition, BLM must periodically review the estimated cost of reclamation to determine if the cost estimates should be updated. The regulations also specify the types of acceptable financial assurances and prohibit new corporate guarantees and increases or transfers in the corporate guarantees used under BLM's previous policy. The financial assurance provisions of the new regulations applied immediately—on January 20, 2001, for new notice- and plan-level operations and on January 20, 2003, for extended notice-level operations, unless the notice was modified.⁸ Plans of operations that were approved before January 20, 2001, were required to have financial assurances in place no later than November 20, 2001.

Under federal regulations, if an operator fails to complete required reclamation, BLM or the designated state agency may take steps to obtain funds from the financial assurance providers. Providers then have the option of (1) relinquishing the amount guaranteed by the financial assurance to BLM or the designated state agency, which would then use the funds for reclamation, or (2) completing the reclamation themselves. The regulations also give BLM the authority to take steps, such as issuing

⁸Before the 2001 regulations, notice-level operations did not have an expiration date. The 2001 regulations stated that all notices filed on or after January 20, 2001, would be extended only for 2 years, after which they would have to be renewed or would expire.

noncompliance and suspension orders, and revoking plans of operation, if operators do not comply with the financial assurance or other regulatory requirements.

BLM established an automated information system—the Legacy Rehost 2000 (LR2000)—in 1999 that combined into one system several existing systems that collect and store information on the programs and land BLM manages. LR2000 is composed of a number of subsystems, some of which contain information on hardrock operations and financial assurances.

You asked us to determine the (1) types, amount, and coverage of financial assurances operators currently use to guarantee reclamation costs, (2) amount that financial assurance providers and others have paid to reclaim operations that had ceased and not been reclaimed since BLM began requiring financial assurances and the estimated costs of completing reclamation for such operations, and (3) reliability and sufficiency of BLM's LR2000 for managing financial assurances for hardrock operations.

We did not rely on LR2000 information to address these objectives, but instead designed two surveys to obtain information from BLM's state and field offices because they maintain the case files and other specific information on hardrock operations. We asked the 12 BLM state offices that manage BLM programs across the United States to complete surveys for each state in their jurisdiction with hardrock operations.⁹ We verified the information in the surveys through discussions with BLM officials in two state and four field offices and by reviewing case files and other documents. In the first survey, which focused on states' experiences with hardrock operations, we asked these 12 offices to provide information on (1) the number of existing hardrock operations for each state within their jurisdiction,¹⁰ (2) the types and the amounts of financial assurances provided for existing hardrock operations in each state, (3) their views on

⁹Some of the 12 BLM state offices manage BLM programs in more than one state. For example, the BLM Montana state office manages BLM programs in Montana, North Dakota, and South Dakota, and the BLM Oregon state office manages BLM programs in Oregon and Washington.

¹⁰In our survey instructions, we defined existing operations to include those hardrock operations that (1) are pending BLM acceptance, (2) have been accepted but operations have not begun, (3) are ongoing, and (4) are temporarily inactive. While federal regulations require reclamation plans and cost estimates for all of these operations, they do not require financial assurances for those pending BLM acceptance or those that have been accepted but have not begun exploration or mining operations.

the effectiveness of the various types of financial assurances, (4) their views on the reliability and sufficiency of hardrock operation data contained in LR2000, and (5) their use of LR2000 for managing hardrock operations and financial assurances in their states. In the second survey, which focused on selected hardrock operations, we asked these 12 offices to provide detailed information on hardrock operations within their jurisdiction that met both of the following criteria: the operator (1) ceased operations after the requirement for financial assurances went into effect—August 1990 for plan-level operations, January 2001 for new notice-level operations, and January 2003 for existing notice-level operations and (2) failed to complete the required reclamation. We used information in this survey to determine the estimated reclamation costs and the adequacy of financial assurances for reclaiming each hardrock operation that BLM identified as meeting these criteria. We took steps to determine whether BLM officials identified all hardrock operations that met these criteria, such as comparing BLM's list of operations with operations identified by others. To the extent that BLM did not identify all hardrock operations that had ceased and not been reclaimed by the operator, the information it reported to us would be understated. In addition, we did not collect information on the thousands of ceased hardrock operations since 1872 that did not require financial assurances and therefore fell outside the scope of this review.

We also took steps to understand BLM's management and oversight of hardrock operations and the use of financial assurances to ensure reclamation. We reviewed BLM regulations, documents, and independent studies relevant to hardrock operations and financial assurances. We also discussed these issues with BLM officials at headquarters and in selected state and field offices. To understand the relationship between BLM and state agencies responsible for overseeing hardrock operations, we met with BLM state office and state agency officials in several states, and reviewed relevant memorandums of understanding and other agreements. To understand the reliability and sufficiency of LR2000, we spoke with BLM officials responsible for administering the system and staff in selected BLM state and field offices who enter information into the system and who use the system to manage hardrock operations and financial assurances. We also discussed relevant hardrock operation and financial assurance issues with experts and representatives from the mining industry, academia, and environmental groups. Finally, to better understand hardrock operations and reclamation requirements, we visited five mining operations in Nevada and Montana. Appendix I provides detailed information on our scope and methodology.

We conducted our review from October 2003 through May 2005 in accordance with generally accepted government auditing standards, which included an assessment of data reliability.

Results in Brief

As of July 2004, hardrock operators were using 11 different types of financial assurances, valued at approximately \$837 million, to guarantee reclamation costs associated with approximately 2,500 existing hardrock operations on BLM land in 12 western states, according to our analysis of survey results. Surety bonds (\$384 million), letters of credit (\$238 million), and corporate guarantees (\$204 million) accounted for almost all of the \$837 million in financial assurances. However, these financial assurances may not fully cover all future reclamation costs for these existing hardrock operations if operators do not complete required reclamation. BLM reported that, as of July 2004, some existing hardrock operations do not have financial assurances, and some have no or outdated reclamation plans and/or cost estimates on which financial assurances should be based.

BLM identified 48 hardrock operations on its land that had ceased and not been reclaimed by operators since it began requiring financial assurances. BLM reported that the most recent cost estimates for reclamation required by applicable reclamation plans and federal regulations for 43 of the 48 operations totaled about \$136 million, with no adjustment for inflation; it did not report reclamation cost estimates for the other 5 operations. However, as of July 2004, the BLM-required financial assurances had provided or were guaranteeing \$69 million, and federal agencies and others had provided \$10.6 million to pay the estimated costs for required reclamation for the 48 operations, leaving \$56.4 million in unfunded reclamation costs. Financial assurances were not adequate to pay all estimated costs for required reclamation for 25 of the 48 ceased operations for several reasons. First, operators did not provide required financial assurances for 10 operations, despite BLM's efforts in some cases to make the operators provide them. Second, financial assurances that were provided were less than the most recent reclamation cost estimates for 13 operations. Third, financial assurance providers went bankrupt and did not have the funds to pay all reclamation costs for two other operations. In addition, cost estimates may be understated for about half of the remaining 23 operations because the cost estimates may not have been updated to reflect inflation or other factors that could increase reclamation costs. Furthermore, the \$136 million cost estimate is understated to the extent that BLM did not identify or report information in response to our survey on all hardrock operations that had ceased and not been reclaimed by

operators, as required. For example, Oregon's BLM state office estimated that 20 notice-level operations in Washington state had ceased and not been reclaimed, but neither the Oregon BLM state office nor its field offices completed our surveys for these operations. Clearly, the \$136 million estimate would be higher if BLM's state or field offices had reported this information. Finally, according to BLM officials, required reclamation had been completed for only 5 of the 48 operations as of July 2004, but they believe it is likely that required reclamation will be completed on an additional 28 operations sometime in the future.

BLM's LR2000 is not reliable and sufficient for managing financial assurances that guarantee coverage of reclamation costs for BLM land disturbed by hardrock operations because staff do not always update information, and LR2000 is not currently designed to track certain critical information. Specifically, staff have not entered information on each hardrock operation and, for those hardrock operations included in LR2000, the information is not always current. Moreover, LR2000 does not track some information on hardrock operations and their associated financial assurances that we believe is critical for effectively managing financial assurances. This information includes the basic status of operations, such as whether they are ongoing or have ceased and should be reclaimed; some types of allowable financial assurances; and state- and county-held financial assurances. Given these limitations, it is not surprising that BLM's reliance on LR2000 to manage financial assurances is mixed. Specifically, BLM headquarters does not always rely on the system, and BLM state offices' reliance varies—in four states with hardrock operations, the state and field offices relied on the system to little or no extent; in eight states, to a moderate or some extent; and in one state, to a very great extent. In part to compensate for LR2000's limitations, some BLM state and field offices use informal record-keeping systems to help manage hardrock operations and financial assurances. BLM has taken some steps and identified others to improve LR2000 for managing financial assurances for hardrock operations.

To ensure that hardrock operators on BLM land have adequate financial assurances, we are making recommendations to the Secretary of the Interior to strengthen BLM's management of financial assurances for hardrock operations on its land by directing the Director of BLM to (1) require state office directors to develop an action plan for ensuring that operators have adequate financial assurances and (2) improve the reliability and sufficiency of BLM's automated information system.

In responding to a draft of this report, Interior stated that it appreciated the advice and critical assessment we provided on BLM's management of financial assurances required for hardrock operations. However, without acknowledging or addressing specific deficiencies identified in our report, Interior disagreed with our recommendations, stating that guidance already issued ensured that proper management attention was being provided. In the face of considerable evidence in this report to the contrary, Interior's assertions that all is well and that recently issued policy and guidance ensure that adequate financial assurances are in place seems hard to comprehend. Accordingly, we continue to believe that our recommendations are warranted to ensure that adequate financial assurances are in place. Interior's letter and our comments are included in appendix IV.

Background

BLM is responsible for managing approximately 261 million acres of public land, over 99 percent of which is located in 12 western states, including Alaska. Approximately 90 percent of this land is open to the public for hardrock mineral exploration and mining. Less than one-tenth of 1 percent of BLM land is affected by existing hardrock operations. Figure 1 shows the BLM land available for hardrock operations.

Figure 1: BLM-Managed Land



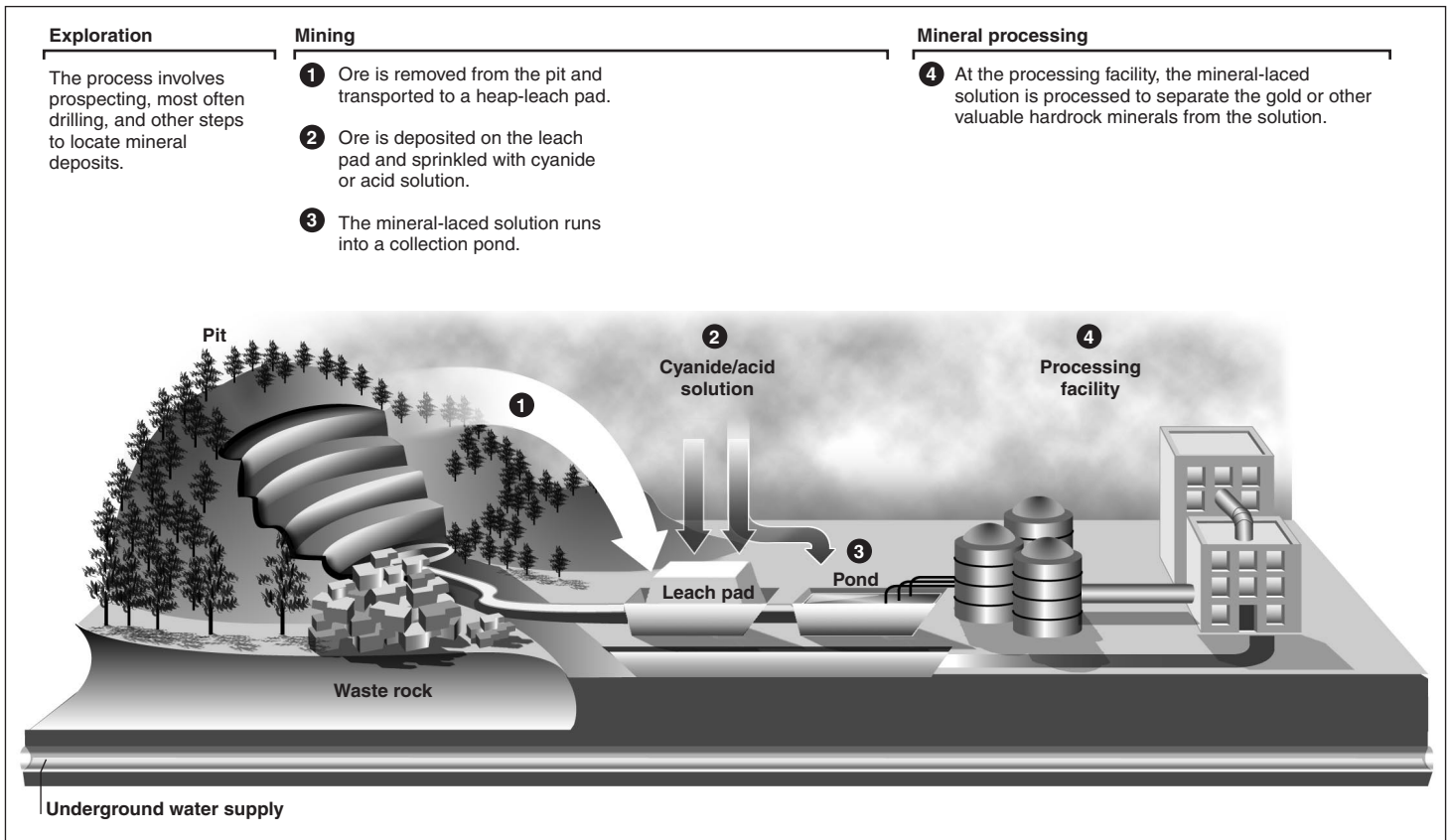
Source: BLM.

How Hardrock Operations Work and the Importance of Reclamation

Hardrock operations consist of three primary stages—exploration, mining, and mineral processing. Operators are responsible for reclaiming the land disturbed by such operations at the earliest economically and technically feasible time, if this land will not be further disturbed. Exploration involves prospecting and other steps to locate mineral deposits. Drilling is the most common exploration tool for identifying the extent, quantity, and quality of

minerals within an area. The mining phase includes developing the mining infrastructure (water, power, buildings, and roads) and extracting the minerals. Mineral extraction generally entails drilling, blasting, and hauling ore from pit areas to processing areas. To process minerals, operators prepare the ore by crushing or grinding it to extract minerals. The material left after the minerals are extracted—tailings (a combination of fluid and rock particles)—is then disposed of, often in a nearby pile. In addition, some operators use a leaching process to recover microscopic hardrock minerals from heaps of crushed ore by percolating solvent (such as cyanide for gold and sulfuric acid for copper) through the heap of ore. Through this heap-leaching process, the minerals adhere to the solvent as it runs through the leach heap and into a collection pond. The mineral-laced solution is then taken from the collection pond to the processing facility, where the valuable minerals are separated from the solution for further refinement. Figure 2 provides an overview of the three stages of a hardrock operation using a heap-leaching process.

Figure 2: Overview of a Hardrock Operation Using a Heap-Leaching Process



Source: GAO analysis of information provided by BLM, the National Research Council, and others.

At the earliest feasible time, operators are required to reclaim BLM land that will not be further disturbed to prevent or control on-site or off-site damage. Reclamation practices vary by type of operation and by applicable federal, state, and local requirements. However, reclamation generally involves resloping pit walls to minimize erosion, removing or stabilizing buildings and other structures to reduce safety risks, removing mining roads to prevent damage from future traffic, and capping and revegetating leach heaps, tailings, and waste rock piles to control erosion and minimize the potential for contamination of groundwater from acid rock drainage

and other potential water pollution problems.¹¹ Addressing potential water pollution problems may involve long-term monitoring and treatment. Reclamation costs for hardrock mining operations vary by type and size of operation. For example, the costs of plugging holes at an exploration site are usually minimal. Conversely, reclamation costs for large mining operations using leaching practices can be in the tens of millions of dollars.

Laws and Regulations for Hardrock Operations

Hardrock operations on BLM land are regulated by federal and state laws. Under the General Mining Act of 1872 (Mining Act),¹² an individual or corporation can establish a claim to any hardrock mineral on public land.¹³ Upon recording a mining claim with BLM, the claimant must pay an initial \$25 location fee and a \$100 maintenance fee annually per claim;¹⁴ the claimant is not required to pay royalties on any hardrock minerals extracted. The Mining Act was designed to encourage the settlement and development of the West; it was not designed to regulate the associated environmental effects of mining. The number of hardrock operations left abandoned throughout the West after operations ceased is not known but is estimated to be in the hundreds of thousands, many of which pose environmental, health, and safety risks. Until Congress passed the Federal Land Policy and Management Act of 1976 (FLPMA),¹⁵ development of hardrock minerals on public land remained largely unregulated. FLPMA

¹¹Acid drainage occurs when water and oxygen contact rock with sulfides and sulfates and form acids that can be released into the environment.

¹²30 U.S.C. § 22.

¹³Under U.S. mining laws, minerals are classified as locatable, leasable, or saleable. Locatable minerals—often referred to as hardrock minerals—include, for example, copper, lead, zinc, magnesium, gold, silver, and uranium. Only hardrock minerals continue to be “claimed” under the Mining Act. 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.

¹⁴The location and maintenance fees were reduced from \$30 and \$125, respectively, by the Consolidated Appropriations Act, 2005, and will not be reinstated until, among other things, BLM establishes a nationwide system to track the length of time between submission and approval of a hardrock plan of operation.

¹⁵Pub. L. No. 94-579 (1976) (codified at 43 U.S.C. § 1701).

states that the Secretary of the Interior shall take any action necessary to prevent “unnecessary or undue degradation” of public land.¹⁶

Under FLPMA, BLM has developed and revised regulations and issued policies to prevent unnecessary or undue degradation of BLM land from hardrock operations. BLM issued regulations that took effect in 1981 on how these operations were to be conducted.¹⁷ Named for their location in the *Code of Federal Regulations*, the “3809” regulations classify surface disturbance generated by hardrock operations into three categories: casual use, notice-level operations, and plan-level operations. For all three operation levels, the operator must prevent unnecessary and undue degradation and complete reclamation at the earliest feasible time. BLM issued the revised 3809 regulations, effective in part in January 2001 that, among other things, changed the definition of the types of operations, modified the reclamation requirements, and strengthened the financial assurance requirements. Table 1 describes each type of operation under both the old and new regulations.

¹⁶In addition, hardrock mining operations on BLM land may be subject to a variety of federal environmental laws, such as the National Environmental Policy Act, the Endangered Species Act, and the Clean Water Act. States can also pass their own laws for regulating hardrock operations in their state, including operations on BLM land.

¹⁷BLM’s Surface Management Program for hardrock operations began in 1981 with the issuance of these regulations (43 C.F.R. 3809), which apply only to hardrock operations.

Table 1: Description of Types of Hardrock Operations under 1981 and 2001 BLM Regulations

Type of operation	Description under 1981 regulations	Description under 2001 regulations
Casual use	<ul style="list-style-type: none"> Activities ordinarily resulting in only negligible disturbance of public land and resources Does not require the operator to notify BLM 	<ul style="list-style-type: none"> Activities ordinarily resulting in no or negligible disturbance of public land or resources Does not require the operator to notify BLM
Notice-level operation	<ul style="list-style-type: none"> Any operation that causes a surface disturbance of 5 acres or less Operator must notify BLM 15 calendar days before commencing operations, but BLM does not approve the notice 	<ul style="list-style-type: none"> Exploration operations that disturb 5 acres or less of public land Operator must notify BLM 15 calendar days in advance of causing surface disturbance, but BLM does not approve the notice
Plan-level operation	<ul style="list-style-type: none"> Any operation that disturbs more than 5 acres or any operation, other than casual use, in BLM special status areas, such as the national wild and scenic river system Plans of operations must be approved by BLM 	<ul style="list-style-type: none"> Any operation greater than casual use, except for notice-level operations, and operations causing surface disturbance greater than casual use in special status areas, such as designated wilderness areas and national monuments Plans of operations must be approved by BLM^a

Source: 1981 and 2001 federal regulations.

^aOther plan-level operations include bulk sampling operations, in which 1,000 tons or more of presumed ore for testing will be removed.

While the performance standards for reclamation under the 1981 and 2001 regulations remain the same, the 2001 regulations specifically identified the components involved in reclamation. For standards under both regulations, the operator of a notice- or plan-level operation must reclaim the disturbed land at the earliest time that is economically and technically feasible, except to the extent necessary to preserve evidence of the presence of minerals, by taking reasonable measures to prevent or control on-site and off-site damage to federal land. Reclamation must include the following actions:

- saving topsoil to be applied after reshaping disturbed areas;
- taking measures to control erosion, landslides, and water runoff;
- taking measures to isolate, remove, or control toxic materials;
- reshaping the area disturbed, applying the topsoil, and revegetating disturbed areas, where reasonably practicable; and
- rehabilitating fisheries and wildlife habitat.

The 2001 regulations specified that, as applicable, reclamation components include:

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- isolating, controlling, or removing acid-forming and deleterious substances;
 - regrading and reshaping the disturbed land to conform with adjacent landforms, facilitating revegetation, controlling drainage, and minimizing erosion;
 - placing growth medium and establishing self-sustaining vegetation;
 - removing or stabilizing buildings, structures, or other support facilities;
 - plugging drill holes and closing underground workings; and
 - providing for post-mining monitoring, maintenance, or treatment.

The 2001 regulations also significantly strengthened the financial assurance requirements for hardrock mining operations. Under the 1981 regulations, BLM had the option of requiring an operator to obtain a bond or other financial assurances for plan-level hardrock operations and for notice-level operations where the operator had a record of noncompliance.¹⁸ However, BLM rarely exercised this option.¹⁹ In 1990, BLM instructed its officials to require operators of plan-level operations to provide (1) financial assurances of \$1,000 per acre for exploration and \$2,000 per acre for mining and (2) financial assurances for all estimated reclamation costs for operations that used leaching chemicals and for operators with a record of noncompliance. Under the 2001 regulations, BLM requires all notice- and plan-level hardrock operators to provide financial assurances that cover all estimated reclamation costs for all plan- and notice-level operations before exploration or mining operations begin. Casual-use operations do not have to provide financial assurances.

The 2001 regulations amended the types of financial assurances that can be used. The 1981 regulations identified three types of acceptable financial assurances—bonds, cash, and negotiable U.S. securities. BLM could also accept evidence of an existing bond pursuant to state law or regulations if BLM determined that the coverage would be equivalent to the amount that

¹⁸For notice-level operations with a history of noncompliance, BLM had to first require the operator to file a plan of operation.

¹⁹[GAO/T-RCED-89-13](#).

would be required by BLM. Some operations used corporate guarantees, which were allowable under state laws and regulations. In contrast, the 2001 regulations prohibit the use of corporate guarantees for new operations and state that corporate guarantees currently in use under an approved BLM and state agreement cannot be increased or transferred. The 2001 regulations specify the following types of financial assurances as acceptable:

- surety bonds that meet the requirements of U.S. Treasury Circular 570;²⁰
- cash in an amount equal to the required dollar amount of the financial assurance and maintained in a federal depository account of the U.S. Treasury by BLM;
- irrevocable letters of credit from a bank or other financial institution organized or authorized to transact business in the United States;
- certificates of deposit or savings accounts not in excess of the Federal Deposit Insurance Corporation's maximum insurable amount;
- negotiable U.S., state, and municipal securities or bonds with a market value of at least the required dollar amount of the financial assurance maintained in a Securities Investors Protection Corporation insured trust account by a licensed securities brokerage firm for the benefit of the Secretary of the Interior;²¹
- investment-grade securities that (1) have a Standard and Poor's rating of AAA or AA, or an equivalent rating from another nationally recognized securities rating service, (2) have a market value of at least the required dollar amount of the financial assurance, and (3) are maintained in a Securities Investors Protection Corporation insured trust account by a licensed securities brokerage firm for the benefit of the Secretary of the Interior;

²⁰The Department of the Treasury reviews insurance companies to determine whether they qualify to underwrite insurance and annually publishes the list of qualified companies in Treasury Circular 570.

²¹The Securities Investors Protection Corporation is a nonprofit corporation created by Congress and funded by its member securities brokers and dealers to protect investors by returning cash, stock, and other securities if the brokerage firm goes bankrupt.

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- certain types of insurance underwritten by a company having an A.M. Best rating of “superior” or an equivalent rating from another nationally recognized insurance rating service;
 - evidence of an existing financial assurance under state law or regulations, as long as the financial assurance is held or approved by the state agency for the same operations covered by the notice or plan of operation, has a value equal to the required amount, and is redeemable by BLM. These financial assurances can include any of the above instruments. In addition, they can include state bond pools,²² as well as corporate guarantees that existed on January 20, 2001, under an approved BLM and state agreement; or
 - trust funds or other funding mechanisms available to BLM. The 2001 regulations require operators, when BLM identifies a need for it, to establish a trust fund or other funding mechanism to ensure continuation of long-term treatment to achieve water quality standards and for other long-term, post-mining maintenance requirements.

Finally, under the 2001 regulations, all notice- and plan-level operators must submit a reclamation plan and an associated cost estimate with its notice or plan of operation and any modifications or renewals. The financial assurance amount is based on the cost estimate. Furthermore, the associated cost estimate must reflect the cost to BLM as if the agency had to contract with a third party to complete reclamation. In addition, BLM issued guidance in February 2003, which was revised in March 2004, setting forth factors that should be considered in developing cost estimates. For example, estimates should include administrative and other indirect costs. The regulations require BLM to periodically review the estimates to determine if the estimate should be updated to reflect any necessary changes in the cost of reclaiming the operation.

BLM’s Management and Oversight of Financial Assurances

BLM headquarters manages and oversees hardrock operations as well as its other programs, primarily through its headquarters, 12 state offices, and 157 field offices. Within headquarters, the Minerals, Realty, and Resource

²²The state must agree that, upon BLM’s request, it will use part of the bond pool to meet reclamation obligations on public land. In addition, the BLM state office director must determine that the bond pool provides the equivalent level of protection as otherwise required.

Protection group is responsible for administering the mining laws and establishing hardrock operations policies. This office is also responsible for evaluating the effectiveness of policy implementation at the state- and field-office levels. For example, in 2004, BLM conducted a survey of 18 of its 157 field offices to determine, among other things, whether operators had obtained financial assurances as required.

Each state office is headed by a state director who reports to the Director of BLM in headquarters. BLM state office delegations of responsibilities for financial assurances vary from state to state. For example, some state offices verify the authenticity of the financial assurance and confirm that financial assurances are payable to BLM. The state offices manage BLM programs and land in the geographic areas that generally conform to the boundary of one or more states. The state offices are Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Wyoming, and Eastern States. BLM has little land in the east and the Eastern state office is responsible for all of the states in the east. Figure 3 shows the boundaries of the 12 BLM state offices.

Figure 3: The Boundaries of the 12 BLM State Offices



The 157 BLM field offices, which are headed by field managers who report to the state directors, are responsible for implementing several BLM programs and policies, including many aspects of the hardrock mining program. The field offices maintain case files on each hardrock operation in their jurisdiction. Field office staffs are generally responsible for, among other things, (1) reviewing notices and plans of operations, along with associated reclamation plans and cost estimates; (2) determining the amount of financial assurances needed to pay reclamation costs; and (3) inspecting hardrock operations for compliance with regulations.

In addition, BLM has specialized centers, which are organizationally affiliated with headquarters, to carry out a variety of activities. One of these centers, near Denver, Colorado, administers BLM's LR2000, which is an automated information system used to collect and store information on BLM land and programs, including hardrock operations. LR2000 includes several subsystems that contain information on hardrock operations and the financial assurances provided by operators. Specifically, the Case Recordation System contains information on hardrock operations, such as the name and address of the operator; the location, type, and size of the operation; and inspection information. The other subsystem—the Bonding and Surety System—contains information on financial assurances, such as the types and amounts of financial assurances and the names of the providers. BLM state and field offices both enter data into LR2000 and thus are primarily responsible for the data's accuracy and completeness. In most instances, field offices are responsible for entering data about hardrock operations into the Case Recordation System, while BLM state offices are more often responsible for entering data about financial assurances into the Bonding and Surety System.

BLM Identified 11 Types of Financial Assurances Valued at Approximately \$837 Million, but These Financial Assurances May Not Fully Cover Reclamation Costs

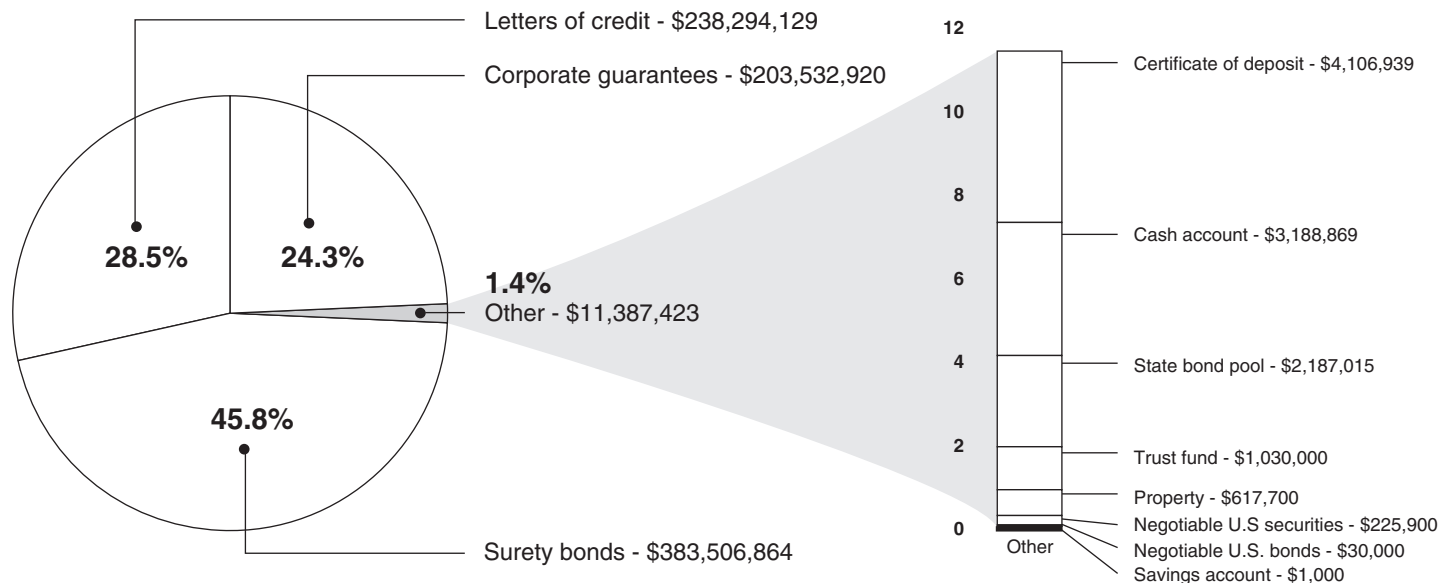
BLM reported that, as of July 2004, hardrock operators were using 11 types of financial assurances, valued at approximately \$837 million, to cover reclamation costs on BLM land in 12 western states. Surety bonds, letters of credit, and corporate guarantees accounted for almost 99 percent of this \$837 million. However, these financial assurances may not fully cover all future reclamation costs if operators fail to complete required reclamation. BLM reported that it had approximately 2,500 existing notice- and plan-level hardrock operations as of July 2004 and that some of these operations do not have financial assurances, and some have no or outdated reclamation plans and/or cost estimates on which financial assurances should be based. While BLM state office explanations indicated that financial assurances are not yet required for some operations, other

explanations indicated that some operations may not be complying with BLM's requirements.

Surety Bonds, Letters of Credit, and Corporate Guarantees Are the Financial Assurances Currently Used to Cover Most of the Estimated Reclamation Costs

As of July 2004, operators were using 11 different types of financial assurances valued at approximately \$837 million to guarantee reclamation costs for BLM land disturbed by hardrock operations, according to our analysis of survey results. Almost 99 percent of the \$837 million in financial assurances is in the form of surety bonds, letters of credit, and corporate guarantees. Figure 4 shows the types of financial assurances used, their value, and the percentage of the total value accounted for by each type.

Figure 4: Types of Financial Assurances Used, Value, and Percentage of Total Value



Source: GAO analysis of BLM survey responses.

BLM reported that all of the current notice- and plan-level hardrock operations on BLM land—2,490 operations—are located in 12 western

states.²³ Table 2 shows the states with existing hardrock operations and the types and amounts of financial assurances operators are currently using in each state.

²³BLM reported a total of 1,704 notice-level operations and 786 plan-level hardrock operations in these 12 states. The BLM Montana state office, which also has jurisdiction over North Dakota and South Dakota, reported that South Dakota has only two hardrock operations and that both have ceased operating and are being reclaimed by the operators. For this reason, South Dakota was not included as a state with existing hardrock operations.

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Table 2: Type and Amount of Financial Assurances for 12 States with Existing Hardrock Operations, as of July 2004

State	Number of operations	Surety bonds	Letters of credit	Corporate guarantees
Alaska	240	\$0	\$0	\$0
Arizona	185	3,802,763	571,907	0
California	303	3,986,000	737,000	0
Colorado	132	1,600,000	19,313	0
Idaho	55	242,340	305,050	0
Montana	180	103,831,894	3,996,803	0
New Mexico	35	3,307,406	921,293	0
Nevada	774	230,769,986	192,058,810	200,000,000
Oregon	175	34,000	0	0
Utah	216	1,719,343	365,699	122,000
Washington	139	a	a	a
Wyoming	56	34,213,132	39,318,254	3,410,920
Total	2,490	\$383,506,864	\$238,294,129	\$203,532,920

Certificates of deposit	Cash accounts	State bond pools	Trust funds	Property	Negotiable U.S. securities	Negotiable U.S. bonds	Savings accounts	Total
\$0	\$0	\$1,000,000	\$0	\$0	\$0	\$0	\$0	\$1,000,000
113,085	239,343	0	0	0	45,900	0	0	4,772,998
184,000	27,800	0	0	0	0	0	1,000	4,935,800
116,000	1,600	0	0	0	0	0	0	1,736,913
140,969	77,173	0	0	0	0	30,000	0	795,532
708,081	153,452	0	0	617,700	0	0	0	109,307,930
61,009	9,281	0	0	0	0	0	0	4,308,289
1,931,761	2,526,893	1,187,015	1,030,000	0	180,000	0	0	629,684,465
16,000	2,000	0	0	0	0	0	0	52,000
393,034	128,109	0	0	0	0	0	0	2,728,185
a	a	a	a	a	a	a	a	a
443,000	23,218	0	0	0	0	0	0	77,408,524
\$4,106,939	\$3,188,869	\$2,187,015	\$1,030,000	\$617,700	\$225,900	\$30,000	\$1,000	\$836,721,336

Source: GAO analysis of BLM survey responses.

^aThe BLM Oregon office did not provide information on the amount of financial assurances available to reclaim the existing hardrock operations it identified in Washington state on BLM land. The office reported no individual bonds are used for operations in Washington state, but that a statewide bond is held by the Washington state Department of Ecology.

The information below describes the types of financial assurances currently being used and BLM state offices' views of the effectiveness of these assurances in minimizing losses to the federal government if the operator does not complete reclamation.

Surety bonds. Surety bonds are a third party guarantee that an operator purchases from an insurance company. As a third party with possible financial responsibility for reclamation, the insurance company has a strong incentive to monitor the operator's environmental safety record and efforts to fulfill reclamation obligations. If the operator does not complete required reclamation once operations cease, the insurance company has the option of performing the reclamation work or paying the financial assurance value to BLM or the designated state agency for reclamation. According to industry representatives and experts, insurance companies are amenable to issuing surety bonds for hardrock operations for predictable reclamation activities that will occur in a defined time frame. As table 2 shows, operators in 10 of the 12 states with hardrock operations

are using surety bonds. In 7 of these 10 states, BLM state offices rated surety bonds as “effective” or “very effective” for minimizing losses to the federal government; in the other three states, BLM state offices reported that they had no experience (that is, they had not taken steps to obtain funds from the financial assurance provider) in using this type of assurance in minimizing losses to the federal government.²⁴

Letters of credit. Letters of credit, which hardrock operators typically purchase from a bank or other financial institution, require the institution to pay BLM or the designated state agency the value of the letter of credit if the purchaser does not complete the required reclamation. Depending on the financial condition of the operator, the financial institution may require a deposit or collateral. Letters of credit are used in nine states with hardrock operations. In seven of these states, BLM state offices rated letters of credit as “moderately effective” or “very effective” in minimizing losses to the federal government; in the other two states, the BLM state offices reported that they had no experience in using this type of assurance in minimizing losses to the federal government.

Corporate guarantees. Corporate guarantees are promises by operators, sometimes accompanied by a test of financial stability, to pay reclamation costs, but do not require that funds be set aside to pay such costs. Although BLM prohibits new corporate guarantees in its 2001 regulations, 3 of the 12 states had existing corporate guarantees that were to cover almost one fourth of the total estimated reclamation costs, as of July 2004. Most of these corporate guarantees—\$200 million of the approximately \$204 million—are for operations in Nevada. The Nevada BLM state office rated corporate guarantees as “not effective” for minimizing losses to the federal government. Operators in Utah and Wyoming are also using corporate guarantees, although in relatively smaller amounts of \$122,000 and \$3.4 million, respectively. The Utah BLM state office reported that it has no experience in using this type of financial assurance to minimize losses to the federal government and therefore did not rate the effectiveness of this type of assurance. The Wyoming BLM state office rated corporate guarantees as a “very effective” financial assurance, although the office

²⁴We asked each of the 12 BLM state offices, for each state within their jurisdiction with hardrock operations, to rate the effectiveness of each type of financial assurance in minimizing losses to the federal government based on their experience. The rating categories were very effective, effective, moderately effective, somewhat effective, and not effective.

reported it had no experience with an operation that had this type of financial assurance and failed to reclaim the land.

State bond pools. Operators in two states—Alaska and Nevada—use state bond pools to cover reclamation costs. According to Alaska BLM state office officials, all hardrock operators on BLM land in Alaska participate in the state bond pool.²⁵ Operators in the Alaska bond pool do not develop individual cost estimates for reclaiming the land disturbed by their operations. The bond pool, administered by the Alaska Department of Natural Resources, had \$1 million in reclamation funds as of July 2004.²⁶ According to Alaska BLM state office officials, if the bond pool funds are not sufficient to cover reclamation costs, the state of Alaska has agreed to cover any additional costs. The Alaska BLM state office rated the bond pool as “effective” in minimizing financial losses to the federal government. The office also reported that to date no requests or claims have been initiated to use bond pool funds for reclamation because either BLM has successfully negotiated with the operators to have the operations reclaimed, or the operations are pending further action.

The Nevada reclamation bond pool—which had about \$1.2 million as of July 2004—is open to operators on BLM or private lands. The state’s Division of Minerals administers this pool that was designed to help smaller operations that may have difficulty securing other forms of financial assurances. The Nevada bond pool does not establish the amount of the assurance required for each operation; this is typically done by BLM for operations on BLM land. The maximum bond amount for a participant is

²⁵The cost to an operator to participate in the Alaska state bond pool is calculated by multiplying the total number of acres to be disturbed by an operator by \$150.00. The \$150.00 includes a refundable reclamation deposit of \$112.50 per acre and an annual nonrefundable administrative fee of \$37.50 per acre. The fees for entry into the Alaska state bond pool were determined to be the average costs for reclamation per acre in the state for placer operations—those that involve extracting gold or other minerals from stream or beach sediment by gravity using water separation and typically do not use leaching chemicals. Operations using cyanide or other chemicals for leaching are not authorized to use the Alaska state bond pool and must secure another form of financial assurance.

²⁶The Alaska bond pool covers all hardrock operations on federal, state, and private lands in the state.

\$3 million.²⁷ The Nevada BLM state office rated the state's bond pool as "very effective" in minimizing financial losses but noted that the pool had not been used as of our July 2004 survey. Subsequently, the office told us that the bond pool was used for the first time in late 2004, when BLM requested funds from the pool to reclaim a hardrock operation.

Certificates of deposit and savings accounts. Certificates of deposit and savings accounts can be used to guarantee reclamation costs but must not exceed the maximum amount insured by the Federal Deposit Insurance Corporation. Operators use certificates of deposit in 10 of the 12 states with hardrock operations. BLM state offices in 7 of these 10 states rated these assurances as "effective" or "very effective" in minimizing losses to the federal government. Another state office rated this type of assurances as "moderately effective" and noted that care must be given to ensure that BLM is the beneficiary of the certificate. In the other two states, the BLM state offices reported that they had no experience with this type of assurance in minimizing losses to the federal government. Operators in one state are using savings accounts, and the BLM rated savings accounts as "very effective" for minimizing losses to the federal government.

Cash accounts. Operators provide cash to BLM to guarantee reclamation costs, and BLM must deposit and maintain this cash in a federal depository account of the U.S. Treasury. Operators in 10 of the 12 states with hardrock operations use cash accounts. BLM state offices in 8 of these 10 states rated cash as "very effective" for minimizing losses to the federal government. In the other two states, the offices reported that they had no experience with using this type of assurance to minimize losses to the federal government.

Trust funds. The 2001 regulations require operators, when BLM identifies a need for it, to establish a trust fund or other funding mechanism to ensure the continuation of long-term treatment to achieve water quality standards and other long-term, post-mining requirements. Funds are placed in an interest-bearing trust account by an operator with BLM as the beneficiary.

²⁷For bonds under \$10,000, the deposit is 100 percent of the bond amount, and the annual premium is 3 percent of the bond amount. For bonds of \$10,000 and greater, the deposit is 50 percent of the bond amount, escalating linearly to 80 percent at the cap; and the annual premium is 10 percent of the bond amount, declining linearly to 5 percent at the cap. Interest earned remains in the pool's account, and the deposit is returned to the operator when the bond is released following successful reclamation. Premiums are not returned to the operator.

The trust account should accrue sufficient funds to be sustained in perpetuity. The Nevada BLM state office reported one trust fund with just over \$1 million and said it did not have sufficient experience to determine the effectiveness of this type of assurance in minimizing losses to the federal government.

Property. The Montana BLM state office reported that one operator has used \$617,000 in property—consisting of 17 mining claims on private land owned by the operator—as a financial assurance. According to BLM state office officials, the operator pledged these properties as collateral. The Montana BLM state office reported that it had no experience using property to minimize losses to the federal government. We note that the revised federal regulations do not identify property as an acceptable type of financial assurance.

Negotiable U.S. securities and bonds. Operators in two states—Arizona and Nevada—use negotiable U.S. securities. The Arizona BLM state office reported it had no experience in using this type of assurance to minimize losses to the federal government. The Nevada BLM state office rated this type of assurance as “effective.” The Idaho BLM state office reported that operators in the state use U.S. bonds to guarantee reclamation costs and that the state has no experience using bonds to minimize losses to the federal government.

Although the \$837 million in financial assurances that BLM reported is the most complete information available, we note that this total may not include all financial assurances for hardrock operations on BLM land. Some BLM state offices had difficulty determining the value of financial assurances for hardrock operations in their jurisdictions when designated state agencies hold these assurances. For example, the state offices reported the following:

- *Washington.* The Oregon BLM office did not provide the value of financial assurances for the 139 hardrock operations it identified in Washington state.
- *California.* The information the California BLM office provided may not be complete because some financial assurances may be held by California’s 58 county agencies, and the state office did not contact each county agency to complete our survey.

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- *Montana.* The Montana BLM office does not track state-held financial assurances for hardrock operations on BLM land. BLM obtained information on these assurances for our survey from the state and reported that this information was not all inclusive but appeared to be reasonably accurate.

See appendix II for the number of notice- and plan-level hardrock operations and associated financial assurances for each state identified by BLM state offices, as of July 2004.

Existing Financial Assurances May Not Fully Cover Future Reclamation Costs

Existing financial assurances for reclaiming BLM land disturbed by hardrock operations may not fully cover future reclamation costs for the approximately 2,500 hardrock operations that BLM reported if operators do not complete required reclamation. The costs may not be fully covered because BLM reported that some of these operations do not have financial assurances, and some have no or outdated reclamation plans and/or cost estimates. BLM's explanations for this lack of coverage indicate that some operators may not be complying with BLM requirements.

As of July 2004, BLM state offices reported that some notice- or plan-level operations in 9 of the 12 states with existing hardrock operations did not have financial assurances. For example, BLM state offices reported that in five states (Arizona, California, Idaho, New Mexico, and Utah) more than 5 percent of both notice- and plan-level operations did not have financial assurances. All of the operations in two other states—Colorado and Wyoming—had financial assurances, and the Oregon BLM state office reported that all plan-level operations in Washington state had financial assurances, but the office did not know the percentage of notice-level hardrock operations without financial assurances in Washington state. Table 3 shows the number of notice- and plan-level hardrock operations and the percentage of these operations without financial assurances for each of the 12 states with existing hardrock operations.

Table 3: Number of Notice- and Plan-Level Hardrock Operations and the Percentage of These Operations BLM Reported Had No Financial Assurances, by State, as of July 2004

State	Number of notice-level hardrock operations	Percentage of notice-level hardrock operations without financial assurances	Number of plan-level hardrock operations	Percentage of plan-level hardrock operations without financial assurances
Alaska	134	1-4	106	0
Arizona	130	50-74	55	25-49
California	205	5-14	98	15-24
Colorado	102	0	30	0
Idaho	32	5-14	23	5-14
Montana	150	1-4	30	0
Nevada	450	0	324	1-4
New Mexico	24	15-24	11	15-24
Oregon	165	1-4	10	0
Utah	167	50-74	49	15-24
Washington	127	Do not know	12	0
Wyoming	18	0	38	0

Source: GAO analysis of BLM survey responses.

Note: Based on our analysis of survey responses, we identified the range of percentages of hardrock operations that did not have financial assurances in each of the states with hardrock operations. Those percentage ranges were 0, 1-4, 5-14, 15-24, 25-49, 50-74, 75-99, and 100 percent.

For the states in which BLM state offices indicated that less than 100 percent of their hardrock operations had financial assurances, we asked them to provide an explanation. While some of the explanations indicated that financial assurances are not yet required for some operations, such as those that are pending BLM acceptance or have not yet begun exploration or mining, others indicated that the operations may not be complying with BLM's requirements. The following explanations provided by BLM state offices for the lack of financial assurances suggest that some operators may not be complying with applicable financial assurance requirements.

- *Alaska.* The operator failed to submit state bond pool fees on time.
- *California.* Some older operations may not have financial assurances.

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- *Idaho.* The office could not find records of financial assurance for two plan-level operations.
 - *Nevada.* Some operations have been terminated by the state bond pool, operators have gone bankrupt, or operations have been abandoned and the operator cannot be found.

BLM state offices also reported that, as of July 2004, some hardrock operations on BLM land have no or outdated reclamation plans and/or reclamation cost estimates. Specifically, BLM state offices reported that some existing hardrock operations in 9 of the 12 states did not have reclamation plans and/or cost estimates. For example, BLM state offices reported that in three states (Arizona, California, and Utah) both types of operations (notice- and plan-level operations) were missing some reclamation plans and cost estimates. In addition, according to BLM state office officials, all hardrock operators on BLM land in Alaska currently participate in the Alaska bond pool and do not develop cost estimates. All of the operations in two other states—New Mexico and Wyoming—had both reclamation plans and cost estimates, and the Oregon BLM office reported that in Washington state all plan-level operations have reclamation plans and cost estimates, but it did not know the percentage of notice-level hardrock operations without plans and estimates. Table 4 shows the percentage of BLM’s notice- and plan-level hardrock operations without reclamation plans and cost estimates, as of July 2004.

Table 4: Reported Percentage of Notice- and Plan-Level Hardrock Operations without Reclamation Plans and Cost Estimates, by State, as of July 2004

State	Percent of operations without reclamation plans		Percent of operations without cost estimates	
	Notice-level	Plan-level	Notice-level	Plan-level
Alaska	1-4	0	100 ^a	100 ^a
Arizona	50-74	25-49	50-74	25-49
California	1-4	15-24	15-24	1-4
Colorado	5-14	0	0	0
Idaho	0	0	5-14	1-4
Montana	0	0	1-4	0
Nevada	0	0	0	1-4
New Mexico	0	0	0	0
Oregon	1-4	0	1-4	0
Utah	50-74	15-24	50-74	15-24
Washington	Do not know	0	Do not know	0
Wyoming	0	0	0	0

Source: GAO analysis of BLM survey responses.

Note: Based on our analysis of survey responses, we identified the ranges of the percentages of hardrock operations that did not have reclamation plans and cost estimates in each of the states with hardrock operations. Those ranges were 0, 1-4, 5-14, 15-24, 25-49, 50-74, 75-99, and 100 percent.

^aAll of the Alaska operations are covered by the Alaska state bond pool and do not develop cost estimates.

For the states in which BLM state offices reported that less than 100 percent of their operations had reclamation plans and/or cost estimates, we asked BLM to provide an explanation. All notice- and plan-level operations are required to have reclamation plans and cost estimates. The following explanations provided by BLM state offices for the lack of reclamation plans and/or cost estimates suggest that some operators may not be complying with financial assurance requirements.

- *Arizona.* Some of the older plan-level operations may still have financial assurances that were calculated on the basis of \$2,000 per acre, which was the policy under previous federal regulations, rather than all of the estimated costs of reclamation as the 2001 regulations now require.
- *Colorado.* No reclamation plan was required when some of the notices were submitted.

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- *Idaho.* A record of a cost estimate for two plans could not be found.
 - *Oregon.* Not all of the notice-level operations have a reclamation plan because of a general backlog in updating reclamation plans, and reclamation cost estimates are still being developed in a few cases.

In addition, three state offices reported that some reclamation plans and cost estimates had not been updated. For example, the California BLM state office reported that some of the older reclamation plans for operations in that state have not been updated because of a workload backlog and staff vacancies. Consequently, these plans and estimates may not provide a sound basis for establishing financial assurances to cover all future reclamation costs.

Like our survey results, the results of the 2004 BLM survey of 18 of its 157 field offices showed that some hardrock mining operations under the jurisdiction of 7 field offices did not have financial assurances that met BLM's requirements in fiscal year 2003. For example, one field office reported that it did not have financial assurances that met BLM's requirements because none of the reclamation cost estimates for plan-level operations included indirect costs. Another field office had a backlog of nearly 80 plan-level operations that had not had their reclamation cost estimates updated because, among other things, the office did not have sufficiently trained staff to review updates. In yet another field office, higher priority work prevented timely updates of some reclamation cost estimates.

Financial Assurances Were Not Always Adequate to Pay All Estimated Costs for Required Reclamation for Hardrock Operations That Had Ceased and Not Been Reclaimed by Operators

BLM identified 48 hardrock operations on BLM land that had ceased and not been reclaimed by operators since it began requiring financial assurances. BLM reported that the most recent cost estimates for reclamation required by applicable plans and federal regulations for 43 of these operations totaled about \$136 million, with no adjustment for inflation; it did not report reclamation cost estimates for the other 5

operations.²⁸ However, as of July 2004, financial assurances had provided or were guaranteeing \$69 million, and federal agencies and others had provided \$10.6 million to pay estimated reclamation costs for the 48 operations, leaving \$56.4 million of reclamation costs unfunded. In particular, financial assurances were not adequate to pay all estimated costs for required reclamation for 25 of the 48 operations because (1) some operations had no assurances, (2) some operations' assurances were less than the most recent reclamation cost estimates, and (3) some financial assurance providers declared bankruptcy and could not pay. In addition, for about half of the remaining 23 operations, cost estimates may be understated because the cost estimates may not have been updated to reflect inflation or other factors that could increase reclamation costs. Furthermore, the \$136 million cost estimate is understated to the extent that BLM did not identify or report information on all hardrock operations that had ceased and not been reclaimed by operators as required. Finally, according to BLM officials, required reclamation had been completed for only 5 of the 48 operations as of July 2004, but they believe it is likely that required reclamation will be completed for 28 of the remaining 43 operations.

BLM Identified 48 Hardrock Operations That Had Ceased and Not Been Reclaimed by Operators Since It Began Requiring Financial Assurances and About \$136 Million in Estimated Costs for Required Reclamation

BLM identified 48 hardrock operations in seven states that had ceased and not been reclaimed by operators, as required by applicable reclamation plans and federal regulations, since it began requiring financial assurances.²⁹ The number of operations BLM identified in each of the seven states, along with the primary minerals explored, mined, and/or processed, and the operating authority for the 48 operations are shown in table 5. Appendix III, table 14, contains additional information about these operations.

²⁸BLM reported estimates before and/or after operations ceased. (See app. III, table 17 for details.) We used the most recent complete cost estimate to determine total estimated costs. (See app. I for detailed methodology.)

²⁹For the other six states with hardrock operations—Colorado, New Mexico, Oregon, South Dakota, Utah, and Wyoming—BLM reported that no operations had ceased and not been reclaimed by operators since it began requiring financial assurances.

Table 5: Number and Selected Characteristics of 48 Hardrock Operations Reported by BLM as Ceased and Not Reclaimed by Operators Since BLM Began Requiring Financial Assurances, by State, as of July 2004

States	Number of hardrock operations reported by BLM as ceased and not reclaimed by operators	Primary hardrock minerals being explored, mined, or processed			Authority	
		Gold	Other minerals	Unidentified	Plan-level	Notice-level
Alaska	4	4	0	0	4	0
Arizona	6	6	0	0	5	1
California	2	2	0	0	2	0
Idaho	1	0	1 ^a	0	1	0
Montana	3	3	0	0	2	1
Nevada	29	25	4 ^b	0	26	3
Washington	3	1	0	2	3	0
Total	48	41	5	2	43	5

Source: GAO analysis of BLM survey responses.

^aThe primary mineral explored and mined at this operation was limestone.

^bThe primary mineral was different for each of these four operations: one mined copper, another silver, and a third zinc; the fourth was a mill site for platinum/gold.

According to BLM officials in each of the seven states, BLM had taken steps to compel operators of most of the 48 operations to reclaim BLM land. For example, it had sent notices of noncompliance (24 operations) and taken administrative, legal, or other actions (19 other operations), such as revoking plans of operations. BLM took no action to compel reclamation of the remaining five operations. However, none of the operators for these 48 operations completed reclamation, primarily because of bankruptcy (30 operations). Appendix III, table 16, details the actions BLM took to compel operators to complete reclamation and the reasons reclamation was not completed.

BLM reported reclamation cost estimates for 43 of the 48 operations that had ceased and not been reclaimed by the operators; it did not report estimates for the other 5 operations—2 in Alaska, 2 in Nevada, and 1 in Arizona. The most recent estimates as of July 2004 indicated that the total

reclamation cost for the 43 operations was about \$136 million.³⁰ Almost 99 percent of this estimated cost was associated with operations in Montana and Nevada—primarily for the Zortman and Landusky mining operation in Montana (\$85 million) and the Paradise Peak operation (\$21.2 million) and MacArthur Mine operation (\$17 million) in Nevada. Clearly, the total cost estimate would be higher if the costs for the 5 operations with no estimates were included. The number of hardrock operations for which BLM reported cost estimates and the value of the most recent cost estimates, as of July 2004, for each of the seven states is shown in table 6. Appendix III, table 17, provides the reported estimates for each of the 43 operations.

Table 6: Cost Estimates for Required Reclamation of 43 Hardrock Operations with Cost Estimates Reported by BLM as Ceased and Not Reclaimed by Operators Since BLM Began Requiring Financial Assurances, by State, as of July 2004

State	Number of hardrock operations with cost estimates	Most recent BLM-reported reclamation cost estimates
Alaska	2	\$639,000
Arizona	5	944,439
California	2	17,431
Idaho	1	12,000
Montana	3	85,502,013
Nevada	27	48,840,972
Washington	3	33,825
Total	43	\$135,989,680

Source: GAO analysis of BLM survey responses.

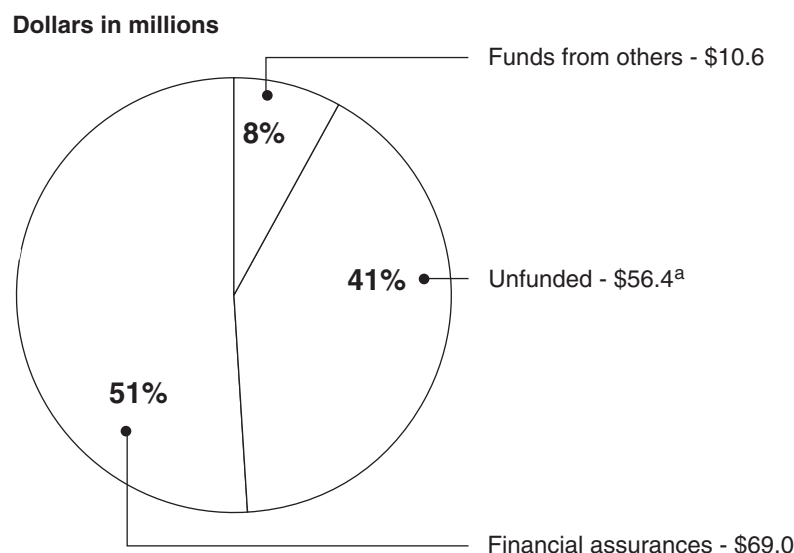
Financial Assurances and Funds Provided by Others Were Not Adequate to Pay All of the Estimated \$136 Million in Costs for Required Reclamation

Financial assurances and funds provided by others were not adequate to pay all of the estimated \$136 million needed to complete the required reclamation of the 43 operations for which BLM reported cost estimates. Surety bonds and other types of financial assurances had provided or were guaranteeing \$69 million of the estimated costs for required reclamation that BLM reported for these operations, or about 51 percent. According to our analysis of information BLM officials provided in response to our survey, these funds were not adequate to pay all estimated costs for

³⁰See appendix I for details on how the most recent cost estimates were identified.

required reclamation for 25 of the 48 operations. Moreover, cost estimates may be understated for 12 of the other 23 operations. In addition, funds provided by federal agencies and others paid only a fraction of the estimated reclamation costs. As a result, at least \$56.4 million, or about 41 percent, of the estimated \$136 million needed for required reclamation was unfunded, as shown in figure 5. Finally, the \$136 million cost estimate for required reclamation is understated to the extent that BLM did not identify or report information on all hardrock operations that had ceased and not been reclaimed, as required.

Figure 5: Sources and Amount of Funds Provided or Guaranteed to Pay Estimated \$136 Million in Costs for Required Reclamation for Operations that BLM Identified as Ceased and Not Reclaimed by Operators Since BLM Began Requiring Financial Assurances, as of July 2004



Source: GAO analysis of BLM survey responses.

^aThe \$56.4 million of unfunded costs includes \$4,233,465 in corporate guarantees that lost their value when the operator that guaranteed reclamation costs went bankrupt and had no funds to pay reclamation costs and \$949,350 that was not relinquished by a financially-troubled surety bond provider. When the \$56.4 million in unfunded costs is added to the \$10.6 million from others, a total of \$67 million, or about 49 percent of the total estimated cost, was not guaranteed by financial assurances.

Types of Financial Assurances
Varied but Were Not Adequate to
Pay About Half of the Estimated
Costs Needed for Required
Reclamation

Operators used a variety of types of financial assurances for 38 operations to pay or guarantee coverage of \$74.2 million of the \$136 million of estimated costs for required reclamation, as table 7 shows. (The remaining 10 operations had no financial assurances.) Operators used surety bonds, a trust fund, and corporate guarantees to guarantee almost 97 percent of these costs, with the rest guaranteed by state bond pools, letters of credit, certificates of deposit, cash, and a construction bond provided by an operator. However, as of July 2004, financial assurances had provided or were guaranteeing only \$69 million, or almost 51 percent, of the reclamation costs. This amount decreased because \$4.2 million in corporate guarantees had lost all their value when the operator that guaranteed the reclamation costs declared bankruptcy and had no funds to pay such costs, and \$949,350 was not available from a surety bond because the financially-troubled financial assurance provider paid for reclamation instead of relinquishing the bond. See appendix III, table 18, for the types of financial assurances used for each hardrock operation.

Table 7: Type and Value of Financial Assurances Used by Operators to Guarantee Reclamation Costs for 38 Operations with Financial Assurances that BLM Identified as Ceased and Not Reclaimed by Operators Since BLM Began Requiring Financial Assurances, as of July 2004

Type of financial assurance	Number of operations with financial assurances ^a	Value of financial assurances
Surety bonds ^b	22	\$55,294,010
Trust funds	1	12,300,000
Corporate guarantees ^c	3	4,233,465
Operator's construction bond	1	2,000,000
State bond pools ^d	8	340,573
Letters of credit	2	18,500
Certificates of deposit	3	17,431
Cash	3	7,076
Total^e	38^e	\$74,211,046
Less financial assurances with no value	b,c	(\$5,182,815)
Total	38^e	\$69,028,231

Source: GAO analysis of BLM survey responses.

^aTen of the 48 operations had no financial assurances.

^bAs of July 2004, one security provider had financial problems and contracted for reclamation instead of relinquishing bond funds.

^cAs of July 2004, these three corporate guarantees had lost all their value because the operator that guaranteed the reclamation costs had gone bankrupt and had no funds to pay reclamation costs. However, these operations also had surety bonds that maintained their value.

^dThis is the value for six of the eight hardrock operations; BLM did not provide the value for the other two operations.

^eDoes not add because some operations had more than one type of financial assurance.

These 38 financial assurances provided or guaranteed funds for only about half of the estimated costs for required reclamation for the 48 hardrock operations. Specifically, these financial assurances were not adequate for 25 of the 48 operations because (1) operators did not provide financial assurances for 10 hardrock operations, (2) the financial assurances that were provided were less than the most recent cost estimates for 13 operations, and/or (3) the financial assurance providers declared bankruptcy and did not have the funds to pay all reclamation costs for two other operations. (Also, 2 of the 13 operations whose financial assurances were less than the most recent cost estimates went bankrupt.) Table 8 shows the reasons financial assurances were not adequate and the

associated funding differential. Table 8 also shows that most of the difference between the value of the estimated reclamation costs and the value of the financial assurances occurred because the financial assurances were less than the most recent cost estimate.

Table 8: Reasons Financial Assurances Were Not Adequate to Pay Estimated Costs for Required Reclamation for 25 Hardrock Operations Identified by BLM as Ceased and Not Reclaimed by Operators Since BLM Began Requiring Financial Assurances, as of July 2004

Reason for inadequate financial assurances	Number of affected hardrock operations	Value of estimated reclamation costs	Value of financial assurances	Funding differential
Operations had no financial assurances	10 ^a	\$2,001,014	\$0	(\$2,001,014)
Financial assurances less than most recent cost estimates	13	128,187,236	64,445,305	(63,741,931)
Bankrupt financial assurance providers	4 ^b	1,688,006	2,638,017	950,011
Subtotal	25^c	\$131,876,256	\$67,083,322	(\$64,792,934)
Less financial assurances with no value	^d		(5,182,815)	(5,182,815)
Total	25	\$131,876,256	\$61,900,507	(\$69,975,749)

Source: GAO analysis of BLM survey responses.

^aIncludes one operation with no reported cost estimate.

^bFour operations were affected by bankrupt financial assurances providers. The \$1.7 million and \$2.6 million are the values for estimated reclamation costs and associated financial assurances, respectively, for two of these operations—County Line and Olinghouse. For the other two operations—the MacArthur Mine and the Paradise Peak operations—the values for the estimated reclamation costs (\$38.2 million) and the associated financial assurances (\$4.8 million) are included with the 13 operations for which financial assurances were less than the most recent cost estimates.

^cDoes not add because two of these operations also had financial assurances that were less than the most recent cost estimate.

^dAs of July 2004, three of the four operations affected by bankruptcy used corporate guarantees that had lost all their value because the operator that guaranteed the reclamation costs was bankrupt and one surety bond provider did not relinquish bond funds because the provider went bankrupt.

No Financial Assurances

As table 8 shows, 10 hardrock operations had no financial assurances. These operations were located in Washington (2), Arizona (4), and Nevada (4). The most recent reclamation cost estimates for 9 of these 10 operations indicated that slightly over \$2 million in reclamation costs was unfunded; BLM reported no cost estimate for the other operation. BLM officials provided the following explanations for why the 10 operations did not have the required financial assurances:

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- *Two operations in Washington.* An official in Oregon's BLM state office, which manages BLM programs in Oregon and Washington, said that two operations in Washington did not have financial assurances, probably because the responsible BLM field office did not have adequate staff to enforce compliance with this requirement. The official also said that financial assurance training had been a problem and that staff turnover in one field office meant that financial assurances were overlooked for a period of time.
 - *Four operations in Arizona.* According to BLM state office officials, the operators of two operations did not provide financial assurances, even though BLM told them that financial assurances were required. According to an official in the BLM state office, the heavy workloads associated with other BLM programs dissuaded staff from taking enforcement actions that could involve time-consuming activities, such as obtaining court orders. Furthermore, the official said that case files indicated the third operation had financial assurances sometime during the 1990s, but information on the type and amount of financial assurances after it ceased could not be found. No reason was given for the fourth operation.
 - *Four operations in Nevada.* According to BLM state office officials, operators of three operations did not provide financial assurances, even though BLM notified the operators that financial assurances were required. At one of these operations, for example, BLM's field office issued a noncompliance order that, after the operator appealed it, was upheld by the BLM state office. BLM is currently working with the state of Nevada to reclaim this operation. BLM state office officials said that the operator of another operation, who eventually went bankrupt, was never able to provide a suitable financial assurance instrument. Regarding the fourth operation—Relief Canyon—officials in BLM's responsible field office told us that the operator refused to provide financial assurances despite the field office's enforcement steps. The field office issued a noncompliance order and took other enforcement actions, such as revoking the operator's plan of operation.

The Relief Canyon gold mine is located in north-central Nevada on about 344 acres, including 295 acres of BLM land. According to BLM officials, the mine was being reclaimed when a new operator purchased it in 1995 and, at that time, the agency advised the new operator of the need for financial assurances for all required reclamation—including past and future disturbances. However, the operator never obtained the

financial assurances. According to BLM, the mine's plan of operation was last updated in October 1996, and before the operation ceased, the operator estimated reclamation costs at about \$889,000. BLM reported that, as of July 2004, 26 to 50 percent of the operation had been reclaimed. BLM officials told us that they had revoked the mine's plan of operation, operations had ceased, and the operator should complete reclamation, but the operator has appealed this revocation to Interior's Board of Land Appeals. The operator contends that he plans to either begin mining operations when he gets the funds or sell the operation. When we visited the operation in September 2004, we did not see any signs of ongoing mining activity and observed that buildings, collection pond liners, the security fence, and other structural facilities needed repair. As of June 2005, BLM was awaiting the board's decision.

Financial Assurances Were Less Than Recent Cost Estimates

As table 8 also shows, 13 operations had financial assurances that were less than the most recent cost estimates. These operations were located in Alaska (1), California (1), Montana (1), and Nevada (10). The most recent cost estimate for these 13 operations was \$128.19 million, and the value of the associated financial assurances was \$64.45 million, leaving \$63.74 million of the estimated reclamation costs with no financial assurance coverage. Table 9 shows the most recent cost estimates, compared with the value of financial assurances for each of the 13 operations. Three mining operations—Zortman and Landusky, MacArthur Mine and Paradise Peak—accounted for about 95 percent of the amount that the cost estimates exceeded the financial assurances.

Table 9: Comparison of Most Recent Cost Estimate as of July 2004 with the Value of Financial Assurances for 13 Hardrock Operations with Cost Estimates That Exceeded Financial Assurances

Hardrock operation	Location	Most recent cost estimate	Value of financial assurances	Amount cost estimate exceeded financial assurance
Gold Hill Mining	Alaska	\$500,000	\$15,000	\$485,000
Nina	California	15,000	5,000	10,000
Zortman and Landusky Mine	Montana	85,200,000	57,800,000	27,400,000
Wildhorse Canyon	Nevada	53,000	12,000	41,000
South Hy/Isabella	Nevada	169,700	22,000	147,700
Golden Butte	Nevada	1,397,000	328,942	1,068,058
Easy Jr	Nevada	668,936	365,917	303,019
Kinsley	Nevada	1,400,000	911,763	488,237
Phoenix Metals USA II Inc.	Nevada	100,000	45,904	54,096
American Canyon KOF	Nevada	21,600	5,314	16,286
16:1 Millsite	Nevada	458,000	124,017	333,983
MacArthur Mine ^a	Nevada	17,047,000	184,300	16,862,700
Paradise Peak ^a	Nevada	21,157,000	4,625,148	16,531,852
Total		\$128,187,236	\$64,445,305	\$63,741,931

Source: GAO analysis of BLM survey responses.

^aPart of these financial assurances were corporate guarantees that lost their value when the operator that guaranteed reclamation costs went bankrupt.

For these 13 hardrock operations, we identified several reasons why financial assurances were less than the most recent reclamation cost estimate. In particular:

- *Estimates at the time operations ceased for 6 of the 13 operations did not consider all costs.* BLM reported that some estimates excluded BLM administrative or indirect costs, interim maintenance costs, long-term maintenance and monitoring costs, costs for inflation, and/or other costs. For example, estimates for five operations did not include sufficient funds to cover BLM administrative or indirect costs, which can be high, especially if BLM gets involved with bankruptcy procedures. In its guidance on preparing cost estimates BLM states that estimates should include (1) costs for contract administration, which should be between 6 and 10 percent of estimated operations and maintenance costs, depending on the size of the operation, and (2)

indirect costs, which should be 21 percent of the contract administration costs.

- *One operator intentionally understated reclamation costs for an operation to minimize the amount of financial assurances required, according to BLM field office officials in Nevada. They said, for example, that the operator calculated the estimate as if very large equipment were going to be used, which would reduce costs; however, the operator did not have such equipment available in the state. The field office officials said that the BLM staff who reviewed the cost estimate were inexperienced and did not detect the understatement.*
- *Reclamation plans and cost estimates sometimes were not updated to reflect all reclamation costs when the scope of the plan of operations changed and, as a result, the reclamation requirements changed. For example, BLM reported that the amount of financial assurances for the Zortman and Landusky mining operation in Montana was significantly less than the cost estimate prepared after the operations ceased. The difference in costs was due in part to the failure to update the reclamation plan to address acid rock drainage found during an inspection in the early 1990s, despite efforts by the operator to update the plan. Specifically, the most recent cost estimate for water treatment is greater than the estimate prepared before operations ceased. In addition, the cost estimate increased because the revised reclamation plan required more extensive work on the heap-leach pad than in the earlier plan. Approval of the plan was delayed until 2002 by the review process and litigation over the effects of the proposed changes, and by that time the operator had declared bankruptcy.*

According to the Montana Department of Environmental Quality, which jointly manages the hardrock operation with BLM, the value of the financial assurances increased during this period. However, the most recent reclamation cost estimate was still greater than the associated financial assurances. An estimate of \$85.2 million for reclamation costs was prepared after operations ceased and addressed water contamination and other reclamation activities, such as backfilling, regrading, and revegetating. This estimate included \$36.3 million for earthworks, \$22 million for water treatment through 2017, and \$26.9 million for long-term water monitoring and treatment, according to BLM field office officials. This estimate was \$27.4 million more than the \$57.8 million in financial assurances provided for the reclamation. The financial assurances consisted of \$29.6 million in surety bonds for

earthworks, a \$2 million construction assurance bond for water treatment facilities, \$13.9 million in surety bonds for water treatment through 2017, and \$12.3 million in a trust fund for long-term water treatment and monitoring. Part of the funding shortfall—about \$8.7 million—was covered with funds from other sources.

Financial Assurance Providers Declared Bankruptcy

For four operations in Nevada, as table 8 shows, financial assurances were not adequate because financial assurance providers went bankrupt and could not pay all the reclamation costs they guaranteed. For three of these operations—Paradise Peak, County Line, and MacArthur Mine—an operator used corporate guarantees totaling \$4.2 million to guarantee part of the estimated reclamation costs. However, these corporate guarantees lost all their value when the operator went bankrupt. Reclamation costs for the fourth operation were guaranteed with a surety bond underwritten by a company that went bankrupt and spent \$850,650 for partial reclamation of the operation instead of relinquishing the \$1.8 million surety bond. In particular:

- Paradise Peak, a mining operation in central Nevada, used heap leaching to extract gold from ore. When the operation ceased, it covered almost 1,000 acres, about half of which was on BLM land. The plan of operation was last updated in May 1996, and in November 1995, the operator estimated that reclamation costs would be \$5,462,000. The operator, Arimetco Inc., provided financial assurances totaling \$4,625,000—\$1,157,000 in a surety bond and \$3,468,000 in a corporate guarantee that lost all of its value when Arimetco went bankrupt. As of July 2004, the surety bond company had relinquished the \$1,157,000, but none of the funds had been spent. BLM reported that estimated reclamation costs were \$21,157,000—\$20 million more than the funds the surety bond company relinquished. This estimated cost is significantly more than the original estimate, according to BLM state office officials, because the original estimate did not include all costs that it should have, such as costs for reclaiming collection ponds, and because the cost estimate was not updated to reflect changes in the reclamation plan. BLM reported that no reclamation had been done as of July 2004, but it was very likely that reclamation would be completed because a portion of the needed funding was obtained through bankruptcy procedures and BLM was working with the operator to perform reclamation.
- County Line Project, located on 130 acres of BLM land in western Nevada, used heap leaching to extract gold from ore. The plan of operation was last updated in January 1992, when the operator

estimated that reclamation costs would be about \$837,000. BLM reported no more recent reclamation cost estimates. Arimetco Inc., the operator, provided \$838,000 in financial assurances—\$210,000 in surety bonds and \$628,000 in a corporate guarantee that lost all of its value after Arimetco went bankrupt. As of July 2004, the surety bond company had relinquished the \$210,000, but none of the funds had been spent.³¹ BLM reported that, as of July 2004, between 26 percent and 50 percent of the operation had been reclaimed. BLM also reported that it was very unlikely that reclamation would ever be completed because it was unlikely that the operator would remain viable after bankruptcy.³²

- The MacArthur Mine covers about 550 acres, over three-quarters of which are on BLM land. The MacArthur Mine was purchased by Arimetco in 1988. This copper mine consisted of a pit, waste dump, and roads used to haul ore from the pit to three heap-leach pads that Arimetco constructed on the nearby Yerington Mine, which was also on BLM land, to extract copper from the MacArthur ore.³³ BLM reported that Arimetco began operating the MacArthur Mine in 1992 and ceased operations in 1997, after it filed for bankruptcy. BLM also reported that the plan of operation was last updated in 1995 and that Arimetco had no reclamation cost estimate before operations ceased. Further, BLM provided documents that showed the MacArthur reclamation plan covered not only the MacArthur land but also the heap-leach pads at the Yerington Mine. Although Arimetco had no cost estimate, it did have \$184,300 in financial assurances—\$47,000 in a surety bond and \$137,300 in a corporate guarantee that had lost all of its value when Arimetco went bankrupt. BLM reported that, as of July 2004, the \$47,000 in surety bond funds had been relinquished but not spent. BLM also reported that estimated reclamation costs would be \$17,047,000—\$17 million more than the funds relinquished by the surety bond company. This estimate, according to an official in a BLM Nevada field office, was prepared by

³¹BLM officials told us in February 2005 that, as of December 2004, some of the surety bond funds had been obligated to review and determine reclamation designs and costs.

³²BLM officials told us in February 2005 that, as of December 2004, about 75 percent of the reclamation had been completed and that the heap-leach pad and process ponds were the remaining features to be reclaimed.

³³The Yerington Mine, which is on BLM and private land, was mined by the Anaconda Copper Company from 1953 to 1978 (before BLM required reclamation or financial assurances) and was purchased by the Atlantic Richfield Company in 1977 and sold to a private entrepreneur in 1978. The entrepreneur sold the Yerington land to Arimetco in 1988.

the state of Nevada for bankruptcy procedures. BLM reported that, as of July 2004, no reclamation of the MacArthur operation had been undertaken or completed and that it was very unlikely reclamation of this operation would occur. However, in March 2005, the BLM official told us that the Yerington Mine, including the leach heaps built and used by Arimetco for the MacArthur operation, would be cleaned up under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA).³⁴ CERCLA governs cleanup of severely contaminated hazardous waste sites.³⁵

- The Olinghouse Mine operation, a exploration and mining operation in northwest Nevada, used heap leaching to extract gold from ore on 502 acres, of which 447 acres were BLM land. The plan of operation was last updated in September 2002, and the operator estimated that reclamation costs would be about \$851,000. BLM has not reported any more recent cost estimates. Alta Gold Company, the operator of the Olinghouse operation and eight other hardrock operations in Nevada, provided financial assurances to guarantee reclamation of all nine operations through a statewide surety bond underwritten by the Frontier Insurance Company (Frontier). In April 1999, Alta Gold Company filed for bankruptcy, and BLM gave Frontier the option of paying or performing reclamation. Subsequently, the insurance company filed for bankruptcy and was put into “rehabilitation”—a term for bankruptcy with the intent of making the company solvent. In October 2001, Frontier offered to reclaim the operation to a “satisfactory level.” According to BLM, its options were to (1) wait upon the bankruptcy court, with no guarantee to obtain funds or (2) find an alternative solution to reclaim most of the land. BLM entered into an agreement with Frontier for it to perform reclamation using contractors, with BLM oversight. Frontier completed the agreed-upon reclamation by February 2003, and in December 2003, BLM released the company from future financial obligations for this operation. Frontier performed the reclamation for \$850,650, which was significantly less than the \$1.8 million surety bond that it would have

³⁴42 U.S.C. §§ 9601-9675.

³⁵BLM officials advised us that their most recent reclamation cost estimates for the MacArthur Mine pit and waste piles was \$350,000 and for the haul road was \$1.15 million. They also said that, assuming the estimate for the bankruptcy court was correct, over \$15.5 million of the cleanup costs for the leach heaps on the Yerington Mine used to extract copper from the MacArthur pit will be included in the CERCLA cleanup costs. The officials said that the total reclamation costs for the Yerington Mine had not yet been estimated.

relinquished if Frontier had not performed the reclamation. BLM state and field office officials told us that this solution was satisfactory to all parties, even though all reclamation required by the reclamation plan was not completed. BLM reported that, as of July 2004, 86 to 95 percent of the reclamation had been completed, but it was very unlikely that the remaining reclamation would ever be completed. For example, BLM reported that all exploration roads were not reclaimed.

Financial Assurances for 12
Hardrock Operations May Not
Be Adequate to Pay All Costs for
Required Reclamation

Financial assurances may not be adequate to pay all costs for required reclamation for 12 of the other 23 operations—11 for operations where financial assurances were equal to the associated cost estimates and 1 where the financial assurance was greater than associated cost estimate.³⁶ The financial assurances may not be adequate because the cost estimates on which they were based were prepared before operations ceased—in some cases, as long as a decade ago—and likely do not reflect inflation or other factors that would cause reclamation costs to increase. Table 10 shows the value of the cost estimate prepared before the operations ceased and the number of months elapsed between that time and July 2004, when our surveys were completed.

³⁶Of the remaining 11 operations, 3 had been reclaimed, 4 had no basis to assess the adequacy of the cost estimates because BLM reported no estimates, and the most recent cost estimates for 4 were prepared after operations ceased.

Table 10: Value of Cost Estimate Prepared before Hardrock Operations Ceased and the Number of Months Elapsed between Estimate Date and July 2004 for 12 Hardrock Operations Where Financial Assurances Were Equal to or Greater than Cost Estimate

Operation	Value of cost estimate prepared before hardrock operations ceased	Date of cost estimate	Number of months elapsed between cost estimate and July 2004
Pan Project	\$5,670	Feb. 1993	137
Monte Exploration	7,395	April 1993	135
Ward Mine	141,500	Mar. 1993	136
Northern Crown Mines	3,897	Dec. 1991	151
Phil Claims Expl Proj	28,556	Oct. 1995	105
Diamond Peak Prospect Mtn	6,500	May 2001	38
Eldorado Pediment	8,200	Oct. 2001	33
Elder Creek	256,062	Feb. 1996	101
Gold Bar Resource Area	303,300	Dec. 1994	115
Gold Bar Mine	2,608,000	Oct. 1994	117
Atlas Exploration ^a	265,000 ^a	June 1994	121
Snowbound Placer	\$2,970	June 2003	13

Source: GAO analysis of BLM survey responses.

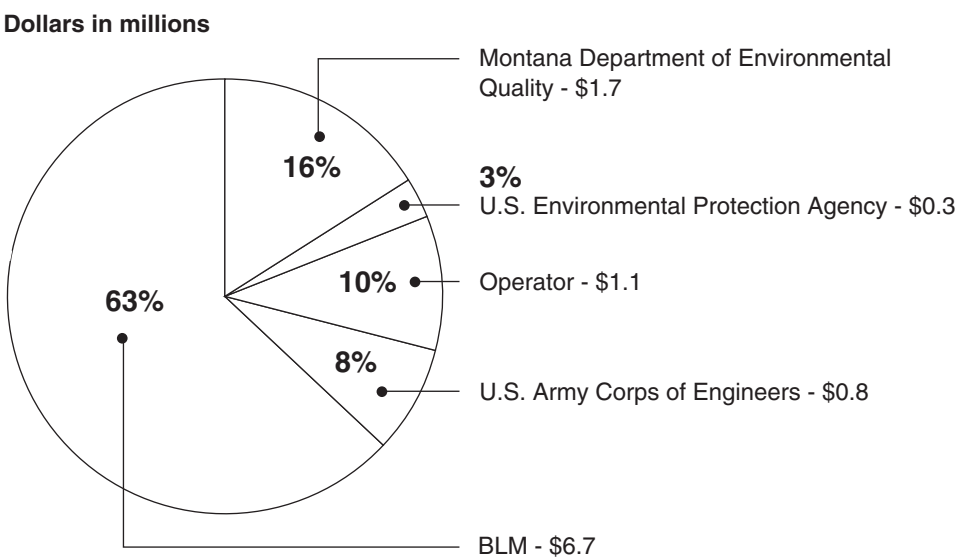
^aThe value of the financial assurance for this operation was \$2,000 more than the value of the cost estimate.

Because reclamation costs can be influenced by many factors, we did not attempt to project the amount that the cost estimates prepared before operations ceased were likely to be less than the amount currently needed to complete reclamation. However, BLM's past experience with reclamation costs indicates that cost estimates prepared after operations ceased likely will be higher than cost estimates prepared before operations ceased. Specifically, BLM updated cost estimates for 16 of the 43 operations for which cost estimates had been prepared before operations ceased, and those updated estimates were the same for 2, lower for 2, and higher for 12 operations. The increases in BLM's 12 higher estimates totaled about \$35.5 million, or about a 47 percent increase over the estimates before operations ceased, and ranged from \$690 to \$16.7 million per hardrock operation, while the decreases in BLM's 2 lower estimates totaled \$10,497, or about a 33 percent decrease, and were \$6,000 and \$4,497 for the two hardrock operations.

Federal Agencies and Others
Provided Only a Fraction of the
Funds Needed to Pay Estimated
Costs for Required Reclamation

As of July 2004, BLM reported that federal agencies and others had provided about \$10.6 million to help reclaim 11 operations. These funds accounted for about 8 percent of the estimated \$136 million needed to pay for required reclamation for operations identified by BLM as ceased and not reclaimed by operators. The sources and amounts of funds provided by others are shown in figure 8. Appendix III, table 19, shows the other sources of funds for the 48 operations.

Figure 6: Sources of \$10.6 Million Provided by Others to Pay the Cost of Required Reclamation for 11 Operations Identified by BLM as Ceased and Not Reclaimed by Operators, as of July 2004



Source: GAO analysis of BLM survey responses.

BLM headquarters provided over \$6.7 million to reclaim 10 operations. Nearly all of this amount—\$5,594,500—was for the Zortman and Landusky mining operation in Montana.³⁷ Officials in Montana’s Lewistown field office told us that most of these funds came from BLM’s Abandoned Mine Land Program and were used to remove leach pads and tailings, backfill

³⁷Lewistown Montana BLM field office officials told us that BLM provided additional funds after July 2004.

pits, and treat water.³⁸ BLM headquarters officials told us that some of the funds used to reclaim the 10 operations were special funds that became available on a one-time basis as the result of a GAO report.³⁹ In March 2001, we reported that BLM had improperly used Mining Law Administration Program funds for purposes other than intended by that program and recommended that BLM correct the improper charges. BLM made the corrections and, according to BLM headquarters officials, used some of the funds for reclamation.

The U.S. Army Corps of Engineers (the Corps) provided about \$0.8 million to reclaim two operations through its Restoration of Abandoned Mines Sites (RAMS) program, according to BLM. The RAMS program, created in 1999, allows the Secretary of the Army to provide assistance to federal and nonfederal entities for projects to address water quality problems caused by drainage and related activities from inactive and abandoned noncoal mines, such as hardrock operations. Specifically, BLM reported that the Corps provided \$171,000 to reclaim the Easy Jr Mine located near Ely, Nevada. These funds were used for a site characterization study and for construction to close the operation, with the primary goal of recontouring and reclaiming a heap-leach pad. In addition, the Corps provided \$600,000 to reclaim the Golden Butte Mine, which is also located near Ely, Nevada. This project included collecting and analyzing water data, characterizing the leach pad, and developing a closure plan. The Corps also partnered with BLM through the RAMS program on another operation that had ceased and not been reclaimed by the operator—the Elder Creek operation located near Battle Mountain, Nevada. BLM told us that, as of July 2004, the Corps had provided all of the funds to develop the engineering closure design for this project, but BLM did not identify the amount of funds provided.

Funds to reclaim the Zortman and Landusky mining operation also were provided from other sources, according to BLM. Through a bankruptcy procedure, the bankrupt operator provided \$1,050,000 to help reclaim the

³⁸The Abandoned Mine Land Reclamation Program is authorized by Title IV of the Surface Mining Control and Reclamation Act of 1977 and provides funds for reclamation and restoration of land mined and abandoned or left inadequately restored before August 13, 1977, and for which there is no continuous reclamation responsibility under state or other federal laws.

³⁹GAO, *Bureau of Land Management: Improper Charges Made to Mining Law Administration Program*, [GAO-01-356](#) (Washington, D.C.: Mar. 8, 2001).

operation. The Environmental Protection Agency provided \$340,000 in grant funds, primarily to prepare a supplemental environmental impact statement. Finally, the Montana Department of Environmental Quality provided \$1,697,000 for reclamation activities, such as studies, sampling, tailings removal, water treatment, and monitoring.⁴⁰ The status of reclamation in 1993 and 2004 for the Zortman and Landusky mining operations is shown below.

Description of Zortman and Landusky Mine

The Zortman and Landusky Mine is located in north-central Montana on about 1,200 acres, half of which are on BLM land. The operation, originally permitted in the 1970s, was the first large open-pit gold mine to use heap leaching in the United States. BLM reported that the operation began under a BLM-approved plan of operation in 1981 and ceased in 1999 after Pegasus Gold, the parent company, went bankrupt. BLM reported that, as of July 2004, over 85 percent of the required reclamation had been done and that complete reclamation is very likely.

Source: BLM and others.

⁴⁰Most of this money came from Resource Indemnity Trust Grants, which are derived from taxes on coal mining in the state.

Figure 7: Zortman and Landusky Mining Operations at or Near Buildout in 1993 and Status of Reclamation in 2004

Zortman 1993
at full buildout



Landusky 1993
near full buildout



Source: BLM.



Zortman 2004
Reclamation near
completion



Landusky 2004
Reclamation near
completion

The \$136 Million Estimate of Costs for Required Reclamation Is Understated to the Extent That BLM Did Not Identify or Report on All Hardrock Operations

The \$136 million estimate of costs for required reclamation for hardrock operations that had ceased and not been reclaimed by the operators as required is understated to the extent that BLM did not identify or report information on all such operations. For example, officials in Oregon's BLM state office estimated that 20 notice-level operations in Washington state met these criteria, but neither the Oregon BLM state office nor its field offices completed our surveys for any of these operations. State office officials did not explain why surveys had not been completed for these notice-level operations. Clearly, the \$136 million estimate would be higher if BLM's state or field offices had reported this information. Furthermore, some other BLM offices had difficulty identifying operations that met our criteria and may not have identified all such operations. For example, Nevada's BLM state office completed additional hardrock operation surveys after we questioned whether they had identified all the operations that met the criteria. For more detailed information on the difficulties in identifying hardrock operations that met our criteria, see our scope and methodology in appendix I.

Required Reclamation Has Been Completed for 5 of the 48 Hardrock Operations, and BLM Officials Believe That Reclamation Will Likely Be Completed for 28 Others

BLM reported that, as of July 2004, required reclamation had been completed for 5 of the 48 hardrock operations on BLM land that had ceased and not been reclaimed by operators since it began requiring financial assurances, and it expects to complete reclamation for most of the remaining operations. BLM reported that the reclamation status was in various stages or unknown for the 43 operations that had not completed reclamation. BLM officials' views on the likelihood of completing required reclamation for these operations varied, but they believed that 28 of the 43 operations are likely to be reclaimed, as shown in table 11. Appendix III, table 19, shows the status and likelihood of completing reclamation for the 48 operations.

Table 11: Reclamation Status and BLM Views on the Likelihood of Completing Reclamation of 43 Hardrock Operations for Which Required Reclamation Had Not Been Completed by Operators, as of July 2004

Reclamation status		BLM's views on the likelihood of completing reclamation			
Percent of reclamation completed	Number of hardrock operations	Somewhat or very likely	About as likely as unlikely	Somewhat or very unlikely	No answer
96-99	4	4	0	0	0
76-95	7	6	0	1	0
51-75	3	3	0	0	0
26-50	4	1	0	3	0
1-25	8	5	0	3	0
0	13	7	5	1	0
Do not know	4	2	0	1	1
Total	43	28	5	9	1

Source: GAO analysis of BLM survey responses.

Required reclamation of the five operations that were fully completed was accomplished with funds from several sources. For three of the five operations, financial assurances were sufficient to cover the costs to complete reclamation, including one for which the operator did some reclamation and negotiated with BLM to have BLM do the remaining reclamation. For the other two operations, BLM paid at least part of the reclamation costs. Specifically, BLM spent \$92,000 to reclaim one operation that had no financial assurances, and spent \$15,000 to reclaim another operation whose financial assurance was less than the most recent reclamation cost estimate. In the latter case, the operator agreed to abandon the claim if BLM did the reclamation; the operation was in a wild and scenic river canyon in California.

BLM officials generally believed that required reclamation would be completed for most of the 43 operations that had not been reclaimed by the operators as of July 2004. They reported that required reclamation was somewhat or very likely for 28, or almost two-thirds of the 43 operations. Some BLM officials believed reclamation would be completed because funds were available from financial assurances or other sources. For example, BLM reported that completion was very likely for the Zortman and Landusky mining operation in Montana, which was between 86 and 95 percent reclaimed as of July 2004, partly because funds for earthwork were available and work was under way. At the same time, BLM noted that more than \$18 million in additional funds would be needed to maintain water treatment at the operation in perpetuity. In other cases, officials believed

that operations may be taken over by new operators, or reopened by the existing operators, who will ultimately complete reclamation of the operations. For example, BLM reported that completing reclamation of an operation in Alaska that was less than 50 percent reclaimed was very likely because another operator agreed to reclaim the area in conjunction with taking over the operation from the bankrupt operator. Conversely, BLM reported that completing required reclamation was somewhat or very unlikely for nine operations, most of which had less than 50 percent of required reclamation completed as of July 2004. BLM said that the operators of several of these operations could not do the required reclamation, usually because they lacked funds.

BLM's LR2000 Is Not Reliable and Sufficient for Managing Financial Assurances for Hardrock Operations

BLM's LR2000 is not reliable and sufficient for managing financial assurances to cover reclamation costs for BLM land disturbed by hardrock operations because staff do not always update information, and LR2000 is not currently designed to track certain critical information. Specifically, staff have not entered information on every hardrock operation and, for those hardrock operations included in LR2000, information is not always current. In addition, the system does not track some information on hardrock operations and their associated financial assurances, which we believe is critical for effectively managing financial assurances. This information includes the basic status of operations, some types of allowable financial assurances, and state- and county-held financial assurances. Given these limitations, it is not surprising that BLM's reliance on LR2000 to manage financial assurances is mixed. In part to compensate for LR2000 limitations, some BLM offices use informal record-keeping systems to help manage financial assurances. BLM has taken some steps and identified others to improve LR2000 for managing financial assurances for hardrock operations.

Information in LR2000 Is Not Reliable and Sufficient

Information in LR2000 is not reliable and sufficient because staff do not always update the information, and the system is not currently designed to track critical information. Specifically, some hardrock operations are not in LR2000:

- In Nevada—the state with the largest number of hardrock operations—LR2000 does not contain information on all hardrock operations that a state BLM official's informal records show. When Nevada officials queried LR2000 during our visit, the system showed 248 plan-level

operations in the state. However, according to a senior Nevada BLM state office official who keeps informal records of the hardrock operations, some of the operations are not in LR2000; his records contain 300 plan-level operations. According to BLM state and field office officials, some operations are not in the system because some data were lost during the conversion from an earlier information system to LR2000 in 1999. Officials in one Nevada field office told us that they have not had time to reenter some of the lost data but plan to do so in the future.

- Alaska—with 240 hardrock operations—does not use LR2000 to record information on these operations. Instead, BLM state office officials told us that they use the Alaska Land Information System (ALIS) because LR2000 cannot be used to meet the office's other needs. That is, LR2000 cannot process the conveyance of land from the federal government to the state of Alaska and to Native villages and corporations. In addition, the costs and staff time associated with incorporating the information in ALIS into LR2000 contributed to BLM's decision to continue to use ALIS.
- In BLM's March 2004 assessment of 18 of its 157 field offices' compliance with current hardrock regulations, 3 of the 18 offices reported that all hardrock operations were not recorded in LR2000. For example, one of these field offices reported that its office had only recently received training on LR2000.

Furthermore, for some operations that are in LR2000, information is not up to date. For example, in responding to our survey regarding the number of existing notice- and plan-level hardrock operations with financial assurances, the New Mexico state office explained that some of its existing operations without financial assurances may be inactive and should be closed in LR2000. BLM officials are to open a case in LR2000 when a notice or plan of operation is received, and they are to close the case in LR2000 when operations have ceased and reclamation is complete. However, BLM state and field office officials reported that data entry is not always timely. For example, some field office officials told us that they do not enter data until the winter, when it is more difficult to work in the field and they spend more time in the office. In addition, in BLM's March 2004 assessment, 11 of the 18 field offices reported that the results of compliance inspections were not entered in a timely manner.⁴¹ These inspections are critical to ensuring

⁴¹In this survey, BLM defined timely as within 5 days.

that all hardrock operations are meeting federal requirements. The field offices explained that this problem occurred because of other office priorities, lack of staff trained to use LR2000, and staff workload. In addition, the BLM officials who administer LR2000 said the quality of the data currently in LR2000 varied in part because of the varied emphasis the field offices gave to data entry.

LR2000 also does not track some critical information on hardrock operations and their associated financial assurances. In particular, LR2000 does not track the following:

- *The status of hardrock operations, such as whether the operation is ongoing or has ceased and should be reclaimed.* LR2000 uses the term “open” to identify both operations that are ongoing and operations that have ceased and should be reclaimed. It uses the term “closed” to refer to those operations where reclamation has been completed. While field staff should know whether an operation is ongoing or has ceased because of first-hand knowledge or access to case files in their offices, BLM headquarters and state office officials do not have ready access to this basic information. For example, in response to our survey regarding the number of ongoing hardrock operations with financial assurances, the Arizona state office reported that only 32 of 55 plan-level operations had financial assurances. The office also reported that it was reviewing its case files to determine the status of the operations without financial assurances, such as whether any of these operations have ceased, been reclaimed, and should have been closed in LR2000. Also, in response to our survey, the California state office reported that LR2000 showed 639 “open” hardrock operations in the state, but officials estimated that only 303 of these operations were actually ongoing. Furthermore, for 9 of the 13 states with hardrock operations, BLM state offices reported that they did not track the status of reclamation where operators had failed to do required reclamation using LR2000 or other means.⁴²
- *Information on all types of financial assurances allowed under federal regulations.* LR2000 has data entry fields for five of the allowed types of assurances—surety bonds, letters of credit, certificates of

⁴²BLM state office officials completed state surveys for those states within their jurisdiction with hardrock operations—a total of 13 states. The BLM Montana state office said that one state within its jurisdiction—South Dakota—had only two hardrock operations, both of which had ceased operating and were being reclaimed by the operators.

deposit, cash, and treasury securities—as well as a “personal” field. However, some of the missing types of financial assurances, such as corporate guarantees, bond pools, and trust funds, are being used to guarantee reclamation costs. For example, corporate guarantees covered \$204 million in reclamation costs, or 24 percent of the total value of financial assurances that BLM reported as of July 2004. To overcome this system limitation, the Nevada BLM state office uses the “personal” field to track information on both corporate guarantees and operations covered by the state bond pool. Without the capability to track all types of financial assurances, BLM cannot identify the total amount of reclamation costs that each type of financial assurance guarantees.

- *Information on financial assurances held by the state or county agencies.* Several BLM state offices reported that some financial assurances for hardrock operations on BLM land are held by state or county agencies and are not included in LR2000. For example, the Montana BLM state office contacted the Montana Department of Environmental Quality to obtain information on the types and amounts of financial assurances. The Idaho office reported that it relies on its own informal records to track state-held financial assurances and provided the information. In California, where county agencies can hold the financial assurances for hardrock operations on BLM land, the office reported that it does not have information on all financial assurances held by the counties and did not contact them to provide it. In commenting on a draft of this report, Interior stated that BLM issued an instruction memorandum in April 2005 to provide guidance and direction on data standards for LR2000.⁴³ The instruction memorandum states that BLM data entry staff must use a specific action code when financial assurances are filed and instructs the staff to use that action code when BLM receives documentation that a financial assurance is held by another agency.

BLM Makes Limited Use of LR2000

Given LR2000’s limitations, it is not surprising that BLM’s reliance on the system to manage financial assurances is mixed. At the headquarters level, BLM does not always rely on information in LR2000. Rather, to obtain information needed on hardrock operations and associated financial

⁴³BLM Instruction Memorandum 2005-126, *Data Standard Changes for Surface Management Plans of Operations*, (Apr. 14, 2005).

assurances, BLM headquarters officials must contact their state and field offices. For example, because the information was not in LR2000, in March 2003, BLM headquarters requested information from its state and field offices on the number of notice-level operations that (1) did not meet the required deadline to request an extension, (2) requested an extension, and (3) were extended under the 2001 regulations. BLM needed this information to determine if all notice-level operations were in compliance with current regulations.⁴⁴

Furthermore, BLM headquarters does not always rely on LR2000 to answer questions on financial assurances at a national or state level from the Congress, the public, and other interested parties. For example, BLM headquarters could not provide information on hardrock operations and financial assurances in response to our request for such information and told us we would have to get this information from the state and field offices. State offices told us that some of the critical information, such as the status of the hardrock operation and reclamation cost estimates needed to determine the adequacy of the financial assurances, is in paper case files located in the field offices. Others also have found that BLM does not systematically use LR2000 to track information on hardrock operations. For example, in its 1999 report on hardrock mining, the National Research Council found no systematic, easily available compilation and analysis of information about hardrock operations on BLM land.⁴⁵

At the state- and field office-levels, BLM's reliance on LR2000 for managing financial assurances for hardrock operations varies. BLM state offices reported that in four states with hardrock operations LR2000 was relied on to little or no extent; in eight states, to a moderate or some extent; and in one state—Nevada—to a very great extent.⁴⁶ Of the four BLM state offices reporting little or no reliance on LR2000, two explained that there is no BLM state office oversight of the program; one defers program responsibility to the state agency; and one has few hardrock operations.

⁴⁴BLM Instruction Memorandum 2003-118, *43 C.F.R. 3809 Notice-Workload Analysis* (Mar. 24, 2003).

⁴⁵National Research Council, *Hardrock Mining on Federal Lands* (Washington, D.C.: 1999).

⁴⁶We asked each of the BLM state offices with hardrock operations to what extent the state office or its field offices rely on information in BLM's LR2000 system for managing the financial assurance program for hardrock operations. The categories were: little or no extent, some extent, moderate extent, great extent, and very great extent. The Alaska BLM state office answered this question for ALIS.

The lack of reliance on LR2000 for managing financial assurances is due in part to state office concerns about the reliability and adequacy of information in the system. For example, as discussed earlier, some BLM state offices do not use LR2000 because it does not contain information on financial assurances held by state or county agencies. States' views on the reliability and adequacy of LR2000 are shown in table 12.

Table 12: States' Views on Reliability and Adequacy of LR2000 to Manage Financial Assurances

Survey question: To what extent is the information in LR2000	BLM state offices' views					
	Did not use LR2000 to manage financial assurances	Very unreliable/ Inadequate	Unreliable/ Inadequate	Marginal or borderline reliability/ Adequacy	Generally reliable/ Adequate	Very reliable/ More than Adequate
Reliable for managing financial assurances ^a	2	2	1	2	5	1
Adequate to manage financial assurances ^b	2	2	1	2	6	^c

Source: GAO's analysis of BLM survey responses.

^aWe asked each of the BLM state offices with hardrock operations how reliable is the information in LR2000 for managing financial assurances. The categories were: very unreliable, unreliable, marginal or borderline reliability, generally reliable, very reliable, or do not use LR2000 for this purpose. The Alaska BLM state office answered this question for ALIS.

^bWe asked each of the BLM state offices with hardrock operations how adequate is the information in LR2000 for managing financial assurances. The categories were: very inadequate, inadequate, marginal or borderline adequacy, generally adequate, more than adequate, or do not use LR2000 for this purpose. The Alaska BLM state office answered this question for ALIS.

^cNone of the BLM state offices chose this response.

Some BLM offices reported using informal record-keeping systems or records to track information on hardrock operations and associated financial assurances within their jurisdiction. For example:

- In Alaska, the field offices use an Alaska state agency database to obtain information on the number of existing notice- and plan-level hardrock operations.
- The New Mexico BLM state office has an informal database that lists all financial assurances filed and approved to track financial assurance information in the state.
- The Nevada BLM state office uses field offices' logs and the Nevada state database to track information on hardrock operations.

-
- The Idaho BLM state office maintains informal records on state-held financial assurances.

According to agency officials, BLM has taken some steps to improve the information in LR2000 and is planning others. Specifically, BLM reported the following actions:

- *Developing revised data standards for LR2000, which have not been updated since the 1990s.* These standards set forth the type and format of information that must be entered into LR2000. Officials are considering expanding information on the status of hardrock operations in the system to show whether operations have been abandoned and the type of activity associated with the operation, such as mining and road construction. In commenting on a draft of this report, Interior stated that BLM's April 2005 instruction memorandum provided guidance on action codes to track the length of time between submission and approval of hardrock plans of operation.
- *Planning to add an additional report to LR2000 so that BLM officials can directly compare information on hardrock operations with their associated financial assurances.* The creation of this report was prompted by a request from the Nevada BLM state office for this information.
- *Reengineering LR2000 to better reflect the way BLM does business so that officials will have better management information.* Officials said that while progress has been made on this effort with some other BLM programs, such as oil and gas, reengineering BLM's data management for hardrock operations is planned for the future.

BLM state offices also identified some changes to LR2000 that could help them better manage financial assurances for hardrock operations. These changes included ensuring the codes in LR2000 match the on-the-ground conditions of operations; changing it to better identify critical information on financial assurances, such as those held by state and county agencies; and enhancing its capability to notify BLM officials when it is time to review financial assurance amounts. According to BLM officials responsible for administering LR2000, the system has the capacity to handle virtually any changes that the state and field offices request. In commenting on a draft of this report, Interior stated that BLM will continue to refine and enhance LR2000 data systems as needed to facilitate the hardrock mining program.

Conclusions

Having adequate financial assurances to pay reclamation costs for BLM land disturbed by hardrock operations is critical to ensuring that the land is reclaimed if operators fail to complete reclamation as required. Furthermore, financial assurances must be based on sound reclamation plans and current cost estimates so that BLM can be confident that financial assurances will fully cover reclamation costs. For years, BLM headquarters has relied on BLM state offices that, in turn, rely on BLM field offices and sometimes on state and county agencies to obtain adequate financial assurances. However, while federal regulations and BLM guidance set forth financial assurance requirements for notice- and plan-level hardrock mining operations, BLM does not have a process for ensuring that the regulations and guidance are effectively implemented to ensure that adequate financial assurances are actually in place, as required.

Moreover, BLM does not know whether all hardrock operations have adequate financial assurances because of limitations in the types of information collected in LR2000 and failure of staff to update information in a timely manner. Specifically, LR2000 does not track the status of hardrock operations, whether each existing operation that requires a financial assurance has the assurance, and whether the financial assurance is adequate to pay the cost of required reclamation.

Because BLM does not have an effective management process and critical management information, it has not ensured that some current and previous operators have adequate financial assurances, as required by federal regulations and/or BLM guidance. Furthermore, some operations either do not have any, or have outdated reclamation plans and/or cost estimates. When operators without any financial assurances, or with inadequate financial assurances, fail to reclaim BLM land disturbed by their hardrock operations, BLM is left with public land that requires tens of millions of dollars to reclaim and poses risks to the environment and public health and safety. Until BLM establishes monitoring and accountability mechanisms to ensure that all operations have required financial assurances—based on sound reclamation plans and current cost estimate—and improves the information it collects to effectively manage financial assurances, these problems will continue.

Recommendations for Executive Action

To ensure that hardrock operations on BLM land have adequate financial assurances, we recommend that the Secretary of the Interior direct the Director of BLM to take the following two actions:

-
- require the BLM state office directors to establish an action plan for ensuring that operators of hardrock operations have required financial assurances and that the financial assurances are based on sound reclamation plans and current cost estimates, so that they are adequate to pay all of the estimated costs of required reclamation if operators fail to complete the reclamation, and
 - modify LR2000 to ensure that it tracks critical information on hardrock operations and associated financial assurances so that BLM headquarters and state offices can effectively manage financial assurances nationwide to ensure regulatory requirements are met.

Agency Comments and Our Evaluation

We received written comments on a draft of this report from the Department of the Interior. Interior stated that it appreciated the advice and critical assessment we provided on BLM's management of financial assurances required for hardrock operations. However, Interior did not acknowledge or address specific deficiencies identified in our report and did not concur with our recommendations or the conclusions upon which the recommendations were based.

In commenting on our recommendation to establish an action plan for ensuring that operators of hardrock operations have required financial assurances, Interior stated that existing procedures and policies ensure financial guarantees are in place to protect the public should an operator fail to reclaim. We disagree and believe that Interior's view is inconsistent with the evidence we developed based on information provided by BLM's own offices. While we agree that existing federal regulations and BLM guidance require financial assurances to cover all reclamation costs for notice- and plan-level hardrock operations, the evidence in our report shows that notices and plans of operation do not always have adequate financial assurances, as required. As we stated in this report, BLM state offices with existing hardrock operations informed us that, as of July 2004, some notice- and/or plan-level operations did not have adequate financial assurances. Furthermore, the evidence is clear that hardrock operations have ceased without operators having the adequate financial assurances required by regulations and BLM guidance. As a result, funds are not available to pay at least \$56.4 million in reclamation costs for operations that had ceased and not been reclaimed since BLM began requiring financial assurances. We continue to believe that this evidence clearly calls for a plan of action that includes monitoring and accountability

mechanisms to ensure that the requirements in the federal regulations and BLM guidance to have adequate financial assurances are met.

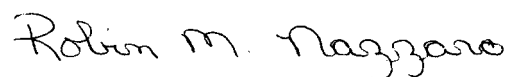
In commenting on our recommendation to modify LR2000 to ensure that it tracks critical information on hardrock operations and associated financial assurances, Interior stated that BLM does track all critical information on authorized operations in LR2000. Again, we disagree with BLM's opinion and find this view troubling when viewed in the context of clear evidence to the contrary presented in this report. As we reported, LR2000 does not track the critical information needed to effectively manage and oversee financial assurances, including the operation's basic status, such as whether the operation is ongoing or has ceased and should be reclaimed; some types of financial assurances being used, such as corporate guarantees, bond pools, and trust funds; and the adequacy of financial assurances to pay the cost of required reclamation. We are encouraged by BLM's April 2005 instruction memorandum to provide guidance and direction on data standards for LR2000 and the recent addition of codes and edits to LR2000 for plans of operations and financial guarantees, and we have added information to our report, as appropriate. We are also encouraged by BLM's willingness to refine and enhance LR2000. However, we continue to believe that until BLM timely enters, tracks, and uses this critical information it will not be able to effectively manage financial assurances to ensure that federal regulations and BLM guidance are followed.

Interior also suggested some technical changes that we have incorporated as appropriate. Interior's letter is included in appendix IV, along with our comments.

As agreed with your office, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. We will then send copies to other appropriate congressional committees and to the Secretary of the Interior. We will also make copies available to others upon request. In addition, the report will be available at no charge on the GAO Web site at <http://www.gao.gov>.

If you or your staff have any questions concerning this report, please contact me at (202) 512-3841 or Nazzaror@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made major contributions to this report are listed in appendix V.

Sincerely yours,

A handwritten signature in black ink that reads "Robin M. Nazzaro". The script is cursive and fluid, with the first letters of each word being capitalized and prominent.

Robin M. Nazzaro
Director, Natural Resources and Environment

Objectives, Scope, and Methodology

This appendix details the methods we used to examine three aspects of financial assurances used to cover reclamation costs for the Department of the Interior's Bureau of Land Management (BLM) land disturbed by hardrock exploration, mining, and processing operations. Specifically, we were asked to determine the (1) types, amount, and coverage of financial assurances operators currently use to guarantee reclamation costs; (2) amount that financial assurance providers and others have paid to reclaim operations that had ceased and not been reclaimed since BLM began requiring financial assurances and the estimated costs of completing reclamation for such operations; and (3) reliability and sufficiency of BLM's automated LR2000 information system for managing financial assurances for hardrock operations.

To address these objectives, we designed two surveys to obtain information from BLM's state and field offices because they maintain the case files and other specific information on hardrock operations. We asked the 12 BLM state offices that manage BLM programs across the United States to complete surveys for each state in their jurisdiction with hardrock operations. The 12 BLM state offices were Alaska, Arizona, California, Colorado, Idaho, Montana, New Mexico, Nevada, Oregon, Utah, Wyoming, and Eastern States.¹

We used the first survey, which focused on states' experiences with hardrock operations, to determine the types and amounts of financial assurances currently used to guarantee reclamation costs. Specifically, we asked the 12 BLM state offices to provide information on (1) the number of existing hardrock operations for each state within their jurisdiction, (2) the types and the amounts of financial assurances provided for existing hardrock operations in each state, (3) their views on the effectiveness of the various types of financial assurances, (4) their views on the reliability and sufficiency of hardrock operation data contained in the LR2000, and (5) their use of LR2000 for managing hardrock operations in their states.

We used the second survey, which focused on selected hardrock operations, to determine the amount of funds provided by financial assurances and others to reclaim hardrock operations that had ceased and

¹Some of the 12 BLM state offices manage BLM programs in more than one state. For example, the BLM Montana state office manages BLM programs in Montana, North Dakota, and South Dakota, and the Oregon state office manages BLM programs in Oregon and Washington.

not been reclaimed by operators since BLM began requiring financial assurances and the estimated costs of completing reclamation of such operations. We asked the state offices to provide detailed information on each hardrock operation within their jurisdiction that met both of the following criteria: the operator (1) ceased operations after the requirement for financial assurances went into effect—August 1990 for plan-level operations, January 2001 for new notice-level operations, and January 2003 for existing notice-level operations—and (2) failed to complete the required reclamation. In most cases, BLM field office staff completed this survey because hardrock operation case files are maintained in these offices. Also, as necessary, we obtained information from BLM state and field staff to clarify responses to the survey. We used the information obtained to determine the estimated reclamation costs and the adequacy of financial assurances for reclaiming the hardrock operations that BLM identified as meeting our criteria.

To determine the adequacy of financial assurances, we compared the most recent complete reclamation cost estimate that BLM reported for each operation with the dollar value of the financial assurance that BLM reported for that operation. We then computed the difference between the most recent cost estimate and the value of the financial assurance to determine the total net excess or deficiency of the financial assurances. The total is the sum of the differences between the values of the financial assurances and the cost estimates that were made at different times over the past 15 years and were not adjusted for inflation. For each operation, we asked BLM to report the value of the (1) estimates that the operator had before operations ceased, (2) estimates that BLM prepared after operations ceased, (3) actual reclamation costs, (4) BLM's estimate of the shortfall in funds needed to complete reclamation in excess of funds relinquished by the financial assurance provider, and (5) BLM's estimates of funds needed to complete required reclamation. BLM reported one or more of these values for 43 operations, and no value for the other 5 operations. For 24 of these 43 operations, BLM reported only one value, and we used that value as the most recent reclamation cost estimate. For the other 19 operations, BLM reported two or more values. In determining which value to use for our analysis, we generally did not use the (1) actual costs for operations that were not fully reclaimed because the actual cost could not be known unless reclamation was complete and (2) estimated funds needed to complete reclamation for operations that were partly reclaimed because those estimates did not include funds that had already been spent. We used the following values as the most recent reclamation cost estimate for these 19 operations.

- For 12 operations, we used BLM's estimate prepared after operations ceased because those estimates were the most recent.
- For three operations that BLM reported as having no reclamation completed or not knowing the status of reclamation, we used BLM's reported estimate of funds needed to complete required reclamation.
- For one operation that BLM reported as being fully reclaimed, we used BLM's reported actual cost.
- For one operation, we used BLM's estimate of the shortfall of funds needed in excess of funds relinquished by the financial assurance provider because that estimate was the most recent and most accurate, according to BLM officials.
- For one operation, we used the estimate available before operations ceased because the only other value reported for the operation was BLM's estimate of funds needed to complete reclamation and reclamation was only partly completed.
- For one operation, we used the estimate available before operations ceased because the other values reported for the operation were BLM's estimate of funds needed to complete reclamation and the reported amount of actual costs, but reclamation was only partly completed.

We provided a copy of these two surveys to BLM headquarters and incorporated officials' comments as appropriate. We also pretested these surveys with state and field office staff in Nevada, Utah, and Arizona and made changes in the surveys' scope and content as appropriate. Further, after respondents submitted their answers, we (1) verified the information in the survey that focused on states' hardrock operations experience through discussions with BLM officials in two state offices with extensive financial assurance experience in hardrock operations—Nevada and Montana—and (2) verified information reported in four randomly selected hardrock operations surveys through discussions with officials and a review of case files in three Nevada field offices—Carson City, Elko, and Winnemucca—and one Montana field office—Lewistown. We checked the answers respondents had given to the questions against information contained in the case files. In many cases, staff provided answers based on their own knowledge and information in the case files.

Some BLM state offices had difficulty identifying hardrock operations that met our criteria. For example, some states completed our surveys for hardrock operations that did not appear to meet our criteria, and we contacted the respondents to clarify whether the operations did or did not meet the criteria. We eliminated 12 surveys that did not meet the criteria from our analysis.

Furthermore, we cannot know whether BLM reported to us all hardrock operations that met our criteria. To address this concern, we took additional steps to help ensure that BLM completed the selected hardrock operations survey for all operations that met our criteria. For example, in Nevada, we compared a list of bankrupt operations prepared by the Nevada Bonding Task Force with a list of BLM's completed surveys to identify potential omissions. In addition, we asked selected experts, interest groups, and others to identify instances when operators failed to complete required reclamation and the federal government or others paid such reclamation costs or the required reclamation was not fully completed. To the extent that BLM staff did not identify all of the operations that met our criteria or did not report information on those operations that did meet the criteria, the information the BLM staff reported is incomplete. Furthermore, we did not collect information on the thousands of ceased hardrock operations since 1872 that did not require financial assurances and, therefore, fell outside the scope of this review.

To determine the reliability and sufficiency of BLM's LR2000 system, we spoke with BLM information technology officials in the headquarters unit near Denver, Colorado, who are responsible for administering the system; BLM state and field office staff in two states who enter information into the system; and BLM managers at headquarters and in two states who use information from the system. In addition, we visited information technology officials near Denver to discuss the structure and history of LR2000 and to observe firsthand how data are entered into and processed by the two subsystems used to manage financial assurances—the Case Recordation System, which contains information about hardrock operations, and the Bond and Surety System, which contains information about financial assurances. Also, in our two surveys of BLM's 12 state offices, we asked questions to gather data on whether each respondent used LR2000 to respond to the survey. Specifically, we asked questions about whether the information used to respond came from LR2000 or from state office personnel's knowledge, field office personnel's knowledge, other databases, case files, or other sources. These questions helped us

determine the extent to which BLM officials used and relied on the data in LR2000.

It is important to note that the practical difficulties of conducting any survey introduce various types of errors. Differences in how a particular question is interpreted and differences in the sources of information available to respondents can also be sources of survey response errors. We included steps in both the data collection and data analysis stages to minimize such errors. These steps included developing our survey questions with the aid of our survey specialists, conducting pretests of the questionnaires, and twice verifying the entry of survey data where applicable.

In addition to the surveys, we took several steps to understand BLM's management and oversight of hardrock operations and the use of financial assurances to ensure reclamation. We reviewed GAO reports, federal laws and regulations, BLM documents, and independent studies on hardrock operations and financial assurances. We also discussed these issues with BLM officials at headquarters and in selected state and field offices in Arizona, Montana, Nevada, and Utah. To understand the relationship between BLM and state agencies responsible for overseeing hardrock operations, we met with BLM and state agency officials in Colorado and Nevada, and we reviewed relevant memorandums of understanding and other documents for these and other states. We also discussed relevant hardrock operation and financial assurance issues with experts and representatives from the mining industry, academia, and environmental groups. Finally, to better understand hardrock operations and reclamation requirements, we visited five hardrock operations on BLM land in two states—the Florida Canyon, MacArthur Mine, Olinghouse, and Relief Canyon operations in Nevada and the Zortman and Landusky operation in Montana.

We conducted our review from October 2003 through May 2005 in accordance with generally accepted government auditing standards, including an assessment of data reliability.

Number of Notice- and Plan-Level Hardrock Operations and Value of Associated Financial Assurances

This appendix provides information on the number of notice- and plan-level operations and dollar value of associated financial assurances for the 12 states with existing hardrock operations as of July 2004, as reported by BLM.

Table 13: Number of Notice- and Plan-Level Hardrock Operations and Associated Financial Assurances, by State, as of July 2004

State	Notice-level operations		Plan-level operations		Total for notice- and plan-level hardrock operations	
	Number of operations	Value of financial assurances	Number of operations	Value of financial assurances	Number of operations	Value of financial assurances
Alaska	134	^a	106	^a	240	\$1,000,000
Arizona	130	446,107	55	4,326,891	185	4,772,998
California ^b	205	116,800	98	4,819,000	303	4,935,800
Colorado	102	14,600	30	1,722,313	132	1,736,913
Idaho ^c	32	43,761	23	751,771	55	795,532
Montana	150	^d	30	^d	180	109,307,930
New Mexico	24	^e	11	^e	35	4,298,989
Nevada ^f	450	7,001,785	324	621,495,665	774	629,684,465
Oregon	165	21,000	10	31,000	175	52,000
Utah ^g	167	552,556	49	2,175,629	216	2,728,185
Washington	127	^h	12	^h	139	^h
Wyoming ⁱ	18	51,000	38	77,357,524	56	77,408,524
Total	1,704	^j	786	^j	2,490	\$836,721,336

Source: GAO analysis of BLM data.

^aThe Alaska state bond pool covers all hardrock operations in the state. The Alaska BLM office did not provide information on the value of financial assurances for each type of operation.

^bThe \$4,935,800 in financial assurances includes those held by BLM, the state of California, and some county agencies in California. However, it may not include all financial assurances held by California counties to guarantee reclamation of hardrock operations on BLM public land.

^cThe \$795,532 in financial assurances includes \$512,590 held by the state of Idaho and \$282,942 held by the BLM.

^dMontana BLM holds \$66,390 in financial assurances for hardrock operations in the state. The majority of financial assurances funds, \$109,241,540, are held by the Montana Department of Environmental Quality. Neither the BLM nor the state agency provided information on the value of the financial assurances by type of operation.

^eNew Mexico BLM holds \$975,191 in financial assurances—\$71,898 for notice-level operations and \$903,293 for plan-level operations. Additional financial assurances held by the New Mexico Mining and Minerals Division for hardrock operations on BLM land total \$3,323,798. The New Mexico agency did not provide information on the value of these financial assurances by type of operation.

^fThe Nevada BLM reported that some operators in the state use statewide and nationwide financial assurances that the office could not separate by notice- and plan-level operation. The office estimated

Appendix II
Number of Notice- and Plan-Level Hardrock
Operations and Value of Associated Financial
Assurances

that 10 percent of the statewide and nationwide financial assurances cover notice-level and 90 percent cover plan-level operations and allocated assurances accordingly. The \$629,684,465 in financial assurances includes corporate guarantees held by the state of Nevada and one trust fund and the state bond pool, which are maintained by the State of Nevada.

^gThe \$2,728,185 in financial assurances for Utah includes those held by both the BLM and the state of Utah.

^hThe Oregon BLM state office did not provide information on the amount of financial assurances available to reclaim the 139 existing hardrock operations it identified in the state of Washington on BLM public land. The office reported no individual bonds are used for operations in Washington state, but that a statewide bond is held by the Washington Department of Ecology.

ⁱThe state of Wyoming holds all financial assurances to guarantee reclamation of BLM public land.

^jThe total value of financial assurances for notice-level operations or the total value for plan-level operations is not available because BLM did not provide this information for some states.

Detailed Information on 48 Hardrock Operations That Had Ceased and Not Been Reclaimed by Operators

This appendix provides detailed information obtained from our survey on the 48 hardrock operations that BLM identified as ceased but not reclaimed by the operator since BLM began requiring financial assurances. Specifically, the appendix presents tables 14 through 19 showing: the basic characteristics of the 48 hardrock operations; key reclamation dates; BLM steps to compel operators to reclaim BLM land disturbed by hardrock operations and reasons operators did not reclaim the land; estimated reclamation costs; the types and amount of financial assurances and the amount of financial assurances relinquished and spent on reclamation; and sources of other funds and the status of reclamation.

Appendix III
Detailed Information on 48 Hardrock
Operations That Had Ceased and Not Been
Reclaimed by Operators

Table 14: Basic Characteristics of 48 Hardrock Operations That Had Ceased and Not Been Reclaimed by Operators

State and operation	Authority	Type of operation	Primary hardrock mineral	Heap-leaching	BLM acres
Alaska					
Chapman Creek Mining	Plan	Mining; other (road construction)	Gold	No	5
R D Environmental Mining	Plan	Exploration; mining	Gold	No	2
Gold Hill Mining	Plan	Mining	Gold	No	30
Nixon Fork Mine	Plan	Exploration; mining	Gold	No	115
Arizona					
Tyro Mill	Plan	Other (gold milling)	Gold	No	20
Granite Property	Plan	Exploration	Gold	No	^a
Herring Mine	Plan	Mining	Gold	No	2
SKOR	Plan	Mining	Gold	No	3
UFO	Plan	Mining	Gold	No	12
Ironwood Claim Group	New notice	Exploration	Gold	No	^a
California					
Screech Owl	Plan	Exploration	Gold	No	2
Nina	Plan	Mining; other (placer gold wash plant)	Gold	No	4
Idaho					
West One Minerals	Plan	Exploration; mining	Limestone	No	7
Montana					
Snowbound Placer	New notice	Exploration	Gold	No	0
Zortman & Landusky Mine	Plan	Mining	Gold	Yes	684
Zortman Exploration Plans	Plan	Exploration	Gold	Yes	88
Nevada					
Adelaide Crown	Plan	Mining	Gold	Yes	69
Wildhorse Canyon	Plan	Exploration	Gold	No	12
South Hy/Isabella	Plan	Exploration	Gold	No	22
Hogum or Golden Eagle	Plan	Mining	Gold	No	10
Golden Butte	Plan	Mining	Gold	Yes	235
Pan Project	Plan	Exploration	Gold	No	30
Monte Exploration	Plan	Exploration	Gold	No	18
Ward Mine	Plan	Mining	Zinc	No	22
Easy Jr	Plan	Mining	Gold	Yes	247
MacArthur Mine	Plan	Mining	Copper	Yes	415
Northern Crown Mines	Plan	Exploration	Gold	No	4

Appendix III
Detailed Information on 48 Hardrock
Operations That Had Ceased and Not Been
Reclaimed by Operators

(Continued From Previous Page)

State and operation	Authority	Type of operation	Primary hardrock mineral	Heap-leaching	BLM acres
Maverick Springs	Plan	Exploration	Gold	No	13
Phil Claims Expl Proj	Plan	Exploration	Gold	No	23
Kinsley	Plan	Mining	Gold	Yes	350
County Line Project	Plan	Mining	Gold	Yes	130
Olinghouse Mine	Plan	Exploration; mining	Gold	Yes	447
Mina Mill	Plan	Other (custom mill)	Gold	No	20
Diamond Peak Prospect Mtn	New Notice	Exploration	Gold	No	1
Eldorado Pediment	New Notice	Exploration	Gold	No	1
Phoenix Metals USA II Inc.	Plan	Other (mill site)	Platinum group metals/gold	No	12
American Canyon KOF	New Notice	Exploration	Gold	No	1
Jumbo Mine	Plan	Mining	Gold	Yes	63
Relief Canyon Mine	Plan	Mining	Gold	Yes	295
Elder Creek	Plan	Mining	Gold	Yes	102
Gold Bar Resource Area	Plan	Exploration; mining	Gold	Yes	154
Atlas Exploration	Plan	Exploration	Gold	No	149
16: 1 Millsite	Plan	Mining	Silver	Yes	40
Gold Bar Mine	Plan	Exploration; mining	Gold	Yes	1,175
Paradise Peak	Plan	Mining	Gold	Yes	470
Washington					
Raven Hill Mining	Plan	Mining	Rare Earth Elements	No	10
Empire Creek Project	Plan	Exploration	Unknown	No	5
Lamefoot	Plan	Mining	Gold	No	5

Source: BLM survey responses.

^aNo acreage given.

**Appendix III
Detailed Information on 48 Hardrock
Operations That Had Ceased and Not Been
Reclaimed by Operators**

Table 15: Key Dates for 48 Hardrock Operations That Had Ceased and Not Been Reclaimed by Operators

State	Operation began	Last plan of operation update	Last reclamation plan update	Last cost estimate update	Operation ceased	BLM cost estimate
Alaska						
Chapman Creek Mining	7/1996	7/1996	Not applicable	No answer	1/1998	No answer
R D Environmental Mining	1/1992	7/1995	7/1995	No answer	1/1995	6/2003
Gold Hill Mining	2/1999	5/2000	No answer	No answer	5/2002	No answer
Nixon Fork Mine	1/1991	5/1999	No answer	No answer	1/1999	No answer
Arizona						
Tyro Mill	1/1980	2/2000	2/2000	2/2000	7/2002	No answer
Granite Property	1/1990	5/1990	5/1990	No answer	11/1990	No answer
Herring Mine	1/2002	6/2002	6/2002	6/2002	1/2002	No answer
SKOR	1/1984	3/1985	Not applicable	No answer	1/1991	6/2003
UFO	1/1982	5/1991	Not applicable	No answer	1/1991	3/2004
Ironwood Claim Group	1/1983	1/2003	No answer	No answer	1/2003	No answer
California						
Screech Owl	7/1981	8/1995	8/1995	No answer	8/1996	No answer
Nina	1/1988	5/1995	4/1988	4/1988	1/2001	9/2003
Idaho						
West One Minerals	3/1990	1/1991	No answer	No answer	4/1991	No answer
Montana						
Snowbound Placer	1/2003	6/2003	9/2003	6/2003	1/2003	No answer
Zortman & Landusky Mine	1/1981	2/1994	2/1994	6/1998	1/1999	8/2004
Zortman Exploration Plans	1/1981	1/1996	1/1996	8/1999	1/1998	8/1999
Nevada						
Adelaide Crown	6/1988	6/1991	3/1988	No answer	10/1991	No answer
Wildhorse Canyon	10/1989	3/1995	3/1995	3/1995	7/1999	6/2003
South Hy/Isabella	5/1988	5/1995	5/1995	5/1995	7/1999	6/2003
Hogum or Golden Eagle	1/1997	2/1989	2/1989	No answer	1/1999	No answer
Golden Butte	1/1986	9/1995	4/1993	4/1993	1/1999	8/2004

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State	Operation began	Last plan of operation update	Last reclamation plan update	Last cost estimate update	Operation ceased	BLM cost estimate
Pan Project	1/1989	9/1989	No answer	No answer	1/1999	No answer
Monte Exploration	1/1987	4/1993	4/1993	4/1993	1/1999	No answer
Ward Mine	1/1989	3/1993	11/1994	No answer	1/1999	No answer
Easy Jr	1/1987	5/1999	5/1999	5/1999	1/1999	8/2003
MacArthur Mine	9/1992	9/1995	5/1998	No answer	11/1997	No answer
Northern Crown Mines	12/1991	3/1993	Not applicable	12/1991	12/1993	No answer
Maverick Springs	7/1990	12/1990	Not applicable	No answer	7/1991	9/1993
Phil Claims Expl Proj	1/1982	10/1995	10/1995	10/1995	1/1998	No answer
Kinsley	1/1994	3/1997	1/1996	1/1996	1/2000	No answer
County Line Project	5/1991	1/1992	12/1994	1/1992	12/1995	No answer
Olinghouse Mine	5/1998	9/2002	9/2002	9/2002	5/1999	No answer
Mina Mill	11/1985	11/1994	11/1994	11/1994	6/1996	No answer
Diamond Peak Prospect Mtn	6/2001	8/2002	5/2001	5/2001	1/2003	No answer
Eldorado Pediment	8/2001	10/2001	10/2001	10/2001	10/2003	No answer
Phoenix Metals USA II Inc.	1/1997	12/2001	2/1999	9/1997	12/2001	11/2001
American Canyon KOF	1/2002	5/2002	Not applicable	5/2002	1/2002	No answer
Jumbo Mine	1/1983	6/1986	4/1986	No answer	1/1997	1/1998
Relief Canyon Mine	1/1995	5/1997	5/1994	5/1997	1/2001	No answer
Elder Creek	1/1989	10/2000	12/1995	2/1996	1/2000	No answer
Gold Bar Resource Area	12/1986	8/2004	9/2004	12/1994	12/1994	No answer
Atlas Exploration	1/1984	12/1994	9/2004	6/1994	1/1994	No answer
16: 1 Millsite	4/1981	3/1991	No answer	7/1991	6/1992	7/1992
Gold Bar Mine	1/1984	8/2004	9/2004	10/1994	1/1994	No answer
Paradise Peak	12/1995	5/1996	5/1996	11/1995	8/2003	No answer
Washington						
Raven Hill Mining	1/1995	6/1995	No answer	No answer	1/1996	No answer
Empire Creek Project	4/1997	4/1997	No answer	4/1997	Unknown	No answer
Lamefoot	1/1992	11/1991	No answer	No answer	1/2001	No answer

Source: BLM survey responses.

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Table 16: BLM Steps to Compel Operators to Reclaim BLM Land Disturbed by 48 Hardrock Operations That Had Ceased and Not Been Reclaimed by Operators and the Reasons Operators Did Not Reclaim the Land

State and operation	BLM steps to compel reclamation	Operator did some reclamation	Reasons operators did not complete reclamation
Alaska			
Chapman Creek Mining	Notice of noncompliance; other (sent letters)	No	Recently ceased; other (operator tried unsuccessfully to sell)
R D Environmental Mining	Notice of noncompliance	Some reclamation	Other (claimant had health problems)
Gold Hill Mining	Notice of noncompliance; other (issued enforcement order)	No	Bankruptcy
Nixon Fork Mine	Other (worked with solicitor re: bankruptcy)	Some reclamation	Bankruptcy
Arizona			
Tyro Mill	Other (issued orders)	No	Other (operator in violation of two orders)
Granite Property	No action	No	Unknown
Herring Mine	Notice of noncompliance; other (revoked plan)	Some reclamation	Bankruptcy
SKOR	No action	No	Bankruptcy
UFO	Other (tried to locate operator)	Some reclamation	Bankruptcy; other (operator failed to submit bond)
Ironwood Claim Group	Other (asked friends to do reclamation)	Some reclamation	Other (claimant died)
California			
Screech Owl	Notice of noncompliance	Some reclamation	Other (claimant had BLM reclaim using financial assurance funds)
Nina	Other (negotiated bond release & claim relinquishment)	Some reclamation	Bankruptcy; other (BLM reclaimed in exchange for forfeiture of claim)
Idaho			
West One Minerals	Notice of noncompliance; other (attached bond)	No	Bankruptcy
Montana			
Snowbound Placer	Notice of noncompliance; other (sent letters)	Some reclamation	Recently ceased; other (operator was busy but promised to reclaim)
Zortman & Landusky Mine	Other (filed bankruptcy claim & worked with state re: bond)	Some reclamation	Bankruptcy
Zortman Exploration Plans	Other (unsuccessfully tried to have financial assurance provider do work)	Some reclamation	Bankruptcy
Nevada			
Adelaide Crown	Notice of noncompliance	No	Bankruptcy
Wildhorse Canyon	Notice of noncompliance	No	Bankruptcy

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State and operation	BLM steps to compel reclamation	Operator did some reclamation	Reasons operators did not complete reclamation
South Hy/Isabella	Notice of noncompliance	No	Bankruptcy
Hogum or Golden Eagle	Other (legal procedures to obtain bond)	Some reclamation	Bankruptcy
Golden Butte	Other (legal procedures to obtain bond)	Some reclamation	Bankruptcy
Pan Project	Other (legal procedures to obtain bond)	Some reclamation	Bankruptcy
Monte Exploration	Other (legal procedures to obtain bond)	Some reclamation	Bankruptcy
Ward Mine	Other (legal procedures to obtain bond)	Some reclamation	Bankruptcy
Easy Jr	Other (legal procedures to obtain bond)	Some reclamation	Bankruptcy
MacArthur Mine	Notice of noncompliance	No	Bankruptcy; other (operator believes reclamation will affect sale)
Northern Crown Mines	Notice of noncompliance	No	Other (ceased operations in 1993; no BLM action since)
Maverick Springs	Other (sent letters)	Some reclamation	Other (civil action)
Phil Claims Expl Proj	Notice of noncompliance; other (sent letters & made phone calls)	Some reclamation	Other (operator would like to continue work, but has no funds)
Kinsley	No action	Some reclamation	Bankruptcy
County Line Project	Notice of noncompliance	No	Bankruptcy
Olinghouse Mine	Notice of noncompliance	No	Bankruptcy; other (financial assurance provider went bankrupt, but did some work)
Mina Mill	Notice of noncompliance	No	Other (operator died & spouse has no funds for reclamation)
Diamond Peak Prospect Mtn	Other (sent notice of expiration)	No answer	Unknown
Eldorado Pediment	Other (sent expiration letter)	No	Recently ceased operation
Phoenix Metals USA II Inc.	Other (civil action & obtained court order to seize property)	No	Other (operator died)
American Canyon KOF	Notice of noncompliance	No	Other (operator fled)
Jumbo Mine	Notice of noncompliance	Some reclamation	Bankruptcy
Relief Canyon Mine	Notice of noncompliance; other (revoked plan)	No	Other (another operator assumed responsibility)
Elder Creek	Other (sent letters)	No	Bankruptcy
Gold Bar Resource Area	Notice of noncompliance	No	Bankruptcy
Atlas Exploration	Notice of noncompliance	Some reclamation	Bankruptcy
16: 1 Millsite	No action	Some reclamation	Bankruptcy
Gold Bar Mine	Notice of noncompliance	No	Bankruptcy
Paradise Peak	Notice of noncompliance	No	Bankruptcy

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State and operation	BLM steps to compel reclamation	Operator did some reclamation	Reasons operators did not complete reclamation
Washington			
Raven Hill Mining	Notice of noncompliance	Some reclamation	Bankruptcy
Empire Creek Project	No action	Some reclamation	Bankruptcy; other (project languished and was never completed)
Lamefoot	Other (awaiting operator decision re: closure)	Some reclamation	No answer

Source: BLM survey responses.

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Table 17: Estimated Reclamation Costs for 48 Hardrock Operations That Had Ceased and Not Been Reclaimed by Operators

State and operation	Operators cost estimate before operation ceased	BLM cost estimate after operations ceased	Actual cost or estimate of shortfall or funds needed to complete reclamation	Most recent reclamation cost estimate as of July 2004
Alaska				
Chapman Creek Mining	No answer	No answer	No estimate	\$0
R D Environmental Mining	No answer	\$139,000	No estimate	\$139,000
Gold Hill Mining	No answer	No answer	\$500,000 needed to complete reclamation	\$500,000
Nixon Fork Mine	No answer	No answer	No estimate	\$0
Arizona				
Tyro Mill	\$47,023	\$800,000	\$300,000 needed to complete reclamation and \$800,000 actual	\$800,000
Granite Property	No answer	No answer	No estimate	\$0
Herring Mine	\$1,800	No answer	\$34,000 needed to complete and \$34,000 actual	\$34,000
SKOR	No answer	\$88,240	\$92,239 actual cost	\$92,239
UFO	\$24,000	\$18,000	No estimate	\$18,000
Ironwood Claim Group	\$200	No answer	No estimate	\$200
California				
Screech Owl	No answer	No answer	\$2,431 actual cost	\$2,431
Nina	\$5,000	\$15,000	No estimate	\$15,000
Idaho				
West One Minerals	\$12,000	No answer	No estimate	\$12,000
Montana				
Snowbound Placer	\$2,970	No answer	\$2,970 needed to complete and \$2,970 actual	\$2,970
Zortman & Landusky Mine	\$68,500,000	\$85,200,000	\$18,500,000 needed to complete and \$25,200,000 shortfall	\$85,200,000
Zortman Exploration Plans	\$299,043	\$299,043	No estimate	\$299,043
Nevada				
Adelaide Crown	No answer	No answer	No estimate	\$0

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State and operation	Operators cost estimate before operation ceased	BLM cost estimate after operations ceased	Actual cost or estimate of shortfall or funds needed to complete reclamation	Most recent reclamation cost estimate as of July 2004
Wildhorse Canyon	\$52,310	\$53,006	\$53,000 needed to complete	\$53,000
South Hy/Isabella	\$122,369	\$169,593	\$169,700 needed to complete	\$169,700
Hogum or Golden Eagle	No answer	No answer	No estimate	\$0
Golden Butte	\$328,942	\$1,397,000	\$400,000 needed to complete and \$1,068,000 shortfall	\$1,397,000
Pan Project	\$5,670	No answer	No estimate	\$5,670
Monte Exploration	\$7,395	No answer	No estimate	\$7,395
Ward Mine	\$141,500	No answer	No estimate	\$141,500
Easy Jr	\$365,917	\$668,936	\$100,000 needed to complete and \$400,000 shortfall	\$668,936
MacArthur Mine	No Answer	No answer	\$17,000,000 shortfall over \$47,000 funds relinquished	\$17,047,000
Northern Crown Mines	\$3,897	No answer	No estimate	\$3,897
Maverick Springs	No Answer	\$7,999	\$37,846 needed to complete	\$37,846
Phil Claims Expl Proj	\$28,556	No answer	No estimate	\$28,556
Kinsley	\$911,763	\$1,400,000	\$550,000 needed to complete and \$500,000 shortfall	\$1,400,000
County Line Project	\$837,356	No answer	No estimate	\$837,356
Olinghouse Mine	\$850,650	No answer	No estimate	\$850,650
Mina Mill	\$116,408	No answer	No estimate	\$116,408
Diamond Peak Prospect Mtn	\$6,500	No answer	No estimate	\$6,500
Eldorado Pediment	\$8,200	No answer	No estimate	\$8,200
Phoenix Metals USA II Inc.	\$45,904	\$100,000	\$30,000 needed to complete	\$100,000
American Canyon KOF	\$21,600	No answer	No estimate	\$21,600
Jumbo Mine	\$8,197	\$3,700	\$2,500 needed to complete	\$3,700

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State and operation	Operators cost estimate before operation ceased	BLM cost estimate after operations ceased	Actual cost or estimate of shortfall or funds needed to complete reclamation	Most recent reclamation cost estimate as of July 2004
Relief Canyon Mine	\$888,696	No answer	\$463,500 needed to complete	\$888,696
Elder Creek	\$256,062	No answer	No estimate	\$256,062
Gold Bar Resource Area	\$303,300	No answer	No estimate	\$303,300
Atlas Exploration	\$265,000	No answer	No estimate	\$265,000
16: 1 Millsite	\$124,017	\$458,000	No estimate	\$458,000
Gold Bar Mine	\$2,608,000	No answer	No estimate	\$2,608,000
Paradise Peak	\$5,461,537	No answer	\$20,000,000 shortfall over \$1,157,000 funds relinquished	\$21,157,000
Washington				
Raven Hill Mining	\$6,700	No answer	No estimate	\$6,700
Empire Creek Project	\$7,125	No answer	No estimate	\$7,125
Lamefoot	No answer	\$20,000	No estimate	\$20,000

Source: BLM survey responses.

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Table 18: Types and Amount of Financial Assurances and the Amount of Financial Assurances Relinquished and Spent on Reclamation of 48 Hardrock Operations That Had Ceased and Not Been Reclaimed by Operators

State and operation	Financial assurance	Types and amount of financial assurances	Types and amount relinquished	Types and amount spent
Alaska				
Chapman Creek Mining	Yes	Bond pool - no value reported	None relinquished	Not applicable
R D Environmental Mining	Yes	Bond pool - \$139,000	None relinquished	Not applicable
Gold Hill Mining	Yes	Bond pool - \$15,000	None relinquished	Not applicable
Nixon Fork Mine	Yes	Bond pool - no value reported	None relinquished	Not applicable
Arizona				
Tyro Mill	No	No financial assurances	Not applicable	Not applicable
Granite Property	Yes	Surety bond - \$2,000	None relinquished	Not applicable
Herring Mine	No	No financial assurances	Not applicable	Not applicable
SKOR	No	No financial assurances	Not applicable	Not applicable
UFO	No	No financial assurances	Not applicable	Not applicable
Ironwood Claim Group	Yes	Cash - \$200	Cash - \$200	Cash - \$200
California				
Screech Owl	Yes	Certificate of deposit - \$2,431	Certificate of deposit - \$2,431	Certificate of deposit - \$2,431
Nina	Yes	Certificate of deposit - \$5,000	None relinquished	Not applicable
Idaho				
West One Minerals	Yes	Letter of credit - \$12,000	Letter of credit - \$12,000	Letter of credit - \$12,000
Montana				
Snowbound Placer	Yes	Cash - \$2,970	None relinquished	Not applicable
Zortman & Landusky Mine	Yes	Surety bond - \$43,500,000; other - \$14,300,000	Surety bond - \$31,200,000 other - \$2,000,000	Surety bond - \$31,200,000 other - \$1,800,000
Zortman Exploration Plans	Yes	Surety bond - \$299,043	None relinquished	Not applicable
Nevada				
Adelaide Crown	No	No financial assurances	Not applicable	Not applicable
Wildhorse Canyon	Yes	Bond pool - \$12,000	None relinquished	Not applicable
South Hy/Isabella	Yes	Bond pool - \$22,000	None relinquished	Not applicable

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State and operation	Financial assurance	Types and amount of financial assurances	Types and amount relinquished	Types and amount spent
Hogum or Golden Eagle	Yes	Surety bond - \$24,000	Surety bond - \$24,000	Surety bond - none
Golden Butte	Yes	Surety bond - \$328,942	Surety bond - \$328,942	Surety bond - none
Pan Project	Yes	Surety bond - \$5,670	Surety bond - \$5,670	Surety bond - none
Monte Exploration	Yes	Surety bond - \$7,395	Surety bond - \$7,395	Surety bond - none
Ward Mine	Yes	Surety bond - \$141,500	Surety bond - \$141,500	Surety bond - none
Easy Jr	Yes	Surety bond - \$365,917	Surety bond - \$365,917	Surety bond - none
MacArthur Mine	Yes	Surety bond - \$47,000; corporate guarantee - \$137,300	Surety bond - \$47,000; corporate guarantee - none	Surety bond-none; corporate guarantee-not applicable
Northern Crown Mines	Yes	Cash - \$3,897	None relinquished	Not applicable
Maverick Springs	No	No financial assurances	Not applicable	Not applicable
Phil Claims Expl Proj	Yes	Bond pool - \$28,556	None relinquished	Not applicable
Kinsley	Yes	Surety bond - \$911,763	Surety bond - \$911,763	Surety bond - \$561,763
County Line Project	Yes	Surety bond - \$210,000; corporate guarantee - \$628,017	Surety bond - \$210,000; corporate guarantee – none relinquished	Surety bond-none ^a Corporate guarantee-not applicable
Olinghouse Mine	Yes	Surety bond - \$1,800,000	None relinquished	Not applicable
Mina Mill	No	No financial assurances	Not applicable	Not applicable
Diamond Peak Prospect Mtn	Yes	Letter of credit - \$6,500	None relinquished	Not applicable
Eldorado Pediment	Yes	Surety bond - \$8,200	None relinquished	Not applicable
Phoenix Metals USA II Inc.	Yes	Surety bond - \$45,904	None relinquished	Not applicable
American Canyon KOF	Yes	Surety bond - \$5,314	None relinquished	Not applicable
Jumbo Mine	Yes	Certificate of deposit - \$10,000	Certificate of deposit - \$4,323	Certificate of deposit - \$1,800
Relief Canyon Mine	No	No financial assurances	Not applicable	Not applicable
Elder Creek	Yes	Surety bond - \$256,062	Surety bond - \$256,062	Surety bond - none
Gold Bar Resource Area	Yes	Surety bond - \$303,300	None relinquished	Not applicable
Atlas Exploration	Yes	Surety bond - \$267,000	None relinquished	Not applicable
16: 1 Millsite	Yes	Bond pool - \$124,017	None relinquished	Not applicable
Gold Bar Mine	Yes	Surety bond - \$2,608,000	None relinquished	Not applicable

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State and operation	Financial assurance	Types and amount of financial assurances	Types and amount relinquished	Types and amount spent
Paradise Peak	Yes	Surety bond - \$1,157,000; corporate guarantee - \$3,468,148	Surety bond - \$1,157,000; corporate guarantee-none relinquished	Surety bond-none; corporate guarantee-not applicable
Washington				
Raven Hill Mining	No	No financial assurances	Not applicable	Not applicable
Empire Creek Project	No	No financial assurances	Not applicable	Not applicable
Lamefoot	Yes	Surety bond - \$3,000,000	None relinquished	Not applicable

Source: BLM survey responses.

^aBLM told us in February 2005 that, as of December 2004, some of the surety bond funds had been obligated to review and determine reclamation design and costs.

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Table 19: Sources of Other Funds and the Status of Reclamation of 48 Hardrock Operations That Had Ceased and Not Been Reclaimed by Operators

State and operation	Sources and amount of funds received from others	BLM made arrangements for the financial assurance provider to do the reclamation	Percent of reclamation complete	Likelihood reclamation will be completed
Alaska				
Chapman Creek Mining	None	No answer	96-99%	Very likely
R D Environmental Mining	BLM - \$65,000	No answer	86-95%	Very likely
Gold Hill Mining	None	No answer	None	Somewhat likely
Nixon Fork Mine	None	No answer	26-50%	Very likely
Arizona				
Tyro Mill	BLM - \$517,088	No answer	76-85%	Very likely
Granite Property	None	No answer	None	About as likely as unlikely
Herring Mine	BLM - \$34,000	No answer	None	Very likely
SKOR	BLM - \$92,000	No answer	100%	Not applicable-reclamation complete
UFO	BLM - \$35,110	No answer	76-85%	Somewhat likely
Ironwood Claim Group	None	Yes	100%	Not applicable - reclamation complete
California				
Screech Owl	None	No	100%	Not applicable - reclamation complete
Nina	BLM - \$15,000	No answer	100%	Not applicable - reclamation complete
Idaho				
West One Minerals	None	No	100%	Not applicable - reclamation complete
Montana				
Snowbound Placer	None	No	1-25%	Somewhat unlikely
Zortman & Landusky Mine	BLM - \$5,594,500; ^a operator - \$1,050,000; EPA - \$340,000; MT DEQ - \$1,697,000	No	86-95%	Very likely
Zortman Exploration Plans	None	Yes	76-85%	Very likely
Nevada				
Adelaide Crown	None	No answer	1-25%	Very unlikely

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State and operation	Sources and amount of funds received from others	BLM made arrangements for the financial assurance provider to do the reclamation	Percent of reclamation complete	Likelihood reclamation will be completed
Wildhorse Canyon	None	No answer	None	About as likely as unlikely
South Hy/Isabella	None	No answer	None	About as likely as unlikely
Hogum or Golden Eagle	None	No	1-25%	Very likely
Golden Butte	U.S. Army Corps of Engineers - \$600,000	No	51-5%	Very likely
Pan Project	None	No	96-99%	Very likely
Monte Exploration	None	No	96-99%	Very likely
Ward Mine	None	No	1-25%	Very likely
Easy Jr	BLM - \$300,000; U.S. Army Corps of Engineers - \$171,000	No	51-75%	Very likely
MacArthur Mine	None	No	None	Very unlikely
Northern Crown Mines	None	No Answer	Do not know	Very unlikely
Maverick Springs	None	No Answer	Do not know	Somewhat likely
Phil Claims Expl Proj	None	Yes	None	Very likely
Kinsley	None	No	51-75%	Very likely
County Line Project	None	No	26-50%	Very unlikely
Olinghouse Mine	None	Yes	86-95%	Very unlikely
Mina Mill	None	No answer	None	About as likely as unlikely
Diamond Peak Prospect Mtn	None	No answer	Do not know	Very likely
Eldorado Pediment	None	No	None	Very likely
Phoenix Metals USA II Inc.	BLM - \$50,000	No answer	76-85%	Very likely
American Canyon KOF	None	No answer	None	About as likely as unlikely
Jumbo Mine	None	No	96-99%	Very likely
Relief Canyon Mine	None	No answer	26-50%	Somewhat unlikely
Elder Creek	None	Yes	1-25%	Very likely

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State and operation	Sources and amount of funds received from others	BLM made arrangements for the financial assurance provider to do the reclamation	Percent of reclamation complete	Likelihood reclamation will be completed
Gold Bar Resource Area	None	Yes	None	Somewhat likely
Atlas Exploration	None	Yes	1-25%	Somewhat likely
16: 1 Millsite	None	No answer	1-25%	Somewhat unlikely
Gold Bar Mine	None	Yes	None	Somewhat likely
Paradise Peak	None	No	None	Very likely
Washington				
Raven Hill Mining	BLM - \$2,500	No answer	26-50%	Very unlikely
Empire Creek Project	None	No answer	Do not know	No answer
Lamefoot	None	No answer	1-25%	Very likely

Source: BLM survey responses.

^aLewistown Montana BLM field office officials told us that BLM provided an additional \$550,000 after July 2004 and before September 2004.

Comments from the Department of the Interior

Note: GAO comments supplementing those in the report text appear at the end of this appendix.



United States Department of the Interior

OFFICE OF THE SECRETARY
Washington, D.C. 20240



In Reply Refer To:
1245 (830)

JUN 8 2005

Ms. Robin M. Nazzaro
Director, Natural Resources and Environment
Government Accountability Office
441 G Street, NW
Washington, DC 20548-0001

Dear Ms. Nazzaro:

Thank you for the opportunity to respond to the U.S. Government Accountability Office (GAO) Draft Report, *Hardrock Mining - BLM Needs to Better Manage Financial Assurances to Guarantee Coverage of Reclamation Costs* (GAO-05-377).

The draft report captures many of the demands facing the Mining Law Administration, Surface Management Program of the Bureau of Land Management (BLM) related to managing financial guarantees required for operations authorized under the General Mining Law of 1872, as amended (Mining Law). Following are our responses to the recommendations and some suggested changes within the report.

Responses to the Recommendations:

Recommendation #1: *We recommend that the Secretary of the Interior direct the Director of BLM to require the BLM state office directors to establish an action plan for ensuring that operators of hardrock operations have required financial assurances, and that the financial assurances are based on sound reclamation plans and current cost estimates so they are adequate to pay all of the estimated costs of required reclamation if operators fail to complete the reclamation.*

Existing procedures and policies ensure financial guarantees are in place to protect the public should an operator fail to reclaim. The regulations at 43 CFR 3809 require the operator to provide a financial guarantee that covers the full reclamation cost for the operation. The regulations also require the BLM to conduct a periodic review of the reclamation cost estimate and the financial guarantee. BLM issued guidance on February 5, 2003 (IM 2003-082) on the review and acceptance of financial guarantee cost estimates for Notices and Plans of Operations under the 43 CFR 3809 Surface Management regulations. This guidance was updated on March 1, 2004 (IM 2003-082, Change 1). The guidance provides specific timeframes within which reclamation cost estimates must be reviewed for adequacy. The guidance requires: cost estimates for Notices are to be reviewed at time of extension (every two years); reclamation cost estimates for Plans of Operations are to be reviewed at least every three years; financial

See comment 1.

guarantees for part of an operation are to have the cost estimate reviewed annually; anytime an operation is modified, the cost estimate for the entire operation is to be reviewed; and if there is an agreement with the State dealing with financial guarantees and the State has review timeframes more stringent than the BLM's, the State's more stringent timeframe must be met.

Ensuring that the financial guarantees for operations authorized under the Mining Law meet the requirements of the regulations are a priority of the BLM's Surface Management Program. The importance of having adequate financial guarantees in place for all operations is stressed through the budget process and in directives issued by the BLM-Washington Office and State Offices.

In summary, we do not concur with this recommendation because the BLM has recently updated and implemented national policy and field guidance to ensure bond adequacy.

Recommendation #2: *We recommend that the Secretary of the Interior direct the Director of BLM to modify LR2000 to ensure that it tracks critical information on hardrock operations and associated financial assurances so that BLM headquarters and state offices can effectively manage financial assurances nationwide to ensure regulatory requirements are met.*

The BLM tracks all critical information on authorized operations in LR2000, which include case recordation and the bond and surety systems. BLM issued Instruction Memorandum No. 2005-126 on April 29, 2005 to provide guidance and direction on data standards for LR2000. Recently, the BLM added codes and edits to LR2000 for Plans of Operations, environmental analyses, financial guarantees and appeals. The BLM will continue to refine and enhance LR2000 data systems as needed to facilitate the surface management program.

Suggested changes within the report:

Report title: Consider changing the report title to *BLM Needs to Better Manage Financial Assurances "that" Guarantee Coverage of Reclamation Costs*.

Page 3, 2nd paragraph, after last sentence add: Plans of Operations that were approved on or before January 20, 2001, were required to have financial guarantees in place that met the requirements of the regulations on November 20, 2001.

Page 4, 1st paragraph, revise sentence from "... give BLM authority to take steps, such as issuing notices of noncompliance and revoking plans of operations" to "...give BLM authority to take steps, such as issuing noncompliance and suspension orders, and revoking plans of operations..." We suggest this because the previous regulations (43 CFR 3809, October 1, 2000) used the term "notice of noncompliance." The current regulations use the term "noncompliance and suspension orders."

See comment 2.

See comment 3.

See comment 4.

See comment 5.

Now on pp. 3 and 4.

See comment 6.

Page 5, 1st paragraph, 2nd sentence "...with operations identified by others": If possible, identify GAO's "others."

See comment 7.

Page 11, Figure 2 footnote: If possible, identify "others."

See comment 8.

Page 11, Figure 2: Remove Step 5. The reason we suggest removal of the step is the operation described in the figure is employing a heap-leaching process. However, the described operation includes a tailings pile. There are no tailings in heap-leaching operations. Tailings piles are associated with operations that employ milling and flotation.

See comment 9.

Page 12, 2nd paragraph, 2nd sentence, change to read: Upon recording a mining claim with BLM, the claimant must pay, per claim, an initial location fee, and a maintenance fee that is required annually; the claimant is not required to pay royalties on any hardrock minerals extracted.

See comment 10.

Page 20, 1st paragraph: To clarify this paragraph please include the following: Approved operations on notices and plans of operations are subject to the claimant or operator filing and obtaining approval of the financial guarantee instrument from BLM in accordance with regulations and policy.

See comment 11.

Page 21, paragraph: For consistency with information on page 20, add "notice- and plan-level" before "...hardrock operations...."

See comment 12.


Page 63, Conclusions: We disagree with the 4th sentence that reads "BLM has no process in place to ensure that operators obtain adequate financial assurance." As stated under Recommendation #1, the BLM process as mandated in regulations and guidance adequately addresses the financial obligations of an operator for notice-level and plan-level hardrock mining operations. In addition, we do not agree with the sentence "Specifically, LR2000 does not track the status of hardrock operations...." As noted under our response to Recommendation 2, BLM tracks all critical information on authorized operations in the LR2000 database.

Now on page 65.

See comment 13.

We appreciate the advice and critical assessment the GAO has given to BLM's Mining Law Administration, Surface Management Program. If you have any questions, please contact Ted Murphy, Chief, Division of Solid Minerals, at 202-452-0351, or Andrea Nygren, BLM Audit Liaison Officer, at 202-452-5153.

Sincerely,


Rebecca W. Watson
Assistant Secretary
Land and Minerals Management

The following are GAO's comments on the Department of the Interior's letter dated June 8, 2005.

GAO Comments

1. See agency comments and our evaluation section of this report.
2. See agency comments and our evaluation section of this report.
3. We did not change the title of the report because doing so would indicate that adequate financial assurances are in place to guarantee reclamation costs. As we report, this is not the case.
4. We added a sentence to state that plans of operations that were approved before January 20, 2001, were required to have financial assurances in place no later than November 20, 2001.
5. We changed the language to state that BLM has the authority to take steps, such as issuing noncompliance and suspension orders or revoking plans of operations, if operators do not comply with financial assurance or other regulatory requirements.
6. The "other" sources of information on hardrock operations that had ceased and not been reclaimed, as required, are identified in appendix I.
7. We added the National Research Council as one of the other sources used to develop figure 2.
8. We removed step 5, which described leftover material known as tailings, from figure 2.
9. We changed the language to clarify that upon recording a mining claim with BLM, the claimant must pay the fees discussed in our report, and that the location fee is not paid annually.
10. We did not add this language to this section of the report because we explain in the background section of the report that BLM requires all notice- and plan-level hardrock operations to have financial assurances before exploration or mining operations begin.
11. We clarified the language by adding "notice- and plan-level" before hardrock operations.

12. We clarified this sentence in our conclusion to state that “However, while federal regulations and BLM guidance set forth financial assurance requirements for notice- and plan-level hardrock mining operations, BLM has no process for ensuring that the regulations and guidance are effectively implemented to ensure that adequate financial assurances are in place, as required.” Our report shows that BLM state offices with hardrock operations reported that, as of July 2004, some hardrock operations did not have adequate financial assurances. Furthermore, past experience has shown that some hardrock operations have ceased without operators having the adequate financial assurances required by regulations and BLM guidance. We continue to believe that until BLM establishes monitoring and accountability mechanisms to ensure that all hardrock operations have required financial assurances based on sound plans and current cost estimates, these problems will continue.
13. We did not change this sentence in our conclusion because evidence in our report shows that LR2000 does not track the critical information BLM needs to effectively manage financial assurances on hardrock operations. Specifically, we reported that LR2000 does not track some critical information, including the operation’s basic status, such as whether the operation is ongoing or has ceased and should be reclaimed; some types of financial assurances being used, such as corporate guarantees, bond pools, and trust funds; and the adequacy of financial assurances to pay the cost of required reclamation.

GAO Contact and Staff Acknowledgments

GAO Contact

Robin M. Nazzaro (202) 512-3841

Acknowledgments

In addition to the contact named above, Andrea Wamstad Brown, Byron S. Galloway, Heather Holsinger, Carol Herrnsstadt Shulman, Walter Vance, and Amy Webbink made key contributions to this report.

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March 2018

COAL MINE RECLAMATION

Federal and State
Agencies Face
Challenges in
Managing Billions in
Financial Assurances

GAO Highlights

Highlights of [GAO-18-305](#), a report to congressional requesters

Why GAO Did This Study

Coal accounts for 17 percent of domestic energy production. SMCRA requires coal mine operators to reclaim lands that were disturbed during mining and to submit a financial assurance in an amount sufficient to ensure that adequate funds will be available to complete reclamation if the operator does not do so. Recent coal company bankruptcies have drawn attention to whether financial assurances obtained by OSMRE and state agencies will be adequate to reclaim land once coal mining operations have ceased.

GAO was asked to review management of financial assurances for coal mine reclamation. This report describes, among other things, the amounts and types of financial assurances held for coal mine reclamation in 2017 and the challenges that OSMRE and state agencies face in managing these financial assurances. GAO collected and analyzed data from OSMRE and 23 state agencies; reviewed federal laws, regulations, and directives; and interviewed OSMRE and state agency officials and representatives from organizations associated with the mining and financial assurance industries and environmental organizations.

What GAO Recommends

GAO recommends that Congress consider amending SMCRA to eliminate self-bonding. Interior neither agreed nor disagreed with GAO's recommendation.

View [GAO-18-305](#). For more information, contact Anne-Marie Fennell at (202) 512-3841 or fennella@gao.gov.

March 2018

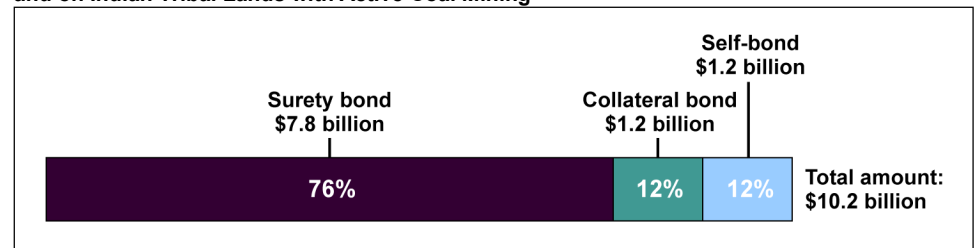
COAL MINE RECLAMATION

Federal and State Agencies Face Challenges in Managing Billions in Financial Assurances

What GAO Found

State agencies and the Department of the Interior's Office of Surface Mining Reclamation and Enforcement (OSMRE) reported holding approximately \$10.2 billion in surety bonds (guaranteed by a third party), collateral bonds (guaranteed by a tangible asset, such as a certificate of deposit), and self-bonds (guaranteed on the basis of a coal operator's own finances) as financial assurances for coal mine reclamation.

Amount of Financial Assurances Held in 2017, by Type, for Reclaiming Coal Mines in States and on Indian Tribal Lands with Active Coal Mining



Sources: GAO analysis of information provided by state regulatory authorities and the Office of Surface Mining Reclamation and Enforcement. | GAO-18-305

OSMRE and state agencies face several challenges in managing financial assurances, according to the stakeholders GAO interviewed. Specifically,

- Obtaining additional financial assurances from operators for unanticipated reclamation costs, such as long-term treatment for water pollution, can be difficult.
- Determining the financial stability of surety companies has been challenging in certain instances.
- Self-bonding presents a risk to the government because it is difficult to (1) ascertain the financial health of an operator, (2) determine whether the operator qualifies for self-bonding, and (3) obtain a replacement for existing self-bonds when an operator no longer qualifies. In addition, some stakeholders said that the risk from self-bonding is greater now than when the practice was first authorized under the Surface Mining Control and Reclamation Act (SMCRA).

GAO's previous work examining environmental cleanup found that the financial risk to government and the amount of oversight needed for self-bonds are relatively high compared to other forms of financial assurances. GAO also previously reviewed federal financial assurance requirements for various energy and mineral extraction sectors and found that coal mining is the only one where self-bonding was allowed. However, because SMCRA explicitly allows states to decide whether to accept self-bonds, eliminating the risk that self-bonds pose to the federal government and states would require SMCRA be amended.

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Abbreviations

OSMRE	Office of Surface Mining Reclamation and Enforcement
SMCRA	Surface Mining Control and Reclamation Act

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March 6, 2018

Congressional Requesters

Coal accounted for approximately 17 percent of domestic energy production in 2016, and extracting this resource requires disturbing the land, potentially affecting vegetation, wildlife, and water quality, among other things.¹ Under the Surface Mining Control and Reclamation Act (SMCRA), operators of coal mines on federal and nonfederal lands in the United States are required to reclaim mined lands—for example, by regrading and replanting the area.² To help ensure that reclamation occurs, SMCRA requires an operator to submit a financial assurance (e.g., a bond) in an amount sufficient to ensure that adequate funds will be available for the regulatory authority—either the Department of the Interior’s Office of Surface Mining Reclamation and Enforcement (OSMRE) or an approved state regulatory authority—to complete required reclamation if the operator does not do so.³ If specific conditions are met, SMCRA allows states to let an operator guarantee the cost for reclaiming a mine on the basis of its own finances, a practice known as self-bonding, rather than by securing a bond through another company or providing collateral, such as cash, letters of credit, or real property.

Three of the largest coal mining companies in the United States filed for bankruptcy in 2015 and 2016. This drew attention to whether financial assurances obtained by OSMRE and approved state regulatory authorities will be adequate to reclaim land once coal mining operations have ceased, particularly in cases where operators had used self-bonds

¹Coal was the energy source for approximately 30 percent of electricity production in the United States in 2016.

²Surface Mining Control and Reclamation Act of 1977, Pub. L. No. 95-87, 91 Stat. 445 (codified as amended at 30 U.S.C. §§ 1201-1328 (2017)). SMCRA’s reclamation requirements apply to surface coal mines, surface effects of underground coal mines, and other coal mining related structures (e.g., roads). For simplicity, we refer to these as surface effects of coal mining. Also, in this report, “reclaim” and “reclamation” refer to any activity required to return a site to the state it was in before mining occurred.

³States and Indian tribes can submit a program to implement SMCRA to OSMRE for approval. A state or Indian tribe with an approved program is said to have “primacy” for that program. In 2017, 24 states had primacy, 23 of which had active coal mining. OSMRE directly implements SMCRA in states and for Indian tribes that do not have primacy. Two non-primacy states (Tennessee and Washington) and four Indian tribes had active coal mining that OSMRE manages.

as their financial assurance. In August 2016, citing the recent bankruptcies, lower market demand for coal, and the potential for more market downturn, OSMRE issued a policy advisory to states suggesting, among other things, that states take steps to assess whether operators currently using self-bonds continue to qualify to do so and that states not accept new self-bonds.⁴ Moreover, in September 2016, in response to a petition seeking revisions to its self-bonding regulations, OSMRE stated that it planned to examine changes to its bonding regulations that would, among other things, help ensure the completion of the reclamation plan if the regulatory authority has to perform the work in the event the operator does not do so.⁵

You asked us to review OSMRE's oversight of financial assurances for coal mine reclamation. This report examines (1) the amounts and types of financial assurances held for coal mine reclamation, (2) the extent to which financial assurances to reclaim coal mines were forfeited from July 2007 through June 2016, (3) how OSMRE oversees financial assurances for coal mine reclamation, and (4) any challenges that OSMRE and approved state regulatory authorities face in managing financial assurances for coal mine reclamation.

To determine (1) the amounts and types of financial assurances held for coal mine reclamation and (2) the extent to which financial assurances to reclaim coal mines have been forfeited, we developed a data collection instrument and sent it to the relevant state regulatory authority for the 23 primacy states that OSMRE identified as having active coal mining in 2017. We also sent it to OSMRE to request data for the 2 states and four Indian tribes with active coal mining where it directly manages the coal program. In developing the instrument, we discussed available data with OSMRE and state regulatory authority officials and with a representative of the Interstate Mining Compact Commission, a multistate governmental agency representing state mining regulatory authorities. All 23 states we contacted and OSMRE responded to our data collection instrument. For financial assurances forfeited, the data reported includes forfeitures that

⁴Office of Surface Mining Reclamation and Enforcement, *Policy Advisory: Self-Bonding* (Washington, D.C.: Aug. 5, 2016).

⁵Petition to Initiate Rulemaking; Ensuring That Companies With a History of Financial Insolvency, and Their Subsidiary Companies, Are Not Allowed To Self-Bond Coal Mining Operations, 81 Fed. Reg. 61,612 (Sept. 7, 2016).

occurred from July 2007 through June 2016.⁶ We discussed with state and OSMRE officials how the data were collected and maintained and determined that the data were sufficiently reliable for our purposes.

To determine how OSMRE oversees financial assurances for coal mine reclamation, we analyzed SMCRA, federal regulations, and OSMRE directives. Specifically, we reviewed directives pertaining to OSMRE's oversight of state and tribal programs, its inspections of mines in both primacy and nonprimacy states, and a handbook on the calculation of the amount of financial assurance that OSMRE and primacy states obtain.⁷ We also reviewed agency documents, including the *2010 National Priority Review* that examined how financial assurance amounts were calculated, and interviewed OSMRE officials from its headquarters and its three regional offices.⁸ We selected a nonprobability sample of 7 states—Illinois, Kentucky, Montana, Pennsylvania, Tennessee, West Virginia, and Wyoming—to examine OSMRE's oversight activities in more detail. We generally selected states that produced the most coal in 2015 (the most recent data at the time we began our review), according to the U.S. Energy Information Administration. We also selected states to achieve some variation in factors such as geographic location, the dominant type of coal mining conducted (e.g., surface or underground mining), whether the state had primacy, and whether the state allowed self-bonding (see app. I). Because this is a nonprobability sample, the oversight activities in the 7 states are not generalizable to all 25 primacy and nonprimacy states with active coal mining but provide illustrative examples. For each of the 7 states, we reviewed agency documents, including OSMRE's annual evaluation of the state's program, agreements between OSMRE and the state regulatory authority specifying oversight steps OSMRE would take, and in some cases OSMRE and state documents related to OSMRE's determination that a state was not implementing its primacy program as required. We also interviewed OSMRE field office officials responsible for

⁶States and OSMRE generally report coal mining data according to the evaluation year, which runs from July 1 to June 30 of the following year.

⁷Office of Surface Mining Reclamation and Enforcement, *Oversight of State and Tribal Regulatory Programs*, REG-8 (Washington, D.C.: Jan. 31, 2011); *Completion and Processing of Mine Site Inspection Federal Program and Mine Site Evaluation State Program Report Forms*, INE-23 (Washington, D.C.: Dec. 28, 1998); and *Handbook for Calculation of Reclamation Bond Amounts*, TSR-1 (Washington, D.C.: Apr. 5, 2000).

⁸Office of Surface Mining Reclamation and Enforcement, *2010 National Priority Review: State Calculation of Required Bond Amounts* (Washington, D.C.: Feb. 11, 2011).

these 7 states and, for primacy states, officials from the state regulatory authority.

To obtain additional perspectives on OSMRE's oversight of financial assurances, we interviewed the following parties: officials from the Interstate Mining Compact Commission, officials from the National Association of Insurance Commissioners, and representatives from two organizations associated with the mining and financial assurances industries (the National Mining Association and The Surety and Fidelity Association of America) and from two environmental nongovernmental organizations (the Natural Resources Defense Council and the Western Organization of Resource Councils) actively involved with these issues. These organizations were identified through our research as well as by other stakeholders as potentially having relevant perspectives and information to share with regard to financial assurances for coal mine reclamation.

To identify any challenges that OSMRE and approved state regulatory authorities face in managing financial assurances for coal mine reclamation, we interviewed the federal and state officials and industry and environmental nongovernmental organization representatives identified above. Interview questions were designed to elicit officials' and representatives' views on any challenges facing OSMRE and state regulatory authorities and potential actions to address those challenges. We also asked about any actions OSMRE has taken or could take to address the challenges identified. We included those challenges that were identified by at least 4 of the 13 parties we interviewed.⁹ Not all parties we interviewed commented on every challenge identified.

We conducted this performance audit from January 2017 to March 2018 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

⁹The 13 parties are OSMRE; the state regulatory authorities of Illinois, Kentucky, Montana, Pennsylvania, West Virginia, and Wyoming; the Interstate Mining Compact Commission; the National Association of Insurance Commissioners; the National Mining Association; the Natural Resources Defense Council; The Surety and Fidelity Association of America; and the Western Organization of Resource Councils.

Background

Coal accounted for 17 percent of energy production (30 percent of electricity production) in the United States in 2016.¹⁰ To generate this energy, approximately 730 million tons of coal were mined domestically in 2016, according to the U.S. Energy Information Administration, approximately 40 percent of which was produced on federal lands. As of 2016, state regulatory authorities and OSMRE had received financial assurances associated with coal mines that had been permitted to disturb approximately 2.3 million acres, according to OSMRE data.

Coal is mined in two different ways: surface mining and underground mining. In surface coal mining, before the underlying coal can be extracted, the land is cleared of forests and other vegetation and topsoil is removed and stored for later use. Explosives or other techniques are then used to break up the overlying solid rock, creating dislodged earth, rock, and other materials known as spoil. Surface coal mines can cover an area of many square miles. In underground coal mining, tunnels are dug to access coal that is too deep for surface mining methods. In some cases, underground coal mines are designed to leave sufficient coal in the mine to support the overlying surface, and in other cases, they are designed to extract higher quantities of coal that results in subsidence of the overlying surface as mining progresses.

In addition to disturbing the land surface, coal mining can affect water quality, according to the Environmental Protection Agency, the National Academies, and others. For example, mining can increase sediments in rivers or streams, which may negatively affect aquatic species. Moreover, mining can expose minerals and heavy metals to air and water, leading to a condition known as acid mine drainage, which can lead to long-term water pollution and harm some fish and wildlife species. Mining can also lower the water table or change surface drainage patterns.

Regulation of Coal Mining

The surface effects of coal mining in the United States are regulated under SMCRA, which also created OSMRE to administer the act. SMCRA allows an individual state or Indian tribe to develop its own program to implement the act if the Secretary of the Interior finds that the program is

¹⁰U.S. Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(2017/11) (Washington, D.C.: Nov. 21, 2017).

in accordance with federal law.¹¹ A state with an approved program is said to have “primacy” for that program. To obtain primacy, a state or Indian tribe submits to the Secretary of the Interior for approval a program that demonstrates that the state or tribe has the capability of carrying out the requirements of SMCRA. The program must demonstrate that the state or Indian tribe has, among other things, a law that provides for the regulation of the surface effects of coal mining and reclamation in accordance with the requirements of SMCRA, and a regulatory authority with sufficient personnel and funding to do so. Of the 25 states and four Indian tribes that OSMRE identified as having active coal mining in 2017, 23 states had primacy, and OSMRE manages the coal program in 2 states and for the four Indian tribes.¹²

SMCRA requires a mine operator to obtain a permit before starting to mine.¹³ The permit process requires operators to submit plans describing the extent of proposed mining operations and how and on what timeline the mine sites will be reclaimed. In general, an operator must reclaim the land to a use it was capable of supporting before mining or to an alternative postmining land use that OSMRE or the state regulatory authority deems higher or better than the premining land use. In reclaiming the mine site, operators must comply with regulatory standards that govern, among other things, how the reclaimed area is regraded, replanting of the site, and the quality of water flowing from the site. Specifically:

- Operators are generally required to return mine sites to their approximate original contour unless the operator receives a variance from the regulatory authority. To return to this contour, the surface configuration achieved by backfilling and grading of the mined area must closely resemble the general surface configuration of the land

¹¹SMCRA states that “because of the diversity in terrain, climate, biologic, chemical, and other physical conditions in areas subject to mining operations, the primary governmental responsibility for developing, authorizing, issuing, and enforcing regulations for surface mining and reclamation operations subject to this act should rest with the States.” 30 U.S.C. § 1201(f) (2017).

¹²OSMRE implements SMCRA in Tennessee and Washington and for the Crow, Hopi, Navajo, and Ute Mountain Ute Indian tribes.

¹³In this report, we refer to permittees and operators as operators. The permittee is the person or entity that holds the permit and is legally responsible for the permit, whereas the operator is the person or entity that conducts coal removal operations. The permittee and the operator may or may not be the same person or entity.

before mining and blend into and complement the drainage pattern of the surrounding terrain, with all highwalls and spoil piles eliminated.¹⁴

- Operators are required to demonstrate successful revegetation of the mine site for 5 years (in locations that receive more than 26 inches of rain annually) or 10 years (in drier areas). States have requirements for what vegetation may be planted depending on the approved postmining land use. For example, West Virginia's regulations call for sites with a postmining land use of forest land to be planted with at least 500 woody plants per acre. The state specifies that at least five species of trees be used, including at least three of the species being higher value hardwoods, such as oak, ash, or maple.
- SMCRA requires that financial assurances be sufficient to ensure reclamation compliant with water quality standards, including those established by the Environmental Protection Agency or the states under the Clean Water Act.¹⁵ SMCRA's implementing regulations also contain additional water protection requirements. For example, the regulations require that all surface mining and reclamation activities be conducted to minimize disturbance of the hydrologic balance within the permit and adjacent areas and to prevent material damage to the hydrologic balance outside the permit area.¹⁶

The federal government also enacted SMCRA, in part, to implement an abandoned mine land program to promote the reclamation of mined areas left without adequate reclamation prior to 1977, when SMCRA was enacted, and that continue to substantially degrade the quality of the environment, prevent or damage the beneficial use of land or water resources, or endanger the health or safety of the public.¹⁷ Specifically,

¹⁴A highwall is a cliff of exposed rock left after a surface mining operation has cut into the landscape. A spoil pile consists of rock and other excavated material that is produced by mining.

¹⁵The Clean Water Act is codified at 33 U.S.C. 1251-1388 (2017). For more information on the role the Clean Water Act plays in the regulation of the surface effects of coal mining, see GAO, *Surface Coal Mining: Financial Assurances for, and Long-Term Oversight of, Mines with Valley Fills in Four Appalachian States*, [GAO-10-206](#) (Washington, D.C.: Jan. 14, 2010).

¹⁶Hydrologic balance means the relationship between the quality and quantity of water inflow to, water outflow from, and water storage in a hydrologic unit, such as a drainage basin, aquifer, soil zone, lake, or reservoir. 30 C.F.R. §701.5 (2017).

¹⁷To finance reclamation of abandoned mine sites, the legislation established an Abandoned Mine Reclamation Fund, funded in part by fees on coal production. Abandoned mine reclamation funds are distributed annually to states with approved reclamation programs.

Congress found that a substantial number of acres of land throughout the United States had been disturbed by surface and underground coal mining on which little or no reclamation was conducted. Further, it found that the impacts from these unreclaimed lands imposed social and economic costs on residents in nearby areas as well as impaired environmental quality. Since the abandoned mine land program was created, approximately \$3.9 billion has been spent to reclaim abandoned mine lands, and there is at least \$10.2 billion in remaining reclamation costs for coal mines abandoned prior to 1977, as of September 30, 2017, according to OSMRE.

Financial Assurances for Reclamation

SMCRA generally requires operators to submit a financial assurance in an amount sufficient to ensure that adequate funds will be available for OSMRE or the state regulatory authority to complete the reclamation if the operator does not do so. The amount of financial assurance required is determined by the regulatory authority—OSMRE or the state—and is based on its calculation of the estimated cost to complete the reclamation plan it approved as part of the mining permit.¹⁸ Financial assurance amounts can be adjusted as the size of the permit area or the projected cost of reclamation changes.

SMCRA also authorizes states to enact an OSMRE-approved alternative bonding system as long as the alternative achieves the same objectives. One kind of alternative bonding system is known as a bond pool. Under this type of system, the operator may post a financial assurance for an amount determined by multiplying the number of acres in the permit area by a per-acre assessment. The per-acre assessment may vary depending on the site-specific characteristics of the planned mining operation and the operator's history of compliance with state regulations. However, the per-acre bond amount may be less than the estimated cost of reclamation. To supplement the per-acre bond, the operator generally must pay a fee for each ton of mined coal and may also be required to pay other types of fees. These funds are pooled and can be used to reclaim sites that participants in the alternative bonding system do not reclaim. Under OSMRE regulations, all alternative bonding systems must

¹⁸When OSMRE is the regulatory authority, agency officials said they use a handbook for calculating financial assurance amounts. See Office of Surface Mining Reclamation and Enforcement, *Handbook for Calculation of Reclamation Bond Amounts*. Primacy states can choose to use the handbook but are not required to do so and can also develop their own approaches to calculating the amount required.

provide a substantial economic incentive for the operator to comply with reclamation requirements and must ensure that the regulatory authority has adequate resources to complete the reclamation plan for any sites that may be in default at any time.¹⁹

OSMRE regulations implementing SMCRA recognize three major types of financial assurances: surety bonds, collateral bonds, and self-bonds.

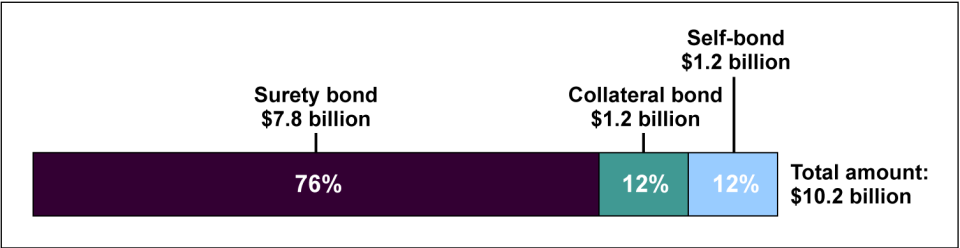
- A surety bond is a bond in which the operator pays a surety company to guarantee the operator's obligation to reclaim the mine site. If the operator does not reclaim the site, the surety company must pay the bond amount to the regulatory authority, or the regulatory authority may allow the surety company to perform the reclamation instead of paying the bond amount.
- Collateral bonds include cash; certificates of deposit; liens on real estate; letters of credit; federal, state, or municipal bonds; and investment-grade rated securities deposited directly with the regulatory authority.
- A self-bond is a bond in which the operator promises to pay reclamation costs itself. Self-bonds are available only to operators with a history of financial solvency and continuous operation. To remain qualified for self-bonding, operators must, among other requirements, do one of the following: have an "A" or higher bond rating, maintain a net worth of at least \$10 million, or possess fixed assets in the United States of at least \$20 million. In addition, the total amount of self-bonds any single operator can provide shall not exceed 25 percent of its tangible net worth in the United States. Primacy states have the discretion on whether to accept self-bonds.

¹⁹The regulations do not define "substantial economic incentive."

State Regulatory Authorities and OSMRE Reported Holding \$10.2 Billion in Various Types of Financial Assurances

State regulatory authorities and OSMRE reported holding a total of approximately \$10.2 billion in surety bonds, collateral bonds, and self-bonds as financial assurances for coal mine reclamation in 2017.²⁰ Of the total amount of financial assurances, approximately 76 percent (\$7.8 billion) were in the form of surety bonds, 12 percent (\$1.2 billion) in collateral bonds, and 12 percent (\$1.2 billion) in self-bonds (see fig. 1).

Figure 1: Amount of Financial Assurances Held in 2017, by Type, for Reclaiming Coal Mines in States and on Indian Tribal Lands with Active Coal Mining



Sources: GAO analysis of information provided by state regulatory authorities and the Office of Surface Mining Reclamation and Enforcement. | GAO-18-305

Twenty-four states reported holding surety bonds, 20 states reported holding collateral bonds, and 8 states reported holding self-bonds (see table 1).²¹ In addition, OSMRE officials identified 6 states—Indiana, Kentucky, Maryland, Ohio, Virginia, and West Virginia—that have also established alternative bonding systems, such as bond pools. In a state with a bond pool, the operator may generally post a financial assurance for less than the full estimated cost of reclamation; in addition, the operator must pay into a bond pool.²² The pooled funds can be used to

²⁰The states and OSMRE provided the data to us from May to August 2017; however, because the states and OSMRE vary in how often they update their respective databases, the effective date the data reflect ranges from March to August 2017.

²¹We previously examined federal requirements for financial assurances for surface effects of coal mining, hardrock mining, onshore oil and gas extraction, and wind and solar energy development, and found that of these mining and energy development activities, coal mining was the only one where self-bonding was allowed under federal requirements. See GAO, *Financial Assurances for Reclamation: Federal Regulations and Policies for Selected Mining and Energy Development Activities*, [GAO-17-207R](#) (Washington, D.C.: Dec. 16, 2016).

²²In Maryland, operators must post a financial assurance for the full estimated cost of reclamation. The state’s bond pool serves as a supplement to be used if bond funds are otherwise not sufficient for reclamation.

supplement forfeited financial assurances to reclaim sites that operators participating in the bond pool do not reclaim.

Table 1: Amount of Financial Assurances Held in 2017, by Type and State, for Reclaiming Coal Mines in States and on Indian Tribal Lands with Active Coal Mining

State or Indian tribe	Type of financial assurance (dollars)			Total (dollars)
	Surety bond	Collateral bond ^a	Self-bond ^b	
Alabama	221,323,000	18,602,000	0	239,925,000
Alaska	261,000	6,000,000	9,617,000	15,878,000
Arkansas	1,126,000	1,330,000	0	2,456,000
Colorado	94,890,000	5,196,000	91,318,000	191,404,000
Crow	39,613,000	1,703,000	0	41,316,000
Hopi	0	0	0	0
Illinois	386,522,000	10,244,000	0	396,765,000
Indiana ^c	215,444,000	2,351,000	0	217,795,000
Kansas	0	2,953,000	0	2,953,000
Kentucky ^c	885,992,000	39,414,000	0	925,406,000
Louisiana	156,834,000	0	0	156,834,000
Maryland ^c	18,659,000	4,027,000	0	22,685,000
Mississippi	53,824,000	0	0	53,824,000
Missouri	636,000	2,985,000	7,266,000	10,887,000
Montana	470,903,000	1,753,000	0	472,656,000
Navajo	643,562,000	0	0	643,562,000
New Mexico	287,066,000	0	0	287,066,000
North Dakota	100,322,000	21,247,000	211,230,000	332,799,000
Ohio ^c	58,465,000	3,874,000	0	62,339,000
Oklahoma	16,534,000	4,899,000	0	21,433,000
Pennsylvania	976,693,000	60,739,000	0	1,037,431,000
Tennessee	44,426,000	3,661,000	0	48,087,000
Texas	193,980,000	996,950,000	249,700,000	1,440,630,000
Utah	57,886,000	6,754,000	0	64,640,000
Ute Mountain Ute	16,704,000	10,000	0	16,714,000
Virginia ^c	235,312,000	3,531,000	24,964,000	263,807,000
Washington	139,295,000	6,200,000	0	145,495,000

State or Indian tribe	Type of financial assurance (dollars)			Total (dollars)
	Surety bond	Collateral bond ^a	Self-bond ^b	
West Virginia ^c	801,910,000	29,108,000	140,116,000	971,135,000
Wyoming	1,641,061,000	4,512,000	425,947,000	2,071,520,000
Total	7,759,244,000	1,238,041,000	1,160,158,000	10,157,443,000

Sources: GAO analysis of information provided by state regulatory authorities and the Office of Surface Mining Reclamation and Enforcement. | GAO-18-305

Notes: The effective date the data reflect ranges from March to August 2017 and varies by state and Indian tribe. Financial assurance amounts are rounded to the nearest \$1,000. Totals may not add due to rounding.

^aCollateral bonds include cash; certificates of deposit; liens on real estate; letters of credit; federal, state, or municipal bonds; and investment-grade rated securities deposited directly with the regulatory authority.

^bSelf-bonds are bonds for which the operator guarantees reclamation costs on the basis of its own finances rather than by securing a bond through another company or providing collateral.

^cState also has established an alternative bonding system, such as a bond pool. A bond pool supplements financial assurances that are posted for less than the full estimated cost of reclamation.

About Half of the States Reported at Least One Forfeited Financial Assurance

States and OSMRE reported that operators forfeited more than 450 financial assurances for reclaiming coal mines between July 2007 and June 2016,²³ with 13 of the 25 states reporting at least one forfeiture.²⁴ States and OSMRE reported that the amount of financial assurance forfeited was sufficient to cover the cost of required reclamation in about 52 percent of the cases and did not cover the cost of required reclamation in about 22 percent of the cases.²⁵ In the remainder of the cases (26 percent), the state or OSMRE reported that it had not yet determined if the financial assurance amount covered the reclamation costs that it was intended to cover. State and OSMRE officials said that it can take many years to fully reclaim a site and that it may take time for them to identify the extent of reclamation needed and to determine if the amount of financial assurance forfeited was sufficient to cover reclamation costs.

State and OSMRE officials said there were several reasons why the amount of financial assurance obtained might not be sufficient to cover reclamation costs. For example, officials said the amount of financial assurance might not be sufficient if an operator mined in a manner inconsistent with the approved mining plan upon which the amount of financial assurance was calculated or if mining activity resulted in water pollution that was not considered when the amount of financial assurance was calculated. In cases where the amount of financial assurance does not cover the cost of reclamation, the operator remains responsible for

²³Financial assurance forfeiture occurs when a mine operator does not fully reclaim an area disturbed by mining in accordance with its permit and the regulatory authority collects the financial assurance to pay for reclamation. In some cases, an operator provided more than one financial assurance for a single coal mine; therefore, the number of financial assurances forfeited is higher than the number of mines where a forfeiture occurred. States and OSMRE generally report coal mining data according to the evaluation year, which runs from July 1 to June 30 of the following year.

²⁴Most of the financial assurances forfeited come from mining operations in 3 states—Kentucky, Pennsylvania, and West Virginia. State officials cited several reasons why these states had the most forfeitures. For example, these states had a large number of mines, including smaller mines whose operators may have fewer financial resources. OSMRE did not report any forfeitures on Indian tribal lands for the four tribes with active coal mining programs.

²⁵These percentages exclude forfeitures involving alternative bonding systems, such as bond pools, where the amount of financial assurance an operator provides is not intended to cover the full estimated cost of reclamation. For cases in which the states and OSMRE reported that the financial assurance forfeited did not cover the cost of reclamation, we did not collect additional information.

reclaiming the mine site. However, OSMRE officials said that in those cases where the operator may be experiencing financial difficulties, it might be difficult for the states or OSMRE to compel the operator to complete the reclamation or provide additional funds to do so without having the operator go out of business or into bankruptcy. If the operator does not reclaim the site, the regulatory authority must use the forfeited financial assurance to do so. If the forfeited funds are not adequate, the site may not be fully reclaimed unless the regulatory authority either successfully sues the operator for more funds or provides any additional funds needed for reclamation. One other source of funds states can use to reclaim forfeited mines is civil penalties that the United States government collects from operators that violate conditions of their mining permits.²⁶ OSMRE obligated approximately \$2.8 million in civil penalties from fiscal years 2012 through 2017 for states to use to perform reclamation in cases where the financial assurance was not sufficient, according to agency officials.

OSMRE Has Taken a Variety of Steps Related to Oversight of Financial Assurances

OSMRE has taken steps—including periodically reviewing financial assurance amounts, inspecting mine sites, and reviewing state programs that implement SMCRA—to oversee financial assurances and aspects of the mining and reclamation process that can affect whether the amount of financial assurances obtained will cover the cost of required reclamation.

OSMRE and State Regulators Periodically Review Financial Assurance Amounts

SMCRA requires OSMRE or the primacy state regulatory authority to calculate the amount of financial assurance required for each mine and to adjust the amount when the area requiring bond coverage increases or decreases or when the cost of future reclamation changes. OSMRE officials and state regulatory authority officials from four of the six states we interviewed said they generally review the amount of financial assurance at least every 2 1/2 years or when the mining plan has been modified in a way that may affect the amount of financial assurance

²⁶Civil penalties are available to the extent authorized in the applicable annual appropriations act or other relevant statute. 30 C.F.R. § 845.21(a) (2017).

required.²⁷ Such periodic reviews are in part to help ensure that OSMRE and state regulatory authorities continue to hold an amount sufficient to complete required reclamation as conditions change. These reviews can lead to OSMRE or the state regulatory authority changing the amount of financial assurance required for a mine. For example:

- A state regulatory authority official in Utah said that the regulatory authority reviewed an existing mine permit in 2014, which led to it recalculating the estimated cost of reclamation on the basis of current costs. The state regulatory authority requested that the operator provide a financial assurance to cover the difference (approximately \$195,000), in addition to the \$445,000 financial assurance already in place. However, the official said that the operator—which had stopped mining the site in 2012 and filed for bankruptcy in 2013—did not provide the additional financial assurance amount. As a result, in 2017 the state regulatory authority collected the financial assurance that was in place (i.e., the operator forfeited its assurance). The official said in December 2017 that the state regulatory authority is determining the steps it will take to reclaim the site and expects that the forfeited amount will be sufficient to cover reclamation costs.
- OSMRE officials said that the agency reviewed a permit for a mine on Navajo tribal lands and determined that it needed to ask the operator to provide an additional financial assurance in the amount of \$5.7 million. The increase was due to inflation and to include certain costs, such as the cost of mobilizing equipment needed for reclamation, that had inadvertently been excluded from the earlier calculation of the financial assurance required.²⁸ The officials said that the operator provided the additional financial assurance amount.
- State regulatory authority officials in Wyoming said they review financial assurance amounts annually, and in 2017 they reduced the financial assurance for one mine by almost \$35 million because of a

²⁷ According to OSMRE officials, financial assurance amounts are generally calculated at permit issuance and mid-point review, and most permits cover 5 years. Wyoming state regulatory authority officials said that they review financial assurance amounts annually. Pennsylvania state regulatory officials said that in their state, the review of the financial assurance calculation occurs at permit renewal, which happens after 5 years, and is optional during the mid-point review.

²⁸ The operator did not include these costs in the calculation of estimated reclamation costs that it submitted to OSMRE and OSMRE did not initially identify the oversight, according to OSMRE officials.

substantial decline in fuel costs and the mine's ability to share the cost of needed reclamation equipment with a neighboring mine.

OSMRE Inspects Mine Sites

SMCRA requires OSMRE to make an average of at least one complete inspection per calendar quarter and one partial inspection per month for each active permit for which it is the regulatory authority to ensure that mines are in compliance with SMCRA and federal regulations.²⁹

Complete inspections cover all inspection elements in OSMRE's directive, while partial inspections may instead focus on issues that most frequently result in violations or a specific topic identified for oversight, according to OSMRE officials. In addition, OSMRE's directive instructs the agency to inspect a sample of mines annually in states that have primacy to monitor and evaluate approved state programs' compliance with SMCRA. The total number of inspections OSMRE is directed to conduct in primacy states is based on the number of inspectable units in each state.³⁰

Complete inspections are to be done on 33 percent of those sites selected for inspection.³¹ Overall, OSMRE completed more inspections in primacy states than directed each year for evaluation years 2013 through 2016, according to agency data.³² For example, in evaluation year 2016, OSMRE's directive called for it to conduct 1,225 inspections and OSMRE completed 1,388.

As part of a complete inspection, OSMRE confirms that the operator is following the mining and reclamation plans to assure that the amount of financial assurance in place is adequate, according to OSMRE officials. If

²⁹In primacy states, the state regulatory authority is also required to make an average of one complete inspection per calendar quarter and one partial inspection per month for all active permits.

³⁰OSMRE's directive instructs the agency to determine the number of oversight inspections OSMRE conducts in primacy states on the basis of the number of "inspectable units" in each state. For example, for states with fewer than 5 inspectable units, OSMRE is required to inspect at least 1 of them annually, whereas for states with between 5 and 1,000 units, OSMRE is required to inspect at least 25 percent of them annually. An inspectable unit is a surface coal mining and reclamation operation or a coal exploration operation for which an inspection obligation exists under 30 C.F.R. § 840.11(a)-(c) or under section 842.11(c). An inspectable unit may consist of an individual permit or a consolidation of several permits issued to the same permittee but which for all practical purposes constitutes the same surface coal mining and reclamation operation.

³¹For the remaining inspections, OSMRE can conduct a complete or partial inspection.

³²This refers to the total number of inspections OSMRE was directed to conduct nationwide. In some cases, OSMRE did not conduct the directed number of inspections in a particular state in a given year.

a violation is identified during an inspection, SMCRA requires OSMRE to issue a ten-day notice to the state regulatory authority or an immediate cessation order to the operator.³³ If the violation increases the estimated cost of reclamation (e.g., if the operator disturbed more land than it was approved for) or an adequate financial assurance had not been collected, OSMRE or the state regulatory authority can request that the operator provide an additional financial assurance. For example:

- OSMRE issued a ten-day notice to the Pennsylvania regulatory authority in 2015 because a water treatment system for a mine in that state did not have a financial assurance. According to OSMRE officials, the state regulatory authority took appropriate action to resolve the situation by issuing an order for the operator to post a financial assurance within 7 days.
- During an inspection of a mine in Tennessee, a nonprimacy state, OSMRE determined that the operator had not correctly reclaimed a portion of the mine because the slope of the regraded area was too steep, according to an OSMRE official. For the reclamation work that would be needed to regrade that area, OSMRE determined that the operator needed to provide an additional financial assurance of \$272,000.

OSMRE Reviews State Coal Programs

Under SMCRA, OSMRE is required to evaluate each primacy state's coal program annually to ensure that it complies with SMCRA. SMCRA includes a requirement that the regulatory authority secure necessary financial assurances to assure the reclamation of each permitted mine site. While OSMRE's directive on oversight of state and tribal regulatory programs does not instruct the agency to review state regulatory authority calculations of financial assurance amounts, it instructs OSMRE to focus on the state programs' success in achieving the overall purposes of SMCRA. For example, OSMRE, in conducting its oversight, is to evaluate the states' effectiveness in successfully reclaiming lands affected by mining and in avoiding negative effects outside of areas authorized for

³³ OSMRE issues a ten-day notice to a state regulatory authority when, on the basis of an inspection, it determines that a violation exists or when it otherwise has reason to believe a violation exists (e.g., because it has received information regarding a violation from the public). Upon receiving such a notice, the state regulatory authority has 10 days to respond to OSMRE indicating whether, in its determination, a violation occurred and, if so, the state's intended response. OSMRE issues a cessation order to an operator if a condition creates an imminent danger to the health or safety of the public or is causing or can reasonably be expected to cause significant, imminent environmental harm.

mining activities.³⁴ If OSMRE's review of a state program identifies an issue that could result in the state not effectively implementing, administering, enforcing, or maintaining all or any portion of its approved coal program, OSMRE can work with the state regulatory authority to develop an action plan to correct the issue. If a state regulatory authority does not take the necessary corrective action, OSMRE may begin the process of withdrawing approval for a part or all of the state's primacy.³⁵

In addition to annually evaluating state programs, OSMRE can conduct national or regional reviews on specific topics. For example, OSMRE conducted a national review in 2010 that examined how state regulatory authorities calculated the required amount of financial assurances for coal mine reclamation.³⁶ The review examined financial assurance practices in 23 states and reported that on the basis of the sample of mining permits reviewed, OSMRE was unable to determine if the amount of financial assurances was adequate for at least one of the permits it reviewed in 10 of the 23 states. Among the potential issues OSMRE identified were errors in the methods state regulatory authorities used to calculate financial assurance amounts and insufficient information in the reclamation plan upon which to calculate reclamation costs.

OSMRE has worked with the 10 state regulatory authorities to address the financial assurance issues identified in the 2010 review. For example, OSMRE's review found that the regulatory authority in Pennsylvania did not secure sufficient financial assurances to complete reclamation plans, in part because amounts were not calculated based on the actual sizes of the areas excavated for mining. In August 2014, OSMRE and Pennsylvania's regulatory authority agreed to an action plan to ensure that the financial assurances for all active and new permits would be calculated using the actual sizes of the excavated areas. According to an OSMRE official, as of February 2017, the state regulatory authority had

³⁴Office of Surface Mining Reclamation and Enforcement, *Oversight of State and Tribal Regulatory Programs*.

³⁵An OSMRE directive defines an action plan as a detailed schedule of specific measures to be taken to resolve an issue identified during OSMRE's oversight of a state coal program that could result in a failure by the state to effectively implement, administer, enforce, or maintain all or any portion of its approved program. Office of Surface Mining Reclamation and Enforcement, *Corrective Actions for Regulatory Program Problems and Action Plans*, REG-23 (Washington, D.C.: Jan. 31, 2011).

³⁶Office of Surface Mining Reclamation and Enforcement, *2010 National Priority Review*. OSMRE's Acting Director requested this review in 2009.

recalculated the financial assurance amount for all mines and had secured the additional financial assurances needed from operators of all but two of the mines. State officials said in October 2017 that they were continuing to work to obtain the assurances required for the two mines.

OSMRE's 2010 review also found that financial assurances in Kentucky were not always sufficient to cover required reclamation costs, in part because the method Kentucky's regulatory authority used to calculate financial assurance amounts did not factor in all costs, such as the cost of moving equipment to and from the reclamation site. In February 2011, OSMRE and Kentucky's regulatory authority signed an action plan identifying steps needed to address the issues OSMRE had identified. However, in May 2012, OSMRE determined that the state regulatory authority's proposed changes to its method for calculating financial assurance amounts was an improvement but would not result in the authority obtaining sufficient funds to cover required reclamation. As a result, OSMRE initiated the process of revoking Kentucky's primacy for this aspect of its program. In response, Kentucky implemented regulations to increase the minimum financial assurance required. The regulations also required the state regulatory authority to evaluate financial assurance amounts every 2 years to determine whether they need to be increased, among other things. The state regulatory authority sent a set of program amendments to OSMRE designed to address the identified deficiencies, some of which OSMRE is currently reviewing.

OSMRE and State Regulatory Authorities Face a Number of Challenges in Managing Financial Assurances

OSMRE and state regulatory authorities face a number of challenges in managing financial assurances for coal mine reclamation—including those related to self-bonding, unanticipated reclamation costs, and the financial stability of surety companies—according to federal and selected state regulatory authority officials, representatives from organizations associated with the mining and financial assurance industries, and representatives from environmental nongovernmental organizations whom we interviewed.³⁷

³⁷Challenges included were identified by at least four parties we interviewed. Not all parties we interviewed commented on every challenge identified.

Regulatory Authorities Face Several Challenges Associated with Self-Bonding

Challenges facing OSMRE and state regulatory authorities related to self-bonding include the following:

- **Not knowing the complete financial health of an operator.** The information federal regulations require operators to provide to regulatory authorities may provide an incomplete picture of the financial health of an operator, according to some parties we interviewed.³⁸ For example, the financial information that operators provide reflects their past financial health, which may not reflect the operators' current financial position, according to OSMRE's response to the 2016 petition seeking revisions to its self-bonding regulations.³⁹ In addition, if an operator applying for a self-bond is a subsidiary of another company, the operator is not required by regulation to submit information on the financial health of its parent company. While the operator applying may have sufficient financial assets to qualify for self-bonding, if its parent company experiences financial difficulties, the operator's assets may be drawn on to meet the parent's obligations, which could worsen the financial health of the self-bonded operator. In addition, according to OSMRE officials, even if OSMRE or a state regulatory authority were to become aware that an operator's parent company was at financial risk, it would be difficult for the agency to deny the operator's request for a self-bond because eligibility is specific to the entity applying for the self-bond, according to regulations.

OSMRE could change its self-bonding regulations to require more information, according to OSMRE officials. However, the financial relationships between parent and subsidiary companies have become increasingly complex, making it difficult to ascertain an operator's financial health on the basis of information reported in company financial and accounting documents, according to officials. When OSMRE first approved its self-bonding regulations in 1983, it noted that it was attempting to provide rules that would allow self-bonding without necessitating regulatory authorities to employ financial experts to determine which companies should be allowed to self-bond. However, according to OSMRE officials, financial expertise is now often needed to evaluate the current complex financial structures of

³⁸In this report, "some" refers to statements made by three or more parties.

³⁹81 Fed. Reg. 61,612 (Sept. 7, 2016). Following a review of department actions that could affect domestic energy production, Interior announced in October 2017 that it would reconsider the need for and scope of potential changes to its bonding regulations.

large coal companies, which was not envisioned when the regulations were developed.

- **Difficulty in determining whether an operator qualifies for self-bonding.** The regulatory authority in a given state may not be aware that an operator had self-bonded in other states, making it difficult for the agency to determine whether the operator qualifies for self-bonding, according to some parties we interviewed. Operators are only allowed to self-bond for up to 25 percent of their net worth in the United States, according to regulations. Regulatory authority decisions on accepting self-bonds generally focus on assessing activities occurring in a specific state, not nationwide, according to the Interstate Mining Compact Commission.⁴⁰ As a result, the state regulatory authority or OSMRE may know whether an operator has applied for self-bonds in other states that if approved would exceed 25 percent of its net worth in total.
- **Difficulty in replacing existing self-bonds with other assurances if needed.** OSMRE and state regulatory authorities may find it difficult to get operators to replace existing self-bonds with another type of financial assurance when needed, according to some parties we interviewed. If an operator no longer qualifies for self-bonding (e.g., if it has declared bankruptcy), federal regulations require it to either replace self-bonds with other types of financial assurances or stop mining and reclaim the site. In either case, however, some parties noted that such actions could lead to a worsening of the operator's financial condition, which could make it less likely that the operator will successfully reclaim the site.

Some parties we interviewed have noted that regulatory authorities may be reluctant to direct the operator to replace a self-bond with another type of financial assurance and may instead allow the operator to keep mining so that any generated revenue could help the operator reclaim the site. For example, in 2015 the Wyoming regulatory authority determined that an operator no longer qualified for self-bonding and ordered it to replace a \$411 million self-bond. However, the operator entered into bankruptcy without having replaced the self-bond. In this case, the state regulatory authority determined that reclamation was more likely to occur if the operator continued mining and allowed the operator to do so without a valid

⁴⁰Gregory E. Conrad, Interstate Mining Compact Commission, "Mine Reclamation Bonding – from Dilemma to Crisis to Reinvention: What's a State Regulator to Do?" (paper presented at the Energy and Mineral Law Foundation Winter Workshop on Energy Law, February 2014).

financial assurance.⁴¹ The operator replaced its self-bond as a part of its bankruptcy settlement approximately 17 months after the state regulatory authority's order to replace the self-bond, according to OSMRE officials. However, if a self-bonded operator were to enter bankruptcy and did not secure a financial assurance to replace the self-bond or complete the required reclamation, the state regulatory authority would have to work through the bankruptcy proceedings to obtain funds for reclamation, according to OSMRE's preamble to its 1983 self-bonding regulations.⁴² As a result, the state may recover only some, or possibly none, of the funds promised through the self-bond, and the cost of reclamation could fall on taxpayers.

- **Difficulty in managing the risk associated with self-bonding.** The risk associated with self-bonding is greater now than when the practice was first authorized under SMCRA, according to some parties we interviewed. According to SMCRA, the purpose of financial assurances is to ensure that regulatory authorities have sufficient funds to complete required reclamation if the operator does not do so. While SMCRA allows self-bonding in certain circumstances, when OSMRE first approved its self-bonding regulations, the agency did so noting that at the time there were companies financially sound enough that the probability of bankruptcy was small. Furthermore, the regulations stated that the intent was to avoid, to the extent reasonably possible, the acceptance of a self-bond from a company that would enter bankruptcy.⁴³ However, as previously mentioned, three of the largest coal companies in the United States declared bankruptcy in 2015 and 2016, and these companies held approximately \$2 billion in self-bonds at the time, according to an

⁴¹Wyoming entered into a voluntary agreement with the operator under which the state would gain a \$61 million "superpriority" claim in case of liquidation in exchange for a promise to stay any enforcement action regarding self-bonding until the reorganization of the operator's debts could be finalized. A superpriority claim gives a creditor a priority claim over other creditors in bankruptcy proceedings, increasing the likelihood that they would obtain the claim if the company is unable to emerge from bankruptcy.

⁴²Bond and Insurance Requirements for Surface Coal Mining and Reclamation Operations Under Regulatory Programs; Self Bonding, 48 Fed. Reg. 36,418 (Aug.10, 1983).

⁴³48 Fed. Reg. 36,418 (Aug.10, 1983).

OSMRE August 2016 policy advisory, making it a very different risk landscape than originally envisioned.⁴⁴

Following these bankruptcies—and recognizing that the coal industry was likely to continue to face economic challenges for several more years—OSMRE initiated steps in 2016 to reexamine the role of self-bonding for coal mine reclamation. Specifically, as previously mentioned, OSMRE issued a policy advisory in August 2016 noting that given these circumstances, state regulatory authorities should exercise their discretion under SMCRA and not accept new or additional self-bonds for any permit until coal production and consumption market conditions reach equilibrium. OSMRE has reported that it is not likely for that to occur until at least 2021.⁴⁵ OSMRE also announced in September 2016 that the agency planned to examine changes to its bonding regulations that would, among other things, help ensure that reclamation is completed if a self-bonded operator does not do so.⁴⁶ However, following a review of department actions that could affect domestic energy production, Interior announced in October 2017 that it was reconsidering the need for and scope of potential changes to its bonding regulations.⁴⁷ OSMRE officials said that they did not have a timeline for finalizing a decision on potential changes in its bonding regulations. In addition, OSMRE rescinded its August 2016 policy advisory that states take steps to assess whether operators currently using self-bonds can still quality to do so and that states not accept any new self-bonds.⁴⁸

Similar issues involving bankruptcies of hardrock mining operators led the Bureau of Land Management to implement regulations in 2001

⁴⁴Office of Surface Mining Reclamation and Enforcement, *Policy Advisory: Self-Bonding*. According to an Interior October 2017 review, the three companies have completed their plans for Chapter 11 bankruptcy reorganization, and either have or are expected to replace all self-bonds with other forms of financial assurances. See Department of the Interior, *Review of the Department of the Interior Actions that Potentially Burden Domestic Energy* (Washington, D.C.: Oct. 24, 2017).

⁴⁵Office of Surface Mining Reclamation and Enforcement, *Policy Advisory: Self-Bonding*.

⁴⁶OSMRE announced this step in response to a petition from a nongovernmental organization asking the agency to revise its self-bonding regulations. 81 Fed. Reg. 61,612 (Sept. 7, 2016).

⁴⁷Department of the Interior, *Review of the Department of the Interior Actions that Potentially Burden Domestic Energy*. This review was directed by Executive Order 13783.

⁴⁸Interior rescinded this policy advisory in response to Executive Order 13783.

eliminating the use of self-bonding for hardrock mining.⁴⁹ In doing so, the Bureau of Land Management determined that a self-bond is less secure than other types of financial assurances, especially in cases where commodity prices fluctuate. The agency also noted that operators that would otherwise be eligible to self-bond should not have a significant problem obtaining another type of financial assurance. In our previous work examining other types of environmental cleanup, we found that the financial risk to the government and the amount of oversight needed for self-bonds are relatively high compared to other forms of financial assurances.⁵⁰ Furthermore, we also previously reviewed federal financial assurance requirements for coal mining, hardrock mining, onshore oil and gas extraction, and wind and solar energy production and found that of these activities coal mining is the only one where self-bonding was allowed.⁵¹ Because SMCRA explicitly allows states to decide whether to accept self-bonds, eliminating the risk that self-bonding poses to the federal government and states would require that SMCRA be amended.⁵²

Obtaining Additional Financial Assurances for Unanticipated Reclamation Can Be Difficult

Unanticipated reclamation costs, such as those related to long-term treatment for water pollution, may arise late in a mine's projected lifespan, and the operator may not have the financial means to cover the additional costs, according to OSMRE officials. Under SMCRA, OSMRE and state regulatory authorities are not to approve a permit for a coal mine if the regulatory authority expects the mine to result in long-term water pollution. As a result, since long-term water pollution is not anticipated to occur, the cost of addressing it would not be included in the initial financial assurance that the operator provides. If the regulatory authority

⁴⁹Under U.S. mining laws, minerals are classified as locatable, leasable, or saleable. Locatable minerals—often referred to as hardrock minerals—include, for example, copper, lead, magnesium, gold, silver, and uranium. For more information on financial assurances for hardrock mining, see GAO, *Hardrock Mining: BLM Needs to Better Manage Financial Assurances to Guarantee Coverage of Reclamation Costs*, [GAO-05-377](#) (Washington, D.C.: June 20, 2005).

⁵⁰GAO, *Environmental Liabilities: EPA Should Do More to Ensure That Liable Parties Meet Their Cleanup Obligations*, [GAO-05-658](#) (Washington, D.C.: Aug. 17, 2005).

⁵¹[GAO-17-207R](#).

⁵²Some states have used their discretion under SMCRA to take steps to restrict self-bonding. For example, Virginia no longer accepts self-bonds because the practice created a risk that the cost of reclamation could pass onto the tax payers should an operator default. In addition, Wyoming is considering changing its regulations to make the criteria to qualify for self-bonding more stringent.

later determines that long-term water treatment is needed, the regulatory authority must adjust the amount of financial assurance that the operator is required to provide.

Some parties we interviewed have also noted that the costs and duration of long-term water treatment are not well defined and that surety bonds are not well-suited to provide assurance for such indefinite long-term costs. For example, according to the Interstate Mining Compact Commission, surety bonds are designed for shorter-term, defined obligations that have a high certainty for bond release following the completion of reclamation. To help address this challenge, some states have established, or allowed operators to establish, trust funds to help cover such unanticipated reclamation costs. For example, West Virginia established a fund, primarily supported through a tax on the amount of coal mined, to operate water treatment systems on forfeited sites. West Virginia's regulatory authority is also working to evaluate permits for sites with water pollution to estimate water treatment costs within the state more precisely. Similarly, Pennsylvania allows operators to establish trust funds that are maintained by foundations and monitored by the state regulatory authority and are intended to ensure that there are sufficient funds to cover the costs of long-term water treatment, according to state regulatory authority officials. In addition, the OSMRE-run coal program in Tennessee allows trust funds for water treatment, in part because an assurance system that provides an income stream may be better suited to ensuring the treatment of long-term water pollution than conventional financial assurances, according to an OSMRE notice in the *Federal Register*.⁵³

⁵³Tennessee Federal Regulatory Program, 72 Fed. Reg. 9,616 (Mar. 2, 2007).

Determining the Financial Stability of Surety Companies Has Been Challenging in Certain Instances

The utility of surety bonds in providing a financial assurance depends on the surety company's ability to pay the amount pledged if the operator forfeits. OSMRE regulations require that a surety company be licensed to do business in the state where a mine is located.⁵⁴ Some parties we interviewed noted that surety companies have declared bankruptcy or experienced financial difficulties in the past and could experience similar difficulties in the future. In addition, two states reported recent issues related to surety companies. For example, state regulatory authority officials in Alabama said that a surety company that had provided surety bonds totaling \$760,000 for four mines in that state had gone bankrupt or was insolvent. As of May 2017, the state had collected only \$127,000. Similarly, state regulatory authority officials in Alaska said that as of August 2017, the state had not collected any part of a forfeited \$150,000 surety bond because the surety company had gone bankrupt. In our previous work examining other types of environmental cleanup, we have found that the financial risk to the government and the amount of oversight needed for surety bonds are relatively low to moderate compared to other forms of financial assurances.⁵⁵

Conclusions

Billions have been spent to reclaim mines abandoned prior to the financial assurance requirements SMCRA put in place, and billions more remain. Under SMCRA, self-bonding is allowed for coal mine operators with a history of financial solvency and continuous operation—the only type of energy production or mineral extraction activity we have reviewed for which this is allowed. Bankruptcies of coal mine operators in 2015 and 2016 have highlighted risks that OSMRE and state regulatory authorities face in managing self-bonding—a risk that may be greater today than when self-bonding was first authorized under SMCRA. If a self-bonded operator were to enter bankruptcy and does not provide a different type of financial assurance or complete the required reclamation, the regulatory authority and the taxpayer potentially assume the risk of paying for the reclamation. Although OSMRE said it would examine changes to its self-bonding regulations following recent bankruptcies, Interior recently said that it is reconsidering the need to do so. Because SMCRA explicitly allows states to decide whether to accept self-bonds, eliminating the risk

⁵⁴30 C.F.R. § 800.20 (2017). Acceptable surety companies include those that are listed in the Department of the Treasury's Listing of Certified Companies (Circular 570).

⁵⁵[GAO-05-658](#).

that self-bonding poses would require amending SMCRA. Until such a change is made, the government will remain potentially at financial risk for future reclamation costs resulting from coal mines with unsecured financial assurances.

Matter for Congressional Consideration

Congress should consider amending SMCRA to eliminate the use of self-bonding as a type of financial assurance for coal mine reclamation.
(Matter for Consideration 1)

Agency Comments

We provided a draft of this report to the Department of the Interior for review and comment. Interior did not provide written comments on our findings and matter for congressional consideration. OSMRE provided technical comments in an e-mail, which we incorporated as appropriate.

As agreed with your offices, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. At that time, we will send copies to the appropriate congressional committees, the Secretary of the Interior, the Acting Director of OSMRE, and other interested parties. In addition, the report will be available at no charge on the GAO website at <http://www.gao.gov>.

If you or your staff have any questions, please contact Anne-Marie Fennell at (202) 512-3841 or fennella@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Major contributors to this report are listed in appendix II.



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Director
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List of Requesters

The Honorable Maria Cantwell
Ranking Member
Committee on Energy and Natural Resources
United States Senate

The Honorable Raúl M. Grijalva
Ranking Member
Committee on Natural Resources
House of Representatives

The Honorable Alan S. Lowenthal
Ranking Member
Subcommittee on Energy and Mineral Resources
Committee on Natural Resources
House of Representatives

The Honorable Richard J. Durbin
United States Senate

The Honorable Matt Cartwright
House of Representatives

The Honorable Debbie Dingell
House of Representatives

Appendix I: Characteristics of States GAO Selected for Review to Obtain Additional Information regarding OSMRE Oversight

We selected a nonprobability sample of states to examine the Office of Surface Mining Reclamation and Enforcement’s (OSMRE) oversight activities in more detail. We generally selected states that produced the most coal in 2015 but also selected states in order to achieve some variation in factors such as geographic location, the dominant type of coal mining conducted (e.g., surface or underground mining), whether the state had primacy, and whether the state allowed self-bonding (see table 2).

Table 2: Characteristics of States GAO Selected for Review to Obtain Additional Information regarding the Office of Surface Mining and Reclamation’s (OSMRE) Oversight

State	Coal produced in 2015 (in thousands of tons) ^a	OSMRE region	Dominant type of coal mining conducted ^b	Primacy or nonprimacy ^c	Allows self-bonding
Illinois	56,101	Mid-Continent ^d	Underground	Primacy	Yes
Kentucky	61,425	Appalachian ^e	Underground	Primacy	No
Montana	41,864	Western ^f	Surface	Primacy	No
Pennsylvania	50,031	Appalachian	Underground	Primacy	Yes
Tennessee	897	Appalachian	Underground	Nonprimacy	Yes
West Virginia	95,633	Appalachian	Underground	Primacy	Yes
Wyoming	375,773	Western	Surface	Primacy	Yes

Source: GAO analysis of U.S. Energy Information Administration, OSMRE, and Interstate Mining Compact Commission data and state and federal regulations. | GAO-18-305

^aAs reported by the U.S. Energy Information Administration. Together, these states represent more than 75 percent of coal mined in the United States in 2015.

^bBased on the amount of coal produced in 2015.

^cStates and Indian tribes can submit a program to implement the Surface Mining Control and Reclamation Act to OSMRE for approval. A state or Indian tribe with an approved program is said to have “primacy” for that program.

^dThe Mid-Continent Region comprises Alabama, Arkansas, Illinois, Indiana, Iowa, Kansas, Louisiana, Mississippi, Missouri, Oklahoma, and Texas.

^eThe Appalachian Region comprises Georgia, Kentucky, Maryland, Massachusetts, Michigan, North Carolina, Ohio, Pennsylvania, Rhode Island, Tennessee, Virginia, and West Virginia.

^fThe Western Region comprises Alaska, Arizona, California, Colorado, Crow Tribe, Hopi Tribe, Idaho, Montana, Navajo Nation, New Mexico, North Dakota, Oregon, South Dakota, Utah, Ute Mountain Ute Tribe, Washington, and Wyoming.

Appendix II: GAO Contact and Staff Acknowledgments

GAO Contact

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Staff Acknowledgments

In addition to the contact named above, Elizabeth Erdmann (Assistant Director), Antoinette Capaccio, Jonathan Dent, Cynthia Grant, Marya Link, Anne Rhodes-Kline, Sheryl Stein, Guiovany Venegas, and Jack Wang made key contributions to this report.

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