



Testimony

Before the Subcommittee on Energy
and Mineral Resources, Committee on
Natural Resources, House of
Representatives

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**FEDERAL ENERGY
DEVELOPMENT**

**Challenges to Ensuring a
Fair Return for Federal
Energy Resources**

Statement of Frank Rusco, Director
Natural Resources and Environment

GAO Highlights

Highlights of [GAO-19-718T](#), a testimony before the Subcommittee on Energy and Mineral Resources, Committee on Natural Resources, House of Representatives

Why GAO Did This Study

Interior oversees energy production on federal lands and waters and is responsible for ensuring taxpayers receive a fair return for access to federal energy resources. Oil, gas, and coal on federal lands provide an important source of energy for the United States; they create jobs; and they generate billions of dollars in revenues that are shared between federal, state, and tribal governments. However, when not managed properly, energy production on federal lands can create risks to public health and the environment, such as contaminated surface water. In February 2011, GAO designated Interior's management of federal oil and gas resources as a program at high risk for fraud, waste, abuse, and mismanagement or the need for transformation.

This testimony discusses GAO's work related to ensuring a fair return on resources from federal lands. To do this work, GAO drew on reports issued from May 2007 through September 2019 and preliminary observations from ongoing work. GAO reviewed relevant federal and state laws, regulations, and policies; analyzed federal data; and interviewed federal, state, and industry officials, among others.

What GAO Recommends

For the reports discussed in this testimony, GAO has made 20 recommendations and three matters for congressional consideration. Interior has taken steps to implement a number of these recommendations, but 10 recommendations and two matters for congressional consideration remain unimplemented, presenting opportunities to continue to improve management of energy resources on federal lands.

View [GAO-19-718T](#). For more information, contact Frank Rusco at (202) 512-3841 or RuscoF@gao.gov.

FEDERAL ENERGY DEVELOPMENT

Challenges to Ensuring a Fair Return for Federal Energy Resources

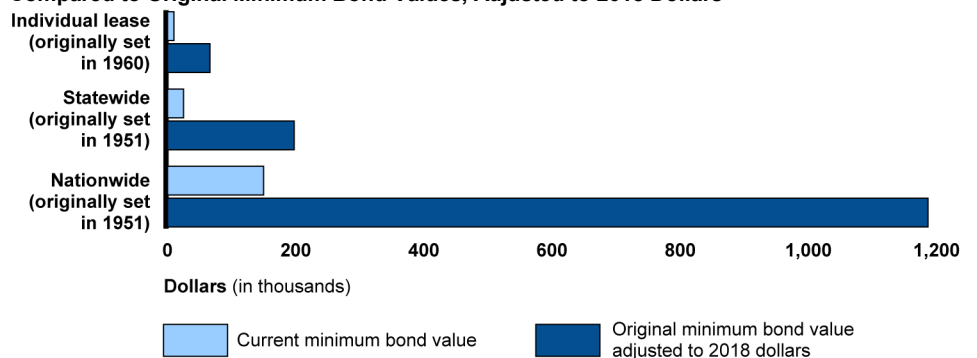
What GAO Found

GAO's prior and ongoing work found challenges related to ensuring a fair return for oil, gas, and coal developed on federal lands in areas, including the following:

Oil, Gas, and Coal Lease Terms and Conditions. Key federal lease terms are the same as they were decades ago, and Interior has not adjusted them for inflation or other factors that may affect the federal government's fair return. In June 2017, GAO reported that raising federal royalty rates—a lease term that defines a percentage of the value of production paid to the government—for onshore oil, gas, and coal resources could decrease production on federal lands by a small amount or not at all but could increase overall federal revenue. Also, preliminary observations from GAO's ongoing work indicate that selected states charge royalty rates for oil and gas produced on state lands at a higher rate than the federal government charges for production on federal lands.

Oil, Gas, and Coal Bonding. GAO found in September 2019 that oil and gas bonds do not provide sufficient financial assurance because, among other things, most individual, statewide, and nationwide lease bonds are set at regulatory minimum values that have not been adjusted for inflation since the 1950s and 1960s (see figure). Further, GAO reported in March 2018 that coal self-bonding (where an operator promises to pay reclamation costs without providing collateral) poses financial risks to the federal government. Bonds provide funds that can be used to reclaim lands—restore them as close to their original natural states as possible—if an operator or other liable party does not do so.

Bureau of Land Management Current Regulatory Minimum Oil and Gas Bond Values Compared to Original Minimum Bond Values, Adjusted to 2018 Dollars



Source: GAO analysis of Bureau of Land Management data. | GAO-19-718T

Natural Gas Emissions. In October 2010, GAO reported that data collected by Interior likely underestimated venting and flaring because they did not account for all sources of lost gas. GAO reported that economically capturing vented and flared natural gas could increase federal royalty payments by \$23 million annually and made recommendations to help Interior better account for and manage emissions. In November 2016, Interior issued regulations consistent with GAO's recommendations, but Interior has since issued revised regulations, which are inconsistent with GAO's recommendations.

Chairman Lowenthal, Ranking Member Gosar, and Members of the Subcommittee:

I am pleased to be here today to discuss our work related to Interior ensuring a fair return for oil, gas, and coal development on federal lands.¹

The Department of the Interior (Interior) oversees energy production on federal lands and waters, is responsible for ensuring taxpayers receive a fair return for access to federal energy resources, and is responsible for ensuring those resources are safely and responsibly developed. Federal oil, gas, and coal are an important source of revenues that are shared among federal, state, and tribal governments. These revenues consist of, among other things, a percentage of the value of production paid to the federal government, or royalties. Based on Interior data, for fiscal year 2018 Interior collected about \$4.2 billion associated with onshore oil, gas, and coal production on federal and Indian lands. Federal lands also provide an important source of energy for the United States and create jobs in the oil and gas industry. According to Interior's Bureau of Land Management (BLM), in fiscal year 2018, production on federal lands was responsible for 9 percent of the natural gas, 8 percent of the oil, and nearly 40 percent of the coal produced in the United States. However, when not managed properly, energy production on federal lands can create risks to public health and the environment, such as contaminated surface water and groundwater and methane leaks into the atmosphere.

In February 2011, we designated Interior's management of federal oil and gas resources as a program at high risk for fraud, waste, abuse, and mismanagement or the need for transformation.² This designation was based on challenges we identified with several aspects of Interior's oversight responsibilities, including that Interior lacked reasonable assurance that it was collecting a fair return from oil and gas produced on federal lands. Since our 2011 designation, we have made numerous recommendations to improve Interior's management of federal oil and gas resources. Interior has taken some actions to strengthen how it manages federal oil and gas resources, but it has not met the criteria for removal

¹This testimony covers our work on onshore energy development on federal lands.

²GAO, *High-Risk Series: An Update*, [GAO-11-278](#) (Washington, D.C.: Feb. 16, 2011).

from our high-risk list.³ For example, in December 2013, we recommended that Interior revise BLM’s regulations to provide flexibility for the bureau to make changes to onshore oil and gas royalty rates.⁴ Interior agreed with our recommendation and adopted regulations in November 2016 that provided royalty rate flexibility.

In addition to reporting in February 2011 on challenges with Interior collecting a fair return from oil and gas produced on federal lands, we have recently reported on challenges in several other areas related to Interior ensuring a fair return, including

- managing bonds for oil, gas, and coal development to ensure taxpayers do not have to pay to reclaim lands affected by energy development;⁵
- ensuring royalty compliance (Interior’s ability to determine moneys owed and to collect and account for such amounts); and
- accounting for and managing natural gas emissions in determining royalties owed.

In these reports, we made 20 recommendations and three matters for congressional consideration. Interior has taken steps to implement a number of these recommendations, but 10 of our recommendations and two matters for congressional consideration remain unimplemented, presenting opportunities to continue to improve management of energy resources on federal lands.

³GAO, *High-Risk Series: Substantial Efforts Needed to Achieve Greater Progress on High-Risk Areas*, [GAO-19-157SP](#) (Washington, D.C.: Mar. 6, 2019). The high-risk area on management of federal oil and gas resources is composed of three segments: royalty determination and collection, human capital, and restructuring of offshore oil and gas oversight. Since we added this area to our high-risk list, we have made numerous recommendations related to this high-risk issue, four of which were made since the previous high-risk update in February 2017. As of September 2019, 14 recommendations were open or unimplemented. We use five criteria to assess agencies’ progress in addressing high-risk areas: (1) leadership commitment, (2) agency capacity, (3) an action plan, (4) monitoring efforts, and (5) demonstrated progress.

⁴GAO, *Oil and Gas Resources: Actions Needed for Interior to Better Ensure a Fair Return*, [GAO-14-50](#) (Washington, D.C.: Dec. 6, 2013).

⁵With regard to oil and gas development, we use the term reclamation to refer to all of the actions and costs to reclaim a well, including well plugging and surface reclamation, and to restoring any lands or surface waters adversely affected by oil and gas operations. BLM defines reclamation as restoring lands to as close to their original natural states as possible. With regard to surface coal mining, reclaim and reclamation refer to any activity required to return a site to the state it was in before mining occurred.

My testimony today discusses challenges we have identified related to Interior ensuring a fair return for oil, gas, and coal development on federal lands in four areas: (1) lease terms and conditions, (2) bonds, (3) royalty compliance, and (4) natural gas emissions.

The information in this testimony is based primarily on reports we issued from May 2007 through September 2019.⁶ In conducting that work, we reviewed relevant federal laws, regulations, and policies; analyzed federal data; and interviewed federal, state, and industry officials, among others. More detailed information on our objectives, scope, and methodology for that work can be found in the issued reports. In addition, this testimony includes preliminary observations from our ongoing work examining federal and selected states' oil and gas lease practices.⁷ We shared the preliminary observations that we are presenting in this testimony with Interior and selected states for comment. Interior and selected states provided technical comments, which we have addressed as appropriate.

⁶GAO, *Oil and Gas: Bureau of Land Management Should Address Risks from Insufficient Bonds to Reclaim Wells*, [GAO-19-615](#) (Washington, D.C.: Sept. 18, 2019); *Federal Oil and Gas Royalties: Additional Actions Could Improve ONRR's Ability to Assess Its Royalty Collection Efforts*, [GAO-19-410](#) (Washington, D.C.: May 31, 2019); [GAO-19-157SP](#); *Coal Mine Reclamation: Federal and State Agencies Face Challenges in Managing Billions in Financial Assurances*, [GAO-18-305](#) (Washington, D.C.: Mar. 6, 2018); *Oil, Gas, and Coal Royalties: Raising Federal Rates Could Decrease Production on Federal Lands but Increase Federal Revenue*, [GAO-17-540](#) (Washington, D.C.: June 20, 2017); *Financial Assurances for Reclamation: Federal Regulations and Policies for Selected Mining and Energy Development Activities*, [GAO-17-207R](#) (Washington, D.C.: Dec. 16, 2016); *Oil and Gas: Interior Could Do More to Account for and Manage Natural Gas Emissions*, [GAO-16-607](#) (Washington, D.C.: July 7, 2016); [GAO-14-50](#); [GAO-11-278](#); *Federal Oil and Gas Leases: Opportunities Exist to Capture Vented and Flared Natural Gas, Which Would Increase Royalty Payments and Reduce Greenhouse Gases*, [GAO-11-34](#) (Washington, D.C.: Oct. 29, 2010); *Oil and Gas Royalties: The Federal System for Collecting Oil and Gas Revenues Needs Comprehensive Reassessment*, [GAO-08-691](#) (Washington, D.C.: Sept. 3, 2008); *Oil and Gas Royalties: A Comparison of the Share of Revenue Received from Oil and Gas Production by the Federal Government and Other Resource Owners*, [GAO-07-676R](#) (Washington, D.C.: May 1, 2007).

⁷For our ongoing work, we selected a nongeneralizable sample of eight states with oil and gas leasing programs based on their having the largest number of federal oil and gas leases in fiscal year 2018 and from recommendations from subject matter experts. The states selected were (1) Colorado, (2) Montana, (3) New Mexico, (4) North Dakota, (5) Oklahoma, (6) Texas, (7) Utah, and (8) Wyoming. We reviewed documentation state officials provided and relevant laws, regulations, and policies.

We conducted, or are conducting, the work on which this testimony is based 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.

Background

Federal Onshore Oil, Gas, and Coal Lease Terms and Conditions

BLM leases federal lands to private entities for oil and gas development generally through auctions.⁸ In the auctions, if BLM receives any bids that are at or above the minimum acceptable bid amount of \$2 an acre—called bonus bids—the lease is awarded to the highest bidder (leases obtained in this way are called competitive leases). Tracts of land that do not receive a bid at the auction are made available noncompetitively for a period of 2 years on a first-come, first-served basis (leases obtained in this way are called noncompetitive leases).⁹

The government collects revenues from oil and gas leases under terms and conditions that are specified in the lease, including rental fees and royalties. Annual rental fees are fixed fees paid by lessees until production begins on the leased land or, when no production occurs, until the end of the period specified in the lease. For federal oil and gas leases, generally the rental rate is \$1.50 per acre for the first 5 years, and \$2 per acre each year thereafter.¹⁰ Once production of the resource starts, the lessees pay the federal government royalties of at least 12.5

⁸For onshore leases, BLM's current leasing processes were established under the Mineral Leasing Act of 1920, as amended. BLM regulations for oil and gas leasing and coal management are codified at 43 C.F.R. Parts 3100 and 3400, respectively.

⁹43 C.F.R. § 3110.1(b); 43 C.F.R. § 3110.2.

¹⁰43 C.F.R. § 3103.2-2(a).

percent of the value of production.¹¹ Oil and gas parcels are generally leased for a primary term of 10 years, but lease terms may be extended if, for example, oil or gas is produced in paying quantities. A productive lease remains in effect until the lease is no longer capable of producing in paying quantities. The fiscal system refers to the terms and conditions under which the federal government collects revenues from production on leases, including from payments specified in the lease (e.g., royalties and rental payments).

We reported in December 2013 that, since 1990, all federal coal leasing has taken place through a lease-by-application process, where coal companies propose tracts of federal lands to be put up for lease by BLM. BLM is required to announce forthcoming lease sales, and the announcement notes where interested stakeholders can view lease sale details, including bidding instructions and the terms and conditions of the lease. BLM leases a tract to the highest qualified bidder, as long as its bonus bid meets or exceeds \$100 per acre and BLM's confidential estimate of fair market value. Annual rental fees are at least \$3 an acre, and royalties are 8 percent of the sale price for coal produced from underground mines and at least 12.5 percent of the sale price for coal produced from surface mines. Tracts are leased for an initial 20-year period, as long as the lessee produces coal in commercial quantities within a 10-year period and meets the condition of continued operations.

Oil, Gas, and Coal Bonding

Bonds can help ensure lands affected by energy development are properly reclaimed, that is, according to BLM, restored to as close to their original natural states as possible. Bonds provide funds that can be used by the relevant regulatory authority to reclaim such lands if the operator or other liable party does not do so.¹² For oil and gas developed on federal lands, BLM requires operators to provide a bond before certain drilling operations begin. Wells are considered orphaned and fall to BLM to

¹¹Until January 2017, BLM regulations generally established a fixed royalty rate of 12.5 percent. 43 C.F.R. § 3103.3-1 (2015). In November 2016, BLM issued regulations amending this section to mirror BLM's statutory authority for competitive leases, providing BLM with the flexibility to set royalty rates at or above 12.5 percent. This rule became effective in January 2017. Department of the Interior, Bureau of Land Management, *Waste Prevention, Production Subject to Royalties, and Resource Conservation*, Final Rule, 81 Fed. Reg. 83008 (Nov. 18, 2016).

¹²For the purposes of this testimony, we use the term "operator" to refer to permittees, lessees, owners of operating rights and operators of an oil, gas, or coal operation, unless indicated otherwise.

reclaim if they are not reclaimed by their operators, there are no other responsible or liable parties to do so, and their bonds are too low to cover reclamation costs.

For surface coal mining, the Surface Mining Control and Reclamation Act of 1977 (SMCRA) requires operators to submit a bond to either Interior's Office of Surface Mining Reclamation and Enforcement (OSMRE) or an approved state regulatory authority before mining operations begin for development on federal or nonfederal lands.¹³ Among other bonding options, coal operators may choose to self-bond, whereby the operator promises to pay reclamation costs.¹⁴

Federal Oil and Gas Royalty Compliance

Royalties that companies pay on the sale of oil and natural gas extracted from leased federal lands and waters constitute a significant source of revenue for the federal government. The Federal Oil and Gas Royalty Management Act of 1982 requires, among other things, that Interior establish a comprehensive inspection, collection, and fiscal and production accounting and auditing system for these revenues.¹⁵ In particular, the act requires Interior to establish such a system to provide the capability of accurately determining oil and gas royalties, among other moneys owed, and to collect and account for such amounts in a timely manner.

¹³Surface 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. SMCRA's reclamation requirements apply to surface coal mines, surface effects of underground coal mines, and other coal mining related structures (e.g., roads). States 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.

¹⁴Self-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—those that have developed their own approved programs to implement SMCRA—have the discretion on whether to accept self-bonds.

¹⁵Pub. L. No. 97-451, § 101 (1983), codified at 30 U.S.C. § 1711.

To accomplish this, Interior tasks its Office of Natural Resources Revenue (ONRR) with collecting and verifying the accuracy of royalties paid by companies that produce oil and gas from over 26,000 federal leases.¹⁶ Each month, these oil and gas companies are to self-report data to ONRR on the amount of oil and gas they produced and sold, the value of this production, and the amount of royalties that they owe to the federal government. To ensure that the data provided to ONRR are accurate and all royalties are being paid, ONRR relies on its compliance program. Under this program, ONRR initiates compliance activities by selecting companies and properties for review to assess the accuracy of their royalty data and their compliance with all relevant laws and regulations.

Natural Gas Emissions on Federal Lands

Under the Minerals Leasing Act of 1920, Interior is authorized to collect royalties on oil and gas produced on federal lands, and BLM is required to ensure that operators producing oil and gas take all reasonable precautions to prevent the waste of oil or gas developed on these lands.¹⁷ While most of the natural gas produced on leased federal lands and waters is sold and therefore royalties are paid on it, some is lost during production for various reasons, such as leaks or intentional releases for ongoing operational or safety procedures. Natural gas that is released for operational or safety procedures is released directly into the atmosphere (vented) or burned (flared).¹⁸ In addition to gas that is lost during production, some natural gas may be used to operate equipment on the lease (lease use). We use the term natural gas emissions to refer to vented, flared, and lease use gas collectively. Interior has generally exempted operators from paying royalties on reported natural gas emissions, and so such emissions represent a loss of royalty revenues for the federal government.

¹⁶In 2010, Interior underwent a reorganization. As part of this reorganization, Interior eliminated the Minerals Management Service and created ONRR, ultimately along with two other bureaus that oversee offshore oil and gas activities. Specifically, Interior created ONRR on October 1, 2010. ONRR programs represent those activities covered by the Minerals Management Service's Minerals Revenue Management program, which oversaw royalty payments that companies paid on the production and sale of oil and gas from federal leases. For the purposes of this testimony, we refer to the office responsible for this program as ONRR.

¹⁷30 U.S.C. §§ 225, 226(b)(1)(A), 226(c)(1), 352.

¹⁸For the purposes of this testimony, we use natural gas to mean the mixture of gas resulting from oil and gas production activities. Natural gas will vary in content, but, on average, is approximately 80 percent methane, with the remaining 20 percent a mix of other hydrocarbons and nonhydrocarbons, such as carbon dioxide and nitrogen.

Venting and flaring natural gas also has environmental implications as it adds greenhouse gases to the atmosphere—primarily methane and carbon dioxide. Natural gas consists primarily of methane, and methane (which is released through venting) is 34 times more potent by weight than carbon dioxide (which is released through flaring) in its ability to warm the atmosphere over a 100-year period, and 86 times more potent over a 20-year period, according to the Intergovernmental Panel on Climate Change.¹⁹

Key Terms and Conditions for Federal Oil, Gas, and Coal Leases Are the Same as They Were Decades Ago, though Market Conditions Have Changed

Key federal lease terms are the same as they were decades ago, and Interior has not adjusted lease terms for inflation or other factors, such as changes in market conditions, which may affect the government's fair return. In addition, preliminary observations from our ongoing work indicate that federal oil and gas lease terms and practices differ from those of selected states, with selected state governments generally charging higher royalty rates on production on state lands than the federal government charges for production on federal lands. We have previously recommended that Interior should establish procedures for determining when to conduct periodic assessments of the oil and gas fiscal system, including how the federal government's share of revenues compares with those of other resource owners. Interior has established procedures for determining when to conduct periodic assessments of the oil and gas fiscal system, and according to its policy, BLM plans to complete the next assessment in late 2019.

¹⁹The Intergovernmental Panel on Climate Change, established by the United Nations Environment Programme and the World Meteorological Organization, assesses climate change to provide a scientific view on the current state of climate change and its potential environmental and socio-economic consequences. Myhre, G., D. Shindell, F.-M. Bréon, W. Collins, J. Fuglestvedt, J. Huang, D. Koch, J.-F. Lamarque, D. Lee, B. Mendoza, T. Nakajima, A. Robock, G. Stephens, T. Takemura and H. Zhang, 2013: *Anthropogenic and Natural Radiative Forcing*. In: *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

Key Federal Lease Terms
Are the Same as They
Were Decades Ago
though Market Conditions
Have Changed

Key federal lease terms are the same as statutory minimums established decades ago. For onshore oil and gas leases, the minimum royalty rate of 12.5 percent has been in place since 1920, and minimum bonus bids and rental rates are currently set at the statutory minimums established in 1987.²⁰ For coal, the royalty rate for surface mining is set at the statutory minimum set in the Mineral Leasing Act.²¹

We previously found that royalty rates for oil and gas leases have not been adjusted to account for changes in market conditions, and our preliminary analysis for our ongoing work suggests that adjusting rental rates for inflation could generate increased federal revenues. We reported in December 2013 that Interior offers onshore leases with lease terms—terms lasting the life of the lease—that have not been adjusted in response to changing market conditions, potentially foregoing a considerable amount of revenue.²² Energy markets have also changed since federal oil and gas lease terms were established. For example, we reported in June 2017 that, according to the U.S. Energy Information Administration, almost all of the recent increase in overall oil and gas production had centered on oil and gas located in shale and other tight rock geologic formations, spurred by advances in production technologies

²⁰The Federal Onshore Oil and Gas Leasing Reform Act of 1987 requires that all public lands available for oil and gas leasing be offered first by competitive leasing. BLM is required to accept the highest bid received that exceeds the minimum bid value of \$2 per acre or fraction thereof. 30 U.S.C. § 226(b)(1). The law allows the Secretary to increase the \$2 per acre minimum bid and directs that the House and Senate Committees on Natural Resources be notified 90 days before doing so. The annual rental rate is \$1.50 per acre for the first 5 years and \$2.00 per acre each year thereafter.

²¹The Mineral Leasing Act, as amended, directs the Secretary of the Interior to establish annual rentals and royalties for leases but establishes a minimum royalty rate of not less than 12.5 percent of the value of coal recovered by surface mining operations. 30 U.S.C. § 207(a) (2013). The regulation establishing the minimum rental rate—43 C.F.R. § 3473.3-1(a)—and the regulation establishing the minimum royalty rate for surface mining—43 C.F.R. § 3473.3-2(a)(1)—were issued in 1979. The regulation establishing the royalty rate for underground mining—43 C.F.R. § 3473.3-2(a)(2)—was initially issued in 1979 with a regulatory minimum (of a 8 percent royalty rate) that could be lowered (to a 5 percent royalty rate) but in 1990 the regulation was amended to establish a 8 percent royalty rate. The regulations also authorize BLM to waive, suspend, or reduce the rental, or reduce the royalty, for the purpose of encouraging the greatest ultimate recovery of federal coal, and in the interest of conservation of federal coal and other resources, whenever it is necessary to promote development or when the lease cannot be successfully operated under its terms, but in no case can the royalty on a producing federal lease be reduced to zero.

²²[GAO-14-50](#).

such as horizontal drilling and hydraulic fracturing.²³ In addition, we estimate that, based on preliminary observations, the rental rate would be \$2.91 per acre if it were adjusted for inflation, which would have generated about \$3.6 million for the first year for new leases issued in fiscal year 2018, or an additional \$1.8 million.

In June 2017, we reported that raising federal royalty rates for onshore oil, gas, and coal resources could decrease oil and gas production on federal lands by either a small amount or not at all but could increase overall federal revenue, according to studies we reviewed and stakeholders we interviewed.²⁴ The two oil and gas studies we reviewed for that report modeled the effects of different policy scenarios on oil and gas production on federal lands and estimated that raising the federal royalty rate could increase net federal revenue from \$5 million to \$38 million per year. One of the studies stated that net federal revenue would increase under three scenarios that modeled raising the royalty rate from the current 12.5 percent to 16.67 percent, 18.75 percent, or 22.5 percent. The other study noted that the effect on federal revenue would initially be small but would increase over time.

The two coal studies we reviewed for our June 2017 report analyzed the effects of different policy scenarios on coal production on federal lands, and both studies suggested that a higher royalty rate could lead to an increase in federal revenues. Specifically, one study suggested that raising the royalty rate to 17 percent or 29 percent might increase federal revenue by up to \$365 million per year after 2025. The other study suggested that increasing the effective rate could bring in an additional \$141 million per year in royalty revenue. However, we reported that the extent of these effects was uncertain and depended, according to stakeholders, on several other factors, such as market conditions and prices.

²³[GAO-17-540](#).

²⁴[GAO-17-540](#). The studies discuss results 10 or more years into the future. A royalty rate increase would apply only to new leases, and production on a new lease might not begin until near the end of the lease term. Therefore, the effects of a royalty rate increase on production and revenue would only begin to be realized within the first 10 years, according to one of the studies.

Federal Onshore Lease Terms Differ from Those of Selected States

Based on preliminary observations from our ongoing work, federal onshore lease terms and practices for oil and gas development differ from those of selected states (see table 1). For example, selected state governments tend to charge higher royalty rates for oil and gas development on state lands than the federal government charges for production on federal lands.

Table 1: Federal and State Lease Terms and Practices for Onshore Oil and Gas Leases, as of September 2019

	Primary Term (years) ^a	Minimum bonus bid ^b (per acre)	Rental rate ^c (per acre)	Royalty Rate (percent)
Federal Lease Terms				
Onshore	10	\$2.00	\$1.50 or \$2.00 ^d	12.5 ^e
Selected State Lease Terms				
Colorado	5	None	\$2.50	18.75 or 20 ^f
Montana	10	None	\$1.50/2.75/4.00 ^g	16.67
New Mexico	5	Varies ^h	\$0.25 – 1.00	12.5, 16.67, 18.75 or 20 ⁱ
North Dakota	5	\$1.00	\$1.00	16.67 or 18.75 ^j
Oklahoma	3	\$5.00	\$1.00	18.75
Texas	3	\$10.00 ^k	\$10.00	25
Utah ^l	5	\$2.00	\$2.00 ^m	16.67 ⁿ
Wyoming	5	\$1.00	\$1.00	12.5 or 16.67 ^o

Sources: GAO analysis of federal and state laws and regulations, and state officials. | GAO-19-718T

Note: Table reflects both legally-required terms and, for some terms, federal or state practice.

^aLease terms generally allow for extensions to the primary term, and those may vary for federal and state lands. We did not include extensions in our analysis.

^bMinimum bonus bid is the minimum amount that Interior or a selected state will accept at auction. Minimum bonus bids apply to competitive lease sales only.

^cRental rate is a fee paid on a non-producing lease during the primary term.

^dThe rental rate is \$1.50 per acre for first 5 years of the lease term, and \$2.00 per acre for any subsequent year.

^eFederal oil and gas royalty is set by statute and regulation at a rate of at least 12.5 percent. In October 2018, officials told us that they were not aware of any competitive leases recently issued by the Bureau of Land Management with a royalty rate higher than 12.5 percent.

^fColorado offers all leases competitively at a 20 percent royalty rate. If not sold, they offer the lease at a second lease sale for an 18.75 percent royalty rate.

^gAnd not less than \$100 annually. The rental rate increases to \$2.75 per acre in year six, and to \$4.00 per acre in years seven through 10.

^hAccording to a state official, the Commissioner of Public Lands may specify a minimum bonus.

ⁱThe royalty rate depends on various bases, including, according to a state official, points that take into account factors such as oil and gas trends and recent leasing data.

^j18.75 percent for core (i.e., oil and gas producing) counties, and 16.67 percent for all other counties.

^kAccording to a state official, bonuses are set based on location, geology, and comparable lease bonuses in the vicinity and range as high as \$20,000 an acre in the Delaware Basin.

^lThe State of Utah School and Institutional Trust Lands Administration can enter into Other Business Arrangements (OBA) for the development of oil, gas and hydrocarbon resources if the agency deems it is in the best interest of the trust to do so. The terms of an OBA are written and reviewed on a case-by-case basis and may vary from the standard terms used for competitive and noncompetitive leases. According a state official, OBAs typically have more competitive requirements or terms that tie to a specific performance.

^mAnd not less than \$500 annually.

ⁿ16.67 percent is the standard royalty rate, but under statute, the Utah School and Institutional Trust Lands Administration has authority to increase royalty based on location.

^oWyoming Office of State Lands and Investments offers all leases competitively at a 16.67 percent royalty rate. If not sold, leases are offered at a second lease sale at a 12.5 percent royalty rate. Noncompetitive leases are offered at a 12.5 percent royalty rate.

For coal production, we reported in June 2017 that royalty rates charged by selected states were generally the same as federal rates. Royalty rates for the six states representing over 90 percent of total federal oil, gas, and coal production in fiscal year 2015 ranged from 8 to 12.5 percent for surface coal and from 8 to 10 percent for underground coal.

Other factors influence the competitiveness of the development of oil and gas resources on federal land versus nonfederal land. We also reported in June 2017 that some stakeholders we spoke with stated that there was already a higher regulatory burden for oil and gas companies to develop resources on federal lands than on nonfederal lands. For coal, BLM officials stated that—assuming the royalty rate was the same—the main difference between federal and nonfederal coal was the additional regulatory burden of producing on federal lands.

In our ongoing work examining the oil and gas lease permitting process, our preliminary interviews indicate that drilling permit fees are higher for federal lands than for the states we reviewed.²⁵ However, operators we interviewed said that the filing fee was not an important or major factor in their decisions to apply for federal drilling permits.

In addition to regulatory differences, in June 2017 we reported that a few stakeholders told us that competitiveness of federal lands for development depends on the location of the best resources—such as areas with low exploration and production costs. We also reported in June 2017 that most areas with major U.S. tight oil and shale gas plays—areas

²⁵Operators must submit an Application for Permit to Drill to BLM and obtain approval before commencing drilling operations or any related surface disturbance. After receiving an application, BLM generally communicates with operators until they provide all of the required documents. New Mexico, North Dakota, Utah, and Wyoming are included in the scope of this ongoing work.

of known oil and gas sharing similar properties—and major U.S. coal basins do not overlap with federal lands.²⁶

Interior Has Taken Steps to Assess Its Oil and Gas Lease Terms and Conditions

We have reported on steps Interior has taken to assess its oil and gas fiscal system—the terms and conditions under which the federal government collects revenues from production on leases—and have made recommendations intended to help ensure that the federal government receives a fair return on its oil and gas resources. For example, in September 2008, we found that Interior had not evaluated the federal oil and gas fiscal system for over 25 years and recommended that a periodic assessment was needed.²⁷ In response to our September 2008 report, Interior contracted for a study that was completed in October 2011 and compared the federal oil and gas fiscal systems of selected federal oil and gas regions to that of other resource owners.²⁸ However, in December 2013, we reported that Interior officials said that the study was not adequate to determine next steps for onshore lease terms.²⁹

Interior has considered making changes to improve its management of federal oil and gas resources. For example, in April 2015, BLM sought comments on a number of potential reforms to the oil and gas leasing

²⁶GAO-17-540. According to the U.S. Energy Information Administration, a play is a set of known or postulated oil and gas accumulations sharing similar geologic, geographic, and temporal properties, such as source rock, migration pathway, and hydrocarbon type. Oil and natural gas are found in a variety of geologic formations distributed across the country, such as shale or tight sandstone formations—also referred to as tight oil or shale gas. Shale is a sedimentary rock that is predominantly composed of consolidated clay-sized particles. Hydraulic fracturing (also known as fracking) is commonly defined as an oil or gas well completion process that directs pressurized fluids to penetrate tight rock formations, such as shale or coal formations, in order to stimulate and extract the oil or gas in the formation. The fluids typically contain a combination of water, proppant, and added chemicals.

²⁷GAO-08-691. In the draft report we sent to Interior for comment, we made recommendations to address these issues. In its response, Interior stated that it did not fully concur with our recommendations because it had already contracted for a study that would address many of the issues we raised. However, Interior's ongoing study at the time was limited in scope, rather than a review of the entire federal oil and gas fiscal system as we recommended. Therefore, we recommended that Congress consider directing the Secretary of the Interior to convene an independent panel to perform a comprehensive review of the federal oil and gas fiscal system.

²⁸IHS Cambridge Energy Research Associates, *Comparative Assessment of the Federal Oil and Gas Fiscal System* (October 2011).

²⁹GAO-14-50.

process, including changing royalty rates, but took no further action. In November 2016, BLM did issue the Methane and Waste Prevention Rule, which incorporated flexibility for the bureau to make changes to onshore royalty rates, as we recommended in December 2013.³⁰ Officials told us in October 2018 that they were not aware of BLM issuing any recent competitive leases with a royalty rate higher than 12.5 percent.

In addition, in March 2017, the Secretary of the Interior established the Royalty Policy Committee (committee), which was to be comprised of stakeholders representing federal agencies, states, Indian tribes, mining and energy, academia, and public interest groups. The purpose of the committee was to advise the Secretary on the fair market value of mineral resources developed on federal lands, among other issues. The committee met four times over the 2 years it was in effect and approved recommendations related to Interior's oversight of its oil and gas programs. This included two recommendations to conduct studies that compare the U.S. oil and gas fiscal system to certain other countries' fiscal systems.³¹ However, a U.S. District Court found that the establishment of the committee violated the law and prohibited Interior from relying on any of the committee's recommendations.³²

Interior has established procedures for assessing the oil and gas fiscal system. In December 2013, we found that Interior did not have documented procedures for determining when to conduct additional periodic assessments of the oil and gas fiscal system, and we recommended that Interior put such procedures in place.³³ Further, we reported that documented procedures could help Interior ensure that its evaluations take relevant factors into consideration. These factors may

³⁰[GAO-14-50](#). Interior generally agreed with our findings and concurred with our recommendation. BLM rescinded and revised some of the requirements in the November 2016 rule in September 2018, but the new rule did not affect the rate flexibility provision.

³¹Other topics of the committee's recommendations included reducing the timeframe for approving federal drilling permits and increasing offshore acreage for oil and gas leasing.

³²In August 2018, the Western Organization of Resource Councils sued Interior, BLM, and various agency officials in their official capacities, challenging the reestablishment and operation of the committee under the Federal Advisory Committee Act (FACA), its implementing regulations, and the Administrative Procedure Act. Subsequently, in August 2019, the U.S. District Court for the District of Montana held that the 2017 establishment of the committee violated the Administrative Procedure Act and FACA and, on that basis, enjoined Interior from relying on any of the committee's recommendations.

³³[GAO-14-50](#).

change over time as the market for oil and gas, the technologies used to explore and produce oil and gas, or the broader economic climate changes. In August 2016, in response to our recommendation, Interior reported that it had developed documented procedures for conducting assessments of the oil and gas fiscal system, fully implementing our recommendation. To meet this recommendation, BLM established a fiscal assessment policy that describes actions it will take every 3 years and every 10 years. Based on this policy, the next assessment is expected to be completed in late 2019. According to the policy, every 3 years BLM plans to conduct a review of the oil and gas fiscal systems of the states with significant oil and gas leasing activity where there is also significant federal onshore leasing activity. The policy states that every 10 years—depending on available appropriations—Interior plans to co-sponsor with the Bureau of Ocean Energy Management an independent study of government take from lease and development of federal oil and gas resources. In February 2019, as part of our ongoing work examining oil and gas leases, BLM officials told us that the bureau had contracted for an external fiscal assessment in 2018 and that the report would be completed in mid-2019. According to Interior officials, the study is undergoing final review.

Weaknesses in Coal, Oil, and Gas Bonding Present Financial Risks to the Federal Government

We have reported that weaknesses with bonds for coal mining and for oil and gas development pose a financial risk to the federal government as laws, regulations, or agency practices have not been adjusted to reflect current economic circumstances. We have also reported that BLM has no mechanism to pay for reclaiming well sites that operators have not reclaimed.

Coal Self-Bonding Presents a Financial Risk to the Government

We reported in March 2018 that self-bonding for coal mining creates a financial risk for the federal government.³⁴ 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. We reported that as of 2017, eight states held coal self-bonds worth over \$1.1 billion. In the event a self-bonded operator becomes bankrupt and the

³⁴[GAO-18-305](#).

regulatory authority is not able to collect sufficient funds to complete the reclamation plan, the burden could fall on taxpayers to fund reclamation.

According to stakeholders we interviewed for our March 2018 report, self-bonding for coal mining presents a financial risk to the federal government for several reasons. It is difficult to (1) ascertain the financial health of an operator, in part, because greater financial expertise is often now needed to evaluate the complex financial structures of large coal companies as compared to when self-bonding regulations were first approved in 1983; (2) determine whether an operator qualifies for self-bonding; and (3) secure a replacement for existing self-bonds when an operator no longer qualifies.³⁵

For example, some stakeholders we interviewed told us that the risk from self-bonding is greater now than when OSMRE first approved its self-bonding regulations in 1983; at that time, the office noted there were companies financially sound enough that the probability of bankruptcy was small. However, according to an August 2016 OSMRE policy advisory, 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.³⁶ 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 to be amended. In our March 2018 report, we recommended that Congress consider amending SMCRA to eliminate self-bonding. Interior did not provide written comments on the report.

³⁵If 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. We reported in March 2018 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. For more information, see [GAO-18-305](#).

³⁶Office of Surface Mining Reclamation and Enforcement, *Policy Advisory: Self-Bonding* (Washington, D.C.: Aug. 5, 2016). According to an October 2017 review by Interior, 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).

Oil and Gas Bonds Do Not Provide Sufficient Financial Assurance to Prevent Orphaned Wells

We reported in September 2019 that bonds held by BLM have not provided sufficient financial assurance to prevent orphaned oil and gas wells on federal lands.³⁷ Specifically, we reported that BLM identified 89 new orphaned wells from July 2017 through April 2019, and 13 BLM field offices identified about \$46 million in estimated potential reclamation costs associated with orphaned wells and inactive wells that officials deemed to be at risk of becoming orphaned in 2018. Although BLM does not estimate reclamation costs for all wells, it has estimated reclamation costs for thousands of wells whose operators have filed for bankruptcy. Based on our analysis of these estimates, we identified two cost scenarios: low-cost wells typically cost about \$20,000 to reclaim, and high-cost wells typically cost about \$145,000 to reclaim.³⁸

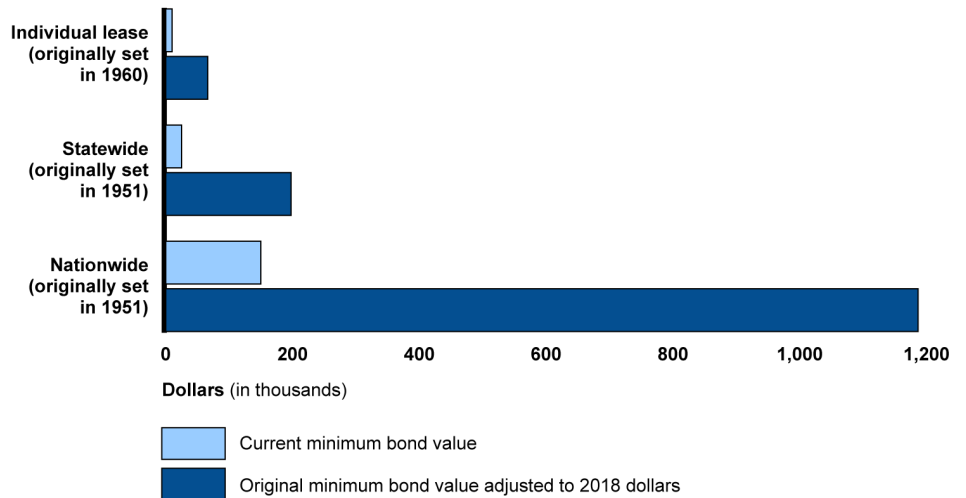
In our September 2019 report, based on our cost scenarios described above, we found that most bonds (84 percent) that we were able to link to wells in BLM data are likely too low to fund reclamation costs for all the wells they cover. Bonds generally do not reflect reclamation costs because most bonds are set at regulatory minimum values, and these minimums have not been adjusted to account for inflation since they were first set in the 1950s and 1960s, as shown in figure 1. In addition, these minimums do not account for variables, such as the number of wells they cover, or other characteristics that affect reclamation costs, such as increasing well depth.

³⁷[GAO-19-615](#).

³⁸Based on our analysis of BLM reclamation cost estimates, the costs to reclaim wells were clustered into distinct groups: relatively low-cost and relatively high-cost wells. Due to this pattern of clustering and a wide variation in reclamation costs, we used these data as a basis to define two scenarios of potential reclamation costs for any individual well. Although we do not have information about the reclamation costs for all BLM wells, or the extent to which the proofs of claim sample is representative of all BLM wells, we consider these two scenarios to reflect a reasonable range of potential reclamation costs for a typical well.

The low-cost scenario is based on the 25th percentile of average well reclamation costs in proofs of claim, and the high-cost scenario is based on the 75th percentile. These scenarios do not encompass the complete range of BLM's well reclamation cost estimates. For example, on the low end, the 5th percentile average was about \$15,000, and the lowest average estimate was \$3,096. On the high end, the 95th percentile average was about \$174,000, and the highest estimate was \$603,000. Reclamation costs can vary based on a number of factors, such as well depth or location.

Figure 1: Bureau of Land Management Current Regulatory Minimum Oil and Gas Bond Values Compared to Original Minimum Bond Values, Adjusted to 2018 Dollars



Source: GAO analysis of Bureau of Land Management data. | GAO-19-718T

In addition to the wells identified by BLM as orphaned over the last decade, in our September 2019 report we identified inactive wells at increased risk of becoming orphaned and found their bonds are often not sufficient to reclaim the wells. Our analysis of BLM bond value data as of May 2018 and ONRR production data as of June 2017 revealed that a significant number of inactive wells remain unplugged and could be at increased risk of becoming orphaned. Specifically, we identified 2,294 wells that may be at increased risk of becoming orphaned because they have not produced since June 2008 and have not been reclaimed.³⁹

Since these at-risk wells are unlikely to produce again, an operator bankruptcy could lead to orphaned wells unless bonds are adequate to reclaim them. In our September 2019 report, we stated that if the number of at-risk wells is multiplied by our low-cost reclamation scenario of \$20,000, it implies a cost of about \$46 million to reclaim these wells. If the number of these wells is multiplied by our high-cost reclamation scenario

³⁹Our analysis used conservative assumptions to estimate a lower bound of the number of wells at the end of their useful life that have not been reclaimed. In particular, our lower-bound estimate does not include some coalbed methane wells that have been inactive for less than 9 years but are unlikely to produce at current prices because of the relatively higher cost of coalbed methane production. [GAO-19-615](#) provides additional information on our methodology.

of \$145,000, it implies a cost of about \$333 million.⁴⁰ When we further analyzed the available bonds for these at-risk wells, we found that most of these wells (about 77 percent) had bonds that would be too low to fully reclaim the at-risk wells under our low-cost scenario.⁴¹ More than 97 percent of these at-risk wells have bonds that would not fully reclaim the wells under our high-cost scenario. Without taking steps to adjust bond levels to more closely reflect expected reclamation costs, BLM faces ongoing risks that not all wells will be completely and timely reclaimed, as required by law.⁴² We recommended in our September 2019 report that BLM take steps to adjust bond levels to more closely reflect expected reclamation costs. BLM concurred with our recommendation.⁴³ However, while BLM stated it had updated its bond review policy, it is unclear whether the updated policy will improve BLM's ability to secure bond increases.

BLM Does Not Currently Assess User Fees to Fund Orphaned Well Reclamation

In addition to fulfilling its responsibility to prevent new orphaned wells, it falls to BLM to reclaim wells that are currently orphaned, and BLM has not always been able to do so quickly. For example, we reported in September 2019 that there were 51 wells that BLM identified as orphaned in 2009, and that they had not been reclaimed as of April 2019. As noted above, BLM faces significant estimated potential reclamation costs associated with orphaned wells and inactive wells.

⁴⁰Not all of these wells may become orphaned, although they are at an increased risk of becoming orphaned as compared to active wells or wells that have been inactive for fewer years.

⁴¹We analyzed bonds linked to at-risk wells in BLM's data as of May 2018. Of the 2,294 at-risk wells, 2,041 were linked to bonds in BLM's data (about 89 percent) and these formed the basis of our analysis of bond value per at-risk well; the remaining wells were not tied to any bonds in BLM's data systems. In addition, we examined costs associated with at-risk wells covered by these bonds and did not count any other wells covered by the bond if they were not at risk. [GAO-19-615](#) provides additional information on our methodology.

⁴²Specifically, BLM "shall, by rule or regulation, establish such standards as may be necessary to ensure that an adequate bond, surety, or other financial arrangement will be established prior to the commencement of surface-disturbing activities on any lease, to ensure the complete and timely reclamation of the lease tract, and the restoration of any lands or surface waters adversely affected by lease operations after the abandonment or cessation of oil and gas operations on the lease." 30 U.S.C. § 226(g).

⁴³[GAO-19-615](#).

The Energy Policy Act of 2005 directs Interior to establish a program that, among other things, provides for the identification and recovery of reclamation costs from persons or other entities currently providing a bond or other financial assurance for an oil or gas well that is orphaned, abandoned, or idled.⁴⁴ In our September 2019 report we described one way in which BLM may be able to accomplish this is through the imposition of user fees, such as at the time an operator submits an application for permit to drill or as an annual fee for inactive wells. Some states, such as Wyoming, have dedicated funds for reclaiming orphaned wells. According to one official we interviewed with the Wyoming Oil and Gas Conservation Commission, the Commission has reclaimed approximately 2,215 wells since 2014 under its Orphan Well Program, which is funded through a conservation tax assessed on the sale of oil and natural gas produced in the state. Developing a mechanism to obtain funds from operators for such costs could help ensure that BLM can reclaim wells completely and timely. In commenting on a draft of our September 2019 report, BLM stated that it does not have the authority to seek or collect fees from lease operators to reclaim orphaned wells. We continue to believe a mechanism for BLM to obtain funds from oil and gas operators to cover the costs of reclamation of orphaned wells could help ensure BLM can completely and timely reclaim these wells, some of which have been orphaned for at least 10 years. Accordingly, in our September 2019 report, we recommended that Congress consider giving BLM the authority to obtain funds from operators to reclaim orphaned wells and requiring BLM to implement a mechanism to obtain sufficient funds from operators for reclaiming orphaned wells.⁴⁵

⁴⁴The Secretary of the Interior is to establish this program in cooperation with the Secretary of Agriculture.

⁴⁵[GAO-19-615](#).

ONRR Compliance Goals May Not Align with the Agency Mission to Account for Royalty Payments, Despite Agency Efforts to Improve Operations

In May 2019, we found that ONRR had begun implementing several initiatives to help the agency operate more effectively, according to ONRR officials.⁴⁶ For example, in March 2017, ONRR initiated Boldly Go, an effort to assess its organizational structure and identify and implement potential improvements.⁴⁷ ONRR was also in the process of implementing a new electronic compliance case management and work paper tool referred to as the Operations and Management Tool. According to ONRR documents, this tool was to combine multiple systems into one and was intended to serve a variety of functions. ONRR documents stated that the tool is designed to be a single, standardized system that reduces manual data entry, creates a single system of record for ONRR case data, offers checks to eliminate data entry errors, and provides greater transparency for outside auditors. The agency also introduced a new auditor training curriculum in April 2018.

In our May 2019 report, we also found that ONRR reported generally meeting its annual royalty compliance goals for fiscal years 2010 through 2017.⁴⁸ However, we found that while ONRR's fiscal year 2017 compliance goals could be useful for assessing certain aspects of ONRR's performance, they may not have been effectively aligned with the agency's statutory requirements or its mission to account for all royalty payments.⁴⁹ For example, ONRR's fiscal year 2017 compliance goals did not sufficiently address its mission to collect, account for, and verify revenues, in part, because its goals did not address accuracy, such as a coverage goal (e.g., identifying the number of companies or percentage of royalties subject to compliance activities over a set period).

⁴⁶[GAO-19-410](#).

⁴⁷According to ONRR officials, this initiative was in response to March 2017 comments from the Secretary of the Interior, in which he said the department, in general, should undergo a "bold restructuring." The officials said that the Boldly Go organizational restructuring was implemented in October 2017 and included several changes to how ONRR conducts its compliance work.

⁴⁸In this testimony, annual compliance goals refer to those identified in Interior's budget justifications and annual performance plan and reports as a performance measures to support the Interior's strategic plan. ONRR also has supporting goals that are included in Interior's annual budget justifications, referred to as bureau-specific goals and exhibit 300 goals. We refer to these goals as bureau-specific goals. Strategic plan goals are higher-level goals linked directly to Interior's strategic plan, while bureau-specific goals are lower-level goals that generally support the strategic plan but are developed at the bureau level.

⁴⁹ONRR's statutory requirements under the Federal Oil and Gas Royalty Management Act of 1982 require that it establish a comprehensive auditing system to provide the capability to accurately determine oil and gas royalties, among other requirements.

We stated that by establishing a coverage goal that aligns with the agency's mission, ONRR could have additional assurance that its compliance program was assessing the extent to which oil and gas royalty payments were accurate. Overall, we made seven recommendations, including that ONRR establish an accuracy goal that addresses coverage that aligns with its mission. Interior concurred with our recommendations.

Limitations Exist in Interior's Accounting and Management of Natural Gas Emissions

We issued reports in October 2010 and July 2016 that included several recommendations regarding steps Interior should take to better account for and manage natural gas emissions associated with oil and gas development.⁵⁰ In October 2010, we reported that data collected by Interior to track venting and flaring on federal leases likely underestimated venting and flaring because they do not account for all sources of lost gas. For onshore federal leases, operators reported to Interior that about 0.13 percent of produced gas was vented or flared. Estimates from the Environmental Protection Agency and the Western Regional Air Partnership showed volumes as high as 30 times higher.⁵¹ We reported that economically capturing onshore vented and flared natural gas with then-available control technologies could increase federal royalty payments by \$23 million annually. We also found limitations in how Interior was overseeing venting and flaring on federal leases, and made five recommendations geared toward ensuring that Interior had a complete picture of venting and flaring and took steps to reduce this lost gas where economic to do so. Interior generally concurred with our recommendations.

In July 2016, we found that limitations in Interior's guidance for oil and gas operators regarding their reporting requirements could hinder the extent to which the agency can account for natural gas emissions on federal lands. Without such data, Interior could not ensure that operators were minimizing waste and that BLM was collecting all royalties that were owed to the federal government. We recommended, among other things, that BLM provide additional guidance for operators on how to estimate

⁵⁰[GAO-11-34](#) and [GAO-16-607](#).

⁵¹The Western Regional Air Partnership is a collaborative effort of tribal governments, state governments, and various federal agencies to address western air quality concerns. It is administered by the Western Governors' Association and the National Tribal Environmental Council.

natural gas emissions from oil and gas produced on federal leases. BLM concurred with the recommendation.

Interior has taken steps to implement our past recommendations regarding the control of natural gas. Accounting for natural gas is important for ensuring that the federal government receives all royalties it is due and because methane—which comprises approximately 80 percent of natural gas emissions—is a potent greenhouse gas that has the ability to warm the atmosphere. In addition, we reported in July 2016 that increased oil production in recent years has resulted in an increase in flared gas in certain regions where there is limited infrastructure to transport or process gas associated with oil production. In November 2016, Interior issued regulations intended to reduce wasteful emissions from onshore oil and gas production that were consistent with our recommendations. In June 2017, however, Interior postponed the compliance dates for relevant sections of the new regulations and then suspended certain requirements in December 2017. Interior subsequently issued revised regulations in September 2018 that are not consistent with the findings and recommendations in our prior work.

In our prior work and preliminary observations in our ongoing work, we have found that some states have requirements that are more stringent than BLM's regarding accounting for and managing natural gas emissions. For example, we reported in July 2016 that North Dakota targeted the amount of gas flared from two geologic formations in the state by imposing restrictions on the amount of gas operators may flare from existing and new sources.⁵² We also reported that North Dakota requires operators to include a gas capture plan when they apply to drill a new oil well. According to state officials we interviewed for our report, gas capture plans help facilitate discussions between oil producers and firms that process and transport gas and have improved the speed at which new wells are connected to gas gathering infrastructure. In the course of our ongoing work, we obtained documents indicating that per its regulations, North Dakota requires all gas produced and used on a lease for fuel purposes or that is flared must be measured or estimated and reported monthly, and that all vented gas be burned and the volume reported.

⁵²North Dakota Industrial Commission Order No. 24665 (July 1, 2014), and North Dakota Industrial Commission Order No. 24665 Policy/Guidance Version 102215.

In addition, based on preliminary observations in our ongoing work, Colorado and Texas both charge royalties on vented and flared gas volumes. In the course of our ongoing work, we obtained documents indicating that the Colorado Oil and Gas Conservation Commission, which regulates oil and gas activity in the state, addresses both venting and flaring as well as leaks.⁵³ Colorado officials we interviewed with the State Land Board told us in September 2019 that, since 2018, the state charges royalties on all vented and flared gas volumes, with certain exceptions.⁵⁴ These officials told us that prior to 2018, vented and flared gas could be exempt from royalties, but that it was uncommon. In addition, in Texas, a state official we interviewed told us that vented or flared volumes must be reported monthly and that charging royalties on these volumes increases revenues.

Chairman Lowenthal, Ranking Member Gosar, and Members of the Subcommittee, this completes my prepared testimony. I would be pleased to respond to any questions you may have at this time.

GAO Contacts and Staff Acknowledgments

If you or your staff have any questions about this testimony, please contact Frank Rusco, Director, Natural Resources and Environment at (202) 512-3841 or RuscoF@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this testimony. GAO staff who made key contributions to this testimony are Quindi Franco (Assistant Director), Marie Bancroft (Analyst-In-Charge), Antoinette Capaccio, John Delicath, Jonathan Dent, Elizabeth Erdmann, Glenn C. Fischer, Emily Gamelin, William Gerard, Cindy Gilbert, Holly Halifax, Richard P. Johnson, Christine Kehr, Michael Kendix, Greg Marchand, Jon Muchin, Marietta Mayfield Revesz, Dan Royer, and Kiki Theodoropoulos.

⁵³Colorado Oil and Gas Conservation Commission Rules and Regulations, 317.m, 604.c(2)C, 805.b(3), 912.

⁵⁴According to officials, for vented and flared gas, royalties must be paid except for (1) gas that is flared, vented, or otherwise lost during the well completion process, (2) recycled gas that is used for injection and enhanced recovery until such gas is produced and sold, and (3) gas that is unavoidably lost.

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