



December 2015

OFFSHORE OIL AND GAS RESOURCES

Actions Needed to Better Protect Against Billions of Dollars in Federal Exposure to Decommissioning Liabilities

GAO Highlights

Highlights of [GAO-16-40](#), a report to congressional requesters

Why GAO Did This Study

Oil and gas produced on federal leases in the Gulf of Mexico are important to the U.S. energy supply. Historically, most offshore production was in shallow water, but more than two-thirds of the more than 5,000 active oil and gas leases in the Gulf are now located in deep water. When oil and gas infrastructure is no longer in use, Interior requires lessees to decommission it so that it does not pose safety and environmental hazards. Decommissioning can include plugging wells and removing platforms, which can cost millions of dollars. Interior requires lessees to provide bonds or other financial assurances to demonstrate that they can pay these costs; however, if lessees do not fulfill their decommissioning obligations, the federal government could be liable for these costs.

GAO was asked to review Interior's management of liabilities from offshore oil and gas production. This report examines Interior's (1) procedures for overseeing decommissioning and estimating its costs, (2) procedures for obtaining financial assurances for these liabilities, and (3) challenges managing these liabilities. GAO reviewed agency regulations and procedures and interviewed officials from Interior, credit rating agencies, academia, and trade associations.

What GAO Recommends

GAO recommends that Interior take several steps to improve its data system, complete plans to revise its financial assurance procedures, and revise its cost reporting regulations, among other things. Interior concurred with GAO's recommendations.

View [GAO-16-40](#). For more information, contact Frank Rusco at (202) 512-3841 or ruscof@gao.gov.

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Actions Needed to Better Protect Against Billions of Dollars in Federal Exposure to Decommissioning Liabilities

What GAO Found

The Department of the Interior (Interior) has developed procedures to oversee the decommissioning of offshore oil and gas infrastructure and estimate costs associated with decommissioning liabilities but has not addressed limitations with its system for tracking cost estimates. According to officials, Interior's procedures include (1) identifying and tracking unused infrastructure, (2) reviewing lessee plans to decommission infrastructure, and (3) using different cost estimates for decommissioning in shallow and deep water. However, inconsistent with internal control standards, Interior officials must manually enter cost estimates into Interior's main data system to override inaccurate estimates automatically calculated by the system. Without a more accurate data system, Interior does not have reasonable assurance that it will consistently estimate the costs associated with decommissioning.

Interior's procedures for obtaining financial assurances for decommissioning liabilities pose financial risks to the federal government, and Interior is planning to revise its procedures to address these risks but has not finalized its approach. As of October 2015, for an estimated \$38.2 billion in decommissioning liabilities in the Gulf, Interior officials identified about \$2.3 billion in liabilities that may not be covered by financial assurances. However, these officials were unable to determine the extent to which these data were valid due to limitations with Interior's data system, among other things. Of the remaining \$35.9 billion in decommissioning liabilities, Interior held or required about \$2.9 billion in bonds and other financial assurances, and had foregone requiring about \$33.0 billion in bonds for the remaining liabilities. Interior has procedures that allow it to waive its requirement for a lessee to provide a bond if the lessee passes a financial strength test. Prior GAO work has shown that the use of financial strength tests in lieu of bonds poses risks to the federal government. Interior recognizes the risks associated with its procedures, and Interior officials stated that they issued draft guidance to clarify their procedures in September 2015. Interior has not issued any final revisions to its procedures; therefore, it is too soon to evaluate the details of these proposed changes. Until Interior improves its ability to obtain valid data from its data system and revises and implements its financial assurance procedures, the federal government remains at increased risk of incurring costs should lessees fail to decommission oil and gas infrastructure.

Interior faces challenges managing potential decommissioning liability. For example, until December 2015, Interior did not have a requirement for lessees to report on costs associated with decommissioning activities in the Gulf. Instead, Interior contracted studies to obtain data on decommissioning costs, but some data were decades old. Federal internal control standards call for agencies to obtain information from external stakeholders that may significantly affect their ability to achieve agency goals. However, in December 2015, Interior issued final regulations (proposed in 2009) requiring lessees to report data on most, but not all, decommissioning costs to Interior. Unless and until Interior obtains accurate and complete data on decommissioning costs, Interior may not have reasonable assurance that its cost estimates of decommissioning liabilities in the Gulf are accurate, or that it is requiring sufficient amounts of financial assurance based on these estimates.

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Abbreviations

BOEM	Bureau of Ocean Energy Management
BSEE	Bureau of Safety and Environmental Enforcement
Gulf	Gulf of Mexico
Interior	Department of the Interior
TIMS	Technical Information Management System

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December 18, 2015

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

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

The Honorable Peter A. DeFazio
House of Representatives

Oil and gas resources located on federal leases on the outer continental shelf are an important component of the nation's energy supply.¹ Wells on federal leases on the outer continental shelf accounted for over 16 percent of the nation's crude oil production in 2014 and about 5 percent of natural gas production in 2013. The vast majority of this production occurred on federal leases in the Gulf of Mexico (Gulf). Historically, most offshore oil and gas activities have occurred in shallow water,² but in recent decades these activities have moved into deep water. More than two-thirds of the more than 5,000 active oil and gas leases in the Gulf are now located in deep water.

The Department of the Interior (Interior) manages oil and gas activities on offshore federal leases, including activities associated with thousands of wells, platforms, and miles of pipelines on the outer continental shelf. When this infrastructure is no longer useful for operations or otherwise

¹The outer continental shelf refers to the submerged lands outside the territorial jurisdiction of all 50 states, but within U.S. jurisdiction and control. The portion of the North American continental edge that is federally designated as the outer continental shelf generally extends seaward 3 geographical miles off the coastline to at least 200 nautical miles.

²In this report, unless other specified, we use the term "shallow" water to refer to depths of less than 400 feet and "deep" water to refer to depths of greater than 400 feet.

becomes idle,³ or when a lease has been expired for more than 1 year, Interior requires oil and gas lessees to decommission it so that it does not pose potential safety hazards to marine vessels and environmental hazards to sea life and humans.⁴ Decommissioning refers to the process of plugging wells, removing platforms and other structures, removing or cleaning out pipelines, and clearing sites of debris. According to Interior estimates, in shallow water, decommissioning infrastructure can cost tens of millions of dollars per lease, depending on the number of wells and types of structures present. In deep water, decommissioning can cost hundreds of millions of dollars per lease. In addition, infrastructure damaged by hurricanes is significantly more expensive to decommission than nondamaged infrastructure.

According to Interior's regulations, all lessees are liable for decommissioning costs that accrue during their ownership.⁵ Before lessees drill wells or install platforms and other structures, Interior requires them to provide financial assurance to ensure that they are capable of meeting their decommissioning obligations. This financial assurance may be in the form of a financial asset provided by the lessee, such as a bond, or a determination that a lessee has the financial strength and ability to fulfill decommissioning obligations. According to Interior officials, the federal government has not incurred costs associated with offshore decommissioning since 1989, when a lessee declared bankruptcy.⁶ In response to this bankruptcy, Interior promulgated regulations in 1993 requiring some lessees to provide bonds specifically for offshore decommissioning.⁷ Nonetheless, Interior refers to oil and gas infrastructure on offshore federal leases as potential liabilities because

³Interior refers to wells and platforms as "idle" if they have not been used in the past 5 years for oil and gas exploration or development and production activities.

⁴For the purposes of this report, we use the term "lessee" to refer to owners of record title and owners of operating rights on offshore leases, designated operators acting on behalf of record title and operating rights owners, and right-of-way holders.

⁵30 C.F.R. § 250.1701.

⁶According to Interior officials, this company entered into an agreement to fund two decommissioning trusts using cash, services performed, acceptable forms of security, and royalty reductions. As part of this agreement, Interior reduced the company's royalty payments by about \$13 million, which was spent on decommissioning.

⁷30 C.F.R. § 556.53(d).

the federal government may have to pay for decommissioning if lessees do not.

You asked us to review Interior's management of potential federal liabilities associated with the decommissioning of offshore oil and gas infrastructure. This report examines (1) Interior's procedures for overseeing the decommissioning of offshore oil and gas infrastructure and estimating costs associated with decommissioning liabilities; (2) Interior's procedures for obtaining financial assurances for decommissioning liabilities; and (3) challenges, if any, Interior faces in managing potential decommissioning liabilities. We focused our work on the Gulf, where most oil and gas infrastructure is located.

To conduct this work, we reviewed Interior's regulations regarding its management of leases for offshore oil and gas production. To examine Interior's procedures for overseeing the decommissioning of offshore oil and gas infrastructure and estimating decommissioning costs, we interviewed officials from Interior's Bureau of Safety and Environmental Enforcement (BSEE) in their Washington, D.C., headquarters office and Gulf regional office in New Orleans, Louisiana, and reviewed and summarized relevant BSEE guidance, procedures, and related documentation.⁸ We also compared BSEE's actions to implement its procedures to standards for internal control in the federal government.⁹ In addition, to better understand the decommissioning process and the costs involved, we spoke with a nongeneralizable sample of officials and stakeholders from trade associations and academia. We identified these officials and stakeholders from our prior work, published academic and technical articles, our attendance at a decommissioning conference, and interviews with BSEE officials, and we selected them based on their knowledge in this area.

To examine Interior's procedures for obtaining financial assurances for decommissioning liabilities, we interviewed officials from Interior's Bureau of Ocean Energy Management (BOEM) in their Washington, D.C.,

⁸For the purposes of this report, we use the term "procedure" to include Interior's notices to lessees, which are supposed to clarify, supplement, or provide more details about Interior's regulations; standard operating procedures; and other related documents describing Interior's processes. See 30 C.F.R. § 250.103.

⁹GAO, *Standards for Internal Control in the Federal Government*, [GAO/AIMD-00-21.3.1](#) (Washington, D.C.: November 1999).

headquarters office and Gulf regional office in New Orleans, Louisiana, and reviewed and summarized relevant BOEM guidance, procedures, and related documentation. We compared actions that BOEM took to implement its procedures to standards for internal control in the federal government. In addition, to better understand financial assurance and bonding issues, we spoke with a nongeneralizable sample of analysts from the three largest credit rating agencies,¹⁰ officials from bonding companies, and stakeholders from trade associations. We identified these organizations from our prior work and interviews with BOEM officials and selected them based on their knowledge in this area.

To examine challenges Interior faces in managing potential decommissioning liabilities, we used the information collected from our first two objectives. We also spoke with a nongeneralizable sample of stakeholders from trade associations about their views on challenges; we identified these stakeholders from our prior work and selected them based on their knowledge in this area.

We conducted this performance audit from October 2014 to December 2015 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

This section provides information on (1) the types of wells and structures in the Gulf, (2) offshore leasing, (3) financial assurance requirements, (4) decommissioning requirements, and (5) oil and gas infrastructure installed and removed in the Gulf.

Types of Wells and Structures in the Gulf

Lessees drill wells to access and extract oil and gas from geologic formations. According to an Interior publication, “exploratory” wells are drilled in an area with potential oil and gas reserves, while “development”

¹⁰The three largest credit rating agencies are Moody’s Investors Services, Standard and Poor’s, and Fitch Ratings, as reported by the Securities and Exchange Commission.

wells are drilled to produce oil and gas from a known reserve.¹¹ An exploratory well may not actually produce any oil or gas, while a successful development well produces oil or gas. Wellheads that are located on a fixed platform (typically in shallow water) are referred to as “dry tree” wells, and wellheads that are located on the seafloor (typically in deep water) are referred to as “subsea” or “wet tree” wells.

Offshore oil and gas structures in the Gulf vary in size and complexity. The simplest structures are found in shallow water and include caissons and well protectors. A caisson is a cylindrical or tapered large diameter steel pipe enclosing a well conductor and is the minimum structure for offshore development. A well protector provides support to one or more wells with no production equipment and facilities. A more complex structure in shallow water is a fixed platform, which uses a jacket and pilings to support the superstructure, or deck.¹² The deck is the surface where work is performed and provides space for crew quarters, a drilling rig, and production facilities. Most of the large fixed platforms have living quarters for the crew, a helicopter pad, and room for drilling and production equipment.¹³ A typical platform is designed so that multiple wells may be drilled from it. Wells from a single platform may have bottom-hole locations many thousands of feet (laterally displaced) from the surface location.

Structures in deep water rely on other methods to anchor to the ocean floor. For example, a “compliant tower” structure supports the deck using a narrow, flexible tower and a piled foundation. According to an industry publication, the flexible nature of the compliant tower allows it to withstand large wind and wave forces associated with hurricanes. Other common deep-water structures include the tension leg platform, floating

¹¹According to BSEE officials, lessees sometimes drill other types of wells, such as relief wells and core test wells. However, these types of wells represent a very small portion of the wells drilled in the Gulf.

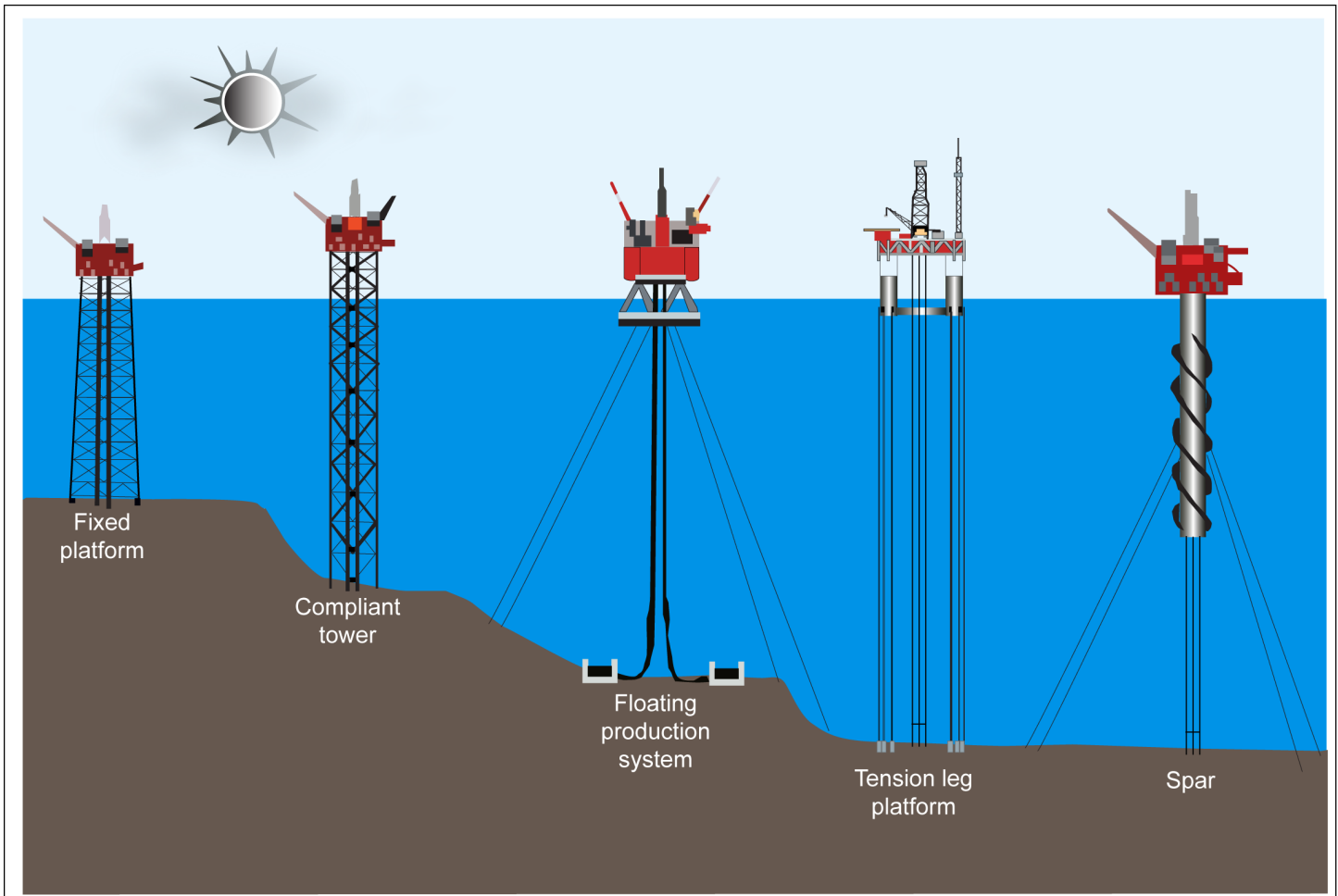
¹²A jacket is a steel structure that rests on the ocean’s floor and has columns, or legs. Pilings are driven through the legs of the jacket into the seafloor to hold the jacket in place.

¹³According to BSEE officials, fixed platforms are typically found in shallow water, but some fixed platforms are used in water depths between 400 feet and 1,400 feet.

production system, and spar platform.¹⁴ Illustrations of these structures are shown in figure 1.

¹⁴A tension leg platform structure supports a floating deck using vertical steel “tendons” or a chain and wire system anchored to the seafloor by pilings. A floating production system uses a floating, semisubmersible hull equipped with drilling and production equipment. It can be anchored in place with a chain and wire system or dynamically positioned using rotating thrusters. A spar platform supports a floating deck using a long, slender column that extends far below the ocean surface. Vertical steel tendons anchor the column to the seafloor (using pilings), and guy-wires extend out diagonally to seafloor anchors for horizontal stability.

Figure 1: Examples of Oil and Gas Structures in the Gulf of Mexico



Source: GAO analysis of industry reports. | GAO-16-40

Offshore Leasing

Management of offshore oil and gas resources is primarily governed by the Outer Continental Shelf Lands Act, which sets forth procedures for leasing,¹⁵ exploration, and development and production of those resources. The act calls for the preparation of an oil and gas leasing

¹⁵For the purposes of this report, we use the term “lease” to include leases, grants of right of way, and right of use and easements.

program designed to meet the nation's energy needs while also taking into account a range of principles and considerations specified by the act. Specifically, the act provides that "[m]anagement of the outer Continental Shelf shall be conducted in a manner which considers economic, social, and environmental values of the renewable and nonrenewable resources contained in the outer Continental Shelf, and the potential impact of oil and gas exploration on other resource values of the outer Continental Shelf and the marine, coastal, and human environments."¹⁶

The Outer Continental Shelf Lands Act also requires the Secretary of the Interior to prepare a 5-year schedule of proposed lease sales, indicating the size, timing, and location of leasing activity as precisely as possible. Every 5 years, Interior selects the areas that it proposes to offer for leasing and establishes a schedule for individual lease sales. These leases may be offered for competitive bidding, and all eligible companies are invited to submit written sealed bids for the lease and rights to explore, develop, and produce oil and gas resources on these leases. These rights last for a set period of time, referred to as the initial period of the lease,¹⁷ and vary depending on the water depth.¹⁸

Historically, Interior's Minerals Management Service managed offshore federal oil and gas activities and collected royalties for all producing leases. In May 2010, in an effort to separate major functions of offshore oil and gas management, Interior announced the reorganization of the Minerals Management Service into the Bureau of Ocean Energy Management, Regulation, and Enforcement, responsible for offshore oil and gas management, and the Office of Natural Resources Revenue, responsible for revenue collections. Subsequently, in October 2011, the

¹⁶43 U.S.C. §1344(a)(1).

¹⁷If a discovery is made within the initial period of the lease, the lease is extended for as long as oil and/or natural gas is produced in paying quantities or approved drilling operations are conducted. The term of the lease may also be extended if a suspension of production or suspension of operations has been granted or directed.

¹⁸In the Gulf, in a notice of sale in 2012, BOEM offered leases with an initial term of 5 years extended to 8 years if drilling begins during the initial 5-year period targeting hydrocarbons below a depth of at least 25,000 feet subsea for leases in less than 400 meters of water. For leases in 400 to 800 meters of water, the initial term was 5 years extended to 8 years if drilling begins during the initial 5-year period. For leases in 800 to 1,600 meters of water, the initial period was 7 years extended to 10 years if drilling begins during the initial 7-year period. For leases in over 1,600 meters of water, the initial period was 10 years.

Bureau of Ocean Energy Management, Regulation, and Enforcement was separated into BOEM and BSEE. BOEM oversees resource management activities, including preparing the 5-year outer continental shelf oil and gas leasing program; reviews oil and gas exploration and development plans and environmental studies; and conducts National Environmental Policy Act analyses. BSEE oversees operations and environmental compliance, including reviewing drilling permits, inspecting offshore drilling rigs and production platforms, assessing civil penalties, developing regulations and standards for offshore drilling (including those related to decommissioning), and ensuring the conservation of natural resources.

Financial Assurance Requirements

The Outer Continental Shelf Lands Act authorizes the Secretary of the Interior to promulgate regulations necessary to administer the outer continental shelf leasing program, including regulations concerning financial assurance. Under this authority, Interior promulgated regulations and developed financial assurance procedures to protect the government from incurring costs if a lessee fails to meet its lease obligations, including its obligation to decommission offshore infrastructure. Under these regulations and procedures, BOEM regional directors may require a lessee to provide a bond —referred to as a “supplemental bond”—that covers the estimated costs of decommissioning for a lease.¹⁹ BSEE is responsible for estimating costs associated with decommissioning liabilities. If a lessee is unable to accomplish decommissioning obligations as required, the federal government can use the bond to cover decommissioning costs.²⁰ However, if BOEM determines that at least one lessee has sufficient financial strength to accomplish decommissioning

¹⁹To satisfy the requirement to provide bonds, BOEM accepts surety bonds, U.S. Treasury notes, and other financial instruments if the government’s interests are protected. A surety bond is a third-party guarantee that a lessee purchases from a private insurance company or other entity approved by the Department of the Treasury (i.e., listed on Circular No. 570). The lessee must pay a premium to the surety company to maintain the bond.

²⁰In addition to a supplemental bond that may be required from a lessee, under BOEM regulations, every offshore oil and gas lease must be covered by a general bond that could be used to ensure a lessee complies with regulatory and lease requirements such as inspection fees, civil penalties, decommissioning, and rents and royalties. The general bond is not relied on to cover oil spill response, because those activities are covered by BOEM’s Oil Spill Financial Responsibility regulations (30 C.F.R. § 553) as well as the Oil Spill Liability Trust Fund. General bonds vary in amount, from \$50,000 to \$3 million, depending on the geographical area and phase of operation covered by the bond. As of June 10, 2015, lessees had provided 604 general bonds with a value of \$517 million.

obligations on the lease, BOEM may waive the requirement for a supplemental bond.²¹

Under BOEM and BSEE regulations, lessee liability is “joint and several”—that is, each lessee is liable for all decommissioning obligations that accrue on the lease during its ownership, including those that accrued prior to its ownership but had not been performed. In addition, a lessee that transfers its ownership rights to another party will continue to be liable for the decommissioning obligations it accrued. According to BOEM officials, BOEM ensures that all decommissioning obligations on offshore leases are required to be covered by either a supplemental bond or a current lessee that has the financial ability to conduct decommissioning.

Decommissioning Requirements

According to Interior regulations, lessees must permanently plug all wells, remove all platforms and other structures, decommission all pipelines, and clear the seafloor of all obstructions created by the lease and pipeline operations when this infrastructure is no longer useful for operations.²² Lessees must also permanently plug wells and remove platforms within 1 year after a lease terminates. BSEE refers to infrastructure that is no longer useful for operations on active leases as idle infrastructure (or “idle iron”) and infrastructure on expired leases as terminated lease infrastructure. In general, BSEE’s guidance defines idle infrastructure as follows:²³

²¹Each lease may have numerous lessees that have various rights to the lease, including lessees that are record title holders and lessees that are operating rights holders. BOEM requires that all lessees agree to one designated operator, and the designated operator generally provides BOEM with the required bonding.

²²According to BSEE, permanent well abandonment includes installing a surface plug and severing the casing at least 15 feet below the mudline, among other requirements. Temporary well abandonment includes all plugging and testing requirements imposed by BSEE to permanently abandon a well, except a surface plug is not required, and the lessee need not sever the casing, remove the wellhead, or clear the site. BSEE regulations also allow a lessee to either leave a pipeline in place after performing certain activities (e.g., cleaning it and flushing with seawater) or remove it from the seafloor. See 30 C.F.R. § 250.

²³Department of the Interior, *Notice to Lessees and Operators of Federal Oil and Gas Leases and Pipeline Right-of-way Holders in the Outer Continental Shelf, Gulf of Mexico OCS Region: Decommissioning Guidance for Wells and Platforms*, NTL No. 2010-G05 (Sept. 15, 2010). This guidance expired Oct. 14, 2013, but BSEE continues to use it.

-
- A well is considered idle if it has not been used in the past 5 years for operations associated with exploration or development and production of oil or gas, and if the lessee has no plans for such operations.
 - A platform is considered idle if it has been toppled or otherwise destroyed, or it has not been used in the past 5 years for operations associated with exploration or development and production of oil or gas.

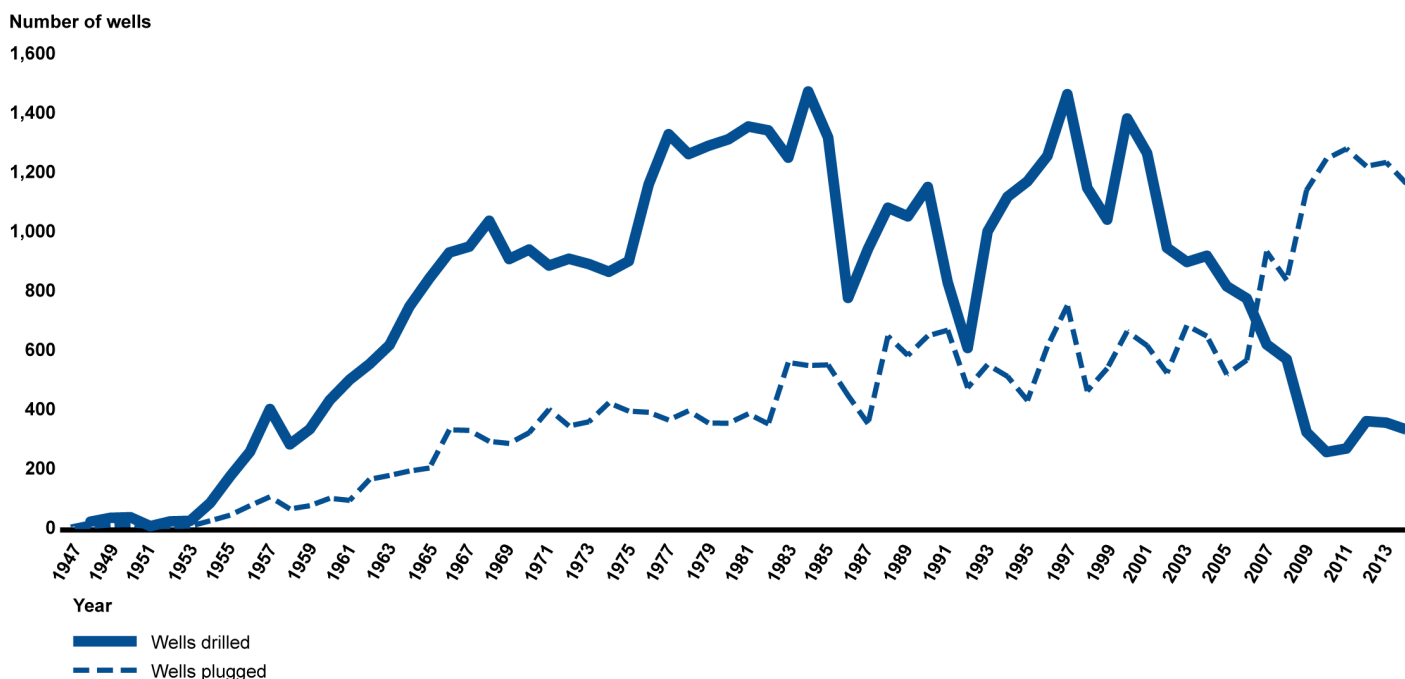
Companies may postpone decommissioning idle wells and platforms to defer the cost of removal, increase the opportunity for resale, or reduce decommissioning costs through economies of scale and scheduling, among other reasons. However, postponing decommissioning can be costly because the longer a structure is present in the Gulf the greater the likelihood it will be damaged by a hurricane. According to Interior documentation, decommissioning a storm-damaged structure may cost 15 times or more the cost of decommissioning an undamaged structure. In 2005, Hurricanes Katrina and Rita destroyed 116 structures and significantly damaged another 163 structures and 542 pipelines in the Gulf, according to Interior documentation. According to BSEE officials, as of April 2015, the Gulf contained 13 destroyed structures with 16 associated wells.

Storm-damaged or toppled structures present a greater risk to safety and require difficult and time-consuming salvage work. After preliminary salvage work that can take weeks, divers cut and remove structural components while crane assemblies remove the components and place them on a barge for transport and disposal. Additionally, when working in areas with strong currents and unconsolidated material, coffer dams are often constructed on the seabed to prevent material from slumping back in on the dive crews and equipment.

Oil and Gas Infrastructure Installed and Removed in the Gulf

Figure 2 shows the annual number of wells drilled and plugged in the Gulf from 1947 through 2014. During this time period, lessees drilled a total of 52,223 wells in the Gulf (including 18,447 exploratory wells and 33,776 development wells) and plugged a total of 29,879 wells (including 4,017 temporarily abandoned wells and 25,862 permanently abandoned wells).

Figure 2: Annual Number of Wells Drilled and Plugged in the Gulf of Mexico, 1947-2014

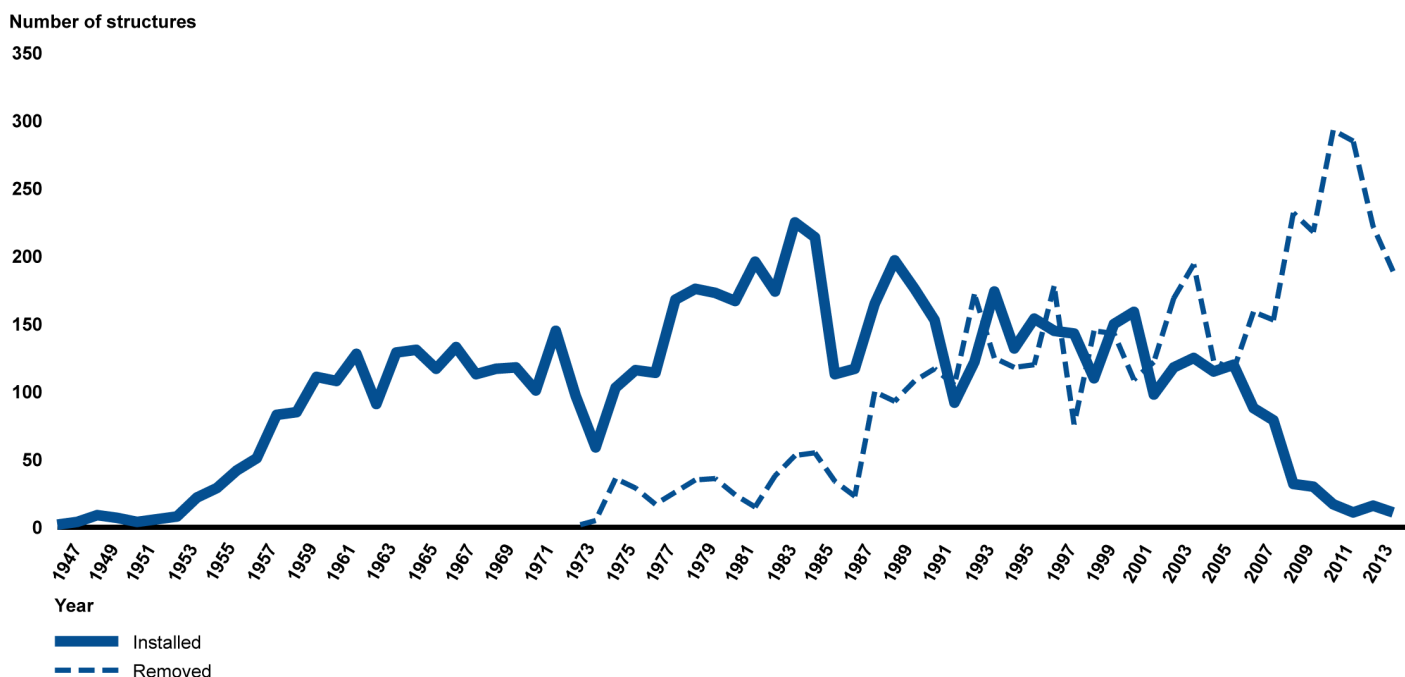


Source: GAO analysis of Bureau of Safety and Environmental Enforcement (BSEE) data. | GAO-16-40

Note: Wells drilled include exploratory and development wells. Wells plugged include temporary and permanent well abandonments.

Figure 3 shows the annual number of structures installed and removed in the Gulf from 1947 through 2014. During this time period, lessees installed a total of 7,038 structures in the Gulf. In addition, starting in the 1970s, lessees began removing structures from the Gulf. Specifically, lessees removed a total of 4,611 structures from 1973 through 2014. Most of the structures installed and removed were fixed platforms and caissons installed in shallow water.

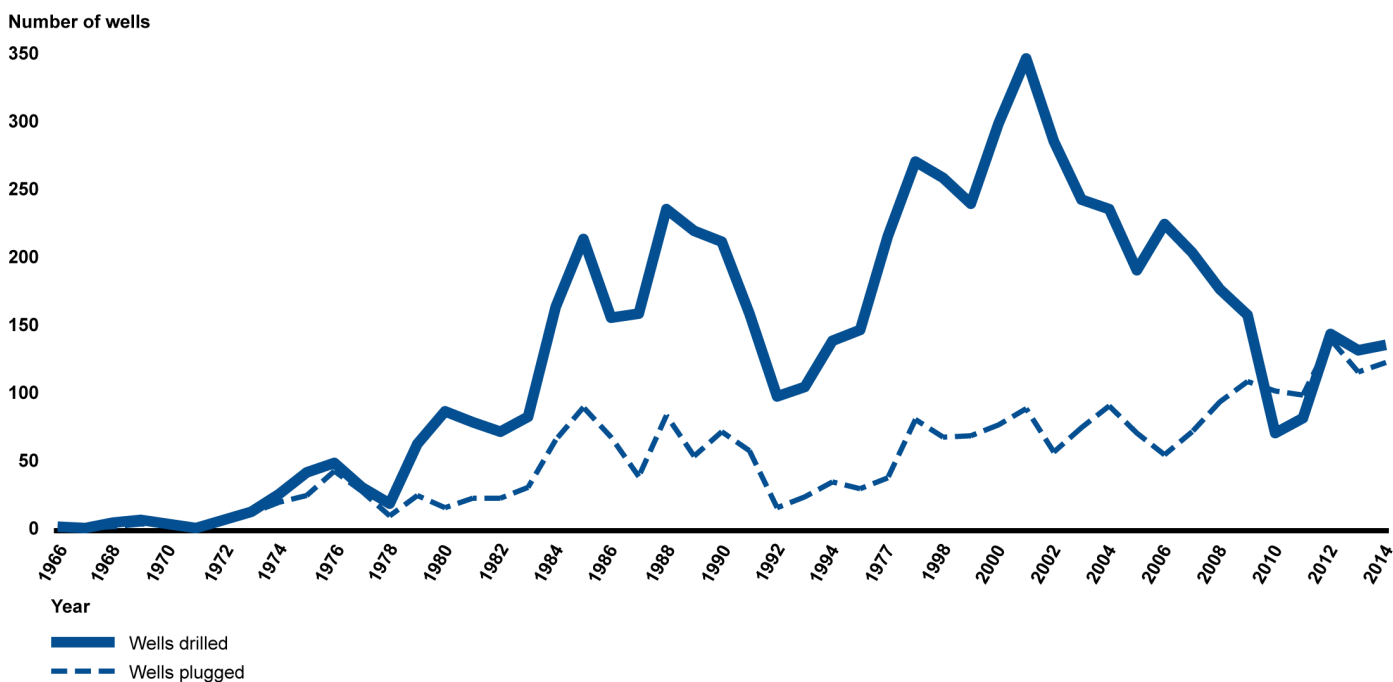
Figure 3: Annual Number of Structures Installed and Removed in the Gulf of Mexico, 1947-2014



Source: GAO analysis of Bureau of Safety and Environmental Enforcement (BSEE) data. | GAO-16-40

Between the late 1940s and early 1960s, lessees only drilled wells in shallow water. However, starting in the mid-1960s, lessees began drilling wells in deep water. Figure 4 shows the annual number of wells drilled and plugged in deep water in the Gulf from 1966 through 2014. During this time period, lessees drilled a total of 6,468 wells (including exploratory and development wells) and plugged a total of 2,489 wells (including temporary and permanently abandoned wells) in deep water. Lessees also installed 112 structures—mostly fixed platforms, spar, tension leg platforms, and floating production systems—and removed 19 structures in deep water during this time period.

Figure 4: Annual Number of Deepwater Wells Drilled and Plugged in the Gulf of Mexico, 1966-2014



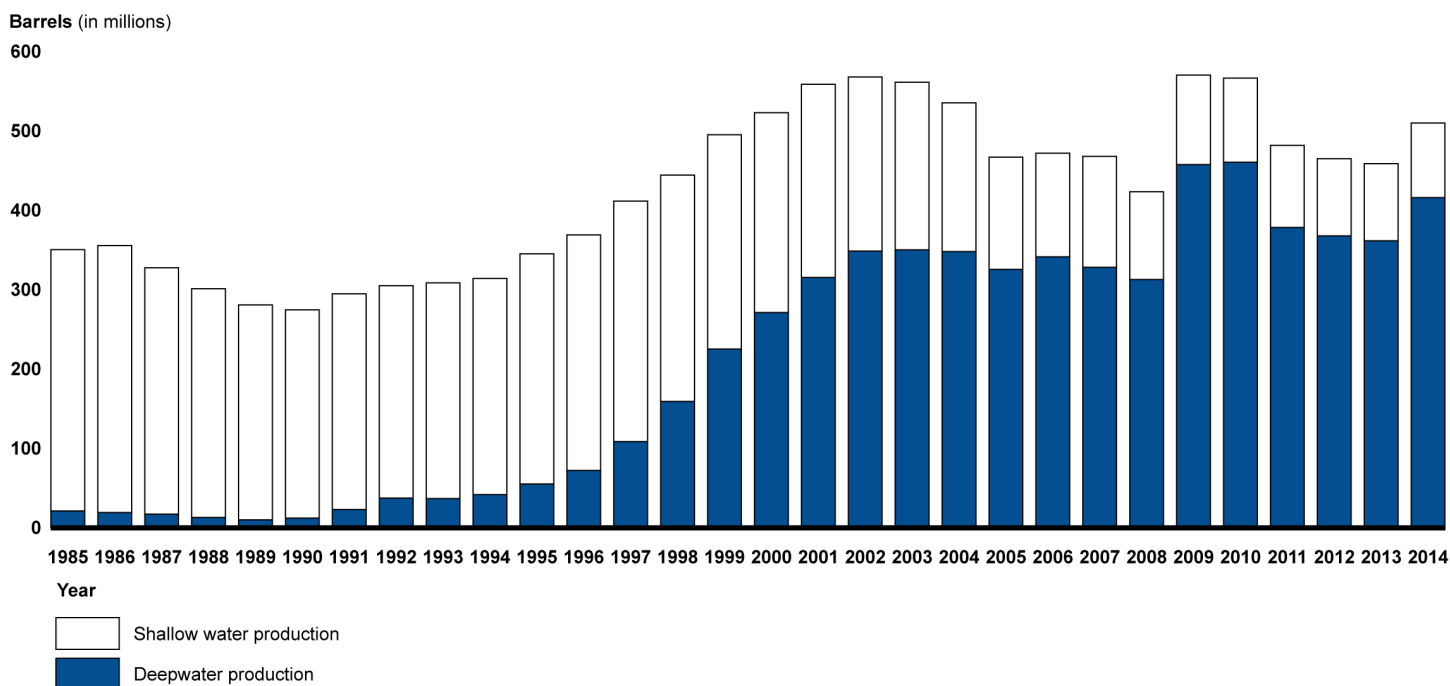
Source: GAO analysis of Bureau of Safety and Environmental Enforcement (BSEE) data. | GAO-16-40

Note: Wells drilled include exploratory and development wells drilled in greater than 400 feet of water. Wells plugged include temporary and permanent well abandonments in greater than 400 feet of water.

Since 1985, oil production from deepwater wells has increased significantly, as shown in figure 5. While the number of wells drilled has decreased in recent years, offshore production has increased as lessees have drilled wells in deep water that are more productive than wells in shallower water. In 2014, over 80 percent of Gulf oil production occurred in deep water, up from 6 percent in 1985.²⁴ According to BSEE officials, activities in deep water, including drilling and decommissioning, are significantly more expensive than those in shallow water because of the technology required and challenges associated with deep water, such as very high pressures at significant water and well depths.

²⁴For these data, Interior defined deep water as depths of greater than 1,000 feet. According to Interior's data, gas production in deep water also increased dramatically over this period, from less than 1 percent of total Gulf production in 1985 to over 50 percent in 2014.

Figure 5: Oil Production in the Gulf of Mexico, 1985-2014



Source: GAO analysis of Bureau of Ocean Energy Management (BOEM) data. | GAO-16-40

Interior Has Procedures to Oversee Decommissioning and Estimate Related Costs but Faces Data System Limitations and Has Not Documented Some Procedures

Interior's BSEE has developed procedures to oversee the decommissioning of offshore oil and gas infrastructure and estimate costs associated with decommissioning liabilities, but limitations in its data system may affect the accuracy and completeness of some cost estimates. In addition, BSEE has not documented some of its procedures for identifying and tracking infrastructure that needs to be decommissioned and for estimating the related costs.

BSEE Has Procedures to Oversee Decommissioning and Estimate Costs, but Data System Limitations May Affect the Accuracy and Completeness of Some Cost Estimates

Procedures for Overseeing Decommissioning

Officials in BSEE's Gulf regional office have developed procedures for overseeing the activities of lessees in decommissioning oil and gas infrastructure in the Gulf and estimating the costs of doing so, but limitations in its data system for estimating costs may affect the accuracy and completeness of some cost estimates.

Under BSEE's regulations, lessees must apply for approval before plugging wells, removing platforms and clearing sites, and decommissioning pipelines. According to BSEE regional officials, they review applications to ensure that they contain the required information (see table 1 below). Once this process is complete, BSEE officials approve a lessee's application, which authorizes the lessee to begin decommissioning activities.

Table 1: Bureau of Safety and Environmental Enforcement (BSEE) Requirements for Decommissioning Applications for Offshore Oil and Gas Infrastructure

Type of application	Description
Plugging wells ^a	Lessees must provide the following information: (1) reason for plugging the well; (2) recent well test and pressure data; (3) maximum possible surface pressure; (4) type and weight of well-control fluid to be used; (5) description of work; (6) current and proposed well schematic and description; and (7) certification by a registered professional engineer of the well abandonment design and procedures, and that all plugs meet BSEE requirements.
Removing platforms or other facilities	Lessees must provide the following information: (1) identification and description of the structure to be removed; (2) description of vessel(s) used to remove structure; (3) identification of purpose for removing structure; (4) description of removal method (e.g., explosives); (5) plans for transportation and disposal or salvage of removed platform; (6) if available, results of any recent biological surveys conducted in vicinity of structure; (7) and plans to protect archaeological and sensitive biological features during removal operations, among other things.
Decommissioning pipelines	If decommissioning a pipeline in place, lessees must submit information on the proposed decommissioning procedures and the length of the segment to be decommissioned and left in place, among other things. If removing a pipeline, lessees must submit information on the proposed removal procedures and length of segment to be removed, among other things.

Source: GAO analysis of BSEE documentation. | GAO-16-40

^aBSEE has established requirements for an application to permanently plug a well and to temporarily abandon a well. This table reflects requirements for an application to permanently plug a well.

After lessees complete all planned decommissioning, they are required to report to BSEE on the outcome of these activities so that BSEE may verify that all their decommissioning obligations have been met, including clearing the seafloor around wells, platforms, and other facilities.

According to BSEE regional officials, they review lessee reports on decommissioning activities to ensure that the results are consistent with the information presented as part of the application process. Table 2 summarizes BSEE’s reporting requirements related to the results of decommissioning activities.

Table 2: Bureau of Safety and Environmental Enforcement (BSEE) Requirements for Reporting on Decommissioning Results for Offshore Oil and Gas Infrastructure

Type of report	Description
Plugging wells	Lessees must submit a report within 30 days after plugging a well. This report must include the following information: (1) information included with request submitted before permanently plugging the well along with a final well schematic; (2) description of plugging work; (3) nature and quantities of material used in plugs; and (4) description of methods used for casing removal (including information on explosives, if used), among other things.
Removing platforms or other facilities	Lessees must submit a report within 30 days after removing a platform or other facility. This report must include the following information: (1) summary of removal operations including completion date; (2) description of any mitigation measures taken; and (3) signed statement certifying that the types and amounts of explosives used in removing the platform were consistent with those set forth in the approved removal application.
Decommissioning pipelines	Lessees must submit a report within 30 days after decommissioning a pipeline. This report must include the following information: (1) summary of the decommissioning operation including completion date; (2) description of any mitigation measures taken; and (3) signed statement certifying that the pipeline was decommissioned according to the approved application.
Clearing sites around wells, platforms, and other facilities	Lessees must verify that a site is clear of obstructions within 60 days of plugging a well or removing a platform or other facility. Lessees then must submit a report within 30 days after verifying site clearance to certify to BSEE that all site clearance activities are completed. For wells, this report must include the following information: (1) signed certification that the well site area is cleared of all obstructions; (2) date the verification work was performed and the vessel used; (3) extent of the area surveyed; (4) survey method used; and (5) results of the survey, among other things. For platforms and other facilities, this report must include the following information: (1) letter (signed by the lessee) certifying that the platform or area is cleared of all obstructions and that a company representative witnessed the activities; (2) letter (signed by contractor) certifying that it cleared the platform or area of all obstructions; (3) date that work was performed and vessel used; (4) extent of area surveyed; (5) survey method used; and (6) survey results, among other things.

Source: GAO analysis of BSEE documentation. | GAO-16-40

According to BSEE regional officials, during the process of reviewing lessee reports, BSEE may issue a notice of an “incident of noncompliance” in cases where lessees have not provided all of the required information or when lessee activities are not consistent with BSEE regulations. If BSEE officials determine that the violation is not severe or threatening, they will issue a “warning” notice that requires the lessee to correct the violation within a specified period of time. If BSEE

officials determine that the violation is more serious, they will issue a “shut-in” notice that requires the lessee to correct the violation before resuming activities. In addition, BSEE officials can assess a civil penalty of up to \$40,000 per violation per day if the lessee fails to correct the violation in the period of time specified in the notice, or if the violation resulted in a threat of serious harm to human life or damage to the environment.

In addition to reviewing lessee applications and reports, the BSEE Gulf region identifies and tracks idle and terminated lease infrastructure. According to BSEE regional officials, the BSEE Gulf region began identifying and tracking idle lease infrastructure in 2010 and currently updates a list of this infrastructure on an annual basis. BSEE began identifying and tracking terminated lease infrastructure prior to 2010, according to BSEE regional officials. At the beginning of each calendar year, BSEE regional officials obtain data from Interior’s main data system—the Technical Information Management System (TIMS)—on wells and structures on leases that meet the criteria for idle and terminated lease infrastructure.²⁵ Based on these data, BSEE sends a list of idle and terminated lease infrastructure to each lessee, requesting a decommissioning plan and schedule for decommissioning the lessee’s inventory. According to BSEE regional officials, BSEE works with lessees to verify the accuracy of their inventory of idle and terminated lease infrastructure, and BSEE tracks lessees’ progress in meeting their schedules.²⁶

Procedures for Estimating Costs

According to BSEE regional officials, BSEE estimates the costs associated with decommissioning liabilities by counting the number and types of wells, pipeline segments, and structures on a lease and using

²⁵According to the Federal IT Dashboard, TIMS is a computerized information system that automates many of the business and regulatory functions of BSEE and BOEM. TIMS enables staff of the regional and headquarters offices of both BSEE and BOEM to share and combine data; create and print maps; standardize processes, forms, and reports; and promote the electronic submission of data.

²⁶According to BSEE data, lessees have made progress in decommissioning idle infrastructure in the Gulf. Specifically, in 2010, there were 3,233 idle wells and 617 idle platforms in the Gulf and, as of June 15, 2015, there were 1,082 idle wells and 245 idle platforms in the Gulf.

data on the water depth associated with this infrastructure.²⁷ Using these data, BSEE then calculates the costs associated with (1) plugging and abandoning wells, (2) removing platforms and other structures, (3) decommissioning pipelines, and (4) clearing debris from the site.

In general, the cost to plug wells and remove structures increases as the water depth increases. For example, according to BSEE's current methodology, its estimate of the cost to plug a dry tree well attached to a fixed structure in shallow water is \$150,000, while its estimate of the cost to plug a subsea well in deep water is a minimum of about \$21 million. Likewise, BSEE's estimates of the costs to remove fixed platforms in shallow water range from approximately \$85,000 to \$4.6 million, while its estimate of the cost to remove a floating structure (and associated equipment) in deep water is a minimum of \$30 million.

According to BSEE regional officials, a number of events can trigger BSEE's review of the costs associated with decommissioning liabilities on a lease. Examples of these events include the following:

- BSEE determines that a lessee is planning a potential sale or acquisition of leases.
- BOEM or BSEE detect indications of financial stress for a lessee.
- BOEM requests a review of a pending request for lease assignment and bond cancellations.
- A lessee requests a review from BSEE when some but not all infrastructure is decommissioned on a lease.

BSEE enters and stores its cost estimates of decommissioning liabilities in TIMS. However, according to BSEE regional officials, TIMS is limited in its ability to accurately and completely record cost estimates of decommissioning liabilities, as follows:

- TIMS contains three data fields to record cost estimates for each offshore lease—one for estimates of the cost of removing existing structures, one for estimates of the cost of plugging existing wells, and one for estimates of the cost of clearing debris from sites. TIMS uses algorithms developed in the 1990s to calculate cost estimates for

²⁷The BSEE Gulf regional office established a Decommissioning Support Section in December 2013 to estimate costs associated with decommissioning liabilities in the Gulf. Prior to that date, BSEE officials in other sections within the Gulf regional office were assigned the responsibilities associated with estimating these costs.

each of these data fields. However, BSEE officials said that the cost estimates are too low compared to BSEE's current estimates. For example, TIMS calculates the cost to plug a well is \$100,000, regardless of water depth or the type of well, while BSEE estimates the cost to plug a subsea well in deep water is approximately \$21 million.

- TIMS does not contain separate data fields for recording the estimated cost to plug a planned well (as opposed to an existing well) or to decommission pipelines. BSEE officials said that both of these costs are important to consider and to estimate a lessee's potential decommissioning liability.

Because of these limitations, BSEE regional officials said that, in 2009, they began investing more time and resources into manually updating cost estimates of decommissioning liabilities in TIMS. Currently, BSEE officials use separate spreadsheets—containing updated methodologies for estimating costs in shallow and deep water—to estimate costs to decommission leases. They then manually enter the cost estimates into TIMS using separate data fields entitled “adjusted decommissioning liability” for each type of cost estimate; for example, plugging wells, removing structures, and site clearance. In addition, they add estimated costs for (1) plugging planned wells into the “adjusted decommissioning liability” data field for existing wells and (2) decommissioning pipelines into the “adjusted decommissioning liability” data field for site clearance. Once they enter these data, TIMS automatically populates the date of that entry into an “updated” data field.

According to BSEE regional officials, they have manually entered updated cost estimates for most leases in the Gulf. Specifically, as of July 8, 2015, BSEE officials said that they had entered updated cost estimates for 3,460 (86 percent) of the 4,021 leases in the Gulf with decommissioning liabilities. BSEE officials characterized their efforts to update cost estimates as an “ongoing process” and said that their activities related to cost estimating have increased dramatically over the past decade. Officials said that while there was no set time frame by which they plan to update cost estimates for all the leases in the Gulf, the number of leases changes over time, and BSEE prioritizes its efforts on those leases that BOEM and BSEE determine pose higher financial risk.

BSEE regional officials told us that Interior is transitioning to a new data system (the National Consolidated Information System) to manage offshore oil and gas activities and that BSEE plans to use the new data system to improve how decommissioning liabilities are calculated and

recorded. However, officials were unable to provide details on how the new data system will address the existing data limitations in TIMS or when they expect to implement these improvements in the new data system. Internal control standards in the federal government call for agencies to ensure that all transactions and events are completely and accurately recorded.²⁸ Without the ability to completely and accurately record data on decommissioning costs, some of BSEE's estimates of decommissioning liabilities may not be complete or accurate, and BOEM may not have reasonable assurance that it is requiring sufficient amounts of financial assurance based on BSEE's estimates.

BSEE Does Not Have Finalized, Documented Procedures for Identifying and Tracking Infrastructure That Needs to Be Decommissioned or for Estimating Costs

BSEE officials in the Gulf regional office told us BSEE does not have documented procedures for identifying and tracking idle and terminated lease infrastructure or finalized documented procedures for estimating costs associated with decommissioning liabilities. Specifically, BSEE regional officials told us the bureau did not have documentation, such as standard operating procedures or operating manuals that described their process for identifying and tracking infrastructure. BSEE regional officials provided draft documentation outlining their approach to estimating costs associated with plugging wells, removing structures, and decommissioning pipelines; however, they told us that these documents had not been finalized and were a "work in progress." According to these officials, these documents replace an older policy manual and were developed in 2014 after BSEE established the Decommissioning Support Section within the Gulf regional office.²⁹

In addition, BSEE's draft documents outlining its approach to estimating the costs of decommissioning liabilities do not address how BSEE regional officials plan to periodically assess the methodology for estimating costs, as recommended by an internal Interior review. Specifically, in fiscal year 2009, Interior conducted an internal review of its procedures related to its financial accountability and risk management

²⁸ [GAO/AIMD-00-21.3.1](#).

²⁹ Department of the Interior, Minerals Management Service, *Policy Manual Part 640.1 - Financial Accountability and Risk Management (FARM) Program* (Washington, D.C.: July 22, 2008).

program. In an internal report,³⁰ Interior stated that program officials estimated costs using data that had not been updated in over 14 years. The report recommended that the program develop and implement a formal policy to review and revise all assessments at least once every 5 years for all regions.³¹ It also recommended that program officials consider adjusting assessments to reflect the cost of inflation during the period between the 5-year updates. To date, BSEE regional officials have not developed and implemented formal procedures addressing these recommendations.

Internal control standards in the federal government call for agencies to clearly document internal controls, and the documentation should appear in management directives, administrative policies, or operating manuals.³² According to BSEE regional officials, they plan to establish documented procedures to identify and track idle and terminated lease infrastructure and estimate costs, but have not done so due to competing priorities, among other reasons. Without finalized, documented procedures, BSEE does not have reasonable assurance that it will consistently conduct such activities in the future, which could limit the effectiveness of Interior's oversight of the decommissioning process and its ability to obtain sufficient financial assurances to cover decommissioning liability.

³⁰Department of the Interior, Minerals Management Service, *Offshore Energy and Minerals Management, Supplemental Bonding Process, Fiscal Year 2009 Internal Control Review* [publication date not listed].

³¹In keeping with this recommendation, BSEE's Pacific regional office customarily prepares a decommissioning cost report every 5 years to determine estimated decommissioning costs for its region and to support decisions regarding bonding requirements.

³²[GAO/AIMD-00-21.3.1](#).

Interior's Procedures for Obtaining Financial Assurances for Decommissioning Liabilities Pose Risks to the Federal Government, and Interior Plans to Revise Them

Interior's procedures for obtaining financial assurances for offshore decommissioning liabilities pose financial risks to the federal government. Officials from Interior's BOEM told us that the bureau plans to revise its procedures that determine how much financial assurance a lessee must provide, and that they expect these procedures to reduce the risk that the government could incur costs associated with decommissioning.

BOEM's Procedures for Obtaining Financial Assurances for Decommissioning Liabilities Pose Risks to the Federal Government

BOEM's procedures for obtaining financial assurances for offshore decommissioning liabilities pose financial risks to the federal government in three ways. First, as of October 2015, according to BOEM officials, BOEM had identified approximately \$2.3 billion in decommissioning liabilities in the Gulf that may not be covered by financial assurances but was unable to determine in a timely manner the extent to which these liabilities were valid. Specifically, after identifying data on potentially uncovered decommissioning liabilities in TIMS, BOEM officials analyzed these data over several months to determine their validity. That is, BOEM officials tried to determine the extent to which these liabilities were accurate and the extent to which valid liabilities were covered by financial assurances. BOEM officials told us that, based on their analyses, some of the \$2.3 billion in decommissioning liabilities may be valid and uncovered by financial assurances.³³

However, according to BOEM officials, they were unable to quantify how much of the \$2.3 billion in decommissioning liabilities were valid and uncovered by financial assurances due to limitations with the TIMS data system and inaccurate data, among other things. For example, BOEM officials stated that existing reports generated by the TIMS data system

³³For example, according to BOEM officials, BSEE recently began updating its estimates of decommissioning liabilities associated with pipelines in the TIMS data system. As a result, BOEM officials said that data associated with these decommissioning liabilities may be valid.

did not provide all the necessary information for determining the validity of data on decommissioning liabilities and financial assurances. As a result, officials said that they had to create new reports to access additional data stored in TIMS, and that these efforts were time consuming. In addition, BOEM officials said that they identified leases that did not have wells or platforms but for which TIMS contained estimates of decommissioning liabilities. BOEM officials said that data associated with these decommissioning liabilities may not be valid but that they would need to consult with BSEE officials to determine their validity, which would take additional time.

BOEM officials stated that, in order to determine the validity of the data in TIMS, they plan to consult with BSEE officials and continue to analyze relevant data. Once they have determined the validity of the data, they said that they will take steps to obtain financial assurances for any uncovered decommissioning liabilities. However, officials were unable to provide details on how or when they planned to address existing limitations with the TIMS data system or determine the accuracy of data on decommissioning liabilities. Internal control standards in the federal government call for agencies to ensure that pertinent information is identified, captured, and distributed in a form and time frame that permits people to perform their duties efficiently.³⁴ Without timely access to valid data on decommissioning liabilities in the Gulf and associated financial assurances, BOEM does not have reasonable assurance that it has sufficient financial assurances in place, putting the federal government at risk.

Second, under BOEM's procedures, less than 8 percent of estimated decommissioning liabilities in the Gulf are covered by financial assurance mechanisms such as bonds. Specifically, as of October 2015, according to BOEM officials, for an estimated \$38.2 billion in decommissioning liabilities in the Gulf, BOEM held or required about \$2.9 billion in bonds and other financial assurances.³⁵ For \$33.0 billion in decommissioning liabilities, BOEM waived 47 lessees from the requirement to provide

³⁴[GAO/AIMD-00-21.3.1](#).

³⁵As of October 2015, BOEM held about \$1.8 billion in bonds (including supplemental and general bonds) and about \$500 million in trust agreements. In addition, BOEM had issued letters requiring lessees to provide about \$600 million in financial assurances.

supplemental bonds based on BOEM's reviews of the lessees' financial strength, according to BOEM officials.^{36, 37}

Under BOEM's current financial assurance procedures,³⁸ each offshore lease with a decommissioning liability must be covered by a supplemental bond unless BOEM determines that a lessee has the financial ability to fulfill its decommissioning obligations. BOEM staff evaluate the financial ability of a lessee to fulfill its decommissioning obligations by means of a financial strength test. BOEM's financial strength test requires a lessee to meet the following criteria:

- provide an independently audited financial statement indicating a net worth greater than \$65 million;
- possess a total decommissioning liability (as determined by BSEE) of less than or equal to 50 percent of its audited net worth;
- possess total company liabilities of no more than 2 to 3 times the value of the adjusted net worth;^{39, 40} and

³⁶For the purposes of ensuring that there is at least one responsible party with the financial ability to fulfill lease decommissioning obligations, BOEM attributes all lease decommissioning liabilities to any waived lessee on a lease (even if other responsible parties are present on the lease). The waived lessee is, with all other lessees, jointly and severally liable for decommissioning and relies on its financial strength to secure the costs of this decommissioning, on behalf of all the jointly and severally liable parties.

³⁷Under Interior regulations, regional directors may determine that a supplemental bond is necessary to ensure compliance with a lessee's obligations. According to Interior officials, supplemental bonding becomes a requirement once the regional director determines that it is necessary.

³⁸Department of the Interior, Minerals Management Service, *Notice to Lessees and Operators of Federal Oil, Gas, and Sulfur Leases and Pipeline Right-of-way Holders in the Outer Continental Shelf: Supplemental Bond Procedures*, NTL No. 2008-N07 (Aug. 28, 2008).

³⁹Adjusted net worth includes a percentage of a lessee's proven oil and gas reserves added to a lessee's audited net worth. BOEM varies the total liability ratio it will accept based on adjusted net worth—for example, a lessee with between \$65 million and \$100 million in adjusted net worth can possess total lessee liabilities of no more than 2 or 2.5 times its adjusted net worth, depending on the size of the company's potential decommissioning liability.

⁴⁰Alternatively, BOEM allows a lessee to use a substitute criterion—the lessee must demonstrate that it produces in excess of an average of 20,000 barrels of oil equivalent per day on its leases. However, according to BOEM officials, of the 51 waived lessees only 1 or 2 chose to use this alternative criterion.

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- demonstrate reliability, as shown by a record of compliance with laws, regulations and lease terms, among other factors.

If a lessee passes the financial strength test by demonstrating its financial ability to pay for decommissioning on its leases, BOEM waives its requirement for the lessee to provide supplemental bonds. Other responsible parties on the lease will also be waived from the requirement to provide supplemental bonds.⁴¹ According to BOEM officials, BOEM waives these parties as well because the waived lessee could be held responsible if another party on a lease does not fulfill its decommissioning obligations. In addition, a waived lessee may provide financial assurance in the form of a corporate guarantee of the lease obligations of a lessee on another lease.⁴²

After BOEM waives a lessee from the requirement to provide supplemental bonding, it monitors the financial strength of the lessee to ensure it continues to pass BOEM's financial strength test. BOEM conducts quarterly financial reviews for the first 2 years after a lessee receives a waiver and then an annual review thereafter.⁴³ In addition, on a weekly basis, BOEM compares the decommissioning obligations (as determined by BSEE) of all waived lessees with the financial information provided by lessee audited financial statements.⁴⁴ If BOEM finds that a lessee no longer passes its financial strength test, BOEM will conduct a more in-depth review of a lessee's financial status by reviewing financial statements, credit ratings, and other financial information. BOEM may also conduct an unscheduled financial review if: (1) BSEE revises its estimate of a lessee's decommissioning liability, (2) a lessee's financial status changes as reported by credit rating agencies, or (3) a lessee does

⁴¹In addition to bonds required by BOEM, some lessees that transfer leases or rights may require the party acquiring the lease to provide a surety bond. This bond protects the transferring party from paying decommissioning costs it may be liable for if the purchasing party is unable to fulfill its decommissioning obligations. According to BOEM officials, these bonds are generally not reported to BOEM, and BOEM does not consider them as financial assurance because BOEM is not a beneficiary of such bonds.

⁴²According to BOEM officials, nearly all corporate guarantees are between parent companies and subsidiaries.

⁴³These reviews evaluate the same criteria that BOEM officials used during the initial financial strength test.

⁴⁴As part of these reviews, BOEM determines whether the waived lessee has the ability to pay for all decommissioning costs on leases where the lessee is an owner.

not pay the required royalties to the federal government. According to BOEM officials, these reviews could cause BOEM to revoke a lessee's waiver from the requirement to provide supplemental bonding. For example, in May 2015, BOEM revoked the waiver of one lessee and, according to BOEM officials, the waived lessee and related parties could be required to provide as much as \$1 billion in supplemental bonds.⁴⁵

Our prior reports have found that the use of financial strength tests and corporate guarantees in lieu of bonds poses financial risks to the federal government. Specifically, we found, in August 2005, that the financial assurance mechanisms that impose the lowest costs on the companies using them— such as financial strength tests and corporate guarantees— also typically pose the highest financial risks to the government entity accepting them.⁴⁶ In that report, we found that, if a company passes a financial strength test but subsequently files for bankruptcy or becomes insolvent, the company in essence is no longer providing financial assurance because it may no longer have the financial capacity to meet its obligations. Such financial deterioration can occur quickly. While companies no longer meeting the financial test are to obtain other financial assurance, they may not be able to obtain or afford to purchase it. In addition, in May 2012, we found that, according to the Bureau of Land Management and the Environmental Protection Agency, corporate guarantees are potentially risky because they are not covered by a specific financial asset such as a bond.⁴⁷ BOEM's use of the financial strength test and corporate guarantees in lieu of bonds raises the risk that the federal government may have to pay for offshore decommissioning if lessees do not.

The third way BOEM's procedures pose financial risks to the federal government is that BOEM's financial strength test relies on measures that may not provide an accurate indication of a lessee's ability to pay for

⁴⁵In cases where BOEM revokes a lessee's waiver from the requirement to provide supplemental bonding, the lessee or other responsible parties on a lease or recipients of corporate guarantees would be required to provide supplemental bonds to cover decommissioning obligations that are no longer covered by a waiver or guarantee.

⁴⁶GAO, *Environmental Liabilities: EPA Should Do More to Ensure That Liable Parties Meet Their Cleanup Obligations*, [GAO-05-658](#) (Washington, D.C.: Aug. 17, 2005).

⁴⁷GAO, *Phosphate Mining: Oversight Has Strengthened, but Financial Assurances and Coordination Still Need Improvement*, [GAO-12-505](#) (Washington, D.C.: May 4, 2012).

decommissioning. As described above, BOEM uses net worth (from a lessee's audited financial statements) as a key measure in its financial strength test. However, according to representatives from credit rating agencies we spoke to, net worth provides limited value to assess a company's financial strength and ability to pay future liabilities. Specifically, these representatives said that net worth is "backward looking" and can be skewed by the volatile nature of commodity prices, among other factors. Credit rating agencies use financial measures that emphasize the evaluation of cash flow, such as debt-to-earnings and debt-to-funds from operations to evaluate whether a company will be able to pay its liabilities. Without the use of similar measures in its financial assessments, BOEM may not have reasonable assurance that the lessees it waives from the requirement to provide supplemental bonds have the financial abilities to fulfill decommissioning obligations, which may increase the financial risk to the government.

BOEM Plans to Revise Its Procedures to Reduce Financial Risks

According to BOEM officials, BOEM recognizes the financial risks associated with its current financial assurance procedures and plans to revise its procedures to reduce risk. Specifically, BOEM officials told us that BOEM's planned revisions would eliminate the use of financial strength tests to completely waive lessees from the requirement to provide supplemental bonding. Instead, BOEM plans to conduct financial reviews of lessees' financial status and, based on those reviews, assign lessees an amount of credit that may be used to reduce required bonding associated with decommissioning liabilities on leases. Lessees would be able to apportion this credit to leases, in coordination with other responsible parties on those leases, to ensure that lease decommissioning liabilities are fully covered by apportioned credit or supplemental bonds. As part of BOEM's financial review of lessees, these officials told us that BOEM plans to use criteria that emphasize the use of measures such as cash flow and company liquidity while deemphasizing the use of net worth. In addition to these planned revisions, in August 2014, BOEM announced its intent to update its regulations and program oversight for offshore financial assurance requirements.⁴⁸ BOEM solicited stakeholder comments in response to this proposal and has held industry

⁴⁸79 Fed. Reg. 49027 (Aug. 19, 2014). According to BOEM officials, BOEM expects to promulgate these new regulations in 2017.

forums to discuss potential changes to its financial assurance regulations and procedures.

According to BOEM officials, if BOEM were to use these criteria as part of its financial strength test, some of the lessees currently waived from the requirement to provide supplemental bonds could lose their waivers. BOEM officials also stated that, if the revised procedures are implemented as planned, lessees could be required to provide several billion dollars in additional supplemental bonds. BOEM officials told us they plan to update the bureau's financial assurance procedures in late 2015 or early 2016. In commenting on a draft of this report, Interior officials stated that on September 22, 2015, BOEM issued proposed guidance to clarify its financial assurance procedures. However, it is too soon to evaluate the specific details of BOEM's proposed changes to its financial assurance procedures because BOEM has not issued any final revisions to its procedures. Until BOEM revises and implements new procedures, the federal government remains at greater risk of incurring costs should lessees fail to decommission offshore oil and gas infrastructure as required.

Interior Faces Two Key Challenges Managing Potential Decommissioning Liabilities

Interior faces two key challenges managing potential decommissioning liabilities. First, BSEE does not have access to all relevant data from lessees on costs associated with decommissioning activities in the Gulf. Second, BOEM's requirements for reporting the transfers of lease rights may impair its ability to manage decommissioning liabilities.

BSEE Does Not Have Access to All Relevant Data on Decommissioning Costs

BSEE does not have access to all relevant current data on costs associated with decommissioning activities in the Gulf. Internal control standards in the federal government call for agencies to obtain information from external stakeholders that may significantly affect their abilities to achieve agency goals.⁴⁹ Obtaining accurate and complete information on the decommissioning costs is critical to Interior being able

⁴⁹[GAO/AIMD-00-21.3.1](#).

to achieve its goals. Specifically, BSEE needs accurate and complete information on decommissioning costs to estimate decommissioning liabilities in the Gulf, and BOEM relies on BSEE's estimates to ensure that it is requiring sufficient amounts of financial assurance to cover decommissioning liabilities.

However, BSEE generally has not had access to current data on decommissioning costs. Prior to December 2015, under BSEE's regulations, lessees were not required to report costs associated with decommissioning activities to BSEE. According to BSEE regional officials, data on decommissioning costs were considered proprietary, and companies generally did not share this information with BSEE. Instead, BSEE regional officials relied on other sources of data—some of which are decades old and, as a result, likely inaccurate—to estimate costs associated with decommissioning liabilities. According to BSEE regional officials, their estimates for decommissioning liabilities in shallow water were based on data provided by the oil and gas industry in 1995.⁵⁰ For decommissioning liabilities in water depths of 400 to 1,400 feet, their estimates were based on information in a 2009 report that Interior contracted.⁵¹ For decommissioning liabilities for subsea wells, BSEE officials said that they had developed their own models for estimating costs based on an analysis of a variety of factors, such as the daily cost of hiring a vessel in the Gulf to plug wells.

During the course of our audit, BSEE regional officials told us that they planned to improve this process and the resulting data by issuing a regulation requiring such data to be submitted. Specifically, Interior issued a proposed rule in May 2009 to establish new requirements for lessees to submit expense information on costs associated with plugging and abandonment, platform removal, and site clearance.⁵² In December 2015, BSEE issued a final rule establishing these requirements.⁵³ However,

⁵⁰BSEE officials told us that they are preparing to request proposals to fund a new study to evaluate the costs associated with structure removal in shallow water in the Gulf and have proposed studies to evaluate costs associated with pipeline decommissioning and well plugging in shallow water.

⁵¹Proserv Offshore, *Gulf of Mexico Deep Water Decommissioning Study: Final Report*, prepared for Interior's Minerals Management Service (Houston, Tex: October 2009).

⁵²74 Fed. Reg. 25177 (May 27, 2009).

⁵³80 Fed. Reg. 75806 (Dec. 4, 2015) (effective Jan. 4, 2016).

according to BSEE regional officials, the rule does not require lessees to submit expense information on costs associated with decommissioning pipelines, and officials were unable to provide details as to when or whether BSEE would issue a new rule to require the reporting of such costs. Unless and until BSEE obtains all relevant cost data, BSEE may continue to use outdated information to assess decommissioning liabilities. Without access to accurate and complete information on decommissioning costs, BSEE may not have reasonable assurance that its estimates of decommissioning liabilities in the Gulf are accurate, and BOEM may not have reasonable assurance that it is requiring sufficient amounts of financial assurance based on BSEE's estimates.

Absence of a Clear Reporting Deadline for Transfers of Revenue Rights May Impair BOEM's Ability to Manage Decommissioning Liabilities

The absence of a clear deadline for reporting transfers of rights to lease production revenue may impair BOEM's ability to manage decommissioning liabilities. Under BOEM's financial assurance procedures, BOEM must obtain accurate information on a lessee's financial status to determine whether the lessee has sufficient financial strength to meet its decommissioning obligations, and BOEM may waive its requirement for the lessee to provide supplemental bonds based on this information. However, the transfer of rights to a lease may affect a lessee's financial status. For example, lessees may transfer lease ownership and the right to operate on a lease, which also obligates the new owner to decommission infrastructure on the lease. Under Interior regulations, these transfers must be approved by BOEM.⁵⁴

Lessees can also transfer rights to lease production revenue.⁵⁵ Transfers of these revenue rights generally allow the receiving party to obtain a portion of the revenue from oil and gas production over a period of time and the lessee, in turn, is paid in advance of production. The more revenue rights a lessee transfers to other parties, the less revenue the lessee has to cover its other obligations, including decommissioning. However, unlike transfers of lease ownership and operating rights, transfers of revenue rights do not obligate the new owner to decommission, and lessees are not required to obtain BOEM's approval for these transfers. BOEM requires lessees to report these transfers, but

⁵⁴30 C.F.R. § 556.64(a).

⁵⁵For the purposes of this report, we use the term "revenue rights" in place of "overriding royalty interests" and "payments out of production."

its regulations do not establish a clear deadline for the reporting.⁵⁶ As a result, BOEM is not always aware of such transfers in a timely manner.

For example, in one recent case, a waived lessee that had previously transferred most of its revenue rights to other parties subsequently declared bankruptcy. BOEM was unaware of these transfers until bankruptcy court proceedings. Had BOEM been aware of these transfers during its weekly review of the waived lessee, it could have revoked the lessee's waiver if it determined the lessee no longer passed the financial strength test. Consequently, BOEM then could have required the lessee or its co-lessees to provide supplemental bonds to cover its decommissioning obligations. In this case, the transfer of revenue rights left the lessee with insufficient assets to pay all of its liabilities during bankruptcy, including decommissioning. Though other lessees were held liable for decommissioning costs under joint and several liability, the government was at increased risk of incurring costs if the other lessees had been unwilling or unable to perform decommissioning.

BOEM officials told us that they created an internal group to help improve BOEM's knowledge of revenue rights transfers and the effect of transfers on a lessee's financial status. In commenting on a draft of this report, BOEM officials stated that they believe that current regulations could be interpreted as imposing a reporting deadline but recognize the need to clarify the regulations. Without a clear reporting deadline, lessees have little incentive to report revenue rights transfers to BOEM in a timely manner, and this could limit BOEM's ability to effectively evaluate a lessee's financial strength.

Conclusions

Decommissioning offshore oil and gas infrastructure is expensive and poses potential financial liabilities to the federal government. BSEE officials in the Gulf region have developed procedures for reviewing idle and terminated lease infrastructure to ensure that this infrastructure is decommissioned. In addition, in December 2015, BSEE issued final regulations (proposed in 2009) requiring lessees to report decommissioning costs directly to BSEE. However, several problems

⁵⁶The regulations at 30 C.F.R. § 556.64 establish a 90-day deadline for the reporting of transfers of interest but do not define the term "interest." In discussions with BOEM officials in the Gulf regional office, BOEM officials did not interpret these regulations as imposing a reporting deadline for transfers of lease production revenue.

remain. First, BSEE's recent regulations do not require lessees to report costs associated with decommissioning pipelines. Unless and until BSEE obtains all relevant cost data, it may continue to use outdated data to assess decommissioning liabilities. Second, limitations of Interior's current data system restrict BSEE's ability to record estimates of decommissioning costs, and it is unclear how BSEE's new data system will address these limitations or when it will be available. Without access to complete data on decommissioning costs, and without the ability to accurately and completely record data in Interior's main data system, BSEE does not have reasonable assurance that its estimates of decommissioning liabilities in the Gulf are accurate, and BOEM may not have reasonable assurance that it is requiring sufficient amounts of financial assurance based on BSEE's estimates. Third, BSEE does not have finalized, documented procedures for identifying and tracking idle and terminated lease infrastructure and estimating decommissioning liabilities. Without such documented procedures, BSEE does not have reasonable assurance that it will consistently conduct such activities in the future, which could limit the effectiveness of BSEE's oversight of the decommissioning process.

Moreover, while BOEM is taking important steps to ensure that the financial assurance procedures used by the federal government are reducing the government's exposure to decommissioning costs by updating its procedures to assess the financial strength of lessees, we continue to have three concerns. First, BOEM identified roughly \$2.3 billion in decommissioning liabilities in the Gulf that may not be covered by financial assurances but was unable to determine the extent to which these liabilities were valid after several months of analysis due to limitations with the TIMS data system and inaccurate data. As a result, it is unclear whether BOEM has obtained sufficient financial assurances to cover decommissioning liabilities in the Gulf. Without timely access to valid data on decommissioning liabilities and associated financial assurances, BOEM cannot ensure that it has sufficient financial assurances in place, putting the federal government at financial risk. Second, to date BOEM has not taken concrete steps to revise its current procedures. As a result, it is unclear whether BOEM's planned revisions will improve its procedures and the extent to which these revisions will increase the amount of bonding that lessees provide. Until BOEM revises its financial assurance procedures, the federal government remains at increased risk of incurring costs should lessees fail to decommission oil and gas infrastructure. Third, BOEM is not always aware when lessees transfer rights to lease production revenue. While BOEM's current regulations require lessees to report such transfers, these regulations do

not clearly establish a deadline for reporting. Without a clear reporting deadline, lessees have little incentive to report revenue rights transfers to BOEM in a timely manner, and this could limit BOEM's ability to effectively evaluate a lessee's financial strength.

Recommendations for Executive Action

To improve the effectiveness of Interior's oversight of the decommissioning process, we recommend that the Secretary of the Interior direct BSEE to establish documented procedures for identifying and tracking idle and terminated lease infrastructure.

To better ensure that the government obtains sufficient financial assurances to cover decommissioning liabilities in the event of lessee default, we recommend that the Secretary of the Interior take the following six actions:

- Ensure that BSEE collects all relevant data associated with decommissioning from lessees.
- Direct BSEE to establish documented procedures for estimating decommissioning liability.
- Develop a plan and set a time frame to ensure that Interior's data system for managing offshore oil and gas activities includes processes to accurately and completely record estimated decommissioning liabilities.
- Develop a plan and set a time frame to ensure that Interior's data system for managing offshore oil and gas activities will be able to identify, capture, and distribute data on decommissioning liabilities and financial assurances in a timely manner.
- Ensure that BOEM completes its plan to revise its financial assurance procedures, including the use of alternative measures of financial strength.
- Revise BOEM's regulations to establish a clear deadline for the reporting of transfers to require that lessees report the transfer of rights to lease production revenue.

Agency Comments and Our Evaluation

We provided a draft of this report to Interior for review and comment. Interior provided written comments, which are reproduced in appendix I, and generally agreed with our findings and concurred with our recommendations.

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 of this report to the appropriate congressional committees, the Secretary of the Interior, and other interested parties. In addition, this report will be available at no charge on the GAO website at <http://www.gao.gov>.

If you or your staff members have any questions about this report, please contact me 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 report. GAO staff members who made major contributions to this report are listed in appendix II.

A handwritten signature in black ink, reading "Frank Rusco" with a long, sweeping horizontal line extending to the right.

Frank Rusco
Director, Natural Resources and Environment

Appendix I: Comments from the Department of the Interior



United States Department of the Interior

OFFICE OF THE SECRETARY
Washington, DC 20240

NOV 30 2015

Mr. Frank Rusco
Director
Natural Resources and Environment
Government Accountability Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Rusco:

Thank you for the opportunity to review and comment on the Government Accountability Office (GAO) draft report entitled, *Offshore Oil and Gas Resources – Actions Needed to Better Protect Against Billions of Dollars in Federal Exposure to Decommissioning Liabilities* (GAO-16-40). Thank you also for incorporating the technical edits we recommended in our letter dated October 13, 2015.

The Department of the Interior (Department) generally agrees with the findings and concurs with the recommendations directed to the Bureau of Ocean Energy Management (BOEM) and the Bureau of Safety and Environmental Enforcement (BSEE). The Department is implementing GAO's recommendations to document procedures, improve its data system, and revise financial assurance procedures and regulations.

BOEM is updating its financial assurance requirements for Outer Continental Shelf (OCS) leases and facilities to mitigate risks associated with decommissioning liability. BOEM's goal is to ensure the taxpayer never has to pay to decommission an OCS facility. Updating the financial assurance policies will better reflect current business practices and the increased cost of decommissioning OCS facilities.

On September 22, 2015, BOEM issued proposed guidance to clarify procedures for oil and gas companies operating on the OCS. Specifically, the guidance contains updated financial criteria for determining a lessee's ability to meet its financial obligations, including decommissioning liabilities, in whole or part, and the potential need for additional security. BOEM will no longer consider the combined financial strength and reliability of co-lessees or operating rights holders when determining a lessee's ability to carry out its obligations with respect to decommissioning.

BOEM intends to update its data system and create comprehensive procedures designed to decrease risks to taxpayers while providing industry flexibility to negotiate adaptive solutions and utilize tailored financial plans to meet financial assurance needs. Next year, BOEM expects to publish a Notice to Lessees and Operators, which will clarify the process BOEM will use to develop tailored plans and financial assurance requirements.

In the draft report, GAO states that BOEM regulations do not include a deadline by which filings of transfer of revenue interests must be submitted to BOEM. BOEM believes that its regulation found at 30 CFR section 556.64(a)(2) requiring submittal of the creation or transfer of an interest

within 90 days of the last date that a party executes the transfer agreement could be interpreted to impose such a deadline. Nonetheless, BOEM is working to finalize a leasing rule that will clarify the deadline.

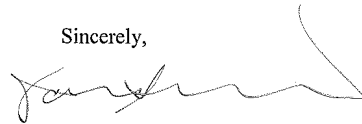
In recent years, BSEE has made considerable progress in improving its capabilities with regard to estimating decommissioning costs for OCS facilities in the Gulf of Mexico. Over the past few years, BSEE has updated cost data, revised estimation methodologies, begun consolidating decommissioning-related activities into a single program office, worked to develop new regulations, and generated thousands of updated decommissioning cost estimates for offshore wells and structures, which greatly reduced BSEE's backlog of leases requiring an updated estimate.

Despite these improvements, BSEE acknowledges that more needs to be done. BSEE intends to continue to focus on systematizing the process of updating decommissioning estimates and finalizing policy and procedures related to estimating decommissioning costs and overseeing idle infrastructure. BSEE's upcoming rule, *Oil and Gas and Sulphur Operations in the Outer Continental Shelf—Decommissioning Costs*, will require the submission of summary decommissioning expenditures from operators, greatly improving the bureau's ability to ensure that estimates reflect actual decommissioning costs. BSEE recently received approval from the Office of Management and Budget, and anticipates publishing the rule in the *Federal Register* soon.

Once the final rule is effective, BSEE will begin collecting expenditure data on decommissioning activities as early as 120 days after the effective date. As data are collected, BSEE will review and analyze the submissions to revise current cost data and estimation techniques, and develop algorithms that will automatically generate more reliable decommissioning cost estimates for wells and structures on leases. Until that time, BSEE will continue to use existing estimation techniques, where cost estimates must be built for each lease. Additionally, BSEE will seek available opportunities to refine cost data. BSEE is currently working toward procuring contracted services to improve data quality related to costs associated with decommissioning fixed structures in under 400 feet of water. BSEE plans to undertake additional research on decommissioning costs in the current fiscal year.

Enclosed are a few additional general and technical comments for your consideration when finalizing the report. If you have any questions about this response, please contact Andrea Nygren, BOEM Audit Liaison Officer, at 202-208-4343, or Linh Luu, BSEE Audit Liaison Officer, at 202-208-4120.

Sincerely,



Janice M. Schneider
Assistant Secretary
Land and Minerals Management

Enclosure

Appendix II: GAO Contact and Staff Acknowledgments

GAO Contact

Frank Rusco, (202) 512-3841 or ruscof@gao.gov

Staff Acknowledgments

In addition to the individual named above, Christine Kehr (Assistant Director), Jason Holliday, and David Messman made key contributions to this report. Also contributing to this report were Philip Farah, Cindy Gilbert, Paul Kinney, Risto Laboski, Alison O'Neill, and Barbara Timmerman.

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