

GAO

Testimony

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MINERAL REVENUES

Data Management Problems and Reliance on Self-Reported Data for Compliance Efforts Put MMS Royalty Collections at Risk

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Mr. Chairman and Members of the Subcommittee:

We are pleased to participate in the subcommittee's hearing to discuss the Department of the Interior's (Interior) oversight of the collection of royalties paid on the production of oil and natural gas (hereafter oil and gas) from federal lands and waters. In fiscal year 2007, Interior's Minerals Management Service (MMS) collected over \$9 billion in oil and gas royalties and disbursed these funds to federal, state, and tribal accounts. The federal portion of these royalties, which totaled \$6.7 billion in fiscal year 2007, represents one of the country's largest nontax sources of revenue. At the same time, oil and gas production on federal lands and waters represents a critical component of the nation's energy portfolio, supplying roughly 35 percent of all the oil and 30 percent of all the gas produced in the United States in 2006. The Department of Energy's (DOE) Energy Information Administration projects that over the next 10 years the portion of U.S. production from federal lands and waters will increase to 47 percent for oil and 37 percent for gas. In fiscal year 2007, MMS also transferred \$322 million worth of oil to DOE as part of its efforts to fill the nation's Strategic Petroleum Reserve (SPR). The SPR currently holds nearly 700 million barrels of oil—equivalent to about 58 days of net oil imports—that can be released at the discretion of the President in the event of an oil supply disruption. Recently, both oil prices and the demand to drill for oil and gas on federal lands have increased dramatically. For example, the price of West Texas Intermediate—a commonly used benchmark crude oil—now exceeds \$100 per barrel, a price that, when adjusted for inflation, is the highest price since 1980. Moreover, Interior's Bureau of Land Management (BLM) is projecting substantially increased numbers of drilling permit applications. It received 8,351 in 2005 and anticipates receiving 12,500 in 2008.

Companies that develop and produce federal oil and gas resources from federal lands and waters do so under leases obtained and administered by Interior—BLM for onshore leases and MMS's Offshore Minerals Management (OMM) for offshore leases. Together, BLM and OMM are responsible for overseeing oil and gas operations on more than 28,000 producing leases to help ensure that oil and gas companies comply with applicable laws, regulations, and agency policies. Among other things, BLM and OMM staff inspect producing leases to verify whether oil and gas are accounted for as required by both the Federal Oil and Gas Royalty Management Act of 1982¹ and agency policies. As a condition of producing oil and gas under federal leases, companies are required to self-report monthly production volumes to MMS (as part of their monthly production

¹Federal Oil and Gas Royalty Management Act, Pub. L. No. 97-451, § 101(a) (1983).

reports).² In some situations, several companies may be jointly involved in developing oil and gas from a lease or a number of adjacent leases, in which case the companies designate one of the companies to be the “operator.” The operator has sole responsibility for submitting production reports for all oil and gas produced from the leases.

Companies, or lessees, compensate the government for producing federal oil and gas resources either “in value” (royalty payments made in cash), or “in kind” (royalty payments made in oil or gas). In fiscal year 2006, 58 percent of the \$9.74 billion in oil and gas royalty payments were made in value, while 42 percent were made in kind. Under the royalty-in-value program, lessees responsible for paying cash royalties, also called “payors,” calculate the royalty payment they owe to the federal government using the key variables illustrated in the following equation:

$$\text{Royalty payment} = (\text{sales volume} \times \text{sales price} - \text{deductions}) \times \text{royalty rate}^3$$

Cash royalty payors are required to submit monthly royalty reports to MMS specifying the royalty amount they owe the federal government for the production and sale of oil and gas, and generally make the cash payment via an electronic fund transfer to an account at the Department of the Treasury (Treasury).⁴ In many instances, because leases are co-owned by multiple companies, multiple payors submit individual royalty reports for a single lease. However, in these situations a single company is designated the “operator” and is responsible for submitting the production report for that entire lease. As a result, MMS will often receive multiple royalty reports corresponding to a single production report. Royalty reports include the sales volume (amount sold), the sales revenue (the amount of revenue received from the sale), and the royalty payment due to MMS (royalty value less allowances taken for transportation and processing the gas into a marketable condition), prorated based on the share owned by each payor. Some of these data, as well as some of the deductible transportation costs, are also available from third-party sources. For example,

²Companies are required to self-report monthly production volumes to MMS on an Oil and Gas Operations Report (OGOR) form.

³The royalty rate varies somewhat but is typically in the range of 12.5 to 18.75 percent. In other words, the federal government typically receives between 12.5 and 18.75 percent of revenues less allowable deductions for oil and gas produced on federal lands and waters. Allowable deductions include payments to pipeline companies and other shipping costs required to transport the commodity to a market center, as well as adjustments made for the costs of processing natural gas.

⁴Companies are required to self-report monthly royalty payments to MMS on the Report of Sales and Royalty Remittance Form, Form 2014.

individual royalty payor data on production and some transportation costs can be acquired from pipeline statements, which are essentially receipts from pipeline companies for shipping oil and gas. In contrast, documentation of sales revenue data, as well as data supporting allowable deductions, are generally available only from oil and gas company records. Royalty payors submit their monthly royalty reports through a Web-based portal. Once MMS reconciles the self-reported royalty payment data from the monthly royalty reports with the payments submitted to Treasury, MMS disburses the royalties from the Treasury account to the appropriate federal, state, and tribal accounts. The transaction information is recorded in MMS's financial management system.⁵

As a check on the accuracy of the self-reported data the payors use when determining cash royalty payments, among MMS's internal controls are audits and compliance reviews.⁶ Audits are an assessment of the accuracy and completeness of the self-reported production and royalty data compared against source documents, such as sales contracts and oil and gas sales receipts from pipeline companies. By contrast, compliance reviews deal with reasonableness—a quicker, more limited check of the accuracy and completeness of a company's self-reported data—and they do not include systematic examination of underlying source documentation. In addition, some states and tribes that receive a share of royalties collected by MMS have agreements with MMS authorizing them to conduct both audits and compliance reviews on federal and Indian producing leases within their jurisdictions.⁷ MMS has an annual performance goal whereby it evaluates the compliance group's performance on the basis of whether the group has conducted compliance activities—either full audits or compliance reviews—on a predetermined percentage of royalty payments.

In contrast to royalties in value, when paying royalties in kind, a payor delivers a volume of oil or gas to MMS as determined by the following equation:

⁵This system, also known as the Minerals Revenue Management Support System, is designed to store and support the collection, verification, and disbursement of royalty revenues from federal and Indian mineral leases.

⁶Internal controls are a series of management actions and activities that occur throughout an entity's operations and include the procedures used to meet agency objectives.

⁷Eleven states—Alaska, California, Colorado, Louisiana, Montana, New Mexico, North Dakota, Oklahoma, Texas, Utah, and Wyoming—and seven tribes—Blackfoot Nation, Jicarilla Apache Tribe, Navajo Nation, Shoshone and Arapaho Tribes, Southern Ute Indian Tribe, Ute Mountain Ute Tribe, and the Ute Indian Tribe—conducted compliance work under cooperative agreements with MMS in fiscal year 2007.

$$\text{Royalty volume} = \text{total production volume} \times \text{royalty rate}^8$$

Once it receives the oil or gas, MMS may either sell it and disburse the revenues received from the sales, or transfer it to federal agencies for them to use. For example, MMS can transfer oil to DOE and DOE, in turn, can trade this oil for other oil of specific quality to fill the SPR. Under the Energy Policy Act of 2005,⁹ MMS is charged with ensuring that the revenues it receives when it sells oil and gas taken in-kind are at least as great as the revenues it would have received had it taken the royalties in value. Furthermore, MMS cannot sell oil and gas it takes in-kind for less than market value. As required, MMS routinely compares the estimated benefits of the in-kind program to the estimated benefits MMS would have received if the royalties had been taken in cash and annually reports these benefits to the Congress.

MMS estimates that from fiscal years 2004 through 2006 the royalty-in-kind program generated about \$87 million more in net value to the government than MMS would have collected had it received royalties in cash. Of this \$87 million, MMS estimates that (1) \$74 million came from selling royalty-in-kind oil and gas for more than it would have received in cash royalty payments, (2) \$5 million came from interest from receiving revenues from in-kind sales earlier than cash payments are due, and (3) \$8 million came from savings because the royalty-in-kind program costs less to administer than the in-value program.

Our testimony today is based on two ongoing efforts. The first focuses on MMS's royalty-in-value program and addresses (1) whether Interior has adequate assurance that it is receiving full compensation for oil and gas produced from federal lands and waters and (2) the extent to which MMS's compliance efforts provide an adequate check on industry's self-reported data.¹⁰ The second, relating to MMS's royalty-in-kind program, addresses (1) the extent to which MMS has reasonable assurance that it is collecting the right amounts of royalty-

⁸In some cases, there may be deductions to the royalty oil given MMS as a result of costs incurred by the payor to transport the oil to the point at which MMS takes possession. In addition, there may be credits or deductions that adjust for different qualities of oil transported on a pipeline.

⁹Energy Policy Act of 2005, Pub. L. No. 109-58, § 342 (2005).

¹⁰This work is being done at the request of Senator Bingaman and Mr. Davis, Mr. Issa, Ms. Maloney, and Mr. Rahall, House of Representatives.

in-kind oil and gas and (2) the reliability of the benefits of the royalty-in-kind program that MMS has reported.¹¹

In addressing these issues, we reviewed documentation on MMS policies and procedures for collecting royalties; collected and assessed information on the sales of royalty oil and gas; and reviewed MMS procedures for preparing the administrative cost comparison between the royalty-in-value and royalty-in-kind programs. We also interviewed officials at offices selected from a nonprobability sample of five BLM field offices and the associated BLM state offices—the offices were selected based on the numbers of violations, oil and gas volume errors identified, and geographic location. In addition, we interviewed officials at MMS; toured oil and gas production facilities in Wyoming, Colorado, and the Gulf of Mexico; sent questionnaires addressing production and royalty data issues to the 11 state and 7 tribal members of the State and Tribal Royalty Audit Committee, of which 9 states and 5 tribes responded. We assessed the reliability of the royalty-in-kind sales and performance data by (1) reviewing the systems that MMS has in place to help ensure that the data were entered and calculated correctly, and (2) comparing the data to aggregate performance results that MMS reported to the Congress for fiscal years 2004 through 2006. We determined that the data were sufficiently reliable for the purposes of this testimony. Our work is ongoing and we are continuing to assess information related to the objectives and findings presented in this testimony. We conducted this work from April 2007 to February 2008 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.

In summary, regarding the royalty-in-value program, our work to date has revealed the following:

- Interior lacks adequate assurance that it is receiving full compensation for oil and gas produced from federal lands and waters. For example, neither BLM nor OMM is meeting statutory obligations or agency targets for conducting inspections of meters and other equipment used to measure oil and gas production, which raises questions about the accuracy of oil and gas measurement. Further, MMS's systems and processes for collecting and

¹¹This work is being done at the request of Senator Bingaman and Senator Wyden, and Mr. Issa and Mr. Rahall, House of Representatives.

verifying royalty data are inadequate and lack key internal controls. Specifically, MMS lacks an automated process to routinely and systematically reconcile all production data filed by payors (those responsible for paying the royalties) with production data filed by operators (those responsible for reporting production volumes).

- MMS's compliance efforts do not consistently examine data from third parties to verify whether self-reported industry payment data are complete and accurate. Combined with the inadequacy of MMS's systems and processes for collecting and verifying royalty data and the lack of key internal controls, the absence of a consistent check on self-reported data using third-party data raises further questions about the accuracy of royalty payments.

Regarding the royalty-in-kind program, our work to date has revealed the following:

- MMS does not consistently check the accuracy of self-reported gas collection data against available third-party data, putting the accuracy of gas royalty collections at risk. MMS's ability to detect gas production discrepancies is weaker than for oil because, unlike in the case of oil, MMS does not use third-party gas metering data to verify the operator-reported production numbers.

The methods and assumptions MMS uses to compare the revenues it collects in kind with what it would have collected in cash do not account for all costs and do not sufficiently deal with uncertainties, raising significant questions about the reported financial benefits of the in-kind program.

Interior's Oversight Does Not Provide Adequate Assurance That the Government Is Being Fully Compensated for Oil and Gas Production on Federal Lands and Waters

Interior lacks adequate assurance that it is receiving the full royalties it is owed because (1) neither BLM nor OMM is fully inspecting leases and meters as required by law and agency policies, and (2) MMS lacks adequate management systems and sufficient internal controls for verifying that royalty payment data are accurate and complete. With regard to inspecting oil and gas production, BLM is charged with inspecting approximately 20,000 producing onshore leases annually to ensure that oil and gas volumes are accurately measured. However, BLM's state Inspection and Enforcement Coordinators from Colorado, Montana, New Mexico, Utah, and Wyoming told us that only 8 of the 23 field offices in the 5 states completed both their (1) required annual inspections of wells and leases that are high-producing and those that have a history of violations and (2) inspections every third year on all remaining leases.¹² According to the BLM state Inspection and Enforcement Coordinators, the number of completed production inspections varied greatly by field office. For example, while BLM inspectors were able to complete all of the production inspections in the Kemmerer, Wyoming, field office, inspectors in the Glenwood Springs, Colorado, field office were able to complete only about one-quarter of the required inspections. Officials in 3 of the 5 field offices in which we held detailed discussions with inspection staff told us that they had not been able to complete the production inspections because of competing priorities,¹³ including their focus on completing a growing number of drilling inspections for new oil and gas wells, and high inspection staff turnover. However, BLM officials from all 5 field offices told us that when they have conducted production inspections they have identified a number of violations. For example, BLM staff in 4 of the 5 field offices identified errors in the amounts of oil and gas production volumes reported by operators to MMS by comparing production reports with third-party source documents. Additionally, BLM staff from 1 field office we visited showed us a bypass built around a gas meter, allowing gas to flow around the meter

¹²We excluded production inspection results from three BLM field offices where BLM state Inspection and Enforcement Coordinators could not validate production inspection numbers because they felt the data in BLM's Automated Fluid Minerals Support System (AFMSS), the database used to track production inspections, were unreliable. We excluded one additional BLM field office because it is implementing a pilot project inspection program using different selection and prioritization criteria; therefore it is not comparable with the other BLM field offices.

¹³To gain a balance of perspectives of how BLM field offices conduct production inspections, we chose a nonprobability sample of five field office locations—Meeker, Colorado; Vernal, Utah; Farmington, New Mexico; Buffalo, Wyoming; and Pinedale, Wyoming. We selected the field offices in each of these states through consideration of a number of criteria, ensuring that we visited BLM field offices that represented a range of BLM state office jurisdictional policies. While this nonprobability sample allowed us to learn about many important aspects of production inspections, it was not designed to be representative of all the BLM field offices production inspection activities. As such, the findings cannot be generalized to sites we did not visit.

without being measured. BLM staff ordered the company to remove the bypass. Staff from another field office told us of a case in which individuals illegally tapped into a gas line and routed gas to private residences. Finally, in one of the field offices we visited, BLM officials told us of an instance in which a company maintained two sets of conflicting production data—one used by the company and another reported to MMS.

Moreover, OMM, which is responsible for inspecting offshore production facilities that include oil and gas meters, did not inspect all oil and gas royalty meters, as required by its policy, in 2007. For example, OMM officials responsible for meter inspections in the Gulf of Mexico told us that they completed about half of the required 2,700 inspections, but that they met OMM's goal for witnessing oil and gas meter calibrations. OMM officials told us that one reason they were unable to complete all the meter inspections was their focus on the remaining cleanup work from hurricanes Katrina and Rita. Meter inspections are an important aspect of the offshore production verification process because, according to officials, one of the most common violations identified during inspections is missing or broken meter seals. Meter seals are meant to prevent tampering with measurement equipment. When seals are missing or broken, it is not possible without closer inspection to determine whether the meter is correctly measuring oil or gas production.

With regard to MMS's assurance that royalty data are being accurately reported by companies, MMS's systems and processes for collecting and verifying these data lack both capabilities and key internal controls, including those focused on data accuracy, integrity, and completeness. For example, MMS lacks an automated process to routinely and systematically reconcile all production data filed by payors (those responsible for paying the royalties) with production data filed by operators (those responsible for reporting production volumes). MMS officials told us that before they transitioned to the current financial management system in 2001, their system included an automated process that reconciled the production and royalty data on all transactions within approximately 6 months of the initial entry date. However, MMS's new system does not have that capability. As a result, such comparisons are not performed on all properties. Comparisons are made, if at all, 3 years or more after the initial entry date by the MMS compliance group for those properties selected for a compliance review or audit.

In addition, MMS lacks a process to routinely and systematically reconcile production data included by payors on their royalty reports or by operators on their production reports with production data available from third-party sources. OMM does compare a large part of the offshore operator-reported production data with third-party data from pipeline operators through both its oil and gas verification programs, but BLM compares only a relatively small percentage of

reported onshore oil and gas production data with third-party pipeline data. When BLM and OMM do make comparisons and find discrepancies, they forward the information to MMS, which then takes steps to reconcile and correct these discrepancies by talking to operators. However, even when discrepancies are corrected and the operator-reported data and pipeline data have been reconciled, these newly reconciled data are not automatically and systematically compared with the reported sales volume in the royalty report, previously entered into the financial management database, to ensure the accuracy of the royalty payment. Such comparisons occur only if a royalty payor's property has been selected for an audit or compliance review.

Furthermore, MMS's financial management system lacks internal controls over the integrity and accuracy of production and royalty-in-value data entered by companies. Companies may legally make changes to both royalty and production data in MMS's financial management system for up to 6 years after the reporting month, and these changes may necessitate changes in the royalty payment.¹⁴ However, when companies retroactively change the data they previously entered, these changes do not require prior approval by, or notification of, MMS. As a result of the companies' ability to unilaterally make these retroactive changes, the production data and required royalty payments can change over time, further complicating efforts by agency officials to reconcile production data and ensure that the proper amount of royalties was paid. Compounding this data reliability concern, changes made to the data do not necessarily trigger a review to determine their reasonableness or whether additional royalties are due. According to agency officials, these changes are not subject to review at the time a change is made and would be evaluated only if selected for an audit or compliance review. This is also problematic because companies may change production and royalty data after an audit or compliance review has been done, making it unclear whether these audited royalty payments remain accurate after they have been reviewed. Further, MMS officials recently examined data from September 2002 through July 2007 and identified over 81,000 adjustments made to data outside the allowable 6-year time frame. MMS is working to modify the system to automatically identify adjustments that have been made to data outside of the allowable 6-year time frame, but this effort does not address the need to identify adjustments made within the allowable time that might necessitate further adjustments to production data and royalty payments due.

¹⁴The Royalty Simplification and Fairness Act of 1996, Pub. L. No. 104-185, § 5(a) (1996), provides a 6 year adjustment window.

Finally, MMS's financial management system could not reliably detect when production data reports were missing until late 2004, and the system continues to lack the ability to automatically detect missing royalty reports. In 2004, MMS modified its financial management system to automatically detect missing production reports. As a result, MMS has identified a backlog of approximately 300,000 missing production reports that must be investigated and resolved. It is important that MMS have a complete set of accurate production reports so that BLM can prioritize production inspections, and its compliance group can easily reconcile royalty payments with production information. Importantly, MMS's financial management system continues to lack the ability to automatically detect cases in which an expected royalty report has not been filed. While not filing a royalty report may be justifiable under certain circumstances, such as when a company sells its lease, MMS's inability to detect missing royalty reports presents the risk that MMS will not identify instances in which it is owed royalties that are simply not being paid. Officials told us they are currently able to identify missing royalty reports in instances when they have no royalty report to match with funds deposited to Treasury. However, cases in which a company stops filing royalty reports and stops paying royalties would not be detected unless the payor or lease was selected for an audit or compliance review.

MMS's Compliance Efforts Do Not Consistently Use Third-Party Data to Check Self-Reported Royalty-in-Value Payment Data

MMS's increasing use of compliance reviews, which are more limited in scope than audits, has led to an inconsistent use of third-party data to verify that self-reported royalty data are correct, thereby placing accurate royalty collections at risk. Since 2001, MMS has increasingly used compliance reviews to achieve its performance goals of completing compliance activities—either full audits or compliance reviews—on a predetermined percentage of royalty payments. According to MMS, compliance reviews can be conducted much more quickly and require fewer resources than audits, largely because they represent a quicker, more limited reasonableness check of the accuracy and completeness of a company's self-reported data, and do not include a systematic examination of underlying source documentation. Audits, on the other hand, are more time- and resource-intensive, and they include the review of original source documents, such as sales revenue data, transportation and gas processing costs, and production volumes, to verify whether company-reported data are accurate and complete. When third-party data are readily available from OMM, MMS may use them when conducting a compliance review. For example, MMS may use available third-party data on oil and gas production volumes collected by OMM in its compliance reviews for offshore properties. In contrast, because BLM collects only a limited amount of third-party data for onshore production, and MMS does not request these data from the companies, MMS does not systematically use third-party data when conducting onshore compliance reviews. Despite conducting thousands of compliance reviews since 2001, MMS

has only recently evaluated their effectiveness. For calendar year 2002, MMS compared the results of 100 of about 700 compliance reviews of offshore leases and companies with the results of audits conducted on those same leases or companies. However, while the compliance reviews covered, among other things, 12 months of production volumes on all products—oil, gas, and retrograde, a liquid product that condenses out of gas under certain conditions—the audits covered only 1 month and one product. As a result of this evaluation comparing the results of compliance reviews with those of audits, MMS now plans to improve its compliance review process by, for example, ensuring that it includes a step to check that royalties are paid on all royalty-bearing products, including retrograde.

To achieve its annual performance goals, MMS began using the compliance reviews along with audits. One of MMS's performance goals is to complete compliance activities—either audits or compliance reviews—on a specified percentage of royalty payments within 3 years of the initial royalty payment. For example, in 2006 MMS reported that it had achieved this goal by confirming reasonable compliance on 72.5 percent of all calendar year 2003 royalties. To help meet this goal, MMS continues to rely heavily on compliance reviews, yet it is unable to state the extent to which this performance goal is accomplished through audits as opposed to compliance reviews. As a result, MMS does not have information available to determine the percentage of the goal that was achieved using third-party data and the percentage that did not systematically rely on third-party data. Moreover, to help meet its performance goal, MMS has historically conducted compliance reviews or audits on leases and companies that have generated the most royalties, with the result that the same leases and companies are reviewed year after year. Accordingly, many leases and companies have gone for years without ever having been reviewed or audited.

In 2006, Interior's Inspector General (IG) reviewed MMS's compliance process and made a number of recommendations aimed at strengthening it. The IG recommended, among other things, that MMS examine 1 month of third-party source documentation as part of each compliance review to provide greater assurance that both the production and allowance data are accurate. The IG also recommended that MMS track the percentage of the annual performance goal that was accomplished through audits versus through compliance reviews, and that MMS move toward a risk-based compliance program and away from reviewing or auditing the same leases and companies each year. To address the IG's recommendations, MMS has recently revised its compliance review guidance to include suggested steps for reviewing third-party source production data when available for both offshore and onshore oil and gas, though the guidance falls short of making these steps a requirement. MMS has also agreed to start tracking compliance activity data in 2007 that will allow it to report the

percentage of the performance goal that was achieved through audits versus through compliance reviews. Finally, MMS has initiated a risk-based compliance pilot project, whereby leases and companies are selected for compliance work according to MMS-defined risk criteria that include factors other than whether the leases or companies generate high royalty payments. According to MMS, during fiscal year 2008 it will further evaluate and refine the pilot as it moves toward fuller implementation.

Finally, representatives from the states and tribes who are responsible for conducting compliance work under agreements with MMS have expressed concerns about the quality of self-reported production and royalty data they use in their reviews. As part our work, we sent questionnaires to all 11 states and seven tribes that conducted compliance work for MMS in fiscal year 2007. Of the nine state and five tribal representatives who responded, seven reported that they lack confidence in the accuracy of the royalty data. For example, several representatives reported that because of concerns with MMS's production and royalty data, they routinely look to other sources of corroborating data, such as production data from state oil and gas agencies and tax agencies. Finally, several respondents noted that companies frequently report production volumes to the wrong leases and that they must then devote their limited resources to correcting these reporting problems before beginning their compliance reviews and audits.

The MMS Royalty-in-Kind Program Is at Risk of Inaccurate Collection of Natural Gas Royalties because of Inconsistent Oversight

Because MMS's royalty-in-kind program does not extend the same production verification processes used by its oil program to its gas program, it does not have adequate assurance that it is collecting the gas royalties it is owed. As noted, under the royalty-in-kind program, MMS collects royalties in the form of oil and gas and then sells these commodities in competitive sales. To ensure that the government obtains the fair value of these sales, MMS must make sure that it receives the volumes to which it is entitled. Because prices of these commodities fluctuate over time, it is also important that MMS receive the oil and gas at the time it is entitled to them. As part of its royalty-in-kind oversight effort, MMS identifies imbalances between the volume operators owe the federal government in royalties and the volume delivered and resolves these imbalances by adjusting future delivery requirements or cash payments. The methods that MMS uses to identify these imbalances differ for oil and gas.

- For oil, MMS obtains pipeline meter data from OMM's liquid verification system, which records oil volumes flowing through numerous metering points in the Gulf of Mexico region. MMS calculates its royalty share of oil by multiplying the total production volumes provided in these pipeline statements by the royalty rates for a given lease. MMS compares this calculation with the volume of royalty oil that the operators delivered as reported by pipeline operators. When

the value of an imbalance cumulatively reaches \$100,000, MMS conducts further research to resolve the discrepancy. Using pipeline statements to verify production volumes is a good check against companies' self-reporting of royalties due the federal government because companies have an incentive to not underreport their share of oil going into the pipeline because that is the amount they will have to sell at the other end of the pipeline.

- For gas, MMS relies on information contained in two operator-provided documents—monthly imbalance statements and production reports. Imbalance statements include the operator's total gas production for the month, the share of that production that the government is entitled to, and any differences between what the operator delivered and the government's royalty share. Production reports contain a large number of data elements, including production volumes for each gas well. MMS compares the production volumes contained in the imbalance statements with those in the production reports to verify production levels. MMS then calculates its royalty share based on these production figures and compares its royalty share with gas volumes the operators delivered as reported by pipeline operators. When the value of an imbalance cumulatively reaches \$100,000, MMS conducts further research to resolve the discrepancy. MMS's ability to detect gas imbalances is weaker than for oil because it does not use third-party metering data to verify the operator-reported production numbers. Since 2004, OMM has collected data from gas pipeline companies through its gas verification system, which is similar to its liquid verification system in that the system records information from pipeline company-provided source documents. Our review of data from this program shows that these data could be a useful tool in verifying offshore gas production volumes.¹⁵ Specifically, our analysis of these pipeline data showed that for the months of January 2004, May 2005, July 2005, and June 2006, 25 percent of the pipeline metering points had an outstanding discrepancy between self-reported and pipeline data.¹⁶ These discrepancies are both positive and negative—that is, production volumes submitted to MMS by operators are at times either under- or overreported.

Data from the gas verification system could be useful in validating production volumes and reducing discrepancies. However, to fully benefit from this

¹⁵Onshore gas properties accounted for less than 1 percent of the revenue managed by the royalty-in-kind program from fiscal year 2004 through fiscal year 2006, but this area is expected to grow in the future.

¹⁶For purpose of this testimony, we used 4 months of data from the gas verification system. We chose these months (January 2004, May 2005, July 2005, and June 2006) because these are the months for which MMS has started to work to resolve the discrepancies identified between the production reports and pipeline data.

opportunity, MMS needs to improve the timeliness and reliability of these data. After examining this issue, in December 2007, the Subcommittee on Royalty Management, a panel appointed by the Secretary of the Interior to examine MMS's royalty program, reported that OMM is not adequately staffed to conduct sufficient review of data from the gas verification system.¹⁷ We have not yet, nor has MMS, determined the net impact of these discrepancies on royalties owed the federal government.

Significant Questions and Uncertainties Exist Regarding the Reported Financial Benefits of the Royalty-in-Kind Program

The methods and underlying assumptions MMS uses to compare the revenues it collects in kind with what it would have collected in cash do not account for all costs and do not sufficiently deal with uncertainties, raising doubts about the claimed financial benefits of the royalty-in-kind program. Specifically, MMS's calculation showing that MMS sold the royalty oil and gas for \$74 million more than MMS would have received in cash payments did not appropriately account for uncertainty in estimates of cash payments. In addition, MMS's calculation that early royalty-in-kind payments yielded \$5 million in interest was based on assumptions about payment dates and interest rates that could misstate the estimated interest benefit. Finally, MMS's calculation that the royalty-in-kind program cost about \$8 million less to administer than an in-value program did not include significant costs that, if included, could change MMS's conclusions.

Sales Revenue

MMS sold the oil and gas it collected during the 3 fiscal years 2004 through 2006 for \$8.15 billion and calculated that this amount exceeded what MMS would have received in cash royalties by about \$74 million—a net benefit of approximately 0.9 percent. MMS has recognized that its estimates of what it would have received in cash payments are subject to some degree of error but has not appropriately evaluated or reported how sensitive the net benefit calculations are to this error.¹⁸ This is important because even a 1 percent error in the estimates of cash payments would change the estimated benefit of the royalty-in-kind program from \$74 million to anywhere from a loss of \$6 million to a benefit of \$155 million.

¹⁷Subcommittee on Royalty Management, Royalty Policy Committee, *Report to the Royalty Policy Committee: Mineral Revenue Collection from Federal and Indian Lands and the Outer Continental Shelf* (2007).

¹⁸OMB Circular A-94, "Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs," suggests that such sensitivity analysis be done and reported.

Moreover, MMS's annual reports to the Congress present oil sales data in aggregate and therefore do not reflect the fact that, in many individual sales, MMS sold the oil it collected in kind for less than it estimates it would have collected in cash. Specifically, MMS estimates that, in fiscal year 2006, it sold 28 million barrels of oil, or 64 percent of all the oil it collected in kind, for less than it would have collected in cash. The government would have received an additional \$6 million in revenue if it had taken these royalties in cash instead. These sales indicate that MMS has not always been able to achieve one of its central goals: to select, based on systematic economic analysis, which royalties to take in cash and which to take in kind in a way that maximizes revenues to the government.

According to a senior MMS official, the federal government has several advantages when selling gas that it does not have when selling oil, a fact that helps to explain why MMS's gas sales have performed better than its oil sales. For example, MMS can bundle the natural gas production in the Gulf of Mexico from many different leases into large volumes that MMS can use to negotiate discounts for transporting gas from production sites to market centers. Because purchasers receive these discounts when they buy gas from MMS, they may be willing to pay more for gas from MMS than from the original owners. Opportunities for bundling are less prevalent in the oil market. Because MMS generally does not have this, or other, advantages when selling oil, purchasers often pay MMS about what they would pay other producers for oil, and sometimes less. Indeed, MMS's policies allow it to sell oil for up to 7.7 cents less per barrel than MMS estimates it would collect if it took the royalties in cash. MMS told us that the other financial benefits of the royalty-in-kind program, including interest payments and reduced administrative costs, justify selling oil for less than the estimated cash payments because once these additional revenues are factored in, the net benefit to the government is still positive. However, as discussed below, we have found that there are significant questions and uncertainties about the other financial benefits as well.

Interest

Revenues from the sale of royalty-in-kind oil are due 10 days earlier than cash payments, and revenues from the sale of in-kind gas are due 5 days earlier. MMS calculates that the government earned about \$5 million in interest from fiscal years 2004 through 2006 from these early payments that it would not have

received had it taken royalties in cash.¹⁹ We found two weaknesses in the way MMS calculates this interest. First, the payment dates used to calculate the interest revenue have the potential to over- or underestimate its value. MMS calculates the interest on the basis of the time between the actual date that Treasury received a royalty-in-kind payment and the theoretical latest date that Treasury would have received a cash payment under the royalty-in-value program. However, MMS officials told us that cash payments can, and sometimes do, arrive before their due date. As a result, MMS might be overstating the value of the early royalty-in-kind payments. Second, the interest rate used to calculate the interest revenue may either over- or understate its value because the rate is not linked to any market rate. From fiscal year 2004 through 2007, MMS used a 3 percent interest rate to calculate the time value of these early payments. However, during this time, actual market interest rates at which the federal government borrowed fluctuated. For example, 4-week Treasury bill rates ranged from a low of 0.72 percent to a high of 5.18 percent during this same period. Therefore, during some fiscal years, MMS likely overstated or understated the value of these early payments.

Administrative Cost Savings

MMS has developed procedures to capture the administrative costs of the royalty-in-kind and cash royalty programs and includes in its administrative cost comparison primarily the variable costs for the federal offshore oil and gas activities—that is, costs that fluctuate based on the volume of oil or gas received by MMS, such as labor costs. Although MMS also includes some department-level fixed costs, it excludes some fixed costs that it does not incur on a predictable basis (largely information technology [IT] costs). According to MMS, if it included these IT and other such costs, there would be a high potential of skewing the unit price used to determine the administrative cost savings. However, by excluding such fixed costs from the administrative cost comparison, MMS is not including all the necessary cost information to evaluate the efficacy of the royalty-in-kind program.

MMS's administrative cost analysis compares a bundle of royalty-in-kind program administrative costs divided by the number of barrels of oil equivalent realized by the royalty-in-kind program during a year,²⁰ with a bundle of cash

¹⁹While MMS calls this value “interest,” it is not interest per se because the money does not go into an interest-bearing account. Rather, MMS argues that the government uses the early payments to cover expenses that it would otherwise need to borrow money to pay for. The interest, then, is the cost that the government avoids by deferring the need to borrow.

²⁰A barrel of oil equivalent is an amount of natural gas or natural gas liquid that contains the same heating value as a barrel of oil.

royalty program administrative costs divided by the number of barrels of oil equivalent realized by that program. The difference between these amounts represents the difference in cost to administer a barrel of oil equivalent under each program.

MMS then multiplies the difference in cost to administer a barrel of oil equivalent under the two programs by the number of barrels of oil equivalent realized by the royalty-in-kind program to determine the administrative cost savings. However, MMS's calculations excluded some fixed costs that are not incurred on a regular or predictable basis from the analysis. For example, in fiscal year 2006, royalty-in-kind IT costs of \$3.4 million were excluded from the comparison. Moreover, additional IT costs of approximately \$29.4 million—some of which may have been incurred for either the royalty-in-kind or the cash royalty program—were also excluded. Including and assigning these IT costs to the programs supported by those costs would provide a more complete accounting of the respective costs of the royalty-in-kind and royalty-in-value programs, and would likely impact the results of MMS's administrative cost analysis.

Conclusions

Ultimately the system used by Interior to ensure taxpayers receive appropriate value for oil and gas produced from federal lands and waters is more of an honor system than we are comfortable with. Despite the heavy scrutiny that Interior has faced in its oversight of royalty management, we and others continue to identify persistent weaknesses in royalty collections. Given both the long-term fiscal challenges the government faces and the increased demand for the nation's oil and gas resources, it is imperative that we have a royalty collection system going forward that can assure the American public that the government is receiving proper royalty payments. Our work on this issue is continuing along several avenues, including comparing the royalties taken in kind with the value of royalties taken in cash, assessing the rate of oil and gas development on federal lands, comparing the amount of money the U.S. government receives with what foreign countries receive for allowing companies to develop and produce oil and gas, and examining further the accuracy of MMS's production and royalty data. We plan to make recommendations to address the weaknesses we identified in our final reports on these issues.

We look forward to further work and to helping this subcommittee and the Congress as a whole to exercise oversight on this important issue. Mr. Chairman, this concludes our prepared statement. We would be pleased to respond to any questions that you or other members of the subcommittee may have at this time.

GAO Contact and Staff Acknowledgments

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