United States General Accounting Office

GAO

Report to Congressional Requesters

January 2003

# MINERAL REVENUES

# A More Systematic Evaluation of the Royalty-in-Kind Pilots Is Needed

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# Highlights

Highlights of GAO-03-296, a report to Representative Nick J. Rahall, Ranking Minority Member, House Committee on Resources, and Representative Carolyn B. Maloney

## Why GAO Did This Study

In fiscal year 2001, the federal government collected $7.5 billion in royalties from the sale of oil and gas produced on federal lands. Although most oil and gas companies pay royalties in cash, the Department of the Interior's Minerals Management Service (MMS) has the option to take a percentage of the oil and gas produced and either transfer this percentage to other federal agencies or to sell this percentage itself—known as "taking royalties in kind." GAO reviewed the extent to which MMS has taken royalties in kind since 1995, the reasons for taking royalties in kind, and MMS's progress in implementing management control over its Royalty-in-Kind Program.

## What GAO Recommends

GAO recommends that MMS clarify its strategic objectives for the Royalty-in-Kind Program and link these objectives to statutory requirements. GAO also recommends that MMS gather key information to monitor and evaluate the program prior to further expansion of the program. In commenting on the draft report, the Department of the Interior generally agreed with GAO's observations and recommendations and emphasized MMS's future plans to improve management control over the Royalty-in-Kind Program.

www.gao.gov/cgi-bin/getrpt?GAO-03-296.

To view the full report, including the scope and methodology, click on the link above. For more information, contact Jim Wells at (202) 512-6877 or wellsj@gao.gov.

January 2003

# MINERAL REVENUES

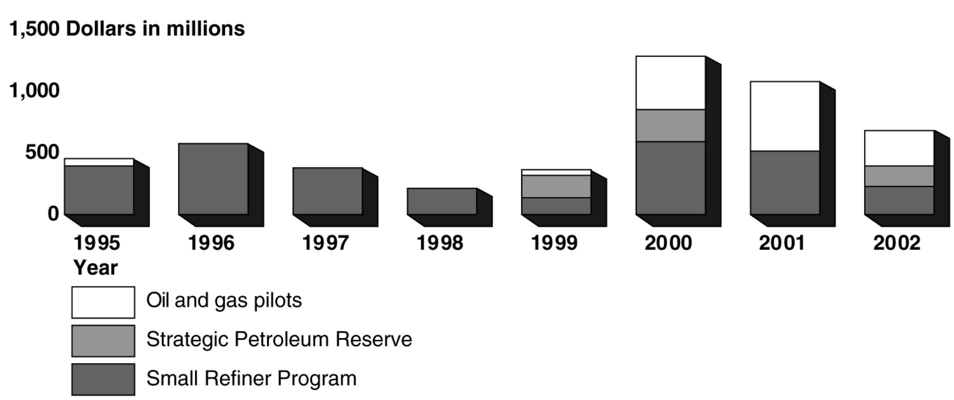
# A More Systematic Evaluation of the Royalty-in-Kind Pilots Is Needed

## What GAO Found

From January 1995 through September 2001, the Minerals Management Service (MMS) took, in kind, 178 million barrels of oil and 213 billion cubic feet of gas, or 32 percent of the federal government's royalty share of all oil and 3 percent of the federal government's royalty share of all gas produced on federal lands. MMS sold the majority of this oil—143 million barrels—to small refiners in accordance with long-standing legislation. MMS also took 29 million barrels of federal royalty oil to fill the Strategic Petroleum Reserve. MMS took the remaining 6 million barrels of oil in kind and all the gas in kind under a series of pilot projects to evaluate whether there are additional circumstances under which taking royalties in kind is in the best interest of the federal government.

MMS personnel have made progress in implementing some components of management control for its Royalty-in-Kind Program, such as addressing the risks associated with oil and gas sales and developing written procedures. However, MMS does not plan to complete and implement all management controls until 2004, when it will consider the Royalty-in-Kind pilots to have changed from a pilot stage to a fully operational stage and when it will have acquired additional systems support. To date, MMS has not developed clear strategic objectives linked to statutory requirements nor collected the necessary information to effectively monitor and evaluate the Royalty-in-Kind Program. Without clear objectives linked to statutory requirements and the collection of necessary information, MMS cannot systematically assess whether Royalty-in-Kind sales are administratively less costly, whether they generate fair market value or at least as much revenue as traditional cash royalty payments, and thus whether MMS should expand or contract the Royalty-in-Kind Program.

**Estimated Value of Federal Royalty Oil and Gas Taken in Kind by Purpose, Calendar Years 1995 through 2001 and January through July 2002.**




Source:GAO's analysis of MMS data.

# Contents

**Letter** 1

Results in Brief 2
Background 3
MMS Has Taken Increasing Amounts of Royalties in Kind Since 1995 to Meet Several Objectives 5
MMS Takes Oil in Kind and Sells It to Small Refiners 5
MMS Takes Oil in Kind to Fill the Strategic Petroleum Reserve 8
MMS Is Studying the Increased Use of Royalties in Kind 9
MMS Has Established Some Management Control over Its RIK Program, but Additional Efforts Are Needed 12
Conclusions 19
Recommendations for Executive Action 20
Agency Comments and Our Evaluation 20
Scope and Methodology 20

**Appendix I** **Comments from the Department of the Interior** 22

**Appendix II** **Objectives, Scope, and Methodology** 36

**Appendix III** **GAO Contacts and Staff Acknowledgments** 38

**Figures**

Figure 1: Estimated Percentage of Federal Royalty Oil Taken in Kind by Purpose, Calendar Years 1995 through 2000 and January through September 2001 6
Figure 2: Estimated Value of Federal Royalty Oil Taken in Kind by Purpose, Calendar Years 1995 through 2001 and January through July 2002 7
Figure 3: Estimated Percentage of Total Federal Royalty Gas Taken in Kind by Purpose, Calendar Years 1995 through 2000 and January through September 2001 11
Figure 4: Revenues Reportedly Collected from the Sale of Federal Royalty Gas Taken in Kind, Calendar Years 1995 through 2001 and January through July 2002 11

## Abbreviations

| | |
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| DOE | Department of Energy |
| GAO | General Accounting Office |
| MMS | Minerals Mangement Service |
| RIK | Royalty-in-Kind |
| SPR | Strategic Petroleum Reserve |

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Accountability * Integrity * Reliability
**United States General Accounting Office**
**Washington, DC 20548**

January 9, 2003

The Honorable Nick J. Rahall
Ranking Minority Member
Committee on Resources
House of Representatives

The Honorable Carolyn B. Maloney
House of Representatives

Federal lands supply about one-third of the oil and gas produced in the United States. Companies that lease these lands traditionally pay royalties to the Department of the Interior's Minerals Management Service (MMS) based on a percentage of the value of the oil and gas that the companies produce. In fiscal year 2001, oil and gas royalties to MMS totaled about $7.5 billion. Determining proper royalty payments, however, has been costly and administratively difficult for both the companies that lease federal lands and MMS. The value of the oil and gas, in particular, is often a source of dispute. For example, during MMS's recently completed 4-1/2 year process of promulgating new regulations for valuing oil, the oil industry strongly opposed these regulations primarily because they would increase the industry's royalty payments and increase their administrative burden. In commenting on the regulations, industry officials suggested that instead of accepting cash royalty payments, MMS should accept a percentage of the actual oil and gas produced and sell this percentage itself—known as "taking royalties in kind."

The Mineral Leasing Act of 1920 and the Outer Continental Shelf Lands Act of 1953 authorize taking royalties in kind and require that the government obtain at least fair market value for royalty oil and gas it sells. Under this authority, MMS has taken federal oil in kind, mainly to fulfill congressional and executive directives. Specifically, the Congress has directed taking oil in kind for the Small Refiners Program, whose objective is to supply crude oil to small refiners that do not have an adequate supply of their own. In more recent years, the President has directed the taking of oil in kind to fill the Strategic Petroleum Reserve as a safeguard against disruptions to the national supply of crude oil. However, in 1995, MMS began to study whether there are additional circumstances under which taking oil and gas in kind is in the best interest of the federal government. MMS's efforts were encouraged by the Congress as a means of avoiding disputes between MMS and the oil and gas industry over the value of the oil and gas produced as well as a way to simplify royalty administration. To this end, MMS established Royalty-in-Kind (RIK) pilots and is developing management controls for its RIK Program—a newly created program under which MMS manages all its RIK activities. Management control is an integral component of an organization's management that, if effective, can provide for the effectiveness and the efficiency of operations, the reliability of financial reporting, and compliance with applicable laws and regulations. Key management controls include (1) identifying and mitigating the risks that could prevent an agency from achieving its objectives, (2) developing written procedures, and (3) monitoring and evaluating program performance. In the 2001 and 2002 Appropriations Acts for Interior and Related Agencies, the Congress provided additional direction that MMS collect at least as much revenue from its RIK pilots as it would have collected in cash royalty payments.

As a part of your interest in MMS's stewardship over federal oil and gas royalties, you asked us to (1) determine the extent to which MMS has taken oil and gas in kind since 1995 and the reasons for doing so and (2) report on the status of MMS's efforts to implement management controls for its RIK Program.

## Results in Brief

From January 1995 through September 2001, the Minerals Management Service took 178 million barrels of oil and 213 billion cubic feet of gas in kind, or about 32 percent of the federal government's royalty share of all oil and 3 percent of the federal government's royalty share of all gas produced on federal lands, and used these quantities for various purposes. Of the 178 million barrels, MMS sold about 143 million barrels to small refiners under the Small Refiners Program. MMS also complied with presidential directives to use federal royalty oil to fill the nation's Strategic Petroleum Reserve at various times, transferring about 29 million barrels to the Strategic Petroleum Reserve from 1999 through 2000. In addition, MMS selectively took federal oil and gas in kind with the intent of improving the stewardship of federal resources. Specifically, MMS took both oil and gas in kind to evaluate whether there are additional circumstances under which taking oil and gas in kind is in the best interest of the federal government. The amount of oil that MMS took in kind for these pilot purposes was small from October 1998 through September 2001. However, over the following 6 months, we estimate that the amount may have approached 20 percent of the federal government's royalty share of all oil produced on federal lands. Similarly, the amount of gas that MMS took in kind beginning in 1998 was small until 2000 and has averaged about 10 percent of the federal government's royalty share of all gas produced on federal lands from January 2000 through September 2001.

MMS personnel have made progress in implementing some components of management control, such as mitigating the risks associated with the sale of oil and gas and developing written procedures. However, MMS does not plan to complete and implement all management controls until 2004, when it will consider the Royalty-in-Kind pilots to have changed from a pilot stage to a fully operational stage and when it will have acquired additional systems support. To date, MMS has not developed clear strategic objectives linked to statutory requirements or collected the necessary information to effectively monitor and evaluate the Royalty-in-Kind Program. Without clear objectives linked to statutory requirements and the collection of necessary information, MMS cannot systematically evaluate to what extent Royalty-in-Kind sales should continue.

We are making recommendations to improve the management of the Royalty-in-Kind Program. These recommendations include clarifying strategic objectives and obtaining the necessary information to more effectively monitor and evaluate the Royalty-in-Kind Program. We provided the Department of the Interior with a draft of this report for comment.

## Background

In fiscal year 2001, the latest period for which data are available, the Minerals Management Service reported that it collected about $5.2 billion in gas royalties and about $2.3 billion in oil royalties. There are more than 20,000 producing federal leases located in the continental United States and Alaska and more than 2,000 producing federal leases in the waters off the shores of the United States. Despite the larger number of onshore leases, offshore leases (most of which are in the Gulf of Mexico) account for 81 percent of all federal oil and gas royalty payments. In general, royalty rates for onshore leases are 12-1/2 percent of the value of the oil and gas produced, whereas royalty rates for most offshore leases are 16-2/3 percent. The government generally distributes about half of the royalty payments collected onshore back to the states in which the leases are located. The government also shares with the coastal states a smaller portion of the royalty payments collected from offshore leases located within 3 miles of the coast, known as the 8(g) zone. However, the government does not share royalties from offshore leases beyond the 8(g) zone, where the majority of offshore oil and gas is produced.

The collecting, reporting, and auditing of cash royalty payments have been challenging for MMS. MMS relies upon royalty payors to self-report the amount of oil and gas they produce, the value of this oil and gas, and the cost of transportation and processing that they deduct from royalty payments. There are concerns about the accuracy and reliability of these data. Although MMS is responsible for auditing these data, with more than 22,000 producing leases and often several companies paying royalties on each lease each month, the auditing becomes a formidable task. In addition, there has been considerable disagreement between industry and MMS over the value of the oil and gas produced and the cost of transportation and processing deductions, leading to time-consuming and costly appeals and litigation.

While most companies that lease federal lands pay their royalties in cash, the federal government can instead take a portion of the oil and gas that these companies produce—known as "taking royalties in kind." The Congress authorized royalties in kind under the Mineral Leasing Act of 1920 and under the Outer Continental Shelf Lands Act of 1953. Standard leases for the exploration of oil and gas on federal properties reserve the right for the federal government to take its royalties in kind.

The Federal Managers' Financial Integrity Act of 1982 directed federal agencies to develop management control for safeguarding resources and required GAO to prescribe standards for agencies to follow in establishing management control.[1] Management control plays a significant role in helping managers achieve strategic and annual performance goals that are required under the Government Performance and Results Act of 1993. Management control consists of several components: (1) an environment that sets a positive and supportive attitude toward management control and conscientious management (control environment); (2) an assessment of the risks that an organization faces from both external and internal sources (risk assessment); (3) procedures, techniques, and mechanisms that enforce management's directives (management control activities); (4) recording and communicating information to management and to others that need it within the organization (information and communication); and (5) monitoring the quality of performance over time (monitoring).

[1] Management control is synonymous with internal control, which is the term used in the Federal Managers' Financial Integrity Act of 1982. The standards that GAO were required to establish under the act appear within the report entitled *Standards for Internal Control in the Federal Government*, GAO/AIMD-00-21.3.1 (Washington, D.C.: November 1999).

## MMS Has Taken Increasing Amounts of Royalties in Kind Since 1995 to Meet Several Objectives

From January 1995 through September 2001, MMS took 178 million barrels of oil and 213 billion cubic feet of gas in kind primarily for three purposes: (1) to provide small refiners with a stable source of crude oil, (2) to fill the Strategic Petroleum Reserve (SPR), and (3) to study alternatives to the traditional system of cash royalty payments.[2] MMS sold the majority of the oil that it took in kind to small refineries under the Small Refiners Program—a long-standing program designed to assist small refiners that are having difficulty obtaining an adequate supply of crude oil. MMS also transferred substantial quantities of federal royalty oil to the SPR as a safeguard against disruptions in the nation's supply of crude oil. MMS takes lesser quantities of oil and gas in kind under a series of pilot sales in Wyoming and the Gulf of Mexico to study alternatives to the traditional system of cash royalty payments. In doing so, MMS has been testing whether it can improve the administrative efficiency of royalty collections and whether it can sell the federal royalty oil and gas for at least as much as it would have collected from traditional cash royalty payments.

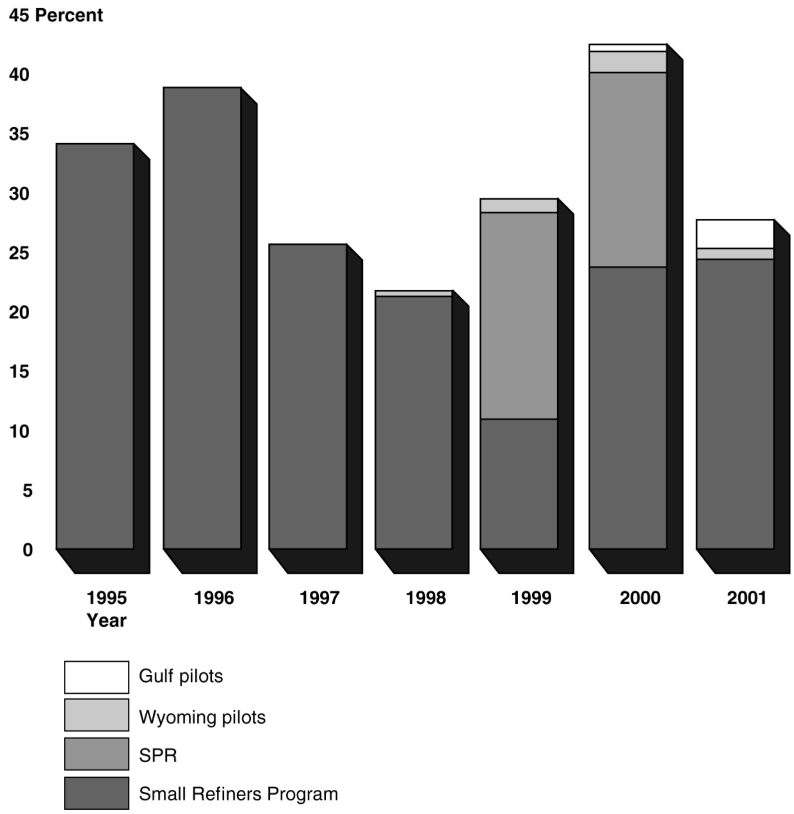
## MMS Takes Oil in Kind and Sells It to Small Refiners

From January 1995 through September 2001, MMS sold to small refiners about 143 million barrels of oil, or about 25 percent of the federal government's royalty share of all oil produced on federal lands during this time period. The amounts of oil taken in kind each year for small refiners have ranged from about 10 to 40 percent of the total federal royalty oil, as shown in figure 1. These amounts were worth from $138 million to $588 million, as shown in figure 2.[3] The majority of federal royalty oil sold to small refiners since 1995 was produced in the Gulf of Mexico. Other purposes for which MMS took oil in kind, such as for the Wyoming and Gulf pilots and the SPR, are also shown in figures 1 and 2.

[2] For the purpose of this report, 1 cubic foot of gas has a heating value of 1,000 British thermal units. When MMS reported federal royalty gas as having a heating value greater than 1,000 British thermal units per cubic foot, we adjusted the volume to compensate for this difference.

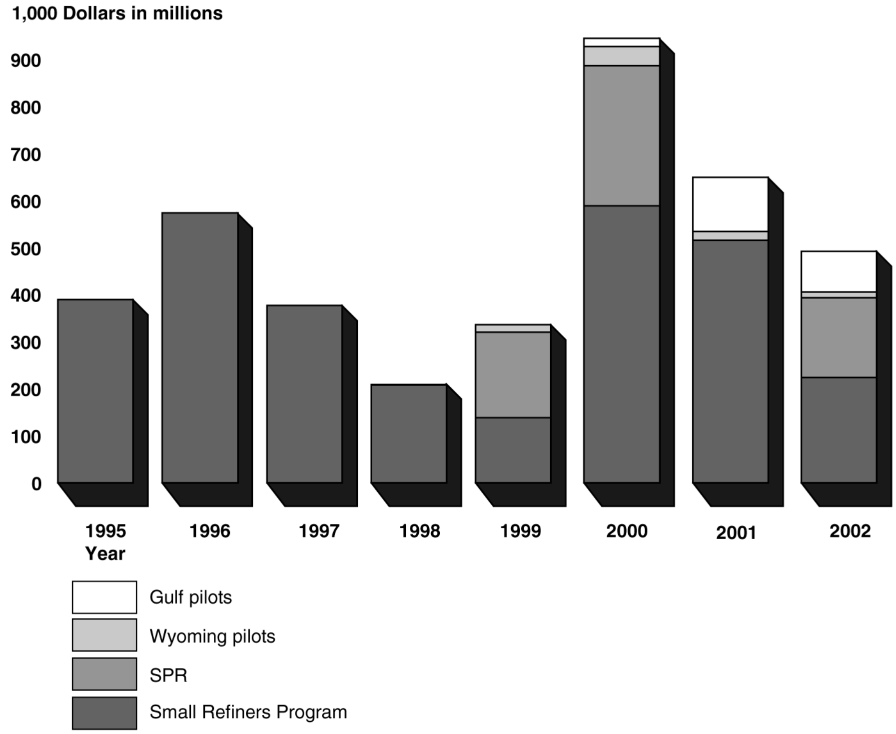
[3] MMS personnel within the RIK Program supplied data on revenues collected from the sale of oil taken in kind from January 1995 through July 2002. However, MMS personnel were unable to supply data on total federal oil royalty revenues (from both RIK sales and cash royalty payments) or the total amount of oil produced on federal lands that were more current than September 2001. They attributed their inability to obtain these data, in part, on a court-ordered shutdown of the system that lasted from December 2001 through March 2002.

**Figure 1: Estimated Percentage of Federal Royalty Oil Taken in Kind by Purpose, Calendar Years 1995 through 2000 and January through September 2001**




Source:GAO'S analysis of MMS data.

Figure 2: Estimated Value of Federal Royalty Oil Taken in Kind by Purpose, Calendar Years 1995 through 2001 and January through July 2002




Source:MMS.

Under the Mineral Leasing Act, as amended by P.L. 79-506, if the Secretary of the Interior determines that there are insufficient supplies of crude oil available on the open market to refiners that do not have their own supply, the Secretary is required to give preference to these small refiners in selling federal royalty oil. Accordingly, the Secretary provides small refiners with a stable source of crude oil at equitable prices so that these small refiners can compete in areas dominated by integrated oil companies and large refiners. Although the Secretary has long held this authority, the Secretary conducted few sales prior to 1970 because of little interest from small refiners. The Secretary delegated the responsibility to administer small refiner sales to MMS shortly after its formation in 1982. After MMS assesses small refiners' needs for crude oil, MMS identifies federal royalty oil to meet these needs, and then conducts sales. Often, more than one small refiner wanted to purchase the same oil, so MMS in recent years conducted a lottery to determine the purchaser.

Prior to 2000, MMS relied upon the producer of the oil to report its sales value and subsequently billed the small refiner this amount plus an administrative fee to cover the costs of running the program. After billing the small refiners, however, MMS determined that the producers had understated the value of the oil, so MMS sent additional bills to the small refiners. These bills often surprised the small refiners, and in some cases, large bills threatened their financial solvency. Because small refiners were dropping out of the program owing to the uncertainty over the value of the oil, MMS changed its small refiner sales in 2000 from lottery-based sales to competitive auction-based sales. The bidders and MMS now agree to the price before receiving the oil, just as they do in sales of other federal royalty oil.

## MMS Takes Oil in Kind to Fill the Strategic Petroleum Reserve

The Congress established the Strategic Petroleum Reserve to provide emergency oil in the event of a disruption in petroleum supplies. The SPR consists of a series of underground salt caverns along the coastline of the Gulf of Mexico that can store up to 700 million barrels of oil. It is managed and maintained by the Department of Energy (DOE). Largely to reduce the federal deficit, the federal government withdrew and sold oil from the SPR in fiscal years 1996 and 1997.

To replace the amounts withdrawn from the SPR, MMS assisted with the transfer of about 29 million barrels of federal royalty oil from the Gulf of Mexico to DOE in 1999 and 2000. This amount represented about 17 percent of the federal government's royalty share of all oil produced on federal lands in each of these 2 years, as shown in figure 1. By filling the SPR, the federal government had forgone the receipt of royalty revenues that it would have otherwise collected in cash. The Office of Management and Budget in February 1999 estimated that the total cost of filling the SPR would be $370 million, but oil prices rose since then, and the total cost was probably higher. Refilling stopped in December 2000 but commenced again in April 2002 under presidential directive and is expected to continue into 2005. From April through July 2002, MMS assisted in transferring to DOE about 7.5 million barrels of oil, worth about $169 million. MMS plans to increase deliveries to DOE from 63,000 barrels per day in July 2002 to about 130,000 barrels per day in 2003.

## MMS Is Studying the Increased Use of Royalties in Kind

MMS began studying the use of federal royalty oil as an alternative to cash royalty payments through a series of pilot sales in Wyoming. Through nine consecutive sales that began in October 1998, MMS and the state of Wyoming collectively sold federal and state royalty oil.[4] In doing so, MMS acquired information on how to group properties for sale and how to establish a price basis for bidding. Although the federal portion of these volumes far exceeded the state portion, we estimate that the federal oil that MMS sold during the 3-year period from October 1998 through September 2001 accounted for about 1 percent of the federal government's royalty share of all oil produced on federal lands. MMS expanded its study of royalty oil to the Gulf of Mexico with two competitive sales, the first of which delivered oil to purchasers starting in November 2000. Unlike the pilots in Wyoming, the amount of federal royalty oil that MMS sold in the Gulf of Mexico reached significant quantities during the second pilot sale—about 32 times the amount of oil sold in Wyoming during the same 6-month period. We estimate that the federal royalty oil that MMS sold during this second sale, which commenced in October 2001 and ended in March 2002, might have accounted for about 20 percent of the federal government's royalty share of all oil produced on federal lands during the term of the sale.

MMS first began studying the taking of gas in kind by conducting a gas pilot in 1995. This pilot assessed the administrative efficiency and revenue impacts of taking gas in kind relative to cash royalty payments. MMS accepted about 6 percent of the federal royalty gas in the Gulf of Mexico and sold it through auctions for about $72.6 million. Although this pilot showed that MMS could execute the sale of royalty gas, MMS estimated that these sales resulted in about 6 percent less revenue than MMS would have received in cash royalty payments, or more than a $4 million loss. MMS attributed this loss primarily to unforeseen problems in securing transportation of the gas through pipelines and to industry's volunteering the royalty gas for sale, rather than to MMS's selecting this gas. MMS continued studying RIK and issued a report in 1997 that concluded that RIK sales could be administratively more efficient and could generate at least as much revenue as traditional cash royalty payments. MMS began testing these conclusions with a series of pilot sales in the Gulf of Mexico that began in December 1998. The gas that MMS sold during these pilot

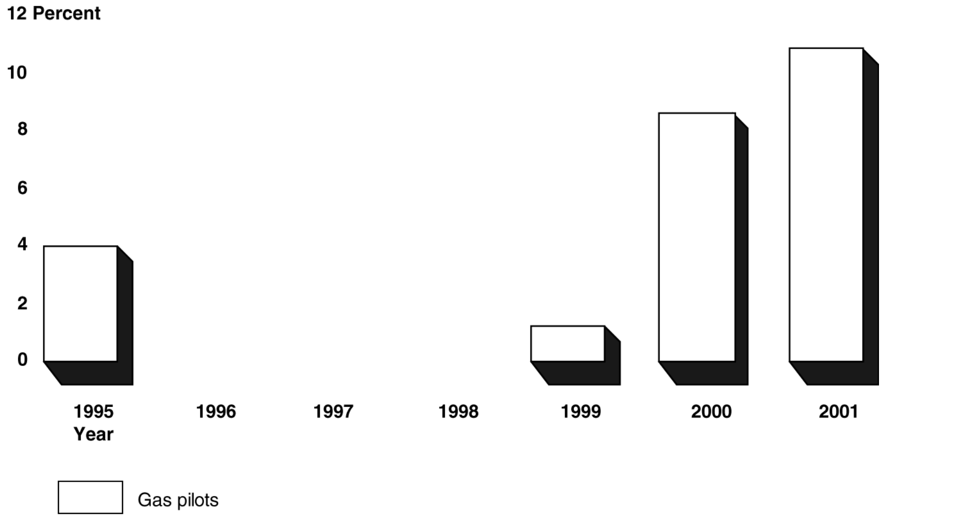
[4] In these sales, MMS and the state of Wyoming sold oil from specified properties for 6-month periods. The buyer would receive the federal and state royalty share of oil from those properties for a period of 6 months following the sale. Wyoming participated in all but the first sale.

sales averaged about 10 percent of the federal government's royalty share of all gas produced on federal lands from January 2000 through September 2001, as shown in figure 3. The annual revenues that MMS reported collecting from the sale of this federal royalty gas are illustrated in figure 4.[5] MMS studied various methods of selling this royalty gas, including negotiating the sales price, paying gas marketers to aggregate smaller volumes of gas into larger volumes, and auctioning the gas. As a result of these pilot studies, MMS decided to sell federal royalty gas through auctions open to all buyers meeting minimum standards of credit worthiness.[6]

[5] MMS personnel within the RIK Program supplied data on revenues collected from the sale of gas taken in kind from January 1995 through July 2002. However, MMS personnel were unable to supply data on total federal gas royalty revenues (from both RIK sales and cash royalty payments) or the total amount of gas produced on federal lands that were more current than September 2001. They attributed their inability to obtain these data, in part, on a court-ordered shutdown of the system that lasted from December 2001 through March 2002.

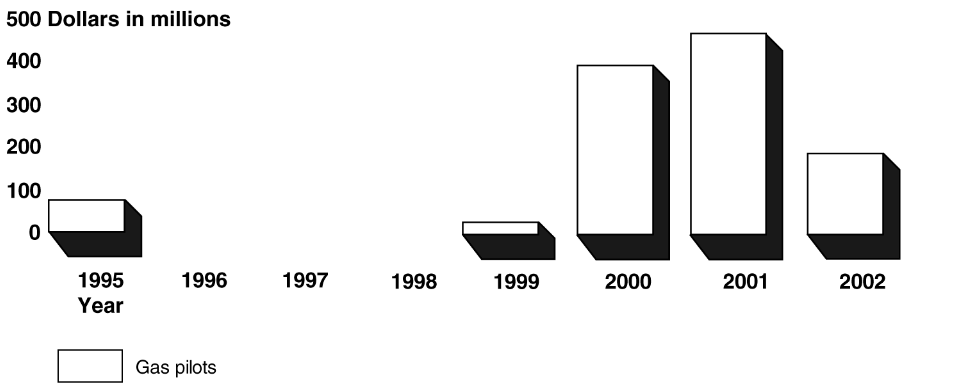
[6] In these auctions, MMS sells gas from selected properties for specified periods of time. The buyer receives the federal royalty share of gas for a period of 5, 7, or 12 months following the sale. MMS initially sold this gas for 1-month periods but discontinued this process because it was administratively more efficient to conduct sales for greater periods of time.

**Figure 3: Estimated Percentage of Total Federal Royalty Gas Taken in Kind by Purpose, Calendar Years 1995 through 2000 and January through September 2001**




Source:GAO's analysis of MMS data.

**Figure 4: Revenues Reportedly Collected from the Sale of Federal Royalty Gas Taken in Kind, Calendar Years 1995 through 2001 and January through July 2002**




Source:MMS.

## MMS Has Established Some Management Control over Its RIK Program, but Additional Efforts Are Needed

Management control is a necessary safeguard to protect against the risks of fraud, waste, abuse, and mismanagement. MMS has made progress in establishing some components of management control over its RIK Program, such as (1) identifying and mitigating the risks associated with oil and gas sales and (2) developing written procedures for these sales and for collecting and reporting revenues. However, MMS has yet to develop several key management control activities and does not plan to develop them until 2004, when it will consider the RIK Program to have changed from a pilot status to a fully operational status. Specifically, MMS has not clearly defined its strategic objectives, linked performance measures to these objectives, and collected the necessary information to monitor and evaluate the RIK Program.

### Management Control Is a Necessary Safeguard

The Federal Managers' Financial Integrity Act of 1982 directs federal agencies to develop management control for safeguarding resources against the risks of fraud, waste, abuse, and mismanagement. Management control is critical to ensure that revenues and expenditures from agency operations are recorded and accounted for properly and that financial and statistical reports are reliable. The act also directs us to issue standards for management control within the federal government. These standards provide broad criteria for agencies to use, in conjunction with guidance issued by the Office of Management and Budget. Management control includes (1) developing strategic objectives, (2) linking performance measures to these objectives, (3) collecting the necessary information to monitor and evaluate performance, (4) identifying and mitigating risks, and (5) developing written procedures and documenting compliance with these procedures.

Management control also plays an important role in helping managers comply with the Government Performance and Results Act of 1993 (Results Act), which requires federal agencies to establish strategic goals, measure performance, and report on accomplishments. The Results Act shifts the focus of federal agencies away from traditional concerns, such as staffing and reporting on activities, toward achieving results. There is no more important element in results-oriented management than an agency's strategic-planning process, and establishing formal strategic objectives can help clarify what the agency seeks to accomplish and can help unify the agency's staff in achieving its goals.

## MMS Has Begun to Establish Management Control

MMS has begun to establish management control over its RIK Program by addressing the risk that oil and gas sales will be unsuccessful, addressing inherent risks associated with the sale of oil and gas, and developing written procedures for various activities within the Royalty-in-Kind Program. These activities include conducting RIK sales, collecting revenues, and reporting on revenues. MMS also has made progress in documenting the results of its RIK sales.

MMS has addressed the risk that RIK sales will be unsuccessful by ensuring that prior to these sales, certain conditions exist for the properties from which MMS will sell royalty oil and gas. In 1998, we identified the conditions necessary for successful oil and gas sales by surveying state governments, universities, and the Province of Alberta, which, at various times, had programs that took oil and gas in kind.[7] We identified several conditions that made these programs feasible. In particular, these programs seemed successful if these entities had (1) relatively easy access to pipelines, (2) properties that produce relatively large volumes of oil or gas, (3) favorable arrangements for processing gas, and (4) expertise in marketing oil and gas. MMS has considered these conditions in addressing risk. Specifically, MMS's practice of negotiating the cost of transporting gas through pipelines helps to secure relatively easy access to pipelines. Similarly, MMS's practice of grouping the properties that produce royalty oil or gas according to the pipelines to which they are connected helps ensure that properties produce relatively large volumes of oil or gas. MMS has also arranged for the processing of natural gas and has increased its knowledge of oil and gas marketing by hiring consultants and interviewing oil and gas marketers and representatives of pipeline companies in Wyoming and the Gulf Coast.

MMS has also developed procedures to manage the inherent risks, or uncertainties, in the selling of oil and gas. Such risks include fluctuating oil and gas prices, the varying amount of oil and gas that wells produce, and the credit worthiness of purchasers. To manage the risk associated with fluctuating prices, for example, MMS does not try to maximize revenues by guessing which way the market will move but, instead, accepts bids relative to the fluctuating market prices. Thus, MMS avoids substantial losses that could result from wrong guesses. MMS also manages the risk due to the inability of properties to deliver consistent quantities of gas,

[7] See *Federal Oil Valuation: Efforts to Revise Regulations and an Analysis of Royalties in Kind*, GAO/RCED-98-242 (Washington, D.C.: Aug. 19, 1998).

which could require that MMS purchase or supply more costly alternative gas in the event of a shortfall. MMS manages this risk by guaranteeing that it will deliver only a portion of the gas (base volume) at a stable price and offering the other portion (swing volume), without guarantee, at published prices that vary daily. MMS has also developed procedures to monitor the credit worthiness of oil and gas purchasers and can terminate their sales contract or demand additional credit guarantees, if necessary. These procedures led MMS to promptly cancel its contract with Enron, thereby limiting losses to 1 month's worth of gas production from the Enron contract.

MMS has developed written procedures for conducting RIK sales activities, collecting revenues from these sales, and reporting on these revenues. Sales activities include identifying properties from which to take oil and gas in kind, announcing the oil and gas for sale, determining a minimum acceptable bid, analyzing bids, and awarding contracts. We examined documents for sales that MMS conducted from October 1998 through October 2002 and found documentation of these activities in all sales in which they were appropriate. However, we did not determine the adequacy of MMS's procedures for collecting and reporting on revenues, nor did we assess the degree to which MMS complied with these procedures.[8]

## MMS Has Not Developed Clear Objectives and Linked Performance Measures to These Objectives

MMS developed the following seven strategic objectives for the RIK Program:

- Implement RIK where applicable and when it is an improvement over traditional cash royalty payments (royalty in value).
- Leverage MMS's position as an asset holder.
- Take advantage of potential interagency synergies.
- Minimize the cost of royalty administration.
- Reduce business cycle time (the time to collect, disburse, audit, and reconcile revenues).

[8] The Department of the Interior's Inspector General recently reported a problem in collecting all revenues due from the sale of royalty gas. MMS had not resolved in a reasonable time frame the commonly occurring discrepancies between amounts paid and owed due to uncertainties in the gas volumes delivered (referred to as "gas imbalances"). See Department of the Interior, Office of Inspector General, *Evaluation of Vulnerabilities to Underreporting: Royalty-in-Value versus Royalty-in-Kind*, Report No. 2002-I-0044 (Washington, D.C.: August 2002).

- Accelerate timing of revenue collections.
- Adopt energy industry business practices and controls wherever feasible.

Overall, none of the seven objectives address the revenue impacts of the RIK sales. The seven objectives do not address requirements in the law that MMS (1) collect at least as much revenue from the RIK pilots as it would have from traditional cash royalty payments and (2) obtain fair market value. The Congress directed MMS in the fiscal years 2001 and 2002 Appropriations Acts for Interior and Related Agencies to collect at least as much revenue from the sale of royalties in kind as MMS would have collected from traditional cash royalty payments. Moreover, the Congress had previously directed the Secretary of the Interior in the Mineral Leasing Act of 1920 and the Outer Continental Shelf Lands Act of 1953 to obtain fair market value for oil and gas taken in kind.[9] The Congress defined "fair market value" in the Outer Continental Shelf Lands Act as the average unit price for the mineral sold either from the same lease or, if such sales did not occur, in the same geographic area.

Furthermore, the first three objectives are not expressed in either a quantitative or measurable form. The last four objectives, although being quantitative, address administrative efficiency only. Without objectives to guide agency staff in the quantitative evaluation of the revenue impacts of RIK sales, MMS will be unable to determine whether RIK sales generate more or less revenue than traditional cash royalty payments; whether MMS obtains fair market value; and hence, whether it should convert the RIK pilots to an operational status.

MMS has also not developed any performance measures that it linked to the seven strategic objectives for its RIK Program. However, MMS has developed two performance measures—(1) confirm and reconcile, within 90 days, all production royalties taken in kind and (2) accelerate the timing of revenue receipt by 5 days over traditional cash royalty payments (royalty in value)—that are linked to the broader agency-wide objective of "collecting royalties in the shortest time possible." In addition to supporting the broad agency-wide objective, these two performance measures support RIK Program objectives that are designed to improve

[9] The Mineral Leasing Act uses the term "market price" not "fair market value," and the requirement to obtain market price does not cover competitive sales, which, by their very nature, provide some protection to the federal government.

administrative efficiency. MMS officials told us that they intend to develop performance measures that are specific to the RIK Program in 2004, when the RIK Program changes from the pilot status to a fully operational status and they acquire and fully implement new information systems that can better measure performance.

## MMS Has Not Obtained the Necessary Information to Monitor and Evaluate the RIK Program

After 5 years of conducting pilot programs and completing 24 oil and gas pilot sales, MMS's ability to effectively and efficiently monitor and evaluate its RIK Program is limited because it has not obtained the necessary information to do so. This information includes the administrative costs of the RIK Program, the savings from avoiding potential litigation and appeals, the savings in auditing properties, and the revenue impacts of all sales. MMS lacks information largely because it has not developed an information systems infrastructure to rapidly and efficiently collect this information. Without quantitative costs, savings, and revenue information, MMS is unable to determine the program's overall cost and effectiveness, whether RIK generates at least as much revenue as traditional cash royalty payments, and whether the RIK Program should be expanded or contracted.

### MMS Has Not Quantified Anticipated Costs and Savings from Implementing the RIK Program

MMS has not quantified the costs of administering the RIK Program. Such costs, which MMS incurs when selling RIK but does not incur when collecting traditional cash royalty payments, result from identifying properties from which to sell oil and gas, calculating minimum acceptable bids, analyzing bids, awarding and monitoring contracts, billing purchasers, negotiating transportation rates, reconciling discrepancies in volume, and comparing RIK revenues with traditional cash royalty payments. MMS has not quantified these costs because its current personnel, payroll, and budgeting systems do not capture data in sufficient detail. Although MMS tracks employees' time charges with these systems, MMS does not distinguish between time charges that support only the RIK Program and time charges that support both the RIK Program and the traditional system of collecting cash royalties. Similarly, MMS has not decided how to assign the cost of MMS's financial system and other significant overhead costs to the RIK Program and to the traditional cash royalty system. MMS officials told us, however, that they plan to implement an activity-based cost-accounting system in fiscal year 2003 that will assist in resolving these issues.

MMS also has not quantified anticipated savings from avoiding potential appeals and litigation by selling oil and gas in kind. MMS officials explained that MMS anticipates that it can avoid substantial costs associated with appeals and litigation involving primarily the valuation of natural gas and the transportation of both oil and gas. MMS officials have not estimated the costs of appeals because of problems with implementing the information system that tracks these costs and because of their uncertainty that these costs are recorded in a consistent manner. In addition, the Office of the Solicitor within the Department of the Interior, which is responsible for litigation concerning MMS's activities, does not have an automated system to track litigation costs.

Although MMS anticipates that the cost of auditing revenues will decrease because of taking RIK, MMS has not quantified these savings. MMS anticipates substantial savings because verifying the value of oil and gas is much easier when taking RIK because the purchaser and MMS agree to the sales price before the sale occurs. Similarly, when MMS negotiates transportation costs itself, it knows the exact transportation rate that companies can charge MMS, unlike when companies pay royalties in cash. In addition, MMS does not need to audit transportation costs when MMS sells royalty oil or gas at the location of the lease because there are no transportation costs, since the buyer assumes the responsibility for transportation. Although MMS has projected decreases in the number of staff auditors as a result of future RIK sales, MMS has not finalized these estimated savings because MMS is uncertain of how much oil and gas it will take in kind in the future. MMS officials also question the reliability of the time that auditors have charged to the RIK Program in the past—information that formed the baseline for their projections.

## MMS Has Not Fully Determined the Revenue Impacts of RIK Sales

MMS also has not fully quantified the revenue impacts of all the royalty oil and gas that it sold, preventing a comprehensive comparison between RIK sales revenues and the revenues that MMS would have received under the traditional cash royalty system. MMS does analyze factors that affect the revenues of upcoming RIK sales, including current oil and gas prices; anticipated market conditions; and transportation and processing, if applicable. However, MMS does not systematically compare RIK sales revenues with what it would have received in traditional cash royalties after these gas sales are completed. Of the 15.8 million barrels of federal royalty oil sold in pilot sales from October 1998 through July 2002, MMS quantified the revenue impacts of about 9 percent. Of the approximately 241 billion cubic feet of federal royalty gas that MMS sold from December 1998 through March 2002, we estimate that MMS quantified, either in whole or in part, the revenue impacts resulting from the sale of about 44 percent of this gas. Although MMS analyzed revenue impacts from 44 percent of the federal royalty gas it sold, almost none of this analysis was done in a timely manner, thereby precluding the use of this information to improve or modify subsequent sales. For example, MMS did not complete the evaluation of the gas that it sold competitively each month over a 19-month period until after it had discontinued selling gas in this manner. Similarly, MMS did not evaluate the revenue impacts of using a gas marketer to aggregate gas volumes until 1 year after it terminated these sales. If MMS had evaluated these aggregated sales earlier, it might have discontinued this method of selling royalty gas because it would have confirmed employees' suspicions during the initial sale that the manner in which gas was being sold was disadvantageous to MMS. Instead, MMS let another three contracts with similar terms, resulting in an overpayment of almost $3 million on transportation valued at about $13 million.

MMS's information systems hinder the timely monitoring and evaluation of the RIK Program and the evaluation of the revenue impacts from individual sales. The RIK Program's current system for managing RIK sales revenues consists of a series of unlinked computer spreadsheets into which personnel manually enter RIK data. Such a manual system is prone to errors, which could lead to inaccurate information. Prior to September 2002, RIK Program personnel did not compile basic monthly reports on revenues collected and royalty volumes sold, which could have been used to monitor the RIK Program on a periodic basis. Also, limitations of MMS's agency-wide financial system—the system that generates agency-wide accounting reports and maintains and manages all royalty data—currently hamper the timely comparison of RIK sales revenues with cash royalty payments. MMS personnel were unable to use the financial system to produce summary data that were more current than 1-year old. As of October 2002, for example, MMS personnel were unable to use the financial system to determine how much total revenue MMS collected and how much oil and gas had been produced from federal lands since September 2001. MMS personnel also said that because of missing or erroneous data in the agency-wide financial system, data extracted from this system cannot be used in revenue comparisons without time-consuming checks for accuracy and reasonableness. Furthermore, it will be more difficult to use RIK gas data in this system to calculate revenue impacts because MMS personnel do not enter these data at the lease level.[10] Lastly, RIK Program personnel said that because they have to

[10] When sales involve the federal offshore leases whose royalties must be shared with adjacent states, MMS officials said that they record the transactions for each lease separately. This facilitates the disbursement of royalty revenue to the adjacent states.

manually acquire data to evaluate federal properties for prospective sales, the growth of the RIK Program has slowed.

MMS officials also said that they have not evaluated the revenue impacts from the sales of all royalty oil and gas largely because they have delayed the development of performance measures for the RIK Program until 2004. These performance measures will incorporate benchmarks against which to compare RIK sales revenues. MMS personnel said that MMS has generally encountered difficulty in establishing benchmarks against which to measure the revenue impacts of RIK oil and gas sales because once it takes all federal royalty oil or gas in kind in a specific area, it no longer receives any traditional cash royalty payments for comparison. However, MMS officials explained that by 2004, MMS expects to acquire and fully implement two additional information systems dedicated to the RIK Program that will automate the acquisition of necessary information for attempting revenue comparisons. MMS personnel said that they had not acquired these automated systems earlier because they believed that they first needed to process a large number of transactions and sell a large volume of oil and gas before they could justify the expense of acquiring these systems.

## Conclusions

MMS has begun to establish management control over its RIK Program. It has initiated positive steps to address the risks that affect its oil and gas sales and has developed written procedures for various activities within the RIK Program. MMS has also made progress in documenting the results of its RIK sales. However, MMS has not established clear objectives for the program that are linked to statutory requirements. MMS's current objectives for its RIK Program are not clearly linked to requirements in the law that MMS (1) collect at least as much during pilot sales as it would have collected in cash royalty payments and (2) obtain fair market value.

In addition to the lack of objectives linked to statutory requirements, MMS is not systematically collecting the necessary information to monitor and evaluate the RIK program. Such information includes the administrative costs of the RIK program, anticipated savings from reductions in audit efforts and from avoiding appeals and litigation, and the revenue impacts of all sales. Without clear objectives and the systematic collection of evaluative information, MMS cannot assess and ultimately determine whether it should expand or contract the use of royalty in kind sales.

## Recommendations for Executive Action

To continue the further development of management control for the Minerals Management Service's Royalty-in-Kind Program, we recommend that the Secretary of the Interior instruct the appropriate managers within the Minerals Management Service to do the following:

- Clarify the Royalty-in-Kind Program's strategic objectives to explicitly state that goals of the Royalty-in-Kind pilots include obtaining fair market value and collecting at least as much revenue as MMS would have collected in cash royalty payments.

- Prior to expanding the Royalty-in-Kind Program, identify and acquire key information needed to monitor and evaluate performance. Such information, as identified by the Minerals Management Service, should include the revenue impacts of all Royalty-in-Kind sales, administrative costs of the Royalty-in-Kind Program, estimates of savings in avoiding potential litigation, and expected savings in auditing revenues.

## Agency Comments and Our Evaluation

We provided the Department of the Interior with a draft of this report for review and comment. Interior fundamentally agreed with our observations and recommendations and emphasized MMS's future plans for improving management control over the RIK Program. Where appropriate, we have included additional references to the activities that Interior mentions in its comments. Interior's comments and our response to these comments are reproduced in appendix I.

## Scope and Methodology

In reviewing MMS's RIK Program, we reviewed congressional directives in pertinent legislation; standards for the development of management control issued by us and the Office of Management and Budget; and prior reports and documentation on the Small Refiners Program, Strategic Petroleum Reserve, and RIK pilots. We also obtained statistical information from MMS on oil and gas volumes taken in kind and the revenue that MMS generated by selling these volumes. In addition, we reviewed documentation pertaining to management control and interviewed MMS personnel about their efforts to establish management control over the RIK Program.

We conducted our work from January to November 2002 in accordance with generally accepted government auditing standards. For a more detailed discussion of the scope and methodology of our review, see appendix II.

As agreed with your offices, unless you publicly announce its contents earlier, we plan no further distribution of this report until 7 days from the date of this letter. At that time, we will send copies of this report to the Secretary of the Interior; the Director, Office of Management and Budget; and other interested parties. We will also make copies available to others upon request. This report will be available at no charge on GAO's Web site at http://www.gao.gov.

If you have any questions about this report, please call Mark Gaffigan or me at (202) 512-3841. Key contributors to this report are listed in appendix III.

Jim Wells
Director, Natural Resources
and Environment

# Appendix I: Comments from the Department of the Interior

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

United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

DEC 13 2002

Mr. Mark Gaffigan
Assistant Director, Natural
Resources and Environment
U.S. General Accounting Office
441 G Street, N.W.
Washington D.C. 20548

Dear Mr. Gaffigan:

We appreciate the opportunity to review your Draft Audit Report, "MINERAL REVENUES: A More Systematic Evaluation of the Royalty-in-Kind Pilots Is Needed." Our general and specific comments are enclosed for you to incorporate into the final report (Appendix I).

Since 2001, the Minerals Management Service (MMS) has been advancing its Royalty In Kind (RIK) Pilot Program to implement RIK as a permanent part of its royalty asset management strategy. In compliance with statutes and regulations, MMS has devoted significant attention to monitoring and evaluating the RIK pilots. We believe the RIK management control process has evolved and is functioning at a level sufficient to effectively manage the current scale of the pilot program. We appreciate the recognition of this progress in the draft report.

In the draft report, the General Accounting Office (GAO) recommends that MMS clarify strategic objectives linked to performance measures and gather information to monitor and evaluate performance prior to further expansion of the RIK program. We fundamentally agree and, to that end, have already taken steps to ensure these and other management control enhancements are an integral part of the larger-scale, permanent RIK program.

We believe a Federal RIK program is an important vehicle to ensure fair market values for large segments of the Nation's mineral royalty assets. With the continuing assistance of the GAO and others, we can continue to build and implement a Federal RIK program for which all Americans can be proud.

Once again, thank you for the opportunity to review and comment on this report. We stand ready to assist GAO in answering further questions or providing data that would help in its review of the RIK program. If you have any questions, please contact Bettine Montgomery, Minerals Management Service's Audit Liaison Officer, on (202) 208-3976.

Sincerely,

Rebecca W. Watson

Rebecca W. Watson
Assistant Secretary
Land and Minerals Management

Enclosure

**Response to December 2002 General Accounting Office (GAO) Draft Report Titled "A More Systematic Evaluation of the Royalty-in-Kind Pilots is Needed"**

**Summary Comments**

The Department of the Interior's Minerals Management Service (MMS) is responsible for the administration of royalty-in-kind (RIK) pilot projects and other RIK operational activities. For many years now, MMS has been utilizing the RIK approach to manage oil and gas royalty assets. Historically, the RIK approach has been used to supply crude oil to the small refiner sector of the Nation's petroleum industry. Recently, MMS has been pursuing the development of an operational RIK program with the capability to not only manage the Small Refiner Program but to also manage the competitive sale of oil and gas and the delivery of crude oil production to the Strategic Petroleum Reserve (SPR). Since 2001, MMS has been aggressively pursuing an implementation plan to make RIK a permanent part of MMS's royalty asset management strategy to be used in tandem with the traditional royalty in value (RIV) approach. MMS has made substantial progress in this implementation and appreciates GAO's acknowledgment of this progress in the draft report.

We appreciate the insights and suggestions offered by the GAO to assist us in implementing a Federal RIK program that operates on sound and industry proven business principles with strong management controls. In the December draft report, the GAO addresses the importance of strategic goals, performance measurements, and information needed for consistent and effective monitoring of future RIK program performance. MMS fundamentally agrees with these tenets for success and, as discussed later in this response, is poised to implement enhancements in these areas.

In evolving the RIK program, MMS has implemented a business model and operational processes based on industry best practices. This has been done in close consultation with state governments, expert consultants, and the oil and gas industry. The MMS RIK pilots and other operations are premised in significant ways on advice provided by GAO in 1998. This early advice set forth conditions and approaches to be used in the successful marketing of royalty oil and gas volumes. This advice has been extensively applied by MMS in managing the Federal RIK portfolio and has proven to be successful in an operational environment. MMS has also acquired industry experts to assist in developing automated gas and liquids management systems to support RIK asset management decisions and operations. These important systems development projects are on schedule and in budget with staged implementation of functionality beginning next month.

The GAO draft report documents the substantial progress MMS has made to implement RIK controls in the areas of risk management and written procedures. MMS believes the RIK management control process has evolved and is functioning at a level sufficient to effectively manage the current scale of the pilot program. At the same time, we agree with the GAO that more emphasis will be needed on financial analysis and performance measurement in the permanent, full-scale RIK program. To ensure compliance with statutes and regulations, MMS has devoted significant attention to monitoring and evaluating the RIK pilots at the pre-sale, concurrent, and post-sale levels. These in-depth analytical assessments document that RIK revenues are at least equal to RIV revenues and that in several circumstances the revenue stream is increased. Although the assessment reports do not quantify administrative cost savings of utilizing the RIK approach as compared to the RIV approach, such savings are observed in the areas of royalty accounting, regulatory reporting and audit. In October 2002, MMS implemented an activity-based cost accounting system that provides the cost-capture tools and foundation to effectively assess the RIK program, particularly in the area of administrative cost savings.

The joint Department of Energy (DOE)/Department of the Interior (DOI) initiative to utilize RIK oil to fill the remaining capacity of the Nation's SPR is, far and away, the dominant activity in the current MMS RIK program. This presidential initiative was successfully launched with first deliveries of RIK crude oil being made in April 2002 and will continue through 2005. This significant achievement in crude oil logistics is accomplishing a non-monetary transfer of oil volumes to the DOE with minimal costs in commodity transportation. The 5-year RIK strategic business plan being developed by MMS for the period 2004-2008 will provide objectives and measures to ensure completion of the SPR initiative and the timely collection of proper royalty payments, whether they are paid in value or in kind.

In its draft report, GAO provides two recommendations that relate to the setting of strategic objectives for the RIK program and acquisition of information to support measurement of progress in achieving those objectives. The GAO correctly notes that MMS will not fully develop certain management controls until 2004 when RIK activities move from pilot to operational status. However, GAO's conclusion that MMS does not have clearly defined strategic objectives linked to performance measures or information to evaluate performance does not take into account the substantial progress MMS has already made in these areas. MMS is aware that more controls are needed for an expanded program. In partnership with industry experts and other stakeholders, MMS is developing and will implement a 5-year strategic business plan to guide the continued development and expansion of the Federal RIK program through 2008. This new Business Plan for 2004 and Beyond will be the vehicle to assure that a full-range of management and internal controls are in place to effectively administer the future RIK program at the highest levels of integrity.

In 2001, MMS published its first strategic RIK plan (Road Map) to build operational RIK processes and for acquisition of supporting technology and automated support systems. This Road Map did not address the scale of the Federal RIK program nor did it provide strategic direction beyond 2003. MMS's new 5-year RIK plan will translate the political and business priorities of the DOI into meaningful strategic business objectives to guide future RIK operations and expansion efforts. To assist in building and implementing the 5-year plan, MMS plans to award a contract in early 2003 to a private-sector company with special expertise in oil and gas marketing and strategic business planning for the

2

energy industry. These experts will assess current RIK program capabilities and provide improvement recommendations. More specifically, this initiative will address:

- management and internal control processes
- RIK performance measurement tools and metrics
- Processes and tools to optimize RIK revenues
- Strategies for acquisition of transportation and processing services
- Approaches for aggregating and marketing expanded RIK volumes

In a fully operational status, the Federal RIK program will have enhanced business objectives and expansion goals that can be measured. The MMS's stated objective has always been to utilize the RIK asset management approach when it is equal to or better than taking royalties in value. The permanent RIK program will have the information and means needed to comprehensively measure revenue impacts, evaluate overall performance, and determine cost savings and other program benefits.

The following sections of this response provide specific comments on the findings, conclusions, and recommendations presented in the GAO draft report.

**GAO Highlights Page**

See comment 1.

Under the caption "Why GAO Did This Study," the draft report indicates that royalties taken in kind are always sold. The draft report should be changed to reflect the fact that royalties taken in kind can also be transferred or sold to other Federal agencies. Currently, the majority of the hydrocarbon production royalties taken in kind are dedicated to the SPR Fill Initiative. In this initiative the DOI takes Gulf of Mexico oil royalties in kind and transfers the oil to the DOE at no cost, thus there is no sale.

See comment 1.

Similarly, the chart titled "Estimated Revenues Collected by the Minerals Management Service from Selling Royalties in Kind, January 1995 to July 2002" incorrectly describes SPR royalty oil as being sold and that revenues are being received by MMS. The chart needs to be changed to reflect the fact that SPR royalty oil is transferred by MMS to the DOE without payment by DOE. This reduction in royalty receipts to the Treasury is offset by lower expenditures from the Treasury for purchase of oil on commercial markets.

**Background**

Note: Page numbers in the draft report may differ from those in the report.

**Page 3**

See comment 1.

Offshore royalty payments share with states are limited to those associated with leases located in the 8(g) zone, or the 3-mile-wide band beyond the Federal/state boundary. States do not share in royalty revenues associated with Federal leases located beyond the 8(g) zone where the vast majority of offshore oil and gas production occurs. A clarification to this effect is recommended.

3

**Page 5**

See comment 2.

We recommend that footnote 3 be clarified to provide the reader with the reason for data not being available beyond September 2001. In December 2001, the MMS, in response to a Court Order issued by the U. S. District Court for the District of Columbia, shutdown all of its royalty and production accounting systems. The systems remained shutdown until March 23, 2002, when approval was received to restore the systems and connect them with the Internet. During the shutdown period, lessees were unable to report royalty and production data, and MMS was unable to process such data. However, during the shutdown, royalty revenues continued to be received by MMS from cash royalty payors as well as purchasers who continued to be timely billed for sales of oil and gas royalty in kind production. With the restoral of the systems, MMS proceeded with its recovery plan which will continue into 2003.

**Page 6**

See comment 1.

Figure 2 incorrectly describes SPR royalty oil as being sold and that revenues are being received by MMS. The chart needs to be changed to reflect the fact that SPR royalty oil is transferred by MMS to the DOE at no cost.

**Page 8**

See comment 1.

The draft report states that MMS plans to increase SPR royalty oil deliveries to about 130,000 barrels per day by the end of 2002. The established fill schedule does not anticipate the fill rate to increase to 130,000 barrels per day until April 2003. This fill rate is expected to be sustained for the remainder of the fill initiative, which is expected to be completed in the latter part of 2005.

See comment 3.

The draft report describes royalty oil and gas sales volumes in percentage relationships that are misleading and not reflective of actual RIK sales activities. We recommend that instead of using percentage relationships, the draft report be augmented with actual volumetric deliveries. For example, the state of Wyoming/MMS oil pilot has, over the nine consecutive sales, involved the delivery of between 2,000 barrels and 6,000 barrels of crude oil per day. The variability in delivery rates between sales is the result of the rejection of bids by MMS and the State as inadequate to assure that RIK revenues were at least equal to RIV revenues. In the same respect, the OCS Gulf of Mexico competitive RIK oil pilot began in November 2000 with the sale of 7,000 barrels per day. For the second sales period beginning in October 2001, the RIK oil volume deliveries increased to approximately 60,000 barrels per day and remained at that level until the end of the sale term in March 2002 when the volumes were redirected to the SPR Fill Initiative.

**Page 9**

See comment 1.

The draft report attributes the revenue reductions associated with the 1995 gas RIK sales to unforeseen problems in securing transportation of gas through pipelines. We

4

would note that other factors played a role in impacting revenues realized in the 1995 prototype pilot. Particularly noteworthy was the selection of properties based on the voluntary nominations of producers rather than selecting properties based on the underlying economics and the physical flow of commercially attractive volumes to market centers.

See comment 1.

More importantly, the draft report is silent on a major study of national scope that was conducted by MMS in 1997. This study assessed the feasibility of a truly competitive RIK program that, unlike the 1995 prototype, would be based on commercial industry standard practices. The feasibility study report served as the springboard for today's RIK pilot program.

**MMS Has Begun to Establish Management Control**

**Page 13**

See comment 1.

The draft report includes the statement "These procedures led MMS to cancel its contract with Enron within days after Enron's bankruptcy, thereby limiting losses to 1 month's worth of gas production from the Enron contract." To more accurately describe the circumstances, this statement should read "These procedures led MMS to cancel its contract with Enron within days before Enron's bankruptcy, thereby limiting exposure to 1 month's worth of gas production from the Enron contract." Also, MMS's claim against Enron is now in a collection action before the bankruptcy court. It is worthy of note that MMS also terminated four additional contracts thus avoiding exposure to loss with purchasers experiencing financial difficulties.

See comment 1.

Footnote 8 in the draft report states that "The Department of the Interior's Inspector General recently reported a problem in complying with payment procedures." This statement is incorrect. In fact, the OIG identified an issue in the timeliness of reconciliation of natural gas volume imbalances. The OIG recommended instituting for natural gas the same procedures as used by MMS for oil volume imbalance reconciliations. MMS has completed implementation of this and several other OIG recommendations. A relevant and noteworthy conclusion made by the OIG in the same report comparing the underpayment vulnerability of the RIK and RIV approaches, was that ... "RIK is substantially less susceptible because valuation is established by fair-market sale, MMS receives actual proceeds from sales, MMS negotiates and pays actual transportation and processing costs."

**MMS Has Not Developed Clear Objectives and Linked Performance Measures to These Objectives**

**Pages 13-14**

The draft report asserts that MMS's business objectives for the RIK program do not (1) address requirements in the leasing statutes that MMS collect fair market value, and (2) that they do not address requirements of the fiscal years 2001 and 2002 Appropriations Acts for Interior and Related Agencies that MMS analyze and document the expected

5

return in advance of any royalty-in-kind sales to assure to the maximum extent practicable that royalty income under the pilot program is equal to or greater than royalty income recognized under a comparable royalty-in-value program. We do not believe the facts support these assertions.

See comment 4.

The first RIK business objective cited in the draft report is clear in its statement that the MMS will "Implement RIK where applicable and when it is an improvement over traditional cash royalty payments (royalty in value)." The Outer Continental Shelf Lands Act and the Minerals Leasing Act provide the foundational requirement for the royalty value to be collected for production removed from Federal lands. For decades, the MMS, and its predecessors, have promulgated implementing regulations that define the methodology to be used in determining "fair market value" or "market value" for payment of production royalties. The MMS takes very seriously its responsibilities under the law in enforcing its regulations to collect proper royalty value whether paid in cash or in kind. The codified valuation regulations serve as the foundation for determining fair market value for oil and gas production and the revenue baseline which the RIK option must meet or exceed before lease royalties are converted to the RIK option.

Furthermore, regarding the fiscal years 2001 and 2002 Appropriations Acts for Interior and Related Agencies, the specific language provides:

> "That MMS may under the royalty-in-kind pilot program use a portion of the revenues from royalty-in-kind sales, without regard to fiscal year limitation, to pay for transportation to wholesale market centers or upstream pooling points, and to process or otherwise dispose of royalty production taken in kind: Provided further, That MMS shall analyze and document the expected return in advance of any royalty-in-kind sales to assure to the maximum extent practicable that royalty income under the pilot program is equal to or greater than royalty income recognized under a comparable royalty-in-value program."

See comment 5.

While not described in the GAO report, MMS undertakes as a matter of standard business practice extensive economic analysis prior to all conversions of leases from royalty in value to royalty in kind. This economic analysis establishes the baseline revenues from RIV. For crude oil competitive sales, minimum acceptable bids (MAB) are established prior to each sale based on the revenues expected to be received under the effective oil valuation regulations. These MABs must be exceeded for an award to be made. MMS rejects bids not meeting MABs and consequently does not convert such properties to RIK. Similarly for natural gas, prior to the conversion of leases from royalty in value to royalty in kind, detailed analyses of commodity sales, transportation and processing scenarios are conducted to ascertain the revenue impacts. MMS pursues conversion of lease production royalties to in kind only when the revenues will equal or exceed what would otherwise be expected if paid in value. MMS is confident that it has met and continues to meet, in every respect, the subject appropriations law requirements related to RIK.

6

See comment 5.

Furthermore, the MMS is conducting ongoing assessments of RIK pilots to evaluate performance based on success in meeting the following criteria:

- Simplicity, accuracy, certainty for lessees and government.
- Revenue neutral (or better) for the government;
- Reduced administrative burden for lessees and government.

Evaluations of the Wyoming oil pilot and the Texas 8(g) gas pilot have been completed and found each pilot to have performed favorably. An assessment is currently underway to evaluate the Gulf of Mexico Federal natural gas pilot. This assessment is expected to be completed in early 2003.

The MMS conducts additional ongoing analyses, again as a matter of standard business practice, to monitor the status of the RIK sales program. These analyses are described on page 9 of these comments.

In Fiscal Year 2002, MMS initiated the development of industry-based systems support tools with which to manage the RIK program. These tools are critical to the efficient management of a permanent RIK business activity as well as for the efficient management of performance information related to the business activity. In addition to providing the needed support for ongoing logistics and sales activities, the installed systems will support the efficient monitoring of RIK sales revenues and comparisons against benchmark revenues that would be expected with in value collections. This capability will provide more current information than the manual processes and pilot assessment study approach now being utilized. The first systems implementation related to natural gas will occur in January 2003. The second implementation for crude oil will occur in September 2003.

In managing the oil and gas royalty asset, the MMS has established strategic goals consistent with the Government Performance and Results Act. These goals and the associated measures focus on (1) the timely collection and verification of the proper amount of royalty whether collected in value or in kind, and (2) providing program beneficiaries with early access to their revenues. MMS is in the process of finalizing its strategic goals for 2004-2008 which will include specific focus on the RIK business activity. We are confident that these strategic goals and associated measures will capture an ongoing comparative monitoring of RIK revenues to RIV benchmark values.

The MMS will also continue to perform its intensive economic analysis prior to the conversions of leases from royalty in value to royalty in kind to determine revenue neutrality.

7

**MMS Has Not Obtained the Necessary Information to Monitor and Evaluate the RIK Program**

**Page 15-16**

The draft report states that MMS's ability to effectively and efficiently monitor its RIK program is limited because it has not obtained the necessary information to do so and that this condition exists largely because it has not developed an information systems infrastructure to rapidly and efficiently collect this information. We agree that an information systems infrastructure is needed and, as previously mentioned, MMS is in the process of installing such an infrastructure. The first major implementation, scheduled for January 2003, will support the natural gas RIK program. The next implementation scheduled for September 2003 will support the oil RIK program.

Concurrent with the oil systems development is the implementation of risk management functionality which will provide related performance measurements for all commodities. The entire RIK infrastructure will integrate with MMS's new financial and compliance systems infrastructure and will be supported under the same application service provider arrangements. The GAO staff spent considerable time with MMS systems development staff as well as with the development and integration contractor, Accenture, LLP, to gain an understanding of MMS's technology initiative in this area. We are confident that the installation of the information systems infrastructure will yield substantial increases in the efficiency and effectiveness as compared to the current manual processes and supporting desktop technology.

Furthermore, in October 2002, MMS completed the implementation of an Activity Based Cost System (ABC). This system is providing the needed automated support for the structuring and capture of agency cost information to be utilized in measuring program performance. We expect the ABC system to be of considerable utility in understanding and measuring the comparative costs of collecting royalties in value and in kind.

In developing its business plan for the permanent RIK program, MMS will utilize private sector experts to build and implement a state-of-the-art management control environment.

**MMS Has Not Quantified Anticipated Costs and Savings from Implementing the RIK Program**

**Page 15**

The draft report states that MMS has not quantified the costs of administering the RIK program and that this has not occurred because its current personnel, payroll and budgeting systems do not capture data in sufficient detail. MMS agrees and will utilize the new ABC system to quantify the costs of operating the RIK program and for gathering information to measure the comparative costs of collecting royalties in value and in kind.

8

While cost data has not been captured for a detailed quantification and comparison of the administrative costs of collecting royalties in kind versus in value, the RIK pilots have demonstrated that efficiencies and cost savings can be realized in the areas of royalty accounting, regulatory reporting and audit. This is particularly true for Outer Continental Shelf leases involving large volumes of production, relatively few leases, and a well-developed and highly competitive marketplace for oil and natural gas. As described in the draft report, MMS has concluded that the cost of compliance work associated with in kind collections for OCS leases is significantly less than for in value collections, and is in the process of projecting associated savings.

**MMS Has Not Fully Determined the Revenue Impacts of RIK Sales**

**Pages 16-18**

The draft report states that the MMS has not fully quantified the revenue impacts of all the royalty oil and gas that is sold, preventing a comprehensive comparison between RIK sales revenues and the revenues that MMS would have received under the traditional cash royalty system. The draft report states that this condition exists because MMS's current information systems do not permit timely monitoring and evaluation of the RIK program. MMS agrees with GAO that an information systems infrastructure is needed to do such comprehensive analysis on every commodity sale. Early next year MMS will begin implementation of the automated information systems to provide this functionality. As previously noted, the MMS RIK Business Plan for 2004 and Beyond will implement a full range of management and internal controls to evaluate the performance of the permanent full scale RIK program.

See comment 5.

While we agree with the draft report's statement that the RIK Pilot Assessments have not addressed and fully quantified the revenue impacts on every RIK sale, it is important to note that MMS performs additional analyses to quantify and monitor the revenue impacts of RIK sales. These analyses address at in-depth levels all of the factors that influence and impact revenue receipts. Examples of these analyses follow.

- The relationship of RIK revenues to commercial benchmarks of fair market value used in the industry is known for every RIK sales package for every month.
- Consistent with statutory requirements, pre-sale analyses and/or minimum acceptable bid evaluations compare proceeds to occur for all RIK sales to those estimated to occur under RIV, ensuring that sales are made only if RIK sales will result in greater estimated revenues.
- Transportation and processing costs under RIK and RIV are compared comprehensively for all sales packages prior to sale.

9

- Post-sales contract assessments are made for natural gas sales examining all aspects of the transactions to determine if changes to the sales structure are needed.

These measurements, in addition to routine market intelligence gathering on all pipeline systems and markets where RIK sales are occurring, are made in a timely manner that supports real-time decisions on current and future sales.

The draft report concludes by describing several circumstances in which adverse impacts have been experienced by MMS due to its current information systems and lack of timeliness in evaluating natural gas sales. These issues include transportation costs under gas aggregation contracts, access to financial system information for in value comparisons, and the compromise of RIK natural gas data. Each issue is discussed in the remainder of these comments.

See comment 6.

Regarding the draft report's description of MMS's natural gas aggregation contracts, we are unaware of how the alleged overpayment of transportation costs in the draft report was calculated, and thus consider it unsubstantiated at this point. Contrary to the draft report, MMS was aware of all aspects of the operation of its aggregation contracts for gas RIK, including the fact that transportation underpayments in times of falling commodity prices within such contracts would ultimately offset short-lived transportation overpayments during rising markets. Such contracts were terminated, not because of untimely assessments as the draft report asserts, but because (1) the Federal Energy Regulatory Commission opined that they were inconsistent with their regulations, and (2) MMS received new authority in appropriations language allowing us to arrange for transportation in a less risky manner. The MMS is in the process of completing its assessment of the Gulf of Mexico RIK gas pilot, including the aggregation contracts, and expects to issue the draft report early in 2003.

See comment 7.

The draft report describes MMS's difficulties in gaining access to in value royalty data in its financial system and that this has limited MMS's ability to compare in kind and in value receipts. The draft report is referring to the adverse impacts of the shutdown of all DOI systems in response to a Court Order. While the effects of this order were in fact adverse, MMS's financial systems are now operational and relevant data are being timely captured and used.

See comment 7.

We do not believe the facts support the GAO conclusion that natural gas data in MMS's systems are compromised due to sales data being entered into the MMS financial system under single monthly entries. In fact, the sales data are entered into the financial system under multiple sales contract entries allocated to single property number(s). Further, MMS retains all data necessary to allocate sales volumes and values to individual leases where there is a valid reason to do so. There is not a routine need to allocate 100 percent Federal revenues to lower levels than necessary to ensure contract compliance and distribute such revenues.

10

The following are GAO's comments on the Department of the Interior's letter dated December 13, 2002.

## GAO's Comments

1. We clarified our report to reflect these comments.

2. We acknowledge that the Mineral's Management Service's (MMS) difficulties in obtaining royalty data from its financial system may be due, in part, to the court-ordered shutdown of this financial system in December 2001. However, 9 months had passed since operation of the financial system was restored on March 23, 2002. Additionally, MMS personnel said that the statistical subsystem designed to generate routine summary data that we requested for October 2001 through July 2002 had not yet been deployed and was not expected to be deployed until April 2003 at the earliest.

3. We expressed Royalty-in-Kind (RIK) volumes as a percentage of total federal royalty oil and gas volumes to show the overall significance of taking royalties in kind compared with receiving cash royalty payments. Using percentages also made it easier to show that large percentages of oil were taken in kind for the Strategic Petroleum Reserve (SPR) and for the Small Refiners Program relative to the small percentages taken for pilot purposes. In expressing RIK volumes as percentages, we used actual RIK sales volumes supplied by MMS but had to estimate the total federal royalty volumes because MMS does not maintain these data.

4. In this report, we state that MMS's strategic objectives do not address the requirements in the law because nowhere in the seven strategic objectives is there reference to the terms "fair market value" or "collecting at least as much revenue as would have been collected in cash royalty payments." In its response, Interior states that it has intended to accomplish these legislative mandates, and Interior apparently believes that these intentions are implied by the strategic objective stating that MMS will implement RIK "when it is an improvement over traditional cash royalty payments." In light of Interior's agreeing with us that the objectives for the RIK Program should include achieving fair market value and collecting revenues at least equal to what MMS would have collected in cash royalty payments, we continue to recommend that MMS clarify the language in its strategic objectives to reflect these intentions.

5. We acknowledge that MMS performs substantial analysis prior to converting leases from traditional cash royalty status to RIK. For oil sales, MMS generally calculated a minimum acceptable bid that bidders had to exceed before MMS made an award. For gas sales, MMS relied upon gas

indexes to assess bids. While relying on minimum acceptable bids and gas indexes prior to a sale is a first step in ensuring that RIK revenues will equal or exceed cash royalty payments, MMS cannot determine actual revenue impacts until after the sales are completed. To effectively monitor and evaluate the performance of the RIK pilot sales, MMS should calculate revenue impacts in a timely manner after sales are completed and adjust future sales on the basis of these results.

Relying on codified valuation regulations as an indicator of what MMS would have collected in cash royalty payments is not as straightforward as Interior implies, and the application of valuation regulations is often a source of dispute between MMS and industry. For example, MMS often does not know which provision of the valuation regulations will apply to future royalty collections from a given lease until after the sale. Also, MMS's market analyses suggests that many of the provisions for valuing oil and gas sold to affiliated companies may no longer reflect the manner in which many companies buy and sell oil and gas today. To compensate for these uncertainties, MMS must use considerable judgment in estimating revenue impacts prior to RIK sales.

While MMS has evaluated the revenue impacts after some completed sales, MMS has not evaluated the revenue impacts of all sales. We point out in this report that MMS evaluated the revenue impacts, either in whole or in part, of about 9 percent of the oil sold in kind and about 44 percent of the gas sold in kind. With regards to the Wyoming oil pilots and the Texas 8(g) gas pilots that Interior mentions in commenting on this report, MMS evaluated and published the results of 3 of the 8 completed pilot sales in Wyoming and 19 of the 29 monthly Texas 8(g) sales. Furthermore, only a few of MMS's analyses were done in a timely manner, precluding MMS from using this information to modify subsequent sales. For example, MMS did not analyze the revenue impacts of the Texas 8(g) monthly sales or its aggregated gas sales until after it had discontinued selling gas by these methods. However, we encourage MMS to analyze the revenue impacts of its Gulf of Mexico oil pilots despite these sales' current suspension because the oil from these properties is being transferred to the SPR. The results of such a study could be useful, should MMS continue the Gulf of Mexico oil pilots in the future.

6. MMS supplied us with the estimated loss of about $3 million on the aggregation contracts. We calculated that transportation was worth about $13 million on the basis of transportation costs and volumes supplied by MMS. MMS reported that the total value of royalty payments on the aggregated gas was about $363 million.

7. Our assessment that MMS has difficulty obtaining royalty information from its financial system is based largely on MMS personnel, who have used these data to estimate the revenue impacts of RIK sales and told us that they could not use these data without first performing time-consuming checks for accuracy and reasonableness. At our request, these personnel supplied us with royalty data from nine Wyoming oil properties that we estimate accounted for about 50 percent of the oil sold during the Wyoming pilots. Although we did not find widespread systemic problems with this small data set, we confirmed that a small amount of missing, incomplete, and inaccurate data, in addition to numerous modifications of data entries by payors (adjustments), precluded using these data for calculating revenue impacts without first inspecting these data for accuracy and reasonableness. We confirmed that the manual inspection of these data was time-consuming. In addition, MMS personnel told us that RIK gas data are not entered into the system at the lease level, and we believe this will complicate comparing RIK revenues with cash royalty payments.

# Appendix II: Objectives, Scope, and Methodology

In this report, we discuss (1) the extent to which the Minerals Management Service has taken federal royalties in kind since 1995 and the reasons for doing so and (2) the status of MMS's efforts to implement management controls for its RIK program.

To determine the extent to which and the purposes for which MMS has taken RIK since 1995, we reviewed legislative directives concerning RIK in the Mineral Leasing Act of 1920, the Outer Continental Shelf Lands Act of 1953, and the Appropriations Acts for the Interior and Related Agencies for fiscal years 1995 though 2002. We also reviewed presidential directives for using federal royalty oil to fill the SPR. We reviewed prior reports and other documentation on the Small Refiners Program, the SPR, and the RIK pilots in Wyoming and the Gulf of Mexico. We then asked MMS personnel to supply data on the amount and values of federal royalty oil and gas taken in kind and of total oil and gas royalties from January 1995 through July 2002. Although MMS personnel within the RIK Program could supply data on RIK revenues and volumes taken in kind during this time period, they could not supply data on total royalty revenues and the total amount of oil and gas produced on federal lands that were more current than September 2001. We did not review the accuracy of these figures.

To review the status of MMS's efforts to implement management control over its RIK Program, we reviewed the Federal Managers' Financial Integrity Act of 1982, the standards for management control that we issued entitled *Standards for Internal Control in the Federal Government* (GAO/AIMD-00-21.3.1, November 1999), and the implementation guidance issued by the Office of Management and Budget in OMB Circular A-123. We also reviewed our tool for assessing an agency's management controls entitled *Internal Control Management and Evaluation Tool* (GAO-01-1008G, August 2001) and our guide for assessing an agency's strategic plan entitled *Agencies' Strategic Plans Under GPRA: Key Questions to Facilitate Congressional Review* (GAO/GGD-10.1.16, May 1997). *Standards for Internal Control in the Federal Government* establishes the criteria that agencies must meet in developing and maintaining management control, which is not one event but a series of actions and activities that occur throughout an agency's operations on an ongoing basis. Our review focused on MMS's efforts to address risks that could affect the RIK Program and on some management control activities that we identified as being critical to MMS's implementation and management of the program. These management control activities are (1) developing strategic objectives, (2) linking performance measures to these objectives, (3) obtaining the necessary data for making management decisions and for monitoring and evaluating the RIK Program, and (4) developing written procedures and documenting compliance with these procedures. We assessed MMS's efforts to establish these management control activities by reviewing relevant documentation and interviewing MMS personnel.

We reviewed MMS's efforts to mitigate the risks associated with differences in the properties that produce federal oil and gas, fluctuating oil and gas prices, disruptions in production, and credit worthiness. In assessing strategic objectives and linked performance measures, we reviewed these objectives and measures for their results-orientation, clarity, specificity, ability to be expressed quantitatively or in a measurable form, and consistency with congressional directives. In reviewing the availability of key data for management decisions and monitoring and evaluating the RIK Program, we assessed the extent to which MMS had determined the revenue impacts of all RIK sales, the administrative cost of operating the RIK Program relative to collecting cash royalties, and the expected savings from avoiding litigation and appeals and simplifying auditing. We also examined whether MMS had compared revenue impacts from each RIK sale with expected revenues from traditional cash royalty payments or other benchmarks and assessed whether MMS had collected monthly RIK revenues and sales volumes for monitoring purposes. In reviewing MMS's efforts to develop written procedures, we determined if written procedures existed as of January 1, 2002, for conducting sales activities, collecting revenues, and reporting on these revenues. We determined major sales activities to be the selection of properties from which to sell RIK, the announcement of the sale, the calculation of a minimum acceptable bid, the evaluation of bids, and the determination of the winning bidders. For each sale completed as of October 2002, we also reviewed whether MMS documented these major activities. However, we did not assess the adequacy of written procedures to collect and report on revenues, nor did we assess MMS's compliance with these procedures. Because at the time of our review, MMS had not implemented an automated system to support the RIK Program, we reviewed its current manual system and its efforts to acquire automated systems.

# Appendix III: GAO Contacts and Staff Acknowledgments

## GAO Contacts

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## Acknowledgments

In addition to those named above, Letha Angelo, Ronald Belak, Robert Crystal, Cynthia Norris, Frank Rusco, Dawn Shorey, Jamelyn Smith, and Maria Vargas made key contributions to this report.

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