



## REPORT TO CONGRESS

### MINERALS MANAGEMENT SERVICE ROYALTY IN KIND PROGRAM

FISCAL YEAR 2008

ENERGY POLICY ACT OF 2005 - SECTION 342

**MMS** U.S. Department of the Interior  
Minerals Management Service

# **REPORT TO CONGRESS**

## **MINERALS MANAGEMENT SERVICE ROYALTY IN KIND PROGRAM**

### **FISCAL YEAR 2008 ENERGY POLICY ACT OF 2005 - SECTION 342**

**SEPTEMBER 2009**

Cover photos clockwise from top left:  
Thunder Horse Floating Platform, courtesy of BP  
Natural gas flame, courtesy of the U.S. Department of Energy  
Drilling Rig  
Oil Refinery

# TABLE OF CONTENTS

## EXECUTIVE SUMMARY

<b>1. BACKGROUND .....</b>	<b>1</b>
<b>2. RIK BUSINESS MODEL/ORGANIZATION .....</b>	<b>4</b>
<b>3. RIK PERFORMANCE METRICS .....</b>	<b>10</b>
3.1 Administrative Cost Performance .....	10
3.2 Time Value of Money .....	12
3.3 Revenue Performance .....	13
<b>4. RIK NATURAL GAS PROGRAM .....</b>	<b>15</b>
4.1 Gulf of Mexico RIK Natural Gas Program .....	17
4.2 Onshore RIK Natural Gas Program .....	17
<b>5. RIK CRUDE OIL PROGRAM .....</b>	<b>19</b>
5.1 Conversions/Reversions of Leases from RIV to RIK in FY 2008 .....	20
5.2 Unrestricted Oil Program .....	20
5.3 Small Refiner Program .....	21
5.4 Strategic Petroleum Reserve Program .....	22
5.5 SPR Converted to Unrestricted Oil Program .....	23
<b>6. ENERGY POLICY ACT OF 2005 REPORT REQUIREMENTS .....</b>	<b>23</b>
<b>7. CONCLUSIONS AND PREVIEW OF FY 2009 .....</b>	<b>26</b>

## APPENDIX A

## APPENDIX B

## APPENDIX C

## APPENDIX D

# EXECUTIVE SUMMARY

## OVERVIEW

The Fiscal Year (FY) 2008 Report to Congress fulfills the annual requirement under section 342 (e)(2) of the Energy Policy Act of 2005 that the Secretary of the Interior submit to Congress a report that describes the performance, benefits, and savings associated with the Minerals Management Service (MMS) Royalty in Kind (RIK) Program. This report also serves as the annual update for other program stakeholders, detailing the history, current status, operational condition, and the successes of MMS RIK Program over the past year and longer-term.

Through the RIK Program, MMS takes royalties on crude oil and natural gas production in amount, or “in kind,” from the Federal lessee rather than via a cash payment, or “in value,” method. MMS then sells that crude oil or natural gas production competitively on the open market. Through the competitive sales process, the RIK Program can increase the return on the American taxpayers’ crude oil and natural gas royalty assets. The RIK Program accomplishes this by:

1. Improving government efficiencies
2. Reducing administrative costs
3. Providing a fair market return on the royalty assets of the American taxpayers, typically reflected in increased revenues over the in-value method

FY 2008 marks the eleventh anniversary of the first formal evaluation of the RIK concept. In FY 2008, no significant volumes were added to either the Natural Gas or Oil Programs. However, the MMS-Department of Energy Joint Program to fill the remaining capacity of the Strategic Petroleum Reserve (SPR) was suspended in June 2008, adding significant volumes to the Unrestricted Oil Sales Program.

Depending on market conditions and program staffing, the RIK Program provides several economic benefits for the American public:

### 1. **LOWER ADMINISTRATIVE COSTS**

The program reduces administrative costs by reducing the number of costly reviews, audits, and disputes over payment.

### 2. **TIME VALUE OF MONEY**

Additional benefits accrue to the Federal government due to earlier receipt of royalty payments under the RIK Program (RIK sales contracts require earlier payments than in-value royalties).

### 3. INCREASED REVENUE

The Federal government receives increased royalty receipts by obtaining higher sales values through sales of RIK production in higher-priced markets and by paying lower operational costs for transporting and processing RIK production.

Depending on various assumptions regarding markets and administrative costs, during FY 2008, the RIK Program generated benefits estimated at \$106 million.

<b>Total Benefits of RIK Program - FY 2008</b>			
	<b>Crude Oil</b>	<b>Natural Gas</b>	<b>Total</b>
<b>ADMINISTRATIVE COST SAVINGS</b>	\$1,810,000	\$3,410,000	\$5,220,000
<b>TIME VALUE OF MONEY BENEFIT</b>	\$2,150,000	\$922,000	\$3,070,000
<b>REVENUE PERFORMANCE<sup>1</sup></b>	<u>\$19,100,000</u>	<u>\$78,600,000</u>	<u>\$97,700,000</u>
<b>TOTAL BENEFITS</b>	<b>\$23,100,000</b>	<b>\$82,900,000</b>	<b>\$106,000,000</b>

**NOTE:** Totals in this and other tables may not add due to rounding.

The range of the RIK Program's estimated benefits, established by using different marketing assumptions, is from a low of \$81 million to a high of \$172 million. Appendix C provides the details behind this range, including changes made to the various marketing assumptions.

As Appendix C makes clear, the figures stated in this report are estimates based on a model that incorporates a series of assumptions. This year's report looks a little different from previous reports, as we have acknowledged the aforementioned uncertainty by rounding off the associated calculations and illustrating the different conclusions that might be reached by varying the assumptions.

On September 16, 2009, Secretary of the Interior Ken Salazar announced that MMS would begin the orderly termination of the RIK Program. No further RIK sales will be held; however, because MMS has existing arrangements to receive royalties in kind and sell the associated oil and gas through September 2010, MMS will prepare two more RIK Annual Reports to Congress – FY 2009 and FY 2010.

## BACKGROUND

The current version of the RIK Program began as a pilot program in 1998, in partnership with the State of Wyoming, involving crude oil. Also, that year, MMS collaborated with the Texas General Land Office to sell natural gas in the Gulf of Mexico. The program quickly expanded to include sales to Federal government facilities through the General Services Administration in 1999 and broader sales of crude oil and natural gas in the Gulf of Mexico in 2000. The program transitioned into a permanent program with the approval and

---

<sup>1</sup> As noted in Section 3.3 Revenue Performance, rising oil prices in FY 2008 made this benefit far larger than in previous years; dropping prices in FY 2009 may yield a reduction of a similar order of magnitude. Additional Revenue Performance information is provided in Appendix A.

publication of the Five Year Royalty in Kind Business Plan in 2004, following an independent review and analysis by the Lukens Energy Group verifying the program's viability.

## **PROCESS AND POLICY IMPROVEMENTS**

MMS recently implemented many improvements to processes and policies within the RIK Program. These improvements resulted from recommendations made in both internal and external reviews of RIK and include the following:

- Enhanced ethics program and specific training for RIK employees
- Clarified strict code of conduct for all MMS employees
- Modified reporting structure for RIK
- Strengthened coordination with MMS Contracting Office and the Minerals Revenue Management (MRM) Audit and Compliance organization
- Enhanced revenue performance metrics
- New verification of gross production volume procedures
- Addition of an attorney dedicated to RIK in the Office of the Solicitor

## **FY 2008 PROGRAM CHANGES**

A major program change occurred in FY 2008 when a November 7, 2007, memorandum from the Department of Interior's Associate Solicitor for Mineral Resources concluded that MMS's arranging for transportation of RIK oil or gas and processing of RIK gas is subject to the Federal Acquisition Regulations (FAR) at 48 CFR parts 1-53. In FY 2008, MMS began developing processes and procedures to make transportation and processing contracts FAR compliant. MMS also began transporting natural gas on the Rockies Express Pipeline, delivering natural gas to the mid-continent to diversify the Wyoming RIK sales portfolio.

## **REVENUE PERFORMANCE**

MMS measures the financial success and economic benefits of the RIK Program by comparing RIK sales receipts to a fair market value (FMV) benchmark range. The FMV methodology<sup>2</sup> was devised in collaboration with an independent energy consulting firm, Lukens Energy Group. The FMV benchmark is an approximation of what the average third-party may have sold the same production for and is an estimate of what MMS would expect to see, on average, through RIV. The following are the revenue performance results in FY 2008 for RIK natural gas sales in the Gulf of Mexico (GOM) and Wyoming, and RIK crude oil sales in the Outer Continental Shelf (OCS).

---

<sup>2</sup> Appendix B provides a detailed explanation of this FMV methodology, including the underlying principles that drove its development.

## **RIK NATURAL GAS PROGRAM**

In FY 2008, MMS did not add any new packages of natural gas to RIK but did remove, or convert to RIV, two GOM packages. A package of natural gas consists of properties connected to the same pipeline system. MMS removed these packages because the production volumes had dropped to a level below which there was no longer a benefit to the Federal Government from taking the royalties in kind.

Overall estimated revenue gains for the remaining 24 GOM natural gas packages in FY 2008 were more than \$34 million. The Wyoming RIK natural gas program remained steady at three packages during FY 2008 and saw estimated revenue gains of \$44 million. These estimated revenue gains are unprecedented in the RIK program's history and can be traced primarily to increased revenues from more-favorable processing contracts when compared to industry standards and the unprecedented rise in commodity prices. MMS also saw estimated revenue gains attributable to lower costs paid for transportation services, sales in higher-priced markets, and premiums received over index prices. MMS does not expect to see this level of estimated revenue gains in FY 2009 because of market changes and lower commodity prices.

## **RIK CRUDE OIL PROGRAM**

The RIK Crude Oil Program consists of three main sub-programs, which are as follows:

- The Unrestricted Program (GOM and Pacific)
- The Small Refiner Program
- The Strategic Petroleum Reserve Program (SPR)

In FY 2008, the Unrestricted and Small Refiner Programs realized estimated revenue gains above FMV of more than \$19 million, a gain similar to the previous year. These estimated gains are primarily attributable to:

1. RIK benefiting from crude oil price increases during the first nine months of FY 2008, because RIK crude oil sales contracts use "calendar month" pricing instead of earlier "trade month" pricing used in some industry sales contracts.
2. RIK obtaining premiums from purchasers on certain crude packages for which the purchaser entered into lucrative downstream financial transactions and passed on a portion of those benefits to RIK.

Considering market changes already witnessed in FY 2009, these estimated gains may not be repeated in the next fiscal year.

MMS also provides crude oil to the Department of Energy (DOE) for SPR fill to strengthen national security. In FY 2008, the RIK Program delivered more than 16.2 million barrels of crude oil to the DOE.

## **RIK BEYOND FY 2008**

In FY 2009, as part of the FY 2009 strategic reorganization of MRM, the RIK program has been integrated into the new “Asset Management” program. Asset Management is responsible for administering the MRM’s oil and gas sales and asset valuation business processes. The Asset Management program will continue to implement those RIK-related recommendations made by internal and external review groups, such as the Government Accountability Office, Office of Inspector General, and the Royalty Policy Committee, that impact the orderly termination of the RIK Program.



# MINERALS MANAGEMENT SERVICE MINERALS REVENUE MANAGEMENT ROYALTY IN KIND PROGRAM FY 2008 REPORT AUGUST 2009

---

## 1. BACKGROUND



The Minerals Management Service (MMS) is the Federal agency that collects, accounts for, and disburses over \$13 billion per year, on average, in revenues from Federal offshore mineral leases and from onshore mineral leases located on Federal and Indian lands.

Historically, the recipients of these revenues include the U.S. Treasury, other Federal agencies, 38 states, 41 Indian tribes, and over 30,000 individual Indian mineral owners. Most of these revenues have

historically been received in the form of cash payments, referred to as royalty in value (RIV) payments. Through the Royalty in Kind (RIK) Program, MMS takes Federal royalties in kind, in the form of product, and competitively sells the crude oil or natural gas on the open marketplace. Under certain conditions, the RIK Program improves government efficiencies, reduces administrative costs, and provides a fair market return on the public's royalty assets.

The Outer Continental Shelf Lands Act of 1953, as amended, and the Mineral Leasing Act of 1920, as amended, authorize the collection of production royalties either in value or in kind for Federal lands leased for development on the Outer Continental Shelf (OCS) and onshore. Furthermore, the terms of almost all Federal oil and gas leases provide for royalties to be paid in value or in kind at the discretion of the lessor. In the mid-1990's, MMS began exploring the potential for a broadly applied RIK Program. Several pilot projects tested this approach under a variety of conditions for crude oil and natural gas, as well as for onshore and offshore production volumes. MMS concluded that RIK is a viable approach to be used in tandem with royalty in value in managing Federal oil and gas royalty assets. The MMS asset management strategy includes the selective and strategic use of both RIK and RIV based on systematic economic analysis of the Federal oil and gas portfolio.

Fiscal Year (FY) 2008 marks the eleventh anniversary of the first formal evaluation of taking Federal oil and gas royalties in kind. This Annual Report to Congress details the results and achievements of the MMS RIK Program during FY 2008 (October 1, 2007, through September 30, 2008). This report also provides a brief history of the RIK Program and performance results from past years as a comparison to FY 2008.

## 1.1 ENERGY POLICY ACT OF 2005 REQUIREMENTS

This report covers the information required by section 342 (e)(2) of the Energy Policy Act of 2005 (EPAct). The EPAct requires that, for each of Fiscal Years 2006-2015 in which the United States takes oil or gas royalties in kind from production in any state or from the OCS, excluding royalties taken in kind and sold as part of the small refiner program, the Secretary shall submit to Congress a report that describes the following:

1. The one or more methodologies used by the Secretary to determine that royalties taken in kind provide benefits that are greater than or equal to the benefits that likely would have been received had royalties been taken in value, including the performance standard for comparing amounts received by the United States derived from royalties in kind to amounts likely to have been received had royalties been taken in value
2. An explanation of the evaluation that led the Secretary to take royalties in kind from a lease or group of leases, including the expected revenue effect of taking royalties in kind
3. Actual amounts received by the United States derived from taking royalties in kind and costs and savings incurred by the United States associated with taking royalties in kind, including administrative costs savings and any new or increased administrative costs
4. An evaluation of other relevant public benefits or detriments associated with taking royalties in kind

This required information is contained within this report. Please see Section 6 for a summary of the information.

## 1.2 RIK PILOT PROJECTS

In 1998, MMS and the State of Wyoming collaborated on the first major RIK pilot project. The first competitive sale was for a 6-month term beginning in October 1998 involving only crude oil from Federal leases in the state. Subsequent sales included volumes of over 6,000 barrels per day and included production from state leases, as well. This pilot demonstrated that the RIK approach was viable, reduced the period of value uncertainty from years to months, increased royalty receipts, and yielded administrative savings to MMS and to industry. The Wyoming Crude Oil Program was discontinued in April 2006 due to low production volumes and changing market conditions.



Also in 1998, MMS partnered with the Texas General Land Office (GLO) on another RIK project. This project involved natural gas production from Federal leases in the Texas 8(g) zone of the Gulf of Mexico. The 8(g) zone refers to the area within three miles seaward of

state waters, where 27 percent of lease revenues are shared with the coastal state. This pilot also had a goal to learn from the GLO's longstanding RIK Program. This project concluded that the RIK strategy is viable for natural gas royalties and can lead to modest increases in revenue. It also concluded that RIK could yield administrative savings for MMS and industry, as in the Wyoming crude oil pilot. This pilot was later incorporated into a broad Gulf of Mexico pilot.

In 1999, MMS and the General Services Administration (GSA) entered into an agreement to take natural gas in kind from Federal leases for use in GSA facilities. The pilot involved a series of exchange transactions from December 1999 through March 2001. This pilot demonstrated the need for MMS to seek authority to enter into and pay for transportation contracts in order to successfully manage RIK volumes. This authority was subsequently sought and granted by Congress in FY 2001.

MMS initiated sales under a Gulf of Mexico RIK Natural Gas Pilot in April 2000. This pilot involved the sale of approximately 500,000 million British thermal units (MMBtu) per day of RIK natural gas transported on nine pipeline systems in the Gulf of Mexico. This pilot allowed MMS to refine specific strategies and processes for selling RIK natural gas. Specific areas of focus included managing volumes, gas imbalances, and gas processing rights. The pilot provided an important base of market knowledge needed for the development of a defined business model for future RIK operations.

The Gulf of Mexico RIK Crude Oil Pilot began in August 2000. It involved two competitive sales of RIK crude oil from Federal leases in the Gulf of Mexico of approximately 60,000 barrels per day. It provided MMS staff with important insights into crude oil markets, pipeline infrastructure, and competitive sales processes. In November 2001, the pilot ended to respond to a Presidential Directive to use RIK oil in filling the Department of Energy's Strategic Petroleum Reserve (SPR).

Although not a pilot project, the Small Refiner Program benefited from a number of improvements generated from the pilot programs. MMS and its predecessor agency, the United States Geological Survey, have operated a Small Refiner Program for many years selling RIK crude oil to qualified small refiners.

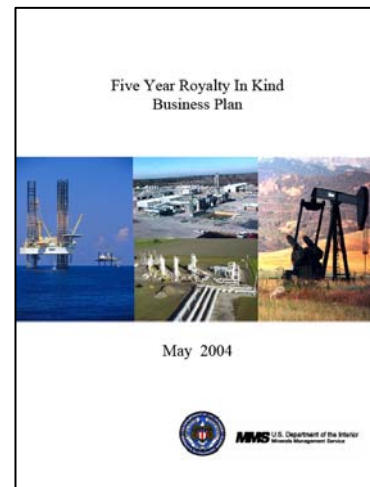
### **1.3 TRANSITION FROM PILOT TO PERMANENT PROGRAM**

The pilot projects advanced MMS's knowledge of the oil and gas markets and provided experience in using commercial approaches to sell production. The pilots provided MMS with an in-depth understanding of the implications of using the RIK approach. These implications led MMS to establish a risk policy, operational processes, recordkeeping requirements, analytical techniques, credit monitoring, and contracting strategies, among

others. Most importantly, the pilots confirmed the viability of the RIK approach and its use in tandem with the RIV approach.

In January 2001, MMS management decided to proceed with the development of a permanent RIK operational activity. *The Road Map to the Future: Implementing Royalty in Kind Business Processes and Support Systems* (Road Map) set forth the strategic direction for the development of the RIK process and the resources needed to effectively manage and support ongoing RIK operations. MMS developed and implemented core operational processes and expanded the pilot operations.

In January 2003, MMS engaged the Lukens Energy Group to evaluate the capabilities and performance of the RIK Program. The Lukens Energy Group recommended improvements in several areas prior to any significant expansion of the RIK Program. These improvements included performance measurement, quantitative economic analysis, and the enhancement of complex marketing and sales strategies. With the input from the Lukens Energy Group, MMS published the *Five Year Royalty in Kind Business Plan* (Five Year Plan) to guide RIK business through 2009. This marked the transition of the RIK Program from pilot projects to a permanent RIK Program.



## 2. THE RIK PROGRAM

### 2.1 BUSINESS MODEL

The RIK Program's business model and core operational procedures were developed in the Road Map and in the expanded pilot operations. The business model was designed according to statutory authorities and positions MMS as a conservative, market price-taking seller of energy commodities into the wholesale, upstream market. The business model features the use of the following:

- Competitive sales based on upstream physical spot markets
- Competitively based transportation and processing contracts
- No fixed price, financial derivatives, or storage positions
- Conservative credit risk assessments

In addition to the core RIK business model, the Five Year Plan laid out a set of guiding business principles for the RIK Program.

The RIK business principles are as follows:

- Meet or exceed revenue benchmarks, using a portfolio approach, established in accordance with statute
- Maximize net revenue for RIK volumes consistent with the business model
- Continue to focus on the Gulf of Mexico as a strategic core area, and work with producing states to identify/develop onshore opportunities
- Efficiently manage administrative costs of the RIK Program
- Maintain flexibility in responding to the nation's strategic energy initiatives
- Maintain the highest ethical and professional standards

## **2.2 FIVE YEAR BUSINESS PLAN GOALS**

The Five Year Plan set out a number of measurable objectives and efficiency goals for the RIK Program, including the following:

- Realize maximum benefits by optimizing RIK volumes as follows:
  - RIK Natural Gas – initial goal to grow to 1.3 billion cubic feet per day in FY 2009 (revised to 825 million cubic feet per day)
  - RIK Crude Oil – maintain static volumes of up to 190,000 barrels per day through FY 2009
- Enhance net revenue by \$50 million over 5 years (revised to \$125 million)
- Develop a high-quality marketing portfolio by diversification as follows:
  - Customers: Increase sales to utilities/industrials to 20 percent of all natural gas sales
  - Contracts: Increase non-seasonal sales for 35 percent of all natural gas sales

The goal to increase net revenue has been revised since the Five Year Plan was published. In order to take into account the administrative cost savings and the time value of money benefit, the initial \$50 million goal was first increased to \$67.5 million. After reaching \$67.1 million at the end of FY 2006, the goal was increased to \$125 million. In addition, at the beginning of FY 2008, MMS revised the natural gas volume goals set forth in the Five Year Plan due to production declines, royalty relief issues, and other priorities.

## **2.3 CREDIT POLICY**

A sound credit policy is central to the success of the RIK Program. The credit policy, completed in June 2005, responds to credit risks inherent in energy commodity sales. The policy provides guidance and direction for counterparty credit evaluation, requirements for

secured versus unsecured credit lines, provision of credit assurance, contract termination, and emergency procedures.

## **2.4 RISK MANAGEMENT POLICY**

Policy oversight plays a large role in the risk management policies of the RIK Program. The Chief Risk Officer manages the oversight activities and reports directly to the Minerals Revenue Management Associate Director and the MRM Executive Team. The RIK Program also has risk management policies and procedures to implement key internal controls. The *Royalty in Kind Risk Management Policy* (Policy) outlines the principles and policies that drive risk management decisions and guide day-to-day RIK operations. The *Risk Management Procedures Manual* (Procedures) outlines the specific actions necessary to implement the policy.

The Policy provides a framework as follows:

- Balance risk management and operational flexibility
- Mitigate exposure to and results of undesirable outcomes
- Assign responsibilities and accountability for risk management
- Monitor and report on risk exposures

The Procedures are as follows:

- Delegate authorities for transacting sales, accounting, invoicing, collecting debt, and monitoring and reporting
- Provide clear and detailed guidance on sales and transactions allowed, those requiring further approval, and those that are prohibited
- Outline monitoring and reporting responsibilities
- Require an attestation of compliance with risk management policies

## **2.5 PARTNERS**

The RIK Program works with a number of different Federal agency and state partners to accomplish its mission. These partners are critical to the success of the RIK Program. The RIK Program currently partners, or has partnered with, the following organizations:

- Department of Energy (DOE) in the joint effort to fill the remaining capacity of the SPR
- The State of Wyoming on crude oil sales from both Federal and state leases and natural gas sales from Federal leases
- The States of Texas, Louisiana, and Alabama on natural gas and/or crude oil in 8(g) zones offshore

- The Bureau of Land Management (BLM) on sales of natural gas produced from the National Helium Reserve as the reserve is decommissioned

## **2.6 MRM/RIK REORGANIZATION**

The RIK Program will change with the FY 2009 strategic reorganization of MRM when the RIK program is integrated into the “Asset Management” Program. This reorganization is in response to MRM’s own Strategic Business Plans and recommendations received from MRM employees, Government Accountability Office (GAO), Royalty Policy Committee (RPC), and Office of Inspector General (OIG) reviews. The RIK Program’s focus will be as a royalty asset option and not a stand-alone program. While RIK will retain most of the same responsibilities, duties and skill sets as in the current organization, the program will utilize these abilities as part of the larger Asset Management Program. The integration of RIK into the Asset Management Program will provide MMS with the flexibility to conduct the orderly termination of the RIK Program

## **2.7 RIK PROGRAM REVIEWS AND RECOMMENDATIONS**

Since 2003, MRM has received 85 recommendations related to RIK resulting from internal and external audits from groups such as the GAO, the OIG, and the RPC. As of January 2009, the MRM has closed 47 of the 85 recommendations.

In March 2007, the RPC Subcommittee on Royalty Management (Subcommittee) was appointed by the Secretary of the Interior to conduct an independent prospective examination of MMS’s MRM program, including a review of the RIK Program. The Subcommittee’s report was published in December 2007<sup>3</sup>. The review of the RIK Program confirmed that there are clear advantages to the RIK approach. The Subcommittee recommended increasing the transparency of the RIK processes and provided a number of recommendations regarding challenges that the RIK Program needed to address in the following six areas:

- Growth of the RIK Program
- Market position, organizational structure, and incentives
- The RIK Crude Oil Program
- Personnel breadth and depth
- Performance measures
- RIK auction procedures

---

<sup>3</sup> Report to the Royalty Policy Committee, Mineral Revenue Collection from Federal and Indian Lands and the Outer Continental Shelf, Submitted by the Subcommittee on Royalty Management, December 17, 2007.

The Subcommittee presented 31 separate recommendations regarding the RIK Program. The Department created an action plan to address the recommendations. As of May 2009, 19 of the RIK recommendations were closed. Two additional recommendations will be closed upon the publication of this report.

In September 2008, the GAO issued a report titled “Oil and Gas Royalties: MMS’s Oversight of its Royalty-in-Kind (RIK) Program Can Be Improved through Additional Use of Production Verification Data and Enhanced Reporting of Financial Benefits and Costs” (GAO-08-942R). The report addressed five areas of concern regarding the RIK Program. The GAO stated the following:

1. MMS’s RIK program does not extend the same production verification processes used by its oil program to its gas program, and, as a result, MMS does not have the same level of assurance that it is collecting the gas royalties it is owed.
2. MMS has not calculated, or reported to the Congress, the uncertainties surrounding the benefits of taking royalties in kind, which can be significant.
3. MMS may be overstating or understating the value of early RIK payments due to assumptions on when in-value payments are received and the interest rate used.
4. MMS’s calculation of the administrative cost savings did not include some fixed costs that were not incurred on a regular or predictable basis.
5. The annual reports do not provide information on individual oil sales.

In response, MMS has completed the following:

1. Improved its procedures with regard to the verification of gross production volumes; this improvement took into account GAO’s recommendation to use data from the gas verification system when verifying gross production volumes<sup>4</sup>
2. Calculated and reported its revenue performance as a range of values, taking into account the uncertainties surrounding the benefits of taking royalties in kind<sup>5</sup>
3. Used the Federal Funds Rate to compute its time value of money for early payments<sup>6</sup> and assumed that both RIK and RIV payments are made on time<sup>7</sup>
4. Disclosed RIK-specific costs associated with information technology<sup>8</sup>

---

<sup>4</sup> Implemented in FY 2009.

<sup>5</sup> See Appendix C for performance as a range of values.

<sup>6</sup> See Section 3.2 for Time Value of Money calculation.

<sup>7</sup> Researching actual payment dates is not cost-effective because payments are timely received by both RIV and RIK a large percentage of the time.

<sup>8</sup> See Section 3.1 for Administrative Costs.



5. Reported the number of oil properties that had positive revenue performance and those that did not<sup>9</sup>

In May 2008, the OIG issued an evaluation report on the RIK Oil Sales Process (C-EU-MMS-0001-2008). The OIG noted that MMS has taken some important and necessary steps to enhance the overall performance and effectiveness of the RIK Program and has responded positively to recommendations contained in the RPC Report. The report made six recommendations, which included the following:

1. Develop a comprehensive operations manual for the Crude Oil Front Office
2. Obtain legal review of all existing contract documents
3. Develop guidelines for oil sales contracting
4. Address staffing needs, position qualifications, and training
5. Implement a pilot project to evaluate the viability of other sales methods
6. Use longer-term oil sales contracts

MMS has implemented recommendations 1, 3, 4, and 6. MMS is in the process of implementing recommendations 2 and 5.

Additionally, in September 2008, the OIG released an investigative report entitled “MMS Oil Marketing Group” containing four recommendations. In response, MMS has taken appropriate administrative corrective actions, enhanced its ethics program and provided specific ethics training to RIK employees, developed a clear, strict code of conduct for all MMS employees, and modified the reporting structure for RIK.

## **2.8 PROCESS AND POLICY IMPROVEMENTS**

In addition to the improvements to processes and policies within the RIK Program mentioned above, the Department has also implemented the following improvements:

- Strengthened coordination with the MMS Contracting Office and with the MRM Compliance function
- Added an attorney dedicated to RIK in the Office of the Regional Solicitor

## **2.9 FY 2008 PROGRAM CHANGES**

A major program change occurred in FY 2008 when a November 7, 2007, memorandum from the Department of Interior’s Associate Solicitor for Mineral Resources concluded that MMS’s arranging for transportation of RIK oil or gas and processing of RIK gas is subject to the Federal Acquisitions Regulations (FAR) at 48 CFR parts 1-53.

---

<sup>9</sup> See Appendix D for Oil Performance Detail.

In FY 2008, MMS began developing processes and procedures to make existing and new transportation and processing contracts FAR compliant. MMS also entered into a firm transportation agreement with the Rockies Express Pipeline to transport natural gas to the mid-continent to diversify the Wyoming RIK sales portfolio.

### 3. RIK PERFORMANCE METRICS

The Outer Continental Shelf Lands Act mandates that MMS receive at least fair market value when production is sold in kind. The potential benefits of using the RIK strategy include the following:

- Lower administrative costs
- Time value of money benefit
- Increased royalty revenues

Within the RIK Program, the Economic Analysis Office (EAO) is a separate, independent group that measures and reports performance. The EAO staff computes performance on a semi-annual basis with performance results reported to the public annually. MMS estimates that, in FY 2008, the total value of the benefits of the RIK Program was \$106 million, a substantial increase over previous years, primarily attributable to the unprecedented rise in commodity prices. Table 3.1 presents the RIK performance history since FY 2004.

<b>TOTAL BENEFITS OF RIK PROGRAM</b>					
	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>FY 2008</b>
<b>ADMINISTRATIVE SAVINGS</b>	\$1,447,051	\$3,725,372	\$2,368,227	\$3,553,392	\$5,220,000
<b>TIME VALUE OF MONEY</b>	\$892,875	\$1,528,550	\$2,633,470	\$3,089,072	\$3,070,000
<b>REVENUE PERFORMANCE</b>	\$17,242,415	\$30,790,482	\$26,254,845	\$56,534,729	\$97,700,000
<b>Total Benefits</b>	<b>\$19,582,341</b>	<b>\$36,044,404</b>	<b>\$31,256,542</b>	<b>\$63,177,192</b>	<b>\$106,000,000</b>

Table 3.1

The range of the RIK Program’s estimated benefits, established by using different marketing assumptions, is from a low of \$81 million to a high of \$172 million<sup>10</sup>.

#### 3.1 ADMINISTRATIVE COST PERFORMANCE

MMS performs an annual comprehensive comparative cost analysis between administering the RIK and the RIV Programs. In the RIV Program, MMS is required to validate the value and the transportation and processing costs associated with the sales and movement of

<sup>10</sup> MMS has rounded all FY 2008 revenue performance numbers because they are now presented as a range and to emphasize that these figures represent estimates.

Federal royalty production. These requirements can be very labor-intensive due to the complexity of the business practices surrounding hundreds of mineral lessees' application of valuation regulations defining royalty payment standards and of the Generally Accepted Government Auditing Standards in conducting audits.

Royalties taken in kind through the RIK Program are sold under explicit commercial contract terms. These standard industry contracts provide a level of transparency in the valuation and transportation of royalties taken in kind that typically lead to a more-efficient process with decreased conflicts and costs. These differences equate to a potential cost savings through taking royalties in kind versus in value.

FY 2008 was the fifth year in which MMS performed this analysis. Both RIK and RIV increased their administrative costs per barrel of oil equivalent (BOE)<sup>11</sup> in FY 2008<sup>12</sup>, due, in part, to hurricane damage that reduced both RIK and RIV BOE volumes. Table 3.2 presents the historical Administrative Cost analysis.

<b>ADMINISTRATIVE COST</b>					
	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>	<b><u>FY 2006</u></b>	<b><u>FY 2007</u></b>	<b><u>FY 2008</u></b>
<b>ROYALTY IN KIND COST PER BOE</b>	\$0.056	\$0.059	\$0.076	\$0.071	\$0.083
<b>ROYALTY IN VALUE COST PER BOE</b>	\$0.073	\$0.102	\$0.108	\$0.114	\$0.156
<b>COST PER BOE DIFFERENCE</b>	\$0.017	\$0.043	\$0.033	\$0.043	\$0.073
<b>RIK Revenue Gain/(Loss)</b>	\$1,447,051	\$3,725,372	\$2,368,227	\$3,553,392	\$5,220,000

**Table 3.2**

The increased efficiency due to the RIK Program translates into an estimated cost savings of \$5.22 million for FY 2008. Meaning, that if offshore volumes allocated to the RIK Program were instead taken in value, MMS would have accrued an additional cost of \$5.22 million<sup>13</sup>.

As part of the administrative cost analysis, MMS examines the number of appeals in the RIK and RIV Programs. The MMS director received 206 administrative appeals in FY 2008, one of which was associated with the RIK Program. The number of appeals is a direct measurement of the potential for litigation and, thus, cost. Additionally, the time taken to close accounting periods in the RIK Program is significantly lower compared to the RIV business cycle of three years. For FY 2008, MMS reconciled 90 percent of RIK delivery volumes within 180 days of the month of production.

<sup>11</sup> The barrel of oil equivalent measure converts natural gas volumes into barrels by assuming 5.8 MMBtu of natural gas has the same heating content as one barrel of oil.

<sup>12</sup> RIV payments are audited 3 years after the production year so royalties paid in calendar year (CY) 2005 were audited during CY 2008. Therefore, the RIV costs use 2005 BOE RIV volumes as a basis for the cost per BOE.

<sup>13</sup> Administrative cost savings are only calculated for the offshore RIK volumes. Wyoming is the only state that has MMS royalties in kind and onshore RIV administrative costs are not tracked by state.

In response to a GAO recommendation, MMS now discloses some obligations associated with RIK-specific Information Technology (IT) systems. The RIK Program incurred direct IT obligations of \$2.6 million in FY 2008 out of total MRM IT obligations of \$24.3 million. Certain IT costs are driven by ongoing business operational needs and not by movement of volumes between RIV and RIK and, as such, are excluded from the Administrative Cost Analysis. These IT costs can include RIK and/or RIV computer system upgrades that are not incurred on a regular basis and the costs of IT systems shared by RIK and RIV.

### 3.2 TIME VALUE OF MONEY

Revenue Collection Time (RCT) is a measure of the number of days after each production month that MMS takes to collect outstanding receivables. Payments in the RIK Program are received on average five (natural gas) and 10 (crude oil) days before the end of the month following production, which gives RIK an RCT between 20 and 25 days. Conversely, RIV payments are due at the end of the month following the month of production, which gives RIV an RCT of 30 to 31 days.

The difference in RCT between RIK and RIV provides a time value of money (TVM) component. Because RIK payments are received earlier than they would have been received in RIV, EAO calculates and reports a TVM component. Historically, RIK used 3 percent to calculate the TVM. However, in response to a GAO recommendation, RIK is adopting the Federal Funds Effective Rate<sup>14</sup> as a more appropriate market-based interest rate used to determine the TVM for early RIK payments received in FY 2008. Table 3.3 presents the historical TVM calculation and a comparison of the two rates.

<b>RIK TIME VALUE OF MONEY BENEFIT</b>					
	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>FY 2008</b>
<b>INTEREST RATE USED FOR TVM</b>	3%	3%	3%	3%	2.92%
<b>FEDERAL FUNDS EFFECTIVE RATE</b>	1.1%	2.7%	4.6%	5.2%	2.92%
<b>TVM EARNED - OIL</b>	\$461,030	\$1,023,548	\$1,996,859	\$2,306,589	\$2,150,000
<b>TVM EARNED - GAS</b>	\$431,845	\$505,002	\$636,111	\$782,483	\$922,000
<b>TOTAL TVM EARNED - RIK</b>	\$892,875	\$1,528,550	\$2,633,470	\$3,089,072	\$3,070,000
<b>TOTAL TVM PER BOE</b>	\$0.010	\$0.026	\$0.035	\$0.034	\$0.042

Table 3.3

The TVM component provided an estimated revenue gain for the RIK Program of \$3.07 million, or 4.2 cents per BOE, in FY 2008.

<sup>14</sup> [http://www.federalreserve.gov/releases/h15/data/Monthly/H15\\_FF\\_O.txt](http://www.federalreserve.gov/releases/h15/data/Monthly/H15_FF_O.txt)

### 3.3 REVENUE PERFORMANCE

The RIK Program realizes higher royalty revenue than MMS would expect to earn through RIV. These higher revenues come from more-favorable natural gas processing and transportation contracts, increased competition, and aggregated production. The RIK Program has a well-defined process using economic modeling to measure and record overall RIK revenue performance. This detailed process was developed with the assistance of Lukens Energy Group. Although minor adjustments and modifications have altered the models in their 5-year application, the general approach and calculation process has not changed.

MMS computes a fair market value (FMV) benchmark for each sales package. This FMV benchmark is an approximation of what the average third-party may have sold the same production for and estimates what MMS would expect to see on average through RIV. The FMV benchmark recognizes the fair market value as a range for either crude oil or natural gas based, in part, on certain marketing assumptions and compares it to the RIK sales. Chart 3.1 and Table 3.4 display total RIK revenues and the corresponding estimated revenue gains for each year since FY 2004.

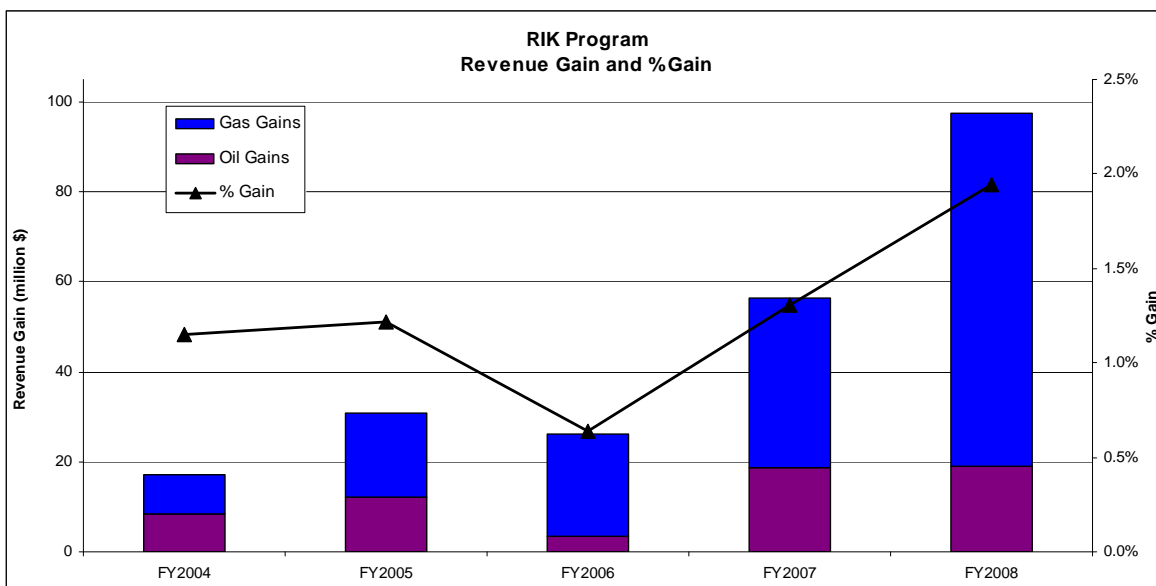


Chart 3.1

	<u>FY2004</u>	<u>FY2005</u>	<u>FY2006</u>	<u>FY2007</u>	<u>FY2008</u>
<b><u>TOTAL RIK REVENUE</u></b>					
<b>OIL</b>	\$579,025,456	\$1,263,075,756	\$2,665,248,146	\$2,498,530,659	\$2,669,451,462
<b>GAS</b>	\$923,909,425	\$1,265,625,121	\$1,450,733,883	\$1,829,363,142	\$2,342,461,208
<b>TOTAL</b>	\$1,502,934,881	\$2,528,700,877	\$4,115,982,029	\$4,327,893,801	\$5,011,912,670
<b><u>RIK REVENUE GAIN</u></b>					
<b>OIL</b>	\$8,470,124	\$12,150,397	\$3,490,618	\$18,614,613	\$19,100,000
<b>GAS</b>	\$8,772,291	\$18,640,086	\$22,764,227	\$37,920,116	\$78,600,000
<b>TOTAL</b>	\$17,242,415	\$30,790,482	\$26,254,845	\$56,534,729	\$97,700,000
<b><u>TOTAL % GAIN</u></b>					
<b>OIL</b>	1.46%	0.96%	0.13%	0.75%	0.72%
<b>GAS</b>	0.95%	1.47%	1.57%	2.07%	3.35%
<b>TOTAL</b>	1.15%	1.22%	0.64%	1.31%	1.95%

Table 3.4

These revenue gains, as a percentage of total RIK revenues, have remained steady at approximately 1.2 percent for FY 2004, FY 2005, and FY2007. Percentage gains were lower in FY 2006 due to specific market conditions in the crude oil market and the hurricanes of fall 2005 and higher in 2008 due, in large part, to increasing crude oil prices that made RIK's favorable processing contracts much more lucrative than a standard third-party contract.

The RPC has recommended that MMS present monthly performance measures, in addition to the annual measures, to show a more accurate view of periods of exceptional (either high or low) revenue performance gains or losses. Chart 3.2 provides RIK's FY 2008 monthly performance and shows that decreasing commodity prices beginning in August 2008 and the September 2008 hurricanes did dramatically affect RIK's revenue performance. This effect makes it likely that revenue performance in FY 2009 will prove far lower than FY 2008.

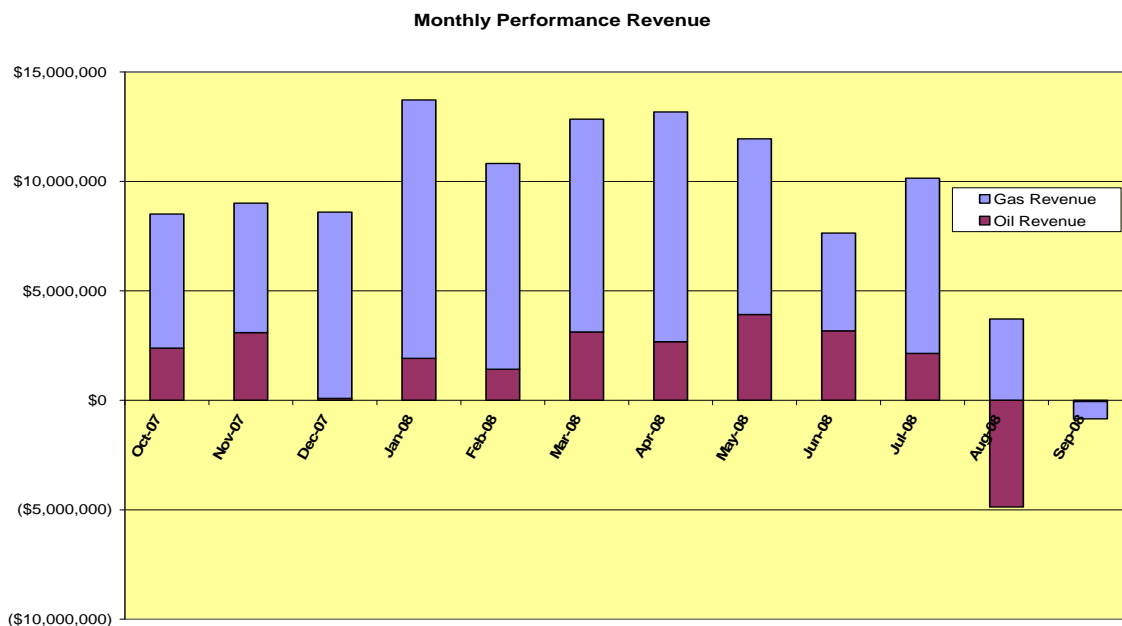


Chart 3.2

Both RPC and GAO have recommended presenting RIK revenue performance as a range of values. MMS has calculated a range of performance values based on changing the marketing assumptions used in the FMV benchmark calculations. The details of those calculations, including the marketing assumption changes, are presented in Appendix C. Table 3.5 presents the low, high, and reported performance range for both crude oil and natural gas and shows that, regardless of the marketing assumptions made by MMS, revenue performance shows a gain.

RIK REVENUE PERFORMANCE AS RANGE OF VALUES			
	LOW	REPORTED	HIGH
NATURAL GAS	\$ 59,600,000	\$ 78,600,000	\$ 93,200,000
CRUDE OIL	\$ 13,400,000	\$ 19,100,000	\$ 70,900,000
TOTAL	\$ 73,000,000	\$ 97,700,000	\$ 164,000,000

Table 3.5

#### 4. RIK NATURAL GAS PROGRAM

The RIK Natural Gas Program began with the GSA pilot (described earlier) in June 1999. The RIK Program expanded with the Gulf of Mexico (GOM) pilot in 2000.

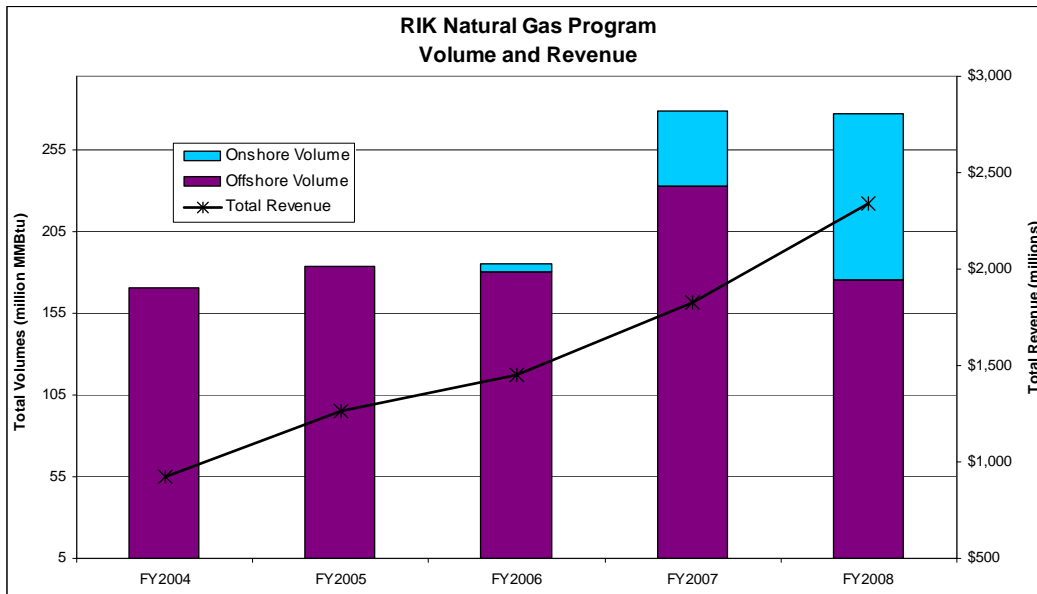


Chart 4.1

There have been 28 different packages in the program, with 21 currently remaining. Packages may be added, removed, or combined with others for various reasons. Properties are removed and reverted to RIV status due to continued negative performance, low volumes, or unfavorable transportation or processing contracts. Alternatively, packages can be combined

with other sales packages to leverage new opportunities or to combine packages with low volumes. In FY 2008, no new packages were added to the RIK Natural Gas Program, while two packages were removed. Chart 4.2 shows how the sales packages in the program have changed over the past 11 years.

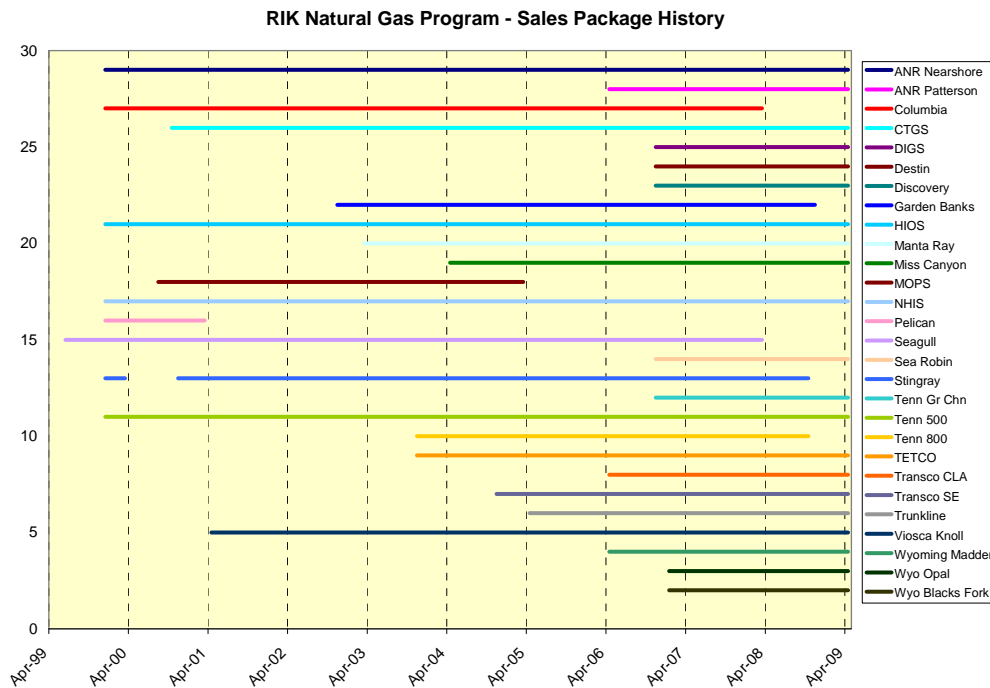


Chart 4.2

The RIK Program continues to see high bidder participation in its natural gas sales. In FY 2008, there were 26 sales packages in the RIK Natural Gas Program sold to 17 different companies. These sales were supported by approximately 90 transportation, processing, and other service contracts during FY 2008. Table 4.1 details bidder participation information for recent Gulf of Mexico natural gas sales and illustrates the high level of competition for RIK natural gas.

GULF OF MEXICO PROGRAM SALES PARTICIPATION HISTORY					
SALE DATE	NUMBER OF BIDDERS	NUMBER OF BIDS	NUMBER OF PACKAGES	NUMBER OF COMPANIES AWARDED CONTRACTS	GAS VOLUME (MMBTU/DAY)
APRIL-05	19	126	16	13	485,400
NOVEMBER-05	10	42	7	3	195,575
APRIL-06	21	127	16	9	509,800
NOVEMBER-06	15	155	13	10	340,150
APRIL-07	20	152	13	10	398,000
NOVEMBER-07	21	122	13	9	301,400
APRIL-08	17	77	11	8	290,500

Table 4.1



## 4.1 GULF OF MEXICO RIK NATURAL GAS PROGRAM

The Gulf of Mexico (GOM) RIK Natural Gas Program began with the 1999 RIK Natural Gas pilots. The current program consists of 18 sales packages. MMS has achieved an estimated 1 percent-2 percent revenue gain on RIK natural gas sales over the past 5 years, as shown in Table 4.2.

<b>RIK Gulf of Mexico Program</b>					
	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008
<b>TOTAL VOLUME (MMBTU)</b>	170,707,071	183,997,321	180,212,534	232,887,752	175,205,800
<b>TOTAL REVENUE</b>	\$923,909,425	\$1,265,625,121	\$1,422,637,294	\$1,632,382,454	\$1,685,741,898
<b>REVENUE GAIN (Loss)</b>	\$8,772,291	\$18,640,086	\$23,083,864	\$24,302,030	\$34,600,000
<b>REVENUE GAIN (Loss)/MMBTU</b>	\$0.05	\$0.10	\$0.13	\$0.10	\$0.20
<b>PERCENTAGE GAIN</b>	0.95%	1.47%	1.62%	1.49%	2.05%

Table 4.2

MMS benefits under the RIK Natural Gas Program due, in large part, to decreased costs under RIK processing and transportation contracts and increased revenues by taking gas to higher-valued markets. For example, in some situations where producers have long-term obligations to a specific pipeline/market and/or processing plant, MMS can obtain a higher price and lower rate with a different pipeline/market and/or plant. However, the program can also benefit by obtaining premiums to index prices because RIK purchasers gain access to attractive downstream markets using RIK transportation contracts. Overall natural gas production in the GOM is declining, leaving much of the transportation and processing facilities underutilized. Increasing competition allows MMS to leverage this cost savings for RIK natural gas production because it is not subject to a long-term commitment found in many producers' service contracts. These contracts require service to be continued for the life of the lease. The drop in RIK GOM volumes from FY 2007 to FY 2008 is attributed to overall GOM production decline, FY 2008 hurricanes, and reversion of two natural gas packages to RIV.

### 4.1.1 CONVERSION/REVERSIONS FROM RIK TO RIV IN FY 2008

No packages were converted from RIV to RIK in FY 2008, while two were reverted to RIV. The Columbia and Seagull sales packages were reverted due to decreased production volumes and continued negative revenue performance. As of May 2009, MMS has reverted three additional natural gas packages.

## 4.2 ONSHORE RIK NATURAL GAS PROGRAM

The onshore natural gas RIK Program consists of the following:

- Sales from the decommissioning of the National Helium Reserve on behalf of BLM
- Sales of natural gas from Federal leases in the State of Wyoming

#### 4.2.1 BLM NATIONAL HELIUM RESERVE

MMS sells approximately 9,000 MMBtu/day of Federal natural gas produced from the Cliffside Helium Enrichment Unit (CHEU) on behalf of BLM. The CHEU is located in Potter County, Texas, near the city of Amarillo. As the helium reserve is drawn down, natural gas is produced. Revenues from these sales are collected by BLM and are not reported in RIK revenues or performance metrics because the natural gas is not royalty gas.

#### 4.2.2 WYOMING

The major component of the onshore RIK Natural Gas Program is production from three major fields in the State of Wyoming. MMS takes Federal royalties in kind from the Madden, Jonah, and Pinedale Anticline fields. The first production taken in kind was from the Madden field beginning in April 2006. In January 2007, production from the Jonah and Pinedale fields was added to the RIK Program.

Beginning in January 2008, MMS began to move gas under a long-haul transportation contract on the Rockies Express Pipeline (REX) to markets in the mid-continent. The final segment of REX, anticipated to be complete in late 2009, will move gas farther east to more-favorable markets in eastern Ohio. MMS was unable to execute the contract associated with this last segment because MMS and Kinder Morgan, the owners of the Rockies Express Pipeline, were unable to agree on the contract terms for the final segment of the pipeline. MMS stopped shipping gas on REX on March 31, 2009.

#### 4.2.3 REVENUE PERFORMANCE

FY 2008 was a very successful year for the RIK Natural Gas Program in Wyoming. Estimated revenue performance results by year are shown in Table 4.3. Transportation discounts, favorable pricing terms, and percentage-of-proceeds<sup>15</sup> processing contracts contribute to the success of the Wyoming RIK Program<sup>16</sup>.

<b>WYOMING GAS PROGRAM</b>			
	<b>FY 2006</b>	<b>FY 2007</b>	<b>FY 2008</b>
<b>TOTAL VOLUME (MMBTU)</b>	5,453,918	45,662,862	101,729,254
<b>TOTAL REVENUE</b>	\$28,096,588	\$196,980,687	\$656,719,310
<b>REVENUE GAIN (Loss)</b>	(\$319,637)	\$13,618,085	\$44,000,000
<b>REVENUE GAIN (Loss)/MMBTU</b>	(\$0.06)	\$0.30	\$0.43
<b>PERCENTAGE GAIN/(Loss)</b>	(1.14%)	6.91%	6.70%

Table 4.3

<sup>15</sup> In a percentage-of-proceeds processing contract, the producer compensates the gas plant operator through the plant's retention of a percentage of the volume of the liquids extracted from the natural gas.

<sup>16</sup> The loss in FY 2006 was due to diversification of pricing terms on a portion of the sales volume.

#### 4.2.4 CONVERSIONS/REVERSIONS FROM RIV TO RIK IN FY 2008

There were no property conversions or reversions for the RIK Onshore Natural Gas Program.

### 5. RIK CRUDE OIL PROGRAM

The RIK Crude Oil Program consists of three main sub-programs<sup>17</sup> as follows:

- The Unrestricted Program (UNR) in the Gulf of Mexico and Pacific
- The Small Refiner Program (SR)
- The Strategic Petroleum Reserve Program (SPR)<sup>18</sup>

In FY 2008, RIK conducted four separate sales and received competitive bids from 11 different companies. Sales packages were sold to eight different counterparties during the year. These sales were supported by five transportation and other service contracts during FY 2008. Chart 5.1 shows the total estimated revenue performance by program.

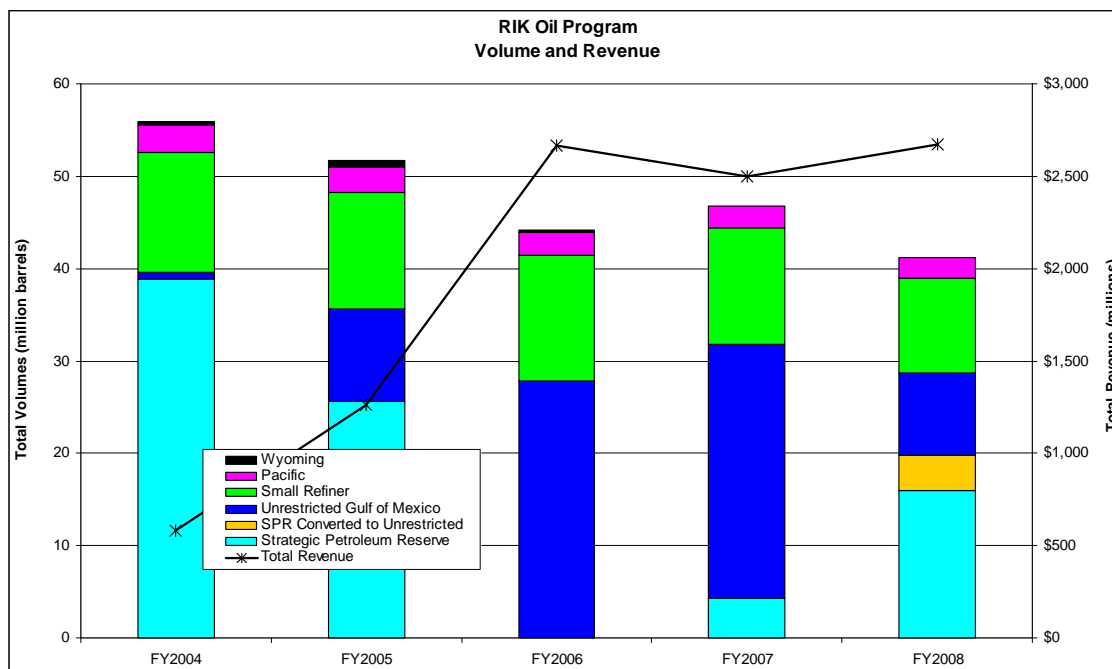


Chart 5.1

Chart 5.1 also details the changes in total volumes and revenues in the RIK Crude Oil Program from FY 2004 through FY 2008. Volumes have remained relatively constant in the

<sup>17</sup> The Wyoming RIK Crude Oil Program was discontinued in April 2006. Declining production volumes inhibited the Wyoming RIK Crude Oil Program's ability to realize administrative cost savings. Also, changing crude oil market conditions in the state, due to low export capacity, made potential purchasers reluctant to enter into term contracts.

<sup>18</sup> For evaluation purposes, MMS created a sub-program for properties that were converted mid-FY 2008 from the SPR program to the UNR Program.

Small Refiner and Unrestricted Pacific Programs. The Unrestricted Gulf of Mexico Program has experienced the most change in volumes over the years due to the SPR Program. The volumes that have been used to fill the SPR have come out of the Unrestricted Gulf of Mexico Program.

## 5.1 CONVERSIONS/REVERSIONS OF LEASES FROM RIV TO RIK IN FY 2008

No crude oil properties were converted from RIV to RIK during FY 2008. There were five properties reverted from RIK to RIV in FY 2008. As of May 2009, MMS has reverted an additional 14 crude oil properties.

## 5.2 UNRESTRICTED OIL PROGRAM

As the name implies, there are no mandated eligibility requirements to participate in this program. Any and all companies meeting basic credit requirements are eligible to participate. Over the years, diverse companies have participated in this program, ranging from major oil companies to financial holding companies.



This program is subject to the most volume fluctuations as some of its volumes have often been diverted to the SPR over the past five years.

Below is a summary of the estimated revenue performance measurements for the Unrestricted Program over the past five years. In FY 2008, the Gulf Unrestricted Program realized estimated gains of \$6.3 million: significantly lower than the previous year. This decrease is attributable to over half of the unrestricted production volumes being diverted to the SPR. The overall gain per barrel, however, is nearly double from the previous year. The increase in revenue per barrel is primarily attributable to RIK benefiting from crude oil price increases during FY 2008; because RIK crude oil sales contracts use “calendar month” pricing, a more favorable pricing mechanism in upward markets, instead of earlier “trade month” pricing used in some industry sales contracts<sup>19</sup>; and RIK obtaining premiums from purchasers on certain crude packages for which the purchaser entered into a lucrative downstream financial transaction and passed on a portion of those benefits to RIK.

---

<sup>19</sup> Calendar Month is the period from the first through the last day of the production month. Trade Month is the period prior to the actual production month during which crude oil is bought and sold. This period typically begins on the 26<sup>th</sup> of the month two months prior to the production month through the 25<sup>th</sup> of the month one month prior to the production month.

<b>UNRESTRICTED PROGRAM</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>FY 2008</b>
<b>TOTAL VOLUME</b>	778,876	10,079,297	27,865,100	27,458,666	8,956,846
<b>TOTAL REVENUE</b>	\$28,634,061	\$527,705,356	\$1,685,390,839	\$1,590,416,840	\$910,491,043
<b>REVENUE GAIN (Loss)</b>	\$330,971	\$5,741,065	\$1,504,870	\$11,267,888	\$6,340,000
<b>REVENUE GAIN (Loss)/BBL</b>	\$0.42	\$0.57	\$0.05	\$0.41	\$0.71

Table 5.1

### 5.2.1 PACIFIC UNRESTRICTED OIL PROGRAM

The Pacific RIK Crude Oil Program originally began as part of the Small Refiner Program. In late 2005, many of the small refiners either no longer qualified for the program or were no longer interested in bidding on the Pacific RIK production. As a result, the production was moved to the Unrestricted Program.

In FY 2008, approximately 6,000 barrels per day were taken in kind from one offshore field: Santa Ynez. In previous years, two other offshore fields were included: Dos Cuadras and the Grace Units. As shown in Table 5.2, the estimated revenue gain per barrel has always been significant in this program due to the strategic location of the production and the unique demand for this supply. The location is remote from foreign oil delivery points. The production is also directly connected via pipeline to a refinery in the local area. Due to both of these factors, this production had a significant competitive advantage in FY 2008.

The factors driving the competitive advantage changed dramatically in FY 2009, and, as a result, MMS has reverted the Pacific Unrestricted Oil Program to RIV.

<b>PACIFIC PROGRAM</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>FY 2008</b>
<b>TOTAL VOLUME</b>	3,070,044	2,768,916	2,424,214	2,397,646	2,245,531
<b>TOTAL REVENUE</b>	\$90,612,399	\$105,848,071	\$131,190,275	\$126,955,028	\$213,924,289
<b>REVENUE GAIN (Loss)</b>	\$4,987,498	\$2,770,092	\$3,028,152	\$4,303,449	\$5,870,000
<b>REVENUE GAIN (Loss)/BBL</b>	\$1.62	\$1.00	\$1.25	\$1.79	\$2.62

Table 5.2

### 5.3 SMALL REFINER PROGRAM

The Small Refiner Program began in the 1970s as a program designed to assist domestic small refiners by providing a reliable supply of crude oil at equitable prices. Historically, these eligible refiners have supplied United States military operations with jet fuel and other energy needs on military bases. Because these small refiners do not typically have any production of their own, the RIK Small Refiner Program has served an important role in



helping small refiners acquire feedstock. A Small Refiner, as defined in 30 CFR section 208.4(a) and by the Small Business Administration, is a refiner of crude oil with a total operable atmospheric crude oil distillation capacity of less than or equal to 125,000 barrels per calendar day, and fewer than 1,500 employees.

Over the course of the last 5 years, the Small Refiner Program has experienced decreasing small refiner participation. The decreased participation can be attributed to a lack of interest and a more-competitive market, forcing a number of small refiners to merge, thus becoming ineligible for the program. Under 30 CFR 208.4<sup>20</sup>, MMS performed a Determination of Need for the Small Refiner Program. The evaluation was completed in June 2008 and recommended continuation of the Small Refiner Program.

<b>SMALL REFINER PROGRAM</b>					
	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>FY 2008</b>
<b>TOTAL VOLUME</b>	12,942,188	12,556,031	13,586,984	12,627,650	10,214,429
<b>TOTAL REVENUE</b>	\$447,297,868	\$597,608,325	\$833,577,818	\$781,158,791	\$1,086,726,850
<b>REVENUE GAIN (Loss)</b>	\$2,873,433	\$1,803,837	(\$1,377,911)	\$3,043,275	\$9,140,000
<b>REVENUE GAIN (Loss)/BBL</b>	\$0.22	\$0.14	(\$0.10) <sup>21</sup>	\$0.24	\$0.90

**Table 5.3**

In FY 2008, MMS sold all RIK packages in its Small Refiner Program for a term of one year, providing an estimated revenue gain of \$9 million or 90 cents per barrel of oil. The significant increase in revenue gain per barrel is attributable to the same reasons mentioned in the Unrestricted Oil Program section.

#### **5.4 STRATEGIC PETROLEUM RESERVE (SPR) PROGRAM**

MMS partners with the Department of Energy (DOE) to fill the remaining capacity of the SPR. In order to receive crude oil that meets the quality specifications for the SPR sites, DOE uses RIK oil in exchange contracts. MMS arranges for delivery of the royalty oil from offshore production facilities to onshore market centers and then transfers the production to DOE. The DOE then contracts with industry partners to exchange the royalty oil for oil of the appropriate specifications at SPR sites.



**Provided by the U.S. Department of Energy**

MMS previously worked with DOE to add crude oil to the SPR from 1999 to 2000 and 2002 to 2005. This effort brought the

<sup>20</sup> 30 CFR 208.4(a) states: "The Secretary may evaluate crude oil market conditions from time to time. The evaluation will include among other things, the availability of crude oil and the crude oil requirements of the Federal Government, primarily those requirements concerning matters of national interest and defense. The Secretary will review these items and will determine whether eligible refiners have access to adequate supplies of crude oil and whether such oil is available to eligible refiners at equitable prices. Such determinations may be made on a regional basis. The determination by the Secretary shall be published in the Federal Register..."

<sup>21</sup> FY 2006 losses were due to specific conditions in the crude oil market and the hurricanes of fall 2005.

volume of the SPR to 700 million barrels. MMS and DOE began the current SPR fill initiative in July 2007 to fill the SPR to its capacity of 727 million barrels. Legislation was passed to suspend delivery of RIK oil for the current initiative at the end of June 2008. The SPR program resumed shipments in April 2009. These contracts will help DOE “top off” the SPR at its capacity of 727 billion barrels. Until the SPR is expanded, no further RIK SPR sales are planned.

Table 5.4 shows volume and estimated market value of the production transferred to DOE for SPR purposes. This information is as reported in the Department of the Interior’s Annual Performance and Accountability Report<sup>22</sup>.

STRATEGIC PETROLEUM RESERVE PROGRAM					
	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008
TOTAL VOLUME	38,813,488	25,608,852	0	4,304,386	16,210,265
TOTAL VALUE	\$1,213,007,293	\$1,194,617,678	\$0	\$306,190,550	\$1,600,026,660

Table 5.4

## 5.5 SPR CONVERTED TO UNRESTRICTED OIL PROGRAM

In May 2008, Congress ceased the SPR fill beginning July 2008. At that time, only three months remained on the 38 SPR sales contracts and, under RIK Policy, all packages were reverted to an outright sale and transferred to the Unrestricted Oil Program. Of the 38 packages transferred, only four exhibited revenue gains. The revenue loss incurred by the 34 packages totaled \$2.2 million. These losses are primarily attributed to how the oil revenue performance is measured: comparing oil RIK revenue sold at a Calendar Month price to a FMV benchmark price weighted using 90 percent Calendar Month and 10 percent Trade Month pricing. In a rising market, the inclusion of the Trade Month pricing results in a revenue gain, while, conversely, a falling market results in a revenue loss<sup>23</sup>.



Bryan Mound SPR site  
Photo provided by the U.S. Department of Energy

## 6. ENERGY POLICY ACT OF 2005 REPORT REQUIREMENTS

This report provides the information required by section 342 (e)(2) of the Energy Policy Act of 2005 (EPAct). The EPAct requires that, for each of Fiscal Years 2006-2015 in which the United States takes oil or gas royalties in kind from production in any State or from the outer

<sup>22</sup> U.S. Department of the Interior, Annual Performance and Accountability Report FY 2008, [http://www.doi.gov/pfm/par/par2008/par08\\_final.pdf](http://www.doi.gov/pfm/par/par2008/par08_final.pdf)

<sup>23</sup> To properly evaluate the revenue loss incurred by the SPR properties from July through September, MMS must consider the potential revenue impacts had those properties remained in the UNR or Small Refiner programs. See Appendix D for an evaluation of the SPR Opportunity costs.

Continental Shelf (OCS), excluding royalties taken in kind and sold to refineries under subsection (h)<sup>24</sup>, the Secretary shall submit to Congress a report that describes the following:

1. The one or more methodologies used by the Secretary to determine compliance with subsection (d)<sup>25</sup>, including the performance standard for comparing amounts received by the United States derived from royalties in kind to amounts likely to have been received had royalties been taken in value
2. An explanation of the evaluation that led the Secretary to take royalties in kind from a lease or group of leases, including the expected revenue effect of taking royalties in kind
3. Actual amounts received by the United States derived from taking royalties in kind and costs and savings incurred by the United States associated with taking royalties in kind, including administrative costs savings and any new or increased administrative costs
4. An evaluation of other relevant public benefits or detriments associated with taking royalties in kind

## **6.1 METHODOLOGIES TO COMPARE RIK AND RIV VALUES**

### **6.1.1 CONVERSION FROM RIV TO RIK**

MMS completes a financial analysis to determine whether a property should be converted to RIK using public industry information, pipeline system maps, energy publications, transportation routes, processing options, downstream marketing routes, and index pricing. This research is focused on each property's existing economic case or royalty in value payments and the potential options for economic improvement. MMS includes transportation and/or processing bids in building this economic case. The dollar amount the Federal government is currently receiving in value is compared with the estimated value that would be received in kind. Prior to conversion, MMS completes a conversion document recommending whether the pipeline/properties should be converted to in-kind. That document contains pipeline maps showing properties analyzed, spreadsheet analysis comparing estimated RIK economics versus RIV reported economics, and the technical written economic case.

### **6.1.2 REVENUE PERFORMANCE METRICS**

Given the fiduciary responsibility to the taxpayer, MMS measures the performance of the RIK Program against a calculated Fair Market Value (FMV) benchmark that approximates the royalty value that the RIV Program would have received. Market price and basis volatility create risk exposure that RIK performance could be below the FMV benchmark due to the

---

<sup>24</sup> Subsection (h) refers specifically to the Small Refiner Program

<sup>25</sup> Subsection (d) states that "Benefit to the United States Required—The Secretary may receive oil or gas royalties in-kind only if the Secretary determines that receiving royalties in-kind provides benefits to the United States that are greater than or equal to the benefits that are likely to have been received had royalties been taken in-value."



difference between the pricing mix used by RIK for selling the commodity and the pricing mix used in the FMV benchmark.

MMS computes the FMV benchmark range specific to the commodity, and uses the result as the performance standard for measuring RIK performance. To compute the FMV benchmark, MMS establishes a benchmark price that reflects major liquid pricing point(s) proximal to RIK properties. This benchmark price is adjusted to reflect transportation, quality, processing, and various marketing possibilities and any adjustments that may have been derived from RIV or other commercial market transactions. This results in a FMV benchmark for comparison to RIK actual values netted back to the lease.

These measures meet statutory requirements to reflect commercial fair market value and a proxy for RIV. They recognize fair market value as a range of values, differentiate between forward-looking decision analysis and backward-looking measurement, use as much RIV data as possible, and use RIV data to calibrate commercial market data. (See Section 3.3 Revenue Performance in this report for more information.)

## 6.2 EVALUATION SUPPORTING CONVERSION OF PROPERTIES TO RIK STATUS IN FY 2008

There were no property conversions for either oil or gas in FY 2008.

## 6.3 REVENUES, COSTS, AND SAVINGS INCURRED BY RIK

The quantitative benefits of the RIK Program include reduced administrative costs, a time-value-of-money benefit from receiving payments earlier than RIV payments, and additional royalty revenue. During FY 2008, the estimated benefits of the RIK Program totaled over \$106 million, as shown in Table 6.1.

<b>TOTAL BENEFITS OF RIK PROGRAM - FY 2008</b>			
	<b>CRUDE OIL</b>	<b>NATURAL GAS</b>	<b>TOTAL</b>
<b>ADMINISTRATIVE SAVINGS</b>	\$1,810,000	\$3,410,000	\$5,220,000
<b>TIME VALUE OF MONEY</b>	\$2,150,000	\$922,000	\$3,070,000
<b>REVENUE PERFORMANCE</b>	\$19,100,000	\$78,600,000	\$97,700,000
<b>TOTAL BENEFITS</b>	<b>\$23,100,000</b>	<b>\$82,900,000</b>	<b>\$106,000,000</b>

Table 6.1

Details of these benefits are presented in Section 3 of this report.

## 6.4 OTHER RELEVANT BENEFITS OR DETRIMENTS

Through the activities of the RIK Program, MMS staff has gained significant market knowledge regarding specific oil and natural gas markets. This knowledge is shared with other MMS offices, such as Compliance and Asset Management, to improve MMS operations. Sharing information between the RIK Program and other areas was an area of

significant focus in FY 2008, and formal procedures for sharing information are now documented.

Also, the RIK Program is in a unique position to provide data necessary in times of natural disasters, such as the hurricanes in 2005 and 2008. The RIK Program answered special information requests from both the DOE and the Department of the Interior regarding Gulf of Mexico infrastructure after the 2005 and 2008 hurricanes. MMS stands ready to provide information whenever needed in future similar situations in order to support continuity of operations.

## 7. CONCLUSIONS

FY 2008 marked a year of realignment for the RIK program. MMS used five years of historical RIK estimated revenue performance data to better understand market economics. Using RIK as a tool, MMS is able to determine the viability of each crude oil property or natural gas package.

Additionally, RIK no longer ties itself to production volume goals as defined in the RIK Five Year Business Plan. This allowed a more-critical examination of each crude oil property or natural gas package and resulted in a contraction of RIK properties, packages, and, ultimately, production volumes. Two natural gas packages and five oil properties were reverted to RIV in FY 2008.



MMS expects this trend to continue in FY 2009. As of May 2009, MMS has reverted three additional natural gas packages and 14 crude oil properties.

MMS also implemented several improvements in FY 2008, including the following:

- Strengthened internal controls
- Documented specific procedures for bid acceptance during sales
- Enhanced documentation requirements
- Improved record-keeping
- Strengthened coordination with MMS Procurement Office and with the MRM Compliance function



**APPENDIX A**  
**ADDITIONAL ESTIMATED REVENUE PERFORMANCE INFORMATION**

<b>RIK NATURAL GAS - RIK VALUES VS. FMV BENCHMARK VALUES</b>					
<b>FY 2008 TOTALS</b>					
	RIK VOLUMES SOLD (MMBTU)	RIK REVENUES	REVENUE GAIN (Loss) vs. FMV BENCHMARK PRICE	REVENUE GAIN (Loss) PER MMBTU	PERCENT GAIN / (Loss)
<b>GULF OF MEXICO</b>	175,205,800	\$1,685,741,898	\$34,600,000	\$0.20	2.05%
<b>WYOMING</b>	101,729,254	\$656,719,310	\$44,000,000	\$0.43	6.70%
<b>Total</b>	<b>276,935,054</b>	<b>\$2,342,461,208</b>	<b>\$78,600,000</b>	<b>\$0.28</b>	<b>3.36%</b>

<b>RIK CRUDE OIL - RIK VALUES VS. FMV BENCHMARK VALUES</b>					
<b>FY 2008 TOTALS</b>					
	RIK VOLUMES SOLD (BBLs)	RIK REVENUES	REVENUE GAIN (Loss) vs. FMV BENCHMARK PRICE	REVENUE GAIN (Loss) PER BBL	PERCENT GAIN/ (Loss)
<b>SMALL REFINER</b>	10,214,429	\$1,086,726,850	\$9,140,000	\$0.90	0.84%
<b>UNRESTRICTED</b>	8,956,846	\$910,491,043	\$6,340,000	\$0.71	0.70%
<b>SPR CONVERTED</b>	3,842,558	\$458,309,280	(\$2,240,000)	(\$0.58)	(0.49%)
<b>PACIFIC</b>	2,245,531	\$213,924,289	\$5,870,000	\$2.62	2.74%
<b>Total</b>	<b>25,259,364</b>	<b>\$2,669,451,462</b>	<b>\$19,100,000</b>	<b>\$0.76</b>	<b>0.72%</b>

<b>RIK TOTALS - RIK VALUES VS. FMV BENCHMARK VALUES</b>					
<b>FY 2008 TOTALS</b>					
	RIK VOLUMES SOLD (BOE)	RIK REVENUES	REVENUE GAIN (Loss) vs. FMV BENCHMARK PRICE	REVENUE GAIN (Loss) PER BOE	PERCENT GAIN/ (Loss)
<b>RIK TOTAL</b>	73,006,787	\$5,011,912,670	\$97,700,000	\$1.34	1.95%

**NOTES:**

1. Revenue performance metrics are calculated by individual property for oil and by pipeline for gas. The results are rolled up into the reporting categories above in order to protect proprietary information regarding RIK sales.
2. MMS uses a portfolio approach in its RIK sales; therefore, losses may occur in individual sales packages due to diversification in purchasers, pricing, and other contract terms for overall risk mitigation. MMS is formalizing its process for review of revenue performance results and its role as a management tool.

## **APPENDIX B**

### **PERFORMANCE METRICS METHODOLOGY**

The RIK Program has a well-defined revenue performance calculation process as part of the RIK Performance Metrics and Measurement Tools Procedures Manual and Module. This process was initiated with the assistance of an outside consulting organization, Lukens Energy Group (LEG). Although minor adjustments and modifications have altered the models in their 5-year old application, the general approach and calculation process has not changed. The procedures are outlined in detail in documents from LEG and are maintained in both paper and electronic copy.

Principles that drove the development of the Fair Market Value (FMV) benchmark methodologies are as follows:

1. The benchmarks implemented should adhere to statutory requirements to reflect commercial fair market value and the value that MMS would have received as royalty in value (RIV).
2. The FMV benchmarks should recognize that fair market value is a range of values rather than an absolute number.
3. The FMV benchmark methodology should be a well-defined and repeatable procedure.
4. The FMV benchmark methodology should be applicable across different time periods and across different groupings of properties and programs.
5. The FMV benchmark methodology should ensure reasonable statistical accuracy.
6. The FMV benchmark methodology should have reasonable labor requirements.
7. The FMV benchmark methodology should prescribe maintaining detailed documentation within a performance measurement system.
8. The FMV benchmark methodology should differentiate between forward-looking decision analysis and backward-looking performance measurement incorporating recent market conditions.
9. The FMV benchmark methodology should use RIV data as much as possible.
10. The FMV benchmark should be based on transparent market intelligence, as much as possible, when sufficient RIV data of reasonable accuracy is not available. Where appropriate, market intelligence should be calibrated with available RIV data.

MMS computes a FMV benchmark range specific to the commodity, and compares it to the RIK sales value. To compute the FMV benchmark, the Economic Analysis Office establishes a benchmark price that reflects major liquid pricing point(s) proximal to RIK

properties. This benchmark price is adjusted to reflect transportation, quality, processing, and various marketing possibilities and any adjustments that may have been derived from RIV or market intelligence data. This results in a FMV benchmark for comparison to RIK actual values, netted back to the lease.

There are a number of marketing assumptions MMS must make when calculating the FMV benchmark. The FY 2008 assumptions include the following:

1. **Calendar and Trade Month Pricing**

MMS calculates a crude oil FMV benchmark using 90 percent Calendar Month pricing and 10 percent Trade Month pricing.

2. **Processing Modeling**

MMS calculates the natural gas processing component of the FMV benchmark using contractual terms found in standard third-party processing contracts at each individual plant.

3. **Transportation Modeling**

MMS calculates both crude oil and natural gas transportation component of the FMV benchmark price using the tariff specific to each individual pipeline.

4. **First-of-Month Baseload vs. Daily Swing Price Weighting**

MMS calculates a natural gas FMV benchmark price using a First-of-Month/Daily price weighting equal to the same proportion that MMS sold production.

5. **Financial Keepwhole**

MMS includes any financial keepwhole<sup>26</sup> charges incurred during the course of the natural gas sales in the FMV benchmark price.

6. **Pricing Modeled using Midpoint Averages**

MMS calculates the natural gas FMV benchmark price using the First-of-Month and Daily midpoint prices, rather than either the high or low price in the range.

MMS reexamines these assumptions every year to verify they are still valid and make adjustments when necessary.

---

<sup>26</sup> Financial keepwhole is the method specified in natural gas sales documents to financially compensate either the purchaser or seller, depending on the monthly and daily natural gas prices, when the delivered volume is less than the agreed to baseload volume on any particular day.

## **APPENDIX C**

### **FMV BENCHMARK RANGE OF VALUES**

RIK revenue performance measures the financial success and estimated economic benefits of the RIK Program by comparing RIK sales receipts to a Fair Market Value (FMV) benchmark. The FMV benchmark is an approximation of what the average third-party may have sold the same production for and estimates what royalty revenues MMS would expect to see, on average, through Royalty in Value.

Both the Government Accountability Office (GAO) and Royalty Policy Committee (RPC) have recommended that RIK present a range of estimated performances based on the FMV benchmark calculations. The GAO stressed that uncertainty exists in the revenue performance calculation because of underlying assumptions made by the Economic Analysis Office (EAO) and that this method does not meet Office of Management and Budget guidelines (GAO-08-942R).

MMS believes that the most effective method to present this range of possible performances is to vary key assumptions MMS makes about each specific product. This will provide sensitivity for all underlying assumptions.

#### **C.1 OIL**

The primary assumption in calculating a FMV benchmark for Gulf of Mexico crude oil is to use a 90 percent Calendar Month (CM), and 10 percent Trade Month (TM) price weighting in an attempt to mirror the ratio found in the oil markets. The EAO has based this price weighting assumption on market research obtained from Oil Front Office personnel and from third-party oil marketing representatives. The EAO has calculated alternative oil revenue performance values using both 100 percent CM pricing and 100 percent TM pricing to create a range of values around this critical oil marketing assumption.

This is quite a dramatic range but is entirely attributable to the unprecedented volatility in the oil markets in FY 2008. MMS would expect this range to be much smaller during periods of market stability. Going forward, MMS will continue to evaluate the appropriate CM/TM weighting to use in calculations, based on current market conditions and market research, and will continue to present this range of performance values. See the following chart for more details.

<b>FY 2008 RIK CRUDE OIL ESTIMATED REVENUE PERFORMANCE RANGE</b>			
	<b>REVENUE GAIN (Loss) USING 100% CM</b>	<b>REVENUE GAIN (Loss) USING 90% CM, 10% TM</b>	<b>REVENUE GAIN (Loss) USING 100% TM</b>
<b>SMALL REFINER</b>	\$4,470,000	\$9,140,000	\$51,200,000
<b>UNRESTRICTED/SPR CONVERTED</b>	\$3,020,000	\$4,100,000	\$13,800,000
<b>PACIFIC<sup>27</sup></b>	\$5,870,000	\$5,870,000	\$5,870,000
<b>TOTAL</b>	<b>\$13,400,000</b>	<b>\$19,100,000</b>	<b>\$70,900,000</b>
<b>REPORTED REVENUE GAIN</b>			

## **C.2 NATURAL GAS**

For natural gas, one assumption MMS uses to calculate a FMV benchmark is to use a weighting between First-of-Month (FOM) and Gas Daily pricing equal to the baseload and swing volume weightings of the actual RIK sale by month and package. MMS has calculated alternative gas revenue performance numbers using weightings of 70 percent FOM, 30 percent Gas Daily (a weighting that market research indicates is common in the industry); and 100 percent FOM and 100 percent Gas Daily pricing to create a range of value around critical marketing assumptions.

Another assumption made by MMS is to calculate the FMV benchmark price using the midpoint average prices for both FOM and Gas Daily. Publications survey companies selling gas at fixed “cash” prices on the spot market to develop a range of gas prices for a particular day or month and pricing point. The publications then use these fixed prices to develop the “index” or midpoint price. MMS sells all RIK gas at this midpoint index price, as do most other producers, but recognizes that gas is sold at both these low and high prices. As such, MMS has created a revenue performance range using the low and high prices as the benchmark price, rather than the midpoint price. In FY 2008 for the Henry Hub index, a benchmark price in the natural gas industry, the average difference between the midpoint price and both the low and high price was approximately 5 cents/MMBtu. MMS has created a “Midpoint Price Variance” range by adjusting the estimated revenue performance both up and down by this difference.

MMS also assumed in performance calculations that the financial keepwhole costs should be treated with neutrality in the gas revenue performance. MMS has calculated an alternative gas revenue performance number assuming that financial keepwhole costs should only apply to RIK revenues, not the FMV benchmark calculation.

MMS believes that the current natural gas price weighting is most appropriate because it allows individual revenue elements such as transportation, processing, and market pricing to be more-readily measured. Likewise, MMS believes that measuring performance using midpoint pricing is appropriate, given that the use of the low or high price in the range makes

<sup>27</sup> Pacific is not measured using Calendar and Trade Month prices.



the unreasonable assumption that all gas is sold at that price. Lastly, MMS believes that the current handling of the financial keepwhole is appropriate because a producer, similarly situated as MMS, would have to include this provision in order to sell their gas.

<b>Reported Estimated Revenue Gain</b>		
	\$78,600,000	(1)
<b>Revenue Differentials to Reported Gain</b>		
<b>Price Weightings</b>		
70% FOM - 30% GD	(\$1,200,000)	
100% FOM	(\$500,000)	
100% GD	(\$2,800,000)	(2)
<b>Midpoint Price Variance</b>		
Using Lowest Price in Range	\$14,600,000	(3)
Using Highest Price in Range	(\$15,000,000)	(4)
<b>Financial Keepwhole</b>	(\$1,230,000)	(5)
<b>Revenue Range</b>		
(1) + (2) + (4) + (5)	Low	\$59,600,000
(1) + (3)	High	\$93,200,000

This table presents the difference between the reported estimated natural gas revenue gain and the revenue gain calculated using the specified alternative marketing assumptions. The low and high range adds together the extremes in each assumption. The “high” performance in both the price weighting and financial keepwhole assumptions occur in our reported performance, so no adjustment is made for those components in the high range.

## APPENDIX D

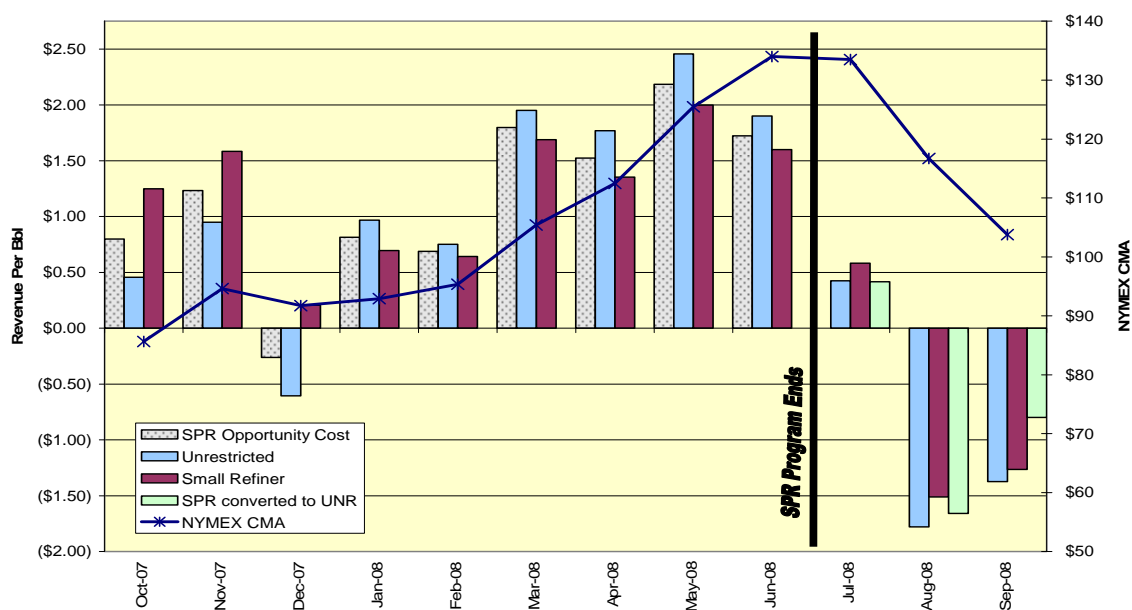
### OIL PERFORMANCE DETAIL BY SALES PACKAGE AND SPR OPPORTUNITY COSTS

The Government Accountability Office (GAO) has recommended that RIK “disaggregate the oil sales data to show the variation in the performance of individual sales” by disclosing the number of properties with revenue gains and those with revenue losses. The GAO stated that this information could be useful to the Congress in its evaluation of the RIK program. MMS has provided the following table showing totaled property gain/loss by Oil Program.

OIL PROGRAM	# OF REVENUE GAIN PROPERTIES	# OF REVENUE LOSS PROPERTIES	TOTAL # OF PROPERTIES
UNRESTRICTED	29	1	30
SMALL REFINER	31	0	31
PACIFIC	1	0	1
SPR CONVERTED <sup>28</sup>	4	34	38
<b>TOTAL</b>	<b>65</b>	<b>35</b>	<b>100</b>

Of particular concern is the number of SPR properties that were converted to UNR in July 2008 that experienced an estimated revenue loss. MMS converted these properties because of a May 2008 law that suspended the SPR fill beginning in July 2008. These estimated losses are primarily attributed to how the oil revenue performance is measured: comparing oil RIK revenue sold at a Calendar Month (CM) price to a Fair Market Value benchmark price calculated using 90 percent on a CM and 10 percent on a Trade Month (TM).

**RIK GOM Crude Oil Monthly Revenue Summary With SPR Opportunity Cost**



<sup>28</sup> In July 2008, RIK converted all the SPR properties to UNR. The FY 2008 SPR converted to UNR revenue measurement period is from July through September 2008.

In a rising market, the inclusion of the TM results in a revenue gain, while, conversely, a falling market results in a revenue loss. The chart above provides the monthly revenue gain/loss by program and illustrates this point.

To properly evaluate the estimated revenue loss incurred by the SPR properties from July through September 2008, MMS must consider the potential revenue impacts had those properties remained in the Unrestricted or Small Refiner programs. MMS has estimated this impact, referred to as the SPR opportunity cost, for the period of October 2007 through June 2008, by assuming that the SPR properties would incur a revenue impact that was a volume-weighted average of the revenue impacts incurred by the two competitive GOM oil programs: Unrestricted and Small Refiner. RIK compared the July through September 2008 total revenue loss for the SPR properties of \$2,240,000 to the SPR opportunity cost of \$17,400,000 for the period October 2007 through June 2008, and conclude that, had these properties been included in the Unrestricted program for the entire year, they, too, would have experienced a revenue gain. This conclusion is presented graphically on the chart above by providing the monthly SPR opportunity cost (dotted bar) for the period October 2007 through June 2008.