

**Minerals Management Service
Minerals Revenue Management**

**Royalty in Kind Program
Fiscal Year 2005 Report**

April 2006

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Executive Summary

This annual report documents the status of the Minerals Management Service's Royalty in Kind (RIK) program as of the end of fiscal year (FY) 2005.

The MMS RIK Program is now in its second full year of operational status after the May 2004 *Five Year Royalty in Kind Business Plan* marked the transition of the program from pilot projects to operational program.

FY 2005 saw the continuing positive evolution of the MMS RIK program as a fully operational component of MMS's asset management approach to managing the Nation's mineral royalty asset stream. Program performance far outpaced program goals. Administrative costs continued to decrease compared to the cash royalty alternative. Revenues to the Treasury were increased. Accounting periods were closed within 6 months. Conflict with producers was virtually non-existent. Agency knowledge of the Nation's energy infrastructure/markets was increased.

Program Status and Scope. In FY 2005, the MMS RIK Program was relatively static in scope compared to the previous year. A total of 82,364,035 barrels of oil equivalent (BOE) was taken in kind and sold or exchanged by MMS in FY 2005. This volume is 97% of the volumes taken in kind for FY 2004 - the reduction mostly reflecting the effects of the 2005 hurricane season on RIK activity. The value of RIK oil and gas in FY 2005 was \$3,727,467,532, a 39% year-on-year increase in value – the increase reflecting the effect of markedly higher energy commodity prices in 2005.

The Gulf of Mexico remains the core source area for RIK volumes sold or exchanged. As of the end of FY 2005, MMS took in kind approximately 75% and 30% of the crude oil and natural gas royalty volumes, respectively, produced daily in the Gulf of Mexico. Notably, MMS and the State of Wyoming decided to begin a natural gas RIK project for Federal gas production in Wyoming, a project that will commence in FY 2006.

In August, 2005, the RIK Program achieved a notable milestone by completing the Presidential directed initiative to fill the Strategic Petroleum Reserve (SPR) with some 115 million barrels of RIK crude oil. This joint project with the Department of Energy was completed well ahead of schedule, effectively and efficiently increasing our Nation's energy security. Gulf of Mexico producing properties that supported the SPR initiative are now supporting a fully commercial crude oil RIK sales program.

Program Performance. The MMS has fully implemented a comprehensive system of RIK program performance measurement - for both revenue receipts and administrative costs. Accordingly, GAO concluded in FY 2005 that MMS has fully implemented their recommendations that MMS should routinely monitor RIK program performance. These recommendations are now closed.

Administrative Cost Performance. FY 2005 was the second year in which MMS performed a comprehensive comparative analysis of the costs of administering the RIK and Royalty in Value (RIV) programs at MMS. The FY 2005 cost per “barrel of oil equivalent” or BOE for RIK is 5.9 cents (nearly identical to FY 2004’s cost of 5.6 cents/BOE). This compares to a FY 2005 cost of 10.2 cents/BOE for RIV, and represents a 42 percent reduction attributable to RIK. Using producing properties as the unit of measurement, the FY 2005 RIK cost per unit is \$7,128 compared to \$15,015 for RIV, a 52 percent reduction in costs.

Using a more conservative BOE unit comparison, increases in efficiency from RIK activity translate to cost avoidance of \$3.74 million. That is, if RIV were applied to all BOE at the 10.2 cent rate versus a combination of RIK/RIV at the 5.9 and 10.2 cent rates, respectively, additional costs of \$3.74 million would have accrued.

Revenue Performance. Measurement of MMS’s RIK revenue performance for FY 2005 indicates a revenue gain of \$30.8 million related to both the natural gas and crude oil business units. Combined with an additional revenue gain of \$1.5 million in additional interest earned on RIK revenues received 5 to 10 days earlier than under the RIV program, a total revenue gain of \$32.3 million was measured for the MMS RIK program in FY 2005. These results indicate that the five-year, \$50 million incremental revenue goal for the MMS RIK program is quite achievable. However, it should be noted that revenue gains will be variable and future gains – or losses - are not possible to predict. This fact underscores the importance of the associated administrative benefits of RIK described above.

Overall RIK Revenue Performance for FY 2005

Category	Revenue Gain (Natural Gas)	Revenue Gain (Crude Oil)	Total
Sales	\$18,640,086	\$12,150,397	\$30,790,483
Interest	\$505,002	\$1,023,548	\$1,528,550
Total	\$19,145,088	\$13,173,945	\$32,319,033

The RIK revenue performance far exceeded goals, reflecting the commercial leverage that the scale of the Federal royalty portfolio provides. The overarching factor in this success, however, is the development and maturation of the skill sets and business experience of the RIK staff.

In FY 2006, MMS will continue to explore opportunities for program application. We expect that the natural gas RIK business unit will expand substantially in the GOM and Wyoming now that the RIK internal control, risk policy, and human resource foundations have been built. The crude oil business unit will remain relatively static in size. Modest expansions of the RIK business model for both oil and gas will include diversification of sales methods and increased movement of energy commodities to market centers.

**Minerals Management Service/Minerals Revenue Management
Royalty in Kind Program FY 2005 Report
April 2006**

This report documents the status of the Minerals Management Service's Royalty in Kind (RIK) program as of the end of fiscal year (FY) 2005. The size, scope, and nature of the program are described as are measurements of the performance of the RIK program for FY 2005. We also report on progress made in implementing the MMS *Five Year Royalty in Kind Business Plan*.

1 Background

The MMS is responsible for ensuring that all revenues from Federal and Indian mineral leases are effectively, efficiently, and accurately collected, accounted for, and disbursed to recipients. These substantial revenues, nearly \$10 billion annually, are disbursed to the U.S. Treasury, 5 Federal agencies, 36 states, 41 Indian tribes, and some 30,000 individual Indian mineral owners.

Historically, most of these revenues have been received in the form of cash payments, also known as royalty in value (RIV) payments, paid by mineral development interests. In the mid-1990s, MMS began exploring the potential for a broadly applied RIK program, in which royalties are paid in commodity, rather than cash, to increase efficiencies, decrease conflict, and enhance net revenues generated from oil and gas production royalties. Several pilot projects tested this approach under a variety of conditions for crude oil and natural gas, and for onshore and offshore production volumes. Based on the pilot projects, MMS concluded that the RIK method is a viable tool to use in managing the Nation's oil and gas royalty assets. The MMS also concluded that RIK is not optimal for all oil and gas production scenarios. Accordingly, selective and strategic use of both RIK and RIV, based on systematic economic analysis of the Federal oil and gas portfolio, is the royalty asset management strategy adopted and used by MMS.

In May 2004, MMS released its *Five Year Royalty in Kind Business Plan* outlining the business principles, objectives, and specific action items that will guide and evolve the Federal RIK program from FY 2005 through FY 2009. The Plan, which marks the transition of the MMS RIK initiative from pilot projects to operational program, is aimed at attaining an effective, steady-state RIK program of the highest quality and integrity. The first two years of operations under the Plan are dedicated to enhancement of the internal control environment, organizational structure, in-house human resource skill sets, and performance measurement capability. The Plan's out-years focus on refining the RIK commercial business model to optimize benefits to the Government.

2 RIK Program Status

2.1 Business Model/Approach

The Minerals Management Service Royalty in Kind program has adopted the business strategy of a conservative producer/seller of energy commodities at entry points into the wholesale market at or near the lease in producing areas. All sales are competitively made and revenues are received based on the spot market for physical sales transactions as reported by the major price reporting publications at the most liquid and transparent market points. The MMS does not employ strategies involving speculative storage positions, fixed prices, hedging, or financial derivatives. Typically, sales are for multi-month terms, at this point in time for periods no more than 1 year in length. Transportation and processing contracts are negotiated and executed where favorable to optimize revenue returns over RIV. Standard industry contracts and business processes are used.

The above business model is consistent with statutory authorities, and reflects a conservative approach designed to minimize the government's risk profile and selectively leverage the value of oil and gas lease terms that allow both the RIV and RIK options.

2.2 Status and Scope of the Program

The Federal RIK Program has matured and is now in its second full year of operational status after six years of pilot testing. Budgets, organization, staff, and management are in place. A focused business model, internal controls, information systems, risk policies/procedures, and standard commercial business processes are operating. Business relationships with state partners and industry counterparties and partners are established.

In FY 2005, a total of 82,364,035 barrels of oil equivalent (BOE) was taken in kind and sold or exchanged by MMS, reflecting a value of \$3,727,467,532. This volume is 97% of the volumes taken in kind for FY 2004, and the value represents a 39% increase over FY 2004 RIK values.

Federal oil and gas royalties are taken in kind in 22 portfolios within the two major business units of crude oil and natural gas RIK. The Federal royalty position in the Gulf of Mexico is the core business focus area for both the crude oil and natural gas programs. As of the end of FY 2005, MMS took in kind approximately 75% and 30% of the crude oil and natural gas royalty volumes, respectively, produced daily in the Gulf of Mexico.

As of September 30, 2005, MMS RIK held 90 active contracts, including 27 active sales or exchange contracts and 63 contracts for transportation, processing, and miscellaneous services executed pursuant to DOI annual appropriations authorities. Payments for services under these contracts totaled \$16,011,906 for crude oil and \$1,521,884 for natural gas in FY 2005.

2.3 Natural Gas RIK Business Unit

During FY 2005, the MMS RIK program for natural gas was exclusively applied to Gulf of Mexico royalty volumes. No onshore Federal natural gas was taken in kind, although, on behalf of the Bureau of Land Management, MMS sold natural gas volumes associated with decommissioning of the National Helium Reserve. In FY 2005, gas RIK volumes totaled nearly 183 million MMBtu (million British Thermal Units) – over 500,000 MMBtu/day - sold in 17 sales portfolios. Revenues received from competitive sales of these royalty volumes equaled nearly \$1.25 billion, a 37% increase from FY 2004.

In FY 2005, the MMS natural gas RIK program increased a modest 8% in volumes taken relative to FY 2004. Two major sales events occurred, in October 2004 and March 2005 for the ensuing U.S. domestic heating and cooling seasons, respectively. Participation and competition continued at a high level in these sales with respect to both numbers and diversity of bidders. Bidders included mid-stream marketers, major producers, utilities, industrial end users, and financial institutions. The October 2004 sale attracted 19 companies offering a total of 97 bids, and the March 2005 sale attracted 19 companies offering 126 bids. Individual sales packages typically generated more than seven bids each.

At the end of FY 2005, natural gas royalty production from 361 leases in the Gulf of Mexico delivered into 16 pipelines was being sold in kind by MMS to 14 counterparties. A total of 19 purchasers bought RIK gas in FY 2005. These sales were supported by 43 transportation, processing, and miscellaneous service contracts. Significant additions to the RIK gas program in FY 2005 included Gulf of Mexico leases producing gas into the Transco Southeast Lateral and Trunkline Pipeline, together adding nearly 51,000 MMBtu/day to the RIK gas volumes sold. In March 2005, leases producing into the Matagorda Offshore Pipeline System were reverted back to RIV status, after economic analysis indicated revenues would likely be increased by that action.

In August 2005, the MMS Executive Committee approved the first MMS RIK natural gas project for onshore leases – focused on Federal leases in Wyoming. This decision, based on a nearly one year study of Wyoming natural gas markets involving both MMS staff and outside commercial consultants, was also endorsed by the Wyoming State Land Board. The project commences in April 2006 with approximately 30,000 MMBtu/day of gas production from the Madden Field and is anticipated to grow commensurate with opportunities and success.

2.4 Crude Oil RIK Business Unit

The FY 2005 MMS RIK program for crude oil was applied to royalty volumes produced in the Gulf of Mexico, Pacific Outer Continental Shelf (OCS), and Federal lands in Wyoming. Crude oil RIK volumes totaled nearly 52 million barrels (or over 142,000 barrels/day) in five sales/exchange portfolios. This represents a 9% decline in volumes taken in kind, resulting primarily from

hurricane effects. The value of these royalty volumes was nearly \$2.5 billion. Revenues received from competitive sales of these royalty volumes equaled over \$1.263 billion, while the value of crude oil involved in the non-monetary exchange to the Department of Energy for the Strategic Petroleum Reserve (SPR) was \$1.195 billion. The five crude oil RIK portfolios in FY 2005 were:

- Small Refiner Program (Gulf of Mexico): 12,556,031 barrels sold for net value of \$597,608,325
- Small Refiner Program (Pacific OCS): 2,768,916 barrels sold for net value of \$105,848,071
- “Unrestricted” Crude Oil Sales (Gulf of Mexico): 10,079,297 barrels sold for net value of \$527,705,356
- Wyoming Crude Oil Sales: 684,719 barrels sold for net value of \$31,914,004
- SPR Crude Oil Exchange: 25,608,852 barrels exchanged to DOE representing net value of \$1,194,617,678

In FY 2005, the MMS crude oil RIK business unit saw significant change. The SPR Fill Initiative began winding down in April 2005 and was completed at the end of August 2005. Volumes committed to the SPR decreased from 38.8 million barrels in FY 2004 to 25.6 million in FY 2005, a decrease of 13.2 million barrels. Volumes supporting the Pacific Small Refiner Program decreased by 10% from FY 2004. On the other hand, volumes supporting the unrestricted commercial sales portfolio increased from 731,000 barrels in FY 2004 to 10.1 million in FY 2005.

The marked increase in the unrestricted sales portfolio reflects conversion of crude oil producing properties from the SPR Fill Initiative to this revenue-generating RIK sales portfolio. The unrestricted crude oil sales portfolio is distinct from the small refiner portfolio, which is open only to bids from companies that qualify by regulation as “small refiners”. The unrestricted portfolio originally began operations in October 2001, but was terminated in April 2002 due to the need to promptly respond to the President’s directive to fill the SPR. Several factors drove the re-emergence of this sales portfolio:

- Marked increases in crude oil transportation routes to markets in the Gulf of Mexico. Crude oil marketers of larger size and capabilities than the small refiner community are better able to exploit this increase in diversity of transportation and markets, providing greater revenues to the government
- Joint desire of MMS and the State of Louisiana to increase the number of market participants in a new RIK partnership (see below)

Royalty production from two major crude oil types – HOOPS and Southern Green Canyon – was converted to RIK during FY 2005. New RIK production from these properties was approximately 20,000 barrels/day. However, these additions were

not sufficient to offset significant production losses due to the devastating effects of Hurricane Katrina in September 2005, in which the entire stream of Heavy Louisiana Sweet and the majority of Mars crude oil production were shut in.

At the end of FY 2005, crude oil royalty production from 1,378 onshore and offshore leases (596 in Wyoming; 782 on the OCS) delivered into 55 pipelines was being competitively sold or exchanged to 13 counterparties. The sales and exchanges were supported by 20 transportation and miscellaneous service contracts.

2.5 Partnerships with States and Other Federal Agencies

The MMS continued to jointly engage in RIK activities under a series of memorandums of understanding with states and Federal agencies:

- Joint sales of crude oil produced from Federal and State leases in the State of Wyoming, a business partnership in place since 1998. This agreement now includes natural gas RIK sales as well.
- RIK sales of natural gas produced from the 8(g) zone offshore Texas, a collaborative project with the State of Texas since 1999.
- RIK sales of natural gas/crude oil produced from the 8(g) zone offshore Louisiana, a partnership with the State of Louisiana begun in FY 2004.
- Sales of natural gas produced from the National Helium Reserve as the Reserve is decommissioned by the Bureau of Land Management
- Crude oil exchanges from producing leases in the Gulf of Mexico for delivery to the Department of Energy in the joint SPR Fill Initiative

3 Business Plan Implementation

The Minerals Management Service continued implementing management action items of the *Five Year Royalty in Kind Business Plan* in FY 2005. The Plan includes guiding business principles, commercial objectives, and administrative goals, including:

- Meet or exceed revenue benchmarks consistent with statutory authorities
- Enhance net revenue by \$50 million over 5 years
- Effectively manage/reduce administrative costs by 10%, per unit volume
- Effectively contribute to the Nation’s strategic energy initiatives
- Implement systematic measurement of RIK program performance
- Maintain the highest ethical and professional standards

The Plan calls for completion of organizational changes, process improvements and personnel enhancements during the first and second years. When this RIK framework is fully operational, MMS will be in a better position to take advantage of market opportunities through implementing the enhanced marketing strategies and expand RIK volumes. All the specific goals and objectives are designed for completion by the end of the five year business plan.

Business Plan Segment	Implementation Steps	Quarter																			
		Year 1				Year 2				Year 3				Year 4				Year 5			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Policy Oversight Function	Develop & Implement RIK Risk Policy & Procedures	█	█	█	█																
	Develop Internal Management Control Review ("IMCR") Guidelines	█	█	█	█																
Performance Measurement	Develop & Implement Rev. Perf. Measurement Metrics & Procedures	█	█	█	█																
	Develop & Implement Admin. Perf. Measurement Metrics & Procedures	█	█	█	█																
	Complete Administrative Cost Comparison for RIV/RIK	█	█	█	█	█	█	█	█												
Organization & Human Resources	Complete RIK Organizational Structure	█	█	█	█																
	Acquire or Contract for Required Personnel and Skill Sets	█	█	█	█	█	█	█	█												
	Ongoing Training Program for Mktg. & Scheduling Functions	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Expanding Marketing Strategies	Develop, Implement & Utilize Expanded Marketing Strategies					█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
	Complete Initial WY Assessments					█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
	Assess & Develop Specific Opportunities with Producing States					█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Information Systems Improvements & Process Controls	Finalize/Develop Implementation of Perf. Measurement Modules	█	█	█	█																
	Implement Pipeline Pool Scheduling Capabilities	█	█	█	█	█	█	█	█												
	Assess/Improve Systems Capabilities to Reflect Expanded Marketing	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Business Plan Performance Monitoring	Measure Progress on 5-year Objectives Periodically									█	█	█	█	█	█	█	█	█	█	█	█
	Reevaluate Assumptions and Drivers of the Business Plan									█	█	█	█	█	█	█	█	█	█	█	█
	Develop New Five-Year Business Plan									█	█	█	█	█	█	█	█	█	█	█	█
Communication & Outreach	Brief Congressional Members and Staff on RIK 5-year Plan	█	█	█	█																
	Provide Presentations/ Feedback Sessions with States, Industry, and other Stakeholders	█	█	█	█	█	█	█	█												
	Facilitate Review Session within MRM Organization Regarding Interrelationships and Synergies	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█

3.1 Accomplishments

Actions envisioned for the second year of the Plan (FY 2006) are on schedule. These include actions in risk procedures, performance measurement, and human resource areas. Performance measurement is described in the next section of this status report.

3.1.1 *Risk Policy Tasks*

The Plan calls for the development of a comprehensive RIK risk policy framework consisting of both a risk policy and associated procedures. The RIK Risk Management Policy was completed in August 2005, and can be found on the MMS web site. Procedures to implement the risk policy have also been developed and are now being implemented.

3.1.2 *Organizational Tasks*

The organizational objectives of the Plan include further increasing efficiencies and internal controls through complete implementation of the industry-standard front, mid, and back office environment, augmented by an independent risk office with economic analysis capability.

The primary organizational changes outlined in the Plan have been accomplished. Further organizational changes may be necessary in the Plan's out-years. The following changes have occurred to date:

- Creation of a SES-level RIK organizational entity
- Establishment and filling of a Chief Risk Officer position/role outside of RIK line management, with responsibility for oversight of the RIK risk policy environment.
- Creation of an RIK Back Office and movement of the back office functions of accounting, reconciliation, and receivables/payables into this office from the front office entities where they previously resided – resulting in even tighter internal controls.
- Establishment of an Economic Analysis Office in which support services related to portfolio analysis and performance measurement now reside. Performance measurement services are conducted under the guidance and review of the Chief Risk Officer.

3.1.3 *Human Resources Tasks*

A primary human resource-related objective of the Plan is to institute an internal commercial capability to expand the RIK business model to that of an active energy commodity producer/seller in upstream locations. Additionally, other activities will be best served through commercial contract support. The identified internal skill sets needing enhancement include marketing, scheduling, and economic analysis. The Plan stresses the importance of building a significant RIK front office (marketing and scheduling) capability in Houston, the production/marketing hub of the domestic petroleum industry.

The following tasks have been accomplished:

- Filled management positions in the new RIK organization: deputy manager, gas front office and economic analysis office
- Staffed the RIK Economic Analysis Office nearly to full build-out

Several additional human resource elements in the Plan, including enhancement of commercial/legal contracting capabilities and retention of scheduling and marketing expertise, are currently being implemented.

4 RIK Program Performance

In the first year of the *Five Year Royalty in Kind Business Plan* (FY 2004), Minerals Management Service fully established a comprehensive system of RIK program performance measurement - for both revenue receipts and administrative costs. Based on this action, the GAO concluded that MMS had fully implemented their recommendations that MMS should routinely monitor RIK program performance. Accordingly, these recommendations are now closed.

4.1 Administrative Cost Performance

FY 2005 was the second year in which MMS performed a comprehensive comparative analysis of the costs of administering the RIK and RIV programs at MMS. The FY 2005 cost per "barrel of oil equivalent" or BOE for RIK is 5.9 cents (nearly identical to FY 2004's cost of 5.6 cents/BOE). This compares to a FY 2005 cost of 10.2 cents/BOE for RIV, and represents a 42 percent reduction attributable to RIK. Using producing properties as the unit of measurement, the FY 2005 RIK cost per unit is \$7,128 compared to \$15,015 for RIV, a 52 percent reduction in costs.

Using the more conservative BOE unit comparison, the increase in efficiency from RIK activity translates to a cost avoidance of \$3.74 million. That is, if RIV were applied to all BOE at the 10.2 cent rate versus a combination of RIK and RIV at the 5.9 and 10.2 cent rates, respectively, additional costs of \$3.74 million would have accrued.

The RIV activities cost more than RIK primarily due to the necessity to audit the value and transportation costs associated with sales and movement of Federal mineral production. These audit requirements are inherently labor intensive due to the complexity of the interrelationships between the business practices of hundreds of mineral lessees and a set of valuation regulations that prescribe royalty payment standards applied to complex, dynamic market conditions. In RIK situations, valuation and transportation are determined by unambiguous contract terms, thus providing for efficiencies and lack of conflict.

Additionally, we note several lines of qualitative data that indicate efficiencies due to RIK implementation. As of the end of FY 2005, out of 120 pending administrative appeals of mineral royalty management decisions, none were RIK-related. The number of appeals is a direct measurement of the potential for litigation and thus cost. Additionally, the time taken to close accounting periods under the RIK method is notably condensed compared to the RIV business cycle of at least 3 years. Specifically, for FY 2005, 85% of RIK business activity was closed within 180 days of the month of RIK production.

4.2 Revenue Performance

Similar to administrative cost measurement, FY 2005 was the second full year in which the revenue performance of all RIK sales portfolios was measured. Revenue performance of the SPR Fill Initiative was not measured since it is not

revenue producing. Measurements took place quarterly, approximately 4 months after the end of the quarter being measured. The measurement process is performed under the direction, guidance, and review of the MRM Chief Risk Officer, reporting outside of RIK line management to the Associate Director for Minerals Revenue Management, with “dotted line” reporting to the MMS Executive Committee. This is directly analogous to the organizational structure and reporting relationships existing in commercial enterprises relative to revenue performance measurement.

4.2.1 Principles Underlying the Measurement

In MMS’s revenue performance metrics, the objective is to measure RIK revenues against benchmarks created to represent fair market value. The primary principle underlying this system is that the benchmarks should represent a defensible interpretation of MMS’s RIK statutory requirements to achieve both fair market value (authorizing legislation) and the value MMS would have received under a comparable royalty in value program (appropriations legislation). Additional principles in this area are that the methodology used to create the “fair market value” benchmarks should:

- Recognize that fair market value is a range of values rather than an absolute number
- Be well-defined, repeatable, and statistically accurate
- Apply across different time periods and groupings of properties/portfolios
- Reflect reasonable labor requirements
- Use as much royalty in value data as possible
- Use transparent market data as much as possible when accurate in value data are not available

4.2.2 Results

Measurement of MMS’s RIK revenue performance for FY 2005 indicates a revenue gain of \$30.8 million related to both the natural gas and crude oil business units. Combined with an additional revenue gain of \$1.5 million in additional interest earned on RIK revenues received 5 to 10 days earlier than under the RIV program, a total revenue gain of \$32.3 million was measured for the MMS RIK program in FY 2005 (Figure 1). These results indicate that the five-year, \$50 million incremental revenue goal for the MMS RIK program is quite achievable. However, it should be noted that revenue gains will be variable and future gains – or losses - are not possible to predict. This fact underscores the importance of the associated administrative benefits of RIK described above.

Figure 1: Overall RIK Revenue Performance for FY 2005

Category	Revenue Gain (Natural Gas)	Revenue Gain (Crude Oil)	Total
Sales	\$18,640,086	\$12,150,397	\$30,790,483
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The revenue results discussed in this section are used by MMS in several ways. This report conveys the results to MMS stakeholders in the minerals revenue management program. Internally, MMS uses the results to measure RIK program performance relative to the program objectives. Lastly, the results are provided to the RIK front office marketers to enhance their ongoing commercial decision making. Suboptimal results for individual sales portfolios may result in changes to marketing/contracting practices or conversion of properties or portfolios to RIV status.

RIK Natural Gas Portfolios. Domestic natural gas markets in FY 2005 were robust, with GOM prices ranging from \$5 to \$7 per MMBtu. August and, especially, September 2005 brought a notable spike in GOM prices up to \$12 per MMBtu, as the effects of devastating hurricanes on natural gas markets were seen. Price volatility was high. Although domestic crude oil prices also increased with corresponding increases in NGL prices, gas processing economics were generally negative in FY 2005 (i.e., unprocessed gas was generally of greater value than residue gas plus NGLs).

For FY 2005, the average RIK sales price for GOM gas was \$6.88/MMBtu, whereas the average Henry Hub price was \$7.15/MMBtu. The 29 cent difference in these prices is a reasonable and demonstrable effect of transportation differentials and processing costs on a net MMS price at the offshore platform versus a gross Henry Hub price at the primary GOM onshore market center.

Figure 2 shows FY 2005 revenue performance for the RIK natural gas portfolios - a revenue gain of \$18.6 million or 10.1 cents/MMBtu. (FY 2004 gain was \$8.4 million). This represents a gain of slightly less than 1.5% over fair market value benchmarks, compared to a FY 2004 gain of 1%. The significantly higher FY 2005 revenue gains reflect the impact of a slight increase in percentage gain applied to the substantially higher FY 2005 absolute natural gas prices.

Performance for the 17 sales portfolios ranges from a low of a 3.65% loss for the Matagorda Offshore Pipeline System (MOPS) to a gain of nearly 4% for the Texas Eastern Transmission Company Pipeline (TETCO). Thirteen of the 17 portfolios show revenue gains. The sales packages with the largest revenue gains were TETCO, Garden Banks, Mississippi Canyon, ANR, and Viosca Knoll. Factors contributing to these gains include:

- Processing: The size of the Federal royalty position was used to leverage greater processing returns where options to process at several plants exist. Many producers have locked in multi-year processing arrangements negotiated at prior times more favorable to processors than producers. Although processing economics were generally negative in FY 2005, MMS processing contracts provided more economic options than most producers and acted to limit negative returns on production taken in kind. For one

particularly favorable contract, MMS was able to share in liquids revenues at no cost in either cash or relinquished gas volumes – a unique success accruing from the large Federal portfolio on this pipeline.

- **Transportation:** Again, MMS leveraged the size of the Federal portfolio for significantly discounted transportation rates where multiple transportation options exist, as pipelines competed against each other to service MMS gas that was previously contracted by producers for long periods to just one pipeline. Lower rates translate to higher net receipts to the Treasury.
- **Basis Transactions:** Based on market intelligence, MMS priced several sales packages not on the most local price index but on a more regional index with a location differential (basis) typically deducted from the price. As absolute gas prices increased during FY 2005, the basis between pricing points generally increased (reflecting increased cost of fuel) beyond the basis included in MMS contracts. Accordingly, MMS's net value received for these transactions reflected lesser basis deductions than the market indicated and thus exceeded the market.

The RIK front office has determined that revenue losses for the "MOPS" sales portfolio during FY 2005 were likely to continue under RIK. Accordingly, this sales package was converted back to RIV status effective April 2005.

RIK Crude Oil Portfolios. Domestic crude oil markets were also robust in FY 2005 with prices increasing to new benchmark levels. Crude oil (WTI Cushing – the NYMEX crude oil benchmark price) steadily rose from the mid \$40 level early in the fiscal year to the mid \$60s in September 2005 in the aftermath of Hurricane Katrina. Sweet grades of Gulf Coast crude oil ("LLS" and "HLS") were particularly strong, while Gulf Coast sour grades trailed behind as published differentials to WTI approached \$10 at times. The MMS RIK barrels are predominantly Gulf Coast sour crude types, and thus the 2005 value of the RIK crude oil portfolio reflected these steep differentials to WTI (see below). Sour crude oil grades produced in Wyoming were valued at even higher discounts to WTI - over \$20/barrel at times.

Importantly, the domestic crude oil market in FY 2005 exhibited a persistent "contango" trend (lower near term value and higher future values). The FY 2005 average contango value exceeded 70 cents. This observation is important to crude oil royalties because buyers and sellers adopt pricing provisions that can favor a contango market or its opposite, a backwardated market.

For FY 2005, the average RIK sales price for GOM crude oil was \$48.41/barrel, whereas the average NYMEX WTI price was \$53.80/barrel. The \$5.39 difference in these prices is a reasonable and demonstrable effect of transportation, quality, and crude oil grade type differentials from the WTI Cushing price to the offshore platform. Deductions for transportation can often range between \$1 to \$2/barrel.

However, the most significant factor in this comparative difference is far and away the effect of sour crude oil grade types on RIK price in the Gulf of Mexico. In particular, significant discounts to WTI were seen for the following GOM crude types (stated as averages/barrel for the fiscal year): Mars (\$7.03), Bonito Sour (\$3.49), Poseidon (\$5.85), and Eugene Island (\$3.73).

Figure 3 shows FY 2005 revenue performance for the RIK crude oil portfolios – a revenue gain of \$12.2 million or 47 cents per barrel (FY 2004 gain was \$8.4 million). This represents a gain of nearly 1% over fair market value benchmarks, compared to a FY 2004 gain of 1.5%. The significantly higher FY 2005 revenue gains reflect the impact of continued solid percentage gains applied to 66% more crude oil volumes sold (rather than exchanged to SPR) at much higher prices.

Performance of the four measured portfolios was revenue positive in all cases and ranges from a low of .3% gain for the small refiner portfolio in the Gulf of Mexico to a high of a 5.8% gain for the Wyoming portfolio. Factors contributing to these gains include:

- The MMS priced a portion of crude oil sales on a fixed 6-month “NYMEX roll” methodology that, in a contango market, can significantly improve revenues relative to the routine 3-month market pricing method.
- Increasing optionality in crude oil transportation and sales markets was leveraged for substantial RIK volumes, leading to increased revenues.
- The MMS priced a major Wyoming sales transaction off NYMEX quotes rather than the more routine Canadian indices, just prior to significant increases in NYMEX prices and decreases in Canadian indices.

5 Conclusions and Preview of FY 2006

Fiscal Year 2005 saw the continuing positive evolution of the Minerals Management Service Royalty in Kind program as a fully operational component of MMS's asset management approach to managing the Nation's mineral royalty asset stream. The President's directive to fill the SPR was completed, well ahead of schedule and at the least cost and highest effectiveness and efficiency. Producing properties supporting the SPR fill were seamlessly converted to commercial sales programs. Capabilities to manage the RIK portfolio were enhanced through development and publication of the RIK Risk Management Policy. RIK program performance far outpaced program goals, reflecting the influences of the various technical factors described above. However, more important than technical considerations, the overarching factor in this success is the development and maturation of the skill sets and experience of the RIK staff applied to the substantial Federal oil and gas royalty portfolio.

In FY 2006, continued progress is being made in implementing the RIK business plan. Work will continue on enhancing human resource skill sets, focused on strengthening a Houston RIK presence. We anticipate completion of the RIK risk management framework through full implementation of risk procedures and metrics that will fully implement the RIK risk policy.

Operationally, MMS will continue to explore opportunities for program application. We expect that the natural gas RIK business unit will expand substantially in the GOM and Wyoming now that the RIK internal control, risk policy, and human resource foundations have been built. The crude oil business unit will remain relatively static in size. Modest expansions of the RIK business model for both oil and gas will include diversification of transactional structures and increased transportation of commodity to market centers.

Energy commodity markets are showing continued strength in FY 2006. Market strength at these levels is associated with a seller's market, a situation favoring producer/sellers of crude oil and natural gas, like the MMS RIK presence. However, several challenges exist. High energy commodity prices bring high volatility and dynamic basis relationships between pricing points. MMS RIK entry into the Rocky Mountain natural gas markets presents more direct exposure to a delicate balance between rapidly expanding regional production and the capacity to transport gas to consuming regions. As a result, price risk is increased. Lastly, large builds in both crude oil and natural gas inventories in early FY 2006 are causing domestic market softness for wholesale energy sales, especially with respect to natural gas. Each of these challenges is manageable by capture and application of market intelligence and diligence in sales execution.

Figure 2: FY 2005 Natural Gas RIK Revenue Performance

Gas System	Total Volumes	per day	RIK Revenues	Gain (Loss)	Per MMBtu	Percent
ANR Nearshore	15,305,028	41,932	\$106,243,970	\$2,689,981	\$0.176	2.53%
Columbia	6,185,601	16,947	\$43,662,256	\$577,531	\$0.093	1.32%
CTGS	14,416,248	39,497	\$94,603,370	\$(47,982)	\$(0.003)	-.05%
Garden Banks	15,654,027	42,888	\$108,788,054	\$2,251,167	\$0.144	2.07%
HIOS	19,690,035	53,945	\$133,699,258	\$2,143,515	\$0.109	1.60%
Manta Ray	7,032,080	19,266	\$49,541,378	\$819,882	\$0.117	1.65%
MOPS	2,512,876	13,883	\$15,782,037	\$(576,555)	\$(0.229)	-3.65%
NHIS	21,508,086	58,926	\$152,934,981	\$947,952	\$0.044	0.62%
Seagull/Blessing	5,538,606	15,174	\$37,617,686	\$143,218	\$0.026	0.38%
Stingray	15,023,297	41,160	\$100,869,162	\$(121,585)	\$(0.008)	-0.12%
TGP 500/Viosca Knoll	6,887,220	18,869	\$46,788,577	\$529,164	\$0.077	1.13%
TGP 800	5,750,582	15,755	\$40,207,854	\$239,513	\$0.042	0.60%
Transco SE	6,944,258	20,791	\$49,799,999	\$949,442	\$0.137	1.91%
Trunkline	5,459,839	29,999	\$39,550,059	\$(211,835)	\$(0.039)	-0.54%
TETCO (E. La)	12,095,584	33,139	\$83,512,513	\$3,293,777	\$0.272	3.94%
Mississippi Canyon	13,911,568	38,114	\$93,045,979	\$3,283,204	\$0.236	3.53%
Viosca Knoll	10,082,386	27,623	\$68,977,988	\$1,729,697	\$0.172	2.51%
Grand Totals	183,997,321	527,907	\$1,265,625,121	\$18,640,086	\$0.101	1.47%

Figure 3: FY 2005 Crude Oil RIK Revenue Performance

Oil Sale	Total Volumes	per day	RIK Revenues	Gain (Loss)	Per bbl	Percent
Small-Refiner (GOM)	12,556,031	34,400	\$597,608,325	\$1,803,837	\$0.14	0.30%
Small-Refiner (Pacific)	2,768,916	7,586	\$105,848,071	\$2,770,092	\$1.00	2.62%
Unrestricted Sale (GOM)	10,079,297	27,615	\$527,705,356	\$5,741,065	\$0.57	1.09%
Wyoming	684,719	1,876	\$31,914,004	\$1,835,404	\$2.68	5.8%
Grand Totals	26,088,963	71,477	\$1,263,075,756	\$12,150,397	\$0.47	0.96%

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