Minerals Management Service
Minerals Revenue Management

Royalty in Kind Program Revenue Performance: Fiscal Year 2004

April 2005

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This document reports on the revenue performance of the Minerals Management Service's (MMS) Royalty in Kind (RIK) program for fiscal year (FY) 2004.

Background

The MMS's Minerals Revenue Management program 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.

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. One of the principal initial action items of the Plan is to refine and finalize the metrics used to measure the revenue performance of the RIK program.

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RIK Revenue Performance

The most conclusive studies of the revenue performance of the RIK program to date - by the Government Accountability Office (GAO) and MMS's policy office - have indicated revenue gains for the Treasury in the 1 to 3 percent range. However, the GAO concluded in their 2003 and 2004 reports on the RIK program that MMS should institute a systematic, routine, and comprehensive system of RIK performance measurement rather than the partial measurement process implemented previously.

MMS agreed with GAO and, during 2003 and 2004, undertook a series of efforts to develop, refine, and fully institute RIK revenue performance measurement:

- An automated support system for RIK performance measurement was implemented in July 2003,
- The Lukens Energy Group (Lukens) of Houston, Texas was engaged in August 2003 to refine and enhance existing measurement methodologies,
- A procedures manual for such measurement was completed by Lukens in January 2004,
- Automated systems were enhanced in early 2004 with refined procedures
- Routine, systematic, and comprehensive measurement of all RIK sales portfolios began in April 2004,
- MMS engaged Lukens in the fall of 2004 to perform an independent review and verification of MMS 's implementation of RIK performance measurement, including assumptions, methodologies, and detailed calculations used in the measurements, and
- MMS continued to refine measurement methodologies per additional suggestions from Lukens into calendar year 2005.

As of the end of FY 2004, the revenue performance of all RIK sales portfolios was being measured going back to April 2003 for natural gas sales and July 2003 for crude oil sales. Revenue performance of the Strategic Petroleum Reserve Fill Initiative is not measured since it is not revenue producing. Measurements take place quarterly, approximately 4 months after the end of the quarter being measured. Importantly, the measurement process is performed under the direction, guidance, and review of the MRM Senior Policy Advisor, 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.

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Methodologies

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 defendable 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 RIV data as possible, and
- Use transparent market data as much as possible when accurate RIV data are not available.

The benchmarks generally consist of a price index (to reflect realized *market price*) and an adjustment factor (to reflect realized *market value*, netted back to the producing property). The price indices represent liquid market prices at one or a collection of market centers or pooling points proximal to the producing properties being measured. The adjustment factors derive from a range of commercial market/contracting possibilities for producing area natural gas or crude oil commodity sales, transportation, processing, and product quality. The adjustment factors are established based on either historical RIV data for the RIK properties being measured or transparent market data representing commercial market/contracting opportunities for similarly situated producer sellers of energy commodities.

The single exception to the approach and methodology described above is the measurement of revenue performance of RIK crude oil sales from Federal leases in Wyoming. For this analysis, due to the lack of fully transparent pricing data, MMS uses severance tax data submitted to the State of Wyoming by producers for the same properties taken in kind. Both MMS and GAO analyses have observed a high positive correlation between values reported to MMS supporting RIV payments and to the State of Wyoming supporting severance tax payments. MMS concludes that benchmarks created by using Wyoming state tax data reasonably reflect fair market value and what RIV proceeds would have been in the absence of the RIK program.

The Lukens review of MMS’s implementation of its revenue performance metrics concluded that established procedures were followed; assumptions made in the process were reasonable; and results reflect a reasonable comparison of RIK proceeds against estimates of both fair market value and what a comparable royalty in value program would have achieved.

Results
Measurement of MMS's RIK revenue performance for FY 2004 indicates a revenue gain of $17.2 million related to both the natural gas and crude oil business units. Combined with an additional revenue gain of nearly $900,000 in incremental interest earned on RIK revenues received 5 to 10 days earlier than under the RIV program, a total revenue gain of $18.1 million was measured for the MMS RIK program in FY 2004 (Figure 1). These results indicate that the five-year, $50 million incremental revenue goal for the MMS RIK program is reasonable.

Figure 1: Overall RIK Revenue Performance for FY 2004

Category	Revenue Gain (Natural Gas)	Revenue Gain (Crude Oil)	Total
Sales	$8,772,291	$8,470,124	$17,242,415
Interest	$431,845	$461,030	$892,875
Total	$9,204,136	$8,931,154	$18,135,290

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, we use the results to measure RIK program performance relative to the Plan's 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.

Figure 2 shows FY 2004 revenue performance for the <u>RIK natural gas business unit</u> - a revenue gain of $8.8 million or 5.1 cents/MMBtu. This represents a gain of slightly less than 1%. Performance for the 15 sales portfolios ranges from a low of nearly 2% loss for the Matagorda Offshore Pipeline System (MOPS) portfolio to a gain of some 4.5% for the Texas Eastern Transmission Company Pipeline (TETCO) portfolio. Thirteen of the 15 portfolios show revenue gains. RIK revenues were measured as either in or above the fair market value range for 93% of the months evaluated. Other than the TETCO portfolio, those indicating the largest revenue gains – Garden Banks, Manta Ray, and TGP 500/Vioska Knoll – are the portfolios with the greatest optionality in markets served and available transportation and processing options. The results confirm the MMS's asset management theory and pilot project experience that the size of the Federal royalty position can be used to leverage lower transportation rates and higher processing returns where market/contracting options exist.

The RIK front office will examine reasons for indicated revenue losses for the MOPS sales portfolio during FY 2005 and will make appropriate decisions to enhance revenue performance.

Figure 2: FY 2004 Natural Gas RIK Revenue Performance

Gas System	Total Volumes	per day	RIK Revenues	Gain (Loss)	Per MMBtu	Percent
ANR Nearshore	20,753,344	56,703	$113,988,069	$63,415	$0.003	0.06%
Columbia	6,685,020	18,265	$35,644,926	$229,330	$0.034	0.64%
CTGS	9,270,401	25,329	$48,847,938	$772,535	$0.083	1.58%
Garden Banks	19,036,400	52,012	$103,092,074	$1,904,680	$0.100	1.85%
HIOS	19,163,187	52,358	$99,873,179	$451,946	$0.024	0.45%
Manta Ray	7,030,424	19,209	$38,362,334	$865,516	$0.123	2.26%
MOPS	3,991,082	10,905	$20,674,597	($379,399)	($0.095)	-1.84%
NHIS	19,672,586	53,750	$108,568,662	$1,375,786	$0.070	1.27%
Seagull/Blessing	7,382,206	20,170	$39,043,367	$128,435	$0.017	0.33%
Stingray	15,856,362	43,323	$84,079,017	($80,120)	($0.005)	-0.10%
TGP 500/Viosca Knoll	12,639,179	34,533	$67,195,952	$1,591,768	$0.126	2.37%
TGP 800	9,779,478	29,192	$53,567,363	$35,221	$0.004	0.07%
TETCO (E. La)	4,950,510	14,778	$27,339,372	$1,247,594	$0.252	4.56%
Mississippi Canyon	7,808,140	42,667	$44,640,096	$239,563	$0.031	0.54%
Viosca Knoll	6,688,752	36,551	$38,992,479	$326,021	$0.049	0.84%
Total FY04	170,707,071	509,746	$923,909,425	$8,772,291	$0.051	0.95%

Figure 3 shows FY 2004 revenue performance for the RIK crude oil business unit – a revenue gain of $8.5 million or 49 cents per barrel. This represents a gain of 1.5%. Performance of the four measured portfolios was revenue positive in all cases and ranges from a low of 0.6% gain for the small refiner portfolio in the Gulf of Mexico to a high of 5.5% gain for the small refiner portfolio in the Pacific OCS.

We believe that the significant revenue gains realized for the two Gulf of Mexico portfolios may reflect the influence of RIK volumes being sold based on pricing methods favoring markets in backwardation (higher near-term value; lower future value), whereas the RIV regulations were opposite in effect. North American crude oil markets were predominantly in backwardation in FY 2004. We note that MMS finalized crude oil valuation regulations at the end of FY 2004 that will favor backwardation markets.

We caution against a blanket interpretation that the Gulf of Mexico small refiner portfolio (0.6% increase) is suboptimal compared to the Gulf of Mexico “unrestricted” portfolio (1.2% increase), since the RIK properties with the most market and transportation optionality (i.e., greatest potential for revenue gain) are included in the “unrestricted” portfolio to attract the most competition.

The strong revenue performance of the small refiner Pacific OCS sales portfolio (5.5%) is not expected to continue at the level indicated. The fair market value benchmarks for this portfolio include both local commercial pricing methods and Alaska North Slope (ANS) indexed crude oil. Values of ANS-priced crude oil were quite weak in FY 2004 relative to other pricing alternatives available, including those used in RIK sales. ANS prices have significantly strengthened to date in FY 2005.

Figure 3: FY 2004 Crude Oil RIK Revenue Performance

Oil Sale	Total Volumes	per day	RIK Revenues	Gain (Loss)	Per Bbl	Percent
Small Refiner (GOM)	12,942,188	35,361	$447,297,868	$2,873,433	$0.22	0.64%
Small Refiner (Pacific)	3,070,044	8,388	$90,612,399	$4,987,498	$1.62	5.50%
Unrestricted (GOM)	778,876	2,296	$28,634,061	$330,971	$0.42	1.16%
Wyoming	370,684	1,013	$12,481,128	$278,222	$0.75	2.23%
Total FY04	17,161,792	47,058	$579,025,456	$8,470,124	$0.49	1.46%

Conclusions

FY 2004 saw the continuing positive evolution of the MMS RIK program as a now fully operational component of MMS's asset management approach to managing the Nation's mineral royalty stream.

Revenue performance of the MMS RIK program in FY 2004 was exceptional, and represented a solid fiscal contribution of more than $18 million to the Treasury.

Energy commodity markets are showing continued strength in FY 2005, and predictions are equally, if not more, bullish. Market strength at current levels generally translates to a seller's market, a situation attractive to producer/sellers of crude oil and natural gas, like the MMS RIK presence. We anticipate that oil and gas markets will continue to be attractive for sellers and to foster even greater optionality and access to infrastructure and markets.

In FY 2005, we are exploring opportunities to build off the successes noted above for FY 2004. The FY 2004 revenue performance metrics will be used as a primary tool in examining ways to optimize the current portfolio and exploring the potential for modest program expansion.