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Wyoming Oil Royalty In Kind Pilot

18 Months and Counting

March 1, 2001

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The Minerals Management Service (MMS) and the State of Wyoming's Office of State Lands and Investments (State) have been cooperatively developing an oil royalty in kind (RIK) program since 1998. There have been four additional sales of RIK oil since the first sale occurred in October 1998. All sales were for 6-month terms. This document summarizes and analyzes the first three sales – October 1998 through March 2000.

Executive Summary

The Wyoming Oil RIK Pilot successfully demonstrates that taking oil production in kind and selling it through a competitive bid process is a viable alternative to the historical method of taking royalties in value in some circumstances.

The Wyoming Oil Royalty In Kind pilot was established with the following criteria as a basis for evaluating its success:

1. Simplicity, accuracy, certainty for lessees and government;
2. Revenue neutral (or better) for government; and
3. Reduced administrative burden for lessees and government.

The Wyoming RIK pilot has met these criteria for the period under review in that:

- RIK has reduced the period of value uncertainty for MMS and lessees from years to months
- RIK royalty receipts exceeded comparable in value royalties by approximately \$810,000
- RIK streamlined processes have established a foundation for administrative savings for MMS and industry in future periods.

The Pilot provided the MMS and the State with valuable experience in operating an ongoing RIK program. In several areas, the three sales allowed the MMS and State to review previous phase results and improve processes for the next cycle. Reviewing the bidding mechanisms and which properties were receiving bids led to the expansion of the possible bidding and pricing mechanisms and to the elimination of trucked properties from subsequent sales. Feedback from sale participants provided impetus to eliminating burdensome and unnecessary qualification requirements. The MMS and the State need to further investigate other pricing mechanisms and different sales terms (1, 2, or 3 months) as a result of the Pilot. The Wyoming oil market is complex. Overall the value received in kind was at or above the comparable in value number; however, this was not the case for every month for every property.

Any future expansion of the RIK program would assist the MMS in meeting its strategic and Government Performance and Results Act goal of assuring compliance sooner and on a broader universe of leases.

The knowledge gained from the Pilot provides the MMS with invaluable experience for any future RIK activities. Lessons learned from the Wyoming oil RIK pilot will be utilized in future competitive RIK oil sales and small refiner sales in the Gulf of Mexico. The MMS and the State have demonstrated that they can initiate and maintain an ongoing oil RIK program. The sixth 6-month sale will be for production occurring from April through September 2001.

The royalty equation can be summarized as:

$$\text{Royalty} = \text{Volume} \times \text{Value (with appropriate adjustments)} \times \text{Royalty Rate}$$

Selling the government's share of production in kind directly impacts the Value component. RIK removes the Value calculation from the responsibility of the lessee and places it on the lessor and purchaser. RIK simplifies the price calculation since it is part of the contract agreed to by the seller and purchaser. Historically, Value (and the transportation element) has been the most contentious and labor intensive component of the royalty equation.

The MMS and the State took and sold in kind between 25 and 30 per cent of the royalty barrels (Federal and State) produced in Wyoming during the 18 months of this analysis. A total of 1.643 million barrels of Federal and State oil were sold with a value of \$27.66 million.

The Wyoming oil RIK pilot occurred during a time of extreme price volatility. Generally, the values received in kind were greater than the values received in value. The MMS compared the royalties received for the oil sold in kind to similarly situated oil for which royalties were calculated and paid in value. The in kind oil's value exceeds the in value oil's value in excess of \$810,000 (Federal - \$683,000 and State - \$133,000) for the 18 months of this analysis. Several factors (volumes, length and price terms of the contract, aggregation ability, and transportation availability) impacted the month-to-month comparisons.

The MMS compared the RIK values to the postings average. The RIK value exceeded the postings average by a total dollar differential of \$6.33 million, or - \$3.85/bbl.

The MMS declined bids in Phase 1a. This decision resulted in the avoidance of approximately \$72,000 in reduced royalties, and in part validated the effectiveness and control over the bid process.

Royalties are paid 5 days earlier under the RIK pilot contracts. This equates to approximately \$1,000/month additional monies.

Definitive quantification of the actual administrative savings realized by the MMS, the State, and the industry is difficult. While MMS expects cost savings on some functions (e.g., audit, appeals), a permanent RIK program requires that MMS shift resources into new functions (e.g., sale of RIK volumes, credit reviews of potential purchasers, etc.). Since MMS is still developing its processes for managing RIK, it cannot document any cost savings at this time. In addition, MMS is streamlining the reporting requirements for in value payments in conjunction with the reengineering of the Minerals Revenue Management program. Thus, the basis for any cost comparison between ongoing RIK and in value activities is currently changing. The reporting requirements for the RIK pilot resulted in a reduction of approximately 80 per cent of the reported lines. The industry estimates a reduction for lessees of approximately \$1,700 per year for each oil lease taken in kind permanently. This reduction pertains to costs (reporting, audit, etc.) related to the lease, with almost half of the savings from avoided costs of audits and valuation disputes. Any MMS and industry savings will be realized the longer the RIK program continues and processes become standardized. Reduced litigation costs present an additional, but not insignificant potential savings to all parties.

The MMS instituted a revised reconciliation process for the oil RIK pilot. Although needing further improvements, the revised process reduces the period of value uncertainty from years to months. Through the competitive bid process which specifically details the value mechanism, the lessor and lessee receive value certainty on a more timely basis. MMS will continue to refine RIK processes to reduce costs for all parties.

The MMS and the State modified the available properties and the bid criteria for each sale. The RIK pilot was, and still is, an ongoing learning experience. The companies involved in the RIK pilot have been contacted (i.e., Dear Operator Letters, public meetings, day-to-day telephone, emails, etc.). Positive and negative feedback was received. The MMS and the State have taken actions to alleviate concerns and remedy problems in the evolution and development of the program. The MMS and the State are continually investigating new approaches to improve the efficiency and effectiveness of the Wyoming oil RIK program.

Background

Under the terms of standard Federal and State oil and gas leases, the government is entitled to a share, known as a royalty, of production removed or sold from the lease. Historically, the government receives its royalty share "in-value", i.e., as a percentage of the sales proceeds received by the mineral lessee. The Government may take its royalty share "in-kind" (RIK) instead of "in-value"-- that is, by taking volumes of oil or gas equaling the percentage royalty share. The RIK pilot's structure is consistent with existing lease terms and examines where, when, and under what conditions RIK would be feasible without reducing revenue for the U.S. Treasury and for any state entitled to a share of those revenues.

In 1997, the MMS released a Royalty In Kind Feasibility Study which concluded that under the right circumstances, RIK "could be workable, revenue neutral or positive, and administratively more efficient for MMS and industry."

To test the conclusions of the study, the MMS and the State initiated an onshore pilot for crude oil from Federal leases in the Powder River and Big Horn Basins of Wyoming. In other pilots, MMS is also taking natural gas and oil royalties in kind in the Gulf of Mexico.

Federal leases in Wyoming currently produce approximately 10,340 of royalty barrels/day from four major geologic basins:

- Bighorn Basin (3,412 bbls/day – 33 per cent of royalty volumes)
- Powder River Basin (3,503 bbls/day – 34 per cent of royalty volumes)
- Green River Basin (2,532 bbls/day – 25 per cent of royalty volumes)
- Wind River Basin (639 bbls/day – 6 per cent of royalty volumes) and
- Other (254 bbls/day – 2 per cent of royalty volumes).

These volumes are approximately 19 per cent lower than the production levels at the beginning of the pilot.

Wyoming crude oil comes in different grades. For the first pilot, the MMS and the State decided to take production in kind from two basins for three different grades of oil: the Bighorn basin where production is almost entirely asphaltic sour and the Powder River basin where production is approximately 60 per cent sweet crude and 40 per cent general sour.

The MMS established minimum volume criteria for the inclusion of leases in the six-month sales. The primary reason for the establishment of volume criteria was to minimize the administrative burden on industry and the MMS. The criteria for leases connected to pipelines was approximately 20 Bbls/day. This remained constant for the sales reviewed in this report. After reviewing all production levels in the basins, the 20 Bbls/day minimum appeared to be reasonable. For the two sales that included trucked properties, there was no minimum volume requirement on those properties. The MMS did attempt to aggregate properties during the sale process in order to minimize the effort involved in trucking the RIK oil being sold.

All successful bidders provided a letter of credit before taking any oil in kind.

October 1998 through March 1999 - Phase 1a

Bids for the first 6-month sale were submitted to the MMS as outlined in the Invitation for Bid (IFB) No. 3947 dated July 1, 1998. This sale included only Federal properties. Title to the royalty oil transferred at the wellhead. The MMS reserved the right to reject any bid based upon its economic analysis. The sale summary follows.

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Phase 1a (10/98-3/99)	Big Horn Asphaltic Sour	Powder River Gen. Sour	Powder River Sweet	Total
Description				
Total Properties offered for bid	56	63	67	186
Bbls/day offered for bid	1782	890	1007	3679
Properties awarded	51	46	0	97
Bbls/day awarded	1736	780	0	2516
% of properties awarded	97%	71%	0%	52%
% of Bbls/day awarded	97%	88%	0%	68%
Winning Bidders				
Cenex				
EOTT				
Northridge Energy/Trans Canada				
Scurlock-Permian				
Western Gas Resources				

Figure 1

April 1999 to September 1999 - Phase 1b

Bids for the second 6-month sale were submitted to the MMS and State as outlined in IFB No. 3984 dated January 4, 1999. This sale included both Federal and State properties. The MMS and the State reserved the right to reject any bid based upon their economic analysis. The sale summary follows.

Phase 1b (4/99-9/99)	Big Horn Asphaltic Sour	Powder River Gen. Sour	Powder River Sweet	Total
Description				
Total Properties offered for bid	55	63	67	185
Bbls/day offered for bid	1857	812	1136	3805
Properties awarded	41	47	20	108
Bbls/day awarded	1829	722	874	3425
% of properties awarded	75%	75%	30%	58%
% of Bbls/day awarded	98%	89%	77%	90%
Winning Bidders				
Cenex				
Eighty-Eight Oil Co.				
EOTT				
Scurlock-Permian				

Figure 2

October 1999 to March 2000 - Phase 1c

Bids for the third 6-month sale were submitted to the MMS and State as outlined in IFB No. 31010 dated July 22, 1999. Title to the royalty oil transferred at the wellhead. The

MMS and the State reserved the right to reject any bid based upon their economic analysis. The sale summary follows.

Phase 1c (10/99-3/00)	Big Horn Asphaltic Sour	Powder River Gen. Sour	Powder River Sweet	Total
Description				
Total Properties offered for bid	30	26	10	66
Bbls/day offered for bid	1704	526	1019	3249
Properties awarded	30	26	10	66
Bbls/day awarded	1704	526	1019	3249
% of properties awarded	100%	100%	100%	100%
% of Bbls/day awarded	100%	100%	100%	100%
Winning Bidders				
Cenex				
88 Oil				
Teppco				
Scurlock-Permian				

Figure 3

Elimination of Trucked Properties

Phases 1a and 1b requested companies to bid on any or all properties that were listed in the IFB. The IFB included properties that were not connected to pipelines – trucked properties. Trucked properties accounted for approximately two-thirds of the properties in the first two sales, but approximately only 10 per cent of the RIK volumes. When bids were received, they were generally low compared to the leases connected to pipelines in the same area. Also in many instances the only bidder for the RIK oil was the same entity that would be paying in value and the same entity that would be physically trucking the oil - there seemed to be a lack of a robust market for the trucked properties. Many of the trucked properties are reduced royalty rate properties.

The MMS and the State reviewed the bids received in the first two phases. In addition to the purchasing companies expressing little or no interest in the trucked properties, the MMS and the State concluded that the values received for the pipeline system subgroups were noticeably greater than the values received for the trucked properties. They therefore decided that there was no economic incentive for including the trucked properties in subsequent sales. Using this information and recognizing the de minimus nature of the volumes and the administrative burden on both the seller and purchaser, the MMS and the State eliminated trucked properties from all sales after Phase 1b.

In the first two sales –Phases 1a & 1b – there were no restrictions on bidding. Companies could bid on any or all properties on any or all pipelines. The IFB for Phase 1c contained specific language in sections B.2.2.a, b, and c. This stated that companies could submit bids for a particular crude package (sour, asphaltic, or sweet) or pipeline system subgroup. This stipulation continued in Phases 2 and 3. All winning bids were

received on a pipeline system subgroup basis. This is primarily for two reasons; first, bids received for properties are sensitive to the pipeline that connects the properties – bids were not being received for packages of properties where the properties flowed into different pipelines. Second, there were administrative savings for both the seller and purchaser in only allowing bidding on a pipeline basis.

Wyoming Pilot - Royalty In Kind Collections

In October 2000, royalty data was extracted from the MMS computer system. These detail lines represented the at-the-lease sales (RIK) for the pilot period. All Federal pilot leases were gathered and summarized. The State collected similar data for the 12-month period beginning April 1999. During the 18-month pilot period, 1.643 million barrels of Federal and State RIK oil were sold with a value of \$27.66 million. The average price per barrel for all RIK oil ranged from a low of \$5.79 in December 1998 to a high of \$26.73 in March 2000.

Bid Evaluation

The MMS and the State have attempted to improve the bid evaluation process from sale to sale. The bid evaluation process used several criteria. Some of the criteria were:

- Are the bids comparable to values received for comparable properties?
- Are the bids in line with the appropriate futures prices?
- Is there an acceptable number of bidders on the property? and
- Has the bidder previously taken and paid for RIK oil?

All of the details of the bid evaluation process will not be provided because of the competitive and ongoing nature of the RIK program.

A total of nine different companies submitted bids during Phases 1a, 1b, and 1c. The number of bidders by phase was; 1a – 7, 1b – 6, and 1c – 7.

The MMS has maintained an overall conservative approach in the analysis and acceptance of bids for Wyoming RIK oil in an effort to provide a greater likelihood that the accepted RIK payments would exceed the probable in value payments had the oil not been sold.

For the first two sales, the MMS undertook the calculation of a minimum acceptable bid (MAB) which had to be exceeded before a bid was accepted. The State did the same calculation for sale 1b. In general, the MMS and the State used submitted royalty data for the same six-month period from the previous year. The MMS calculated a 6-month average for the royalty data, the NYMEX and the appropriate postings. Differences (higher or lower) between these three calculations were made. The MMS and the State applied adjustment factors to the differences. One adjustment for the bid to be acceptable depended on the number of payors on a property. If there was only one payor, the MAB was increased by a predetermined factor. If there were more than one payor on a lease,

the MAB was the highest reported price. The MMS and the State also considered an adjustment due to the fact that the historical data had not been audited.

For the third sale, since there were no prior year in value payments for the majority of the properties, the MMS hired a consultant to assist in the market analysis of the RIK bids. Additionally, trucked properties were not included in the third sale for two primary reasons: 1) the values of the pipeline properties were noticeably higher than the values received for the trucked properties, and 2) the purchasing companies expressed little or no interest in the trucked properties.

In Phase 1a, the MMS did **not** accept bids on five of the Big Horn asphaltic sour properties, 17 of the Powder River general sour properties, and all 67 of the Powder River sweet properties. The MMS compared the potential royalty receipts using the rejected high RIK bids to the actual royalties received in value. For the five Big Horn properties the in value receipts were greater than the rejected RIK potential payments by approximately \$1.84 per barrel (\approx \$13,400 total) for the period October 1998 through March 1999. A similar comparison for the 67 Powder River sweet properties indicates the decision resulted in additional royalties of approximately \$0.16 per barrel (\approx \$30,200 total) and for the 17 Powder River general sour properties approximately \$1.66 per barrel (\approx \$28,500 total). The analysis confirms that when bids were rejected, the correct decision had been made.

In Phase 1b bids were rejected because bids were not submitted properly according to the requirements outlined in the IFB. One company submitted bids based upon its own posting – which wasn't one of the four postings used to calculate the average allowed per the IFB.

In Phase 1c no trucked properties were offered for bid. Using knowledge gained from the first two phases, the universe of bid mechanisms was expanded to include any readily available transparent pricing structure.

The following summarizes the changes made concerning the bidding mechanisms from sale 1a to 1c. A consequence of these changes was an increase in the complexity of the bid evaluation process.

Phase 1a

- Bids accepted for any number of individual properties
- Bids accepted for an entire package (Sweet, General Sour, or Asphaltic Sour)
- Bids accepted on pipeline connected (with a minimum volume threshold) or trucked properties
- For the Sweet package or properties, the bids were an increment or decrement from the average of the calendar month's daily closing (settle) price on the NYMEX.
- For the General Sour package or properties, the bids were an increment or decrement from the average of four Wyoming sour postings (Texaco, EOTT, Conoco, and Scurlock Permian) adjusted for gravity.

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- For the Asphaltic Sour package or properties, the bids were an increment or decrement from the average of four Wyoming asphaltic postings (Texaco, EOTT, Conoco, and Scurlock Permian) adjusted for gravity.
- No bids accepted on self-defined packages.

Phase 1b

- Bids accepted for any number of individual properties
- Bids accepted for an entire package (Sweet, General Sour, or Asphaltic Sour)
- Bids accepted on pipeline connected (with a minimum volume threshold) or trucked properties
- For the Sweet package or properties, the bids were an increment or decrement from 1) the average of the calendar month's daily closing (settle) price on the NYMEX, or 2) the calendar month's average of the following four Wyoming sweet postings (Equiva, Conoco, EOTT, and Scurlock Permian).
- For the General Sour package or properties, the bids were an increment or decrement from the average of four Wyoming sour postings (Equiva, EOTT, Conoco, and Scurlock Permian) adjusted for gravity.
- For the Asphaltic Sour package or properties, the bids were an increment or decrement from the average of four Wyoming asphaltic postings (Equiva, EOTT, Conoco, and Scurlock Permian) adjusted for gravity.
- No bids on self-defined packages.

Phase 1c

- Bids accepted for an entire package (Sweet, General Sour, or Asphaltic Sour)
- Bids accepted on individual pipeline system subgroups (with a minimum volume threshold). Trucked properties were not included.
- For the Sweet package or pipeline subgroups, the bids were an increment or decrement from; 1) the average of the calendar month's daily closing (settle) price on the NYMEX; or 2) the calendar month's average of four Wyoming sweet postings (Equiva, Conoco, EOTT, and Scurlock Permian); or 3) any other transparent pricing structure for which documentation is readily available and supportable.
- For the General Sour package or pipeline subgroups, the bids were an increment or decrement from 1) the average of the calendar month's daily closing (settle) price on the NYMEX, or 2) the calendar month's average of four Wyoming sour postings (Equiva, Conoco, EOTT, and Scurlock Permian) adjusted for gravity, or 3) any other transparent pricing structure for which documentation is readily available and supportable.
- For the Asphaltic Sour package or pipeline sub groups, the bids were an increment or decrement from 1) the average of the calendar month's daily closing (settle) price on the NYMEX, or 2) the calendar month's average of four Wyoming asphaltic postings (Equiva, Conoco, EOTT, and Scurlock Permian) adjusted for gravity, or 3) any other transparent pricing structure for which documentation is readily available and supportable.
- No bids on self-defined packages.
- No bids on individual properties.

Overview of Wyoming Pilot Market Conditions

The Wyoming RIK pilot has occurred during what arguably has been the most volatile pricing environment in history for Wyoming oil producers and area refiners. During the 18-month period under review, beginning October 1, 1998, the volatility in West Texas Intermediate ranged from a monthly low of \$11.31 per barrel to a monthly high of \$31.53 per barrel.

This high degree of volatility and price uncertainty impacts market fundamentals in many ways. Producers, requiring a competitive return on investment funds, may analyze their investment decisions more conservatively and possibly reduce capital budgets. Drilling programs are suspended and enhanced oil recovery projects are not initiated. This has a longer-term impact on supply and brings uncertainty to refiners through long-term supply concerns. This uncertainty of supply typically manifests itself in refineries finding access to alternate crude supplies, as has been the case in Wyoming the past several years. Near term reactions by producers to low price volatility is manifested by shut-ins of uneconomic production, suspension of enhanced oil recovery projects, and a scaling back of repair programs for wells that require repair. The impacts to refiners from these actions are immediate and can result in very competitive bidding “wars” for production that can be refined immediately. Conversely, during extended periods of higher prices, producer development activity increases resulting in production increases and less competitive bidding scenarios.

While exact data specific to the Wyoming RIK pilot is difficult to obtain, it is estimated that year to year production declined by over 25 per cent from 1997 to 1999 during the period of lowest prices. Much of the decline can be attributed to reduced producer spending and shut-ins of uneconomic production. With cash costs approaching \$10.00 per bbl for heavy sour production, many producers were required to shut-in production during this period. Conversely, during the high price environment we are now experiencing, production declines have eased and in some areas growth in production has been noted.

The Canadian production that competes with Wyoming’s production is very similar in nature, albeit typically less mature and therefore more productive on a well-by-well basis. Additionally, as most of the heavy production is enhanced recovery based (steam) and requires blending with condensate for viscosity control to allow pumping long distances on pipelines, it typically has very similar if not slightly higher costs associated with production and transportation. As such, during the Wyoming RIK pilot the Canadian production that competes with the Wyoming production was in a similar decline pattern as occurred in Wyoming. During sustained higher prices, as seen most recently, Canadian production is able to recover more quickly and, being less mature, is a better source for new production into the Wyoming refinery environment (PADD 4 – Petroleum Administration for Defense Districts 4). This is the case and has been recently validated by the new Express Pipeline connection into Billings, Montana.

While Wyoming crude must compete with Canadian crude, not all Wyoming crude competes with Canadian crude at Billings. Therefore, a comparison of RIK values and Canadian postings adjusted for location, gravity, and sulfur, would be of limited use. Additionally, the Canadian crude at Edmonton or Hardisty can be easily transported through pipelines in Canada into PADD 2 refineries located in Detroit and Chicago. This is not the case for the Wyoming crude.

An expanded knowledge of the Canadian market can assist the MMS and the State in evaluating future RIK bids. The Canadian postings may even provide an additional bid mechanism for future RIK sales.

The MMS has determined that for the time period involved in this study, the Canadian benchmarks are not a reliable price for purposes of comparison with the values received under the RIK pilot. Because markets are dynamic and new factors (additional pipelines, refineries, etc.) develop, the MMS will continue to analyze the Canadian benchmarks in future RIK sales of Wyoming crude.

Comparing RIK to Postings and In Value Prices

In addition to the Canadian markers discussed above, the MMS identified the following public indices as potential comparators with the in kind values received during the 18-month period covered by this report. Publicly available indices include the New York Merchantile Exchange (NYMEX) West Texas Intermediate future price at Cushing, Oklahoma, the West Texas Sour (WTS) price at Midland, Texas, and the Wyoming Sweet spot price at Guernsey, Wyoming.

In its oil valuation rulemaking, the MMS recognized the production in the Rocky Mountain Region is controlled by a relatively few companies and the number of buyers is more limited than in the Texas, Gulf Coast, or Midcontinent areas. As a result, there is less spot market activity and trading in this area due to the control over production and refining. The NYMEX is a futures market that bears little resemblance to the market at the lease without adjustments. The MMS dropped the NYMEX as a valuation basis for oil in the Rocky Mountain Region from the final rule.

In the same rulemaking, the MMS recognized that the only published spot price for the Rocky Mountain Region was at Guernsey, Wyoming. However, that price is the result of a survey of a few trades – an indicator that the market is not robust – and therefore not a reliable measure of value.

Another public index available for comparison with the sour Wyoming crudes being offered is West Texas Sour at Midland. With the proper adjustments for quality and location differentials, a comparison with the Wyoming sour crude could possibly be made. However, it would not accurately reflect the market in Wyoming.

The NYMEX, WTS at Midland, and spot price at Guernsey may have some correlation with the values received for the different Wyoming crude types offered in the RIK pilot.

However, for the reasons stated above, the MMS decided that detailed comparisons with these comparators would be of little value.

The posting average, the RIK value, and the Wyoming in value data are at the lease. The RIK and the Wyoming in value data for the asphaltic sour and the general sour reflect the values reported by the purchasers (adjusted for gravity) and have not been readjusted back to 40 degrees API. In order to compare accurately these indices with the values received for the RIK oil, the proper adjustments for API gravity and location would need to be calculated.

The RIK monthly values for the three crude types have been compared to the Wyoming in value data and the posting average. Attachment 1 is for the Powder River Basin – General Sour. Attachment 2 is for the Big Horn Basin – Asphaltic Sour. Attachment 3 is for the Powder River Basin – Sweet.

The Powder River Basin – General Sour (Attachment 1) and the Big Horn Basin – Asphaltic Sour (Attachment 2) were compared to the average of the 4 postings permitted in the IFB (at 40° API and adjusted for gravity) and to the State of Wyoming's in value price data (adjusted for gravity). The comparisons for the general and asphaltic sour crudes are for 18 months. The weighted average gravity of the general sour crude was 23.7° API for the pilot period. This resulted in a deduction from the posting of \$2.22. The weighted average gravity of the asphaltic sour crude was 20.3° API for the pilot period. This resulted in a deduction from the posting of \$2.90.

In Attachment 3 the Powder River Basin – Sweet was compared to the average of the four postings permitted in the IFB and to the State of Wyoming's in value price data. All three values are at 40° API as volumes of sweet sold are deemed to be 40°, regardless of the actual gravity. The comparison for the sweet crude is for 12 months as there was no sweet sold in the first RIK sale.

Crude oil prices increased in almost every month over the analysis period. Prices fell in the first 2 months of the pilot. When prices began increasing in the December 1998 - January 1999 time frame, the RIK values were less than the in value prices. This is reflective of the 6-month term sales of the in kind volumes of oil. In April 1999, when a new contract went into effect, the RIK prices consistently exceeded the Wyoming in value prices.

The RIK price always exceeds the postings average. The total dollar differential between the RIK value and the posting's value was \$6.33 million for Federal and State production for the 18-month period. This equates to a per barrel difference of \$3.85. The differential between the RIK price and the posting average is exceedingly consistent for each 6-month RIK sales period. The explanation for this is that the posting average does not include any premiums that are offered to purchasers. Purchasers utilize premiums and discounts as a way to adjust postings to current market conditions.

The RIK price is generally greater than the Wyoming in value price. This is possibly because of the nature of the bidding mechanisms. Aggregating volumes would increase the average price. Detailed data indicates that not all properties are up or down. This is because the bids are for a package. A package may include multiple properties with significantly different production levels. Within a package, the average price may exceed the in value price for some properties and be less than the in value price for others. The aggregation effect tends to raise the average price received for all properties in a package.

Specific analysis of the graphs is best performed in 6-month intervals – the length of the individual contracts.

Wyoming Severance Tax Commission Comparison

For Phase 1a, the State of Wyoming retrieved actual in value royalty payments from their automated system. For Phases 1b and 1c, Wyoming extracted information from its Severance Tax Commission database for those properties in Phases 1b and 1c. All values used in the comparison are based on gravity adjusted values at the lease.

Article 2 (Oil and Gas) of Title 39 (Taxation and Revenue) of the State of Wyoming Revenue Statutes provides guidance concerning the valuation of crude oil for tax purposes. The fair market value for crude oil is determined after the production process is completed. Expenses incurred by the producer prior to the point of valuation are not deductible in determining the fair market value the oil. The production process for crude oil or lease condensate is completed after extracting from the well, gathering, heating and treating, separating, injecting for enhanced recovery, and any other activity which occurs before the outlet of the initial storage facility or lease automatic custody transfer unit. If the crude oil is sold to a third party, or processed or transported by a third party prior to the point of valuation then the fair market value shall be the value established by bona fide arm's length transaction. If the crude oil is not sold at or prior to the point of valuation by bona fide arm's length sale, or, if the production is used without sale, Wyoming will identify a method to be used. Wyoming provides four methodologies.

1. Comparable Sales - The fair market value is the representative arm's length market price for minerals of like quality and quantity used or sold at the point of valuation taking into consideration the location, terms, and conditions under which the crude is being sold or used.
2. Comparable Value – The fair market value is the arm's length sales price less transportation fees charged to other parties for oil of like quantity, taking into consideration the quality, terms, and conditions under which the oil is being transported.
3. Netback – The fair market value is the sales price minus the expenses incurred by the producer for transporting produced oil to the point of sale.

4. Proportionate Profits – The fair market value is the total amount received from the sale of the oil minus exempt royalties, nonexempt royalties and production taxes times the quotient of the direct cost of producing the oil divided by the direct cost of producing and transporting the oil; plus the nonexempt royalties and production taxes.

The methodology for calculating value for Wyoming severance taxes and Federal royalties in value are very similar, particularly in determining allowable deductions.

Wyoming calculated the average monthly price per barrel for all production from the RIK properties using unaudited data. This price was compared to the RIK contract price for each month during the RIK Pilot. The results of this comparison - with proprietary data excluded - are presented in Attachments 4-6. The MMS sells its oil for 6-month terms. As expected, for some months, the severance tax price is greater than the RIK contract price, and for other months, the converse is true. The data does highlight some properties for which the severance tax values are higher for the entire 6-month period of a sale phase. This information is beneficial to the MMS. The MMS should perform additional analysis on these properties prior to accepting the purchaser's bids in future sales.

The MMS summed the Federal RIK production from all of the properties involved in each phase of the RIK pilot. The in value prices for Phase 1a and the severance tax prices for Phases 1b and 1c and the RIK contract prices were multiplied by the Federal volumes and the differences summed. For the entire 18-month period, the cumulative RIK value exceeded the in value/severance tax value by approximately \$0.45/barrel or approximately \$683,000.

Wyoming performed the same comparison for the State's share of the production from its RIK properties. For the last 12 months of the pilot, the RIK value exceeded the severance tax value by approximately \$1.12/barrel or approximately \$133,000. Wyoming's price per barrel difference is greater than the MMS' primarily because Wyoming did not participate in phase 1a. Other contributing factors could be because Wyoming did not have a share of production in all RIK properties, and some properties the State did have a share in did better than the average.

Over the comparison period, the differential between the RIK values and the State values varies from month to month and by crude types. This is because the ratio of Federal production to State production is not constant. If all leases (Federal and State) produced exactly the same volumes from month to month, then the ratio would be constant. However, this is not the case. The ratio varies from property to property, from crude type to crude type, and from sale to sale.

Bidder/Purchaser Issues and Concerns with the Current Wyoming Crude RIK Program

As a part of our overall assessment of the success of the Wyoming crude oil royalty in kind program (pilot), the universe of known potential bidders and former

bidders/purchasers were contacted via telephone to solicit comments on the program, and their specific issues and concerns with the program to date. Respondents to this solicitation were:

Cenex Harvest States	Marathon Ashland Oil LLC
Conoco	Continental Resources
Devon Energy	Eighty-Eight Oil
EOTT Energy	Equiva Trading
Exxon Company, USA	Frontier Oil and Refining
Koch	Trans-Canada
Plains/Scurlock	TEPPCO
Western Gas Resources	

Not all of the above companies actually bid on RIK properties. Only seven of these companies were winning bidders.

The companies' issues and concerns can be characterized as follows:

1) The number one voiced concern was the surety issue, either by the posting of a bond, or securing an Irrevocable Letter Of Credit (ILOC). Companies felt the requirements were too burdensome, or that the requirements for larger companies put smaller companies at a disadvantage from a cash flow perspective. The short time span allowed for the return of ILOC's was a concern.

2) Many respondents voiced opposition to the Federal "contractor" requirements/stipulations on grounds that they were too burdensome.

3) Some voiced concern over the requirement for a company seal/stamp on the bid, feeling this was unnecessary, and many times respondents to a bid had no knowledge of or access to a specific corporate seal.

4) Some professed an inability to understand what we were offering for bid, i.e., in what manner we wished the response. The alternative methodologies offered confused bidders thereby affecting the number of bids.

5) Some merely have not had the appetite for the crude in the area offered.

6) Some expressed concerns about assurances of transportation status, i.e., trucked, piped or otherwise. The MMS did not provide sufficient data for bidders to determine which leases were trucked as opposed to being connected to pipes.

7) One company indicated they would never bid again because they were being audited and demands were being made for materials they felt should not have been made, given the stated objective and/or purpose of the program, i.e., no pricing disputes. They felt that the MMS had shifted the administrative burden from the lessees to the purchasers and was not utilizing standard industry practices.

Obviously, most complaints were related to administrative issues surrounding the preparation for delivery of crude. None of the parties surveyed, excepting as per item 7) above, conveyed the sense that the problems/concerns/issues were insurmountable from the standpoint of excluding them from bidding.

The MMS has attempted to determine the specific company concerns raised in item 7). The best the MMS can determine, the company received inquiries concerning production balancing problems. Production balancing issues occur regardless of whether the royalties are being paid in kind or in value. The MMS is working with industry in developing standard industry practices related to RIK oil production balancing. Regardless of the method selected to fulfil the lease's royalty requirements, there will continue to be contact between the MMS and the lessee or purchaser. Questions concerning the accuracy of reported information (e.g., volumes) can only be resolved by communication with the appropriate party.

The MMS and the State of Wyoming have taken actions to improve the bidding and reporting process throughout the pilot. All efforts are taken not to discourage bids because that is counterproductive to the program's intent. Each successive round of bidding has included improvements based upon comments and analysis of previous sales. One specific correction is the revision of the sales contract to eliminate burdensome and unnecessary requirements. There will always be some need for contact with the RIK purchaser and lessee, particularly when there are questions about production balancing and volumes. Further improvements to the process are still needed.

MMS Cost of Administration

The MMS' Minerals Revenue Management (MRM) maintained detailed costs by land category and state for Net Receipts Sharing calculations. Fiscal year 1998 was the last year that detailed records were available. For Wyoming, the MRM incurred costs of \$8.1 million for administering royalties in FY 1998. The costs by function are presented in Table 1.

The processing of coal royalties is performed essentially separate from the oil and gas process. As can be seen from the number of royalty lines processed, the costs associated with processing coal royalties are relatively small. Less than 1 per cent of the royalty reporting lines processed are associated with coal, though direct costs associated with solid minerals within the State of Wyoming were approximately \$250,000 in FY 1998. With administrative support and other costs not specifically referenced, total costs for solid minerals royalty administration in the State of Wyoming are in the \$500,000 to \$1,000,000 range.

MMS/MRM
Costs Associated with Wyoming FY 1998

<u>Accounting & Reporting</u>		<u>Compliance Verification</u>	
Royalty in Kind	\$259,337	AFS/PAAS Comparisons	\$567,096
Reference Data	594,840	Royalty Rate Reductions	23,946
Document Processing	95,059	Late Payments	172,489
Prod. Error Correction	260,281	Financial Term Exceptions	185,190
Royalty Error Correction	163,812	Adjustment Monitoring	42,078
Disbursements	7,796	Royalty Rate Monitoring	30,896
Cash Application	292,206	Allowance Exceptions	46,422
Administration	496,897	RMP Overhead	792,458
RMP Overhead	1,160,809	Administration	295,838
Total	\$3,331,037	Total	\$2,156,413

<u>Royalty Valuation</u>		<u>Audit</u>	
Oil & Gas	\$162,086	205 Contract	\$864,968
Solid Minerals	236,224	State & Indian Office	282,735
Administration	108,414	Administration	81,950
RMP Overhead	286,056	RMP Overhead	248,883
Total	\$792,780	Total	\$1,478,536

<u>Document Control</u>	
Document Control	\$156,576
Administration	57,156
RMP Overhead	125,725
Total	\$339,457
Grand Total	\$8,098,223

Table 1

Figure 4. presents data for Federal quantities and royalties by product type and from Wyoming for FY 1998. The approximate number of royalty lines processed by MMS to collect these royalties are also presented.

Using the high end of the estimated cost (\$1,000,000) associated with solid minerals leaves a cost in excess of \$7 million for administering oil and gas leases in Wyoming. Approximately 3 times more royalty lines are processed for gas than oil, and about three times more gas production occurs when measured in barrels of oil equivalent (BOE). Using this measurement, the MRM expended between \$0.40 - \$0.45/BOE in FY 1998. MRM's cost of administering oil royalties in Wyoming is in the range of \$1.72 - \$1.93 million.

Federal Royalties State of Wyoming Fiscal Year 1998				
Commodity	Royalty Value (Millions)	Royalty Lines	Royalty Quantity	Quantity: Barrels of Oil Equivalent
Coal	\$170.8	3,060		
Oil	51.9	126,000	4,291,730	4,291,730
Gas	140.3	379,000	76,264,870	11,370,262
Total	\$363.0	508,060		

Figure 4

The MRM is still developing a process to manage royalties taken in kind. Steps in this process include:

- Developing a manual process that includes gathering information concerning oil production that does not exist elsewhere in the system,
- Simplifying the royalty reporting and collection process for industry and the MRM (The amount of royalty lines processed has been reduced about 80 percent by the taking of production in kind),
- Simplifying the valuation component of the royalty equation by removing much of the expense associated with the collection of royalties, and
- Revising the process to reconcile production in a much-shortened timeframe.

The estimated costs for the new RIK process can not be made at this time because the process is not final. The MRM is implementing a new RIK reporting scheme. It is simpler than the current reporting requirements. This change and other process improvements should continue to further reduce the cost of RIK administration. The MRM is also streamlining the reporting requirements for royalties collected in value, so the basis for any administrative cost comparison will change in the future.

Industry Cost of Administration

The industry performed an analysis of lessees' administrative costs associated with reporting and paying MMS royalties in value. The purpose of this evaluation was to identify and evaluate potential administrative savings to industry associated with the MMS taking its royalties in kind. The framework for the administrative cost analysis was the Benchmarking Survey of Domestic E&P Accounting Organizations conducted by the American Petroleum Institute. This survey includes the largest Federal lessees in the United States. The industry analysis only reviewed costs associated with the reporting of royalty by the lessee. The reporting costs incurred by RIK purchasers under the RIK program were not calculated.

The industry analysis determined that a lessee incurs an average administrative cost of approximately \$2,400 per year to report and pay MMS royalties for each oil lease paid in

value. These costs may vary depending on the size of the company and the complexity of its operations. The analysis also concluded that a lessee could potentially realize administrative savings of approximately \$1,700 per year for each oil lease permanently taken as RIK. For the pilot period, this would have equated to savings of up to approximately \$191,500, based on the average of 75 common properties included in the pilot program. Almost one half of the potential savings would be achieved from reduced audit and regulatory compliance efforts resulting from decreased MMS audits and disputes over valuation.

This evaluation recognizes industry will not fully realize any of the potential administrative savings until the MMS makes the pilot project a permanent program. Industry cannot re-assign personnel on a permanent basis until the pilot decision becomes final.

MMS Reconciliation Procedures

The MMS developed a spreadsheet application to reconcile RIK reported volume, price, or gravity differences. One MMS staff person was involved in the reconciliation process. That person estimates that approximately 565 hours over a period of 10 months were charged to work performed concerning the generation, tracking and reconciliation related to Phase 1a exceptions. The resolution process for Phase 1b and 1c exceptions has yet to begin. The scheduled completion is summer 2001.

In order to resolve discrepancies, the MMS used a process very similar to its existing reconciliation process for resolving production and royalty volume differences. Imbalance differences were reconciled in accordance with the procedures outlined in the Invitation for Bids, the RIK Purchaser Contract, and the Dear Operator letter. The reconciliation status as of August 9, 2000, is summarized below.

By March 9, 2000, 61 of the 95 resolved exceptions had been put into 11 different resolution categories. In only one case was an incorrect API gravity and price submitted on the royalty report by the purchaser that necessitated a correction of the royalty value. All other exceptions were resolved by correcting previously submitted data but did not require a correction of the royalty value.

During the process of analyzing the data for this report, the MMS identified \$11,500 in underpaid royalties on Federal leases for December 1999 for one purchaser (Phase 1c).

The administrative cost of reconciling reporting errors is minimal. To date, the reconciliation efforts have resulted in negligible collection of additional royalties from leases for which oil was taken in kind. This simply reflects that the in kind process provides greater accuracy and certainty in the payment of royalties. Utilizing the existing reconciliation process may not be meaningful for RIK.

Early Payment Bonus

Royalty payment requirements are part of the RIK contract. Under the terms of the pilot contracts, the RIK payments are received 5 days earlier than required under the in value regulations. Using the MMS' standard late payment interest rate and the average monthly volumes received during the pilot, the MMS estimates approximately \$1,000/month was realized by selling oil production in kind.

Reporting Requirements

Reporting and paying royalties under an RIK program is a much simpler process than under in value royalties. Under the Wyoming pilot, RIK crude oil purchasers reported and paid to MMS using a streamlined reporting worksheet requiring fewer lines and reporting fields (Attachment 7). While the RIK sales process involves certain procedures unlike those under the in value way, payment of royalties in value entails more administrative processes following the actual sale of the product.

In Value Royalties

In value payment of royalties involves completion and submittal of a Report of Royalty and Sales Remittance, Form MMS-2014 (2014). For reporting monthly sales of oil, the 2014 requires completion of multiple fields (a minimum of 12) and a separate reporting line for each Accounting Identification Number (AID) and selling arrangement (SA). Those fields are: AID, product code, SA, sales month, transaction code, sales quantity, quality measurement, calculation method, sales value, royalty quantity, royalty value, and payment method. If there is more than one payor for the lease or AID, each payor must submit an individual 2014. For out-of-pocket transportation costs, the payor must report a separate transportation allowance line for the AID/SA combination. To report adjusted lines, the payor must report a reverse, or back out line using another code (adjustment reason) to void the original line and also a new corrected line.

During the first three sales under the Wyoming Oil RIK Pilot, a total of 271 properties participated. The MMS determined that 33,049 lines were reported for all Federal properties in the Big Horn and Powder River Basins. This includes adjustments and transportation allowance lines. Each property may have one or more report entity. By determining the number of report entities for the properties in each phase over the 18-month span of the three pilots, the MMS estimates there would have been 10,211 lines reported for those properties. (See Figure 5.)

In Kind Royalties

Wyoming oil RIK pilot reporting was much simplified from in value reporting. The reporting format outlined in the Royalty Oil and Gas Purchase System form (Attachment 7) requires only four fields for completion – quantity of RIK oil purchased, unit price, API gravity, and sales month. On this MMS created spreadsheet application, the purchaser must only report one line per property instead of reporting lines for each

AID/SA. Adjustments require additional lines. The form contains electronic macros that automatically prepare the 2014, including allocation of royalty data to all leases participating in the property, and a 2014 transmittal letter. While MMS must still process 2014 lines for in kind reporting, the purchaser is subjected to significantly less reporting burden and valuation scrutiny than the lessee under an in value scenario. Due to the constraints of the MMS' current systems, reporting burdens are imposed on the oil purchaser. Evolution of the systems to support in kind activities could further reduce this burden.

For the first three sales under the Wyoming pilot, purchasers reported 2,116 lines. This is based on 97 properties under the first sale (97 lines per month x 6 months), plus 108 properties for the second sale (108 lines per month x 6 months), plus 66 properties for the third sale (66 lines per month x 6 months), plus 490 adjustment lines. Compared to 10,211 lines, in kind reporting for the Wyoming pilot represented savings of 8,095 lines or a 79.3% reduction in reporting lines. Based upon MMS' analysis of information collection costs of its royalty reporting form (Form MMS-2014), the cost of electronic reporting is approximately \$2.50/line. Based upon the reduction in lines (8,095) reported, this amounts to a savings of \$20,238 for the Wyoming RIK properties.

The reported line savings are summarized in Figure 5.

Reported Lines – Royalty In Kind				
Phase	Number of Properties	Lines for All Sales Period	Adjusted Lines	Total Lines for Evaluation Period
1a	97	582		
1b	108	648		
1c	66	396		
Totals	271*	1,626	490	2,116

*222 common properties, 49 new properties between sales

Potential Report Lines – Royalty In Value			
Phase	Number of Properties	Report Entities	Potential Report Lines – Original and Modified
1a	97	310	2,563
1b	108	474	3,919
1c	66	451	3,729
Totals	271	1,235	10,211

For the 6 months prior to Phase 1a (April – September 1998) a total of 33,409 lines (23,790 original + 9,079 modified) were reported for all Federal properties in the Big Horn and Powder River Basins – 1.378 lines/report entity.

Figure 5

RIK Bidder Qualification

Unlike in value royalty payments, sales of royalty crude oil to winning bidders requires a qualification process before the bids can be awarded. That is, potential purchasers must

demonstrate that they have the financial solvency or credit worthiness to guarantee that they will not default on payment for RIK purchases. Under in value, the royalty obligation of the lessee is generally covered by the lease bond, or merely by the trust that has developed over the years under the lessee/lessor relationship. The bidder qualification process contributes significantly, not only to the administrative cost of running an RIK program, but also to the pricing amount offered by bidders. Following is a short discussion of the bidder qualification process.

Sales of royalty oil to qualified purchasers began as early as the 1970's with the small refiner program. Credit requirements for small refiners since that time have been based on posting a surety instrument in an amount equal to the 99 days worth of production. Under the small refiner oil sale regulations at 30 CFR 208.11, MMS-acceptable surety instruments have been: (1) an MMS-specified surety bond, (2) an irrevocable letter of credit (LOC), or (3) a financial institution book-entry certificate of deposit. [Similar requirements were used for staying payments for issues under appeal at 30 CFR Part 243, up until 1999.]

The common feature of these instruments is that each of them ties-up a sum of money by the purchaser to guarantee payment of 99 days worth of oil. Because of this obligation, these types of credit assurances are more costly. The most common instrument used over the past two decades for the small refiner program has been the LOC.

No data is available for the per-barrel costs of surety bonds or COD's. However, we have been informed by small refiners that LOC's cost as much as \$0.09-\$0.10 per barrel. Consequently, small refiners claim that this cost is necessarily reflected in the amount bid for MMS crude oil supplies. Therefore, MMS obtains a guarantee of payment, but receives a lower bid for its oil. This burden has also been an impediment to otherwise interested buyers from participating in the program altogether.

With the advent of new initiatives for selling the government's royalty share of production beyond the arena of small refiners, MMS has expanded the options for determining credit worthiness. Furthermore, the appeals regulations at 43 CFR were revamped to allow companies to "self-bond" or "self-certify," that is, demonstrate financial solvency without posting a bond or LOC. Under 30 CFR 243.201, a company is deemed financially solvent if their net worth, minus the amount MMS would have required for surety, is greater than \$300 million. If their net worth is less, the company's credit worthiness must be determined by MMS.

Under the RIK pilots for selling natural gas in the Gulf of Mexico, the MMS evaluated a company's credit worthiness by reviewing audited financial statements and Dunn and Bradstreet's credit ratings.

For Wyoming RIK sales during the 18-month evaluation period, the standard method for guaranteeing payment was the LOC. Under the latest Wyoming oil sale (phase 3), MMS followed the appeals rule guidelines and gas pilot practices by allowing companies to

self-certify in lieu of providing an LOC. However, for the recent competitive Gulf Oil sale, MMS allowed self-certification only for companies with net worth exceeding \$300 million. No analysis has been performed to determine the effect of self-certifying on bid amounts.

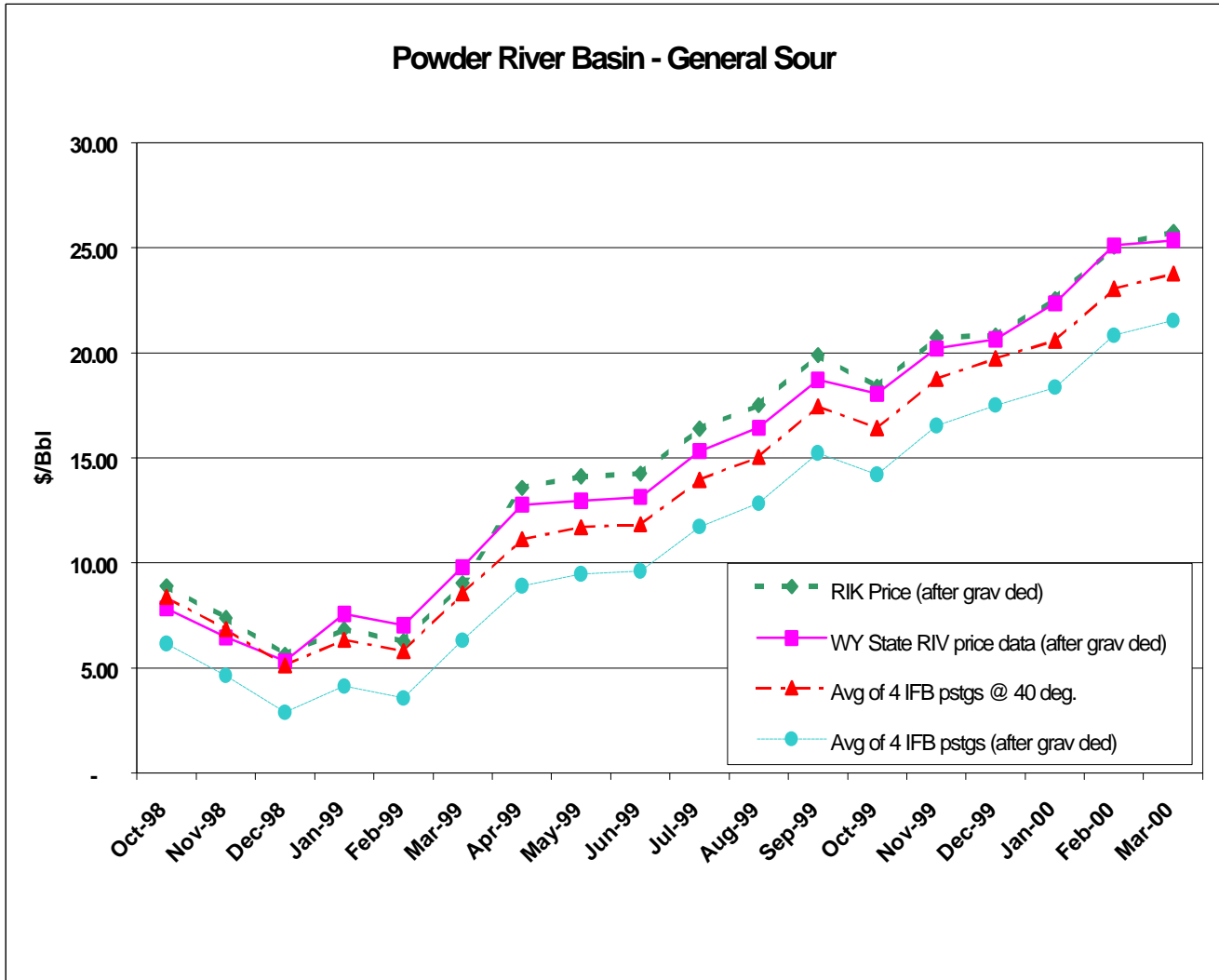
Another alternative to assuring payment for sales of RIK production is credit insurance. Credit insurance is generally much cheaper than LOCs or bonds but works in much the same way. The University of Texas has had experience in this area for its 3,500 barrels per day of oil production from State grant lands. The University pays the premiums for its buyers to guarantee payment for its sales of royalty oil. The University's costs were higher at the beginning of the program but have decreased with experience, familiarity with the buyers, and developing trust. The current costs are about \$18,000 per year, or about \$0.014 per barrel. MMS, in consultation with Accenture, is currently reviewing and evaluating the insurance option as well as the entire bidder qualification process.

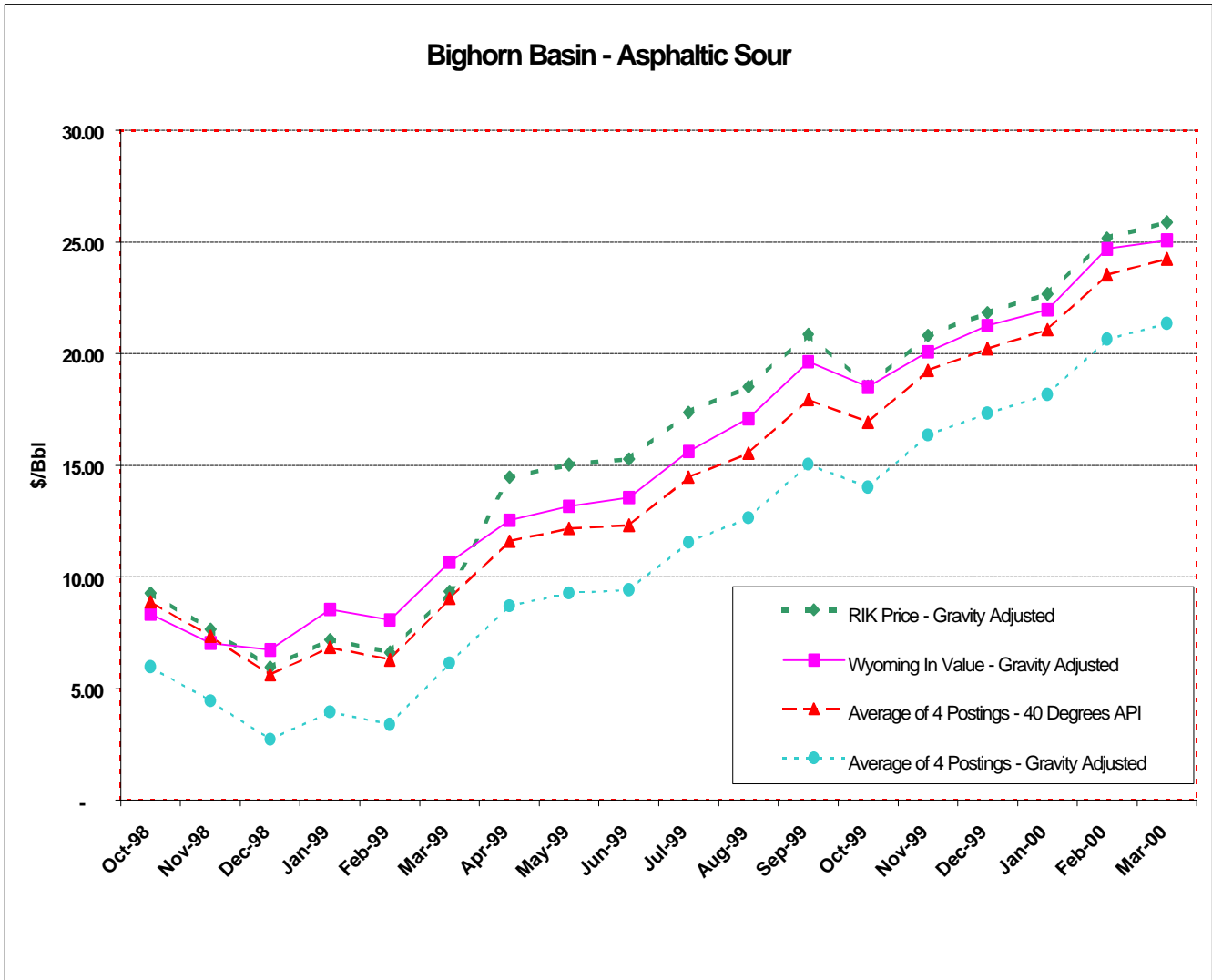
Appeals and Litigation

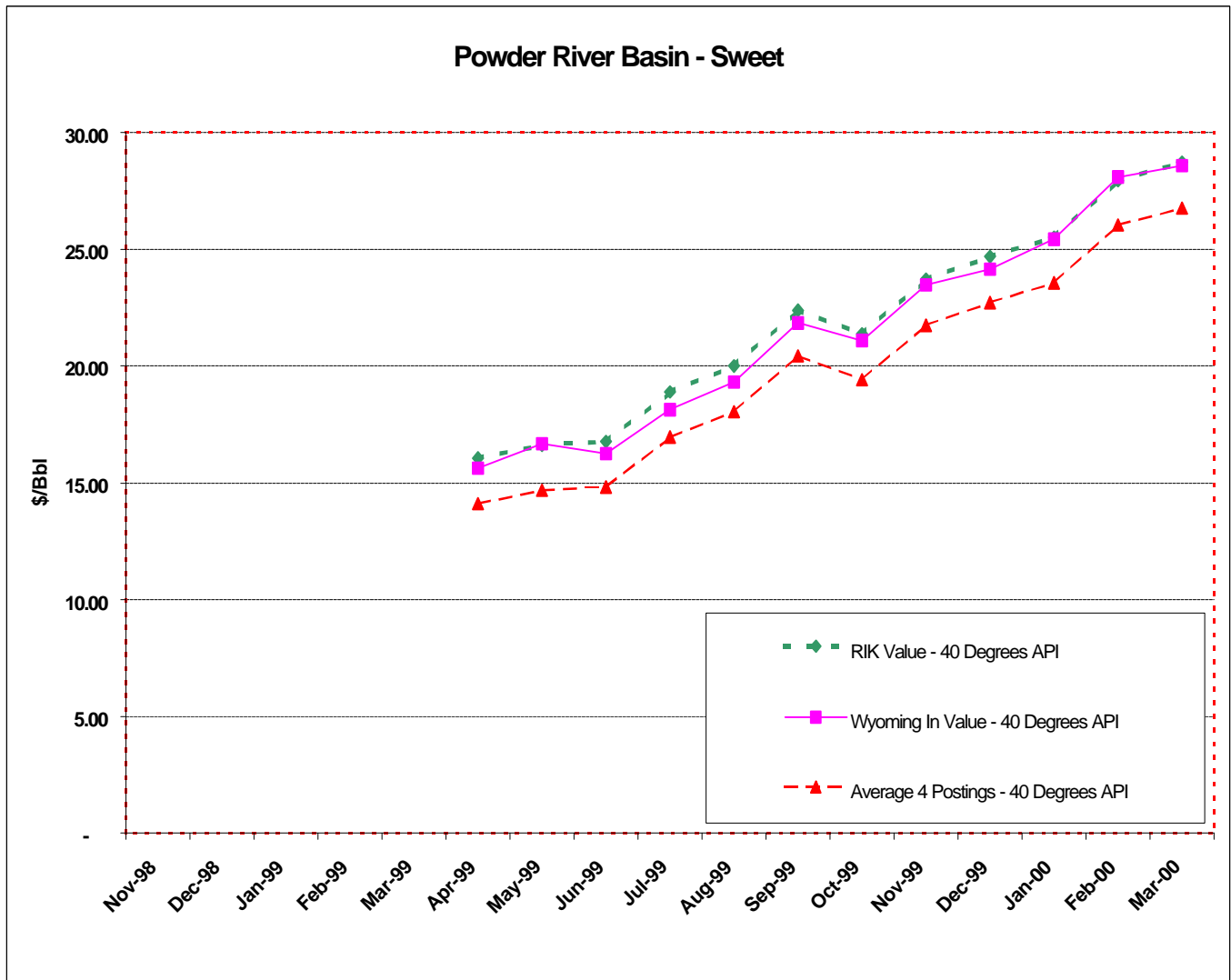
For in value royalties, administrative oversight and management of the valuation process add costs. Regulations must be written to provide procedures and methods for valuation. In value payments must be audited, valuation determinations must be researched and developed, and disputes typically follow, causing years of uncertainty for the lessee and lessor. These disputes can lead to administrative appeals, district court litigation, and appeals court litigation. Using estimated data from the cost/benefit analysis for the Federal oil rule, appeals and litigation costs for the 18-month evaluation period, had the oil been under in value, would be \$112,500. [\$5M for oil appeals/litigation annually nationwide x Wyoming's 6 per cent share of Federal oil production x 1.5 for the 18-month period x 25 per cent for the portion of RIK production taken in Wyoming.]

Audit Costs

Audit costs for the Wyoming production taken in kind during the evaluation period should be less than if royalties were paid in value. The audit process for RIK should be simpler. Additionally, one of the major components of the royalty equation – Value – has been set by the RIK contract.







Powder River Sweet

**COMPARISON OF RIK PRICES RECEIVED
TO WYOMING TAX RECEIPTS
SUMMARY SCHEDULE OF VALUE AND PERCENTAGE DIFFERENCES**

	<u>Field 1</u>		<u>Field 2</u>		<u>Field 3</u>		<u>Field 4</u>	
Apr-99	(\$0.50)	-3%	\$1.02	6%	\$0.42	3%	\$0.85	5%
May-99	(0.52)	-3%	0.92	5%	0.31	2%	(1.14)	-7%
Jun-99	(0.56)	-4%	0.46	3%	0.33	2%	1.57	9%
Jul-99	0.16	1%	0.51	3%	0.32	2%	2.10	11%
Aug-99	1.85	10%	0.56	3%	0.20	1%	2.65	13%
Sep-99	(0.32)	-1%	1.05	5%	0.12	1%	2.79	12%
Oct-99	(0.18)	-1%	0.21	1%	0.03	0%	2.35	11%
Nov-99	(0.16)	-1%	4.60	19%	0.03	0%	1.84	8%
Dec-99	(0.18)	-1%	(0.02)	0%	0.01	0%	4.23	17%
Jan-00	0.29	1%	0.24	1%	0.27	1%	(0.12)	0%
Feb-00	(0.20)	-1%	(0.11)	0%	(0.02)	0%	(0.41)	-1%
Mar-00	(0.17)	-1%	(0.57)	-2%	0.07	0%	(0.20)	-1%

	<u>Field 5</u>		<u>Field 6</u>		<u>Field 7</u>	
Apr-99	(\$0.53)	-4%	(\$0.09)	-1%	(\$0.32)	-2%
May-99	(1.14)	-7%	(0.11)	-1%	(0.32)	-2%
Jun-99	(0.59)	-4%	(0.13)	-1%	(0.56)	-3%
Jul-99	(0.79)	-4%	1.09	6%	(0.15)	-1%
Aug-99	(0.65)	-3%	0.36	2%	(0.42)	-2%
Sep-99	(0.78)	-4%	(0.28)	-1%	(0.41)	-2%
Oct-99	(0.43)	-2%	(0.41)	-2%	0.05	0%
Nov-99	(0.40)	-2%	0.04	0%	0.13	1%
Dec-99	(0.40)	-2%	(0.54)	-2%	0.07	0%
Jan-00	(0.39)	-2%	(0.29)	-1%	0.62	2%
Feb-00	(0.62)	-2%	(0.06)	0%	1.02	4%
Mar-00	(0.99)	-4%	2.08	7%	0.58	2%

Note: Negative numbers (\$) indicate that price received by Wyoming Revenue and Tax was greater than that received under RIK program bids.

Powder River Sour

COMPARISON OF RIK PRICES RECEIVED TO WYOMING TAX RECEIPTS SUMMARY SCHEDULE OF DIFFERENCES

	<u>Field 1</u>		<u>Field 2</u>		<u>Field 3</u>		<u>Field 4</u>		<u>Field 5</u>		<u>Field 6</u>		<u>Field 7</u>	
Apr-99	\$1.34	10%	(\$0.05)	0%	\$0.37	3%	\$0.00	0%	\$1.02	8%	\$1.53	10%	\$0.77	5%
May-99	1.30	10%	0.02	0%	0.54	4%	0.80	6%	4.83	35%	1.35	8%	0.79	5%
Jun-99	1.33	10%	0.05	0%	0.49	4%	0.89	6%	4.87	35%	0.95	6%	0.84	6%
Jul-99	(1.10)	-7%	0.05	0%	0.43	3%	1.02	6%	5.55	35%	0.42	2%	0.84	5%
Aug-99	0.49	3%	0.06	0%	0.34	2%	0.92	5%	5.05	30%	0.69	4%	0.81	5%
Sep-99	(1.07)	-6%	0.07	0%	0.34	2%	1.03	5%	5.88	30%	0.75	3%	0.78	4%
Oct-99	(1.32)	-7%	(0.28)	-2%	0.21	1%	0.48	3%	0.93	5%	0.20	1%	0.30	2%
Nov-99	(1.56)	-8%	(0.22)	-1%	0.11	1%	6.94	33%	0.04	0%	(0.04)	0%	0.30	1%
Dec-99	(1.63)	-8%	(0.23)	-1%	0.15	1%	0.66	3%	(0.43)	-2%	0.19	1%	0.28	1%
Jan-00	0.28	1%	(0.23)	-1%	0.22	1%	0.35	2%	0.03	0%	1.42	6%	0.48	2%
Feb-00	0.25	1%	(0.24)	-1%	0.21	1%	0.47	2%	(5.03)	-20%	0.35	1%	0.46	2%
Mar-00	0.27	1%	(0.25)	-1%	0.29	1%	0.71	3%	0.58	2%	0.07	0%	0.58	2%

	<u>Field 8</u>		<u>Field 9</u>		<u>Field 10</u>		<u>Field 11</u>		<u>Field 12</u>		<u>Field 13</u>		<u>Field 14</u>	
Apr-99	\$1.06	8%	\$0.77	6%	\$0.00	0%	\$0.28	2%	\$0.88	6%	\$0.97	7%	\$4.21	31%
May-99	0.98	7%	0.64	5%	0.53	4%	0.46	3%	0.84	6%	0.97	7%	4.22	30%
Jun-99	1.02	7%	0.67	5%	0.67	5%	0.49	4%	0.83	6%	0.97	7%	0.80	6%
Jul-99	0.99	6%	0.83	4%	0.70	4%	0.44	3%	0.83	5%	0.99	6%	0.36	2%
Aug-99	1.08	6%	0.82	5%	0.65	4%	0.31	2%	0.89	5%	0.98	6%	0.15	1%
Sep-99	1.06	5%	0.85	5%	2.18	11%	0.11	1%	0.90	4%	0.98	5%	0.34	2%
Oct-99	0.72	4%	0.36	2%	0.25	1%	0.35	2%	0.32	2%	0.46	2%	0.25	1%
Nov-99	0.57	3%	0.46	2%	0.21	1%	0.51	3%	0.33	2%	0.43	2%	0.24	1%
Dec-99	0.54	3%	0.39	2%	0.20	1%	0.12	1%	0.30	1%	0.28	1%	0.41	2%
Jan-00	1.01	5%	0.81	5%	0.34	2%	3.20	14%	0.76	3%	0.25	1%	0.42	2%
Feb-00	1.13	5%	0.75	3%	0.38	2%	0.45	2%	0.68	3%	0.31	1%	0.50	2%
Mar-00	1.09	4%	1.12	4%	0.47	2%	0.33	1%	0.88	3%	0.34	1%	0.59	2%

	<u>Field 15</u>		<u>Field 16</u>		<u>Field 17</u>		<u>Field 18</u>		<u>Field 19</u>		<u>Field 20</u>		<u>Field 21</u>	
Apr-99	\$1.28	9%	\$1.02	7%	\$0.53	4%	\$1.60	11%	\$0.89	7%	\$0.30	2%	\$0.43	3%
May-99	1.28	9%	0.89	6%	0.41	3%	1.47	10%	0.88	7%	0.29	2%	0.36	3%
Jun-99	0.60	4%	1.06	7%	0.55	4%	1.45	10%	0.91	7%	0.48	3%	0.50	4%
Jul-99	0.61	4%	1.44	9%	0.63	4%	1.45	9%	0.93	6%	0.39	2%	0.48	3%
Aug-99	0.64	4%	1.37	8%	0.52	3%	1.44	8%	0.91	5%	0.59	3%	0.48	3%
Sep-99	0.56	3%	1.41	7%	0.44	2%	1.41	7%	0.88	5%	0.42	2%	0.47	2%
Oct-99	0.68	4%	0.72	4%	(0.22)	-1%	1.00	5%	0.29	2%	(0.18)	-1%	0.16	1%
Nov-99	(0.34)	-2%	3.20	15%	0.27	1%	0.90	4%	0.28	1%	(0.21)	-1%	(0.01)	0%
Dec-99	(0.26)	-1%	3.69	17%	0.06	0%	0.83	4%	0.29	1%	(0.23)	-1%	(0.05)	0%
Jan-00	(0.28)	-1%	1.70	7%	(4.50)	-20%	0.77	3%	(0.07)	0%	(0.21)	-1%	0.32	1%
Feb-00	(0.29)	-1%	(1.50)	-6%	0.43	2%	0.81	3%	(0.06)	0%	0.07	0%	0.42	2%
Mar-00	0.54	2%	(1.45)	-6%	(0.31)	-1%	0.38	1%	0.01	0%	0.00	0%	(0.64)	-2%

Note: Negative numbers (\$) indicate that price received by Wyoming Revenue and Tax was greater than those received under the RIK program bids.

Bighorn Basin Asphaltic Sour

**COMPARISON OF RIK PRICES RECEIVED
TO WYOMING TAX RECEIPTS
SUMMARY SCHEDULE OF PRICE DIFFERENCES**

	<u>Field 1</u>		<u>Field 2</u>		<u>Field 3</u>		<u>Field 4</u>		<u>Field 5</u>	
Apr-99	(\$0.51)	-4%	\$1.00	9%	\$0.31	3%	\$2.01	13%		
May-99	(0.53)	-4%	0.71	6%	0.06	1%	2.26	14%		
Jun-99	(0.51)	-4%	1.20	10%	0.17	1%	2.07	13%		
Jul-99	(0.49)	-3%	1.21	9%	0.02	0%	1.98	11%		
Aug-99	(0.50)	-3%	1.51	10%	(0.47)	-3%	1.27	6%		
Sep-99	(0.48)	-3%	1.23	7%	(1.02)	-6%	0.95	4%		
Oct-99	(1.14)	-7%	0.56	4%	(0.93)	-6%	(0.65)	-3%	\$0.92	5%
Nov-99	(1.25)	-7%	0.56	3%	0.55	3%	1.55	7%	4.80	21%
Dec-99	(1.22)	-6%	0.99	5%	0.47	2%	1.00	5%	0.94	4%
Jan-00	(1.21)	-6%	0.96	5%	0.16	1%	0.61	3%	1.44	6%
Feb-00	(1.19)	-5%	1.09	5%	(0.19)	-1%	0.11	0%	0.58	2%
Mar-00	(1.17)	-5%	1.00	4%	0.04	0%	0.61	2%	1.29	5%

	<u>Field 6</u>		<u>Field 7</u>		<u>Field 8</u>		<u>Field 9</u>		<u>Field 10</u>	
Apr-99	\$2.57	16%	\$2.68	17%	\$2.46	16%	\$3.68	23%	\$3.04	20%
May-99	2.85	18%	2.45	15%	2.80	17%	3.83	23%	3.38	21%
Jun-99	2.68	16%	2.44	15%	2.64	16%	3.82	23%	2.65	16%
Jul-99	2.50	13%	2.38	13%	2.42	13%	3.85	20%	3.14	17%
Aug-99	1.80	9%	2.02	10%	1.75	9%	4.18	21%	2.04	10%
Sep-99	0.99	4%	1.57	7%	0.90	4%	6.14	27%	1.52	7%
Oct-99	(0.44)	-2%	0.32	2%	0.01	0%	2.13	11%	0.19	1%
Nov-99	1.60	8%	1.39	6%	2.14	10%	2.13	10%	1.66	8%
Dec-99	1.22	6%	1.50	7%	1.63	7%	2.06	9%	0.91	4%
Jan-00	0.76	3%	1.31	6%	1.21	5%	2.91	12%	1.17	5%
Feb-00	0.33	1%	1.00	4%	0.78	3%	2.60	10%	0.87	3%
Mar-00	(0.16)	-1%	1.38	5%	0.86	3%	1.95	8%	1.28	5%

	<u>Field 11</u>		<u>Field 12</u>		<u>Field 13</u>		<u>Field 14</u>	
Apr-99	\$2.70	17%	\$2.36	15%	\$1.04	7%	\$4.71	32%
May-99	2.43	15%	2.37	15%	1.37	9%	3.52	23%
Jun-99	2.68	16%	2.40	15%	1.11	7%	2.53	16%
Jul-99	2.59	14%	2.43	13%	1.17	7%	2.63	15%
Aug-99	2.12	11%	2.39	12%	0.95	5%	2.64	14%
Sep-99	1.48	7%	2.38	11%	1.02	5%	2.57	12%
Oct-99	0.31	2%	1.02	5%	(0.29)	-2%	0.90	5%
Nov-99	1.81	8%	0.55	3%	(0.05)	0%	0.94	4%
Dec-99	1.50	7%	0.54	2%	(0.40)	-2%	1.63	7%
Jan-00	1.36	6%	0.62	3%	(0.47)	-2%	2.92	13%
Feb-00	0.89	3%	0.54	2%	(0.29)	-1%	2.04	8%
Mar-00	1.38	5%	0.61	2%	(0.16)	-1%	3.37	13%

Note: Negative numbers (\$) indicate that price received by Wyoming Revenue and Tax was greater than those received under the RIK program bids.

Minerals Management Service / State of Wyoming Land & Farm Loan Office
Joint Effort: Royalty-In-Kind Pilot Program
Royalty Oil and Gas Purchase System

EXHIBIT D

41.0

RIK Oil and Gas Reporting and Payment for:		Federal Payor Code: RIN07	
Exmpl. Oil Company Inc.		Payor Assigned (3a) Document Number: A12345	
123 Green Tree Street		Contract Number: MMS-RIK0793-0007	
Sam City, Wyoming 82003		MMS	
Report Month (mm/yy):	State Payor Code: 1000	RIK Quantity	1,048
11/99		RIK Value	\$8,702.06
Print Method Code:	3		

Create Electronic Reports:

MMS-2014 Transmittal Letter

MMS-2014 Form

State of Wyoming - Form M2E

Internal Disk File Name:

a:\Federal City

a:\State City

Instructions: Enter the data in the yellow boxes above and below. Once you have entered all of the data elements are correct, select/push the "MMS-2014 Transmittal Letter" button to print the Transmittal Letter. Then select/push the "MMS - 2014 Form" button to create the MMS-2014 CSV format file. These separate files should then be sent to the MMS and the State of Wyoming as provided in the instruction package. The RIK purchase amount due is shown in the green box noted as "RIK Value". For modifications insert at least two new lines (one with a negative amount of the original line and one for the new line). Give the new lines a new file code. For example line code B0100 would become B0100M1 and B0100M2. Insert the proper amount of lines in the 2014 Work Sheet and 2014 sheet.

Line Code	Property Name	Agreement Number	Purchased RIK Quantity	Purchase Unit Price	RIK Value	Gravity * API	Sales Month	Selling Amt. Code	Transaction Code	Adjustment Reas. Code	MMS Roy Pct.	State Roy Pct.	100% Volume
B0100	Agreement	68-1234567	1,592.5	\$10.00	\$15,925.00	23.1	1099	001	01	00	7.38644%	4.75349%	13,964.60
B0101	Federal Lease	68-1234567	19.8	\$10.00	\$198.00	23.1	1099	001	01	00	8.50000%	0.00000%	232.00
B1501	Non-Farmable	68-1234567	206.4	\$10.00	\$2,064.00	24.1	1099	001	01	00	0.00000%	12.50000%	1,541.25
													15,948.85

Certification Statements

The Paperwork Reduction Act of 1995 requires us to inform you that this information is being collected by the Minerals Management Service (MMS) to document details of royalty payments and sales of minerals from leases on Federal lands. We will use this information to maintain and audit lease accounts, and we estimate the burden for reporting electronically is 2 minutes per line and for reporting manually is 7 minutes per line. Comments on the accuracy of this burden estimate or suggestions on reducing this burden should be directed to the Information Collection Clearance Officer, MS 4230, MMS, 1849 C Street, N.W., Washington, DC 20740 and to the Office of Management and Budget, Office of Information and Regulatory Affairs, Attention: Desk Officer for the U.S. Department of the Interior, Washington, DC 20503. Proprietary information submitted to the U.S. Department of the Interior is protected in accordance with standards established by the Federal Oil and Gas Royalty and the Department's Regulations (43 CFR 2). An agency may not conduct or sponsor a collection of information that is not required to respond to a collection of information unless it displays a currently valid OMB control number.

Purchaser
Required
Information