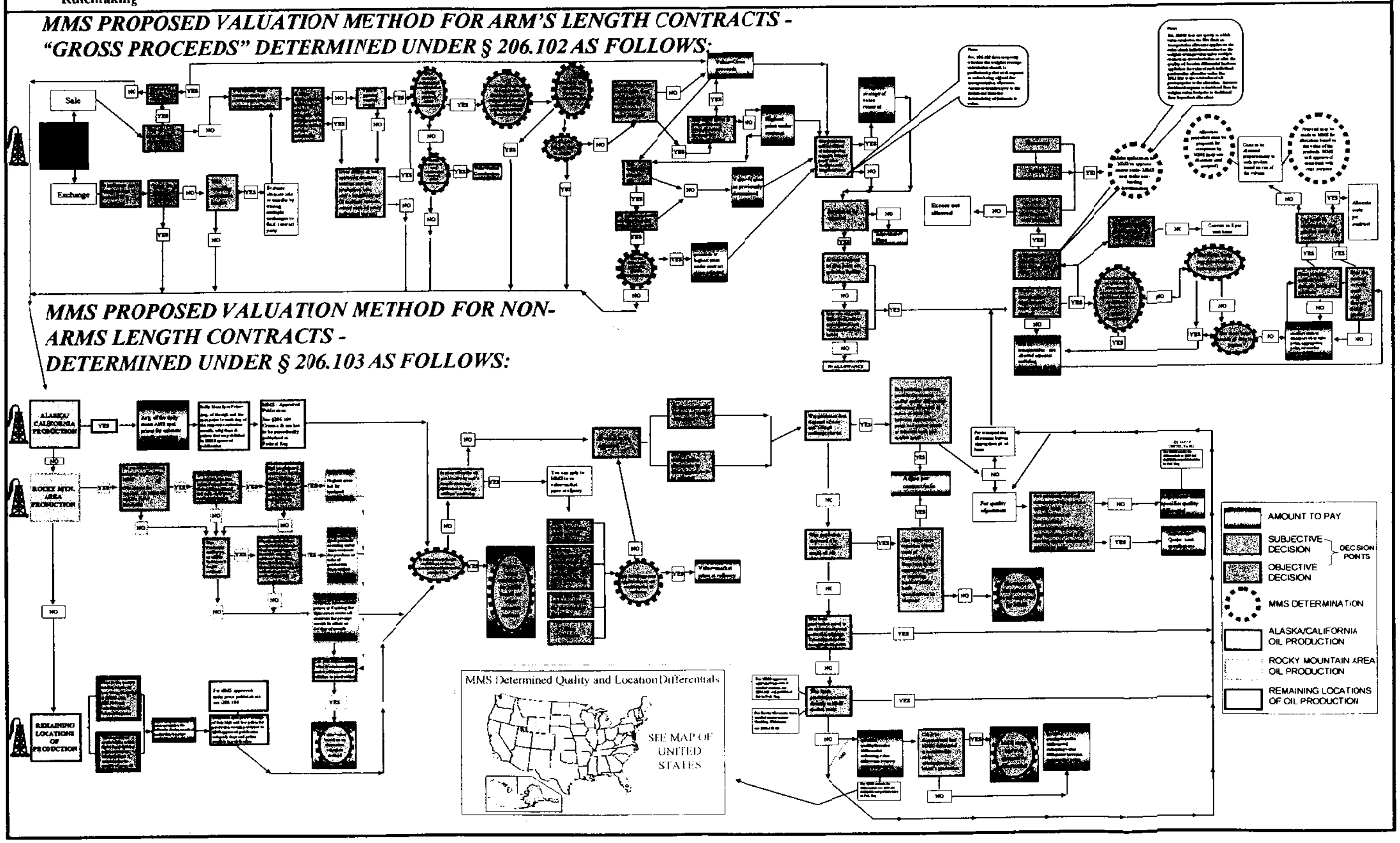
APPENDIX 2
DECISION TREE

MMS Second
Supplementary Notice
of Proposed
Rulemaking

HOW WILL ROYALTY VALUE BE CALCULATED UNDER MMS PROPOSED RULE?

Establishing Oil Value for
Royalty Due on Federal Leases.
FEBRUARY 6, 1998



ANALYSIS OF THE DEPARTMENT OF INTERIOR, MINERALS MANAGEMENT SERVICE'S SUPPLEMENTARY PROPOSED RULE ESTABLISHING OIL VALUE FOR ROYALTY DUE ON FEDERAL LEASES

PREPARED BY

BARENTS GROUP • LLC

A KPMG Company
2001 M Street, NW
Washington, DC 20036
202-467-3828

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PREFACE

Barents Group LLC, a wholly owned subsidiary of KPMG Peat Marwick LLP, was retained by a group of companies having significant crude oil production on Federal lands, to assist in analyzing the Department of Interior, Minerals Management Service's (MMS) proposed rule establishing a new method for valuing oil for royalties due on Federal leases (63 F.R. 6113, published February 6, 1998). These companies are interested in and affected by the MMS proposal.

For the purposes of this report, we have utilized certain terminology defined by MMS in its proposed rule, though we understand that these terms are not necessarily recognized or commonly used in the oil industry. The term "market center" is defined by MMS as "a major point MMS recognizes for oil sales, refining, or transshipment" – for example, St. James, Louisiana, and Guernsey, Wyoming. The term "aggregation point" is defined by MMS as "a central point where production is aggregated for shipment to market centers or refineries. It includes, but is not limited to, blending and storage facilities and connections where pipelines join. Pipeline terminations at refining centers also are classified as aggregation points." MMS proposes to publish periodically the aggregation points associated with each market center.

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EXECUTIVE SUMMARY

Barents Group LLC was retained by Gardere & Wynne, L.L.P. on behalf of a group of companies having significant crude oil production on Federal lands to assist in analyzing the Department of Interior, Minerals Management Service's (MMS) further supplementary proposed rule establishing a new method for valuing oil for royalties due on Federal leases (63 F.R. 6113, published February 6, 1998). These companies are interested in and affected by the MMS proposal. This report addresses a number of problems raised by both the further supplementary proposed rule and MMS' entire crude oil valuation rulemaking effort. As a result of our analysis of the proposed rule, and as discussed further below, we strongly recommend that MMS abandon any additional efforts directed towards the development of an index pricing methodology for valuing crude oil at the lease. Instead, MMS should fully commit its resources to either fixing the existing regulations (e.g., with a tendering program, and indeed, two integrated producers, Texaco and Conoco, already have tendering programs in place) or to the further development of a viable royalty-in-kind program.

MMS published its original proposed rule on January 24, 1997 and, in response to numerous comments, released the most recent version of the rule on February 6, 1998. Our analysis indicates that not only do many of the original problems remain, but indeed, the revised rule creates new problems that render it virtually unworkable.

Our analysis leads us to conclude that the proposed spot price and Alaska North Slope-based index valuation method is fatally flawed. It fails to satisfy the basic objective of measuring the value of crude oil at the lease, and it imposes unnecessary costs and risks on both the Federal government and on Federal lessees. MMS has performed no tests of its proposed rule to determine whether it would accurately value crude oil at the lease. Furthermore, as discussed in our earlier studies filed with the Office of Management and Budget and with MMS, the proposed rule would impose unnecessary and large administrative costs on lessees. Specifically, our findings include following:

- *Proposed gross proceeds method would be extremely burdensome.* The proposed rule would impose a requirement that lessees trace production from the lease through unlimited non-arm's-length transfers until the point of ultimate sale. Because crude oil is frequently aggregated and commingled at numerous points, the proposed rule appears to effectively require the tracing of all of a lessee's production regardless of whether it comes from a Federal lease. So long as one barrel could come from a Federal lease, the lessee would have an obligation to compute value based on the ultimate arm's-length disposition. Because actual tracing of molecules is physically impossible, MMS would require that lessees develop an unspecified allocation system that would perform the economic equivalent of such tracing. This requirement would be extremely burdensome and require uncertain and arbitrary adjustments to determine a netback value at the lease for many transactions downstream of the lease.
- *Proposed gross proceeds method of questionable legality.* The sharing of information between affiliates required by this rule raises significant legal, including antitrust, issues.

This is particularly troublesome where affiliation is defined to include companies where there is an ownership interest of a little as 10 percent. If, for example, a Federal lessee has a 10-percent interest in a mid-stream marketing company with which it also competes, the proposed rule would require the mid-stream company to disclose sensitive and commercially valuable pricing information to determine the value of crude oil when it is ultimately sold arm's length. This disclosure will be required so long as the mid-stream company accepts for sale as little as one barrel of production that might come from a Federal lease.

- *Proposed methodology will not capture value at the lease.* MMS asserts that its non-arm's-length netback methodology will capture market value at the lease, but what MMS would really capture is market value downstream of the lease. While the downstream value is a market value, even with the proposed adjustments, what MMS would capture is value in a different market than the lease market. Indeed, the entire middle market segment of the industry exists precisely to capture the value associated with moving crude oil supplies between such markets. The conceptual flaw in MMS' approach is that it focuses on allowable deductions rather than on the fact that value in one market cannot in any practical way be used to replicate value in another market simply by picking the right adjustment factors.

- *Spot prices do not accurately reflect lease values.* Spot markets do not generally reflect local supply and demand conditions at the lease and can represent either a discount or a premium relative to term contract prices. Additionally, spot price assessments are based on a limited polling of traders and so do not reflect an average of spot transactions or even the price of any particular transaction. The proposed valuation method does not accurately take into account the volatile nature of market oil price differentials between different locations and different grades of crude. The many local oil markets in the U.S. do not move in lock step with each other because of the influence of local supply and demand factors.

- *MMS' proposed adjustments do not accurately capture differentials.* Even if one were to accept the theory underlying MMS' approach, the proposed adjustments fail to capture all the differences in value between the lease and ultimate disposal point.

- *Data from Form MMS-4415 not usable for intended purpose.* MMS will not be able to derive meaningful location and quality differentials between aggregation points and market centers from the data to be collected on Form MMS-4415. Indeed, there are potentially serious problems with the statistical accuracy and representativeness of the differentials MMS proposes to publish. Even more troubling, however, is that at the February 18 hearing in Houston, an MMS official said that MMS planned to wait to see the Form MMS-4415 data before figuring out how to use it. He also confirmed that MMS has performed no prototyping or pilot testing.

- *Proposed methodology results in inaccurate values in each region.* In addition to system-wide inaccuracies, MMS' proposed regional schemes introduce their own inaccuracies.

  ◊ *California/Alaska.* Alaska North Slope (ANS) spot market crude oil sales represent the sale of a different kind of product than onshore California crude oil at the lease. While both products are crude oil, they are of different qualities available in different quantities at different locations under different contract terms. These tangible and intangible differences in markets are reflected in a higher level of volatility in price differentials between ANS crude and California crudes. As a result, the proposed methodology will not result in an accurate measure of onshore lease value.

◊ *Rocky Mountain Area.* MMS has not fully considered the problems and inaccuracies associated with each of the four benchmarks for the Rocky Mountain Area. The restrictions imposed on the tendering program could easily result in a lower value being received for tendered oil. The volume-weighted average benchmark will result in overvaluation for some oil and is also subject to significant restrictions. The NYMEX benchmark will not result in an accurate lease value, and the final benchmark where a lessee uses an MMS-established methodology relies on subjective decisions on the part of MMS. Because of the restrictions placed on the first two methods and the many inaccuracies associated with the NYMEX method, it could well be that a substantial share of Rocky Mountain Area production is forced to be valued using a far less certain and yet to be determined method than exists under today's benchmark methodology. MMS also asked for comments on the composition of the Rocky Mountain Area. A debate over whether all or some portion of New Mexico should be included in the defined area misses the fundamental issue. While crude oil produced in the Rockies is subject to different market pressures than crude produced in some other parts of the country, this is not equivalent to characterizing the Rockies as a single market. As discussed above, we believe that all crude oil markets are inherently local and subject to their own supply and demand characteristics. While these local markets are certainly affected by the value of crude oil sold elsewhere, this is not the same as saying that the value of crude oil produced in one locality can be determined formulaically by the value of crude in other localities.

◊ *Rest of the country.* MMS has not carefully considered each region and local market in the rest of the country when developing this methodology. Some Federal leases are hundreds of miles from a defined aggregation point or market center, and MMS requires lessees to use the spot price at the market center closest to the lease to value crude oil not sold at arm's-length. If the closest spot price is many hundreds of miles away, this may bear little relationship to the local market and will not result in an accurate value at the lease. MMS also requires the lessee to use the spot price for the crude oil most similar in quality to its oil. It is not clear what the lessee should do when these requirements conflict. For example, what should the lessee do when sour crude oil production is closest to Cushing? Should it use a West Texas Sour spot price at Midland, even though Midland is 500 miles from Cushing, because it is most similar in quality, or the Cushing price?

The costs and inefficiencies that would be imposed on lessees by the further supplementary proposed rule are entirely avoidable and unnecessary because an active market exists for oil at the lease that would allow a more straightforward and less costly approach to royalty valuation. In addition, a serious, carefully developed, alternative approach is now under congressional consideration: royalty-in-kind (RIK). One hearing has already been held on RIK legislation and an additional hearing is now scheduled . An RIK bill has also been introduced in the U.S. Senate. RIK legislation would require that the Federal government take title to royalty in kind production at the lease. By using private sector qualified marketing agents to market its production at whatever point maximizes value, the U.S. Government would achieve greater certainty than the proposed rule envisions but would do so in a way that is much less administratively burdensome, and clearly captures accurate arm's-length values through outright sales. Indeed, MMS has studied the feasibility of royalty-in-kind for natural gas in the Gulf of Mexico and is initiating crude oil royalty-in-kind pilot programs in Wyoming and offshore Texas.

It makes little sense to completely restructure the current crude oil valuation system, as would be required if the further supplementary proposed rule were to be finalized, when serious efforts are underway to develop a much better system that has broad industry support and which MMS is actively pilot testing. A properly structured royalty-in-kind program will allow the government to obtain the market value for production on Federal lands without the unnecessary administrative complexity and burden that would be imposed by MMS' further supplementary proposed rule.

1. INTRODUCTION

On January 24, 1997, the Minerals Management Service (MMS) published a proposed rule establishing oil value for royalty due on Federal leases and on sale of Federal royalty oil (62 F.R. 3742). In compliance with the Paperwork Reduction Act of 1995 (PRA) and other statutory and regulatory requirements, MMS estimated the regulatory burden associated with the proposed rule and solicited comments.

On March 25, the Domestic Petroleum Council, the Independent Petroleum Association of America, the Independent Petroleum Association of Mountain States, the Mid-Continent Oil and Gas Association, and the Rocky Mountain Oil and Gas Association submitted a report prepared by Barents Group LLC (Barents) to the Office of Management and Budget (OMB) commenting on the proposed rule.[1] In response to these and other industry comments, as well as its own analysis, OMB denied MMS' request to collect information on proposed Form MMS-4415. The information to be collected on this form would be necessary to implement the proposed rule.

The Rocky Mountain Oil and Gas Association submitted a second report prepared by Barents to the Minerals Management Service (MMS) on May 28, 1997.[2] This second report presented a more substantive discussion of problems with the proposed rule, and concluded that the proposed valuation method based on New York Mercantile Exchange (NYMEX) futures prices and Alaska North Slope (ANS) California spot prices was fundamentally and fatally flawed. The proposed rule failed to satisfy the basic objective of measuring the value of crude oil at the lease, and it imposed unnecessary costs and risks on Federal lessees and the Federal government. Additionally, the proposed rule would impose unnecessarily large administrative costs on lessees. Consequently, the report recommended that the proposed rule be withdrawn and its underlying valuation method rejected.

On July 3, MMS released a supplementary rule intended to address certain concerns raised during the comment period.[3] Barents prepared a report that reviewed the supplementary rule to analyze whether MMS had significantly reduced the paperwork burden. The report was submitted to OMB on August 4, 1997.[4] In reviewing the July 3 supplementary rule, the Barents report concluded that while MMS had addressed certain relatively minor issues, MMS had not addressed the substantive issues raised by the industry or by OMB.

[1] "Preliminary Analysis of the Department of Interior, Minerals Management Service Proposed Rule Establishing Oil Value for Royalty Due on Federal Leases and on Sales of Federal Royalty Oil," March 25, 1997 as submitted by the Domestic Petroleum Council, the Independent Petroleum Association of America, the Independent Petroleum Association of Mountain States, the Mid-Continent Oil and Gas Association, and the Rocky Mountain Oil and Gas Association.

[2] "Analysis of the Department of Interior, Minerals Management Service Proposed Rule Establishing Oil Value for Royalty Due on Federal Leases and on Sales of Federal Royalty Oil," May 28, 1997 as submitted by the Rocky Mountain Oil and Gas Association.

[3] 30 CFR Part 206 (62 FR 36030)

[4] "Analysis of The Department of Interior, Minerals Management Service Supplementary Proposed Rule Establishing Oil Value for Royalty Due on Federal Leases and on Sale of Federal Royalty Oil Under the Paperwork Reduction Act," August 4, 1997 as submitted by the Rocky Mountain Oil and Gas Association.

MMS reopened the comment period on September 22, 1997 and requested comments on alternatives suggested by commenters before proceeding with the rulemaking. During that comment period, MMS held a number of workshops to discuss these valuation alternatives.[5]

On February 6, 1998, MMS released a further supplementary proposed rule after reviewing more than 2,600 pages of comments.[6] Barents has again been asked to prepare a report analyzing the further supplementary proposed rule. In reviewing the February 1998 rule, our analysis indicates that not only do many of the original problems remain, but also the revised rule creates new problems that render it virtually unworkable.

We begin with an overview of the proposed rule, the supplementary proposed rule, and the further supplementary proposed rule (Section 2). Section 3 discusses problems with the further supplementary proposed rule. Section 4 discusses a viable, less burdensome alternative approach under which the Federal government would take its royalties in kind. Finally, Section 5 presents our conclusions.

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[5] On November 5, 1997, a Barents Group report entitled "Analysis of the Department of Interior, Minerals Management Service Proposed Rule Establishing Oil Value for Royalty Due on Federal Leases and on Sale of Federal Royalty Oil Under Executive Order 12866" and submitted by the Rocky Mountain Oil and Gas Association called for MMS to complete an Executive Order 12866 analysis of its proposed rule.

[6] All references to the further supplementary proposed rule in this report refer to 30 CFR Part 206. (63 FR 6113)

2. OVERVIEW OF PROPOSED, SUPPLEMENTARY PROPOSED, AND FURTHER SUPPLEMENTARY PROPOSED RULES

This section briefly discusses the proposed rule as it has continued to evolve from its original form in January 1997 to its most recent iteration in February 1998.

ORIGINAL PROPOSED RULE

The original proposed rule sought to decrease reliance on posted prices and to develop rules for Federal royalty valuation which would better reflect market value of crude oil at the lease.[7] It retained the concept that for arm's-length sales, gross proceeds are the basis of royalty value, but limited the application of this concept. The majority of sales would be subject to a new index methodology in which the royalty value is linked to either the New York Mercantile Exchange (NYMEX) futures price for West Texas Intermediate (WTI) at Cushing, Oklahoma or the Alaska North Slope (ANS) spot price for deliveries in either Los Angeles or San Francisco, depending on the location of production. The transactions required to use this new methodology include exchange agreements, reciprocal buy/sell agreements, non-arm's length transactions, sales to an affiliate refiner, and production subject to a crude oil call, and arm's-length sales by lessees who have purchased crude oil within the preceding two years. The proposed rule would also require lessees to file a new form, Form MMS-4415, for all exchange agreements. The information collected on the new form would be used to calculate location/quality differentials between aggregation points and market centers.

Proposed Form MMS-4415, in its original version, would impose new reporting and record-keeping burdens on Federal lessees. Initially, the form was to be submitted no later than two months after the effective date of the information requirement and then by October 31 of the year in which the rule takes effect and by October 31 of each succeeding year. The form requested information on the terms of the contract including: contract party name, contract type and ID, contract term, title transfer location, volume terms, crude quality (including API gravity and sulfur content), pricing terms, and quality adjustments.

Royalty valuation at the lease for non-arm's-length transactions was proposed as follows: Where oil is transferred to an affiliate who later sells it at arm's length, the value of the oil for royalty purposes would be either:

1. the affiliate's arm's-length resale price (provided that neither the lessee nor its affiliate also purchases oil); or
2. a "monthly average" of the NYMEX futures price (for non-California and non-Alaska oil) or ANS spot price (for oil produced in California or Alaska), adjusted for location and/or quality differentials.

[7] All references to the original proposed rule in this report refer to 30 CFR Part 206 (62 FR 3742)

For all other cases (i.e., where the lessee or its affiliate refines the oil or disposes of it in a non-arm's-length transaction), only the second option would be available.

MMS described three adjustments to the "monthly average" NYMEX futures price:

1. a location/quality differential between the index pricing point (for example, West Texas Intermediate (WTI) at Cushing, Oklahoma) and the appropriate market center (for example, Light Louisiana Sweet at St. James, Louisiana), calculated as the difference between the average monthly spot prices published in an MMS-approved publication for the respective locations;
2. a location/quality differential between the market center and a major aggregation point for oil from various sources, as either published by MMS or contained in the lessee's arm's-length exchange agreement (this adjustment would be based on data collected on Form MMS-4415) or the company's own differential on a buy/sell or exchange between a market center and an aggregation point; and
3. the actual costs of transportation (as determined under existing valuation rules) from the aggregation point to the lease, or from the market center to the lease if the oil flows directly to a market center.

SUPPLEMENTARY PROPOSED RULE

On July 3, 1997, MMS published a supplementary proposed rule that modified the eligibility requirements for oil valuation for arm's-length transactions and the procedures for collection of exchange information.[8] It also amended the list of aggregation points. This section discusses changes to the proposed rule contained in the supplementary proposed rule.

Modifications in Reporting Requirements

The supplementary proposed rule did not significantly change the reporting requirements of proposed Form MMS-4415. It contained no changes to either the proposed form or its instructions. The only change in reporting requirements was that MMS would only require Form MMS-4415 to be filed for transactions between an aggregation point and a market center and would not require a Form MMS-4415 to be filed for oil exchanged at the lease.

Modifications in Valuation Methodology

Under the original proposed rule, MMS would require that all production subject to a crude oil call be valued using the proposed index methodology. MMS received many comments regarding oil subject to crude oil calls; crude oil calls are frequently not exercised, and when they are exercised, the purchaser must typically match or exceed the price offered by the highest bidder. In these cases, MMS would not require the oil to be valued using an index pricing method. The supplementary proposed rule amended proposed 30 CFR 206.102(a)(4) to require index valuation only in situations involving non-competitive crude oil calls and added a definition of a non-competitive crude oil call in 30 CFR 206.101. The supplementary proposed rule also

[8] 62 FR 36030

deleted 30 CFR 206.102(a)(6), as proposed in January, to address the issue that disallowing producers who purchased small quantities of oil for on-lease and other uses from using the gross proceeds method was too restrictive.

MMS proposed a new paragraph (a)(6) to allow producers who exchange oil with a non-affiliated entity, and then sell the oil in an arm's-length transaction, to value that oil using gross proceeds or to choose to use an index methodology. This paragraph would only apply if there were a single exchange agreement before the arm's-length sale.

MMS also proposed to exclude an additional category of arm's-length transactions from gross proceeds valuation. The preamble states "[t]hat these are situations where two parties transact purchases and sales of oil that would appear to be arm's length. However, the prices are below market for the field or area. Neither party cares because they agree to sell roughly equivalent volumes to one another..."[9] In this situation, referred to as an "overall balance" situation, the supplementary proposed rule would amend 30 CFR 206.102(a)(4) to require the oil to be valued based on index value.

Finally, MMS amended proposed 30 CFR 206.102(a)(1) to clarify that the exceptions to valuing oil based on gross proceeds should be applied on a contract-by-contract or transaction-by-transaction basis.

FURTHER SUPPLEMENTARY PROPOSED RULE

On February 6, 1998, MMS published a further supplementary proposed rule which retains the concept of index pricing, but would require the use of spot prices published for the market center nearest the lease for oil most similar in quality to the lease production rather than NYMEX. Additionally, it divides the United States into three geographic regions for purposes of valuing oil disposed of in non-arm's-length transactions for Federal royalty purposes. The use of an Alaska North Slope (ANS) index for production from Alaska and California was retained from the original proposed rule.

Modifications in Reporting Requirements

The further supplementary proposed rule proposes a slightly modified Form MMS-4415 which would need to be filed for all the lessee's and their affiliates' crude oil production from Federal leases which is exchanged under arm's-length exchange agreements between paired aggregation points and market centers. The revised form requests the following information: lessee name and address; lessee payor code; reporting period; contract party name; exchange party payor, if available; contract type and contract number; the effective date, initial term, and expiration terms of the contract; the aggregation point and market center; the volume of oil transferred or received; the exchange differential received or paid; and certain quality information and adjustments including API gravity (either deemed or actual), the gravity adjustment received or paid, the actual or deemed sulfur content, the sulfur adjustment received or paid, and any other quality adjustment and the amount received or paid.

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[9] 62 FR 36031

Modifications in Valuation Methodology

Under the further supplementary proposed rule, the value of crude oil for royalty purposes is the *gross proceeds* accruing to the seller less applicable allowances.[10] This also applies if oil is transferred under multiple non-arm's-length contracts and ultimately sold at arm's length, regardless of the number of non-arm's-length transfers before the final sale. The following adjustments are allowed for arm's-length sales:

- A location/quality differential determined from an arm's-length exchange agreement reflecting the difference in value between an aggregation point and a market center or between a lease and a market center;
- Actual transportation costs between an aggregation point and a lease; and
- Quality adjustments based on premia or penalties determined by pipeline quality bank specifications at intermediate commingling points, at the aggregation point, or at the market center that applies to the lease.

There are four exceptions to the gross proceeds rule, and these include:

1. MMS may require the lessee to value oil as non-arm's length if MMS determines arm's-length contract does not reflect the total consideration actually transferred;
2. The lessee must value oil as non-arm's-length if MMS determines that gross proceeds do not reflect a reasonable value because of misconduct by either party to the arm's-length contract or a breach of the duty to market the oil for the mutual benefit of the lessee and lessor;
3. Oil is disposed of under a non-arm's-length exchange; or
4. Oil is subject to a noncompetitive crude oil call.

Oil falling under these exceptions must be valued using the methodology for non-arm's-length transactions.

The non-arm's-length methodology is now separated into three regional schemes. For production in California and Alaska, the value of crude oil would be the average of the daily mean ANS spot prices adjusted for applicable location and quality differentials and possibly for transportation costs.

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[10] Note that gross proceeds is a defined term that is not the same as the definition of gross proceeds under current regulations. As Ben Dillon, Vice President of the Independent Petroleum Association of America, noted in his comments at the MMS hearing on the further supplementary proposed rule on February 25, 1998, "[MMS] inserted into gross proceeds the word "market" and implied duty versus marketable condition."

In the Rocky Mountain Area,[11] crude oil would be valued using a system of four benchmarks:

1. Values established by an MMS-approved tendering program;
2. The volume-weighted average gross proceeds received;
3. The average of daily NYMEX futures prices adjusted for applicable location and quality differentials and possibly for transportation; or
4. An alternative established by the MMS Director.

The rest of the country would use average daily mean spot prices for the market center nearest the lease where spot prices are published in an MMS-approved publication for the crude oil most similar in quality to the lease production. This spot price must then be adjusted for location and quality differentials and may be adjusted for transportation costs. MMS is not proposing to allow the costs of marketing production to be deducted.

The following deductions would be allowed for oil valued using these non-arm's-length methodologies:

- ♦ If production moved directly to alternate disposal point:
  - ◊ Actual transportation costs between the aggregation point and the lease (treat alternate disposal point as aggregation point);[12]
  - ◊ Quality adjustments based on premia or penalties determined by pipeline quality bank specifications at intermediate commingling points, at the aggregation point, or at the market center that applies to the lease.[13]
- ♦ If production moved directly to an MMS-identified market center:
  - ◊ Actual transportation costs between the market center and the lease;[14]
  - ◊ Quality adjustments based on premia or penalties determined by pipeline quality bank specifications at intermediate commingling points, at the aggregation point, or at the market center that applies to the lease.[15]
- ♦ If production neither moved to an alternate disposal point or to a market center:
  - ◊ An MMS-specified location/quality differential determined from arm's-length exchange agreement that reflects difference in value of crude oil between the aggregation point and the market center;[16]
  - ◊ MMS will publish annually a series of differentials applicable to various aggregation points and market centers based on data collected on Form MMS-4415. MMS will

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[11] The Rocky Mountain Area is a defined term and means the States of Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming.
[12] Proposed Section 206.112(c)
[13] Proposed Section 206.112(e)
[14] Proposed Section 206.112(d)
[15] Proposed Section 206.112(e)
[16] Proposed Section 206.112(b)(1)

calculate each differential using a volume-weighted average of differentials reported for similar quality crudes for the aggregation point, market center pair for the last year. These differentials will be used for that calendar year.[17]

◊ Actual transportation costs between the aggregation point and the lease (treat alternate disposal point as aggregation point);[18]

◊ Quality adjustments based on premia or penalties determined by pipeline quality bank specifications at intermediate commingling points, at the aggregation point, or at the market center that applies to the lease.[19]

[17] Proposed Sections 206.112(b)(2) and (3)
[18] Proposed Section 206.112(c)
[19] Proposed Section 206.112(e)

3. PROBLEMS WITH FURTHER SUPPLEMENTARY PROPOSED RULE

The stated goal of MMS' further supplementary proposed rule is to "decrease reliance on oil posted prices, develop valuation rules that better reflect market value, and add more certainty to valuing oil produced from Federal lands."[20] While the further supplementary proposed rule may accomplish MMS' first objective, it fails to achieve the remaining two. In earlier comments filed with MMS and OMB on this proposed rule, Barents stated that the proposed rule was fatally flawed, and we believe that the further supplementary proposed rule fails to address many of the original problems and introduces new problems that render it virtually unworkable.

PROPOSED GROSS PROCEEDS METHOD WOULD BE EXTREMELY BURDENSOME

As described above, under the further supplementary proposed rule, crude oil ultimately disposed of at arm's length must be valued based on the gross proceeds accruing to the seller under the ultimate arm's-length sale regardless of whether the oil is sold or transferred to one or more affiliates or other persons in non-arm's-length transactions before the arm's-length sale. This method would be required without regard to how many non-arm's-length exchanges have occurred before the arm's-length sale.[21] MMS would look to the ultimate arm's length disposition as the best measure of value. This would place an enormous burden on lessees to trace all transactions from the time the production leaves the lease until the point of ultimate sale. As the rule is structured, this could and likely would involve multiple transactions downstream of the lease for many lessees.

In recent years, changes in the marketplace have resulted in many transactions of integrated companies ultimately being disposed of at arm's length.[22] It is very common for producers with their own refineries to buy and sell crude oil at arm's length as well as to transfer some oil directly to their refineries. As a result, many integrated producers will be required to value oil using MMS' proposed gross proceeds method. In so doing, these companies will be forced to trace a large number of transactions with multiple arbitrary adjustments to determine a net back value at the lease. Many integrated companies have affiliates in the trading business that are engaged in arm's-length transactions with third party lessees where their production will be commingled with the upstream affiliate's own production. By imposing this valuation system, MMS would place an almost impossible burden on those mid-stream marketing affiliates that conduct their own third-party trading activities to attempt to distinguish between Federal and non-Federal oil produced by affiliates and nonaffiliated lessees and to trace those transactions and any differentials and transportation costs associated with the Federal barrels.

[20] 63 FR 6113
[21] 63 FR 6115
[22] See, for example, comments filed by Conoco and Texaco regarding their tendering programs (See Conoco comments filed August 1, 1997 with MMS and Texaco Inc, comments filed May 28, 1997). Quite apart from these formalized programs, other integrated companies also sell some of their production arm's length because it is in their commercial interest to do so.

For oil sold or transferred to an affiliate or another person in a non-arm's-length transaction and then sold under multiple arm's-length contracts, this process would be further complicated. In this situation, MMS would require the value to be based on the volume-weighted average of the values established for each contract.[23] If oil has been exchanged or transferred, it will almost certainly have been commingled with other production, Federal or otherwise, and as such, it will be impossible to trace barrels back to a Federal lease or any other lease. This section would require that this tracing occur not once, but once for *each* ultimate arm's-length disposition.

PROPOSED GROSS PROCEEDS METHOD OF QUESTIONABLE LEGALITY

Not only would this proposed gross proceeds method impose a substantial burden on lessees, but it is also not clear that the type of information sharing that this rule would require, especially between affiliates, is legal. Lessees are likely to encounter serious problems in providing information to and receiving information from affiliates that are separate legal entities. There are significant questions regarding their ability to provide and receive information in some cases – especially where the downstream affiliate of a producer is less than 100-percent owned by the leaseholder or where the leaseholder has an equity interest in an inter-state pipeline. The proposed rule modifies the definition of an affiliate to be a "person who owns, is owned by, or is under common ownership with another person to the extent of 10 percent or more of the voting securities of an entity, interest in a partnership or joint venture, or other forms of ownership."[24] By defining affiliation in this overly broad manner, substantial compliance costs would be imposed upon the industry, and the information sharing that MMS would require between less than 100-percent owned affiliates is of questionable legality. Larger oil producing companies often have separate affiliates engaged in production, marketing, and transportation activities, in addition to some integrated companies having other downstream entities. It is not uncommon for affiliated entities to be less than 100-percent owned. As such, it is unclear whether such sharing of information is possible or even legal.

Additionally, sharing of information required under this gross proceeds method will almost certainly require careful review by lessees' antitrust counsel. The proposal requires sharing of competitive pricing information and could be in direct violation of U.S. antitrust laws.

PROPOSED METHODOLOGY WILL NOT CAPTURE VALUE AT THE LEASE

In addition to placing a substantial burden on lessees and their affiliates, this methodology is unlikely to result in an accurate lease value. Under the proposed methodology, MMS would require that lessees net a downstream value back to the lease with adjustments for quality and location differentials and for transportation costs in some cases. Even if the lessee were able to determine all the appropriate, allowable adjustments, it would still not be able to determine an accurate value at the lease by starting with gross proceeds at the point of ultimate sale downstream of the lease and netting back to the lease. MMS is attempting to capture value added downstream of the lease by not acknowledging or allowing a deduction for any value added after the lease. This will result in an overstatement of the value of crude oil at the lease.

[23] Proposed Section 206.102(b) 63 FR 6127
[24] 63 FR 6126

Spot Prices Do Not Accurately Reflect Lease Values

The market value of the crude oil sold at any given market center is not necessarily fairly represented by spot prices. Spot prices represent the cost of obtaining crude for delivery within 30 days. By contrast, a great deal of market activity is accounted for by longer-term contracting arrangements – chiefly refineries contracting for a stable supply of crude over a period of many months. Refiners commonly turn to spot markets to balance out short-term supply/demand imbalances, but rely on longer-term contracts to meet most of their needs. Depending on supply and demand conditions at any given point in time, spot market prices could represent either a premium or discount relative to term contract prices. This and the large volume of oil that changes hands outside of spot markets should raise doubts about the ability of average spot prices to function as an index price for valuation purposes.

The quoted spot price "assessments" are based on a limited polling of traders in each market plus the judgments of reporters. They do not reflect an average of spot transactions or even the price on any particular transaction. Problems with spot market assessments published by reporting services were cited as the reason the Department of Energy ended its long-standing practice of pricing crude from the Elk Hills Naval Petroleum Reserve (NPR) based on the average of spot prices published by Reuters News Service and Telerate for ANS and Line 63 crude. According to an article in *Inside Energy*:

> *... the decision was made ... to switch to the new pricing formula because the two news services said many of the prices they published for ARCO's Line 63 ... represented bids and offers to sell crude oil but not necessarily the final sales price. In addition, only one of the three major oil companies with significant ANS production agreed to divulge confidential pricing information to the news media ...*
>
> *NPR officials stopped using those news services because they believed the indices were unreliable in that they did not represent a large enough percentage of the volumes of California crude oil being traded on the spot market, he said. Prices posted by major refiners in California or paid for NYMEX futures contracts are "less subject to manipulation" and "seem to be more independently verifiable," he said.*[25]

On some days, there may be no spot trading, so the quoted price may simply be the same price as reported on the previous day or may reflect a judgment call by the publication's analysts based on information from other markets or recent price differentials with more active markets. When prices do not change as often as underlying market supply and demand conditions because of a lack of trading, prices are said to be "sticky." Volatility in the differential between one spot price and another can be due, in part, to the "stickiness" of one or both of the prices. For example, if the spot market for WTI at Cushing is active and the spot market for WTS at Cushing is thinly traded with sticky prices, we could observe the differential between the prices in the two markets going up or down even if their actual market values relative to each other (as determined by market supply and demand) have not changed.

[25] "DOE has switched the Way it Sets Prices for Crude Oil it Sells," *Inside Energy*, March 25, 1996.

In thinly traded markets, the assessed price may reflect information from the trades of just a few market participants and, therefore, may reflect the unique circumstances of these spot market participants and may not be reliable indicators of the underlying market conditions. Also, there is no reason to expect that the factors that influenced one individual's or publication's assessment of the price in one spot market will be the same as those influencing the spot price assessment in another market, or that they will be consistent over time. For these, we could observe day-to-day or month-to-month changes in spot price differentials that do not reflect market information about value but simply reflect imperfections in the spot markets and price reporting process.

MMS' Proposed Adjustments Do Not Accurately Capture Differentials

The proposed rule requires that lessees adjust the spot price value for applicable location and quality differentials, and permits a deduction for transportation costs in some cases. By allowing only these particular adjustments, MMS is attempting to capture value added downstream of the lease. These deductions do not reflect any of the value added by mid-stream marketing functions, including, for example, aggregation and blending. If a lessee moves production directly to an alternate disposal point (e.g., its refinery), the lessee is able to claim adjustments for actual transportation costs between the aggregation point and the lease and a quality adjustment based on premia or penalties determined by pipeline quality bank specifications at intermediate commingling points, at the aggregation point, or at the market center.

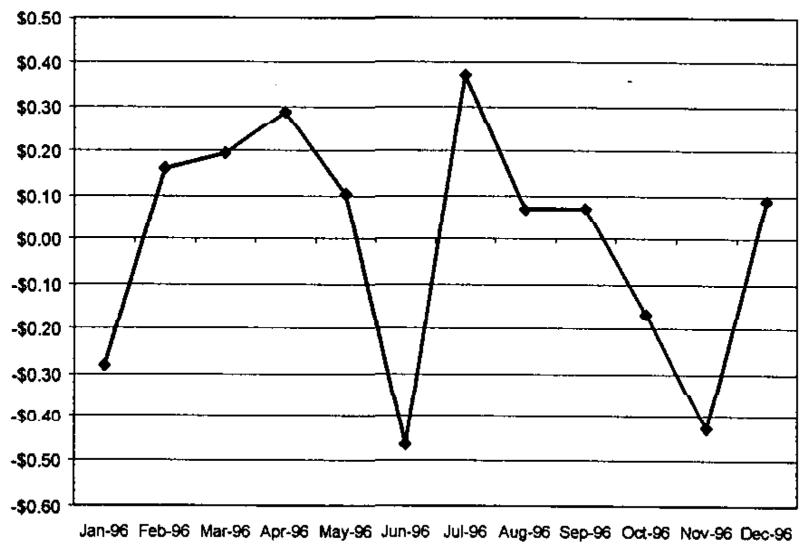
Allowing these adjustments cannot possibly result in an accurate value at the lease.

1. Spot markets generally do not move in lock step with local markets and will not reflect local supply and demand conditions; and
2. No location adjustment is allowed, and so no consideration is given to the difference in value of the crude at the lease and at the disposal point. The difference in value will generally reflect more than just the cost of transportation. The same is true of production moved directly to a market center.

If production is not ultimately sold at arm's length and is neither moved directly to an alternative disposal point nor a market center, the lessee may use an MMS-published location quality adjustment based on information to be collected on proposed Form MMS-4415, actual transportation costs between the aggregation point and the lease, and a quality adjustment based on premia or penalties determined by pipeline quality bank specifications at intermediate commingling points, at the aggregation point, or at the market center. These adjustments will also not result in an accurate measure of value at the lease. For the latter two adjustments, the problems described above apply.

An examination of the differentials between spot prices for 1996 and the weighted average price received by producers/marketers with no refinery capacity for the same period, reveals that differentials between prices received in arm's-length transactions and spot prices are not constant. Using data provided under a Freedom of Information Act request by MMS, we were able to calculate weighted average prices for producers/marketers with no refinery capacity for each month in 1996 for the Gulf of Mexico and for offshore California. We then compared these weighted average monthly prices to the ANS spot price for California production and to the spot price for either Eugene Island crude (EI), Light Louisiana Sweet (LLS), or Heavy Louisiana Sweet (HLS) for Gulf of Mexico production.[26] In the case of LLS, for example, the average differential for 1996, is $1.39, yet monthly variations range from $0.55 below the average to $0.51 above the average. As the following charts show, there is substantial variation in each case.

Figure 1
Variation from Average Differential:
Eugene Island Spot Price and Weighted Average Price[27]



[26] These are the three spot prices MMS used in its E.O. 12866 analysis. MMS had designated each data line as being either EI, LLS, or HLS, and we use those designations in this analysis.
[27] In each case, the weighted average price refers to the price received by producers/marketers with no refinery capacity as reported on Form MMS-2014 and presented in spreadsheets used by MMS in performing its E.O. 12866 analysis.

Figure 2
Variation from Average Differential:
Heavy Louisiana Sweet Spot Price and Weighted Average Price

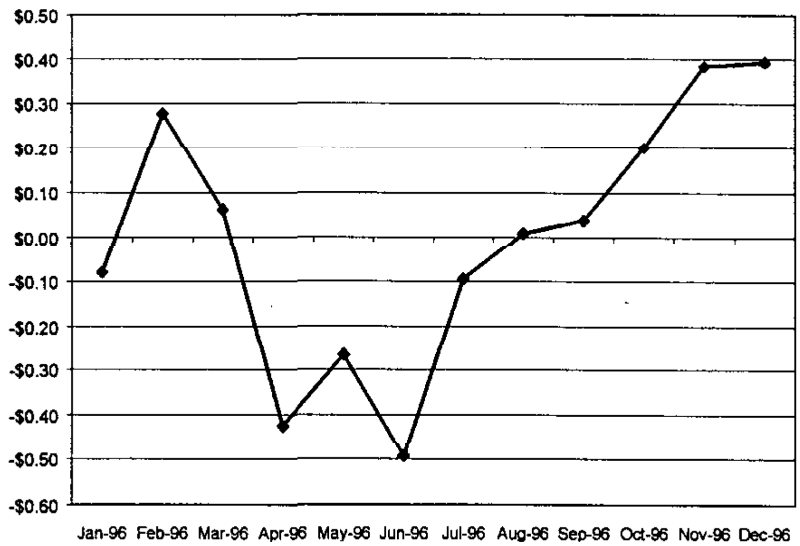


Figure 3
Variation from Average Differential:
Light Louisiana Sweet Spot Price and Weighted Average Price

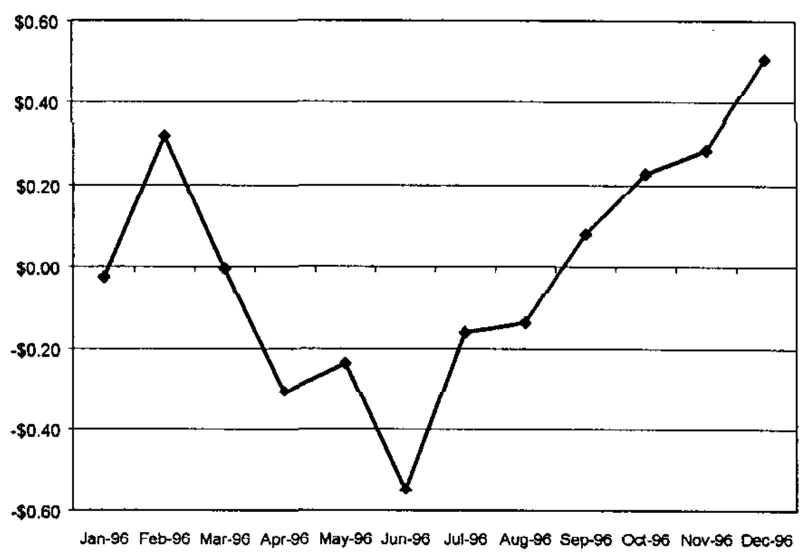
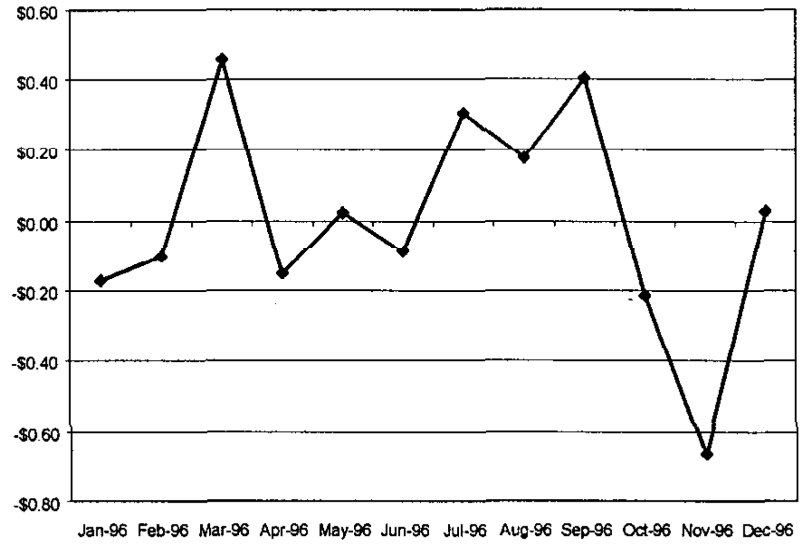


Figure 4
Variation from Average Differential:
ANS Spot Price and Weighted Average Price



These charts clearly show that one cannot net back to a lease value by starting with a spot price and deducting fixed adjustments. To net back from the market center to the lease, MMS' proposed rule allows certain deductions, and these deductions generally will not fluctuate as market prices fluctuate. Indeed, the MMS-published differentials would be set one per year, while clearly, actual prices vary much more often than annually. As a result, no set of adjustments can consistently and accurately capture value at the lease when starting with a spot price because the spot market is a different market from the lease market.

In addition, as we discuss next, there are numerous problems with the calculating quality/location differentials from information to be collected on Form MMS-4415.

Data from Form MMS-4415 Not Usable for Intended Purpose

At a hearing in Houston on February 18, 1998, MMS representatives said that they planned to wait to see the data to be collected on proposed Form MMS-4415 before they figure out how to use it. Our analysis indicates that MMS will not be able to use the data collected on Form MMS-4415 for the intended purpose.

MMS cannot derive meaningful differentials between aggregation points and market centers based on the information to be reported on proposed Form MMS-4415.

MMS cannot use a single differential to make adjustments from a given aggregation point to a given market center for a variety of reasons. This part of the valuation method represents a fatal flaw in MMS' proposal. Because there are several different crude types (e.g., different grades and gravities) that are traded from a given area, a schedule of differentials would be required for each market center/aggregation point pair to cover all of the quality/location possibilities. However, while MMS now states that it will publish several differentials for different crude oil qualities that are identified separately on Form MMS-4415, it will not be possible for MMS to derive such differentials in a statistically reliable manner based on the data to be collected on Form MMS-4415. MMS is unlikely to receive sufficient data for all aggregation point/market center pairs to calculate reliable differentials, and Form MMS-4415 may reference only deemed API gravity and deemed sulfur content making accurate calculations impossible.

It is important not simply to average together all transactions between a given market center and aggregation point over a given year, because the overall average will blur together the effects of location, gravity and sulfur content on market prices. Instead, in order for the differentials to be meaningful adjustments for market valuation, MMS would need to develop a schedule that provides incremental allowances for gravity and sulfur differences for each market center/aggregation point pair. It will not be possible to do this with an adequate degree of statistical precision based on the method proposed or the data provided on Form MMS-4415.

If there are any discounts implicit in longer-term contracts or in contracts for larger quantities, then these will distort any attempted estimates of location and quality differentials based on Form MMS-4415. The result would be that different producers may be treated differently by the proposed valuation method. For example, suppose that in an exchange of heavy oil for light oil between a given aggregation point and market center, one producer is able to get a higher price for its heavy oil in the form of a smaller differential charged in the exchange agreement. Then the proposed valuation method would have the effect of biasing upward the valuation of a another producer's heavy oil exchanged between the two points relative to the value it actually received in its exchange agreement. This is simply an illustration of the point that the actual value of a specific volume of oil sold or exchanged at a particular point in time is determined in part by the circumstances and needs of the particular parties involved. While one can compute an average market value, there really is no *one* market value that applies to all market participants for all transactions in a given month.

There are potentially serious problems with the statistical accuracy and representativeness of the differentials that MMS proposes to publish based on data reported to MMS on proposed Form MMS-4415.

In our earlier reports filed with the Office of Management and Budget and MMS, we noted the potentially serious statistical problems with MMS' proposed approach to computing location and quality differentials based on the information filed by lessees.[28] Among these is the problem of small samples in cases where few lessees engage in exchange agreements between aggregation point/market center pairs, or where a relatively small volume of oil is involved. From a statistical viewpoint, one cannot accept the averages of price differentials from small samples of

[28] See "Preliminary Analysis of the Department of Interior, Minerals Management Service Proposed Rule Establishing Oil Value for Royalty Due on Federal Leases and on Sales of Federal Royalty Oil," March 25, 1997 as submitted by the Domestic Petroleum Council, the Independent Petroleum Association of America, the Independent Petroleum Association of Mountain States, the Mid-Continent Oil and Gas Association, and the Rocky Mountain Oil and Gas Association and "Analysis of the Department of Interior, Minerals Management Service Proposed Rule Establishing Oil Value for Royalty Due on Federal Leases and on Sales of Federal Royalty Oil," May 28, 1997 as submitted by the Rocky Mountain Oil and Gas Association.

exchanges as being representative of market price differentials for that aggregation point/market center pair. There is also no reason to believe that any relationship exists between adjustments specific to one transaction and how a different stream of crude oil would be valued. Contract-specific adjustments reflect the market conditions and the preferences of both parties to the transaction at the time the contract was signed.

The further supplementary proposed rule, while limiting the filing requirement for Form MMS-4415 to arm's-length exchange agreement contracts between an aggregation point and a market center, would create serious problems for the utility of any collected information in determining a market value at the lease (even if it were possible to do so using a method like the one proposed). It should be recognized that the revised filing requirement could lead to market distortions that would thwart MMS' efforts to collect reliable and representative data. MMS' further supplementary proposed rule may effectively force some companies to restructure transactions so that they will not trigger a costly Form MMS-4415 filing requirement.

If this should happen, MMS may find that perhaps only one or two companies will provide relevant data for some aggregation point/market center pairs that already have relatively few parties engaged in arm's-length exchange agreements. A smaller number of responses means that the sample of data available to MMS for estimating average location/quality differentials would be reduced, thus making such estimates even less reliable and leading to inaccurate royalty valuations for those lessees required to rely on that information.

Additionally, the further supplementary proposed rule only requires that Form MMS-4415 be filed for exchange agreements involving Federal production. Distinguishing between contracts involving Federal and non-Federal oil, if it were possible at all, would be an onerous burden. If it were possible, it would so severely limit the number of forms filed that any data collected would not be usable for the intended purpose. If MMS' current estimate of the number of forms to be filed is correct, then only 8 forms would be filed on average for each aggregation point/market center pair.[29]

At a hearing in Houston on February 18, 1998, it became apparent that MMS officials have not carefully considered how they are going to analyze these data and what they are going to publish. In response to a question on how MMS was going to actually use these data to publish something in the Federal Register and what it would look like, Dave Hubbard, Chief of MMS' Economic Valuation Branch, responded "frankly, part of the answer to your question has to depend on the type of information we get in, the level and type of it. Until we see how much of a spread there might be in different exchanges, in terms of quality differences for the oil being traded at both ends of the exchange, you know. That's necessarily going to drive the results of our -- how many different differentials we have for different levels of quality."[30] Further Dave Hubbard concurred that MMS was going to "wait to see the data to figure out what [it is] going to do."[31] How can

[29] See "Analysis of The Department of Interior, Minerals Management Service's Form MMS-4415 Under the Supplementary Proposed Rule Establishing Oil Value for Royalty Due on Federal Leases Under the Paperwork Reduction Act," March 10, 1998 as submitted by Gardere & Wynne, L.L.P. on behalf of a number of oil and gas companies.

[30] Transcript of Public Hearing on Minerals Management Service's Supplementary Proposed Rule on Oil Valuation. Pages 124-25.

[31] *Ibid.* Page 125.

MMS accurately estimate the time it will take to analyze and publish these data if it does not know itself what it will do with the data?

The proprietary nature of the data to be collected may preclude MMS from being able to publish differentials based on these data.

In its supporting statement for the Paperwork Reduction Act (PRA) on Form MMS-4415, MMS states that the information provided on the form is proprietary and "will be exempt from disclosure by the Freedom of Information Act, 5 U.S.C. 552, or other Federal law."[32] As such, MMS could not routinely release the data for any one transaction for an aggregation point-market center pair and would need to develop specific procedures for cases in which disclosure could be an issue. Indeed, if MMS were to release data based on two Form MMS-4415 filings, one competitor would be able to calculate the differential for the other by subtracting its own data. MMS has not demonstrated that it has considered this issue, and given how small the sample will be, it is an issue that must be considered before proceeding with the proposed information collection and proposed rule.

Standardized location/quality differentials set once per year are not appropriate because of changing market conditions.

In its PRA supporting statement, MMS states that "[t]he requested/collected information provides a critical link to estimating the proper value of oil from Federal lands. A crucial piece of the valuation equation relies on adjusting the value at a given market center by the proper location and quality differential."[33] MMS' proposed method would result in certain lessees using location and quality differentials that do not reflect current market conditions and cannot therefore be the *proper* adjustments. MMS' decision to maintain the submittal frequency at once per year will cause the differentials to be wrong. Indeed, fixing the differentials for any period of time will result in any differentials not representing the proper adjustments.

In reality, price levels and relationships fluctuate constantly based on continual changes in local supply and demand factors. For example, an increase in refining capacity in one location could have an impact on either location or quality differentials that would be reflected in the MMS-calculated allowances with a one-year lag. Similarly, the initiation of production from a significant new field – especially one whose crude has characteristics that are significantly different from the types typically sold in the local market – could significantly alter value relationships among different kinds of crude in the local market or between the local market and other markets.

The relative demands for crudes of various sulfur contents and gravities change over the course of the year as the demands for different refined products vary (or due to such events as refinery shutdowns, weather, etc.). The proper market value of Federal oil – or any oil – extracted and sold is established at a point in time, not on average. Setting differentials on an annual basis based on exchange agreements reported to MMS will impose large costs on many lessees. The incidence of these costs of misvaluation will be random – a lottery dependent on the

[32] "Supporting Statement for Paperwork Reduction Act on Oil Location Differential Report." Page 6. Item 7.
[33] "Supporting Statement for Paperwork Reduction Act on Oil Location Differential Report." Page 6. Item 6.

unpredictable changes in the relative market values of different grades and qualities of crude in different locations.

PROPOSED METHODOLOGY WILL DISTORT THE MARKET

Any overvaluation of crude oil under the proposed rule will result in an effective royalty rate that exceeds the contractual rate. This, in turn, will lower the rate of return on lessee investment. Not only could such a result violate the terms of the contract, but it could in the long run be harmful to the Federal government's economic interest. A fundamental economic principle in a market economy is that capital investment is highly mobile and will seek the highest risk-adjusted return. As a result, if a higher royalty burden is imposed on production from Federal lands, both lease bonus payments and lease investment would be expected to fall, which will reduce production and Federal revenues below the level that would otherwise occur. If MMS' \$66.1 million estimate of increased oil royalty collections were to be correct, the effective royalty rate would increase, on average, by 4.56 percent.[34] Such an increase in the effective royalty rate could have the opposite effect of the recently implemented deep-water royalty relief, which has resulted in high lease bonus payments and investment.

PROPOSED METHODOLOGY WILL NOT RESULT IN CERTAINTY

One major objective of the proposed rule is to achieve certainty in Federal royalty valuation, yet the net result is increased uncertainty. Attached to this report is a chart prepared by Gardere & Wynne, L.L.P. entitled, "How to Calculate Royalty." The chart illustrates the extraordinary number of steps required to determine value under the further supplementary proposed rule. In addition to the great complexity of the proposed rule with more than 60 potential decision points, the most troubling feature is that over half of these decisions are subjective. One of the more striking examples of the increased level of uncertainty is the following question and answer from the further supplementary proposed rule:

> **§ 206.107 What valuation guidance can MMS give me?**
> *You may ask MMS for guidance in determining value. You may propose a valuation method to MMS. Submit all available data related to your proposal and any additional information MMS deems necessary. MMS will promptly review your proposal and provide you with a non-binding determination of the guidance you request.*[35]

It is unfortunate that MMS cannot bind itself to its own guidance on determining value under the proposed rule because this highlights the rule's failure to achieve the certainty MMS desires. In one sense this is also fortunate because it provides supporting evidence that even the agency does not believe that its own rule can achieve a proper value. Should the further supplementary proposed rule be made final, we would suspect that such requests for guidance would be a frequent occurrence. Under Section 206.109, MMS also offers to provide a non-binding determination on certain high-cost transportation allowances. While such requests for high-cost

[34] This increase is simply equal to MMS' \$66.1 million estimated annual increase in oil royalty collections as a percentage of actual collections of \$1.45 billion. Both amounts are based on 1996 figures.
[35] Proposed Section 206.107 63 FR 6129

transportation allowances will likely be less frequent than will be valuation guidance in general, it is a further indication that the rule does not accomplish its stated objective.

PROPOSED METHODOLOGY RESULTS IN INACCURATE VALUES IN EACH REGION

By proposing separate valuation procedures for California/Alaska, the Rocky Mountain Area, and the rest of the country, MMS raises regionally-specific valuation issues, as well as issues concerning how transactions occurring between regions are to be handled.

California/Alaska

The further supplementary proposed rule requires that production from California and Alaska that is not ultimately disposed of in an arm's length sale be valued using the average of the daily mean Alaska North Slope (ANS) spot prices published in any MMS-approved publication during the calendar month preceding the production month. This value must then be adjusted for applicable location and quality differentials and may be adjusted for transportation costs.[36]

ANS spot market crude oil sales represent the sale of a different kind of product than onshore California crude oil at the lease. While both products are crude oil, they are of different qualities available in different quantities at different locations under different contract terms. These tangible and intangible differences in markets are reflected in a higher level of volatility in price differentials between ANS crude and California crudes. As a result, the proposed methodology will not result in an accurate measure of onshore lease value.

ANS spot price quotes are indicative only of the value of ANS delivered in waterborne cargo volumes and not of the value of onshore California crude delivered by pipeline. Furthermore, price differentials between ANS and California crudes can vary widely, even for crudes with relatively similar gravities to ANS. There can also be large changes in the relative prices of different California crudes.[37]

Use of MMS' proposed index methodology for California and Alaska production may misvalue crude oil at the lease. Because the price differentials between ANS and California crudes can vary widely, even for oil of a similar quality, there is no reason to believe that an adjustment for transportation costs and a quality adjustment based on pipeline quality bank specifications will result in the market value of onshore crude oil at the lease. Even more troublesome, fixing MMS-published quality and location differentials for one year will almost certainly not represent the value of California onshore production at the lease given the historical volatility in California price differentials.

Rocky Mountain Area

MMS has proposed a system of four benchmarks for the Rocky Mountain Area. Each benchmark has structural features that raise issues of accuracy and administrability.

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[36] Proposed Section 206.103(a) 63 FR 6128

[37] Comments of Benjamin Klein on Proposed MMS Crude Oil Royalty Regulation. Page 10.

1. Tendering: The first benchmark is an MMS-approved tendering program subject to the following requirements:

- Royalty value must be the highest price rather than some individual or average value;
- The lessee would have to offer and sell at least 33-1/3 percent of production from both Federal and non-Federal leases in that area; and
- The lessee must also receive at lease three bids for the tendered volumes from bidders who do not have their own tendering programs that cover all or some of the same area.

MMS does not identify which definition of "area" is to be used; i.e., does "area" refer to the Rocky Mountain Area, or to "a geographic region at least as large as the limits of an oil field, in which oil has similar quality, economic, and legal characteristics"?[38] By leaving the definition of "area" uncertain, MMS makes it more difficult to effectively comment how tendering might work.

If we assume that MMS intends to define "area" expansively, a tendering program could easily involve sales of different qualities of crude oil at differing prices. By requiring that the royalty value be the highest price received and allowing no adjustments for quality or location, some production would clearly be overvalued.

MMS' requirement that 33-1/3 percent of production from Federal and non-Federal leases be offered for bid is unduly high and MMS' justification for this rate is illogical. MMS chose this figure "because it exceeds the typical combined Federal royalty rate and effective State tax and royalty rates for onshore oil leases by roughly 10 percent."[39] The choice of 10 percent is not explained and appears to be arbitrary. Further the combination of State and Federal royalty rates is illogical in that a lessee would never pay both State and Federal royalties on the same production. Indeed, we suspect that MMS may simply have made a mistake in choosing how to justify its selected percentage. With both Federal and State royalty rates generally each being equal to 12.5 percent, adding an additional 10 percent is already equal to 35 percent even before adding State severance tax rates. On the other hand, beginning with the specified 33-1/3-percent rate and subtracting a 12.5-percent royalty interest and MMS' 10-percent margin results in an implied Rocky Mountain Area average severance tax rate of 10-2/3 percent. This appears to be an unusually high rate, particularly when federal and state royalties are not subject to state severance taxation.

The last requirement has the potential to seriously limit the universe of purchasers from whom lessees could receive qualifying bids. The geographical isolation of the Rocky Mountain market means that there are already a limited number of crude oil purchasers. If these purchasers begin operating their own tendering programs within that area, that will limit the number of eligible bidders. Even potentially more restrictive, MMS is requesting comments on whether it should limit qualified bids to those with tendering programs anywhere.

[38] Definition of "area" found at 63 FR 6126
[39] 63 FR 6119

While the language is vague regarding whether affiliates may bid for tendered production, we assume that MMS will not allow any company to participate if an affiliate has its own tendering program.[40] Some lessees own less than 100 percent of the equity of middle market companies that are active purchasers in the Rocky Mountain Area. These middle market companies would be precluded from bidding for tendered production. Indeed, some companies with 100-percent owned middle market affiliates buy production from third parties, and they would be precluded from bidding for tendered production. By eliminating these middle market companies and others with tendering programs, the demand for the tendered production would significantly decrease, and as a result, as demand fell, so prices would decrease.

MMS' rationale for the last two qualifications is to eliminate the possibility that lessees will "game the system."[41] It seems, however, that MMS is so concerned about the opportunity for gaming that they not only significantly complicate and limit the process, but they also appear to have designed a tendering program that is self-defeating and will result in reduced valuations by excluding potential participants.

Finally, MMS states that it will provide additional criteria for approval of a tendering program in its "Oil and Gas Payors Handbook."[42] MMS provides no indication of what these additional criteria will be. It is not possible to effectively comment on this proposed valuation methodology without fully understanding all criteria related to it.

*2. **Volume-Weighted Average:*** Under the second benchmark, value for royalty purposes would be the volume-weighted gross proceeds accruing to the seller under the lessee's or its affiliates arm's-length contracts for the crude oil sales and purchases from the field or area during the production month. The total volume purchased or sold under these contracts must exceed 50 percent of the lessee's and its affiliate's production from both Federal and non-Federal leases in the same field or area during that month. MMS is proposing to use the unadjusted volume-weighted average gross proceeds, not just those considered comparable, under the assumption that production in the same field or area would be comparable.

This simplified method will not result in accurate valuation; some oil may be overvalued and some may be undervalued. A lessee could buy crude oil of a completely different quality than it is selling. There is not necessarily any reason to believe that on net this method will result in the right value. This method would sacrifice accuracy in an attempt to achieve simplicity. Indeed, given MMS' stated concerns in the proposed tendering program, we are somewhat surprised that MMS does not also believe that lessees will "game" this methodology by choosing to engage in arm's-length sales or purchases of lower quality crude oil in the same field or area to establish a lower value for the remaining higher quality crude oil.

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[40] An "[a]ffiliate means a person who owns, is owned by, or is under common ownership with another person to the extent of 10 percent or more of the voting securities of an entity, interest in a partnership or joint venture, or other forms of ownership. MMS may require the lessee to certify the percentage of ownership. Aside from the percentage of ownership criteria, relatives, either by blood or marriage, are affiliates." 63 FR 6126

[41] 63 FR 6119

[42] 63 FR 6128

3. NYMEX: The third benchmark requires that lessees use the average of the daily NYMEX futures settle prices at Cushing, Oklahoma for the light, sweet crude contract for the prompt month in effect on the first day of the month preceding the production month. The NYMEX value would then be adjusted for applicable location and quality differentials and possibly for transportation.

Previous Barents reports as well as those of numerous other commentators included extensive discussions of problems associated with using NYMEX as an index for Federal royalty valuation, and these problems are equally applicable here.[43] Key findings from Barents' previous reports include:

- There are two key problems with MMS' choice of the NYMEX light sweet crude futures price as the starting point for royalty valuations.
  - First, MMS is exactly backwards in concluding that oil markets are "driven" by the NYMEX market.
  - Second, the same factors that MMS claims invalidate the use of NYMEX for California and Alaska crude also invalidate it for most other areas of the country and for grades of crude that are significantly different from West Texas Intermediate.
- MMS' proposed adjustments to account for differences in value between the light, sweet types of crude deliverable against a NYMEX futures contract at Cushing, Oklahoma, and the many different grades and qualities of crude actually produced and sold at the lease by individual lessees have many problems, and in most cases will not lead to accurate valuation of oil at the lease.
- The proposed valuation method does not take into account the volatile nature of market oil price differentials between different locations and different grades of crude.

MMS' stated reason for creating this system of benchmarks for the Rocky Mountain Area is because of "the isolated nature of the Area from the major oil market centers."[44] Yet, the third benchmark relies entirely on the value on NYMEX futures settle prices at a major market center. Additionally, MMS has removed one of the allowable adjustments in this version of the rule, so the lessee is required to value its crude oil starting with NYMEX and using only MMS-published differentials between a market center and an aggregation point, quality adjustments based on pipeline back specifications, and actual transportation costs.

The NYMEX settle price is for oil of a very different quality than many Rocky Mountain crudes. Additionally, if this market is isolated from the major market centers, there is unlikely to be a reliable MMS-published location and quality differential between Cushing and any Rocky

[43] See "Preliminary Analysis of the Department of Interior, Minerals Management Service Proposed Rule Establishing Oil Value for Royalty Due on Federal Leases and on Sales of Federal Royalty Oil," March 25, 1997 as submitted by the Domestic Petroleum Council, the Independent Petroleum Association of America, the Independent Petroleum Association of Mountain States, the Mid-Continent Oil and Gas Association, and the Rocky Mountain Oil and Gas Association and "Analysis of the Department of Interior, Minerals Management Service Proposed Rule Establishing Oil Value for Royalty Due on Federal Leases and on Sales of Federal Royalty Oil," May 28, 1997 as submitted by the Rocky Mountain Oil and Gas Association.
[44] 63 FR 6115

Mountain aggregation points, and a differential based on data greater than a year old will not reflect current market conditions. The remaining adjustments will not result in an accurate value at the lease for the reasons discussed above.

MMS' own analysis performed in compliance with Executive Order 12866 did not attempt to quantify the impact of NYMEX index pricing in the Rocky Mountain Area because "[It] could not determine a location/quality differential from Cushing, Oklahoma, to the fields/areas of each State due to lack of such transaction information." [45]

4. MMS-Established Method: The final benchmark for the Rocky Mountain Area is an MMS-established valuation method. A lessee may request that the MMS Director establish an alternative method in cases where the first three benchmarks would result in an "unreasonable value" for the lessee's production.[46] MMS provides no guidance on what constitutes an unreasonable value, and so this is another subjective decision. MMS also does not describe how it will determine an alternative valuation method, and so there is no guarantee that the alternative would result in a reasonable method or be easy for the lessee to administer.

Because of the restrictions placed on the first two methods and the many inaccuracies associated with the NYMEX method, it could well be that a substantial share of Rocky Mountain Area production is forced to be valued using a far less certain and yet to be determined method than exists under the current benchmark methodology.

MMS also asked for comments on the composition of the Rocky Mountain Area. A debate over whether all or some portion of New Mexico should be included in the defined area misses the fundamental issue. While crude oil produced in the Rockies is subject to different market pressures than crude produced in some other parts of the country, this is not equivalent to characterizing the Rockies as a single market. As discussed above, we believe that all crude oil markets are inherently local and subject to their own supply and demand characteristics. While these local markets are certainly affected by the value of crude oil sold elsewhere, this is not the same as saying that the value of crude oil produced in one locality can be determined formulaically by the value of crude in other localities.

Rest of the Country

The methodology proposed for production from areas other than California and Alaska and the Rocky Mountain Area relies on spot prices as an index value for non-arm's-length transactions. The problems related to using spot prices as an indicator of value at the lease are discussed above and clearly apply here. There are additional problems relating to the proposed methodology that apply specifically to the rest of the country.

In the further supplementary proposed rule, MMS "has attempted to refine and limit the aggregation points identified in the January 1997 proposed rule to better reflect actual locations

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[45] "Economic Analysis of Proposed Federal Oil Royalty Valuation Rule under Executive Order 12866," Minerals Management Service, Department of the Interior, page 22

[46] Proposed Section 206.103(b)(4)

where oil is aggregated."[47] In limiting the list of aggregation points, MMS may have effectively made this rule impossible to implement for some parts of the country. Crude oil is produced on Federal lands in the following states:

- Alabama
- Alaska
- Arkansas
- California
- Colorado
- Illinois
- Kansas
- Kentucky
- Louisiana
- Michigan
- Mississippi
- Montana
- Nebraska
- Nevada
- New Mexico
- North Dakota
- Ohio
- Oklahoma
- Pennsylvania
- South Dakota
- Texas
- Utah
- West Virginia
- Wyoming

There will be aggregation points in the following states:

- Louisiana
- Texas
- California
- New Mexico
- Texas
- Colorado
- Montana
- North Dakota
- Utah
- Wyoming

Clearly, there are not aggregation points in every state where crude oil is produced on Federal lands, and in several cases, there is not a market center or an aggregation point close to the Federal leases. MMS does not provide any guidance on how these lessees should value any Federal oil not sold at arm's length. The further supplementary proposed rule requires that lessees value their oil using the average daily mean of the spot price published for the market center nearest the lease. There are cases here where the nearest market center is many hundreds of miles away from the lease. If the production is moved from the lease to an alternate disposal point (e.g., a refinery), which is likely, the lessee would be allowed to adjust that spot price for actual transportation costs and quality adjustments based on premia or penalties based on pipeline bank specifications. Calculating the price in this manner will, in all likelihood, result in a price that is completely unrelated to the price that would have been obtained were the production sold at the lease. A spot price at Cushing, Oklahoma is inappropriate to use in determining value in Michigan, for example, and Cushing is the market center closest to those Federal leases.

If a lessee in Michigan were required to use MMS published data, there would be no relevant differentials for that lessee to use. A published differential between any market center and aggregation point would bear no relevance to production from a lease in Michigan. MMS clearly has not fully thought through how this proposed rule would operate in practice.

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[47] 63 FR 6123

MMS also requires the lessee to use the spot price for the crude oil most similar in quality to its oil. It is not clear what the lessee should do when these requirements conflict. For example, what should the lessee do when sour crude oil production is closest to Cushing? Should it use a West Texas Sour spot price at Midland, even though Midland is 500 miles from Cushing, because it is most similar in quality, or the Cushing price?

Problems with Transactions Between Regions

As we discussed in our report on the impact of this proposed rule on Form MMS-2014, MMS has failed to consider the difficulties and issues that arise when valuing Federal crude oil which has been commingled with Federal crude from another region.[48] The All American Pipeline, for example, carries a blended stream of California crudes (including some Federal lease crude) to Texas.[49] If this crude were not sold at arm's length until reaching Texas, a lessee would be required to use more than one valuation method to value the Federal crude oil. The proposed rule appears not to contemplate this kind of transaction, which would add additional layer of complexity and further reduce the accuracy of any resulting lease valuation. It would very likely result in yet another case where MMS would be required to determine a non-binding valuation methodology.

[48] See "Analysis of the Department of Interior, Minerals Management Service's Request for Extension of the Existing Collection Authority for Form MMS-2014" filed by Gardere & Wynne, L.L.P. on March 6, 1998.
[49] Comments of Benjamin Klein on Proposed MMS Crude Oil Royalty Regulation. Page 5.

4. ROYALTY-IN-KIND: A VIABLE ALTERNATIVE

The costs and inefficiencies that would be imposed on lessees by the further supplementary proposed rule are entirely avoidable and unnecessary because an active market exists for oil at the lease that would allow a more straightforward and less costly approach to royalty valuation. In addition, a serious, carefully developed, alternative approach is now under congressional consideration: royalty-in-kind (RIK). One hearing has already been held on RIK legislation and an additional hearing is now scheduled . An RIK has also been introduced in the U.S. Senate.

RIK legislation would require that the Federal government take title to royalty in kind production at the lease. By using private sector qualified marketing agents to market its production at whatever point maximizes value, the U.S. Government would achieve greater certainty than the proposed rule envisions but would do so in a way that is much less administratively burdensome, and clearly captures accurate arm's-length values through outright sales. Indeed, MMS has studied the feasibility of royalty-in-kind in for natural gas in the Gulf of Mexico and is initiating crude oil royalty-in-kind pilot programs in Wyoming and offshore Texas.

5. CONCLUSION

As a result of our analysis of the proposed rule, we strongly recommend that MMS abandon any additional efforts directed towards the development of an index pricing methodology for valuing crude oil at the lease. Instead, MMS should either fixing the existing regulations (e.g., with a tendering program, and indeed, two integrated producers, Texaco and Conoco, already have tendering programs in place) or to the further development of a viable royalty-in-kind program.

MMS published its original proposed rule on January 24, 1997, and in response to numerous comments, released the most recent version of the rule on February 6, 1998. Our analysis indicates that not only do many of the original problems remain but, indeed, the revised rule creates new problems that render it virtually unworkable.

We conclude that the proposed spot price and Alaska North Slope-based index valuation method is fatally flawed. It fails to satisfy the basic objective of measuring the value of crude oil at the lease, and it imposes unnecessary costs and risks on both the Federal government and on Federal lessees. MMS has performed no tests of its proposed rule to determine whether it would accurately value crude oil at the lease. Furthermore, as discussed in our earlier studies filed with the Office of Management and Budget and with MMS, the proposed rule would impose unnecessary and large administrative costs on lessees. Our analysis leads to the conclusion that the proposed spot price and ANS-based valuation method is fatally flawed. It fails to satisfy the basic objective of measuring the value of crude oil at the lease and it imposes unnecessary costs and risks on Federal lessees. MMS has performed no tests of its proposed rule to determine whether it would yield fair and reasonable estimates of crude oil value at the lease. Furthermore, as discussed in our earlier studies filed with the Office of Management and Budget and MMS, the proposed rule would impose unnecessary and large administrative costs on lessees.

It makes little sense to completely restructure the current crude oil valuation system, as would be required if the further supplementary proposed rule were to be finalized, when serious efforts are underway to develop a much better system that has broad industry support and which MMS is actively pilot testing. A properly structured royalty-in-kind program will allow the government to obtain the market value for production on Federal lands without the unnecessary administrative complexity and burden that would be imposed by MMS' further supplementary proposed rule.