REPORT BY THE

Comptroller General

OF THE UNITED STATES

Georgia Embayment--Illustrating Again The Need For More Data Before Selecting And Leasing Outer Continental Shelf Lands

The Nation relies heavily on Outer Continental Shelf lands to increase its domestic oil and natural gas production.

The Department of the Interior leases the tracts to industry for the right to explore for natural resources.

The Georgia Embayment is the fourth Outer Continental Shelf lease sale that GAO reviewed and found that only limited data was available to assess its potential resources. Had there been more information, Georgia Embayment might not have been put up for lease.

A new bidding system--sliding scale royalty--was tested in this sale. It seemed successful but more study is needed on this as well as other systems to test its effect on Outer Continental Shelf development. Interior still needs to improve its leasing program to make sure that areas selected for sale have been adequately explored and evaluated for resources.

EMD-79-22
MARCH 19, 1979

COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

DOI
USGS
BLM

B-118678

The Honorable John M. Murphy
Chairman, Ad Hoc Select Committee
on the Outer Continental Shelf
House of Representatives

Dear Mr. Chairman:

In response to your letter of September 11, 1978, we reviewed the Department of the Interior's Southeast Georgia Embayment Outer Continental Shelf (OCS) Lease Sale 43. As requested, information in this report is in a similar format to that included in our prior reports 1/ on OCS lease sales to facilitate the comparison of results.

BACKGROUND

The Nation is relying heavily on OCS lands as a way to increase its domestic oil and natural gas production. Decisions on where to lease and at what rate will greatly affect whether the Nation can decrease its reliance on foreign energy supplies and have enough energy resources to meet its near-term needs.

The leasing program's primary objectives are to promote the timely and orderly exploration and development of OCS lands, to help assure the public receives fair market value for those lands, and--in doing this--to protect the environment. Our analysis of past sales showed these objectives were not met because:

--Limited data may have precluded selecting the best (i.e., most productive) tracts for sale.

1/"OCS Sale 35--Problems Selecting and Evaluating Lands to Lease," EMD-77-19, March 7, 1977. "OCS Sale 40--Inadequate Data Used to Select and Evaluate Lands to Lease," EMD-77-51, June 28, 1977. "Lower Cook Inlet--Another Example of More Data Needed for Appraising OCS Oil and Gas Resources," EMD-78-48, June 8, 1978.

--Limited data at the time of sale resulted in unreliable Geological Survey estimates of each tract's fair market value. Because these unreliable estimates were used to accept or reject industry bids, the public could not be certain that public lands were leased for their fair market value.

--The limited number of industry bids received may have precluded competitive market forces from assuring a fair return to the Government.

While agreeing that more data would be useful, the Department of the Interior in the past has disagreed that this data is necessary to adequately select and value OCS lands. Despite its disagreement, the Department has recently taken certain actions to improve its evaluation capabilities, including a decision to allow stratigraphic test wells to be drilled on structures which could contain oil or gas. The Director of the Geological Survey believes this policy change is an important and logical first step toward managing our energy resources. It is also consistent with our March 7, 1977, recommendation that the Secretary of the Interior consider allowing on-structure drilling as a means of providing better and more reliable data.

SUMMARY OF OBSERVATIONS ON SALE 43

In September 1975 the Department of the Interior requested nominations and comments on the Georgia Embayment--an area of 20.7 million acres (3,726 tracts) off the coasts of North Carolina, South Carolina, Georgia, and Florida. Based principally on nominations from nine companies and the Geological Survey's estimates of resource potential, 224 tracts were selected for the sale, held in March 1978. Only 11 companies participated, spending about $100 million on 43 tracts, about one-fifth of the tracts offered for sale.

Our review of the Georgia Embayment sale indicated that, like the previous sales we reviewed, the data available to select and value tracts was limited and, in some cases, less than in the prior sales we reviewed. In addition, the degree of industry interest in the Georgia Embayment sale was significantly less than in prior sales--mainly because the area was believed to have limited geologic potential. Had more information been available on this as well as other OCS areas prior to scheduling this area for sale, perhaps the area would not have been put up for sale at this time. It is for this reason that we have recommended that Interior establish a systematic

program for exploring OCS areas and then--in concert with overall national energy policy and OCS production goals--schedule sales to meet such goals.

Another significant aspect of the sale--unlike the prior sales we reviewed--was the experimental use of a sliding scale royalty bidding system on about one-third of the tracts offered for sale. This alternative bidding system was used on most of the tracts leased--seemingly with good success considering industry participation on sliding scale tracts and the relatively poor geologic potential of the overall area. More study of the experience with this and other alternative systems is needed, however, to determine what the overall impacts--both favorable and unfavorable--will be on OCS development as well as on management and oversight of operations by the Department of the Interior.

LEASING LOW POTENTIAL AREAS MAY NOT ADVANCE NATIONAL GOALS

Although timely exploration and development of the OCS is a fundamental objective of the leasing program, the Georgia Embayment area was scheduled for sale even though it was recognized as having relatively low potential for oil and gas resources. The Department of the Interior--as early as November 1974--had ranked the South Atlantic, including Georgia Embayment, 13th among 17 OCS areas in resource potential and preference. As a result of this limited potential, industry participation in the sale was limited. In comparison with previous sales, the percent of tracts that received bids and the percent leased were smaller, the percent that received only one or two bids was larger, and the average number of bids per tract was smaller, as shown below.

Measures of Industry Participation

	Sale 35		Sale 40		Cook Inlet		Georgia Embayment	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Tracts in sale area	231	100	154	100	135	100	224	100
Tracts receiving bids	70	30	101	66	91	67	57	25
Low-bid tracts (one or two bids)	49	a/70	49	a/49	55	a/60	46	a/81
Tracts leased	56	24	93	60	87	64	43	19
Average number of bids per tract	2.4		4.1		2.6		1.7	

a/As a percentage of tracts receiving bids.

Also, only 11 bidders participated in the Georgia Embayment sale. In comparison, there normally have been 80 to 90 bidders in a Gulf of Mexico sale and there were 51 bidders in the Baltimore Canyon (Sale 40), which was considered a good frontier area. In addition, the average revenue per tract leased for this sale ($2.34 million) is the lowest of any of the sales we have evaluated, as follows--Sale 35 ($7.45 million), Sale 40 ($12.1 million), and Cook Inlet ($4.58 million).

According to officials of all seven oil companies we contacted, the limited degree of participation was caused by the poor geologic prospects of the sale area and not by any new provisions of the law. Based either on their evaluation of seismic data or data from one stratigraphic test well--drilled after tract selection but prior to the sale --these officials believed that the area did not have good prospects for the commercial accumulation of oil and gas. Our review of the stratigraphic test well report also indicated that the lack of petroleum potential rock formations especially at deeper depths made the oil and gas potential of the area marginal at best.

Should the sale have been held?

One of the leasing program's fundamental objectives is the timely and orderly exploration and development of the OCS in order to achieve national energy policy goals. Holding a lease sale in an area with low geologic potential, such as Georgia Embayment, would not seem the best way to meet this objective. Officials of six out of seven oil companies we spoke with said the prospects were so poor that a sale should have been held in a higher-potential area. It also seems likely that the production which would result from a sale in a higher-potential area would better justify the environmental risks inherent in oil and gas exploration.

The Congress has recently mandated long-term planning in the energy area in two ways. First, the Department of Energy Organization Act requires the Secretary of Energy to identify the Nation's energy needs and establish production goals for each energy resource (oil, gas, nuclear, etc.). Second, the OCS Lands Act Amendments of 1978 require the Secretary of the Interior to prepare and periodically

revise a 5-year oil and gas leasing schedule which he determines will best meet these needs and goals. In this and prior reports on OCS leasing, we concluded that available information on the OCS was limited and that estimates of resource potential derived from this information were unreliable. We question whether congressional initiatives related to long-term energy planning can be adequately met until better information on OCS resource potential is available to aid the Department of Energy and the Department of the Interior in long-term planning. We are addressing questions related to long-term OCS planning and coordination in another study, which includes examining the procedures followed to identify energy needs, set production goals, and prepare OCS leasing schedules.

LIMITED DATA TO SELECT AND VALUE TRACTS

Once it was decided that the Georgia Embayment area should be leased (Nov. 1974), the Department of the Interior was required to select the most promising tracts for sale and to determine whether industry bids represented a fair market value return for each tract. Like previous sales, the data available at the time of tract selection and leasing was inadequate to meet either of these objectives.

However, unlike previous sales, a sliding scale royalty bidding system was used on 72 percent of the tracts leased. We believe this system may help to assure that the public receives a fair market value return even though the tract values are unknown at the time of sale. Whether the public will be adequately protected, however, and what the overall impact will be of alternative bidding systems on OCS development and on management oversight by the Department of the Interior cannot be determined until more experience is gained under these bidding systems.

Identifying resource potential when tracts are selected

As in previous sales, the Geological Survey and the Bureau of Land Management recommended tracts for inclusion in the sale. The Survey recommends tracts primarily based on their estimates of resource potential. Although it also considers environmental and other data derived from a variety of sources, the Bureau of Land Management recommends tracts primarily based on industry nominations which reflect their

views on resource potential. The Survey and industry have similar types of geophysical data available for use in estimating resource potential. Their analyses of the data, however, do not always agree since such data is subject to wide interpretation. Therefore, the Department of the Interior includes some tracts that industry feels may contain producible oil and gas, i.e., have good resource potential, even though the Survey does not agree with industry interpretations.

Tract selection influenced by industry nominations

In September 1975, the Department of the Interior requested nominations and comments on specific tracts for the proposed Georgia sale, comprising an area of 20.7 million acres (3,726 tracts). In response to this request, nine petroleum companies nominated 778 tracts. Also, three Federal agencies and the States of South Carolina, Georgia, and Florida identified tracts which they believed should not be leased or should be leased only under special lease restrictions to protect the environment. Several development and resort companies, civic associations, and one educational institution also responded. Two respondents asked that all tracts be withdrawn from consideration because they believed insufficient data existed to evaluate potential environmental hazards.

As previously pointed out in our Sale 35, Sale 40, and Cook Inlet reports, the Department of the Interior relies heavily on industry nominations for selecting tracts. As seen in the following table, only 32 of the 224 tracts selected for sale received less than 5 nominations.

Number of nominations received per tract	Total number of tracts	Tracts selected	
		Number	Percent of total number
0	2,948	5	0.2
1 to 4	575	27	4.7
5 to 9	203	192	94.6
	3,726	224	

Geological Survey's estimates of resource potential

The Geological Survey's estimates of resource potential were based primarily on about 5,000 line miles of seismic data, generally covering the entire area offered for nominations. This included an average of 6 by 9 mile spacing of seismic lines in areas of little interest and about 3 by 3 miles in areas of high interest. Seismic data is gathered by measuring generated sound waves as they pass through different types of rock. By analyzing the data, the Survey identified 29 structures with potential for containing producible oil and gas. In addition to the seismic data, some magnetic and gravity information was available. Information from seven coreholes was also available; however, a Survey official told us that the seismic data was the principal source of information for the Survey's estimate of resource potential.

In the Georgia Embayment sale, the Geological Survey had less information with which to select tracts than it did for the tracts in OCS Sale 40 and the Cook Inlet sale. The table below summarizes the data available to the Survey for tract selections.

Data Available For Tract Selection

	Sale		
	Sale 40	Cook Inlet	Georgia Embayment
Number of acres offered for nomination and comment (thousands)	6,500	2,300	20,700
Line miles of seismic data for each 1,000 acres	1.1	1.0	0.2
Number of coreholes	0	17	7
Stratigraphic test wells	0	0	0

Although structures that may contain oil and gas can be identified from seismic data, the specific potential for oil and gas is not known until after wells have been drilled.

Stratigraphic test drilling can help provide this kind of information, which is particularly valuable in undrilled areas of the OCS, such as the Georgia Embayment area. The Geological Survey did not have any drilling data for the 20.7 million acres under consideration when the area was scheduled for sale or at the time of tract selection.

Drilling of a stratigraphic test well was begun in February 1977 and finished in May 1977, more than a year after tract selection. This well provided data on rock porosities and permeabilities which affect resource potential. If this data had been available prior to tract selection, it could have been correlated with the seismic data to help assure that the tracts with the most potential were selected for sale. For example, Interior itself stated that 51 tracts in the James Island area, which were selected prior to the stratigraphic test, were later not bid on because industry felt they had insufficient resource potential when seismic information was coupled with the results of the stratigraphic test well. Had this information been available at the time of tract selection, it is reasonable to assume that these 51 tracts might not have been offered in the sale.

The problem of having limited data available for tract selection is further demonstrated by the differences in the Geological Survey's and industry's opinions on which tracts should be selected for sale. More than one-third of the tracts selected for sale (81 of 224) had little geologic potential according to the Geological Survey and, consequently, were not recommended for inclusion in the sale. These same tracts, however, were nominated for inclusion in the sale by at least four different companies, a clear sign that those companies believed the tracts had potential.

Estimating value when tracts are sold

Before each OCS lease sale, the Geological Survey calculates the estimated value of tracts offered for lease. This estimated value is a primary factor, along with competition, in determining the acceptability of industry bids and in assuring that the Government receives a fair market value return when it leases public lands. The Survey's evaluation is based upon geological, geophysical, and engineering inputs obtained through analysis of data

submitted by industry and of purchased seismic data. Certain economic inputs, such as estimates of oil and gas prices, discount rates, and taxes, are also considered.

To place a dollar value on individual tracts, the Survey interprets this data and includes over 30 input variables in a Monte Carlo mathematical model. While this model is useful in estimating tract values, developing the variables used by the model requires much subjective judgment. Many uncertainties must be weighed and evaluated based on individual experience and knowledge. Thus, the quantity and quality of data on which these judgments are based affect the reliability of the final value assigned to each tract. This final dollar value is important because it is the basis for the Secretary of the Interior's accepting or rejecting industry bids.

For the Georgia Embayment sale, the Survey's estimates of resource potential were principally based on a single deep stratigraphic test well and 9,000 line miles of seismic data on a 1 by 1-1/2 mile grid. Some data from nearby coreholes and onshore fields having similar geologic characteristics were also considered. Both the types and amount of data available for this sale were similar to that available for Cook Inlet.

The Geological Survey measures the adequacy of available data by assigning a reliability rating to each tract. All tracts in the Georgia Embayment sale were rated "E" on a scale of "A" through "G." As the reliability category changes from "A" to "G," the risk factor increases because the data used is more limited. However, there are no specific guidelines, criteria, or parameters for rating tracts. The rating is subjective, based upon the definition of each category and the experience of the technical staff making the rating. A rating of "E" indicates there is sufficient seismic data to identify structures which could hold oil or gas but there is no current production in the area and there is insufficient information to establish stratigraphic trends and conditions. This rating is equivalent to the reliability ratings assigned in the previous sales we reviewed.

The difficulty in estimating tract values from this data is demonstrated by the differences between the estimates obtained. Examples follow:

--Industry's estimate of the value (as measured by the high bid) for the 57 tracts receiving bids was $110 million, or 77 percent more than the Geological Survey's estimate of $62 million.

--For 30 tracts which received bids and for which the Survey assigned the minimum value allowed by law ($142,848), industry paid $46 million, or about 11 times more than the Survey's estimated value.

--For 14 tracts on which the high bid was rejected as insufficient, the Survey had a total estimated value of $35 million, or about four times industry's total high bids of $9 million.

--For the 26 tracts receiving more than one bid, the high bids totaled $83 million, or about six times the low bids.

These statistics show that industry either interpreted existing data differently than Interior did or used different evaluation procedures, such as a different weighting system. Wide variations in Interior's and industry's valuations demonstrate the difficulty of using highly interpretive data to estimate the value of individual tracts. Which estimate is the most accurate will not be determined until a sufficient number of exploratory wells are drilled to determine if oil or gas are present and the extent to which they have accumulated. The exploration of leased OCS lands has repeatedly shown that individual tract values range from nothing (if hydrocarbons are not present in producible quantities) to hundreds of millions of dollars in excess of the bid price.

Competition in the Georgia Embayment sale

As stated in our prior reports, a competitive leasing program is based on the premise that competition will provide a fair market value return. When competitive conditions do not exist, however, it becomes increasingly important to have reliable tract values to use as the basis for accepting or rejecting bids. When large percentages of the total tracts in a sale receive one or two bids per tract and are minimally valued based on poor information, there can be no assurance that the public received a fair market value return for the potential resources leased.

As shown in the following table, competition in the Georgia Embayment sale was substantially less than in previous sales, as measured by the large number of tracts receiving only one or two bids.

	Distribution of Bids					
	Sale 40		Cook Inlet sale		Georgia Embayment sale	
	Number	Percent	Number	Percent	Number	Percent
Tracts receiving one or two bids	49	49	55	60	46	81
Tracts receiving three to six bids	21	21	32	35	11	19
Tracts receiving more than six bids	31	31	4	4	0	0
Average number of bids per tract	4.1		2.6		1.7	

In response to our Cook Inlet report, the Department of the Interior disagreed with our criterion, believing instead that only the bids on those tracts valued above the legal minimum by the Geological Survey should be counted. Even accepting the Department's criterion, we must conclude that competition was very limited. There were 76 tracts which the Survey valued above the legal minimum price of $142,848. Forty-nine of these tracts (64 percent) received no bids. About half of the remaining tracts (13 of 27) received only one bid. As an overall measure, an average of only two bids was received for the 27 tracts. This is significantly less than the average of 4 or 5 bids (depending on the bidding system) received for such tracts in the Cook Inlet sale.

The number of bidders in the sale and the number of companies which shared the cost of the stratigraphic test well were also suggested as measures of competition. Both of these criteria consider potential competitors who evaluated the sale area but who chose to either not bid or to bid only on selected tracts. With respect to the first suggested criterion, only 11 bidders participated in this sale. This is substantially less than the 31 bidders in the Cook Inlet sale or the 51 bidders in the Baltimore Canyon (Sale 40), which was considered a good frontier area.

As to the second criterion, 25 companies jointly financed the single stratigraphic test well, a primary source of data for evaluating Georgia Embayment. This is slightly more than the number of companies financing the Cook Inlet well (19 companies) but less than the number financing the Baltimore Canyon well (31 companies).

SLIDING SCALE ROYALTY HELPS RELATE PUBLIC REVENUES TO RESOURCES FOUND

In almost all prior sales, the public's revenues have been based primarily on the high cash bonus bid at the time of the sale and, later, a fixed royalty (usually 16.67 percent) on any production. In apparent anticipation of the congressional mandate to use different bidding systems (under the OCS Lands Act Amendments of 1978), the Department of the Interior used a sliding scale royalty bidding system in the Georgia Embayment sale. More than 70 percent of the tracts (31 of 43) were leased under this system. Like previously used bidding systems, the sliding scale royalty system retains the cash bonus as the bid variable but calls for the royalty rate to be based on the quarterly value of production. For the Georgia Embayment tracts, the royalty rate is 16.67 percent of production saved, removed, or sold for production of $1.5 million or less. This royalty increases the equivalent of 1 percent for each 1 million dollar increment in production up to a maximum of 50 percent of production. The maximum royalty rate applies when the quarterly value of production is $35 million or more. The quarterly value of production is adjusted for inflation.

Although only 80 of the 224 tracts in the Georgia Embayment sale were offered using the sliding scale royalty system, 40 of the 57 tracts on which industry bid were sliding scale tracts. In addition, all 11 companies participating in the sale bid on sliding scale tracts, while

only 9 companies bid on the cash bonus tracts. We also noted that the average number of bidders per tract was greater on the sliding scale tracts than on the cash bonus tracts (1.93 and 1.29, respectively). Thus, from the standpoint of industry participation, use of the sliding scale royalty system on this sale appeared successful.

In addition, we believe that--lacking greater competition and more data with which to value tracts prior to sale--the use of sliding scale royalty bidding may help to assure that the public receives a fair market value return for the resources, a principal matter of concern in our criticism of prior sales. This results because the sliding scale royalty system allows the public's receipts to be more directly related to the resources actually produced, rather than to a cash bonus determined from unreliable estimates of resource potential made prior to actual exploration. Thus, if no producible resources are discovered on a specific tract, the public would receive a relatively small return. However, if large discoveries are found, the public would receive a large return. In the Georgia Embayment sale, the public could receive up to 50 percent of the value of the resources eventually produced.

Industry reaction to use of a sliding scale royalty system

Although oil companies showed no reluctance to bid on sliding scale tracts in the Georgia Embayment sale, officials of the seven oil companies we contacted generally opposed the use of a sliding scale royalty bidding system. Their principal argument was that the taxpayer should not take unnecessary risks that the oil companies were willing to assume. This risk occurs because the public will receive a lower cash bonus and the companies will pay a higher royalty only if a major discovery is made. In addition, company spokesmen said the sliding scale system penalizes the companies by taking a larger share of a major discovery which they need to offset the cost of their many dry holes. They also stated that such a system

--has not resulted in bringing in new bidders and is not necessary since small companies can always participate by bidding jointly with large companies,

--may result in slower production because industry may reduce production rates to avoid a higher royalty rate,

--will not help small companies win leases because they can always be outbid by larger companies under any system, and

--will create many legal and administrative problems if adjacent tracts produce from the same reservoir but with different royalty rates.

We have not evaluated the overall implications--pro and con--of this or other alternative bidding systems but plan to do so in our future work.

CONCLUSIONS

In our prior reports on OCS sales, we have recommended that the Secretary of the Interior conduct a systematic program to identify the amounts of potential resources available for production on the OCS. Better information on resource potential, we have said, is needed to:

--formulate broad energy policy,

--set priorities on the OCS areas for leasing,

--evaluate resource development potential in relation to potential environmental impacts, and

--value tracts more reliably to assure a fair market value return for public lands.

In the Georgia Embayment sale, there was no more and, in some cases, less data available to select and value tracts than in prior sales we reviewed. Had more information been available on the resource potential prior to scheduling the area for sale, perhaps the area would not have been put up for lease at this time. In any event, it is for this reason that we have recommended in our prior reports that Interior establish a systematic plan for exploring OCS areas and then --in concert with national energy policy and definitized production goals--schedule sales to meet such goals.

Unlike prior sales we reviewed, a sliding scale royalty bidding system was used on most of the tracts leased--seemingly with good success, considering the otherwise drab nature of the sale. Such a system relates public revenues to resources eventually produced better than previously used bidding systems. Thus--lacking better data and adequate competition--we believe this new bidding system has potential for helping to assure that the public receives a fair market value return for OCS resources, one of the principal objectives of an expanded data gathering program. Whether sliding scale royalty bidding completely resolves the problem of assuring fair market value--and what other potentially favorable or adverse effects it may have on OCS development as well as on the need for more administration and closer oversight by the Department of the Interior--cannot be determined until there is more experience using this as well as other alternative bidding systems.

Regarding the need for better data for long-term planning, Interior's recent decision to allow industry to drill test wells on structures that may contain oil and gas should help meet this need. This change in emphasis, along with recent requirements under the new OCS Lands Act Amendments giving Interior access to oil companies' interpreted as well as raw exploratory data, and the call for a new 5-year OCS leasing program, are consistent with our past recommendations on the need for more and better data and should make possible improved long-range planning.

We plan to follow Interior's experience in experimenting with alternative leasing systems as well as to address long-term OCS planning and coordination in separate studies.

AGENCY COMMENTS

In addition to the more specific comments we have treated in appropriate sections of this report, the Department of the Interior had the following general observations:

1. Interior noted that issues surrounding the need for more resource information have been considered by both the Congress and the Administration during the past several years and that several developments and policy changes with regard to such data have taken place. Those specifically cited were:

--removal of the prohibition against on-structure test wells, which will make additional resource data available prior to sales, and

--the testing of new bidding systems, such as the sliding scale royalty system, which it says has lessened the need for Government reliance on pre-sale data to assure fair market value return.

We agree that various policy changes have been made and actions taken--both by the Congress through the recent OCS Lands Act Amendments and at Interior's initiation--to improve resource information available prior to the time of holding OCS sales. We believe these are steps in the right direction and have tried to appropriately recognize them in this report.

2. Interior pointed out that we have not defined "fair market value" and that its recent analysis of the criteria used in bid decisions showed that current procedures result in "levels of bid rejections that approximate the optimal from the viewpoint of public receipts."

Interior further stated that our comparison of the differences between the Geological Survey's estimates of tract values and industry's high bids (see p. 10) leaves the implication--misleading it feels--that the Government did not receive fair market value for leases sold.

A competitive leasing program is based on the premise that competition will provide a fair market value return to the Government. When sufficient competition is not present--as we believe was the case in this sale--it becomes increasingly important to have reliable tract values to use as a basis for accepting or rejecting bids. Our comparisons of the wide variations between the Survey's and industry's valuations show that qualified individuals on both sides drew drastically different conclusions from the limited data available at the time of the sale. Our report points out that such limited data--in the absence of adequate competition --does not assure the Government will receive fair market value return, and our review of the analysis Interior furnished us has not altered this conclusion. We do recognize, however, that a change in the bidding system--such as going to a sliding scale royalty system--may influence the type and amount of data needed prior to the sale to assure fair return to the Government. We plan to study this further in future reviews of alternative bidding systems.

3. With regard to our past recommendations on the need for a "systematic approach to exploring OCS," Interior stated that any change in the leasing program which required new statutory authority and additional manpower and resources would, in its opinion, result in substantial controversy and delay in OCS development--moreover, Interior has a systematic approach within the confines of existing authority.

While we have not repeated our past recommendations in this report, we continue to believe that there's a need for better knowledge of the total OCS resource potential for the purpose of formulating broad energy policy and as a basis for setting priorities among areas available for leasing within a planned schedule of sales designed to minimize leasing of non-productive areas and maximize the potential for rapid production. This would also give a better basis than now exists for evaluating resource development potential and environmental impacts.

A basic premise underlying our recommendation has been that a plan for a broad assessment--once developed by Interior --would rely largely, if not entirely, on industry to explore and that appropriate incentives would be provided to accomplish this. Thus, we wouldn't anticipate the need for a large expenditure of public funds, and we don't believe the development of such a plan should necessarily delay OCS development. In fact, at least in the long run, it could insure that public as well as private funds go further and that development takes place sooner through concentration of development in the most productive areas.

In any event, until Interior develops a plan which identifies the types and amount of data needed, using various assumptions, and determines the extent to which industry is willing to gather this data, the cost-benefits of following this approach cannot be evaluated.

It is noted that Interior stated that it will continue to work with the Department of Energy to identify potential benefits to national energy policy from improved information concerning OCS resources. In a separate study, we plan to reassess our past position based on the new OCS Lands Act Amendments and other events which have transpired in recent times.

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As agreed with your office, we are sending copies of this report to the Secretary of the Interior; the Secretary of Energy; appropriate House and Senate energy committees; and to the Director, Office of Management and Budget.

Sincerely yours,

Comptroller General
of the United States

APPENDIX I

U.S. House of Representatives
Ad Hoc Select Committee on
Outer Continental Shelf
Washington, D.C. 20515

September 11, 1978

The Honorable Elmer B. Staats
Controller General of the United States
Washington, D.C.

Dear Mr. Staats:

I request that the General Accounting Office study and report to me on the Department of the Interior's Southeast Georgia Embayment oil and gas OCS lease Sale No. 43 held on March 28, 1978, in Savannah, Georgia. I expect that this report would be prepared using a similar methodology as your report EMD-77-19, dealing with OCS Sale No. 25, offshore Southern California, EMD-77-51, dealing with OCS Sale No. 40, offshore mid-Atlantic, and EMD-78-48, concerning the OCS Cook Inlet Sale; and would be prepared in such a format that the information and conclusions of the reports may be compared.

Because of its previous experience in the above-mentioned studies, I feel that the GAO is best qualified to conduct such a study. I expect that the study would develop an analysis of the competitive aspects of the sale, the reliability of tract evaluations, the use of royalty and bonus bidding from a comparative standpoint, and other facets of the Georgia Embayment sale. This sale is particularly unique because about 36 percent of the tracts were offered under the experimental sliding scale royalty, cash bonus bidding system in which the royalty rate will vary from the conventional 16 2/3 percent to as high as 50 percent, based on the value of crude oil and natural gas produced. In addition, in a new lease stipulation for OCS Sale No. 43, Interior's decision regarding transportation methods are to be made within the context of an intergovernmental planning process involving consultation with affected coastal states.

APPENDIX I

I would appreciate it if Mr. Canfield or a member of his staff would contact Martin H. Belsky, Chief Counsel of the OCS Committee (225-5727) at the earliest possible date regarding this request.

With kindest personal regards, I remain,

Sincerely,

JOHN M. MURPHY
Chairman

APPENDIX II

United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

Mr. J. Dexter Peach
Director, Energy and Minerals Division
General Accounting Office
Washington, D.C. 20548

FEB 15 1979

Dear Mr. Peach:

The Department of the Interior has conducted a brief review of the draft GAO report entitled "Review of OCS Lease Sale #43." This report continues the focus of previous GAO reports on the role of resource information in the sale of Outer Continental Shelf (OCS) oil and gas leases.

As you recognize, the issues which you raise have been considered by both the Congress and the Carter Administration during the past several years in developing new policies for the OCS program. In particular, several specific developments have provided both new policies and a better understanding of issues having to do with resource information. Your report mentions two of these: the testing of new bidding systems such as the sliding scale royalty system; and, the removal of the prohibition against on-structure test wells. Bidding systems are designed to reduce the risks borne by bidders for OCS leases and improve competition. Generally speaking, this risk reduction is achieved by setting financial terms which provide a return to the government based on the value of hydrocarbons actually recovered. Thus, the Government has less need to rely on pre-sale resource information to assure that it receives fair market value.

In addition, allowing on-structure test wells should assure that the investments that industry makes in these wells will not be restricted to areas that may not produce the most valuable information. In implementing this decision, the Department will make sure that data from such wells are available for estimating tract values in preparation for OCS lease sales.

In addition, we have recently completed a careful analysis of the criteria used in bid rejection decisions. As your study points out, the tract value estimates prepared by the U.S. Geological Survey are an important input to decisions on whether to accept or reject bids received for OCS leases. The results of our analysis do not support the implication left by your draft report that differences between the USGS estimates and the high bids received indicate a failure or uncertainty concerning receipt of fair market value for leases sold. The comparisons made on page 14 are particularly misleading in this respect and should be deleted. Since high bids are the highest estimates of all those made, the sum of the high bids for any set of tracts will exceed the sum of any other bids or estimates of the tracts' values. As a result, that set will always exceed the USGS estimates which are designed to be estimates of tract value, not estimates of high bids.

APPENDIX II

In discussions subsequent to receipt of your draft report, we have provided our analysis to your staff. It is particularly important to note that your draft report fails to define the term "fair market value" or to present any data which demonstrate the extent to which the receipts from sale #43 fail to satisfy this requirement. Our analysis examines all government receipts from OCS leases, not just bonus receipts, and reflects the use of the USGS tract value estimates in conjunction with the criteria used for bid rejection decisions. This study concludes that the current procedures result in levels of bid rejection that approximate the optimal from the viewpoint of the public receipts.

Your draft study also addresses the adequacy of information for planning to hold a lease sale in an area and for selecting the tracts to be offered. Better information, it is concluded on page 20, is needed to formulate broad energy policy, set priorities on the OCS areas for leasing and evaluate resource development potential. The draft suggests that the Department establish a "systematic plan for exploring OCS areas" and then schedule lease sales.

Recent consideration of the potential role of improved resource information provides a way of addressing this issue that is not reflected in your draft. During congressional consideration of the OCS Lands Act Amendments of 1978, the authorities and mandates concerning exploration were the focus of substantial debate and controversy. The final outcome of the debate was to leave the issue unresolved and the previous authorities unchanged. It appears that resolution of the issue was not feasible without delaying or jeopardizing passage of the Amendments. It seems likely that any proposal for a "systematic plan for exploring OCS areas" that involves new statutory authority, budget or personnel would be subject to equal controversy and substantial delay in the recovery of hydrocarbons.

The OCS Leasing Program, on the other hand, provides such a systematic plan within the confines of existing authorities. The leasing program consists of a schedule of proposed lease sales, a schedule which allows both government and industry to embark on an orderly process of collecting data and developing information about the oil and gas resources of the OCS. This data collection proceeds prior to the sale of leases primarily because potential bidders have sufficient confidence that the planned sale will occur. It continues after the sale of leases with exploratory drilling, usually conducted first on the best prospects leased. This information is then available for later drilling and subsequent lease sales.

It is appropriate to consider the leasing schedule as part of a systematic plan because any such plan would, of necessity, begin with a decision to collect data absent all but the most general information concerning the resource potential of frontier areas. As each new set of data was collected, a systematic plan would call for more intensive investigation of the areas which previous data showed to be the most promising. As more extensive and costly data are collected, it would be focused on the better resource prospects. This would finally result in exploratory drilling on the best prospects first.

Implementation of any "systematic plan for exploration" would require the Nation to invest its resources--labor, equipment, materials--in this search process. Under the existing arrangements, the leasing schedule governs the collection of data up to the point of lease sale, after which the lessees invest in exploratory drilling under the incentives of finding valuable oil and gas deposits. To rearrange the relationship between the process for selling leases and the process of searching for oil and gas would have little positive effect on the search itself. It would certainly not avoid the necessity of beginning the search in the absence of information.

However, because of the substantial controversy surrounding the issue of exploration, any substantial rearrangement of these two processes would postpone the search for many years. In the absence of clear evidence that the public would benefit from such costly delays, we believe that it is prudent to continue with the leasing program and to improve information within this basic structure. This will very likely mean that some areas are scheduled for sale and some tracts selected which later information will show to be less rich in resources than others, but the sale dates of all areas, rich and less rich, will be earlier than under a public search process which put off leasing, and thus the possibility of realizing additional oil and gas supplies, until an overall assessment of potential was completed.

With regard to broad national energy policy, we have asked the Department of Energy to provide production goals that reflect national energy policy for development of a new 5-Year Leasing Program. All of the OCS production levels that appear to be feasible would be snapped up by the domestic market, and would still leave a substantial demand for imported oil and thus a consequent need for policies and programs to reduce such imports. We will, however, continue to work with the Department of Energy to identify potential benefits to national energy policy from improved information concerning OCS resources.

Additional technical comments are enclosed.

Sincerely,

Larry E. Meierotto
Deputy Assistant Secretary--Policy,
Budget and Administration

Enclosure

APPENDIX II

Technical Comments on GAO Draft Report
"Review of OCS Lease Sale No. 43"

Data on hand at the time the tracts were selected and at the time the tracts were evaluated were neither limited nor inadequate to make an evaluation. At tract selection time, there were sufficient geophysical data to make an estimate as to where the structures were located in the nominated area. Knowing where the structures were located from the seismic data, prospective tracts were identified for inclusion in the sale. During the evaluation process, geophysical data covering the South Atlantic area were available to make an evaluation of the tracts selected for lease. The amount of geological and geophysical data necessary for tract evaluation varies from tract to tract depending upon technical parameters such as (1) structure placement on the tract, (2) the complexity of the structure, and (3) variation of the structure with depth.

In addition, geologic information from a deep stratigraphic test drilled in the vicinity of the proposed sale area was available for estimating and evaluating the subsurface geology and stratigraphy of the area. Although this was only one test, it did provide regional information and data to enhance evaluations. It is important to keep in mind that a stratigraphic test provides regional stratigraphic information that is useful in projecting and correlating subsurface formations over a wide area, not just information about the tract on which it is drilled.

With respect to the overall amount of data available for evaluation in sale #43, Interior had just as much, or more, data to select and evaluate tracts than industry had. This is true simply because the Government has access to company data (through contracts and permits), but companies do not have access to each other's data.

GAO note: The deleted comments relate to matters which were discussed in the draft report but omitted from this final report.

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