ALASKA LEGISLATURE COMMITTEE FILES 1981-1982 8672

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The rationale used by the State of Alaska was specious to begin with, and this paper documents why there is nothing magical about the March 31 to November 1 dates in that the 3-month worst case blowout scenario used by the State of Alaska to justify the "drilling window" is based on speculation and not on the facts. Indeed, the assertion that the chance of an oil blowout from an exploratory well in the Beaufort Sea is "very great" is patently false, as is documented herein. The facts are that the chance of an exploratory oil well blowout in the Beaufort Sea is next to zero, and the paper shows why what happened at the Mexican Ixtoc well would not happen in operations conducted by the leaseholders in the Alaska Beaufort Sea.

The paper also presents the 8-month worst case scenario for a blowout developed by the experts and documents why and/or how (1) Arctic conditions actually limit the spread of the oil; (2) one million barrels of oil could be contained under one square mile of ice because of the natural roughness of the under-surface of the ice; (3) the overall oil removal rate that would result is 94 percent, even with clean-up operations extending into the broken ice period and (4) the oil would not disappear into the ocean and float all over the Arctic.

Oil removal techniques and descriptions of new equipment that has been tested are also documented, including the Sohio-sponsored hoverbarge that can act as an icebreaker for ice up to 24 inches thick, clearing the way for tugboats or some other vessel to push through ice infested waters. To sum up, the assumption that the chances are great of a blowout from an exploratory oil well in the Alaska Beaufort Sea is incorrect; the scenario developed in defense of the March 31 and November 1 dates is wrong; and the imagined disaster that would be impossible to clean-up is not based on responsible analysis. The March 31 and November 1 dates are thus meaningless.

The paper also details the costs and valuable time and data that have been lost as the result of the imposition of the March 31 and November 1 drilling restriction on the 1979 Beaufort Sea leases. Tangible costs for lost time in the fall of 1981 alone amounted to an estimated $25 million for the four operators and eight rigs and other equipment sitting idle out on gravel islands from mid-September until the November 1st date arrived and drilling was allowed to commence. That same $25 million could have been used instead by the companies now trying to explore in the Beaufort to drill 40 wells onshore or 15 wells offshore in the Lower 48.

Although two-week extensions to the March 31 deadline are sometimes granted for wells drilled inside the Barrier Islands, the examples cited show that insufficient time remains for thorough evaluations even with an extension. Companies have thus frequently been forced to forfeit valuable data that is crucial to exploration planning. They have also incurred excessively high costs for the data that still can be obtained by re-entering the well in a subsequent drilling season. Yet the necessity of having to re-enter a well to obtain data makes it unlikely that a follow-up well can be drilled during that succeeding season. Instead that time period is used to test the well that should have been tested the

previous season to determine where next to drill. The drilling program initiated by Sohio alone should have been, under normal circumstances, completed within 18 months but will take five years to complete because of the drilling restriction, and the costs incurred are about 40% higher, representing tens of millions of dollars.

There is a substantial amount of evidence indicating that the environmental effects of oilspills may not be as devastating as once thought. It is also becoming more evident that even if oilspill impacts are distinguishable from the results of natural phenomena, ecosystems generally recover within one to a few years. There is also every indication that the arctic ecosystem is incredibly resilient. That is, it has adaptive mechanisms that compensate for environmental "disturbances" regardless of whether they are of natural or man-made origin.

The evidence for the success of these adaptive strategies is in the existence and continued survival of populations of arctic organisms in an environment of unbelieveable extremes in ice, temperature, light, salinity, nutrients, etc. When all the various factors are taken into consideration it is obvious that oilspill concerns have usually been presented in a manner inconsistent with the facts.

Oil spill prevention, containment and clean-up technology is a fact, and its implementation is the most powerful mitigating measure available. The physical, chemical and biological weathering and detoxification of spilled oil is a fact. These processes significantly alter the types and concentrations of oil after it is released to the environment.

When all the evidence is realistically evaluated, it is difficult to imagine a scenario in which oil would be present in quantities, concentrations, and durations sufficient to result in massive numbers of organisms being impacted.

Finally, it should be noted that there is significant new knowledge that makes the possibility of any Bowheads being adversely affected by an oilspill, even during the months of September and October, as remote as is the likelihood of an oil well blowout, i.e., a next to zero possibility, for a number of reasons.

First, September and October are the only months in which a Bowhead could possibly interact with industrial development off the coast of Alaska. Second, the whales are migrating: therefore, the amount of time that any one whale could interact is considerably limited, probably around 2 1/2 to 3 days. Third, it is also known that the whales are at the surface where they could contact an oilspill only 11-19% of the time. Fourth, the lease areas comprise approximately half of an area in which, for 1980, it was estimated there were only 15 Bowheads present at any given time, with a total of 107 Bowheads migrating through the area. (Current estimates put the Bowhead population at about 2500 animals.) Fifth, there were only three Bowheads actually sighted in the lease areas, and these sightings

were seaward of the Barrier Islands. Sixth, added to this already remote possibility should be a consideration of the mitigative effects of physical, chemical and biological alteration of spilled oil, and oil spill response, prevention and containment activities. These factors serve to weather, detoxify, contain and remove the oil from the environment. So even if the whales did encounter oil, there are not likely to be any resultant adverse impacts.

EXXON COMPANY, U.S.A.
POST OFFICE BOX 4279 • HOUSTON, TEXAS 77001

EXPLORATION DEPARTMENT
ALASKA/PACIFIC DIVISION

R.D. WILSON
MANAGER

November 11, 1981

Five-Year Leasing Program
State of Alaska

Division of Minerals and Energy Management
Pouch 7-005
Anchorage, Alaska 99510

Attention: Ms. Kristina O'Connor

Ladies and Gentlemen:

The following comments are submitted pursuant to your "Call For Comments" issued in conjunction with your proposed revision of the Five-Year Leasing Program.

Exxon is concerned about the deletion of the originally proposed Chukchi Sea Sale (No. 44) from the schedule because the most effective and efficient scheduling of State lease sales is accomplished by coordinating the State sales with adjacent Federal sales, and perhaps even conducting joint State/Federal lease sales. We had anticipated such coordination between State No. 44 and Federal Lease Sale No. 85. Postponing the proposed Chukchi Sea State sale will result in duplication of effort and could create significant operational problems in the exploration and development of these two areas, especially if prospective geological structures on the Federal acreage leased in Sale No. 85 extend onto State acreage.

The oil and gas industry has demonstrated its ability to operate successfully and without adverse effects on the environment in the environmentally sensitive Arctic Slope region. While the Chukchi Sea and its adjacent coastline may present unique technical and environmental challenges, we are confident that industry will respond with workable solutions.

The time remaining before the presently scheduled Chukchi Sea State Sale date of January, 1985 should be adequate to study any unknown factors and conclude the necessary environmental studies.

Although we urge you to retain Sale 44 (Chukchi) in its presently scheduled January 1985 position, we approve of your proposal to add two Kuparuk Uplands Sales (Nos. 47 and 48) to the 1985 Leasing Program. These are areas which should be of interest to industry.

With respect to the proposed Camden Bay (No. 50) State Sale, we do not believe that it should be scheduled unless and until it is assured that facility and support sites will be made available on shore in the Arctic National Wildlife Refuge opposite the sale area, together with pipeline and access easements across the Refuge. It simply is not feasible to attempt development of the Camden Bay area otherwise.

Exxon urges that the sales currently scheduled for 1982, particularly State Sales 34 and 36, be held as presently scheduled. In order for prospective bidders to make efficient and economic use of their manpower and financial resources, they must be able to rely with a degree of certainty on the published sale schedule for at least a year ahead. Such certainty would be highly desirable for even longer periods, but it is essential for at least the first full calendar year following issuance of the Five-Year Schedule.

We again ask you to give earnest consideration to utilizing bonus bidding and ten-year lease terms for these frontier area sales. We previously have furnished detailed reasons for these suggestions in written comments and testimony before various Alaska legislative and regulatory bodies. Please refer to (1) our letter dated June 28, 1979 addressed to the Director which enclosed a copy of Testimony on Use of Net Profit Bidding given on March 31, 1979 by J. D. Langston, Vice-President, Exploration, Exxon Company, U.S.A. before the State of Alaska House of Representatives Ad Hoc Committee and (2) our letter to the Director dated December 13, 1979 which enclosed our comments on the revised proposed leasing regulations.

Finally, the effectiveness and workability of any Five-Year Leasing Program which you may adopt will be related directly to the method of application and administration of the unitization regulations. In remote frontier areas, it is essential that holders of leases be encouraged to pool their expertise and their economic resources, as well as their leases, in their efforts to discover, define, develop and produce oil and gas, and such encouragement is best bestowed by the State making unitization available on reasonable, workable conditions.

Thank you for this opportunity to comment on these proposed sale schedule revisions. Any further information or details which you desire will be furnished on request.

R. D. Wilson

RDW:bc

K. Daniel Hinkle
Division Attorney
Production, U.S. & Canada

3/23/82

Marathon
Oil Company

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March 19, 1982

Senator Bettye Fahrenkamp
Senate Resources Committee
Alaska State Legislature
Pouch V (MS 1300)
Juneau AK 99811

Re: Alaska 5-Year Oil and Gas Leasing Program
Marathon Oil Company Comments

Dear Senator Fahrenkamp:

Enclosed for the Senate Resource Committee's review and consideration are the written comments of Marathon Oil Company on the most recently released Alaska 5-Year Oil and Gas Leasing Program. These comments are in response to your February 5, 1982 letter; the Committee's February 8th hearing with John Katz, Commissioner of the Department of Natural Resources and the February 26th hearing with the oil industry.

An executive summary of our comments is as follows:

1. The 5-Year Oil and Gas Leasing Program:

   A. Though Marathon contends a predictable leasing program is in the best interest of the State and Marathon, we would urge the Committee's consideration of the following proposals:

      (1) Acceleration of the Camden Bay Sale to 1984 for the reason it lies in the industry's high interest area from Point Barrow to the Canadian Border.

      (2) Return the Chukchi Sea Sale to the schedule for the reason it lies in an industry high interest area. Deletion of the sale creates a self-fulfilling prophecy, in that, if the sale area is deleted, it ensures technological questions regarding the area will not be answered.

2. Specifics on the Procedures and Permitting Process Being Utilized.

   A. Discussion of the cumbersome and/or Bureaucratic items in the process is not to say the remaining parts of the process are good, but rather they are

less onerous. In regards to cumbersome/bureaucratic items, the Committee is urged to review the following:

(1) The social, economic and environmental analysis (SEEA) process that occurs pursuant to Administrative Order No. 52. This process is a de facto environmental impact statement and the legislature, on at least two occasions, has rejected this concept. Approximately 10 months of pre-leasing time schedule is devoted to the process and Marathon questions whether the SEEA serves more to alarm rather than inform the public.

(2) The Committee should review further usage of the seasonal drilling restriction concept. Though this concept was originally proposed for the 1979 Beaufort Sea Lease Sale, we are seeing it being used more and more in other areas where the oil and gas industry has a proven record they can operate on a year-round basis - e.g., Cook Inlet.

(3) The Committee is urged to consider the addition of a litigation notice provision to the leasing process. This notice would require those parties opposed to the sale to give notice that if the sale is held, they intend to bring suit and the claims they intend to bring in that suit. The Department of Natural Resources Commissioner would have the time to cure potential sale defects and, if unable to cure these defects, then the Commissioner could postpone the sale. In short, this concept could prevent the current situation faced in the 1979 Beaufort Sea Lease Sale where drilling has taken place, but the question of whether the state leases are valid remains with the Alaska Supreme Court.

3. The State's Leasing Policy.

Marathon responds to this point by providing its comments to the Department of Interior on Bidding Systems, Tract Evaluation and Rejection of Bids. In these comments Marathon's Vice President - Production/Exploration U.S. and Canada, R. R. Burke, comments as follows:

.Commends the Department of Interior's efforts to abandon experimentation with bidding systems that contain inherent deficiencies and, thereby, act as exploration/production disincentives.

.The best methods for ascertaining fair market value tract evaluation still lies with the free market, competitive bidding process.

.A review of the OCS Lease Sale evidence leads to the conclusion that tract evaluations and bid rejections are unnecessary and wasteful.

We believe these comments to the Department of Interior should provide meaningful food for thought for the Committee, in that, the State of Alaska is currently in litigation over geophysical data collection, which they say they need for evaluation and the comments by various Committee members on particular bidding systems.

Marathon thanks you for this opportunity to provide comments on this very integral part of Alaska's well being. If you have any questions or comments, please feel free to contact me.

Very truly yours,

K. Daniel Hinkle

KDH:mr

Enc.
xc: John Katz, Commissioner
Department of Natural Resources

ALASKA 5-YEAR OIL AND GAS LEASING PROGRAM

WRITTEN COMMENTS

TO

SENATE RESOURCES COMMITTEE

BY

MARATHON OIL COMPANY

This document is submitted in response to the invitation of Senator Bettye Fahrenkamp, Chairman, Senate Resources Committee, for written detailed comments on the Alaska 5-Year Oil and Gas Leasing Program briefed to the Committee on February 8, 1982 by the Department of Natural Resources (DNR) Commissioner, John Katz. An executive summary of these comments was set out in this document's cover letter to Senator Fahrenkamp.

1. The 5-Year Oil and Gas Leasing Program.

Marathon adheres to the concept that an oil and gas leasing schedule should be predictable to the point where it

can be counted on by the public, the government and the industry in their planning on behalf of the citizens of Alaska and the rest of the United States. Recognizing full well there are factors beyond the control of the parties, Marathon would urge no deletion or postponement of a sale once the sale has progressed on the sale schedule to the two year time frame from sale date. In light of this statement and in recognition of the more specific factors commented upon below, Marathon makes the following lease sale schedule recommendation:

A. Accelerate the Camden Bay sale to 1984.

The Camden Bay Sale area lies in the industry's prime area of interest in Alaska - that area between Point Barrow and the Canadian boundary. In comparison to other geologic areas in the state, the area from Point Barrow to the Canadian boundary holds the highest geologic interest and the location/existence of the Trans Alaska Pipeline, aids in its development interest. As stated on Page 32 of DNR's

5-Year Oil and Gas Leasing Program: "Rich source rocks, thick productive reservoirs, adequate seals and numerous, diverse traps have been documented" in the North Slope basin. As Commissioner Katz stated during the February 8th briefing to the Committee: "We (DNR) added the Camden Bay Sale, which I think is a very high value prospective area." As currently scheduled, only one sale in 1984 (Sale 43 - Beaufort Sea) may be considered a high value area. There will be two low to moderate sales during 1984 (Sale 42 - Minchumina and Sale 41 - Bristol Bay Uplands).

During the February 8th briefing, the Committee members expressed concern over production declines - state revenue drop (the decline of Prudhoe Bay production) within the decade - and the need for an appropriate leasing schedule to minimize this production/revenue drop. Commissioner Katz noted "it is becoming increasingly difficult" to find areas to lease that are considered "high potential". Given these points, plus the delays in exploration, it would appear to be

prudent to accelerate a "high potential" area such as Camden Bay.

B. Return the Chukchi Sea Lease Sale to the Program.

Secretary of Interior Watts' recently released federal 5-year lease sale schedule includes 1987 Chukchi Sea Lease Sale(s). The 1981 Alaska Legislature approved an Alaska 1985 Chukchi Lease Sale. The 1985 Alaska sale has been deleted from the Alaska program and Commissioner Katz stated two reasons for this deletion.

The first reason is to avoid inconsistencies between what the State is saying to the Federal Government in connection with the Federal Chukchi lease sale. This point is a classic policy decision by the executive and legislative branches of government. In this case, the executive is requesting the legislature to ligitimize the executive's policy decision to delete a sale previously approved by the

legislative body. Our response to this question is perhaps best stated by our comments on the second reason given for deletion. The Commissioner opines a lack of technology exists for operations in the area. We question the validity of this rationale and to some degree we see this point as a self-fulfilling prophecy. That is, the "technology" does not exist at this time; the incentive to develop technology is a scheduled lease sale; and, if the lease sale is deleted, the technology is not developed. On the other hand, the Federal Government has a lease sale scheduled for the area and this alone will be an incentive to develop the technology needed. The State, however, would be delayed in receipt of this development, because the Federal Chukchi lease sale is not on the State's program. Either way it appears in the State's best interest to maintain the Chukchi Sale on its schedule. For those of us operating in the Cook Inlet, we should be happy a "can do" attitude existed in the State.

2. Comments on Procedures and Permitting Process.

To a great degree, DNR's hands are tied in this area by statutory/regulatory mandate. One need only review Item X. Overview of the State Leasing Process, P. 34-36 of the Department's 5 Year Oil and Gas Leasing Program, to see the degree to which DNR has been tied down. Of course, an exception to this process is the SEEA, which is not a statutory regulatory mandate, but is brought into the process through Administrative Order No. 52. (A copy of these 21 steps is attached). There are, however, "cumbersome/bureaucratic" items of note in this leasing procedure. Discussion of these "cumbersome/bureaucratic" items is not to say the other parts of the procedure are good, but rather let us say they are less onerous.

a. Social, Economic and Environmental Analysis (SEEA)

As stated, a primary concern in this area is that the SEEA is a de facto environmental impact statement. The legislature, in the past, has rejected the environmental

impact statement process, yet we have ended up in the same situation due to the Governor's Administrative Order No. 52. From the attached leasing process you will note approximately 10 months of that time is devoted to the development of this document. The document is supposedly advisory, but many of the assertions set out therein become part of the terms of the lease sale. (See seasonal drilling restriction below.) The document serves more to alarm the general public rather than to inform them. For instance, in the preliminary draft SEEA for the Upper Cook Inlet sales (1980) on page 11, the document uses oil spill numbers directly lifted from the federal environmental impact statement for the Lower Cook Inlet, which were based upon an annaul production rate of 340 million barrels. The state lease sale area, to which the SEEA was to be addressing, had a total of 202 million barrels of recoverable reserves over the life of the field. Obviously, the spill rate would be overstated using a 340 million barrel annual production versus a 202 million recoverable over the life of the field figure.

b. Seasonal Drilling Restriction.

As the Committee is aware, a seasonal drilling restriction (November 1 to March 31 - imposed for two years before reconsideration) currently exists for Beaufort Sea operations. Because the 2 year term has run, the Commissioner is currently grappling with the decision of whether to extend, modify or delete the drilling restriction. The Committee is also aware that a preliminary draft report by the Division of Minerals and Energy Management estimates the drilling limitation could cost the state approximately $500 million. The Committee is also aware this lease sale area will not be able to be developed with the current restriction in place. The Committee should be aware of the fact that, if the restriction is continued, depending upon the case by case circumstances, the State of Alaska may be subject to a force majeure type action for the recovery of the lease sale bonus/rentals or net profit share lease expenditures. Since the lessee would be prohibited from developing the reserve it discovered during the exploratory phase by the State of

Alaska, it would appear the lessee should have the right to seek a refund of the lease expenditures it had made. Marathon is not saying actions of this type are imminent, but is saying the continuance of restrictions lays the ground work and increases the probability for such.

c. Litigation Notice.

Over the past years the "high-value frontier area sales" have suffered litigation delays. By this comment, Marathon suggests an additional step to the administrative lease sale process that should shorten the litigation period and increase the probabilities of the state lease sale being upheld. The suggestion is the addition of a notice of litigation/claims to be filed by those parties adverse to the sale. The notice would be given at some meaningful time period prior to the date of the sale and would require those parties to set out the basis or claim they will make in their litigation. A failure by these parties to give notice would subject their claim to a "failure to exhaust their adminis-

trative remedies" argument in court. Upon receipt of the notice, the DNR Commissioner would address and cure, if need be, the alleged sale defect claimed to exist. Litigation, if any, should then be shortened by the third party's concern being answered by the Commissioner's corrective action and the knowledge on the part of the third party that the corrective action carries with it the legal presumption of validity on the part of the State. Thus, the third party would carry an even heavier burden before the court in its attempt to void the lease sale.

The Federal Government on OCS sale has a similar provision, but the above includes added improvements. There are benefits to all of the parties concerned by such a mechanism. The State increases its probability of holding a valid lease sale. The concerns of the third parties are answered prior to the lease sale. Expensive litigation is avoided on the part of all parties. The industry does not buy a "pig in a poke". It is unclear whether this action could be taken through regulatory measures, but at a minimum,

the legislature could add the notice provision through legislative action.

d. Hearings Upon Hearings - SB 84.

Given the hearings upon hearings, the comments upon comments received from agencies and all other involved parties, it has been difficult for Marathon to comprehend the permit delays that occur subsequent to the issuance of a lease. In this regard, Marathon supports the passage of Senate Bill 84, which would shorten the permitting time delays presently occurring for those permits needed to explore and produce.

One need only to briefly review the State leasing process set out on Pages 34-36 of DNR's 5-Year Oil and Gas Leasing Program to substantiate the amount of general public, local, state, federal and industry input obtained and received during the pre-leasing process. From all of this input, it should be fairly obvious what actions will be taken

by the successful lessee on the lease. However, such apparently is not the case, because many of the questions answered during the pre-leasing stage must be reanswered by the successful lessee during its obtaining of the necessary permits to explore its lease. Granted there may be some questions related to a particular on-site activity, but philosophical and generic questions should definitely have been answered by this point.

Given the great amount of information obtained prior to the lease sale, Marathon contends the time delays associated with obtaining permits should be minimal. To aid in reaching this goal, Marathon supports the passage of SB 84.

3. State's Leasing Policy.

To a great degree, Alaska's leasing policy/procedure mirrors the federal leasing policy/procedures; therefore, the Federal Government's recent call for comments on their

reexamination of bidding mechanisms and tract evaluations appears relevant. These same two points are, or should be, reexamined by the State of Alaska. In this regard, attached are the comments of Marathon's R. R. Burke, Vice President, Production/Exploration U.S. & Canada, to the Department of Interior. These relevant comments provide some excellent food for thought for the Senate Resources Committee and the Department of Natural Resources. In summary, the comments of Mr. Burke are as follows:

1. Commends the Department of Interior's efforts to abandon experimentation with bidding systems that contain inherent deficiencies and, thereby, act as exploration/production disincentives.

2. The best method for fair market value tract evaluation is the free market, competitive bidding process.

3. A review of the OCS lease sale evidence leads to

the conclusion that tract evaluation and bid rejection are unnecessary and wasteful. (This point is particularly relevant in regards to DNR's current position that it needs geophysical data in regards to lease sale evaluation.)

CONCLUSION.

Marathon, once again, thanks the Senate Resources Committee for this opportunity to comment on the Alaska 5-Year Oil and Gas Leasing Program. If you have any questions or comments, please feel free to contact us.

R. R. Burke
Vice President
Production Exploration, U.S. & Canada

Marathon
Oil Company

Findlay, Ohio 45840
Telephone 419/422-2121

March 3, 1982

Mr. William P. Pendley, Acting Director
Minerals Management Service
Room 6651, Main Interior Building
18th and C Streets, N.W.
Washington, D.C. 20240

Re: Tract Evaluation Procedures to Assure Receipt of Fair Market Value for Outer Continental Shelf Oil and Gas Leases

Dear Mr. Pendley:

This letter constitutes the comments of Marathon Oil Company ("Marathon") in response to the Department of the Interior's ("Department") request for comments on Tract Evaluation Procedures to Assure Receipt of Fair Market Value for Outer Continental Shelf Oil and Gas Leases ("Request for Comments"), 47 Fed. Reg. 5694-5698 (February 5, 1982). Marathon feels that the Department's examination of tract evaluation procedures comes at an opportune time in light of the rejection of an overwhelming number of bids in two recent Outer Continental Shelf ("OCS") lease sales -- Mid-Atlantic OCS Sale No. 59 ("Mid Atlantic Sale 59") and Gulf of Mexico OCS Sale No. 67 ("Gulf of Mexico Sale 67"). Marathon believes the number of bid rejections in Mid-Atlantic Sale 59 (44 of 98 high bids) and Gulf of Mexico Sale 67 (22 of 137 high bids) is evidence of a system which has gotten out of hand and which seriously threatens timely exploration of the nation's OCS oil and gas resources. Marathon, therefore, welcomes the Department's inquiry into this entire system and the opportunity to submit comments.

Marathon has commented in the past on the serious deficiencies inherent in the Department's evaluation of tracts and rejection of bids.[1/] In its past comments, Marathon

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1/ See Marathon Oil Company's comment letters regarding "Request for Information on Proposed Changes in Offshore Leasing Programs" (May 22, 1981), "Rejection of Bids in Recent South Atlantic OCS Sale No. 56" (September 18, 1981), and "Proposed 5-Year OCS Oil and Gas Leasing Program" (October 17, 1981).

has pointed out that the Department's evaluation of tracts and rejection of high bids in OCS lease sales is unnecessary, costly, unfair, and impedes timely exploration of the OCS. Because of these serious deficiencies, Marathon has urged the Department to abandon completely tract evaluations and bid rejections.

Marathon has read the Department's Request for Comments and the three options for changing the system contained therein. Although Marathon commends the Department for recognizing that something needs to be done, Marathon cannot support any system of tract evaluations and bid rejections. Instead, Marathon's position is that the practice is inherently deficient and that no amount of fine tuning can rectify its inherent deficiencies. Marathon, therefore, again strongly urges the Department to completely abandon this practice and rely on the free market, competitive bidding process to insure receipt of fair market value for leases on the OCS.

GENERAL COMMENTS

A. Tract Evaluations and Bid Rejections are not Required by the OCS Lands Act Amendment of 1978

Section 102(2)(A) of the OCS Lands Act Amendment of 1978 (the "Act") provides in part that one of the purposes of the Act is to "insure the public a fair and equitable return on the resources of the Outer Continental Shelf." 43 U.S.C. § 1802(2)(C). In addition, Section 208 of the Act provides in part that "[l]easing activities shall be conducted to assure receipt of fair market value for the lands leased and the rights conveyed by the Federal Government." 43 U.S.C. § 1344(a)(1). Neither of these provisions, however, requires evaluations of tracts and bid rejections. In addition, Marathon has found nothing in the legislative history of the Act or court decisions interpreting the Act which requires tract evluations and bid rejections.

Section 208 requires that "leasing activities . . . be conducted to assure receipt of fair market value for the lands leased and the rights conveyed by the Federal Government." Marathon believes there is no better way to assure this than

to allow operation of the free market, competitive bidding system without tract evaluations and bid rejections.[2/]

The Department's Request for Comments contains the following statement at page 5695:

> "In the OCS program, the market value of "the lands leased and rights conveyed" clearly depends on the oil and gas prospects of the tracts, the expected prices of oil and gas, the costs of OCS operations, the supply of leases and substitutes, and the financial, market, and technological characteristics of potential bidders. The market value of leases is not the market value of the oil and gas eventually discovered or produced, but the value of the right to explore, and, if there is a discovery, develop and produce, subject to a wide array of constraints. The market value of a lease is its value at the time it is offered, given conditions at that time. It is not necessarily the same as the value of the leases at a later time.

The Department, therefore, apparently recognizes the normal operation of oil and gas exploration and development. When the oil industry bids on OCS leases, it is not the same as bidding on a tangible good the value of which can be readily assessed in terms of its potential return on the investment. When a manufacturing company invests in capital goods, it fully expects to earn a profit on each individual investment. However, when an oil company invests in OCS leases, it cannot readily assess the potential return on each individual investment. In fact, an oil company can

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2/ Marathon notes that the sale of OCS leases does not take place in an environment of true free market competition. While there are many bidders for OCS leases, the United States government is the only seller of those leases. The government, therefore, has a monopoly on OCS leases. This may explain to a large degree why, as indicated below at pages 6 and 7, the government has been able to extract more than fair market value for its OCS leases.

expect that a majority of its individual OCS investments will be total losses. The oil company must rely on high profits from some individual investments to pay for the losses on the others.

A few tracts may ultimately be highly profitable, which would result in an unusually high rate of return when calculated on a single lease. But it is just such an expectation that constitutes the economic justification for any company to participate in exploration of the OCS. High profits from a successful lease are needed to absorb the costs, both lease bonus paid to government and exploratory costs, for the vast majority of leases that fail to be profitable. It is only the high profit lease that can provide an adequate rate of return calculated on the aggregate of any company's OCS exploration efforts, both successes and failures. The fact that a company achieves a high rate of return on one lease does not mean, therefore, that the United States is not receiving "fair market value for the lands leased and the rights conveyed" by it.

Considering these facts, there is no reason to assume that the Department's duty to conduct leasing activities "to assure receipt of fair market value for the lands leased and the rights conveyed by the Federal Government" requires the Department to evaluate those lands and reject bids to insure that no particular parcel or group of parcels is leased at below the Department's estimate of fair market value. Rather, the Department should employ a leasing system designed to assure receipt of fair market value for the OCS lands leased as a whole. Marathon believes that there is no system better suited to this than a free market, competitive bidding leasing system which is not overruled by Department evaluations and bid rejections.

Finally, Section 102 also provides that other purposes of the Act are to: 1) "preserve, protect, and develop oil and natural gas resources in the Outer Continental Shelf in a manner which is consistent with the need to make such resources available to meet the Nation's energy needs as rapidly as possible" (43 U.S.C. §1802(2)(A)) and 2) "insure that the extent of oil and natural gas resources of the Outer Continental Shelf is assessed at the earliest practicable time . . ." (43 U.S.C. §1802(9)). When the Department rejects the high bid for a tract, this delays leasing and exploration of that tract, which conflicts with the provisions quoted above. Marathon believes, however, that reliance on a free market, competitive bidding system without Department evaluations and bid rejections will assure receipt of fair

market value for OCS leases and a fair and equitable return on the resources of the OCS. In addition, such a policy will further the goals enunciated in the provisions quoted above, rather than inhibit them. Marathon, therefore, strongly urges the Department to further all three purposes of the Act by relying on a free market, competitive bidding system without Department evaluations and bid rejections.

B. Tract Evaluations and Bid Rejections are Unnecessary, Wasteful, and Unfair

Marathon believes that tract evaluations are unnecessary to assure receipt of fair market value, wasteful, and unfair. First, the Department's evaluation of a tract is simply one more inexact estimate of the value of a tract in addition to those made by numerous experts in the industry. The Department interprets geologic structures and prospects and estimates the values of individual tracts based on interpretation. Industry, as a part of the competitive bidding process, does exactly the same thing. Although the Department takes into account the companies' bids through use of an Average Evaluation of Tract ("AEOT"), if the Department's evaluation is much higher than the bidding companies', or if only a few companies estimate a tract's relative value as high enough to warrant submission of a bid, the high bid for a tract will be rejected.

The fundamental problem with rejecting bids because of a high tract evaluation by the Department is that it simply ignores the fair market value arrived at through the competitive bidding process. The only true assessment of fair market value of a particular OCS tract is the value given it by expert oil and gas explorationists forced to place a value on it in a free market, competitive bidding situation after evaluation of the tract. In such an environment, there is simply no reason whatsoever for tract evaluations or rejections of bids. Indeed, to reject a bid as too low is tantamount to asking as many as 50 or more experts for their opinion of an item's worth, having them agree that it is not worth over a certain sum, and then rejecting their assessment as too low because one other expert, no more

qualified, believes a higher assessment is more accurate.[3/] Of course, this simply does not make sense.

Second, there simply is no evidence of lack of competition for OCS leases or collusive bidding in OCS lease sales. In July of 1981 the Department formally submitted its Proposed 5-Year OCS Oil and Gas Leasing Program to the House of Representatives under a cover letter to the Honorable Thomas P. O'Neill dated July 24, 1981. Attachment 5 to that letter contains a discussion of fair market value, tract evaluations, and bid rejections on the OCS.

At page six of Attachment 5, the Department refers to the low rates of return on OCS leases. The Department also states:

> "This indicates that OCS lessees did not earn surplus profits, providing further strong evidence that the OCS lease market has yielded fair market value to the government."
>
> "In addition, the DOE sponsored an elaborate study of OCS competition by the Cabot Consulting Group which was completed in July, 1980. This study concluded that there is no evidence of strategic underbidding for OCS leases and that all of the studies of the profitability of OCS leases indicated that the government has received fair market value."

In addition, a review of Competition and Performance in OCS Oil and Gas Lease Sales and Lease Development, an independent study made by Walter J. Mead and Phillip E. Sorenson under contract with the United States Geological Survey (the "Mead and Sorenson study"), indicates that the federal government has captured more than "fair market value" for OCS

3/ Although a tract may receive only one bid in any given sale, this does not mean that only one expert has evaluated the tract. Many more experts have evaluated the tract. The fact that only one company chose to bid may mean that the other experts set the relative value of the tract so low as to not warrant submission of a bid.

leases in the Gulf of Mexico.[4/] Mead and Sorenson analyzed 1,223 leases issued in 17 Gulf of Mexico OCS lease sales held in the years 1954-1969. For all 1,223 leases, the average internal rate of return was 11.43% before corporate income tax. This return is far below the average return (1954-1976) of all U.S manufacturing corporations of 19.81%. Of course, oil and gas exploration and development in the OCS entails much more risk than manufacturing operations. This study reveals that industry has made an inadequate rate of return on the OCS and that the federal government, therefore, has captured more than "fair market value."

All of these Gulf of Mexico sales were conducted in areas which were offshore extensions of the existing producing areas onshore Texas and Louisiana. Greater presale geologic data was available; hence, these sales had much less risk than those in frontier areas. The table below indicates that perhaps only one out of 50 or more leases in frontier areas can be expected to be profitable. Exploratory drilling results in these areas conclusivly show that industry has thus far obtained a negative return on investment.

Frontier Areas	Date of Sale	No. of Leases Issued	Bonus Paid to Government ($MM)	Results of Drilling to 2-1-82
Eastern Gulf of Mexico	1973	87	1,490	No Production Found
California	1975	56	417	Only 3-4 Leases May Be Profitable
Gulf of Alaska	1976	76	559	No Production Found
Mid-Atlantic	1976	93	1,127	3 Leases May Be Profitable
Lower Cook Inlet, Alaska	1977	87	398	No Production Found
South Atlantic	1978	43	100	No Production Found
TOTALS	-	442	4,092	6-7 Leases May Be Profitable

4/ W. Mead and P. Sorenson, Competition and Performance in OCS Oil and Gas Lease Sales and Lease Development, U.S.G.S. Contract No. 14-08-001-16552 (1980).

The government's own studies, not industry's, show there is adequate competition and that the government has received more than fair market value for the OCS lands it has leased. The government's own studies show that evaluations and bid rejections are unnecessary. Considering this evidence, it simply does not make sense to have government personnel duplicate industry's efforts in evaluating leases. It is a waste of the government's and industry's time and resources. For if the industry evaluates a tract, bids on it in a competitive system, and no lease is awarded, industry's efforts are wasted as well.

Finally, bid rejections are unfair. Marathon puts great effort into evaluating the lands offered in OCS lease sales, finding bidding partners, and formulating bids which it hopes will allow it to earn a reasonable rate of return on its OCS investments and also win the bidding. It is gratifying to submit a bid at a sale and win the right to explore a particular prospect. It also is very disappointing to learn that although you have competed well and won the bidding, the Department nonetheless has decided to reject your bid.

C. Department Tract Evaluations and Bid Rejections Achieve No Rational Results

As indicated at page 5, above, the Department's evaluation of a tract is simply one more inexact estimate of the value of a tract in addition to those made by numerous experts in the industry. Although the Department takes into account the companies' bids through use of an AEOT, if the Department's evaluation is much higher than the companies', or if only a few companies estimate a tract's relative value as high enough to warrant submission of a bid, the high bid for a tract will be rejected. Geologic evaluations, however, simply are not accurate enough to allow one estimate of value to result in rejections of high bids.

The ultimate value of any tract is never known prior to actual exploration and development. The presale value of a tract is nothing more than a scientific estimate. These estimates are dependent on the seismic data coverage and geometry, application of various computer processing and analytical techniques, and the resulting interpretations utilizing sound geologic principles. The many variables involved in this process cause significant differences in the relative values placed on individual tracts even though the general area of a large geologic structure may be quite similar among the various interpretations. It is

unreasonable, therefore, to allow the single Department interpretation to cause rejection of a high bid.

Even when numerous potential bidders utilize essentially the same geological and geophysical raw data prior to a lease sale, the interpretation of that data, and hence the estimated presale value of each tract, varies widely among potential bidders. A cursory review of bidding in other sales indicates that differences in presale evaluations by potential bidders cause some tracts to receive bids from some companies while other potential bidders do not bid on those tracts at all. The inaccuracy of presale evaluations is even more vividly demonstrated by the extremes of bid levels placed on the same tract. Frequently, the same tract will receive dollar bids ranging from hundreds of thousands to tens of millions.

In addition, the Mead and Sorenson study referred to at page 6 determined that of the 1,223 individual leases studied, 62% were abandoned without production and another 15% were productive but unprofitable. The inescapable conclusion is that the successful bidders' presale evaluations were totally wrong with respect to nearly two-thirds of the leases issued. Seventy-seven percent of presale evaluations were greatly in error since those evaluations resulted in bids for leases which proved to be either worthless or failed to provide a profit.

A review of past lease sales reveals that the Department's practice of evaluating tracts and rejecting bids does not achieve rational results. The overwhelming number of high bids rejected in the recent Mid-Atlantic Sale 59 indicates this is the case. In Mid-Atlantic Sale 59, numerous experts evaluated the tracts and formulated bids or decided not to bid at all. Only some of those bids were high bids. The Department rejected 44.9% of the high bids. It certainly does not make sense to assume, however, that the Department's geologists were correct 44.9% of the time and the many more industry geologists were correct 55.1% of the time. Certainly Marathon would not maintain that its evaluations are correct 44.9% of the time and the entire rest of the industry 55.1% of the time.

Another example is the rejection of bids in South Atlantic OCS Sale No. 56 ("South Atlantic Sale 56"). Marathon commented on this matter in a September 18, 1981 letter from R. R. Burke (Vice President of Production Exploration, U.S. and Canada) to Secretary of the Interior James Watt. In those comments Marathon pointed out the capricious and

irrational results of Department evaluations and bid rejections. A copy of the September 18, 1981 letter is attached hereto.

In South Atlantic Sale 56, the Department estimated the total value of the tracts receiving bids at $216,026,666. The total sum of the high bids for those tracts was $363,829,953.80. Viewed as a whole, the Department received high bids for those tracts far in excess of its own evaluation. In spite of this, it singled out seven tracts (Nos. 022, 026, 027, 064, 065, 096 and 097) and rejected the high bids for those tracts. Marathon was a high joint bidder on Tract No. 022.

Although the Department does take into account through its Average-Evaluation of Tract criterion the average of all the bids plus its evaluation in determining whether to reject a bid, in each case the Department's higher evaluation was the determinative factor with respect to the bid rejection. In fact, the Department's Average Evaluation of Tract criterion insures that bid rejections will occur most frequently when the Department's evaluation is entirely out of line with all of industry. In short, the more unreasonable the Department's evaluation is when compared with industry, the more likely it is that the Department evaluation will cause rejection of a high bid.

Finally, Marathon has reviewed 59 bid rejections in seven Gulf of Mexico sales held between June 23, 1977 and November 18, 1980.[5/] The review of bid rejections in these sales again illustrates that Department evaluations and bid rejections achieve no rational results. Between June, 1977 and November, 1980, seven sales were conducted in the Gulf of Mexico -- Gulf of Mexico OCS Sale Nos. 47, 45, 51, 58, 58A, A62

5/ The Department admits at page 5695 of its Request for Comments that market value changes with time due to changes in geologic knowledge, including development of productive trends, improvement in geophysical data and interpretive tools and techniques, and nearby drilling, and changes in other relevant variables such as anticipated prices for oil and gas. To minimize distortion caused by these changes, Marathon chose these seven Gulf of Mexico sales because these tracts were subject to (or to be subject to) the "new gas" pricing provisions of the Natural Gas Policy Act, many rejected tracts were quickly reoffered, and the sales were located in offshore Louisiana and Texas, the most mature OCS area.

and 62. Ninety-seven high bids were rejected during this time period. Fifty-nine of the tracts on which high bids were rejected were subsequently reoffered and leased.

The sum of the Mean Ranges of Value ("MROV") the Department had assigned to each tract when a high bid for it was rejected equals $661,419,512 (the sum of 64 MROV's since three tracts had high bids rejected twice and one tract three times). The sum of the MROV's the Department had assigned to each tract when a high bid for it was accepted equals only $181,027,610. It is obvious that the MROV's were too high at the time high bids for tracts were rejected and that the Department's input data was significantly altered when MROV's were estimated for the sales in which the tracts were leased.

The deficiencies inherent in tract evaluations are more vividly demonstrated when a comparison is made between individual MROV's at the time high bids for tracts were rejected and individual MROV's at the time the tracts were leased. This comparison shows the Department substantially lowered its MROV 52 times, while substantially raising the MROV only 4 times. This is tantamount to admitting that most MROV's at the time of rejection did not represent fair market value and had to be lowered after bids were rejected.

Marathon commends the Department's effort to adjust its evaluations more in line with the values arrived at on the free market. Marathon wonders, however, why this is necessary at all. Why not accept the value arrived at in the free market, competitive bidding system to begin with and avoid the cost, and more importantly the delays in exploration, caused by such a system.

D. Tract Evaluations and Bid Rejections Delay Exploration and Development of the Nation's OCS Resources

Of the 59 bid rejections Marathon analyzed, 36 were single bids and 19 were on tracts that received two bids. The Department's rejections of high bids for these tracts clearly delayed leasing and exploration of tracts where industry as a whole had no desire to explore. This is the one sure result of bid rejections and, of course, the most pernicious. If the high bid for a tract is rejected, that tract simply is not leased in that lease sale. It may never be leased if industry's interest is low and the one or two bidders who bid change their minds. In short, the tract is not explored as soon as it would have been, and maybe not at all.

The Department's Request for Comments indicates the Department feels, as a general rule, that tract evaluations and bid rejections should focus on those tracts which receive fewer than three bids. Marathon fails to see the logic in such a system, however. First, the number of bids a tract receives does not indicate how many experts have evaluated the tract. The fact that only one or two companies or bidding groups choose to bid means that the other experts estimate the relative value of the tract so low as to not warrant submission of a bid.

Second, Marathon feels that high bids for tracts on which only one or two bids are received are precisely the bids the Department should be eager to accept. If only one or two bidders want to explore the tract and the rest of industry is not interested enough to even submit a bid, certainly the Department should accept the high bid and let the one or two bidders who are interested explore the lease and develop the oil and gas resources found, if any.

Bid rejections also delay exploration and development by impeding exploration and development of nearby tracts. As pointed out at page eight of the attached September 18, 1981 letter, the structure involved in South Atlantic Sale 56 will logically be explored jointly by contiguous lease owners. In that sale the Department rejected the high bid for Tract 022. The lessees of the contiguous tracts are now faced with the choice of deferring drilling until Tract 022 is leased or conducting exploratory drilling which evaluates this tract, as well as their own, at no cost to the ultimate owner of Tract 022. If drilling is delayed, the end result will be slower and less efficient development of the nation's OCS oil and gas resources.

E. Marathon's Recommendation

As indicated above, Marathon believes that the Department should abandon completely its practice of evaluating and rejecting bids. Marathon does not believe that any system devised by the Department is more likely to assure receipt of fair market value for OCS leases than reliance on a free market, competitive bidding leasing system.

The Department has 25 years of experience with OCS leasing. The government's own studies indicate there has been no collusion or strategic underbidding during these 25 years. If the Department suspects collusion or systematic underbidding in future lease sales, it can monitor companies'

bidding behavior and compare that to past behavior. If behavior has changed in a manner indicating collusion or systematic underbidding, the Department could investigate and take necessary corrective action. History indicates there simply is no reason to assume collusion or systematic underbidding and continue a system which is wasteful and delays exploration and development of the nation's OCS oil and gas resources.

SPECIFIC COMMENTS

As indicated throughout these comments, Marathon strongly urges the Department to abandon completely its practice of evaluating tracts and rejecting high bids. Marathon has commented at length on this practice's serious deficiencies. Marathon does not feel that any amount of amendment or fine tuning of the system will improve it over the free market as a means for assuring receipt of fair market value. In addition, any system which results in rejections of high bids necessarily impedes expeditious exploration of the OCS. Marathon, therefore, cannot support any of the three options outlined in the Department's Request for Comments. Marathon's answers to the specific questions enunciated under each option, therefore, should not be interpreted as its support for any of the three options or any variations of them.

I. Option 1

1. As indicated throughout these comments, Marathon believes the government should rely on the free market, competitive bidding system to assure receipt of fair market value. Marathon does not believe that any method of evaluation and bid rejection can improve on the free market as an indicator of fair market value. Marathon, therefore, strongly urges the Department to accept in the future all high bids on tracts without evaluation.

2. Same as answer to question 1.

3. Same as answer to question 1.

4.a. Same as answer to question 1.

4.b. Same as answer to question 1.

4.c. Same as answer to question 1.

4.d. Same as answer to question 1.

12. Marathon does not understand how this results in a subsidy. The bidder whose high bid for hypothetical Tract A exceeds the Department's evaluation is not giving anything to the bidder whose high bid on a hypothetical Tract B is lower than the Department's evaluation. The fact that the high bidder on Tract A lost the bidding for Tract B indicates the high bidder for Tract A does not feel Tract B is worth even what the high bidder for Tract B is paying, much less the Department's evaluation of Tract B.

13. Same as answer to question 1.

14. Marathon believes the Department should abandon the use of evaluations and bid rejections completely and avoid altogether the problem of trying to define a structure or prospect. Each entity evaluating an OCS lease sale prepares its evaluation of prospects or structures involved. These evaluations depend on many variables and subjective judgments, including seismic data coverage and geometry, application of various computer processing and analytical techniques, and resulting interpretations utilizing sound geologic principles.

In some cases the basic interpretive element is structure. But because of the uncertain and subjective nature of geologic evaluations, no two definitions of the structure will be the same. If the Department's definition is different from the sum of industry's definitions (arrived at through competitive bidding), a completely irrational pattern of bid rejection and acceptance could arise, as evidenced by the results in South Atlantic Sale 56.[6/]

Marathon also does not believe prospect can be defined with sufficient certainty for use in a system of evaluation and bid rejections. There are many crucial interpretive elements that cause no two definitions of a prospect to be the same. These include, but are not limited to, the existence, location and extent of faults, geological perceptions of changes in potential reservoir rock, geophysical

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6 Marathon commented on the bid rejections in South Atlantic Sale 56 in its letter regarding "Rejections of Bids in Recent South Atlantic OCS Sale No. 56" (September 18, 1981), a copy of which is attached hereto.

4.e. Same as answer to question 1.

4.f. As indicated at pages 11 and 12 of these comments, Marathon believes that evaluations and bid rejections effect the most pernicious results when they prevent or delay leasing and exploration of those tracts in which industry as a whole has no interest. Marathon believes it is in the nation's best interest to accept high bids for these tracts and let that one bidder explore the lease that no one else, or perhaps only one other bidder, wants to explore. Marathon believes any evaluation and bid rejection system which focuses on tracts receiving fewer bids contradicts this interest. As a practical matter, it appears that the Department frequently just lowers its bid, reoffers the tract, and accepts a later bid in the reoffering sale, if anyone is still interested enough to bid. In many cases, therefore, nothing, other than delay, is accomplished.

4.g. Same as answer to question 1.

5. Same as answer to question 1.

6. The government's own studies of 25 years of OCS leasing indicate there has been adequate competition for OCS leases. In addition, the fact that only one or two bidders bid on a tract does not mean that many other experts have not evaluated it. The other experts, however, perceive the relative value of the tract as too low to warrant submission of a bid. There simply is no reason to assume, therefore, that a low number of bids represents inadequate competition.

7. If only one company or bidding group participates in a sale, that means the other potential bidders value the entire area so low as to not warrant submission of even the minimum bid. The government can accept that company's or bidding group's bid and get the area explored. Or the government can reject the bid and delay or prevent exploration of the entire area. Marathon believes the government should accept the bids, lease the tracts, and further expeditious exploration of the area.

8. Same as answer to question 1.

9. Same as answer to question 1.

10. Same as answer to question 1.

11. Same as answer to question 1.

interpretations of velocity surveys which indicate changes in reservoir rock or in the fluids contained therein, and geological interpretations of this data as it relates to reservoir characteristics such as depositional facies and/or onlap-offlap of potential reservoir beds.

In addition, even if the Department's definition of a structure or prospect essentially coincides with the one industry arrives at through competitive bidding, the Department's estimate of the structure's or prospect's value could be out of step with industry's. If that is the case, all bids might be rejected and the entire structure unleased and unexplored.

For example, in Mid-Atlantic Sale 59, the Department obviously placed a higher value on the northern portion of the sale than did industry. Even though industry's and the Department's definition of the "structure" or "prospect" involved may have coincided, most of the bids for the northern tracts were rejected. Unless one assumes that all of industry was wrong and the Department right, the resulting bid rejections simply do not make sense. Marathon fears such results could become common if the Department employs a "structure" or "prospect" evaluation approach.

II. Option II

A. General Comments

At pages 5,694 - 5,695 of the Request for Comments, the Department suggests that the tract evaluation and bid rejection system has been considered important as an additional deterrent to discourage underbidding "on drainage, proven, or development tracts on which one bidder has potentially superior information." Option II seeks to provide this assurance by subjecting structures containing drainage, proven, or development tracts to evaluations. Unfortunately, however, this assumes that other bidders' lack of information necessarily will cause them to bid lower than a bidder possessing superior information about a tract. This is not necessarily the case, however.

For example, West Delta Block 78 in the Gulf of Mexico offsets one of Marathon's prime producing properties, where Marathon possesses a wealth of data from wells drilled from four platforms and considerable seismic work. Marathon has interpreted this data and consistently determined that West Delta Block 78 has no value to Marathon. Other companies

nonetheless have been willing to bid on the tract, as evidenced by the following bidding history:

Date	Sale	Bid Amount	Sole Bidder	MMS Evaluation
7/31/79	58	$155,187	OXOCO	$3,249,625
9/30/80	A62	517,500	Paragon Pet.	6,388,495
.7/21/81	A66	608,000	Paragon Pet. & Pacific Res. Inc.	1,680,067

This shows two things. First, the Department has refused to accept bids for a tract which Marathon believes is worthless. Second, it shows why a company possessing superior information about a tract simply cannot assume others will bid lower than it and risk losing the tract by bidding lower than it believes the tract is worth.

In each lease sale, only one bidder expressed an interest in leasing and exploring a tract Marathon believes is worthless. Marathon, the Department, and the bidders cannot be certain of their estimates of West Delta Block 78's value. The only way to find out is to explore the block. Had the Department allowed the free market to operate, West Delta Block 78 may have been explored already. However, because of the Department's bid rejections, West Delta Block 78 remains unleased and unexplored in recent years.

In this same area, Marathon and its co-venturers have a long history of bidding for drainage tracts, as shown by the following table:

Date	Block #	Marathon Bid	Second-High Bid	Department Evaluation
3/66	57/79/80 (por.)	$19.101	$17.758	Unpublished
11/68	79/80 (por.)	94.190	71.706	Unpublished
7/70	80 (por.)	15.377	6.062	Unpublished
11/71	80 (por.)	2.200	--	Unpublished
10/74	86 (N/2)	20.666	6.400	4.965
11/79	86 (S/2)	39.656	22.215	29.309
10/81	85 (por.)	30.917	--	33.053

It is apparent the government has received fair market value from Marathon's and its co-venturers' bids. Nonetheless, under the Department's system of tract evaluations and bid rejections, the high bid for the Federal portion of Block 85 would have been rejected if the Marathon bid had been 2.29% lower or if the Department's Discounted Range of Values

("DROV") had been 2.35% higher.[7/] Considering the inexact nature of geological evaluations, such fine tuning simply serves no useful purpose. Marathon readily admits that, in spite of its knowledge of the area, its evaluation is not even close to a 2.29% accuracy.

B. Specific Questions

1.a. Same as answer to question 1 under Option 1.

1.b. Same as answer to question 1 under Option 1.

1.c. Same as answer to question 1 under Option 1.

1.d. Again, Marathon urges the Department to deter and monitor collusion and systematic underbidding by comparing current bidding behavior to the bidding behavior of the last 25 years. If a company's bidding behavior changes in a suspicious manner, the Department can investigate to determine the cause of the change and take appropriate measures.

2. Same as answer to question 1 under Option 1.

3. Same as answer to question 1 under Option 1.

4. Same as answer to question 1 under Option 1.

5. Same as answer to question 1 under Option 1.

6. If only one company or bidding group bids in a sale or on a structure or prospect, that means that company or bidding group is the only one willing to invest its money in that sale, structure, or prospect. The Department should accept those bids and allow exploration by the one company or bidding group willing to explore the lands offered.

III. Option 3

1. Same as answer to question 1 under Option 1.

2. Same as answer to question 1 under Option 1.

7/ The Department's MROV was $33.053 million, its DROV was $30.210 million, and the AEOT was $31.985 million.

3. Same as answer to question 1 under Option 1.

4. Here the Department admits that bid rejections are harmful and deter expeditious exploration and development of the nation's OCS oil and gas resources. Again, however, the Department suggests fine tuning a system which Marathon believes is inherently deficient. Marathon does not believe any amount of fine tuning will make what it believes is a bad system good. Marathon, therefore, urges the Department to abandon completely the practice of evaluations and bid rejections.

IV. General Questions

1. Same as answer to question 1 under Option 1.

2. Same as answer to question 1 under Option 1.

3. Marathon does not believe any analysis is credible enough to warrant overriding a decision arrived at through a free market, competitive bidding process.

4.a. Marathon will continue to formulate its bidding strategy in a manner designed to win the bidding and acquire properties at a value which provides the possibility of a reasonable return on investment.

4.b. Same as answer to question 4.a.

4.c. If the government uses its monopoly power to extract more than fair market value from the OCS lands it leases, return on investment will be too low to provide an adequate incentive for OCS exploration and development. Eventually, some companies will be forced to invest in other endeavors where returns on investment are better and competition for OCS leases will be reduced.

4.d. Of course, when the Department rejects the high bid for a tract, exploration, development, and production are delayed. Also, same as answer to question 4.c.

4.e. Same as answer to question 4.d.

4.f. As exploration, development, and production of the nation's OCS resources are delayed, the government's receipt of revenues from production also will be delayed.

4.g. Each option still requires Department evaluations which duplicate industry efforts in the free market, competitive bidding system, thus wasting government resources.

4.h. The government's own studies have found no evidence of collusive bidding or strategic underbidding in 25 years of OCS leasing history. The Department can compare current bidding behavior to past behavior to detect and investigate suspicious bidding patterns. There simply is no reason to assume the worst and employ a system of tract evaluations and bid rejections which provides no logical results and deters exploration and development of the nation's OCS resources.

5. Bidders must take into account contingency payments each time they evaluate OCS lands and formulate bids for those lands. If the Department relys on the free market, competitive bidding system to determine the value of OCS lands, contingency payments will be taken into account automatically.

6. Minimum bids should be kept low so this threshold amount does not prevent exploration of OCS lands with marginal potential for oil and gas.

CONCLUSION

Again, Marathon feels the overwhelming number of bid rejections in Mid-Atlantic Sale 59 and Gulf of Mexico Sale 67 is evidence of a system which has gotten out of hand. Marathon welcomes the Department's inquiry into evaluation and bid rejection procedures and the opportunity to submit comments. Marathon cannot, however, support any of the three options suggested in the Department's Request for Comments.

Marathon believes that tract evaluations and bid rejections are not required by law, that they are unnecessary, wasteful, and unfair, that they achieve no rational results, and that they delay exploration and development of the nation's OCS oil and gas resources. Marathon does not believe that any amount of fine tuning or amendment can eliminate the serious deficiencies inherent in any system of evaluations and bid rejections.

The fundamental problem with rejecting bids because of evaluations by the Department is that this simply ignores the fair market value arrived at through the competitive bidding process. The only true assessment of fair market value of a particular OCS tract is the value given it by expert oil and gas explorationists forced to place a value on it in a free

market, competitive bidding situation after evaluation of the tract. In such an environment, there is simply no reason whatsoever for evaluations or rejections of bids.

Marathon believes there is no better way to assure receipt of fair market value for OCS lands than through a free market, competitive bidding leasing system without Department evaluations and bid rejections. Also, eliminating Department evaluations and bid rejections will further the goal of expeditious exploration and development of the nation's OCS oil and gas resources by eliminating the delays caused by bid rejections. Marathon, therefore, strongly urges the Department to abandon completely its practice of evaluating OCS lands and rejecting legitimate high bids. Instead, Marathon urges the Department to accept all legitimate high bids in future OCS lease sales.

Very truly yours,

R R Burke

R. R. Burke

X. Overview of the State Leasing Process

The planning and execution of an oil and gas lease sale is a lengthy process, beginning before the sale area is included in the State's proposed five-year leasing program. It involves a number of state agencies, with the Department of Natural Resources as the lead agency. It also involves the public and local communities. The process described here is an idealized version and one the Department hopes to follow for future sales. Given the time constraints in this process, those sales scheduled for late 1983 will be the first ones to have fully undergone these steps.

Aside from certain legal noticing requirements, there are important reasons why a process as lengthy as this one is necessary. The early announcement of a potential sale encourages the early mobilization of public and private resources for the purpose of gathering information (geologic/geophysical, environmental, socioeconomic) relevant to the proposed sale area.

Certain aspects of the process require added emphasis. Approximately 30 months before a proposed sale date, the Department of Natural Resources begins to acquire regional geophysical/geological data. This information is used in conjunction with industry nominations and public comments to define a specific sale area. This reduces the proposed sale area to a smaller, more compact size and permits public and private agencies to more accurately focus their sale-related evaluations. In the past, industry nominations have largely determined the tract selections for a given sale.

As the information gathering process continues, the Department gathers additional geophysical/geological data, including information about geohazards. This information permits the Department to roughly assess the hydrocarbon potential of the sale area. These rough approximations provide other state and local agencies with information important to their assessments of potential sale related socioeconomic and environmental impacts.

The Department's evaluation process gradually moves from region to basin to a tract specific analysis. These refinements permit the assessment of potential trade offs associated with tract deletions that may be suggested for reasons of environmental concern. Without tract specific information, the Department may unknowingly delete high potential tracts.

AS 38.05.180 requires that the Department conduct a thorough presale analysis prior to each proposed sale. This analysis is used to select a bidding system and lease terms tailored to a specific area and designed to yield the State a maximum return on its hydrocarbon resources. For the analysis to be valid, an intensive interpretation of geophysical/geological, engineering and economic data is necessary.

With this overview in mind, the steps in the process are set out below. (For "exempt" sales--those excepted from the five-year program requirement by AS 38.05.180(d) or (w)--most of these same steps are followed, but they are compressed into a much shorter period of time.)

1. Approximately 26 to 61 months before a sale is proposed to take place: Department of Natural Resources chooses new areas to add to the leasing program or revises the schedule, based on its assessment of oil and gas potential, industry interest, and informal state

agency review. DNR then invites the public to comment on the proposed additions and revisions. The State's Agency Advisory Committee on Leasing (AACL) and officials of potentially affected communities located near proposed sale areas also review the proposed additions and revisions.

2. 24 to 59 months before the proposed sale date: The Five-Year Leasing Program is presented to the Alaska Legislature.

3. 22 to 32 months before the proposed sale date: DNR issues a formal Call for Nominations or Comments to the oil industry, State and federal agencies, and the public for a general sale area shown in the Five-Year Leasing Program. At the same time, DNR begins a search for available seismic data and starts compiling surface and subsurface geologic data on the nomination area.

4. 23 months: DNR analyzes the nominations or comments submitted by the oil industry, interest groups, other agencies, and the public. On the basis of this information, the nomination/comment area is scaled down to the "proposed sale area."

5. 21 months: The availability of the new proposed sale area maps is advertised. The map is sent to potentially affected communities to use in planning for the proposed sale. Other State agencies, including members of the AACL, are also invited to review the proposed sale area boundaries. After making its final selection of geophysical data, DNR begins contracting to puchase and process the data over the next seven months. Meanwhile, DNR starts interpreting the geologic data that has been gathered on the proposed sale area and schedules field work to fill in any identified gaps.

6. 15 months: State members of the AACL begin researching and summarizing the data they will contribute to the Social, Economic and Environmental Analysis (SEEA) that is prepared for major sales pursuant to Administrative Order No. 52. A member of a potentially affected community is appointed as ex-officio member of the AACL.

7. 12 months: The Department completes its preliminary geologic analysis of the proposed sale area and provides the economic and engineering units with estimates of ranged reservoir parameters.

8. 10 to 11 months: The draft SEEA is made available to the public and comments are solicited.

9. 9 to 10 months: Public meetings are held on the draft SEEA and additional comments are received.

10. 8 to 9 months: Public review period for draft SEEA ends.

11. 8 months: DNR initiates land status research to determine leasable acreage. Once engineering data are gathered, an economic analysis of a proposed lease sale is begun.

12. 6 months: Geologic analysis, including the identification of potential geohazards, is completed. DNR begins a preliminary assessment of bidding methods to be used in the proposed sale.

13. 5 to 6 months: The draft SEEA is revised as a result of public and agency review. Meanwhile, based on a combination of the information contained in the SEEA, agency comments made directly to DNR, and geological and geophysical information, the proposed sale area boundaries undergo their final revision. A preliminary tract map of the revised sale area is prepared.

14. 3 to 4 months: Final version of the SEEA is printed and distributed.

15. 4 months: A preliminary finding that sets out the issues and facts regarding the proposed sale is made by DNR and is distributed to the public for comment. At the same time, advertisements are published in the proposed sale area stating that the preliminary finding on the proposed sale is available and public response is invited.

16. 3 months: Comments are received from the general public and from communities within the proposed sale area. Final decisions on the sale, tracts to be included, and the mitigating measures that will be enforced on the leases are made on the basis of these comments and those of other State agencies. A final tract map is prepared. A coastal management consistency determination is prepared and the final decision pursuant to AS 38.05.035(a)(14) is written.

17. 2 months: Based on geophysical information, DNR prepares a final prospect map (confidential) of the proposed sale area, completes the required pre-sale economic analysis and selects a bidding method to be used for the specific sale.

18. 2 months: Public notice of the final sale terms is initiated, with a copy of the notice sent to affected communities and to all parties on the DNR oil and gas mailing list.

19. 1 month: A final land status check and identification of third-party interests are carried out.

20. Day zero: The lease sale is held on its scheduled date.

21. Within a week after the lease sale, the apparent high bids are analyzed, and the Commissioner of DNR decides whether to accept the high bids. The winning bidders are notified.

GASLINE BRIEFING

2-20-81

Introduction

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The Project

The Alaska Natural Gas Transportation System will be an overland pipeline of varying diameters designed to carry about 2.4 billion cubic feet of natural gas daily from Prudhoe Bay, Alaska, to homes and industries in the lower 48 states. At a cost of over $20 billion it will be the largest privately-financed construction project ever undertaken anywhere. It will supply about five percent of our Nation's gas needs for the 25-year life of the project, based on current use rates.

The entire project stretches 4,800 miles from Prudhoe Bay, on the northern coast of Alaska, along the route of the Trans Alaska Oil Pipeline to Delta Junction, south of Fairbanks. There the gas line turns southeast and continues south into Canada, generally following the Alaskan-Canadian highway. Just north of Calgary it splits into two legs—the West Leg going to Antioch, California and the East Leg almost to Chicago. Construction is scheduled to start in 1981 on the two lower Legs. The last portion to be built, the Alaskan segment, is now scheduled for completion in 1985.

OFFICE OF THE FEDERAL INSPECTOR
ALASKA NATURAL GAS TRANSPORTATION SYSTEM
ROOM 2413, POST OFFICE BUILDING
1200 PENNSYLVANIA AVENUE
WASHINGTON, D.C. 20044

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A map of the ALASKA NATURAL GAS TRANSPORTATION SYSTEM

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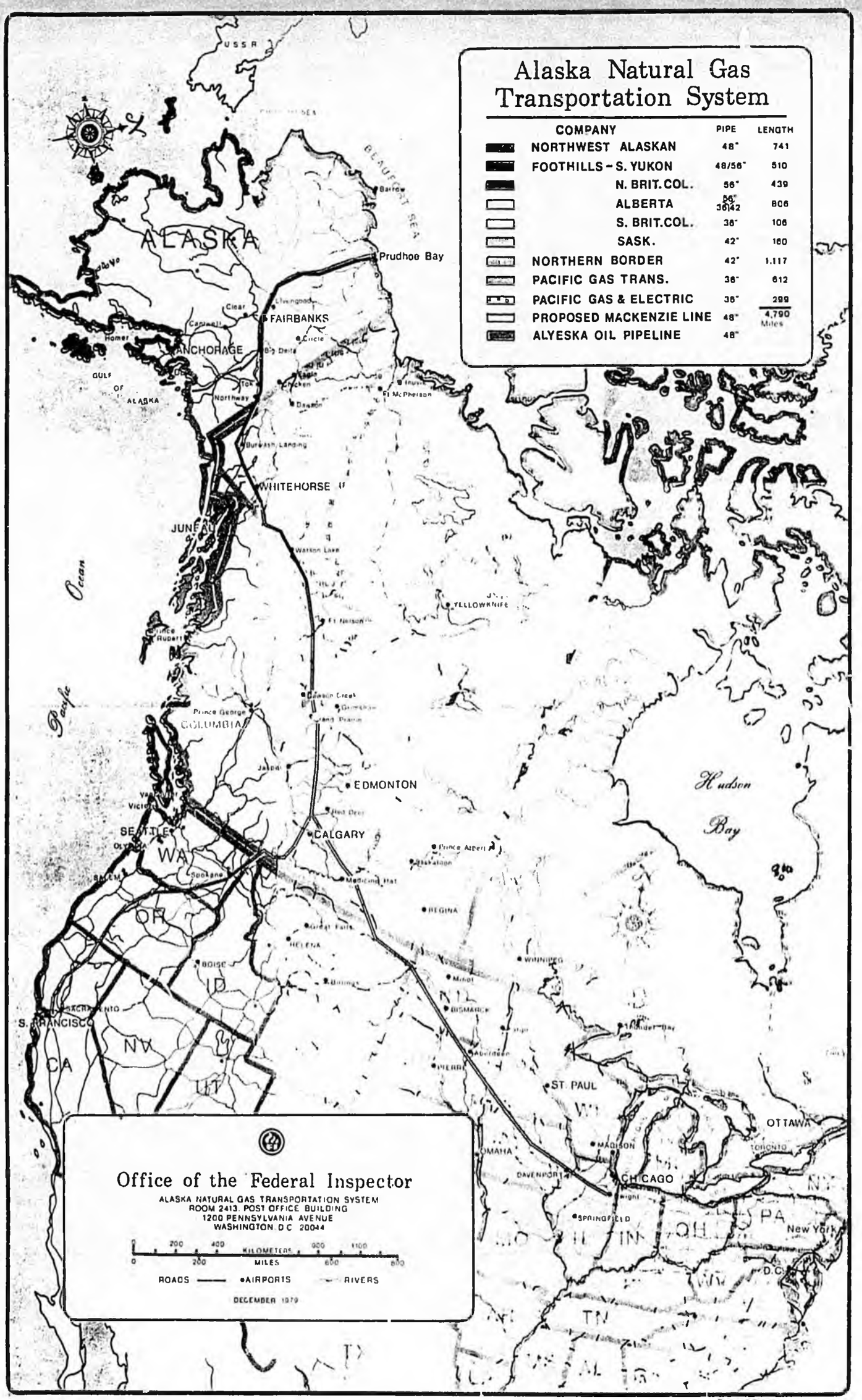
Alaska Natural Gas Transportation System
COMPANY | PIPE | LENGTH
NORTHWEST ALASKAN | 48" | 741
FOOTHILLS – S. YUKON | 48/56" | 510
N. BRIT. COL. | 56" | 439
ALBERTA | 36/42" | 806
S. BRIT. COL. | 36" | 106
SASK. | 42" | 160
NORTHERN BORDER | 42" | 1,117
PACIFIC GAS TRANS. | 36" | 612
PACIFIC GAS & ELECTRIC | 36" | 299
PROPOSED MACKENZIE LINE | 48" | 4,790 Miles
ALYESKA OIL PIPELINE | 48"
USSR
BEAUFORT SEA
ALASKA
Barrow
Prudhoe Bay
Livengood
FAIRBANKS
Clear
Cantwell
Circle
Homer
ANCHORAGE
Big Delta
Eagle
Tok
Northway
Dawson
Fort McPherson
GULF OF ALASKA
Burwash Landing
WHITEHORSE
JUNEAU
Watson Lake
Pacific Ocean
YELLOWKNIFE
Fort Nelson
Prince Rupert
Dawson Creek
Prince George
COLUMBIA
Grande Prairie
Jasper
EDMONTON
Hudson Bay
SEATTLE
CALGARY
WA
Prince Albert
Saskatoon
Medicine Hat
REGINA
OR
Great Falls
HELENA
BOISE
WINNIPEG
Minot
ID
Billings
BISMARCK
SACRAMENTO
S. FRANCISCO
NV
CA
UT
ST. PAUL
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0 200 400 KILOMETERS 800 1100
0 200 MILES 600 800
ROADS —— AIRPORTS •••• RIVERS
DECEMBER 1979

Photos Steucke

Cover: Sunset at the Arctic Circle. Above: Rugged snow covered mountains in August

Legislative History

The U.S. Congress enacted the Alaska Natural Gas Transportation Act on October 22, 1976, setting out a series of innovative procedures to expedite the selection, approval and construction of a natural gas pipeline system to bring Alaskan gas to lower 48 markets. After receiving a recommendation from the U.S. Federal Power Commission (now the Federal Energy Regulatory Commission), the President in September 1977 selected a route and applicant. Congress in November of that year approved the President's selection.

Office of the Federal Inspector

The Office of the Federal Inspector is a small but unique, independent entity created by Congress and the President specifically to expedite and oversee construction of the Alaska Natural Gas Transportation System. Congress in its 1976 legislation clearing the way for the project included the requirement that a single individual, to be called the Federal Inspector, be appointed to be responsible for assuring that the project is built as timely as possible, without excessive cost overruns, and with minimal harm to the environment. It included that requirement because the undertaking is itself unique in size and in importance to the Nation's energy future, and in light of the delays and large cost overruns that have in the past plagued large construction projects, such as the Trans-Alaskan Oil Pipeline.

The exact duties of the Federal Inspector were not defined until Reorganization Plan No. 1 was signed by the President on June 11, 1979. The concepts of that Plan were set out in Executive Order No. 12142, signed by the President on June 21. These three Presidential documents combined to implement the intent of Congress embodied in the ANGTA of establishing the Office of the Federal Inspector, which officially came into being July 1, 1979.

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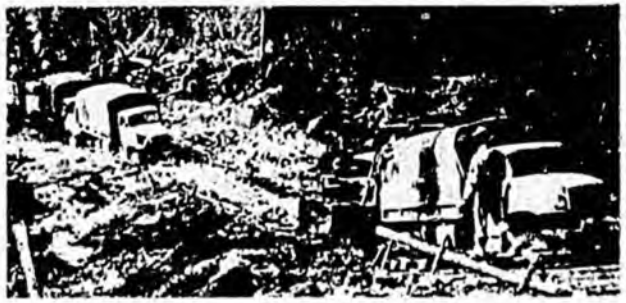
The Alyeska oil pipeline transports oil from Prudhoe Bay, Alaska, to Valdez. Below: The Alaska-Canadian highway under construction by the U.S. Army in 1942.



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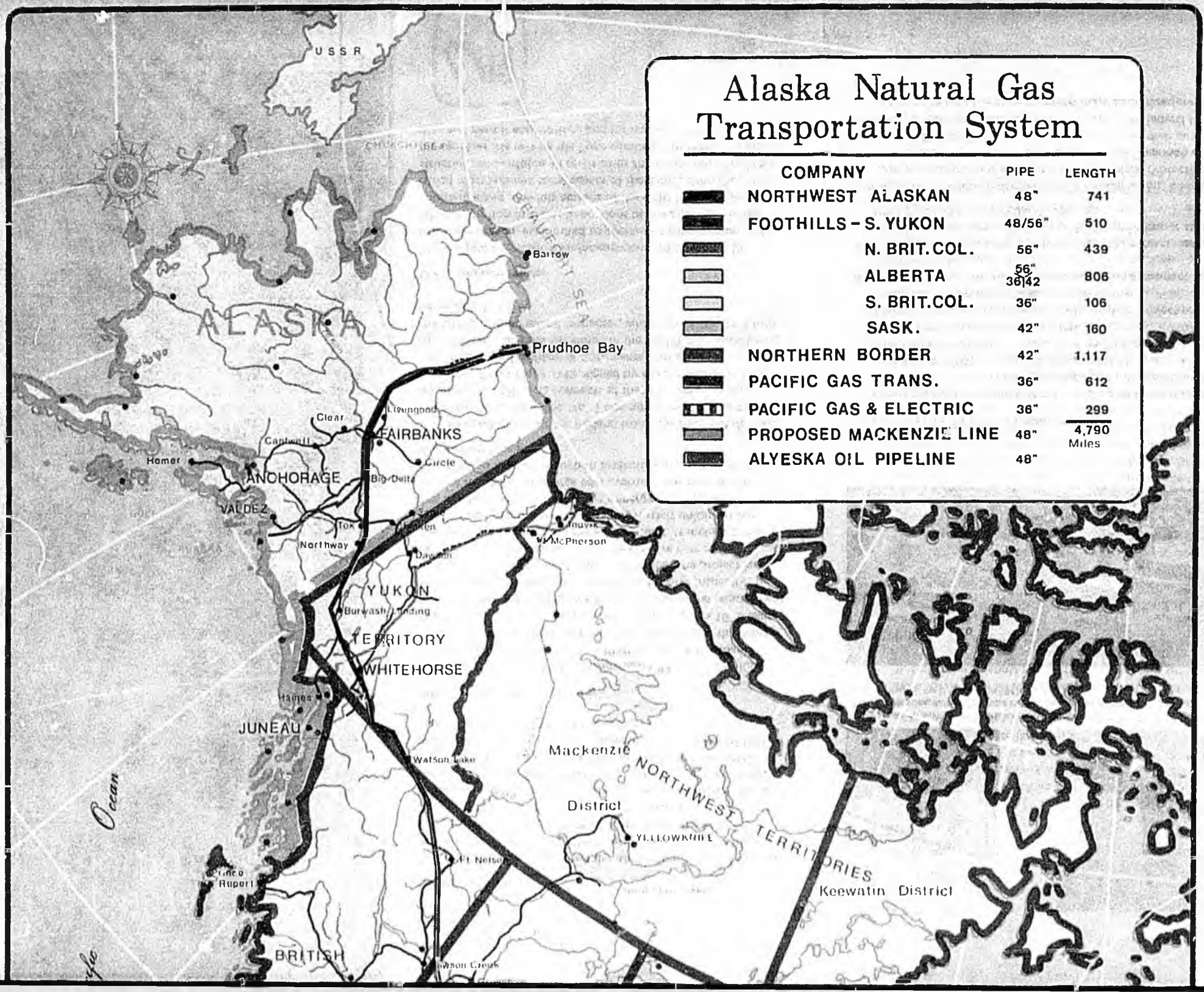
Although the Federal Departments of Transportation, Energy, Interior, Agriculture, Treasury, the Environmental Protection Agency, U.S. Army Corps of Engineers, and the Chairman of the Federal Energy Regulatory Commission retain their authority to issue necessary permits and certificates, the Federal Inspector must assure that the agencies make these authorizations in timely fashion.



Alaska Natural Gas Transportation System

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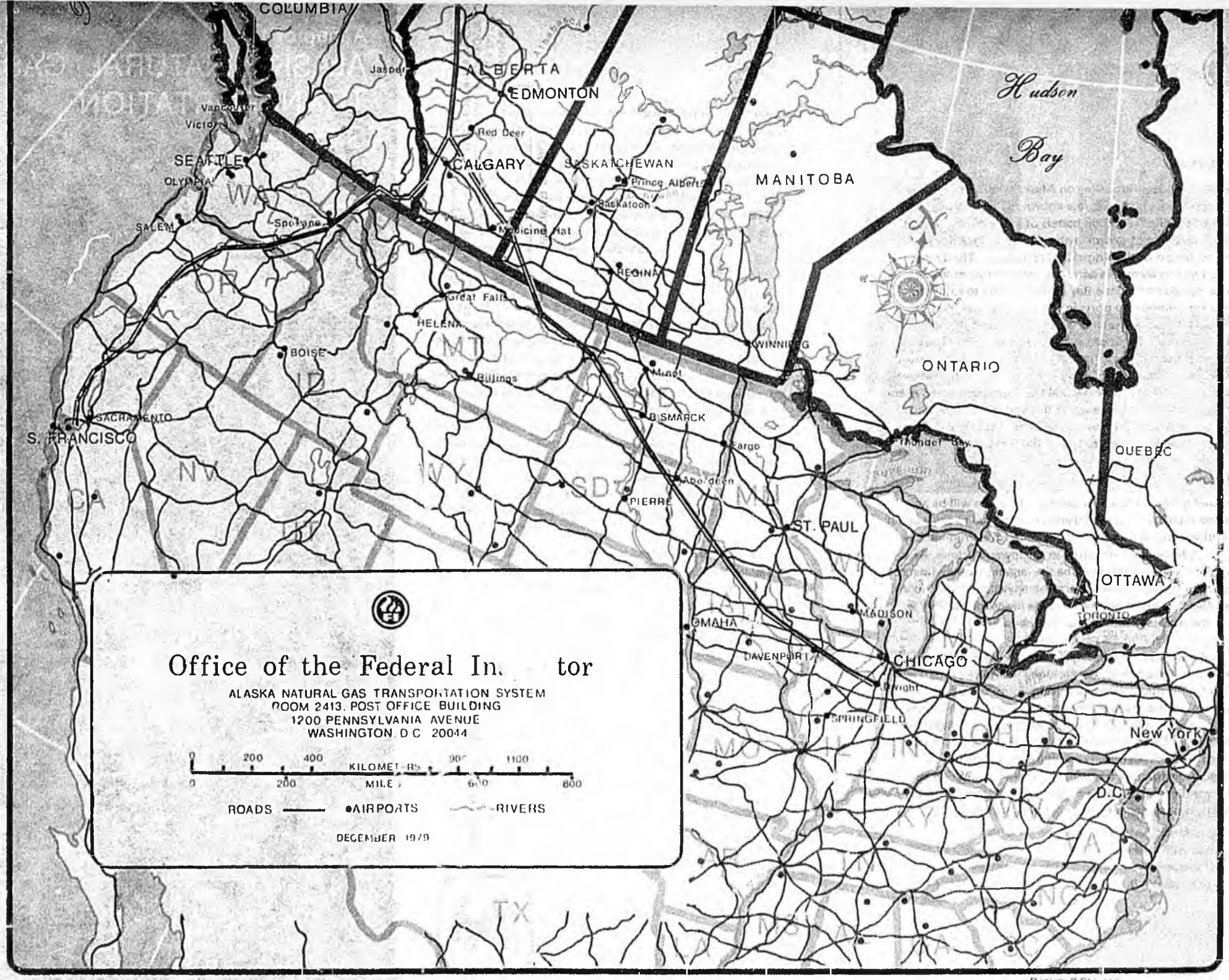
COLUMBIA
Jasper
ALBERTA
EDMONTON
Hudson
Bay
Vancouver
Victoria
Red Deer
SEATTLE
CALGARY
SASKATCHEWAN
MANITOBA
OLYMPIA
Prince Albert
Saskatoon
SALEM
Spokane
Medicine Hat
REGINA
Great Falls
HELENA
WINNIPEG
ONTARIO
BOISE
Billings
Minot
SACRAMENTO
S. FRANCISCO
BISMARCK
Fargo
Thunder Bay
QUEBEC
Aberdeen
PIERRE
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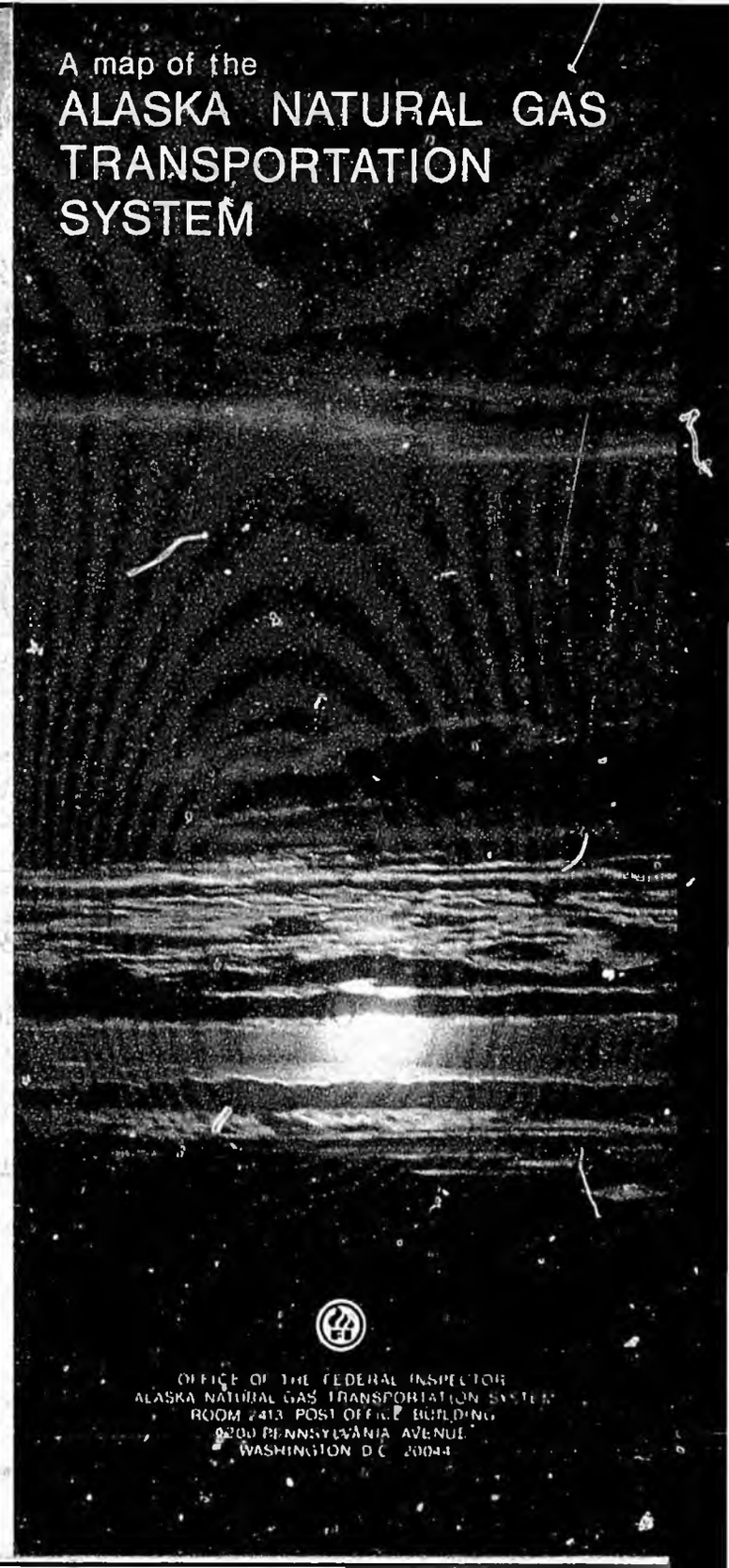

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Photos: Steucke

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Although the Federal Departments of Transportation, Energy, Interior, Agriculture, Treasury, the Environmental Protection Agency, U.S. Army Corps of Engineers, and the Chairman of the Federal Energy Regulatory Commission retain their authority to issue necessary permits and certificates, the Federal Inspector must assure that the agencies make these authorizations in timely fashion.

Alaska State Legislature

BETTYE FAHRENKAMP, CHAIRMAN
VIC FISCHER, VICE-CHAIRMAN
BRAD BRADLEY
DICK ELIASON
DON GILMAN
BOB MULCAHY
ARLISS STURGULEWSKI

POUCH V
STATE CAPITOL
JUNEAU, ALASKA 99811
(907) 465-3834
(907) 465-3835

Senate

Committee on Resources

February 20, 1981
1:30 p.m.

Beltz Room
211 - Capitol

MEMBERS PRESENT

SENATOR FAHREMKAMP
SENATOR FISCHER
SENATOR BRADLEY
SENATOR STURGULEWSKI
SENATOR MULCAHY
SENATOR ELIASON
SENATOR GILMAN

The Committee was briefed by Mo Mathews and Austin Ward, Office of the Federal Inspector, Alaska Natural Gas Transportation System and Gary Anderson, President, Alaska Commercial Fishing and Agriculture Bank, Frank Homan, Chairman, Alaska Commercial Fishing and Agriculture Bank and Joe Carter, President, Spokane Bank of Cooperatives.

Mo Mathews stated that the responsibilities of the Office of Federal Inspector are:

1. Coordinate the scheduling and issuance of all Federal permits and related activities to assure timely and unified decisions;
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4. Establish a joint surveillance and monitoring agreement with the State of Alaska; and
5. Enforce all Federal Statutes which affect the project, assuring that the builders are complying with all conditions or stipulations attached to any Federal approval.

In response to the question, is the outlined schedule for the completion of the pipeline reasonable? Mr. Mathews stated that the real key to the schedule is the financing plan which he has no responsiblity for.

In response to the question, are the impacts on communities in Alaska being taken into consideration? Mr. Mathews stated that there is an

agreement with the State that they will conduct the community impact studies. The impact will be mostly on communties that are close to the gas pipeline.

In response to the question, what is the outlook for the financing problems? Mr. Mathews stated that Northwest was the only proposal that stated they could construct the line without Federal aid. There may be some need for removal of antitrust provisions to allow North Slope producers to become financially involved. Federal aid is a long way off and even then only as a last resort.

Frank Homan, stated that the 1978 legislature created the Alaska Commercial Fishing and Agriculture Bank (CFAB). The State provided seed money to the bank and it is to be repaid to the State in 20 years. Customers and borrowers become members of the bank, with dividends payable to them in proportion to the amount interest they pay annually. CFAB is an alternative to direct state financing of fisheries and agriculture. CFAB can draw upon other sources of money, and can leverage its money with the Federal Farm Credit System.

The purposes of CFAB are:

1. Provide sources of credit for Alaskan agriculture and fishing industries;
2. Encourage utilization of the fisheries off the coast of Alaska that have been underutilized in the past by local fishermen;
3. Encourage harvesting, processing and marketing of underutilized fish species;
4. Encourage technological development in the harvesting and processing of underutilized fish species; and,
5. Promote the more rapid development of agriculture.

He stated that CFAB is not involved in venture capitol. CFAB loans money to farmers and fishermen that have demonstrated an ability to repay the loan.

Joe Carter stated that the Bank of Cooperatives was founded in 1933. The initial funding was from the Federal government, the loan was repaid and now is owned by the users of the Bank. He indicated that a problem arose after the capital loan was paid off - the members thought since the capital loan was paid off they could do what ever they wanted with the funds of the Bank. He stated that he felt that government overview was important inorder to insure the original intent is being carried out.

PROJECT HIGHLIGHTS - ALASKA

1977: President Carter selects Alaska-Canada highway route and Northwest Alaskan Pipeline Company to build Alaska portion of natural gas line.

Northwest Alaskan Pipeline Company starts design work. Contracts international design firm of Fluor, Inc., in Irvine, California to design and build the Alaska portion of line.

Survey, design, analysis work underway in preparation for filing a request for a final Certificate of Public Convenience and Necessity from the U. S. Federal Energy Regulatory Commission (FERC).

1978: Frost heave test facility built near Fairbanks, Alaska, by Northwest Alaskan Pipeline Company, August.

Northwest Alaskan Pipeline Company purchases research and environmental data from the Alyeska Pipeline Service Company (oil line) to save duplication of study effort.

1979: July 1, Office of the Federal Inspector established.

Continuation of pipeline design work by Fluor, Inc., and Northwest Alaskan Pipeline Company.

1980: Continuation of design and planning work.

Thousands of soil samples taken along right-of-way by drilling operations to determine geology for design effort. Additional field studies done on water, wildlife, and the environment.

Sohio, Exxon, and ARCO join Northwest Alaskan Pipeline Company to provide additional funding and review of design work.

Four small work camps established by Northwest Alaskan Pipeline Company north of the Yukon River.

Northwest Alaskan Pipeline Company files for a Certificate of Public Convenience and Necessity, FERC, July 1.

R. M. Parsons, worldwide engineering firm, selected by Northwest Alaskan Pipeline Company to design gas conditioning plant.

Construction on the gas line in southern Canada and northern Idaho started.

Crossing of 430 miles of Federal Lands in Alaska authorized by the Secretary of the Interior, December 1.

1981: Continuation of design, engineering, and field studies.

Installation of five to seven cold pipe test sites in varying soils along gas line right-of-way started.

Alaska Natural Gas Transportation System

PROJECT SCHEDULE - ALASKA

1981: Continue design, engineering, study work

Obtain financing for Alaska portion of project

1982: Complete design work

Install work camps

Start construction of gas conditioning plant at Prudhoe Bay

Obtain U. S. Federal Energy Regulatory Commission (FERC) approval of Certificate of Public Convenience and Necessity

1983: Spring: Start double joining of pipe
Install pipe at major river crossings

Fall: Start laying pipe in six simultaneous operations

1984: Continue laying pipe

Start construction of compressor stations (7)

1985: Complete laying of pipe (fall)

Complete construction of compressor stations

Complete gas conditioning plant at Prudhoe Bay

Test all equipment and line

1986: Gas flow turned on

Restoration of environment, remove camps, clean up

GEOCHEMICAL BRIEFING 1-30-81

Alaska State Legislature

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VIC FISCHER, VICE-CHAIRMAN
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Senate

Committee on Resources

January 30, 1981
11:00 a.m.

Beltz Room
211 Capitol

MEMBERS PRESENT	MEMBERS ABSENT
SENATOR FAHRENKAMP	SENATOR FISCHER
SENATOR MULCAHY	SENATOR BRADLEY
SENATOR ELIASON	
SENATOR GILMAN	
SENATOR STURGULEWSKI	

The Committee was briefed on the need to complete the analysis of geochemical samples by Dr. Gene Rutledge, Energy Scientist and. Dr. Thomas A. Weaver, Group Leader, Los Alamos Scientific Laboratory.

Dr. Gene Rutledge indicated that the Department of Energy plans to phase out the Hydrogeochemical and Stream Sediment Reconnaisance program. 18,000 water and sediment samples at about 9,000 separate locations have been taken in Alaska on some lands where it is now impossible to obtain such samples because of the recent land withdrawals. The samples were scheduled to be analyzed for 44 different elements. There is enough money to analyze a few more samples. It is only one-half of the amount needed. He urged the Committee to support an appropriation of $800,000 as matching funds to finish analyzing the samples.

Dr. Thomas A. Weaver showed the Committee slides of the Laboratory facilities and the types of work they produce. He indicated that the geochemical data from Alaska they are working on can compliment the work being conducted by the Department of Natural Resources Division of Geological and Geophysical Surveys. If the samples are shipped to archives, they will most probably be lost forever for scientific purposes.

The motion was made by Senator Mulcahy to have the Committee sponsor a bill appropriating the funds. With no objections the motion passed.

ALASKAN BUSINESS BRIEFS

SELDOVIA

'he city of Seldovia is considering its sales tax from 1 to 3 ts on the dollar and raising utility charges in an effort to ance the budget and chip away at a $60,000-$70,000 icit from 1978 and '79. A special city election on the sales will be held May 27 if it wins city council endorsement. e monies would be earmarked for the city's general fund. der the plan water and sewer charges would go from .67 to $18.47 a month; utility hookups--now $5--would up to $4..5 for water and $165 for sewer. For fish cessors, the standard utility charge of $200 a month uld increase to $1,300 or the company could choose to be tered.

CHUGIAK - EAGLE RIVER

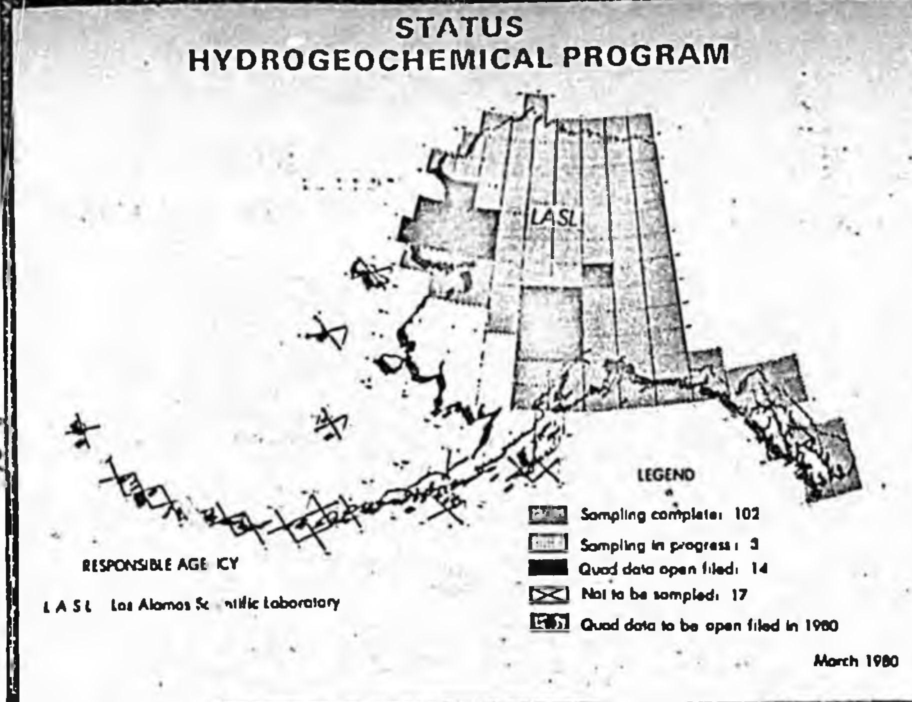
Chugiak-Eagle river has experienced "phenomenal wth" in the past decade, says Jackie Russel, director of Anchorage office of the Bureau of Census. Despite wth projections built into planning for census counters, enumerators have found more residents than expected. some areas where we had expected 500, we are finding times that many," she said.

JAPAN

Mitsubishi Petrochemical Co. and ARCO Chemical Co. ve signed an agreement to launch an equally owned joint nture in this country for production of chemicals from de oil recovery. ARCO will supply production know-how. oduction is expected to start in the spring of 1982. Test oduction is planned by Mitsubishi, the largest petrochem- l company in Japan, on specially imported raw terials. ARCO chemical produces more than 300 emical products used for petroleum recovery.

WRANGELL

The owners of Stikine Air Service have applied to the aska Transportation Commission for authority to ovide scheduled commuter air service between Wrangell, tchikan, Petersburg, Sitka and Juneau. Camps Inc., ich owns Stikine, says the new commuter service would operated under 'LeConte Airlines,' providing commuter vice only. Stikine would continue to operate its air arter business. Both airlines [illegible] out of kine's hanger and office at Wrangell. [illegible] arring otests to the proposed action, Camps Inc. spo[illegible] n said e service could start late this month or early June [illegible] ur twin-engine, 9-passenger Piper Chieftains are planned for service.



DOE cancels HSSR, minerals info stopped

By GENE RUTLEDGE
AJC Staff Writer

Another Alaskan resource information tragedy is about to unfold.

The Department of Energy (DOE) plans to phase out the Hydrogeochemical and Stream Sediment Reconnaissance (HSSR) program.

Dr. Robert Sharp of Los Alamos Scientific Laboratory (LASL) supervised the collection of about 18,000 water and sediment samples at about 9,000 separate locations in Alaska on lands where it is now impossible to take such samples because of recent land withdrawals by top federal officials.

The samples were scheduled to be analyzed for 44 different elements including uranium, copper, silver, gold, chromium, cobalt, manganese and titanium.

Now LASL, because of inadequate funding, may be forced to analyze only about 3,000 of the samples.

The above is only the tip of the iceberg--LASL has in hand about 130,000 samples from about 70,000 locations all over Alaska, but only 18,000 samples are to be analyzed. To cover all of the state, another 16,000 locations need to be sampled as originally planned.

Alaska isn't the only state that has been benefitting from DOE's Hydrogeochemical and Stream Sediment Reconnaissance program, which is the collection and analysis of small samples of surface waters, ground waters and stream sediments from the entire U.S.

This national effort involves a total of more than 1 million samples, each of which will be analyzed for their concentration of uranium and other elements. However, only 30 per cent of the nation's million samples now are scheduled to be analyzed.

By the end of 1981, DOE will have spent about $50 million on the HSSR national program. To continue it would take three years and $5 million per year. But compared with an annual DOE budget of more than $11 billion, the $5 million is indeed very modest.

A significant recommendation of the recent Alaska Regional Energy Resource Planning Project report, which was funded by DOE and administered by the state, states:

"A major increase in energy resource exploration (surface and subsurface) should be initiated immediately. Without adequate knowledge of the magnitude, quality and location of Alaska's energy resources, these issues (i.e. land) and other critical energy-related development questions cannot be properly addressed by governmental and private decision makers."

One defense procurement authority recently said "since we import 90 per cent of six or seven strategic materials vital to modern propulsion systems, we are concerned about availability."

Program Background

In 1973, the Resource Division of the U.S. Atomic Energy Commission (now DOE) initiated a 10-year program to assess ore accurately the nation's uranium resources and make available to industry information for use in the development of uranium resources.

This program, entitled the National Uranium Resource Evaluation (NURE), has three primary parts:

- an airborne geophysical survey of the entire country;
- research studies of geologic environments and natural mechanisms that favor uranium concentrations; and,
- a nationwide hydrogeochemical survey of surface and ground waters and water-deposited sediments.

In 1975, LASL, the Oak Ridge Gaseous Diffusion Plant, and the Savannah River Lab were asked to conduct the hydrogeochemical portion of NURE in their respective parts of the U.S.

DOE uses information from HSSR in conjunction with airborne geophysical data and geological data to identify and

Continued on Page 8

Whole Page

• half of samples will not be analyzed

Continued from Page 1

deilneate areas that hold the most promise for containing uranium mineralization.

These areas are usually then reexamined, generally more samples and more geological and geophysical data are collected.

Based on the reconnaisance and detailed follow-up, a realistic appraisal of uranium resources can be produced. This work involves applied geology, ground- and surface-water hydrology, geochemistry, geophysics and computer science, as well as extensive field operations.

However, these same NURE data can be evlauated for other strategic resources (chromium, cobalt, manganese and titanium, among others) at little increased expense which can be very important to Alaskans.

LASL works with Alaskan scientists in order to evalunte the date and maximize the information that can be retrieved.

Program Status

After five years the HSSR portion of NURE is proposed for cancellation by DOE, as a result of budget cuts in favor of other uranium assessment programs (airborne radiometric reconnaissance, geologic investigations on world-class uranium deposit studies).

from most of Alaska.

Multi-element HSSR data has been reported for about a year. For these analyses, all three labs developed high-volume, low-cost automated systems that will not be used for other projects in the foreseeable future. The capital investment in these systems approaches $4 million.

Since the samples are on hand and the analytical and report producing systems are operational, continuing the HSSR program would involve little money, about $5 million for each of three years.

Program Problems

A national program of the scope of HSSR is not without problems. The analytical tools to analyze may get more and more sophisticated so the parts per billion of an element can be identified; however, the analysis is no good if the sediment sample is a "dry lab."

In order to obtain a water and sediment sample in the rugged Rocky Mountain regions of the U.S. and interior of Alaska, the cost is high and the risk to life is real. It is much easier, for example, to take 10 samples at a single location and merely lable the samples for 10 hard-to-get-to locations.

Alaska Miners Association President Howard Grey peruses some of the material that has been reported as a result of the HSSR program. AJC STAFF PHOTO

The NURE budget has been cut from $65 million in FY 80 to $28 million in FY 81. If the HSSR were cancelled, much of the country will not be surveyed and many of the samples already collected will not be analyzed.

During the national reconnaissance, 60 per cent of the country was sampled, including 85 per cent of Alaska; about 680,000 samples have been collected.

Most of the sampling was done in mountain regions of the west, southern portion of the midwest, Rocky Mountains, the Basin and Range province, and Alaska. By the end of FY 80, if the program is closed out, samples from only 30 per cent of the country will have been analyzed.

A close-out means more than one half of the samples already collected will not be analyzed and reported, including those

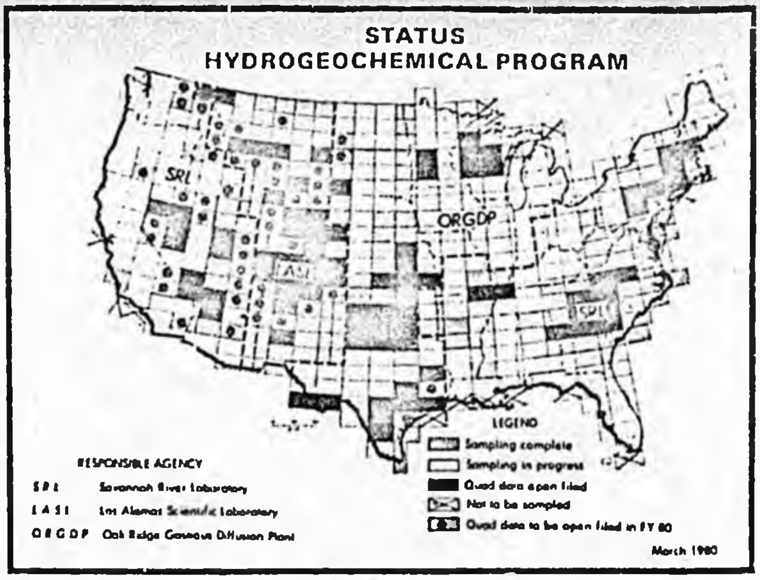
In this manner the sample contractor saves on fuel and time but the results from the lab can be worse than no sampling at all. Sometimes a lab scientist has not actually taken the samples but left it to non-technical operators to obtain the samples.

Unfortunately some "dry lab" samples were apparently taken in the HSSR program, less than 2 per cent, which means some few analyses will not be released to the public.

Since each sample is sort of a 'fingerprint,' the identification of the same 'fingerprint' for several locations indicates a problem. The "dry lab" slows the publication of results and does add to the overall cost of the program.

Another problem that exists is that the potential users of the data have not been brought into the program to the extent they should.

Howard Grey, executive director, Alaska Miners Association, feels the program should be completed but believes private industry could do the analysis work at a more economical cost. LASL estimates a cost of about $50 per location (two sample) for an analysis of 44 elements.



Program should continue

By DR. GENE RUTLEDGE

Secretary of Energy Duncan should see that the HSSR program is continued and promote closer coordination with other interested federal agencies.

LASL, ORGDP and SRL should work with potential users of the data collected including state agencies, state university scientists and, especially, the resource scientists in industry.

However, DOE must avoid 'too many cooks in the kitchen' to the point that little or nothing is done. DOE should be commended for taking the 'bull by the horns' and getting under way the HSSR program which can be one, but only one, significant link in the chain of needed national resource information.

As for the entire NURE program, it too should be continued as originally planned even though the cost for FY 81 is $65 million, which is much higher than the $5 million for the HSSR but still only a tiny part of the $11 billion DOE budget.

While we must give very important credit to Duncan's staff members for far sighted national sampling for uranium and other elements, it is vital that the HSSR program not be brought to an abrupt end and precious and strategic samples not analyzed.

Certainly to collect thousands of samples at great government expense with the literal risk of life (Dr. Sharp survived a plane crash in the Alaska interior) and then not to proceed in a timely manner with their analysis is indeed unwise.

Editor's Note: Dr. Rutledge was the project leader of the Alaska Regional Energy Resource Planning Project from 1976 until late 1978. During that time he met Dr. Sharp and obtained from him considerable information on the National Uranium Resource Evaluation (NURE) program for use in Volume II of "Alaska's Energy Resources."

Upon learning of the planned cancellation of the HSSR program, his concern was so great, he traveled to Los Alamos, N.M., to meet with the scientists involved.

The Payoffs for Completion of NURE

Baseline geochemical data, collected and analyzed by standardized procedures, would be available to the public for the entire conterminous U.S. and Alaska. From these data, a comprehensive, geochemical atlas of the U.S. would be prepared that would illustrate the areal concentrations of major and trace elements and water quality measurements (e.g., pH, temperature, dissolved oxygen, etc.) throughout the U.S.

Such baseline data are needed by environmentalists, industrialists, geoscientists, resource explorationists, and various state, federal and local agencies. These date also provide some measure of ground truth for geologic mapping and for use with remotely sensed data (LANDSAT imagery).

For the first time, there would be geologic maps available for the entire U.S. at a scale of 1:250,000. This would be a direct result of the NURE program, which generates these maps (where they are not already available) for use in correlating the hydrogeochemical and airborne data with the local geology.

AK Interstate reports earnings

Alaska Interstate co. says its net earnings for the first quarter were greater than its earnings for the entire year of 1979.

Net earnings in the first quarter of '80 were a record $14.2 million compared to $978,000 in first quarter '79 as restated and $13.4 million for the entire year of '79.

Revenues in the first quarter were a record $83 million, compared to $58 million in the same period of 1979. Primary earnings per share for the quarter were $2.58 compared to 20 cents in the first quarter of 1979.

The company's Indonesian oil and gas operations accounted for most of the increase in earnings, reflecting the first full quarter of the company's higher workinst in the Huffco Group oil and gas JV.

SEMICONDUCTORS

Semiconductors accounted for $2.6 billion of the $3.9 billion worth of electronic components exports from the U.S. in '79. Imports of semiconductors amounted to $2.4 billion out of the $3.6 billion total of electronic components imports.

Rutledge volume confirms vast Alaskan energy resources

ANCHORAGE — The Alaska State Division of Energy and Power Development has released the first two volumes of a statewide assessment of Alaska's energy resources, operations and issues which shows that Alaska is a storehouse of nation's energy resources.

Alaska may contain about one-third of the nation's energy resources, but because of land tenure environmental constraints and other issues, the report concludes "a resource is one thing, the development of that resource is quite another."

Conclusions and recommendations on Alaska's energy status reached by the research team include:

—The immediate expansion of surface and subsurface exploration activities. Without adequate knowledge of the magnitude, quality and location of the resources, critical energy-related and land-related questions cannot be properly addressed by government and private decision-makers.

Gene P. Rutledge

—Immediate attention must be given to technologies for large-scale energy operations, which could either extend the recovery life of a specific resource site, or would enable development in areas which are otherwise marginal or uneconomic.

—An inventory of alternate energy sources (small hydro, wind, geothermal, solar and peat) for rural Alsakan communities should be conducted and technologies (waste heat recovery systems, fluidized bed units, heat pumps and fuel cells) to match the available resources should be evaluated.

The analysis of resource estimates indicates that the extent and location of all the energy resources are not fully known. Volume I (290 pages) is entitled "Alaska's Energy Resources: Findings and Analysis." Volume II (431 pages) is called "Alaska's Energy Resources: Inventory of Oil, Gas, Coal, Hydroelectric and Uranium Resources."

The planning project documents have been written and compiled by a five-member team with Gene P. Rutledge as the project leader. Other members are Dee Lane, William McConkey, Clarissa Quinlan and Mike Rahm.

The project, which is funded by $150,000 from the Federal Department of Energy, is an analysis of documented reports and previously completed research conducted by a wide range of private and government agencies.

Volume I identifies Alaska's energy resources (oil, gas, coal, hydro, uranium, geothermal, wind, tides, wood, solar, oil shale, peat and waste heat), operations (exploration/discovery, development/recovery, storage, transportation/transmission, processing/generation, end use, decommission/reclamation) and issues (economic, social, environmental, governmental, conservation and technology). The land tenure issues (D-2, Native Claims, easements, coastal zone lands) are addressed as to these issues relate to energy development.

Several energy scenarios have been developed and written on a regional (geographical and political) basis. Each entails a brief chronology of events that seem most likely to occur in view of the information available now.

Energy sites likely to be developed between now and the year 2000 have been tabulated and ranked for oil and gas (onshore and offshore), coal, hydroelectric, and uranium, based on information obtained from numerous experts in the energy field.

An earlier draft printing of Volume I has been used as the textbook for a number of courses taught by Dr. Rutledge at the University of Alaska and Alaska Methodist University.

Volume II collects and summarizes by five color maps, tables and bibliography, all written reports on the quantity and quality of oil, gas, coal, hydroelectric and uranium resources in Alaska. Volume II also includes a brief history of development and production of these energy resources, a list of key contact persons, and extensive bibliography, by six regions: arctic, northwest, interior, southwest, southcentral, and southe Alaska.

IDAHO POST REGISTER

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STATE OF ALASKA

JAY S. HAMMOND, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

P.O. BOX 80007
COLLEGE, ALASKA 99708

(907) 479-7147

March 11, 1981

Senator Bettye Fahrenkamp
Pouch V
Juneau, AK 99811 (Mail Stop 3100)

SB164

Dear Senator Fahrenkamp:

Enclosed is a summary of the quadrangles and samples for which Los Alamos is requesting State funding. As you requested we have looked over the list of 32 quadrangles to determine where the information would be most valuable to the State. Ten of these quadrangles (4992 samples), Barrow, Wainwright, Mead River, Teshekpuk, Utukuk River, Lookout Ridge, Ikpikpuk River, Misheguk Mountain, Howard Pass, and Killik River, lie within the National Petroleum Reserve and data from these quadrangles will have little effect on resource evaluation of State lands. Data from the balance of the quadrangles (14,579 samples) might provide information that can be used to assess the State's mineral resources, although the sampling density in these quadrangles is several times lower than is generally taken by industry (e.g. U.S. Borox) or DGGS. Samples that are not analyzed by Los Alamos can be stored by DGGS and be made available for future analyses by either DGGS or industry.

As we discussed in Juneau the raw data provided by Los Alamos will only be useful if DGGS can process and model the information. A DGGS project that would provide a minimum processing and modeling capability is also enclosed.

Sincerely,

Wyatt G. Gilbert

Wyatt G. Gilbert
Deputy State Geologist

Enclosures

cc: Jeff Haynes
Ross Schaff
Milton Wiltse

10-J21LH

March 1, 1981

Dr. Milton Wiltse
Alaskan Department of
Geological and Geophysical Surveys
P. O. Box 80007
College, Alaska 99708

Dear Milt:

The enclosed map shows the status of the analyses of the National Uranium Resource Evaluation geochemical sediment samples from Alaska. The samples from areas colored in blue are being analyzed with DOE funds. These will be open filed as data tapes only through the Oak Ridge Data Center. The areas in yellow are those for which there are insufficent DOE funds to do the analyses. These quadrangles would be analyzed by State of Alaska funds if they become available (Table I lists these quadrangles and the approximate number of sediment samples in each quadrangle). There are a total of 19,571 sediment samples in the yellow areas. The final count upon completion of analysis may be as much as 200 samples above or below that number. All quadrangles have an approximately uniform sampling density of one sample location per 23 square kilometers in areas where lakes predominate and one sample location per 11 square kilometers in areas where streams predominate.

With the $800,000 requested from Alaska, we will guarantee the completion of these sample analyses, using the uniform analytical methodologies employed thus far by Los Alamos. We will also provide to the State Geologist's office a hard copy data listing and a 1:250,000-scale, sample-location overlay for each quadrangle in Alaska that has been sampled under this program no matter who paid for the analyses. As you can see, the sample location overlay is one of the end products of analyses and clean up of data; therefore, we are not able to provide at this time a sample location overlay for the quadrangles in Table I. We also believe that for the $800,000 we will be able to complete multielement analysis of those samples that we have analyzed for uranium only to date (green quadrangles in the Seward Peninsula region).

In order to get this response to you as quickly as possible, I am sending you this bootleg copy of the map and table. I anticipate being in Fairbanks on March 11 or 12 and would be able to handcarry the master sampling maps for your perusal.

I hope this answers the questions concerning what Los Alamos will provide the State for the $800,000 requested. If you have further questions, do not hesitate to call me.

Sincerely,

Tom

Thomas A. Weaver
Group Leader, G-4
Resource Characterization

TAW:jab

Enc. As noted

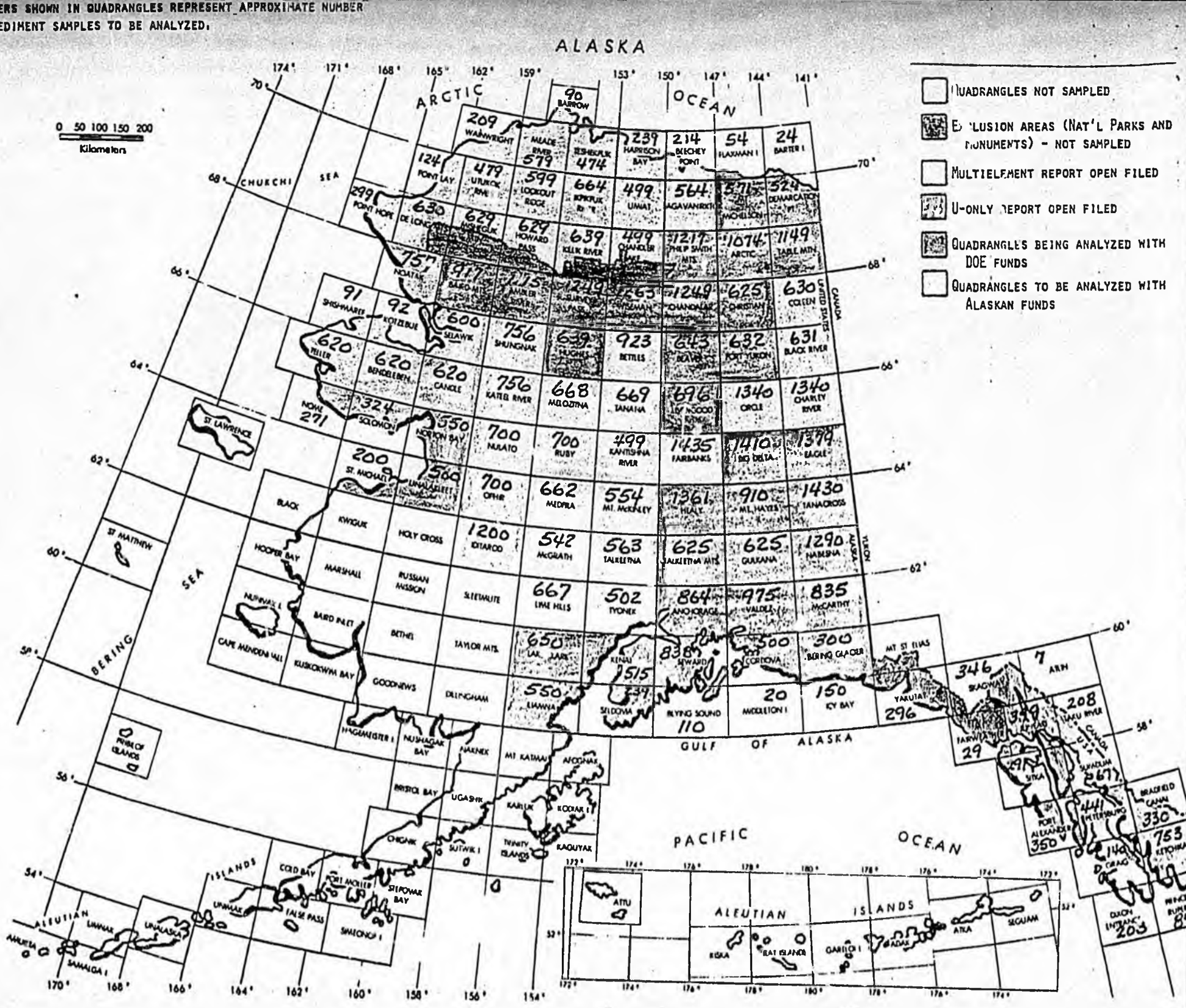
Table I

SEDIMENT SAMPLES TO BE ANALYZED WITH FUNDS REQUESTED FROM THE STATE OF ALASKA

1° x 3° Quadrangle	Approximate Number of Sediment Samples	Comments
Barrow	90	
Wainwright	209	
Meade River	579	
Teshekpuk	474	
Harrison Bay	239	
Beechey Point	214	
Point Lay	124	
Utukok River	479	
Lookout Ridge	599	
Ikpikpuk River	664	
Umiat	499	
Sagavanviktok	564	
Point Hope	299	
DeLong Mtns.	630	SE corner unsampled
Misheguk Mtn.	629	Southern half unsampled
Howard Pass	629	Southern third unsampled
Killik River	639	Southern third unsampled
Chandler Lake	499	Southern half unsampled
Coleen	630	
Shungnak	756	
Bettles	923	
Black River	631	
Kateel River	756	
Melozitna	668	
Tanana	669	
Circle	1340	
Charley River	1340	
Nulato	700	
Ruby	700	
Kantishna River	499	
Ophir	700	
Iditarod	1200	
TOTAL	19,571	

NOTE: ORIGINAL DOCUMENT IS COLOR-CODED. IF NECESSARY TO PROPER INTERPRETATION, REFER TO ORIGINAL DOCUMENT IN THE ALASKA STATE ARCHIVES

• NUMBERS SHOWN IN QUADRANGLES REPRESENT APPROXIMATE NUMBER OF SEDIMENT SAMPLES TO BE ANALYZED.



PROJECT TITLE: Statewide Placer/Geochemical Assessment

STATUTORY BASIS: AS 27.05.080

PROJECT DESCRIPTION:
This project will use computor modeling to establish an improved service to miners, prospectors, and interested numbers of the public by establishing a systematic means of evaluating statewide placer,geochemical, and public assay data. The models service will steadily improve as new information is added to the system.

OBJECTIVES/POLICIES:

The objective of this project is to provide an effective means of placing assay results from miner's and prospector's samples in the context of district and regional mineralization and to improve the methods of evaluating the signif.cance of the assays for the prospector.

It is the policy of this project that the prospector's data will be supplemented by the available geologis and geochemical data of ADGGS.

INTEREST GROUPS AFFECTED:
Miners, prospectors, Borough gevernments.

LEGISLATION/REGULATIONS REQUIRED:

None

AGENCY Natural Resources

CATEGORY

COVER PROGRAM Mgmt. of Mineral Resource

BRU Minerals & Energy Management

COMPONENT Mineral Development

SHORT FORM PAGE

SOURCE OF REQUEST:

PROJECT LOCATION:

Field work in various areas of the state. Office work in Fairbanks.

DEPARTMENT PRIORITY:

_____ OF _____

GOVERNOR'S ACTION:

LEAD DIVISION/PROJECT MANAGER:

Div. of Geological & Geophysical Surveys, Milton Wiltse, Chemist V (479-7147)

SUMMARY OF PROJECT COST:

CODE	EXPENDITURES BY OBJECT	GGS DIVISION	DIVISION	DIVISION	DIVISION	DIVISION	DIVISION	DIVISION	DIVISION	TOTAL
100	PERSONAL SERVICES	12.8								12.8
200	TRAVEL	5.8								5.8
300	CONTRACTUAL SERVICES	68.7								68.7
400	COMMODITIES	7.7								7.7
500	EQUIPMENT	25.0								25.0
600	LANDS, BLDGS., ETC.									
700	GRANTS, CLAIMS, ETC.									
800	MISCELLANEOUS									
	TOTAL	120.0								120.0
	I-A TRANS. (non-add)									
FED. RECEIPTS - CODE:										
GF MATCH.										
GEN. FUND		120.0								120.0
I-A RCPTS.										
PGM RCPTS.										
OTHER										
OTHER										

CAPITAL

DESCRIPTION OF ASSOCIATED CAPITAL COSTS:

All capitol costs are directed towards peripheral computer devices needed to upgrade current data processing equipment to a level at which it can model geochemical and placer data. These devices are primarily memory storage disks and tape storage units.

COSTS TO OTHER AGENCIES

None

PROJECT DURATION/LIFE CYCLE COST:

1982 Continuation

PERSONAL SERVICES DETAIL

PCN/JOB TITLE	LOCATION	DIVISION	SALARY	BENEFITS	NO. OF MONTHS	POSITION CO
NEW/Publication Spec. II	Fbx	GGS	2837	1568	2	7,242
NEW?Clerk Typist II	Fbx	GGS	1475	1439	3	5,864
						13,106
					Less vacancy	327
						12,779

TRAVEL DETAIL	AMOUNT	DIVISION	PURPOSE
	5.8	GGS	On site prospect investigation, consultation on modeling programs.

CONTRACTUAL DETAIL	AMOUNT	DIVISION	PURPOSE
	68.7	GGS	Acquisition of expertise to execute the computor interfacing systems and modeling programing necessary to meet the objective of this project

COMMODITIES DETAIL	AMOUNT	DIVISION	PURPOSE
	7.7	GGS	To purchase disks, drafting supplies, incedental hook up parts, office supplies.

EQUIPMENT DETAIL	AMOUNT	DIVISION	PURPOSE
	25.0	GGS	Hard disk memory, floating point operator, tape drive peripherals.

RESULTS DELIVERED (Narrative)

This project will provide a modern routine procedure for displaying specific miner's prospector's or other public member's assay data in conjunction with pertinent associated data of district of regional extent, and thus improve DNR's service in helping the interested public evaluate mineralization.

RESULTS DELIVERED (Quantified)

DIVISION	MEASURE
GGS	1) An operational connection of the ADGGS Tektronix 4051 graphics system and a larger capacity computer which will allow computer modeling of miner prospectors, and ADGGS assay and geochemical data. 2) A working program for digitizing sample locations, identity, and geochemic data. 3) An assay and geochemical storage, retrieval, and sort program. 4) Three operational geochemical modeling prorams. 5) Graphics display of the modeled data.

POSSIBLE ADJUSTMENTS

UPWARD INCREMENT

RESULT	COST
Upward increments would allow more sophisticated models to be incorporated earlier in this project.	$100,000

DOWNWARD INCREMENT

RESULT	COST
Downward increments would jeopordize the projects ability to purchase the necessary peripheral components or execute the required computer program development.	Any

SUMMARY OF PRIOR YEAR PROJECT COST: GGS

CODE	EXPENDITURES BY OBJECT	DIVISION	DIVISION	DIVISION	DIVISION	DIVISION	DIVISION	DIVISION	DIVISION	TOTAL
100	PERSONAL SERVICES									
200	TRAVEL									
300	CONTRACTUAL SERVICES									
400	COMMODITIES									
500.	EQUIPMENT									
600	LANDS, BLDGS., ETC.									
700	GRANTS, CLAIMS, ETC.									
800	MISCELLANEOUS									
	TOTAL	0								
	1-A TRANS. (non-add)									
FED. RECEIPTS - CODE:										
% MATCH.										
GEN. FUND										
1-A RCPTS.										
PGM RCPTS.										
CAPITAL										

CHANGES FROM PRIOR YEAR (INCLUDE CIRCUMSTANCES, COSTS, POSITIONS, RESULTS DELIVERED)

New project

LASL PROPOSAL

ANALYSIS OF GEOCHEMICAL SAMPLES FROM THE STATE OF ALASKA

For submission to the State of Alaska

by the

Los Alamos Scientific Laboratory
P. O. Box 1663
Los Alamos, NM 87545

Prepared by:

David E. Broxton
Principal Investigator

Merle E. Bunker
Principal Investigator

Glenn R. Waterbury
Principal Investigator

Approved by:

Robert R. Brownlee
G Division Leader

George A. Cowan
Associate Director for
Chemistry, Earth, and
Life Sciences

George A. Keyworth
P Division Leader

Harry C. Hoyt
Associate Director for
Energy Programs

William J. Maraman
CMB Division Leader

Robert N. Thorn
Associate Director for
Physics and Mathematics

Ann Tellier
Financial Management Office

Larry S. Germain
Deputy Assistant Director
for Alternate Energy Sources

STATUTORY BASIS:

PROJECT DESCRIPTION: The nationwide Hydrogeochemical and Stream Sediment Reconnaissance (HSSR) portion of the National Uranium Resource Evaluation, sponsored by the US Department of Energy, is being terminated in September 1981. The present status of the HSSR in Alaska is shown in Figure 1. With its remaining HSSR monies, the Los Alamos Scientific Laboratory (LASL) will be able to analyze only one-half of the remaining collected but unanalyzed sediment samples (i.e., 20,000 out of 40,000 unanalyzed samples or 33 of the 66 remaining quadrangles). This effort will require $800,000 of the LASL's $1,500,000 HSSR budget, the remainder to be used for analyses in the lower states and program closeout.

If funded by the State of Alaska for $800,000 to match the LASL's $800,000, the LASL would be able to complete the analysis of all remaining Alaskan HSSR sediment samples. Each sediment sample would be analyzed for 12 elements by x-ray fluorescence (Ag, As, Bi, Cd, Cu, Nb, Ni, Pb, Se, Sn, W, and Zr) and for 32 elements by neutron activation analysis (Al, Au, Ba, Ca, Ce, Cl, Co, Cr, Cs, Dy, Eu, Fe, Hf, K, La, Lu, Mg, Mn, Na, Rb, Sb, Sc, Sm, Sr, Ta, Tb, Th, Ti, U, V, Yb, and Zn). The analytical costs and detection limits are comparable to or better than those obtainable commercially.

OBJECTIVES/POLICIES:

The principal objective of this proposal is to complete the analysis of all HSSR sediment samples collected from the State of Alaska and open file these analytical data to the public. These data provide baseline geochemical information, covering approximately 85% of Alaska, that can be used for formulating policy decisions regarding natural resources and environmental quality.

INTEREST GROUPS AFFECTED:

Alaska Department of Natural Resources (State Geologist, Division of Geological and Geophysical Services, Division of Parks, Fish and Game Department.)
Alaska Department of Environmental Conservation.
Alaska Department of Commerce and Economic Development (Alaska Energy Office - Division of Energy and Power Development.)
Alaskan Senate Committee on Natural Resources.
All Alaskan Native and Village Corporations.

LEGISLATION/REGULATIONS REQUIRED:

CATEGORY _____

COVER PROGRAM _____

BRU _____

COMPONENT _____

SHORT FORM PAGE _____

SOURCE OF REQUEST:

PROJECT LOCATION:

DEPARTMENT PRIORITY:

_____ OF _____

GOVERNOR'S ACTION:

LEAD DIVISION/PROJECT MANAGER:

DNR
PROJECT

EQUIPMENT	AMOUNT	DIVISION	PURPOSE

POSSIBLE ADJUSTMENTS

UPWARD INCREMENT

It would cost $2,000,000 to complete the sample collection, analysis, and open filing of 18000 locations from the unsampled areas of Alaska exclusive of the Aleutian Island chain west of the Unimak quadrangle (Fig. 1).

DOWNWARD INCREMENT

For each downward increment of $24,000, one quadrangle will remain unanalyzed.

RELATION TO LAST YEAR:

ONAL SERVICES

JOB TITLE	LOCATION	DIVISION	SALARY	BENEFITS	NO. OF MONTHS	POSITION COST

VEL	AMOUNT	DIVISION	PURPOSE

TRACTUAL	AMOUNT	DIVISION	PURPOSE
s Alamos ientific oratory	$800,000	Geosciences Div.	Analyze and open file data listings, 1:250,000 scale location maps, and data tapes for 44 elements in 20,000 Alaskan sediment samples.

For each quadrangle, a data listing, a sample location overlay (1:250,000 scale), and, if desired, a computer data tape will be delivered to the State Geologist's office. Details of payment schedules and deliverable schedules to be negotiated between the State of Alaska and the Los Alamos Scientific Laboratory.

UMMARY OF PROJECT COST:

ODE	EXPENDITURES BY OBJECT	DIVISION	DIVISION	DIVISION	DIVISION	DIVISION	DIVISION	DIVISION	DIVISION	TOTAL
00	PERSONAL SERVICES									
00	TRAVEL									
00	CONTRACTUAL SERVICES	Los Alamos Scientific Laboratory								$800,000
00	COMMODITIES									
00	EQ JIPMENT									
00	LANDS, BLDGS., ETC.									
00	GRANTS, CLAIMS, ETC.									
00	MISCELLANEOUS									
	TOTAL									$800,000
	1-A TRANS. (non-add)									
ED. RECEIPTS – CODE:										
F MATCH.										
EN. FUND										
A RCPTS.										
GM RCPTS.										
THER										
THER										

APITAL

SCRIPTION OF ASSOCIATED CAPITAL COSTS:

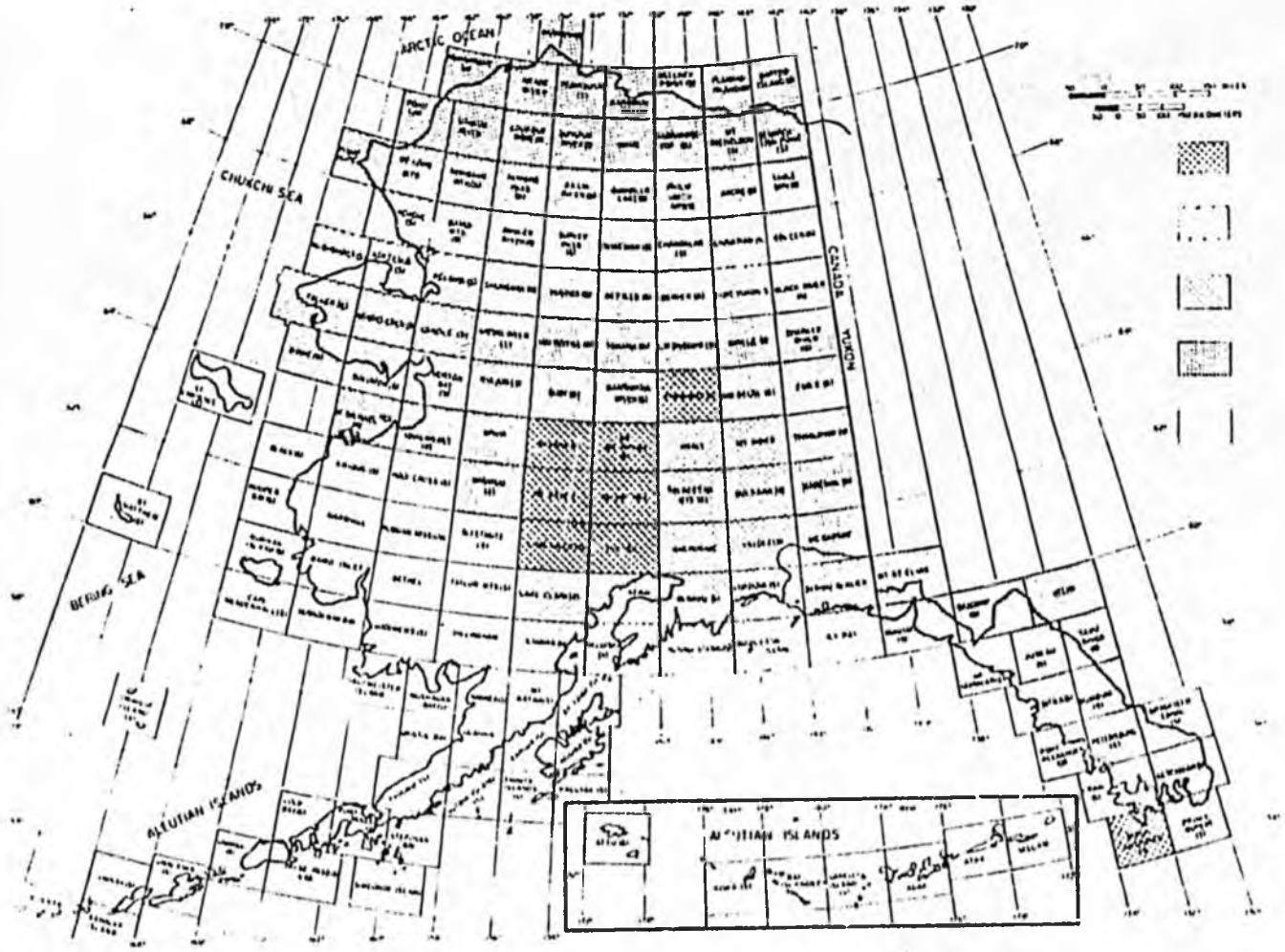
NONE

OSTS TO OTHER AGENCIES

NONE

ROJECT DURATION/LIFE CYCLE COST:

Project Duration: 1 year


ARCTIC OCEAN
CHUKCHI SEA
BERING SEA
ALEUTIAN ISLANDS
ALEUTIAN ISLANDS

JAN 12 1981

January 7, 1981

Senator Bettye Fahrenkamp
Alaska State Senate
Pouch V
Juneau, Alaska 99811

Dear Senator Fahrenkamp:

The Los Alamos Scientific Laboratory (LASL) has submitted a proposal to the State of Alaska requesting $800,000 to complete analysis of geochemical samples remaining from an extensive geochemical exploration program carried out in Alaska by LASL over the past four years. Enclosed is a copy of their proposal and a brochure describing the LASL program.

I am writing to request your support of the LASL proposal.

My position in this matter is that through the Institute of Water Resources, University of Alaska-Fairbanks, I was a recipient of two grants from LASL to carry out pilot studies of the Fairbanks and Bettles quadrangles as part of the statewide LASL project. As a result of this work I was a consultant to LASL, which arrangement has since been terminated. At present I have received data only for the Fairbanks quadrangle. The Bettles data are part of the pending request. I am very concerned that hard-won data may be irretrievably lost. The funds requested by LASL will only provide a computer listing of the data which must subsequently be interpreted by geologists, presumably within the State Division of Geological and Geophysical Surveys.

The funds requested by LASL appear to me to ba about the minimum needed. I don't think the project funds can be reduced. Quite frankly, I think that in addition to funding the LASL request an additional $250,000 should be given the DGGS for the purpose of interpreting and publishing the data in a form useful to the geologic community. I strongly urge your support of this proposal.

I stress that I have no financial interest but only a scientific interest in seeing my data and those for other quadrangles. Thank you for your consideration. If you have any questions, please contact me.

Sincerely,

Daniel B. Hawkins
Professor of Geology
University of Alaska, Fairbanks

cc: Rep. Sally Smith
Enclosures

LASL-77-34

December 1977

Hydrogeochemical and Stream Sediment Reconnaissance for Uranium

Paul L. Aamodt

los alamos
scientific laboratory
of the University of California
LOS ALAMOS NEW MEXICO 87545

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UNITED STATES
DEPARTMENT OF ENERGY
CONTRACT W-7405-ENG. 36

INTRODUCTION

In 1973, the Resource Division of the US Atomic Energy Commission [now the Department of Energy (DOE)] initiated a ten-year program to assess more accurately the nation's future uranium resources. This program, entitled the National Uranium Resource Evaluation (NURE), has three primary parts: an airborne radiometric survey of the entire country, research studies of geologic environments and natural mechanisms that favor uranium concentration, and a nationwide hydrogeochemical survey of surface and ground waters and water-deposited sediments. In 1975, the Los Alamos Scientific Laboratory (LASL) was asked to design and manage the hydrogeochemical reconnaissance throughout the Rocky Mountain states of New Mexico, Colorado, Wyoming, and Montana, and the state of Alaska. Other DOE laboratories are conducting the hydrogeochemical portion of the NURE in other regions of the country. The information provided by the Hydrogeochemical and Stream Sediment Reconnaissance (HSSR), in conjunction with that produced by the other NURE programs, will make it possible to estimate more accurately the nation's long-range uranium resources and will also identify promising areas for future private exploration.

HOW AND WHY HSSR WORKS

Geochemistry, in its broadest sense, is the study of both the relative and absolute abundances of elements that make up the earth. Included are the relationships, distribution, and migration of these elements in air, water, soil, rock, and vegetation. Geochemistry encompasses all aspects of geology that deal with chemical change in the natural environment. Geochemical prospecting uses the principles of geochemistry to identify local or regional areas having abnormal concentrations of selected elements. By establishing the normal, or background, abundance of a selected element within particular geologic environments, it is possible to delineate areas that are relatively enriched or depleted with respect to that element. This information, combined with that from supportive surveys and technical and economic criteria, can be used to forecast future reserves of that element. The resulting data can also be used to identify promising areas for more detailed exploration.