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Followup Review Of The Naval Petroleum Reserves

Department of the Navy

A lack of funding has delayed the development of the Navy's reserves and the capability of producing large quantities of oil for an emergency. Funds are now being made available for exploration and development. Leases remain in effect on Federal land around the reserves, but no new leases have been awarded since GAO's 1972 report.

BY THE COMPTROLLER GENERAL OF THE UNITED STATES

LCD-75-321

JULY 29, 1975

BEST DOCUMENT AVAILABLE

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

B-66927

The Honorable John E. Moss
House of Representatives

Dear Mr. Moss:

By February 13, 1974, letter, you referred to our report (B-66927, Oct. 5, 1972) on the capability of the Navy's petroleum reserves to meet emergency needs and requested certain additional information. This information is summarized below and discussed in more detail in the appendixes.

The Navy's Office of Naval Petroleum and Oil Shale Reserves manages the reserves and for years has requested funds to further explore and develop them. For the most part, however, the requests have been denied and have not been submitted for appropriation consideration.

In reviewing the Office's requests, the Navy and the Department of Defense have assumed that funds approved for the reserves would be at the expense of other Navy activities. Reasons given for denying the requests were: (1) the reserves were national resources and appropriations for other essential Navy activities should not suffer and (2) there was no firm national policy on the reserves.

No development funds of any consequence were approved by the Office of the Secretary of Defense through fiscal year 1975. A lack of funding has delayed the development of the reserves and the capability of producing large quantities of oil for an emergency.

Although not included in the Secretary of Defense's budget requests, funds for exploration and development at Petroleum Reserve No. 1 in California and Petroleum Reserve No. 4 in Alaska have recently been made available by the Congress. The Supplemental Appropriations Act, 1974, provided $59 million, and the Congress provided $62.5 million for fiscal year 1975.

Over the years administration representatives and various congressmen have proposed producing oil from the reserves for purposes other than national defense. Recently, proposals have been made to produce oil to increase the amount of domestic oil available to meet current fuel needs and reduce future reliance on foreign sources.

Your office informally requested that we obtain information on whether the Federal Energy Administration report on Project Independence would have policy recommendations on petroleum reserves. The report, issued in November 1974, contained no policy recommendations but set forth alternatives, one of which envisioned production from the Navy's petroleum reserves.

Leases continue in effect on Federal land around the reserves; only three have been canceled since our 1972 report. Almost one-half of the remaining 46 leases have existed for over 45 years, their renewal having been assured by law. No new leases have been awarded since our 1972 report.

As you know, for years the Navy has contracted with Standard Oil of California to operate Petroleum Reserve No. 1. Standard Oil has advised the Navy that it wants to terminate its role as the operator. The Navy has taken action to get a new operator and the changeover is expected later this year.

As requested by your office, we provided a draft of the appendixes to, and requested comments from, officials of the Departments of Defense, the Navy, the Interior, and Justice. Their comments have been incorporated, where appropriate, and are attached as appendixes III through V.

Sincerely yours,

Elmer B. Staats

Comptroller General
of the United States

FOLLOWUP REVIEW OF THE NAVAL PETROLEUM RESERVES

INTRODUCTION

The naval petroleum reserves are to provide fuel resources in a standby production status until they are needed for national defense. The Secretary of the Navy has overall responsibility for developing and maintaining the reserves; the Navy's Office of Naval Petroleum and Oil Shale Reserves (ONPR) manages and operates them. In past years ONPR personnel have requested funds to explore and develop Petroleum Reserve No. 1 in Elk Hills, California, and Petroleum Reserve No. 4 on the North Slope of Alaska, but their requests have generally been denied. Our 1972 report 1/ noted that the Navy, largely because of a lack of funds, did not fully develop the reserves to produce oil for emergency use.

Congressman John E. Moss requested certain additional and up-to-date information on (1) how the lack of funds affected development of the reserve properties, (2) steps taken since our 1972 report to adequately fund the development program, (3) proposals calling for development of the reserves by private interests, and (4) the status of leases on Federal land in buffer zones around the reserves. He also asked about the extent that the Federal Energy Administration included the naval petroleum reserves in its blueprint for Project Independence.

Production capability and reserve potential

The development and production status of the reserves is as follows.

Shale reserves

Environmental, economic, and technological problems have hampered development of the naval oil shale reserves. The high cost of recovering oil from shale has been the principal limitation. But because of the increase in oil prices starting in late 1973, interest in exploring the technology and economics of recovering oil from shale has also increased.

1/"Capability of the Naval Petroleum and Oil Shale Reserves to Meet Emergency Oil Needs" (B-66927, Oct. 5, 1972).

The naval oil shale reserves in Colorado and Utah contain an estimated 25.8 billion barrels of oil. Due to the economic and technological problems in extracting oil from shale, the Navy has not explored and developed these reserves. Therefore, the naval oil shale reserves have remained undeveloped and incapable of supplying oil in a national emergency. Activity has been limited to experimenting with recovery processes.

Petroleum reserves 1/

The Navy has concluded that the potential for increasing productive capacity at Petroleum Reserves Nos. 2 and 3 is not great. In August 1974 the recoverable oil in these reserves was estimated to be about 28 million and 43 million barrels, respectively. Oil is being produced from these reserves, but any additional oil that could be produced would have only a minor effect in a national emergency.

At Petroleum Reserve No. 2, the current production rate of 10,500 barrels a day is equal to the maximum daily deliverable rate, and Navy officials expect production to decline.

At Petroleum Reserve No. 3, current production of 400 barrels a day is about 12,000 barrels below the maximum daily deliverable rate, attainable if the reserve were fully developed.

Petroleum Reserves Nos. 1 and 4, the Navy's major petroleum reserves, have estimated maximum daily deliverable rates of about 400,000 barrels and 3 million barrels, respectively. Petroleum Reserve No. 1 produces about 3,000 barrels a day; Petroleum Reserve No. 4 is not yet producing oil. Information about recoverable resources and costs of development for these two reserves was included in our 1972 report. This and other data revised by the Navy in August 1974 is shown in appendix II.

1/Petroleum Reserves: No. 1, Elk Hills, California.
No. 2, Buena Vista, California.
No. 3, Teapot Dome, Wyoming.
No. 4, North Slope, Alaska.

AVAILABILITY OF FUNDS TO FULLY DEVELOP THE RESERVES

Steps taken to obtain adequate funding

ONPR has planned for many years to fund a program to fully explore and develop the reserves. Generally, the annual requests for funding have been denied--either within the Navy Department, by the Office of the Secretary of Defense, or by the Office of Management and Budget.

The following table summarizes the funds ONPR proposed for exploration and development activities and the amounts approved since fiscal year 1965.

Fiscal year	ONPR request (note a)	Approved by Navy Department	Approved by OSD-OMB (note b)	Added by congressional action
	(millions)			
1965	$ 2.1	$ 0.7	$ 0.7	$ -
1966	1.4	-	-	-
1967	1.3	-	-	-
1968	1.3	-	-	-
1969	4.0	4.0	-	-
1970	4.0	-	-	-
1971	4.0	1.0	-	-
1972	5.0	2.9	-	-
1973	15.9	-	-	-
1974	20.1	-	-	59.0
1975	92.4	75.3	(c)	62.5
1976	113.2	113.1	108.7	(d)

a/These figures did not include funds requested for the Barrow gas field.

b/Office of the Secretary of Defense--Office of Management and Budget.

c/The budget submission to the Congress included $17.3 million contingent on the passage of a joint resolution to authorize production from Petroleum Reserve No. 1 for 1 year. This resolution did not pass in the 93d Congress.

d/Not available.

Before fiscal year 1975, ONPR fund requests had been included in the Navy's overall budget for operation and maintenance. As shown above, these budget requests were rarely approved by higher officials. Among the reasons given for deleting funds requested for the reserves were: (1) the reserves are national resources, (2) there was no firm national policy on the reserves, and (3) appropriations for other essential Navy activities should not suffer in order to develop the reserves.

For example, the Assistant Secretary of the Navy (Installations and Logistics) wrote the Assistant Secretary of Defense (Installations and Logistics) in June 1971 about increasing funds for the naval petroleum reserves for the fiscal year 1973 budget. He noted that the major impediment to developing the reserves had been the lack of funding support from higher levels. He said that from the time he assumed responsibility for the reserves in February 1969:

> "Requests for funds beyond the minimum required to operate * * * have been deleted upon each budget submission, generally at the joint OSD/OMB level.
>
> "* * * because funds have consistently been denied in the past, I hesitate to include the total Naval Petroleum Reserves requirement, thus reducing the amount available for other O&MN [Operation & Maintenance, Navy] purposes, without some reasonable assurance that these funds will be supported at the OSD/OMB level."

The Assistant Secretary of Defense (Installations and Logistics) responded in July 1971, stating that:

> "At the present time there appears to be no practicable way to develop the Reserves to meet purely military needs. For those reasons I do not believe that substantial sums should be set aside within the military budget for exploration and development * * *."

He recommended that the Navy restrict its budget request for the reserves to minimum operational needs and the environmental cleanup program at Petroleum Reserve No. 4.

The Chief of Naval Operations expressed the same view in his memorandum to the Secretary of the Navy on June 14, 1971. On the fiscal year 1973 budget request, he stated that he realized the potential returns from expanding exploratory drilling but added that the Office of the Secretary of Defense and the Office of Management and Budget had disapproved an earlier request to expand exploratory operations because there was no explicit overall policy concerning development of national oil reserves.

The view that the reserves are national assets and should be funded accordingly prevailed during budget reviews in the following years. The Under Secretary of the Navy expressed this view in a memorandum to the Chief of Naval Operations on the fiscal year 1975 budget.

> "This is basically the same proposal as the one submitted last year * * *. At that time, I stated that exploration and evaluation of naval oil reserves should be part of a government-wide natural energy plan with definite goals and objectives. In the absence of such a plan, I felt the Navy should not attempt to budget for such an undertaking. * * * You concurred with this approach."

ONPR has since been provided with exploration and development funds. The Congress appropriated $59 million for these activities by the Supplemental Appropriations Act, 1974 (Public Law 93-245), and made the funds available in January 1974. ONPR committed the funds to further explore and develop Petroleum Reserves Nos. 1 and 4. Major projects started at Reserve No. 1 included drilling new wells; rehabilitating the pipeline system; and providing for gas injection, pumping, and transfer systems. At Reserve No. 4, projects included drilling one well and gathering seismic information for additional drillings. For fiscal year 1975, the Congress added $62.5 million to the Navy's request for exploration and development funds; reserve activities were highlighted by including the request as a separate line item in the budget. Such action should lessen funding problems that have hampered exploring and developing the reserves in the past. For example, in reviewing the fiscal year 1976 budget request for the petroleum reserves, the Office of the Secretary and the Office of Management and Budget approved over 95 percent of the amount requested.

Effects of limited funding

A lack of funding has delayed the development of the reserves and the capability of producing large quantities of oil for an emergency. Also, ONPR has had to drill additional wells to prevent oil loss by drainage because of the private operators' activities. This has interrupted ONPR's normal operating and maintenance program.

Delays in the development program

The Navy has programs for exploring and developing Petroleum Reserves Nos. 1 and 4.

The December 1972 program for Petroleum Reserve No. 1 called for full exploration and development over a 5-year period. From the exploration information, ONPR personnel estimated an increase to the reserves of 432 million barrels. That program was incorporated with a program for Petroleum Reserve No. 4 and issued in April 1973 as an overall engineering and assessment plan. In April 1973, ONPR personnel estimated from the development information that the maximum daily production rate would be about 492,000 barrels of oil from the Elk Hills field. However, more recent data indicated a maximum daily production rate of about 400,000 barrels.

For years ONPR personnel have considered the pipeline capability on Petroleum Reserve No. 1 to be limited and have tried to develop it further. For fiscal year 1969 they requested funds to install additional pipelines and other surface facilities so the reserve could handle production of 115,000 barrels a day. The request was for the first phase of a 2-year program to increase the pipeline and other surface facilities to handle production of 160,000 barrels a day. The request was denied at the Office of the Secretary of Defense-Office of Management and Budget level.

Funds for pipelines and other development activities were requested in fiscal years 1970 and 1971 but were deleted within the Navy Department. In fiscal year 1972, ONPR personnel did not request funds to develop Petroleum Reserve No. 1. In fiscal years 1973 and 1974 funds were requested for that reserve, but the Chief of Naval Operations denied the 1973 request and the Navy Comptroller denied the 1974 request. The funds were denied on the basis that the reserves are national assets and their development should not be carried out solely by the Department of Defense.

The Petroleum Reserve No. 4 program of March 1973 provided for exploration activities over a 10-year period to locate and test as many large oil accumulations as possible. The Navy estimated that at least 10 billion barrels of oil would be located. In March 1973 they also expected to develop a daily production capability at Petroleum Reserve No. 4 of 1 million barrels by 1980 and 3 million barrels by 1985. ONPR personnel requested funds for exploration activities at that reserve since fiscal year 1965 without success until passage of the Supplemental Appropriations Act, 1974.

Normal operational activities deferred

Private operator activities around the reserves have forced ONPR to drill wells on the reserves to prevent oil loss by drainage to the outside pumping. Such activities were not planned or budgeted for.

Because such drilling was necessary, money was made available by reprograming and deferring other planned Navy activities, as illustrated by the following briefing document.

"On 17 August 1973, a new and prolific oil discovery was made by the Standard Oil Company of California (SOCAL) on its land adjacent to the northwestern boundary of NPR [Naval Petroleum Reserve] #1 (Elk Hills) in California. The discovery well, located within 1,650 feet of the nearest boundary of the Reserve, has been flowing at the rate of 3,300 barrels of oil per day from the Stevens sand. And as of December 1973, SOCAL was producing 7 wells continuously at 16,500 barrels of oil per day and about 10,000 Mcf of gas per day, and is currently completing, as producers, 3 more wells with a total planned program of 33 wells on its 'Section 7R' lands.

"In order to enable the Secretary of the Navy to fulfill his statutory obligation to protect the Reserve from drainage, a program of offset drilling is mandatory.

"In view of the need for Navy to commence protective offset drilling immediately, the Director, Naval Petroleum and Oil Shale Reserves provided, through the temporary deferral of essential projects on NPR #1, $1 million for the first two offset wells. The Secretary of the Navy then made $2 million available to drill four more wells from Operation and Maintenance, Navy (Budget Activity 9 funds)." (Underscoring supplied.)

The Navy, by reacting to situations calling for offset drilling, has postponed other projects and not performed normal maintenance functions.

Besides the 6 wells drilled to protect against drainage, the Navy provided for 22 other wells to be started between January and September 1974. The Supplemental Appropriations Act, 1974, provided funds for the additional wells.

Current funding status

Before fiscal year 1974, funds available to ONPR for reserve activities had been limited to about $4 million to $6 million yearly. The original appropriation for fiscal year 1974 included $6.4 million for operations and $2.1 million for development. However, the Supplemental Appropriations Act, 1974, provided an additional $59 million for exploring and developing Petroleum Reserves Nos. 1 and 4. Thus, the total funds for reserve activities in fiscal year 1974 were $67.5 million. For fiscal year 1975, $69.4 million was appropriated for these activities.

In its program outlining a plan to explore and develop Petroleum Reserves Nos. 1 and 4, ONPR included the following fund requirements.

--Total costs to fully explore Reserve No. 1 are about $19.2 million, amounting to a yearly cash flow of $4 million for 5 years. (Funds allocated were $4.4 million in fiscal year 1974 and $3.75 million in fiscal year 1975.)

--Total costs to fully develop all known hydrocarbon regions in Reserve No. 1 are about $290 million, or about $58 million a year over a 5-year period. (Funds allocated were $47.5 million in fiscal year 1974 and $37.5 million in fiscal year 1975.)

--Costs for the 10-year exploration program at Reserve No. 4 are about $15 million annually. (Funds allocated were $7.5 million in fiscal year 1974 and $23.2 million in fiscal year 1975.)

Fund requirements shown above are based on the 1970 dollar value. In commenting on this, Navy personnel provided more current data. They noted that the costs to fully develop Petroleum Reserve No. 1 are about $417 million, or about $83.4 million a year over a 5-year period. They also noted that the exploration program for Petroleum Reserve No. 4 is now considered to be a 7-year program, estimated to cost about $40.5 million a year.

Conclusion

A lack of funding was identified in our October 1972 report as the primary cause for the nondevelopment of the reserves. Congressman Moss requested an updated report for the Congress to use in considering action. The Congress has since acted to remedy the funding deficiency, as evidenced by the fiscal years 1974 and 1975 appropriations.

PROPOSALS TO PRODUCE OIL FROM THE RESERVES

Some production from the petroleum reserves is necessary to protect and maintain them; however, additional production must be approved by the Congress. To obtain such approval, the Secretary of the Navy must determine that such production is necessary for national defense purposes, and his finding must be approved by the President. Production, however, cannot begin until approved by a joint resolution of the Congress.

Over the past few years, several proposals have been made to produce from the reserves, some for purposes other than national defense. Certain Department of Defense officials endorsed those proposals, but ONPR personnel opposed them.

Production to improve balance-of-payments position

In 1965 the Department of Defense Directorate for Petroleum Logistics Policy prepared a study calling for increased production of crude oil from Petroleum Reserve No. 1 to improve the U.S. balance-of-payments position. This would be accomplished by displacing oil imports. The study noted that:

> "There is no real justification today for the retention of these lands for the exclusive benefit of the Navy, or for any other military department. Industry continues to have the capability to

adequately supply the military and essential civilian needs in any future emergency, as it had in World Wars I and II, and during the Korean emergency."

The study suggested additional production of about 68,000 barrels a day from the shallow zone and concluded that this would not jeopardize national security. According to the study, our balance of payments would be enhanced by about $40 million each year until the shallow zone was depleted. The Assistant Secretary of Defense (Installations and Logistics) and the Acting Secretary of the Navy both endorsed the plan. A legislative package was prepared within the Department of Defense but was not presented to the Congress.

Production to cover costs of canceled leases

Since 1969, legislation has been proposed repeatedly by various congressmen and the administration to use oil from Petroleum Reserve No. 1 to pay for leases to be terminated in the Santa Barbara Channel and for other purposes. The legislation would use receipts generated from crude oil and gas production to

--compensate Santa Barbara Channel leaseholders for offshore leases to be terminated by the Department of the Interior,

--enable the Secretary of the Navy to carry out petroleum exploration on Petroleum Reserve No. 4, and

--reimburse the Treasury for lost royalties from reducing existing production from oil and gas leases on Federal lands.

Because of the large quantity of oil that would have to be produced, the Secretary of the Interior sponsored legislation to create a new naval petroleum reserve in the Santa Barbara Channel. The proposed reserve would compensate the Navy for the loss of Elk Hills oil by creating a reserve out of canceled channel leases.

The Navy and Defense opposed production from Petroleum Reserve No. 1 to pay for the Santa Barbara leases because:

--The proposal was inconsistent with the law defining the role of the reserves.

--A precedent might be established for tapping the reserves whenever the Treasury is short of money.

--Defense personnel believed that production in the manner proposed would create problems because Standard Oil was the dominant producer on the west coast; was under contract to operate the Elk Hills reserve; owned some of the Santa Barbara Channel leases to to be terminated; and would receive either 17 or 30 percent of the oil produced to pay for the leases terminated, depending on the Elk Hills zone produced.

--Production would come from the untouched Stevens zone as well as from the shallow oil zone. This would disturb the hydrostatic equilibrium in the Stevens zone and would require increased production to prevent voidages and imbalances.

--Standard Oil might charge breach of the existing unit plan contract and increase production from its own lands, thereby initiating depletion of the reserve.

Legislation calling for the production at Petroleum Reserve No. 1 to pay for Santa Barbara leases was backed by the Department of the Interior and the President but was not enacted into law.

Production to ease fuel shortage

The oil embargo late in 1973 and the continuing dialog about energy policy since then have prompted proposals to produce oil from the naval reserves. The proposals suggested immediate production to help meet current fuel needs and envisioned future production to reduce reliance on foreign sources.

Proposed current production

In September 1973 the President unsuccessfully proposed producing oil from Petroleum Reserve No. 1 to meet the winter fuel needs of the west coast. His proposal also included authorizing the exploration of Petroleum Reserve No. 4. Shortly thereafter, the oil embargo was imposed.

In November 1973 the Acting Secretary of the Navy, responding to the oil embargo, determined that Elk Hills petroleum production was necessary for national defense because the military services could not purchase required amounts of petroleum products. The President approved the finding and Defense strongly supported it.

Senate Joint Resolution 176 was subsequently introduced to

--concur in the finding of the Secretary of the Navy that production of Naval Petroleum Reserve No. 1 was needed for national defense,

--authorize the production and development of Petroleum Reserve No. 1, and

--authorize and direct exploration of Petroleum Reserves Nos. 1 and 4.

Under that resolution, production from Elk Hills was not to continue for more than 1 year after production started or to exceed a rate of 160,000 barrels of oil a day.

The Senate passed the joint resolution in December 1973 but the House did not act on it before the end of the 93d Congress in December 1974. Other resolutions (H. J. Res. 47 and S. J. Res. 13) which would authorize production have been introduced in the 94th Congress.

Other bills that would have affected the naval petroleum reserves were for the:

--Production and sale of Elk Hills oil in certain quantities for specified periods to ease the effects of the "energy crisis."

--Return of the custody of the reserves to the Secretary of the Interior.

--Creation of a system of national petroleum reserves under the jurisdiction of the Secretary of the Interior.

Features similar to these have been included in proposed legislation to the 94th Congress.

<u>Proposed future production</u>

In the winter of 1973, as a result of the energy shortage, the President announced the inception of Project Independence, which was to evaluate the Nation's energy problems and to provide a framework for developing a national energy policy.

In November 1974 Federal Energy Administration issued its "Project Independence Report," evaluating the impact of several possible strategies on the U.S. energy situation through 1985.

The report considered two strategies for domestic oil production--business as usual and accelerated development of oil-producing capacity. Under business as usual conditions, the report estimated total domestic potential production in 1985 would be about 15 million barrels of oil a day, with no production planned for the naval petroleum reserves.

Under accelerated production conditions, the report estimated that total daily domestic potential production in 1985 would be about 20 million barrels. Of that amount, 2 million barrels would come from Petroleum Reserve No. 4 and 200,000 barrels from Petroleum Reserve No. 1. Therefore, under the accelerated development strategy, 11 percent of total domestic production was expected to come from naval reserves. Of equal importance was the additional 5 million barrels a day anticipated under the accelerated development strategy. The naval reserves were expected to provide 45 percent of that quantity.

The Project Independence Report contained no specific policy recommendations; however, one of the alternatives for consideration envisioned considerable production from the naval reserves.

In his January 15, 1975, state of the Union message the President urged quick action on legislation to allow commercial production from the naval petroleum reserves. A policy to fully develop and produce from the reserves was included in the proposed Energy Independence Act of 1975 (S. 594 and H. R. 2650). That proposed legislation also provided for creating a national strategic petroleum reserve to meet emergency national security needs. Such a reserve was to be created from petroleum and revenues resulting from production at the naval petroleum reserves.

Other legislation dealing directly with the naval petroleum reserves has been proposed to the 94th Congress. The more recent of these included:

--A bill (H.R. 49) authorizing the Secretary of the Interior to establish national petroleum reserves on certain public lands. Such reserves could include all or part of an existing naval petroleum reserve, after consulting with the Secretary of Defense. The House passed H.R. 49 on July 8, 1975.

--An amendment to H.R. 49 excluding the naval petroleum reserves from any national reserves to be established by the Secretary of the Interior. However, the amendment proposed producing from Petroleum Reserves Nos. 1, 2, and 3 up to 200,000 barrels of oil a day for not more than 3 years. The amendment was defeated in the House on July 8, 1975.

--A bill (H.R. 5919) authorizing, among other things, full exploration and development of the naval petroleum reserves and authorizing their production of up to 200.000 barrels of oil a day for not more than 3 years. The House rejected the proposed bill on July 8, 1975.

--An energy proposal developed by GAO in response to congressional inquiries. Under this proposal, Petroleum Reserve No. 4 would be transferred to a newly created Department of Energy and Natural Resources, which would fully explore the reserve to develop information needed to proceed with a sound program of commercial leasing. Petroleum Reserves Nos. 1 and 3 would be fully developed by the Navy and be considered part of the newly created national emergency reserves.

LEASING ON FEDERAL LAND IN BUFFER ZONES

A buffer zone is an area on Federal land around a petroleum reserve. Under current leasing regulations, Federal land in these zones may be leased for gas and oil only if such lands are subject to drainage or if the Bureau of Land Management, in consultation with the Navy, determines that such a lease would not adversely affect the adjacent reserve. The zones around Petroleum Reserves Nos. 1, 2, and 3 are 1 mile wide; the zone around Petroleum Reserve No. 4 is 2 miles wide. Department of the Interior officials noted that a 1-mile buffer zone was created by regulations approved in 1938. However, the Public Land Order opening Alaska lands to oil and gas leasing expressly provided for a 2-mile zone around Petroleum Reserve No. 4.

Leases continue in effect on buffer zones around Petroleum Reserves Nos. 1, 3, and 4. Many leases were issued or based on rights existing before the buffer zones were established. Also, as discussed on page 18, leases may be awarded in these zones if the Navy approves. Since our report in October 1972, one lease has been terminated because production in paying quantities ceased and two have been canceled because they were erroneously awarded. Other leases will be extended because of the terms under which they were issued or because of options provided by legislation enacted after they were awarded. No new leases have been awarded.

The Secretary of the Interior has responsibility for issuing leases and for supervising the development and production of mineral resources on Federal lands. Within the Department of the Interior, the Bureau of Land Management issues and administers leases.

The U.S. Geological Survey provides technical support in the leasing process. Once operations start, the Survey is responsible for all matters relating to those operations and for accounting for production under the leases. As part of its duties, the Survey issues drilling permits to lessees and operators to drill new wells or change existing ones. Each permit requires that drilling be in accordance with applicable administrative and operating regulations. When a drilling permit request meets these criteria and the operator owns or has been delegated the rights to conduct the operation, the Survey normally approves the permit. To do otherwise would be to deny the rights granted by the lease. When the planned work is completed, a report on the results is filed with the Survey.

An approved permit extends only to the operations included therein, and any work at a later date would require a new permit. No new requests to drill have been received and no drilling permits have been issued for current leases within buffer zones around the reserves since 1971, according to Survey personnel.

Department of the Interior records showed that Federal lands in the buffer zones around Petroleum Reserves Nos. 1 and 3 contained 10 and 32 leases, respectively. There are portions of four leases on Federal land within the buffer zone around the reserve in Alaska, accepting the Navy's view that the boundary lies along the Coleville River. 1/

Leases currently in effect will be extended if they meet any of the following criteria.

1/If the outcome of the Coleville River boundary dispute establishes the reserve boundary in favor of the Department of the Interior, these leases will not be in the buffer zone. The Department of Justice advised us in May 1975 that the boundary dispute is still under consideration.

1. They were issued under those provisions of the Mineral Leasing Act of 1920, which provided for the issuance of a 20-year lease and the preferential right of renewal for successive 10-year periods.

2. There is evidence that oil or gas is or can be produced in paying quantities.

3. They are committed to a producing cooperative or unit plan approved by the Secretary of the Interior.

Petroleum Reserve No. 1

Department of the Interior records disclosed that Federal land in the buffer zone around this reserve consisted of 10 leases. Of these, six were issued before 1926 and none since 1963. Two of the leases contain provisions which grant the preferential rights to successive 10-year renewals. Thus, unless the leases have been extended beyond their fixed term by commitment to a producing unit, they can be extended as long as the lessees desire to hold them, even if they are not productive. Four leases will continue to be valid as long as they are producing in paying quantities, and all four were so classified as of the end of fiscal year 1974. The remaining four leases will be extended as long as the units to which they are committed remain productive.

One lease in its extended term by production was terminated in 1973 due to a cessation of production in paying quantities. No new leases have been awarded since our 1972 report, and no new drilling permits on existing leases have been issued since 1969.

Petroleum Reserve No. 3

Department of the Interior records disclosed that leased Federal land in the buffer zone around this reserve is contained in 32 leases. Of these, 15 were issued in the 1920s. Of the remaining leases, 13 were issued before 1957 and 4 between 1962 and 1967.

All these leases will be extended for the present--2 because they contain provisions which grant the preferential right of renewal, 10 because they are now producing oil and gas in paying quantities, and 20 because they are committed to producing units.

Two leases around this reserve were canceled in 1974 because they had been erroneously awarded. Federal regulations require that, before an award, the Department of the Interior obtain Navy concurrence on proposed leases within the buffer zone. These leases were issued without Navy concurrence. Interior officials said this occurred because the land status records erroneously indicated that the lands lay outside the buffer zone. They noted that, when the error was discovered, the leases were canceled.

According to a Department of the Interior official. no leases have been awarded and no drilling permits have been issued on existing leases since our 1972 report.

Petroleum Reserve No. 4

Leases have been issued on Federal and State lands adjacent to the reserve. Four 10-year leases were awarded in 1966 on Federal lands. No wells have been drilled and no drilling permits issued. If the lessees have no producing wells or have taken no action to produce within the 10-year period, the leases will expire. However, if the lessees are diligently drilling at the end of the period, the lease can be extended for 2 years.

Under the Alaska Statehood Act (Public Law 85-508), Alaska selected some Federal land adjacent to the northeast corner of the reserve. The Bureau of Land Management, with Department of Defense concurrence, tentatively approved this selection. Tentative approval means that there were no claims to the land but it had not been surveyed.

The Statehood Act and Alaska statutes authorize conditional leasing of State-selected lands after the Bureau has given its tentative approval. The State has leased some land adjacent to the reserve boundary, and portions of 11 of the leases are within 2 miles of the reserve. An Alaska official said that when the State was given title to the land there were no restrictions on leasing within 2 miles of the boundary.

Officials from both the Bureau and the State said that a conditional lease does not prohibit the lessee from drilling on the leased property. However, no drilling permits have been issued and no wells drilled within 3 miles from the Navy boundary.

UPDATED DATA ON PETROLEUM RESERVES NOS. 1 AND 4

	No. 1		No. 4	
	Reported 1972	Revised 1974	Reported 1972	Revised 1974
Proven recoverable resources:				
Barrels of oil (millions)	1,022	1,010	(a)	(a)
Market value (millions)	$2,633	$10,100	(a)	(a)
Present daily production capability (barrels):				
Total	100,000	b/ 160,000	-	-
Already in use	5,000	c/ 3,000	-	-
Balance available for emergency	95,000	157,000	-	-
Development potential and costs:				
Maximum daily deliverable rate (barrels)	d/ 267,440	d/ 400,000	e/ 3,000,000	e/ 3,000,000
Increase over present daily capability (barrels)	167,440	240,000	e/ 3,000,000	e/ 3,000,000
Cost to develop (millions)	$69	$418	e/ $1,900	e/ $3,000
Total available daily for emergency (barrels)	262,440	397,000	e/ 3,000,000	e/ 3,000,000

a/Reserve No. 4 has not been fully explored. The Navy has estimated recoverable resources to be 100 million barrels. In our 1972 report we estimated the reserve's market value to be $200 million. However, the Geological Survey estimated the reserve to contain from 10 to 33 billion barrels of oil. Based on that estimate and on the price of oil in early 1974, the market value of the oil would be from $100 billion to $330 billion.

b/Development activities to increase production capability have been underway since late 1973. The Navy reprogramed funds in 1973 for drilling to prevent drainage, and the 1974 supplemental appropriation provided funds in January 1974.

c/Although the Navy is responsible for conserving oil, some production is necessary to maintain and protect the reserves. The Congress must approve any additional production, and it has not done so.

d/Reported figures in 1972 were in the average daily rates that would deliver the maximum volume of oil for a 5-year period without adversely affecting the maximum recoverable resources. The 1974 revised figures were for a 1-year period based on an estimated reserve of 1.5 billion barrels in a fully developed field.

e/Navy estimates based on the assumption that Reserve No. 4 contains 10 billion barrels. The Navy has made no estimate on developing No. 4 as a 33-billion-barrel reserve.

DEPARTMENT OF THE NAVY
OFFICE OF THE SECRETARY
WASHINGTON D C 20350

4 JUN 1975

Mr. F. J. Shafer
Director, Logistics and Communications Division
U. S. General Accounting Office
Washington, D. C. 20548

Dear Mr. Shafer:

The Secretary of Defense has asked me to reply to your letter of April 7, 1975, which forwarded the GAO draft report on the Naval Petroleum Reserves, GAO Code 945234, (ase #4068).

We appreciate this opportunity to review your findings. The Department of the Navy comments are enclosed herewith.

Sincerely,

Jack L. Bowers

JACK L. BOWERS
Acting Secretary of the Navy
For Naval Petroleum and Oil Shale Reserves

Encl:
(1) Comments

GAO notes: 1. Page references in this appendix may not correspond to pages in the final report.

2. The Navy requested that certain comments no longer pertinent be deleted.

Department of the Navy Reply

to

GAO Draft Report of 7 April 1975

on

Follow up of GAO's Review of
The Naval Petroleum Reserves

OSD Case No. 4068

Summary of GAO findings. The "follow-up report" contained no specific recommendations but found that: (a) a major reason for not developing the Reserves was that Navy did not have the necessary funds, (b) the lack of funds has delayed developing the Reserves to a capability of producing large quantities of oil for an emergency, (c) steps have been taken by Navy and OSD to insure that the funding for the Petroleum Reserves receives appropriate attention in the Congressional budget submission and Congress has acted to remedy the funding deficiency, and (d) that no new leases had been let on Federal land in buffer zones around the Reserves.

Summary of Department of Navy findings. The Department of the Navy concurs in the findings of the General Accounting Office. However, it is felt that certain data within the report should be clarified in order to prevent the assumption

Enclosure (1)

of erroneous conclusions on the part of the recipients of the report. The suggested changes are contained in the following statement.

Statement. The following suggested changes to Appendix I and Appendix II are considered essential to the submission of a truly objective and factual report:

APPENDIX I

Page 3, first full paragraph - Delete the last sentence and substitute the following sentence: "Naval Petroleum Reserve No. 2 production can be expected to continue to decline."

Page 3, second full paragraph - Reword to read as follows: "At Petroleum Reserve No. 3, current oil production of 400 barrels a day is about 12,000 barrels below the average maximum daily deliverable rate attainable if the reserve were fully developed."

[See GAO note 2, p. 21.]

[See GAO note 2, p. 21.]

Page 7, line 5 - the last word of that line should be "injection" not "inspection."

Page 7, last paragraph - It is felt that since the December 1972 report on NPR-1 was actually merged with similar reports on NPR-3, NPR-4 and NOSR to produce the "April 1973 Engineering and Assessment Plan . . . . ", that reference to recent planning should more properly be credi ed to the "April 1973 Plan", rather than the "December 1972 program".

Page 10, first non-indented line - Last word should be changed to "drilling" in lieu of "production".

Page 10, same line - The wording of this sentence seems to infer that our "drilling" was performed at the expense of essential projects as if this were wasted money, whereas the drilling actually provided Navy with information which led to a temporary restraining order closing down Standard Oil Company's production and helped identify a new producing pool. It is felt that these benefits should be highlighted in the report.

Page 11, second indented paragraph should be corrected, based on most recent information, to read as follows:

> "Total costs to fully develop all known hydrocarbon regions in Reserve No. 1 are about $417 million, or about $83.4 million a year over a 5-year period. (Funds allocated to date were $47.5 million in fiscal year 1974 and $37.5 million in fiscal year 1975.)"

Page 11, third indented paragraph should be corrected, based on most recent information, to read as follows:

> "Costs for the 7-year exploration program at Reserve No. 4 are about $40.5 million annually. (Funds allocated were $7.5 million in fiscal year 1974 and $23.2 million in fiscal year 1975.)"

Page 14, change the first two paragraphs under the heading "Proposed Current Production" to read as follows:

"In September 1973, the President in a speech, proposed production of oil from Petroleum Reserve No. 1 to meet the winter fuel needs of the west coast. His proposal also included authorizing the exploration of Petroleum Reserve No. 4. Shortly thereafter, the oil embargo was imposed."

"In November 1973, the Acting Secretary of the Navy, responding to the oil embargo and the critically short operating fuel stock of the military around the world, determined that Elk Hills petroleum production was necessary for national defense, because the Armed Services could not purchase required amounts of petroleum products. The President approved the finding and DoD strongly supported it."

APPENDIX II

Note d - It is suggested that the second sentence of this note be changed to read as follows: "The 1974 revised figures were for a 1-year period based on estimated reserves of 1.5 billion barrels in a fully developed field."

It is suggested that the 1974 market value of proved and potential oil reserves as indicated in second line under "No.1" and in note a, be revised to reflect value in the free market, not subject to price controls. At the end of 1974 that value was approximately $10.00 per barrel.

United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

MAY 14 1975

Mr. Henry Eschwege
Director, Resources and Economic
Development Division
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Eschwege:

We have reviewed your proposed report to the Congress entitled "Follow Up of GAO's Review of the Naval Petroleum Reserves."

Our response is essentially a clarification of pages 16-20 of the draft report which discuss leasing on Federal lands within the buffer zone around petroleum reserves.

On page 17, it is stated that leases remain within the boundaries of buffer zones around Petroleum Reserves Nos. 1, 2, 3, and 4. Such buffer zones were created by regulations approved March 21, 1938. The Secretary of the Interior directed that no application for an oil and gas lease would be allowed for lands within 1 mile of the exterior boundaries of a naval petroleum reserve or military or naval helium reserve. There has been no change since then in this 1-mile buffer zone around any of the naval petroleum reserves, including NPR No. 4 in Alaska.

Public Land Order 1621 of April 18, 1958, opening lands north of the Brooks Range in Alaska to oil and gas leasing, expressly provided that the leasing maps would not describe any lands within 2 miles of NPR No. 4. This decision was made because of the uncertain language in Executive Order 3797-A describing the boundary of NPR No. 4 along the Colville River as the "western or right bank" of the Colville River. Interior's interpretation of the 1923 Executive Order places the boundary along the west bank of the Colville River. If this interpretation prevails, then none of the four leases issued in 1966 on Federal lands are situated within the buffer zone. If the Navy's interpretation of the Reserve boundary as being on the "eastern" bank of the Colville River is correct, then, as stated by GAO, the portions of four leases would be within the buffer zone to NPR No. 4.

These four leases issued in 1966 for 10-year periods must each have wells capable of producing oil or gas in paying quantities by the end of their 10-year term to continue the life of the lease. Failure to have such wells will result in the leases expiring by operation of law at the end of the tenth year. If there is no such well on the leasehold, the leases can be extended for 2 years provided the lessee is actively and diligently drilling over the expiration date of the lease. Production in paying quantities during the 10-year primary term or the 2-year extended term by reason of diligent drilling will continue the lease for the life of production.

Also, as indicated on page 19 of the report, two leases within the buffer zone to Petroleum Reserve No. 3 were issued erroneously and have since been cancelled. These two leases were issued because of error in the land status records which indicated that the lands lay outside the buffer zone and were available for leasing without obtaining Navy's concurrence. When the error was discovered, the leases were, of course, promptly cancelled.

In addition to the foregoing, we informally provided editorial changes to report text pages 16-20 for consideration in preparing the final report. They include, on page 18, identification of one statement on lease cancellations which we believe should be greatly expanded or deleted.

Sincerely,

A L Reynolds

Allan L. Reynolds
Director of Audit and Investigation

ASSISTANT ATTORNEY GENERAL

Department of Justice
Washington, D.C. 20530

MAY 6 1975

Mr. Victor Lowe
Director
United States General Accounting
Office
Washington, D.C. 20548

Dear Mr. Lowe:

I am replying to your letter of April 7, 1975, requesting any comments we wish to make with respect to a draft report entitled "Follow Up of GAO's Review of the Naval Petroleum Reserves," prepared at the request of Representative John E. Moss.

We have examined the report, which is mainly a factual report regarding the status of the development of the Naval Petroleum Reserves and the status of federal lands and buffer zones around those reserves, and have no comments.

You have also asked for information regarding the current status of the Colville River boundary dispute between the Department of the Navy, the Department of the Interior, and the State of Alaska. At the present time this matter is under consideration by the Department in connection with a request for an opinion of the Attorney General. It is hoped that our work on the matter will be completed in the near future.

Sincerely,

Antonin Scalia
Assistant Attorney General
Office of Legal Counsel