HJR

12

STATE OF ALASKA
1997 LEGISLATIVE SESSION

NO.
BILL VERSION: HJR 12
PUBLISH DATE:

Revision Date:
Title: Urging the Secretary of the Interior to conduct competitive oil and gas lease sales....
Sponsor: Representative Green
Requestor: Representative Green

Department Affected: Legislative Affairs Agency
BRU: All
Component: All

COMPONENT SERIAL NO:

Expenditures/Revenues: (Thousands of Dollars)

OPERATING	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03
PERSONAL SERVICES	0	0	0	0	0	0
TRAVEL	0	0	0	0	0	0
CONTRACTUAL	0	0	0	0	0	0
SUPPLIES	0	0	0	0	0	0
EQUIPMENT	0	0	0	0	0	0
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	0	0	0	0	0	0
CAPITAL	0	0	0	0	0	0
REVENUE FUND SOURCE	0	0	0	0	0	0

FUNDING: (Thousands of Dollars)

GENERAL FUND	0	0	0	0	0	0
FEDERAL FUNDS						
OTHER FUND SOURCE						
TOTAL	0	0	0	0	0	0

POSITIONS:

FULL-TIME	0	0	0	0	0	0
PART-TIME	0	0	0	0	0	0
TEMPORARY	0	0	0	0	0	0

Estimate of current year impact:

ANALYSIS: (Attach a separate page if necessary)

Zero fiscal impact.

Prepared By: Karla Schofield, Deputy Director Karla Schofield Phone: 465-3852
Division: Administrative Services Date: 1/17/97

Approved By: Pamela A. Varni, Executive Director Pamela A. Varni
Agency: Legislative Affairs Agency Date: 1/17/97

Distribution (by preparer): Leg. Finance, Legislative Sponsor, Requestor, OMB, Gov. , & Impacted Agency(ies).

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HJR 12

"A Resolution, Urging the Secretary of the Interior to conduct competitive oil and gas lease sales within the National Petroleum Reserve in Alaska."

We oppose House Joint Resolution 12 because oil and gas exploration in the NPRA is not essential for national security at this time, and will cause unnecessary harm to an ecologically significant area.

Spanning across more than 23 million acres from the crest of the Brooks Range north to the Beaufort and Chukchi Seas, the NPRA is the largest continuous span of undeveloped public land in the United States. The National Reserve is essential to the survival of the 450, 000 western Arctic caribou herd, (our nation's largest herd) as well as numerous species of waterfowl, possibly, the world's largest congregation of wolverines, and the largest populations of spotted seals and beluga whales (35 hundred mammals) along the Chukchi Sea coast. Also within its borders lies the world's largest breeding grounds for several species of birds and five million waterbirds, including the threatened spectacled eider.

Without a pressing need for oil and gas development, we feel it is in the nation's interest to leave the land preserved. HJR 12 specifically references national security as a reason for drilling while currently, Congressional policy allows for the export of Alaskan oil. Under this act, development today could prove harmful in the event of a future energy crisis. Additionally, since United States' energy needs are not great enough to provoke a national energy policy that stresses energy conservation, it is inappropriate and misguided to consider an oil development project of this scale. This act would be an unnecessary give away of Alaska's federal lands to industry.

In conclusion we suggest using the same technologies making NPRA a valuable prospect to utilize existing state-owned fields. When you consider existing oil prices along with the natural values of the NPRA in its current state, this is clearly not the time to drill for oil and gas in the Preserve.

Alaska State Legislature

Representative Joe Green

District 15

Sponsor Statement

HJR 12

Supporting oil & gas lease sales in the National Petroleum Reserve Alaska

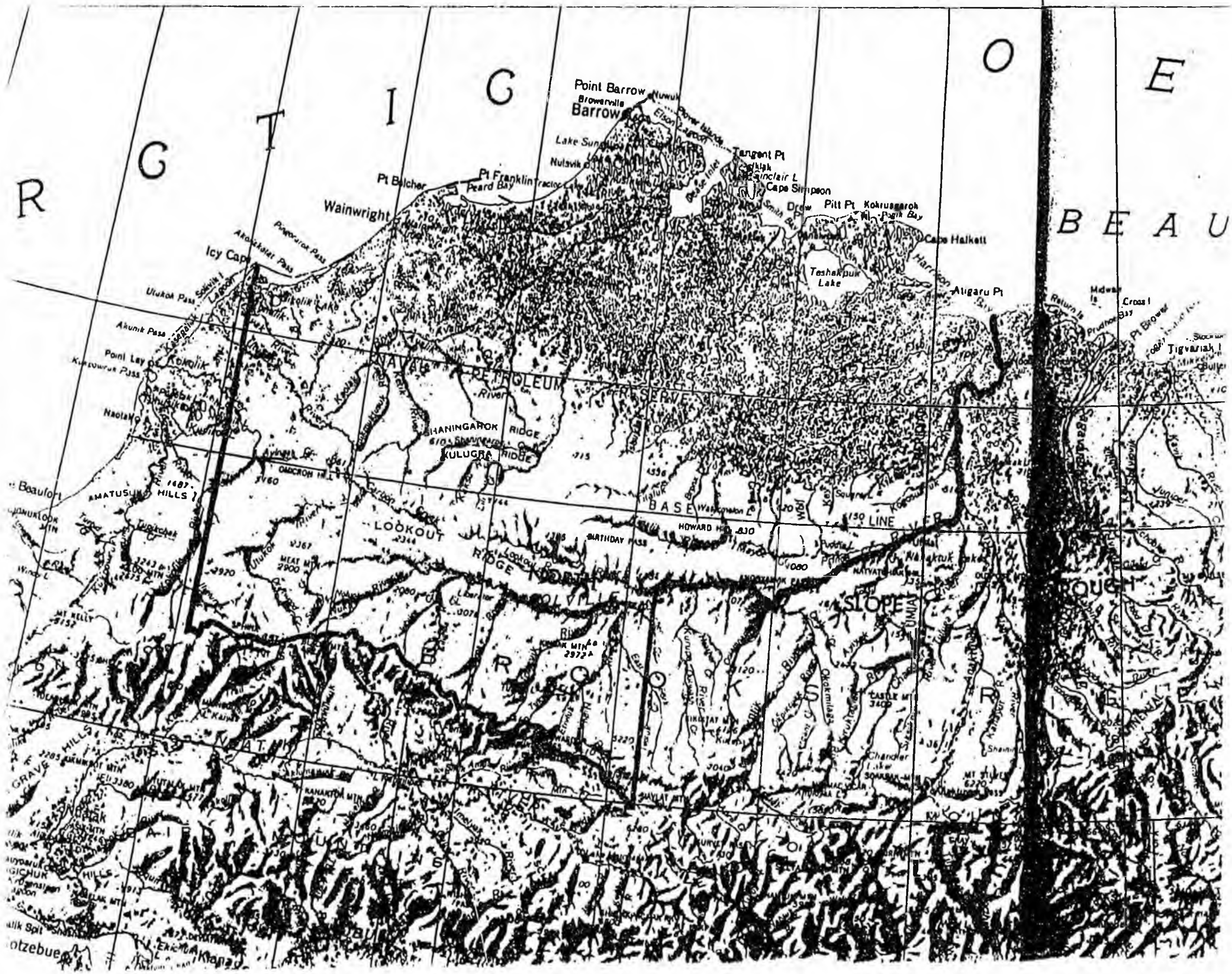
HJR 12 is a statement by the 20th Alaska Legislature urging the Secretary of the U.S. Department of the Interior to **re-institute an oil and gas leasing program** in the National Petroleum Reserve Alaska (NPRA).

Leasing in the NPRA is in the state's best interest for three reasons: 1) The economic activity associated with oil and gas leasing, exploration, and production benefits Alaskans; 2) oil produced in the NPRA would be transported through the Trans-Alaska Pipeline, helping to keep the pipeline open, and potentially enhancing the commercial viability of existing and future oil development projects on the North Slope; 3) the State of Alaska will receive 50% of the revenues from oil and gas production in the NPRA.

There were four oil and gas lease sales in the NPRA during the early 1980's. In January 1982 Sale # 821 offered 59 tracts. 52 bids were submitted on 29 tracts for a total of $86,575,537. In May of 1982 Sale # 822 offered 212 tracts. 14 bids were submitted on 12 tracts for a total of $11,747,131. In July of 1983 Sale # 831 offered 84 tracts. 23 bids were submitted on 18 tracts for a total of $20,309,208. In July of 1984 Sale # 841 offered 64 tracts but no bids were submitted. Sale # 841 scheduled for August 1985 was canceled due to lack of interest.

With advances in technology **new interpretations are being developed from the data collected during the past several decades** by both the private sector and the federal government. These new evaluations are generating renewed interest, and oil companies with considerable experience in Alaska have indicated that they would like to utilize new interpretations of it to resume exploration.

I believe **the federal government should resume lease sales** and allow - no, encourage - the industry to explore for oil and gas in the NPRA. I also believe it is important that the Alaska Legislature send a unified message to the Department of the Interior that we support lease sales being scheduled. I would appreciate your support of this measure.



Point Barrow
Barrow
Pt Franklin
Peard Bay
Pt Belcher
Wainwright
Icy Cape
Tangent Pt
Cape Simpson
Pitt Pt
Cape Halkett
Teshekpuk Lake
Aligaru Pt
Cross I
Tigvariak I
B E A U
Point Lay
NAVAL PETROLEUM RESERVE
KULUGRA RIDGE
LOOKOUT RIDGE
BASE LINE
HOWARD HILL
BIRTHDAY PASS
SLOPE
UMIAT
TROUGH
Beaufort
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THE POOR QUALITY OF THE ORIGINAL

THE ALASKA JOURNAL OF COMMERCE

FOCUS

Alpine discovery brings renewed interest in reserve

By Tim Bradner
Alaska Journal of Commerce

ARCO Alaska Inc.'s Alpine oil discovery on the Colville River Delta west of Prudhoe Bay has brought renewed interest in the National Petroleum Reserve — Alaska, the huge 23.4 million acre federal land reserve on the western Arctic Slope that covers an area the size of Indiana.

[redacted]

The Arctic Slope Regional Corp. also has been working to get additional mineral rights in NPR-A through exchanges of other ASRC-owned lands with the government.

The Barrow-based Native regional corporation already owns some mineral rights within the reserve, underneath surface lands selected by the village of Nuiqsut. But an expansion of ASRC holdings would likely speed exploration.

[redacted]

SOURCE: The Arctic Coastal Zone Management Newsletter

AJOC/NOLAN

[redacted]

"The good news is that NPR-A is back on peoples' radar screen because of the Alpine discovery," said Mike Richter, ARCO's exploration vice president.

A lot of the NPR-A acreage considered marginal in the earlier rounds of exploration may now be worth a second look because of advances in technology and the industry's new, lower-cost methods of exploring and developing North Slope oil, Richter said.

The Colville Delta, where ARCO discovered oil at Alpine and Texaco made a nearby, earlier discovery that was uneconomic, is at the eastern border of NPR-A. ARCO's Richter declined to comment, but most geologists feel it's likely that oil-bearing geologic strata extends to the west into NPR-A.

The construction of a pipeline into the region from the east also will make it possible to develop small oil and gas discoveries in nearby NPR-A lands that were considered previously uneconomic.

The oil potential of the reserve long has been known, and it was actually this that first

Continued on Page 11

National Petroleum Reserve may now be worth new

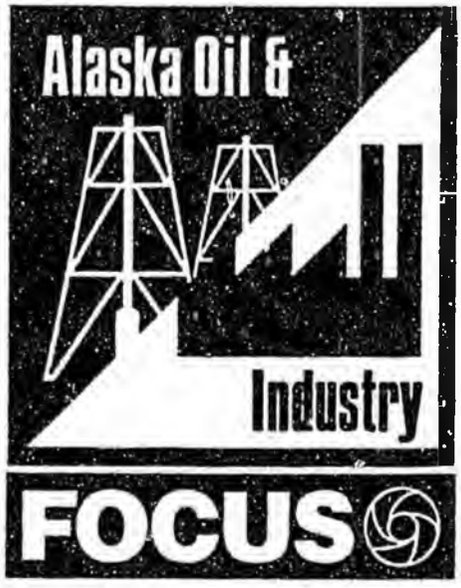
Continued from Page 9

attracted private industry to the North Slope, although the first commercial discoveries were made to the east near Prudhoe Bay.

Inupiat Eskimo people of the North Slope were the first to tap the oil potential of what is now the National Petroleum Reserve — Alaska.

There are oil seeps throughout the region, and Native hunters would cut oil-saturated tundra into blocks for home heating and cooking, using the pitch-laden bricks in much the same way that urban homeowners use artificial particle logs.

Local tradition has it that Charles Brower, a well-known early resident of Barrow, was the first person to lead U.S. government geologists to oil seeps in the early part of the century.



In the following years, federal geologists made surveys of river drainages in what is now NPR-A. In 1923, President Warren Harding signed legislation creating Naval Petroleum Reserve No. 4, covering 23.4 million acres, as a source of oil for the U.S. Navy.

World War II stimulated more interest in the region, and from 1943 to 1953 the Navy sponsored an exploration program that was to result in two small oil and two small gas discoveries, none of them commercial in the modern sense.

The U.S. Geological Survey handled geological and geophysical aspects of the program, contracting with United Geophysical Co. for seismic services.

Over nine years, 37 exploratory wells and 45 core holes were drilled in NPR-4, with an aggregate footage of 175,000 feet. About $45 million was spent on the program before it was halted by the Eisenhower administration.

One oil discovery was at Umiat, on the Colville River in the southeastern part of NPR-A, where a shallow deposit with about 300 million barrels of reserves was discovered. The find was noncommercial due to its remoteness, but the oil was of sufficient high quality that it could be run without refining through diesel engines at the site.

An airfield was built at Umiat and it became a logistics support base for exploration in that part of the reserve. Umiat still is used today as a base for geological and scientific research.

A significant gas field also was discovered near Barrow, in the northern part of the reserve. The Walakpa Gas Field was developed to serve government installations in Barrow and later the local Inupiat community of Barrow.

Because reserves in the Walakpa field were limited, the North Slope Borough, the regional municipal government, later invested in further exploration and was successful in finding additional reserves.

Nothing much happened in NPR-4 for the next 20 years, but in 1975, following the discovery of the large Prudhoe Bay field east of NPR-4, the OPEC oil embargo, the first "oil crisis" and the runup in oil prices, the federal government decided to take another look at the area.

[redacted]

Local communities in the region, particularly the North Slope Borough and the City of Barrow, were to play a major part in passage of this legislation. The city needed land for expansion, but was blocked by restrictions on access to lands managed by the Navy.

Under the Department of the Interior, more conventional federal land regulations were applied to NPR-A, and Barrow was allowed access to adjacent land for new subdivisions.

The responsibility for exploring and developing NPR-A was given to the U.S. Geological Survey, which contracted for drilling and exploration services with Husky Oil, a Canadian firm.

Under the USGS, Husky drilled 28 exploration wells and gathered 14,770 miles of seismic data before the program of government-sponsored exploration was halted by the Reagan administration in 1981.

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NPR-A exploration continued under President Reagan, but it was led by private industry in a more conventional fashion. Reagan's Secretary of the Interior James Watt held four lease sales between 1982 and 1985.

Industry interest in the area was lukewarm. At the time, the companies were more focused on offshore prospects in the Beaufort Sea. Two sales were held in 1982, netting the government $66.8 million in

oil exploration

high bids.

In the third sale, in July 1983, bids were made on only 18 of 84 tracts offered, with $16 million in high bids collected by the government. A fifth sale, planned for 1985, was canceled due to lack of industry interest.

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Of all the companies working on the North Slope, ARCO has had the most sustained interest in the area. ARCO was the big player in the 1983 sale, paying out $9.4 million in high bids including a $2.9 million bid for a tract south of Barrow.

ARCO also drilled the only exploration well drilled by private industry on NPR-A under the Reagan-era leasing program. ARCO's Brontosaurus No. 1 well south of Barrow encountered oil shows in the Sadlerochit formation, but was not economic.

Anchorage Daily News

NPR-A

Oil reserve merits another look

Alaskans are notorious for never being able to agree on anything, but there's at least one place in the state where oil rigs can go to work without stirring up controversy: The National Petroleum Reserve — Alaska.

Though prior drilling never found more than piddling amounts of oil in this part of the North Slope, that was back in the Stone Age of drilling technology. Now that Arco Alaska Inc. has found oil just across from the reserve's eastern boundary, it would be foolish not to take another look at what may be there. Arco's discovery may extend into the reserve, in which case the American public should be sure to get its fair share of the action.

This is one of those happy cases where government can open a hot oil prospect without invading hallowed environmental ground. Bill Clinton and Interior Secretary Bruce Babbitt are as green as they come, but they had no trouble agreeing to take a fresh look at the possibility of leasing the reserve's most promising areas.

That's not to say that it will be open season for oil anywhere. The reserve itself is huge, roughly the size of Indiana. There will be some environmentally sensitive areas that will be best left undisturbed by oil activity. Fortunately, the areas of greatest concern seem to be well away from the hot spot near Arco's discovery. The study process announced by Secretary Babbitt should identify potential conflicts, but at first glance, no serious problems lie ahead.

Seeing this new opportunity unfold under Democrats Knowles and Clinton seems to have stirred Republican U.S. Sen. Frank Murkowski into a fit of one-upmanship. He immediately went on record with a complaint that the whole reserve should be opened to leasing.

The senator's idea is politically unwise and economically dubious. It would stir up more environmental opposition, as groups geared up to protect sensitive areas elsewhere in the reserve. And the feds would drive down the value of the public's resources by flooding the market with leases before we know whether there really are commercial oil deposits inside the reserve.

For now, the feds should concentrate on getting the uncontroversial eastern portion of the reserve on the market as quickly as possible. Once that work is done, they can take more time to plan a responsible balance between exploration and protection for the rest of the reserve.

What and where is the NPRA—and how was it established?

FROM: USGS PROFESSIONAL PAPER 1240-C

NPRA established

[redacted]

"Whereas there are large seepages of petroleum along the Arctic Coast of Alaska and conditions favorable to the occurrence of valuable petroleum fields on the Arctic Coast and,

WHEREAS the present laws designed to promote development seem imperfectly applicable in the region because of its distance, difficulties, and large expense of development and,

WHEREAS the future supply of oil for the Navy is at all times a matter of national concern,

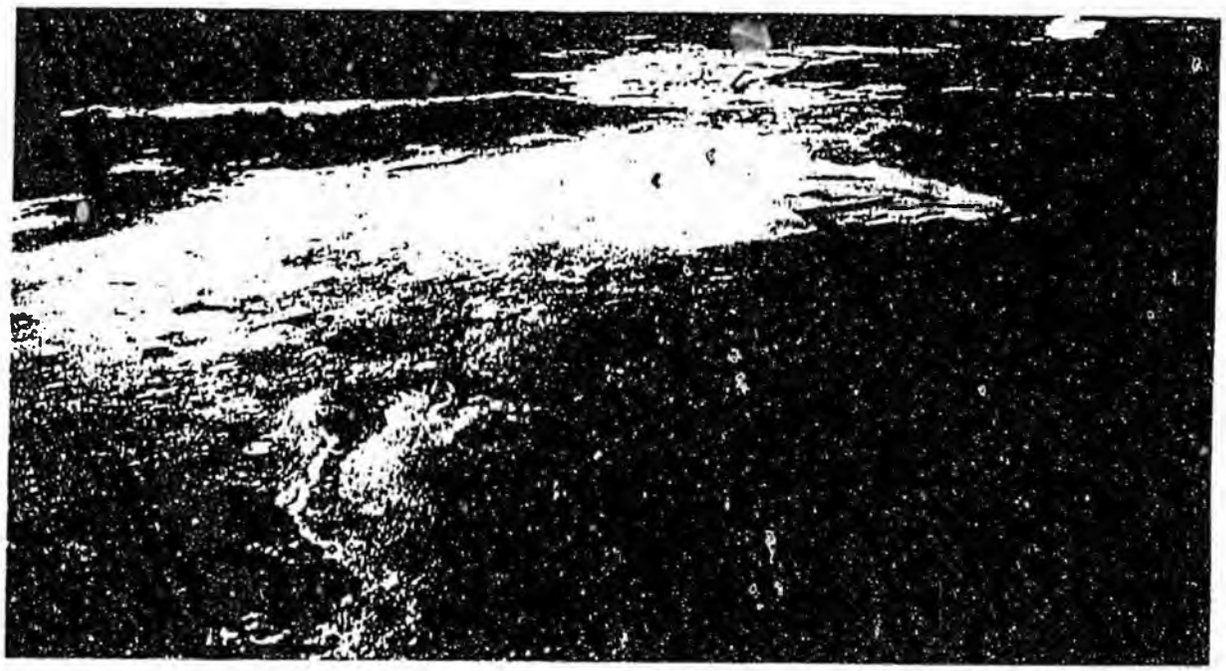
Now, THEREFORE, I, WARREN G. HARDING, President of the United States of America, by virtue of the power in me vested by the laws of the United States, do hereby set apart as a Naval Petroleum Reserve all of the public lands within the following described area not now covered by valid entry, lease or application: • • •"

WARREN G. HARDING

The White House,
Feb. 27, 1923

No. 3797–A.

The first description of oil seepages at Cape Simpson by A. H. Brooks was published in 1909 in USGS Bulletin 379. Eskimos had known of these seepages as well as of oil shales that burned like wood; they had used both for fuel long before recorded history. Although these leads were in a remote and isolated region of the then Territory of Alaska, oil prospectors were already following up on them. Crude oil had been discovered and produced in the conterminous United States, but experts, including some prominent geologists, were predicting that resources were limited and soon could be in short supply. Oil was rapidly replacing other sources of energy (coal and whale oil), and oil for ships was considered critical to the Nation's welfare and defense. Thus, the establishment of a Naval Petroleum Reserve in Arctic Alaska was fitting



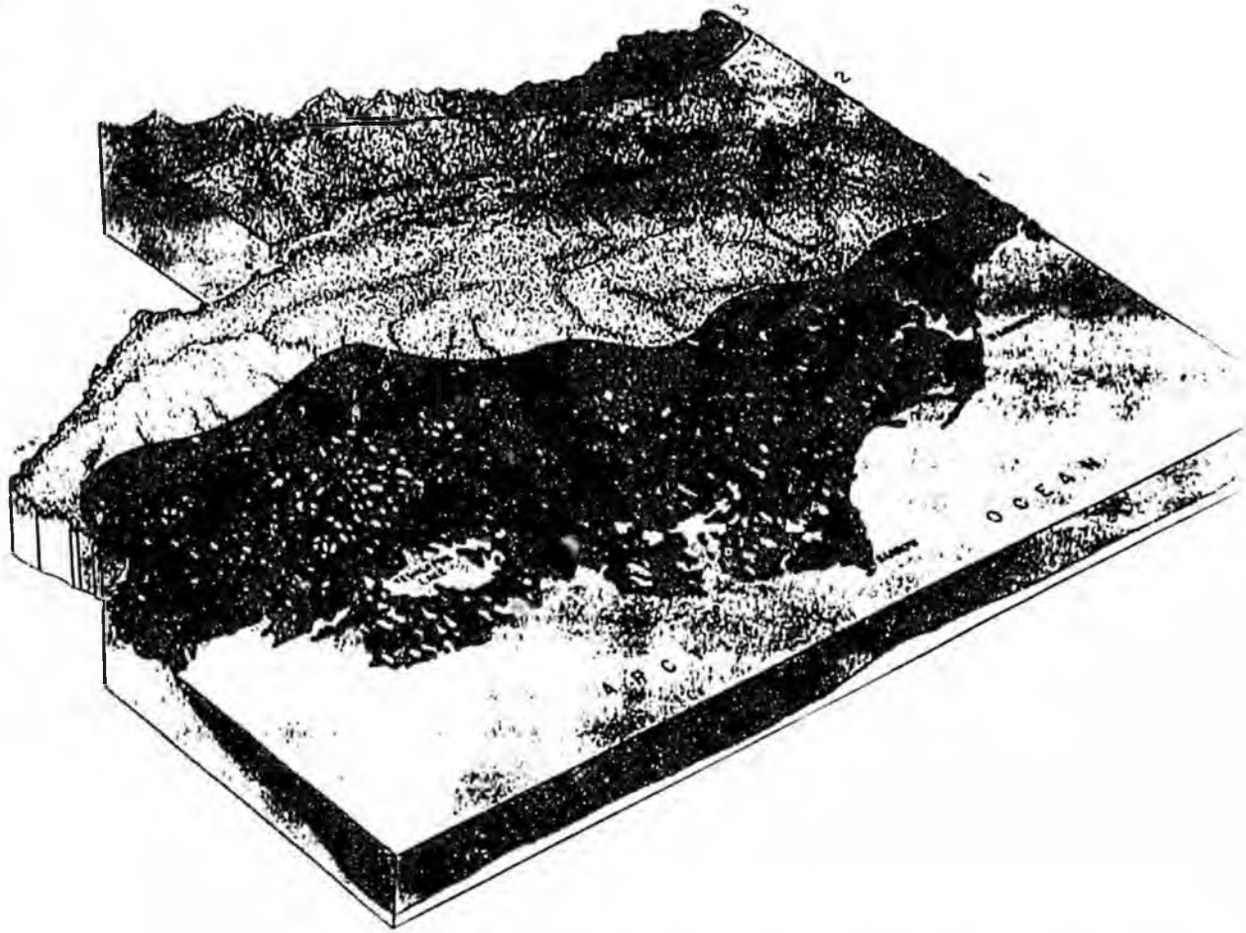
Oil seeps, such as this one near Simpson, provided clear evidence to early explorers that petroleum rich rocks were present beneath the Arctic tundra. Photograph by George Gryc.

Geographic setting

The entire NPRA is north of the Arctic Circle. It occupies an area about the size of the State of Indiana—some 37,000 square miles. Its north boundary is the Arctic Ocean, and about half of its south boundary follows the watershed divide of the western Brooks Range, thence northward to the Colville River, and along that river to the Arctic coast.

Northern Alaska and the NPRA are divided into three major physiographic provinces: the Arctic Coastal Plain, the foothills, and the east-west trending Brooks Range that cuts off this Arctic region from the rest of Alaska. The Brooks Range forms a major watershed, the north slope of which drains into the Arctic Ocean—thus the terms "Arctic Slope" and "North Slope" of Alaska. The mountains form an arc, concave northward, of complexly folded and faulted rocks. Peaks range in elevation from 3,000–4,000 feet in the west to more than 9,000 feet in the east. The foothills immediately to the north consist of low synclinal mountains separated by broad anticlinal lowlands that give way to long, continuous, east-west-trending ridges covered by a green tundra mat. These ridges gradually blend into the vast, nearly treeless coastal plain dotted with literally thousands of shallow northwest-oriented lakes.

Typical scenes in the three physiographic provinces of northern Alaska



From north to south, the NPRA consists of (1) the Arctic Coastal Plain, a broad, flat expanse dotted with lakes; (2) the foothills, an area of rolling hills; and (3) the Brooks Range, a rugged mountain range with elevations as high as 9,030 feet within the NPRA and peaks of 8,000 to 9,000 feet near the Trans-Alaska Pipeline

When, by whom, and how was the NPRA explored?

Early exploration

Between 1800 and 1900, several hardy explorers sailed along the Arctic coast and described and named the major geographic features. Much of the sealane traffic, however, was by enterprising traders and whalers. It is interesting to note that the oil business, in one form or another, has had the greatest impact on the North Slope and its inhabitants.

The first big push to the Arctic was in search of whale oil, which, in the years before the Civil War, was the principal fuel for lamps and a common lubricant. The premium grade of fuel came from sperm whales, and the regular grade from bowhead and other species of whales. The rising industrialization of the United States and the heightened emphasis on education (requiring better light for evening study) created a rapid increase in demand. In 1823, sperm oil sold for 45 cents a gallon; ten by 1859, the price rose to $2.55 a gallon. The first oil shortage was relieved for this shortage came through the discovery and development of a more abundant and cheaper source of fuel, petroleum. Ironically, the next several waves of exploration and development in Arctic Alaska focused on a search for "rock oil."

In winter 1885–86, Lt. George M. Stoney participated in expeditions sponsored by the U.S. Naval Institute that explored the Brooks Range from the south. Ens. W. L. Howard of the U.S. Navy crossed the Brooks Range in 1886, and continued overland across the Colville River valley and thence down the Chipp River by skin boat to Point Barrow. He described what were undoubtedly lumps and pebbles of oil shale along the Etivluk River. His report, published in 1900, may have been the first recorded suggestion of the oil potential of northern Alaska. However, this material and seepage tars had been known and used by the Eskimos before recorded history.

Frank C. Schrader, 1910. The first systematic survey of the North Slope was made in 1901 with Schrader as geologist and W. J. Peters, an experienced topographer and explorer, in charge. The geography and geology of an entirely new section of northern Alaska were studied by Peters and Schrader, much of it in the NPRA area.

Geologic and topographic surveys, 1923–26

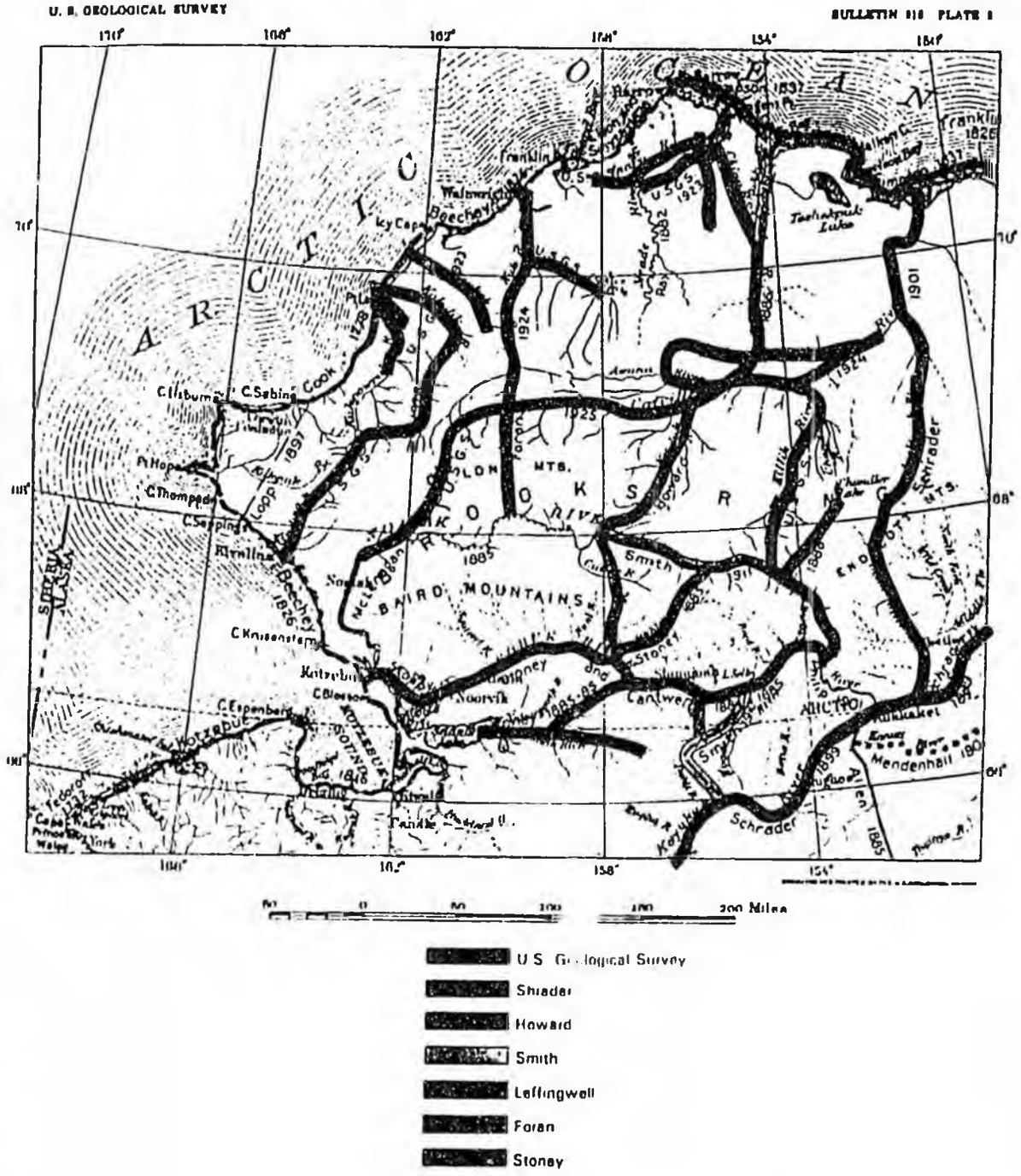
The first systematic topographic and geologic survey across the Brooks Range and the North Slope was by F. C. Schrader and W. J. Peters of the USGS in 1901; the results were published in 1904 in Professional Paper 20. Schrader described thick marine sequences and noted broad anticlinal structures—both of prime importance in the search for oil. Thus, by 1923, when the lands were set apart, three of the prerequisites for the occurrence of petroleum were already known to be present: source rocks, such as organic marine deposits, including oil shale; potential reservoir rocks, including limestone and sandstone; and favorable structures, such as anticlines. In addition, oil

seepages were found along the Arctic coast. The region had already attracted the attention of the new oil industry, and several applications for prospecting permits were filed under the old mining laws on claims near Cape Simpson, Peard Bay, and along the Meade, Kukpowruk, and Kokolik Rivers.

About 150 miles east of NPR–4, E. de K. Leffingwell completed his classic work in the Canning River region. From 1906 to 1914, Leffingwell mapped the Arctic coast from Barrow to the United States-Canadian border. He named and described the now-famous Sadlerochit Group, which includes the primary oil reservoir of the Prudhoe Bay field. His report, published in 1919 as USGS Professional Paper 109, is now a collector's item. The region mapped by Leffingwell from the Canning River to the border was set aside in 1960 as the Arctic National Wildlife Refuge (ANWR).

Ernest de K. Leffingwell. Between 1906 and 1914 Leffingwell mapped in the Canning River region from Barrow to the United States-Canadian border. His expedition was privately funded, half by his father. Toward the close of his fieldwork, the USGS provided him with office space to write and compile his maps, and eventually published his work in 1919. Photograph by George Grye.

Sketch map showing the progress of mapping, seismic surveying, and drilling from 1911 to 1953 (modified from Reed, 1958).

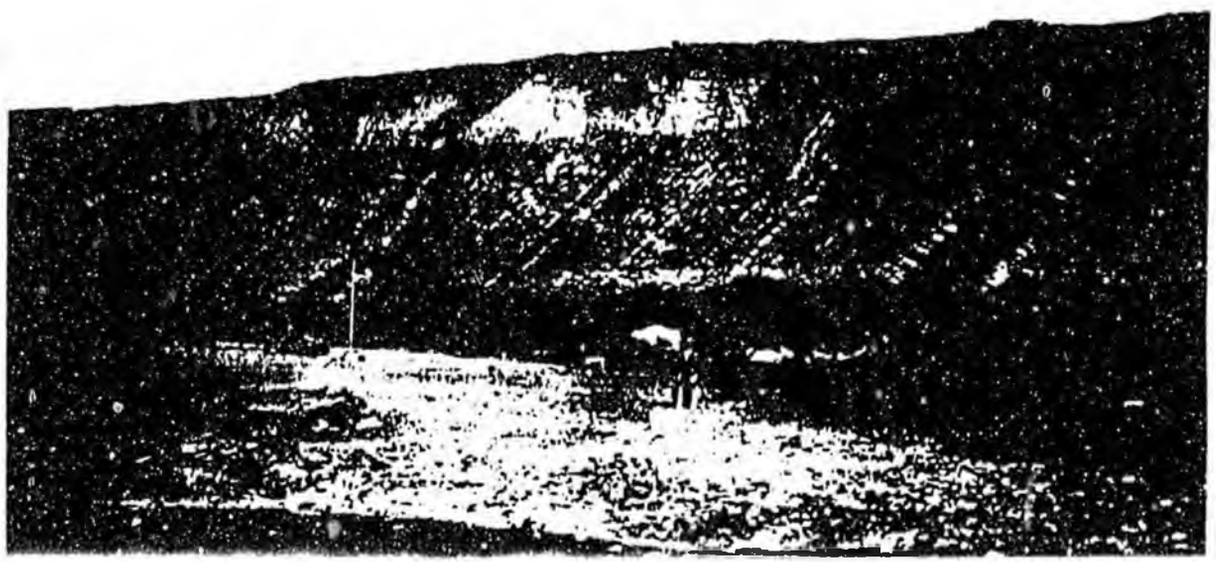


The International Boundary Commission completed locating and marking the border between the United States and Canada in 1912, and additional geologic information was collected along it by USGS geologists attached to the mapping party.

Thus, the geology and geography of the east edge of this potential petroleum province were known and mapped in a general way before the establishment of the Reserve. However, there remained a virtually unknown gap, 130 miles wide, between the Canning and Colville Rivers. That area included the Prudhoe Bay oil and gas fields.

NPR–4 was defined, and its boundaries described, on the basis of explorations carried out before 1923. In delineating the Reserve, account was taken of the observations of oil seepages at Cape Simpson, the early explorations by the U.S. Navy (particularly Howard's traverses in the western area), and the traverse by Schrader and Peters along the Colville River—the east boundary of the Reserve. Although some detailed surveys had been made by Leffingwell and the United States Canadian-boundary survey teams, their information was not considered to warrant a change in delineation of the boundary. Furthermore, the northwest coast of Arctic Alaska was more accessible by sea than the northeast coast.

USGS surveying camp on the banks of the Canning River where Leffingwell worked. Photograph by George Gryc.



Smith and Mertie party resting with dog teams along the Colville River, 1924. The first expedition started from Tanana on February 17, but it was not until April 2 that all supplies, including four specially built canoes, were safe in the first camp on the Arctic drainage, and it was May 30 before the streams were open enough to

In 1923, little was known of the interior of the new Reserve. The U.S. Navy recognized that more geologic and geographic information would be required for proper management, and so the USGS was asked to survey the region. From 1923 through 1926, USGS parties traversed the Reserve along the major rivers and crossed the Brooks Range through Howard Pass and at the head of the Colville River. In 1930, the results of these field studies and surveys by P. S. Smith, J. B. Mertie, Jr., and others were published in USGS Bulletin 815. This classic report includes the first topographic and geologic maps of the Reserve, as well as descriptions of the rock sequences and structures, and an analysis of the mineral potential of the region, including petroleum and coal. Although the authors could not identify the precise age or distribution of the oil shales, they concluded that these rocks were the most likely source of crude oil. They felt that sources in Paleozoic rocks were "extremely problematic" and that, because the Cretaceous rocks were of shallow marine and terrestrial origin, oil deposits derived from them were "likely to be small and of extremely sparse distribution." Smith and Mertie noted the numerous anticlinal structures in the Cretaceous sequences, as well as the faulted and overthrust structures in the Paleozoic rocks of the Brooks Range, and concluded that the regional dip of the older rocks was monoclinal to the north. Thus, pre-Cretaceous rocks at Cape Simpson and along the Arctic coast would be below practical drilling depth. They recommended that the next steps in evaluating the petroleum possibilities should be drilling for stratigraphic and structural information in the vicinity of Cape Simpson, followed by geologic field studies and then drilling in other areas that these studies might indicate to be favorable.

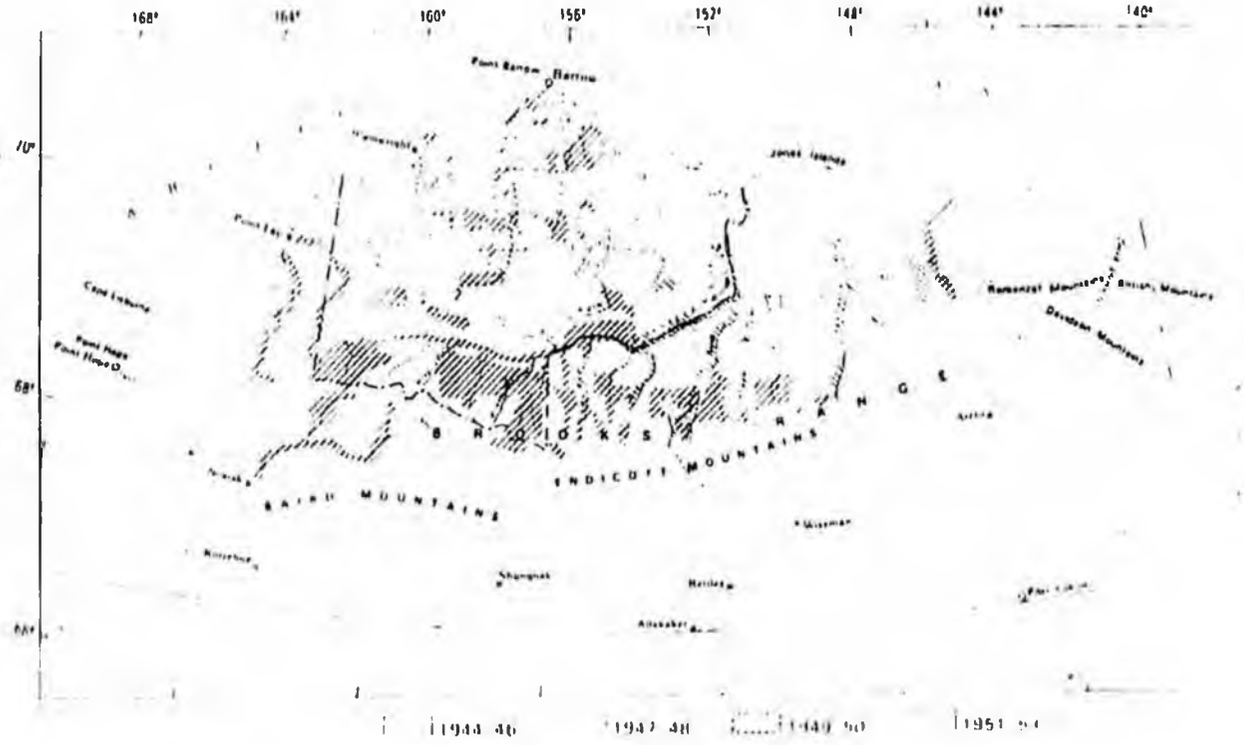
Philip S. Smith about 1915. Smith was Chief Alaskan geologist from 1925 until he retired in 1946. At the request of the Department of the Navy, the USGS was included in the first explorations of the newly established NPR-4.

John Beaver Mertie, 1915. Mertie began his long geologic career with the USGS in 1908 and finished his last publication, a professional paper, in 1979. Along with Philip S. Smith, Mertie led the expedition into NPR-4.

W. T. Foran field party in Nenana, about 1923. From left to right, A. W. Ridgard, W. T. Foran, O. F. Wix, and H. G. Hughes. In 1923, Foran called attention to the petroleum potential of NPR-4. As World War II brought an increasing demand for petroleum. Sparked by his encouragement, the first modern systematic oil exploration program began in NPR-4 (1944 until 1953).

The Pet–4 exploration program, 1943–53

[redacted] There was then no shortage of petroleum either for the U.S. Navy or for industry, and the remote and frigid Arctic was not an attractive target for commercial exploration. However, World War II brought a new perspective and an increasing demand for petroleum products to fight a highly mechanized war. In 1943, Lt. W. T. Foran, a former USGS geologist and a Naval Reserve officer, prepared a memorandum to the U.S. Bureau of the Budget, calling attention to the petroleum potential of NPR–4. Consequently, in 1943 the Secretary of the Interior issued Public Land Order 82, which withdrew from further entry all the possible petroleum areas of Alaska, including lands north of the drainage divide of the Brooks Range. Later in 1943, the U.S. Bureau of Mines fielded a party to investigate and sample the known oil seepages and to check on reported seepages elsewhere in northern Alaska, including those on the Colville River at the base of Umiat Mountain [redacted] On the basis of Foran's enthusiastic report and the perceived need for additional domestic oil supplies, a major exploration program, commonly called Pet–4, was started. This program had a tremendous impact on not only the future of petroleum exploration but also many aspects of life in the North American Arctic.



Progress of geologic investigations in northern Alaska (modified from Smith and Mertie, 1930)

The Pet–4 program established the feasibility and practicality of carrying out large-scale modern oil-exploration operations in the Arctic, and developed many new techniques for such operations. During the period 1945 through 1952, 45 shallow core tests and 36 test wells were drilled in and adjacent to NPR–4. Public Land Order 82 and the addition of enabling appropriation language permitted exploration in adjacent areas. This drilling resulted in the discovery of oil deposits at Umiat, Cape Simpson, and Fish Creek, gas deposits at Umiat, Barrow, and Gubik, and prospective gas deposits at Meade, Square Lake, and Wolf Creek. Operating bases were established (and still exist) at Barrow and Umiat; the gas deposit at Barrow was developed, and gas was produced for use originally by the U.S. Navy base and other Government installations and, in 1964, by the entire Barrow community. The Pet–4 Barrow camp facility evolved into the Naval Arctic Research Laboratory, which was the hub of U.S. Arctic scientific investigations until it was decommissioned in 1981.

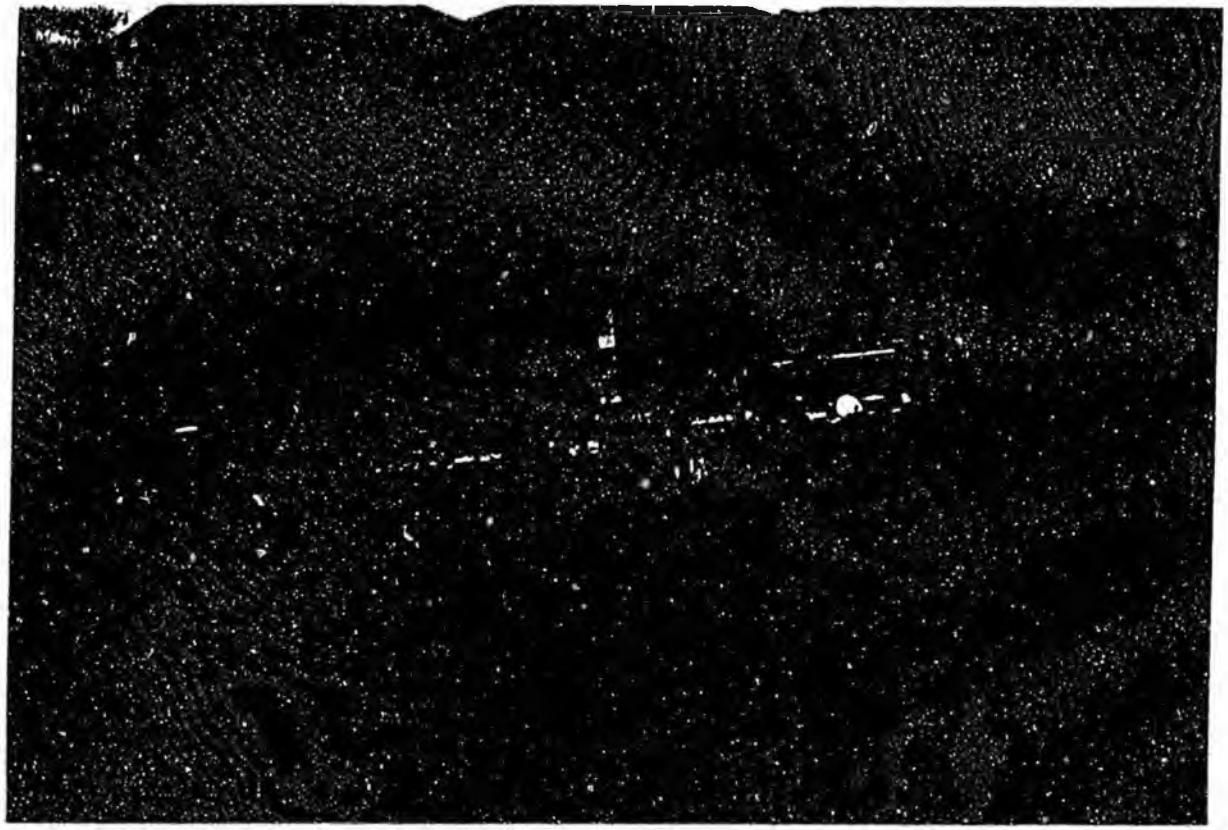
The USGS contribution to this program included surface geologic mapping of the Reserve and adjoining areas; study of subsurface samples and geophysical data; an airborne magnetic survey; interpretation of the geologic framework; assessment of potential resources; and production of the first complete set of planimetric maps of all of northern Alaska.

A series of reports on the Pet–4 program were prepared and published by the USGS as Professional Papers 301 through 305. They include a historical account, description of logistics and operations, well histories and descriptions, a geophysical report, and geologic maps and descriptions of the extensive surface mapping. Thus, a general geologic framework for all of northern Alaska became available for the first time.

Several test wells were drilled on the flank of the Barrow structure, and a new gas field was discovered at Walakpa, 14 miles southwest of Barrow. This deposit may be useful to the Barrow community but probably is of insufficient size to warrant development for export to the "South 48." Farther south on the downslope of the Prudhoe-Barrow trend, test wells were drilled to explore the wedge edge of potential reservoir rocks, and two deep test wells were drilled near the center of the northern Alaska depositional trough. Additional test wells were drilled on anticlinal structures in the foothills, an area that had been drilled extensively in the Pet-4 program, but only for shallow horizons. One test well was drilled in the overthrust belt near the front of the Brooks Range. Nearly all these test wells produced shows of oil or gas, but no commercial deposits were discovered.

The congressional mandate to continue supplying gas to the Barrow community required drilling additional production wells in that area. Six wells were drilled, and four were completed for production.

The third duty of the USGS was to complete cleanup of the debris from earlier work within or adjacent to the Reserve. In addition, all the sites or "areas of operations" of the current program, as defined in a memorandum of understanding (MOU) with the U.S. Bureau of Land Management (BLM), had to be rehabilitated and revegetated. A cleanup program was started by the U.S. Navy in 1971 and was completed by the USGS in 1981. These sites have recently been returned to management by the BLM.



The Lisburne No. 1 test well, located in the southern part of the NPRA, was spudded in June 1979 and completed in June 1980 at a total depth of 17,000 feet.

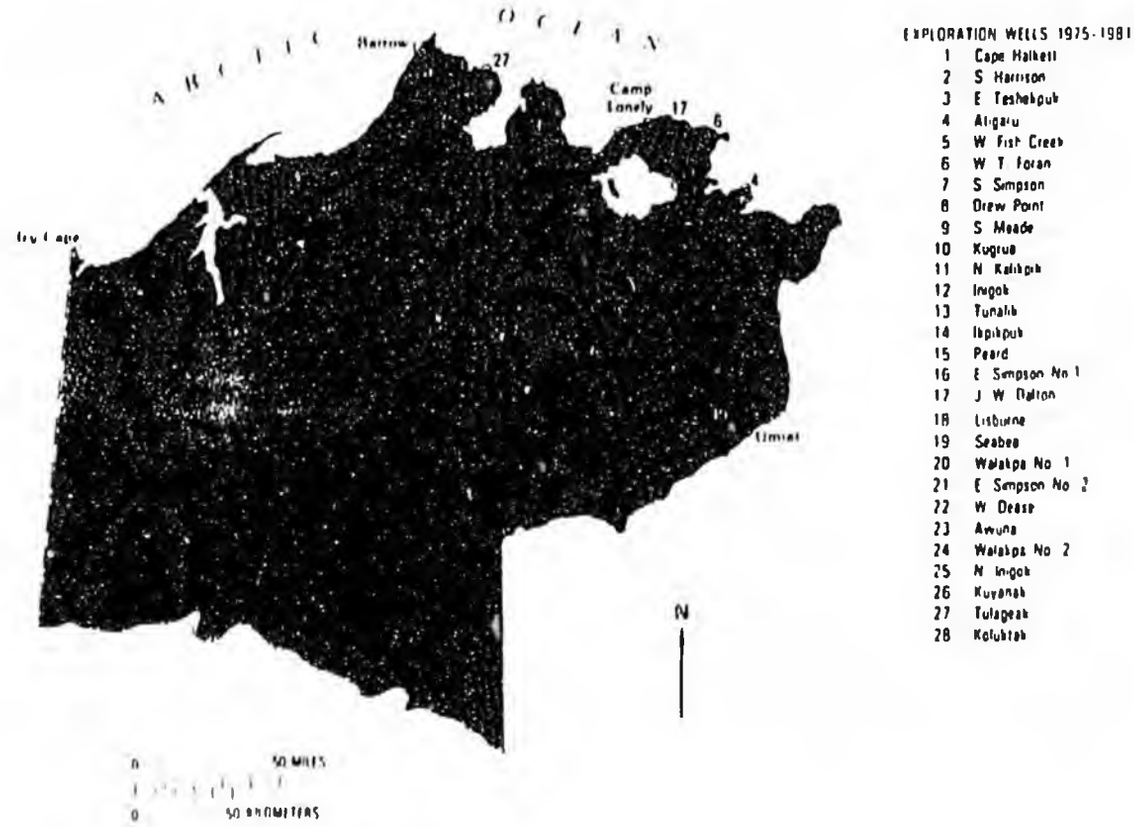
The 1974–82 exploration of NPR–4/NPRA

The discovery of oil and gas at Prudhoe Bay in 1968, in combination with the Arab oil embargo of 1974, stimulated the U.S. Navy to propose, and the Congress to approve, the next exploration program in the Reserve. Between 1974 and 1977, the Navy drilled seven test wells in the northeast corner of the Reserve, following the Prudhoe trend and hoping for similar results. The Navy also drilled four wells in the Barrow area and discovered the East Barrow gas field, thus providing an additional supply of gas for local use.

In 1975, the U.S. Navy signed a 5-year contract with Husky Oil NPR Operations, Inc., to manage and supervise all aspects of the exploration program.

In 1976, the Naval Petroleum Reserves Production Act (Public Law 94–258) authorized further development and actual production for sale of crude oil from NPR Nos. 1, 2, and 3 in California and Wyoming, and redesignated NPR–4 as the NPRA. Thus, the purpose of these Reserves was redirected to augment domestic supplies of crude oil. The act also required studies of other resources and alternative management systems for NPRA. Responsibility for these studies and for continuation of the NPRA exploration program was transferred to the Secretary of the Interior, who, in turn, assigned to the USGS three duties: (1) furthering of the exploration program; (2) continuation of the operation, maintenance, and production of the gas fields at Barrow; and (3) cleanup of debris left from previous activities in and adjacent to the NPRA.

The USGS took over management of the program, including all contracts and facilities, on June 1, 1977. The primary objective of the exploration program was defined as an assessment of the oil and gas potential of the entire Reserve. A secondary objective was the discovery of commercially producible deposits. Thus, all tests were drilled "on structure," to the extent that this could be determined. A total of 28 test wells were drilled in the period 1974 to 1982, of which 7 were under U.S. Navy management. One, the W. T. Foran test well, and a followup, the J. W. Dalton test well, penetrated a section of favorable rock similar to that at Prudhoe Bay, but only shows (indications) of oil were found. Apparently, oil had accumulated in quantity at these localities but had subsequently migrated elsewhere.



Exploration wells in the NPRA drilled from 1975 to 1981 (from Mitchell, 1983).

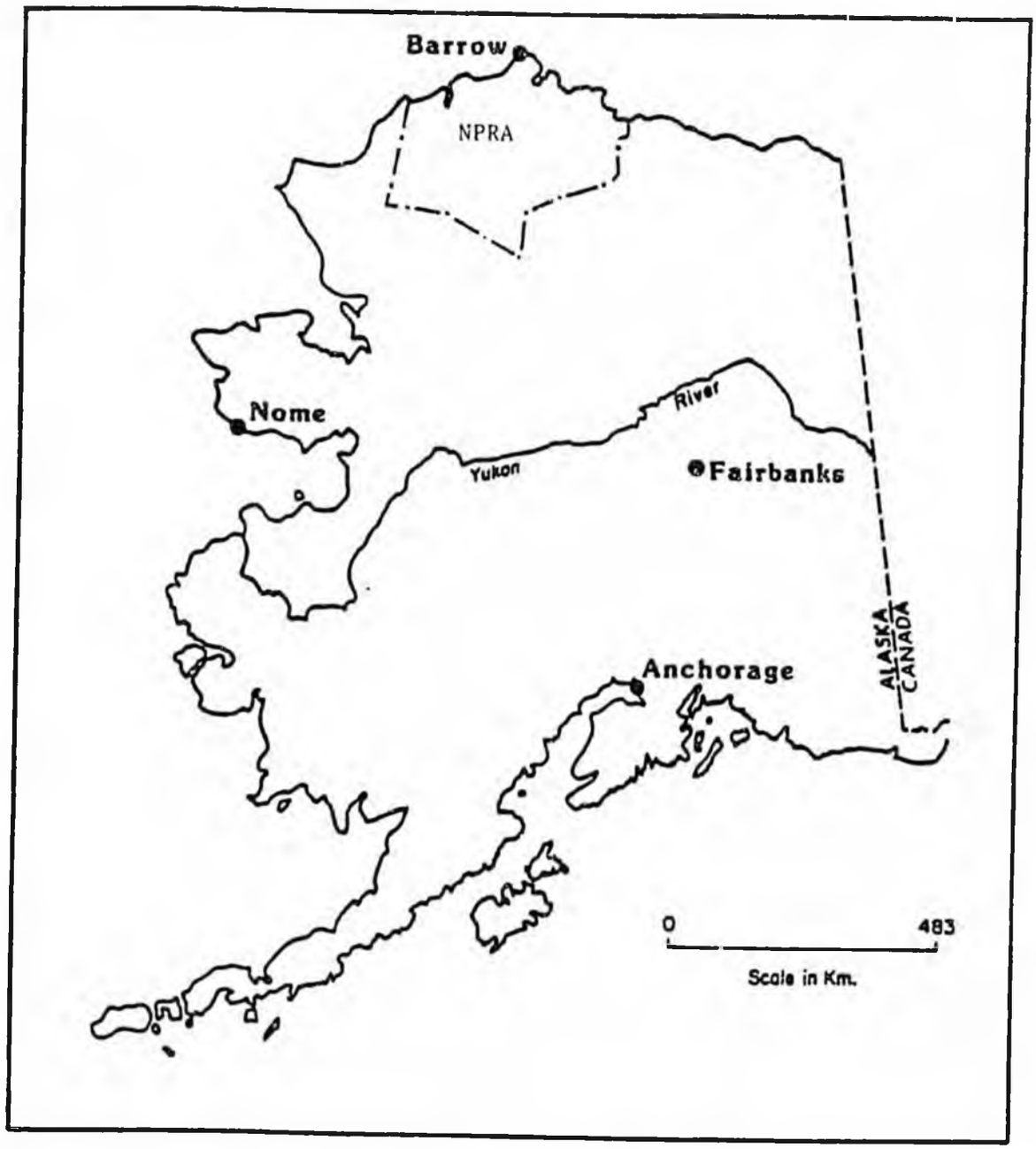
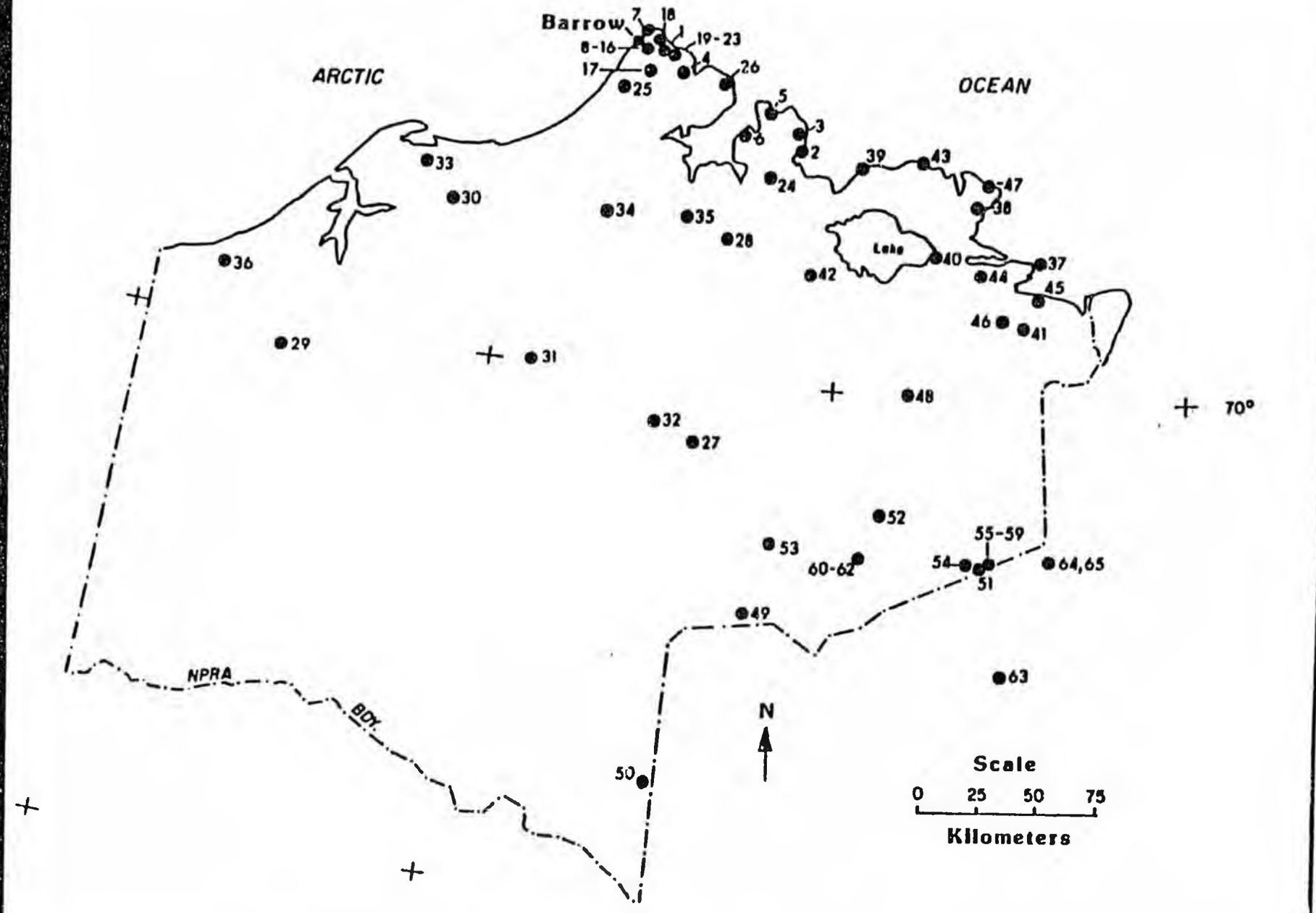


Figure 1. Location map, National Petroleum Reserve in Alaska (NPRA).



Well location, number refers to key on preceding page.

LEGEND FOR FIGURE 2

1. Avak - 1
2. East Simpson - 1
3. East Simpson - 2
4. Iko Bay - 1
5. North Simpson - 1
6. Simpson - 1
7. South Barrow - 1
8. South Barrow - 2
9. South Barrow - 4
10. South Barrow - 6
11. South Barrow - 7
12. South Barrow - 8
13. South Barrow - 9
14. South Barrow - 10
15. South Barrow - 11
16. South Barrow - 13
17. South Barrow - 3
18. South Barrow - 16
19. South Barrow - 12
20. South Barrow - 14
21. South Barrow - 17
22. South Barrow - 19
23. South Barrow - 20
24. South Simpson - 1
25. Walakpa - 1
26. West Dease - 1
27. East Oumalik - 1
*28. East Topagoruk - 1
29. Kaolak - 1
30. Kugrua - 1
*31. Meade - 1
32. Oumalik - 1
33. Peard - 1
34. South Meade - 1
35. Topagoruk - 1
36. Tunalik - 1
37. Atigaru Point - 1
38. Cape Halkett - 1
39. Drew Point - 1
40. East Teshekpuk - 1
*41. Fish Creek - 1
42. Ikpikpuk - 1
43. J.W. Dalton - 1
44. North Kalikpik - 1
45. So. Harrison Bay - 1
46. West Fish Creek - 1
47. W.T. Foran - 1
48. Inigok - 1
*49. Knifeblade - 1, 2A
50. Lisburne - 1
51. Seabee - 1
52. Square Lake - 1
*53. Titaluk - 1
54. Umiat - 1
55. Umiat - 2
56. Umiat - 3
57. Umiat - 4
58. Umiat - 7
59. Umiat - 11
*60. Wolf Creek - 1
*61. Wolf Creek - 2
*62. Wolf Creek - 3
63. Grandstand - 1
64. Gubik - 1
65. Gubik - 2

ARCO Alaska, Inc.
Post Office Box 100360
Anchorage, Alaska 99510-0360
Telephone 907 276 1215

January 23, 1997

Representative Joe Green
Alaska State Legislature
House of Representatives
State Capital
Juneau, AK 99801-1182

Re: House Joint Resolution No. 12

Dear Representative Green:

We at ARCO Alaska support resumption of leasing in the Natural Petroleum Reserve Alaska.

Sincerely,

Dave A. Sutter
Land Manager
Exploration & Land

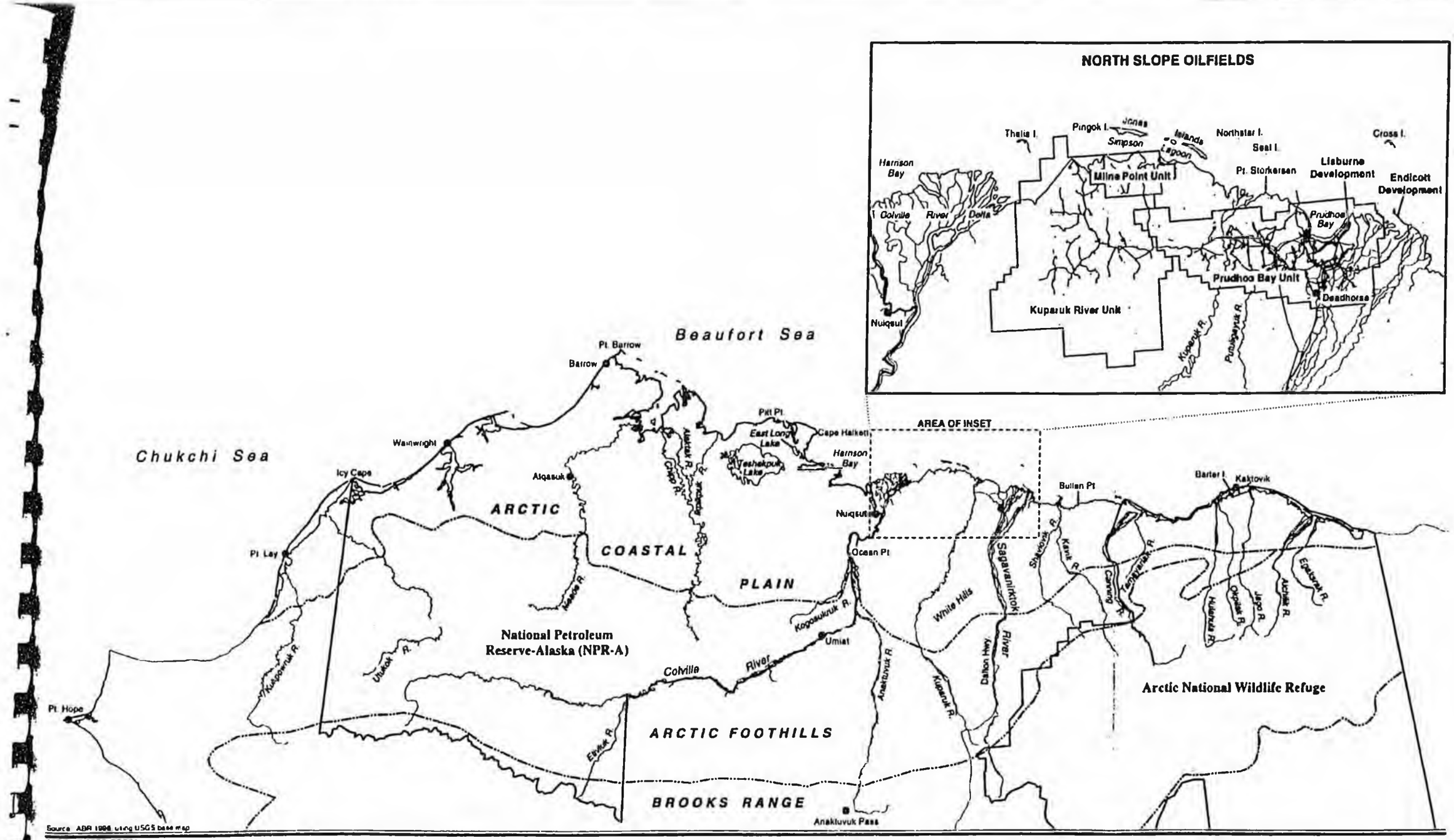


Figure 2.1.0-1.
North Slope Region and Existing Oilfields