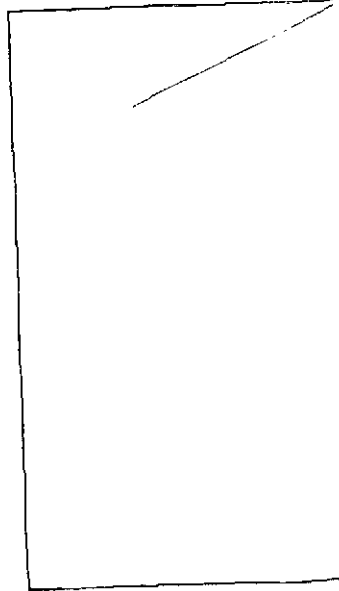


PRUDHOE BAY UNIT

APPLICATION FOR THE
FOURTH EXPANSION OF THE UNIT AREA, FIRST EXPANSION
OF THE NIAKUK PARTICIPATING AREA AND
FORMATION OF THE WEST NIAKUK
PARTICIPATING AREA



DECISION AND FINDINGS OF THE COMMISSIONER
ALASKA DEPARTMENT OF NATURAL RESOURCES

NOVEMBER 17, 1997

PRUDHOE BAY UNIT

FOURTH EXPANSION OF THE UNIT AREA, FIRST EXPANSION OF THE NIAKUK PARTICIPATING AREA AND FORMATION OF THE WEST NIAKUK PARTICIPATING AREA

I. INTRODUCTION AND BACKGROUND

ARCO Alaska, Inc. (ARCO), the Exxon Corporation (Exxon), and BP Exploration (Alaska), Inc. (BPX) (collectively known as the GNA Owners) filed an interim application to expand the Prudhoe Bay Unit (PBU) and Niakuk Participating Area (NPA) and to form a new participating within the PBU, the West Niakuk Participating Area (WNPA). This interim application proposes a temporary solution to the problem of having wells producing from a known reservoir that are not in a participating area or unit. Production data indicates that the acreage proposed for inclusion in the expanded NPA and WNPA overlies Kuparuk River Formation that is capable of production or contributing to production of hydrocarbons in paying quantities. DNR's decision on this Interim Application will govern operations in the Greater Niakuk Area (GNA) while the GNA Owners obtain additional drilling data that will enable them to resolve the equity issues among themselves. A "final" application is due no later than March 31, 1998.

An oil and gas "unit" is comprised of a group of leases which cover all or part of one or more potential or known reservoirs and which are subject to a "unit agreement." The "unit agreement" is the instrument which is typically executed by those with an interest in the leases, including the royalty owner, and which specifies how unit operations will be conducted, and how costs and benefits will be allocated among the various leases. A second agreement called a "unit operating agreement" controls the relationship between parties which share the costs of unit development. Unitization generally allows a potential or known reservoir to be more efficiently explored, developed, or produced than on a lease by lease basis.

A "participating area" (PA) is usually limited to that part of the unit area which has been shown to be productive of oil or gas in "paying quantities." A PA may consist of less, but not more, area than the unit area. If the unit area encompasses more than one reservoir, a separate PA must generally be established for each delineated reservoir. If the same reservoir contains both oil and gas, separate PAs may be established to distinguish between the oil rim and the gas cap. For example, the PBU now consists of five PAs overlying several reservoirs all located within the PBU area: the oil rim and gas gap PAs (collectively the initial participating areas or IPAs) for the Prudhoe Bay or Permo-Triassic Reservoir; the Lisburne PA for the Lisburne Reservoir; the West Beach PA for the West Beach Reservoir; and the Pt. McIntyre PA for the Pt. McIntyre and Stump Island Reservoirs.

The boundaries of PAs can be continually revised as more wells are drilled and more data is obtained. PAs must be expanded to include all acreage that overlays a common reservoir. 11 AAC 83.356.

The Division approves the Interim Application as a temporary solution. A final decision defining the appropriate PA(s), and unit(s) boundaries will be made after the "final" application is submitted with supporting geologic information. That application is due no later than December 31, 1997. Approval of the Interim Application is not intended to create any precedent or bind the Department of Natural Resources (DNR) in its evaluation of further applications regarding the lands within the GNA.

II. APPLICATION FOR THE FOURTH EXPANSION OF THE UNIT AREA, FIRST EXPANSION OF THE NIAKUK PARTICIPATING AREA AND FORMATION OF THE WEST NIAKUK PARTICIPATING AREA

On July 31, 1997, ARCO, Exxon, and BPX (collectively, the GNA Owners) applied to expand the PBU and the existing NPA and to form the WNPA. The proposed interim expansion of the PBU would add portions of two state oil and gas leases, ADL 34625 and ADL 34626, totaling approximately 4480 acres, to the PBU for a total expanded PBU of approximately 247,595 acres.

The two leases were issued as a result of state Lease Sale No.18 (Prudhoe), held on January 24, 1967. These leases were issued on state lease form DL-1 (Revised Oct. 1963) providing for a 12.5 percent royalty to the state.

Simultaneously with the application to expand the PBU, the GNA Owners applied to approve the expansion of the existing NPA and formation of the WNPA within the expanded and existing PBU. The unit expansion acreage and the acreage proposed for the WNPA and expanded NPA encompass reservoirs of the Kuparuk River Formation, which are capable of producing or contributing to the production of hydrocarbons in paying quantities and included in an approved Plan of Development. The proposed WNPA would contain parts of two individual oil and gas leases, ADLs 34626 and 34629, and would total approximately 3,040 acres. The proposed expansion of the NPA would contain parts of two individual oil and gas leases, ADLs 34625 and 34630, and would total approximately 2,240 acres.

The Interim Application also included interim WNPA and NPA Tract Participation Factors, a copy of the Western Niakuk Special Provisions to the PBU Operating Agreement, and incorporated by reference the 1997 Plan of Development for the NPA as the plan of development and operations for the WNPA and expansion area of the NPA. The Interim Application is a result of lengthy discussions between the GNA Owners and the DNR, Division of Oil and Gas ("the Division"). The GNA Owners and the Division discussed the numerous tract and lease operations being conducted from the NPA Heald Point facilities.

The geologic evidence exists to expand the NPA beyond its current boundaries to develop the Kuparuk River Formation reservoirs within the GNA under a unified plan of development. Tract Operations to evaluate the further extent of the Kuparuk River Formation adjacent to the NPA

began with the NK-19 Well in December 1994. Next came the NK-29 (WNK-1) Well Tract Operation to the west of the NPA in March 1995. The NK-29 Well was certified capable of production in paying quantities in June 1995. Following the NK-19 and NK-27 Tract Operations, NK-13, NK-14, NK-15, and NK-17 were drilled to the north of the NPA on BPX lease ADL 34625. To the northwest of the NPA, NK-28 (WNK-2) and NK-29 (WNK-3) were drilled on ARCO/Exxon lease ADL 34626. Since the formation of the initial NPA, a total of eight wells have been drilled to evaluate the extent of the Kuparuk River Formation reservoirs surrounding the current NPA. The West Niakuk wells, NK-27 and NK-28, are producing on average between 2,900 and 3,800 BOPD, while NK-14 is producing on average 2,900 BOPD. NK-15 and NK-17 are designated water injection wells. Additional wells are scheduled in 1997 to evaluate the Kuparuk River Formation to the northwest on ADL 34626 and to the northeast on ADL 312827.

Pursuant to Article 4.4 of the PBU Agreement, the director¹ approved the PBU Tract Operations for a limited period of time. In its response to an ARCO request to further extend the Niakuk Well NK-27 Tract Operation, and a BP request to extend the Niakuk Well NK-19 Tract Operation and approve the Niakuk Well NK-13 Lease Operation, the Division notified the GNA Owners on December 31, 1996, that:

Given the number of tract operations and lease production wells, not to mention the proposed waterflood operations planned for Segment 3/5 of the Niakuk Reservoir with the NK-17 well, the Division believes that the lands to the west and northwest of the Niakuk Reservoir are reasonably known to be underlain by hydrocarbons and known or reasonably estimated through the use of geological, geophysical, or engineering data to be capable of producing or contributing to the production of hydrocarbons in paying quantities. 11 AAC 83.351. Additionally, these areas of the Niakuk Reservoir have been proven to be capable of sustained commercial production. Article 5.3 of the PBU Agreement. The owners must establish a participating area for all or that portion of the Niakuk Reservoir as has been reasonably defined by the recent Niakuk drilling results.

Although the Division does not require a final NPA expansion boundary nor a final participation interest, it does require an interim expansion and participation formula that brings the reasonably defined portions of the reservoir into the NPA and under the NPA Plan of Development (POD). The Division believes that this action will protect the interests that would normally be protected through a participating area to insure the maximum ultimate recovery from all leases overlying the Niakuk Reservoir.

After several meetings between the GNA Owners and the Division to address the issues raised in the December 31, 1996 letter, and exchanges of draft interim applications, the Interim Application was submitted on July 31, 1997.

With receipt of the filing fee required under 11 AAC 05.010(a)(10)(E), the DO&G determined that the Interim Application was complete under 11 AAC 83.306. On August 17, 1997, public notice

¹When the PBU Agreement was executed, the state director of the Division of Minerals and Energy Management, the predecessor agency of the Division, was responsible for plan of testing, evaluation and pilot production decisions.

was published in the Anchorage Daily News and in the Fairbanks Daily News Miner, as required by 11 AAC 83.311. Copies of the public notice were provided to interested parties in compliance with 11 AAC 83.311, and to the City of Barrow, the North Slope Borough, the Arctic Slope Regional Corporation, the Alaska Department of Environmental Conservation, the Alaska Department of Fish and Game, the Alaska Department of Natural Resources, Division of Land and Water Management, and the Alaska Oil and Gas Conservation Commission (AOGCC).

During the 30-day public notice period allowed under 11 AAC 83.311, no comments were received from the public, interested parties, or state or local agencies.

III. DISCUSSION OF DECISION CRITERIA

The commissioner or the commissioner's designee may approve expansion of a unit area if it is determined that expansion is "necessary or advisable to protect the public interest." AS 38.05.180(p) and 11 AAC 83.303(c). Approval of the Interim Application and the anticipated "final" application for the PA, PAs, "final" PBU expansion, or formation of a new unit and "final" tract allocation schedule(s) must be based on the criteria in 11 AAC 83.303(a) and the factors enumerated in 11 AAC 83.303(b).

Article 9.1 of the PBU Agreement (PBUA), which permits expansion of the PBU if approved by the director, restates the commissioner's discretionary power under AS 38.05.180(p) and 11 AAC 83.303. Article 5.3 of the PBUA reflects the commissioner's discretionary power under AS 38.05.180(p) and 11 AAC 83.351 to approve or disapprove formation of a participating area. Article 5.3 requires the lessees to apply for expansion of participating areas using specified criteria and procedures but does not change the commissioner's discretion to approve establishment, enlargement, or contraction of lands reasonably proven to be within the reservoir limits.

In meetings with the Division and in the Interim Application, the GNA Owners have represented that the GNA contains multiple Kuparuk River Formation reservoirs that are hydraulically isolated from one another. The GNA Owners have not agreed among themselves whether to expand the NPA or form a new PA or PAs. The GNA Owners have advised DNR that their "final" proposal for the GNA, after appraisal drilling and their equity negotiation process are complete, may be multiple participating areas and tract allocation schedules for the various reservoir segments within an expanded PBU.

11 AAC 83.356(a) states that a "unit must encompass the minimum area required to include all or part of one or more oil or gas reservoirs, or all or part of one or more potential hydrocarbon accumulations." That regulation does not mandate that two adjacent reservoirs or two adjacent separate fault bounded reservoir segments/accumulations must be in the same unit. The regulation requires that a unit must encompass, at a minimum, only part of a reservoir.² A unit area may

²In the case of an exploratory unit, the minimum area is "part of one...potential hydrocarbon accumulation...." The West McArthur River Unit is an exploratory unit that includes only a part of a potential hydrocarbon accumulation. The Kuparuk River Unit and the Milne Point Unit are producing units that initially included only a part of the oil or gas accumulation from which the two produce.

include part of one reservoir, one complete reservoir, one complete reservoir and part of another reservoir, or any one of a number of combinations. It must include, at least part of a reservoir. A unit cannot be formed without at least a portion of a reservoir, but it can be formed with only that minimum area. As more geologic data become available the unit area must be contracted to exclude areas that do not contain any reservoir. 11 AAC 83.356(b).

The commissioner has discretion to approve or disapprove a unit consisting of "all or a part of an oil or gas pool, field, or like area" when it is "necessary or advisable in the public interest." 11 AAC 83.356(a), AS 38.05.180(p). Even if the separate Kuparuk Formation reservoirs segments are included within the PBU now, the commissioner may form a separate unit that includes the various reservoir segments if that result better met the statutory and legal criteria for approval of unit and PA expansions.

Article 9.1 provides:

The Unit Area may be enlarged from time to time so as to include any additional lands reasonably determined to be within any Reservoir any portion of which is within the Unit Area. The lands to be included shall be based on such subdivisions of the public land survey as may be approved by the Director, but not less than the area approved by the well-spacing order affecting such lands for such Reservoir.

....

After due consideration of all pertinent information, the Director shall render his decision, separate as to each lease or lands therein submitted for commitment.

Under the statutes, the unitization regulations, and the terms of the PBU Agreement, the commissioner retains the discretion, after consideration of the criteria in 11 AAC 83.303, to approve or deny the expansion of the PBU to include the expanded NPA and WNPA based on the "final" application .

The commissioner will approve a proposed expansion of a unit area, a proposed PA, or a proposed production or cost allocation formula if the commissioner finds that each requested approval is necessary or advisable to protect the public interest. AS 38.05.180(p). To find that any or all of the requested approvals are necessary or advisable to protect the public interest, the commissioner must find that the requested approval will: (1) promote the conservation of all natural resources; (2) promote the prevention of economic and physical waste; and (3) provide for the protection of all parties of interest, including the state. 11 AAC 83.303(a). In evaluating the above criteria, the commissioner must consider: (1) the environmental costs and benefits; (2) the geological and engineering characteristics of the potential hydrocarbon accumulation or reservoir(s) proposed for inclusion in the participating area; (3) prior exploration activities in the proposed participating area; (4) the applicant's plans for exploration or development of the proposed participating area; (5) the economic costs and benefits to the state; and (6) any other relevant factors (including mitigation measures) the commissioner determines necessary or advisable to protect the public interest. 11 AAC 83.303(b).

A PA may include only land reasonably known to be underlain by hydrocarbons and known or reasonably estimated through use of geological, geophysical, or engineering data to be capable of producing or contributing to the production of hydrocarbons in paying quantities. 11 AAC 83.351(a). "Paying quantities" is defined by 11 AAC 83.395(4) to mean:

quantities sufficient to yield a return in excess of operating costs, even if drilling and equipment costs may never be repaid and the undertaking as a whole may ultimately result in a loss; quantities are insufficient to yield a return in excess of operating costs unless those quantities, not considering the costs of transportation and marketing, will produce sufficient revenue to induce a prudent operator to produce those quantities.

The following evaluates the Interim Application under all these criteria and considerations.

(A) Promote the Conservation of All Natural Resources.

The unitization of oil and gas reservoirs and the formation of PAs within unit areas to develop hydrocarbon-bearing reservoirs is a well accepted means of hydrocarbon conservation. Without unitization, the unregulated development of reservoirs tends to be a race for possession by competitive operators. The results can be: (1) overly dense drilling, especially along property lines; (2) rapid dissipation of reservoir pressure; and (3) irregular advance of displacing fluids. These all contribute to the loss of ultimate recovery or economic waste. The proliferation of surface activity; duplication of production, gathering, and processing facilities; and haste to get oil to the surface also increase the likelihood of environmental damage (such as spills and other surface impacts). Requiring lessees to comply with conservation orders and field rules issued by the AOGCC would mitigate some of these impacts without an agreement to unitize operations. Unitization, however, provides a practical and efficient method for maximizing oil and gas recovery, and minimizes negative impacts on other resources.

The interim expansion of the PBU, the interim expansion of the NPA, and the interim formation of the WNPA to encompass additional lands overlying the Kuparuk River Formation reservoirs in the GNA will allow this area to be comprehensively and efficiently explored and developed. Adoption of a operating agreement and plan of development governing that production will help avoid unnecessary duplication of development efforts on and beneath the surface. Although the extent of the Kuparuk River Formation reservoirs in the GNA has not been finally determined, including the lands in the PBU and a PA now will accelerate exploration and maximize recovery from the area. When the extent of the separate Kuparuk Formation reservoir segments are better known, the commissioner may decide to create a separate unit to combine the various segments.

Producing hydrocarbon liquids from the expanded NPA and the new WNPA through the existing production and processing facilities, at Heald Point and the LPC, generally reduces the incremental environmental impact of the additional production. Using the existing facilities, gravel pads, and infrastructure eliminates the need for new ones. The interim expansion of the PBU, the interim expansion of the NPA, and the interim formation of the WNPA to encompass additional lands overlying the Kuparuk River Formation reservoirs in the GNA will promote resource conservation

and protect the public interest during the current appraisal drilling and production phase. Depending on the results from the additional delineation wells drilled in 1997 and the GNA Owners' equity negotiations, the creation of a separate unit over the various individual reservoir segments would also accomplish the same resource conservation goals under terms and conditions potentially more favorable to the public interest.

(B) The Prevention of Economic and Physical Waste.

Traditionally, under unitized operations, the assignment of undivided equity interests in the oil and gas reservoirs to each lease largely resolves the tension between lessees to compete for their share of production. Economic and physical waste, however, could still occur without an equitable cost sharing formula, and a well-designed and coordinated development plan. Consequently, unitization must equitably divide costs and production, and plan to maximize physical and economic recovery from any reservoir. It must also treat the royalty owner fairly.

An equitable allocation of hydrocarbon shares among the WIOs discourages hasty or unnecessary surface development. Similarly, an equitable cost-sharing agreement promotes efficient development of reservoirs and common surface facilities and encompasses rational operating strategies. Such an agreement further allows the WIOs to decide well spacing requirements; scheduling, reinjection and reservoir management strategies; and the proper common, joint-use surface facilities. Unitization prevents economic and physical waste by eliminating redundant expenditures for a given level of production, and avoiding loss of ultimate recovery by adopting a unified reservoir management plan.

Unitized operations greatly improve development of reservoirs beneath leases which may have variable productivity. Marginally economic reserves, which otherwise would not be produced on a lease by lease basis, often can be produced through unitized operations in combination with more productive leases. Facility consolidation saves capital and promotes better reservoir management by all WIOs. Pressure maintenance and secondary recovery procedures are much more predictable and attainable through joint, unitized efforts than would otherwise be possible. In combination, these factors allow less profitable areas of a reservoir to be developed and produced in the interest of all parties, including the state.

The GNA Owners have negotiated agreements among themselves to share the existing production capacity of the Lisburne facilities, the Heald Point facilities, and the PBU infrastructure. Using this infrastructure and facilities eliminates the need to construct stand-alone facilities to process the volume of recoverable hydrocarbons from the GNA. Further, these agreements address reservoir management and operational decisions for the Kuparuk River Formation reservoirs within the GNA. The state has participated in attempts to reduce the need for additional major processing facilities and thus to minimize any additional surface impacts and costs. The state has agreed to allow commingled production through the existing Lisburne Production Center (LPC) and has worked to provide for a well test-based production allocation methodology for current and future reservoirs sharing the LPC. The adoption of that methodology is subject to periodic review and reconsideration to assure that the state's royalty and tax interests are protected.

Further, facility consolidation will save capital and promote better reservoir management through pressure maintenance and enhanced recovery procedures. In combination, these factors allow the Kuparuk River Formation reservoirs within the GNA to be developed and produced in the interest of all parties.

Nevertheless, the formation of multiple interim PAs could possibly make proper reservoir management in the western Niakuk area difficult. A potential for economic waste and physical waste exists because: (1) The boundaries of interim PAs do not conform to the known compartmentalization of the Kuparuk reservoirs in the western Niakuk area; (2) The GNA Owners do not have an integrated full field model for this very complex field and at least parts of the field will be in decline before the development of such a model; (3) Although the GNA Owners have made progress in sharing raw and interpretative geological, geophysical and engineering data, the Division has been told the sharing is not complete, thereby complicating reservoir management and delaying any consensus technical mapping in the western Niakuk area; and (4) Because the GNA Owners have not yet developed a methodology for equity determination, a new development well may not be optimally placed for production of the reservoir but for its value in future equity negotiations. Although the Division has not seen evidence that economic or physical waste has or will occur in the Niakuk field, it remains concerned and will continue to monitor closely the GNA reservoir management and to encourage the GNA Owners to complete their equity negotiations as soon as possible.

Although expanding the PBU to unitize the leases encompassing the various Kuparuk Formation reservoirs within the expanded NPA and WNPA could prevent economic and physical waste in the interim, creating a separate unit for some of the reservoir segments, under terms and conditions potentially more favorable to the public interest, could accomplish these same goals.

(c) Protection of All Parties

The Interim Application seeks to protect the economic interests of all working interest owners of the reservoirs in the GNA, as well as the royalty owner. By combining interests and operating under the terms of a unit agreement and unit operating agreement, such as the PBU Agreement and PBU Operating Agreement, as amended to account for any special PA provisions, as well as the GNA Agreement, the GNA Owners may fairly allocate costs and revenues among themselves.

Because hydrocarbon recovery will be maximized and additional production-based revenue will be derived from the additional GNA production, the state's economic interest is promoted. Additional recovery of hydrocarbons alone may not always be determinative of the state's best interest. Production must occur under suitable terms and conditions to assure that the economic interests of both the working interest owners and the state, as the royalty owner, are protected.

The Interim Application is a reasonable temporary resolution of the current undesirable situation. There are now numerous, individual, tract and lease operations for each well drilled and produced within the GNA. The current NPA needs to be expanded or a new PA, PAs, or new unit formed to provide for the integrated development of the lands that have been proven by the tract and lease operations to be capable of sustained commercial production of Unitized Substances.

In the Interim Application, the GNA Owners agreed that the effective date for the "final" expansion of the PBU, "final" new, expanded or contracted PA(s), and "final" tract allocation schedule for the PA(s) would be November 1, 1996. DNR agreed to provide the opportunity for the GNA Owners to complete their equity determination process and submit the application for "final" PBU expansion, "final" PA(s), and "final" tract allocation schedule by December 31, 1997. Given the information presented by the GNA Owners on November 10, 1997, the Division will extend that time to March 31, 1997. Failure to timely submit the "final" application may cause the DNR to prescribe the "final" expansion boundaries of the PBU, "final" new, expanded or contracted PA(s), and "final" tract allocation schedule for the PA(s).

As proposed, the Interim Application, protects all parties' interests, including the State's and allows the GNA Owners more time to propose a final solution. The GNA Owners and the DNR recognize that the Interim Application is not the "final" answer as to the ultimate size and shape of the PA or PAs for the Kuparuk River Formation reservoirs in the GNA, the extent of any PBU expansion or unit formation, and the ultimate tract allocation schedule for the PA or PAs. The determination of the boundaries of a "final" PA, PAs, or new unit, and the "final" expansion of the PBU or formation of a new unit will be based on the applicable provisions of the PBU Agreement, the state statutes and regulations, and the information determined from additional drilling and development operations in the GNA. The "final" PBU expansion will not be approved unless all parties of interest, including the state, can be protected. 11 AAC 83.303(a)(3). The GNA Owners must show why the state's interests, particularly its economic interests, are better protected by expansion of the PBU, than by forming a new unit area.

In reviewing the above criteria, the following factors were considered:

(1) The Environmental Costs and Benefits

As discussed above, the sharing of the existing facilities eliminates duplication and reduces the surface area altered by development. The GNA Owners negotiated agreements that provide for increased access to existing Heald Point and LPC facilities for exploration, production, and development in the GNA. Additional GNA wells will be drilled from surface locations at the Niakuk drillsite to delineate and test potential Kuparuk River Formation accumulations in the northern portions of the proposed expanded NPA and proposed WNPA. These activities will not significantly alter the existing gravel pads, roads or surface facilities. There will be no significant additional impacts to nearshore habitat or biological resources because of the additional Niakuk production, or production from other accumulations near Heald Point.

(2) The Geological and Engineering Characteristics of the Reservoir

Geological, geophysical, or engineering information was not submitted with the Interim Application. However, geological, geophysical, and production data available from the Niakuk field indicates that the Kuparuk River Formation reservoir is stratigraphically and structurally complex and contains multiple compartments. Any given compartment may or may not be in full or partial pressure or fluid communication with adjacent compartments. Compartmentalization

appears to be a function of multiple depositional point sources, syn-depositional and post-depositional faulting, and variations in depositional environmental relating to the local and regional tectonics and basin morphology.

The proposed PA boundaries do not conform with the known compartmentalization of the reservoir. For example, production, test, and geophysical data indicate that the Kuparuk reservoir is in communication between the proposed WNPA and the current NPA. The boundaries for the WNPA and the expanded NPA in the Interim Application are based on geography and lessee interests rather than the known geology of the reservoir.

(3) Prior Exploration and Development Activities

Numerous delineation wells have been drilled since the NPA was formed and drilling continues from Heald Point to determine the extent of the Kuparuk River Formation reservoirs in the GNA. Within the proposed expanded NPA, at least four wells have been drilled: NK-13, NK-14, NK-15, and NK-17. Three wells have recently been drilled within the proposed WNPA: NK-27, NK-28, and NK-29. Production data available to the Division indicate that NK-14, NK-27, and NK-28 produce at an average rate of 2,962 BOPD, 3,806 BOPD, and 2,900 BOPD, respectively. NK-27 was certified as capable of production in paying quantities in June 1995. In addition to the well data, 2-D and proprietary 3-D seismic surveys, acquired over the GNA, have assisted the evaluation of the lands appropriate for inclusion within the expanded PBU, expanded NPA, and proposed WNPA. The GNA Owners are expected to provide the results from their 1997 drilling efforts with the "final" application.

(4) The Applicant's Plan for Exploration or Development of the Participating Area

The Interim Application incorporated by reference the 1997 Plan of Development for the NPA as the plan of development and operations for the WNPA and expansion area of the NPA. The Division approved this plan of development for the period March 2, 1997 through March 2, 1998.

(5) The Economic Costs and Benefits to the State

As discussed in Article III(c) above, increased production and revenues alone may not always be in the state's best interest. Here, however, the gain in economic benefits outweigh any costs to the state.

In the Interim Application, the GNA Owners have agreed to make November 1, 1996, the effective date for the "final" expansion of the PBU, "final" new, expanded or contracted PA(s), and "final" tract allocation schedule for the PA(s). This retroactive effective date will assure that the state receives the timely, adjusted benefits of the earliest production from Kuparuk River Formation reservoirs in the GNA in exchange for providing the GNA Owners the time to complete their reservoir delineation plans and equity determination process. The state's royalty share will be adjusted using the effective date for the "final" PA or PAs.

The GNA Owners submitted an allocation of production for the leases in the proposed WNPA and the extended NPA (Exhibit 4 and Exhibit 5, respectively, to the Interim Application) to comply with 11 AAC 83.371. Because the tract allocation schedules are only for the interim period before the "final" PA or PAs application are submitted and are subject to the retroactive adjustment date mentioned above, the tract allocation schedules are acceptable.

(6) Any other relevant factors (including mitigation measures) the commissioner determines necessary or advisable to protect the public interest

The factors are discussed in Article IV below.

IV. OTHER ISSUES PERTINENT TO THE INTERIM APPLICATION

As part of the Interim Application, the GNA Owners and the Division have agreed that ARCO's, BP's, and Exxon's ANS Gas Royalty Settlement Agreements and ANS Royalty Litigation Settlements Agreements will apply to all production from the WNPA and the NPA, as expanded.

The parties have further agreed that the 1980 Prudhoe Bay Royalty Settlement Agreement (RSA) will apply to (1) all GNA leases currently in the PBU; (2) the production attributable to the southern halves of ADL 34625 and ADL 34626 as these lands were included in the PBU on the effective date of the RSA; and (3) the production attributable to the northern halves of ADL 34625 and ADL 34626. Any changes for field cost allowances on the northern halves of ADL 34625 and ADL 34626 which may result from a final resolution of the field cost allowance issue for the "final" PA or PAS would be effective retroactive to November 1, 1996. The parties have agreed that this proposal in no way prejudices or limits any GNA Owners' right to claim or the DNR's right to object to field cost allowances for the production attributable to the northern halves of ADL 34625 and ADL 34626.

V. FINDINGS AND DECISION

Considering the facts discussed in this document and the administrative record, I hereby make findings and impose conditions as follows:

1. DNR had the discretion to expand the PBU under the conditions proposed by the GNA Owners.
2. In evaluating whether to exercise my discretion to approve the proposed expansion, I must determine that it is in the state's best interest to do so considering the specific facts and circumstances surrounding the application.
3. In making a determination that the proposed expansion is in the state's best interest, it is necessary to evaluate the proposal in light of the statutes, the regulations and the contractual obligations to which the state is party.

4. The interim expansion of the PBU and the NPA, and the interim formation of the WNPA are necessary and advisable to protect the public interest. AS 38.05.180(p) and 11 AAC 83.303.

5. The available well data and exploration plans justify the inclusion of the proposed lands within the PBU. Under the regulations governing formation and operation of oil and gas units (11 AAC 83.301 - 11 AAC 83.395) and the terms and conditions under which these lands were leased from the State of Alaska, the following lands are to be included in the expanded PBU area:

T.12.N., R.15.E., U.M., Secs. 13, 14, Sec. 23: N/2, Sec. 24: N/2, SE/4
(ADL 34625 (Tract 4));

T.12.N., R.15.E., U.M., Secs. 15, 16, 22, Sec. 21: N/2, SE/4
(ADL 34626 (Tract 5)).

6. The available well data demonstrate that a paying quantities certification is appropriate for the well(s) in the Kuparuk River Formation reservoirs within the GNA. The data also suggest that the acreage is underlain by hydrocarbons and known and reasonably estimated to be capable of production or contributing to production in sufficient quantities to justify the interim expansion of the NPA and the interim formation of the WNPA within the PBU.

The available well and geological data as well as exploration plans justify the interim inclusion of the proposed tracts within the NPA and WNPA. Under the regulations governing formation and operation of oil and gas units (11 AAC 83.301 - 11 AAC 83.395) and the terms and conditions under which these lands were leased from the State of Alaska, the following lands are to be included in the expanded NPA Area and WNPA:

(A) Expanded NPA:

T.12.N., R.15.E., U.M., Secs. 13, 14, Sec. 23: N/2, Sec. 24: N/2, SE/4
(ADL 34625 (Tract 4));

T.12.N., R.15.E., U.M., Sec. 36: NE/4
(ADL 34630 (Tract 31));

(B) WNPA:

T.12.N., R.15.E., U.M., Secs. 15, 16, Sec. 21: N/2, SE/4, Sec. 22
(ADL 34626 (Tract 5));

T.12.N., R.15.E., U.M., Sec. 27
(ADL 34629 (Tract 30)).

7. The approved interim expansion of the NPA and the interim formation of the WNPA encompass the reasonably known hydrocarbon bearing portion of the Kuparuk River

Formation reservoirs within the GNA that are capable of production or contributing to production in paying quantities. The NPA expansion and WNPA formation provide for the equitable division of costs and an equitable allocation of produced hydrocarbons, and set forth a development plan designed to maximize physical and economic recovery from the reservoirs within the expanded and approved participating areas.

8. Pursuant to 11 AAC 83.371(a), the allocation of production and costs for the tracts within expanded NPA and the WNPA, Exhibit 5 and Exhibit 4 of the Interim Application, are approved.

9. The production of GNA hydrocarbon liquids through the existing production and processing facilities within the PBU reduces the environmental impact of the additional production. Utilization of existing facilities will avoid unnecessary duplication of development efforts on and beneath the surface.

10. The currently approved well test allocation methodology continues to be acceptable for royalty allocation purposes and for allocating the commingled gas and hydrocarbon liquids production amongst all the PAS that are processed through the LPC.

The LPC Operator, ARCO, shall provide the Division with the monthly production allocation reports and well test data for the wells producing through the LPC by the 20th day of the following month. The Division reserves the right to request any information it deems pertinent to the review of those reports. The allocation report shall include a monthly oil, gas, and water allocation factor to be applied uniformly to the commingled production, a summary of monthly allocation by well, a summary of the allocated volumes of oil, hydrocarbon liquids, gas, and water by participating area, oil gravity for each participating area and the oil gravity of the combined streams, and specific well test data for all tests which have been conducted.

11. The Division reserves the right to review the well test allocations to insure compliance with the methodology prescribed in this decision. Such review may include, but is not limited to, inspection of facilities, equipment, well test data, and separator back-pressure adjustments.

12. To account for the gas produced from each participating area, the gas volume disposition and gas reserves debited from or credited to each PA using the shared LPC, the LPC Operator shall continue to submit a monthly gas disposition and reserves debit report. The gas disposition report, now to include the WNPA, shall be submitted with the monthly production allocation reports.

13. The field cost allowance for the state's royalty share of oil produced from all GNA leases currently in the PBU and the production attributable to the southern halves of ADL 34625 and ADL 34626, as these lands were included in the PBU on the effective date of the RSA, is governed by the RSA. During the period of the Interim Application, the field cost allowance for the production attributable to the northern halves of ADL 34625 and ADL 34626 will also be governed by the RSA. Any changes for field cost allowances on the


northern halves of ADL 34625 and ADL 34626 which may result from a final resolution of the field cost allowance issue for the "final" PA or PAs would be effective retroactive to November 1, 1996. The parties have agreed that this proposal in no way prejudices or limits any GNA Owner's right to claim or the DNR's right to object to field cost allowances for the production attributable to the northern halves of ADL 34625 and ADL 34626.

14. Diligent exploration and delineation of the reservoir underlying the GNA is planned by the GNA Owners under the PBU plans of development and operation approved by the state.

15. The plan of development for the WNPA and the expansion area of the NPA was included with the 1997 plan of development for the NPA. That plan met the requirements of 11 AAC 83.303 and 11 AAC 83.343 and was approved by the Division on April 21, 1997. Further plans of development which describe the status of projects undertaken and the work completed, any changes or expected changes to the plan must be submitted in accordance with 11 AAC 83.343.

16. Approval of the interim expansion of the Prudhoe Bay Unit, interim expansion of the NPA, and the interim formation of the WNPA are effective this date.

17. A final application must be submitted by March 31, 1998.



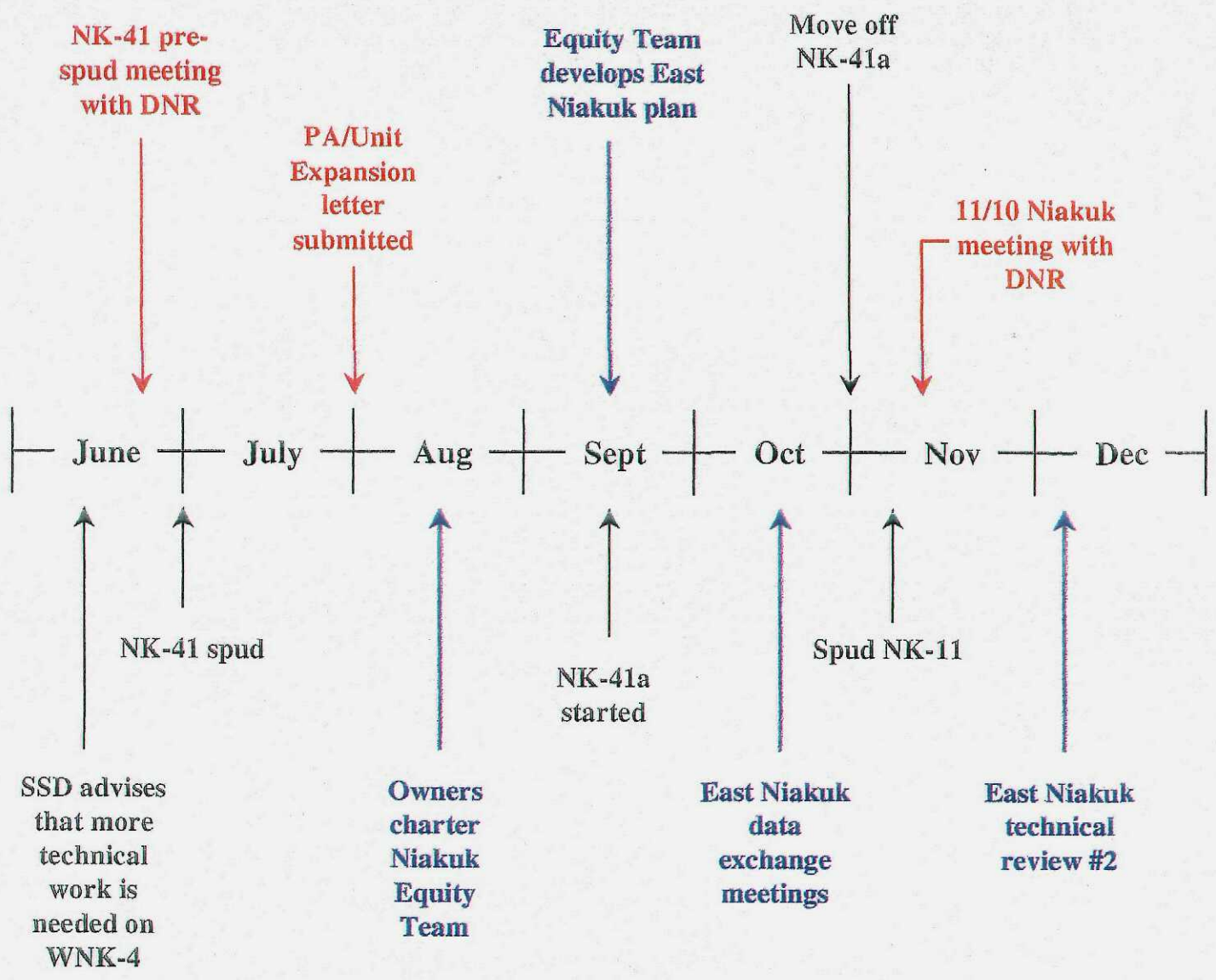
Kenneth A. Boyd, Director
Division of Oil and Gas

11.17.97
Date

Attachments: Expanded NPA Tracts and Tract Allocation Schedule
WNPA Tracts and Tract Allocation Schedule

11-10-97
meeting w/ GNA Owners
MPK

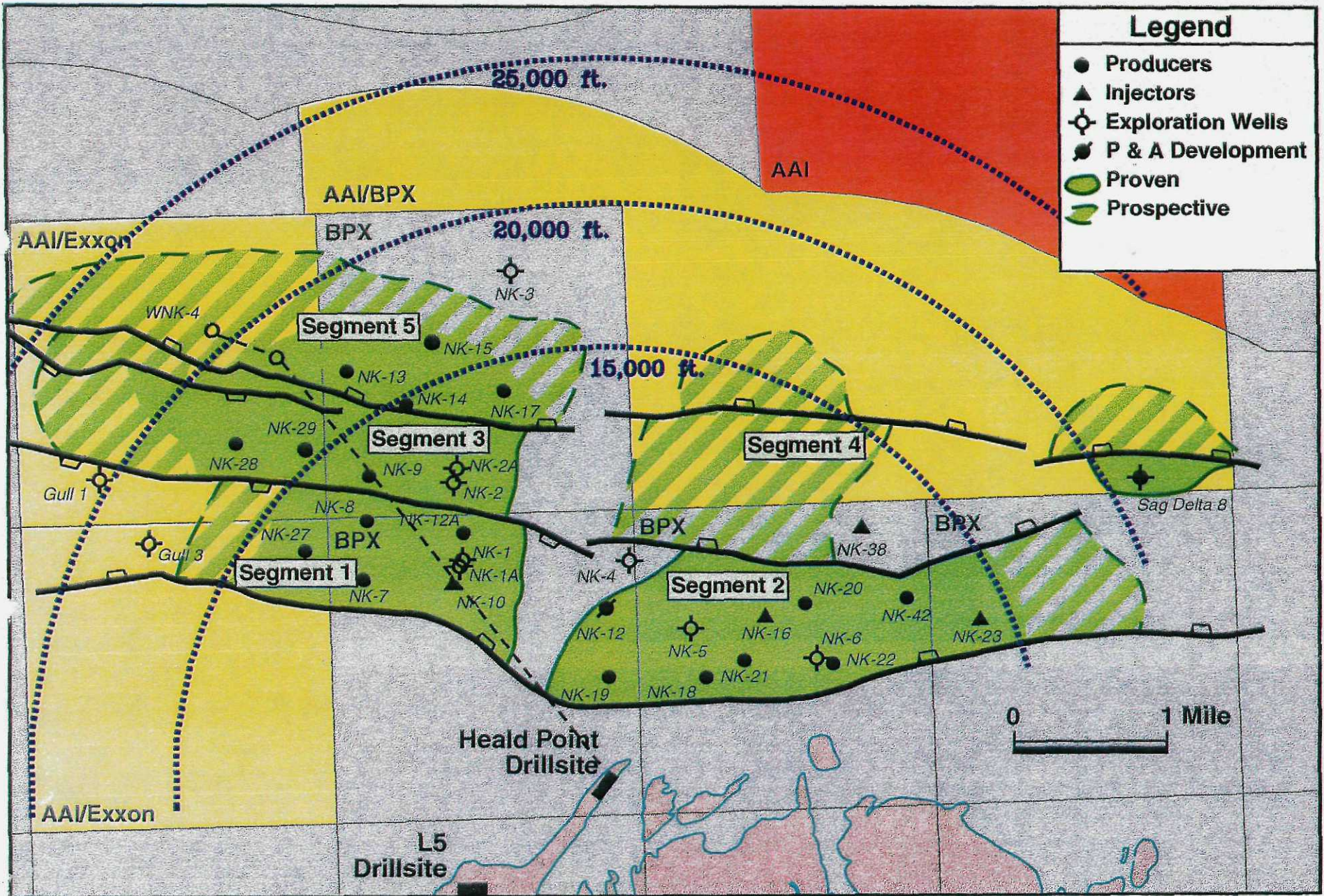
Niakuk Activities



Niakuk Field Map

not confidential per ARCO MDX

ARCO **safe** Low Cost & Long Term



Worldwide Extended Reach Drilling

