

PRUDHOE BAY UNIT

APPLICATION FOR THE EXPANSION
OF THE BOREALIS PARTICIPATING AREA

FINDINGS AND DECISION OF THE DIRECTOR,
DIVISION OF OIL AND GAS UNDER DELEGATION OF AUTHORITY
FROM THE COMMISSIONER,
DEPARTMENT OF NATURAL RESOURCES, STATE OF ALASKA

December 22, 2004

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PRUDHOE BAY UNIT

EXPANSION OF THE BOREALIS PARTICIPATING AREA

I. INTRODUCTION, BACKGROUND AND CONCLUSION

By letter dated April 28, 2004, BP Exploration (Alaska) Inc. (BPXA), as a Working Interest Owner and Unit Operator of the Prudhoe Bay Unit and on behalf of Chevron U.S.A. Inc. (Chevron), ConocoPhillips Alaska, Inc. (ConocoPhillips), ExxonMobil Alaska Production Inc. (ExxonMobil Alaska), and Forest Oil Corporation (Forest) applied to expand the Borealis Participating Area (BPA) within the Prudhoe Bay Unit (PBU) area (Application). The current BPA includes portions of five leases for a total of approximately 7,760 acres. The expanded BPA would include all or portions of thirteen leases and approximately 16,408 acres.

The BPA was approved on August 30, 2002, effective retroactively to November 1, 2001. Currently, there are a total of 41 production and injection wells from PBU L, V and Z Pads producing approximately 32,000 barrels of oil per day (BOPD) from the Borealis Reservoir. Six of the forty-one wells are operating as injector or producer PBU Borealis Tract Operations, that is, operations outside the current BPA, at a combined production rate in September 2004 of approximately 5,620 BOPD.

BPXA provided geological, geophysical, and engineering data supporting the expansion of the BPA. The submitted data justifies the BPA expansion. The data indicate that the Kuparuk formation within the proposed expansion area is capable of producing or contributing to the production of hydrocarbons in paying quantities.

For the reasons set out in this Findings and Decision, the Division approves the BPA expansion. The expanded BPA is limited to the acreage proposed by BPXA because that acreage is "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 production of hydrocarbons in paying quantities." 11 AAC 83.351(a). If additional data are obtained or submitted in the future, the boundaries of the participating area may be revised. The Division also approves the tract participation schedule for the expanded BPA, Attachment 3 to this Findings and Decision. The revised tract allocation schedule adequately allocates production and costs among the leases in the participating area. The effective date of the revised BPA and its revised tract allocation schedule is December 1, 2004.

II. APPLICATION FOR THE EXPANSION OF THE BOREALIS PARTICIPATING AREA

On March 4, 2004, Division staff attended a BPA pre-application meeting with BPXA and the other PBU working interest owners (WIOs). BPXA presented various aspects of the proposed BPA expansion, including a brief analysis of the Borealis Reservoir within the proposed expansion areas, a proposed BPA boundary, and a timetable for BPA activities. BPXA did not submit any Borealis Reservoir, geological, geophysical, and engineering data at this meeting.

By letter dated April 28, 2004, BPXA submitted the Application to expand the BPA within the PBU. The Application included a lease map of the expanded BPA, proposed expanded BPA

participations and tract allocation schedule, the BPA Type Log Well L-101, geological, geophysical and engineering data supporting the proposed expanded BPA, and a BPA plan of development. Attachment 1 to this Findings and Decision is a location map of the BPA and BPA expansion area, Attachment 2 is a lease map of the expanded BPA, and Attachment 3 is the BPA Tract Participation Schedule.

The proposed 8,648 acre BPA expansion is comprised of portions of ten leases: ADL 47447 (Tract 14), ADL 47446 (Tract 15), ADL 25637 (Tract 16), ADL 28238 (Tract 19), ADL 47450 (Tract 49), ADL 28240 (Tract 50), ADL 28245 (Tract 53), ADL 28262 (Tract 54), ADL 28262 (Tract 54A), and ADL 47453 (Tract 81). All ten leases are owned 26.355356 percent BPXA, 36.069385 percent ConocoPhillips, 36.395491 percent ExxonMobil Alaska, 1.1600 percent Chevron, and 0.019768 percent Forest.

By letter dated April 20, 2004, BPXA, as Operator of the adjacent Milne Point Unit (MPU), submitted a letter of no objection to the pending Application of the PBU Owners to expand the BPA. The proposed BPA hydrocarbon accumulation extends to the boundary of the MPU Kuparuk Participating Area. The letter stated that the MPU WIOs worked with the PBU WIOs during the proposed BPA application process and that the two participating areas will not conflict with each other. BPXA, as the MPU Operator, stated its belief that the proposed expanded BPA fully complies with 11 AAC 83.303 and other applicable state statutes and regulations.

The Division determined that the Application was incomplete and by e-mail letter dated May 6, 2004, requested that BPXA address a number of technical issues identified in the Division's letter. On May 25, 2004, Division staff and BPXA representatives met to discuss the issues identified in the May 6, 2004 e-mail. At the request of the Division, BPXA agreed to submit the supplemental information presented at the meeting. The supplemental geoscience information and maps regarding the northern and southern BPA expansion areas were submitted by letters dated June 15, 2004 and July 16, 2004. The Application was deemed complete on July 16, 2004.

III. DISCUSSION OF DECISION CRITERIA

The Commissioner of the Department of Natural Resources (the Commissioner) reviews applications to form participating areas under AS 38.05.180(p) and 11 AAC 83.303 – 11 AAC 83.395. By memorandum dated September 30, 1999, the Commissioner approved a revision of Department Order 003 and delegated this authority to the Director of the Division of Oil and Gas. The Division's review of the Revised Application is based on the criteria set out in 11 AAC 83.303 (a) and (b). A discussion of the subsection (b) criteria, as they apply to the Revised Application, is set out directly below, followed by a discussion of the subsection (a) criteria.

A. Decision Criteria Considered Under 11 AAC 83.303(b)

1. The environmental costs and benefits of unitized exploration and development

11 AAC 83.303(b) (1) requires the Commissioner to assess the environmental costs and benefits of the proposed BPA expansion. DNR's approval of a plan of development for the expanded participating area is only one step in the process of obtaining permission to drill a well or wells or

develop the known reservoirs within the unit area. The unit operator also must obtain permits from various agencies before drilling a well or wells or initiating development activities to produce known reservoirs within the unit area. And the operator must obtain DNR's approval of a plan of operations.

State unitization regulations require the Commissioner's approval of a plan of operations before the unit operator performs any field operations. 11 AAC 83.346. A proposed plan of operations must describe the operating procedures designed to prevent or minimize adverse effects on natural resources. When reviewing a proposed plan of operations, the Division will consider the unit operator's ability to compensate the surface owner for damage sustained to the surface estate and the plans for rehabilitation of the unit area.

Borealis Reservoir development wells will be drilled from existing PBU drill sites (L-Pad, V-Pad and Z-Pad) and a possible new drill site, I-Pad. Existing pad facilities and pipelines will be used to the extent possible to produce Borealis fluids to Gathering Center 2 (GC-2) for processing and shipment to Pump Station 1 (PS1). Borealis fluids will be commingled with fluids from other producing reservoirs in the PBU West End (PBWE) on the surface at the respective well pads to maximize use of existing infrastructure, minimize environmental impacts, reduce costs, and maximize recovery.

Borealis development plans include installation of one new pad, I-Pad, with production, water injection, and gas lift pipelines, power and telecommunications that connect into the existing PBU infrastructure. I-Pad would provide well drilling slots for the most northerly wells in the BPA. L-Pad provides slots for northern and central Borealis development; V-Pad provides slots for central and southern Borealis development. The most southerly wells in the BPA will be drilled from Z-Pad. To accommodate Borealis development wells, Z-Pad may require additional gravel that would be placed within the existing permitted footprint of these well pads.

When the lessees propose further exploration and development of the Borealis Reservoir in the Western PBU, DNR will ensure that an updated unit plan of operations complies with the lease stipulations and lessee advisories developed for the most recent North Slope Areawide lease sale. DNR develops lease stipulations through the lease sale process to mitigate the potential environmental impacts from oil and gas activity. These mitigation measures address such issues as the protection of primary waterfowl areas, site restoration, construction of pipelines, seasonal restrictions on operations, public access to, or use of, the leased lands, and avoidance of seismic hazards. Additionally, lease operations may be subject to a coastal zone consistency determination and must comply with the terms of both the state and North Slope Borough coastal zone management plans as appropriate for the proposed activity.

Ongoing mitigation measures such as seasonal restrictions on specific activities in certain areas can reduce the impact on bird, fish and mammal populations. Designating primary waterfowl areas is one method of protecting the bird habitat. Regulating waste disposal is another way to limit environmental impacts. DNR also requires consolidation of facilities to minimize surface disturbances. With these mitigating measures, the anticipated exploration and development related activity is not likely to significantly impact bird, fish, and mammal populations.

Area residents use the proposed expansion area for subsistence hunting and fishing. Oil and gas activity may impact some wildlife habitat and some subsistence activity. The environmental

impact will depend on the level of development activity, the effectiveness of mitigation measures, and the availability of alternative habitat and subsistence areas. In any case, the anticipated activity within the PBU will impact habitat and subsistence activity less than if the lessees developed the leases individually. Unitized exploration, development and production will minimize surface impact.

2. Geological and engineering characteristics, and prior exploration activities of the proposed expanded participating area

A participating area 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" means:

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.

11 AAC 83.395(4).

The BPA and proposed BPA expansion area lies entirely within the western part of the PBU and was formerly referred to as the Northwest Eileen area. The west end of the PBU has been known to contain hydrocarbons since the late 1960's when oil was encountered within the Kuparuk formation while drilling PBU Ivishak formation appraisal wells. The Kuparuk formation was not considered commercially viable until drilling infrastructure and pipeline facilities were in place and drilling and development methods became more economically efficient.

The type log that defines the stratigraphic interval for the Kuparuk section in the BPA is the Mobil West Kuparuk State 3-11-11 well. The well was drilled in 1969 and the top of the Kuparuk formation occurs at -6,467 tvdss (6,535' md) and the base of the Kuparuk interval occurs at -6,883' tvdss (6,952' md). The well tested 2,208 BOPD of 24.4 API oil from the upper part of the C-4 sandstone of the Kuparuk formation.

The BPA is part of a northwest-to-southeast trending anticlinal structure that is broken up by two major sets of fault: an older set of northwest-southeast trending faults that cut the entire stratigraphic section and a younger set of north-northeast trending faults. The oil accumulation is bounded by faults to the southwest and northwest. Fault throw is variable and divides the reservoir into isolated compartmentalized fault blocks with varying oil/water contacts. Major faults have throws that range between 150 to 350 feet. The throw on minor faults is on the order of 10 to 100 feet. Within the BPA, the Kuparuk reservoir occurs between -6,200 to -6,900 feet tvdss.

The Kuparuk formation is early Cretaceous (120 - 145 million years old) in age, and is subdivided into four major informal members that are designated with letters A (oldest) through D (youngest). Each member is further subdivided into sub-members that are designated with

numbers, such as C-1 and B-7 (with one being the oldest sub-member). The 'C' and 'B' members are separated by a major unconformity, the Lower Cretaceous Unconformity (LCU). The Borealis Reservoir is composed of very fine to medium grained quartz-rich sandstone interbedded with siltstone and mudstone and is overlain by impermeable shales of the Kuparuk 'D' member, the Kalubik formation, and the HRZ. Shales and siltstones of the underlying Miluveach and Kingak formations confine the lower part of the Kuparuk reservoir. BPA Kuparuk production is primarily from the Upper Kuparuk C-4 sandstone with minor contributions from the basal Kuparuk 'C' sandstone where rock quality is good and the sandstone lie above the oil-water contact.

In order to capture additional reserves and production from the Borealis Reservoir, BPXA proposes to expand the BPA to the north and to the south. The expansion will recover additional reserves from the Kuparuk C sand and incremental production from the A and B sands.

Average gross thickness of the Kuparuk formation within the current and expanded BPA is in the range of 150'-200'. Fault displacement varies from 10'-350', resulting in a compartmentalized reservoir with variable oil/water contacts ranging from 6,625' true vertical depth subsea (tvds) in the L-pad area to 6,725' tvds in the V-100 and Z-101 wells in the southeastern BPA. There is no evidence of an associated gas cap in the field.

Having calibrated petrophysical and core analyses to model the reservoir, BPXA described the Borealis Reservoir as having porosity values between 18-22%, permeabilities between 5-216 millidarcies, initial water saturation between 32-54% within the oil leg and an estimated initial reservoir pressure of 3,439 psia. API gravity of oil from L-pad wells is in the 25.6-27.5° range. The results of the reservoir models indicate that the original oil in place within the existing BPA is in the range of 195 million barrels to 277 million barrels of oil. The estimated solution gas in place is in the range of 85 BCF-125 BCF. The complex compartmentalization of the reservoir, variable net pay thickness due to lithological variations and depositional controls and variable oil/water contacts result in the broad range of estimated volumes. Also contributing to the uncertainty of the volumetric estimates is the comparative lack of well control relative to the highly-compartmentalized reservoir. Forty-one wells had been drilled within the Borealis Reservoir at an irregular spacing of approximately 160 acres with locations often dictated by faulted segments. Seven of the injector wells also serve as injectors for portions of the overlying Schrader Bluff reservoir in the Orion Participating Area.

Well logs, core analyses and production history from wells within and near the proposed northern BPA expansion area demonstrate the likely presence of economically recoverable oil in the C1 and upper B zones of the Kuparuk River Formation. Production data from the V-117 and Z-100 wells and core analyses from the Z-39 well indicate that reservoir properties within the proposed southern expansion area will also likely result in recovery of additional reserves.

BPXA provided suitable maps, cross sections, seismic lines, and well data to support this proposed BPA expansion. The Division's analyses of the data indicate that the proposed northern and southern BPA expansion areas are reasonably known to be underlain by hydrocarbons and known or reasonably estimated to be capable of producing or contributing to production of hydrocarbons in paying quantities.

3. The applicant's plan for development of the Borealis participating area

Development of the Borealis Reservoir will take place from existing PBU drill sites (L-Pad, V-Pad and Z-Pad) and a possible new pad, I-Pad, with production, water injection, and gas lift pipelines and telecommunications that connect into existing PBU infrastructure. I-Pad, planned for the first-half of 2006, will provide drilling slots for the most northerly wells in the expanded BPA and the Orion Participating Area. L-Pad provides drilling slots for northern and central Borealis development, and V-Pad provides drilling slots for central and southern Borealis development. The most southerly development wells will be drilled from Z-pad. Borealis Reservoir pressure is maintained through the implementation of a waterflood that started in June 2002. Enhanced oil recovery techniques, using miscible gas injection and water-alternating with miscible gas injection, started in the V-100 and the V-105 wells in June 2004.

Currently, there are a total of 41 production and injection wells from PBU L, V and Z Pads producing approximately 32,000 BOPD. Six of the forty-one wells, Z-100, Z-101, V-114A, V-115, V-117 and V-119, are operating as injector or producer PBU Borealis Tract Operations at a combined production rate in September 2004 of approximately 5,620 BOPD. These six wells are located in the proposed southern expansion area. BPXA will use horizontal well technology to develop the low permeability reservoir in the southern expansion area. Up to an additional 15 wells are anticipated for this area.

The northern expansion area is geologically analogous to the Kuparuk formation developed in the southern MPU. BPXA will drill additional northern Borealis appraisal and development wells concurrent with planned Orion Participating Area development in the 2006 timeframe or possibly earlier from existing gravel or ice pads. Ice pad appraisal wells are scheduled for the first quarter of 2005. Permit applications have been submitted for the I-Pad Ice Pad Appraisal Well Project, which is an appraisal well(s) to be drilled from an ice pad during the winter 2004-2005 season at the same location as the NEW 4-01 exploration well in 2002. Up to two appraisal wells are possible from this location in 2004-2005. If the appraisal well program is successful, anywhere from 5-15 Borealis wells are planned for the northern Borealis expansion area. Both the northern and southern Borealis expansion area developments anticipate water injection and miscible gas injection for enhanced oil recovery.

4. The economic costs and benefits to the state and other relevant factors

4.1 Facility sharing, production allocation and metering

BPXA represented to the Division that further development of the Borealis Reservoir is possible because it will share the existing PBU facilities and infrastructure. Under the plan of development, BPA production will be commingled with IPA production and with production from other reservoirs in the PBU production gathering system before any production passes through a custody transfer meter.

BPXA proposed that Borealis production allocation occur under the PBU Western Satellite Metering Plan (WSMP), described in the letter dated April 23, 2002, to the Division and the AOGCC. The WSMP is currently approved for metering and production allocation from the

Aurora, Borealis, Orion, Polaris, and the Midnight Sun Participating Areas within the PBU. As it will apply to the BPA, production allocation will rely on well performance curves to determine the daily theoretical production from each Borealis well. The GC-2 allocation factor will be applied to adjust total Borealis production. All new Borealis wells will be tested a minimum of two times per month during the first three months of production. A minimum of one test per month will be used to tune the individual well performance curves and to verify the allocation system performance. No natural gas liquids (NGLs), as explained below in Section 4.2, will be allocated to Borealis wells.

The AOGCC conditionally approved the WSMP in Conservation Order No. 471 (CO 471), dated May 29, 2002, and Conservation Order No. 505 (CO 505), dated January 5, 2004. The AOGCC conditions for approval of the WSMP are specified in Rule 4 of both CO 471 and CO 505. The Division coordinated its review of the proposed WSMP with the AOGCC, and agrees with the AOGCC conditional approval of the WSMP. The Division approved the WSMP, described above, subject to the same terms and conditions specified in AOGCC Conservation Order No. 471 and Conservation Order No. 505. The Division approves extending this allocation methodology to the extended BPA.

4.2 Gas disposition

In their agreements, the Borealis Special Supplemental Provisions to the PBU Operating Agreement and the Borealis Facility Sharing Agreement, the Borealis working interest owners have agreed to consider all Borealis Reservoir gas delivered into IPA production facilities as having been used in operations as fuel, flared, or lost gas obligations. However, the Division recognizes that there may be more gas produced beyond that used as fuel, flared or lost. In the Borealis POD, the Borealis working interest owners state that Borealis Reservoir gas not used in operations as fuel, flared or lost, will be injected into the Prudhoe Bay (Permo-Triassic) reservoir. DNR acknowledges that for royalty reporting purposes, the NGLs removed from BPA produced gas will be accounted for and reported as indigenous IPA fluids. Any residue gas from the BPA injected into the Prudhoe Bay (Permo-Triassic) reservoir will be treated as indigenous IPA natural gas for royalty reporting purposes. DNR will allow the Borealis working interest owners to give the BPA gas and NGLs to the IPA and the IPA working interest owners will be responsible for royalty payments when the gas is ultimately sold. DNR will allow this arrangement for the BPA because it would be burdensome for the Division and the Borealis working interest owners to track and report the relatively small amount of gas produced from the Borealis Reservoir, and because the royalty rates are the same for the various PBU participating areas. DNR will consider whether to require a gas disposition report for other participating areas on a case-by-case basis.

4.3 Tract allocation schedule

BPXA submitted a tract allocation schedule that prescribes how the Borealis working interest owners plan to allocate the production and costs between the leases in the expanded BPA as required by 11 AAC 83.371 (Attachment 3 to this Findings and Decision). Under the proposed tract allocation schedule, BPXA owns 26.355356 percent, Chevron owns 1.16 percent, ExxonMobil Alaska owns 36.395491 percent, Forest owns 0.019768 percent, and ConocoPhillips owns 36.069385 percent of the production from the expanded BPA. The proposed allocation schedule distributes working interest equity among the lease tracts based on

the working interest owners' risk weighted assessment of original oil in place for the Kuparuk formation. BPXA's proposed tract allocation schedule is acceptable for allocating production and costs among the leases within the BPA.

4.4 Field costs

Because the BPA approved by this Findings and Decision is within the original PBU boundary, the 1980 Prudhoe Bay Royalty Settlement Agreement governs the field cost allowance for the state's royalty share of production from the BPA.

B. Decision Criteria Considered Under 11 AAC 83.303(a)

1. Promote the conservation of all natural resources

The unitization of oil and gas reservoirs and the formation of participating areas within unit areas to develop hydrocarbon-bearing reservoirs are well-accepted means of hydrocarbon conservation. Without unitization, the unregulated development of reservoirs tends to be a race for possession by competing operators. The results can be 1) overly dense drilling, especially along property lines; 2) rapid dissipation of reservoir pressure; and 3) irregular advancement 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, may increase the likelihood of environmental damage. 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 operation. Unitization, however, provides a practical and efficient method for maximizing oil and gas recovery, and minimizes negative impacts on other resources.

BPA expansion will provide a comprehensive plan for developing the entire known Borealis Reservoir within the existing PBU. The Borealis POD provides for an efficient, integrated approach to development of the Borealis Reservoir.

Further, expansion of the BPA within the PBU will promote the conservation of both surface and subsurface resources through the unitized (rather than lease-by-lease) development. Unitization allows the unit operators to explore the area as if it were one lease. Expansion of the participating area over the entire known Borealis Reservoir will allow this area to be comprehensively and efficiently explored and developed. Adoption of the Borealis SSP, FSA and POD governing production will help avoid unnecessary duplication of development efforts on and beneath the surface. Facilities can be located to maximize recovery and to minimize environmental impacts, without regard for individual lease ownership.

Producing hydrocarbon liquids from the Borealis Reservoir through the existing PBU production and processing facilities will reduce the incremental environmental impact of the additional production. The further Borealis Reservoir development will use the existing PBU western operating area infrastructure of pipelines, roads, pads and processing facilities.

2. 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, still could occur without an equitable cost sharing formula, as well as a well-designed and coordinated development plan. Consequently, unitization must equitably divide costs and production, and maximize physical and economic recovery from any reservoir. It must also treat the royalty owner fairly.

An equitable allocation of hydrocarbon shares among the working interest owners 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 working interest owners to decide well spacing requirements; scheduling, reinjection and reservoir management strategies; and the proper joint-use of surface facilities. Unitization prevents economic and physical waste by eliminating redundant expenditures for a given level of production, and by avoiding loss of ultimate recovery by adopting a unified reservoir management plans.

Unitized operations greatly improve development of reservoirs beneath leases that 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 working interest owners. 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.

Under the PBU Operating Agreement, the required Borealis Owner voting interests, 95 percent of the Borealis voting interest, have signed the PBU Agreement, the Borealis SSP, and the Borealis FSA agreeing to share the existing PBU production capacity and the PBU infrastructure. Using the PBU infrastructure and facilities eliminates the need to construct stand-alone facilities to process the recoverable hydrocarbons from the Borealis Reservoir. Facility consolidation will save capital and promote better reservoir management through pressure maintenance and enhanced recovery procedures. In combination, these factors allow the Borealis reservoir within the PBU to be developed and produced in the interest of all parties.

Expanding the participating area over the Borealis Reservoir, and allowing this area to access existing unit facilities and infrastructure prevents economic and physical waste.

3. Protection of all parties

The proposed expansion of the BPA seeks to protect the economic interests of the Borealis working interest owners as well as the royalty owner. Combining interests and operating under the terms of the PBU Agreement, the Borealis SSP, and the Borealis FSA assures each individual working interest owner an equitable allocation of costs and revenues commensurate with the value of its lease.

Because hydrocarbon recovery will be maximized and additional production-based revenue will be derived from the Borealis Reservoir, one aspect of the state's economic interest is promoted. Diligent development and exploration under a single approved unit plan without the complications of competing leasehold interests is certainly in the state's interest. It promotes efficient evaluation and development of the state's resources, yet minimizes impacts to the area's cultural, biological, and environmental resources.

IV. FINDINGS AND DECISION

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

1. The expansion of the BPA is necessary and advisable to protect the public interest. AS 38.05.180(p) and 11 AAC 83.303.
2. The available geological and engineering data demonstrate that a paying quantities certification is appropriate for the tracts proposed for the expanded BPA. The data also indicates 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 expansion of the BPA within the PBU.
3. The available geological and engineering data justify the inclusion of the proposed expansion tracts within the BPA. 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 included in the expanded BPA:

Tract 14, ADL 47447

T. 12N. R. 11E., Sec. 16: SW/4, W/2SE/4, 240 acres;

Sec. 21: All, 640 acres;

Sec. 22: W/2W/2, SE/4SW/4, SW/4SE/4, 240 acres;

for a total of 1,120 acres.

Tract 15, ADL 47446

T. 12N. R. 11E., Sec. 17: NW/4, S/2, 480 acres;

Sec. 18: All, 583 acres;

Sec. 19: N/2, N/2SE/4, 372 acres;

Sec. 20: All, 640 acres;

for a total of 2,075 acres.

Tract 16, ADL 25637

T. 12N. R. 10E., Sec. 13: S/2SE/4, 80 acres;

Sec. 24: N/2NE/4, 80 acres;

for a total of 160 acres.

Tract 19, ADL 28238

T. 12N. R. 11E., Sec. 26: SE/4, 160 acres;

for a total of 160 acres.

Tract 49, ADL 47450

T. 11N. R. 12E., Sec. 6: SW/4, W/2SE/4, 217 acres;
Sec. 7: All, 596 acres;
Sec. 8: SW/4, S/2NW/4, 240 acres;
for a total of 1,053 acres.

Tract 50, ADL 28240

T. 11N. R. 11E., Sec. 1: E/2E/2, 160 acres;
Sec. 11: S/2SE/4, 80 acres;
Sec. 12: S/2, E/2NE/4, 400 acres;
for a total of 640 acres.

Tract 53, ADL 28245

T. 11N. R. 11E., Sec. 13: N/2, N/2SW/4, SE/4, 560 acres;
Sec. 14: NE/4, N/2SE/4, 240 acres;
Sec. 24: NE/4, N/2SE/4, 240 acres;
for a total of 1,040 acres.

Tract 54, ADL 28262

T. 11N. R. 12E., Sec. 17: All, 640 acres;
Sec. 18: All, 599 acres;
Sec. 19: All, 601 acres;
for a total of 1,840 acres.

Tract 54A, ADL 28262

T. 11N. R. 12E., Sec. 20: N/2, N/2S/2, 480 acres;
for a total of 480 acres.

Tract 81, ADL 47453

T. 11N. R. 12E., Sec. 30: N/2NE/4, 80 acres;
for a total of 80 acres. MDK 1/3/05

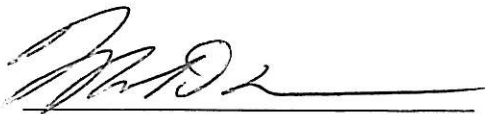
With the inclusion of these lands, the total area within the expanded BPA is now approximately 16,408 acres.

4. The expansion of the BPA divides costs and allocates produced hydrocarbons in a manner currently acceptable to all affected working interest owners, and sets forth a development plan designed to maximize physical and economic recovery from the Borealis Reservoir within the approved BPA.
5. Pursuant to 11 AAC 83.351(a) and 11 AAC 83.371(a), the Division approves the allocations of production and costs for the tracts within the expanded BPA. This approval of the tract participation schedule for the expanded BPA is subject to the same terms and conditions of Section III (A) (4) of the Findings and Decision of the Director regarding the Formation of the Borealis Participating Area, dated August 30, 2002.

6. The production of BPA hydrocarbon liquids may be commingled with other PBU production in surface facilities before custody transfer. Facility sharing reduces the environmental impact of the additional production. Use of existing facilities will avoid unnecessary duplication of development efforts on and beneath the surface.
7. The PBU Western Satellite Metering Plan, discussed in Section III (A) (4.1), is approved under the terms and conditions of that section for the expanded BPA. The Division reserves the right to review the well test allocations to ensure compliance with the methodology prescribed in this decision. The review may include, but is not limited to, inspection of facilities, equipment and well test data.
8. BPXA shall provide the Division with monthly production allocation reports and well test data for the BPA wells by the 20th of the following month. The reports must include a summary of the production allocated to each well for the month and specific well test data for all tests conducted during the month. The Division reserves the right to request any information it deems pertinent to the review of those reports. Moreover, this approval of the allocation methodology is conditioned upon the operator's agreement to reply promptly and fully to any such requests.
9. The BPA and the expanded BPA are assigned Accounting Unit Code "**PBBR**" for royalty accounting purposes. All operator reports and royalty reports must reference this Accounting Unit Code. The Borealis Owners have been allocating production for royalty reporting purposes from the Borealis Tract Operations for the Z-100, Z-101, V-115 and V-117 wells (Accounting Unit Code PB07, X022, PB06 and X022, respectively). Effective December 1, 2004, BPXA, as PBU Operator, and the BPA working interest owners will use Accounting Unit Code **PBBR** to record all production.
10. Diligent exploration and delineation of the Borealis Reservoir underlying the approved BPA is to be conducted by BPXA, the PBU Operator, under the plans of development and operation approved by the state. Before undertaking any specific operations, the unit operator shall submit a plan of operations to the DNR and other appropriate state and local agencies for review and approval. All agencies must grant the required permits before drilling or development operations may commence. DNR may condition its approval of a unit plan of operations and other permits on performance of mitigating measures in addition to those in the leases if necessary or appropriate. Requiring strict adherence to the mitigating measures will minimize adverse environmental impacts.
11. The Fourth Plan of Development for the BPA was submitted on October 1, 2004, and approved by the Division, under separate letter, on October 29, 2004, meets the requirements of 11 AAC 83.303 and 11 AAC 83.343. All future plans must describe the extent to which the requirements of the prior plan were achieved and, if actual operations deviated from or did not comply with the previously approved plan, an explanation of the deviation or noncompliance must be included. It must also provide detailed plans for the term of the plan and long-range development plans for the BPA. 11 AAC 83.343.

Article 5.4 of the PBU Agreement provides that a participating area will be effective on the first day of the month following approval by DNR or any other date agreed to by DNR and the working interest owners. The common practice with respect to the PBU has been that the effective date for any participating area would be retroactive to the start of pilot test production from a Tract Operation. Pilot test production from the Z-101 Borealis Tract Operation began on November 26, 2001. However, in the case of the BPA, the PBU, BPA and Borealis Tract Operation working interest ownership is aligned. There is no need to adjust retroactively the Tract Operation operator and royalty reports with the BPA operator and royalty reports. Consequently, the Division and BPXA, as PBU Operator, agree that approval of the expansion of the BPA, and the BPA tract allocation schedule are effective December 1, 2004, the first day of the month in which the DNR approves the BPA expansion.

A person affected by this decision may appeal it, in accordance with 11 AAC 02. Any appeal must be received within 20 calendar days after the date of "issuance" of this decision, as defined in 11 AAC 02.040(c) and (d) and may be mailed or delivered to Tom Irwin, Commissioner, Department of Natural Resources, 550 W. 7th Avenue, Suite 1400, Anchorage, Alaska 99501; faxed to 1-907-269-8918, or sent by electronic mail to dnr_appeals@dnr.state.ak.us. This decision takes effect immediately. An eligible person must first appeal this decision in accordance with 11 AAC 02 before appealing this decision to Superior Court. A copy of 11 AAC 02 may be obtained from any regional information office of the Department of Natural Resources.

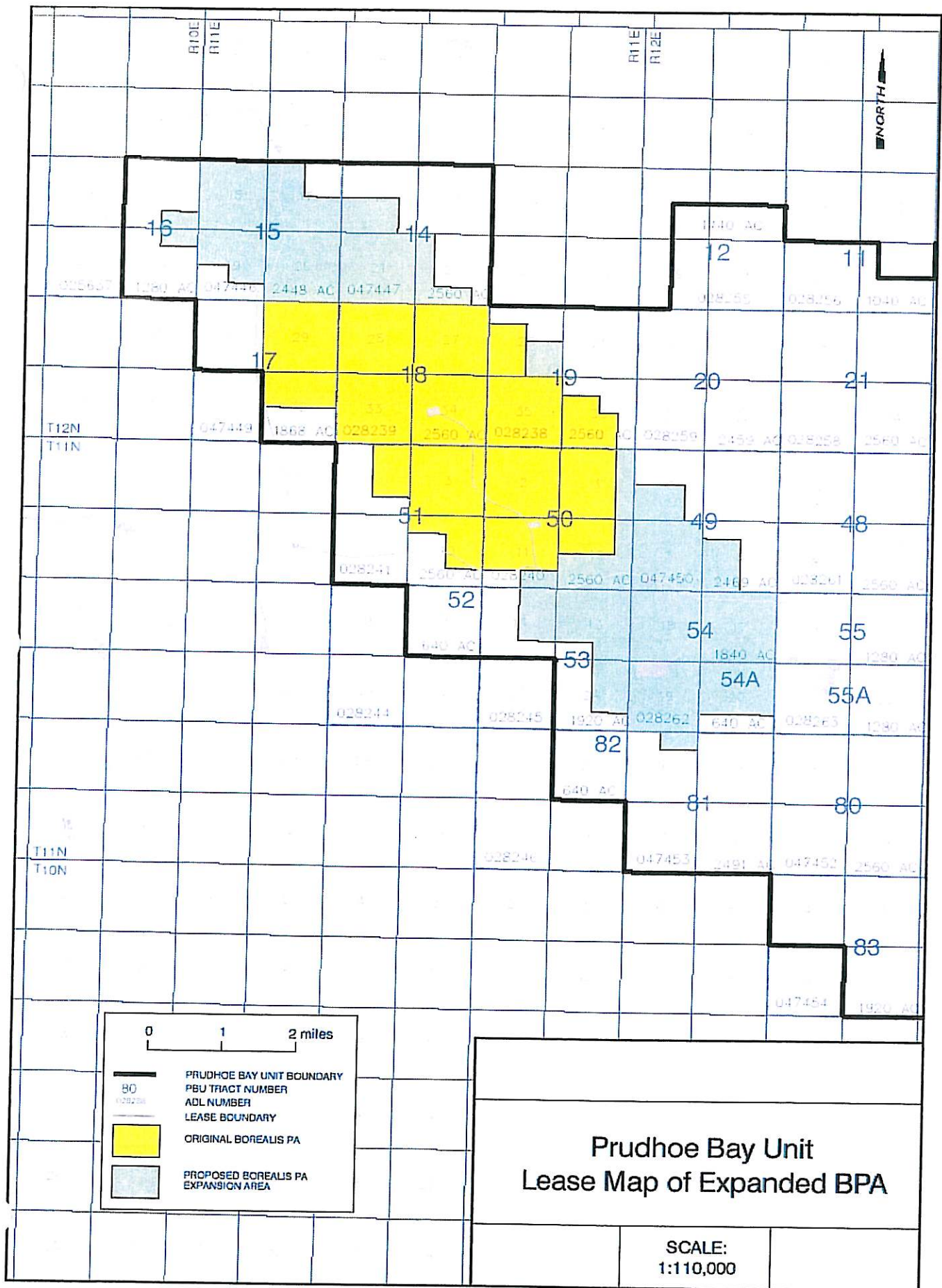


Mark D. Myers, Director
Division of Oil and Gas

12/22/04
Date

- Attachments: 1) Location Map of the BPA and BPA Expansion Area
2) Lease Map of the BPA and BPA Expansion Area
3) BPA Tract Participation Schedule

Borealis_PA_Expansionfinal_12.22.04



Attachment 2:

Lease Map of BPA and BPA Expansion Area

ATTACHMENT 3 (Revised)

TRACTS WITHIN THE BPA AND BOREALIS TRACT PARTICIPATIONS

Tract	Lease	Twp & Rge	Section	Description	Acres	Royalty (%)	BPX	Working Interest Ownership (%)				Tract Participation
14	47447	12N-11E	Sec 16: Sec 21: Sec 22:	SW/4, W/2 SE/4 All W/2W/2,SE/4SW/4, SW/4SE/4	240 640 240	12.5	26.355356	36.069385	36.395491	1.160000	0.019768	3.803%
15	47446	12N-11E	Sec 17: Sec 18: Sec 19: Sec 20:	NW/4, S/2 All N/2, N/2 SE/4 All	480 583 372 640	12.5	26.355356	36.069385	36.395491	1.160000	0.019768	10.388%
16	25637	12N-10E	Sec 13: Sec 24:	S/2 SE/4 N/2 NE/4	80 80	12.5	26.355356	36.069385	36.395491	1.160000	0.019768	0.354%
17	47449	12N-11E	Sec 29: Sec 32:	All N/2	960	12.5	26.355356	36.069385	36.395491	1.160000	0.019768	2.651%
18	28239	12N-11E	Sec 27: Sec 28: Sec 33: Sec 34:	All All All All	2,560	12.5	26.355356	36.069385	36.395491	1.160000	0.019768	25.844%
19	28238	12N-11E	Sec 26: Sec 35: Sec 36:	S/2 NW/4, SW/4, SE/4 All S/2 NW/4, SW/4, W/2 SE/4	1,360	12.5	26.355356	36.069385	36.395491	1.160000	0.019768	10.665%
49	47450	11N-12E	Sec 6: Sec 7: Sec 8:	SW/4, W/2 SE/4 All SW/4, S/2 NW/4	217 596 240	12.5	26.355356	36.069385	36.395491	1.160000	0.019768	3.567%
50	28240	11N-11E	Sec 1: Sec 2: Sec 11: Sec 12:	All All N/2, N/2 S/2, S/2 SE/4 All	640 640 560 640	12.5	26.355356	36.069385	36.395491	1.160000	0.019768	17.857%
51	28241	11N-11E	Sec 3: Sec 4: Sec 10: Sec 13:	All NE/4, N/2 SE/4 N/2 NW/4, NE/4, N/2 SE/4 N/2, N/2 SW/4, SE/4	1,200	12.5	26.355356	36.069385	36.395491	1.160000	0.019768	10.390%
53	28245	11N-11E	Sec 14: Sec 24:	NE/4, N/2 SE/4 NE/4, N/2 SE/4	560 240	12.5	26.355356	36.069385	36.395491	1.160000	0.019768	5.882%
54	28262	11N-12E	Sec 17: Sec 18: Sec 19: Sec 20:	All All All N/2, N/2 S/2	640 599 601 480	12.5	26.355356	36.069385	36.395491	1.160000	0.019768	7.522%
54A 81	28262 47453	11N-12E	Sec 30:	N/2 NE/4	80	12.5	26.355356	36.069385	36.395491	1.160000	0.019768	0.976% 0.101%
Total					16,408							100.000%