

NINILCHIK UNIT AGREEMENT

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

October 30, 2001

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## I. INTRODUCTION AND BACKGROUND

On June 29, 2001, Marathon Oil Company (Marathon), as the designated Ninilchik unit operator, filed the Ninilchik Unit application (Application) with the State of Alaska, Department of Natural Resources (DNR), on behalf of itself and the other majority working interest owner, Union Oil Company of California (Unocal). The proposed unit is located on the Kenai Peninsula, both onshore and offshore between Clam Gulch and Ninilchik. The proposed unit area covers approximately 25,167 acres of which approximately 18,999 acres are State of Alaska lands within ten individual State of Alaska oil and gas leases, and approximately 420 acres are unleased State of Alaska lands. Of the remaining approximate 5,748 acres proposed for the Ninilchik Unit, federal lands encompass 222.67 acres or 0.8857% of the unit area, University of Alaska lands encompass 661.35 acres or 2.63% of the unit area, Cook Inlet Region, Inc. lands encompass 1528.17 acres or 6.078% of the unit area, and patented fee lands encompass 3336.34 acres or 13.27% of the unit area. Approval of the proposed Ninilchik Unit Agreement (Agreement) would conform and modify the lease contracts to be consistent with the Agreement, and extend the term of leases for as long as they are subject to the Agreement.

A summary of the State of Alaska leases proposed for the Ninilchik Unit follows. Five of the leases in the proposed unit area were offered in State of Alaska Lease Sale 78, held on October 31, 1994. DNR issued oil and gas leases ADL 384305 (NU Tract 4), ADL 384306 (NU Tract 5), ADL 384314 (NU Tract 2), ADL 384318 (NU Tract 1), and ADL 384372 (NU Tract 8), effective January 1, 1995, on State of Alaska lease form number DOG 9208. The seven-year primary lease term of these leases expires on December 31, 2001.

Two leases in the proposed unit area were offered in the Cook Inlet Areawide 1999 Oil and Gas Lease Sale, held on April 21, 1999. DNR issued oil and gas leases ADL 389180 (NU Tract 6) and ADL 389181 (NU Tract 187), effective February 1, 2000, on State of Alaska lease form number DOG 9609 (rev. 9/99). The seven-year primary lease term of these leases expires on January 31, 2007.

One lease in the proposed unit area was offered in State of Alaska Lease Sale 1, held on December 10, 1959. DNR issued ADL 590, effective January 27, 1960, on State of Alaska lease form DL-1. The Falls Creek Unit #1 Well, a certified well capable of production in paying quantities, is located on ADL 590. A portion of this lease, 564.45 acres of the total 3,660 acres, is currently within the Falls Creek Unit.

Another lease in the proposed unit area was offered in the State of Alaska Lease Sale 40, held on September 28, 1983. DNR issued oil and gas lease ADL 359242 (NU Tract 10), effective December 1, 1983, on State of Alaska lease form number DMEM-27-83 (royalty revised 7/83). As a result of a litigation settlement agreement, the primary lease term was extended until December 1, 2001.

The remaining lease in the proposed unit area was offered in State of Alaska Lease Sale 85A, held on December 18, 1996. DNR issued ADL 388226 (NU Tract 11), effective February 1,

1997, on State of Alaska lease form DOG 9609. The seven-year primary lease term expires on January 31, 2004.

All ten leases retain a 12.5 percent royalty to the State of Alaska.

## **II. APPLICATION FOR THE FORMATION OF THE NINILCHIK UNIT**

Marathon submitted the Application on June 29, 2001, and simultaneously paid the \$5,000.00 unit application filing fee, in accordance with 11 AAC 83.306 and 11 AAC 05.010(a)(10)(D), respectively. The Application includes: the Agreement; Exhibit A legally describing the proposed unit area, its leases, and ownership interests; Exhibit B, a map of the proposed unit; and Exhibit G, the proposed Plan of Exploration (Initial POE). The Application also includes the Ninilchik Unit Operating Agreement; technical data in support of the Application; and an affidavit that all proper parties were invited to join the Agreement. The Agreement is based on DNR's State Only Royalty Owner model unit form dated April 2001 (Model Form) with no modifications.

Marathon requested that only portions of six of the ten State of Alaska leases be committed to the Ninilchik Unit. The six leases are ADLs 590, 359242, 384305, 384306, 384318, and 389180. Under 11 AAC 83.373, these commitments constitute severance of five of these six leases. For ADL 590, Marathon proposed to retain a portion, 564.45 acres, of the lease in the Falls Creek Unit and commit the remainder of the lease, 3,045.55 acres, to the Ninilchik Unit. Marathon proposed that the severance of the five leases, and apportionment of ADL 590, become effective contemporaneously with the approval of the Ninilchik Unit.

The Agreement requires the unit operator, Marathon, to file unit plans describing the activities planned for the proposed unit area. The Marathon must consider how it can best develop the resource underlying the entire unit area, without regard to internal lease boundaries. Marathon filed a proposed three-year Initial POE. The Initial POE is discussed further in Section III. A. 2.

The Agreement defines the relationship between the unit operator, the working interest owners (WIOs), and the royalty owners. It describes the rights and responsibilities, in addition to those imposed by state law and the leases, of the unit operator, WIOs and royalty owners for exploration of the unit area. It protects the interests of the state and the lessees. It defines the parties' rights and responsibilities in the event of successful or unsuccessful exploration results. DNR may approve the Agreement if the available data suggests that the unit area covers one or more geologic formations that should be developed under a DNR approved plan, and the proposed unit meets the other statutory and regulatory criteria.

The Division of Oil and Gas (Division) determined that the Application was complete and published a public notice in the "*Anchorage Daily News*" on Sunday, July 22, 2001, and in the "*Peninsula Clarion*" on Tuesday, September 25, 2001, under 11 AAC 83.311. The Division provided copies of the public notice to the Kenai Peninsula Borough, City of Kenai, Ninilchik Native Assn., Salamatoff Native Assn., Cook Inlet Region Corporation, and other interested parties under 11 AAC 83.311. The Division also provided public notice to the Alaska

Department of Environmental Conservation (DEC), Alaska Department of Fish and Game (ADF&G), and the Alaska Oil and Gas Conservation Commission (AOGCC). The public notice invited interested parties and members of the public to submit comments by August 21, 2001, and then by October 25, 2001. The Division received no comments in response to the public notice.

### **III. DISCUSSION OF DECISION CRITERIA**

AS 38.05.180(p) gives DNR the authority to form an oil and gas unit. The Commissioner of DNR (Commissioner) reviews unit applications under AS 38.05.180(p) and 11 AAC 83.301 – 11 AAC 83.395. By memorandum dated September 30, 1999, the Commissioner approved a revision of Department Order 003 that delegated this authority to the Director of the Division (Director).

The Director will approve the Agreement upon a written finding that it 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).

The Director will consider the following six criteria in making the written finding required in subsection (a): 1) the environmental costs and benefits of unitized exploration or development; 2) the geological and engineering characteristics of the potential hydrocarbon accumulation or reservoir proposed for unitization; 3) prior exploration activities in the proposed unit area; 4) the applicant's plans for exploration or development of the unit area; 5) the economic costs and benefits to the state; and 6) any other relevant factors, including measures to mitigate impacts identified above, the Director determines necessary or advisable to protect the public interest. 11 AAC 83.303(b). A discussion of the subsection (b) criteria, as they apply to the Agreement, 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 or Development**

DNR considered environmental issues in the lease sale process, this unitization process, and will review them again during the unit plan of operations approval process. Unitized exploration, development, and production minimize surface impacts by consolidating facilities and reducing activity in the field. The Initial POE requires the drilling of two new exploratory wells within the unit area. The unit operator must obtain DNR's approval of a unit plan of operations and permits from various state and federal agencies before beginning operations, including exploratory wells, within the unit area. A unit plan of operations provides a more detailed plan for surface activities incident to exploration of the unit area than does a POE.

When the unit operator begins the permitting process to commence operations under a POE in a coastal area, it must submit a Coastal Project Questionnaire, permit applications, and supporting information to the Alaska Division of Governmental Coordination (DGC). Consistency with the Alaska Coastal Management Program (ACMP) is determined by the DGC, state resource

agencies (DNR, DEC, ADF&G) and affected local governments (Kenai Peninsula Borough). The DGC conditions the proposed activity to ensure consistency with the ACMP and Kenai Peninsula Borough Coastal Management Program (KPBCMP). Submittal of these documents to the state initiates an intensive public and agency review process. DGC organizes an inter-agency review, determines which permits are required, and publishes a public notice soliciting comments from federal, state and local agencies, and the public. DGC designates a 50-day review schedule starting with the public notice. State and federal agencies are asked to review the application, request any additional information and submit comments. After reviewing the comments, DGC crafts additional mitigation measures as necessary to ensure the project is consistent with the ACMP and KPBCMP. DGC then issues a Proposed Consistency Determination for public comment. After the public comment period, additional stipulations may be imposed and a Final Consistency Determination may be issued for a project in the unit area.

When reviewing a proposed unit plan of operations, the Division considers the unit operator's ability to compensate the surface owner for damage sustained to the surface estate and plans for restoration and rehabilitation of the unit area. In addition, DNR, DEC, and AOGCC have bonding and financial responsibility requirements to ensure performance by the operator and reclamation of the area. 11 AAC 96.060; 18 AAC 75; 20 AAC 25.025.

Any new exploration activity that may occur following unitization, unless categorically approved under the ACMP ABC (General Concurrence) list, is subject to an ACMP consistency determination, and must comply with both the state and KPBCMP plans.

The proposed Ninilchik Unit area is habitat for a variety of land and marine mammals, waterfowl and fish. Area residents may use this area for subsistence hunting and fishing. Oil and gas activity in the proposed unit area may affect some wildlife habitat and some subsistence activity. Mitigation measures, including seasonal restrictions on specific activities, reduce the impact on fish, wildlife, and human populations. Mitigation measures specifically address potential impacts to subsistence access and harvesting (See Attachment 2).

Unitization and approval of a POE does not authorize any physical activity. It is simply one necessary step before DNR can accept an application for approval of a unit plan of operations or development. The Director's approval of a unit agreement is an administrative action, which by itself does not convey any authority to conduct any operations on leases within the unit. Unitization does not waive or reduce the effectiveness of the mitigating measures that condition the lessee's right to conduct operations on these leases.

## **2. The Geological and Engineering Characteristics of the Reservoir, Prior Exploration Activities in the Unit Area, and Plans for Exploration and Development of the Proposed Unit Area**

State regulation requires that a unit must encompass the minimum area required to include all or part of one or more oil or gas reservoirs, or potential hydrocarbon accumulations. 11 AAC 83.356(a). Division technical staff evaluated all data provided by the unit applicant to determine if the proposed unit area met those criteria. Marathon provided sufficient geological and

geophysical data for the Division to justify the formation of the Ninilchik Unit. Data submitted included: a geological justification for the formation of the unit; annotated well logs; a northeast-to-southwest cross section across the crest of the structure; representative strike and dip seismic cross sections across the Ninilchik anticline structure; and structure maps for two prospective horizons within the Tyonek Formation.

The Ninilchik Unit encompasses approximately 25,167 acres that surround the Ninilchik anticline, the surface expression that is visible along the cliffs that crop out along the Kenai Peninsula coastline. The Ninilchik anticline stretches for over 16 miles along the coastline from near the community of Clam Gulch to just north of the town of Ninilchik. The anticline is also segmented by a number of crosscutting faults along the crest of the structure.

The structure was recognized as a highly potential exploration target in the late 1950s and was mapped in the subsurface with the seismic, gravity, and magnetic tools available at the time. In 1960, the SOCAL Falls Creek 1 (SFC1) well was the first well drilled to test the promising anticlinal trap. Although the primary exploration objective was oil, it was completed as a gas well in 1961 in four sandstone zones within the Tyonek. The well has remained shut-in since then because the size of the accumulation has not yet justified the cost of facilities. Union drilled the Union Ninilchik 1 well in 1962 and tested gas in two Tyonek zones. Mobil drilled the Mobil Ninilchik 1 well in 1964 that was abandoned as a dry hole. Between 1968-1979 five exploration wells: the SOCAL Falls Creek 2; Falls Creek 43-6; Brinkerhoff Ninilchik 1; Union Clam Gulch 1; and the Texaco Ninilchik 1 were drilled with oil and gas objectives. Of these 5 wells, only the Texaco Ninilchik 1 well flow tested gas from one Tyonek zone. Marathon drilled the Corea Creek 1 well in 1996 that drill stem tested four zones within the Tyonek and recovered minimal gas with water. The results of the well verified the size of the Falls Creek accumulation.

Marathon has re-examined the area in the past few years with new seismic and drilling technology. Because the crest of the structure parallels the coastline, acquiring quality seismic data along the intertidal transition zone between the offshore marine and coastal land has always been a difficult, technically challenging and costly problem. In May 2001, Marathon acquired three high quality 2D seismic lines over the southern end of the structure and along the crest of the structure to help delineate potential exploration targets, especially along the crest of the anticline and the area south of Falls Creek. Marathon is currently reprocessing these data.

Marathon drilled and logged the Grassim Oskolkoff 1 well in 2000 and plans to test the Tyonek interval with the well in late 2001. Marathon is utilizing new technology advances (primarily in directional drilling and seismic acquisition and processing) that have evolved greatly since earlier phases of drilling on the Ninilchik structure. With new seismic data, Marathon is better able to identify and refine potential oil and gas exploration prospects within the Tyonek Formation.

By the end of 2001, Marathon also plans to work-over the SFC1 well to correct anomalous pressure in the tubing/casing annulus so that the well can be re-completed when facilities are in place to produce gas from the well. In 2002 Marathon plans to drill the Grassim Oskolkoff 2 well as a southern offset of the Grassim Oskolkoff 1 well in order to test the productivity of all prospective Tyonek reservoirs that can be mechanically reached within the limits of directional

drilling and completion technology. Marathon also plans to re-enter the Union Ninilchik 1 well in order to attempt to establish a sustainable completion in the Tyonek reservoirs. Future unit plans include a well on the northern fault block of the Ninilchik anticline to delineate gas potential within both the Tyonek and overlying Sterling reservoirs.

Marathon has justified the size of the Ninilchik Unit based on the technical data and the accompanying proposed work plan that outlines how it plans to systematically explore, delineate, develop, and produce economic gas reserves, primarily within the Tyonek Formation.

The Initial POE sets out a timely sequence of reservoir(s) delineation activities that will facilitate the ultimate development and production of the reservoir(s), if oil or gas is discovered in commercial quantities. Furthermore, completion of the proposed exploration activities as scheduled, the proposed work scope in the Initial POE, will satisfy the performance standards and diligence requirements that the state and the WIOs have agreed to as a condition for approval of the Agreement. The Division and the majority WIOs in the proposed Ninilchik Unit, Marathon and Unocal, have agreed that failure to perform the entire proposed work scope set out in the Initial POE is a default under the Agreement and will result in the automatic termination of the Ninilchik Unit. Substitutions of individual items in the Initial POE will be permitted at the sole discretion of the Division. It was also agreed that after 2002 and the completion of the projects proposed for that year, and based on the results/information obtained by that time and the projects completed, the WIOs may propose to amend the Initial POE to not perform the balance of the proposed work scope. In this event, the unit area will be contracted to the area defined by the then currently available information and the proposed further unit exploration, delineation, or production activities. The Division, in its sole discretion, will determine the revised unit area.

Because eight wells have already been drilled within the proposed Ninilchik Unit, the Division had concerns about continuing the Agreement if no additional delineation, appraisal, or development activities were proposed beyond those in the Initial POE. Before the Application was submitted, the Division told the WIOs that the Agreement would only continue past the initial term, December 31, 2004, if further appraisal, delineation, or development/production activities were proposed beyond the Initial POE. The Division expected activity beyond the Initial POE in order to continue the Ninilchik Unit. Consequently, an understanding was reached with the WIOs that they will address the further appraisal and delineation or development of the area in their second POE or first Plan of Development (POD), whichever immediately follows the Initial POE. The WIOs acknowledge that as part of the second POE or first POD the Division intends to require additional drilling, further exploration activities, sustained commercial production, and/or a demonstration of efforts to proceed to further development and production within the unit area. The WIOs further acknowledge that if additional drilling, further exploration activities, sustained commercial production, or efforts to put the unit into production, satisfactory to the Division, are not proposed for the unit area in the second POE or first POD, the Ninilchik Unit will automatically terminate on the expiration date of the Initial POE. The expression of Division's intent in this paragraph is not meant to limit the powers the Division otherwise has to review an application for approval of a POE or POD.

Failure to timely apply for and obtain approval of a second POE or first POD will result in immediate and automatic termination of the Ninilchik Unit. If the Ninilchik Unit terminates for failure to fulfill any of the commitments in the Initial POE, or timely apply for and obtain approval of a second POE or first POD, the WIOs will automatically surrender all leases within the Ninilchik Unit whose primary terms have expired and are not otherwise continued under the leases, effective the day the Ninilchik Unit terminates. The WIOs have agreed to waive the extension provisions of 11 AAC 83.140 and Article 15.2 of the Agreement, and the notice and hearing provisions of 11 AAC 83.374 applicable to default and termination of the Ninilchik Unit.

The Initial POE with the agreed-to terms and conditions ensures that the lease extensions resulting from unitization under 11 AAC 83.336 continue only so long as the applicants proceed diligently with exploration and development.

### **3. The Economic Costs and Benefits to the State and Other Relevant Factors**

Approval of the Agreement in combination with the Initial POE will result in both short-term and long-term economic benefits to the state. The assessment of the hydrocarbon potential of the leases will create jobs in the short-term. If the WIOs make a commercial discovery and begin development/production from the Ninilchik Unit, the state will earn royalty and tax revenues over the long-term life of the field.

The primary term of five leases in the proposed unit area will expire December 31, 2001, and another lease's primary term expires on December 1, 2001, unless extended by unitization. If the leases expire, the leasehold interest will return to the state. The earliest that DNR could reoffer the land, under the current Five-Year Oil and Gas Lease Sale Schedule, is May 2002. If DNR leased the expired lands in 2002, the state could receive bonus payments and rentals for the primary term of the new leases. However, it could be years before the new lessees would propose exploration of the area and even longer before the state receives royalties and taxes on any commercial production. The potential long-term economic benefit of exploration and earlier development of the Ninilchik Unit area outweighs the short-term loss of potential bonus payments.

The ten State of Alaska leases proposed for the Ninilchik Unit are written on a variety of forms, containing a variety of provisions. Including the leases in the Ninilchik Unit Agreement would conform and modify the lease contracts to be consistent with the Agreement. Consistent lease provisions allow the WIOs and the state to reduce the administrative burdens of operating and regulating this unit. Conforming the terms of the older leases to the Agreement allows the state to avoid costly and time-consuming re-litigation of some problematic lease provisions in the older forms.

Marathon and Unocal control approximately 85.43% of the unit area. The next largest interest group in the proposed Ninilchik Unit is the uncommitted individual mineral interest owners with approximately 9.102 %. Under the Ninilchik Unit Joint Operating Agreement, any party with at least 30% interest can propose and cause the drilling of exploratory or development wells. Despite the fact that less than 100% of the leases are committed to the unit, Marathon has

demonstrated that a reasonable effort was made to obtain joinder of all proper parties (record owners of oil and gas interests) within the proposed Ninilchik Unit area. 11 AAC 83.306(3) and 11 AAC 83.328. Furthermore, Marathon and Unocal, representing 85.43% of the working interest ownership in the Ninilchik Unit, hold sufficient interest in the unit area to give reasonable effective control of unit operations. 11 AAC 83.316(c).

The majority WIOs have provided technical data sufficient to define the prospect under consideration, have committed their diverse lease interests to the proposed unit and have agreed to a POE that ensures a timely sequence of drilling and development activities in order to evaluate and develop all the acreage within the proposed unit area. The Initial POE with the agreed-to terms and conditions advances exploration and evaluation of the prospects in the unit area sooner than would occur under any individual lease exploration effort.

## **B. Decision Criteria considered under 11 AAC 83.303(a)**

### **1. The Conservation of All Natural Resources**

DNR recognizes unitization of the leases overlying a reservoir as a prudent conservation mechanism. Without unitization, the unregulated development of reservoirs can become a race for possession by competing operators. This race can result in: 1) unnecessarily dense drilling, especially along property lines; 2) rapid dissipation of reservoir pressure; and 3) irregular advance of displaced fluids, all of which 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 potential for environmental damage. Lessee compliance with conservation orders and field pool rules issued by the AOGCC would mitigate some of these impacts without an agreement to unitize operations. Still, unitization is the most efficient method for maximizing oil and gas recovery, while minimizing negative impacts on other resources. Formation of the unit will provide the state with a comprehensive plan for exploring and developing the entire unit area. Formation of the Ninilchik Unit and implementation of the Initial POE will ensure that WIOs prudently explore the acreage included in the unit.

The Agreement will promote the conservation of both surface and subsurface resources through unitized (rather than lease-by-lease) development. Unitization allows the unit operator to explore the area as if it were one lease. Without the Agreement the lessee would be compelled to seek permits to drill wells on each individual lease in order to extend the leases beyond their primary terms. Unitization reduces both the number of facilities required to develop reserves that may be discovered and the aerial extent of land required to accommodate those facilities. Review and approval of exploration and development permits under a unit agreement will also ensure that rational surface-use decisions are made without consideration of individual lease ownership or expense. After unitization, facilities can be designed and located to maximize recovery and to minimize environmental impact, without regard to lease ownership. Although the applicant has not determined the extent of any oil and gas contained in the prospective reservoir, the Agreement will ensure that the acreage is explored and recovery from the leases is maximized if a commercial hydrocarbon accumulation is discovered.

## **2. The Prevention of Economic and Physical Waste**

The unit will prevent economic and physical waste because the unit operator must have a cost sharing agreement, a coordinated exploration plan, and if a commercial discovery is made, a comprehensive reservoir depletion model. A cost-sharing agreement promotes efficient development of common surface facilities and operating strategies. With a cost-sharing agreement and reservoir model in place, the WIOs in the unit can rationally decide well spacing requirements, injection plans, 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 with the adoption of a unified reservoir management plan.

Unitized operations improve development of reservoirs beneath leases that may have variable or unknown productivity. Marginally economic reserves, which otherwise would not be produced on a lease-by-lease basis, can be produced through unitized operations in combination with more productive leases. Facility consolidation lowers capital costs and promotes optimal reservoir management for all WIOs. Pressure maintenance and secondary recovery procedures are easier to design and achieve 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 total cost of exploring and developing the Ninilchik Unit leases would be higher on a lease-by-lease basis than it would be under unitization terms. Drilling and facilities investment costs will be minimized as a consequence of eliminating a need for numerous sites within the unit area. Locations of individual wells and surface facilities will be selected to optimize ultimate oil and gas recovery, while minimizing or completely avoiding adverse impacts to the environment.

Reducing costs and environmental impacts through unitized operations will expedite development of any reserves discovered and will promote greater ultimate recovery of any oil and gas from the unit area. This will increase and extend the state's income stream from production taxes and royalties. The revenues to the lessees and unit operator may be reinvested in new exploration and development in the state. Unitization means reduced costs and increased benefits to all interested parties. It benefits the local and state economy, and provides revenues to the state's general, school, constitutional budget reserve, and permanent funds.

## **3. The Protection of All Parties in Interest, Including the State**

The Agreement in combination with the Initial POE with the agreed-to terms and conditions outlined in Section III.A.2 promotes the state's economic interests because exploration will likely occur earlier than without unitization. Diligent exploration under a single approved unit plan without the complications of competing operators is in the state's best interest. It advances evaluation of the state's petroleum resources, while minimizing impacts to the region's cultural and environmental resources. A commercial discovery will stimulate the state's economy with production-based revenue, oil and gas related jobs, and service industry activity.

The Agreement provides for accurate reporting and record keeping, state approval of plans of exploration and development and operating procedures, royalty settlement, in-kind taking, and emergency storage of oil and gas, all of which will further the state's interest. The modifications to the varying provisions of some of the leases will economically benefit the state, and reduce the administrative burdens of operating and regulating this unit.

The formation of the Ninilchik Unit protects the economic interests of all WIOs and royalty owners of a common reservoir. Operating under a unit agreement and unit operating agreement assures each individual WIO an equitable allocation of costs and revenues commensurate with the value of their lease(s). The provisions of the Agreement and state law that provide for notice and an opportunity to be heard if they disagree with a unit management decision made by the state also protect the WIOs.

#### **IV. FINDINGS AND DECISION**

##### **A. The Conservation of All Natural Resources**

1. The Agreement will conserve all natural resources, including hydrocarbons, gravel, sand, water, wetlands, and valuable habitat.
2. The unitized development and operation of the leases in this proposed unit will reduce the amount of land and fish and wildlife habitat that would otherwise be disrupted by individual lease development. This reduction in environmental impacts and preservation of subsistence access is in the public interest.
3. If the exploration activities under the Initial POE result in the discovery of a commercially producible reservoir, there may be environmental impacts associated with reservoir development. All unit development must proceed according to an approved plan of development. Additionally, before undertaking any specific operations, the unit operator must submit a unit plan of operations to the Division and other appropriate state and local agencies for review and approval. The lessees may not commence any drilling or development operations until all agencies have granted the required permits. DNR may condition its approval of a unit plan of operations and other permits on performance of mitigation measures in addition to those in the modified leases and the Agreement, if necessary or appropriate. Compliance with mitigation measures will minimize, reduce or completely avoid adverse environmental impacts.

##### **B. The Prevention of Economic and Physical Waste**

1. Marathon submitted geological data to the Division in support of the Application. Division technical staff determined that the Ninilchik Unit area encompasses all or part of one or more potential hydrocarbon accumulations. The available geological data justify including the proposed lands, described in Exhibit A to the Application, in the Ninilchik Unit.

2. The Initial POE provides for the reasonable exploration of potential hydrocarbon accumulations in the unit area. If the WIOs discover oil or gas in commercial quantities, the Agreement will prevent the waste of oil and gas, and increase the probability of recovering more hydrocarbons from the unit area. The Division must approve a plan of development before the unit operator produces any hydrocarbons in commercial quantities.

### **C. The Protection of All Parties in Interest, Including the State**

1. Marathon provided evidence of reasonable effort to obtain joinder of any proper party to the Agreement.
2. Marathon and Unocal hold sufficient interest in the unit area to give reasonably effective control of operations, and ten State of Alaska leases are proposed for the Ninilchik Unit.
3. The Agreement, conditioned upon the performance of the Initial POE, adequately and equitably protects the public interest, and is in the state's best interest.
4. The Agreement meets the requirements of AS 38.05.180(p) and 11 AAC 83.303.
5. The Division complied with the public notice requirements of 11 AAC 83.311.
6. The Agreement will not diminish access to public and navigable waters beyond those limitations (if any) imposed by law or already contained in the oil and gas leases covered by this Agreement.
7. The Agreement provides for expansions and contractions of the unit area in the future, as warranted by data obtained by exploration or otherwise. The Agreement thereby protects the public interest, the rights of the parties, and the correlative rights of adjacent landowners.
8. The applicant's Initial POE, subject to the terms and conditions discussed in Section III.A.2, meets the requirements of 11 AAC 83.303 and 11 AAC 83.341. The Initial POE, Exhibit G to the Agreement, is approved until December 31, 2004. The unit operator must conduct the proposed exploration activities in accordance with the timelines specified in the plan. The Initial POE describes the performance standards and diligence requirements that the state requires. If the WIOs fail to perform any of the exploration activities outlined in the Initial POE as scheduled, the plan will be in default and the unit will terminate.
9. The Unit Operator must submit an annual status report on the Initial POE to the Division. The annual status report must describe the status of projects undertaken and the work completed, as well as any proposed changes to the plan. In order to

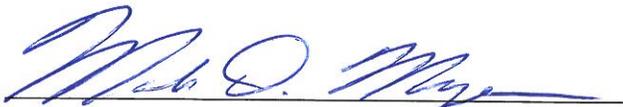
be approved by the state, changes to the Initial POE must comply with Article 8 of the Agreement and Section III.A.2 of this Decision. The unit operator must also submit an application for approval of a second POE 60 days before the Initial POE expires, or, if appropriate, an application for approval of a first POD 90 days before the Initial POE expires.

10. The Ninilchik Unit will expedite exploration and potential development of the unit area. With the formation of the Ninilchik Unit, economic benefits to the state outweigh the economic costs of extending the primary term of the state leases committed to the unit.

For the reasons discussed in this Findings and Decision, I hereby approve the Ninilchik Unit Agreement subject to the conditions specified herein. The Agreement shall become effective as of 12:01 a.m. on the day following approval by the Director.

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 Pat Pourchot, 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](mailto: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.

Appeal Code:OGO103001NUAGREEMENTAPPRV



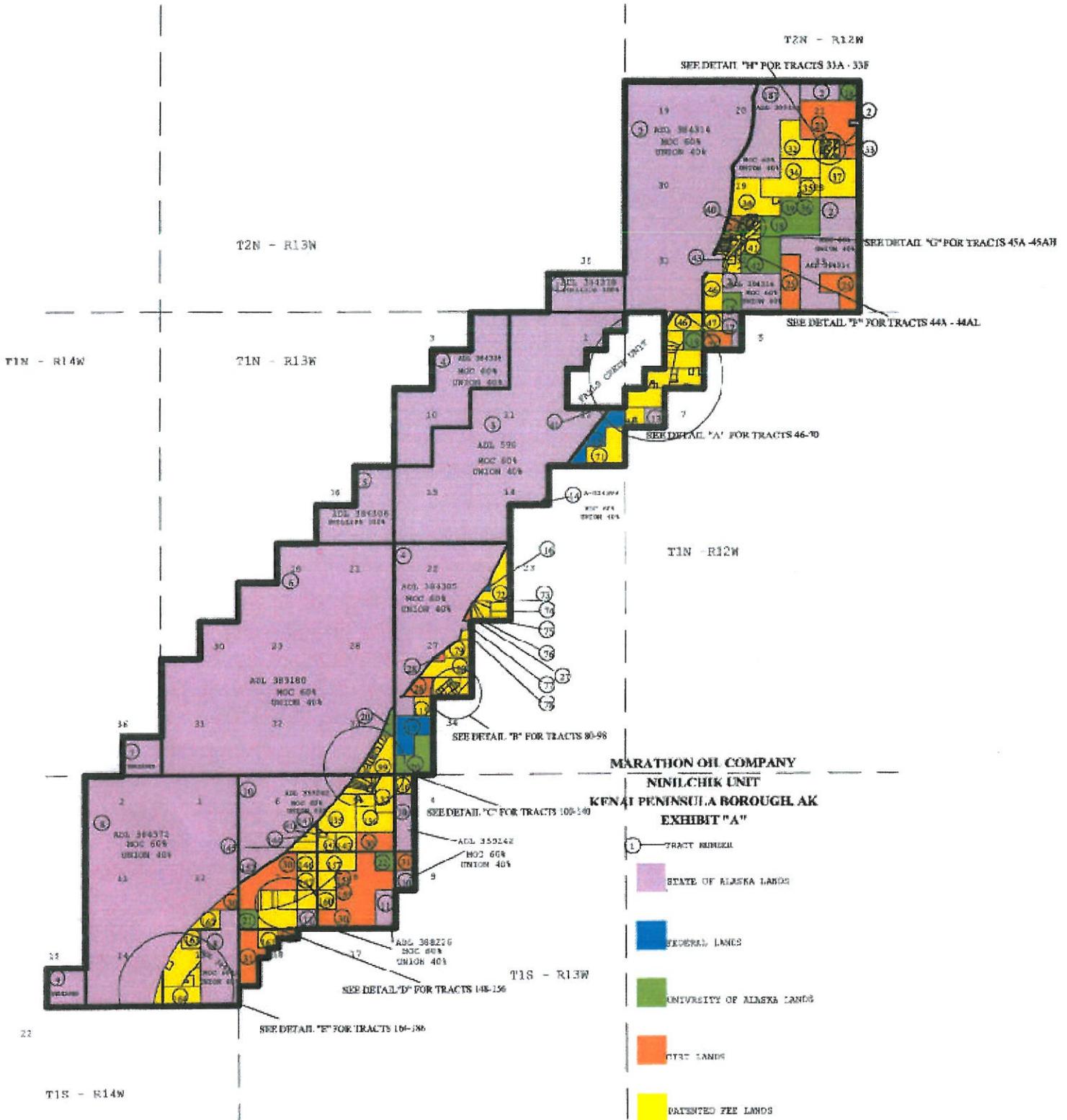
Mark D. Myers, Director  
Division of Oil and Gas

October 30, 2001

Date

- Attachments: 1. Exhibit B, Map of the Unit Boundary  
2. Cook Inlet Areawide 1999 Mitigation Measures

Ninilchik\_Unit\_Decision



## Mitigation Measures for Cook Inlet Areawide 1999

AS 38.05.035(e) and the departmental delegation of authority provide the director, Division of Oil and Gas (DO&G), with the authority to impose conditions or limitations, in addition to those imposed by statute, to ensure that a resource disposal is in the state's best interests. Consequently, to mitigate the potential adverse social and environmental effects of specific selected lease related activities, DO&G has developed mitigation measures and will condition plans of operation, exploration, or development, and other permits based on these mitigation measures.

Under AS 38.05.035(e), ADNR has authority to apply the following mitigation measures developed for this Cook Inlet Areawide lease sale, to all oil and gas activities performed to access the state's leased mineral interest, regardless of the surface ownership status of the land from which the lessee seeks access.

Lessees must obtain approval of a detailed plan of operations from the Director before conducting exploratory or development activities (11 AAC 83.158). An approved plan of operations is the authorization by which DO&G regulates exploration, development, and production activities.

A plan of operations must identify the specific measures, design criteria, and construction methods and standards to be employed to comply with the restrictions listed below. It must also address any potential geophysical hazards that may exist at the site. Plans of operation must comply with coastal zone consistency review standards and procedures established under 6 AAC 50 and 80 including coastal district plans. Applications for required state or federal agency authorizations or permits must be submitted with the plan of operations. DO&G will require, as a condition of consistency approval, such modification or terms as may be necessary to ensure consistency with the ACMP standards.

These measures were developed after considering terms imposed in other Cook Inlet region oil and gas lease sales; fish and wildlife resource and harvest data submitted by ADF&G; environmental data relating to air and water quality, solid and liquid waste disposal, and oil spills submitted by ADEC; consensus items from the Cook Inlet Areawide stakeholders process, as well as comments submitted by the public, local governments, environmental organizations, and other federal, state, and local agencies. Additional project-specific Mitigation Measures are imposed if and when oil and gas lessees submit proposed plans of exploration, operation, or development.

In addition to compliance with these mitigation measures, lessees must comply with all applicable local, state and federal codes, statutes and regulations, and any subsequent amendments. Lessees must also comply with all current or future ADNR area plans and recreation rivers plans; and ADF&G game refuge plans, critical habitat area plans, and sanctuary area plans within which a leased area is located. Federal, state and local government powers to regulate the oil and gas industry are discussed in the "Governmental powers to Regulate Oil and Gas Exploration, Development, Production, and Transportation" Chapter Eight of this finding. In addition, Appendix B lists federal and state statutes and regulations that apply to lease activities.

Information to lessees relevant to the lease sale is also presented in the "Lessee Advisories," section B of this Chapter. This section contains important information to lessees and operators regarding the sale area. It also includes precautions which may apply to post-lease sale activities, and reflect existing local, state, and federal law or policy at the time of the sale.

Hereafter, wherever abbreviations are used they mean: Alaska Coastal Management Program (ACMP), Alaska Department of Environmental Conservation (ADEC), Alaska Department of Fish and Game (ADF&G), Alaska Department of Natural Resources (ADNR), Alaska Oil and Gas Conservation Commission (AOGCC), Areas Meriting Special Attention (AMSA), Director (Director, Division of Oil and Gas), Division of Forestry (DOF), Division of Land (DL), Division of Oil and Gas (DO&G), Division of Parks and Outdoor Recreation (DPOR), Division of Mining and Water Management (DMWM), Kenai Peninsula Borough (KPB), Municipality of Anchorage (MOA), Matanuska-Susitna Borough (MSB), State Historic Preservation Officer (SHPO), and U.S. Fish and Wildlife Service (USF&WS).

Lessees are advised that portions of the sale area may be subject to special area permits by ADF&G to protect areas designated by the legislature as state game refuges in AS 16.20.010 -AS 16.20.080.

For those mitigation measures and lessee advisories that are within ADNR's authority, the Lessee may request, and the Director of DO&G may grant, exceptions if compliance with the mitigation measure is not feasible or prudent, or an equal or better alternative is offered. Requests and justifications for exceptions must be included in the initial Plan of Operations when one is required. The decision whether to grant an exception will be based on review of the Plan of Operations by the public

and in consultation with appropriate state resource agencies. Mitigation measures subject to exceptions are noted with an asterisk (\*), followed by the initials of the agency that must be consulted in any decision to grant an exception. Critical habitat areas and state game refuges are jointly managed by ADNR and ADF&G; exceptions to mitigation measures in these areas must be agreed to by both agencies. Agency abbreviations are: ADF&G (Alaska Department of Fish and Game), ADEC (Alaska Department of Environmental Conservation), DL (Division of Lands) and DOF (Division of Forestry).

Except as indicated, the restrictions listed below do not apply to geophysical activity on state land; geophysical exploration is governed by 11 AAC 96.

The following mitigation measures and advisories will be imposed on oil and gas activities in or on all Cook Inlet Areawide leased lands and waterbodies as a condition of the approval of plans of operation:

### General

1. Oil and hazardous substance pollution control: In addition to addressing the prevention, detection, and cleanup of releases of oil, contingency plans (C-Plans) for oil and gas extraction operations should include, but not be limited to, methods for detecting, responding to, and controlling blowouts; the location and identification of oil spill cleanup equipment; the location and availability of suitable alternative drilling equipment; and a plan of operations to mobilize and drill a relief well.
2. Use of explosives will be prohibited in open water areas of fishbearing streams and lakes. Explosives must not be detonated beneath, or in close proximity to fishbearing streams and lakes if the detonation of the explosive produces a pressure rise in the waterbody greater than 2.5 pounds per square inch (psi) unless the waterbody, including its substrate, is solidly frozen.

Explosives must not produce a peak particle velocity greater than 0.5 inches per second (ips) in a spawning bed during the early stages of egg incubation. The minimum acceptable offset from fishbearing streams and lakes for various size buried charges is:

Charge Weight	Distance from Stream
1 pound charge	37 feet (11.2 m)
2 pound charge	52 feet (15.8 m)
5 pound charge	82 feet (25.0 m)
10 pound charge	116 feet (35.4 m)
25 pound charge	184 feet (50.1 m)
100 pound charge	368 feet (112.2 m)

There are numerous fishbearing streams and lakes within the sale area. Specific information on the location of these waterbodies may be obtained by contacting ADF&G.

- 3.\* Onshore exploration activities must be supported by air service, an existing road system or port facility, ice roads, or by vehicles which do not cause significant damage to the ground surface or vegetation. Unrestricted surface travel may be permitted by the directors of DO&G and DL, if an emergency condition exists.

Construction of temporary roads may be allowed. Temporary means that a road must be removed to the extent that it is rendered impassable or is otherwise rehabilitated in a manner such that any placed gravel remaining approximates surrounding natural features. Construction of permanent roads will be prohibited during the exploration phase. \*Exception - DL.

4. a. Removal of water from fishbearing rivers, streams, and natural lakes shall be subject to prior written approval by DMWM and ADF&G.
- b. Compaction or removal of snow cover overlying fishbearing waterbodies will be prohibited except for approved crossings. If ice thickness is not sufficient to facilitate a crossing, ice and/or snow bridges may be required.
5. Water intake pipes used to remove water from fishbearing waterbodies must be surrounded by a screened enclosure to prevent fish entrainment and impingement. Screen mesh size shall not exceed 0.04 inches unless another size has

been approved by ADF&G. The maximum water velocity at the surface of the screen enclosure may be no greater than 0.1 foot per second.

### Facilities and Structures

6. a. The siting of onshore facilities, other than docks, or road and pipeline crossings, will be prohibited within 500 feet of all fishbearing streams and lakes. Additionally, siting of facilities will be prohibited within one-half mile of the banks of Harriet, Alexander, Lake, Deep and Stariski creeks, and the Drift, Big, Kustatan, McArthur, Chuitna, Theodore, Beluga, Susitna, Little Susitna, Kenai, Kasilof, Ninilchik and Anchor rivers. New facilities may be sited within the one-half mile buffer if the lessee demonstrates that the alternate location is environmentally preferable, but in no instance will a facility be located within one-quarter mile of the river bank. ADF&G concurrence will be required for siting within the one-half mile buffer. Road and pipeline crossings must be aligned perpendicular or near perpendicular to watercourses.
  - b. Lessees will minimize sight and sound impacts for new facilities sited less than one-half mile from river banks and in areas of high recreational use by (1) providing natural buffers and screening to conceal facilities; (2) conducting exploration operations between October 1 and April 30; and (3) using alternative techniques to minimize impacts.
  - c. Surface entry will be prohibited in parcels that are within the Kenai River Special Management Area (KRSMA).
  - d. Surface entry will be prohibited on state lands within the Kenai National Wildlife Refuge. This term does not limit surface entry on other private lands within the refuge.
  - e. Lessees are prohibited from placing drilling rigs and lease-related facilities and structures within an area near the Kenai River composed of: all land within Section 36 in T6N, R11W that is located south of a line drawn from the protracted NE corner to the protracted SW corner of the section; all land within the western half of Section 31 in T6N, R10W and Section 6 in T5N, R10W; and all land within Section 1 in T5N, R11W.
  - f. A fresh water aquifer monitoring well with quarterly water quality monitoring should be required down gradient of a permanent storage facility unless alternative acceptable technology is approved by ADEC.
7. The siting of new facilities in key wetlands and sensitive habitat areas should be limited to the extent possible. If facilities are to be located within these areas, the lessee should demonstrate to the satisfaction of the Director and ADF&G that impacts are minimized through appropriate mitigation measures.
- 8.\* Measures will be required by the Director, after consultation with ADF&G and ADEC, to minimize the impact of industrial development on key wetlands. Key wetlands are those wetlands that are important to fish, waterfowl, and shorebirds because of their high value or scarcity in the region or that have been determined to function at a high level using the hydrogeomorphic approach. Lessees must identify on a map or aerial photograph the largest surface area, including reasonably foreseeable future expansion areas, within which a facility is to be sited, or an activity will occur. The map or photograph must accompany the plan of operations. DO&G will consult with ADF&G and ADEC to identify the least sensitive areas within the area of interest. To minimize impacts, the lessee must avoid siting facilities in the identified sensitive habitat areas. \*Exception - ADF&G, ADEC.
- 9.\* Impermeable lining and diking, or equivalent measures such as double-walled tanks, will be required for onshore oil storage facilities (with a total above ground storage capacity greater than 1,320 gallons, provided no single tank capacity exceeds 660 gal) and for sewage ponds. Additional site-specific measures may be required as determined by ADNR, with the concurrence of ADEC, and will be addressed in the existing review of project permits or oil spill contingency plans (C-Plans).
- Buffer zones of not less than 500 feet will be required to separate onshore oil storage facilities and sewage ponds from marine waters and freshwater supplies, streams and lakes, and key wetlands. Sumps and reserve pits must be impermeable and otherwise fully contained through diking or other means. \*Exception - ADF&G, ADEC.
- 10.\* With the exception of drill pads, airstrips, and roads permitted under Term 3, exploration facilities must be consolidated, temporary, and must not be constructed of gravel. Use of abandoned gravel structures may be permitted on an individual basis. \*Exception - ADF&G, DL.

11. a. Wherever possible, onshore pipelines must utilize existing transportation corridors and be buried where soil and geophysical conditions permit. In areas where pipelines must be placed above ground, pipelines must be sited, designed and constructed to allow free movement of moose and caribou.
- b. Offshore pipelines must be located and constructed to prevent obstructions to marine navigation and fishing operations.
- c. Pipelines must be located upslope of roadways and construction pads and must be designed to facilitate the containment and cleanup of spilled hydrocarbons. Pipelines, flowlines, and gathering lines must be designed and constructed to assure integrity against climatic conditions, tides and currents, and other geophysical hazards.

#### **Local Hire**

12. To the extent they are available and qualified, the lessee is encouraged to employ local and Alaska residents and contractors for work performed on the leased area. Lessees shall submit, as part of the plan of operations, a proposal detailing the means by which the lessee will comply with the measure. The proposal must include a description of the operator's plans for partnering with local communities to recruit and hire local and Alaska residents and contractors. The lessee is encouraged, in formulating this proposal, to coordinate with employment services offered by the state of Alaska and local communities and to recruit employees from local communities.

#### **Training**

13. Lessee must include in any plan of exploration or plan of development, a training program for all personnel, including contractors and subcontractors, involved in any activity. The program must be designed to inform each person working on the project of environmental, social, and cultural concerns which relate to the individual's job.

The program must employ effective methods to ensure that personnel understand and use techniques necessary to preserve geological, archeological, and biological resources. In addition, the program must be designed to help personnel increase their sensitivity and understanding of community values, customs, and lifestyles in areas where they will be operating.

#### **Access**

14. a. Public access to, or use of, the leased area may not be restricted except within 1,500 feet (457 m) or less of onshore drill sites, buildings, and other related structures. Areas of restricted access must be identified in the plan of operations.
- b. No lease facilities or operations may be located so as to block access to or along navigable and public waters as defined at AS 38.05.965(13) and (17).
15. Lease-related use will be restricted when the commissioner determines it is necessary to prevent unreasonable conflicts with local subsistence harvests and commercial fishing operations. In enforcing this term the division, during review of plans of operation or development, will work with other agencies and the public to assure that potential conflicts are identified and avoided. In order to avoid conflicts with fishing activities, restrictions may include alternative site selection, requiring directional drilling, seasonal drilling restrictions, subsea completion techniques, and other technologies deemed appropriate by the commissioner.

#### **Prehistoric, Historic, and Archeological Sites**

16. a. Prior to the construction or placement of any structure, road, or facility resulting from exploration, development, or production activities, the lessee must conduct an inventory of prehistoric, historic, and archeological sites within the area affected by an activity. The inventory must include consideration of literature provided by the KPB, MOA, MSB and local residents; documentation of oral history regarding prehistoric and historic uses of such sites; evidence of consultation with the Alaska Heritage Resources Survey and the National Register of Historic Places; and site surveys. The inventory must also include a detailed analysis of the effects that might result from the activity.
- b. The inventory must be submitted to the Director for distribution to DPOR for review and comment. In the event that a prehistoric, historic, or archeological site or area may be adversely affected by a leasehold activity, the Director, after

consultation with DPOR and the KPB, MOA or MSB, will direct the lessee as to what course of action will be necessary to avoid or minimize the adverse effect.

- c. Discovery of prehistoric, historic, or archaeological objects: In the event any site, structure, or object of prehistoric, historic, or archaeological significance is discovered during leasehold operations, the lessee must immediately report such findings to the Director. The lessee must make every reasonable effort to preserve and protect such site, structure, or object from damage until the Director, after consultation with the SHPO, has given directions as to its preservation.

### **Fishbearing Streams**

17. Under Title 16 of the Alaska Statutes, the measures listed below will be imposed by ADF&G below the ordinary high water mark to protect designated anadromous fish-bearing streams. Similar provisions will be imposed by the Director to protect non-anadromous fishbearing streams. Specific information on the location of anadromous waterbodies in and near the area may be obtained from ADF&G.
  - a. Alteration of river banks will be prohibited.
  - b. Operation of equipment within riparian habitats will be prohibited.
  - c. The operation of equipment, excluding boats, in open water areas of rivers and streams will be prohibited.
  - d. Bridges or non-bottom founded structures will be required for crossing fish spawning and important rearing habitats. In areas where culverts are used, they must be designed, installed, and maintained to provide efficient passage of fish.

### **Waste Disposal**

18. Solid waste disposal:
  - a. Solid waste generated from the development and/or operation of the lease areas shall be reduced, reused, or recycled to the maximum extent practicable. Garbage and domestic combustible refuse must be incinerated where appropriate. Remaining solid waste shall be taken to an approved disposal site, in accordance with 18 AAC 60.

New solid waste disposal sites will not be approved or located on state property during the exploratory phase. Exceptions may be provided for drilling waste if the facility will comply with the applicable provisions of 18 AAC 60.
  - b. The preferred method for disposal of muds and cuttings from oil and gas activities is by underground injection. Injection of non-hazardous oilfield wastes generated during development is regulated by AOGCC through its Underground Injection Control (UIC) Program for oil and gas wells.
  - c. Discharge of drilling muds and cuttings into lakes, streams, rivers, and high value wetlands is prohibited. Surface discharge of drilling muds and cuttings into reserve pits shall be allowed only when it is determined that underground injection is not technically achievable. A solid waste disposal permit must be obtained from ADEC. If use of a reserve pit is proposed, the operator must demonstrate the advantages of a reserve pit over other disposal methods, and describe methods to be employed to reduce the disposed volume. Onpad temporary cuttings storage will be allowed as necessary to facilitate annular injection and/or backhaul operations in accordance with ADEC solid waste regulations 18 AAC 60.
19. Wastewater disposal:
  - a. Unless authorized by NPDES and/or state permit, disposal of wastewater into freshwater bodies, intertidal areas, or estuarine waters is prohibited.
  - b. Disposal of produced waters to freshwater bodies, intertidal areas, and estuarine waters is prohibited.
  - c. Disposal of produced waters in upland areas, including wetlands, will be by subsurface disposal techniques.

- d. Surface discharge of reserve pit fluids will be prohibited unless authorized in a permit issued by AOGCC and approved by DL.

#### **Gravel Mining**

20. Gravel mining within an active floodplain will be prohibited. Upland sites will be restricted to the minimum necessary to develop the field in an efficient manner.

#### **Special Areas**

21. Management of legislatively designated state game refuges and critical habitat areas is the co-responsibility of ADF&G (AS 16.20.050-060) and ADNR (AS 38.05.027). For activities occurring within a refuge or critical habitat area, the lessee will be required to obtain permits from both ADNR and ADF&G.

Five state game refuges (SGR) and four critical habitat areas (CHA) are located within or partially within the sale area: The Goose Bay SGR, Palmer Hay Flats SGR, Anchorage Coastal Wildlife Refuge, Susitna Flats SGR, Trading Bay SGR, Redoubt Bay CHA, Kalgin Island CHA, Clam Gulch CHA, and Anchor River and Fritz Creek CHA.

Operations within these refuges must comply with the terms and conditions of the sale, the regulations contained in 5 AAC 95, and the requirements applicable to special area management plans. Where the requirements of this term are more restrictive than the requirements of other Sale 85 terms, the provisions of this term prevail.

- a. Surface entry for drilling and above ground lease-related facilities and structures will be prohibited within the Palmer Hay Flats SGR, Anchorage Coastal Wildlife Refuge, Clam Gulch CHA, Anchor River and Fritz Creek CHA, within the core Tule goose and trumpeter swan nesting and molting corridors along the Big, Kustatan, and McArthur rivers in the Trading Bay SGR and Redoubt Bay CHA, and on tidelands and wetlands in the Goose Bay SGR and Kalgin Island CHA. Surface entry may be allowed on uplands within the Goose Bay SGR and Kalgin Island CHA; and surface entry for seismic surveys and similar temporary activities may be allowed in all of these areas, consistent with the Special Area regulations and applicable Special Area management plans. Directional drilling from adjacent sites may be allowed.
- b. Exploration, development, and major maintenance within important Tule goose and trumpeter swan habitat in Trading Bay SGR, the Redoubt Bay CHA, and the Susitna Flats SGR, and the primary waterfowl area within the Susitna Flats SGR and Trading Bay SGR will be allowed only between November 1 and March 31, unless an extension is approved by ADF&G and DO&G. Routine maintenance and emergency repairs will be permitted on a year-round basis during the production phase. A detailed plan describing routine maintenance activities to be conducted between April 1 and October 31 must be submitted to ADF&G and DO&G for review and approval.
- c. Gravel pads and wellheads are the only above ground structures that will be allowed within the primary waterfowl areas in the Susitna Flats SGR and the Trading Bay SGR and important Tule goose and trumpeter swan habitat in the Trading Bay SGR, Redoubt Bay CHA and Susitna Flats SGR.

Construction activities within a refuge must utilize the best available technology to minimize the visual, biological, and physical impacts of these structures and must be approved in writing by ADF&G and the Director.

- d. Surface discharge of produced waters will be prohibited.
- e. Disposal of drilling muds and cuttings will be allowed only at upland sites approved by the Director and ADF&G, after consultation with DL and ADEC.
- f. Facilities must be designed and constructed to prevent the spill and spread of hydrocarbons and to facilitate cleanup efforts.
- g. Facilities must be designed to minimize the possibility of spills or fires resulting from vandalism or hunting accidents.
- h. Upon abandonment or expiration of a lease, all facilities must be removed and the sites rehabilitated to the satisfaction of ADF&G and the Director. The departments may determine that it is in the best interest of the public to

retain some or all of the facilities. Rehabilitation requirements will be identified in a Habitat Special Area Permit (AS 16.20.060 and/or AS 16.20.530).

- i. Gravel roads will not be allowed during exploration unless an exception is granted as provided above.
  - j. Public access to, or use of, the leased area may not be restricted except within the immediate vicinity of onshore drill sites, buildings, and other related structures. Areas of restricted access must be identified in the plan of operations. No lease facilities or operations may be located so as to block access to or along navigable and public waters as defined at AS 38.05.965(13) and (17).
22. Surface entry into the critical waterfowl habitat along the Kasilof River is prohibited. Directional drilling from adjacent sites may be allowed.
- 23.\* Surface entry will be prohibited within one-quarter mile of trumpeter swan nesting sites between April 1 through August 31. The siting of permanent facilities, including roads, material sites, storage areas, powerlines, and above-ground pipelines will be prohibited within one-quarter mile of known nesting sites. Trumpeter swan nesting sites will be identified by ADF&G at the request of the lessee. \*Exception - ADF&G.
24. If the lessee discovers a previously unreported active or inactive bald eagle nest site, the lessee must immediately report the nest location to the Director. Lessees are advised that oil and gas activities likely to disturb nesting eagles are subject to the provisions of the Bald Eagle Act of 1940, as amended.
- Permanent facilities may be prohibited within one-quarter mile and will be prohibited within 500 feet of nests, active or inactive. Surface entry, fixed wing aircraft flights below 500 vertical feet, and helicopter flights below 1,500 vertical feet will be prohibited within 500 feet of active nests between April 1 and August 31. Human safety shall take precedence over this provision.
- Temporary activities within 500 feet of nesting sites may be allowed between September 1 and March 31 if they will not alter bald eagle habitat.
- Maps identifying documented nest sites will be made available by ADF&G, upon request.
25. The following measures will be required to minimize impacts on Kenai Lowlands Caribou Herd:
- a. Surface entry within the core caribou calving area is prohibited, except that surface entry for seismic exploration will be allowed from October 16 to March 31.
  - \*b. Exploration and development activities will be restricted or prohibited between April 1 and October 15 within the core caribou summer habitat, except that maintenance and operation of production wells will be allowed year-round. Permanent roads, or facilities other than production wells, will also be restricted or prohibited within this area. Facilities within the core caribou summer habitat that required year-round access must be located in forested areas, where practical. \*Exception - ADF&G
  - \*c. Pipelines must be buried within the core caribou summer habitat. \*Exception - ADF&G.
26. For projects in close proximity to areas frequented by bears, lessees are encouraged to prepare and implement bear interaction plans to minimize conflicts between bears and humans. These plans could include measures to: (a) minimize attraction of bears to drill sites; (b) organize layout of buildings and work areas to minimize human/bear interactions; (c) warn personnel of bears near or on drill sites and the proper procedures to take; (d) if authorized, deter bears from the drill site; (e) provide contingencies in the event bears do not leave the site; (f) discuss proper storage and disposal of materials that may be toxic to bears; and (g) provide a systematic record of bears on site and in the immediate area.
27. Lessees must disclose any requests for exceptions to these mitigation measures and advisories in their plans of operation and applicable permit applications.
28. Plans of operation submitted for review and approval must describe the lessee's efforts to communicate with local communities, and interested local community groups, if any, in the development of such plans.

29. Lessees must submit a plan of operations to the state for approval as required by 11 AAC 83.158. Where surface activities are proposed on non state-owned land, lessees must submit a copy of the plan of operations to the private surface owner. Plans of operation must describe the lessee's efforts to minimize impacts on residential areas and privately-owned surface lands.
30. Prior to commencement of any activities, lessees shall confirm the locations of den sites that are actually occupied in the season of the proposed work with the Division of Wildlife Conservation, DF&G, based on data provided by DF&G. Exploration and development activities, begun between November 15 and March 31, will not be conducted within one-half mile of occupied brown bear dens, unless alternative mitigation measures are approved by DF&G. Occupied dens not previously identified by DF&G that are encountered in the field must be reported to the Division of Wildlife Conservation, DF&G, within 24 hours. Mobile activities shall avoid such dens by one-half mile unless alternative mitigation measures are approved by DO&G with concurrence from DF&G. Non-mobile facilities will not be required to be relocated.
31. To avoid possible adverse impacts to Kenai Peninsula brown bears, exploration activities will be allowed only between November 15 and March 31 within the brown bear movement corridors around Skilak Lake, Tustumena Lake, along the upper Anchor River drainage, and at the head of Kachemak Bay.

#### LESSEE ADVISORIES

1. The use of explosives for seismic activities with a velocity of greater than 3,000 feet per second in marine waters is prohibited.
2. Lessees must include in their seismic permit applications a plan for notifying the public of their activities.
3. Forest clearing for seismic activity must be approved by the Director, after consultation with DOF and ADF&G.
4. Aircraft flying over the Goose Bay SGR and the Palmer Hay Flats SGR, the primary waterfowl habitat within the Susitna Flats SGR and Trading Bay SGR, and the core Tule goose and trumpeter swan molting and nesting corridors in Trading Bay SGR and Redoubt Bay CHA must maintain a minimum altitude of 1,500 feet above ground level or a horizontal distance of one mile from April 1 to October 31. Human safety will take precedence over this provision.
5. a. Because of the state's interest in encouraging clean air, lessees are encouraged to adopt conservation measures to reduce hydrocarbon emissions.  
b. The state recognizes that in the long run sources of energy other than oil and gas will be needed. Lessee participation in conducting research on alternative energy sources is appreciated.
6. In populated areas where there is no local planning and zoning, ADNR may require in approval of plans of operation that permanent structures be designed to be compatible with the aesthetics of the surrounding area.
7. To ensure sufficient vegetative cover in Kenai Peninsula brown bear feeding concentration areas, lessees may be required to locate exploration and development facilities beyond the 500 foot buffer along anadromous fish bearing streams. This requirement will be considered during review of site-specific plans of operations, in consultation with DF&G.
8. If data indicate that brown bear movement will be hindered by development and production activities, lessees may be required to locate facilities outside of the Kenai Peninsula brown bear movement corridors around Skilak Lake, Tustumena Lake, along the upper Anchor River drainage, and at the head of Kachemak Bay. This requirement will be considered during review of site-specific plans of operations, in consultation with DF&G.