

STATE OF ALASKA  
DEPARTMENT OF NATURAL RESOURCES  
and  
ARCTIC SLOPE REGIONAL CORPORATION

Competitive Oil and Gas Lease

ADL No.

THIS LEASE is entered into \_\_\_\_\_, between the State of Alaska ("the State"), acting for itself and on behalf of Arctic Slope Regional Corporation, an Alaska corporation ("ASRC"), as holder of executive rights with respect to the interests of ASRC in oil, gas, and associated substances pursuant to the 1991 SETTLEMENT AGREEMENT BETWEEN ARCTIC SLOPE REGIONAL CORPORATION AND THE STATE OF ALASKA ("Settlement Agreement") which was approved by the Alaska Legislature in chapter 41, SLA 1992; and

"the lessee," whether one or more, whose sole address for purposes of notification is under Paragraph 25. (Unless otherwise specifically stated, all references hereinafter in this lease to "lessors" shall refer to both the State and ASRC, collectively, except that the State or ASRC will sometimes be referred to singularly as "lessor".)

SETTLEMENT AGREEMENT. The State discharges its duty as executive with respect to the interests of ASRC by entering into this lease for itself and for the interests of ASRC in oil, gas, and associated substances in or under the leased area. The State and ASRC will each separately administer this lease with respect to its own undivided interests. All payments due under this lease must be made to the owner of the respective undivided interest as set out in Paragraph 8.

As provided in the Settlement Agreement, the applicable terms of the Settlement Agreement are incorporated by reference in this lease. The lessee agrees that ASRC shall have the right to enforce all the terms of this lease (whether express or implied) directly on its own behalf and with respect only to ASRC's undivided interest in the oil, gas, and associated substances in and under the leased area, including any provision allowing termination of this lease as to the interest of ASRC for a breach of its terms, whether or not the State elects to do so with respect to the undivided interests of the State in the oil, gas, and associated substances in the leased area or portion of the leased area involved. Conversely, the lessee agrees that the State shall have the right to enforce all the terms of this lease (whether express or implied) directly on its own behalf and with respect only to the State's undivided interests in the oil, gas, and associated substances in and under the leased area, including any provision allowing termination of this lease as to the interests of the State for a breach of its terms, whether or not ASRC elects to do so with respect to the undivided interests of ASRC in the oil, gas, and associated substances in the leased area or portion of the leased area involved. In any instance when any action, notice, or decision is provided or permitted to be taken, given, or made by "lessors" under any term or provision of this lease, then, unless otherwise specifically provided in this lease, each of ASRC and the State shall have the independent right, acting solely on its own behalf and with respect only to its undivided interests in the oil,

gas, and associated substances in and under the leased area to take, give or make such action, notice or decision, without regard to whether the other lessor takes, gives, or makes a like or different action, notice or decision or omits to do so. Except for the action of the State acting as executive under and pursuant to the Settlement Agreement in entering into and granting this lease on behalf of ASRC, and except as otherwise elsewhere specifically provided in this lease, no action, notice, or decision of ASRC, alone, or of the State, alone, in connection with this lease or the leased area shall be effective with respect to or binding upon the other lessor or as to that other lessor's interests in the oil, gas, and associated substances in and under the leased area.

IN CONSIDERATION of the cash payment made by the lessee to lessors, which payment includes the first year's rental and any required cash bonus, and subject to the provisions of this lease, including applicable stipulation(s) and mitigating measures attached to this lease and by this reference incorporated in this lease, the State, acting for itself and on behalf of ASRC as holder of executive rights with respect to the interests of ASRC in oil, gas, and associated substances in or under the leased area pursuant to the Settlement Agreement, and the lessee agree as follows:

1. GRANT. (a) Subject to the provisions in this lease, the State, acting for itself and on behalf of ASRC as holder of executive rights with respect to the interests of ASRC in oil, gas, and associated substances in or under the leased area pursuant to the Settlement Agreement, grants and leases to the lessee, without warranty, the exclusive right to drill for, extract, remove, clean, process, and dispose of oil, gas, and associated substances in or under the following described tract of land:

containing approximately \_\_\_\_\_ acres, more or less (referred to in this lease as the "leased area"); the nonexclusive right to conduct within the leased area geological and geophysical exploration for oil, gas, and associated substances; and the nonexclusive right to install pipelines and build structures on the leased area to find, produce, save, store, treat, process, transport, take care of, and market all oil, gas, and associated substances and to house and board employees in its operations on the leased area. The rights granted by this lease are to be exercised in a manner which will not unreasonably interfere with the rights of any permittee, lessee or grantee of either of the lessors. With respect to the State's interest, all actions shall be consistent with the principle of reasonable concurrent uses as set out in Article VIII, Section 8 of the Alaska Constitution.

(b) For the purposes of this lease, the leased area contains the legal subdivisions as shown on the attached plat marked Exhibit A.

(c) If the leased area is described by protracted legal subdivisions and, after the effective date of this lease, the leased area is surveyed under the public land rectangular system, the boundaries of the leased area are those established by that survey, when approved, subject, however, to the provisions of applicable regulations relating to those surveys. If for any reason the leased area includes more acreage than the maximum permitted for an oil and gas lease from the State under applicable law (including the "rule of approximation" authorized in AS 38.05.145 and defined in AS 38.05.965 (18)), this lease is not void and the acreage included in the leased area must be reduced to the permitted maximum. If the State determines that the leased area exceeds the permitted acreage and notifies the lessee in writing of the amount of acreage that must be eliminated, the lessee has 60 days after that notice to surrender one or more legal subdivisions included in the leased area comprising at least the amount of acreage that must be eliminated. Any subdivision surrendered must be located on the perimeter of the leased area as originally described. If a surrender is not filed within 60 days, the State may terminate this lease as to the acreage that must be eliminated by mailing notice of the termination to the lessee describing the subdivision eliminated.

(d) If the lessors' ownership interest in the oil, gas, and associated substances in the leased area is less than an entire and undivided interest, the grant under this lease is effective only as to the lessors' interest in that oil, gas, and associated substances, and the royalties and rentals provided in this lease must be paid to the lessors in the proportion that the lessors' interest bears to the entire undivided fee.

(e) The lessors make no representations or warranties, express or implied, as to title, or access to, or quiet enjoyment of, the leased area. The lessors are not liable to the lessee for any deficiency in title to the leased area, nor is the lessee or any successor in interest to the lessee entitled to any refund due to deficiency in title for any rentals, bonuses, or royalties paid under this lease.

2. RESERVED RIGHTS. (a) The lessors, for themselves and others, reserve all rights not expressly granted to the lessee by this lease. These reserved rights include, but are not limited to:

(1) the right to explore for oil, gas, and associated substances by geological and geophysical means;

(2) the right to explore for, develop, and remove natural resources other than oil, gas, and associated substances on or from the leased area;

(3) the right to establish or grant easements and rights-of-way for any lawful purpose, including without limitation for shafts and tunnels necessary or appropriate for the working of the leased area or other lands for natural resources other than oil, gas, and associated substances;

(4) the right to dispose of land within the leased area for well sites and well bores of wells drilled from or through the leased area to explore for or produce oil, gas, and associated substances in and from lands not within the leased area; and

(5) the right otherwise to manage and dispose of the surface of the leased area or interests in that land by grant, lease, permit, or otherwise to third parties.

(b) The rights reserved may be exercised by the lessors, or by any other person or entity acting under authority of the lessors, in any manner that does not unreasonably interfere with or endanger the lessee's operations under this lease.

3. TERM. This lease is issued for an initial primary term of 7 years from the effective date of this lease. The term may be extended as provided in Paragraph 4 below.

4. EXTENSION. (a) This lease will be extended automatically if and for so long as oil or gas is produced in paying quantities from the leased area.

(b) This lease will be extended automatically with respect to a lessor's undivided interest in the leased area if that lessor's undivided interest is committed to a unit agreement consented to or approved by that lessor, and will remain in effect as to that lessor's undivided interest for so long as it remains committed to that unit agreement.

(c) (1) If the drilling of a well whose bottom hole location is in the leased area has commenced as of the date on which the lease otherwise would expire and is continued with reasonable diligence, this lease will continue in effect until 90 days after cessation of that drilling and for so long as oil or gas is produced in paying quantities from the leased area.

(2) If oil or gas in paying quantities is produced from the leased area, and if that production ceases at any time, this lease will not terminate if drilling or reworking operations are commenced on the leased area within six months after cessation of production and are prosecuted with reasonable diligence; if those drilling or reworking operations result in the production of oil or gas, this lease will remain in effect for so long as oil or gas is produced in paying quantities from the leased area.

(d) If there is a well capable of producing oil or gas in paying quantities on the leased area, this lease will not expire because the lessee fails to produce that oil or gas unless either the State or ASRC gives notice to the lessee, allowing a reasonable time, which will not be less than six months after notice, to place the well into production, and the lessee fails to do so. If production is established within the time allowed, this lease is extended only for so long as oil or gas is produced in paying quantities from the leased area. A notice pursuant to this subparagraph for termination of this lease shall have effect only insofar as to the undivided interests of the lessor who has given that notice.

(e) If both the State and ASRC approve in writing a suspension of all operations on or production from the leased area (except for a suspension necessitated by the lessee's negligence), or if a suspension of all operations on or production from the leased area has been ordered under federal, state, or local law, the lessee's obligation to comply with any express or implied provision of this lease requiring operations or production will be suspended, but not voided, and the lessee shall not be liable for damages for failure to comply with that provision. If the suspension occurs before the expiration of the primary term, the primary term will be extended at the end of the period of the suspension by adding the period of time lost under the primary term because of the suspension. If the suspension occurs during an extension of the primary term under this paragraph, upon removal of that suspension, the lessee will have a reasonable time, which will not be less than six months after notice that the suspension has been removed, to resume operations or production. For the purposes of this subparagraph, any suspension of operations or production specifically required or imposed as a term of sale or by any stipulation made a part of this lease will not be considered a suspension ordered by law. If only one of the State or ASRC directs or approves in writing a suspension of all operations on or production from the leased area, that suspension direction or approval shall be effective with respect only to the undivided interests of that one lessor; it shall not have the effect of suspending the lessee's obligation to the other lessor.

(f) If a lessor determines that the lessee has been prevented by force majeure, after efforts made in good faith, from performing any act that would extend the lease beyond the primary term, this lease will not expire as to that lessor's undivided interest during the period of force majeure. If the force majeure occurs before the expiration of the primary term, the primary term will be extended at the end of the period of force majeure by adding the period of time lost under the primary term because of the force majeure. If the force majeure occurs during an extension of the primary term under this paragraph, this lease will not expire during the period of force majeure plus a reasonable time after that period, which will not be less than 60 days, for the lessee to resume operations or production. A determination of force majeure by only one of the State or ASRC shall be effective with respect only to the undivided interests of that one lessor; it shall not take effect to suspend the lessee's obligation to the other lessor.

(g) Nothing in subparagraphs (e) or (f) suspends the obligation to pay royalties or other production or profit-based payments to the lessors from operations on the leased area that are not affected by any suspension or force majeure, or suspends the obligation to pay rentals.

5. RENTALS. (a) The lessee shall pay annual rental in accordance with the following rental schedule:

- (1) For the first year, \$1.00 per acre or fraction of an acre;
- (2) For the second year, \$1.50 per acre or fraction of an acre;
- (3) For the third year, \$2.00 per acre or fraction of an acre;
- (4) For the fourth year, \$2.50 per acre or fraction of an acre;
- (5) For the fifth year and following years, \$3.00 per acre or fraction of an acre; provided that

the State may increase the annual rental rate as provided by law with respect to oil and gas leases issued by the State upon extension of this lease beyond the primary term. Any rental increase by the State under this provision shall also be applicable with respect to ASRC.

(b) Annual rental paid in advance is a credit on the royalty or net profit share due under this lease for that year.

(c) The lessee shall pay the annual rental to the respective lessors (or any depository designated by the respective lessors with at least 60 days notice to the lessee) in advance, on or before the annual anniversary date of this lease. No lessor is required to give notice that rentals are due by billing the lessee. If a lessor's (or its depository's) office is not open for business on the annual anniversary date of this lease, the time for payment is extended to include the next day on which that office is open for business. If the annual rental payable to a lessor is not paid timely, this lease automatically terminates as to that lessor and the lessee at 11:59 p.m., Alaska Standard Time, on the date by which the rental payment was to have been made. However, failure to make timely payment of annual rentals to only one of the lessors will not terminate this lease as to the other lessor if the annual rentals payable to that other lessor are timely paid.

(d) A percentage share of the annual rentals for each acre or fraction of an acre in each section of land in which the leased area is situated, corresponding to the ASRC percentage in that section as set out in Paragraph



8 of this lease, shall be payable directly to ASRC (or a depository designated by ASRC as provided for above). Likewise, a percentage share of the annual rentals for each acre or fraction of an acre in each section of land in which the leased area is situated, corresponding to the State percentage in that section as set out in Paragraph 8 of this lease, shall be payable directly to the State (or a depository designated by the State as provided for above).

6. RECORDS. The lessee shall keep and have in its possession books and records showing the development and production (including records of development and production expenses) and disposition (including records of sale prices, volumes, and purchasers) of all oil, gas, and associated substances produced from the leased area. The lessee shall permit the State or its agents, and ASRC or its agents to examine these books and records at all reasonable times. Upon request by the State, the lessee's books and records shall be made available to the State at the State office designated by the State. Likewise, upon request by ASRC, the lessee's books and records shall be made available to ASRC at an ASRC office in Anchorage, Alaska, or, at the lessee's election, an office of the lessee in Anchorage, Alaska. These books and records of development, production, and disposition must employ methods and techniques that will ensure the most accurate figures reasonably available without requiring the lessee to provide separate tankage or meters for each well. The lessee shall use generally accepted accounting procedures consistently applied.

7. APPORTIONMENT OF ROYALTY FROM APPROVED UNIT. The landowners' royalty share of the unit production allocated to each separately owned tract shall be regarded as royalty to be distributed to and among, or the proceeds of it paid to, the landowners, free and clear of all unit expense and free of any lien for it. Under this provision, the lessors' royalty share of any unit production allocated to the leased area will be regarded as royalty to be distributed to, or the proceeds of it paid to, the lessors free and clear of all unit expenses (and any portion of those expenses incurred away from the unit area), including, but not limited to, expenses for separating, cleaning, dehydration, gathering, saltwater disposal, and preparing oil, gas, or associated substances for transportation off the unit area, and free of any lien for them.

8. PAYMENTS. (a) All payments to the State under this lease must be made payable to the State in the manner directed by the State, and unless otherwise specified, must be tendered to the State at:

DEPARTMENT OF NATURAL RESOURCES  
550 WEST 7<sup>TH</sup> AVENUE, SUITE 1410  
ANCHORAGE, ALASKA 99501-3561  
ATTENTION: FINANCIAL SERVICE

or to any depository designated by the State with at least 60 days notice to the lessee.

(b) All payments made to ASRC under this lease must be made payable to ASRC in the manner directed by ASRC, and unless otherwise specified, must be tendered to ASRC at:

ARCTIC SLOPE REGIONAL CORPORATION  
P.O. BOX 129  
BARROW, ALASKA 99723  
ATTENTION: TREASURER

or to any depository designated by ASRC (acting by the president or any vice president of ASRC) with at least 60 days notice to the lessee.

(c) As provided in the Settlement Agreement between the State and ASRC, it is agreed and stipulated that the oil, gas, and associated substances in and under the leased area within the respective sections of land described in subparagraph 1(a) of this lease are owned in proportion to the following respective undivided percentages (with the undivided percentage interest of the State being called the "State percentage" and the undivided percentage interest of ASRC being called the "ASRC percentage"), to-wit

<u>Township:</u>	<u>Section:</u>	<u>State percentage:</u>	<u>ASRC percentage:</u>
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Lessee agrees and covenants, for itself and its successors and assigns, to pay or deliver directly to ASRC the applicable ASRC percentage in amount, or in kind (if applicable under Paragraph 37 of this lease), of all bonuses, annual rentals, royalties, net profits and any other consideration or thing of value payable by the lessee to lessors for or under this lease, determined and calculated separately with respect to the respective portions of the leased area within each of the separate sections of land described above in which the leased area is situated; provided only that any bid deposit paid by the lessee incident to submitting a bid or offer for this lease and which is refundable to lessee in the event of rejection of that bid or offer may be paid by lessee to the State, and ASRC will look to the State for accounting for the applicable ASRC percentage of that bid deposit in the event of acceptance of that bid or offer. Likewise, Lessee agrees and covenants, for itself and its successors and assigns, to pay or deliver directly to the State the applicable State percentage in amount, or in kind (if applicable under Section 38 of this lease), of all bid deposits, bonuses, annual rentals, royalties, net profits and other consideration or thing of value payable by lessee to the lessors for or under this lease, determined and calculated separately with respect to the respective portions of the leased area within each of the separate sections of land described above in which the leased area is situated.

9. PLAN OF OPERATIONS. Where required by law or regulation, no lease operations may be undertaken on the leased area until a plan of operations has been approved by the State pursuant to 11 AAC 83.158, 11 AAC 83.343, or other applicable regulations. At the time a proposed plan of operations is submitted for review and approval by the State, five copies must also be provided to ASRC solely for its information.

10. PLAN OF DEVELOPMENT. (a) Except as provided in subparagraph (d) below, within 12 months after certification of a well capable of producing oil, gas, or associated substances in paying quantities, the lessee shall file two copies of an application for approval by each lessor of an initial plan of development that must describe the lessee's plans for developing the leased area. No development of the leased area may occur until a plan of development has been approved by each of the State and ASRC with respect to its undivided interest.

(b) The plan of development must be revised, updated, and submitted to the lessors for approval annually before or on the anniversary date of the previously approved plan. If no changes from an approved plan are contemplated for the following year, a statement to that effect must be filed for approval by each of the State and ASRC with respect to its undivided interest in lieu of the required revision and update.

(c) The lessee may, with the approval of each of the State and ASRC with respect to its undivided interest, subsequently modify an approved plan of development.

(d) If the leased area is included in an approved unit, the lessee will not be required to submit a separate lease plan of development for unit activities.

(e) Neither the State nor ASRC will unreasonably withhold any approval required by this section.

11. LOGS AND OTHER RECORDS OF OPERATIONS. (a) The lessee shall file with the State and ASRC copies of all logs, all raw and all processed geological and geophysical data, a description of all tests run for each well drilled on the leased area, and a plat showing the exact location of each well. This information shall be provided the State and ASRC within 30 days after each well or survey has been completed, suspended, or abandoned.

(b) After conducting seismic exploration on the leased area, the lessee shall provide the same notification and review privileges to ASRC as it is required to accord the State under 11 AAC 96.210 or subsequent regulations.

(c) Any information filed by the lessee in connection with this lease will be available at all times for the use of each of the State and ASRC and their agents except that the State will keep information confidential as provided in AS 38.05.035(a)(9), AS 31.05.035, and applicable regulations, and ASRC will keep information confidential in the same manner as the State.

12. DIRECTIONAL DRILLING. This lease may be maintained in effect by directional wells whose bottom hole location is on the leased area but that are drilled from locations on other lands not covered by this lease. In those circumstances, drilling will be considered to have commenced on the leased area when actual drilling is commenced on those other lands for the purpose of directionally drilling into the leased area. Production of oil or gas from the leased area through any directional well surfaced on those other lands, or drilling or reworking of that directional well, will be considered production or drilling or reworking operations on the leased area for all purposes of this lease. Nothing contained in this paragraph is intended or will be construed as granting to the lessee any interest, license, easement, or other right in or with respect to those lands in addition to any interest, license, easement, or other right that the lessee may have lawfully acquired from the lessors or from others.

13. DILIGENCE AND PREVENTION OF WASTE. (a) The lessee shall exercise reasonable diligence in drilling, producing, and operating wells on the leased area unless consent to suspend operations temporarily is granted by lessors.

(b) Upon discovery of oil or gas on the leased area in quantities that would appear to a reasonable and prudent operator to be sufficient to recover ordinary costs of drilling, completing, and producing an additional well in the same geologic structure at another location with a reasonable profit to the operator, the lessee must drill those wells as a reasonable and prudent operator would drill, having due regard for the interest of the lessors as well as the interest of the lessee.

(c) The lessee shall perform all operations under this lease with due care and in a good and workmanlike manner in accordance with modern methods and practices set out in the approved plan of operations and plan of development, with due regard for the prevention of waste of oil, gas, and associated substances and the entrance of water to the oil and gas-bearing sands or strata to the destruction or injury of those sands or strata, and to the preservation and conservation of the property for future productive operations. The lessee shall carry out at the lessee's expense all orders and requirements of the State relative to the prevention of waste and to the preservation of the leased area. If the lessee fails to carry out these orders, a lessor will have the right, together with any other available legal recourse, to enter the leased area to repair damage or prevent waste at the lessee's expense.

(d) The lessee shall securely plug in an approved manner any well before abandoning it.

(e) The lessee shall use modern geological and geophysical techniques in exploration and development of the leased area.

(f) The lessee shall cause any identified commercial reservoirs of oil, gas, or associated substances within the leased area to be reasonably developed and produced.

14. OFFSET WELLS. The lessee shall drill such wells as a reasonable and prudent operator would drill to protect the lessors from loss by reason of drainage resulting from production on other land. Without limiting the generality of the foregoing sentence, if oil or gas is produced in a well on other land in which the State or ASRC owns a lesser percentage share of the oil, gas and associated substances, or on which the State or ASRC receives a lower royalty than that covered by this lease, and that well is within 500 feet in the case of an oil well or 1,500 feet in the case of a gas well of lands then subject to this lease, and that well produces oil or gas for a period of 30 consecutive days in quantities that would appear to a reasonable and prudent operator to be sufficient to recover ordinary costs of drilling, completing, and producing an additional well in the same geological structure at an offset location with a reasonable profit to the operator, and if, after notice to the lessee and an opportunity to be heard, either the State or ASRC finds that production from that well is draining lands then subject to this lease, the lessee shall within 30 days after written demand by either the State or ASRC begin in good faith and diligently prosecute drilling operations for an offset well on the leased area. In lieu of drilling any well required by this paragraph, the lessee may, with the consent of both the State and ASRC, or, if only one of lessors is suffering loss of royalty through drainage, with the consent of that one lessor, compensate each of lessors, or if only one of the lessors is suffering loss of royalty through drainage that one of the lessors, in full each month for the estimated loss of royalty through drainage in the amount determined by each of the lessors, or, if applicable, by the one lessor who is suffering loss of royalty through drainage.

15. UNITIZATION. (a) As to the undivided interests owned by the State in the oil, gas, or associated substances in the leased area, the lessee may unite with others, jointly or separately, in collectively adopting and operating under a cooperative or unit agreement for the exploration, development, or operation of the pool, field, or like area or part of the pool, field, or like area that includes or underlies the leased area or any part of the leased area whenever the State determines and certifies that the cooperative or unit agreement is in the public interest. Likewise, as to the undivided interests owned by ASRC in the oil, gas, or associated substances in the leased area, the lessee may unite with others, jointly or separately, in collectively adopting and operating under a cooperative or unit agreement for the exploration, development, or operation of the pool, field, or like area or part of the pool, field, or like area that includes or underlies the leased area or any part of the leased area, with the express prior written approval of ASRC of such a cooperative or unit agreement and upon such terms and conditions as shall be mutually agreed by lessee and ASRC.

(b) The State's approval of a cooperative or unit agreement or of any change in any such agreement shall be effective with respect only to the undivided interests owned by the State in the oil, gas, or associated substances in the leased area or part of the leased area included in or affected by that agreement. Likewise, ASRC's approval of a cooperative or unit agreement or of any change in any such agreement shall be effective with respect only to the undivided interests owned by ASRC in the oil, gas, or associated substances in the leased area or part of the leased area included in or affected by that agreement. If the State's approval of a cooperative or unit agreement including or affecting the undivided interests owned by the State in oil, gas or associated substances in all or part of the leased area



is conditioned upon such agreement being effective with respect to the undivided interests in oil, gas, or associated substances owned by ASRC in such area, the lessee must obtain written approval by ASRC of a proposed cooperative or unit agreement before submitting an application to the State for approval of such cooperative or unit agreement. ASRC may condition its approval of any such proposed cooperative or unit agreement in such manner as ASRC deems necessary to protect its interests, including, without limitation, requiring its further consent to any changes in the application for State approval or in the proposed cooperative or unit agreement.

(c) The lessee agrees, within six months after demand by both the State and ASRC, to subscribe to a reasonable cooperative or unit agreement approved by both lessors that will adequately protect all parties in interest, including the lessors. Further, the lessors, acting jointly reserve the right to prescribe such an agreement upon terms and conditions approved by both lessors.

(d) The lessee also agrees, within six months after demand by the State alone, to subscribe to a reasonable cooperative or unit agreement approved by the State and including and affecting the undivided interests owned by the State in oil, gas or associated substances in the leased area or part thereof that will adequately protect all parties in interest, including the State. Further, the State reserves the right to prescribe such an agreement including and affecting the undivided interests owned by the State in oil, gas, and associated substances upon terms and conditions approved by the State. However, no cooperative or unit agreement required or prescribed by the State alone pursuant to this subparagraph (d) shall be effective with respect to the undivided interests owned by ASRC in oil, gas or associated substances in the leased area without the express agreement and approval of such agreement by ASRC.

(e) Except as otherwise provided in this subparagraph, where only a portion of the leased area is committed to a unit agreement approved by a lessor, that commitment constitutes a severance of this lease as to the undivided interests owned by that lessor in the unitized and nonunitized portions of the leased area. The portion of the leased area not committed to the unit will be treated as a separate and distinct lease covering the undivided interest in oil, gas, and associated substances owned by that lessor and having the same effective date and term as this lease and may be maintained only in accordance with the terms and conditions of this lease and any applicable statutes and regulations. Any portion of the leased area not committed to the unit agreement will not be affected by the unitization or pooling of any other portion of the leased area, by operations in the unit, or by suspension approved or ordered for the unit. If the leased area has a well certified as capable of production in paying quantities on it before commitment to a unit agreement, this lease will not be severed pursuant to the subparagraph, and if any portion of the leased area is included in a participating area formed under a unit agreement approved by a lessor, the undivided interests in oil, gas, or associated substances owned by that lessor in the entire leased area will remain committed to the unit and this lease will not be severed as to the undivided interests in oil, gas, and associated substances in the leased area owned by that lessor.

(f) Neither the State nor ASRC will unreasonably withhold any approval required by this section.

16. INSPECTION. The lessee shall keep open at all reasonable times, for inspection and audit by any duly authorized representative of the State or ASRC, the leased area, all wells, improvements, machinery, and fixtures on the leased area, and all reports and records relative to operations and surveys or investigations on or with regard to the leased area or under this lease. Upon request, the lessee shall furnish the State and ASRC, or either of them, with copies of and extracts from any such reports and records.

17. SUSPENSION. As more fully provided in subparagraph 4(e) of this lease, either the State or ASRC may from time to time direct or approve in writing suspension of production or other operations under this lease insofar as to the undivided interests in the oil, gas, and associated substances in and under the leased area of the lessor granting the suspension approval. Further, by mutual agreement of both the State and ASRC, the lessors may from time to time direct in writing suspension of production or other operations under this lease, which direction shall be deemed to constitute a suspension approval granted by both the lessors.

18. ASSIGNMENT, PARTITION, AND CONVERSION. This lease, or an interest in this lease, may, with the approval of both lessors, be assigned, subleased, or otherwise transferred to any person or persons qualified to hold a lease. No assignment, sublease, or other transfer of an interest in this lease, including assignments of working or royalty interests and operating agreements and subleases, will be binding upon the lessors unless approved by both lessors. The lessee shall remain liable for all obligations under this lease accruing prior to the approval by the lessors of any assignment, sublease, or other transfer of an interest in this lease. All provisions of this lease will extend to and be binding upon the heirs, administrators, successors, and assigns of the lessors and the lessee. Applications for approval of an assignment, sublease, or other transfer must comply with all applicable regulations of the State and must be filed within 90 days after the date of final execution of the instrument of transfer. Each lessor will approve a transfer of an undivided interest in this lease unless the transfer would adversely affect the interests of that lessor or the application



does not comply with applicable regulations. Each lessor will disapprove a transfer of a divided interest in this lease if the transfer covers only a portion of the lease or a separate and distinct zone or geological horizon unless the lessee demonstrates that the proposed transfer of a divided interest is reasonably necessary to accomplish exploration or development of the lease, the lease is committed to an approved unit agreement, the lease is allocated production within an approved participating area, or the lease has a well certified as capable of production in paying quantities. Each lessor will make a written finding stating the reasons for disapproval of a transfer of a divided interest. Where an assignment, sublease, or other transfer is made of all or a part of the lessee's interest in a portion of the leased area, this lease may, at the option of and by mutual agreement of both lessors or upon request of the transferee and with the approval of both lessors, be severed, and a separate and distinct lease will be issued to the transferee having the same effective date and terms as this lease.

19. SURRENDER. The lessee at any time may file with both lessors a written surrender of all rights under this lease or any portion of the leased area comprising one or more legal subdivisions or, with the consent of both lessors, any separate and distinct zone or geological horizon underlying the leased area or one or more legal subdivisions of the leased area. That surrender will be effective as of the date of filing, subject to the continued obligations of the lessee and its surety to make payment of all accrued royalties and to place all wells and surface facilities on the surrendered land or in the surrendered zones or horizons in condition satisfactory to both lessors for suspension or abandonment. After that, the lessee will be released from all obligations under this lease with respect to the surrendered lands, zones, or horizons.

20. DEFAULT AND TERMINATION; CANCELLATION. The failure of the lessee to perform timely its obligations under this lease, or the failure of the lessee otherwise to abide by all express and implied provisions of this lease, is a default of the lessee's obligations under this lease. Whenever the lessee fails to comply with any of the provisions of this lease (other than a provision which, by its terms, provides for automatic termination), and fails within 60 days after written notice of that default from either or both of the lessors to begin and diligently prosecute operations to remedy that default, either or both lessors may terminate this lease insofar as to the undivided interests in the oil, gas, and associated substances in the leased area owned by the lessor or lessors thus electing to terminate this lease if at the time of termination there is no well on the leased area capable of producing oil or gas in paying quantities. If there is a well on the leased area capable of producing oil or gas in paying quantities, this lease may be terminated by an appropriate judicial proceeding. In the event of any termination under this subparagraph, the lessee shall have the right to retain under this lease any and all drilling or producing wells for which no default exists, together with a parcel of land surrounding each well or wells and rights-of-way through the leased area that are reasonably necessary to enable the lessee to drill, operate, and transport oil or gas from the retained well or wells.

21. RIGHTS UPON TERMINATION. Upon the expiration or earlier termination of this lease as to the interests of both lessors in all or any portion of the leased area, the lessee will be directed in writing by the State and will have the right at any time within a period of one year after the termination, or any extension of that period as may be granted by the State, to remove from the leased area or portion of the leased area all machinery, equipment, tools, and materials. Upon the expiration of that period or extension of that period and at the option of both lessors acting jointly any machinery, equipment, tools, and materials that the lessee has not removed from the leased area or portion of the leased area become the property of both lessors or may be removed by either or both lessors at the lessee's expense. If both lessors elect to acquire title to the machinery, equipment, tools, and materials not removed by lessee, they shall share ownership thereof in proportion to the respective State percentage and ASRC percentage in the oil, gas, and associated substances in and under the land on which the machinery, equipment, tools, and materials are situated. At the option of the State, all improvements such as roads, pads, and wells must either be abandoned and the sites rehabilitated by the lessee to the satisfaction of both lessors, or be left intact and the lessee absolved of all further responsibility as to their maintenance, repair, and eventual abandonment and rehabilitation. Subject to the above conditions, the lessee shall deliver up the leased area or those portions of the leased area in good condition.

22. DAMAGES AND INDEMNIFICATION. (a) No rights under the lease may be exercised by the lessee until the lessee has provided to pay the surface owner, his lessees and permittees, upon which the lease rights are sought to be exercised, full payment for all damage sustained by the owner by reason of entering the land. If the owner for any reason does not settle the damages, the lessee may enter the land after posting a surety bond determined by the State of Alaska, Director of the Division of Oil & Gas, after notice and an opportunity to be heard, to be sufficient as to form, amount, and security to secure to the owner, his lessees and permittees, payment for damages, and may institute legal proceedings in a court of competent jurisdiction where the land is located to determine the damages which the owner of the land may suffer. The lessee agrees to pay for any damages that may become payable under this lease and to

indemnify each of the lessors and hold each of them harmless from and against any claims, demands, liabilities, and expenses arising from or in connection with such damages. The furnishing of a bond in compliance with this paragraph will be regarded by the State as sufficient provision for the payment of all damages that may become payable under this lease.

(b) The lessee shall indemnify each of the lessors for, and hold each of them harmless from, any claim, including claims for loss or damage to property or injury to any person caused by or resulting from any act or omission committed under this lease by or on behalf of the lessee. The lessee is not responsible to a lessor under this subparagraph for any loss, damage, or injury caused by or resulting from the sole negligence of that lessor.

(c) The lessee expressly waives any defense to an action for breach of a provision of this lease or for damages resulting from an oil spill or other harm to the environment that is based on an act or omission committed by an independent contractor in the lessee's employ. The lessee expressly agrees to assume responsibility for all actions of its independent contractors.

23. BONDS. (a) If required by the State, the lessee shall furnish a bond prior to the issuance of this lease in an amount equal to at least \$5 per acre or fraction of an acre contained in the leased area, but no less than \$10,000, and must maintain that bond as long as required by the State.

(b) The lessee may, in lieu of the bond required under (a) above, furnish and maintain a statewide bond in accordance with applicable regulations.

(c) The State may, after notice to the lessee and a reasonable opportunity to be heard, require a bond in a reasonable amount greater than the amount specified in (a) above where a greater amount is justified by the nature of the surface and its uses and the degree of risk involved in the types of operations being or to be carried out under this lease. A statewide bond will not satisfy any requirement of a bond imposed under this subparagraph, but will be considered by the State in determining the need for and the amount of any additional bond under this subparagraph.

(d) If the leased area is committed in whole or in part to a cooperative or unit agreement approved or prescribed by the State, and the unit operator furnishes a statewide bond, the lessee need not maintain any bond with respect to the portion of the leased area committed to the cooperative or unit agreement.

24. AUTHORIZED REPRESENTATIVES. The Director of the Division of Oil and Gas, Department of Natural Resources, State of Alaska, shall be the authorized representative for the State for the purposes of administering this lease. The President of ASRC shall be the authorized representative of ASRC for the purposes of administering this lease. The person executing this lease on behalf of the lessee shall be the authorized representative of the lessee for the purposes of administering this lease. The State, ASRC, or the lessee may change the designation of its authorized representative or the address to which notices to that representative are to be sent by a notice given in accordance with Paragraph 25 below. Where activities pursuant to a plan of operations are underway, the lessee shall also designate, pursuant to a notice under Paragraph 25 below, by name, job title, and address, an agent who will be present in the State during all lease activities.

25. NOTICES; PROTEST. (a) Any notices required or permitted under this lease must be by electronic media producing a permanent record or in writing and must be given personally or by registered or certified mail, return receipt requested, addressed as follows:

TO THE STATE:

DIRECTOR, DIVISION OF OIL AND GAS  
DEPARTMENT OF NATURAL RESOURCES  
550 WEST 7TH AVENUE, SUITE 800  
ANCHORAGE, ALASKA 99501-3510

TO ASRC:

VICE PRESIDENT-LAND  
ARCTIC SLOPE REGIONAL CORPORATION  
P.O. BOX 129  
BARROW, ALASKA 99723

TO THE LESSEE:

(b) Any notice given under this paragraph will be effective when delivered to the above authorized representative.

(c) A lessee who wishes to protest the amount of money due a lessor under the lease or any action of a lessor regarding a provision of this lease must file a written protest with *that lessor* within 30 days after the mailing date of that lessor's notice or bill. A lessee who fails to file a protest within the required time waives any further right to protest.

26. STATUTES AND REGULATIONS. This lease is subject to all applicable state and federal statutes and regulations in effect on the effective date of this lease, and insofar as is constitutionally permissible, to all statutes and regulations placed in effect after the effective date of this lease. A reference to a statute or regulation in this lease includes any change in that statute or regulation whether by amendment, repeal and replacement, or other means. This lease does not limit the power of the State of Alaska or the United States of America to enact and enforce legislation or to promulgate and enforce regulations affecting, directly or indirectly, the activities of the lessee or its agents in connection with this lease or the value of the interest held under this lease. In case of conflicting provisions, statutes and regulations take precedence over this lease.

27. INTERPRETATION. This lease is to be interpreted in accordance with the rules applicable to the interpretation of contracts made in the State of Alaska. The paragraph headings are not part of this lease and are inserted only for convenience. The lessors and the lessee expressly agree that the law of the State of Alaska will apply in any judicial proceeding affecting this lease.

28. INTEREST IN REAL PROPERTY. It is the intention of the parties that the rights granted to the lessee by this lease constitute an interest in real property in the leased area.

29. WAIVER OF CONDITIONS. Each of the lessors severally reserves the right to waive any breach of a provision of this lease insofar as to the undivided interests of that lessor in the oil, gas, and associated substances in and under the leased area, but any such waiver extends only to the particular breach so waived and does not limit the rights of that lessor with respect to any future breach; nor will the waiver of a particular breach prevent cancellation of this lease for any other cause or for the same cause occurring at another time. A waiver by only one of the lessors of a breach of a provision of this lease shall not waive that breach as to the other lessor or as to the other lessor's interest in the oil, gas, and associated substances in and under the leased area. Notwithstanding the foregoing, no lessor will be deemed to have waived a provision of this lease unless it does so in writing.

30. SEVERABILITY. If it is finally determined in any judicial proceeding that any provision of this lease is invalid, either or both of lessors and the lessee may jointly agree by a written amendment to this lease that, in consideration of the provisions in that written amendment, the invalid portion will be treated as severed from this lease and that the remainder of this lease, as amended, will remain in effect insofar as to the lessor or lessors executing that amendment and the interest of that lessor or lessors in the oil, gas, and associated substances in and under the leased area. An agreement amending this lease which is executed by the lessee and one only of the lessors shall not be effective as to the other lessor or as to that other lessor's undivided interests in the oil, gas, and associated substances in or under the leased area.

31. LOCAL HIRE. The lessee is encouraged to hire and employ local and Alaska residents and companies, to the extent they are available and qualified, for work performed on the leased area. Lessees shall submit, with the plans of operations, a proposal detailing the means by which the lessee will comply with this measure. 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.

32. NONDISCRIMINATION. The lessee and the lessee's contractors and subcontractors may not discriminate against any employee or applicant because of race, religion, marital status, change in marital status, pregnancy, parenthood, physical handicap, color, sex, age, or national origin as set out in AS 18.80.220. The lessee and its contractors and subcontractors must, on beginning any operations under this lease, post in a conspicuous place notices setting out this nondiscrimination provision.

33. DEFINITIONS. All words and phrases used in this lease are to be interpreted where possible in the manner required in respect to the interpretation of statutes by AS 01.10.040. However, the following words have the following meanings unless the context unavoidably requires otherwise:

(1) "oil" means crude petroleum oil and other hydrocarbons, regardless of gravity, that are produced in liquid form by ordinary production methods, including liquid hydrocarbons known as distillate or condensate recovered by separation from gas other than at a gas processing plant;

(2) "gas" means all natural gas (except helium gas) and all other hydrocarbons produced that are not defined in this lease as oil;

(3) "associated substances" means all substances except helium produced as an incident of production of oil or gas by ordinary production methods and not defined in this lease as oil or gas;

(4) "drilling" means the act of boring a hole to reach a proposed bottom hole location through which oil or gas may be produced if encountered in paying quantities, and includes redrilling, sidetracking, deepening, or other means necessary to reach the proposed bottom hole location, testing, logging, plugging, and other operations necessary and incidental to the actual boring of the hole;

(5) "reworking operations" means all operations designed to secure, restore, or improve production through some use of a hole previously drilled, including, but not limited to, mechanical or chemical treatment of any horizon, plugging back to test higher strata, etc.;

(6) "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 considered 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; and

(7) "force majeure" means war, riots, acts of God, unusually severe weather, or any other cause beyond the lessee's reasonable ability to foresee or control and includes operational failure of existing transportation facilities and delays caused by judicial decisions or lack of them.

34. ROYALTY ON PRODUCTION. Except for oil, gas, and associated substances used on the leased area for development and production or unavoidably lost, the lessee shall pay to the lessors as a royalty 16.66667 percent in amount or value of the oil, gas, and associated substances saved, removed, or sold from the leased area and of the gas from the leased area used on the leased area for extraction of natural gasoline or other products. In the case of each lessor, royalty attributable to the undivided percentage interest of that lessor shall be paid directly to that lessor.

35. VALUE. (a) For the purposes of computing royalties due under this lease, the value of royalty oil, gas, or associated substances shall not be less than the highest of:

(1) the field price received by the lessee for the oil, gas, or associated substances;

(2) the volume-weighted average of the three highest field prices received by other producers in the same field or area for oil of like grade and gravity, gas of like kind and quality, or associated substances of like kind and quality at the time the oil, gas, or associated substances are sold or removed from the leased or unit area or the gas is delivered to an extraction plant if that plant is located on the leased or unit area; if there are less than three prices reported by other producers, the volume-weighted average will be calculated using the lesser number of prices received by other producers in the field or area;

(3) the lessee's posted price in the field or area for the oil, gas, or associated substances; or

(4) the volume-weighted average of the three highest posted prices in the same field or area of the other producers in the same field or area for oil of like grade and gravity, gas of like kind and quality, or associated substances of like kind and quality at the time the oil, gas, or associated substances are sold or removed from the leased or unit area or the gas is delivered to an extraction plant if that plant is located on the leased or unit area; if there are less than three prices posted by other producers, the volume-weighted average will be calculated using the lesser number of prices posted by other producers in the field or area.

(b) If oil, gas, or associated substances are sold away from the leased or unit area, the term "field price" in subparagraph (a) above will be the cash value of all consideration received by the lessee or other producer from the purchaser of the oil, gas, or associated substances, less the reasonable costs of transportation away from the leased



or unit area to the point of sale. The "reasonable costs of transportation" are as defined in 11 AAC 83.228 and 11 AAC 83.229 as those regulations exist on the effective date of this lease.

(c) In the event the lessee does not sell in an arm's-length transaction the oil, gas, or associated substances, the term "field price" in subparagraphs (a) and (b) above will mean the price the lessee would expect to receive for the oil, gas, or associated substances if the lessee did sell the oil, gas, or associated substances in an arm's-length transaction, minus reasonable costs of transportation away from the leased or unit area to the point of sale or other disposition. The lessee must determine this price in a consistent and logical manner using information available to the lessee and report that price to lessors.

(d) The State may establish minimum values which shall be applicable for the purposes of computing royalties payable both to the State and to ASRC on oil, gas, or associated substances obtained from this lease, with consideration being given to the price actually received by the lessee, to the price or prices paid in the same field or area for production of like quality, to posted prices, to prices received by the lessee and/or other producers from sales occurring away from the leased area, and/or to other relevant matters. In establishing minimum values, the State may use, but is not limited to, the methodology for determining "prevailing value" as defined in 11 AAC 83.227. Each minimum value determination will be made only after the lessee has been given notice and a reasonable opportunity to be heard. Under this provision, it is expressly agreed that the minimum value of royalty oil, gas, or associated substances under this lease may not necessarily equal, and may exceed, the price of the oil, gas, or associated substances.

36. ROYALTY IN VALUE. Except to the extent that a lessor elects to receive all or a portion of its royalty in kind as provided in Paragraph 37 below, the lessee shall pay to the lessors that value of all royalty oil, gas, and associated substances as determined under Paragraph 35 above. Royalty paid in value will be free and clear of all lease expenses (and any portion of those expenses that is incurred away from the leased area), including, but not limited to, expenses for separating, cleaning, dehydration, gathering, saltwater disposal, and preparing the oil, gas, or associated substances for transportation off the leased area. All royalty that may become payable in money to a lessor must be paid on or before the last day of the calendar month following the month in which the oil, gas, or associated substances are produced. The amount of all royalty in value payments which are not paid when due under this lease or the amount which is subsequently determined to be due to the lessors or the lessee as the result of a redetermination will bear interest from the last day of the calendar month following the month in which the oil, gas, or associated substances were produced, until the obligation is paid in full. Interest shall accrue at the rate provided in AS 38.05.135(d) or as may later be amended. Royalty payments must be accompanied by such information relating to valuation of royalty as the lessors may require which may include, but is not limited to, run tickets, evidence of sales, shipments, and amounts of gross oil, gas, and associated substances produced.

37. ROYALTY IN KIND. (a) At the option of either or both lessors, which may be exercised by either lessor (without regard to whether the other lessor exercises or does not exercise that option) from time to time upon not less than 90 days' notice to the lessee, the lessee shall deliver all or a portion of that lessor's royalty oil, gas, or associated substances produced from the leased area in kind. The maximum share of royalty oil, gas, or associated substances which a lessor shall be entitled to require be delivered to it shall be calculated and determined pursuant to and as provided in subparagraph 8(c) of this lease. Delivery will be on the leased area, unit area, or at a place mutually agreed to by a lessor and the lessee, and must be delivered to that lessor or to any individual, firm, or corporation designated by that lessor.

(b) Royalty oil, gas, or associated substances delivered in kind must be delivered in good and merchantable condition, of pipeline quality, and free and clear of all lease expenses (and any portion of those expenses incurred away from the leased area), including, but not limited to, expenses for separating, cleaning, dehydration, gathering, saltwater disposal, and preparing the oil, gas, or associated substances for transportation off the leased area.

(c) After having given notice of its intention to take, or after having taken its royalty oil, gas, or associated substances in kind, a lessor, at its option and upon 90 days' notice to the lessee, may elect to receive a different portion or none of its royalty in kind. If, under federal regulations, the taking of royalty oil, gas, or associated substances in value by a lessor creates a supplier-purchaser relationship, the lessee hereby waives its right to continue to receive royalty oil, gas, or associated substances under that relationship, and further agrees that it will require any purchasers of the royalty oil, gas, or associated substances likewise to waive any supplier-purchaser rights.

(d) The lessee shall furnish storage for royalty oil, gas, and associated substances produced from the leased or unit area to the same extent that the lessee provides storage for the lessee's share of oil, gas, and associated substances. The lessee shall not be liable for the loss or destruction of stored royalty oil, gas and associated substances from causes beyond the lessee's ability to control.

(e) If a lessor's royalty purchaser refuses or for any reason fails to take delivery of oil, gas, or associated substances, or in an emergency, and with as much notice to the lessee as is practical or reasonable under the circumstances, that lessor may elect without penalty to underlift for up to six months all or a portion of that lessor's royalty on oil, gas, or associated substances produced from the leased or unit area and taken in kind. A lessor's right to underlift is limited to the portion of royalty oil, gas, or associated substances that the royalty purchaser refused or failed to take delivery of, or the portion necessary to meet the emergency condition. Underlifted oil, gas, or associated substances may be recovered by a lessor at a daily rate not to exceed 10 percent of its royalty interest share of daily production at the time of the underlift recovery.

38. REDUCTION OF ROYALTY. Lessee may request a reduction of royalty in accordance with the applicable statutes and regulations in effect on the date of application for the reduction. No reduction of royalty payable to ASRC shall be effected without ASRC's approval; and, likewise, no reduction of royalty payable to the State shall be effected without the State's approval.

39. EFFECTIVE DATE. This lease takes effect on

BY SIGNING THIS LEASE, the State, acting for itself and on behalf of ASRC as holder of executive rights pursuant to the Settlement Agreement, and the lessee agree that each of the State, ASRC, and the lessee shall be bound by its provisions.

STATE OF ALASKA

By: \_\_\_\_\_

Mark D. Myers  
Director, Division of Oil and Gas

STATE OF ALASKA       )  
                                  ) ss.  
Third Judicial District    )

On \_\_\_\_\_, before me appeared Mark D. Myers of the Division of Oil and Gas of the State of Alaska, Department of Natural Resources, and who executed this lease and acknowledged voluntarily signing it on behalf of the State of Alaska as lessor.

\_\_\_\_\_  
Notary public in and for the State of Alaska  
My commission expires September 28, 2003

LESSEE: \_\_\_\_\_

Signature: \_\_\_\_\_

Printed Name/Title: \_\_\_\_\_

INSERT NOTARY ACKNOWLEDGMENT OF LESSEE'S SIGNATURE HERE.

LESSEE: \_\_\_\_\_

Signature: \_\_\_\_\_

Printed Name/Title: \_\_\_\_\_

INSERT NOTARY ACKNOWLEDGMENT OF LESSEE'S SIGNATURE HERE.

LESSEE: \_\_\_\_\_

Signature: \_\_\_\_\_

Printed Name/Title: \_\_\_\_\_

INSERT NOTARY ACKNOWLEDGMENT OF LESSEE'S SIGNATURE HERE.



## Mitigation Measures for North Slope Areawide 2001

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 post-sale plans of operation, exploration, or development, and other permits based on these mitigation measures.

Under AS 38.05.035(e), DNR has authority to apply the following mitigation measures for Oil and Gas Lease Sale North Slope Areawide 2001, to all oil and gas activities performed to access the state's leased mineral interest, regardless of the 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 geohazards 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 mitigation measures as may be necessary to ensure consistency with the ACMP standards.

These measures were developed after considering stipulations and terms imposed in other North Slope oil and gas lease sales; fish and wildlife resource and harvest data submitted by ADF&G; and environmental data relating to air and water quality, solid and liquid waste disposal, and oil spills submitted by ADEC. Measures were also developed or modified after considering comments submitted by the public, industry, federal and state agencies, and local government. Additional project-specific mitigation measures will be imposed if and when oil and gas lessees submit 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. 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" in Chapter One of this finding. Additionally, some applicable federal and state statutes and regulations are presented in Appendix B.

Information to lessees relevant to North Slope Areawide 2001 is also presented in the "Lessee Advisories". This section contains important information to lessees and operators regarding the North Slope Areawide 2001 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.

The following abbreviations are used in these mitigation measures: 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), Division of Mining, Land and Water (DMLW), Division of Governmental Coordination (DGC), Director, Division of Oil and Gas (Director), Division of Parks and Outdoor Recreation (DPOR), National Pollutant Discharge Elimination System (NPDES), North Slope Borough (NSB), North Slope Borough Municipal Code (NSBMC), North Slope Borough Coastal Management Plan (NSBCMP), State Historic Preservation Officer (SHPO), Spill Prevention Control and Countermeasure (SPCC), and the U.S. Fish and Wildlife Service (USF&WS).

Except as indicated, the restrictions listed below do not apply to geophysical exploration on state lands; geophysical exploration activities are governed by 11 AAC 96. See lessee advisory four.

The following mitigation measures and advisories will be imposed on oil and gas activities in or on all North Slope Areawide 2001 leased lands and waterbodies as a condition of the approval of plans of operation:

## 1. General Measures

1. a. Explosives must not be detonated within, beneath, or in close proximity to fishbearing waters 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:

1 pound charge	37 feet
2 pound charge	52 feet
5 pound charge	82 feet
10 pound charge	116 feet
25 pound charge	184 feet
100 pound charge	368 feet

Specific information on the location of fishbearing waterbodies may be obtained by contacting ADF&G.

- b. The lessee will consult with the NSB prior to proposing the use of explosives for seismic surveys. The director may approve the use of explosives for seismic surveys after consultation with the NSB.
2. Except for approved off-road travel, exploration activities must be supported only by ice roads, winter trails, existing road systems or air service. Wintertime off-road travel across tundra and wetlands may be approved in areas where snow and frost depth are sufficient to protect the ground surface. Summertime off-road travel across tundra and wetlands may be authorized subject to time periods and vehicle types approved by DMLW. Exceptions may be granted by the director, DMLW, and the Director, if an emergency condition exists or if it is determined, after consulting ADF&G, that travel can be accomplished without damaging vegetation or the ground surface.
3. a. Removal of water from fishbearing rivers, streams, and natural lakes shall be subject to prior written approval by DMLW and ADF&G.
- b. Removal of snow cover from fishbearing rivers, streams, and natural lakes shall be subject to prior written approval by ADF&G. Compaction 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.
4. 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.

## 2. Facilities and Structures

5. Lessees must 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. Lessees must identify on a map or aerial photograph the largest surface area, including future expansion areas, within which a facility is to be sited or an activity is to occur. The map or photograph must accompany the plan of operations. DO&G will consult with ADF&G 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, unless no feasible and prudent alternative exists.
6. Exploration facilities, with the exception of artificial gravel islands, must be temporary and must be constructed of ice unless the Director determines that no feasible and prudent alternative exists. Re-use of abandoned gravel structures may be permitted on a case-by-case basis by the Director, after consultation with

the director, DMLW, and ADF&G. Approval for use of abandoned structures will depend on the extent and method of restoration needed to return these structures to a usable condition.

7. a. Pipelines must be located so as to facilitate the containment and cleanup of spilled hydrocarbons. Where feasible and prudent, onshore pipelines must be located on the upslope side of roadways and construction pads unless the director, DMLW, determines that an alternative site is environmentally acceptable. Wherever possible, onshore pipelines must utilize existing transportation corridors and be buried where soil and geophysical conditions permit.
- b. All pipelines, including flow and gathering lines, must be designed and constructed to provide adequate protection from water currents, storm and ice scouring, subfreezing conditions, and other hazards as determined on a case-by-case basis.
8. Pipelines shall be designed and constructed to avoid significant alteration of caribou and other large ungulate movement and migration patterns. At a minimum, above ground pipelines shall be elevated five feet, as measured from the ground to the bottom of the pipe, except where the pipeline intersects a road, pad, or a ramp installed to facilitate wildlife passage. ADNR may, after consultation with ADF&G, require additional measures to mitigate impacts to wildlife movement and migration.

### 3. Gravel mining and use

9. Gravel mining sites required for exploration and development activities will be restricted to the minimum necessary to develop the field efficiently and with minimal environmental damage. Where feasible and prudent, gravel sites must be designed and constructed to function as water reservoirs for future use. Gravel mine sites required for exploration activities must not be located within an active floodplain of a watercourse unless the director, DMLW, after consultation with ADF&G, determines that there is no feasible and prudent alternative, or that a floodplain site would enhance fish and wildlife habitat after mining operations are completed and the site is closed. Mine site development and rehabilitation within floodplains must follow the procedures outlined in McLean, R. F. 1993, *North Slope Gravel Pit Performance Guidelines*, ADF&G Habitat and Restoration Division Technical Report 93-9.
10. a. The state of Alaska discourages the use of continuous-fill causeways. Environmentally preferred alternatives for field development include use of buried pipelines, onshore directional drilling, or elevated structures. Approved causeways must be designed, sited, and constructed to prevent significant changes to nearshore oceanographic circulation patterns and water quality characteristics (e.g., salinity, temperature, suspended sediments) that result in exceedances of water quality criteria, and must maintain free passage of marine and anadromous fish.
- b. Causeways and docks shall not be located in river mouths or deltas. Artificial gravel islands and bottom founded structures shall not be located in river mouths or active stream channels on river deltas, except as provided for in (c).
- c. Each proposed structure will be reviewed on a case-by-case basis. Causeways, docks, artificial gravel islands and bottom founded structures may be permitted if the Director, in consultation with ADF&G, ADEC, and the NSB determines that a causeway or other structures are necessary for field development and that no feasible and prudent alternatives exist. A monitoring program may be required to address the objectives of water quality and free passage of fish, and mitigation shall be required where significant deviation from objectives occurs.

### 4. Prehistoric, Historic, and Archeological Sites

11. Prior to any ground disturbing activity resulting from exploration, development or production activities, the lessee must conduct an inventory of prehistoric, historic and archeological sites within the area affected by activity. The inventory must include consideration of literature provided by the NSB and local residents, documentation of oral history regarding historic and prehistoric 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 potential effects that might result from the activity. The inventory must be submitted to the Director for distribution to DPOR and the NSB for review and comment. In the event that an archeological, prehistoric or historical site or area may be adversely affected by an activity, the Director, after consulting DPOR, and the NSB, will direct the lessee as to what course of action will be necessary to avoid or minimize the adverse effect.

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 and the lessee must make every reasonable effort to preserve and protect such site, structure, or object from damage until the Director, after consulting the SHPO, has given directions as to its preservation.

#### 5. Training

12. The 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 also be designed to help personnel increase their sensitivity and understanding of community values, customs, and lifestyles in areas where they will be operating. The program must include an explanation of the applicable laws protecting cultural and historic resources. The program shall address the importance of not disturbing archeological, cultural and historic resources and provide guidance on how to avoid disturbance.

#### 6. Local Hire

13. 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.

#### 7. Subsistence Harvest Protection

14. a. Exploration, development or production operations shall be conducted in a manner that prevents unreasonable conflicts between lease related activities and subsistence activities. In enforcing this mitigation measure the division, during review of plans of operation, will work with other agencies and the public to assure that potential conflicts are identified and avoided to the fullest extent possible. Available options include alternative site selection, requiring directional drilling, seismic and threshold depth restrictions, subsea completion techniques, seasonal drilling restrictions, and the use of other technologies deemed appropriate by the Director.
- b. Prior to submitting a plan of operations for both onshore and offshore activities which have the potential to disrupt subsistence activities, the lessee shall consult with the potentially affected subsistence communities and the North Slope Borough (NSB) (collectively "parties") to discuss potential conflicts with the siting, timing, and methods of proposed operations and safeguards or mitigating measures which could be implemented by the operator to prevent unreasonable conflicts. The parties shall also discuss the reasonably foreseeable effect on subsistence activities of any other operations in the area that they know will occur during the lessee's proposed operations. Through this consultation, the lessee shall make reasonable efforts to assure that exploration, development, and production activities are compatible with subsistence hunting and fishing activities and will not result in unreasonable interference with subsistence harvests.



- c. A discussion of resolutions reached or not reached during the consultation process and plans for continued consultation shall be included in the plan of operations. The lessee shall identify who participated in the consultation and send copies of the plan to participating communities and the NSB when it is submitted to the division.
  - d. If the parties cannot agree, then any of them may request the Commissioner of DNR or his designee to assemble the parties. The commissioner may assemble the parties or take other measures to resolve conflicts among the parties.
  - e. The lessee shall notify the director of all concerns expressed by subsistence hunters during operations and of steps taken to address such concerns.
  - f. Lease-related use will be restricted when the Director determines it is necessary to prevent unreasonable conflicts with subsistence harvests.
15. No restriction of public access to, or use of, the lease area will be permitted as a consequence of oil and gas activities except in the immediate vicinity of drill sites, buildings and other related facilities. Areas of restricted access must be identified and a rationale justifying the area restriction must be included in the plan of operations.

#### 8. Title 16 Streams

16. Under Title 16 of the Alaska statutes, the measures listed below will be imposed by ADF&G below the ordinary high water mark in designated anadromous streams and fishbearing streams for activities that could block fish passage. Exceptions to these requirements, including exceptions for the use of spill containment and recovery equipment, may be allowed on a case-by-case basis. Specific information on the location of anadromous waterbodies in and near the area may be obtained from ADF&G.
- a. Alteration of river banks, except for approved permanent crossings, will be prohibited.
  - b. Except for approved stream crossings, equipment must not be operated within willow stands (*Salix* spp.).
  - c. The operation of equipment, excluding boats, in open water areas of rivers and streams will be prohibited.
  - d. Bridges are the preferred watercourse crossings in 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.

#### 9. Waste Disposal

##### 17. Solid Waste Disposal

- a. Garbage and domestic combustible refuse must be incinerated. Nonburnables must be disposed of at an approved upland site.
- b. The preferred method for disposal of muds and cuttings from oil and gas activities is by underground injection. Injection of non-hazardous oil field wastes generated during development is regulated by AOGCC through its Underground Injection Control (UIC) Program for oil and gas wells. Annular disposal of muds and cuttings associated with drilling an exploratory well is permitted by ADEC. Surface 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 the Director, in consultation with ADEC, determines that alternative disposal methods are not feasible and prudent. 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.

- c. Proper disposal of garbage and putrescible waste is essential to minimize attraction to wildlife. The lessee must use the most appropriate and efficient method to achieve this goal. The primary method of garbage and putrescible waste disposal is prompt, on-site incineration in compliance with state of Alaska air quality regulations in 18 AAC 50. The secondary method of disposal is on-site frozen storage in animal-proof containers with backhaul to an approved waste disposal facility. The tertiary method of disposal is on-site non-frozen storage in animal proof containers with backhaul to an approved waste disposal facility. Daily backhauling of non-frozen waste only must be achieved unless safety considerations prevent this.

18. Wastewater disposal:

- a. Unless authorized by NPDES or state permit, disposal of wastewater into freshwater bodies, including Class III, IV, VI, and VIII wetlands, is prohibited.
- b. Surface discharge of reserve pit fluids will be prohibited unless authorized by ADEC permit and approved by DMLW.
- c. Disposal of produced waters in upland areas, including wetlands, will be by subsurface disposal techniques. ADEC may permit alternate disposal methods if the lessee demonstrates that subsurface disposal is not feasible or prudent.
- d. Discharge of produced waters into open or ice-covered marine waters of less than 10 meters (33 feet) in depth is prohibited. The commissioner, ADEC may approve discharges into waters greater than 10 meters in depth based on a case-by-case review of environmental factors and consistency with the conditions of a state certified development and production phase NPDES permit issued for the sale area.

10. Specific Measures

19. Birds: Permanent, staffed facilities must be sited to the extent feasible and prudent outside identified brant, white-fronted goose, snow goose, tundra swan, king eider, common eider, Steller's eider, spectacled eider, and yellow-billed loon nesting and brood rearing areas.

20. Bears:

- a. Exploration and production activities must not be conducted within one-half mile of occupied grizzly bear dens, unless alternative mitigative measures are approved by ADF&G. Known den sites shall be obtained from the Division of Wildlife Conservation, ADF&G, phone 459-7213, prior to commencement of any activities. Occupied dens encountered in the field must be reported to the above, and subsequently avoided by one-half mile.
- b. Operations must avoid known polar bear dens by one mile. Known den locations shall be obtained from the US Fish & Wildlife Service (907-786-3800) prior to starting operations. New dens encountered in the field must be reported to the above, and subsequently avoided by one mile. If a polar bear should den within an existing development, off-site activities shall be restricted to minimize disturbance.
- c. For projects in close proximity to areas frequented by bears, lessees will be 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 the drillsites; (b) organize layout of buildings and work areas to minimize human/bear interactions; (c) warn personnel of bears near or on drillsites and the proper procedures to take; (d) if authorized, deter bears from the drillsite; (e) provide contingencies in the event bears do not leave the site or cannot be deterred by authorized personnel; (f) discuss proper storage and disposal of materials that may be toxic to bears; and (g) provide a systematic record of bears on the site and in the immediate area. The ADF&G has offered to assist lessees in developing educational programs and camp layout and management plans as lessees prepare their lease operations plans.

21. Waterbody Buffers:

- a. To the extent feasible and prudent, onshore facilities other docks, or road and pipeline crossings, will not be sited within 500 feet of fishbearing streams. Additionally, to the extent feasible and prudent, facilities will not be sited within one-half mile of the banks of the main channel of the Colville, Canning and Sagavanirktok, Kavik, Shaviovik, Kadleroshilik, Echooka, Ivishak, Kuparuk, Toolik, Anaktuvuk and Chandler Rivers. *Facilities will be not be sited within 500 feet of all other fishbearing waterbodies. Essential facility siting will be allowed in buffer areas in those instances where no other suitable sites are available. Facilities will not be sited within buffers unless the Director, after consulting ADF&G, determines that such facility restrictions are not feasible or prudent. Road and pipeline crossings must be aligned perpendicular or near perpendicular to watercourses.*
- b. No facilities will be sited within one-half mile of identified Dolly Varden overwintering and/or spawning areas on the Canning, Shaviovik, and Kavik rivers. Notwithstanding the previous sentence, road and pipeline crossings may only be sited within these buffers if the lessee demonstrates to the satisfaction of the Director of Oil & Gas, ADNIR, and the Director of Habitat, ADF&G, in the course of obtaining their respective permits, that either (1) the scientific data indicate the proposed crossing is not within an overwintering and/or spawning area; or (2) the proposed road or pipeline crossing will have no significant adverse impact to Dolly Varden overwintering and/or spawning habitat.

Lessee Advisories

1. Local Ordinance

Lessees are advised that the NSB Assembly has adopted a comprehensive plan and land management regulations under Title 29 of the Alaska Statutes (AS 29.40.020-040). The NSB regulations require borough approval for all proposed uses, development and master plans. The NSBCMP policies are included as part of the NSB zoning regulations (19.70.060) and all NSB permit approvals will require the proposal to be substantially consistent with these policies. The NSB likely will aggressively assert its land management powers to the fullest extent permissible under law to address any outstanding concerns regarding impacts to the area's fish and wildlife species and to habitat and subsistence activities.

Restricting access to and use of fish camps and other subsistence use areas defined in the NSB Traditional Land Use Inventory, may violate NSBCMP and NSBMC subsistence harvest protection and land use regulations. Lessees are advised to consult with the NSB Planning Department and local communities during planning of operations.

To comply with NSB Policy regarding the mining of beaches, barrier islands, or offshore shoals, in those circumstances where no feasible and prudent alternatives exist, substantial alteration of shoreline dynamics is prohibited.

2. Community Participation in Operations Planning

Lessees are encouraged to bring one or more residents of communities in the area of operations into their planning process. Local communities have a unique understanding of their environment and community activities. Involving local community residents in the earliest stages of the planning process for oil and gas activities can be beneficial to the industry and to the community. Community representation on management teams developing plans of operation, oil spill contingency plans, and other permit applications can help communities understand permitting obligations and help industry to understand community values and expectations for oil and gas operations being conducted in and around their area.

3. Wetlands Identification

The wetlands referred to in Mitigation Measures 5, and 19 are based on a classification system developed by Bergman et al (USF&WS Resource Publication 129, 1977 Waterbirds and Their Wetland Resources in Relation to Oil Development at Storkersen Point, Alaska). Lessees are advised that the state may adopt or approve the use of an alternative wetlands classification system in the future, however, the protective nature of

the wetlands mitigation measures developed for this and other oil and gas lease sales will remain consistent regardless of the wetlands classification ultimately selected.

4. Geophysical Activity

Except as indicated, the mitigation measures listed above do not apply to geophysical exploration on state lands; geophysical exploration activities are governed by 11 AAC 96. In conducting offshore geophysical surveys, neither the lessees or their agents will use explosives in open water areas.

Lessees may or may not propose operations which include seismic surveys in the North Slope Areawide 2001 lease area, and may not therefore have any control over those activities. However, if they are post-lease seismic surveys conducted by or contracted by the lessee, they may be considered lease-related activities. Consequently, restrictions on geophysical exploration permits, whether lease related or not, will depend on the size, scope, duration, and intensity of the project. They will also depend on the extent of effects on important species, specifically marine mammals.

Copies of the non-proprietary portions of all Geophysical Exploration permit applications will be made available to the NSB, AEWC, and potentially affected subsistence communities for comment.

5. Bird, Fish, and Marine Mammal Protection

- a. Lessees shall comply with the Recommended Protection Measures for Spectacled Eiders developed by the USF&WS to ensure adequate protection of spectacled eiders during the nesting and brood rearing periods. Lessees shall comply with the Recommended Protection Measures for Steller's eider once they are developed by the USFWS.
- b. Peregrine falcon nesting sites are known to occur in the North Slope Areawide 2001 area. Lessees are advised that disturbing a peregrine falcon nest violates federal law. Lessees are required to comply with the federal resource recovery plan for the arctic peregrine falcon.
- c. To minimize impacts on Dolly Varden (arctic char) overwintering areas, permanent, staffed facilities must be sited to the extent feasible and prudent outside identified Dolly Varden (arctic char) overwintering areas.
- d. Lessees are advised that they must comply with the provisions of the Marine Mammal Protection Act of 1972 as amended.

6. Aircraft Restrictions

In order to protect species that are sensitive to noise or movement, horizontal and vertical buffers will be required, consistent with aircraft, vehicle and vessel operations regulated by NSB Code B 19.70.050(l)(1) which codifies NSBCMP policy 2.4.4.(a). Lessees are encouraged to apply the following provisions governing aircraft operations in and near the sale area:

- a. From June 1 to August 31, aircraft overflights must avoid identified brant, white-fronted goose, tundra swan, king eider, common eider, and yellow-billed loon nesting and brood rearing habitat, and from August 15 to September 15, the fall staging areas for geese, tundra swans, and shorebirds, by an altitude of 1,500 feet, or a lateral distance of one mile.
- b. To the extent feasible and prudent, all aircraft should maintain an altitude of greater than 1,500 feet or a lateral distance of one mile, excluding takeoffs and landings, from caribou and muskoxen concentrations. A concentration means numbers of animals in excess of the general density of those animals found in the area.
- c. Human safety will take precedence over flight restrictions.

7. Oil Discharge Prevention and Contingency Plans (C-Plans)



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;

- a. methods for detecting, responding to, and controlling blowouts;
  - b. the location and identification of oil spill cleanup equipment;
  - c. the location and availability of suitable alternative drilling equipment;
  - d. a plan of operations to mobilize and drill a relief well;
8. a. To conform with ADEC requirements, 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 Discharge Prevention and Contingency Plans (C-Plans).
- b. Buffer zones of not less than 500 feet will be required to separate onshore oil storage facilities (with a capacity greater than 660 gallons) and sewage ponds from freshwater supplies, streams, and lakes and key wetlands unless the Director after consultation with ADEC, determines that such a requirement is not feasible or prudent. Reserve pits, if used must be impermeable and otherwise fully contained through diking or other means. Exception – ADEC.

9. Sensitive Areas

Lessees are advised that certain areas are especially valuable for their concentrations of marine birds, marine mammals, fishes, or other biological resources; cultural resources; and for their importance to subsistence harvest activities. The following areas must be considered when developing plans of operation. Identified areas and time periods of special biological and cultural sensitivity include:

- a. the Canning River Delta, January-December;
  - b. the Colville River Delta, January-December;
  - c. the Sagavanirktok River delta, January-December.
10. Lessees are encouraged in planning and design activities to consider the recommendations for oil field design and operations contained in the final report to the Alaska Caribou Steering Committee: Cronin, M. et al, 1994. "Mitigation of the Effects of Oil Field Development and Transportation Corridors on Caribou." LGL Alaska Research Associates, Inc., July.

11. Access

No lease facilities or operations may be located so as to block access to, or along, navigable and public waters as defined by AS 38.05.965(13) and (17).

12. Hydrocarbon Emissions

- 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.