

PROPOSED NORTH SLOPE FOOTHILLS AREAWIDE OIL AND GAS LEASE SALES

Alaska Coastal Management Program

Consistency Evaluation

January 13, 2011



Alaska Department of
**NATURAL
RESOURCES**
DIVISION OF OIL & GAS

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Prepared by:
Alaska Department of Natural Resources
Division of Oil and Gas

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Table of Contents

	Page
A. Introduction.....	1
B. Plans of Operations	2
C. Public Comment.....	4
D. Alaska Coastal Management Program Standards.....	8
1. Coastal Development Standard (11 AAC 112.200)	8
a. Statement of the Standard.....	8
b. Evaluation	8
2. Natural Hazard Areas Standard (11 AAC 112.210)	10
a. Statement of the Standard.....	10
b. Evaluation	11
3. Coastal Access Standard (11 AAC 112.220).....	11
a. Statement of the Standard.....	11
b. Evaluation	12
4. Energy Facilities Standard (11 AAC 112.230).....	12
a. Statement of the Standard.....	12
b. Evaluation	13
5. Utility Routes and Facilities Standard (11 AAC 112.240)	14
a. Statement of the Standard.....	14
b. Evaluation	15
6. Timber Harvesting and Processing Standard (11 AAC 112.250).....	16
a. Statement of the Standard.....	16
b. Evaluation	16
7. Sand and Gravel Extraction Standard (11 AAC 112.260).....	16
a. Statement of the Standard.....	16
b. Evaluation	16
8. Subsistence Standard (11 AAC 112.270)	17
a. Statement of the Standard.....	17
b. Evaluation	17
9. Transportation Routes and Facilities Standard (11 AAC 112.280).....	18
a. Statement of the Standard.....	18
b. Evaluation	18
10. Habitats Standard (11 AAC 112.300).....	19
a. Statement of the Standard.....	19
b. Evaluation	21
11. Air, Land, and Water Quality Standard (11 AAC 112.310).....	22
a. Statement of the Standard.....	22
b. Evaluation	23
12. Historic, Prehistoric, and Archaeological Resources Standard (11 AAC 112.320)	23
a. Statement of the Standard.....	23
b. Evaluation	23
13. Sequencing Process to Avoid, Minimize, or Mitigate Standard (11 AAC 112.900)	23
a. Statement of the Standard.....	23
b. Evaluation	24
14. Definitions (11 AAC 112.990).....	25
E. Conclusion.....	28
F. References	28

Table of Contents (continued)

	Page
Appendix A. Mitigation Measures and Other Regulatory Requirements (Lessee Advisories)	30
A. Mitigation Measures	29
1. Facilities and Operations	29
2. Habitat, Fish and Wildlife	30
3. Subsistence and Sport Harvest Activities	32
4. Fuel, Hazardous Substances, and Waste	33
5. Access	34
6. Prehistoric, Historic, and Archaeological Sites	34
7. Local Hire, Communication, and Training	35
8. Definitions	35
B. Other Regulatory Requirements (Lessee Advisories)	36
1. Alaska Department of Natural Resources, Division of Coastal and Ocean Management	36
2. Alaska Department of Environmental Conservation	36
3. Alaska Department of Fish and Game	36
4. Alaska Department of Natural Resources, Office of History and Archaeology	37
5. Alaska Department of Labor and Workforce Development	37
6. U.S. Army Corps of Engineers	37
7. Pipeline and Hazardous Materials Safety Administration	38
8. U.S. Fish and Wildlife Service and National Marine Fisheries Service	38
9. North Slope Borough	39
Appendix B: Sample Competitive Oil and Gas Lease	40

List of Maps

Map		Page
Map 1.1.	Tract map of the proposed North Slope Foothills Areawide lease sale area	5
Map 1.2.	Land ownership in the proposed North Slope Foothills Areawide lease sale area	6
Map 1.3.	Alaska Coastal Management Program coastal zone boundary within the proposed North Slope Foothills lease sale area	7

A. Introduction

The Alaska Department of Natural Resources (ADNR), Division of Oil and Gas (DO&G) is proposing to offer for lease all available state-owned acreage in North Slope Foothills Areawide oil and gas lease sales from 2011-2020. DO&G is reviewing the proposed lease sales for consistency with the Alaska Coastal Management Program (ACMP). This document provides a review of consistency of the lease sales with the ACMP, and incorporates by reference the *Proposed North Slope Foothills Areawide Oil and Gas Lease Sale – Preliminary Finding of the Director* (Preliminary Finding), issued January 13, 2011.

In authorizing uses or activities in the coastal area, the resource management agency (DO&G in this case) must determine that the uses or activities are consistent with the applicable enforceable policies of any approved district coastal management plans in effect and with statewide standards (11 AAC 112.020). There is currently no approved district plan in effect for the North Slope Borough (NSB) within which the proposed lease sale area lies.

The area of the proposed North Slope Foothills Areawide lease sales contains approximately 7.6 million acres in 1,347 tracts ranging in size from 1,280 to 5,760 acres. Approximately 3.2 million of these acres are either Native-owned or Native-selected, and will not be included in the proposed lease sales. The area consists of state-owned lands lying between the National Petroleum Reserve-Alaska (NPR-A) and the Arctic National Wildlife Refuge (ANWR), south of the Umiat Baseline and north of the Gates of the Arctic National Park and Preserve (Map 1.1; Map 1.2). The proposed lease sale area is adjacent to and north of the community of Anaktuvuk Pass. The communities of Barrow, Kaktovik, and Nuiqsut are nearby, but outside of the proposed lease sale area.

The proposed North Slope Foothills Areawide oil and gas lease sale area contains areas and watersheds that lie within Alaska's coastal zone. The boundary of the coastal zone extends inland along certain river corridors, including the Colville, Sagavanirktok, Ivishak, Nanushuk, Echooka, Saviukviayak, Itkillik, Anaktuvuk, Kanayut, Lupine, Ribdon and Canning rivers; portions of the Chandler River; and Accomplishment, Upper Section, Lower Section, Flood, Cobblestone, and May creeks (Map 1.3). Lakes are infrequent, but many swift rivers originate in the Brooks Range to the south, cross through the foothills, and occasionally braid across gravel flats. The Brooks Range, located directly south of the proposed lease sale area, is a west-to-east trending range, which creates the watershed divide for several large river systems (Hall 1984).

This consistency review for the proposed North Slope Foothills areawide oil and gas lease sales is based on applicable statutes and regulations, facts that are known and material to this consistency review, and reasonably foreseeable significant effects of the lease sales. In reviewing this proposal for consistency with the statewide standards of the ACMP, DO&G has conditioned lease issuance with mitigation measures and lessee advisories to ensure that the lease issuance is consistent with the statewide standards of the ACMP.

AS 46.40.094 allows phasing of consistency reviews for a use or activity if, at the time the proposed use or activity is initiated, there is insufficient information to evaluate and render a consistency determination on the entirety of the proposed use or activity; the proposed use or activity is capable of proceeding in discrete phases based upon developing information that was not available to the project applicant at the time of the previous phase; and each subsequent phase of the proposed use or activity is subject to discretion to implement alternative decisions based upon the developing information. Oil and gas activities may be separated into three distinct phases: lease issuance, exploration, and development/production. The beginning phase of oil and gas activities is lease issuance. This consistency determination is for the lease sale phase.

The agency responsible for the consistency determination for the particular phase may, in its discretion, limit the consistency review to that particular phase if, but only if:

- A) the agency or another state agency must carry out a subsequent consistency review and make a consistency determination before a later phase may proceed; and,
- B) the agency responsible conditions its consistency determination for that phase on a requirement that a use or activity authorized in a subsequent phase be consistent with the Alaska Coastal Management Program (AS 46.40.094(b)).

It should be noted that “speculation concerning future development activities that will be subject to independent permitting requirements is not necessary at the time a decision is made to dispose of state land or an interest in state land” (SB 308 [Eighteenth Legislature] Section 1[8]; Ch. 38 SLA 1994). At the initial disposal stage, there is insufficient information to render a consistency determination for future exploration and development/production phases, but each of these subsequent phases is subject to alternative decisions on how or when best to proceed with a project based upon this developing information.

At the disposal phase, it cannot reasonably be foreseen whether developable resources will be discovered that would result in coastal development. It is unknown whether any leases will be sold; for which tracts leases will be sold; whether any exploration, development, production, or transportation will be proposed; and if it is, the specific location, type, size, extent, and duration of those activities. If leases are sold, and if, subsequently, specific projects, activities, and site locations are proposed, these will be reviewed for consistency with the ACMP (11 AAC 112) based on developing information gathered during the previous phases. Before they may commence, any projects or activities proposed for exploration, development, production, or transportation phases subsequent to leasing must be found consistent with the ACMP, as well as all enforceable policies of any approved district plans in effect for the affected coastal district. As mentioned above, there is no approved district coastal management plan in effect for the NSB at this time.

Issuance of an oil and gas lease does not authorize the use of, or approve activities on, a lease. A plan of operations must be approved before most operations may be undertaken on or in the leased area (see below). In addition, all oil and gas activities subsequent to leasing (exploration, development, production, and transportation) are subject to numerous federal, state, and local laws, regulations, policies, and ordinances, with which the lessee is obligated to comply. Chapter Seven of the Preliminary Finding (incorporated by reference) discusses many of these agencies and regulations, and provides an overview of the broad spectrum of authority various government agencies have to prohibit, regulate, and condition activities related to oil and gas. The various state, federal, and local regulatory agencies have different roles in the oversight and regulation of oil and gas activities, although some agencies may have overlapping authorities. Important laws and regulations applicable to oil and gas activities are found in Appendix B of the Preliminary Finding.

B. Plans of Operations

During the exploration and development/production phases, lessees submit a proposed plan of operations for DO&G approval. The requirement for a plan of operations (11 AAC 83.158 and paragraph 10 of the lease), described in Chapter Seven, Section A(2) of the Preliminary Finding, is an important consideration concerning consistency of the North Slope Foothills Areawide lease sales with all of the ACMP statewide standards. When a plan of operations is submitted for approval, agency staff review information developed from the previous phase along with new technological developments and other site-specific data and implement any needed alternative mitigation measures when determining whether the plan of operations approval request complies with the ACMP. The requirement for a plan of operations ensures that the various resources and uses identified in 11 AAC 112 are considered and protected at each phase, when a specific project or activity is permitted. Plans of operations must identify specific measures, design criteria, and construction methods and standards to be employed to comply with North Slope Foothills Areawide mitigation measures,

including the statewide standards and the enforceable policies of an affected coastal district if a plan is in effect. Additional mitigation measures may be required to ensure consistency with the ACMP. Applications for required state or federal agency authorizations or permits must be submitted with plans of operations. Parties who want to conduct geophysical exploration activities must also submit a request for DO&G approval of a Miscellaneous Land Use Permit (MLUP) prior to implementing all related activities.

Plans of operations must comply with the ACMP consistency review process, including public notice requirements, and must be found consistent with the ACMP before lessees may begin any projects or activities. By requiring that lessees obtain prior approval of the details of their activities before any lease activities may occur, plans of operations:

- protect fish and wildlife populations and habitats, and protect subsistence, commercial, and sport harvest activities which may be other water-dependent or water related uses and activities (11 AAC 112.200);
- ensure that appropriate measures are taken to protect public safety, services, and the environment from potential damage by requiring that lessees identify specific measures, design criteria, and construction methods and standards to be employed (11 AAC 112.210);
- ensure that appropriate measures are taken in the siting, design, construction, and operation of proposed activities to maintain public access to, from, and along coastal waters (11 AAC 112.220);
- protect local environments and uses by ensuring that siting of major energy facilities is consistent with the ACMP (11 AAC 112.230);
- ensure that utility routes and facilities are sited appropriately to account for drainage patterns, wildlife transit, and access (11 AAC 112.240);
- protect coastal waters, intertidal areas, barrier islands, and spits from unnecessary disturbances from sand and gravel extraction (11 AAC 112. 260);
- avoid or minimize impacts to subsistence uses of coastal resources (11 AAC 112.270);
- ensure that transportation routes and facilities are sited appropriately to account for drainage patterns, wildlife transit, and access (11 AAC 112.280);
- avoid, minimize, or mitigate adverse impacts to the eight habitats identified, and to competing uses if those uses are determined to be in competition with a proposed use (11 AAC 112.300);
- ensure that appropriate measures are taken to protect air, land, and water quality by complying with Alaska Department of Environmental Conservation (ADEC) requirements (11 AAC 112.310);
- protect historic, prehistoric, and archaeological resources by ensuring compliance with applicable state statutes and regulations (11 AAC 112.320); and,
- ensure that adverse impacts are first avoided, then minimized where avoidance is not practicable, and then mitigated if neither avoidance nor minimization is practicable (11 AAC 112.900).

Although this consistency review is for the lease sale phase, it does consider reasonably foreseeable cumulative effects of exploration, development, production, and transportation of oil and gas on the sale area, including effects on subsistence uses, fish and wildlife habitat and populations and their

uses, and historic and cultural resources (AS 38.05.035(g)(vi)), as discussed in the companion Preliminary Finding.

Following receipt and consideration of comments on this consistency review, DO&G will issue a proposed consistency determination and final consistency determination at least 90 days before the lease sale.

C. Public Comment

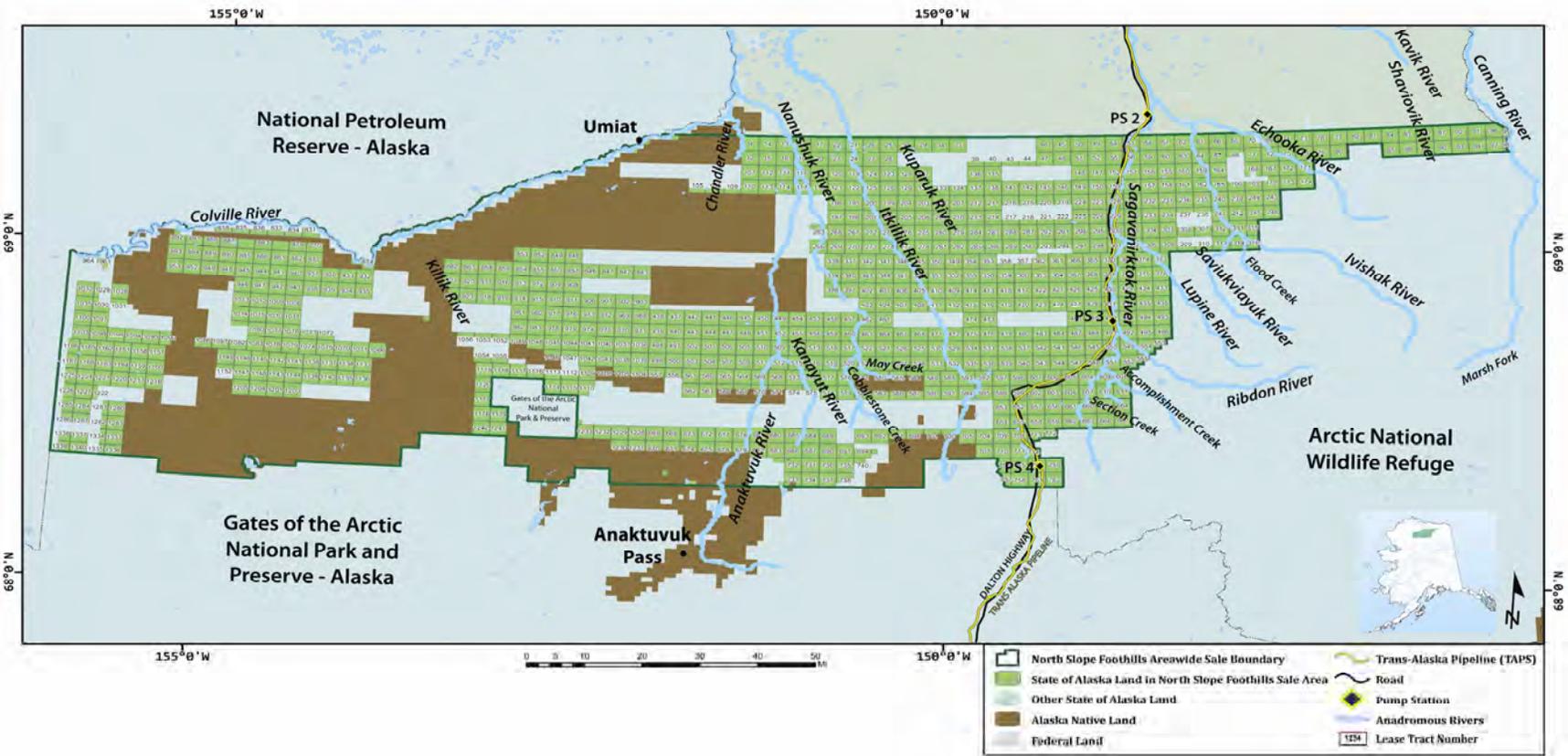
Members of the public, government agencies, environmental organizations, industry, and other interested parties are invited to comment in writing on any part of this consistency review. Comments that contend that the proposed North Slope Foothills Areawide lease sales are inconsistent with an enforceable policy of the ACMP must identify the enforceable policy and explain how the proposed lease sales are inconsistent with that standard (11 AAC 110.510(b)).

Comments must be received by March 25, 2011 in order to be considered and must be sent to the following address:

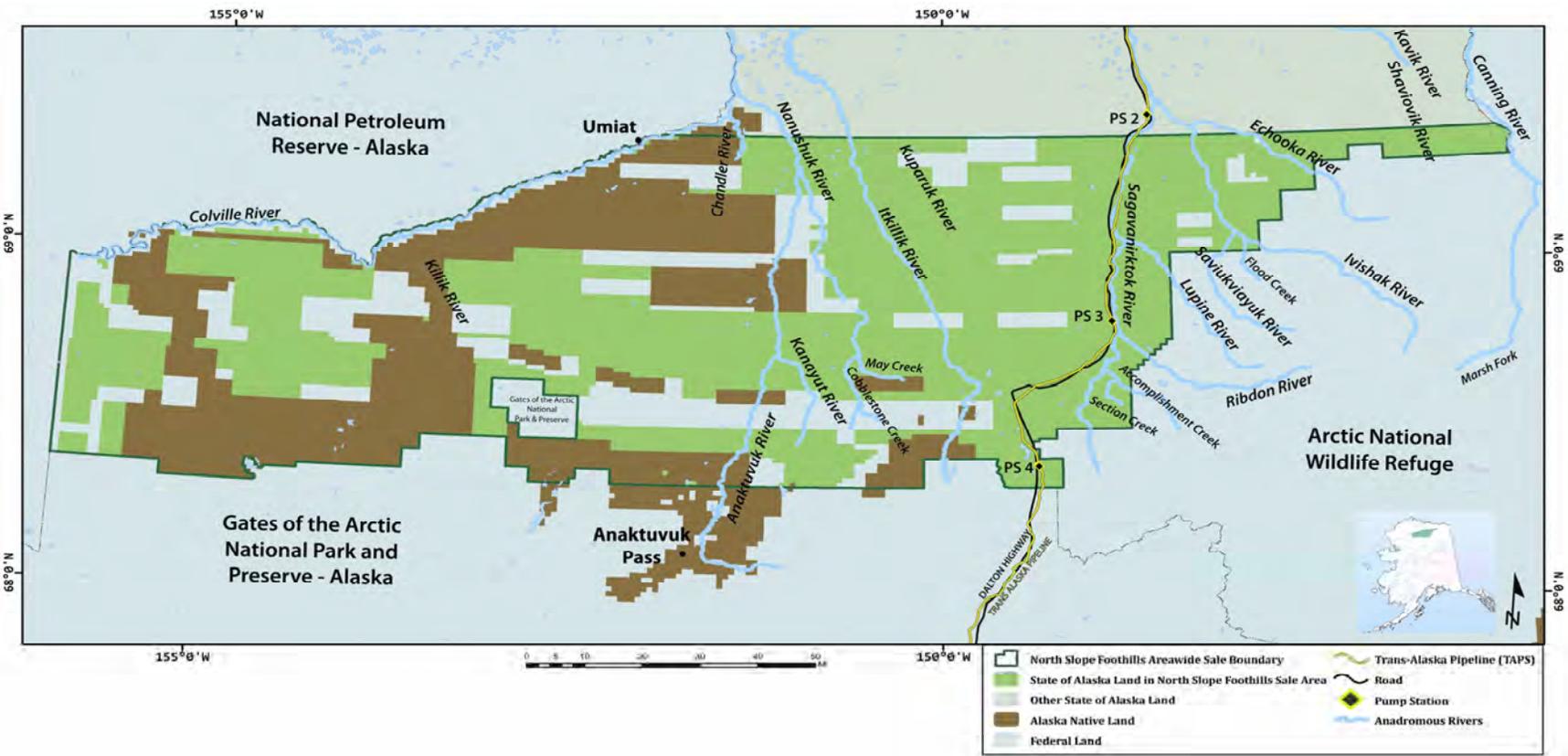
Division of Oil and Gas
550 W. 7th Avenue, Suite 800
Anchorage, AK 99501-3560
ATTN: Susan G. Browne

Comments may also be submitted via courier to the address above, by fax (907-269-8938), or by email (susan.g.browne@alaska.gov).

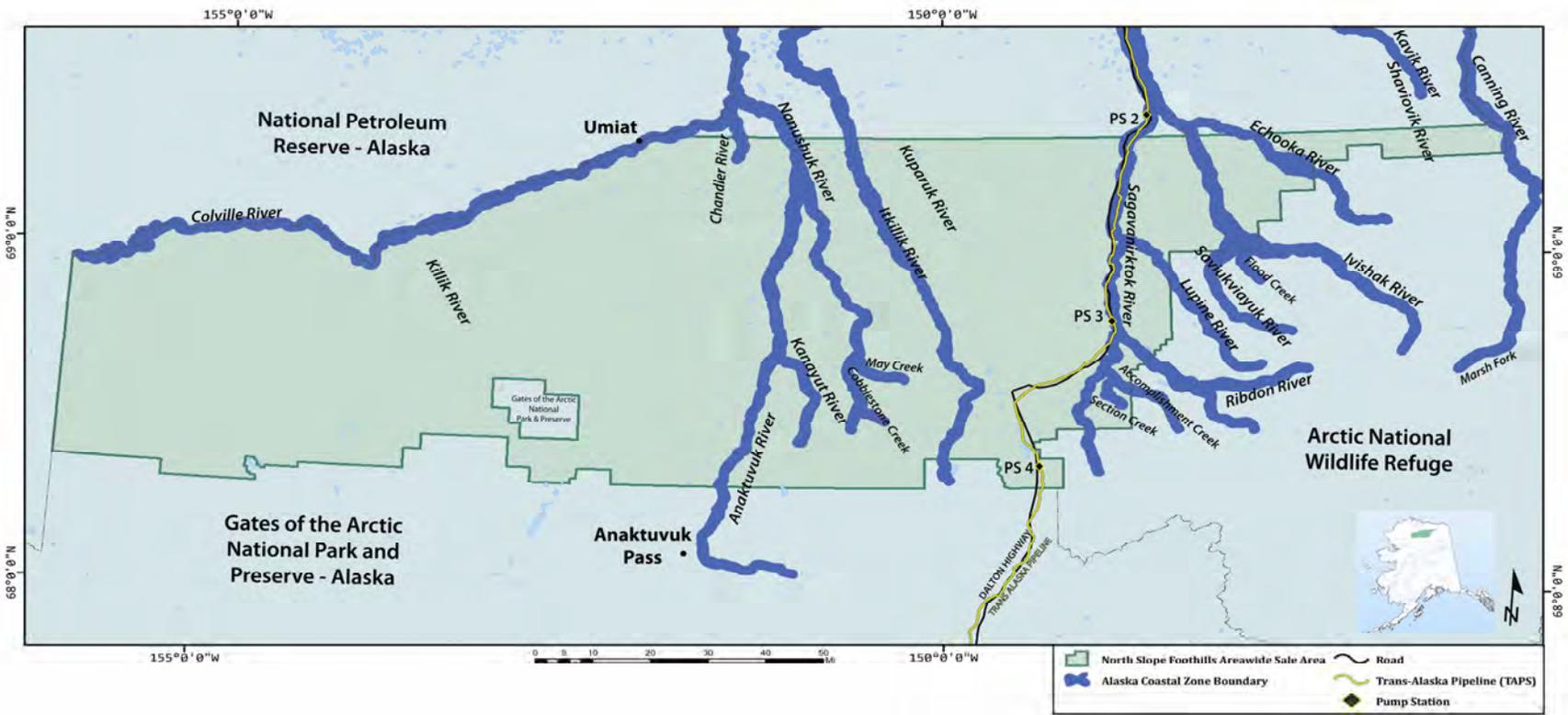
After careful consideration of all comments received by the comment deadline, DO&G will issue a proposed consistency determination. Within five days after DO&G issues the proposed consistency determination, a resource agency, applicant, or affected coastal resource district that does not concur with the proposed consistency determination may request an elevation to the Commissioner of ADNR of the proposed consistency determination under 11 AAC 110.600.



Map 1.1. Tract map of the proposed North Slope Foothills Areawide lease sale area.



Map 1.2. Land ownership in the proposed North Slope Foothills Areawide lease sale area.



Map 1.3. Alaska Coastal Management Program coastal zone boundary within the proposed North Slope Foothills lease sale area.

D. Alaska Coastal Management Program Standards

Following is an evaluation of the consistency of the proposed North Slope Foothills Areawide oil and gas lease sales with the statewide standards of the ACMP. However, at the lease sale phase, **there are no specific projects, activities, or site locations being proposed at this phase, and it is unknown if any projects, activities, or site locations will be proposed subsequent to leasing.**

Below, each statewide standard is presented, followed by an evaluation of how proposed mitigation measures will ensure that the proposed North Slope Foothills Areawide oil and gas lease sales will be consistent with the standard. Mitigation measures and lessee advisories proposed for this lease sale phase are found in Appendix A, and a sample lease form is found in Appendix B.

1. Coastal Development Standard (11 AAC 112.200)

a. Statement of the Standard

The statewide standard is as follows:

- (a) In planning for and approving development in or adjacent to coastal waters, districts and state agencies shall manage coastal land and water uses in such a manner that those uses that are economically or physically dependent on a coastal location are given higher priority when compared to uses that do not economically or physically require a coastal location.
- (b) Districts and state agencies shall give, in the following order, priority to
 - (1) water-dependent uses and activities;
 - (2) water-related uses and activities; and
 - (3) uses and activities that are neither water-dependent nor water-related for which there is no practicable inland alternative to meet the public need for the use or activity.
- (c) The placement of structures and the discharge of dredged or fill material into coastal water must, at a minimum, comply with the standards contained in 33 C.F.R. Parts 320 - 323, revised as of July 1, 2003.

b. Evaluation

This standard requires that uses that are economically or physically dependent on a coastal location be given a higher priority than those that are not. The standard establishes a priority for water-dependent uses and activities, water-related uses and activities, and uses and activities which are neither water-dependent nor water-related. Water-dependent activities are given priority. "Water-dependent" means a use or activity that can be carried out only on, in, or adjacent to a water body because the use requires access to the water body (11 AAC 112.990 (31)). Water-related activities are given a second priority. "Water-related" means a use or activity that is not directly dependent upon access to a water body, but which provides goods or services that are directly associated with water-dependence and which, if not located adjacent to a water body, would result in a public loss of quality in the goods or services offered (11 AAC 112.990 (32)). Third priority is given to uses and activities that are neither water-dependent nor water-related for which there is no practicable inland alternative to meet the public need for the use or activity.

Some oil and gas deposits may be located under a body of water in the coastal zone of the North Slope Foothills Areawide. Thus, some activities subsequent to North Slope Foothills lease sales may be carried out on, in, or adjacent to, the water body in order to access the water body's underlying oil and gas resources. It may be possible to reach such deposits from upland locations by directional drilling. However, there are physical limitations which restrict the obtainable offset distances. Considerations include the depth of the deposit and the distance to the nearest feasible upland drill site, the geology of the area, and the type of rock that must be drilled. These limitations generally dictate that a well site must be located as close to the deposit as possible, adjacent to the water body, and not significant distances upland or away from the deposit.

Oil and gas activities that are carried out on or in a water body to access the water body's underlying oil and gas resources, and directionally drilled wells on upland sites, are "water-dependent" as defined by 11 AAC 112.990(31). As a result, they are given priority under 11 AAC 112.200.

Other upland activities, except those such as port facilities and docks which require access to water and are water-dependent, may, depending upon the specific activity or use, be water-related (11 AAC 112.200(b)(2)) or neither water-related nor water-dependent, but for which there is no practicable inland alternative to meet the public need for the use or activity (11 AAC 112.200(b)(3)). Upland oil and gas deposits must be reached from surface locations reasonably overlying the deposit or from a location from which the deposit can reasonably be reached by directional drilling. Upland sites for drilling and other support activities outside such locations, that may be further inland or away from the deposit, are not practicable for this type of activity (11 AAC 112.990(18)).

This standard also requires that placement of structures and discharge of dredged or fill material into coastal waters must meet federal requirements and permits issued by the U.S. Army Corps of Engineers. Standard (c) will specifically be applied to an activity if and when a structure is actually being sited or discharges are proposed at the exploration, development, or production stages. Lessees and any future activities will have to comply with all applicable state and federal laws including 11 AAC 112.200(c), and will have to go through separate consistency reviews.

Granting oil and gas leases in the lease sale area will not preempt other uses of the area. The state reserves the right to establish or grant easements or rights-of-way on the leased land as well as the right to manage and dispose of the state's interests, if any, in the surface of the leased area or any state-owned interests therein by grant, lease or permit to third parties. All leases are subject to applicable local, state and federal laws, rules and regulations, including 33 CFR 320-323.

Several proposed mitigation measures address conflicts with other uses. Mitigation A(1)(a) requires that a plan of operations describe efforts to minimize impacts on residential, commercial, and recreational areas, Native allotments and subsistence use areas. The associated plan of operations must describe the lessee's plans to minimize adverse impacts to waters and lands of the coastal zone. This measure will ensure that if specific projects, activities, and site locations are proposed, they will be consistent with the ACMP.

Mitigation Measures A(3)(a)(i)-(iv) protect subsistence activities and avoid conflicts with subsistence uses by requiring lessees to make reasonable efforts to ensure that coastal development by exploration, development, and production activities are compatible with subsistence activities and will not result in unreasonable interference with access to, from, and along coastal waters that are used for subsistence.

Mitigation Measure A(3)(b) requires that traditional and customary access to subsistence areas be maintained unless reasonable alternative access is provided. This measure protects traditional and customary access to subsistence areas and avoids conflicts with subsistence uses by requiring that access to subsistence areas be maintained, and by requiring consultation with the NSB, nearby communities, and Alaska Native organizations in identifying and contacting local subsistence users.

Mitigation Measure A(3)(d) prohibits siting of permanent facilities within the Chandler, Nanushuk, Itkillik, Kuparuk, and Anaktuvuk River valleys unless the lessee demonstrates to the satisfaction of the Director of DO&G, in consultation with the local borough, that the development will not preclude reasonable subsistence user access to caribou resources. By limiting where permanent facilities may be sited, this measure protects access to, from, and along coastal waters.

Mitigation Measure A(5)(b) specifically prohibits restricting public access, except in the immediate vicinity of drill sites, buildings, and other related facilities. It prohibits locating facilities that block access to or along navigable or public waters. This measure protects subsistence and sport harvest activities by requiring that public access to, and use of, the lease area be maintained, and by requiring that facilities and operations not be located so as to block access to or along navigable or public waters.

2. Natural Hazard Areas Standard (11 AAC 112.210)

a. Statement of the Standard

The statewide standard is as follows:

- (a) In addition to those identified in 11 AAC 112.990, the department¹, or a district in an approved district plan, may designate other natural processes or adverse conditions that present a threat to life or property in the coastal area as natural hazards. Such designations must provide the scientific basis for designating the natural process or adverse condition as a natural hazard in the coastal area, along with supporting scientific evidence for the designation.
- (b) Areas likely to be affected by the occurrence of a natural hazard may be designated as natural hazard areas by a state agency or, under 11 AAC 114.250(b), by a district.
- (c) Development in a natural hazard area may not be found consistent unless the applicant has taken appropriate measures in the siting, design, construction, and operation of the proposed activity to protect public safety, services, and the environment from potential damage caused by known natural hazards.
- (d) For purposes of (c) of this section, “appropriate measures in the siting, design, construction, and operation of the proposed activity” means those measures that, in the judgment of the coordinating agency, in consultation with the department’s Division of Geological and Geophysical Surveys, the Department of Commerce, Community, and Economic Development as state coordinating agency for the National Flood Insurance Program under 44 C.F.R. 60.25 and other local and state agencies with expertise,
 - (1) satisfy relevant codes and safety standards; or
 - (2) in the absence of such codes and standards;

¹ In the statement of the standard, “department” means ADNDR.

- (A) the project plans are approved by an engineer who is registered in the state and has engineering experience concerning the specific natural hazard; or
- (B) the level of risk presented by the design of the project is low and appropriately addressed by the project plans.

b. Evaluation

This standard addresses siting, design, construction, and operations in areas that have been designated as natural hazards areas by ADNR or by a district in an approved district plan. ADNR has not designated any natural hazard areas for the proposed North Slope Foothills lease sale area, and there is currently no approved district plan in effect for the NSB.

However, the Preliminary Finding does address natural hazards. The primary natural hazards that may affect development in or near the proposed lease sale area include faults and earthquakes, permafrost and frozen-ground phenomena, mass movements, river erosion, flooding, and slope movements. These hazards could impose constraints to exploration, production, and transportation activities associated with possible petroleum development, and should be considered before any siting, design, and construction of facilities.

Oil and gas leases give the lessee the exclusive right to drill for, extract, and dispose of oil, gas and associated substances in or under the leases, therefore lessees will have a right to the oil and gas deposits under their leases. If lessees propose specific projects, the U. S. Geological Survey (USGS) seismic hazard maps, available on the USGS website, are incorporated into the International Building Code for establishing the seismic design values for a selected location (USGS 2007). Lessees must comply with all applicable local, state, and federal codes, statutes, and regulations, as amended. Design parameters, including concrete armoring, berm construction, and coastal facility setbacks, mitigate the effects of ice push and are similar to those employed to resist sea ice and coastal erosion forces. Additional precautions can be taken to identify and accommodate such site-specific conditions as unstable ground, flooding, and other localized hazards. Proper siting, design, construction, and engineering will minimize the risks of these natural processes.

Mitigation measures, lessee advisories, and other regulatory protections address geologic hazards in the lease sale area. Mitigation Measures A(1)(f)-(g) ensure that appropriate measures are taken in the siting, design, construction, and operation of proposed activities to protect public safety, services, and the environment from potential damage by requiring that wherever possible, onshore pipelines must be buried where soil and geophysical conditions permit; and by requiring that all pipelines, including flow and gathering lines, be designed, constructed, and maintained to ensure integrity against climatic conditions, geophysical hazards, corrosion, water currents, storm and ice scouring, subfreezing conditions, and other hazards.

Proposed lessee advisories provide notification to lessees of additional requirements from seven different local, state, and federal agencies. All lessees are required to comply with all applicable local, state, and federal codes, statutes, and regulations. These additional requirements also help to protect the public, services, and the environment from potential damage, and ensure that any project or activity that may be proposed is consistent with the statewide natural hazards standard.

3. Coastal Access Standard (11 AAC 112.220)

a. Statement of the Standard

The statewide standard is as follows:

Districts and state agencies shall ensure that projects maintain and, where appropriate, increase public access to, from, and along coastal water.

b. Evaluation

This standard protects and improves public access to coastal waters. The following mitigation measures, lessee advisories, and other regulatory protections will ensure that if any activities are proposed subsequent to leasing, they will be consistent with the ACMP.

Mitigation Measure A(1)(a) requires a plan of operations describe efforts to minimize impacts on residential, commercial, and recreational areas, Native allotments, and subsistence use areas. This measure ensures that if specific projects, activities, and site locations are proposed, access to, from, and along coastal waters will be maintained.

Mitigation Measures A(3)(a)(i)-(iv) protect subsistence activities and avoid conflicts with subsistence uses by requiring lessees to make reasonable efforts to ensure that exploration, development, and production activities are compatible with subsistence activities and will not result in unreasonable interference with access to, from, and along coastal waters.

Mitigation Measure A(3)(b) requires that traditional and customary access to subsistence areas be maintained unless reasonable alternative access is provided. This measure protects traditional and customary access to subsistence areas and avoids conflicts with subsistence uses by requiring that access to subsistence areas be maintained, and by requiring consultation with the NSB, nearby communities, and Alaska Native organizations in identifying and contacting local subsistence users.

Mitigation Measure A(3)(d) prohibits siting of permanent facilities within the Chandler, Nanushuk, Itkillik, Kuparuk, and Anaktuvuk River valleys unless the lessee demonstrates to the satisfaction of the Director of DO&G, in consultation with the local borough, that the development will not preclude reasonable subsistence user access to caribou resources. By limiting where permanent facilities may be sited, this measure protects access to, from, and along coastal waters.

Mitigation Measure A(5)(b) specifically prohibits restricting public access, except in the immediate vicinity of drill sites, buildings, and other related facilities. It prohibits locating facilities that block access to or along navigable or public waters. Therefore, this measure protects public access to, and use of, coastal areas by requiring that facilities and operations not be located so as to block access to or along navigable or public waters.

4. Energy Facilities Standard (11 AAC 112.230)

a. Statement of the Standard

The statewide standard is as follows:

- (a) The siting and approval of major energy facilities by districts and state agencies must be based, to the extent practicable, on the following standards:
 - (1) site facilities so as to minimize adverse environmental and social effects while satisfying industrial requirements;
 - (2) site facilities so as to be compatible with existing and subsequent adjacent uses and projected community needs;
 - (3) consolidate facilities;
 - (4) consider the concurrent use of facilities for public or economic reasons;
 - (5) cooperate with landowners, developers, and federal agencies in the development of facilities;

- (6) select sites with sufficient acreage to allow for reasonable expansion of facilities;
 - (7) site facilities where existing infrastructure, including roads, docks, and airstrips, is capable of satisfying industrial requirements;
 - (8) select harbors and shipping routes with least exposure to reefs, shoals, drift ice, and other obstructions;
 - (9) encourage the use of vessel traffic control and collision avoidance systems;
 - (10) select sites where development will require minimal site clearing, dredging, and construction;
 - (11) site facilities so as to minimize the probability, along shipping routes, of spills or other forms of contamination that would affect fishing grounds, spawning grounds, and other biologically productive or vulnerable habitats, including marine mammal rookeries and hauling out grounds and waterfowl nesting areas;
 - (12) site facilities so that design and construction of those facilities and support infrastructures in coastal areas will allow for the free passage and movement of fish and wildlife with due consideration for historic migratory patterns;
 - (13) site facilities so that areas of particular scenic, recreational, environmental, or cultural value, identified in district plans, will be protected;
 - (14) site facilities in areas of least biological productivity, diversity, and vulnerability and where effluents and spills can be controlled or contained;
 - (15) site facilities where winds and air currents disperse airborne emissions that cannot be captured before escape into the atmosphere;
 - (16) site facilities so that associated vessel operations or activities will not result in overcrowded harbors or interfere with fishing operations and equipment.
- (b) The uses authorized by the issuance of state and federal leases, easements, contracts, rights-of-way, or permits for mineral and petroleum resource extraction are uses of state concern.

b. Evaluation

This standard contains 16 standards upon which the siting and approval of major energy facilities must be based to the extent practicable. By specifying issues that must be considered in selecting sites for energy facilities, this standard helps to ensure that adverse environmental and social effects from energy facilities will be minimized, and that energy facilities will be compatible with other uses.

Although the following mitigation measures, lessee advisories, and other regulatory protections were designed to avoid, minimize, or mitigate negative effects to the environment and to other uses, the energy facilities standard recognizes the importance of these facilities to the public. The standard applies the regulatory requirement “to the extent practicable”. 11 AAC 112.990(18) defines practicable as “feasible in light of overall project purposes after considering cost, existing technology, and logistics of compliance with the standard.” Energy facilities are also considered “uses of state concern”, which includes uses of national interest, uses of more than local concern, siting of major energy facilities, facilities serving statewide or interregional transportation and communication needs, and uses in areas established as state parks or

recreational areas or as state game refuges, game sanctuaries, or critical habitat areas (AS 46.40.210).

Most of the proposed mitigation measures support this statewide standard. Mitigation Measure A(1)(a) requires a plan of operations describe efforts to minimize impacts on residential, commercial, and recreational areas, Native allotments and subsistence use areas. Mitigation Measure A(1)(b) requires facilities to be designed and operated to minimize sight and sound impacts in areas of high residential, commercial, recreational, and subsistence use and important wildlife habitat. Both of these measures ensure that if specific projects, activities, and site locations for energy facilities are proposed, adverse impacts will be minimized. These measures also ensure that facility siting will minimize adverse social effects and will be compatible with other uses. The lessee must cooperate with landowners, developers, other users, and federal agencies. These mitigation measures also ensure that facility siting will minimize site clearing, dredging, and construction; and that areas of particular value identified in an approved district plan will be protected.

Mitigation Measure A(1)(c) prohibits the siting of facilities within 500 feet of all fish bearing streams and water bodies; 1,500 feet of current surface drinking water sources; and one-half mile of the banks of the main channel of the Colville, Canning, Sagavanirktok, Shavirovik, Kadleroshilik, and Kuparuk rivers, unless it is not practicable or that a location inside the buffer is environmentally preferred. These buffers will help ensure that adverse environmental effects on water habitats and drinking water supplies will be avoided, minimized, or mitigated.

Mitigation Measure A(1)(d) requires that impacts to identified wetlands be minimized, and that facilities be sited in the least sensitive areas. By siting facilities in the least sensitive areas, this measure helps prevent deterioration of important wetland habitats and disturbance of species supported by them, maintain adequate water flow, and avoid adverse effects on natural drainage patterns.

Mitigation Measure A(1)(g) requires pipelines be designed and constructed to avoid significant alteration of caribou and large ungulate movements and migration. This measure ensures the free passage and movement of wildlife such as caribou and other large ungulates.

Mitigation Measure A(2)(f) requires permanent, staffed facilities to be sited 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 to the extent practicable. This measure limits disturbances to bird habitats and nesting and brood rearing areas from siting and construction of oil and gas energy facilities, and ensures that facilities are sited so as to minimize adverse environmental effects.

Mitigation Measures A(3)(a)-(d) and A(5)(b) help to prevent conflicts with subsistence harvest activities, ensure access to subsistence areas, and limit other access restrictions. These measures will ensure that facilities are sited to minimize adverse social effects, and that facilities are sited so as to be compatible with existing and subsequent uses and community needs. The measures also promote cooperation with landowners in the development of facilities.

5. Utility Routes and Facilities Standard (11 AAC 112.240)

a. Statement of the Standard

The statewide standard is as follows:

- (a) Utility routes and facilities must be sited inland from beaches and shorelines unless
 - (1) the route or facility is water-dependent or water related; or

- (2) no practicable inland alternative exists to meet the public need for the route or facility.
- (b) Utility routes and facilities along the coast must avoid, minimize, or mitigate
 - (1) alterations in surface and ground water drainage patterns;
 - (2) disruption in known or reasonably foreseeable wildlife transit;
 - (3) blockage of existing or traditional access.

b. Evaluation

This statewide standard specifies that utility routes and facilities be sited inland unless the route or facility is water-dependent or water related, or no practicable alternative exists. Because some tracts in the proposed North Slope Foothills Areawide lease sale area are located adjacent to or in the coastal zone, utility routes or facilities that might be proposed in future phases could be supporting projects, activities, or facilities that are on or near a water body, and therefore the route or facility could be water-dependent or water related, or there could be no existing practicable inland alternative to meet the public need for the route or facility.

The following mitigation measures, lessee advisories, and other regulatory protections will ensure that if utility routes and facilities along the coast are necessary, they will avoid, minimize, or mitigate alterations in surface and ground water drainage patterns, disruption in known or reasonably foreseeable wildlife transit, and blockage of existing or traditional access.

Mitigation Measure A(1)(a) requires that a plan of operations describe efforts to minimize impacts on residential, commercial, and recreational areas, Native allotments and subsistence use areas. Mitigation Measure A(1)(b) requires facilities to be designed and operated to minimize sight and sound impacts in areas of high residential, commercial, recreational, and subsistence use and important wildlife habitat. Both of these measures ensure that if specific utility projects, activities, and site locations are proposed, blockage of existing or traditional access will be avoided.

Mitigation Measure A(1)(c) requires that the siting of facilities, other than docks, roads, utility, and pipeline crossings will be prohibited within 500 feet of all fish bearing streams and water bodies and 1,500 feet from all current surface drinking water sources. Additionally, to the extent practicable, the siting of facilities will be prohibited within one-half mile of the banks of the main channel of the Colville, Canning, Sagavanirktok, Shaviovik, Kadleroshilik, and Kuparuk rivers. This mitigation measure also requires utility and pipeline crossings to be consolidated and aligned perpendicular or near perpendicular to watercourses. By requiring buffer zones and specifying configuration of utility routes and facilities, alterations in surface and ground water drainage patterns can be avoided.

Mitigation Measure A(1)(d) requires that impacts to identified wetlands must be minimized, and facilities sited in the least sensitive areas. By siting utility routes and facilities in the least sensitive areas, this measure prevents deterioration of important wetland habitats and disturbance of species supported by it, ensures adequate water flow, thereby avoiding alteration of natural drainage patterns.

Mitigation Measure A(1)(f) requires pipelines to use existing transportation corridors, be designed to facilitate cleanup of spilled fluids, be located on the upslope of roadways and pads, and be buried where conditions permit. These requirements will help to ensure that alterations in surface and ground water drainage patterns will be avoided and that disruption to wildlife transit will be avoided.

Mitigation Measure A(1)(g) requires pipelines be designed and constructed to minimize alteration of caribou and other large ungulate movement and migration patterns. This measure will help ensure that disruption to wildlife transit will be avoided.

Mitigation Measure A(2)(f) requires permanent, staffed facilities to be sited outside identified 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 to the extent practicable. This measure will help ensure that disruption to wildlife transit will be avoided.

Mitigation Measures A(3)(a)-(e) and A(5)(b) help to prevent conflicts with subsistence harvest activities, ensure access to subsistence areas, and limit other access restrictions. These measures will ensure that utility routes and facilities will avoid, minimize, or mitigate disruption to wildlife transit and blockage of existing or traditional access facilities.

6. Timber Harvesting and Processing Standard (11 AAC 112.250)

a. Statement of the Standard

The statewide standard is as follows:

AS 41.17 (Forest Resources and Practices Act) and the regulations adopted under that chapter with respect to the harvest and processing of timber are incorporated into the program and constitute the components of the program with respect to those purposes.

b. Evaluation

Lessees must comply with AS 41.17 and associated regulations related to timber harvesting and processing. The state has identified generally allowed uses on state-owned and state managed lands in 11 AAC 96.020 (ADNR MLW 2009), which addresses restrictions on cutting trees. These statutes and regulations are sufficient for protecting timber, and therefore additional mitigation measures addressing timber are not being proposed.

7. Sand and Gravel Extraction Standard (11 AAC 112.260)

a. Statement of the Standard

The statewide standard is as follows:

Sand and gravel may be extracted from coastal waters, intertidal areas, barrier islands, and spits if there is no practicable alternative to coastal extraction that will meet the public need for the sand or gravel.

b. Evaluation

This statewide standard protects coastal habitats by limiting sand and gravel extraction and allowing gravel extraction from coastal waters, intertidal areas, barrier islands, and spits only if there is no practicable alternative.

Mitigation Measure A(1)(e) supports this standard by restricting the construction of gravel structures to projects approved on a case-by-case basis by the Director of DO&G after consultation with DMLW and ADF&G.

Mitigation Measure A(1)(i) also supports this standard by restricting gravel mining sites to the minimum necessary to develop the field efficiently and with minimal environmental damage. It requires that gravel mine sites not be located within an active floodplain of a watercourse unless DMLW, after consultation with ADF&G, determines that there is no practicable alternative, or

that a floodplain site would enhance fish and wildlife habitat after mining operations are completed and the site is closed. Further, mine site development and rehabilitation within floodplains must follow the procedures outlined by McLean (1993).

8. Subsistence Standard (11 AAC 112.270)

a. Statement of the Standard

The statewide standard is as follows:

- (a) A project within a subsistence use area designated by the department or under 11 AAC 114.250(g) must avoid or minimize impacts to subsistence uses of coastal resources.
- (b) For a project within a subsistence use area designated under 11 AAC 114.250(g), the applicant shall submit an analysis or evaluation of reasonably foreseeable adverse impacts of the project on subsistence use as part of
 - (1) a consistency review packet submitted under 11 AAC 110.215; and
 - (2) a consistency evaluation under 15 C.F.R. 930.39, 15 C.F.R. 930.58, or 15 C.F.R. 930.76.
- (c) Repealed 10/29/2004.
- (d) Except in nonsubsistence areas identified under AS 16.05.258, the department may, after consultation with the appropriate district, federally recognized Indian tribes, Native corporations, and other appropriate persons or groups, designate areas in which a subsistence use is an important use of coastal resources as demonstrated by local usage.
- (e) For purposes of this section, “federally recognized Indian tribe” “local usage,” and “Native corporation” have the meanings given in 11 AAC 114.990.

b. Evaluation

There is currently no district plan in effect for the North Slope Borough, and no areas have been designated as subsistence use areas by ADNR for North Slope Foothills Areawide lease sales. However, all mitigation measures support the subsistence standard either by protecting subsistence uses directly, or indirectly by protecting fish and wildlife populations and their habitats.

Mitigation Measure A(1)(a) requires a plan of operations describe efforts to minimize impacts on residential, commercial, and recreational areas, Native allotments, and subsistence use areas. Mitigation Measure A(1)(b) requires facilities to be designed and operated to minimize sight and sound impacts in areas of high subsistence use. Both of these measures ensure that if specific projects, activities, and site locations are proposed, adverse impacts to subsistence uses will be minimized.

Mitigation Measure A(1)(c) prohibits the siting of facilities within 500 feet of all fish bearing streams and water bodies; 1,500 feet of current surface drinking water sources; and one-half mile of the banks of the main channel of the Colville, Canning, Sagavanirktok, Shavirovik, Kadleroshilik, and Kugaruk rivers, unless it is not practicable or that a location inside the buffer is environmentally preferred. Requiring buffers will minimize potential adverse environmental effects to subsistence access, and fishing and hunting uses.

Mitigation Measure A(1)(d) requires that impacts to identified wetlands must be minimized, and that facilities be sited in the least sensitive areas. This mitigation measure will prevent deterioration of important wetland habitats, thereby protecting subsistence uses.

Mitigation Measures A(2)(a)-(j) require that oil and gas activities be planned and implemented to protect and prevent and negative impacts to terrestrial and freshwater habitats and the fish and wildlife found there. Therefore, these measures support subsistence uses by protecting fish and wildlife resources and habitats.

Mitigation Measures A(3)(a)-(e) and A(5)(b) directly support this standard by helping to prevent conflicts with subsistence harvest activities, ensuring access to subsistence areas, and limiting other access restrictions. These measures will help to avoid or minimize impacts to subsistence uses of coastal resources.

Mitigation Measures A(4)(a)-(j) require extensive requirements for placement, storage, management and spill response for fuel, hazardous substances and wastes. These measures protect terrestrial and freshwater habitats from unintentional releases of fuel and hazardous substances. Specifically, Mitigation Measure A(4)(g) protects fish and wildlife habitats by allowing for fresh water aquifer monitoring wells and water quality monitoring. Measures A(4)(h)-(j) set forth requirements and restrictions on the disposal of wastes including garbage, putrescible wastes, and muds and cuttings. By avoiding or minimizing possible sources of pollution from oil and gas facilities that could harm terrestrial and freshwater habitats and fish and wildlife populations, these mitigation measures will protect subsistence resources and uses.

9. Transportation Routes and Facilities Standard (11 AAC 112.280)

a. Statement of the Standard

The statewide standard is as follows:

Transportation routes and facilities must avoid, minimize, or mitigate

- (1) alterations in surface and ground water drainage patterns;
- (2) disruption in known or reasonably foreseeable wildlife transit; and
- (3) blockage of existing or traditional access.

b. Evaluation

This statewide standard protects coastal resources by requiring that transportation routes and facilities avoid, minimize, or mitigate alterations in surface and ground water drainage patterns; disruption in known or reasonably foreseeable wildlife transit; and blockage of existing or traditional access.

Mitigation Measure A(1)(a) requires a plan of operations describe efforts to minimize impacts on residential, commercial, and recreational areas, Native allotments, and subsistence use areas. During the plan of operations approval process, potential blockage of existing or traditional access can be identified and avoided, minimized, or mitigated.

Mitigation Measure A(1)(c) prohibits the siting of facilities within 500 feet of all fish bearing streams and water bodies; 1,500 feet of current surface drinking water sources; and one-half mile of the banks of the main channel of the Colville, Canning, Sagavanirktok, Shaviovik, Kadleroshilik, and Kugaruk rivers, unless it is not practicable or that a location inside the buffer is environmentally preferred. Road, utility, and pipeline crossings must be consolidated and aligned perpendicular or near perpendicular to watercourses to minimize adverse environmental

effects to habitats and subsistence uses. These requirements will help avoid alterations in drainage patterns.

Mitigation Measure A(1)(d) requires that impacts to identified wetlands must be minimized, and that facilities be sited in the least sensitive areas. By siting transportation routes and facilities in the least sensitive areas, this measure ensures adequate water flow, thereby avoiding or minimizing alterations in natural drainage patterns.

Mitigation Measure A(1)(f) requires pipelines to use existing transportation corridors, be designed to facilitate cleanup of spilled fluids, be located on the upslope of roadways and pads, and be buried where conditions permit. This mitigation measure will avoid, minimize, or mitigate alterations in drainage patterns disruption in wildlife transit.

Mitigation Measure A(1)(g) requires that pipelines be designed and constructed to minimize alteration of caribou and other large ungulate movement and migration patterns. At a minimum, above-ground pipelines must be elevated 7 feet, except where the pipeline intersects a road, pad, or a ramp installed to facilitate wildlife passage. This measure will help avoid or minimize disruption of wildlife transit.

Mitigation Measure A(2)(g) restricts aircraft travel to remain one-half mile horizontal of 1,000 feet vertical from Dall sheep lambing areas between May 5 and June 20, and mineral licks from May 20 to June 30. This measure also addresses restrictions of aircraft activities that may be related to transportation corridors, and will help avoid disruption of wildlife transit.

Mitigation Measures A(3)(a)-(d) and A(5)(b) help to prevent conflicts with subsistence harvest activities, ensure access to subsistence areas, and limit other access restrictions. These measures will ensure that transportation routes and facilities are sited to avoid, minimize, or mitigate blockage of existing or traditional access.

Lessees are advised that the Pipeline and Hazardous Materials Safety Administration (PHMSA) has authority over pipelines used for transportation of gas or hazardous liquids. Lessee Advisory 7(a) states that transportation of the specified liquids may be subject to Federal Pipeline Safety Laws (49 USC 60101 et seq.) and regulations (49 CFR 190-195) under the jurisdiction of the U.S. Department of Transportation – Pipeline and Hazardous Materials Safety Administration.

10. Habitats Standard (11 AAC 112.300)

a. Statement of the Standard

The statewide standard is as follows:

- (a) Habitats in the coastal area that are subject to the program are
 - (1) offshore areas;
 - (2) estuaries;
 - (3) wetlands;
 - (4) tideflats;
 - (5) rocky islands and sea cliffs;
 - (6) barrier islands and lagoons;
 - (7) exposed high-energy coasts;
 - (8) rivers, streams, and lakes and the active floodplains and riparian management areas of those rivers, streams, and lakes; and

- (9) important habitat.
- (b) The following standards apply to the management of the habitats identified in (a) of this section:
 - (1) offshore areas must be managed to avoid, minimize, or mitigate significant adverse impacts to competing uses such as commercial, recreational, or subsistence fishing, to the extent that those uses are determined to be in competition with the proposed use;
 - (2) estuaries must be managed to avoid, minimize, or mitigate significant adverse impacts to
 - (A) adequate water flow and natural water circulation patterns; and
 - (B) competing uses such as commercial, recreational, or subsistence fishing, to the extent that those uses are determined to be in competition with the proposed use;
 - (3) wetlands must be managed to avoid, minimize, or mitigate significant adverse impacts to water flow and natural drainage patterns;
 - (4) tideflats must be managed to avoid, minimize, or mitigate significant adverse impacts to
 - (A) water flow and natural drainage patterns; and
 - (B) competing uses such as commercial, recreational, or subsistence uses, to the extent that those uses are determined to be in competition with the proposed use;
 - (5) rocky islands and sea cliffs must be managed to
 - (A) avoid, minimize, or mitigate significant adverse impacts to habitat used by coastal species; and
 - (B) avoid the introduction of competing or destructive species and predators;
 - (6) barrier islands and lagoons must be managed to avoid, minimize, or mitigate significant adverse impacts
 - (A) to flows of sediments and water;
 - (B) from the alteration or redirection of wave energy or marine currents that would lead to the filling in of lagoons or the erosion of barrier islands; and
 - (C) from activities that would decrease the use of barrier islands by coastal species, including polar bears and nesting birds;
 - (7) exposed high-energy coasts must be managed to avoid, minimize, or mitigate significant adverse impacts
 - (A) to the mix and transport of sediments; and
 - (B) from redirection of transport processes and wave energy;
 - (8) rivers, streams, and lakes must be managed to avoid, minimize, or mitigate significant adverse impacts to
 - (A) natural water flow;

- (B) active floodplains; and
- (C) natural vegetation within riparian management areas; and
- (9) important habitat
 - (A) designated under 11 AAC 114.250(h) must be managed for the special productivity of the habitat in accordance with district enforceable policies adopted under 11 AAC 114.270(g) ; or
 - (B) identified under (c)(1)(B) or (C) of this section must be managed to avoid, minimize, or mitigate significant adverse impacts to the special productivity of the habitat.
- (c) For purposes of this section,
 - (1) “important habitat” means habitats listed in (a)(1) - (8) of this section and other habitats in the coastal area that are
 - (A) designated under 11 AAC 114.250(h) ;
 - (B) identified by the department as a habitat
 - (i) the use of which has a direct and significant impact on coastal water; and
 - (ii) that is shown by written scientific evidence to be biologically and significantly productive; or
 - (C) identified as state game refuges, state game sanctuaries, state range areas, or fish and game critical habitat areas under AS 16.20;
 - (2) “riparian management area” means the area along or around a waterbody within the following distances, measured from the outermost extent of the ordinary high water mark of the waterbody:
 - (A) for the braided portions of a river or stream, 500 feet on either side of the waterbody;
 - (B) for split channel portions of a river or stream, 200 feet on either side of the waterbody;
 - (C) for single channel portions of a river or stream, 100 feet on either side of the waterbody;
 - (D) for a lake, 100 feet of the waterbody.

b. Evaluation

This standard specifies requirements for the management of nine habitats in the coastal area and requires that significant adverse impacts to those habitats be avoided, minimized, or mitigated. Seven of the habitats do not occur in the proposed North Slope Foothills lease sale area: offshore areas, estuaries, tidflats, rocky islands and sea cliffs, barrier islands and lagoons, and exposed high-energy coasts. This standard also provides for protection of other “important habitat” designated in enforceable policies in approved district plans, or identified by ADNR. However, there is currently no approved district plan in effect for the NSB, and ADNR has not identified other important habitats for the proposed North Slope Foothills Areawide lease sales.

The North Slope Foothills proposed lease sale area does include two of the habitats identified in this standard: wetlands; and rivers, streams, and lakes and the active floodplains and riparian management areas of those rivers, streams, and lakes.

The following mitigation measures, lessee advisories, and other regulatory protections will ensure that exploration, development, production, and transportation projects, if proposed, will avoid, minimize, or mitigate significant adverse impacts to the habitats identified in this standard and found in the proposed lease sale area.

Mitigation Measure A(1)(b) requires facilities to be designed and operated to minimize sight and sound impacts in areas of high residential, commercial, recreational, and subsistence use and important wildlife habitat. This measures will help ensure that if specific oil and gas projects, activities, and site locations are proposed, impacts to wetlands, rivers, streams and lakes will be avoided, minimized or mitigated.

Mitigation Measure A(1)(c) will protect wetlands, rivers, streams and lakes by prohibiting the siting of facilities, other than docks, roads, utility, and pipeline crossings within 500 feet of all fish bearing streams and water bodies and 1,500 feet from all current surface drinking water sources. Additionally, to the extent practicable, the siting of facilities will be prohibited within one-half mile of the banks of the main channel of the Colville, Canning, Sagavanirktok, Shaviovik, Kadleroshilik, and Kuparuk rivers. This mitigation measure also addresses the siting of facilities and utility and pipeline crossings and requires utility and pipeline crossings to be consolidated and aligned perpendicular to watercourses.

Mitigation Measure A(1)(d) protects wetlands by requiring that impacts to identified wetlands be minimized, and that facilities be sited in the least sensitive areas. By siting oil and gas facilities in the least sensitive areas, this measure ensures adequate water flow, thereby avoiding adverse effects on natural drainage patterns.

Mitigation Measure A(1)(f) requires pipelines to use existing transportation corridors, be designed to facilitate cleanup of spilled fluids, be located on the upslope of roadways and pads, and be buried where conditions permit. These requirements will help ensure that adverse impacts to natural vegetation in riparian areas will avoided, minimized, or mitigated.

Mitigation Measures A(1)(i) addresses gravel mining sites, and requires that mine site development and rehabilitation within floodplains follow procedures outlined in McLean (1993).

Mitigation Measure A(2)(b) and (c) address removal of water and snow from fish bearing rivers, streams, and natural lakes. These measures will help to avoid, minimize, or mitigate impacts to natural water flow.

Mitigation Measure A(2)(d) requires buffers along certain rivers and protects certain overwintering and spawning areas of Dolly Varden and Arctic char. These protections will help to avoid, minimize, or mitigate impacts to natural vegetation within riparian areas.

Mitigation Measures A(4)(a)-(j) require extensive requirements for placement, storage, management and spill response for fuel, hazardous substances and wastes. These measures will help protect the natural vegetation within riparian areas of rivers, stream, and lakes from unintentional releases of fuel and hazardous substances. Specifically, Mitigation Measure A(4)(g) allows for fresh water aquifer monitoring wells and water quality monitoring. Measures A(4)(h)-(j) set forth requirements and restrictions on the disposal of wastes including garbage, putrescible wastes, and muds and cuttings.

11. Air, Land, and Water Quality Standard (11 AAC 112.310)

a. Statement of the Standard

The statewide standard is as follows:

Notwithstanding any other provision of this chapter, the statutes and regulations of the Department of Environmental Conservation with respect to the protection of air, land,

and water quality identified in AS 46.40.040 (b) are incorporated into the program and, as administered by that department, constitute the exclusive components of the program with respect to those purposes.

b. Evaluation

This standard incorporates the statutes and regulations of ADEC (with respect to protection of air, land and water quality) into the ACMP. Many of the mitigation measures, lessee advisories, and other regulatory protections for the proposed North Slope Foothills Areawide oil and gas lease sales address protection of air, land, and water quality.

Mitigation Measures A(1)(d), A(1)(h), A(2)(j), A(4)(a)-(j), and Lessee Advisories B(2)(a)-(d), support ADEC statutes and regulations with respect to the protection of air, land, and water quality.

12. Historic, Prehistoric, and Archaeological Resources Standard (11 AAC 112.320)

a. Statement of the Standard

The statewide standard is as follows:

- (a) The department will designate areas of the coastal zone that are important to the study, understanding, or illustration of national, state, or local history or prehistory, including natural processes.
- (b) A project within an area designated under (a) of this section shall comply with the applicable requirements of AS 41.35.010 - 41.35.240 and 11 AAC 16.010 - 11 AAC 16.900.

b. Evaluation

This statewide standard protects historic, prehistoric, and archaeological resources by requiring that areas designated as important for these resources comply with statutes and regulations specifying disposition of these resources. ADNR has not designated any areas for historic, prehistoric, and archaeological resources for the proposed North Slope Foothills Areawide lease sales. Chapter Three, Section D of the Preliminary Finding discusses cultural and historic resources of the North Slope Foothills area; Chapter Seven, Section A(9) discusses statutes and regulations concerning these resources; and Chapter Eight, Section O discusses potential effects on historic and cultural resources. Several mitigation measures ensure that projects and activities subsequent to leasing are consistent with the ACMP statewide standards by preventing possible harm to, or loss of, historic, prehistoric, and archaeological resources.

Mitigation Measures A(6)(a)-(c) require an inventory of prehistoric, historic, and archaeological sites before development, and these measures require coordination to avoid or minimize adverse effects to sites. If a sensitive site is located, consultation with the DPOR Office of History and Archaeology and the local borough is required for direction on the course of action to avoid or minimize adverse effects.

13. Sequencing Process to Avoid, Minimize, or Mitigate Standard (11 AAC 112.900)

a. Statement of the Standard

The statewide standard is as follows:

- (a) As used in this chapter and for purposes of district enforceable policies developed under 11 AAC 114, “avoid, minimize, or mitigate” means a sequencing process of
 - (1) avoiding adverse impacts to the maximum extent practicable;
 - (2) where avoidance is not practicable, minimizing adverse impacts to the maximum extent practicable; or
 - (3) if neither avoidance nor minimization is practicable, conducting mitigation to the extent appropriate and practicable; for purposes of this paragraph, "mitigation" means
 - (A) on-site rehabilitation of project impacts to affected coastal resources during or at the end of the life of the project; or
 - (B) to the extent on-site rehabilitation of project impacts is not practicable, substituting, if practicable, rehabilitation of or an improvement to affected coastal resources within the district, either on-site or off-site, for a coastal resource that is unavoidably impacted.
- (b) For a project that requires a federal authorization identified under 11 AAC 110.400, the coordinating agency shall consult with the authorizing federal agency during that federal agency's authorization review process to determine whether the mitigation requirements proposed by the federal agency for that federal authorization would satisfy the mitigation requirements of (a)(3) of this section. If the coordinating agency determines that the mitigation requirements proposed by the federal agency would not satisfy the mitigation requirements of (a)(3) of this section, the coordinating agency shall require appropriate mitigation in accordance with (a)(3) of this section.
- (c) For purposes of (a)(3) of this section, a determination of practicability includes consideration of the following factors, as applicable:
 - (1) the magnitude of the functional values lost by the impacted coastal resources;
 - (2) the likelihood that the mitigation measure or improvement will succeed in actually rehabilitating the impacted resource; and
 - (3) the correlation between the functional values lost by the coastal resources impacted and the proposed mitigation measure or improvement.
- (d) To the extent feasible and not otherwise addressed by state or federal law, any requirements imposed under (a)(3) of this section for mitigation through on-site or off-site rehabilitation of project impacts shall be established by the coordinating agency at the time of the project's consistency review under 11 AAC 110.
- (e) In applying the mitigation process described in (a)(3) of this section, unless required by a federal agency issuing an authorization identified under 11 AAC 110.400 for the project, the coordinating agency may not require
 - (1) that no net loss of impacted coastal resources occur; or
 - (2) monetary compensation.

b. Evaluation

This standard sets out a sequencing process that requires, to the extent practicable, that adverse impacts are first avoided, then minimized if avoidance is not practicable, and then mitigated if neither avoidance nor minimization is practicable. If specific projects or activities are proposed

in phases subsequent to leasing, they will be required to be consistent with this standard, and will be required to first avoid adverse impacts, then minimize them, and then mitigate them if neither avoidance nor minimization is practicable.

Many of the proposed North Slope Foothills Areawide mitigation measures address avoiding, minimizing, or mitigating adverse impacts. Mitigation measures A(1)(a), A(1)(b), A(1)(e), A(2)(e), A(3)(a), A(6)(b), and A(7)(c) specifically address avoiding adverse impacts. Mitigation measures A(1)(a), A(1)(b), A(1)(d), A(1)(g), A(2)(e), A(4)(i), and A(6)(b) specifically address minimizing adverse impacts. Mitigation Measure A(1)(g) and A(1)(h) specifically address mitigation and rehabilitation. Paragraphs 9 and 21 of the lease contract address sequencing and rehabilitation.

14. Definitions (11 AAC 112.990)

The following terms are defined in the statewide standards:

Unless the context indicates otherwise, in this chapter,

- (1) “active floodplain” means the low land and relatively flat areas adjoining rivers, lakes, and streams that are subject to regular inundation by floods;
- (2) “adjacent” means near but not necessarily touching;
- (3) “barrier islands and lagoons” means
 - (A) depositional coastal environments formed by deposits of sediment offshore; or
 - (B) coastal remnants that form a barrier of low-lying islands and bars protecting a salt-water lagoon with free exchange of water to the sea;
- (4) “beach” has the meaning given in 11 AAC 114.990;
- (5) “coastal area” has the meaning given “coastal zone” in AS 46.40.210, except that “coastal area” includes federally owned land and water within the coastal zone;
- (6) “coastal water” means those waters, adjacent to the shorelines, that contain a measurable quantity or percentage of sea water, including sounds, bays, lagoons, ponds, estuaries, and tidally influenced waters;
- (7) “department” has the meaning given in AS 46.40.210;
- (8) “designate” means
 - (A) for a district, to identify in a district plan approved by the department; and
 - (B) for a state agency, to identify in a planning document or as part of a review under 11 AAC 110;
- (9) “district” means a coastal resource district as defined in AS 46.40.210;
- (10) “district plan” has the meaning given in 11 AAC 114.990;
- (11) “estuary” means a semiclosed coastal body of water that has a free connection with the sea and within which seawater is measurably diluted with freshwater derived from land drainage;
- (12) “exposed high-energy coasts” means open and unprotected sections of coastline with exposure to ocean generated wave impacts and usually characterized by coarse sand, gravel, boulder beaches, and well-mixed coastal water;

- (13) "freshwater wetlands" means those environments characterized by rooted vegetation that is partially submerged either continuously or periodically by surface freshwater with less than 0.5 parts per thousand salt content and not exceeding three meters in depth;
- (14) "major energy facility"
- (A) means a development of more than local concern carried out in, or in close proximity to, the coastal area, that is:
- (i) required to support energy operations for exploration or production purposes;
 - (ii) used to produce, convert, process, or store energy resources or marketable products;
 - (iii) used to transfer, transport, import, or export energy resources or marketable products;
 - (iv) used for in-state energy use; or
 - (v) used primarily for the manufacture, production, or assembly of equipment, machinery, products, or devices that are involved in an activity described in (i) - (iv) of this subparagraph;
- (B) includes marine service bases and storage depots, pipelines and rights-of-way, drilling rigs and platforms, petroleum or coal separation, treatment, or storage facilities, liquid natural gas plants and terminals, oil terminals and other port development for the transfer of energy products, petrochemical plants, refineries and associated facilities, hydroelectric projects, other electric generating plants, transmission lines, uranium enrichment or nuclear fuel processing facilities, geothermal facilities, natural gas pipelines and rights-of-way, natural gas treatment and processing facilities, and infrastructure related to natural gas treatment and processing facilities;
- (15) "natural hazards"
- (A) means the following natural processes or adverse conditions that present a threat to life or property in the coastal area: flooding, earthquakes, active faults, tsunamis, landslides, volcanoes, storm surges, ice formations, snow avalanches, erosion, and beach processes;
- (B) includes other natural processes or adverse conditions designated by the department or by a district in a district plan;
- (16) "natural hazard area" means an area designated by a district under 11 AAC 114.250(b) or a state agency under 11 AAC 112.210(b);
- (17) "offshore areas" means submerged lands and waters seaward of the coastline as measured from mean low tide;
- (18) "practicable" means feasible in light of overall project purposes after considering cost, existing technology, and logistics of compliance with the standard;
- (19) "program" has the meaning given in 11 AAC 110.990;
- (20) "public need" has the meaning given in 11 AAC 114.990;
- (21) "reasonably foreseeable" has the meaning given in 11 AAC 110.990;

- (22) “resource agency” has the meaning given in AS 46.39.010;
- (23) “rivers, streams, and lakes” means those portions of water bodies that
 - (A) are catalogued under AS 41.14.870 as important for anadromous fish;
 - (B) are not catalogued under AS 41.14.870 as important for anadromous fish, but have been determined by the Deputy Commissioner of the department to contain or exhibit evidence of anadromous fish, in which event the anadromous portion of the stream or waterway extends up to the first point of physical blockage; or
 - (C) are delineated based on written scientific findings demonstrating to the satisfaction of the coordinating agency, in consultation with the state resource agency with expertise, that the project or activity would cause significant and adverse impact to
 - (i) water bodies identified in (A) or (B) of this paragraph; and
 - (ii) coastal waters;
- (24) “rocky islands and sea cliffs” means islands of volcanic or tectonic origin with rocky shores and steep faces, offshore rocks, capes, and steep rocky seafronts;
- (25) “saltwater wetlands” means those coastal areas along sheltered shorelines characterized by halophilic hydrophytes and macro algae extending from extreme low tide to an area above extreme high tide that is influenced by sea spray or tidally induced water table changes;
- (26) “scientific evidence” has the meaning given in 11 AAC 114.990;
- (27) “tideflats” means mostly unvegetated areas that are alternately exposed and inundated by the falling and rising of the tide;
- (28) “transportation routes and facilities” include natural transportation routes dictated by geography or oceanography, roads, highways, railways, air terminals, and facilities required to operate and maintain the route or facility;
- (29) “uses of state concern” has the meaning given in AS 46.40.210;
- (30) “utility routes and facilities” include power transmission lines, mineral slurry lines, oil and gas pipelines, natural transportation routes dictated by geography or oceanography, water and sewage transfer, and facilities required to operate and maintain the route or facility;
- (31) “water-dependent” means a use or activity that can be carried out only on, in, or adjacent to a water body because the use requires access to the water body;
- (32) “water-related” means a use or activity that is not directly dependent upon access to a water body, but which provides goods or services that are directly associated with water-dependence and which, if not located adjacent to a water body, would result in a public loss of quality in the goods or services offered;
- (33) “wetlands” means saltwater wetlands and those freshwater wetlands that have a direct drainage to coastal waters.
- (34) “avoid or minimize” means a process of avoiding adverse impacts to the maximum extent practicable and, if avoidance is not practicable, minimizing impacts where practicable;
- (35) “coordinating agency” has the meaning given in 11 AAC 110.990.

(36) “direct and significant impact” has the meaning given in 11 AAC 114.990;

(37) “subsistence fishing” has the meaning given in AS 16.05.940;

(38) “subsistence uses” has the meaning given in AS 16.05.940.

E. Conclusion

Upon review of the proposed North Slope Foothills areawide oil and gas lease sales for consistency with the ACMP standards of 11 AAC 112, DO&G certifies that the proposed North Slope Foothills Areawide oil and gas lease sales, conditioned by the mitigation measures in Appendix A, the lease contract, and other regulatory requirements, complies with, and will be conducted in a manner consistent with, the standards of the ACMP.

Specific projects that may be proposed in subsequent phases cannot be known at this time. However, potential cumulative effects have been considered and discussed in the companion Preliminary Finding. If specific projects are proposed in subsequent phases, they will be required to undergo an ACMP review, and must be found to be consistent with the ACMP standards. In addition, lessees must comply with all applicable local, state, and federal codes, statutes, and regulations, as amended. It is the lessee’s responsibility to obtain all required state authorizations and permits relating to lease activities, and to comply with all ACMP standards and alternative measures.

F. References

- ADNR MLW (Alaska Department of Natural Resources Division of Mining Land and Water). 2009. Generally allowed uses on state land fact sheet. http://dnr.alaska.gov/mlw/factsht/gen_allow_use.pdf
- AOGCC (Alaska Oil and Gas Conservation Commission). 2010. AOGCC Homepage. <http://doa.alaska.gov/ogc/> Accessed January 25, 2010.
- Hall, E. S. 1984. Interior North Alaska Eskimo. Pages 338-346 in David Damas, editor. Handbook of North American Indians. Smithsonian Institution, Washington, D.C.
- McLean, R. 1993. North Slope gravel pit performance guidelines. Technical Report No. 93-9, Habitat and Restoration Division, Alaska Department of Fish and Game. http://www.habitat.adfg.alaska.gov/tech_reports/93_09.pdf
- USGS (U.S. Geological Survey). 2007. Alaska, 2007: Hazard Maps. USGS Geological Survey Earthquake Hazards Program. <http://earthquake.usgs.gov/hazards/products/ak/2007/>

Appendix A. Mitigation Measures and Other Regulatory Requirements (Lessee Advisories)

Abbreviations used are:

Agencies

ADF&G	Alaska Department of Fish and Game
ADEC	Alaska Department of Environmental Conservation
ADNR	Alaska Department of Natural Resources
DMLW	Division of Mining, Land, and Water (ADNR)
DO&G	Division of Oil and Gas (ADNR)
DPOR	Division of Parks and Recreation
NMFS	National Marine Fisheries Service
NSB	North Slope Borough
USFWS	U.S. Fish and Wildlife Service

Measurements

ft	feet
mi	miles
in	inches
mm	millimeters
gal	gallons

A. Mitigation Measures

1. Facilities and Operations

- a. A plan of operations must be submitted and approved before conducting exploration, development, or production activities, and must describe the lessee’s plans to avoid or minimize impacts on residential, commercial, and recreational areas, Native allotments and subsistence use areas. At the time of application, lessee must submit a copy of the proposed plan of operations to all surface owners whose property will be entered.
- b. Facilities must be designed and operated to avoid or minimize sight and sound impacts in areas of high residential, commercial, recreational, and subsistence use and important wildlife habitat. Methods may include providing natural buffers and screening to conceal facilities, sound insulation of facilities, or by using alternative means approved by the Director, in consultation with ADF&G and the NSB.
- c. To the extent practicable, the siting of facilities, other than docks, roads, utility, and pipeline crossings will be prohibited within 500 ft of all fish bearing streams and water bodies and 1,500 ft from all current surface drinking water sources. Additionally, to the extent practicable, the siting of facilities will be prohibited within one-half mile of the banks of the main channel of the Colville, Canning, Sagavanirktok, Shaviovik, Kadleroshilik, and Kuparuk rivers. Facilities may be sited within these buffers if the lessee demonstrates to the satisfaction of the Director, in consultation with ADF&G, that site locations outside these

buffers are not practicable or that a location inside the buffer is environmentally preferred. Road, utility, and pipeline crossings must be consolidated and aligned perpendicular or near perpendicular to watercourses.

- d. Impacts to identified wetlands must be minimized to the satisfaction of the Director, in consultation with ADF&G and ADEC. The Director will consider whether facilities are sited in the least sensitive areas. Further, certain activities within wetlands require permission from the U.S. Army Corps of Engineers (see Lessee Advisories below).
- e. Exploration facilities must be temporary and must be constructed of ice unless the Director determines that no practicable alternative exists. Use of gravel structures may be permitted on a case-by-case basis by the Director, after consultation with DMLW, and ADF&G. Approval for use of existing structures will depend on the extent and method of restoration needed to return these structures to a usable condition. Refer to A(5)(a) relating to access for exploration activities requirements.
- f. Pipelines must utilize existing transportation corridors where conditions permit. Pipelines and gravel pads must be designed to facilitate the containment and cleanup of spilled fluids. Where practicable, pipelines must be located on the upslope side of roadways and construction pads unless DMLW determines that an alternative site is environmentally acceptable. Wherever possible, onshore pipelines must be buried where soil and geophysical conditions permit. All pipelines, including flow and gathering lines, must be designed, constructed and maintained to maximize integrity against climatic conditions, geophysical hazards, corrosion and other hazards as determined on a case-by-case basis.
- g. Pipelines shall be designed and constructed to minimize alteration of caribou and other large ungulate movement and migration patterns. At a minimum, above-ground pipelines shall be elevated 7 ft, 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. Lessees shall consider increased snow depth in the sale area in relation to pipe elevation to ensure adequate clearance for wildlife. ADNRC may, after consultation with ADF&G, require additional measures to mitigate impacts to wildlife movement and migration.
- h. Dismantlement, Removal and Rehabilitation (DR&R): Upon abandonment of material sites, drilling sites, roads, buildings, or other facilities, such facilities must be removed and the site rehabilitated to the satisfaction of the Director, unless the Director, in consultation with DMLW, ADF&G, ADEC, NSB, and any non-state surface owner, determines that such removal and rehabilitation is not in the state's interest.
- i. 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 practicable, 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 DMLW, after consultation with ADF&G, determines that there is no practicable 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, available from ADF&G.

2. Habitat, Fish and Wildlife

- a. Detonation of explosives will be prohibited in open water areas of fish bearing streams and lakes. Explosives must not be detonated beneath, or in proximity to fish bearing streams and

lakes if the detonation of the explosive produces a pressure rise in the water body of greater than 2.7 pounds per square inch, or unless the water body, including its substrate, is solidly frozen. Detonation of explosives within or in close proximity to a fish spawning bed during the early stages of egg incubation must not produce a peak particle velocity greater than 0.5 in per second. Blasting criteria have been developed by ADF&G and are available upon request from ADF&G. The location of known fish bearing waters within the project area can also be obtained from ADF&G.

The lessee will consult with the NSB before proposing the use of explosives for seismic surveys. The Director may approve the use of explosives for seismic surveys after consultation with the NSB.

- b. Removal of water from fish bearing rivers, streams, and natural lakes shall be subject to prior written approval by DMLW and ADF&G. Water intake pipes used to remove water from fish bearing water bodies must be surrounded by a screened enclosure to prevent fish entrainment and impingement. Screen mesh size shall be no greater than 1 mm (0.04 in), 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 ft per second, unless an alternative velocity has been approved by ADF&G.
- c. Removal of snow from fish bearing rivers, streams, and natural lakes shall be subject to prior written approval by ADF&G. Compaction of snow cover overlying fish bearing water bodies is prohibited except for approved crossings. If ice thickness is not sufficient to facilitate a crossing, ice or snow bridges may be required.
- d. No facilities will be sited within one-half mile of identified Dolly Varden and Arctic char overwintering and/or spawning areas on the Canning, Kavik, Shaviovik, Echooka, Ivishak, Saviukviayak, Anaktuvuk, Kanayut, and Nanushuk Rivers; and on May, Cobblestone, Upper Section, Lower Section, and Accomplishment Creeks without prior authorization. Road and pipeline crossings within these buffers, and for other anadromous streams, require an ADF&G Fish Habitat permit. Current data must indicate that the proposed crossing is not within an overwintering and/or spawning area, or that the crossing will have no significant adverse impact to Dolly Varden or Arctic char overwintering and/or spawning habitat.
- e. Bears:
 - i. Lessees are required to prepare and implement a human-bear interaction plan designed to minimize conflicts between bears and humans. The plan should include measures to:
 - A. minimize attraction of bears to facility sites, including garbage and food waste;
 - B. organize layout of buildings and work areas to minimize interactions between humans and bears such as including the use of electric fencing;
 - C. warn personnel of bears near or on facilities and the proper actions to take;
 - D. if authorized, deter bears from the drill site;
 - E. provide contingencies in the event bears do not leave the site;
 - F. provide for proper storage and disposal of materials that may be toxic to bears; and
 - G. document and communicate the sighting of bears onsite or in the immediate area to all shift employees.
 - ii. Before commencement of any activities, lessees shall consult with ADF&G to identify the locations of any known brown bear den sites that are occupied in the season of proposed activities. Exploration and development activities started between September 20 and May

15 may not be conducted within one-half mile of known occupied brown bear dens, unless alternative mitigation measures are approved by ADF&G. A lessee who encounters an occupied brown bear den not previously identified by ADF&G must report it to the Division of Wildlife Conservation, ADF&G, within 24 hours. Mobile activities shall avoid such discovered occupied dens by one-half mile unless alternative mitigation measures are approved by DO&G with concurrence from ADF&G. Non-mobile facilities will not be required to relocate.

- f. Permanent, staffed facilities must be sited to the extent practicable 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.
- g. Aircraft travel shall remain one-half mile horizontal or 1,000 ft vertical from Dall sheep lambing areas between May 5 and June 20, and mineral licks from May 20 to June 30. Human safety will take precedence over flight restrictions.
- h. Minor ground activity (e.g., surveying, geological hand sampling) and major activity (e.g., seismic testing, construction) shall remain ¼ mi and 1 mi from Dall sheep lambing areas and mineral licks, respectively, during the same time periods as above.
- i. Major manned facilities (e.g., processing facilities, camps) shall be sited at least one mile from Dall sheep lambing areas and mineral licks.
- j. Known Dall sheep lambing areas and mineral licks shall be obtained from ADF&G, Division of Wildlife Conservation, Region 3 (Interior Alaska).

3. Subsistence and Sport Harvest Activities

- a. Exploration, development and production operations shall be conducted in a manner that prevents unreasonable conflicts with subsistence activities. Lease-related use will be restricted when the Director determines it is necessary to prevent conflicts with local subsistence and sport harvest activities.
 - i. Before submitting a plan of operations for onshore activities that have the potential to disrupt subsistence activities, the lessee shall consult with the potentially affected subsistence communities and the NSB (collectively "parties") to discuss the siting, timing, and methods of proposed operations and safeguards or mitigating measures that 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. In order to avoid conflicts with subsistence and sport harvest activities, restrictions may include alternative site selection, requiring directional drilling, seasonal drilling restrictions, and other technologies deemed appropriate by DO&G.
 - ii. A discussion of resolutions reached or not reached during the consultation process and any 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.
 - iii. If the parties cannot agree, then any of them may request that the Commissioner of ADNR or his/her designee intercede. The Commissioner may assemble the parties or take other measures to resolve conflicts among the parties.

- iv. The lessee shall notify the Director of all concerns expressed by subsistence hunters during operations and of steps taken to address such concerns.
- b. Traditional and customary access to subsistence areas shall be maintained unless reasonable alternative access is provided to subsistence users. “Reasonable access” is access using means generally available to subsistence users. Lessees will consult the NSB, nearby communities, and native organizations for assistance in identifying and contacting local subsistence users.
- c. Exploratory drilling operations may be restricted during the fall caribou migration (August 1 through October 15) in the Chandler, Nanushuk, Itkillik, Kuparuk, and Anaktuvuk River valleys to allow for subsistence hunting.
- d. Exploration activities may be restricted during fall caribou migration (August 1 through October 31); and the siting of permanent facilities, except for roads or pipelines, will be prohibited in the Chandler, Anaktuvuk, Nanushuk, Itkillik, and Kuparuk River valleys, unless the lessee demonstrates to the satisfaction of the Director, in consultation with the NSB, that the development will not preclude reasonable subsistence user access to caribou.

Lease related use may be restricted when the Director determines it is necessary to prevent conflicts with subsistence and sport harvest activities. DO&G will consult with other agencies, the affected local borough(s) and the public to identify and avoid potential conflicts that are brought to the division’s attention both in the planning and operational phases of lease-related activities. In order to avoid conflicts with subsistence, commercial and sport harvest activities, restrictions may include alternative site selection, requiring directional drilling, seasonal drilling restrictions, and other technologies deemed appropriate by the Director.

4. Fuel, Hazardous Substances, and Waste

- a. Secondary containment shall be provided for the storage of fuel or hazardous substances. Secondary containment means an impermeable diked area or portable impermeable containment structure capable of containing 110% of the volume of the largest independent container. Double walled tanks do not qualify as secondary containment unless an exception is granted for a particular tank.
- b. Containers with a storage capacity larger than 55 gal that contain fuel or hazardous substances shall not be stored within 100 ft of a water body, or within 1,500 ft of a current surface drinking water source.
- c. During equipment storage or maintenance, the site shall be protected from leaking or dripping fuel and hazardous substances by the placement of drip pans or other surface liners designed to catch and hold fluids under the equipment, or by creating an area for storage or maintenance using an impermeable liner or other suitable containment mechanism.
- d. During fuel or hazardous substance transfer, secondary containment or a surface liner must be placed under all container or vehicle fuel tank inlet and outlet points, hose connections, and hose ends. Appropriate spill response equipment, sufficient to respond to a spill of up to 5 gal, must be on hand during any transfer or handling of fuel or hazardous substances. Trained personnel shall attend transfer operations at all times.
- e. Vehicle refueling shall not occur within the annual floodplain, except as addressed and approved in the plan of operations. This measure does not apply to water-borne vessels.
- f. All independent fuel and hazardous substance containers shall be marked with the contents and the lessee’s or contractor’s name using paint or a permanent label.

- g. A fresh water aquifer monitoring well, and quarterly water quality monitoring, may be required down gradient of a permanent above-ground liquid hydrocarbon storage facility.
- h. Waste from operations must be reduced, reused, or recycled to the maximum extent practicable. Garbage and domestic combustibles must be incinerated or disposed of at an approved site in accordance with 18 AAC 60. (See also Section B(2), below.) Proper disposal of garbage and putrescible waste is essential to minimize attraction of 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 air quality control regulations (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 must be achieved unless safety considerations prevent it.

- i. New solid waste disposal sites will not be approved or located on state property during the exploration phase. Exceptions may be provided for drilling waste if the facility will comply with the applicable provisions of 18 AAC 60.
- j. Wherever practicable, the preferred method for disposal of muds and cuttings from oil and gas activities is by underground injection, as regulated by AOGCC. Other methods of disposal shall be allowed only upon approval by the Director, in consultation with ADEC and ADF&G.

5. Access

- a. Except for approved off-road travel, exploration activities must be supported only by ice roads, winter trails, existing road systems or air service. (Refer to A(1)(e) relating to exploration facilities). Wintertime off-road travel across tundra and wetlands may be approved in areas where snow and frost depths 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 DMLW and the Director if an emergency condition exists; or if it is determined after consulting with ADF&G that travel can be accomplished without damaging vegetation or the ground surface.
- b. Public access to, or use of, the lease area may not be restricted except within the immediate vicinity of drill sites, buildings, and other related facilities. Areas of restricted access must be identified in the plan of operations. Lease facilities and operations shall not be located so as to block access to or along navigable or public waters as defined in AS 38.05.965.

6. Prehistoric, Historic, and Archaeological Sites

- a. Before the construction or placement of any gravel, or other structure, road, or facility resulting from exploration, development, or production activities, the lessee must conduct an inventory of prehistoric, historic, and archaeological sites within the area affected by an activity. The inventory must include consideration of literature provided by the NSB, nearby communities, Native organizations, and local residents; documentation of oral history regarding prehistoric and historic uses of such sites; evidence of consultation with the Alaska Heritage Resources Survey and the National Register of Historic Places; and site surveys. The inventory must also include a detailed analysis of the effects that might result from the activity.
- b. The inventory of prehistoric, historic, and archaeological sites must be submitted to the Director and to DPOR Office of History and Archaeology who will coordinate with the NSB for review and comment. If a prehistoric, historic, or archaeological site or area could be

adversely affected by a lease activity, the Director, after consultation with DPOR Office of History and Archaeology and the NSB, will direct the lessee as to the course of action to take to avoid or minimize adverse effects.

- c. If a site, structure, or object of prehistoric, historic, or archaeological significance is discovered during lease operations, the lessee must report the discovery to the Director as soon as possible. The lessee must make reasonable efforts to preserve and protect the discovered site, structure, or object from damage until the Director, after consultation with DPOR Office of History and Archaeology and the NSB, has directed the lessee as to the course of action to take for its preservation.

7. Local Hire, Communication, and Training

- a. Lessees are encouraged to employ local and Alaska residents and contractors, to the extent they are available and qualified, for work performed in the lease 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, hire and train local and Alaska residents and contractors. The lessee is encouraged, in formulating this proposal, to coordinate with employment and training services offered by the State of Alaska and local communities to train and recruit employees from local communities.
- b. A plan of operations application must describe the lessee's past and prospective efforts to communicate information about the project with local communities and interested local community groups.
- c. A plan of operations application must include a training program for all personnel including contractors and subcontractors. The program must be designed to inform each person working on the project of environmental, social, cultural, health, and safety concerns that relate to that person's job. The program must use methods to ensure that personnel understand and use techniques necessary to preserve geological, archaeological, and biological resources. In addition, the program must be designed to help personnel increase their sensitivity and understanding of community values, customs, and lifestyles in areas where they will be operating. 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.

8. Definitions

Facilities means any structure, equipment, or improvement to the surface, whether temporary or permanent, including, but not limited to, roads, pads, pits, pipelines, power lines, generators, utilities, airstrips, wells, compressors, drill rigs, camps and buildings.

Hazardous substance means the following: (A) an element or compound that, when it enters into or on the surface or subsurface land or water of the state, presents an imminent and substantial danger to the public health or welfare, or to fish, animals, vegetation, or any part of the natural habitat in which fish, animals, or wildlife may be found; or (B) a substance defined as a hazardous substance under 42 USC 9601 - 9675 (Comprehensive Environmental Response, Compensation, and Liability Act of 1980); "hazardous substance" does not include uncontaminated crude oil or uncontaminated refined oil (AS 46.09.900).

Identified wetlands are those areas that have been identified as wetlands by the U. S. Army Corps of Engineers under Section 404 of the Clean Water Act.

Minimize means to reduce adverse impacts to the smallest amount, extent, duration, size, or degree reasonable in light of the environmental, social, or economic costs of further reduction.

Plan of operations means a lease plan of operations under 11 AAC 83.158 and a unit plan of operations under 11 AAC 83.346.

Practicable means feasible in light of overall project purposes after considering cost, existing technology, and logistics of compliance with the standard.

Reasonable access means access using means generally available to subsistence users.

Temporary means no more than 12 months.

B. Other Regulatory Requirements (Lessee Advisories)

Lessees must comply with all applicable local, state, and federal codes, statutes, and regulations, as amended. Lessee Advisories alert lessees to additional restrictions that may be imposed at the permitting stage of a proposed project or activity where entities other than DO&G have regulatory, permitting, or management authority. These advisories are not all inclusive of all the additional regulatory requirements that may be needed. It is the lessee's responsibility to obtain all other state authorizations and permits relating to lease activities.

1. Alaska Department of Natural Resources, Division of Coastal and Ocean Management

- a. Pursuant to AS 46.40, projects are required to comply with all policies and enforceable standards of the Alaska Coastal Management Program, including the approved District Coastal Management Plans.

2. Alaska Department of Environmental Conservation

- a. Pursuant to AS 46.04.030, lessees are required to have an approved oil discharge prevention and contingency plan (C-plan) before commencing operations. The plan must include a response action plan to describe how a spill response would occur, a prevention plan to describe the spill prevention measures taken at the facility, and supplemental information to provide background and verification information.
- b. Pursuant to state regulations administered by ADEC and the Clean Air Act administered by EPA, lessees are required to obtain air quality permits before construction and operation. The permits will include air quality monitoring, modeling, and emission control obligations.
- c. Unless authorized by an ADEC permit, surface discharge of reserve pit fluids and produced waters is prohibited.
- d. Unless authorized by National Pollutant Discharge Elimination System or state permits, disposal of wastewater into freshwater bodies is prohibited.

3. Alaska Department of Fish and Game

- a. Under the provisions of Title 16 of the Alaska Statutes, the measures listed below may be imposed by ADF&G below the ordinary high water mark to protect designated anadromous water bodies and to ensure the free and efficient passage of fish in all fish bearing water bodies. However, exceptions may be authorized with a Fish Habitat permit. Specific information on the location of anadromous water bodies in and near the area may be obtained from ADF&G.

- i. Alteration of riverbanks may be prohibited.
 - ii. The operation of equipment, excluding boats, in open water areas of rivers and streams may be prohibited. Except for approved stream crossings, equipment must not be operated within willow stands (*Salix* spp.).
 - iii. Bridges or non-bottom founded structures may be required for crossing fish spawning and important rearing habitats.
 - iv. Culverts or other stream crossing structures must be designed, installed, and maintained to provide free and efficient passage of fish.
- b. Removal of water from fish bearing water bodies is subject to the regulations for the Appropriation and Use of Water (11 AAC 93.035-.147) and Fish and Games statutes AS 16.05.841 and AS 16.05.871.
 - c. The Director, in consultation with ADF&G, may impose seasonal restrictions on activities located in, or requiring travel through or overflight of, important caribou or other large ungulate calving and wintering areas during the plan of operations approval stage.
 - d. The Director, in consultation with ADF&G, may impose seasonal restrictions on activities located in and adjacent to important waterfowl and shorebird habitat during the plan of operations approval stage.
 - e. To minimize impacts on Dolly Varden, and Arctic char overwintering areas, permanent, staffed facilities must be sited to the extent practicable outside identified Dolly Varden or Arctic char overwintering areas.
 - f. Lessees are encouraged in planning and design activities to consider the recommendations of oilfield design and operations 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.
 - g. Lessees must comply with the provision of Appendix B of the "Yellow-billed Loon Conservation Agreement," dated July 31, 2006, between ADF&G, ADNR, USFWS, Bureau of Land Management, and the National Park Service.

4. Alaska Department of Natural Resources, Office of History and Archaeology

- a. Pursuant to AS 11.46.482, defacing, disturbing, or desecration of a cemetery or graves is prohibited in the State of Alaska. Removal of remains or artifacts is against statute mandates and may be punishable by law.

5. Alaska Department of Labor and Workforce Development

- a. The lessee shall facilitate Alaska resident hire monitoring by reporting project wages on a quarterly basis for each individual employed by the lessee in the lease area, through electronic unemployment insurance reporting, and by requiring the same of the lessee's contractors and subcontractors.

6. U.S. Army Corps of Engineers

- a. A U.S. Army Corps of Engineers permit is required when work is anticipated on, in, or affects navigable waters or involves wetland related dredge or fill activities. A Section 10 permit is required for construction, excavation, or deposition of material in, over, or under navigable waters, or for any work which would affect the course, location, condition, or capacity of navigable waters, or for any work which would affect the course, location, condition, of

capacity of navigable waters (33 USC 403). A Section 404 permit (33 USC 404) authorizes the discharge of dredged and fill material into waters and wetlands of the United States. The process is similar for both permits and, at times, both may be required.

7. Pipeline and Hazardous Materials Safety Administration

- a. Lessees are advised that any pipeline used for transportation of gas or hazardous liquids may be subject to Federal Pipeline Safety Laws (49 USC 60101 et seq.) and regulations (49 CFR 190-195) under the jurisdiction of the U.S. DOT – Pipeline and Hazardous Materials Safety Administration.

8. U.S. Fish and Wildlife Service and National Marine Fisheries Service

- a. Lessees are advised that the Endangered Species Act of 1973 (ESA), as amended (16 USC 1531-1544) protects endangered and threatened species and candidate species for listing that may occur in the lease sale area. Lessees shall comply with the Recommended Protection Measures developed by the USFWS to ensure adequate protection for all endangered, threatened and candidate species. The following endangered or threatened species occur in or adjacent to the lease sale area:

Common Name	ESA Status
Spectacled eider	Threatened
Steller's eider (Alaska breeding population)	Threatened
Polar bear	Threatened

- b. Lessees are advised of the need to comply with the Migratory Bird Treaty Act (MBTA; 16 USC 703) which is administered by the USFWS. Under the MBTA, it is illegal to "take" migratory birds, their eggs, feathers or nests. "Take" is defined (50 CFR 10.12) to include "pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting." The MBTA does not distinguish between "intentional" and "unintentional" take. Migratory birds include songbirds, waterfowl, shorebirds, and raptors. In Alaska, all native birds except grouse and ptarmigan (which are protected by the State of Alaska) are protected under the MBTA.

In order to ensure compliance with the MBTA, it is recommended that lessees survey the project area before construction, vegetation clearing, excavation, discharging fill or other activities which create disturbance, and confirm there are no active migratory bird nests. It is recommended lessees contact the USFWS for assistance and guidance on survey needs, and other compliance issues under the MBTA. While the USFWS can recommend methods (such as surveys and timing windows) to avoid unintentional take, responsibility for compliance with the MBTA rests with lessees.

- c. Lessees are advised that they must comply with the provisions of the Marine Mammal Protection Act of 1972, as amended (16 USC 1361-1407). USFWS shares authority for marine mammals with the NMFS.
- d. Peregrine falcon nesting sites are known to occur in the sale 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.
- e. Lessees are advised that the Magnuson-Stevens Fishery Conservation and Management Act requires identification of Essential Fish Habitat (EFH) for all species managed under a federal

Fisheries Management Plan. Subsequent exploration and/or development activities associated with the lease sale may be subject to consultation under EFH. EFH information, consultation, guidance, and species life history information are available from the National Marine Fisheries Service (NMFS).

9. North Slope Borough

- a. 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's Title 19 for zoning, and other borough regulations, require borough approval for all proposed uses, development, and master plans.
- b. Lessees are advised that restricting access to and use of fish camps and other subsistence use areas defined in the NSB Traditional Land Use Inventory, may violate subsistence harvest protection and land use regulations. Lessees are advised to consult with the NSB Planning Department and local communities during planning of operations.
- c. Lessees are encouraged to include 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.
- d. 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 B19.70.050(I)(1). Lessees are encouraged to apply the following provisions governing aircraft operations in and near the sale area:
 - i. 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 ft, or a lateral distance of 1 mi.
 - ii. To the extent practicable, all aircraft should maintain an altitude greater than 1,500 ft or a lateral distance of 1 mi, 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.
 - iii. Human safety will take precedence over flight restrictions.
- e. Lessees are advised that certain areas are especially valuable for: their concentrations of mammals, birds, fish, 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.
 - i. Dolly Varden or Arctic char overwintering and/or spawning areas on the Canning, Kavik, Shaviovik, Echooka, Ivishak, Saviukviayak, Anaktuvuk, Kanayut, and Nanushuk Rivers; and, on May, Cobblestone, Upper Section, Lower Section, and Accomplishment creeks.
 - ii. The Chandler, Anaktuvuk, Nanushuk, Itkillik, and Kuparuk river drainages, from August 1 to October 15, for protection of subsistence caribou harvest opportunities.
- f. 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 (18).

Appendix B: Sample Competitive Oil and Gas Lease

Competitive Oil and Gas Lease
Form #DOG 200604 (rev. 3/2009)

STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES

Competitive Oil and Gas Lease **ADL No.**

THIS LEASE is entered into _____, between the State of Alaska, "the state," and _____

"the lessee," whether one or more, whose sole address for purposes of notification is under Paragraph 25.

In consideration of the cash payment made by the lessee to the state, 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 and the lessee agree as follows:

1. GRANT. (a) Subject to the provisions in this lease, the state 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 the state 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 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 State of Alaska's 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 state's interest in that oil, gas, and associated substances, and the royalties and rentals provided in this lease must be paid to the state in the proportion that the state's interest bears to the entire undivided fee.

(e) The state makes no representations or warranties, express or implied, as to title, or access to, or quiet enjoyment of, the leased area. The state is 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 state, for itself and others, reserves 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 state, or by any other person or entity acting under authority of the state, 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 if it is committed to a unit agreement approved or prescribed by the state, and will remain in effect 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 the state 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.

(e) If the state directs or approves 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.

(f) If the state 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 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.

(g) Nothing in subparagraphs (e) or (f) suspends the obligation to pay royalties or other production or profit-based payments to the state 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 to the state 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 upon extension of this lease beyond the primary term.

(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 State of Alaska (or any depository designated by the state with at least 60 days notice to the lessee) in advance, on or before the annual anniversary date of this lease. The state is not required to give notice that rentals are due by billing the lessee. If the state's (or 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 is not paid timely, this lease automatically terminates as to both parties at 11:59 p.m., Alaska Standard Time, on the date by which the rental payment was to have been made.

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 of Alaska 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. 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 state's 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 state, 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. All payments to the State of Alaska 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 7TH AVENUE, SUITE 1410
ANCHORAGE, ALASKA 99501-3561
ATTENTION: FINANCIAL SERVICES SECTION

or in person at either of the Department's Public Information Centers located at

550 W. 7th Ave., Suite 1260
Anchorage, Alaska

3700 Airport Way
Fairbanks, Alaska

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

9. PLAN OF OPERATIONS. (a) Except as provided in (b) of this section, a plan of operations for all or part of the leased area must be approved by the commissioner before any operations may be undertaken on or in the leased area.

- (b) A plan of operations is not required for:
 - (1) activities that would not require a land use permit; or
 - (2) operations undertaken under an approved unit plan of operations.

(c) Before undertaking operations on or in the leased area, the lessee shall provide for full payment of all damages sustained by the owner of the surface estate as well as by the surface owner's lessees and permittees, by reason of entering the land.

(d) An application for approval of a plan of operations must contain sufficient information, based on data reasonably available at the time the plan is submitted for approval, for the commissioner to determine the surface use requirements and impacts directly associated with the proposed operations. An application must include statements and maps or drawings setting out the following:

(1) the sequence and schedule of the operations to be conducted on or in the leased area, including the date operations are proposed to begin and their proposed duration;

(2) projected use requirements directly associated with the proposed operations, including the location and design of well sites, material sites, water supplies, solid waste sites, buildings, roads, utilities, airstrips, and all other facilities and equipment necessary to conduct the proposed operations;

(3) plans for rehabilitation of the affected leased area after completion of operations or phases of those operations; and

(4) a description of operating procedures designed to prevent or minimize adverse effects on other natural resources and other uses of the leased area and adjacent areas, including fish and wildlife habitats, historic and archeological sites, and public use areas.

(e) In approving a lease plan of operations or an amendment of a plan, the commissioner will require amendments that the commissioner determines necessary to protect the state's interest. The commissioner will not require an amendment that would be inconsistent with the terms of sale under which the lease was obtained, or with the terms of the lease itself, or which would deprive the lessee of reasonable use of the leasehold interest.

(f) The lessee may, with the approval of the commissioner, amend an approved plan of operations.

(g) Upon completion of operations, the lessee shall inspect the area of operations and submit a report indicating the completion date of operations and stating any noncompliance of which the lessee knows, or should reasonably know, with requirements imposed as a condition of approval of the plan.

(h) In submitting a proposed plan of operations for approval, the lessee shall provide ten copies of the plan if activities proposed are within the coastal zone, and five copies if activities proposed are not within the coastal zone.

10. PLAN OF DEVELOPMENT. (a) Except as provided in subparagraph (d) below, within 12 months after completion 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 the state 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 the state.

(b) The plan of development must be revised, updated, and submitted to the state 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 in lieu of the required revision and update.

(c) The lessee may, with the approval of the state, 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.

11. INFORMATION ACQUIRED FROM OPERATIONS. (a) The lessee shall submit to the state all geological, geophysical and engineering data and analyses obtained from the lease within 30 days following the completion of a well. The lessee shall submit to the state data and analyses acquired subsequent to well completion within 30 days following acquisition of that data. The state may waive receipt of operational data from some development, service or injection wells. The state will inform the operator of the waiver prior to well completion. The lessee shall submit the data and analyses to the Division of Oil and Gas, Department of Natural Resources, at the location specified in paragraph 25 of this lease. The data and analyses shall include the following:

(1) a copy of the completion report (AOGCC form 10-407) with an attached well summary, including daily drilling reports, formation tops encountered, a full synopsis of drillstem and formation testing data, an identification of zones of abnormal pressure, oil and gas shows and cored intervals;

(2) latitudinal and longitudinal coordinates for the completed surface and bottom hole locations;

(3) a copy of the permit to drill (AOGCC form 10-401 only, additional documentation not required) and the survey plat of the well location;

(4) a paper copy (no sepia copies) of all final 2-inch open hole and cased hole logs, including measured depth and true-vertical depth versions, specialty logs (such as Schlumberger's cyberlook, formation microscanners and dipmeter logs), composite mud or lithology log and report, measured-while-drilling (MWD) and logged-while-drilling (LWD) logs, velocity and directional surveys;

(5) a digital version of well logs in LAS, LIS or ASCII format on IBM format floppy disks, a digital version of velocity surveys in SEG Y format, a digital version of directional surveys in ASCII format (other formats may be acceptable upon agreement with the Division of Oil and Gas); and

(6) a paper copy of all available well analyses, including geochemical analyses, core analyses (porosity, permeability, capillary pressure, photos, and descriptions), paleontologic and palynologic analyses, thermal maturation analyses, pressure build up analyses, and fluid PVT analyses (an ASCII format digital version of the above information shall also be submitted, if available). The state may require the lessee to submit additional information in accordance with the applicable statutes and regulations in effect at the time of the completion date of the well.

(b) Any information submitted to the state by the lessee in connection with this lease will be available at all times for use by the state and its agents. The state will keep information confidential as provided in AS 38.05.035(a)(9) and its applicable regulations. In accordance with AS 38.05.035(a)(9)(C), in order for geological, geophysical and engineering information submitted under paragraph 11(a) of this lease to be held confidential, the lessee must request confidentiality at the time the information is submitted. The information must be marked **CONFIDENTIAL**.

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 state 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 the state.

(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 state as well as the interest of the lessee.

(c) The lessee shall perform all operations under this lease in a good and workmanlike manner in accordance with the 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 of Alaska relative to the prevention of waste and to the preservation of the leased area. If the lessee fails to carry out these orders, the state 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.

14. OFFSET WELLS. The lessee shall drill such wells as a reasonable and prudent operator would drill to protect the state 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 not owned by the State of Alaska or on which the State of Alaska receives a lower rate of royalty than under 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, the state finds that production from that well is draining lands then subject to this lease, the lessee shall within 30 days after written demand by the state 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 state's consent, compensate the state in full each month for the estimated loss of royalty through drainage in the amount determined by the state.

15. UNITIZATION. (a) 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.

(b) The lessee agrees, within six months after demand by the state, to subscribe to a reasonable cooperative or unit agreement that will adequately protect all parties in interest, including the state. The state reserves the right to prescribe such an agreement.

(c) With the consent of the lessee, and if the leased area is committed to a unit agreement approved by the state, the state may establish, alter, change, or revoke drilling, producing, and royalty requirements of this lease as the state determines necessary or proper to secure the proper protection of the public interest.

(d) Except as otherwise provided in this subparagraph, where only a portion of the leased area is committed to a unit agreement approved or prescribed by the state, that commitment constitutes a severance of this lease as to 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 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, 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, under 11 AAC 83.361, as capable of production in paying quantities as defined in 11 AAC 83.395(4) on it before commitment to a unit agreement, this lease will not be severed. If any portion of this lease is included in a participating area formed under a unit agreement, the entire leased area will remain committed to the unit and this lease will not be severed.

16. INSPECTION. The lessee shall keep open at all reasonable times, for inspection by any duly authorized representative of the State of Alaska, 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 of Alaska with copies of and extracts from any such reports and records.

17. SUSPENSION. The state may from time to time direct or approve in writing suspension of production or other operations under this lease.

18. ASSIGNMENT, PARTITION, AND CONVERSION. This lease, or an interest in this lease, may, with the approval of the state, 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 state unless approved by the state. The lessee shall remain liable for all obligations under this lease accruing prior to the approval by the state 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 state and the lessee. Applications for approval of an assignment, sublease, or other transfer must comply with all applicable regulations and must be filed within 90 days after the date of final execution of the instrument of transfer. The state will approve a transfer of an undivided interest in this lease unless the transfer would adversely affect the interests of Alaska or the application does not comply with applicable regulations. The state 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 capable of production in paying quantities. The state 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 the state or upon request of the transferee and with the approval of the state, 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 the state 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 the state, 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 the state 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. (a) 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 to begin and diligently prosecute operations to remedy that default, the state may 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.

(b) The state may cancel this lease at any time if the state determines, after the lessee has been given notice and a reasonable opportunity to be heard, that:

(1) continued operations pursuant to this lease probably will cause serious harm or damage to biological resources, to property, to mineral resources, or to the environment (including the human environment);

(2) the threat of harm or damage will not disappear or decrease to an acceptable extent within a reasonable period of time; and

(3) the advantages of cancellation outweigh the advantages of continuing this lease in effect. Any cancellation under this subparagraph will not occur unless and until operations under this lease have been under suspension or temporary prohibition by the state, with due extension of the term of this lease, continuously for a period of five years or for a lesser period upon request of the lessee.

(c) Any cancellation under subparagraph (b) will entitle the lessee to receive compensation as the lessee demonstrates to the state is equal to the lesser of:

(1) the value of the cancelled rights as of the date of cancellation, with due consideration being given to both anticipated revenues from this lease and anticipated costs, including costs of compliance with all applicable regulations and stipulations, liability for clean-up costs or damages, or both, in the case of an oil spill, and all other costs reasonably anticipated under this lease; or

(2) the excess, if any, over the lessee's revenues from this lease (plus interest on the excess from the date of receipt to date of reimbursement) of all consideration paid for this lease and all direct expenditures made by the lessee after the effective date of this lease and in connection with exploration or development, or both, under this lease, plus interest on that consideration and those expenditures from the date of payment to the date of reimbursement.

21. RIGHTS UPON TERMINATION. Upon the expiration or earlier termination of this lease as to 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 the state, 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 the state or may be removed by the state at the lessee's expense. 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 the state, 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 AS 38.05.125 reservation may be exercised by the lessee until the lessee has provided to pay the owner of the land, his lessees and permittees, upon which the AS 38.05.125 reserved 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, 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 AS 38.05.130 and to indemnify the state and hold it 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 AS 38.05.130 by virtue of this lease.

(b) The lessee shall indemnify the state for, and hold it 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 the

state under this subparagraph for any loss, damage, or injury caused by or resulting from the sole negligence of the state.

(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, and the person executing this lease on behalf of the lessee shall be authorized representatives for their respective principals for the purposes of administering this lease. The state 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 99501-3560

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 the state under the lease or any action of the state regarding a provision of this lease must file a written protest with the Division of Oil and Gas within 30 days after the mailing date of the state's notice or bill. A lessee who fails to file a protest within the required time waives any further right to protest. The state will establish the administrative appeal procedure to be followed and will inform the lessee of the procedure no later than 30 days after the filing of the written 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 state 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.** The state reserves the right to waive any breach of a provision of this lease, but any such waiver extends only to the particular breach so waived and does not limit the rights of the state 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. Notwithstanding the foregoing, the state will not 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, the state 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.

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. **CONDITIONAL LEASE.** If all or a part of the leased area is land that has been selected by the state under laws of the United States granting lands to the state, but the land has not been patented to the state by the United States, then this lease is a conditional lease as provided by law until the patent becomes effective. If for any reason the selection is not finally approved, or the patent does not become effective, any rental, royalty, or other production or profit-based payments made to the state under this lease will not be refunded.

33. **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.

34. **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 production in quantities sufficient to yield a return in excess of operating costs, even though drilling and equipment costs may never be repaid and the undertaking considered as a whole may ultimately result in a loss; 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.

35. **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 state as a royalty 12.50 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.

36. **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 lessee's actual and reasonable costs of transportation away from the leased or unit area to the point of sale. The "actual and reasonable costs of transportation" for marine transportation are as defined in 11 AAC 83.229(a), (b)(2), and (c) – (f).

(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 the state.

(d) The state may establish minimum values for the purposes of computing royalties 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.

37. ROYALTY IN VALUE. Except to the extent that the state elects to receive all or a portion of its royalty in kind as provided in Paragraph 38 below, the lessee shall pay to the state that value of all royalty oil, gas, and associated substances as determined under Paragraph 36 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 the State of Alaska must be paid on or before the last federal banking 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 state or the lessee as the result of a redetermination will bear interest from the last federal banking 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 state 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.

38. ROYALTY IN KIND. (a) At the state's option, which may be exercised from time to time upon not less than 50 days' notice to the lessee, the lessee shall deliver all or a portion of the state's royalty oil, gas, or associated substances produced from the leased area in kind. Delivery will be on the leased area, unit area, or at a place mutually agreed to by the state and the lessee, and must be delivered to the State of Alaska or to any individual, firm, or corporation designated by the state.

(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, the state, at its option, 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 the state 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 state 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, the state may elect without penalty to underlift for up to six months all or a portion of the state's royalty on oil, gas, or associated substances produced from the leased or unit area and taken in kind. The state'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 the state at a daily rate not to exceed 100 percent of its royalty interest share of daily production at the time of the underlift recovery.

39. 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.

40. EFFECTIVE DATE. This lease takes effect on _____.

BY SIGNING THIS LEASE, the state as lessor and the lessee agree to be bound by its provisions.

STATE OF ALASKA

By: _____

Director, Division of Oil and Gas

STATE OF ALASKA)

LESSEE: _____

Signature: _____

Printed Name/Title: _____

INSERT NOTARY ACKNOWLEDGMENT OF LESSEE'S SIGNATURE HERE.