

**U.S. Department of the Interior
Bureau of Land Management**

Environmental Assessment

**Line Energy 2012/2013 Delineation Drilling Program
APD/Injection ROW**

PREPARING OFFICE

U.S. Department of the Interior
Bureau of Land Management



Environmental Assessment
Linc Energy 2012/2013 Delineation Drilling
Program APD/Injection ROW

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Chapter 1.

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Environmental Assessment

For Linc Energy Operations, Inc.

EA# DOI-BLM-AK010-2013-0002-EA

Preparing Office: Arctic Field Office, 1150 University Avenue, Fairbanks, AK 99709

Linc Energy Operations, Inc. (Linc) has applied for permits and/or posted notices to access and drill on valid oil and gas leases during a one-year winter delineation program in the Northeast (NE) National Petroleum Reserve-Alaska (NPR-A).

Project title/Type of Action:

2012/2013 Delineation Drilling Program, APD Injection ROW

Serial/Lease/Case File Number:

AA081726, AA084141, FF096563

Land Use Plans:

Northeast National Petroleum Reserve-Alaska Supplemental Integrated Activity Plan/Environmental Impact Statement (IAP/EIS) dated 2008; National Petroleum Reserve-Alaska Integrated Activity Plan Environmental Impact Statement 2012; Colville River Special Area Management Plan 2008

Applicant Address:

Linc Energy Operations Inc, 3000 C Street Suite 103, Anchorage, AK 99503

Date: January 18, 2013**Lands Involved:**

Proposed access routes inside the NPR-A totaling approximately 7 miles to drill sites, storage sites, and water supply lakes. Also proposed are seven drill sites, with four wells co-located at two drill sites, an injection well at the Seabee Pad and temporary use of 5 water supply lakes on federal land in the NPR-A.

Note that some of the formatting and sections differ slightly from the official signed version; however, the content of this online—accessible document is exactly the same as the original.

Land Descriptions:

Legal Description of Proposed Drilling Pads (Umiat Meridian)

Well Name	BLM Lease Number	Township	Range	Section
Umiat Well DSP-01	AA081726	1 South	1 West	5
Umiat Well 16	AA084141	1 North	1 West	31
Umiat Well 16H	AA084141	1 North	1 West	31
Umiat Well 18	AA081726	1 South	1 West	3
Umiat Well 19	AA081726	1 South	1 West	2
Umiat Well 23	AA084141	1 North	1 West	32
Umiat Well 23	AA084141	1 North	1 West	32

Legal Description of Proposed Ice Road and Snow Trail (All Umiat Meridian)

Township	Range	Parcel Ownership	Comments
1 North	14 East	State Land	Start of trail from MP 359
1 North	13 East	State Land	--

Township	Range	Parcel Ownership	Comments
1 North	12 East	State Land	--
1 South	12 East	State Land	--
1 North	11 East	State Land	--
1 North	10 East	State Land	--
1 North	9 East	State Land	--
1 North	8 East	State Land	--
1 North	7 East	State Land	--
1 North	6 East	State Land	--
2 North	6 East	State Land	--
2 North	5 East	State Land	--
2 North	4 East	State Land	--
1 North	4 East	State Land/ASRC Land	--
1 North	3 East	State Land/ASRC Land	--
1 North	2 East	ASRC Land	--
1 South	2 East	ASRC Land	--
1 South	1 East	ASRC Land/Private Land/BLM	BLM Lease AA081726 Sec 5 & 6 (No proposed activity)
1 South	1 West	ASRC Land/NPR-A/BLM	Lakes on BLM: 7124,7118,7119, 7121, 7132 BLM Lease AA081726
1 North	1 West	NPR-A BLM	BLM Lease AA084141

Glossary/Acronyms

AAC.....	Alaska Administrative Code
ACEC.....	Area of Critical Environmental Concern
ADFG/ADF&G	Alaska Department of Fish and Game
ADNR.....	Alaska Department of Natural Resources
ADOT.....	Alaska Department of Transportation
AFO.....	Arctic Field Office
ANILCA-	The Alaska National Interest Lands Conservation Act passed in 1980, modified and established designation of federal lands in Alaska for conservation and wilderness. These lands are managed by the National Park Service, US Fish and Wildlife Service, and US Forest Service.
AOGCC.....	Alaska Oil & Gas Conservation Commission
BLM.....	Bureau of Land Management
C-Plan.....	Oil Discharge Prevention and Contingency Plan
CEQ.....	Council of Environmental Quality
CFR.....	Code of Federal Regulations
DMLW.....	Division of Mining, Land and Water
EA.....	Environmental Assessment
EFH.....	Essential Fish Habitat
EIS.....	Environmental Impact Statement
EO.....	Executive Order
EPA.....	Environmental Protection Agency
ESA.....	Endangered Species Act
FLPMA –	The Federal Land Policy and Management Act of 1976 is a Public Law 94-579 passed by Congress October 21, 1976 that gave direction to the way in which the public lands administered by the Bureau of Land Management are managed.
FONSI.....	Finding of No Significant Impact
IAP.....	Integrated Activity Plan
IFR.....	Instrument Flight Rules

Linc.....	Linc Energy Operations, Inc
LPV.....	Low Pressure Vehicles
MGP.....	Air Quality Minor Source General Permit
NE.....	Northeast
NEPA- National Environmental Policy Act. This law, passed in 1969, went into effect on January 1, 1970. It requires all Federal Agencies to disclose the environmental effects of their actions. NHPA.....	National Historic Preservation Act
NPDES.....	National Pollutant Discharge Elimination System
NPRA- National Petroleum Reserve Alaska, formally named The Naval Petroleum Reserve #4(NPR-4) is an area of more than 23 million acres in the northernmost part of Alaska, and was established by executive order on February 27, 1923.	
NPRPA- The Naval Petroleum Reserves Production Act of 1976 (PL 94-258), dated April 5, 1976, transferred jurisdiction of NPR-4 to the Secretary of the Interior and renamed it the NPR-A. This act authorized the Secretary to begin further petroleum exploration and closed the NPR-A to all forms of appropriation under the public land laws, including mining and mineral leasing laws.	
NPR-4- The Naval Petroleum Reserve No. 4 was established by Executive Order 3797, dated February 27, 1923.	
NSB.....	North Slope Borough
ODPCP.....	Oil Discharge Prevention and Contingency Plan
PCP.....	Progressive Cavity Pump
PF.....	Public Facilities
ROD.....	Record of Decision
ROW.....	Right of Way
SAP.....	Subsistence Advisory Panel
SIAP.....	Supplemental Integrated Activity Plan
SPCC.....	Spill Prevention, Control, and Countermeasures Plan
TAPS.....	Trans-Alaska Pipeline System
UIC.....	Ukpeagvik Inupiat Corporation
USDOI.....	United States Department of Interior
USFWS (FWS)	United States Fish & Wildlife Service
VSAT.....	Very Small Aperture Terminal

1.1. Introduction

Linc Energy Operations, Inc. (Linc) has applied for permits and/or posted notices to access and drill on valid oil and gas leases during a one-year winter delineation program in the Northeast (NE) National Petroleum Reserve-Alaska (NPR-A). Linc (the Applicant) has submitted permit applications to Federal and State agencies and the North Slope Borough (NSB), including a request for an injection well (Table 1.1) Access to the site does not cross lands managed by the Bureau of Land Management (BLM). The proposed drill sites are located at Umiat, Alaska.

Linc is currently proposing to drill at up to seven new sites in the NPR-A (Figure 1), with access via packed snow trail and ice road as well as the existing gravel road system in the Umiat area. Use of existing gravel pads and facilities in the Umiat area is also proposed to minimize the footprint of ice construction. The proposed delineation program is a one year program, beginning in late 2012, with the **National Petroleum Reserve Alaska History:** Following creation of the 23 million-acre Naval Petroleum Reserve Number 4 (now the NPR-A), the Federal government

drilled at 123 sites¹, and private industry and the Arctic Slope Regional Corporation (ASRC) each drilled at one test site.² Early reconnaissance efforts (1943) included field inspection of reported oil seepages on the Colville River at the base of Umiat Mountain in the NE NPR-A.

From 1945 to 1952, 81 core tests and wells were completed, including 11 in the Umiat area (Legacy Wells³), resulting in the discovery of oil deposits and establishment of an operating base at Umiat. Results of delineation drilling led to estimates of 70 million barrels of recoverable oil in the Umiat field.⁴ The 1968 discovery of oil and gas at Prudhoe Bay, combined with the Arab oil embargo of 1974, led to further exploration on the North Slope. From 1974 to 1982, 28 test wells were drilled, including the Seabee well near Umiat.⁵

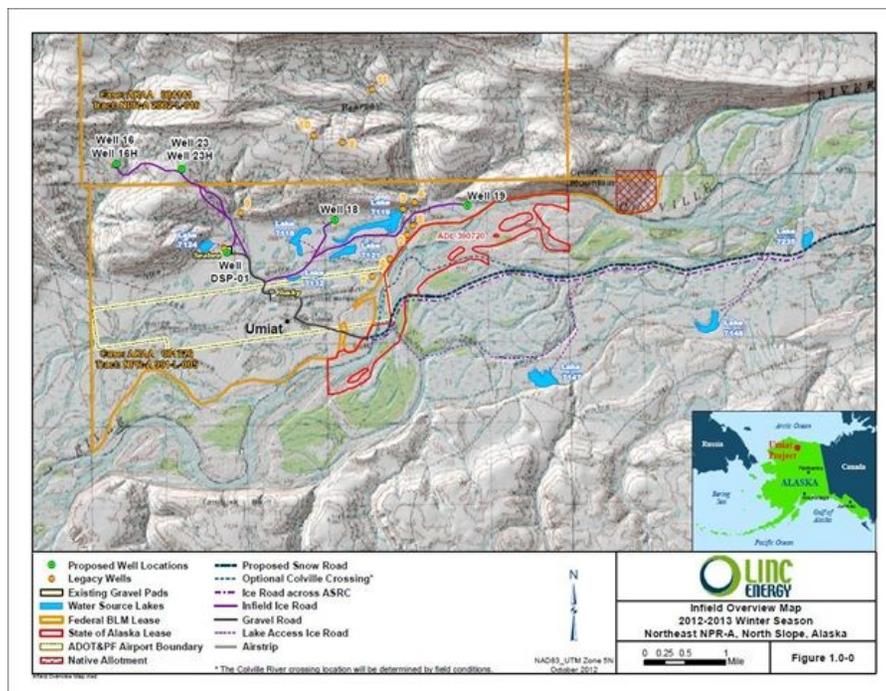


Figure 1.1. Applicant Map of Project Area

¹U.S. Geological Survey (USGS) Professional Paper 1399 (1988), p. 333.

²USDOJ. August 1998. Northeast NPR-A Final Integrated Activity Plan/Environmental Impact Statement (IAP/EIS), Vol. 1, p. III-A-5 (One well drilled by Arctic Slope Regional Corporation (ASRC), and one by CPAI).

³The Umiat Test Wells 1-11, drilled decades ago are now part of the BLM Legacy Well Program and, in this EA, will be called *Legacy Wells* to distinguish them from the proposed wells (W12 – W-22).

⁴Kornbrath, R. W., M. D. Myers, D. L. Krouskop, J. F. Meyer, J.A. Houle, T. J. Ryherd, and K.N. Richter. Alaska Department of Natural Resources Division of Oil and Gas. 1997. Petroleum Potential of the Eastern NPR-A. p. 8.

⁵USGS Professional Paper 1240-C (1985), p. C14

1.2. Purpose and Need

1.2.1. Need for Action

The need for the proposed action is for the BLM to fulfill its directive under the Naval Petroleum Reserves Production Act (NPRPA) of 1976, as amended, and the Energy Policy Act of 2005, to regulate oil and gas activity within the NPR-A. The project is needed to provide detailed information regarding potential reserves of oil and gas within the NPR-A, including Umiat which is known to have oil and gas resources and existing infrastructure. A primary need for the project is implicit in the worldwide demand for oil and gas that is accompanied by concern in the U.S. over dependence on foreign oil supplies and associated stability. The project is needed to supplement the diminishing North Slope oil supplies and maintain the efficiency of the Trans-Alaska Pipeline System (TAPS). Revenues from production are needed to support local, State, and national economies.

1.2.2. Purpose of Action

Alternatives to the proposed project are evaluated on the basis of their effectiveness in meeting these objectives.

The purpose for action is for BLM to provide access to and use of public lands within the NPR-A, including Umiat which has known reserves and existing infrastructure, in a manner that protects the natural resources of public lands and prevents unnecessary or undue degradation. The applicant's purpose for the proposed action is to determine whether lease holdings contain economically recoverable oil and gas in a 1-year delineation program.

The proposed project is composed of several elements and is designed to meet the Applicant's needs and objectives, including:

- Access to drilling sites and water supply lakes in a way that allows for maximum operations during the winter season in a cost-effective manner, while minimizing environmental impact
- Drilling to acquire sufficient subsurface information to satisfy the Applicant's economic and exploration performance criteria.
- Compliance with all related requirements of the NPR-A leases, Record of Decision (ROD)s, and all associated laws, regulations, permits, and approvals.

1.3. Related Statues, Regulations, Policies, and Programs

The 2008 Northeast NPR-A Supplemental Integrated Activity Plan/Environmental Impact Statement (USDOI BLM 2008a) and the 2012 NPR-A Integrated Activity Plan/Environmental Impact Statement (BLM 2012) was completed to fulfill the BLM's responsibility to manage lands in the NE Planning Area under the authority of the: NPRPA as amended, Federal Land Policy and Management Act of 1976 (FLPMA), National Environmental Policy Act (NEPA), and the Alaska National Interest Lands Conservation Act (ANILCA). Findings in the SIAP/EIS, IAP/EIS and decisions reflected in the 2008 Northeast NPR-A Record of Decision (USDOI 2008b) were based upon an open and collaborative public process, as well as experience with multiple exploration programs completed in the NPR-A.

1.3.1.

The proposed action must comply with numerous Federal laws and Executive Orders (EOs) that apply to activities on public lands – including those listed above. Key Federal and State controls associated with the proposed action were described in the USDOJ BLM 2008a. The proposed action is consistent with the 2001 National Energy Policy and the Energy Policy Act of 2005, which address the need for exploration on BLM land, including the NPR-A.

The proposed action is in conformance with the USDOJ (2008a), NPRPA, FLPMA, ANILCA, Endangered Species Act, Sustainable Fisheries Act, EO 11988, and EO 11990.

1.3.2. Required Permits, Licenses, Authorizations, and Approvals

A number of Federal, State, and local permits and approvals must be obtained before the Applicant can access a drill site and commence drilling. Primary regulatory authorization requirements for the proposed project are listed in Table 1.1.

Table 1.1 Permits and Authorizations for Proposed Project in the NPR-A	
Federal Authorizations and Approvals	
Bureau of Land Management (BLM)	<ul style="list-style-type: none"> ● Injection Well Right-of-Way (ROW) ● Application for Permit to Drill and Surface Use Plan ● Threatened and Endangered Species Determination ● Essential Fish Habitat Assessment (No consultation with National Marine Fisheries Service required) ● Alaska National Interest Lands Conservation Act (ANILCA) 810 Evaluation and Findings ● Archaeological and Cultural Resources Clearance ● Comprehensive Waste Management Plan ● Subsistence Plan ● Orientation Plan ● Bear Avoidance and Human Encounter/Interaction Plan
Federal Aviation Administration	<ul style="list-style-type: none"> ● Airspace Study (Needed to re-establish the Instrument Flight Rules (IFR) approach to the Umiat runway)
U.S. Fish and Wildlife Service (USFWS)	<ul style="list-style-type: none"> ● Concurrence on BLM Threatened and Endangered Species and Critical Habitat Determination
U.S. Environmental Protection Agency (EPA)	<ul style="list-style-type: none"> ● Domestic Wastewater Discharge, under National Pollutant Discharge Elimination System (NPDES) General Permit No. AKG-33-0000 (drilling/camp contractor) ● Spill Prevention, Control, and Countermeasures Plan (SPCC) (drilling/testing contractor)
State Authorizations and Approvals	

Table 1.1 Permits and Authorizations for Proposed Project in the NPR-A	
Alaska Department of Natural Resources (ADNR)	Division of Mining, Land and Water (DMLW) <ul style="list-style-type: none"> • Temporary Water Use Permits (ice roads and ice pads construction and maintenance, drilling and human use) • Land Use Permit Access
Alaska Department of Fish and Game	<ul style="list-style-type: none"> • Fish Habitat Permits for water extraction/use and stream crossings with fish habitat
Alaska Department of Transportation & Public Facilities (ADOT&PF)	<ul style="list-style-type: none"> • Lease Permit Application Husky Pad
Alaska Oil and Gas Conservation Commission (AOGCC)	<ul style="list-style-type: none"> • Authorization to Drill • Annular Disposal Approval
Alaska Department of Environmental Conservation (ADEC)	<ul style="list-style-type: none"> • Temporary Storage of Drilling Wastes • Drill Cutting Beneficial Reuse Plan • Air Quality Minor Source General Permit (MGP-1) • Oil Discharge Prevention and Contingency Plan (ODPCP) and Certificate of Financial Responsibility
North Slope Borough (NSB) Authorizations and Approvals	
North Slope Borough (NSB)	<ul style="list-style-type: none"> • Development Permits (for related elements)
Private Land Owners	
Arctic Slope Regional Corporation	<ul style="list-style-type: none"> • Surface Access Agreement
Other-Mutual Aid Agreements	
BP Exploration (Alaska), Inc.	<ul style="list-style-type: none"> • Third Party Agreement for use of Grind and Inject Facilities if needed

1.3.3. Related Environmental Analyses

The environmental analyses most closely related to the proposed action are listed in **Appendix B**. All exploration Environmental Assessments (EAs) and associated Findings of No Significant Impact (FONSIs) document findings that the project under review was: in compliance with ANILCA Title VIII provisions for protecting subsistence use and access; not likely to adversely affect Essential Fish Habitat (EFH); and not likely to adversely impact listed Threatened and Endangered Species or designated critical habitat.

Council of Environmental Quality (CEQ) Regulation 40 Code of Federal Regulations (CFR) §1502.20 encourages agencies to “tier off their environmental impact statements to eliminate repetitive discussions of the same issues and to focus on the actual issues ripe for decision at each level of environmental review.” This EA is tiered USDO I 2008a and 2008b, which are incorporated in their entirety by reference in accordance with CEQ Regulation 40 CFR §1502.21.

1.4. Decision to be Made

The BLM will decide whether or not to issue a permit to Linc for access to BLM lands near Umiat to conduct oil and gas exploration and drilling.

The decision-maker will take into account technical, economic, environmental, and social issues (Table 1.2) and the purpose and need of the proposed project. This EA will be based on findings, management controls and protective measures of USDO I BLM (2008b), as well as other laws and regulations. The scope of this EA includes analysis which enables BLM to select among alternatives that meet the purpose and need, and are within the BLM's jurisdiction [40 CFR §1506.1(a) (2)].

1.5. Scoping and Issues

Public notification of the Environmental Analysis was announced on October 30, 2012 in the NEPA Register on file at the Arctic Field Office (AFO) EA web site. No public comments have been received through January 18, 2013. Development of the IAPs (USDO I BLM 2008a and USDO I BLM 2012) involved extensive input from other Federal agencies, the State, the NSB, thousands of individuals, and many institutions. BLM guidelines include a list of issues that are addressed, where applicable, in NEPA assessments, (USDO I BLM 2008a and USDO I BLM 2012). Some elements are not present in the project area and are, therefore, not discussed further. A summary listing of related issues considered by AFO Field Staff is provided in Table 1.2.

Issue Considered	Determination	Basis of Determination (See Note 1)
ACEC's	Not Present	
Air Quality	Minimally Impacted	Air quality impacts likely to remain below applicable ambient air quality standards and increments. Protection provided by: ADEC air permit; 40 CFR 2020(c)(2), and NE ROP A-9
Cultural and Paleontological Resources	Minimally Impacted	Archaeological and Cultural Resources Clearance by BLM required under the NHPA. Cultural resources survey was completed. Cultural resources expected to remain unaffected based on location; no impacts to paleontological resources expected, based on identified locations and <i>de minimus</i> surface disturbance. Protection provided by NE ROP C-2, E-13, and I-1.
Environmental Justice	Not Present	No disproportionately high and adverse human health or environmental effects to Nuiqsut residents has been identified for the proposed project. Impacts to subsistence use are not expected to be more than minor and short term. Protection provided by NE Stipulations 27, 28 and 67; NE ROPs A-1 – A-7, B-1, B-2, F-1, H-1, H-2, and I-1. EO 12897 [See Subsistence]
Fisheries	Potentially Affected	The potential for impacts on fish overwintering in water source lakes is increased if water use exceeds the standard in ROP B-2f. Protections from other potential impacts provided by NE NPR-A ROPs A-3 – A6, B-1, B-2, C-2 – C-4, and D-1; additional permit stipulations required by this EA (Section 4.4); and ADF&G Fish Habitat Permits. EFH assessment finding is <i>not likely to adversely affect</i> .
Floodplains/Wetlands and Riparian Zones	Minimally Impacted	Protections from potential impacts provided by NE NPR-A ROPs A-4, A-5, C-2, C-3, D-1 and EO11988 and EO11990
Invasive, Non-native species	Minimal Impact to Not Present	BMP M-2 (NPRA IAP/EIS 2012) will ensure that invasive plants to not become an issue.
Native American Religious Concerns	Not Present	
Recreation	Minimally Impacted	Protection provided by NE NPR-A ROPs A-1, A-5, C-3, C-4, , F-1, and I-1.
Socialcultural Systems	Minimally Impacted	Protection provided by NE NPR-A ROP H-1.

Table 1.2 Issues Considered in Evaluating Impacts		
Issue Considered	Determination	Basis of Determination (See Note 1)
Subsistence	Potentially Affected	Large game could be deflected from areas of activity, but effects are expected to be short-term and minor. ANILCA 810 Evaluation and Findings by BLM required. Additional protection provided by: NE ROPs A-1- A-7, A-11, B-1, B-2, C-4, F-1, H-1, H-2, and I-1 [See Note 2.]
Threatened & Endangered Species Steller's eider	Minimally Impacted	Steller's eiders are listed as Threatened under the Endangered Species Act. No impacts expected other than those already covered in NE NPRA Final Supplemental IAP/EIS. USFWS concurred with the BLM ESA finding of <i>not likely to adversely affect</i> . Protection provided by Section 7 of the Endangered Species Act (J), ROP A-4, A-5, E-9
Threatened & Endangered Species Spectacled eider	Minimally Impacted	Spectacled eiders are listed as Threatened under the Endangered Species Act. No impacts expected other than those already covered in NE NPRA Final Supplemental IAP/EIS. USFWS concurred with the BLMs ESA finding of <i>not likely to adversely affect</i> . Protection provided by Section 7 of the Endangered Species Act (J), ROP A-4, A-5, E-9
Threatened & Endangered Species Polar Bear	Minimally Impacted	Protection provided by Section 7 of the Endangered Species Act (USFWS concurrence with BLMs ESA finding of no affect to polar bears), ROPs A-4 - A-8, C-1, C-2, and F-2.
Critical Habitat for Polar Bear	Minimally Impacted	USFWS concurred with the BLMs ESA finding of <i>no affect</i> to polar bear critical habitat. Protection provided by ROPs C-1 and C-2.
Non threatened and endangered birds	Minimally Impacted	Snowy owls, gyrfalcons, raven and ptarmigan may inhabit the area during the operations period. No impacts expected other than those already covered in NE NPRA Final Supplemental IAP/EIS. Protection provided in that document by NE ROPs A-2 – A-6, E-9 and I-1
Non threatened and endangered mammals	Minimally Impacted	Caribou, grizzly bear, wolf, wolverine and small mammals (weasel, rodents, and shrews) may inhabit the area. No impacts expected other than those already covered in NE NPRA Final Supplemental IAP/EIS. Protection provided in that document by NE ROPs A-2 – A-6, A-8, C-1, and F-1. Further protections provided by BMP H-3, and M-1 from NPRA IAP/EIS (2012).
Vegetation	Minimally Impacted	Protection provided by ROP C-2 and D-2 (NE NPRA Final Supplemental IAP/EIS).
Visual Resource Management	Minimally Impacted	Protection provided by NE NPR-A ROPs A-1, A-3, A-4, A-5, A-6, C-2, C-3, C-4, F-1, and I-1.
Water Resources	Potentially Affected	Water withdrawals from Umiat Lake could possibly contain water contaminated by natural seeps, past spills, and disturbed bottom sediments. Redistribution of these waters along ice roads and pads in the vicinity of Umiat could spread contaminants to a greater area. Protections from other potential impacts provided by NE NPR-A ROPs A-3A-7, B-1, B-2, C-2 - C-4, D-1
Waste (Hazardous/ Solid)	Minimally Impacted	Protection provided by ADEC waste storage permit and the Linc Waste Management Plan. Protection is provided by required C-Plans and SPCC Plans, and BLM-required Orientation and Subsistence Protection Plans. Other protections provided by NE ROPS A-1–A-7.

Table 1.2 Issues Considered in Evaluating Impacts		
Issue Considered	Determination	Basis of Determination (See Note 1)
Wild & Scenic Rivers	Not Present	
Wilderness Characteristics	Minimally Impacted	Protection provided by NE NPR-A ROPs A-1, A-4, A-5, A-6, C-2, C-3, C-4, E-10, E-13, and I-1.
<p>Key to Table 1.3: AAC - Alaska Administrative Code ACEC - Area of Critical Environmental Concern ADFG - Alaska Department of Fish and Game ADNR - Alaska Department of Natural Resources ANILCA - Alaska National Interest Lands Conservation Act BLM - Bureau of Land Management CFR - Code of Federal Regulations Plan Oil Spill Discharge and Contingency Plan EA - Environmental Assessment EFH - Essential Fish Habitat EO - Executive Order EPA - Environmental Protection Agency ESA - Endangered Species Act IAP/EIS - Integrated Activity Plan/Environmental Impact Statement LOA - Letter of Authorization NE - Northeast NHPA - National Historic Preservation Act NPRA - National Petroleum Reserve in Alaska ROP - Required Operating Procedure SPCC - Spill Prevention, Control, and Countermeasures USCOE - United States Corps of Engineers USFWS - United States Fish & Wildlife Service</p>		
<p>Potentially Affected: The proposed action or alternative could result in potential impacts to resource or issues to the level that additional mitigation may be required, or there is a need to evaluate potentially significant issues.</p>		
<p>Minimally Impacted: Resources or issues would not be affected to a degree requiring further analysis because either the expected impacts from the proposed action and alternative would be minimal, or standard protections (e.g., ROPs and Stipulations from overriding BLM plans or other legal protections) would reduce impacts. Minimally impacted resources or issues will not be analyzed further in this EA.</p>		
<p>Not Present: Resources or issues are not expected to be affected by the proposed action or alternatives because activities would occur at a different time or place. Resource or issues not present will not be analyzed further in the EA.</p>		

In summary, BLM resource specialists have identified the following issue for further evaluation in this EA: (1) Fish, (2) Water Quality, (3) Subsistence.

The Applicant has held community open houses (Table 1.3) in Nuiqsut and Anaktuvuk Pass and met with community leaders in Barrow to discuss issues of public interest. The Applicant has also implemented a Stakeholder Engagement Plan to provide ongoing opportunities for public involvement as the project proceeds.

1.6. Public Involvement

Development of USDOJ BLM (2008a) and USDOJ BLM (2012) involved extensive input from Federal agencies, the State, the NSB, thousands of individuals, and many institutions. Project-specific permit applications (see Table 1.1) are available for public review prior to agency decision making.

The Applicant has held community open houses (Table 1.3) in Nuiqsut and Anaktuvuk Pass and met with community leaders in Barrow to discuss issues of public interest. The Applicant has also implemented a Stakeholder Engagement Plan to provide ongoing opportunities for public involvement as the project proceeds.

Date	Location	Description
November 6, 2012	Barrow	BLM SAP Meeting
October 26, 2012	Barrow	Planning Commission Meeting
June 5, 2012	Pt. Lay	BLM SAP Meeting
April 18, 2012	Barrow	NSB Planning Department
April 18, 2012	Anaktuvuk Pass	Community Meeting
March 9, 2012	Barrow	NSB Mayor Brower
February 9, 2012	Nuiqsut	Community Meeting
November 15, 2011	Fairbanks	BLM SAP Meeting
November 10, 2011	Nuiqsut	Community meeting/Open House
November 10, 2011	Nuiqsut	Leadership Meetings
November 3, 2011	Anaktuvuk Pass	Community Meeting/Open House
November 3, 2011	Anaktuvuk Pass	Leadership Meetings
September 12, 2011	Barrow	NSB Planning Office (Ben Greene, Acting Planning Director)
September 12, 2011	Barrow	NSB Mayor's office – Mayor Itta and staff
August 22, 2011	Anchorage	NSB Chief of staff and special assistant.

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Chapter 2. Proposed Action and Alternatives

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The proposed project includes delineation drilling at any of six drill sites and an injection well during a one-year winter program in the NE NPR-A. Linc filed Notices of Staking for seven potential wells, which were staked and field inspected, as required by the BLM (see Table 2.1). Umiat Well 16 H and 23H will be co-located with Umiat Well 16 and 23, respectively. Access routes and stream crossings have been identified and field examined. Locations of the drill sites and local access routes are depicted on Figure 1.

Drill Site Name	Well Direction/Type	Notice of Staking Date	Field Inspection Date
Umiat Well DSP-01	Injection	9/28/2012	8/14/2012
Umiat Well 16	Vertical	9/28/2012	9/5/2012
Umiat Well 16H	Horizontal	9/28/2012	9/5/2012
Umiat Well 18	Vertical	9/28/2012	8/14/2012
Umiat Well 19	Vertical	9/28/2012	8/14/2012
Umiat Well 23	Vertical	9/28/2012	8/14/2012
Umiat Well 23H	Horizontal	9/28/2012	8/14/2012

2.1. Description of the Proposed Action

Project Component	Program Total
Ice Drill Pads and Wells	Up to six drill pads each approximately 300 ft. × 300 ft. (approximately 12.6 acres).
Construction/ drilling support ice pads	A 300 ft. × 300 ft. (approximately 2.1 acres) staging area/remote camp pad will be constructed on the Seabee Pad (no Ice pad) or they will use the UIC Camp to accommodate up to 100 people.
Access	Approximately 102.9 miles of snow trail (not on BLM), and by air with up to a C-130 Hercules using the 5,000 ft. gravel airstrip at Umiat. In-field route approximately 7 miles of ice and gravel road
Water requirement	Total of 29.2 million gallons (MG) for the entire project.

Table 2.3 Drilling Schedule (as of 10/29/2012)

2.1.1. Access and Construction

The proposed schedule calls for mobilization and ice construction to begin as soon as required authorizations and weather conditions allow in winter 2012-2013, with drilling expected to begin in Mid-January. Table 2.3 shows the anticipated schedule for the project.

	Activity	Days	Start Date	End Date
Rig	Initial Pre-Pack	14	11/1/2012	11/14/2012
Ice Road	Initial Pre-Pack	14	11/1/2012	11/14/2012
Rig	Build Snow Road	30	11/15/2012	12/14/2012
Ice Road	Build Snow Road	30	11/15/2012	12/14/2012
Rig	Mobe Equipment	24	12/15/2012	1/7/2013
Ice Road	Mobe Equipment	9	12/15/2012	12/23/2012
Ice Road	7124/7147	6	12/24/2012	12/29/2012
Ice Road	To Umiat Well 16 (2.5M)	10	12/30/2012	1/8/2013
Rig	Rig up	10	1/8/2013	1/17/2013
Ice Road	Ice Pad Umiat Well 16	21	1/9/2013	1/29/2013
Rig	Drill Umiat DSP-01	20	1/18/2013	2/6/2013

Table 2.3 Drilling Schedule (as of 10/29/2012)				
Ice Road	7118/7119	8	1/30/2013	2/6/2013
Ice Road	Ice Pad for Deep	12	2/7/2013	2/18/2013
Rig	Drill Umiat Well 16	18	2/7/2013	2/24/2013
Ice Road	Demobe Crews	6	2/19/2013	2/24/2013
Rig	Drill Umiat Well 16H	24	2/25/2013	3/20/2013
Co-Rig Unit	Mobilize	6	3/15/2013	3/20/2013
Rig	Umiat Deep	25	3/21/2013	4/14/2013
Co-Rig Unit	Complete Umiat Well 16	3	3/21/2013	3/26/2013
Well Test Unit	Mobilize Well Test Unit	6	3/21/2013	3/26/2013
Co-Rig Unit	Complete Umiat Well 16H	3	3/24/2013	3/26/2013
Co-Rig Unit	Demobe	6	3/27/2013	4/1/2013
Well Test Unit	Rig Up	5	3/27/2013	3/31/2013
Well Test Unit	Flow Test Umiat Well 16	5	4/1/2013	4/5/2013
Well Test Unit	Flow Test Umiat Well 16H	5	4/6/2013	4/10/2013
Well Test Unit	Move to Deep	5	4/11/2013	4/15/2013
Rig	Down	2	4/15/2013	4/16/2013
Well Test Unit	Flow Test Deep	3	4/16/2013	4/18/2013
Rig	Demobe Equipment	10	4/17/2013	4/26/2013
Well Test Unit	Demobe	6	4/19/2013	4/24/2013
Key to Table 2.3				
Rig – Kuukpik #5				
Pre-Pack – Prepacking snow trail				
Mobe — Mobilization of equipment				
Demobe – Demobilization of equipment				
7118/7119 – Ice Road to Lakes 7118 & 7119				
Ice pad for deep – Deep well to be drilled at Umiat 23 location				
Rig Up – Assembling Drill Rig				

The drill sites are located at Umiat, approximately 70 miles southwest of Nuiqsut and 106 miles southwest of Deadhorse. These sites are in the same general area as drill sites constructed during previous federal exploration programs at Umiat (see Introduction). Access for aircraft ranging up to a C-130 Hercules will be provided via the 5,000-foot gravel airstrip at Umiat, managed by the Alaska Department of Transportation and Public Facilities.

Pre-packing will be used to prepare a trail to the NPR-A boundary. Simultaneously, equipment (Table 2.4) may be transported to Umiat via air so that packed snow trail can be constructed starting from Umiat. The packed snow trail will be constructed from MP 359 of the Dalton Highway (which is MP 52 of the TAPS ROW going south from Prudhoe Bay) to the project area and connect with gravel roads and ice roads to gravel pads, drill sites, and the airstrip at Umiat within the NPR-A. The packed snow trail would provide access for Low Pressure Vehicles to transport the drill rig, camp, and other equipment. Packed snow trails would be approximately 7.3 meters (24 ft) wide. The total trail route is 102.9 miles long. Of this, the only route on BLM managed lands would be on BLM O&G leases. Low-pressure ground vehicles (LPVs – e.g., Rolligons, Steiger tractors, and Tundra Bears) will be used to transport equipment and personnel to construct ice roads/pads/airstrips during each year's winter exploration program.

Table 2.4 Potential Vehicles for Proposed Action.		
Rig Support Bed Truck	Ice Road Support Water Truck	2 Ice Road Support Tundra Soft Water Buffalo
AF120 Conductor Driller	3 Ice Road Support Cat 730 Ejector Truck	Ice Road Support 160 Motor Grader (or 14H)

Rig Support Welding Truck	Ice Road Support Mechanic Truck	Ice Road Support Case Magnum Trimmer/Snow Blower
Rig Support Bed Truck	2 Ice Road Support Cat 730 Haul Truck	Ice Road Support Volvo 120 Loader, Loader Forks and Bucket
2 Rig Support Winch Truck	Drill Rig Hyster Loader with Spreader	Drill Rig IT 62G Loader, Loader Forks, Bucket, Stinger
Cement Pumping Unit	Crane 50 ton	Wireline Logging Truck; Lubricator Box; Kelly Bushing Box
Cement Mixing Unit	Rig Support Winch Truck	PCP Alaska MG CoRod Truck w/ 2,000' CoRod (Continuous Rod)
10 Pickup Trucks	Rig Support Winch Truck Trailers	2 Rig Support Winch Tractor Trailers
Snow Melter	PCP Flushby CoRod Truck	2 Rig Support Skid Mounted Vac Unit
Wireline Logging Van	Medic Excursion; Pickup	
Crew Van	Drill Rig Pickup; Crew Van	

To aid in expediting tundra travel and ice road construction, 20 thermistors were placed at varying intervals along the proposed packed snow trail and in-field ice roads. Only two were placed on BLM managed lands. Data loggers transmit the soil temperature data via satellite and are accessible through a password-protected internet connection.

An ice road would be constructed to connect active well sites, the Seabee Pad, and associated gravel roads, along with access to the ADOT &PF managed airport facilities at Umiat. The ice roads would be approximately 24 ft wide with no shoulders. The minimum thickness of the ice roads would be 4 inches. Any gravel road in need of repair after freeze up would become an ice road to create an appropriate driving surface. Any ice fills required for crossings will be breached before breakup begins.

A drill camp with the capacity to accommodate up to 100 people will be located at the Seabee pad (Figure 2) or in the vicinity of the existing UIC Camp. The camp will not be on an ice pad. The camp will be used to facilitate construction and support drilling operations. The camp may also be used as the base for snow trail construction from the west, simultaneous with snow trail construction from the east. The camp will be self-contained with a power source, heat, water treatment and sewage treatment plants, and fuel tanks (day tanks). This camp will remain at Seabee pad throughout drilling operations. Ice road and pad construction may be concurrent. UIC will provide warehouse, equipment storage, and maintenance facilities. The UIC camp will be available for overflow personnel and will provide support to other operators in the region. The Husky pad, located at the west end of the airstrip on state lands may also be used for staging and equipment storage. Both the Seabee pad and Husky pad are accessible via gravel road that connects to the Umiat Airstrip.

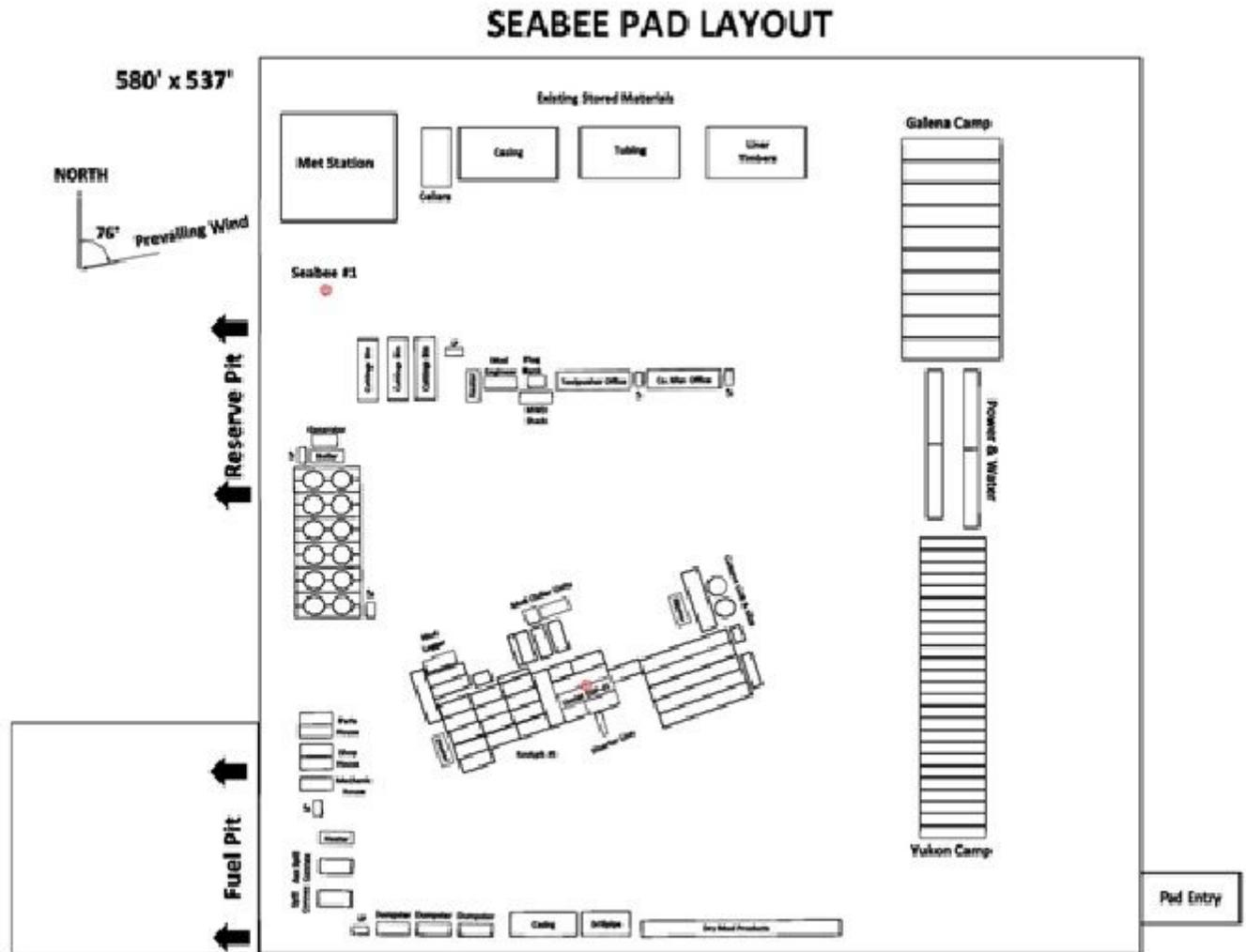


Figure 2.1. Applicant drawing of proposed Seabee Pad Layout.

The ice pads will be constructed to approximately 300 ft by 300 ft. Dimensions may be adjusted as necessary to conserve water or accommodate terrain. To conserve water, pads will be made as small as possible while still accommodating the drill rig. The rig will be placed on rig pads and the ice pad under the rig footprint will be a minimum 12 inches thick. Pad thickness may be greater, with pad dimension varying depending on irregularity and slope of the underlying terrain. The minimum ice pad thickness will be 4 inches, with the estimated average ice pad thickness ranging from 5 ft. to 9 ft. For Umiat Well 16 and 16H the ice thickness will be 4 in. on one side and 16 ft. on the other due to changes in elevation. This site has great variation of contours. The thicker pads are required for well sites on the steeper gradients – to create a level work surface. An ice berm, approximately 12 in. high, will be constructed at the outside edge of the pad to provide for spill containment.

2.1.2. Water Use

The freshwater requirements for constructing the project features (ice road/pads construction, maintenance, drilling operations, and camp use) are approximately 32.2 MG (Table 2.5) including a 10 percent (%) contingency. Linc plans to utilize water from lakes for this exploration program. The lakes proposed for water withdrawal are listed in Table 2.6.

Linc has requested approval to harvest ice aggregate from lakes shown on Table 2.6. Approximately 28.6 MG is required for infield use (e.g., ice construction and maintenance), with an additional 0.6 MG required for camp use. Water will not be used for drilling as a mineral oil based mud will be used.

Potable water will be taken from local lakes. One or more lakes will be evaluated for use as a potable water source. Potential potable water sources will be analyzed to ensure drinking water standards are met before water is introduced into the camp's potable water treatment system.

Table 2.1. (Table 2.5 in original document)

Table 2.5 Water Requirements	
Infield Water Use	Estimated Gallons
Umiat Well 16, 16H	6,060,000
Umiat Well 19	4,710,000
Umiat Well 18	3,370,000
Umiat Well 23, 23H	4,040,000
Infield Ice Road	4,970,000
Lake Access Roads	3,000,000
Ice Road Maintenance	2,490,000
Total Construction	28,640,000
+ 10% Contingency	31,500,000
Potable Water Use	Estimated Gallons
Camp Use (Construction Phase)	56,3000
Camp (Drilling)	540,000
Camp Total	596,000
Total + 10% Contingency	656,000
Infield + Potable Water Use	
Grand Total	29,236,000
Grand Total with contingency	32,156,000

Requested water and ice withdrawal from various lakes are listed in Table 2.7. Any water withdrawn from Umiat Lake (RT S07119) will require approval from the AO of the applicant's Lake Monitoring Plan. Linc will withdraw water from lakes permitted by the Alaska Department of Fish and Game in a manner that protects Fisheries resources. The applicant has applied for Title 41 Fish Habitat Protection Permits from Alaska Department of Fish and Game (ADF&G) and Temporary Water Use Permit applications from Alaska Department of Natural Resources (ADNR). Water pump intakes will be screened with a maximum of 0.25 inch mesh. Water velocity at any given point along the intake structure will not exceed 0.5 ft per second. Linc will inspect the intake screen for damage after each use and prior to each deployment.

Water use quantities requested in the permit applications include ice chips that will be used as ice aggregate for ice road and pad construction. The maximum amount of water requested for use exceeds the limit allowed by the State of Alaska and the BLM and Linc has requested an exception from the BLM. Temporary bench marks were set and existing surface water elevations

were measured for lakes RTS07119, RTS07121, RTS07147 and RTS07148, along with 2 lakes not being used for this project (RTS07125 & RTS07128). Water level elevations will be collected from these same lakes after breakup in 2013 to evaluate the effects of water withdrawal. The six lakes are considered to be representative of those in the project area and can be used as the basis for evaluating recharge at other similar lakes with possible water and ice withdrawal of 35 percent of the total volume.

Stream crossings have been located to avoid adverse impacts on fish habitat. Water crossing locations were determined by field studies, geographic information systems analysis, and evaluation of other environmental factors.

Linc has contracted with Cruz Construction for the construction and maintenance of ice roads and pads. For the crossings, Cruz Construction will drill and record the thickness of ice at each crossing to determine its load capacity. Should the ice at certain crossings not be thick enough for the loading requirements, they will apply water until the necessary thicknesses have been reached. The bridges will be breached in the spring with care taken to not destroy the existing vegetation. The proposed in-field ice roads would cross Seabee Creek and Bearpaw Creek as well as several unnamed streams.

2.1.3. Drilling Operations and Support

The proposed program includes up to seven wells (four vertical, two horizontal, one deviated) during the 2012/2013 season. All wells drilled this season will be drilled using the Kuukpik #5 drill rig. The planned well design will be similar to that employed in previous North Slope exploration wells and in accordance with a Permit to Drill from the BLM and the Alaska Oil and Gas Conservation Commission (AOGCC). Due to the exploratory nature of the wells, nearly all information regarding the downhole aspects of the wells are confidential.

Lake ID	Latitude (N) (NAD83)	Longitude (W) (NAD83)	Max Depth (feet)	Surface Area (acres)	Volume (MG) ^b	Sensitive Fish Species Captured	Resistant Fish Species Captured ^c
RTS07118	69.38109	152.14035	10.0	16.8	23.02	none	NS
RTS07119	69.38340	152.10044	8.0	40.0	42.84	none	none
RTS07121	69.37881	152.11763	4.5	14.4	14.37	none	none
RTS07124	69.38015	152.18760	5.0	9.1	10.75	none	none
RTS07132	69.37418	152.14346	9.5	2.5	4.47	none	NS

^aSource: Renaissance (2007)

^bMG = million gallons

^cNS = ninespine stickleback

Lake ID	15% of Water Under 7 ft of Ice (MG)	30% of Water Under 5 ft of Ice (MG)	35% of Total Lake Volume (MG)	Liquid Water Volume Requesting (MG)	Ice Aggregate Volume Requesting (MG)	Requires BLM Approval per NE ROP B-2?
RTS07118	-- ^a	0.91	--	0.91	3.69	Y
RTS07119	--	--	14.99	14.99 liquid + ice		N
RTS07121	--	--	5.03	none	5.03	N

RTS	Flow	Flow	Flow	Flow	Flow	Flow
RTS07124	--	--	3.76	3.76 liquid + ice		N
RTS07132	--	0.28	--	0.28	0.43	Y

a; -- = not estimated or not applicable

Stream Name	Crossing Identifier	Latitude (NAD83)	Longitude (NAD83)	NHD COMID ^a	ADF&G Anadromous Waters Catalog Number
Seabee Creek	IN-01	69.3717	152.1582	72362971	--
Unnamed tributary to Seabee Creek	IN-03	69.3854	152.1769	72362955	--
Unnamed tributary to Seabee Creek	IN-04	69.3910	152.1909	72362931	--
Unnamed tributary to Seabee Creek	IN-05	69.3931	152.2271	72363017	--
Unnamed tributary to Lake RTS07119	IN-08	69.3833	152.1277	72364467	--
Bearpaw Creek	IN-09	69.3868	152.0673	72362755	--
Unnamed tributary to Bearpaw Creek	IN-10	69.3871	152.0619	72362719	--
Unnamed tributary to Seabee Creek	IN-11	69.3807	152.1735	72362949	--
Unnamed tributary to Seabee Creek	IN-12	69.3726	152.1587	72362869	--
Unnamed tributary to Lake RTS07132	IN-13	69.3749	152.1441	--	--
Unnamed tributary to Seabee Creek	IN-21	69.3907	152.1903	72362929	--
Unnamed tributary to Seabee Creek	IN-22	69.3906	152.1890	72362929	--
Unnamed tributary to Seabee Creek	IN-23	69.3784	152.1670	72362949	--
Unnamed tributary to Seabee Creek	IN-25	69.3747	152.1640	72362873	--
Unnamed tributary to Lake RTS07121	IN-26	69.3815	152.1096	--	--
Unnamed tributary to Colville River	IN-27	69.3815	152.0918	--	--

^aNational Hydrography Dataset Common Identifier (COMID) for stream segment.

The Co-rig will install the progressive cavity pump (PCP) pumps in Umiat #16 and Umiat #16H after the Kuukpik #5 rig moves off the ice pad. The Co-rig will only operate on the ice roads, and specifically on the Umiat #16/#16H ice pad. The Co-rig operates on a well after the rig moves off and does all work with the “tree-on”.

The Well Testing Unit will be mobilized onto the Umiat #16/#16H ice pad after the Co-rig has installed the PCP pumps. The Well Testing Unit will flow the well and measure and store the produced water/gas/oil. All gas will be flared using its 75 ft. flare.

The Well Testing Unit will be mobilized onto the Umiat #23 ice pad after the Kuukpik #5 rig moves off the well. The Umiat #23 well will not be completed with a PCP Pump. The Well Testing Unit will flow the well and measure and store the produced water/gas/oil. The proposed

drilling and testing operations will be used to determine future drilling plans. Testing may include extended flow periods to determine productivity of a well.

Auxiliary facilities include camps to support drilling and ice construction, pump houses on lakes used as water sources, and light plants near pump houses and along ice roads. For drilling a second season, the rig will be stored over the summer at the Seabee Pad, while the Co rig and testing unit would be transported off site.

Fuel will be purchased from the tank farm operated by UIC at the State airstrip. Approximately 8,000 gallons of diesel fuel will be stored on the drill rig and approximately 5,000 gallons of fuel will be stored at the camp site. The rig and camp fuel tanks have built-in containment. The rig fuel tank is inside one of the rig connexes (8 in. × 20 in.) in the support module. The camp fuel tanks are inside two camp buildings along with the generators (9.5ft. × 5.6 ft.).

Drilled wells will be temporarily suspended (capped in place with “Christmas Tree”), or plugged and abandoned prior to end of the 2012-2013 winter drilling season. The Christmas Tree will be completely covered with a thick membrane material and secured to prevent birds from nesting or roosting. Upon completion of delineation activities, all wells will be plugged and abandoned in accordance with applicable BLM and AOGCC regulations.

Linc will erect a 30' tower attached to a shelter (8' × 20') to provide satellite communication for phone, internet, data, fax, etc.. The type of system they will use is called Very Small Aperture Terminal (VSAT). The shelter will be a conex located near the camp. A repeater shelter conex (8' × 20') will be setup on the Umiat Well #23 ice pad to provide communications between the camp and the Umiat Well 16 pad. The repeater shelter will have a 20' tower.

The drilling pad will include the drilling rig, rig camp buildings, warm storage areas, maintenance buildings, and other equipment necessary to conduct the operations (Figure 3). No reserve pits will be constructed.

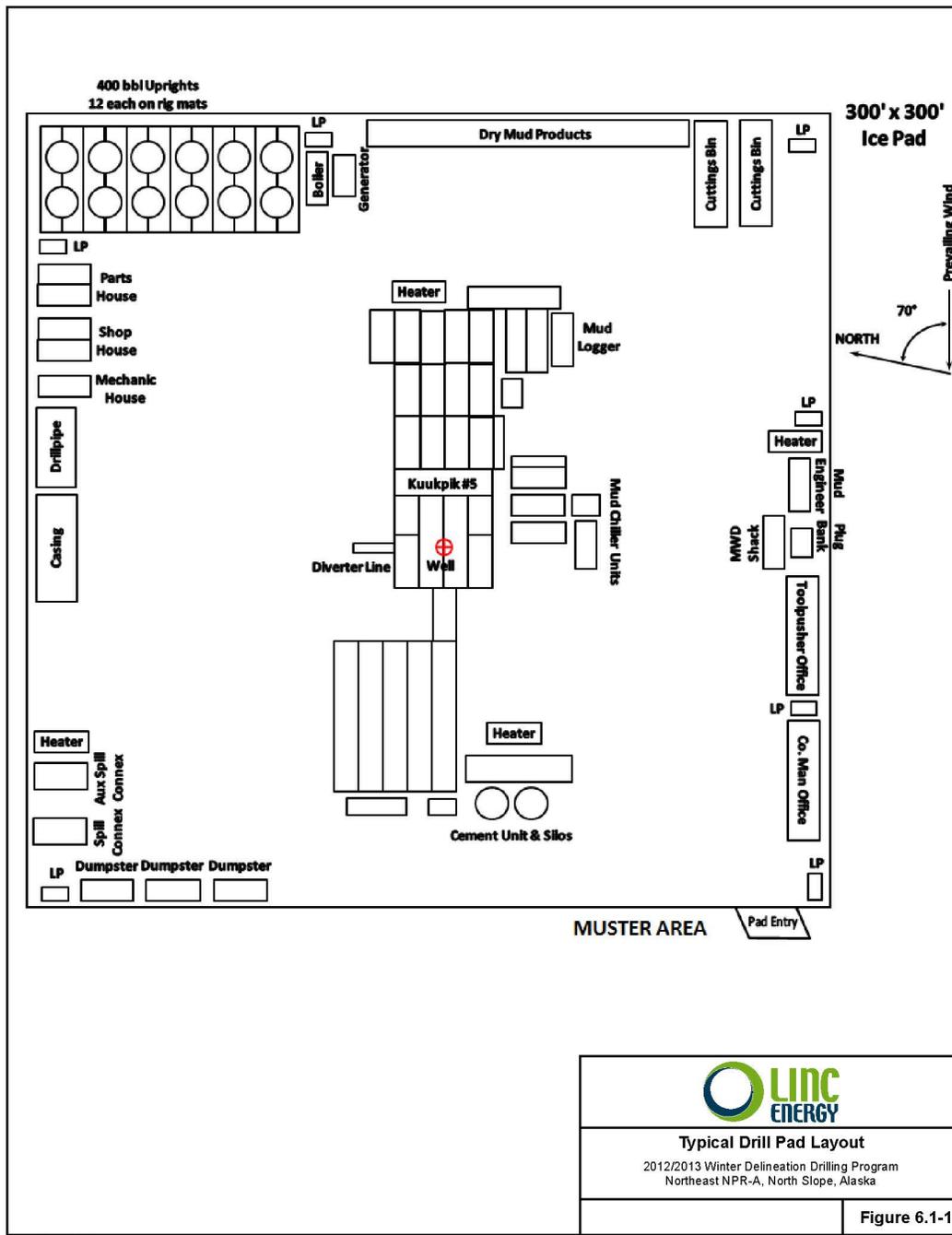


Figure 2.2. Applicant Typical Drill Pad Layout

2.1.4. Waste Management

Wastes will be handled according to the comprehensive waste management plan required by the BLM under USDOJ BLM 2008b ROP A-2, as summarized below.

Drilling wastes include drilling mud and cuttings. Drilling mud will be separated from cuttings, and each fraction will be disposed of by different methods.

A mineral oil drilling mud system will be used. The drilling mud will be reused during drilling, and will be pulled up with production fluids while performing production tests. Approximately 80,000 L (500 barrels) of drilling mud will be generated from each well. Roughly 70 percent of the drilling mud will be reclaimed for reuse. Approximately 40,000 L (250 barrels) of waste drilling mud will be generated per well. Waste drilling mud will be temporarily stored on site and will be transported to the on-site disposal well for appropriate disposal.

After separation from drilling mud, drill cuttings will be temporarily stored in a metal, leak-proof cuttings box. The cuttings box will be filled to approximately 80 percent full and will be covered when not being filled. Drill cuttings boxes will be placed into secondary containment. Drill cuttings will be hauled off site to an approved disposal location. Approximately 80,000 L (500 barrels) of cuttings will be generated from each well.

Upon completion of activities at the drill sites, the drill pad, including the areas where wastes were stored, will be scraped clean and the affected fraction will be backhauled to an approved disposal location. Temporary storage of drilling waste will be conducted in accordance with a plan prepared and submitted to the ADEC that meets the requirements of 18 Alaska Administrative Code (AAC) 60.430 – Drilling Waste.

UIC will be contracted for disposal of solid, non-burnable waste and solid waste including food waste. UIC will not be contracted for the disposal of drilling-related waste, special wastes (e.g., hazardous waste, batteries, light bulbs), or wastewater. Solid, non-burnable waste will be temporarily stored in large dumpsters located at the drill sites and camp. Solid waste and food waste that could attract wildlife will be stored within the camp buildings in a central location. Wastes will be transferred to UIC on a regular basis for treatment or appropriate disposal at an approved disposal site. No incineration of waste on site is planned.

Special wastes, such as chemicals, recovered spilled materials, batteries, and light bulbs will be stored and disposed of in accordance with regulatory requirements. As required by regulation, the transportation and disposal of hazardous wastes as defined by the Resource Conservation and Recovery Act will be performed by permitted contractors. Used oil may be burned for heat recovery or transferred to UIC for use in heat-recovery burners.

Camp wastewater will be processed through a sewage treatment plant having an ADEC approval to operate. The treatment plant will discharge effluent to the tundra in accordance with NPDES General Permit No. AKG-33-0000. The rig camp will generate about 19,000 L (5,000 gal) per day of domestic wastewater.

2.1.5. Injection Well

The operation of drilling exploratory wells at Umiat will result in the generation of waste fluids. The waste fluids would consist of used drilling mud, both water-based and oil-based, excess cement from cement jobs on casing strings, salt water (“brine”) used during completions, used packer or freeze protection fluids, cement rinsate, rig wash, and snowmelt or rainwater in contact with downhole materials, duck ponds, bermed areas, and well cellars associated with exploration activities. These fluids, as they exit the wells or are generated, are classified by the EPA as Class II fluids and may be disposed of down an approved disposal well. All fluids will be transported in

140 barrel [bbl] Vacuum Tank Skids that will be transported on a trailer by a conventional bed truck along the infield ice road infrastructure.

Along with a BLM approved APD and associated disposal well ROW (FF096563) the Umiat DSP-01 well will be permitted by the AOGCC to receive Class II wastes down the tubing as a dedicated disposal well. The authorizations will carry specific requirements about the types of fluids that can be pumped down the tubing as well as pumping rates and pressures permissible.

The Umiat #16, Umiat #16H, Umiat #23, and Umiat #23H wells will be drilled on a separate lease (AKAA-084141) from the Umiat DSP-01, Umiat #18, and Umiat #19 locations (AKAA081726). Class II fluids generated from the wells on lease AKAA084141 are planned to be transported to the disposal well, Umiat DSP-01, and pumped into the disposal zone. The bulk of the fluid generated by these wells will be used drilling mud, used completion fluids and potentially produced crude oil and water. The produced crude oil and water would originate from well tests performed on these wells. Cuttings generated from all wells will also be hauled off-lease and transported by haul truck to Prudhoe Bay for disposal at Drill Site #4, a permitted Class II disposal facility.

2.1.6. Air Emissions

Sources of air emissions from the operation may include rig engines, camp generator engines, steam generators, used oil burners, hot-air heaters, light plants, support equipment (rolling stock), and well test flaring equipment. Linc will use Ultra Low Diesel fuel and will be operating under MGP-1 for Drilling Rigs and Associated Equipment (18 AAC 50.502).

A meteorological air monitoring station was erected in April of 2012. A siting plan was submitted to ADEC for their review and approval.

2.1.7. Contingency Plans

Contingency plans are described below

Oil Discharge Prevention and Contingency Plan (ODPCP or C-Plan)

The Applicant is required to have approved oil spill response measures in place to meet Federal and State requirements. CPAI must have a site-specific ODPCP approved by ADEC that is considered sufficient to meet BLM requirements. (ODPCP is available for review at ADEC.) CPAI is requesting a minor amendment to the “North Slope Exploration ODPCP” for the NPR-A exploration locations.

The ODPCP will contain information on immediate response actions, receiving environments, spill cleanup, mobilization response times, and well control. The ODPCP encompasses standard response methodology and resources for the response. Additionally, the BLM inspects the wells and pads during construction and drilling

The Applicant’s approved ODPCP, along with approved spill control equipment and supplies will be kept on site. Phone service will be available 24-hours a day at the drilling camp. CPAI will conduct a drill of the ODPCP to ensure that project personnel are knowledgeable of roles, responsibilities, and response strategies. The ODPCP will be amended, as necessary, to reflect any changes in the program that would have a bearing on spill responses.

A worst case release (i.e., blowout) is considered to be exceedingly unlikely. The worst case response planning standard for this project is a blowout of 82,500 barrels of oil total, or 5,500 barrels per day lasting 15 days. Based on required modeling, which considers prevailing wind direction, a blowout would distribute oil:

- Approximately seventy percent falls within 236 feet of the well, on the exploration pad.
- Eighty percent of the oil discharged falls within 700 feet of the well.
- Ninety percent of the oil discharged falls within 4,873 feet of the well.
- Ten percent of the oil discharged is in the form of droplets so small (50 m or less) they do not reach the ground.

No drilling will begin until the well pad is fully constructed and accessible by packed snow trail or ice road; the period of active drilling is subject to seasonal restrictions set in the ODPCP approval. In accordance with the ODPCP condition of approval, CPAI will cease drilling in hydrocarbon-bearing formations and isolate said zone by April 24th, to ensure the effectiveness of planned spill response methods prior to the onset of spring breakup.

Spill Prevention Control and Countermeasures (SPCC) Plans

An SPCC Plan provides guidelines for pollution prevention and addresses secondary containment where fuel and hazardous materials are stored in quantities of 1,320 gallons or more. The drilling contractor and the camp operator will have an SPCC Plan for fuel storage facilities.

Waste Management Plan

The applicant is required by the 2008 NE SIAP/EIS ROD (A-2) to submit to the AO for approval a Waste Management Plan for all phases of exploration and development. CPAI's plan is summarized in section 2.1.4 Waste Management above.

Hazardous Materials Emergency Contingency Plan

The applicant is required by the 2008 NE SIAP/EIS ROD (A-3) to have a Hazardous Materials Emergency Contingency Plan. Conoco's NS Exploration ODPCP contains procedures for immediate spill notification, response, and cleanup in the event of, or threat of, a hazardous substance spill and includes spill reporting information (see ODPCP, Part 1 - Response Action Plan). This information is applicable to all hazardous substance spills (e.g. not only a worst-case discharge). In addition, the ODPCP incorporates two response Strategies addressing a diesel tanker spill (see ODPCP, Part 1, scenarios in Section 1.6.5).

The ODPCP addresses appropriate procedures for fuel/hazardous substance handling/transfer and also references the *North Slope Environmental Field Handbook* and the *Alaska Safety Handbook*. Combined, these documents describe the proper procedures employees and contractors must use for handling fuel/hazardous substances (see ODPCP, Part 2, Section 2.1.5).

Wildlife Protection and Encounter Plans

CPAI has a Polar Bear Avoidance and Interaction Plan and a Wildlife Interaction Plan. An approved orientation program is required for all personnel working in the NPR-A, to increase awareness of related environmental, social, and cultural concerns. These actions, along with the required Subsistence Plan, provide wildlife protection measures.

Other Plans

The North Slope operating fields have an Incident Management Team (IMT) which follows the Incident Command System (ICS). The IMT is on call 24-hours per day. Personnel involved in an emergency situation will notify Kuparuk Security who will direct the IMT to respond. An Environmental Health and Safety Policies and Procedures manual is available on CPAI's intranet web page and Emergency Response Plans are available at the individual facilities. Employees are required to watch a video entitled "The National Petroleum Reserve-Alaska Balancing the Use" and CPAI has filed an Orientation Program for BLMs approval. CPAI provides their North Slope employees with a copy of the "North Slope Environmental Field Handbook" which has short synopsis of O&G activities, agency phone numbers, what to do and not do in particular circumstances.

2.1.8. Abandonment and Restoration

Upon completion of activities at the drill sites, the drill pad, including the areas where wastes were stored, will be scraped clean and the affected fraction will be backhauled to an approved disposal location. Waste drilling mud which was temporarily stored on site will be transported to the on-site disposal well for appropriate disposal. Drill cuttings will be hauled off site to an approved disposal location. After testing, Linc anticipates that the fluids will either be injected back into the reservoir or into the disposal well.

At the end of the 2012-2013 drilling season, some or all wells may be temporarily capped with a "Christmas Tree" on top of the well. The Christmas Tree will be completely covered with a thick membrane material and secured to prevent birds from nesting or roosting. Upon completion of delineation activities (year to be determined), all wells will be plugged and abandoned in accordance with applicable BLM and AOGCC regulations. Final site closure will be approved by appropriate agencies.

Surface erosion control measures for Plugging and Abandonment (P &A) wells will initially consist of seeding and silt fence until the mound is revegetated. Linc proposes to collect seeds on site for reseeded.

During the summer, a Linc crew of two will revisit well sites and access routes at least once or more if necessary via helicopter to recover debris that may have been missed during the cessation of winter activities. After final summer cleanup, access routes and well sites will be inspected with the appropriate agencies, typically the BLM, ADNDR, and NSB. Further information about summer activities will be submitted prior to activity taking place.

2.1.9. Community Relations

Linc has prepared a Stakeholder Engagement Plan to assist in the identification of potential issues and response actions. Prior to issuing development permits, the NSB solicits public review including State and Federal agencies, local officials, residents, and private property owners in the affected area.

Linc conducted community meetings in Barrow, Nuiqsut and Anaktuvuk pass to discuss summer field studies and exploratory drilling. In addition, Linc representatives have attended meetings of the Subsistence Advisory Panel (SAP) to hear resident concerns about potential impacts to subsistence. Linc will continue to keep the public informed about project development.

To date, Linc has addressed key community issues as described below.

Cultural and Paleontological Resources. Road and pad locations were selected to avoid known archaeological and cultural resources and traditional land use sites. Linc conducted a cultural and paleontological resources survey at pad locations and along access corridors. A letter report of survey findings was submitted to the BLM.

Subsistence. The project area is recognized as a subsistence use area for Nuiqsut and Barrow, with Anaktuvuk Pass subsistence use historically ranging to the Colville River. Public meetings and consultations included subsistence discussions. The Applicant plans to continue consultation with subsistence users and implement mitigation measures, as necessary. A Subsistence Plan and Orientation program will be implemented, as required.

Economic Opportunity. Linc has worked with the NSB and nearby communities to identify local economic opportunities. The Applicant will employ Subsistence Advisors, and puts a priority on obtaining local goods and services (e.g., use of UIC facilities and services).

2.2. Alternatives to the Proposed Action

The NE NPR-A SIAP/EIS of 2008 and the NPR-A IAP/EIS of 2012 evaluated a fairly specific exploration model, developing extensive site-specific stipulations, required operating procedures and best management practices for that concept. The 2008 ROD, and the proposed action itself (i.e., drilling a specified number of exploration wells on specific oil and gas leases in the NPR-A) significantly limit alternatives for the location and timing of exploration in the NPR-A. Location of the leases and oil and gas prospects on those leases limits the options for feasible drill site locations and access routes. Based on limitations imposed by stipulations, ROPs, BMPs and the flexibility included in the proposed project, only one alternative is considered for detailed evaluation at this time: “no action.”

No-action alternative

With the No-action alternative, exploratory drilling under existing, valid oil and gas leases would not be allowed as proposed. Permit applications to the BLM would be denied, and no in-field access of 7 miles of ice road construction, no ice drill pads, no use of up to 32.2 MG of water (project total) from 5 water supply lakes, no drilling of up to seven wells, or drilling support activities on Federal Lands in the NE NPR-A would be allowed. While this alternative is contrary to the current Administration’s policy and lease rights, analysis is required by NEPA.

2.3. Conformance

The proposed action is in conformance with USDO I BLM (2008a) and associated ROD (USDO I BLM 2008b), USDO I BLM (2012), National Petroleum Reserve Product Act (NPRPA), Federal Land Policy Management Act (FLPMA), Alaska National Interest Lands Conservation Act (ANILCA), Endangered Species Act, Executive Order (EO) 11988, EO 11990, and terms of the federal leases.

In USDO I BLM (2008a), the BLM evaluated the direct, indirect, and cumulative effects of winter exploration in the NPR-A. This analysis concluded that the stipulations and ROPs provided adequate protection for surface resources and subsistence activities in the planning area. In the

associated ROD (USDOI BLM 2008b), several changes were made to those protective measures to address new data, new regulations, and new public concerns.

As part of the most recent analysis, the BLM considered site-specific evaluations of exploration programs in the NE Planning area over the past years, all of which received a Finding of No Significant Impact by the BLM. Findings for these winter exploration programs included analysis of Threatened and Endangered Species, Essential Fish Habitat (EFH) and Subsistence Use under ANILCA 810, as well as coordination with the State Historic Preservation Office. In addition to BLM permits, other required Federal, State, and local authorizations were issued.

The proposed project involves conventional methods and procedures for exploration on the North Slope in general, including the NE NPR-A.

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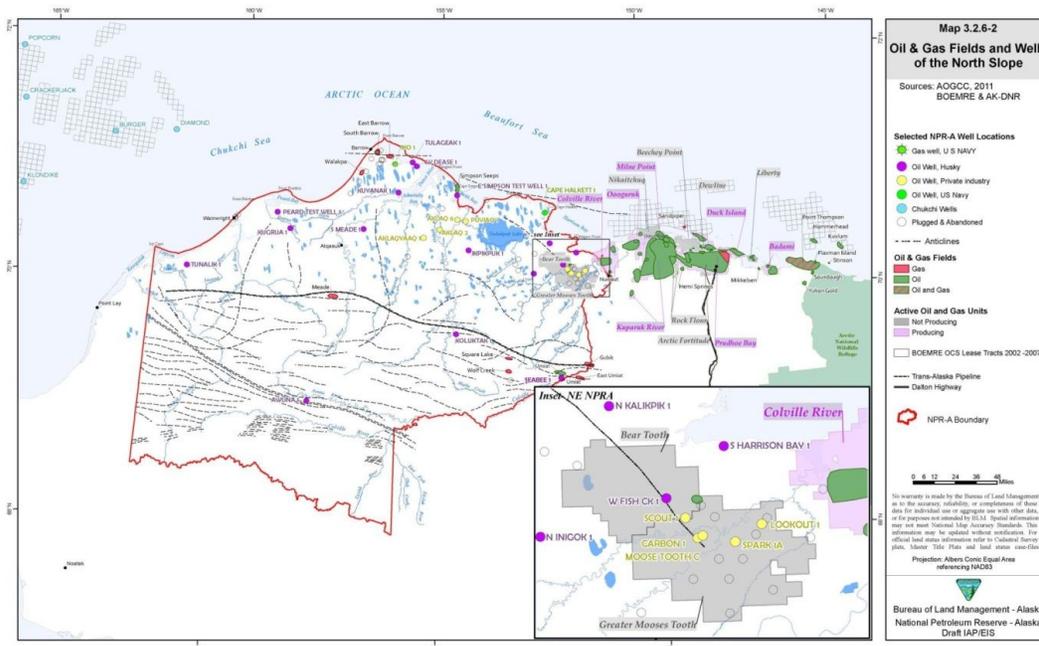
Chapter 3. Affected Environment:

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The proposed Linc delineation drilling operations, ice roads, access corridors, and water supply lakes are near Umiat in the NE NPR-A Planning Area. Environmental characteristics of the general project area have been extensively described in the 2008 NE NPR-A IAP/EIS (Vol. 1, Chapter 3) and the 2008 Colville River Special Area Management Plan, which are incorporated by reference, with some site-specific features summarized below.

All drill sites are on Federal oil and gas leases in or close to the Umiat Oil Field that also is within the Colville River Special Area. The general relation of the project area to existing oil and gas fields on the North Slope and TAPS is shown on Figure 4.

Figure 3.1. Existing/Proposed Oil & Gas Activities on the North Slope¹



Environmental characteristics of the general project area have been extensively described in the USDOJ BLM (2008a) (Vol. 1, Chapter 3), and the USDOJ BLM (2012) NPR-A IAP/EIS (Vol 1, Chapter 3), to which this analysis is tiered, with some site-specific features described below.

When Renaissance proposed to conduct an oil and gas exploration program at Umiat in 2007, Umiat Lake was still on the ADEC list of contaminated sites requiring work be completed. However, there was a removal action conducted in two phases at Umiat Lake. The first phase consisted of a geophysical investigation performed during April 2009 to identify the locations of metal within the lake. Phase two, conducted during July through August 2009, consisted of a removal and disposal action. ADEC determined that no further action in regard to the drums was needed at this site.² The Seabee Pad upon which the DSP 01 disposal well will be drilled is a relatively flat gravel pad. The proposed site of Wells 16 and 16H has a variance of from 4 in. to 16 ft.

¹https://www.blm.gov/epl-front-office/projects/nepa/5251/35072/36522/Map_3_2_6_2_oil_gas_fields_units.pdf
²http://www.dec.alaska.gov/Applications/SPAR/CCReports/Site_Report.aspx?Hazard_ID=3084



Figure 3.2. Proposed Umiat Well 16

The proposed wells 23 and 23H, while on about the same latitude as wells 16 and 16H, do not have a large variation in contour. Proposed Wells 18 and 19 are on low lying land and relatively level. Umiat Well 19 is proposed for a site that is completely covered with shrubs, some of which are about 4 ft. in height, including numerous blueberry plants.



Figure 3.3. Proposed Umiat Well 19

3.1. Issue 1 Fish

Details on all fish species in the region, including general distributions and life histories, can be found in the USDOJ BLM (2008). Fish sampling of the five water source lakes on BLM lands that may be used for the Linc 2012-13 winter operations is documented in Renaissance (2007); only the ninespine stickleback occupy two of these lakes and no fish were captured in the other three lakes (Table 2.6). For consideration of water use limits (ROP B-2), fish in lakes are classified according to their susceptibility to low levels of dissolved oxygen. Alaska blackfish and ninespine stickleback are considered “resistant” due to their greater tolerance to low dissolved oxygen while all other species in the region are considered “sensitive”.

3.2. Issue 2 Water Quality

The waters and sediments of Umiat Lake have been documented to have natural oil seeps. In August 1997, Ecology and Environment Inc. (E&E), in conjunction with field studies in the nearby Test Well No. 3 area, collected three sediment and three surface water samples from Umiat Lake, RTS07119, which were analyzed for diesel-range organics (DRO), residual-range organics (RRO), gasoline-range organics (GRO), volatile organic compounds (VOC), semivolatile 2 organic compounds (SVOC), pesticides, polychlorinated biphenyls (PCB), and metals. Surface water sample analyses excluded RRO but included total recoverable petroleum hydrocarbons (TRPH). Their results indicated elevated petroleum levels (DRO, RRO, and GRO) in the sediment samples collected from the lake (E&E 1998). In August 1998, E&E evaluated the lake water and sediment in Umiat Lake, sampling 10 sediment and surface water locations. Sediments were

analyzed for VOCs and SVOCs, and surface water was analyzed for petroleum products (DRO and TRPH), VOCs, and SVOCs. The results for sediment indicated that nine of the 10 samples exceeded ADEC screening criteria for DRO and RRO. In surface water, DRO was detected in six of the 10 samples exceeding the ADEC screening criteria (E&E 1999).

A 1998 geophysical study of a portion of Umiat Lake located buried ferrous debris in the lake bed. The survey revealed possible drum/debris locations along the east shore of the lake (USDOI BLM 2009). In summer 2009, 270 drums were removed from within the lake and within 200 feet of the shoreline. No soil or sediment removal or treatment was performed; however, samples were collected from locations that showed evidence of potential contamination (ADEC 2012)

3.3. Issue 3 Subsistence

Subsistence can be defined as “hunting, fishing, and gathering for the primary purpose of acquiring traditional food” (USDOI BLM 2003). Subsistence activities are a culture base and provide a sense of identity to the Inupiat people. Subsistence resources supply not only nutritional value, but are also used for clothing, tools, and transportation. Cultural and family ties are preserved through obtaining, sharing, and bartering such resources (USDOI BLM 2003).

A wide range of species are hunted throughout the year in the NPR-A region for local subsistence purposes. These include whale, seal, walrus, bear, birds, caribou, furbearers, small mammals, and fish. Species such as seals, polar bears, and caribou are hunted throughout the entire year in the Barrow area. Fresh and salt-water fish, and small mammals are hunted or trapped in the late spring and summer months. Caribou, whales, walrus are typically hunted or fished in late summer and early fall. Berries and other flora are normally gathered in early to mid-fall.

The proposed project is located within a subsistence area that is very commonly used by Nuiqsut subsistence users, particularly in the fall (by boat on the river during moose hunting) but at any time of year (USDOI BLM 2008a, Map 3-38). Umiat is also within the subsistence use area for Barrow, a community of over 4,500 residents located approximately 200 miles to the northwest of the project area. The Colville River and Umiat area are also used during the winter by furbearer hunters from Anaktuvuk Pass. The primary subsistence use of the area during the proposed project dates will be by residents of Nuiqsut, for the purposes of caribou, small mammal, bird and furbearer hunting. Under ice fishing may also occur during the latter part of the project timeline. Many residents may simply travel through the project area in order to access hunting cabins or camps located outside of the project area. Access is primarily by snow machine.

Chapter 4. Environmental Impacts

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If authorized, the proposed project would be the 17th winter exploration drilling program (Appendix B) in the NPR-A since the 1999/2000 winter drilling season. The majority of these drilling programs have been in the NE Planning Area. To date no recent drilling program has taken place at Umiat. Anadarko drilled a single exploration well (Wolf Creek 4) in 2009 about 30 miles west of Umiat.

Activities proposed by Linc are similar to previously authorized exploration activities in the NPR-A over the past 12 years. All of these programs have been approved and monitored on the basis of full implementation of relevant restrictions, protective measures, and the mitigation set forth in the applicable RODs, as well as state and local permits, and compliance. To date, authorizations to conduct winter exploration in the NPR-A have resulted in no long-term significant impacts to the environment, or access to and the use of subsistence resources.

Because the proposed activities are not substantially different from those previously evaluated, and because no significant new scientific information or analyses have been developed since the most recent related evaluation (i.e., USDO I BLM 2008a and USDO I BLM 2012), this NEPA analysis will focus on impacts due to the project-specific/site-specific differences of the proposed action.

4.1. Direct and Indirect Effects

The proposed action is built on experience gained from decades of similar operations on the North Slope. This EA is tiered from USDO I BLM 2008a and its ROD (USDO I 2008b). Related discussion of impacts is found in: USDO I 2008a, Vol. 2, Chapter 4.6 (Environmental Consequences of Alternative D, the preferred alternative).

Issues specifically identified in Section 1.5 for further analysis in this EA are discussed below.

4.1.1. Issue 1 Fish

Proposed Action

As identified in Table 2.6, the potential for impacts on fish overwintering in water source lakes is increased if water use exceeds the standard in ROP B-2f. For Linc's 2012-2013 winter exploration program in the NPR-A, they are requesting to use ice aggregate at two lakes (RTS07118 and RTS07132) in addition to the maximum liquid water volume typically allowed for use (Table 2.6), which requires additional approval under BLM's ROP B-2f. This ice aggregate would come from within the 4-ft (and shallower) contour of each lake where ice will become naturally grounded during typical winter conditions, a practice commonly permitted by ADF&G and BLM in conjunction with additional monitoring. As snow removal is not permitted beyond this 4-ft contour, this activity should not contribute to additional lake freeze-down. In the existing areas of oil exploration and development on the Arctic coastal plain, lakes pumped solely for winter exploration activities have recharged in the spring, including at some lakes where additional ice aggregate has been utilized (Streever et al. 2001; URS 2001; Baker 2002; Hinzman et al. 2006; Baker 2007; Holland et al. 2008). Additionally, lakes used for winter water sources in the foothills near Umiat were observed to be recharged in the early summer (Hilton and Lilly 2009a) and continued discharging from their outlets in September (Hilton and Lilly 2009b). The BLM has also granted an exception to ROP B-2f during other winter oil and gas operations in the NE NPR-A without a negative outcome. Furthermore, at the two lakes where Linc is requesting an exception to ROP B-2f, ADF&G Division of Habitat is requiring additional work that will help

evaluate if the lake water levels recharge in spring. Specifically, each Fish Habitat Permit for the lakes in question states:

“...Ice removal in succeeding years will be contingent upon receipt of information denoting measured recharge of the lake or a developed predictive method to determine if a particular lake has adequate drainage area and recharge capabilities to support sustained use beyond current recommended levels.”

The documentation of winter-pumped lakes recharging in this general region, the successful implementation of an exception to ROP B-2f by the BLM in other years, and the additional monitoring or modeling required by ADF&G support the BLM’s decision to grant approval for the use of ice aggregate in addition to maximum liquid water quantities at Lake RTS07118 and Lake RTS07132. This exception from BLM only pertains to the 2012-13 winter exploration season and consideration for water use in future years beyond the guidelines outlined in ROP B-2 will depend on the results and observations from this season.

Of further concern is a concurrent clean-up project being conducted by USACE (DOI-BLM-AK010-2013-0003-EA) that plans to utilize two of same lakes (RTS07118 and RTS07124) as LINC for water sources. An additional stipulation (Section 4.4) requires that Linc coordinate a detailed water sharing and tracking plan with USACE to reduce the potential for water removal to exceed the permitted quantities

No-Action Alternative

Under the No-Action Alternative, LINC would not drill delineation wells on BLM-managed land, in which case there would be no need for water from lakes to construct ice roads and pads. As a result there would be no impacts to fish from oil and gas exploration and drilling, or use of water from the lakes.

4.1.2. Issue 2 Water Quality

Proposed Action

Umiat Lake, RTS07119, having no fish, was permitted for removal of up to 35% of total volume of water. Water removal from this lake has the potential of stirring up sediments and re-distributing them along portions of ice roads and pads. Additionally DDO, RRO or other chemicals may also be present in waters due to natural oil seeps or past contamination from leaking drums or other drilling operations. Past contamination was primarily confined to the northeast portion of the lake adjacent to Legacy Test Well No.3. Development of an adequate water conservation and withdrawal plan in conjunction with a water quality sampling program will insure there will not be any redistribution of contaminated water or suspended sediments to adjacent areas to the lake.

No-Action Alternative

Under the No-Action Alternative, Linc would not drill delineation wells on BLM-managed land, in which case there would be no need for water from Umiat Lake to construct ice roads and pads. There would not be any impacts to water quality to the lakes at Umiat due to the proposed action by Linc.

4.1.3. Issue 3 Subsistence

Proposed Action

The proposed project involves winter activity in an area with important subsistence value. While the wintertime is not the primary season for subsistence harvesting, it is the principal time period for furbearer harvesting. Other subsistence activities that occur during the winter, and thus could be impacted by the proposed exploratory delineation drilling program, include caribou, small mammal, and bird hunting. These activities are frequently based from subsistence cabin or camp locales, which are accessed during the winter by snow machine. Ice fishing may also occur. The proposed drilling sites, as well as the associated access routes, are located in an area utilized by subsistence harvesters from Nuiqsut, Anaktuvuk Pass, and Barrow. Umiat is located approximately 70 miles southwest of Nuiqsut and activity at Umiat has had and will continue to have disproportionately high impacts on that community. The primary activities associated with the project that could affect subsistence use include flaring gas, ice road construction, overland moves, and the delineation drilling and associated camps that will be active for several months.

Local knowledge, as elicited through public testimony at NPR-A Subsistence Advisory Panel (SAP) meetings, indicates that this type of industrial oil activity displaces resources from the area of effect. This displacement can lead to hunters having to travel further to harvest resources. In most cases, these activities are expected to cause only short-term, minor displacement and/or disturbance, usually only the time period in which the construction activity or camps are active.

Mitigation measures that minimize impacts to subsistence use have been adopted by the BLM (USDOI BLM 1998; 2008b), including winter-only exploration, measures that protect fish and wildlife, and consultation requirements by the company with affected communities. Linc has developed a Subsistence Plan that includes the use of local subsistence advisors to identify and help mitigate potential impacts of the proposed project to subsistence use. The plan also includes methods for increased communication between the community and the company.

No-Action Alternative

Under the No-Action Alternative, Linc would not drill up to seven exploratory wells at Umiat and there would be no need for the construction of an ice road, snow road, drill pads, or base camp on the Seabee Pad. Other than the concurrently proposed USACE cleanup project at Umiat, significantly less activity would occur within the subsistence use areas for the communities of Nuiqsut, Anaktuvuk Pass, and Barrow. Therefore, little displacement of resources from the area would occur and the amount of aircraft traffic would be greatly reduced. Although the main snow road is not on BLM-managed lands, the no-action alternative would include less impact on the regional ecosystem because 29.2 million gallons of water would not be removed from lakes to construct ice roads. There would be no impacts to subsistence resulting from ice road construction (other than the removal of the option to use the road to access hunting grounds), overland moves, or the camps associated with the drilling locations.

4.2. Cumulative Effects

The BLM has evaluated the cumulative effects of past, present, and reasonably foreseeable oil and gas activities in and around the NPR-A in a series of recent NEPA analyses. This EA tiers to the most recent cumulative impact analysis in USDOI BLM (2008a, Volume 3, Chapter 4, Section 4.7). That analysis was based on a timeframe of approximately 1900 through 2100, and

a geographic range incorporating the entire North Slope of Alaska and adjacent marine waters. Based on the requirements of 40 CFR 1508.7, and guidance in the Council on Environmental Quality handbook on cumulative effects (CEQ, 1997), this analysis of winter exploration drilling considers a narrower temporal and spatial framework (i.e. approximately 30 years past and future and influences limited to a distance of approximately 21 miles from the access corridor and drilling areas). The causes and impacts of climate change are global in scope, with associated impacts evaluated in USDO I BLM (2008a).

The primary influences in the current analysis include: oil and gas activities; the community of Nuiqsut; and subsistence, research/inventory, and recreation activity, as analyzed in USDO I BLM (2008a). Natural oil seeps are known to occur in the Umiat area, and have been documented since the early 1940s, when nearby drilling led to the discovery of the Umiat Oil field.¹ As recently as 2001, a natural oil seep was observed percolating from the Colville Riverbed, a few miles downstream from Umiat.² A 2004 paper by the U.S. Geological Survey (USGS) included a photograph (following) of an oil seep along the Colville River.³

Legacy Wells: The ten old test wells in the Umiat area are part of the current BLM “Legacy Well” closure program, and are identified as such in this EA. Legacy Wells 2-5 and 9 are within a 1/8 of a mile from the proposed activity (See Figure 1). The other wells 6, 7, 8, 10 and 11 are from 1/3 to 2 miles away from the proposed activity. These legacy wells from previous federal activity are listed on the ADEC Contaminated Sites Database; many are also Formerly Used Defense Sites (FUDS).

ADEC Contaminated Sites (CS) staff reviewed and approved a final Focused Feasibility Study (FFS) report for Umiat Wells 3, 4, 6, 7, 8, 10, and 11. The test wells in the FFS all share similar characteristics in that they have either very limited pads or no pads, are surrounded by tundra, and have small volumes of soil that are contaminated with weathered fuel products. Accessing the sites to conduct any cleanup would require helicopter access or winter ice roads. The FFS evaluated treatment of soil at these sites, and concluded with a recommendation for no further action based on lack of risk.⁴

Umiat Wells 2 and 5 were subject to a major removal action in 2002 to remove 20,000 cubic yards of petroleum-contaminated soil after discovering that the well pad was starting to erode into the Colville River. Thermal treatment of the soil was conducted on the Main Gravel Pad from 2002 through 2007. Petroleum contamination remaining at Wells 2 and 5 is substantially below the Method 2 cleanup level.⁵

Beginning in 2009 an ongoing removal action has taken place at Umiat Test Well No. 9. The activity consists of excavating, removing, transporting, and disposing of soils contaminated with polychlorinated biphenyls (PCBs), diesel range organics (DRO), and residual range organics (RRO). Erosion controls will be used, and excavation areas from previous soil excavation and removal projects will be graded at the conclusion of the project. Cleanup of the main drainage channel below the site will be addressed in a future action.⁶ This removal action is ongoing and is expected to continue this winter season.

¹Gryc, G. 1985. USGS Professional Paper 1240-C., p. C-14

²AP. 2001. *Probe Finds Oil Sheen on North Slope Was Natural Seep*. Petroleum News Vo. 6, No.7, July 30,2001.

³Houseknecht, D. W. and C. Schenk. 2004. USGS Professional Paper 1709-B, p. 7.

⁴http://www.dec.alaska.gov/Applications/SPAR/CCReports/Site_Report.aspx?Hazard_ID=3078

⁵http://www.dec.alaska.gov/Applications/SPAR/CCReports/Site_Report.aspx?Hazard_ID=3078

⁶http://www.dec.alaska.gov/Applications/SPAR/CCReports/Site_Report.aspx?Hazard_ID=3093

During the 2012/2013 winter season it is anticipated that the U.S. Army Corps of Engineers (USACE) will continue a removal action at the Legacy Well Umiat Well No. 9. The site is within a 1/8 of a mile from the applicants proposed Infield Ice Road (See Figure 3). Previously the contractor for USACE staged their camp at the Seabee Pad. However, with the Linc proposed activity, it is anticipated that the camp for the removal action would be on state land

Recent Exploration and Drilling: To date, no recent exploration activities authorized by the BLM in the NPR-A, individually or in combination, have caused significant direct, indirect, or cumulative adverse impacts to the environment. There have been some minor, short-term, local adverse impacts as a direct result of activities associated with approved winter exploration programs. The small number and minimal severity of the impacts occurring from 1999 to 2012 demonstrates the overall effectiveness of the environmental protections that are applied to winter exploration activities in the NPR-A.

Results of previous analyses that have been incorporated by reference, and considerations of existing and proposed protective measures in the NPR-A, are key factors in limiting the cumulative impacts analysis to the issues listed below. Neither the Proposed Action nor the No-Action Alternative would add substantially to the incremental past, present, and future impacts described below.

4.2.1. Issue 1 Fish

As discussed in the USDO I BLM (2008a Section 4.7.7), restricted winter habitat for fish makes many species highly vulnerable to the impacts of oil and gas exploration. Some effects may accumulate, but based on federal and state protective measures, effects to fish at the lake population level are not anticipated.

4.2.2. Issue 2 Water Quality

Federal and state restrictions to water quantity and quality withdrawals will insure protection of the biological functionality of Umiat Lake and prevent alteration of adjacent lands due to removal of Umiat Lake waters. Cumulative impacts from the removal of Umiat Lake water are unlikely to occur if adequate monitoring and properly designed water withdrawal plans are maintained in the future.

4.2.3. Issue 3 Subsistence

BLM protective measures have been applied in the NPR-A during the winter drilling seasons without any significant individual or collective direct, indirect, or cumulative impacts to subsistence resources. Activity levels are expected to be similar in the future, such that cumulative impacts are expected to remain insignificant for both the Proposed Action and the No-Action Alternative. In addition, stipulations and ROPS/BMPs have been developed to avoid the potential for significant restriction of subsistence uses or access to subsistence resources (USDO I BLM 1998, 2008b).

Multi-year winter exploration drilling projects and the potential for concurrent operations within and adjacent to the NPR-A have been discussed with local residents through meetings with the local communities, NSB, regulatory and resource agencies in order to minimize project-specific and cumulative effects to subsistence resources or access.

In addition to winter activities, summer activities including studies, monitoring, and recreational use occur in the NPR-A. These include aircraft support for fish and wildlife studies, as well as inspections of proposed drilling sites and abandonment inspections. Helicopters are frequently used as the basic means of air support. Helicopter activity can result in deflection of wildlife and disturbance to people engaged in subsistence activities. This disturbance is usually localized to the area in which the helicopter is operating, and temporary in nature, in that it only occurs during the period in which the activity is taking place. Fixed wing aircraft are used for local passenger and freight transportation, subsistence, and recreation. Although every effort is made to minimize the effects of aircraft activity, aircraft transportation is crucial to many activities. Summer activities in the NPR-A require separate BLM authorization(s), with associated assessment of potential environmental impact.

From an analysis of past actions, communication with residents and the analyses of impacts to other resources, the most significant cumulative impact of this proposed action would likely be air traffic. Linc is currently using or has recently used Hercules C-130 planes to deliver heavy equipment for road construction to Umiat. The continued or increased use of large aircraft and helicopters in the Umiat /Colville River area will continue to negatively impact subsistence users, primarily those from Nuiqsut. A likely outcome is that hunters will increasingly avoid a larger area around Umiat when possible.

4.3. Residual Impacts

Despite the system of controls in place, and the modern technology and methods proposed, some minor impacts from the proposed action cannot be avoided. The impacts include:

Temporary surface disturbance by winter drilling at well sites.

Temporary increase in industrial activity affecting wintertime local tranquility and solitude.

Temporary minor impacts to tundra from ice roads and pads. Longer-term, but relatively minor, visual impacts from multiple green and/or brown trails along portions of the spur routes to ice pads and water supply lakes.

Short-term visual and noise impacts of drill rig, camp, traffic, etc.

Temporary disturbance, with possible displacement of some wildlife, in the area while exploration activities are underway. Possible additive effect on winter wildlife mortality.

Possible minor, temporary impact on subsistence resources and activities if caribou or other animal movements shift away from places where activity winter occurs.

Possible loss of some small mammals (e.g., lemmings, voles, and ground squirrels) due to ice road/pad construction and the hardened overland trail. This would be an adverse impact to those individuals lost, but not to any local wildlife population.

Temporary, localized, minor degradation of air quality and, possibly water quality (oxygen depletion, wastewater disposal, and spills).

Possible temporary restriction of public access to land around drill sites during active drilling activities to meet air quality requirements and increase public safety.

Residual effects have been broadly evaluated for those areas considered for leasing, leased, and subsequently explored (USDO I BLM 2008a, Vol. 3, Section 4.8). With the additional mitigation measures described in Section 4.4, below, the site-specific effects expected from the proposed action are consistent with those previously-discussed impacts, and none of the impacts are expected to be significant for the proposed action.

4.4. Mitigation and Monitoring

In consultation with agencies and local residents, North Slope operators have actively worked to develop winter exploration technologies that create minimal impacts to the environment and to local residents. Many of these enhancements, such as ways to reduce damage to tundra, have been incorporated into operational plans, including the proposed project.

The BLM will continue to monitor the following resources as the proposed action is implemented:

1. Access to subsistence use areas and displacement of subsistence resources
2. Cultural resources
3. Tundra/vegetation
4. Fish habitat
5. Lake recharge

BLM monitoring measures will involve: 1) the drilling operation, including the drill rig and ancillary facilities, and 2) other surface activities. The former involves geotechnical and engineering considerations such as the presence of hydrogen sulfide gas. The latter includes the movement of equipment, supplies, and personnel to and from the drilling operations and the continuing protection of vegetation, fish, and wildlife habitat, as well as subsistence activities.

The objective of this monitoring program is to ensure that all terms and conditions of the Federal oil and gas leases, the RODs (USDO I BLM 1998b, 2008b), the NPRPA, and FLPMA (where applicable) are met.

4.5. Additional Mitigation and Monitoring

The BLM will incorporate the following additional mitigation measures into approvals for the Linc Applications to Drill and ROW permit. Linc shall:

1. Provide the BLM Arctic Field Office with a weekly activities summary report. This report shall include all required reports identified below. The report shall be delivered in digital format every Monday through the applicable season(s) for the life of this project.
2. Avoid disturbing PCB-contaminated surface soils at and down-gradient of the Umiat Legacy Well No. 9. To guard against any accidental tundra disturbance during ice road construction or overland transport, Linc shall work with Marsh Creek (U.S. Army Corp of Engineers contractor) to determine a safe working distance from the Umiat Legacy Well No. 9. Linc shall e-mail the agreement for working near the site to the BLM with a cc to Marsh Creek.

3. Confer with the BLM to develop a plan to reduce ice thickness of ice drill pads left in place where underlying vegetation is likely to remain covered during the growing season.
4. Monitor condition of the ice roads and terminate use if environmental degradation is observed, and immediately report degradation to the BLM AO.
5. Coordinate the use of ice roads/snow trails at Umiat with Marsh Creek contractor for the U.S. Army Corp of Engineers (USACE). Provide the BLM with a copy of the agreement.
6. All activities are prohibited within 1 mile of known polar bears dens (including those encountered in the course of permitted activities). Locations of known polar bear dens can be obtained from the U.S. Fish and Wildlife Service, Marine Mammals Management Office.
7. The permittee or their contractors shall submit an annual polar bear observation report to the BLM within 60 days of completion of field operation. This report shall contain information on all evidence of polar bears, including active den locations, and the actions taken by the permittee on the adherence of these stipulations.
8. The permittee or their contractors must follow the polar bear interaction guidelines provided in the document titled: "Polar Bear Interaction Guidelines.docm"

The following permit stipulations implement practices that will further reduce the likelihood of impacts to fish habitat and water resources on BLM lands (adapted from Noel et al. 2008).

LINC shall:

1. Provide the BLM with an as-built of all ice roads, snow trails, and ice pads at the time the infrastructure is completed. Data should be in the form of ESRI shapefile(s) referencing the North American Datum of 1983 (NAD83).
2. Post a sign on the access road to each lake being utilized as a water source, clearly identifying the lake by its number.
3. Maintain a daily record of water removed as liquid or ice aggregate from each lake utilized as a water source and provide the BLM with this record weekly in conjunction with the progress report. A formatted spreadsheet provided by the BLM must be used for reporting.
4. Immediately cease pumping and notify the BLM within 24 hours if water removal exceeds the volume approved at any lake.
5. Notify the BLM within 24 hours of any observation of dead or injured fish on water source intake screens or in the hole being used for pumping. Temporarily cease pumping from that hole until additional preventative measures are taken to avoid further impacts to fish.
6. Provide the BLM with photographs documenting the condition of all ice and snow road channel crossings that have been "removed, breached, or slotted" (per ROP C-3) at the end of the winter operation period. Geographic coordinates (latitude/longitude) of a crossing must accompany each set of photos. **ROP C-3 Clarification:** ROP C-3 requires that any "bridges" created at stream crossings be breached or removed before spring breakup. A stream channel crossing is a "bridge" only if additional layers of snow, ice, and/or liquid water are added to the crossing (not including streambank ramps). If additional layers are added to a crossing, then ROP C-3 applies and the crossing must be breached before spring breakup.

7. Provide the BLM any data or photographs collected at water source lakes regarding an evaluation of spring recharge.
8. Coordinate with the concurrent USACE clean-up project at Umiat to ensure that the total permitted water withdrawal volume of Lakes RTS07118 and RTS07124 is not exceeded; both LINC and USACE, through their contractor Marsh Creek, have requested to use water from these lakes. Water removal (liquid or ice) from these lakes shall not begin until the BLM has been provided with and approved a coordination plan between LINC and Marsh Creek that explicitly explains how the water and ice from these lakes will be shared, how water and ice removed will be measured, and the manner in which total water removal will be tracked collaboratively between these entities.
9. Confer with the BLM AO prior to initiating water removal from Umiat Lake, RTS07119,. Linc will provide a pumping and water quality monitoring plan acceptable to the BLM with the objective of preventing the intake of contaminated water or bottom sediments and insuring sufficient water remains for invertebrates and other biological organisms. This plan could include analysis of water quality (under ice) prior to, during and at the completion of pumping, and a quality assurance plan to ensure that lake sediments are not disturbed. Future sampling of lake water or removed water may also be required. In addition to turbidity and other parameters, samples could be analyzed for DRO by Alaska Method 102, and for polynuclear aromatic hydrocarbons (PAH) or for BETX (benzene, ethylbenzene, toluene, and xylene by EPA Method 624) to quantify concentrations of lighter petroleum fractions or other parameters as needed.
10. Maintain a daily record of where water from Umiat Lake was used, and submit to the BLM AO at the end of the drilling season.

4.6. Summary of Environmental Consequences

This analysis has considered, tiered from, and incorporated by reference, previous studies and findings on oil and gas winter exploration activities on the North Slope and, specifically, in the NPR-A. Also considered were the requirements and restrictions for water withdrawals and fish stream crossings included in Fish Habitat permits. The potential issue (s) identified in the evaluation of the proposed action for this EA was Issue 1: Fish , Issue 2: Water Quality , and Issue 3: Subsistence. The analysis found that impacts would be short term and localized and that mitigation measures in Appendix A would adequately reduce any adverse effects to Issues 1-3. The proposed action would not contribute to significant cumulative effects to Issues 1-3 in the proposed project areas. Based on this analysis, it is concluded that direct, indirect, and cumulative impacts from the proposed action should be relatively minor and short-term, with no significant impacts foreseen.

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Chapter 5. CONSULTATION AND COORDINATION

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5.1. Agency Coordination

The preparers of this EA have consulted with the following contacts in setting the scope of analysis and alternatives to be addressed: ADNR, Division of Mining Land and Water, ADF&G, USFWS

In preparing its plan of operations, Linc conducted a series of meetings with resource agencies, regulatory agencies, and local governments. The proposed project has recently undergone review by the NSB, as well as other State and Federal agencies, as described in Section 1.5.

Linc provided the BLM with permit applications and support documentation that summarize the proposed project and their compliance with applicable stipulations. The BLM has inspected the proposed drill sites and access routes. The BLM and Linc discussed the proposed action as the proposed program was being developed. These discussions will continue as the project progresses.

5.2. Public Coordination

In preparing its plan of operations, Linc conducted meetings with affected North Slope communities, as described in Section 1.3. Local residents provided Traditional Knowledge at these meetings, which were considered in the project plan and in this EA.

Linc has prepared a Subsistence Plan that presents measures to mitigate potential impacts on subsistence resources and access.

5.3. List of Preparers

Susan Flora, Environmental Scientist
Richard Kemnitz, Hydrologist
Michael Kunz, Archaeologist
Stacey Fritz, Anthropologist/Subsistence Specialist
Debbie Nigro, Wildlife Biologist
Roger Sayre, NEPA Specialist
Matthew Whitman, Fish Biologist
Donna Wixon, Natural Resource Specialist
Dave Yokel, Wildlife Biologist

5.4. ANILCA Requirements

Section 810 Subsistence Evaluation

This action is not likely to cause any significant restriction to the subsistence resources of the area.

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Chapter 6. References

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Chapter 7. APPENDIX

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7.1. APPENDIX A

NE IAP/EIS ROD

Stipulations and Required Operating Procedures

Waste Prevention, Handling, Disposal, Spills, Air Quality, and Public Health and Safety:

A-1 Required Operating Procedure

Objective: Protect the health and safety of oil field workers and the general public by disposing of solid waste and garbage in accordance with applicable Federal, state, and local law and regulations.

Requirement/Standard: Areas of operation shall be left clean of all debris.

A-2 Required Operating Procedure

Objective: Minimize impacts on the environment from non-hazardous and hazardous waste generation. Encourage continuous environmental improvement. Protect the health and safety of oil field workers and the general public. Avoid human-caused changes in predator populations.

Requirement/Standard: Lessees/permittees shall prepare and implement a comprehensive waste management plan for all phases of exploration and development, including seismic activities. The plan shall be submitted to the AO for approval, in consultation with Federal, state, and NSB regulatory and resource agencies, as appropriate (based on agency legal authority and jurisdictional responsibility), as part of a plan of operations or other similar permit application. Management decisions affecting waste generation shall be addressed in the following order of priority: 1) Prevention and reduction, 2) recycling, 3) treatment, and 4) disposal. The plan shall consider and take into account the following requirements:

- a. Methods to avoid attracting wildlife to food and garbage. All feasible precautions shall be taken to avoid attracting wildlife to food and garbage. (A list of approved precautions, specific to the type of permitted use, can be obtained from the AO.)
- b. Disposal of putrescible waste. Requirements prohibit the burial of garbage. Lessees and permitted users shall have a written procedure to ensure that the handling and disposal of putrescible waste will be accomplished in a manner that prevents the attraction of wildlife. All putrescible waste shall be incinerated, backhauled, or composted in a manner approved by the AO. All solid waste, including incinerator ash, shall be disposed of in an approved waste-disposal facility in accordance with USEPA and ADEC regulations and procedures. The burial of human waste is prohibited except as authorized by the AO.
- c. Disposal of pumpable waste products. Except as specifically provided, the BLM requires that all pumpable solid, liquid, and sludge waste be disposed of by injection in accordance with USEPA, ADEC, and the Alaska Oil and Gas Conservation Commission regulations and procedures. On-pad temporary muds and cuttings storage, as approved by ADEC, will be allowed as necessary to facilitate annular injection and/or backhaul operations.
- d. Disposal of wastewater and domestic wastewater. The BLM prohibits wastewater discharges or disposal of domestic wastewater into bodies of fresh, estuarine, and marine water, including wetlands, unless authorized by a NPDES or state permit.

A-3 Required Operating Procedure

Objective: Minimize pollution through effective hazardous-materials contingency planning.

Requirement/Standard: For oil- and gas-related activities, a Hazardous Materials Emergency Contingency Plan shall be prepared and implemented before transportation, storage, or use of fuel or hazardous substances. The plan shall include a set of procedures to ensure prompt response, notification, and cleanup in the event of a hazardous substance spill or threat of a release. Procedures applicable to fuel and hazardous substances handling (associated with transportation vehicles) shall consist of Best Management Practices (BMPs) if approved by the AO. The plan shall include a list of resources available for response (e.g., heavy-equipment operators, spill-cleanup materials or companies), and names and phone numbers of Federal, state, and NSB contacts. Other Federal and state regulations may apply and require additional planning requirements. All appropriate staff shall be instructed regarding these procedures. In addition contingency plans related to facilities **developed** for oil production shall include requirements to:

- a. provide refresher spill-response training to NSB and local community spill-response teams on a yearly basis,
- b. plan and conduct a major spill-response field-deployment drill annually,
- c. prior to production and as required by law, develop spill prevention and response contingency plans and participate in development and maintenance of the North Slope Subarea Contingency Plan for Oil and Hazardous Substances Discharges/Releases for the National Petroleum Reserve - Alaska operating area. Planning shall include development and funding of detailed (e.g., 1:26,000 scale) environmental sensitivity index maps for the lessee's operating area and areas outside the lessee's operating area that could be affected by their activities. (The specific area to be mapped shall be defined in the lease agreement and approved by the AO in consultation with appropriate resource agencies). Maps shall be completed in paper copy and geographic information system format in conformance with the latest version of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration's Environmental Sensitivity Index Guidelines. Draft and final products shall be peer reviewed and approved by the AO in consultation with appropriate Federal, state, and NSB resource and regulatory agencies.

A-4 Required Operating Procedure

Objective: Minimize the impact of contaminants on fish, wildlife, and the environment, including wetlands, marshes and marine waters, as a result of fuel, crude oil, and other liquid chemical spills. Protect subsistence resources and subsistence activities. Protect public health and safety.

Requirement/Standard: Before initiating any oil and gas or related activity or operation, including field research/surveys and/or seismic operations, lessees/permittees **shall develop a comprehensive spill prevention and response contingency plan** per 40 CFR § 112 (Oil Pollution Act). The plan shall consider and take into account the following requirements:

- a. On-site Clean-up Materials. Sufficient oil-spill-cleanup materials (absorbents, containment devices, etc...) shall be stored at all fueling points and vehicle-maintenance areas and shall be carried by field crews on all overland moves, seismic work trains, and similar overland moves by heavy equipment.
- b. Storage Containers. Fuel and other petroleum products and other liquid chemicals shall be stored in proper containers at approved locations. Except during overland moves and seismic

operations, fuel, other petroleum products, and other liquid chemicals designated by the AO that in total exceed 1,320 gallons shall be stored within an impermeable lined and diked area or within approved alternate storage containers, such as over packs, capable of containing 110% of the stored volume. In areas within 500 feet of water bodies, fuel containers are to be stored within appropriate containment.

c. Liner Materials. Liner material shall be compatible with the stored product and capable of remaining impermeable during typical weather extremes expected throughout the storage period.

d. Permanent Fueling Stations. Permanent fueling stations shall be lined or have impermeable protection to prevent fuel migration to the environment from overfills and spills.

e. Proper Identification of Containers. All fuel containers, including barrels and propane tanks, shall be marked with the responsible party's name, product type, and year filled or purchased.

f. Notice of Reportable Spills. Notice of any reportable spill (as required by 40 CFR § 300.125 and 18 AAC § 75.300) shall be given to the AO as soon as possible, but no later than 24 hours after occurrence.

g. Identification of Oil Pans (“duck ponds”). All oil pans shall be marked with the responsible party's name.

A-5 Required Operating Procedure

Objective: Minimize the impact of contaminants from refueling operations on fish, wildlife and the environment.

Requirement/Standard: Refueling of equipment within 500 feet of the active floodplain of any water body is prohibited. Fuel storage stations shall be located at least 500 feet from any water body with the exception of small caches (up to 210 gallons) for motor boats, float planes, ski planes, and small equipment, e.g. portable generators and water pumps, will be permitted. The AO may allow storage and operations at areas closer than the stated distances if properly designed to account for local hydrologic conditions.

A-6 Required Operating Procedure

Objective: Minimize the impact on fish, wildlife, and the environment from contaminants associated with the exploratory drilling process.

Requirement/Standard: Surface discharge of reserve-pit fluids is prohibited.

A-7 Required Operating Procedure

Objective: Minimize the impacts to the environment of disposal of produced fluids recovered during the **development** phase on fish, wildlife, and the environment.

Requirement/Standard: Discharge of produced water in upland areas and marine waters is prohibited.

A-8 Required Operating Procedure

Objective: Minimize conflicts resulting from interaction between humans and bears during leasing and associated activities.

Requirement/Standard: Oil and gas lessees and their contractors and subcontractors will, as a part of preparation of lease operation planning, prepare and implement bear-interaction plans to minimize conflicts between bears and humans. These plans shall include measures to:

- a. Minimize attraction of bears to the drill sites.
- b. Organize layout of buildings and work areas to minimize human/bear interactions.
- c. Warn personnel of bears near or on drill sites and identify proper procedures to be followed.
- d. Establish procedures, if authorized, to discourage bears from approaching the drill site.
- e. Provide contingencies in the event bears do not leave the site or cannot be discouraged by authorized personnel.
- f. Discuss proper storage and disposal of materials that may be toxic to bears.
- g. Provide a systematic record of bears on the site and in the immediate area.
- h. Encourage lessee/permittee to participate and comply with the Incidental Take Program under the Marine Mammal Protection Act.

A-9 Required Operating Procedure

Objective: Reduce air quality impacts.

Requirement/Standard: Concurrent with implementation of the requirement for adoption of use of ultra low sulfur diesel in the “North Slope Ultra Low Sulfur Diesel Transition Agreement,” as amended, between the State of Alaska, BP Exploration (Alaska) Inc. and ConocoPhillips Alaska, Inc., or implementation of federal regulations requiring use of “ultra low sulfur” diesel within NPR-A if these regulations take effect prior to the “Transition Agreement,” all oil and gas operations (vehicles and equipment) that burn diesel fuels must use “ultra low sulfur” diesel as defined by the Alaska Department of Environmental Conservation – Division of Air Quality, subject to its availability. The use of alternative diesel fuel may be considered and approved by BLM’s Authorized Officer on a case-by-case basis.

Water Use for Permitted Activities:

B-1 Required Operating Procedure

Objective: Maintain populations of, and adequate habitat for, fish and invertebrates.

Requirement/Standard: Water withdrawal from rivers and streams during winter is prohibited.

B-2 Required Operating Procedure

Objective: Maintain natural hydrologic regimes in soils surrounding lakes and ponds, and maintain populations of, and adequate habitat for, fish and invertebrates, and waterfowl.

Requirement/Standard: Water withdrawal from lakes may be authorized on a site-specific basis depending on water volume, and depth, and fish population and species diversification. Current water withdrawal requirements specify:

- a. Lakes that are ≥ 7 feet with sensitive fish (any fish except ninespine stickleback or Alaska blackfish), water available for withdrawal is limited to 15% of calculated volume deeper than 7 feet; lakes that are between 5 and 7 feet with sensitive fish, water available for withdrawal would be calculated on a case by case basis.
- b. Lakes that are ≥ 5 feet with only non-sensitive fish (i.e., ninespine stickleback or Alaska blackfish), water available for withdrawal is limited to 30% of calculated volume deeper than 5 feet.
- c. Any lake with no fish present, regardless of depth, water available for withdrawal is up to 35% as specified within the permit.
- d. A water-monitoring plan may be required to assess draw down and water quality changes before, during, and after pumping any fishbearing lake or lake of special concern.
- e. The removal of naturally grounded ice may be authorized from lakes and shallow rivers on a site-specific basis depending upon its size, water volume, and depth, and fish population and species diversification.
- f. Removed ice aggregate shall be included in the 15% or 30% withdrawal limits—whichever is the appropriate case—unless otherwise approved.
- g. Any water intake structures in fish bearing or non-fish bearing waters shall be designed, operated, and maintained to prevent fish entrapment, entrainment, or injury. Note: All water withdrawal equipment must be equipped and must utilize fish screening devices approved by the Alaska Department of Natural Resources (ADNR).
- h. Compaction of snow cover or snow removal from fish-bearing water bodies shall be prohibited except at approved ice road crossings, water pumping stations on lakes, or areas of grounded ice.

The following lease stipulations and ROPs apply to overland moves, seismic work, and any similar cross-country vehicle use of heavy equipment on nonroaded surfaces during the winter season. These restrictions do not apply to the use of such equipment on ice roads after they are constructed.

Winter Overland Moves and Seismic Work:

C-1 Required Operating Procedure

Objective: Protect grizzly bear, polar bear, and marine mammal denning and/or birthing locations.

Requirement/Standard:

- a. Cross-country use of heavy equipment and seismic activities is prohibited within $\frac{1}{2}$ mile of occupied grizzly bear dens identified by the ADFG unless alternative protective measures are approved by the AO in consultation with the ADFG.
- b. Cross-country use of heavy equipment and seismic activities is prohibited within 1 mile of known or observed polar bear dens or seal birthing lairs. Operators shall consult with the USFWS and/or NOAA Fisheries, as appropriate, before initiating activities in coastal habitat between October 30 and April 15.

C-2 Required Operating Procedure

Objective: Protect stream banks, minimize compaction of soils, and minimize the breakage, abrasion, compaction, or displacement of vegetation.

Requirement/Standard:

- a. Ground operations shall be allowed only when frost and snow cover are at sufficient depths to protect the tundra. Ground operations shall cease when the spring snowmelt begins (approximately May 5 in the foothills area where elevations reach or exceed 500 feet and approximately May 15 in the northern coastal areas). The exact dates will be determined by the AO.
- b. Only low-ground-pressure vehicles shall be used for on-the-ground activities off ice roads or pads. A list of approved vehicles can be obtained from the AO. Limited use of tractors equipped with wide tracks or “shoes” will be allowed to pull trailers, sleighs or other equipment with approved undercarriage. Note: This provision does not include the use of heavy equipment such as front-end loaders and similar equipment required during ice road construction.
- c. Bulldozing of tundra mat and vegetation, trails, or seismic lines is prohibited; however, on existing trails, seismic lines or camps, clearing of drifted snow is allowed to the extent that the tundra mat is not disturbed.
- d. To reduce the possibility of ruts, vehicles shall avoid using the same trails for multiple trips unless necessitated by serious safety or superseding environmental concern. This provision does not apply to hardened snow trails for use by low-ground-pressure vehicles such as Rolligons.
- e. The location of winter ice roads shall be designed and located to minimize compaction of soils and the breakage, abrasion, compaction, or displacement of vegetation. Offsets may be required to avoid using the same route or track in the subsequent year.
- f. Motorized ground-vehicle use within the CRSA associated with overland moves, seismic work, and any similar use of heavy equipment shall be minimized within the Colville River Raptor, Passerine, and Moose Area from April 15 through August 5, with the exception that use will be minimized in the vicinity of gyrfalcon nests beginning March 15. Such use will remain ½ mile away from known raptor nesting sites, unless authorized by the AO.

C-3 Required Operating Procedure

Objective: Maintain natural spring runoff patterns and fish passage, avoid flooding, prevent streambed sedimentation and scour, protect water quality and protect stream banks.

Requirement/Standard: Crossing of waterway courses shall be made using a low-angle approach. Snow and ice bridges shall be removed, breached, or slotted before spring breakup. Ramps and bridges shall be substantially free of soil and debris. Except at approved crossings, operators are encouraged to travel a minimum of 100 feet from known overwintering fish streams and lakes.

C-4 Required Operating Procedure

Objective: Avoid additional freeze-down of deep-water pools harboring over-wintering fish and invertebrates used by fish.

Requirement/Standard: Travel up and down streambeds is prohibited unless it can be demonstrated that there will be no additional impacts from such travel to over-wintering fish or the invertebrates they rely on. Rivers and streams shall be crossed at shallow riffles from point bar to point bar whenever possible.

Oil and Gas Exploratory Drilling:***D-1 Lease Stipulation***

Objectives: Protect fish-bearing rivers, streams, and lakes from blowouts and minimize alteration of riparian habitat.

Requirement/Standard: Exploratory drilling is prohibited in rivers and streams, as determined by the active floodplain, and fish-bearing lakes.

D-2 Lease Stipulation

Objective: Minimize surface impacts from exploratory drilling.

Requirement/Standard: Construction of permanent or gravel oil and gas facilities shall be prohibited for exploratory drilling. Use of a previously constructed road or pad may be permitted if it is environmentally preferred.

Facility Design and Construction:

E-9 Required Operating Procedure

Objective: Avoidance of human-caused increases in populations of predators of ground nesting birds.

Requirement/Standard:

a. Lessee shall utilize best available technology to prevent facilities from providing nesting, denning, or shelter sites for ravens, raptors, and foxes. The lessee shall provide the AO with an annual report on the use of oil and gas facilities by ravens, raptors and foxes as nesting, denning, and shelter sites.

b. Feeding of wildlife is prohibited and will be subject to noncompliance regulations.

E-10 Required Operating Procedure

Objective: Prevention of migrating waterfowl, including species listed under the Endangered Species Act, from striking oil and gas and related facilities during low light conditions.

Requirement/Standard: Illumination of all structures between August 1 and October 31 shall be designed to direct artificial exterior lighting inward and downward, rather than upward and outward, unless otherwise required by the Federal Aviation Administration.

E-13 Required Operating Procedure

Objective: Protect cultural and paleontological resources.

Requirement/Standard: Lessees shall conduct a cultural and paleontological resources survey prior to any ground-disturbing activity. Upon finding any potential cultural or paleontological resource, the lessee or their designated representative shall notify the AO and suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the AO.

Use of Aircraft for Permitted Activities:

F-1 Required Operating Procedure

Objective: Minimize the effects of low-flying aircraft on wildlife, traditional subsistence activities, and local communities.

Requirement/Standard: The lessee shall ensure that aircraft used for permitted activities maintain altitudes according to the following guidelines (Note: This ROP is not intended to restrict flights necessary to survey wildlife to gain information necessary to meet the stated objective of the stipulations and ROPs. **However, flights necessary to gain this information will be restricted to the minimum necessary to collect such data):**

- a. Aircraft shall maintain an altitude of at least 1,500 feet above ground level (AGL) when within ½ mile of cliffs identified as raptor nesting sites from April 15 through August 15 and within ½ mile of known gyrfalcon nest sites from March 15 to August 15, unless doing so would endanger human life or violate safe flying practices. Permittees shall obtain information from the BLM necessary to plan flight routes when routes may go near falcon nests.
- b. Aircraft shall maintain an altitude of at least 1,000 feet AGL (except for takeoffs and landings) over caribou winter ranges from December 1 through May 1, unless doing so would endanger human life or violate safe flying practices. Caribou wintering areas will be defined annually by the AO. The AO will consult directly with the Alaska Department of Fish and Game in annually defining caribou winter ranges.
- c. Land user shall submit an aircraft use plan as part of an oil and gas exploration or development proposal. **The plan shall address strategies to minimize impacts to subsistence hunting and associated activities, including but not limited to the number of flights, type of aircraft, and flight altitudes and routes, and shall also include a plan to monitor flights.** Proposed aircraft use plans should be reviewed by appropriate Federal, state, and Borough agencies. Consultations with these same agencies will be required if unacceptable disturbance is identified by subsistence users. Adjustments, including possible suspension of all flights, may be required by the AO if resulting disturbance is determined to be unacceptable. The number of takeoffs and landings to support oil and gas operations with necessary materials and supplies should be limited to the maximum extent possible. During the design of proposed oil and gas facilities, larger landing strips and storage areas should be considered so as to allow larger aircraft to be employed, resulting in fewer flights to the facility.
- d. Use of aircraft, especially rotary wing aircraft, near known subsistence camps and cabins or during sensitive subsistence hunting periods (spring goose hunting and fall caribou and moose hunting) should be kept to a minimum.
- e. Aircraft used for permitted activities shall maintain an altitude of at least 2,000 feet AGL (except for takeoffs and landings) over the Teshekpuk Lake Caribou Habitat Area (Map 1) from May 20 through August 20, unless doing so would endanger human life or violate safe flying practices. Aircraft use (including fixed wing and helicopter) by oil and gas lessees in the Goose Molting Area (Map 2) should be minimized from May 20 through August 20, unless doing so would endanger human life or violate safe flying practices.
- g. Hazing of wildlife by aircraft is prohibited. Pursuit of running wildlife is hazing. If wildlife begins to run as an aircraft approaches, the aircraft is too close and must break away.

Oil Field Abandonment:

G-1 Lease Stipulation

Objective: Ensure the final disposition of the land meets the current and future needs of the public.

Requirement/Standard: Upon abandonment or expiration of the lease, all oil and gas-related facilities shall be removed and sites rehabilitated to as near the original condition as practicable, subject to the review of the AO. The AO may determine that it is in the best interest of the public to retain some or all facilities. Within the Goose Molting Area, the AO, when determining if it is in the best interest of the public to retain a facility, will consider the impacts of retention to molting geese and goose molting habitat.

Subsistence Consultation for Permitted Activities:

H-1 Required Operating Procedure

Objective: Provide opportunities for participation in planning and decision making to prevent unreasonable conflicts between subsistence uses and oil and gas and related activities.

Requirement/Standard: Lessee/permittee shall consult directly with affected communities using the following guidelines:

- a. Before submitting an application to the BLM, the applicant shall consult with directly affected subsistence communities, the NSB, and the National Petroleum Reserve - Alaska Subsistence Advisory Panel to discuss the siting, timing and methods of their proposed operations to help discover local traditional and scientific knowledge, resulting in measures that minimize impacts to subsistence uses. Through this consultation, the applicant shall make every reasonable effort, including such mechanisms as conflict avoidance agreements and mitigating measures, to ensure that proposed activities will not result in unreasonable interference with subsistence activities.
- b. The applicant shall submit documentation of consultation efforts as part of its operations plan. Applicants should submit the proposed plan of operations to provide an adequate time for review and comment by the National Petroleum Reserve - Alaska Subsistence Advisory Panel and to allow time for formal Government-to-Government consultation with Native Tribal governments. The applicant shall submit documentation of its consultation efforts and a written plan that shows how its activities, in combination with other activities in the area, will be scheduled and located to prevent unreasonable conflicts with subsistence activities. Operations plans must include a discussion of the potential effects of the proposed operation, and the proposed operation in combination with other existing or reasonably foreseeable operations.
- c. A subsistence plan addressing the following items must be submitted:
 1. A detailed description of the activity(ies) to take place (including the use of aircraft).
 2. A description of how the lessee/permittee will minimize and/or deal with any potential impacts identified by the AO during the consultation process.
 3. A detailed description of the monitoring effort to take place, including process, procedures, personnel involved and points of contact both at the work site and in the local community
 4. Communication elements to provide information on how the applicant will keep potentially affected individuals and communities up-to-date on the progress of the activities and locations of possible, short-term conflicts (if any) with subsistence activities.

Communication methods could include holding community meetings, open house meetings, workshops, newsletters, radio and television announcements, etc.

5. Procedures necessary to facilitate access by subsistence users to conduct their activities. In the event that no agreement is reached between the parties, the AO shall consult with the directly involved parties and determine which activities will occur, including the timeframes. During development, monitoring plans must be established for new permanent facilities, including pipelines, to assess an appropriate range of potential effects on resources and subsistence as determined on a case-by-case basis given the nature and location of the facilities. The scope, intensity, and duration of such plans will be established in consultation with the AO and Subsistence Advisory Panel. Permittees that propose barging facilities, equipment, supplies, or other materials to NPR-A in support of oil and gas activities in the planning area shall notify, confer, and coordinate with the Alaska Eskimo Whaling Commission, the appropriate local community whaling captains' associations, and the NSB to minimize impacts from the proposed barging on subsistence whaling activities.

H-2 Required Operating Procedure

Objective: Prevent unreasonable conflicts between subsistence activities and geophysical (seismic) exploration.

Requirement/Standard: In addition to the consultation process described in ROP H-1 for permitted activities, before applying for permits to conduct geophysical (seismic) exploration, the applicant shall 1) consult with local communities and residents and 2) notify the local Search and Rescue organizations of current and recent seismic surveys. For the purpose of this standard, a potentially affected cabin/campsite is defined as any camp or campsite within the boundary of the area subject to proposed geophysical exploration and/or within 1 mile of actual or planned travel routes used to supply the seismic operations while it is in operation.

- a. Because of the large land area covered by typical geophysical operations and the potential to impact a large number of subsistence users during the exploration season, the permittee/operator will **notify in writing** all potentially affected long-term cabin and camp users.
- b. The official recognized list of cabin and campsite users is the NSB's 2001 (or most current) inventory of cabins and campsites.
- c. A copy of the notification letter and a list of potentially affected users shall also be provided to the office of the appropriate Native Tribal government.
- d. The AO will prohibit seismic work within 1 mile of any known, long-term, cabin or campsite unless an alternate agreement between the cabin/campsite owner/user is reached through the consultation process and presented to the AO. (Regardless of the consultation outcome, the AO will prohibit wintertime seismic work within 300 feet of a known long-term cabin or campsite.)
- e. The permittee shall notify the appropriate local Search and Rescue (e.g., Nuiqsut Search and Rescue, Atqasuk Search and Rescue) of their current operational location within the NPR-A on a weekly basis. This notification should include a map indicating the current extent of surface use and occupation, as well as areas previously used/occupied during the course of the operation in progress. The purpose of this notification is to allow hunters up-to-date information regarding where seismic exploration is occurring, and has occurred, so that they can plan their hunting trips

and access routes accordingly. Identification of the appropriate Search and Rescue offices to be contacted can be obtained from the NPR-A Subsistence Advisory Panel.

H-3 Best Management Practice

Objective: Minimize impacts to sport hunting and trapping species and to subsistence harvest of those animals.

Requirement/Standard: Hunting and trapping by lessee's/permittee's employees, agents, and contractors are prohibited when persons are on "work status." Work status is defined as the period during which an individual is under the control and supervision of an employer. Work status is terminated when the individual's shift ends and he/she returns to a public airport or community (e.g., Fairbanks, Barrow, Nuiqsut, or Deadhorse). Use of lessee/permittee facilities, equipment, or transport for personnel access or aid in hunting and trapping is prohibited.

Orientation Programs Associated with Permitted Activities:

I-1 Required Operating Procedure

Objective: Minimize cultural and resource conflicts.

Requirement/Standard: All personnel involved in oil and gas and related activities shall be provided information concerning applicable stipulations, ROPs, standards, and specific types of environmental, social, traditional, and cultural concerns that relate to the region. The lessee/permittee shall ensure that all personnel involved in permitted activities shall attend an orientation program at least once a year. **The proposed orientation program shall be submitted to the AO for review and approval and should:**

- a. provide sufficient detail to notify personnel of applicable stipulations and ROPs as well as inform individuals working on the project of specific types of environmental, social, traditional and cultural concerns that relate to the region.
- b. Address the importance of not disturbing archaeological and biological resources and habitats, including endangered species, fisheries, bird colonies, and marine mammals, and provide guidance on how to avoid disturbance.
- c. Include guidance on the preparation, production, and distribution of information cards on endangered and/or threatened species.
- d. Be designed to increase sensitivity and understanding of personnel to community values, customs, and lifestyles in areas in which personnel will be operating.
- e. Include information concerning avoidance of conflicts with subsistence, commercial fishing activities, and pertinent mitigation.
- f. Include information for aircraft personnel concerning subsistence activities and areas/seasons that are particularly sensitive to disturbance by low-flying aircraft. Of special concern is aircraft use near traditional subsistence cabins and campsites, flights during spring goose hunting and fall caribou and moose hunting seasons, and flights near North Slope communities.
- g. Provide that individual training is transferable from one facility to another except for elements of the training specific to a particular site.

- h.** Include on-site records of all personnel who attend the program for so long as the site is active, though not to exceed the 5 most recent years of operations. This record shall include the name and dates(s) of attendance of each attendee.
- i.** Include a module discussing bear interaction plans to minimize conflicts between bears and humans.
- j.** Provide a copy of 43 CFR 3163 regarding Non-Compliance Assessment and Penalties to on-site personnel.
- k.** Include training designed to ensure strict compliance with local and corporate drug and alcohol policies. This training should be offered to the NSB Health Department for review and comment.
- l.** Include training developed to train employees on how to prevent transmission of communicable diseases, including sexually transmitted diseases, to the local communities. This training should be offered to the NSB Health Department for review and comment.

Endangered Species Act—Section 7 Consultation Process:

J. The lease areas may now or hereafter contain plants, animals, or their habitats determined to be threatened, endangered, or to have some other special status. The BLM may recommend modifications to exploration and development proposals to further its conservation and management objective to avoid BLM-approved activities that will contribute to the need to list such a species or their habitat. The BLM may require modifications to or disapprove a proposed activity that is likely to result in jeopardy to the continued existence of a proposed or listed threatened or endangered species or result in the destruction or adverse modification of a designated or proposed critical habitat. The BLM will not approve any activity that may affect any such species or critical habitat until it completes its obligations under applicable requirements of the Endangered Species Act as amended, 16 USC § 1531 et seq., including completion of any required procedure for conference or consultation.

Other

M-1 Best Management Practice

Objective: Minimize disturbance and hindrance of wildlife, or alteration of wildlife movements through the NPR-A.

Requirement/Standard: Chasing wildlife with ground vehicles is prohibited. Particular attention will be given to avoid disturbing caribou

M-2 Best Management Practice

Objective: Prevent the introduction, or spread, of non-native, invasive plant species in the NPR-A.

Requirement/Standard: Certify that all equipment and vehicles (intended for use either off or on roads) are weed-free prior to transporting them into the NPR-A. Monitor annually along roads for non-native invasive species, and initiate effective weed control measures upon evidence of their introduction. Prior to operations in the NPR-A, submit a plan for the BLM's approval, detailing the methods for cleaning equipment and vehicles, monitoring for weeds and weed control.

**Chapter 8. Appendix B Related
Environmental Analyses NPR-A
Exploration**

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Environmental Analysis a	Decision Document	Related Activity b <i>(proposed exploration drilling sites, access route corridors, and water supply associated with the total program, unless otherwise noted)</i>
Northeast National Petroleum Reserve-Alaska Integrated Activity Plan/Environmental Impact Statement. USDO I BLM. August 1998.	Record of Decision, Northeast National Petroleum Reserve-Alaska Integrated Activity Plan/Environmental Impact Statement. BLM, October 1998	Multi-use management of the Northeast NPR-A, including oil and gas leasing, exploration and development
EA: AK-020-00-011. Environmental Assessment, 1999-2000 Winter Exploration Drilling Program in the National Petroleum Reserve-Alaska (NPR-A). USDO I BLM, Alaska, Northern Field Office and Anchorage Field Office. January 2000. [ARCO]	Finding of No Significant Impact and Decision Record AA-081794. Application for Permit to Drill and Right-of-Way. BLM. January 2000	Spark 1, Lookout A, Clover A, Clover B, Moose's Tooth A, Moose's Tooth C, Rendezvous A, and Rendezvous B. 30-mi ice road corridor; 20-mi packed snow trail corridor; 1 ice airstrip/yr; 137 MG water (23 lakes in NPR-A). 3-year program over 5 years
EA: AK-023-01-001. Environmental Assessment, Trailblazer Exploration Drilling Program, 2000-2005, National Petroleum Reserve-Alaska (NPR-A). USDO I BLM, Alaska, Northern Field Office and Anchorage Field Office. November 2000 (minor revision January 2001). [BPX]	Finding of No Significant Impact and Decision Record AA-081752. Application for Permit to Drill and Right-of-Way. BLM. January 2001	Trailblazer AH. 34-mi ice road corridor; 18-mi packed snow trail corridor; 1 ice airstrip/yr; 525 MG water (52 lakes in NPR-A); 54-mi non-federal offshore ice road. 5-year program
EA: AK 023-01-003. Environmental Assessment, National Petroleum Reserve-Alaska (NPR-A) Exploration Program, Winter Drilling 2000-2006. USDO I BLM, Alaska, Northern Field Office and Anchorage Field Office. December 2000 (minor revision March 2001). [Phillips]	Finding of No Significant Impact and Decision Record AA-081780. Application for Permit to Drill and Right-of-Way. BLM. March 2001	Spark 2, Spark 3, Spark 4, Spark 5, Rendezvous 1, Rendezvous 2, Outlook 1, Oxbow 1, Hunter 1, and Sunrise 2. Up to 5 temporary camp/storage ice pads; 56-mi ice road corridor (+20 mi existing ROW); 0-mi packed snow trail corridor (+20 mi existing ROW); 1 ice airstrip/yr; 500 MG water (83 lakes in NPR-A). 5-year program
EA: AK-023-02-004. Environmental Assessment, National Petroleum Reserve-Alaska (NPR-A) Altamura Prospect Exploration Program. December 2001 (Minor revision January 2002). [Anadarko]	Finding of No Significant Impact and Decision Record AA-081736. Application for Permit to Drill. BLM. January 2002.	Altamura 1 and Altamura 2. 7-mi ice road corridor; 4-mi packed snow trail corridor (+15 mi existing ROW); 1 ice airstrip/yr; 19 MG water (9 lakes in NPR-A). 2-year program

Environmental Analysis a	Decision Document	Related Activity b <i>(proposed exploration drilling sites, access route corridors, and water supply associated with the total program, unless otherwise noted)</i>
EA: AK-023-02-005. Environmental Assessment, National Petroleum Reserve-Alaska (NPR-A) 2001-2006 Exploration Drilling Program. USDO I BLM, Alaska, Northern Field Office and Anchorage Field Office. December 2001 (Minor revision January 2002). [Phillips]	Finding of No Significant Impact and Decision Record AA-081780. Application for Permit to Drill and Right-of-Way. BLM. January 2002.	Spark 6, Spark 7, Spark 8, Hunter A, Hunter 2, Lookout 2, Mitre 1, Rendezvous 3, Nova 1, Nova 2, Pioneer 1, Grandview 1, Tuvaq 1, Tuvaq 2, and Tuvaq 3. 30-mi ice road (+40 mi existing ROW); 100-mi packed snow trail (+31 mi existing ROW); 2 ice airstrip sites; 120 MG water (14 lakes in NPR-A). 5-year program
EA: AK-023-02-033. Environmental Assessment, Puviaq Storage Site Project, National Petroleum Reserve-Alaska. USDO I BLM, Northern Field Office, Arctic Management Team. March 2002. [CPAI]	Finding of No Significant Impact and Decision Record FF-093572. BLM NPR-A Permit 298401. March 28, 2002.	Access to and rig storage near Puviaq; 1 over-summer ice storage pad; 80-mi packed snow trail corridor. 1-year program
EA: AK-023-03-008. Environmental Assessment. National Petroleum Reserve-Alaska (NPR-A) Exploration Drilling Program, Puviaq #1 and #2 Exploration Wells. USDO I BLM, Alaska, Northern Field Office and Anchorage Field Office. December 2002. [CPAI]	Finding of No Significant Impact and Decision Record AA-081854. Application for Permit to Drill and Right-of-Way. BLM. December 2002.	Puviaq 1 and Puviaq 2. 76-mi ice road corridor; 168 mi packed snow trail corridor (+107 mi existing ROW); one over-summer ice storage pad, 2 ice airstrip sites; 124 MG water (28 lakes in the NPR-A). 2-year program
EA: AK-023-03-027. Environmental Assessment, Storage Ice Pads, USDO I BLM, Northern Field Office, Arctic Management Team. February 2003. [CPAI]	Finding of No Significant Impact and Decision Record FF-093905. Permit 298401. February 2003.	Alternate trail access to and rig storage near Kokoda/Carbon. 11-mi packed snow trail corridor; over-summer ice storage pad. 1-year program
EA: AK-023-03-032. Environmental Assessment, Access To and Drill Stacking at Inigok. USDO I BLM, Northern Field Office, Arctic Management Team. February 2003. [TOTAL E&P USA, Inc.]	Finding of No Significant Impact and Decision Record FF-093906. BLM NPR-A Permit 281001. February 2003.	Access to and rig storage at existing facility at Inigok; 30-mi packed snow trail corridor (+27 mi existing ROW). Access to lease; 6-mi hardened trail corridor. 1-year program
Northwest National Petroleum Reserve-Alaska Final Integrated Activity Plan/Environmental Impact Statement. USDO I BLM. November 2003.	Record of Decision, Northwest National Petroleum Reserve-Alaska Integrated Activity Plan/ Environmental Impact Statement. BLM. January 2004.	Multi-use management of the Northwest NPR-A, including oil and gas leasing, exploration and development

Environmental Analysis a	Decision Document	Related Activity b <i>(proposed exploration drilling sites, access route corridors, and water supply associated with the total program, unless otherwise noted)</i>
EA: AK-023-04-005. Environmental Assessment, National Petroleum Reserve-Alaska (NPR-A) 2003-2008 Exploration Drilling. USDO I BLM, Northern Field Office, Arctic Management Team. December 2003. [TOTAL E&P USA]	Finding of No Significant Impact and Decision Record AA-084161. Application for Permit to Drill and Right-of-Way. BLM. December 2003.	Caribou 07-16, Caribou 09-11, Caribou 14-12, Caribou 18-08, Caribou 23-14, Caribou 26-11, Caribou 35-05, and Caribou 35-14. One temporary staging ice pad; 60-mi ice road corridor (+22 mi existing ROW); 31-mi packed snow trail corridor (+ 27 mi existing ROW); corridor; 170 MG water (35 lakes in NPR-A). 5-year program
EA: AK-023-04-004. Environmental Assessment National Petroleum Reserve-Alaska (NPR-A) 2003-2008 Exploration Drilling Program, USDO I BLM, Alaska, Northern Field Office and Anchorage Field Office. November 2003 (Minor revision December 2003). [CPAI]	Finding of No Significant Impact and Decision Record AA-084129. Application for Permit to Drill and Right-of-Way. BLM. December 2003.	Kokoda 1, Kokoda 2, Powerline 1, Grandview 2, Carbon 1, Summit 2, and Scout 1. 62-mi ice road corridor (+ 22 mi existing ROW); 5 ice airstrip sites; 92 MG water (12 lakes in NPR-A). 5-year program
Final Environmental Impact Statement. Alpine Satellite Development Plan. USDO I BLM, Alaska State Office, in cooperation with U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, U.S. Coast Guard, and the State of Alaska Anchorage, Alaska. September 2004.	Record of Decision, Final Environmental Impact Statement, Alpine Satellite Development Plan. Prepared by BLM, October 2004.	Production Development
EA: AK-023-05-005. Environmental Assessment National Petroleum Reserve-Alaska (NPR-A) Northeast Planning Area, Winter Exploration Drilling Program. USDO I BLM, Alaska, Northern Field Office and Anchorage Field Office. December 2004 [CPAI]	Finding of No Significant Impact and Decision Record AA-081727. Application for Permit to Drill and Right-of-Way. BLM. December 2004.	Kokoda 3, Kokoda 4, Kokoda 5, Noatak 1, Bounty 1, Defiance 1; up to 10 temporary camp/storage ice pads; 26-mi ice road corridor (+84 mi existing ROW); 8-mi packed snow trail corridor (+88 mi existing ROW); 2 ice air strips/yr; 80 MG water (58 lakes in NPR-A). 5-year program
Final Northeast National Petroleum Reserve-Alaska Amended Integrated Activity Plan/Environmental Impact Statement. USDO I BLM. January 2005 – remanded for further action	ROD – vacated by federal court	Multi-use management of the Northeast NPR-A, including oil and gas leasing, exploration and development

Environmental Analysis a	Decision Document	Related Activity b <i>(proposed exploration drilling sites, access route corridors, and water supply associated with the total program, unless otherwise noted)</i>
EA: AK-023-06-003. Environmental Assessment National Petroleum Reserve-Alaska (NPR-A) Northwest Planning Area, Winter Exploration Drilling Program 2005-2007. USDO I BLM, Alaska, Fairbanks District Office, Arctic Field Office. December 2005 [FEX]	Finding of No Significant Impact and Decision Record AA-085574. Application for Permit to Drill, 3100.00 and Right-of-Way, 2884.01. BLM. December 2005.	Aklaq 1, Aklaq 1A, Aklaq 2, Aklaq 2A, Aklaq 2B, Aklaqyaaq 1, Amaguq 1; 31-mi ice road corridor; 78-mi packed snow trail corridor (+399 mi existing ROW); 2 ice air strips/year; up to 4 temporary camp/storage ice pads, 85 MG water (28 lakes in NPR-A). 2-year program
EA: AK-023-07-001. Environmental Assessment National Petroleum Reserve-Alaska (NPR-A) Northwest Planning Area, Winter Exploration Drilling Program 2006-2008. USDO I BLM, Alaska, Fairbanks District Office, Arctic Field Office. December 2006 [FEX]	Finding of No Significant Impact and Decision Record AA-085574. Application for Permit to Drill, 3100.00 and Right-of-Way, 2884.01. BLM. December 2006.	Aklaq 3, Aklaq 4, Aklaq 5, Aklaq 6, Aklaq 7, Aklaq 7A, Aklaqyaaq 2, Amaguq 2; Uugaq 1; 62 -mi new access corridor, 2ice air strips/year; 113 MG water (34 lakes in NPR-A). 2-year program
EA: AK-023-07-002. Environmental Assessment National Petroleum Reserve-Alaska (NPR-A) Northeast Planning Area, Winter Exploration Drilling Program 2006-2011. USDO I BLM, Alaska, Fairbanks District Office, Arctic Field Office. December 2006. [CPAI]	Finding of No Significant Impact and Decision Record AA-081840. Application for Permit to Drill, and ROWs, FF-092931 and FF-093835. BLM. December 2006.	Noatak-2, Noatak-3, Nugget-1, Nugget-2, Cassin-1, Cassin-2, Cassin-3, Spark DD 9-12; 110-mi new access corridor; 3 ice air strips/year; 201.5 MG water (9 new lakes in NPR-A). 5-year program
EA: AK-023-07-006. Environmental Assessment National Petroleum Reserve-Alaska (NPR-A) Northwest Planning Area, Petro-Canada (Alaska), Inc. Winter Exploration Drilling Program 2007-2009. USDO I BLM, Alaska, Fairbanks District Office, Arctic Field Office. April 2007. [PCA]	Finding of No Significant Impact and Decision Record AA-085497. Application for Permit to Drill, and ROWs, FF-095123. BLM. April 2007.	Alaqtq2 1, Tupaagruk 1, Tupaagruk 2, Tupaagruk 3. 43 miles of new access corridor; 2 ice airstrips/year; 58.8 MG water (22 new lakes in NPR-A). 2-year program
EA: AK-023-08-002. Environmental Assessment National petroleum Reserve-Alaska (NPR-A) Northeast Planning Area, Winter Exploration Drilling Program 2007-2009. USDO I BLM, Alaska, Fairbanks District Office, Arctic Field Office.	Finding of No Significant Impact and Decision Record AA081726 & AA084141. Application for Permit to drill, and ROW FF095270. BLM. December 2007	Wells 12, 13, 14, 15, 16, 17, 18, 19, 21, and 22. 7 miles of ROW in NPR-A. 38 miles of access route on fed lands outside NPR-A. 120MG water (13 new lakes in NPR-A). 2 yr program.
EA:AK-023-2008-007. Environmental Assessment National petroleum Reserve-Alaska (NPR-A) Northeast Planning Area, Winter Exploration Drilling Program 2007-2012. USDO I BLM, Alaska, Fairbanks District Office, Arctic Field Office.	Finding of No Significant Impact and Decision Record AA081775, AA081781 & AA081800. Application for Permit to drill, and ROW FF092931. BLM. December 2007	Rendezvous 2, Spark Down Dip 9, Stony Hill. 110 miles of access corridor. 201.5 MG water (17 lakes). 3 ice air strips. 5 Yr program.

Environmental Analysis a	Decision Document	Related Activity b <i>(proposed exploration drilling sites, access route corridors, and water supply associated with the total program, unless otherwise noted)</i>
Northeast National Petroleum Reserve –Alaska Final Supplemental Integrated Activity Plan/Environmental Impact Statement. USDO I BLM. May 2008.	Record of Decision, Northeast National Petroleum Reserve –Alaska Final Supplemental Integrated Activity Plan/Environmental Impact Statement. BLM. July 2008.	Northeast NPR-A Oil & Gas Leasing, exploration and development.
EA: DOI-BLM-LLAKF01000-2009-001. Environmental Assessment National petroleum Reserve-Alaska (NPR-A) Northeast & Northwest Planning Area, Winter Exploration Drilling Program 2008-2012. USDO I BLM, Alaska, Fairbanks District Office, Arctic Field Office.	Finding of No Significant Impact and Decision Record AA086604, AA086615, AA086616 & AA086617 Application for Permit to drill, and ROW FF095310. BLM. November 2008.	Wolf Creek #4, Wolf Creek #5, Wolf Creek #6, Tsavorite #1A, Tsavorite #1B,, Tsavorite #1C,, Tsavorite #1D,, Tsavorite #1E, 66 Miles of snow trail, 35 miles in field ice road, 2 ice air strips, 23 lakes in NPR-A. 390 MG water.
EA: DOI-BLM-LLAK01000-2009-0004. Environmental Assessment National petroleum Reserve-Alaska (NPR-A) Northeast Planning Area, Winter Exploration Drilling Program 2008-2013. USDO I BLM, Alaska, Fairbanks District Office, Arctic Field Office.	Finding of No Significant Impact and Decision Record AA081785 & AA081779. Application for Permit to drill, and ROW FF092931. BLM. December 2008	Grandview #1 East, Pioneer #1. 27 Miles of new ROW. 26 new lakes. 52.45 MG water
EA: DOI-BLM-LLAK01000-2012-0001. Environmental Assessment National petroleum Reserve-Alaska (NPR-A) Northeast Planning Area, Winter Exploration Drilling Program 2008-2013. USDO I BLM, Alaska, Fairbanks District Office, Arctic Field Office.	Finding of No Significant Impact and Decision Record AA081832, AA091675 & AA081833. Application for Permit to drill, and ROW FF096502. BLM. December 2012	Cassin #1, Cassin #6. 88 miles of ROW, 21 lakes, 97.31MG Water