

**United States Department of the Interior
Bureau of Land Management**

Environmental Assessment

DOI-BLM-AKF01000-2016-001-EA

**Caelus Energy Alaska Smith Bay, LLC
3700 Centerpoint Drive, Suite 500
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**Right-of-Way
FF097064**

Arctic Field Office, Fairbanks, Alaska

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LIST OF ACRONYMS

ADEC	Alaska Department of Environmental Conservation
ADFG	Alaska Department of Fish and Game
ADNR	Alaska Department of Natural Resources
ANILCA	Alaska National Interest Land Conservation Act
AOGCC	Alaska Oil and Gas Conservation Commission
BLM	Bureau of Land Management
BMP	Best Management Practices
CEASB	Caelus Energy Alaska Smith Bay, LLC
CEQ	Council of Environmental Quality
CFR	Code of Federal Regulations
DS-2P	Drill Site 2P
EA	Environmental Assessment
EFH	Essential Fish Habitat
EO	Executive Order
ESA	Endangered Species Act
FLPMA	Federal Land Policy and Management Act of 1976
ft	feet/foot
IAP/EIS	Integrated Activity Plan/Environmental Impact Statement
IMT	Incident Management Team
NEPA	National Environmental Policy Act
NPR-A	National Petroleum Reserve in Alaska
NPRPA	Naval Petroleum Reserve Production Act
NordAq	NordAq Energy, Inc.
NSB	North Slope Borough
ODPCP	Oil Discharge Prevention and Contingency Plan
ROD	Record of Decision
ROW	Right-of-Way
SPCC	Spill Prevention and Countermeasure Plan
USFWS	United States Fish and Wildlife Service

Chapter 1

1. Introduction

This Environmental Assessment (EA) has been prepared in compliance with the National Environmental Policy Act (NEPA) to disclose and analyze the environmental consequences of granting a Right-of-Way (ROW) for activity proposed by Caelus Energy Alaska Smith Bay, LLC (CEASB). The Bureau of Land Management (BLM) follows the procedures contained in the agency's NEPA handbook (H-1790-1), which was issued June 2010. CEASB is the operator of State of Alaska offshore oil and gas leases at Smith Bay. A ROW application was submitted on September 11, 2015, by the Applicant to the BLM Arctic Field Office and assigned BLM case file number FF097064. All documents required for a complete application were received by October 15, 2015. The description of the proposed action ([Section 2.1](#)) provides details of the activity that would be conducted if the ROW were to be granted.

1.1 Need for the Proposed Action

The Applicant has filed a ROW application. The BLM's underlying need is to respond to the ROW application by considering the proposed activity in a manner that minimizes impacts to resources.

1.2 Purpose of the Proposed Action

The purpose of the proposed action is to allow the applicant to conduct the requested activity. The applicant's purpose with the proposed project is to determine, in a one-year exploratory drilling and well testing program, whether its offshore lease holdings contain economically recoverable oil and gas.

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

- Access to drilling site 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 one to two wells on State of Alaska leases near the delta of the Ikpikpuk River in the southern extent of the Smith Bay to acquire sufficient subsurface information to satisfy the applicant's economic and exploration performance criteria.
- Compliance with all related requirements of the National Petroleum Reserve in Alaska (NPR-A) Integrated Activity Plan/Environmental Impact Statement (IAP/EIS) Record of Decision (ROD) and all associated laws, regulations, permits, and approvals.

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

The BLM is authorized to approve ROWs on BLM-administered public lands pursuant to 43 Code of Federal Regulations (CFR) 2800 which establishes procedures for issuing grants, and 43 CFR 2360, operations within the petroleum reserve when authorization for such operation is required from the BLM.

1.3 Related Statutes, Regulations, Policies, and Programs

The 2012 IAP/EIS was completed to fulfill the BLM’s responsibility to manage lands in the NPR-A under the authority of the: Naval Petroleum Reserves Production Act, as amended (NPRPA), Federal Land Policy and Management Act of 1976 (FLPMA), National Environmental Policy Act, and the Alaska National Interest Lands Conservation Act (ANILCA). Findings in the IAP/EIS and decisions reflected in the 2013 ROD 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 Federal Laws and Regulations

The proposed action must comply with numerous Federal laws and Executive Orders (EO) 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 2012 IAP/EIS. The proposed action is consistent with the 2001 National Energy Policy and the Energy Policy Act of 2005.

The proposed action is in conformance with the NPR-A IAP/EIS (USDOI BLM 2012), NPRPA, FLPMA, ANILCA, Endangered Species Act (ESA), Marine Mammal Protection 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

Federal Authorizations and Approvals	
Bureau of Land Management (BLM)	Right-of-Way Threatened and Endangered Species Determination Essential Fish Habitat Assessment Subsistence Plan ANILCA 810 Evaluation and Findings Archaeological and Cultural Resources Clearance

	Waste Management Plan Orientation Program Weed Management Plan
U.S. Fish and Wildlife Service	Letter of Authorizations for the Incidental and the Intentional Take of Polar Bears Concurrence on BLM Threatened and Endangered Species Determination
Federal Aviation Administration	Temporary Airstrip - Visual Flight Rules requirement
National Oceanic and Atmospheric Administration /National Marine Fisheries Service Protected Species	Informal Consultation - Seals and use of area.
United States Air Force	Non objection of use at Point Lonely
Bureau of Safety and Environmental Enforcement	Review and approval of Oil Discharge Prevention and Contingency Plan required to conduct operations.
State Authorizations and Approvals	
Alaska Oil and Gas Conservation Commission	Authorization to Drill Shallow Hazards Analysis Annular Injection
Alaska Department of Environmental Conservation	Air Quality Minor Source General Permit Authorization for Temporary Storage of Drilling Waste Oil Discharge Prevention and Contingency Plan Spill Prevention, Control, and Countermeasures Plan (drilling/testing contractor) Grey Water discharge
Alaska Department of Natural Resources (ADNR) Division of Mining Land and Water	Temporary Water Use Permits Land Use Permit (Overland travel on State lands that includes: ice pad at 2P, travel from 2P to Ocean Point, the staging pad at Oliktok Point, submerged lands along the nearshore ice route, and at drill sites.)
ADNR Division of Oil and Gas	Detailed operational plans for project on State of Alaska oil and gas lease.
ADNR Office of Project Management and Permitting	Agreement to act as coordinator for NSB, State, and Federal agencies.
Alaska Department of Fish and Game	Fish Habitat Permits
Local North Slope Borough Authorizations and Approvals	
North Slope Borough	Development Permits (for related elements) Inupiat History, Language, and Culture Clearance

Private Agreements	
BP Exploration Alaska, LP/ConocoPhillips Alaska, Inc.	Agreement for disposal of cuttings at permitted Deadhorse Grind and Inject facility
Alaska Clean Seas	Oil Spill Response Organization/Primary Response Action Contractor

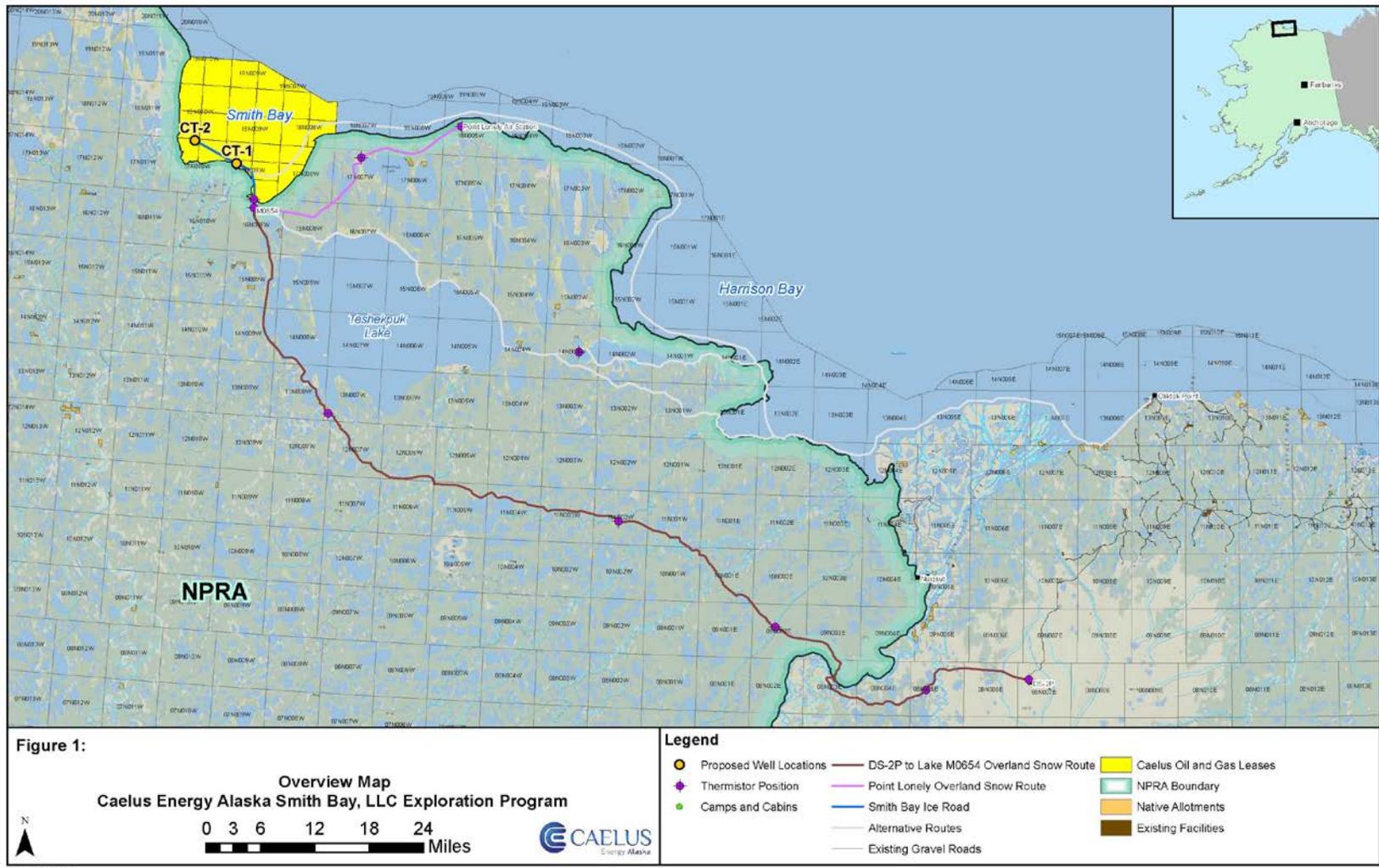
1.3.3 Related Environmental Analyses

The Council of Environmental Quality (CEQ) Regulation 40 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.” The analysis for this EA is tiered off the National Petroleum Reserve-Alaska Integrated Activity Plan Environmental Impact Statement (USDO I BLM 2012) and ROD (USDO I BLM 2013), which are incorporated in their entirety by reference in accordance with CEQ Regulation 40 CFR 1502.21.

1.4 Decision to be Made

The EA assists the BLM in project planning by evaluating the potential significance of environmental impacts. As defined by the CEQ, the significance of a federal action is determined by the context of the action in relation to the overall project setting, as well as the intensity of direct, indirect, and cumulative effects resulting from the project. If the BLM determines that the preferred alternative would not result in significant impacts beyond those already addressed in the 2012 IAP/EIS and 2013 ROD, the BLM would prepare a Finding of No Significant Impact and Decision Record approving the selected alternative. If the project is found to result in significant impacts, an Environmental Impact Statement would be prepared.

The decision-maker, BLM Authorized Officer, 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 the NPR-A ROD (USDO I BLM 2013) 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
 2 Figure 1 Applicant Submitted Map of Project Area

1.5 Scoping and Issues

Public notification of the Environmental Analysis was announced on October 1, 2015 in the NEPA Register on-line at the Arctic Field Office Environmental Assessment web site. The proposed action was also made available to the public. BLM received one comment letter with several comments from The Wilderness Society and the Conservation Lands Foundation. The areas of their concerns were: Level of NEPA analysis, Right-of-Way issues, Teshekpuk Lake Special Area, Teshekpuk Caribou Herd, subsistence, air pollution, water use and protection, blowout prevention and level of public input.

1.5.1 Comment - Level of NEPA Analysis

Comment letter suggested an EIS was more appropriate than an EA. The Interdisciplinary Team (ID Team) took a hard look at the proposed action and determined that while there is potential for water and subsistence resources to be affected ([See Table 1.2](#)) the impacts do not arise to the level of significant. Additionally this EA is tiered to the NPR-A IAP EIS (USDOI BLM 2012) which analyzed the impacts of the type of activity of the proposed action (3.4.1.2 Land Uses).

1.5.2 Comment Right-of-Way Issues

Comment letter suggested that an offshore only ROW should be analyzed as an alternative action. An offshore only ROW was considered but eliminated from detailed analysis ([See Section 2.3](#)). Comment letter also suggested that the DS-2P route should be eliminated from consideration. This was also considered but eliminated from detailed analysis ([See Section 2.3](#)).

1.5.3 Comment Teshekpuk Lake Special Area

Comment letter suggests that the proposed action would result in adverse noise, air, water, and wildlife habitat impacts along with the potential for major and minor oil and other spills.

The NPRPA states regarding special areas : “Any exploration ... shall be conducted in a manner which will assure the maximum protection of such surface values *to the extent consistent with the requirements of this Act for the exploration of the reserve.*” (emphasis added)

The proposed action is similar to many other overland moves for freight hauling, legacy well clean-up and seismic exploration operations that have occurred in the Teshekpuk Lake Special Area over the last 25 years. None of these overland move activities have been found to have significant impacts to wildlife or tundra vegetation in the many past NEPA evaluations that cover this area, including three environmental impact statements complete with “analysis, scrutiny and public review.” This area remains undeveloped and wild, indicating that these past activities have not significantly impacted the special area.

The CEASB activity would be conducted during the winter when very few bird species of any type would be present in the activity area. No waterfowl or shorebirds would be in the area during the time of the activity. Please see the NPR-A IAP EIS (USDOI BLM 2012) Section 4.5.8 for an analysis of potential direct and indirect effects to non-special status birds and Section 4.5.11.2 for an analysis of potential direct and indirect effects to special status bird species. Also please see Section 5.4.8.7.8 for an analysis of cumulative effects to non-special status birds and Section 4.8.7.11 for an analysis of potential cumulative effects to special status bird species.

Comment letter suggests that the CEASB project would negatively affect sensitive surface values and wilderness character of the Teshekpuk Lake Special Area.

In the NPR-A IAP EIS (USDOI BLM 2012), to which this EA is tiered, Section 4.5.18 analyzed impacts of these types of activities to Wilderness Characteristics and found no significant impact. Ice Roads, pads, airstrips, and snow trails are temporary in nature and traversed during the winter months.

1.5.4 Comment Teshekpuk Caribou Herd

Comment suggests that allowing the proposed action would not maximally protect the Teshekpuk Caribou Herd.

Caribou of the Teshekpuk Herd are widely scattered in winters and this winter is no exception, with animals ranging from Wainwright to Nuiqsut to the central Brooks Range and a few on the Seward Peninsula. Nonetheless, about 25% of the collared Teshekpuk caribou are currently spread out in a 1,100 square mile area between Teshekpuk Lake and Nuiqsut. It is likely that traffic using the southern snow route would encounter some of those animals. The affects should be no more adverse than similar operations in the past. Caribou are mobile mammals and can easily move away from temporary disturbances.

1.5.5 Comment Subsistence

Commenter requests a Section 810 subsistence evaluation be completed for the proposed action.

Subsistence was identified as potentially impacted in this document; ([See Table 1.2](#) Issues Considered in Evaluating Impacts; [Section 3.1.2](#) Issue 2 [Subsistence](#); [Section 4.1.2](#) Issue 2: Subsistence; and [4.2.2 Issue 2](#) Subsistence. A section 810 subsistence evaluation was completed and found the proposed action would not significantly restrict subsistence use as described in ANILCA Requirements, Section 5.2. For the full 810 evaluation see Appendix C.

1.5.6 Comment Air pollution

Comment Letter suggests that the project would result in significant air emissions.

The Alaska Department of Environmental Conservation (ADEC) granted authorization for the Tulimaniq project under the minor general permit and CEASB is required to comply with each of the conditions contained in the permit. The USBLM Best Management Practice (BMP) A-9 requires the use of ultra-low sulfur fuel within the NPR-A. CEASB has stated that they would also use ultra-low sulfur fuel for their off-shore activity which BLM does not regulate. Section 4.5.1 of the NPR-A IAP EIS (USDOI BLM 2012) to which this EA is tiered analyzed impacts to air quality and found that BMP A-9 would significantly reduce impacts to air quality. [See Table 1.2](#) for the basis of determination that air quality would be minimally impacted.

1.5.7 Comment Water Use and Protection

Commenter is concerned that BLM does not have data necessary to make an informed decision on water use and the protection of water resources.

In 2006, MJM Research sampled Lake M0654 for standard water quality parameters, determined maximum lake depth, total volume, and surface area. The lake was also assessed for the presence of fish by use of gill and seine nets and by visual means. Results were published in the following report: “MJM Research. 2006. Survey of Lakes Associated with Petro-Canada (Alaska) Prospects. Final Data Report: February 2007. Prepared for ASRC Energy Services Lynx Enterprises, Inc. Anchorage.”

Some of these results are included in [Table 2.4](#) Water and Ice Withdrawal Requirements by Source (BLM managed lands only). This table provides sufficient information to evaluate potential impacts from projected water withdrawal requirements. Additional biological or physical surveys are not merited because the projected withdrawals fall within normally permitted quantities as defined by the BMPs from the NPR-A 2013 ROD.

CEASB requested a deviation from BMP A-5 which would allow them to transfer fuel to a 4,000 gallon capacity fuel truck staged at the shore camp ice pad at Lake M0654. The BLM received the fuel transfer plan from CEASB, evaluated its effectiveness and were satisfied that water quality of Lake M0654 would be protected from potential spills. The BLM will continually assess refueling procedures throughout the project length and, if necessary, make modifications to their refueling operations in order to insure Lake M0654 will be protected from spills.

1.5.8 Comment Blow Out Prevention

Commenter suggests that blowout prevention information should be included in the EA. Based on the comment BLM has added [Section 2.1.7](#) blowout prevention information.

1.5.9 Comment Public input concerns

Commenter is concerned with the timeframe with which the proposed action was available for review.

As mentioned in [Section 1.5](#) above, the proposed action was noticed to the public on October 1, 2015 to allow at a minimum of a month for the receipt of public comments on the proposed action. The proposed activity is essentially the same as that approved last year by BLM for activity conducted by NordAq Energy, Inc. which was announced on-line at the Arctic Field Office Environmental Assessment web site for public comment from October 6, 2014. The 2014 EA was completed December 9, 2014. No public comments were received.

Development of the 2012 NPR-A IAP EIS involved extensive public comment and input from other Federal agencies, the State, the North Slope Borough (NSB), thousands of individuals, and many institutions. A summary listing of issues considered by Arctic Field Office Staff is provided in [Table 1.2](#).

Table 1.2 Issues Considered in Evaluating Impacts

Issue Considered	Determination	Basis of Determination (See Note 1) ¹
ACEC's	Not Present	

Issue Considered	Determination	Basis of Determination (See Note 1)¹
Air Quality	Minimal Impact	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 BMP A-9
Cultural and Paleontological Resources	Not Present	Archaeological survey completed; no identified cultural or paleontological resources in the project area. Cultural resources expected to remain unaffected based on location; no impacts to paleontological resources expected, based on identified locations and de minimus surface disturbance. Protection provided by BMP C-2, E-13, and I-1.
Environmental Justice	Minimal Impact to Not Present	No disproportionately high and adverse human health or environmental effects to North Slope Inupiaq residents have been identified for the proposed project. Impacts to subsistence use from this project in and of itself are not expected to be more than minor and short term. Protection provided by NPR-A BMPs A-1 – A-4, A-7, A-9, B-1, B-2, F-1, H-1, H-3, and I-1. EO 12897 [See Subsistence]
Fisheries	Minimally Impacted	Protections provided by BMPs A-3, A-4, B-1, B-2, and C-2 to C-4; additional permit stipulations required by this EA (Section 4.5); and ADFG Fish Habitat Permits. EFH assessment finding is not likely to adversely affect.
Floodplains/Wetlands and Riparian Zones	Minimally Impacted	Protection provided by BMPs A-2, A-3, A-4, C-2, C-3, and C-4, And EO 11988 AND EO 11990.
Invasive, Non-native species	Minimal Impact to Not Present	BMP M-2 (ROD for NPRA IAP/EIS 2013) will ensure that invasive plants do not become an issue.
Native American Religious Concerns	Not Present	There are no known Native American Religious concerns in the area of the proposed action.
Recreation	Minimally Impacted	Protection provided by 2013 NPR-A BMPs A-1, C-2, C-3, C-4, F-1, H-3, I-1 and M-2
Sociocultural Systems	Minimally Affected	Impacts to sociocultural systems from winter exploration activities are not expected to be more than minor and short term. Protection provided by NPR-A BMPs A-1 – A-4, A-7, A-9, A-12, B-1, B-2, F-1, H-1, H-3, and I-1. EO 12897 [See Subsistence]
Subsistence	Potentially Affected	Large game could be deflected from areas of activity, but effects are expected to be short-term and minor. Hunters may avoid area, but public access to packed snow trails may facilitate hunting. Negative impacts could result if demobilization and melting of ice island

Issue Considered	Determination	Basis of Determination (See Note 1) ¹
		and snow roads do not proceed as expected. ANILCA 810 Evaluation and Findings by BLM required. Additional protection provided by: NPR-A BMPs A-1 – A-4, A-7, A-9, A-12, B-1, B-2, C-4, F-1, H-1, H-3, and I-1
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 2012 NPRA Final IAP/EIS. USFWS concurred with the BLM ESA finding of not likely to adversely affect. Protections are provided by Section 7 of the Endangered Species Act, and BMP's A-2 thru A-4, A-7, E-9, and I-1 from the 2013 ROD.
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 2012 NPRA Final IAP/EIS. USFWS concurred with the BLM ESA finding of not likely to adversely affect. Protections are provided by Section 7 of the Endangered Species Act, and BMP's A-2 thru A-4, A-7, E-9, and I-1 from the 2013 ROD.
Threatened & Endangered Species Polar Bear	Minimally Impacted	Letter of Authorization for the Incidental and Intentional Take of polar bears issued under sections 101 (a) (4) (A) (c), 109(h) and 112(c) of the Marine Mammal Protection Act. In accordance with section 7 of the Endangered Species Act of 1973, as amended (ESA), issuance of these LOAs also fulfills the requirements for Tier 2 Consultation of the Programmatic Biological Opinion. Protection provided by Section 7 of the Endangered Species Act, BMPs A-2 thru A-4, A-7, A-8, C-1, C-2, F-1, I-1, and M-1 from the 2013 ROD and Stipulations 5 – 9 in the Additional Mitigation and Monitoring Section 4.4 of this document.
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 2012 NPRA Final IAP/EIS. Protections are provided in the 2013 ROD by BMPs A-2 thru A-4, A-7, E-9, E-15, and I-1.
Non threatened and endangered mammals	Minimally Impacted	Caribou, grizzly bear, polar bear, wolf, wolverine and small mammals (weasel, rodents, and shrews) may inhabit the area. No impacts expected other than those already covered in 2012 NPRA Final IAP/EIS. Protections provided in the ROD for that document by

Issue Considered	Determination	Basis of Determination (See Note 1) ¹
		BMPs A-4, A-6, A-7, A-8, C-1, F-1 and M-1.
Vegetation	Minimally Impacted	Protection provided by BMP C-2 (2013 ROD for 2012 NPRA Final IAP/EIS).
Visual Resource Management	Minimally Impacted	Protection provided by 2013 NPR-A BMPs A-1, A-3, A-4, 4 C-2, C-3, F-1, I-1, and M-2.
Water Resources	Potentially Affected	Applicants request a deviation from BMP A-5. Water Quality protected by frozen, snow-covered water bodies as well as USCOE, EPA, ADEC, ADFG and ADNR required permits. Other protections provided by: BMPs A-2 – A-4, A-7, B-1, B-2, C2 – C-4.
Waste (Hazardous/Solid)	Minimally Impacted	Protection provided by ADEC waste storage permit and the CEASB Waste Management Plan Protection, provided by required C-Plans and SPCC Plans, and BLM-required Orientation and Subsistence Protection Plans. Other protections provided by BMPs A-1 – A-4, A-7.
Wild & Scenic Rivers	Not Present	
Wilderness Characteristics	Minimally Impacted	Protection provided by 2013 NPR-A BMPs A-1, A-4, C-2, C-3, E-13, F-1, I-1 and M-2.

1 **Key to Table 1.2:**

- 2
- | | |
|---|---|
| 3 ACEC- Area of Critical Environmental Concern | 16 EFH – Essential Fish Habitat |
| 4 ADEC – Alaska Department of Environmental Conservation | 17 EO- Executive Order |
| 5 Conservation | 18 EPA Environmental Protection Agency |
| 6 ADFG- Alaska Department of Fish and Game | 19 ESA- Endangered Species Act |
| 7 ADNR-Alaska Department of Natural Resources | 20 IAP/EIS- Integrated Activity Plan/Environmental Impact Statement |
| 8 ANILCA- Alaska National Interest Lands Conservation Act | 21 |
| 9 Conservation Act | 22 LOA-Letter of Authorization |
| 10 BLM – Bureau of Land Management | 23 NPRA-National Petroleum Reserve in Alaska |
| 11 BMP- Best Management Practice | 24 ROD – Record of Decision |
| 12 CEASB – Caelus Energy Alaska Smith Bay, LLC | 25 SPCC-Spill Prevention, Control, and Countermeasures |
| 13 CFR - Code of Federal Regulations | 26 Countermeasures |
| 14 C-Plan Oil Spill Discharge and Contingency Plan | 27 USFWS-United States Fish & Wildlife Service |
| 15 EA- Environmental Assessment | |

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.
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, BMPs 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.

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.

Notes, Table 1.2:

1 Determination tiered from: 2012 IAP/EIS Vol. 2, Chapter 4; 2013 ROD; and laws and regulations as noted.

In summary, BLM resource specialists have identified the following issue for further evaluation in this EA: Water Resources and Subsistence.

1.6 Public Involvement

Development of the NPR-A IAP/EIS (USDOI 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. CEASB would follow their Plan of Cooperation and Good Neighbor Plan. CEASB representatives have met with the NSB Mayor's office, NSB Wildlife and Planning Departments, Native Village of Nuiqsut, Kuukpik Corporation, Inupiat Community of the Arctic Slope, Kuukpik Subsistence Oversight Panel, whaling captains, and the Alaska Eskimo Whaling Commission to introduce the project. Additionally, CEASB presented their proposed project plan to the BLM Subsistence Advisory Panel on September 3, 2015 in Barrow, Alaska.

CEASB conducted introductory meetings in Anchorage, Barrow, Atkasuk, and Nuiqsut in the summer of 2015. At each of these meetings, CEASB inquired about subsistence patterns of use, impacts that could occur, and mitigation measures that could reduce or eliminate any possible concerns.

Chapter 2

2 Proposed Action and Alternatives

CEASB is proposing to cross lands managed by the BLM to reach their State of Alaska offshore oil and gas lease (Tulimaniq drill sites CT-1 and CT-2) and drill up to two oil and gas wells during the winter of 2015-2016. The exploratory well sites are located in southern Smith Bay near the Ikpikpuk River Delta, as shown on [Figure 1](#). The proposed camp for the program would be located at Lake M0654. Mobilization of equipment and materials would occur by snow roads on both federal and state lands during winter tundra operating conditions. For a complete legal description of the project see Appendix A.

In 2014-2015, NordAq Energy, Inc. (NordAq) began a exploration project similar to what CEASB proposes for 2015-2016; however, NordAq was unable to execute drilling activities in Smith Bay as planned.

2.1 Alternative A - Description of the Proposed Action

NordAq previously conducted several archaeological studies to support their winter activities. CEASB has reviewed the cultural resources field report and coordinated with the archaeologist, Dr. Rick Reanier, to verify that there are no sites in the vicinity of the proposed snow road routes, ice infrastructure, authorized water sources or otherwise. Field verification of small portions of the route that had not been previously surveyed occurred this past summer.

CEASB has proposed the following schedule, shown as Table 2.1, for the 2015-2016 drilling season. All dates are approximate and may be altered by weather or other logistics requirements.

Table 2.1 Estimated Schedule

Activity	Estimated Start Date	Estimated End Date
Start Operations at Pt. Lonely	October 20, 2015 ¹	June 1, 2016
Begin Prepacking Snow Trail, Pt. Lonely to Smith Bay	October 20, 2015 ²	December 15, 2015
Overland Mobilization to Lake 654	Late December, 2015	Middle January, 2016
Begin Prepacking Trail from DS-2P	November, 2015 ³	January 15, 2016 ⁴
Construct Ice Pad at Lake 654	December 19, 2015	
Pre-Season Infield Ice Construction and Prepack Operations	When conditions allow	
Construct Ice Runway Lake 654	December 19, 2015	
Construct Secondary Containment	January 5, 2016	
Ice Island Construction (2 sites)	December 29, 2015	February 18, 2016
Begin Drilling and Well Testing (2 sites)	February 2, 2016	March 29, 2016
Demobilization and clean up	March 29, 2016	May 11, 2016

2.1.1 Access

CEASB has proposed a route from Point Lonely to Lake M0654, a route from ConocoPhillips Alaska Inc. Drill Site 2P (DS-2P) location, and two alternate routes (See [Figure 1](#) and [Appendix A](#)).

¹ Upon receipt of BLM ROW

² Dependent on BLM approval of prepacking activities.

³ Upon receipt of BLM ROW

⁴ Dependent on Start date, estimated up to 76 days of prepacking

2.1.1.1 Access Via Point Lonely

CEASB has a BLM authorization to allow the staging of equipment at Point Lonely ([Figure 2](#)) beginning in August, 2015. CEASB barged equipment to the site for use in this project. The material staged included spud-critical materials and equipment for mobilization by snow road from Point Lonely to CEASB's primary operating area near Lake M0654, south of Smith Bay.

CEASB has requested an authorization from BLM to conduct prepacking of snow on a route from Point Lonely to Lake M0654 to expedite the use of the trail once conditions are such that travel would not damage the tundra. BLM approved the prepacking activity on October 20, 2015 via an NPR-A permit. This route would have a higher level of traffic to and from Lake M0654 operational area than the preferred overland route ([See 2.1.1.2](#)) as the majority of the materials and equipment to support drilling activities would originate from Point Lonely.

Ice infrastructure equipment that is currently stored at Point Lonely would be mobilized infield when CEASB can begin using the Point Lonely overland snow route to Lake M0654, beginning in early December or as soon as conditions allow for the start of ice infrastructure construction. Camp facilities would be mobilized in late December to early January before the rest of the spud-critical equipment and materials that are onsite are mobilized, which is anticipated to continue until January 31, 2016.

If the temporary ice air strip at Lake M0654 ([Section 2.1.2](#) and [Figure 3](#)) is unusable due to adverse weather conditions or for some other reason, the gravel airstrip at Point Lonely might be used for occasional aircraft landings; however, CEASB does not propose to utilize Point Lonely as its primary airstrip during any phase of the winter activities.

CEASB has requested authorization to continue utilizing the gravel facilities at Point Lonely through June 1, 2016, in the event that demobilization must occur partially by marine barge during the subsequent open water season. Survival camps and emergency fuel storage in secondary containment would be maintained at the Point Lonely facilities throughout the winter activities. Although CEASB proposes to demobilize via the DS-2P snow road route, weather conditions or other delays may preclude the option of full overland demobilization, in which case CEASB would request approval from BLM to continue using Point Lonely for storage/staging until all equipment could be transported by marine barge during the subsequent open water season to West Dock. If storage were to be needed past June 1, 2016, BLM would require CEASB to obtain a summer NPR-A permit.

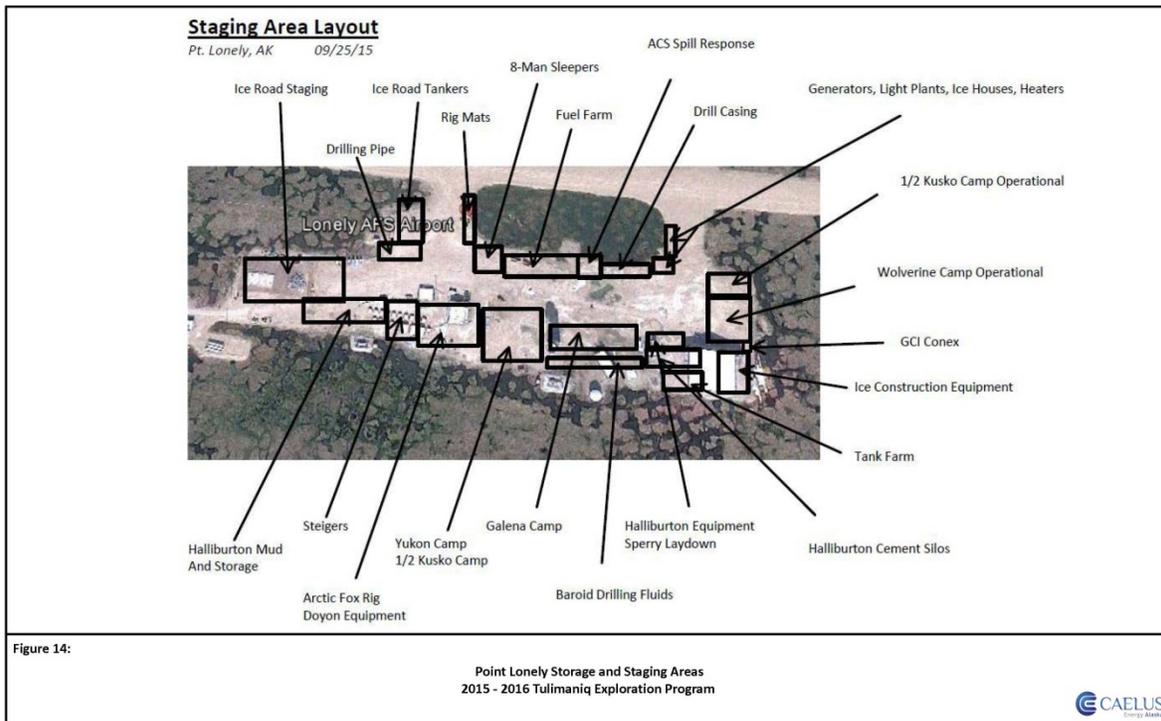


Figure 2. Pt. Lonely Pad Overview

2.1.1.2 Preferred Overland Travel Route Access

CEASB would utilize the DS-2P route (Figure 1) for transporting materials and equipment that could not be transported to Point Lonely by marine barge during the open water season to the Lake M0654 operational area and drill site(s). The DS-2P route would also be used to demobilize equipment that is no longer being used and to transport waste from the drill sites and Lake M0654 to permitted disposal facilities. Traffic would be limited to Steigers and Tundra Bears. The number of trips would vary during the different phases of winter activities but is projected to mimic the schedule shown in Table 2.2:

Table 2.2 Snow Road Trips

Start	End	# Steigers	Days/Trip	Trips/Week/Steiger	Total Trips/Week
1/15/2016	2/1/2016	10	3	2	23
2/1/2016	3/29/2016	8	3	2	19
3/29/2016	4/17/2016	20	3	3	56

2.1.1.3 Alternative Routes

CEASB has not proposed specific activities along the alternate routes at this time. They identified feasible alternate routes for contingency planning purposes and have requested BLM's preliminary approval of the proposed routes so that in the event that the DS-2P route was no longer feasible, CEASB has a viable alternative, subject to further coordination at the time that the change was proposed/requested.

2.1.1.4 Pre-Packing

As noted in [Section 2.1.1.1](#), BLM has approved the prepacking of snow on the Point Lonely to Lake M0654 route. CEASB also proposes to prepack along the preferred overland travel route and alternate routes if the need arises. This prepacking would not occur until after such time that BLM approves the proposed action and grants a ROW to CEASB for winter access.

CEASB provided a description of pre-packing. Pre-packing is compacting snow while driving low-impact vehicles along a surveyed route, before the natural snow and ice conditions reach the threshold that the company determines sufficient to start winter tundra travel. While the State of Alaska opens tundra on State managed lands in the winter, BLM's performance based BMP C-2 puts the onus on the operator to determine when conditions are such that they would not disturb the tundra. If the company does disturb the tundra they could be issued a notice of noncompliance and required to remediate the damage.

CEASB states that pre-packing is recognized by the Alaska Department of Natural Resources (DNR) as a Best Management Practice to protect the tundra and is typically allowed to begin when adequate snow cover is present, irrespective of ground temperature. CEASB would use DNR summer tundra-certified PistenBullys and Tucker Sno-Cat vehicles for pre-packing. These vehicles were also used by NordAq Exploration for activity in the NPR-A last winter, as approved by BLM.

2.1.1.5 Aircraft

CEASB submitted several plans to fulfill the requirements of BMP F-1c, to include [Air Operations and Emergency Response Plan 2015-2016 Tulimaniq Exploration Program](#), [Cruz Construction Emergency Response Program](#) and [Lyden Air Cargo Emergency Procedures Manual](#).

CEASB proposes to conduct regular flight operations in support of the 2015-2016 Tulimaniq Exploration Program using a temporary ice airstrip at Lake M0654 ([Figure 4](#)). CEASB proposes to begin construction of the ice airstrip on December 19, 2015. Initially constructed to be 150 ft wide and 3000 feet (ft.) long, the ice airstrip will be extended to 5000 ft. within 10 days of initial construction to enable use by virtually any aircraft. The total length will include a turnaround ([See Figure 6](#)) area at the northeastern end of the runway, measuring 350 ft. wide and 450 ft. long. Staging of aircraft for unloading and/or fuel transfer would primarily occur in the turnaround area. Ground traffic would access the ice airstrip via an ice road spur from the shore

camp ice pad located east of Lake M0654. All normal flight operations would be conducted using fixed wing aircraft; no helicopter activity is proposed. The estimated peak average is 24 flights per week (flights/week), which is reflected in the table below:

Table 2.3 Aircraft Information

Primary Provider	Purpose	Aircraft	Frequency (flights/week)
Alaska Air Fuel	Fuel Provider	Douglas DC-4	14
Ravn Alaska	Crew Change	DeHavilland DHC-8 Dash 8	3
Bald Mountain	Resupply	Dehavilland DHC-6 Twin Otter	7
Back-up Provider	Purpose	Aircraft	Frequency (flights/week)
Cruz Construction	Site Inspection	Beechcraft King Air	As Needed
70 North	Various	Cessna 207	As Needed
Lynden	Various	C-130 Herclues	As Needed
Iliamna Air Services	Various	Pilatus PC-12	As Needed

CEASB has minimized the number of flights required to the extent possible given the logistical constraints of operating at a remote location. Most flights will originate out of Fairbanks with some flying out of Anchorage or Deadhorse.

Adverse weather conditions, including temperatures below 40°F, can persist for up to 1-2 weeks and may prevent all normally scheduled flights from occurring. During weeks when no flights have occurred, the total number of flights in the 1-2 weeks immediately following would be approximately double the estimated amount in order to make up for flights missed but would not exceed 50 flights/week. CEASB proposes to coordinate with the BLM to provide notice of anticipated changes in the frequency of flights or use of alternate providers, which are not anticipated to be used on a regular basis.

CEASB would maintain a log of all takeoffs and landings that will be provided to BLM as record of all flight operations. Each carrier’s pilots would be briefed on best management practices regarding aircraft altitude and landings while operating in the NPR-A. Pilots would also be advised to avoid flying over areas such as Teshekpuk Lake in order to avoid disturbance to wildlife and/or subsistence users in the area.

Because of the high altitude at which the aircraft would be traveling, CEASB does not anticipate any impacts to local subsistence users. CEASB did not receive any comments or concerns regarding proposed air operations during the community meetings that staff conducted in Barrow, Nuiqsut, or Atqasuk. Nor have any of the Native allotment or cabin owners who were notified by letter with the assistance of the Native Village of Barrow Realty Group expressed concerns regarding the frequency of aircraft landings. CEASB would continue to coordinate with local stakeholders and resource agency representatives regarding proposed air operations and other winter activities.

2.1.1.6 Mobilization

Winter mobilization of materials and equipment not initially transported by marine barge would be via an overland snow road with an origin at an ice pad near the Kuparuk River Unit (KRU) DS-2P Pad ([See Figure 1](#)). Alternate near shore sea-ice and overland routes have been identified for contingency planning purposes, all originating at Oliktok Point. CEASB would determine its winter mobilization route based on environmental and weather conditions; however, the terminus of all the winter season mobilization route options would be at the Lake M0654 location. [See Figure 1](#) for mobilization route options and Tulimaniq lease boundaries.

In August 2015, CEASB installed five new thermistors and conducted maintenance on five thermistors that were previously deployed by NordAq in critical overland travel areas. The thermistors ([See Figure 1](#)) are designed to transmit data, including real-time soil temperature at depth, via satellite to a website that would be available to agencies, landowners, and contractors. CEASB would use the thermistors to provide information for determining when tundra conditions are such that tundra damage is not likely to occur during travel. In addition to those along the snow road route, thermistors were also installed at the Point Lonely staging area, shore camp area adjacent to Lake M0654, and proposed location of the ice pad near DS-2P, which is not on lands managed by the BLM and within the Kuparuk River Unit.

Public access to packed snow trails would be allowed with no control points planned. A safety exclusion zone would be identified using signs at and approaching the Tulimaniq drill sites, warning the public of the work in progress. [Table 2.4](#) outlines the proposed equipment for the drilling operation and support facilities.

[Table 2.4: Equipment List for ice pad, ice road, camp, and snow trail](#)

All-Terrain Vehicles	Quantity
Steiger or T-Bear ATV Haul Unit	16
Pisten Bully 400 ATV Unit	4
All Terrain Water Buffalo Truck (120 bbl)	6
Foremost Delta 3 Fuel Tank (2500 gal)	1
Tucker Snow-Cats	4
Snow Bird - Drill / Flood Pump	3
Camp Units	Quantity
Pre-Pack Survival Camp	2
8 Person Camp Wet Sleeper	4
10 Person Camp - Copper River	1
20-Person Camp - Wolverine Camp	1
36-Person Camp - Galena Camp	1
52-Person Camp - Yukon Camp	1
64-Person Camp - Kuskokwim Camp	1
Kitchen / Dining Room Modules	2
Mobile Shops	1

Office Units/Modules	2
Camp/Rig Support Equipment	Quantity
Wastewater Processing Module (1,000-2,500 gal)	4
Potable Water Processing Module (5,200 gal)	3
Settling Tanks - Wastewater Treatment Plant	4
Potable Water Holding Tanks	2
Wastewater Holding Tanks	2
Generators (40-300 kW)	8
Bull Rail Heavy Duty	4
Cranes and Loaders	Quantity
75-80 Ton Cranes	2
Volvo 220 / CAT 980 Loader with Bucket and Forks	2
Volvo 120 Loader with Bucket and Forks	6
CAT 988 Vertical Forklift	2
Trailers – All-Terrain and Highway	Quantity
60 Ton Sub Base Heavy Haul ATV Trailer	1
60 Ton Double Drop Low Boy ATV Trailer	1
60 Ton Scissor Neck All Terrain Lowboy	2
25 Ton Marcep All-Terrain Trailers	10
40 Ton T-Bear Scissor Neck All-Terrain Trailer	5
Heavy Haul ATV Low Boy Trailer	4
Pisten Bully Sleigh Trailer	2
Tuck Sno-Cat Trailer	4
Oilfield Floats	12
Highway Scissorneck Lowboy	2

2.1.2 Shore Camp Lake M0654

A 150 person camp would initially be used at Lake M0654 for ice pad, airstrip, and infield ice road construction ([Figure 3](#)) prior to drilling. The camp would be increased to accommodate 195 workers during the drilling season. No camp facilities would be located at their offshore drill sites. This camp would treat lake water for potable use and would have a wastewater treatment system with discharge of treated water to tundra surface away from the lake. Cruz currently has a waste water permit from the Alaska Department of Environmental Conservation (ADEC) for the Point Lonely location. They would submit a Notice of Intent to operate under the wastewater permit to ADEC with a new location description prior to the camp modules being mobilized to the Lake M0654 shore camp ice pad.

After the rig is hauled to the ice island, the shore camp would remain at the southern end of Smith Bay to provide program logistics support, facilitate crew changes, and support demobilization at the end of the season. A dish antenna would be used to support communications of phone and internet.

An ice airstrip up to 5,000 ft. in length, 200 ft. in width and a depth of 3 ft. is proposed to be constructed (Figure 6) at Lake M0654 with an ice road to the adjacent Lake M0654 ice pad. From there a six mile ice road would connect to the CT-1 drill site and a five mile ice road would connect CT-1 to CT-2 for a total distance of 11 miles.

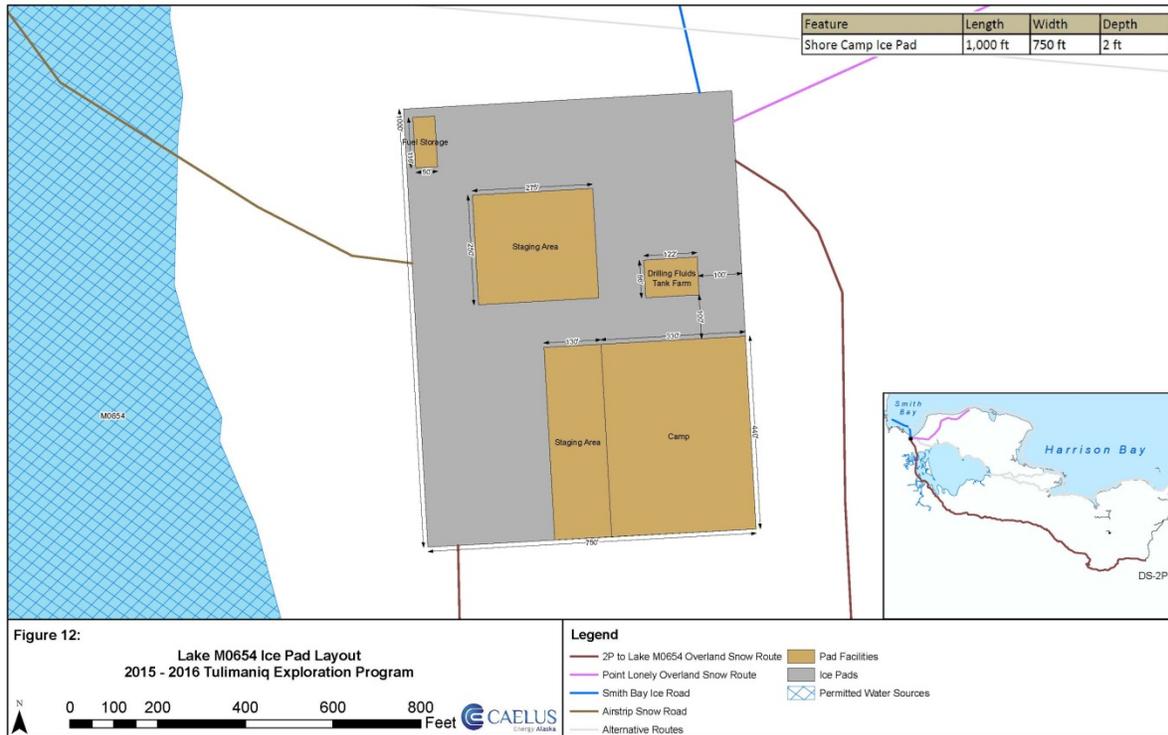


Figure 3 Lake 654 Layout

2.1.3 Water

Fresh water is needed for the ice pads, drill sites and airstrip construction/maintenance, drilling operations, and camp use. Freshwater, seawater, and ice chips would be extracted from permitted water sources (Table 2.4). Ice chips removed from grounded portions of any permitted lake would be included in the total permitted withdrawal volume.

Snow would be removed from portions of lakes approved for water withdrawal, ice chip harvest, or both. Snow removal would provide access for water trucks and ice chippers, installation of temporary water houses, and truck turnaround areas. CEASB acknowledges that, per BMP B-2g, snow removal from fish-bearing water bodies is prohibited except at approved ice road crossings, water pumping stations on lakes, or areas of grounded ice. A request for an exception to this rule would require coordination with the Alaska Department of Fish and Game (ADFG) and a formal deviation request submitted to BLM, requiring appropriate time for an evaluation. The water would be pumped from lakes and transported by low pressure vehicles or rolling stock (Steigers, Tuckers, Water Buffalo ATV trucks, and Tundra Bear ATV trucks). Rolling stock

would only use trails that have been improved with a firm ice surface to support the weight and pressure of the vehicles.

Light plants would be located on access roads and on frozen lakes at the water houses for safety purposes. The light plants would be refueled in compliance with federal and state regulations. Light plant fuel supply storage would have 110 percent containment. Signs would be placed at the access points of permitted lakes.

Water would be processed for human use via a permitted drinking water treatment system. Approximately 50 gallons per day of potable water would be used per day per person. The camps would require a season total of approximately 1.4 million gallons of potable water. A season total of approximately 2 million gallons of water would be required to support drilling operations. Ice infrastructure water withdrawal requirements (estimated) is shown in [Tables 2.5](#) and [Table 2.6](#) below.

[Table 2.5 Water and ice Withdrawal Requirements by Source \(BLM managed lands only\)](#)

Lake ID	Latitude (N) (NAD83)	Longitude (W) (NAD83)	Max Depth (feet)	Surface Area (acres)	Volume (MG)	Sensitive Fish Species Captured ^a	Resistant Fish Species Captured ^b
M0651 ^d	70.72595	154.05833	8.0	458.7	596.9	none	NS
M0653 ^d	70.74082	154.13029	7.9	1432.3	2701.1	none	NS assumed to be present
M0654 ^d	70.74947	154.22931	6.4	1085.7	1615.0	none	none
N77057 ^d	70.81612	153.39071	7.5	5658.4	4562.7	LC	NSSB
M0644 ^d	70.83511	153.55113	9.3	7669.2	7668.4	BW, LC	none
Lake ID	15% of Water Under 7 ft. of Ice (MG) ^c	30% of Water Under 5 ft. of Ice (MG) ^c	35% of Total Lake Volume (MG) ^c	Liquid Water Volume Requesting (MG)	Ice Aggregate Volume Requesting (MG)	Requires BLM Deviation per BMP B-2?	--
M0651	--	27.96	--	0.00	5.00	No	--
M0653	--	162.96	--	1.00	0.00	No	--
M0654	--	--	565.250	10.00	42.40	No	--
N77057	45.63	--	--	0.50	0.00	No	
M0644	284.47	--	--	0.50	0.00	No	

Table 2.4 Key

MG = million gallons, -- = not estimated or not applicable.

Notes:

- a. AG = Arctic grayling, BW = broad whitefish, HW = humpback whitefish, LC = least cisco, RW = round whitefish
- b. NS = ninespine stickleback,
- c. Allowable Volume per BMP B-2
- d. MJM Research. 2006

Water source locations and access routes are presented in [Figure 4a and 4b](#). Water withdrawal from an offshore channel adjacent to the Ikpikpuk River delta alluvial plain is planned using water from Smith Bay and Ikpikpuk River discharge. Ice chip withdrawal is planned from shorefast ice within a 2 mile radius of the well bore location(s). [Figure 4a](#) indicates the areas within Smith Bay for which CEASB is currently permitted to withdraw water.

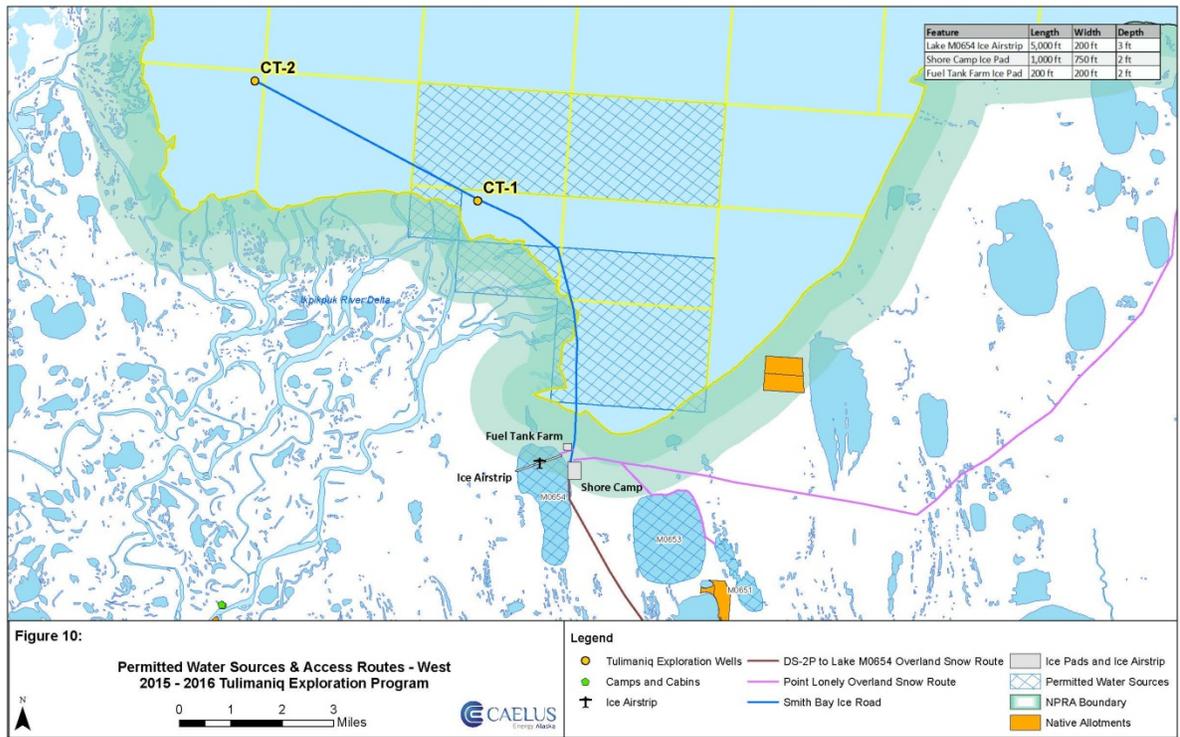


Figure 4a: Water Source Locations Near Smith Bay and Access Routes

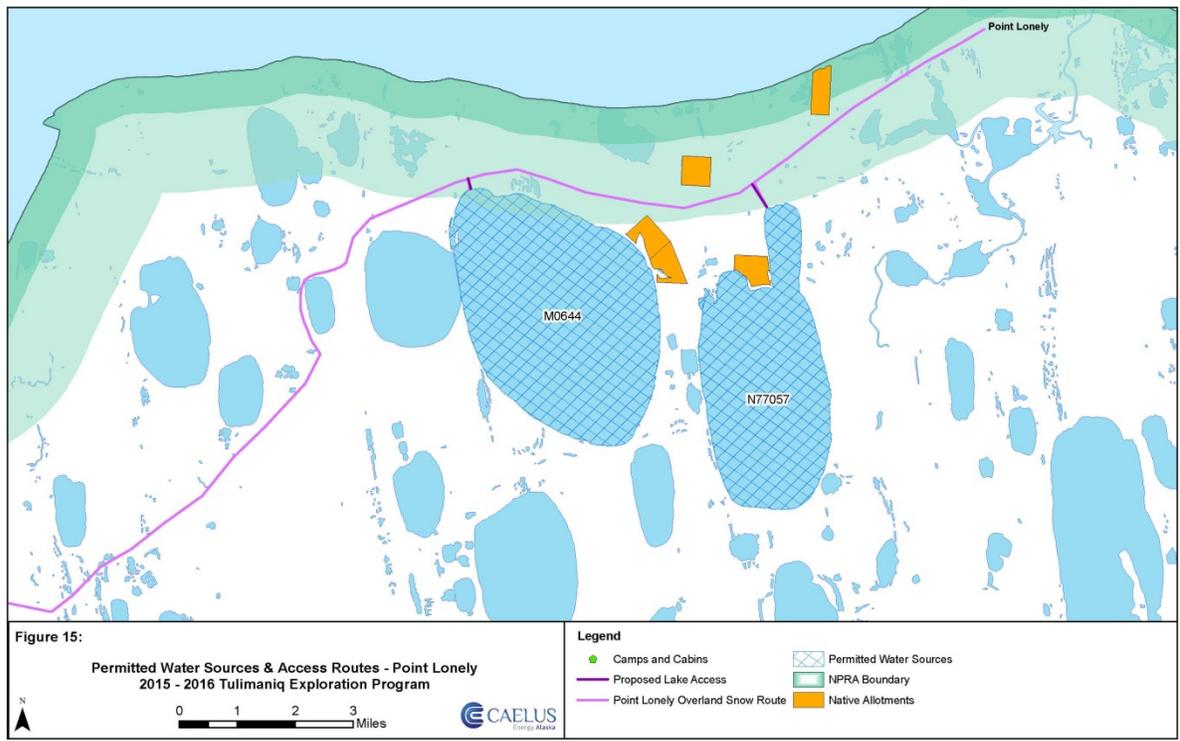


Figure 4b: Water Source Locations Near Point Lonely and Access Routes

Table 2.6 Water and Ice Withdrawal Requirements by use

Feature	Water and/or Ice Aggregate
Ice Roads	47 Million Gallons
Drilling Ice Pads (2)	46.25 Million Gallons
Lake M0654 Ice Airstrip	22.5 Million Gallons
Shore Camp Ice Pad	11.5 Million Gallons
DS-2 Ice Pad	3.75 Million Gallons
Drill Rig Use	2 Million Gallons
Potable Camp Use	1.5 Million Gallons
Total:	134.5 Million Gallons

Table 2.7 Stream crossings identified on BLM lands for 2014-2015 exploration.

No.	Route	Latitude (NAD 83)	Longitude (NAD 83)	Name	Land Manager
1	DS-2P Overland Snow Road	70.068485	-150.572147	DS-2P Crossing 1	State
2	DS-2P Overland Snow Road	70.068349	-150.881300	Itkillik River Crossing	State
3	DS-2P Overland Snow Road	70.018907	-151.033730	DS-2P Crossing 2	State
4	DS-2P Overland Snow Road	70.014460	-151.176021	DS-2P Crossing 3	State
5	DS-2P Overland Snow Road	70.055244	-151.389023	Colville River Crossing	State/BLM
6	DS-2P Overland Snow Road	70.133727	-151.643144	Ublutuoch River East Fork Crossing	BLM
7	DS-2P Overland Snow Road	70.206700	-151.902867	Judy Creek Crossing	BLM
8	DS-2P Overland Snow Road	70.291543	-152.295244	Fish Creek Crossing	BLM
9	DS-2P Overland Snow Road	70.293721	-152.398346	Kalikpik River East Crossing	BLM
10	DS-2P Overland Snow Road	70.296873	-152.408630	Kalikpik River Crossing	BLM
11	DS-2P Overland Snow Road	70.322119	-152.909741	DS-2P Crossing 4	BLM
12	DS-2P Overland Snow Road	70.332430	-153.104436	Lake 122 Creek Crossing	BLM
13	DS-2P Overland Snow Road	70.342941	-153.273154	DS-2P Crossing 5	BLM
14	DS-2P Overland Snow Road	70.348540	-153.502478	Kealok Creek Crossing	BLM
15	DS-2P Overland Snow Road	70.251886	-152.029291	DS-2P Crossing 6	BLM
16	DS-2P Overland Snow Road	70.366461	-153.586277	DS-2P Crossing 7	BLM

No.	Route	Latitude (NAD 83)	Longitude (NAD 83)	Name	Land Manager
17	DS-2P Overland Snow Road	70.639224	-154.119112	DS-2P Crossing 8	BLM
18	Point Lonely Overland Snow Road	70.875082	-153.383242	Point Lonely Crossing 1	BLM
19	Point Lonely Overland Snow Road	70.861526	-153.478201	Point Lonely Crossing 2	BLM
20	Point Lonely Overland Snow Road	70.862790	-153.516818	Point Lonely Crossing 3	BLM
28	Alternate Route 1	70.412044	-151.340028	Tingmeachsiovik River Crossing	BLM
29	Alternate Route 1	70.458158	-151.951819	Kalikipik River Crossing	BLM
40	Alternate Route 2	70.558786	-151.925222	Eskimo Islands Sea Ice Crossing	BLM
41	Alternate Route 2	70.538617	-152.242492	Kogru River Creek Crossing 1	BLM
42	Alternate Route 2	70.535586	-152.354736	Kogru River Creek Crossing 2	BLM
44	Alternate Route 3	70.555628	-151.701997	Atigaru Point Crossing	BLM
44	Alternate Route 3	70.581186	-152.053000	Saktuina Point Crossing	BLM
44	Alternate Route 3	70.801467	-152.187794	Cape Halkett Crossing	BLM
44	Alternate Route 3	70.884208	-152.595003	Cameron Point Crossing	BLM
44	Alternate Route 3	70.884997	-152.852092	Pogik Bay Sea Ice Crossing	BLM
44	Alternate Route 3	70.893164	-152.916828	Pogik Point Crossing	BLM
44	Alternate Route 3	70.919578	-153.155578	Smith River Crossing	BLM
44	Alternate Route 3	70.916806	-153.267642	Point Lonely Crossing	BLM
44	Alternate Route 3	70.901544	-153.334758	Avatanak Bight Crossing	BLM
44	Alternate Route 3	70.889994	-153.731086	McLeod Point Crossing	BLM
44	Alternate Route 3	70.875625	-153.944036	Drew Point Crossing	BLM
44	Alternate Route 3	70.814047	-154.027403	Point Poleakoon Crossing	BLM

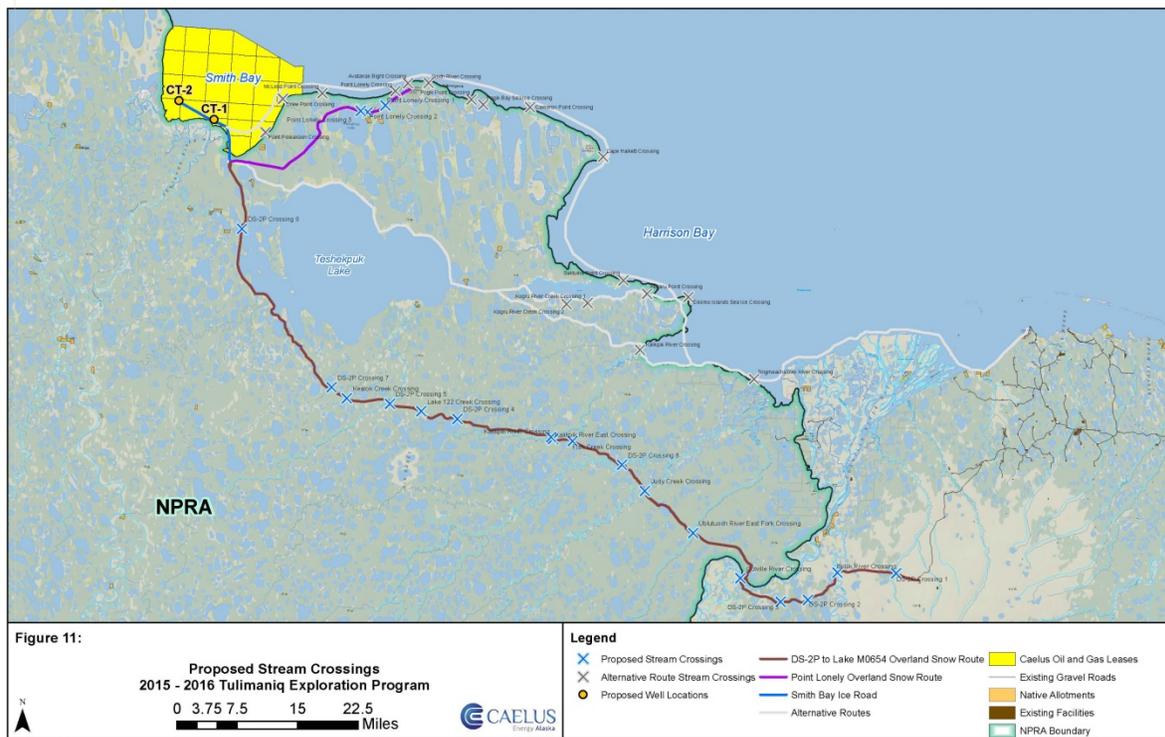


Figure 5: Applicant Map of Proposed Stream Crossings

2.1.4 Fuel Supply and Storage

Secondary containment of bermed and impermeable lined fuel storage areas would be used to temporarily store diesel fuel and drilling fluids. The diesel fuel storage containment is designed for arctic conditions and will be capable of holding a minimum 110 percent of the largest fuel storage container. Containment discharge practices are outlined in the Tulimaniq Spill Prevention and Countermeasure Plan (SPCC) Plan.

The four main areas that would store fuel are Point Lonely, the offshore drill sites, Lake M0654 area, and KRU DS-2P ice pad. Up to 147,000-gallons of fuel, in differing tank volume sizes would be stored at Point Lonely to support operations. The drilling rig would have a main tank of 6,500 gallons of diesel and approximately 10,000 gallons of other fuels in various tank volume sizes. The drilling ice pads tank farm would include approximately 19,800 gallons of diesel. An additional volume, up to 118,500 gallons, would be staged with a minimum offset of 500 ft. from the Lake M0654 shoreline. There would be up to 23,340 gallons of fuel, in differing tank volume sizes, stored at the DS-2P ice pad to support snow road construction and maintenance. There would also be an emergency shelter and 2,400 gallon diesel fuel tank to fuel equipment along the DS-2P snow road.

Fuel would be transferred daily from the Lake M0654 area tank farm using conventional fuel tanker trucks to the drill ice pads. Fuel resupply to this tank farm would be via aircraft to the Lake M0654 airstrip and then transferred to the tank farm.

2.1.4.1 Fuel Transfer, BMP A-5 Deviation Request

CAESB proposes to store fuel 500 ft. from Lake M0654 to comply with BLM BMP A-5. However, their proposed airstrip is on the lake and fuel would need to be transported from the plane to the fuel storage location. CAESB requests a deviation from BMP A-5 and submitted the following for BLM consideration:

“The fuel provider’s plane will land at the Lake M0654 ice airstrip ([see Figure 6](#)) and stage at the turnaround area on the northeastern end of the runway. A 4,000 gallon (gal) capacity fuel truck staged at the shore camp ice pad will access the airstrip via the ice spur road and park alongside the aircraft. During the transfer, a bonding cable will be placed between the plane and the fuel truck, and duck ponds will be placed at each end of the transfer line. The fuel will be pumped using a diesel pump with trained fuelers staged at the nozzle and top hatch of the fuel truck. Once the transfer has been completed, the fuel truck will drive directly to the shore camp ice pad, which is at least 500 feet (ft.) away from both the edge of the airstrip and the edge of Lake M0654.

Transfers between the fuel truck and the tank farm will mimic the transfer from the plane to the truck. A bonding cable will be placed between the fuel truck and the tanks, with duck ponds placed at each end of the transfer line. Trained fuelers, one at the nozzle and one at the top hatch of the tank, will use a diesel pump to transfer the fuel. The proposed fuel transfer procedures are consistent with the Spill Prevention Control and Countermeasures plan (SPCC) for the fuel tank farm at the shore camp ice pad; fuelers would conduct the work in accordance with the guidelines and transfer checklist included in the SPCC.

The same fuel transfer procedures could be implemented with two fuel sloops (each 2,500 gal) that will be staged at the shore camp ice pad in the event that the fuel truck is not available due to maintenance or other reasons.

CEASB acknowledges that BMP A-5 prohibits refueling of equipment within 500 ft. of the active floodplain of any water body with the objective of minimizing the impact of contaminants from refueling operations on fish, wildlife and the environment. While the fuel transfers as described would occur at Lake M0654, CEASB’ proposes alternative BMPs that achieve the same objective:

Two trained personnel will conduct and monitor all fuel transfers, which would ensure prevention, early detection, shutoff, and cleanup of spills.

Duck ponds will be placed at the most likely discharge points in order to catch any drips or spills.

The ice airstrip will be built to a height of 3 ft. above the surface of the lake; the constructed ice will serve as an impermeable barrier to spilled fuel.

The fuel truck and fuel sloops will each carry a spill kit for clean-up activities, and an Alaska Clean Seas spill technician will be available to assist with clean-up as needed.

The site of any drips or spills would be scraped clean and the contaminated ice/snow transported offsite for disposal.

The proposed method was successfully implemented by NordAq Energy Alaska, Inc. and their contractors last year without incidents. While CEASB explored an alternative fuel

transfer scenario with Alaska Air Fuel, that would have required expansion of the shore camp ice pad in order to allow sufficient room for the aircraft to maneuver around the fuel tanks located at the ice pad. There were concerns about having the aircraft taxi from the airstrip to the shore camp ice pad, partially due to the change in elevation. High wind events can create low-visibility conditions that could potentially increase the risk of collisions with other traffic on the ice pad. Ultimately CEASB determined that the benefit of conducting the fuel transfer at the shore camp ice pad was outweighed by the potential risks and proposes the described fuel transfer procedures at the Lake M0654 ice airstrip best meet the objectives of both safety and preventative water quality.

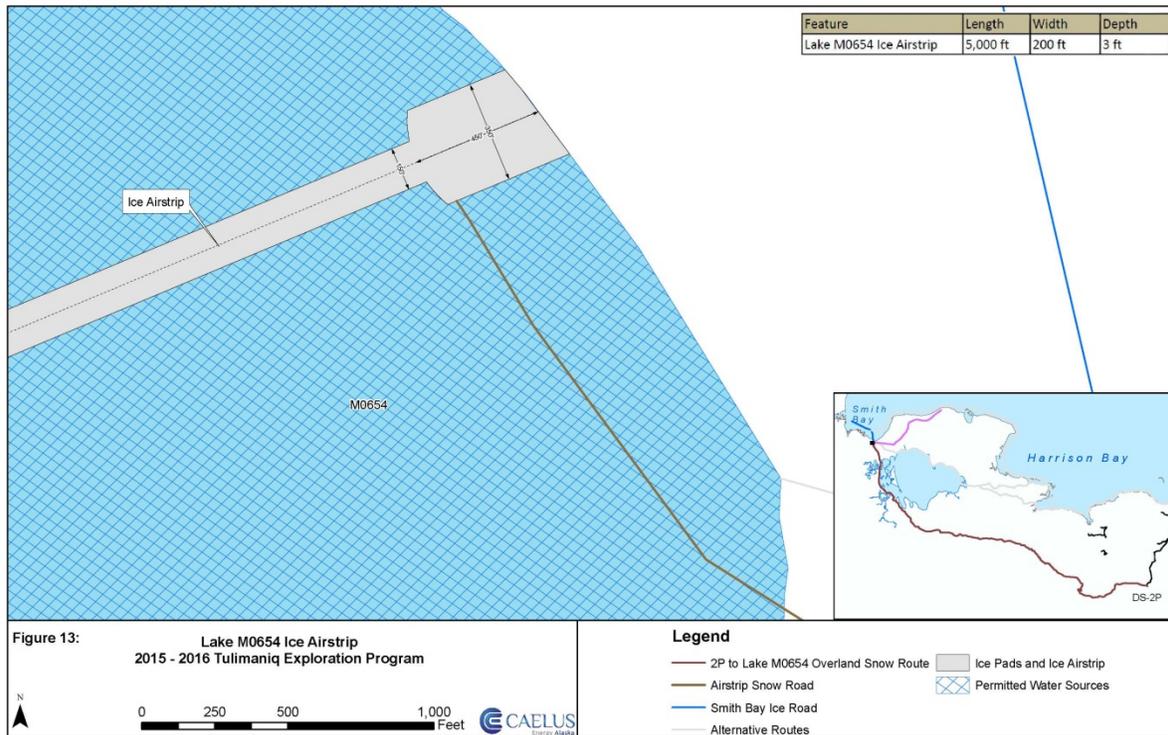


Figure 6: Lake M0654 Ice Airstrip

2.1.5 Waste Management

Waste management would be based on waste minimization and disposal and would comply with federal, state, and local regulations to prevent attracting wildlife. All solid waste would be temporarily stored at each site pending shipment from the area. Non-putrescible waste would be stored at the drill sites and would be transported overland to an approved disposal facility. Food and other putrescible waste would be stored in enclosed wildlife-resistant containers.

Camp wastewater would be processed through the camp wastewater treatment and discharged in accordance with the North Slope General Permit No. AKG-57-2000. CEASB states that the treatment system would meet federal and state requirements.

Water based drilling fluids would be used through all phases of well construction (non BLM managed lands). Non-hazardous Underground Injection Control Class II fluids would require temporary on-site storage and disposal. Drilling fluids would be injected or transported to a Prudhoe Bay disposal facility. The injection would take place at the well location off-shore and not on BLM managed land. Liquid wastes, including processed fluids, would be temporarily stored on the ice drilling pads in accordance with federal and state regulations.

The cuttings would be placed in cutting bins in a temporary storage cell with secondary containment consisting of ice berms and/or impermeable liner and transported to Prudhoe Bay for disposal at a permitted grind and inject facility. CEASB would conform with and use the ADEC air permit for exploration drilling at their off-shore location on State of Alaska submerged lands. Sources of air emissions from the operation are rig engines, camp generator engines, steam generators, engine-driven pumps, hot-air heaters, light plants, and well test flaring equipment. All major equipment would be fired with ultra-low-sulfur diesel fuel.

2.1.6 Contingency Plans

2.1.6.1 Wildlife Protection and Encounter Plans

CEASB would implement practices to minimize wildlife attraction to the winter operations. CEASB submitted a Wildlife Avoidance and Interaction Plan to the BLM on September 11, 2015, and a revised/updated plan on October 12, 2015. The procedures contained in the plan would apply whether a polar or grizzly/brown bear is encountered. The camps and drill site designs and CEASB policies include storing food inside buildings or containers to minimize odors are designed to prevent bear encounters. Feeding or attracting wildlife is prohibited by CEASB policy (also forbidden by BMP A-2). Hazardous materials would be kept in drums or other secure containers.

CEASB applied to the United States Fish and Wildlife Service (USFWS) on August 24, 2015 for a Letter of Authorization (LOA) for the incidental and intentional take of polar bears. The LOA was approved by USFWS on October 22, 2015.

Wildlife that may be in the project vicinity during winter exploration includes owls, ravens, arctic fox, musk ox, and a small number of over-wintering caribou. The project is located in waters less than 10 ft. deep and it is unlikely to encounter seals or seal lairs (USDOI BLM 2012 3.3.7.1). It is likely that polar bears would be encountered in the drilling operations area. Grizzly/brown bears are unlikely to be active in the winter. CEASB and its contractors would be cautious and watch for evidence of bears. CEASB policy requires sightings to be reported immediately to the site superintendent. If a polar bear den site is identified the U.S. Fish and Wildlife Service (USFWS) would be notified and activities would be altered to avoid disturbing

the bear (BLM would also require notification). Grizzly/brown bear sightings would be reported to the ADFG.

2.1.6.2 Oil Discharge Prevention and Contingency Plan

An Oil Discharge Prevention and Contingency Plan (ODPCP) has been prepared for this project. The approved plan would be kept on site at all times for guidance in controlling and cleaning up any accidental discharges of fuels, lubricants, or produced fluids. The plan would include immediate response actions, receiving environments, spill cleanup mobilization response times, and well control.

2.1.6.3 Spill Prevention and Countermeasure Plan

CEASB's various contractors would maintain SPCC plans for drilling, fuel storage facilities, drilling operations, and well testing tanks. The plan includes fuel storage facilities for the camps. Other contractors needing to store fuel would have SPCC plans covering their specific fuel storage and transfer operations.

2.1.6.4 Weed Management Plan

CEASB submitted an Invasive Species Mitigation Plan for BLM's approval on October 12, 2015. Cruz Construction, Inc. (Cruz) has been contracted by CEASB to provide the logistical operations for the proposed project. Cruz wrote the Weed Management Plan that CEASB submitted for their proposed activities. Cruz provided details on their procedure to assure that all equipment is properly maintained, inspected for leaks and serviceability, cleaned of all organic material, and prepared appropriately for remote service. All equipment is steam cleaned at their Deadhorse heated indoor shop prior to use.

2.1.6.5 Orientation Plan

CEASB submitted an Orientation Plan to the BLM for approval on October 12, 2015. All employees working on the Tulimaniq exploration project would be required to receive training, which would include project area orientation, threatened and endangered species information, environmental, social, and cultural awareness, subsistence conflict avoidance, and pertinent mitigation that would be project specific. All personnel would be required to attend annual training. Training records would be maintained while the site is active.

Project related North Slope employees and contractors are required to complete an 8-hour training provided by the North Slope Training Cooperative. A Field Environmental Handbook, Alaska Safety Handbook, and a North Slope Visitor's Guide are used in the training. The training includes classes on the Alaska Safety Handbook, personal protective equipment, camp and safety orientation, hazard communication, HAZWOPER⁵ Level I, environmental awareness

⁵ Hazardous Waste Operations and Emergency Response – a set of guidelines produced and maintained by the United States Occupational Safety and Health Administration.

hydrogen sulfide awareness, hearing conservation, electrical safety, respiratory protection, energy isolation, confined space entry, asbestos awareness, fall protection/avoidance, toxic substance control, first aid/CPR⁶, and use of an automated external defibrillator.

2.1.6.6 Subsistence Plan

CEASB submitted a subsistence Plan entitled “Plan of Cooperation and Good Neighbor Plan” to the BLM on September 11, 2015. CEASB would follow the plan that describes CEASB’s means of communication with the communities and a code of conduct expected of employees and contractors. Community consultations are closely linked to the plan, and further document CEASB’s efforts to maintain communications with residents and subsistence hunters.

Hiring opportunities are limited during exploration drilling. However, subsistence advisors at well sites during operations, translators, and Native elders who are willing to share traditional knowledge of the area, and others have been and would continue to be hired for the exploration project. Applicable traditional knowledge would be used during the project orientation training section.

CEASB supports a Subsistence Mitigation Fund with representatives from the Native Village of Nuiqsut, Kuukpik Corporation, and the City of Nuiqsut. The Subsistence Mitigation Fund is intended to mitigate subsistence impacts, if any, by using the fund to reimburse additional subsistence harvest costs that may result from CEASB’s operations.

CEASB has a liaison in Nuiqsut and subsistence monitors, the latter work onsite as part of the Tulimaniq support staff. The liaison position is responsible for coordinating with the community on company plans and to review these activities for any potential impacts to subsistence resources. The subsistence monitors or advisors help identify and minimize conflicts with subsistence activities.

Through coordination with the North Slope Borough, the Iñupiat Community of the Arctic Slope, and the Native Village of Barrow, CEASB has identified native allotment holders and cabin and camp owners near any of the proposed travel routes. Each allotment holder and cabin owner would receive a letter notifying them of CEASB’s intended activity and a means to notify CEASB should they have any questions or comments about the project.

CEASB would continue to communicate with stakeholders through public announcements on radio and television, project information newsletters, community meetings, and the NPR-A subsistence advisory panel.

2.1.6.7 Other plans

All emergency response situations would be managed by the Incident Management Team (IMT) which would follow the Incident Command System and the Alaska Unified Plan. The IMT is on call 24-hours a day. Personnel involved in an emergency situation would immediately notify the

⁶ Cardiopulmonary resuscitation

IMT for response. CEASB Environmental Health and Safety Policies and Procedures Manual and Emergency Response Plans will be available at the individual facilities.

2.1.7 Blowout Prevention

CEASB provided the blowout prevention procedures outlined below. Their ODPCP contains more detailed information.

The primary method to prevent well control issues commences before actual drilling operations begin. The process starts with the planning and design of the well bore based on standard drilling guidelines and practices. Seismic data and offset-well information provide information for the prediction of subsurface, over-pressured formations.

For the Tulimaniq exploration program at least seven offset wells were analyzed for associated drilling risks (e.g. South Simpson Test Well #1, Drew Point #1, East Simpson Test Well #1, East Simpson Test Well #2, Puviaq #1, Aklaq #2, and Aklaq #6). Drilling engineers use the offset well data in combination with well specific seismic data to predict formation pressures and to design a drilling mud program to provide sufficient hydrostatic head (first line of defense) to overbalance the potential formation pressures from spud to well total depth.

Other factors influencing the mud weight formulations are shale conditions, fractures, lost circulation zones, under-pressured formations, and stuck pipe prevention. Casing strings are then designed to prevent several of these factors from affecting the well-control performance while drilling. Casing strings set at proper depths will allow an influx, if taken, to be safely controlled down hole. These parameters are submitted to the Alaska Oil and Gas Conservation Commission (AOGCC) for review in the permit to drill package, subject to review and approval before drilling commences.

There are two areas where the potential for loss of well control exists during the drilling operations. The first is during the drilling of the surface hole where the potential for shallow gas encounters exist. Shallow gas pockets do not contain oil and no spill occurs at the surface. Shallow hazards assessments for the Smith Bay wells indicate that the potential for encountering shallow gas is negligible to low. The second potential for loss of well control would be during drilling below the surface casing shoe, where loss of well control can occur while drilling into the reservoir or during completion of the well. In both cases, influx identification and management are the primary tools to prevent loss of well-control. Members of the crew are well-versed in such control measures.

There are several additional AOGCC drilling and well requirements (see AOGCC regulations <http://doa.alaska.gov/ogc/Regulations/RegIndex.html>) that are designed to prevent a well control incident, which include:

- A conductor must be set to a depth sufficient to anchor a diverter system, while drilling the surface hole.

- The surface casing must be set into competent strata and cemented back to surface to control downhole pressure.
- After setting the surface string, a blowout preventer (BOP) stack for the rig CEASB is using is three ram, single Hydrill 11” 5,000 psi rated control device must be installed and tested weekly until end of project. The AOGCC frequently witnesses and validates these tests.
- A leak-off test must be performed after setting each casing string to determine formation fracture gradients.
- Cement must fill the casing by open-hole annulus at least 500 ft. above any hydrocarbon or abnormally pressured interval.
- Drilling liquids and fluid systems must be approved by the AOGCC.
- Drilling rig fluid pits must have level indicators and alarms to indicate loss or gain of drilling fluids.
- Drilling fluid return-flow sensors are required to verify that return volumes equal fluid discharge rates.
- BOP diagrams must be submitted to the AOGCC with the permit to drill and subsequent test pressures approved.
- The BOP working pressure must exceed any anticipated surface pressures.

Upon completion of drilling operations, CEASB will plug and abandoned the wells and remove all equipment in compliance with state regulations. State agency personnel will inspect all locations before providing site clearance.

2.1.8 Project End

At the end of the 2015-2016 drilling season, all equipment would be demobilized to Deadhorse via the DS- 2P overland route, conditions allowing ([see Figure 1](#)). Possible alternative demobilization routes are the same as the contingency routes identified for mobilization. If a Deadhorse demobilization is prevented due to weather and tundra travel closure, materials and equipment would be transported to Point Lonely for temporary staging until the 2016 open water season, when all of the loads would be barged to Prudhoe Bay. Locations with temporary snow/ice infrastructure would be cleaned of all debris and potential contamination and allowed to naturally degrade (thaw) in the spring to their original state. The surfaces would be inspected for spills, if any, and scraped clean before being allowed to naturally degrade. Because of the ice pad and ice airstrip depths (2-3 feet), CEASB does not anticipate the need to ensure timely melting of either feature.

CEASB would collect refuse, including delineators, along the snow roads. The cost of scraping the entire length of all snow roads is cost-prohibitive, so the routes used would be inspected for spills and these areas of the snow road would be scraped clean before being allowed to naturally degrade. Because the overland routes are snow roads, as opposed to ice roads, CEASB does not anticipate the need for slotting stream crossings (See [Table 2.7](#) for stream crossings).

2.2 Alternative B No Action

Under the No Action Alternative, the Proposed Action would not take place on BLM managed land. None of the impacts that may result from approval of the ROW grant would occur. Federal lands would not be disturbed by implementation of the Proposed Action. Denial of the Proposed Action may result in CEASB not being able to implement its offshore drilling program this winter.

2.3 Alternatives Considered but Eliminated from Detailed Analysis

Two alternatives were considered but eliminated from detailed analysis. The first alternative considered was an alternative that consisted of a total off-shore route. This alternative was eliminated from further evaluation for the following reasons:

- Safety is major concern when considering navigating sea ice. Sea ice travel adds a greater risk since near shore ice is the most susceptible to tide and wave movement. The ice west of Point Lonely is extremely broken up based on recent field reports.
- Sea ice freezes and develops into various forms due to the turbulence of sea water creating more cracks and crevices, unlike fresh water.
- Sea water density increases as it freezes, therefore slowing the freezing process.
- Sea ice strength is less than fresh water. The sea ice thickness needed to mobilize increases drastically, requiring approximately six feet of sea ice to mobilize.
- An offshore coastal route would be more likely to create human-wildlife interaction, especially with the potential for denning polar bears to be present. Historically there have been more polar bear dens offshore than onshore in the area from the Colville River delta to Smith Bay (Durner et al. 2009)
- The delay of mobilization would substantially increase due to needed ice thickness and slower rate of freezing if CEASB were to use the sea ice route. Slower mobilization would result in insufficient time to complete the Tulimaniq exploration program therefore not meeting the purpose of the proposed action.

The second alternative that was considered is eliminating the DS-2P route, returning to and staging all equipment at Pt. Lonely, and then demobilizing the equipment from Pt. Lonely back to Deadhorse. This alternative was eliminated for the following reasons:

- This alternative does not meet the purpose and need of the proposed action.
- CEASB only transported some of the equipment to Pt. Lonely via barge that would be needed to conduct the proposed action; therefore the DS-2P route is needed to get equipment to the drill site.
- The DS-2P snow road route serves as the CEASB primary support route for their off-shore drilling operations. It would be used for re-supply and for the transport of drilling waste from the site for disposal.
- Using the Pt. Lonely route for this activity would require many additional fixed wing flights. The NPRA IAP/EIS Section 4.5.13 states that subsistence users have repeatedly stated during scoping meetings that aircraft traffic reduces harvest access and success.
- The DS-2P route would be the primary means of back-hauling equipment once drilling is complete. If all equipment and materials were transported to Pt. Lonely at the end of the season the timing may create issues in regard to nesting habitat for waterbirds and

shorebirds and calving Caribou, which would be present in the TLSA at the time that mobilization from Pt. Lonely would occur.

2.4 Conformance

The ROW grant would be subject to the BMPs from the NPR-A IAP EIS (USDOI BLM 2012) and associated ROD (USDOI BLM 2013).

The proposed action is in conformance with the NPR-A IAP EIS (USDOI BLM 2012) and associated ROD (USDOI BLM 2013), the 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, and EO 11990.

In the NPR-A IAP EIS (USDOI BLM 2012), the BLM evaluated the direct, indirect, and cumulative effects of winter access in the NPR-A. This analysis concluded that the stipulations and BMPs provided adequate protection for surface resources and subsistence activities in the planning area.

As part of the most recent analysis, the BLM considered site-specific evaluations of exploration programs in the planning area over the past years, all of which received a Finding of No Significant Impact by the BLM. Findings for these winter 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.

Chapter 3 Affected Environment

Chapter 3 describes the aspects of the human environment that may be affected by implementing Alternatives A or B. Resources and resource values analyzed in this EA are aspects of the human environment. The CEQ regulations discuss “human environment” (40 CFR 1508.14) as broadly relating to the biological, physical, social, and economic elements of the environment. The project area refers to the lands enclosed within the exterior boundaries of the priority and alternate route selection ([See Figure 1](#)).

3.1 Introduction

Environmental characteristics of the general project area have been extensively described in the NPR-A IAP/EIS (USDOI BLM 2012, Vol. 1, Chapter 3), to which this analysis is tiered, with some site-specific features described below. Proposed activities would take place on the Arctic Coastal Plain, where temperatures average below freezing for 8 months of the year. A dramatic change to higher temperatures and longer day length occurs during the other 4 months. Annual precipitation is low, averaging 8 inches per year, with more than half falling as snow. Snow cover is typically established in late September/October and disappears late May/mid-June.

North Slope air quality meets the National Ambient Air Quality Standards and State of Alaska standards.

The topography of the project area is generally flat to gently rolling, dominated by permafrost-related geomorphic features including polygonal patterned ground, shallow lakes, and extensive areas of wetland interlaced with small, meandering streams. Permafrost ranges from 650 to 1,330 feet deep, with an active thaw layer typically 1 to 2 feet deep.

The proposed ROW segment crosses channels and tributaries of the Colville River and the Ublutuoch River (also known as the Tingmiaqsugvik or ‘Ting’) drainage systems. CEASB has identified 3 lakes in the NPR-A on BLM managed land which may be utilized as water sources.

Based on the proposed project and the issue identification in [Section 1.5](#), the following discussion of the affected environment covers those issues that warranted further consideration within this EA: Water Quality and Subsistence.

3.1.1 Issue 1 Water Quality

CEASB proposes to store fuel 500 feet from Lake M0654 to comply with BLM BMP A-5. Their proposed airstrip is on the lake and fuel would need to be transported from the plane to the fuel storage location. For this to occur, CEASB requests a deviation from BMP A-5. Lake M0654 has a maximum depth of 6.4 ft., an area of 1086 acres, no fish, and is in close proximity to the CEASB camp.

BMP A-5: 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 that small caches (up to 210 gallons) for motor boats, float planes, ski planes, and small equipment, e.g. portable generators and water pumps, are permitted. The authorized officer may allow storage and operations at areas closer than the stated distances if properly designed to account for local hydrologic conditions.

3.1.2 Issue 2 Subsistence

CEASB proposes to pre-pack snow roads and move equipment through Nuiqsut’s core subsistence use area, to establish a large camp and air strip near the camps and cabins of several Barrow residents, and to undertake exploratory drilling activities that require an average of 48 aircraft take offs and landings per week. The areas crossed by the ROW near Nuiqsut are used for winter furbearer and some winter caribou hunting, and the location of the exploration site/camp are used for furbearer hunting in the winter and opportunistically for caribou in winter. Owners of camps and cabins in the Teshekpuk Lake area tend to travel from Barrow through the Tulimaniq project area to retrieve caches from ice cellars in the spring. Traditional knowledge indicates that the rivers directly to the east of the ice island that flow from Teshekpuk Lake constitute the main access for fish into and out of the lake.

Chapter 4 Environmental Impacts

Activities proposed by CEASB are similar to previously authorized winter activities in the NPR-A over the past 15 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 activities 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., USDOJ 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 the 2012 NPR-A IAP EIS and its ROD. Related discussions of impacts are found in: 2012 NPR-A IAP EIS, Vol. 2, Chapter 4.5 (Environmental Consequences of Alternative B-2, the preferred alternative).

Issues specifically identified in [Section 1.5](#) for further analysis in this EA are discussed below.

4.1.1 Issue 1 Water Quality

Proposed Action

CEASB proposes to store fuel 500 feet from Lake M0654 to comply with BLM BMP A-5. Their proposed airstrip is on Lake M0654 however, and fuel would need to be transported from the plane to the fuel storage location. CEASB requests a deviation from BMP A-5 and would transfer fuel to a 4,000 gallon capacity fuel truck staged at the shore camp ice pad. During the transfer, a bonding cable will be placed between the plane and the fuel truck, and duck ponds will be placed at each end of the transfer line. The fuel will be pumped using a diesel pump with trained fuelers staged at the nozzle and top hatch of the fuel truck. Once the transfer has been completed, the fuel truck will drive directly to the shore camp ice pad, which is at least 500 feet (ft.) away from both the edge of the airstrip and the edge of Lake M0654.

Transfers between the fuel truck and the tank farm will mimic the transfer from the plane to the truck. A bonding cable will be placed between the fuel truck and the tanks, with duck ponds placed at each end of the transfer line. Trained fuelers, one at the nozzle and one at the top hatch of the tank, will use a diesel pump to transfer the fuel. The proposed fuel transfer procedures are consistent with the Spill Prevention Control and Countermeasures plan (SPCC) for the fuel tank farm at the shore camp ice pad; fuelers would conduct the work in accordance with the guidelines and transfer checklist included in the SPCC.

The same fuel transfer procedures could be implemented with two fuel sloops (each 2,500 gal) that will be staged at the shore camp ice pad in the event that the fuel truck is not available due to maintenance or other reasons.

The ice airstrip, up to 5,000 ft. in length, would be connected by a 4.5 mile ice road to the Tulimaniq #1 wellsite. The airstrip would be used by medium-small to transport project components, crew, and a portion of the fuel. Most flights traveling to the project site would originate from Anchorage or Fairbanks, with local flights originating from Deadhorse and Barrow.

No Action Alternative

If Lake M0654 was not available as a re-fueling airstrip the fuel would need to be flown into the 4,000 ft. gravel airstrip at Pt. Lonely, approximately 24 miles east of the well site. Although useable, use of the Pt. Lonely airstrip would complicate logistics of transferring personnel and equipment due to the increased distance from the drill rig and lack of facilities.

4.1.2 Issue 2: Subsistence

Proposed Action

Impacts to subsistence are expected to include localized and temporary disturbance of subsistence resources. Disturbance from movement of equipment and the activities of the camp is likely to be minor to moderate, because the amount of aircraft traffic is likely to disturb hunters and could result in localized deflection of animals. Hunters may tend to avoid the area if they are in search of game, others may end up frequenting the area if the snow trail is useful to them or they want to visit the camp for shelter and/or nourishment. The snow trails created by the applicant may be used by subsistence hunters during the winter season from Nuiqust to Barrow. No outstanding, long-term, or intense impacts to subsistence are anticipated from the activities. One concern that can be categorized as traditional knowledge about one of the alternate ROW routes is that seafast and lake ice is not as trustworthy as in the past and there have been unusual overflow events on Teshekpuk in recent years.

No Action Alternative

Under the no action alternative, no impacts to subsistence are anticipated.

4.2 Cumulative Effects

Chapter 4 addresses direct, indirect, and cumulative impacts of the Proposed Action and No Action alternative. The BLM has evaluated the cumulative effects of past, present, and reasonably foreseeable winter 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 the USDO I BLM 2012 (Volume 4, Chapter 4 Section 4.8). 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 activity considers a narrower temporal and spatial framework (i.e. approximately 5 years past and future and influences limited to a distance of approximately 21 miles from the access corridor and drilling areas).

CEASB proposal includes access outside of federal lands and exploration on State of Alaska lease holdings. The drill sites are in approximately 1 to 6 feet of water near the mouth of the Ikpikpuk River. The drill site pads would be circular in shape with a maximum 500 feet diameter. CEASB plans to drill two exploration wells at the site. No production facilities or gravel use would be required for this winter exploration drilling program. A 42 person camp would be located at the DS-2P staging area ([Figure 1](#)). The camp would use a store and haul wastewater system and would not have any discharges.

ConocoPhillips Alaska, Inc. has applied to drill up to three wells within the NPR-A this winter. The EA for their proposed activity is DOI-BLM-AK-F010-2015-0005-EA. Peak Oilfield Services has a BLM multiyear ROW which expires this year and they have indicated they will request a renewal. The ROW allows them to travel with low pressure vehicles across the NPR-A to deliver goods and services to villages within the NPR-A.

The causes and impacts of climate change are global in scope, with associated impacts evaluated in USDOJ BLM 2012. The primary influences in the current analysis include: oil and gas activities; subsistence use areas for the communities of Barrow and Nuiqsut; and research/inventory, and recreation activity, as analyzed in USDOJ BLM 2012.

To date, no recent winter 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 2015 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 Water Quality

No cumulative impacts from the use of the Lake M0984 airstrip are foreseen to occur since lake ice will be frozen and easily cleaned up. Any spill occurring during refueling will be cleaned up before breakup and it is not expected that any potential impacts from this drilling season would accumulate past this season.

4.2.2 Issue 2 Subsistence

Tiering from the 2012 BLM NPR-A IAP, the cumulative effects to subsistence are likely to include reasonably foreseeable limitations on harvester access. These effects will be most impactful for Nuiqsut and Barrow. The activities are likely to increase the perception of some Nuiqsut residents that there is a great deal of traffic and activity around the community and increasing activity to the west of the community. The activities, and in particular the aircraft traffic, could disturb Barrow residents who have camps and/or hunt in the area in the winter. Continued activity in the same location could cause longer-term displacement of subsistence resources or subsistence user avoidance of the area and could have cumulative effects on the subsistence uses of owners of nearby camps and cabins.

4.3 Mitigation and Monitoring

In consultation with agencies and local residents, North Slope operators have actively worked to develop winter activity 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

The objective of this monitoring program is to ensure that all terms and conditions of the Federal ROW, the NPR-A ROD (USDOI BLM 2013) the NPRPA, and FLPMA (where applicable) are met.

4.4 Additional Mitigation and Monitoring

The BLM will incorporate the following additional mitigation measures into approvals for the CEASB ROW. CEASB 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 to dwixon@blm.gov and s05mcint@blm.gov, through the applicable season(s) for the life of this project.
2. If one of the alternate routes is needed, permittee shall notify BLM prior to use and describe the activity to take place on the route.

3. The permittee will maintain an aircraft log of the following information **for each take off and landing** (which shall be turned in to BLM in **electronic** format in an excel spreadsheet with each item below listed in a separate column No Later Than **30 days after field activity is completed**):
 - Type of Aircraft
 - Aircraft N number
 - Date
 - Time
 - Decimal Degree Format – latitude of takeoff location
 - Decimal Degree Format – longitude of takeoff location
 - Date
 - Time
 - Decimal Degree Format – latitude of landing location
 - Decimal Degree Format – longitude of landing location
4. Support wires associated with communication towers, radio antennas, and other similar facilities, should be avoided to the extent practicable. If support wires are necessary, they should be clearly marked along their entire length to improve visibility to low-flying birds and humans. Such markings shall be developed through consultation with the BLM.
5. The permittee and designees will cooperate with the U.S. Fish and Wildlife Service (Service) and other Federal, State, or local agencies designated to represent the Service to monitor impacts of project activities on polar bears. For example, the permittee and designees will allow Service personnel access to the activity site upon request.
6. All field crews will follow a Wildlife Interaction Plan prepared by the permittee or a designee detailing how crews will manage wildlife attractants (food and non-food materials) and respond to human-polar bear interactions. This interaction plan must include all guidelines for safely and non-lethally deterring polar bears from damaging property and endangering the public as found in the Final Rule of the Marine Mammal Protection Act Deterrence Guidelines (attached). Other methods of deterring polar bears require authorization by the Service’s Marine Mammals Management (MMM) office. Contact Mike Hendrick at 907-786-3479 for more information.
7. If a polar bear interaction escalates into a life-threatening situation, section 101(c) of the MMPA allows, without specific authorization, to take (including lethal take) a polar bear. Any injury or lethal take of a polar bear must be reported to the Service (907-786-3479) and BLM within 24 hours.
8. The following measures are designed to minimize disturbance of denning polar bears and minimize alteration of potential denning habitat during travel and camp site selection. The permittee and designees are required to review educational materials that describe:
 - a. characteristics of polar bear dens so immediate mitigation measures can be implemented should crews find one; and
 - b. suitable polar bear denning habitat so crews can avoid:

- i. potentially disturbing polar bears in unseen dens; and
 - ii. altering denning habitat (materials are available from the BLM). No human activities can take place within one mile of known polar bears dens or areas where denning frequently occurs. Locations of current and past polar bear dens can be obtained from MMM (contact Michael Hendrick at 907-786-3479).
 - c. If field crews discover a new den, they must cease activities within one mile of it and contact MMM to report the den as soon as possible to seek guidance before proceeding with activities (907-786-3479). The Service will evaluate these instances on a case-by-case basis to determine the appropriate action.
9. The permittee or designees must designate a qualified individual or individuals to record polar bear observations on BLM-furnished forms. Every polar bear encounter shall be documented, including occurrences where activities have changed the behavior of polar bears and actions were taken to adhere to these stipulations. Evidence of polar bears, such as carcasses, will also be reported. The permittee or designee shall submit a polar bear observation report to the BLM weekly during field operations.
10. Water use from Lake M0654, where no fish have been captured, will be restricted to 20% of the total lake volume. BLM 's BMP B-2c typically allows up to 35% of the total lake volume to be utilized when a lake does not support fish. However, since Lake 654 potentially provides summer habitat for ESA-listed spectacled eiders, and considering that the water will be utilized outside of the local watershed that supplies water to that lake, a more restrictive water-use limit is warranted.
11. Provide the BLM with an as-built of all ice roads, snow trails, ice pads, and airstrips within 30 days of when the infrastructure is completed. Data should be in the form of ESRI shapefile(s) referencing the North American Datum of 1983 (NAD83).
12. Provide the BLM with any data collected at ice road or snow (Rolligon) trail stream crossings regarding ice thickness or depth of liquid water during the pioneering stage of construction.
13. Provide the BLM with photographs documenting the condition of all ice and snow road channel crossings that have been “removed, breached, or slotted” (per BMP C-3) at the end of the winter operation period. Geographic coordinates (latitude/longitude) of a crossing must accompany each set of photos. Note that this only applies to channels that have been reinforced with additional snow or ice that most typically occurs with ice roads.
14. Post a sign on the access road to each lake being utilized as a water source, clearly identifying the lake by its number.

15. 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.
16. Immediately cease pumping and notify the BLM within 24 hours if water removal exceeds the volume approved at any lake.
17. 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 (or observed frozen within any portion of ice roads, pads, or airstrips). Temporarily cease pumping from that hole until additional preventative measures are taken to avoid further impacts to fish.

4.5 Summary of Environmental Consequences

This analysis has considered, tiered from, and incorporated by reference, previous studies and findings on winter 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 issues identified in the evaluation of the proposed action for this EA were Water Quality and Subsistence. The analysis found that impacts of this specific project would be short term and localized and that mitigation measures in Appendix B and project specific stipulations from Section 4.4 would adequately reduce any adverse effects to Water Quality and Subsistence. Likewise, the analysis also found that mitigation measures would adequately reduce any adverse effects to Water Quality and Subsistence. The proposed action would not contribute to significant cumulative effects to Water Quality in the proposed project areas and as planned is unlikely to contribute to significant cumulative effects to Subsistence. Based on this analysis, it is concluded that direct, indirect, and cumulative impacts to Water Quality and Subsistence from the proposed action should be relatively minor and short-term, with no significant impacts foreseen.

Chapter 5 Consultation and Coordination

5.1 Agency Coordination

In preparing its plan of operations, CEASB 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](#).

CEASB provided the BLM with permit applications and support documentation that summarize the proposed project and their compliance with applicable stipulations. The BLM and CEASB 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, CEASB conducted meetings with affected North Slope community residents, as described in [Section 1.5](#). Local residents provided Traditional Knowledge that was considered in the project plan and in this EA. CEASB has prepared a Plan of Cooperation and Good Neighbor Plan that presents measures to mitigate potential impacts on subsistence resources and access.

5.3 List of Preparers

Table 5.1 List of Preparers

Name	Title	Responsible for the Following Section(s) of this EA:
Rebecca Hile	Environmental Scientist	Air quality, Wastes, solid/human/hazardous
Richard Kemnitz	Hydrologist	Water Resources, Floodplains/wetlands and Riparian Zones
Stacie McIntosh	Arctic Field Office Manager	Authorized Officer
Stacey Fritz	Anthropologist/Subsistence Specialist	Environmental Justice, , Sociocultural Systems, Subsistence, ANILCA 810
Robin Mills	Archeologist	Cultural and Paleontological Resources , Native American Concerns
Debbie Nigro	Wildlife Biologist	Table 1.1 sections T&E species spectacled and Steller’s eider and polar bear, Section 2.1.7, Section 2.1.9 Wildlife protection and Encounter Plans, Section 4.5 Additional Mitigation and Monitoring stipulations 2 - 14
Matthew Whitman	Fish Biologist	Fisheries
Donna Wixon	Natural Resource Specialist, Project Lead	Lands and Realty Recreation, Wilderness Values, Visual Resource Management
Dave Yokel	Wildlife Biologist	Table 1.1 section T&E species polar bear, Weeds, mammals and vegetation.
Jeanie Cole	Planning and Environmental Coordinator	Document Review

ANILCA Requirements

Section 810 Subsistence Evaluation Findings

The proposed action in and of itself may potentially impact subsistence but will not significantly restrict subsistence uses. No reasonably foreseeable and significant decrease in the abundance of harvestable resources or in the distribution of harvestable resources will result from the proposed action. In the cumulative scenario, reasonably foreseeable limitations on harvester access will result from the proposed action.

Chapter 6 References

- Alaska Oil and Gas Conservation Commission website
<http://doa.alaska.gov/ogc/Regulations/RegIndex.html>). Accessed December 1, 2015.
- Council on Environmental Quality (CEQ). 1997. Considering Cumulative Effects Under the National Environmental Policy Act. December.
- Durner et al. 2009. Ecological Monographs. 79:25-58; Durner et al. 2010. USGS Data Series 568 H-1790-1 National Environmental Policy Act Handbook . Bureau of Land Management . 2008.
- MJM Research. 2006. Survey of Lakes Associated with Petro-Canada (Alaska) Prospects. Final Data Report: February 2007. Prepared for ASRC Energy Services Lynx Enterprises, Inc. Anchorage.
- USDOI BLM. 2012. National Petroleum Reserve-Alaska Integrated Activity Plan Environmental Impact Statement. November.
- USDOI BLM. 2013. National Petroleum Reserve-Alaska Integrated Activity Plan Environmental Impact Statement. Record of Decision. February.

APPENDIX A

Legal Description of Project Area (All Umiat Meridian)

Route from Pt. Lonely to Lake M0654

MTP ID	Township	Range	BLM Managed Land Sections	Land Not Managed by BLM	Notes
L-1	18 North	5 West	8-11, 13-18	7, 12	Camp Lonely, Pt. Lonely, Smith River, Former JW Dalton Legacy Well
L-2	18 North	6 West	22-30 (Excluding Private Land)	12-15, 20-21	Beaufort Sea
L-3	17 North	6 West	1-6, 9 – 12 (Excluding Private Land)	Private Land within 2,3,4,5,9,10,11	Okalik Lake, Naluakruk Lake
L-4	18 North	7 West	20-30	17, 19	Beaufort Sea
L-5	17 North	7 West	1-4, 9-11, 14-17, 20-22, 27-33	None	Naluakruk Lake, Boat Creek
L-6	16 North	8 West	13-30	None	Teshekpuk Lake & Imakrukak Lake
L-7	16 North	9 West	2-5, 9, 10, 15,16,22-26, 35, 36 (Excluding Private Land)	24, 25 (Private Land Only)	TH-9,TH-10, Smith Bay

Route from DS-2P Pad

MTP ID	Township	Range	BLM Managed Land Sections	Non BLM Managed Land Sections	Notes
D-1	8 North	7 East	None	7,8	DS-2P TH-1
D-2	8 North	6 East	None	2-6, 11, 12	--
D-3	8 North	5 East	None	All	TH-2, Itkillik River
D-4	8 North	4 East	None	25-30	Colville River

MTP ID	Township	Range	BLM Managed Land Sections	Non BLM Managed Land Sections	Notes
				(Outside of NPR-A Only)	
D-5	8 North	3 East	1-4, 10-15 (Within NPR-A Only) Excluding private Land	3, 9,10,15,16,22-26 (Outside of NPR-A Only)	Colville River, Ocean Pt.
D-6	9 North	3 East	17-21, 27-34 (Within NPR-A Only)	31-33 (Outside of NPR-A Only)	Colville River
D-7	9 North	2 East	5-9, 14-26	None	TH-3, Ublutuoch River, Colville River
D-8	9 North	1 East	1,2,12	None	--
D-9	10 North	1 East	4-9, 15-118, 20-22, 25-28, 34-36	None	Judy Creek, Fish Creek
D-10	10 North	1 West	1, 2, 11, 12	None	Fish Creek, Judy Creek
D-11	11 North	1 West	19-21, 26-36	None	Fish Creek, Kalikpik River, West Fish Creek Legacy Well Sec 2 & 11
D-12	11 North	2 West	14-30	None	TH-6, Kalikpik River
D-13	11 North	3 West	7-21	None	Kalikpik River
D-14	11 North	4 West	3-15	None	Kalikpik River, North Kalkikpik Legacy Well
D-15	11 North	5 West	1-12	None	Kealok Creek
D-15b	12 North	5 West	30-31	None	Kealok Creek
D-16	11 North	6 West	1-6	None	Kealok Creek
D-17	12 North	6 West	25-36	None	Kealok Creek
D-18	12 North	7 West	4-9, 15-17, 21-23, 25-27, 35-36	None	--
D-19	13 North	7 West	30-32	None	TH-8, Teshekpuk Lake
D-20	13 North	8 West	3-5, 9-11, 13-15, 23-26	None	TH-8, Unnamed Stream, Teshekpuk Lake
D-21	14 North	8 West	19, 30-33	None	Teshekpuk Lake
D-22	14 North	9 West	1-3, 10, 11, 13-15, 22-26	None	Teshekpuk Lake

MTP ID	Township	Range	BLM Managed Land Sections	Non BLM Managed Land Sections	Notes
D-23	15 North	9 West	1-3, 11-14, 23-26, 35, 36		Miguakiak River
D-24	16 North	9 West	2-5, 9, 10, 15,16,22-26, 35, 36 (Excluding Private Land)	24, 25 (Private Land Only)	TH-9,TH-10, Smith Bay
D-25	17 North	9 West	17, 21, 27	15, 16, 22-23	TH-10, Smith Bay, Ikpikpuk River Delta

Alternative Route Oliktok Point to 12 North 2 East

MTP ID	Township	Range	BLM Managed Land Sections	Non BLM Managed Land Sections	Notes
O-1	13 North	9 East	None	5,7,8,18	Oliktok Pt.
O-2	13 North	8 East	None	13,23,24,26,27,31-34	--
O-3	12 North	8 East	None	3-6	--
O-4	13 North	7 East	None	7-9, 15, 16, 22, 23, 26, 35, 36	--
O-5	13 North	6 East	None	1-4, 7-9, 12	--
O-6	13 North	5 East	None	10-12, 14-17, 19, 20	Harrison Bay
O-7	13 North	4 East	None	24-29, 31, 32	Harrison Bay
O-8	12 North	4 East	None	5-7	--
O-9	12 North	3 East	None	3-6, 10-12	--
O-10	12 North	2 East	None	1-6	--
O-11	13 North	2 East	None	6,7,18,19,29-36	Harrison Bay

Alternate Shore Route from 12 North 2 East to Lake M0654

MTP ID	Township	Range	BLM Managed Land Sections	Non BLM Managed Land Sections	Notes
S-1	14 North	2 East	None	19, 30,31	Harrison Bay
S-2	12 North	1 East	1-6	None	--
S-3	13 North	1 East	17-20, 29-36	None	Harrison Bay
S-4	13 North	2 East	None	6,7,18,19,29-36	--
S-5	14 North	1 East	7-36	None	Harrison Bay
S-6	13 North	1 West	5-10, 13-19, 22-	None	--

			26		
S-7	14 North	1 West	3-6, 13, 20-24, 26-30	None	Kogru River
S-8	13 North	2 West	1-12	None	North Kalikpik Legacy Well Sec 3
S-9	14 North	2 West	20-23, 25-36	None	Kogru River
S-10	14 North	3 West	13-36	None	TH-13, Kogru River
S-11	14 North	4 West	3-6, 9, 10, 13- 17, 21-27	15,16	Teshekpuk Lake
S-12	15 North	4 West	19, 29-33	None	Teshekpuk Lake
S-13	15 North	5 West	7-17, 23-25	None	Teshekpuk Lake
S-14	15 North	6 West	3, 10-15, 23, 24	None	Teshekpuk Lake
S-15	16 North	6 West	17-20, 27-30, 33-35	None	Teshekpuk Lake
S-16	16 North	7 West	13-24	None	Teshekpuk Lake
S-17	16 North	8 West	13-30	None	Teshekpuk Lake & Imakrukak Lake
S-18	16 North	9 West	2-5, 9, 10, 15,16,22-26, 35, 36 (Excluding Private Land)	24, 25 (Private Land Only)	TH-9,TH-10, Smith Bay
S-19	17 North	9 West	17, 21, 27	15, 16, 22-23	Smith Bay, Ikpikpuk River Delta

Alternate Offshore Route from 12 North 2 East to Lake M0654

MTP ID	Township	Range	BLM Managed Land Sections	Non BLM Managed Land Sections	Notes
AO-1	14 North	2 East	None	19, 30,31	Harrison Bay
AO-2	13 North	2 East	None	6,7,18,19,29- 36	Harrison Bay
AO-3	14 North	1 East	7-10, 15-30	None	Harrison Bay
AO-4	14 North	1 West	3-6, 13, 20-24, 26-30	None	Kogru River, Harrison Bay
AO-5	15 North	1 West	None	31	Harrison Bay
AO-6	15 North	2 West	4-8, 17-20, 29,32-36	3, 10, 15, 22, 23,25,26	Teshekpuk Lake
AO-7	16 North	2 West	2, 10, 11, 14, 15, 22, 27, 28, 33	1, 12-14, 23, 26, 34	Harrison Bay
AO-8	17 North	1 West	None	6-8, 16, 17, 21, 28, 29, 31, 32	Arctic Ocean, Beaufort Sea
AO-9	17 North	8 West	3, 9, 10, 16, 20,	4,5,10, 17-19,	Smith Bay

			21, 29-31(Excluding Private Land)		
AO-10	17 North	9 West	17, 21, 27	15, 16, 22-23	Smith Bay, Ikpikpuk River Delta
AO-11(All Water)	18 North	1 West	None	None	Harrison Bay
AO-12	18 North	2 West	31-33	28-30, 34-35	Harrison Bay
AO-13	18 North	3 West	25-36(Excluding Private Land)	16-18, 21-24	Arctic Ocean Beaufort Sea
AO-14	18 North	4 West	13-15, 18-24	7-11, 13	Arctic Ocean Beaufort Sea
AO-15	18 North	5 West	8-11, 13-18	7, 12	Camp Lonely, Pt. Lonely, Smith River, Former JW Dalton Legacy Well
AO-16	18 North	6 West	22-30 (Excluding Private Land)	12-15, 20-21	Beaufort Sea
AO-17	18 North	7 West	20-30	17, 19	Beaufort Sea
AO-18	18 North	8 West	25-27, 34-36	22-24, 28, 33-36	Beaufort Sea, Smith Bay

Key to Appendix A

AO- Alternate Offshore Route from 12 North 2 East to Lake M0654

D- Route from DS-2P Pad

L –Route from Pt. Lonely to Lake M0654that

MTP ID – Bureau of Land Management Master Title Plat Identification Number assigned per route for tracking purposes only.

O- Alternate Route Oliktok Point to 12 North 2 East

S- Alternate Shore Route from 12 North 2 East to Lake M0654

TH- Thermistor

APPENDIX B

NPR-A 2013 ROD Stipulations and Best Management Practices

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

A-1 Best Management Practice

Objective: Protect the health and safety of oil and gas 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 Best Management Practice

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 authorized officer for approval, in consultation with federal, State, and North Slope Borough 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. The plan shall identify precautions that are to be taken to avoid attracting wildlife to food and garbage
- 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 authorized officer. All solid waste, including incinerator ash, shall be disposed of in an approved waste-disposal facility in accordance with EPA and Alaska Department of Environmental Conservation regulations and procedures. The burial of human waste is prohibited except as authorized by the authorized officer.
- 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 EPA, Alaska Department of Environmental Conservation, and the Alaska Oil and Gas Conservation Commission regulations and procedures. On-pad temporary muds and cuttings storage, as approved by Alaska Department of Environmental Conservation, 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 National Pollutant Discharge Elimination System or State permit.

A-3 Best Management Practice

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 in the plan applicable to fuel and hazardous substances handling (associated with transportation vehicles) shall consist of best management practices if approved by the authorized officer. 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 North Slope Borough contacts. Other federal and State regulations may apply and require additional planning requirements. All appropriate staff shall be instructed regarding these procedures.

A-4 Best Management Practice

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 authorized officer 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 authorized officer 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-7 Best Management Practice

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 Best Management Practice

Objective: Minimize conflicts resulting from interaction between humans and bears during oil and gas 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 sites to minimize human/bear interactions.
- c. Warn personnel of bears near or on work sites and identify proper procedures to be followed.
- d. Establish procedures, if authorized, to discourage bears from approaching the work 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 work site and in the immediate area.

A-9 Best Management Practice

Objective: Reduce air quality impacts.

Requirement/Standard: 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.

A-12 Best Management Practice

Objective: To minimize negative health impacts associated with oil spills.

Requirement/Standard: If an oil spill with potential impacts to public health occurs, the BLM, in undertaking its oil spill responsibilities, will consider:

- a. Immediate health impacts and responses for affected communities and individuals.
- b. Long-term monitoring for contamination of subsistence food sources.
- c. Long-term

monitoring of potential human health impacts.

- d. Perceptions of contamination and subsequent changes in consumption patterns.
- e. Health promotion activities and communication strategies to maintain the consumption of traditional food.

Water Use for Permitted Activities

B-1 Best Management Practice

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

Requirement/Standard: Withdrawal of unfrozen water from rivers and streams during winter is prohibited. The removal of ice aggregate from grounded areas ≤ 4 -feet deep may be authorized from rivers on a site-specific basis.

B-2 Best Management Practice

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

Requirement/Standard: Withdrawal of unfrozen water from lakes and the removal of ice aggregate from grounded areas ≤ 4 -feet deep may be authorized on a site-specific basis depending on water volume and depth and the waterbody's fish community. Current water use requirements are:

- a. Lakes with sensitive fish (i.e., any fish except ninespine stickleback or Alaska blackfish): unfrozen water available for withdrawal is limited to 15% of calculated volume deeper than 7 feet; only ice aggregate may be removed from lakes that are ≤ 7 -feet deep.
- b. Lakes with only non-sensitive fish (i.e., ninespine stickleback or Alaska blackfish): unfrozen water available for withdrawal is limited to 30% of calculated volume deeper than 5 feet; only ice aggregate may be removed from lakes that are ≤ 5 .
- c. Lakes with no fish present, regardless of depth: water available for use is limited to 35% of total lake volume.
- d. In lakes where unfrozen water and ice aggregate are both removed, the total use shall not exceed the respective 15%, 30%, or 35% volume calculations.
- e. Additional modeling or monitoring may be required to assess water level and water quality conditions before, during, and after water use from any fish-bearing lake or lake of special concern.
- f. 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 Fish and Game, Division of Habitat.
- g. Compaction of snow cover or snow removal from fish-bearing waterbodies shall be prohibited except at approved ice road crossings, water pumping stations on lakes, or areas of grounded ice.

Winter Overland Moves and Seismic Work

The following best management practices apply to overland moves, seismic work, and any

similar cross-country vehicle use of heavy equipment on non- roaded surfaces during the winter season. These restrictions do not apply to the use of such equipment on ice roads after they are constructed.

C-1 Best Management Practice

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 ½ mile of occupied grizzly bear dens identified by the Alaska Department of Fish and Game unless alternative protective measures are approved by the authorized officer in consultation with the Alaska Department of Fish and Game.
- b. Cross-country use of heavy equipment and seismic activity is prohibited within 1 mile of known or observed polar bear dens or seal birthing lairs. Operators near coastal areas shall conduct a survey for potential polar bear dens and seal birthing lairs and consult with the USFWS and/or National Oceanic and Atmospheric Administration-Fisheries, as appropriate, before initiating activities in coastal habitat between October 30 and April 15.

C-2 Best Management Practice

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 authorized officer.
- b. Low-ground-pressure vehicles shall be used for on-the-ground activities off ice roads or pads. Low-ground-pressure vehicles shall be selected and operated in a manner that eliminates direct impacts to the tundra by shearing, scraping, or excessively compacting the tundra mat. 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 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 Colville River Special Area associated with overland moves, seismic work, and any similar use of heavy equipment shall be minimized within an area that extends 1 mile west or northwest of the bluffs of the

Colville River, and 2 miles on either side of the Kogosukruk and Kikiakrorak rivers and tributaries of the Kogosukruk River 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 1/2 mile away from known raptor nesting sites, unless authorized by the authorized officer.

C-3 Best Management Practice

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. Crossings that are reinforced with additional snow or ice (“bridges”) shall be removed, breached, or slotted before spring breakup. Ramps and bridges shall be substantially free of soil and debris.

C-4 Best Management Practice

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, streams, and lakes shall be crossed at areas of grounded ice whenever possible.

Facility Design and Construction

E-9 Best Management Practice

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 authorized officer 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 non-compliance regulations.

E-13 Best Management Practice

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 authorized officer and suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer.

E-15 Best Management Practice

Objective: Prevent or minimize the loss of nesting habitat for cliff nesting raptors.

Requirement/Standard:

- a. Removal of greater than 100 cubic yards of bedrock outcrops, sand, and/or gravel from cliffs shall be prohibited.
- b. Any extraction of sand and/or gravel from an active river or stream channel shall be prohibited unless preceded by a hydrological study that indicates no potential impact by the action to the integrity of the river bluffs.

Use of Aircraft for Permitted Activities

F-1 Best Management Practice

Objective: Minimize the effects of low-flying aircraft on wildlife, 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 best management practice is not intended to restrict flights necessary to survey wildlife to gain information necessary to meet the stated objectives of the stipulations and best management practices. 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 when within ½ mile of cliffs identified as raptor nesting sites from April 15 through August 15 and an altitude of at least 1,500 feet above ground level when 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 above ground level (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 authorized officer. The BLM will consult directly with the Alaska Department of Fish and Game in annually defining caribou winter ranges.
- 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.
- 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.
- h. Fixed wing aircraft used as part of a BLM-authorized activity along the coast shall maintain minimum altitude of 2,000 feet when within a ½-mile of walrus haulouts, unless doing so would endanger human life or violate safe flying practices. Helicopters used as part of a BLM-authorized activity along the coast shall maintain minimum altitude of 3,000 feet and a 1-mile buffer from walrus haulouts, unless doing so would endanger human life or violate safe flying practices.
- i. Aircraft used as part of a BLM-authorized activity along the coast and shore fast ice zone shall maintain minimum altitude of 3,000 feet when within 1 mile from

aggregations of seals, unless doing so would endanger human life or violate safe flying practices.

Subsistence Consultation for Permitted Activities

H-1 Best Management Practice

Objective: Provide opportunities for participation in planning and decision making to prevent unreasonable conflicts between subsistence uses and other 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 North Slope Borough, 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. In the event that no agreement is reached between the parties, the authorized officer shall consult with the directly involved parties and determine which activities will occur, including the timeframes.
- b. The applicant shall submit documentation of consultation efforts as part of its operations plan. Applicants should submit the proposed plan of operations to the National Petroleum Reserve-Alaska Subsistence Advisory Panel for review and comment. The applicant must allow time for the BLM to conduct formal government-to-government consultation with Native Tribal governments if the proposed action requires it.
- c. A plan shall be developed that shows how the activity, in combination with other activities in the area, will be scheduled and located to prevent unreasonable conflicts with subsistence activities. The plan will also describe the methods used to monitor the effects of the activity on subsistence use. The plan shall be submitted to the BLM as part of the plan of operations. The plan should address the following items:
 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 authorized officer 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 the permittees' area of activity or facilities during the course of conducting subsistence activities.
- d. 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 authorized officer and NPR-A Subsistence Advisory Panel.
- e. Permittees that propose barging facilities, equipment, supplies, or other materials to NPR-A in support of oil and gas activities in the NPR-A shall notify, confer, and coordinate with the Alaska Eskimo Whaling Commission, the appropriate local community whaling captains' associations, and the North Slope Borough to minimize impacts from the proposed barging on subsistence whaling activities.
- f. Barge operators requiring a BLM permit are required to demonstrate that barging activities will not have unmitigable adverse impacts on the availability of marine mammals to subsistence hunters.
- g. All vessels over 50 ft. in length engaged in operations requiring a BLM permit must have an Automatic Identification System (AIS) transponder system on the vessel.

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 personal access or aid in hunting and trapping is prohibited.

Orientation Programs Associated with Permitted Activities

I-1 Best Management Practice

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, best management practices, 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 authorized officer for review and approval and should:

- a. provide sufficient detail to notify personnel of applicable stipulations and best management practices 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 North Slope Borough 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 North Slope Borough 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 adversely affect a proposed or listed endangered species, threatened species, or 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.

General Wildlife and Habitat Protection

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.

Appendix C Section 810 Subsistence Evaluation Findings

COMPLIANCE WITH ANILCA SECTION 810 EVALUATION AND FINDINGS

Case File: FF097064

EA Number: BLM-AK-F010-2015-0001-EA

Date 810 Review Conducted: 11/2/2015

Applicant:

Caelus Energy Alaska Smith Bay, LLC
3700 Centerpoint Drive
Suite 500
Anchorage, Alaska 99503

Proposed Action: Construction and operation of camp and airstrip on land and lakes in the Ikpikpuk River Delta to support exploratory drilling of 1-2 wells from ice islands on State leases in the southern part of Smith Bay, including construction and use of snow roads (preferred and alternate routes established) and mobilization/demobilization of personnel and equipment to the camp via snow roads and fixed-wing aircraft

Location: Southern part of Smith Bay/Ikpikpuk River Delta; Point Lonely; snow roads from Point Lonely and 2P Pad southeast of Nuiqsut to southern part of Smith Bay/Ikpikpuk River Delta

Base camp and/or field camp: Lake 654 (Ikpikpuk River delta)

Dates of Proposed Action: Nov. 1, 2015

Number of People: 150, 195 during drilling

Access: Steigers, Pisten Bullys, Tucker Snow-Cats and other all-terrain vehicles via snow trail from Point Lonely and snow trail from 2P Pad. Fixed-wing aircraft of all sizes via 5000 ft ice airstrip constructed adjacent to Lake 654 camp. **Public access to packed snow trails would be allowed** with no control points planned. A safety exclusion zone would be identified using signs at and approaching the Tulimaniq drillsites, warning the public of the work in progress.

Number of Take Offs and Landings: 48 per week during normal operations, maximum of 100 per week if weather prevents flights during previous week(s).

Fuel Sites: Point Lonely, the offshore drill sites, Lake M0654 area, and KRU DS-2P ice pad. Up to 147,000-gallons of fuel, in differing tank volume sizes would be stored at Point Lonely to support operations. The drilling rig would have a main tank of 6,500 gallons of diesel and approximately 10,000 gallons of other fuels in various tank volume sizes. The drilling ice pads tank farm would include approximately 19,800 gallons of diesel. An additional volume, up to 118,500 gallons, would be staged with a minimum offset of 500 ft. from the Lake M0654 shoreline. There would be up to 23,340 gallons of fuel, in differing tank volume sizes, stored at the DS-2P ice pad to support snow road construction and maintenance. There would also be an emergency shelter and 2,400 gallon diesel fuel tank to fuel equipment along the DS-2P snow road.

Fuel would be transferred daily from the Lake M0654 area tank farm using conventional fuel tanker trucks to the drill ice pads. Fuel resupply to this tank farm would be via aircraft to the Lake M0654 airstrip and then transferred to the tank farm.

Description of Proposed Action:

CEASB is proposing to cross lands managed by the BLM to reach their State of Alaska offshore oil and gas lease (Tulimaniq drill sites CT-1 and CT-2) and drill up to two oil and gas wells during the winter of 2015-2016. The exploratory well sites are located in southern Smith Bay near the Ikpikpuk River Delta. The proposed camp for the program would be located at Lake M0654. Mobilization of equipment and materials would occur by snow roads on both federal and state lands during winter tundra operating conditions.

In 2014-2015, NordAq Energy, Inc. (NordAq) began a similar exploration project to what CEASB proposes for 2015-2016; however, NordAq was unable to execute drilling activities in Smith Bay as planned.

CEASB has proposed the following schedule for the 2015-2016 drilling season. All dates are approximate and may be altered by weather or other logistics requirements.

Activity	Estimated Start Date	Estimated End Date
Start Operations at Pt. Lonely	October 20, 2015	June 1, 2016
Begin Prepacking Snow Trail, Pt. Lonely to Smith Bay	October 20, 2015	November 20, 2015
Overland Mobilization to Lake 654	Late December, 2015	Middle January, 2016
Begin Prepacking Trail from DS-2P	November, 2015	January 15, 2016
Construct Ice Pad at Lake 654	December 19, 2015	
Pre-Season Infield Ice Construction and Prepack Operations	When conditions allow	
Construct Ice Runway Lake 654	December 19, 2015	
Construct Secondary Containment	January 5, 2016	
Ice Island Construction (2 sites)	December 29, 2015	February 18, 2016
Begin Drilling and Well Testing (2 sites)	February 2, 2016	March 29, 2016
Demobilization and clean up	March 29, 2016	May 11, 2016

Snow Routes

CEASB has proposed a route from Point Lonely to Lake M0654, a route from ConocoPhillips Alaska Inc. Drill Site 2P (DS-2P) location, and two alternate routes:

CEASB has a BLM authorization to allow the staging of equipment at Pt. Lonely beginning in August, 2015. CEASB barged equipment to the site for use in this project. The material staged

included spud-critical materials and equipment for mobilization by snow road from Point Lonely to CEASB's primary operating area near Lake M0654, south of Smith Bay.

CEASB has requested an authorization from BLM to conduct prepacking of snow on a route from Point Lonely to Lake M0654 to expedite the use of the trail once conditions are such that travel would not damage the tundra. BLM approved the prepacking activity on October 20, 2015 via an NPR-A permit. This route would have a higher level of traffic to and from Lake M0654 operational area than the preferred overland route as the majority of the materials and equipment to support drilling activities would originate from Point Lonely.

Ice infrastructure equipment that is currently stored at Point Lonely would be mobilized infield when CEASB can begin using the Point Lonely overland snow route to Lake M0654, beginning in early December or as soon as conditions allow for the start of ice infrastructure construction. Camp facilities would be mobilized in late December to early January before the rest of the spud-critical equipment and materials that are onsite are mobilized, which is anticipated to continue until January 31, 2016.

If the temporary ice air strip at Lake M0654 is unusable due to adverse weather conditions or for some other reason, the gravel airstrip at Point Lonely might be used for occasional aircraft landings; however, CEASB does not propose to utilize Point Lonely as its primary airstrip during any phase of the winter activities.

CEASB has requested authorization to continue utilizing the gravel facilities at Point Lonely through June 1, 2016, in the event that demobilization must occur partially by marine barge during the subsequent open water season. Survival camps and emergency fuel storage in secondary containment would be maintained at the Point Lonely facilities throughout the winter activities. Although CEASB proposes to demobilize via the DS-2P snow road route, weather conditions or other delays may preclude the option of full overland demobilization, in which case CEASB would request approval from BLM to continue using Point Lonely for storage/staging until all equipment could be transported by marine barge during the subsequent open water season to West Dock. If storage were to be needed past June 1, 2016, BLM would require CEASB to obtain a summer NPR-A permit.

CEASB would utilize the DS-2P route for transporting materials and equipment that could not be transported to Point Lonely by marine barge during the open water season to the Lake M0654 operational area and drill site(s). The DS-2P route would also be used to demobilize equipment that is no longer being used and to transport waste from the drill sites and Lake M0654 to permitted disposal facilities. Traffic would be limited to Steigers and Tundra Bears.

BLM has approved the prepacking of snow on the Point Lonely to Lake M0654 route. CEASB also proposes to prepack along the preferred overland travel route and alternate routes if the need arises. This prepacking would not occur until after such time that BLM approves the proposed action and grants a ROW to CEASB for winter access.

Aviation

CEASB proposes to conduct regular flight operations in support of the 2015-2016 Tulimaniq Exploration Program using a temporary ice airstrip at Lake M0654. CEASB proposes to begin construction of the ice airstrip on December 19, 2015. Initially constructed to be 150 ft wide and 3000 feet (ft) long, the ice airstrip will be extended to 5000 ft within 10 days of initial construction to enable use by virtually any aircraft. The total length will include a turnaround area at the northeastern end of the runway, measuring 350 ft wide and 450 ft long. Staging of aircraft for unloading and/or fuel transfer would primarily occur in the turnaround area. Ground traffic would access the ice airstrip via an ice road spur from the shore camp ice pad located east of Lake M0654. All normal flight operations would be conducted using fixed wing aircraft; no helicopter activity is proposed. The estimated peak average is 24 flights per week (flights/week).

CEASB would maintain a log of all takeoffs and landings that will be provided to BLM as record of all flight operations. Each carrier's pilots have been or would be briefed on best management practices regarding aircraft altitude and landings while operating in the NPR-A. Pilots would also be advised to avoid flying over areas such as Teshekpuk Lake in order to avoid disturbance to wildlife and/or subsistence users in the area.

Shore Camp/Ice Airstrip

A 150 person camp would initially be used at Lake M0654 for ice pad, airstrip, and infield ice road construction prior to drilling. The camp would be increased to accommodate 195 workers during the drilling season. No camp facilities would be located at their offshore drillsites. This camp would treat lake water for potable use and would have a wastewater treatment system with discharge of treated water to tundra surface away from the lake. Cruz currently has a waste water permit from the Alaska Department of Environmental Conservation (ADEC) for the Point Lonely location. They would submit a Notice of Intent to operate under the wastewater permit to ADEC with a new location description prior to the camp modules being mobilized to the Lake M0654 shore camp ice pad.

After the rig is hauled to the ice island, the shore camp would remain at the southern end of Smith Bay to provide program logistics support, facilitate crew changes, and support demobilization at the end of the season. A dish antenna would be used to support communications of phone and internet.

An ice airstrip up to 5,000 ft. in length, 200 ft. in width and a depth of 3 ft. is proposed to be constructed at Lake M0654 with an ice road to the adjacent Lake M0654 ice pad. From there a six mile ice road would connect to the CT-1 drillsite and a five mile ice road would connect CT-1 to CT-2 for a total distance of 11 miles.

Please refer to the Environmental Analysis for details on water, fuel transfer, waste management, and spill contingency plans.

Employee Orientation

CEASB submitted an Orientation Plan to the BLM for approval on October 12, 2015. All employees working on the Tulimaniq exploration project would be required to receive training, which would include project area orientation, threatened and endangered species information, environmental, social, and cultural awareness, subsistence conflict avoidance, and pertinent

mitigation that would be project specific. All personnel would be required to attend annual training. Training records would be maintained while the site is active.

Project related North Slope employees and contractors are required to complete an 8-hour training provided by the North Slope Training Cooperative. A Field Environmental Handbook, Alaska Safety Handbook, and a North Slope Visitor's Guide are used in the training. The training includes classes on the Alaska Safety Handbook, personal protective equipment, camp and safety orientation, hazard communication, HAZWOPER Level I, environmental awareness hydrogen sulfide awareness, hearing conservation, electrical safety, respiratory protection, energy isolation, confined space entry, asbestos awareness, fall protection/avoidance, toxic substance control, first aid/CPR, and use of an automated external defibrillator.

Project End

At the end of the 2015-2016 drilling season, all equipment would be demobilized to Deadhorse via the DS- 2P overland route, conditions allowing. Possible alternative demobilization routes are the same as the contingency routes identified for mobilization. If a Deadhorse demobilization is prevented due to weather and tundra travel closure, materials and equipment would be transported to Point Lonely for temporary staging until the 2016 open water season, when all of the loads would be barged to Prudhoe Bay. Locations with temporary snow/ice infrastructure would be cleaned of all debris and potential contamination and allowed to naturally degrade (thaw) in the spring to their original state. The surfaces would be inspected for spills, if any, and scraped clean before being allowed to naturally degrade. Because of the ice pad and ice airstrip depths (2-3 feet), CEASB does not anticipate the need to ensure timely melting of either feature.

CEASB would collect refuse, including delineators, along the snow roads. The cost of scraping the entire length of all snow roads is cost-prohibitive, so the routes used would be inspected for spills and these areas of the snow road would be scraped clean before being allowed to naturally degrade. Because the overland routes are snow roads, as opposed to ice roads, CEASB does not anticipate the need for slotting stream crossings.

Consultation

In accordance with BMP H-1, it is the determination of the Arctic Field Office that this activity merits ongoing special consultation with tribes and communities.

CEASB submitted a subsistence plan entitled "Plan of Cooperation and Good Neighbor Plan" to the BLM on September 11, 2015. Caelus also presented the entire Tulimaniq project at the Sep. 2015 NPR-A Subsistence Advisory Panel (SAP) meeting and inquired as to the schedule of the next SAP meeting. Caelus held stakeholder meetings in Barrow, Nuiqsut, and Atqasuk. Flyers with aircraft identifying information have also been distributed. KBRW radio announcements are planned and a Tulimaniq Information Line has been established: 907-343-2108. For additional information, residents are invited to contact Dale Hoffman at 907-343-2108 or dale.hoffman@caelusenergy.com.

Local Hire: Hiring opportunities are limited during exploration drilling. However, subsistence advisors at well sites during operations, translators, and Native elders who are willing to share

traditional knowledge of the area, and others have been and would continue to be hired for the exploration project. Applicable traditional knowledge would be used during the project orientation training section.

Caelus has a liaison in Nuiqsut and subsistence monitors, the latter work onsite as part of the Tulimaniq support staff. The liaison position is responsible for coordinating with the community on company plans and to review these activities for any potential impacts to subsistence resources. The subsistence monitors or advisors help identify and minimize conflicts with subsistence activities.

Caelus reports that it supports a Subsistence Mitigation Fund with representatives from the Native Village of Nuiqsut, Kuukpik Corporation, and the City of Nuiqsut. The Subsistence Mitigation Fund is intended to mitigate subsistence impacts, if any, by using the fund to reimburse additional subsistence harvest costs that may result from CEASB's operations.

Because of the high altitude at which the aircraft would be traveling for the Tulimaniq Project, CEASB does not anticipate any impacts to local subsistence users. CEASB did not receive any comments or concerns regarding proposed air operations during the community meetings that staff conducted in Barrow, Nuiqsut, or Atqasuk. Nor have any of the Native allotment or cabin owners who were notified by letter with the assistance of the Native Village of Barrow Realty Group expressed concerns regarding the frequency of aircraft landings. BLM Arctic FO asked NV Barrow and NV Nuiqsut if they had any specific concerns, none were shared. CEASB would continue to coordinate with local stakeholders and resource agency representatives regarding proposed air operations and other winter activities.

Ongoing communication systems are planned. Details of the project will be included on the Arctic Field Office Permitted Projects in the NPR-A spreadsheet/poster and the applicant will be sent any information distributed as part of the NPR-A aviation awareness campaign. Copies of this ANILCA 810 evaluation, which includes contact information should any residents have questions or concerns, will also be made available to Native Villages and to the NPR-A Subsistence Advisory Panel.

Evaluation

Effect of proposed action on subsistence uses and needs

Fisheries:

The proposed action would not significantly reduce harvestable fisheries resources that are available for subsistence use. The proposed action would not alter the distribution, migration or location of harvestable fisheries resources.

Wildlife:

The proposed action may disturb wildlife from the immediate area of snow routes, traffic, and the onshore camp and airstrip but would not significantly reduce harvestable wildlife resources that are available for subsistence use. The proposed action would not create any legal barriers that would limit subsistence harvest and access. With mitigation measures in place, the proposed action would not create physical barriers that would limit subsistence harvest and access.

Other Resources:

The proposed action would not appreciably impact any other harvestable resources such as wood, water, berries or vegetation.

Availability of other lands for the purpose sought to be achieved: The objective of the proposed activity is for CEASB to access areas and establish a temporary winter camp and airstrip to facilitate the exploration of its nearshore leases in Smith Bay. These activities are not inconsistent with the purposes of the NPRPA and no other lands are appropriate for this specific purpose.

Other alternatives which would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes: The no-action alternative may result in the inability for CEASB to implement its offshore drilling program this winter. With mitigation measures in place, there is no substantial evidence that would indicate a significant impact to subsistence as a result of the proposed action. No other alternatives were evaluated.

Finding: This proposed action in and of itself is not likely to significantly restrict subsistence uses. No reasonably foreseeable and significant decrease in the abundance of harvestable resources or in the distribution of harvestable resources, and no reasonably foreseeable limitations on harvester access will result from the proposed action. In the cumulative scenario, reasonably foreseeable limitations on harvester access will result from the proposed action.

PREPARED BY: STACEY A. FRITZ

DATE: 11/2/2015