REVISED
EXPLORATION PLAN

HARRISON BAY BLOCK 6423 UNIT

Proposed Drilling of Leases
OCS-Y-1753, OCS-Y-1754, and OCS-Y-1757

PUBLIC COPY

Submitted by:

Eni US Operating Co. Inc.

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ACRONYMS & ABBREVIATIONS

º	degree(s)
ºC	degrees Celsius
ºF	degrees Fahrenheit
/	per
@	at
2D	two-dimensional
3D	three-dimensional
AAC	Alaska Administrative Code
AAAQS	Alaska Ambient Air Quality Standards
ACMP	Alaska Coastal Management Program
ACS	Alaska Clean Seas
ADEC	Alaska Department of Environmental Conservation
ADF&G	Alaska Department of Fish and Game
ADNR	Alaska Department of Natural Resources
AES	ASRC Energy Services
AEWC	Alaska Eskimo Whaling Commission
AOGCC	Alaska Oil and Gas Conservation Commission
APD	Application for Permit to Drill
APDES	Alaska Pollutant Discharge Elimination System
API	American Petroleum Institute
APM	Application for Permit to Modify
AQCP	Air Quality Control Plan
AQIA	Air Quality Impact Analysis
ASRC	Arctic Slope Regional Corporation
ATV	all-terrain vehicle
bbl	barrel(s) – 42 U.S. gallons
BMP	Best Management Practices
BOEM	Bureau of Ocean Energy Management
BOP	blowout preventer
BOWFEST	Bowhead Whale Feeding Ecology Study
bpd	barrels per day
BSEE	Bureau of Safety and Environmental Enforcement
BWASP	Bowhead Whale Aerial Survey Project
CAA	Clean Air Act
CAH	Central Arctic Caribou Herd
CDPF	catalytic diesel particulate filters
CFR	Code of Federal Regulations
CLO	community liaison officer
cm	centimeter(s)
CO_2	carbon monoxide

COCP	Critical Operations and Curtailment Plan
COTP	Crude Oil Transmission Pipeline
cP	centipoise Viscosity
Com Center	Communications and Call Centers
CZMA	Coastal Zone Management Act
dBA	A-weighted decibel(s)
DEW	Distant Early Warning
DOG	Division of Oil and Gas
DPP	development and production plan
DPS	Distinct Population Segments
E	east
EA	Environmental Assessment
ea	each
EAP	Emergency Action Plan
EIA	Environmental Impact Analysis
EID	Environmental Information Document
EIS	Environmental Impact Assessment
Eni	Eni US Operating Co. Inc.
EP	Exploration Plan
ERD	extended reach drilling
EPA	US Environmental Protection Agency
ESA	Endangered Species Act
FGBNMS	Flower Garden Banks National Marine Sanctuary
FONSI	Finding of No Significant Impact
FR	Federal Register
ft.	foot/feet
Ft^3	cubic feet
FVF	Formation Volume Factor
G&G	Geological and Geophysical
gal	gallon(s)
GOR	gas-to-oil ratio
GP	General Permit
H_2S	Hydrogen Sulfide
hp	horsepower
hr	hour(s)
HRZ	High Radioactive Zone
HSE	Health, Safety, and Environment
ID	inside diameter
IHA	Incidental Harassment Authorization
IMO	International Maritime Organization
IMT	Incident Management Team
IPR	inflow performance relationship

in.	inch(s)
k	thousand
kg	kilogram(s)
km	kilometer(s)
kW	kilowatt(s)
KSOPI	Kuukpik Subsistence Oversight Panel, Inc.
LCU	Lower Cretaceous Unconformity
lb	pound(s)
LOA	Letter of Authorization
LRRS	Long Range Radar Station
m	meter(s)
m/s	meters per second
m^3	cubic meter(s)
mi	statute mile(s)
mi^2	square mile(s)
mph	mile per hour
min	minute(s)
MASP	maximum anticipated surface pressure
MAWP	maximum anticipated wellhead pressure
mD	measured depth
mm	millimeter(s)
MMPA	Maine Mammal Protection Act
MMS	Minerals Management Service
MOBM	mineral oil-based mud
MPH	miles per hour
MSCF	thousand standard cubic feet
mt	metric ton(s)
M/V	Motor vessel
N/A	Not applicable
NAAQS	National Ambient Air Quality Standards
NAD 83	North American Datum 1983
NE	Northeast
NEPA	National Environmental Policy Act
NOC	Nikaitchuq Operations Center
NOI	Notice of Intent
NO_2	Nitrogen Dioxide
NOx	Nitrogen oxide
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPR-A	National Petroleum Reserve-Alaska
NSB	North Slope Borough
NSTC	North Slope Training Cooperative

NTG	Net to Gross ratio (dimensionless)
NTL	Notice to Lessee
NWS	National Weather Service
O_3	Ozone
OCS	Outer Continental Shelf
ODPCP	Oil Discharge Prevention and Contingency Plan (C-Plan)
OIM	Offshore Installation Manager
OPMP	Office of Project Management and Permitting
OPP	Oliktok Production Pad
OSFR	Oil Spill Financial Responsibility
OSHA	Occupational Safety and Health Administration
OSR	Oil Spill Response
OSRO	Oil Spill Removal Organization
OSRP	Oil Spill Response Plan
OSRV	Oil Spill Response Vessel
OST	Oil Storage Tanker
OSV	Offshore Supply Vessel
OWC	Oil Water Contact (ft)
OWS	Oil-water separator
PIP	pipe-in-pipe
PM	particulate matter
$PM_{2.5}$	fine particulate matter, particulate matter less than 2.5 microns
PM_{10}	particulate matter less than 10 microns
ppb	parts per billion
ppm	parts per million
PSD	Prevention of Significant Deterioration
psi	pounds per square inch
psia	pounds per square inch absolute
PTD	proposed total depth
PVT	pressure volume temperature
RKB	rotary kelly bushing
rpm	revolutions per minute
RS/FO	Regional Supervisor, Field Operations
RUSALCA	Russian-American Long-Term Census of the Artic
SB	Schrader Bluff
scf/bbl	standard cubic feet per barrel
SCR	selective catalytic reduction
SEMS	Safety and Environmental Management System
sec	seconds
SID	Spy Island Drillsite
SIP	State Implementation Plan
SO_2	sulfur dioxide

SPCC	Spill Prevention Control and Countermeasure
State	State of Alaska
STB	standard barrels (at standard conditions)
stb/d	standard barrels per day
STBO	standard barrels of oil
TA	temporarily abandon
TAPS	Trans Alaska Pipeline System
TBD	to be determined
TD	total depth
TVD	true vertical depth
TVDSS	true vertical depth subsea
UIC	Underground Injection Control
U.S.	United States
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
VOC	Volatile organic compounds
WBM	water-based mud
WCD	Worst Case Discharge
WCP	Well Control Plan
WIF	Waste Injection Facility
WP	working pressure

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EXPLORATION PLAN CONTENTS

(a) Project description, objectives, and schedule for the Exploration Drilling Program

This proposed Exploration Plan (EP) is for the proposed exploratory drilling of Eni's Nikaitchuq North Project, which consists of three exploration wells, two mainbores and one sidetrack from Eni's existing man-made island, Spy Island Drillsite (SID), on the State of Alaska (State) lease. The proposed exploration wells will begin from the surface of SID and extend subsurface of the ocean floor, ending in federal leases on the Outer Continental Shelf (OCS) of Alaska – Harrison Bay Block 6423 Unit (Leases OCS-Y-1753, OCS-Y-1754, and OCS-Y-1757).

Exploration drilling activities proposed under this EP are scheduled to occur during winter frozen ice conditions and summer open water conditions as authorized by ADEC. The proposed schedule is provided below.

ACTIVITY- SEASON	HYDROCARBON-BEARING ZONE	START DATE	END DATE	NUMBER OF DAYS
Winter 2017-2018				
Spud Well: NN01		12/25/17	1/31/18	37
Drill Well: NN01		2/1/18	6/1/2018	120
Summer 2018				
Temporary P&A		6/2/2018	6/12/2018	10
NN01 re-entry		7/1/2018	7/15/2018	14
Drill NN01 (8 ½ " Hole section)	Yes	7/15/2018	7/31/2018	16
NN01 Flow Test		7/31/2018	8/25/2018	25
NN01 P&A		8/25/2018	9/9/2018	15
Winter 2018-2019				
Drill Well: NN02	Yes	12/1/2018	2/14/2019	75
NN02 Flow Test		2/14/2019	3/11/2019	25
NN02 P&A		3/11/2019	3/26/2019	15
Drill NN02 Sidetrack to Lateral & Complete	Yes	3/26/2019	4/21/2019	26
NN02 Perform Flow Test & Suspend		4/21/2019	5/23/2019	32

Notes:

Hydrocarbons may be present in zones not marked "Yes", but will be isolated prior to deadlines included in the ADEC-approved ODPCP.

A sidetrack to well NN01 (NN01 ST01) is no longer proposed. However, discussion of NN01 ST01 has not been removed from the Revised EP.

OCS Plan Information forms, "Form – BOEM-0137," are included under this section with further activity description.

By letter dated February 27, 2017, the Bureau of Safety and Environmental Enforcement (BSEE) approved the formation of the Harrison Bay Block 6423 Unit, which is comprised of Outer Continental Shelf Leases Y-1703, Y-1704, Y-1705, Y-1751, Y-1752, Y-1753, Y-1754, Y-1756, Y-1757, Y-1771, Y-1772, Y-1779, and Y-1780). The Harrison Bay Block 6423 Unit, although approved on February 27, 2017, became effective on February 24, 2017.

Nikaitchuq Field

Eni operates the Nikaitchuq oil field in the vicinity of Oliktok Point and Simpson Lagoon. This includes the following facilities:

- Oliktok Production Pad (OPP) – an onshore process and drilling facility at Oliktok Point

- Spy Island Drillsite (SID) – a man-made gravel island located offshore of Oliktok Point
- Nikaitchuq Operations Center (NOC) – an onshore pad for support facilities
- A subsea pipeline bundle from SID to OPP
- An onshore crude oil transmission pipeline (COTP) that ties in to the Kuparuk Pipeline

Gravel placement for OPP and SID was completed in 2008, the subsea pipeline from SID to OPP was constructed in 2009, and the COTP between OPP and the Kuparuk Pipeline was constructed in 2010. Nikaitchuq began producing oil in early 2011. Production from SID began in November 2011. The current Nikaitchuq production is 25,000 barrels per day (bpd) from 70 wellbores drilled from OPP and SID.

(b) Location

SID is a man-made gravel island located approximately three miles offshore of Oliktok Point just south of the natural barrier island, Spy Island, in shallow water (approximately 6 to 8 feet deep). SID supports drilling and production operations in the Nikaitchuq Unit. SID has 36 slots for producers and injectors and slots for two Class I disposal wells.

The current SID wells drilled include:

- 18 production wells (9 dual-laterals)
- 13 injection wells
- 1 Class I disposal well/Waste Injection Facility (WIF)

SID has slope protection to prevent erosion and protect against storm surge and ice. SID's perimeter has a 1:3 slope, with no bench, protected by 4-cubic-foot gravel bags designed for island perimeter protection. Storm surge modeling was used to determine the height of the gravel pad above sea level and the shape and profile of the perimeter.

A description of the general lighting for SID is discussed in the Environmental Impact Analysis (EIA) located in Section O as Appendix O.

Drilling activity for the Nikaitchuq North EP will take place on SID, which is located in State waters. The proposed exploration wells will be installed adjacent to the existing row of producing wells on SID.

A vicinity map is enclosed as ***Figure EP-1***, along with a project area map as ***Figure EP-2***. It shows the location of the activities proposed herein relative to the distance of the proposed activities from the shoreline.

(c) Drilling unit description

Doyon Rig 15 is a mobile oil and gas well drilling facility capable of drilling in extreme arctic conditions. The rig design consists of fully integrated modules capable of drilling on 8-foot well spacing.

Further details of the surface blowout preventer (BOP) components are described in Table EP-1.

Table EP-1 – Doyon Rig 15 Main Machinery

Equipment	Actual Rig Setup	After the Rig Upgrade
TDS	63,000 ft/lbs continuous torque @ 100 revolutions per minute (rpm)	72k ft-lbs continuous torque @ 150 rpm
Mud Pump	#3 pumps (#P 160 1600 horsepower [hp] + Skytop Brewster 1600 HP)	Two white star 2200 hp pumps and one 12P – 1600 HP pump

Equipment	Actual Rig Setup	After the Rig Upgrade
Mud Manifold	5000 pounds per square inch (psi) working pressure (WP)	7500 psi wp
Rig Power Plant	3 ea. Cat D3516 HD and 1 ea. Cat 3512, total 5,859 kilowatt (kW), hi-line capable	5 ea 3516, 1 ea 3512 = 9,044 kW
Shale Shakers	2ea – Derrick, model 48, 3ea – Derrick, model 514	4 ea Derrick model 514
Iron Roughneck	Varco BJ ST-80 (maximum break-out 85,000 ft lb)	Nov-ST-120 (max make-up torque 117,500 ft lb)
Drill Pipe	5" 17.0# TT525 (40,000) 4-1/2" 11.7# XH (23,000')	6-5/8" 34# TT690 (6,000') 5-7/8" 23.4# TT585 (32,000') 4-1/2" 16.6# TT435 (23,000')
BOP Stack	13-5/8" 5,000 psi WP Hydril Annular BOP, model GK, 2 each – Hydril single gate, Model MPL, 1 each – Hydril single gate, model MPL	18-3/8" 5,000 psi WP Cameron 18-3/4" 5K DL annular, 1 each. 18-3/4" 5K TL double rams, 18-3/4" 5K TL single rams
Diverter	Maximum Surface Pressure, 20-1/4" x 2,000 psi	Cameron 30" NOV Diverter
Mast capacity	1,000,000 lb	No change
Set back capacity	650,000 lb	No change
Drawworks	Skytop Brewster, Model NE-12_rated @ 2000 input hp (500 ton)	No change
Number of Pits	10 each with total volume – 1250 barrels (bbl)	No change

The Doyon Rig 15 is comprised of three modules: the substructure module, the power module, and the shop. Schematics of these modules are included in the Doyon Drilling Spill Prevention Control and Countermeasure (SPCC) Plan, as certified under provisions of 40 CFR Part 112.

The Doyon Drilling SPCC Plan works in conjunction with the operator Oil Discharge Prevention and Contingency Plan (ODPCP). Outlined are provisions including primary containment within the rig and also secondary containment including lined and bermed barriers around all rig components. Provisions are made within this document to address containment and discharge prevention guidelines. Other features address inspection and testing procedures for fluid handling equipment, fluid transfer procedures, and spill response and reporting procedures.

(d) Storage Tanks

The estimated maximum volume of fluids that could be stored on the drilling facility is shown in ***Table*** EP-2 below. Specific notes on these volumes are shown in the Doyon SPCC Plan.

Table EP-2 – Fluids Stored on Drilling Facility

Tank	Total No. of Tanks	Total Tank Volumes for all Tanks (bbl)
Fuel tank - diesel	5	777
Hydraulic Oil	12	83.5
Lube Oil	8	44.7
Coolant	7	27
Drilling Fluid (mud pits)	9	1360

(e) Service fee

A Pay.gov receipt is included in this plan, as required under 30 CFR 550.125, in the amount of $7,346.00 to cover the cost and processing fee for the proposed operations conducted under this plan.

U.S. Department of the Interior
Bureau of Ocean Energy Management

OMB Control Number: 1010-0151
OMB Approval Expires: 12/31/18

OCS PLAN INFORMATION FORM

GENERAL INFORMATION					
Type of OCS Plan:	X	Exploration Plan (EP)		Development Operations Coordination Document (DOCD)	
Company Name: Eni US Operating Co. Inc.				BOEM Operator Number: 02782	
Address: 1200 Smith Street, Suite 1700				Contact Person: Brian Mamelli	
Houston, Texas 77002				Phone Number: (713) 393-6314	
				Email Address: brian.mamelli@enipetroleum.com	

If a service fee is required under 30 CFR 550.125(a) provide the	Amount paid	$7,346.00	Receipt No.	2611SKL9

Project and Worst Case Discharge (WCD) Information			
Lease: Y1753	Area: HB	Block: 6423	Project Name (If Applicable): Nikaitchuq North
Objective(s): ☒Oil ☐Gas ☐Sulphur ☐Salt			Onshore Support Base(s): OPP
Platform/Well Name: NN02 ST01	Total Volume of WCD: 25,957 bbls		API Gravity: 40
Distance to Closest Land (Miles): 3.2		Volume from uncontrolled blowout: 446,535	

Have you previously provided information to verify the calculations and assumptions for your WCD?		Yes	X	No
If so, provide the Control number of the EP or DOCD with which this information was provided				
Do you propose to use new or unusual technology to conduct your activities?		Yes	X	No
Do you propose to use a vessel with anchors to install or modify a structure?		Yes	X	No
Do you propose any facility that will serve as a host facility for deepwater subsea development?		Yes	X	No

Description of Proposed Activities Scheduled (Mark all that apply)

Proposed Activity	Start Date	End Date	No. of Days
Spud Well: NN01	12/25/2017	1/31/2018	37
Drill Nikaitchuq North (NN01)	2/1/2018	6/1/2018	120
Temporary P&A	6/2/2018	6/12/2018	10
NN01 re-entry	7/1/2018	7/15/2018	14
Drill NN01 (8”1/2 Hole section)	7/15/2018	7/31/2018	16
NN01 Flow Test	7/31/2018	8/25/2018	25
NN01 P&A	8/25/2018	9/9/2018	15
Drill Nikaitchuq North (NN02)	12/01/2018	02/14/2019	75
NN02 Flow Test	02/14/2019	03/11/2019	25
NN02 P&A	03/11/2019	03/26/2019	15
Drill NN02 Sidetrack to Lateral & Complete	03/26/2019	04/21/2019	26
NN02 Perform Flow Test – Suspend	04/21/2019	05/23/2019	32

Description of Drilling Rig				Description of Structure			
	Jackup		Drillship		Caisson		Tension leg platform
	Gorilla Jackup		Platform rig		Fixed platform		Compliant tower
	Semisubmersible		Submersible		Spar		Guyed Tower
	DP Semisubmersible	X	Other (Attach Description)		Floating Production System	X	Other (Attach Description)
Drilling Rig Name (If Known): ***Doyon 15***							

Description of Lease Term Pipelines

From (Facility/Area/Block)	To (Facility/Area/Block)	Diameter (Inches)	Length (Feet)

OCS PLAN INFORMATION FORM (CONTINUED)

Include one copy of this page for each proposed well/structure

<table>
<tr><th colspan="10">Proposed Well/Structure Location</th></tr>
<tr><td colspan="5">Well or Structure Name/Number (If renaming well or structure, reference previous name): NN01</td><td colspan="2">Previously reviewed under an approved EP or DOCD?</td><td></td><td>YES</td><td>X NO</td></tr>
<tr><td>Is this an existing well or structure?</td><td></td><td>YES</td><td>X</td><td>NO</td><td colspan="2">If this is an existing well or structure, list the Complex ID or API No.</td><td colspan="3"></td></tr>
<tr><td colspan="7">Do you plan to use a subsea BOP or surface BOP on a floating facility to conduct your proposed activities?</td><td></td><td>YES</td><td>X NO</td></tr>
<tr><td>WCD info</td><td colspan="3">For wells, volume of uncontrolled blowout (Bbls/day): 3,634BPD</td><td colspan="2">For structures, volume of all storage and pipelines (Bbls):</td><td>API Gravity of fluid:</td><td colspan="3">40</td></tr>
<tr><td></td><td colspan="3">Surface Location</td><td colspan="2">Bottom-Hole Location (For Wells)</td><td colspan="4">Completion (For multiple completions, enter separate lines)</td></tr>
<tr><td>Lease No.</td><td colspan="3">ADL 391283</td><td colspan="2"></td><td colspan="4"></td></tr>
<tr><td>Area Name</td><td colspan="3">ADL 391283</td><td colspan="2"></td><td colspan="4"></td></tr>
<tr><td>Block No.</td><td colspan="3">ADL 391283</td><td colspan="2"></td><td colspan="4"></td></tr>
<tr><td rowspan="2">Blockline Departures (in feet)</td><td colspan="3">N/A</td><td colspan="2"></td><td colspan="4"></td></tr>
<tr><td colspan="3">N/A</td><td colspan="2"></td><td colspan="4"></td></tr>
<tr><td rowspan="2">Lambert X-Y Coordinates</td><td colspan="3">X = 391,933m
UTM Zone 6W</td><td colspan="2"></td><td colspan="4"></td></tr>
<tr><td colspan="3">Y = 7,830,619m
UTM Zone 6W</td><td colspan="2"></td><td colspan="4"></td></tr>
<tr><td rowspan="2">Latitude/ Longitude</td><td colspan="3">Latitude:
N 70° 33' 26.51"</td><td colspan="2"></td><td colspan="4"></td></tr>
<tr><td colspan="3">Longitude:
W 149° 54' 35.66"</td><td colspan="2"></td><td colspan="4"></td></tr>
<tr><td colspan="4">Water Depth (Feet): 0</td><td></td><td></td><td colspan="2" rowspan="2"></td><td colspan="2" rowspan="2"></td></tr>
<tr><td colspan="4">Anchor Radius (if applicable) in feet:</td><td colspan="2">NA</td></tr>
</table>

<table>
<tr><th colspan="6">Anchor Locations for Drilling rig or construction Barge (If anchor radius supplied above, not necessary)</th></tr>
<tr><td>Anchor Name or No.</td><td>Area</td><td>Block</td><td>X Coordinate</td><td>Y Coordinate</td><td>Length of Anchor Chain or Seafloor</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>

OCS PLAN INFORMATION FORM (CONTINUED)
Include one copy of this page for each proposed well/structure

Proposed Well/Structure Location						
Well or Structure Name/Number (If renaming well or structure, reference previous name): **NN01 ST01**			Previously reviewed under an approved EP or DOCD?		YES	X	NO
Is this an existing well or structure?		YES	X	NO	If this is an existing well or structure, list the Complex ID or API No.	
Do you plan to use a subsea BOP or surface BOP on a floating facility to conduct your proposed activities?					YES	X	NO
WCD info	For wells, volume of uncontrolled blowout (Bbls/day): 19,920	For structures, volume of all storage and pipelines (Bbls):	API Gravity of fluid:	40		

	Surface Location	**Bottom-Hole Location (For Wells)**	**Completion (For multiple completions, enter separate lines)**
Lease No.	ADL 391283		
Area Name	ADL 391283		
Block No.	ADL 391283		
Blockline Departures (in feet)	NA		
	NA		
Lambert X-Y Coordinates	X = 391,933m utm zn 6W		
	Y = 7,830,619m utm zn 6W		
Latitude/ Longitude	Latitude: N 70° 33’ 26.51”		
	Longitude: W 149° 54’ 35.66”		
Water Depth (Feet): 0			
Anchor Radius (if applicable) in feet:			

Anchor Locations for Drilling rig or construction Barge (If anchor radius supplied above, not necessary)					
Anchor Name or No.	**Area**	**Block**	**X Coordinate**	**Y Coordinate**	**Length of Anchor Chain or Seafloor**

Proposed Well/Structure Location						
Well or Structure Name/Number (If renaming well or structure, reference previous name): **NN02**			Previously reviewed under an approved EP or DOCD?		YES	X	NO
Is this an existing well or structure?		YES	X	NO	If this is an existing well or structure, list the Complex ID or API No.	
Do you plan to use a subsea BOP or surface BOP on a floating facility to conduct your proposed activities?					YES	X	NO
WCD info	For wells, volume of uncontrolled blowout (Bbls/day): 3,634	For structures, volume of all storage and pipelines (Bbls):	API Gravity of fluid:	40		

	Surface Location	**Bottom-Hole Location (For Wells)**	**Completion (For multiple completions, enter separate lines)**
Lease No.	ADL 391283		

OCS PLAN INFORMATION FORM (CONTINUED)

Include one copy of this page for each proposed well/structure

Area Name	ADL 391283		
Block No.	ADL 391283		
Blockline Departures (in feet)	NA		
	NA		
Lambert X-Y Coordinates	X = 391,936m utm zn 6W		
	Y = 7,830,620m utm zn 6W		
Latitude/ Longitude	Latitude: N 70° 33' 26.53"		
	Longitude: W 149° 54' 35.42"		
Water Depth (Feet): 0			
Anchor Radius (if applicable) in feet:			

Anchor Locations for Drilling rig or construction Barge (If anchor radius supplied above, not necessary)					
Anchor Name or No.	**Area**	**Block**	**X Coordinate**	**Y Coordinate**	**Length of Anchor Chain or Seafloor**

OCS PLAN INFORMATION FORM (CONTINUED)

Include one copy of this page for each proposed well/structure

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<tr><th colspan="8">Proposed Well/Structure Location</th></tr>
<tr><td colspan="4">Well or Structure Name/Number (If renaming well or structure, reference previous name): NN02 ST01</td><td>Previously reviewed under an approved EP or DOCD?</td><td></td><td>YES</td><td>X</td></tr>
<tr><td colspan="8">NO</td></tr>
<tr><td>Is this an existing well or structure?</td><td></td><td>YES</td><td>X</td><td>NO</td><td colspan="2">If this is an existing well or structure, list the Complex ID or API No.</td><td></td></tr>
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<tr><td></td><td>Surface Location</td><td>Bottom-Hole Location (For Wells)</td><td colspan="5">Completion (For multiple completions, enter separate lines)</td></tr>
<tr><td>Lease No.</td><td>ADL 391283</td><td></td><td colspan="5"></td></tr>
<tr><td>Area Name</td><td>ADL 391283</td><td></td><td colspan="5"></td></tr>
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<tr><td rowspan="2">Blockline Departures (in feet)</td><td>NA</td><td></td><td colspan="5"></td></tr>
<tr><td>NA</td><td></td><td colspan="5"></td></tr>
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<tr><td colspan="2">Water Depth (Feet): 0</td><td></td><td colspan="5"></td></tr>
<tr><td colspan="2">Anchor Radius (if applicable) in feet:</td><td>NA</td><td colspan="5"></td></tr>
</table>

Anchor Locations for Drilling rig or construction Barge (If anchor radius supplied above, not necessary)					
Anchor Name or No.	**Area**	**Block**	**X Coordinate**	**Y Coordinate**	**Length of Anchor Chain or Seafloor**

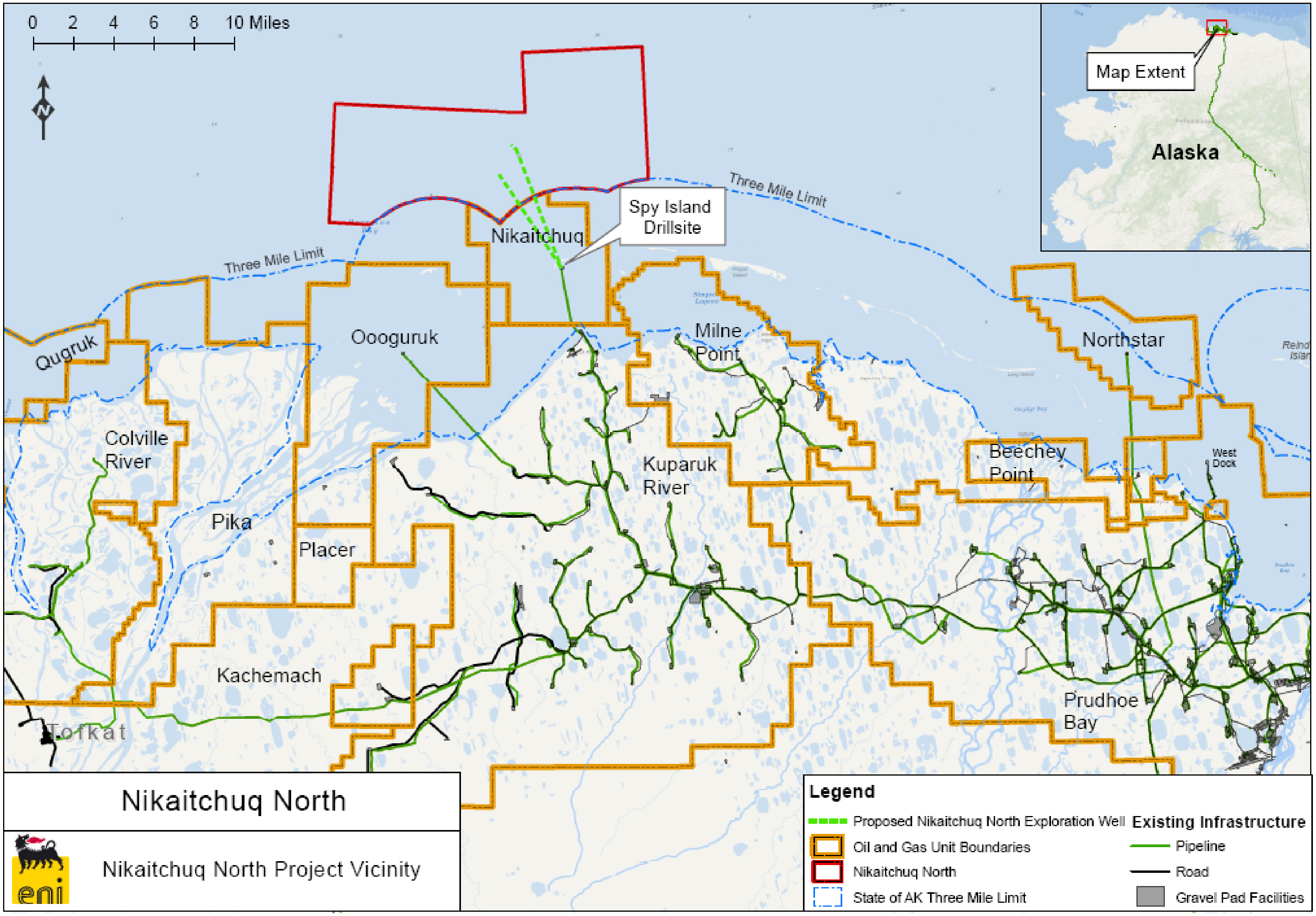

Figure EP-1 – Nikaitchuq North Project Vicinity Map

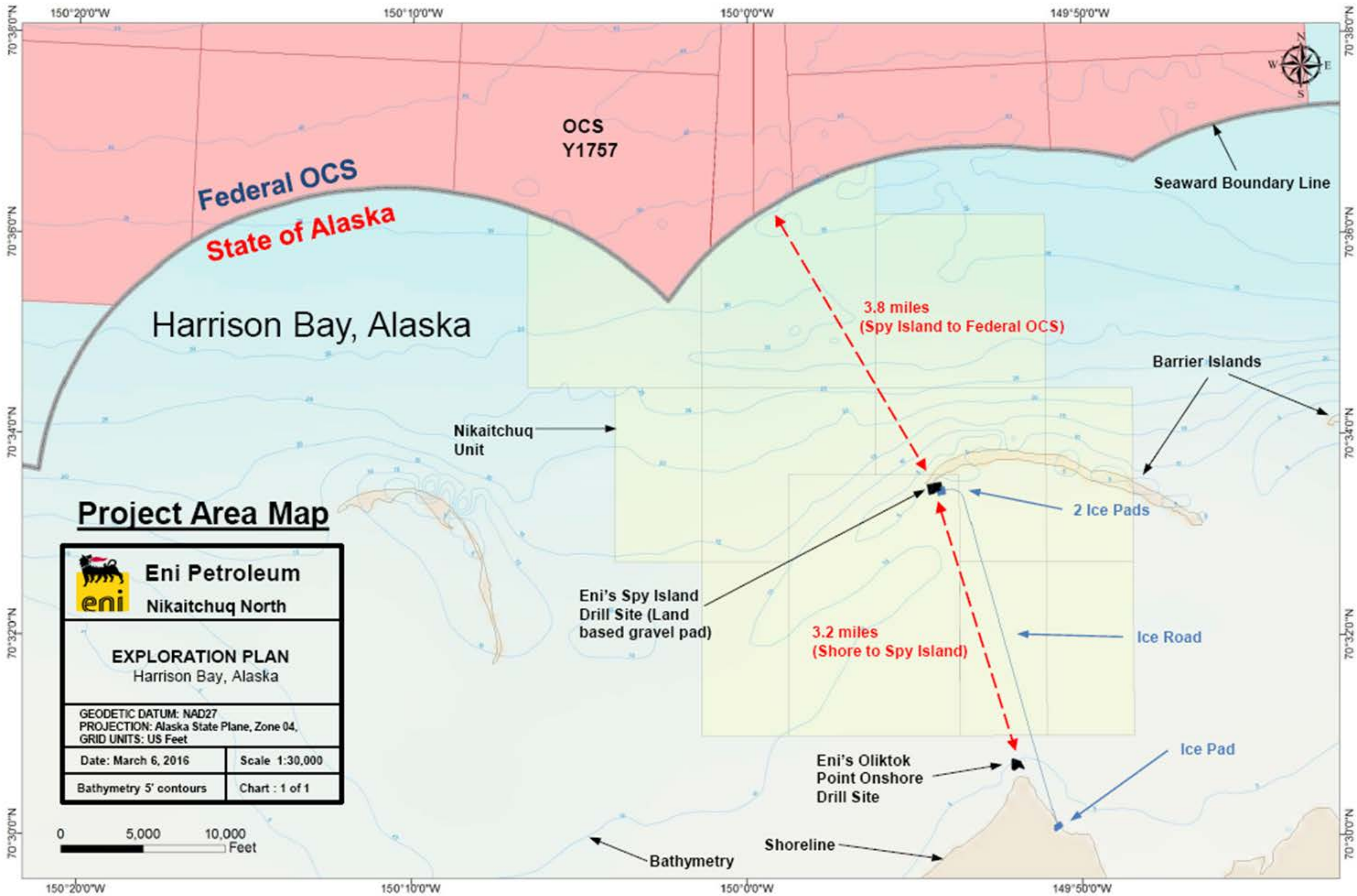

Figure EP-2 – Nikaitchuq North Project Area Map

SECTION A GENERAL INFORMATION

(a) Applications and permits

Table A-1 lists permit and authorization applications that will be submitted to support this EP for the wells to be drilled in the Nikaitchuq North Project.

Table A-1 – Permit Applications Pending

Permits & Authorizations	Agency	Submittal Date	Authorization Date	Document Location
Revisions to Air Quality Title V and Minor Permit	Alaska Department of Environmental Conservation (ADEC)	February 2017	AQ0923TVP01, Rev.3 Issued July 28, 2017 AQ0923MSS11, Issued June 12, 2017	Separate cover
ODPCP 16-CP-5116 Amendment	ADEC	March 2017	November 1, 2017	Separate cover
Amendment - Oil Spill Response Plan (OSRP)	Bureau of Safety and Environmental Enforcement (BSEE)	March 2017	December 28, 2017	Separate cover
ADNR DOG – Unit Plan of Operations	Alaska Department of Natural Resources (ADNR) Division of Oil and Gas (DOG)	March 2017	August 11, 2017	Separate cover
USFWS Polar Bear Incidental Take LOA amendment	U.S. Fish and Wildlife Service (USFWS)	January 2017	June 28, 2017	Separate cover
NSB Administrative Approval	North Slope Borough (NSB)	March 2017	April 13, 2017	Separate cover
Application for Permit to Drill (APD)	BSEE	October 2017	November 28, 2017	Separate cover
APD	AOGCC	--	December 8, 2017	Separate cover

(b) Drilling fluids

No intentional discharge is planned. Hole sections circulate using a steel-pit-contained mud system. All cuttings and waste mud are processed/ground and injected into the onsite disposal well.

Please refer to ***Figure A-1,*** *"Waste Estimated to be Generated, Treated and/or Downhole Disposed or Discharged to the Beaufort Sea"* for further information.

(c) Chemical products

Well spuds and 22-inch surface sections will be drilled with WBM formulation developed for SID using best practices and lessons learned from previously completed wells.

Deeper sections will be drilled with a MOBM. The MOBM formulation includes emulsifiers, filtration controllers, wetting agents, and other elements normally utilized to maintain optimal rheological properties.

Detailed information related to the chemical products proposed under this EP is listed in ***Figure A-2*** and is in accordance with CFR 550.213(c).

Materials Safety Data Sheets for drilling fluid chemicals will be provided in the Application for Permit to Drill and will also be available on the drilling unit and on the support vessels used to transport the chemicals.

(d) New or unusual technology

Eni does not plan to use any new or unusual technology, as defined under 30 CFR 550.200, for the exploration activities proposed under this EP.

(e) Bonds, oil spill financial responsibility, and well control statements

The bond requirements for the activities and facilities proposed in this EP are satisfied by an areawide development bond, furnished and maintained in accordance with 30 CFR 556, Subpart I; and if determined by the Regional Director, provide additional security under 30 CFR 556.901(d).

Eni is of sound financial strength and reliability and has demonstrated oil spill financial responsibility (OSFR) according to 30 CFR 553 for the activities planned in this EP. In accordance with 30 CFR 553.29(a), Eni is insured for $150,000,000. This financial reliability ensures that Eni has the capability to deal with emergency situations such as blowout control, including relief well drilling and kill operations, if such an unlikely event should occur.

Therefore, Oil Spill Financial Responsibility coverage will be obtained under Eni US Operating Co. Inc., BOEM Company Number 02782 for the activities proposed under this *Revised Exploration Plan* according to 30 CFR Part 553.

(f) Suspensions of operations

Eni has plans and mitigation measures in place that accommodate the forced or voluntary suspension of operations during implementation of the proposed exploration drilling program detailed in this EP. These plans and mitigation measures are in reference to suspension of operations as cited under 30 CFR 550.213(f) and are not to be confused with suspension of operations as cited under BSEE regulations at 30 CFR 250.168 through 177. Forced suspension of operations could result from weather, ice conditions, drilling unit mechanical conditions, or downhole conditions, among others. In order to facilitate a possible suspension of operations, Eni will draft several operational plans containing suspension procedures and protocols in accordance with 30 CFR 550.220.

(g) Blowout scenario

As described under 30 CFR 254.47(b), a blowout scenario is required for any exploration activity in federal waters. Eni has prepared the following response:

The target of the project well is the J1 sand located at +/- 7,516 feet true vertical depth (TVD). This will be accomplished by drilling an extended-reach well from the existing SID. The initial well will penetrate the J1 at 35 degrees. Depending on the findings of the NN01 well, Eni's plan includes the flexibility to complete and flow test the initial wellbore or abandoning of the open-hole section to immediately drill a sidetrack for a 600-foot lateral followed by the completion and flow test. The J1 sands have a native reservoir pressure of 3,351 psi.

Eni well control philosophy is based on the double barrier mechanism to contain the wellbore fluids. For purposes of the Blow Out Contingency Plan, a barrier is defined as any physical system or device, hydraulic or mechanical, able to contain fluid and/or pressure within the confines of the well. Eni's policy is to maintain two (2) separate barriers in the well flow path at all times during the execution of well operations. The two barriers are properly weighted drilling mud and the certified and function-tested 18-3/4" BOP stack.

The primary barrier is always in place and active during well operations. The secondary barrier is in place to provide backup to the primary barrier. When required, this secondary barrier, along with the application of proper well control procedures, is used to re-establish primary well control and safe operating conditions. It is considered acceptable for the secondary barrier to be inactive until required (i.e., failure of the primary barrier), provided it is maintained at full efficiency by a regular testing routine.

A number of primary/secondary mechanisms are available to meet the requirements of the various well operations, as provided in the Eni Well Control Policy Manual.

Eni will use surface BOPs rated 5,000 psi. Two activation systems exist to allow rig floor activation or remote activation of the BOPs. A redundant manual system is also available to close the BOP if required.

Eni will shut down operations for any repairs needed on well control devices anytime they are not considered functional and safe. Eni uses Company Representatives with many years of experience in drilling operations. The Company Representatives constantly communicate with the Offshore Installation Manager (OIM) on the rig to ensure the safety of all personnel and equipment. All Company Representatives are trained in well control and maintain well control certificates.

Eni's casing program is designed such that no other hydrocarbon-bearing zones are exposed when drilling the J1 sand. The total depth of the well is intentionally designed to stop above any other potential hydrocarbon zones.

The first penetration of the target interval will include logging and fluid sampling. This hydrocarbon zone will then be completed with a xmas tree installed and flow tested if deemed appropriate, or, as an alternative, will be temporarily abandoned for a sidetrack. The temporary abandonment will be performed placing cement plugs in front of all crossed hydrocarbon zones in the open hole: a sacrificial liner will be run with cement placed inside the liner and in the annulus above the liner top and below the last casing shoe. An open-hole sidetrack would then be drilled with a lateral of approximately 600 feet, and eventually completed and flow tested after the installation of a xmas tree. The same operative sequence of the first well is assumed for the second well, whereas further verification will be eventually implemented based on the drilling/lithological data and information acquired during the execution of the first well. The sidetrack of the second well is currently planned in cased hole to allow for a better management of the lateral trajectory and reduce the dog-leg severities, taking into account the many uncertainties related to the target position at this early stage.

All drilling operations will be accomplished during the 2017-18 and 2018-19 season during winter frozen ice conditions and summer open water conditions as shown in the schedule included in this EP.

Eni will maintain adequate weighting material at the SID site in order to “weight-up” the mud system to control any upsets or well control issues. Mud pits are monitored constantly by personnel when operations are ongoing. In addition, automatic alarms are located in the pits and will sound if pits receive abnormal amounts of return fluids to alert of possible flow control problems. Personnel on the rig floor are trained to monitor the systems and respond immediately if a problem is noted or if alarms sound and will take all necessary steps, including operating the BOPs, to maintain control of the well.

Eni has contracted Wild Well Control, Inc., a worldwide known contractor specialized in well control and emergency interventions, to assess the expected well criticalities and determine a mitigation plan that will be applied to the Well Drilling Program before the well spud.

In the unlikely event of an uncontrolled flow, source control operations would commence with Eni notifying Wild Well Control, Inc. to mobilize the required personnel and equipment resources. Concurrently, the Eni Incident Command System would be initiated. Working together, these teams would fully assess the incident to determine the best way forward. Dynamic and surface well control methods may continue in the interim, but only if approved and safe to do so.

According to the performed assessment of the best available techniques and methods to control a well blowout with the potential of releasing liquid hydrocarbons at surface, it was determined that the most likely interface scenario for a compromised well would be direct containment by capping and killing the well within SID. The direct wellhead intervention containment and capping option would be preferable in any weather condition. Well capping is both compatible with and feasible for use in planned drilling operations, as this technology is applied at surface, with little or no sensitivities to well type or location. Well capping operations have been carried out on both onshore and offshore locations, having historically proven successful in regaining well control within a relatively short duration.

The various pieces of heavy equipment needed for support of well capping operations will be available on the North Slope location on the first day of operations. Mobilization of this equipment to Nikaitchuq in an emergency can be carried out within a matter of hours after requests are submitted. Eni has the global capability of moving specialty personnel and additional equipment to North Slope locations typically within 24 to 48 hours upon declaration of a well control event.

Capping operations can be defined as the placement of a competent pressure control device onto the blown out well under flowing conditions. Once the new control device (i.e., capping stack) is positioned over the well, there must be a means of attaching the device to ensure pressure integrity can be regained.

Capping operations begin with servicing or preparing the wellhead for placement of the new control device (i.e., capping stack). Safe access to the wellhead area must be established first. This process normally begins removing accessible equipment in and around the wellhead. From accessible equipment, teams will initiate more debris clearance. Debris clearance may include use of exothermic torches, remote-operated rakes, and hooks within a water curtain.

The magnitude of the service pressure of the control device (i.e., capping stack) will be expected to withstand the Maximum Anticipated Surface Pressure (MASP) plus externally applied pressure exerted during the dynamic well control procedure (i.e., bullheading). Once determined, this summary pressure (MASP + Applied Pressure) will be multiplied by a safety factor, such as 1.25. The safety factor will be determined by the Well Control Specialists based on wellhead temperatures, equipment damage, fluid stream composition, remoteness of location, etc.

Capping Operation Planning Factors

- Forces exerted on the capping stack as the stack is positioned around and "into" the flowing well
- Best method required to ensure full control of the movement of the capping stack as it enters the flow (turning and swinging prevention)
- Safe operating procedures needed to initiate work around the flowing well while minimizing effects of radiant heat.
- Maintaining optimum bore size (inside diameter [ID]) throughout capping stack, which will allow subsequent well work to be performed
- Optimizing functions within the capping stack for operational redundancy (i.e., multiple outlets, multiple pump tie-in locations, pressure monitors, and sufficient heat-wrapping of key components, etc.)
- Developing optimum placement and attachment method for securing the capping stack to wellhead
- Understanding of pressure and temperature ratings required to control the well throughout all phases of the well control operation
- Forces exerted on the capping stack during the post-capping operation, such as bullheading or snubbing

No one capping technique can be predetermined before blowout conditions exist. Well Control Specialists must select the best capping technique, which will ensure capping success based on knowledge of the mass flow rate, combustible nature of the flow stream, wellbore geometry, and operations to be undertaken in the post-capping phase of the project. Due to the critical nature of well control operations, Well Control Specialists understand they may be given only one chance at successfully capping the well. These Well Control Specialists must weigh time, risk, and chances of success when selecting the appropriate capping technique.

General Techniques Used for Capping Operations

- Capping to an excavated and re-headed wellhead while on fire
- Capping to a flange
- Capping to a stub by installing a wellhead
- Capping by swallowing the stub

Capping to an Excavated and Re-Headed Wellhead While Well is on Fire

The decision process needed to cap a well on fire must emphasize personnel safety and minimize environmental damage. From an environmental viewpoint, leaving a well on fire can reduce the amount of pollution, provided the well is burning efficiently and cleanly. Capping operations may take longer to complete if the well is left on fire throughout the entire operation. If the well is not burning efficiently and cleanly, judgment is needed to determine if less pollution will be caused if the fire is extinguished to allow quicker capping operations.

In all well control interventions, Well Control Specialists strive to find and implement the quickest and safest solution in order to meet requirements for safety, the lowest cost, and uphold environmental responsibility. This is true for all wells, including those that produce hydrogen sulfide (H_2S).

Capping operations while the well is burning has become a preferred industry method for wells. This method basically involves installing the capping device without putting out the fire.

Capping the well while it is on fire requires a very methodical and particular approach. As a result, the materials and equipment required cannot be substituted haphazardly. All equipment, materials, and personnel requested for the well control operation will need to be tested and provided regardless of the lead time involved.

This process describes the operational differences, special materials and equipment needed, and a basic sequence of events for capping on-fire well control and is for information purposes only. Wild Well cannot recommend any well control technique or methodology until an assessment is made of a particular well. (See Capping Sequence below for more information)

Capping Sequence

The following is a basic sequence of events that usually are required for capping on-fire operations. All well control events are unique, and this sequence is a guideline only. The exact nature of the blowout will dictate the actual intervention steps required. Wild Well Control, Inc. will provide detailed operational plans for the intervention after the initial assessment of the well is made.

Step 1: Assess Well

The well itself and the surrounding location and topography will be surveyed for the operation. The orientation of the ramp will be based on prevailing winds and the layout of the location.

Step 2: Prepare Location

The location will need to be cleared from all unexploded ordinance (if it exists). The pollution from the well, if any, will need to be controlled and the location will need to be prepared so that fire water and unburned produced fluids are properly drained away from the site.

Step 3: Remove Debris

Well sites can have debris on the site. The location will need to be cleared in the early stages of the intervention to allow personnel and equipment access to the wellhead.

Step 4: Expose Wellhead

The wellhead will need to be exposed properly for removal, normally requiring excavating down approximately 3 meters (m) for exposure good quality and straight casing. When the wellhead is completely severed from well casings, the tension on the innermost casing string will be relieved causing it to fall a certain distance. Excavation point should be below the fall distance to ensure that 3m of the innermost casing string is available for the emergency wellhead installation.

Step 5: Remove Damaged Wellhead

Once the casing is exposed, it can be cut off with an abrasive jet cutter. This operation may take several cuts depending on the exact nature of the flow from the well.

Step 6: Prepare New Wellhead

The wellhead will need to be prepared for installation on the yoke of the hydraulic Athey Wagon. A skirt and guide assembly will also need to be built and installed. Heat resistant wrap will also be needed for the well head to protect it during installation on the well.

Step 7: Dig Ramps or Corridors

Digging the ramps for the capping operation may take the longest time of any activity during the well control operation. The depth required is a minimum of 3m around the well. The ramps will also need to be dug to this depth. These ramps are approachways that the hydraulic Athey Wagon will use to access the well. The hydraulic Athey Wagon and bulldozer must be level during the “backing approach” to avoid adjusting the BOP stack and boom while the capping crew is attempting to install the new wellhead.

Step 8: Install New Wellhead

The wellhead installation as previously described, will involve setting the wellhead and slip assembly into place. Using casing clamps, the wellhead will be jacked into its final place using the hydraulic force from the jacking system. Once the wellhead is in place, the seal assembly will be energized manually by tightening the screws on top of the combination slips and seals. Once the slips are energized with an effective seal, the casing stub above the wellhead can then be prepared for capping operations.

Step 9: Prepare BOP Stack

With the flow tube and skirt installed on the stack, the BOP stack will be wrapped with heat-resistant material. This preparation work is accomplished off of the critical path in order to minimize the time needed to control the well.

Step 10: Prepare for Diverting Operations

A great deal of work may be needed for post-capping diverting operations. It is important that the preparatory work for diverting be accomplished prior to actually capping the well. Diverting pits are usually large-to-handle, high-volume flows and must be dug prior to capping. The location and size of these pits are dependent on the size and type of event and cannot be determined accurately prior to an incident. This minimizes the time to hook up the diverter lines after capping operations are concluded. The well will be left flowing (and burning) through the capping stack while the diverter lines are secured to the capping BOP stack. In order to avoid damage to the rubber goods and seals in the BOP stack, rigging the diverter lines should be done as soon as practicable.

Step 11: Prepare Casing Stub

After installing the emergency wellhead, the casing stub above the casing head flange will need to be prepared for capping. The stub will be cut off with a lathe-type cutter to a specified height so that the capping BOP stack will swallow the casing stub properly.

Step 12: Prepare Hydraulic Athey Wagon

The hydraulic Athey Wagon will be prepared for capping operations. This will involve hooking up the BOP stack and load-testing the assembly. The blowout bus and the hydraulic lines, power pack, and control panel will be fixed to the blade of the bulldozer. A “dummy” run may be done prior to actual capping operations in order to finalize any dirt work that is required and to make a final check on spacing.

Step 13: Capping the Well

Pre-capping operations will involve stringing the snub lines and spotting the hydraulic Athey Wagon with the BOP stack in the ramp. A final check on the diverter line hookup spacing is also required. The bulldozer will back the hydraulic Athey Wagon and BOP stack over the flow. The stack will be lowered and set-down bolted to the wellhead.

Step 14: Divert the Well

As previously mentioned, the well should not be shut-in until the downhole condition of the well can be determined. If the well is shut-in and casing damage exists, broaching could occur. Broaching is very serious, and often the only well control method that remains is an expensive relief well operation. This highlights the need to divert the well.

The final installation of the divert lines will need to be done prior to actually closing the blind rams. Once the well is diverted, it will still be allowed to flow uncontrolled through the diverter system.

Step 15: Kill Operations

The kill operations will likely involve the use of a snubbing unit. It will be necessary to fish the tubing from the well and conduct diagnostic operations to determine the downhole condition so that the appropriate kill method can be chosen.

Should an influx occur, the formation types in this area do not tend to bridge over of their own accord. The present calculated release from the wellbore would be 25,957 barrels of oil on day one with a drawdown to 13,531.36 barrels by day 33 and 30,841 MSCF (thousand standard cubic feet) of gas on day one with a drawdown to 16,918.34 MSCF of gas per day by day 33. A capping intervention is expected to take 33 days to bring the well under control.

Initial Flow Rate per Day	**Duration of Blowout**	**Total Volumes Released based on Nodal Analysis Tool**
Oil – 25,957 bbl	33 Days	466,535 bbl
Gas – 19,848 CF	33 Days	558,305 mcf

CF = cubic feet Mcf = thousand cubic feet

Eni's primary well control method would be the capping system; however, in the event a relief well is needed, the Nordic Rig #4 will be utilized. The rig will be on standby at Oliktok Point. This rig is capable of drilling the relief well as planned with no constraints or modifications required from its current design. The general specifications for the relief rig are shown in Table A-2. A dynamic killing study performed by Wild Well Control has confirmed that the feasibility of the relief well is within the range of capabilities of the Nordic rig, assuming that the relief well would be drilled from SID or from an adjacent ice pad. The relief well is not considered an extended reach drilling operation because the well can be intersected at a location in the intermediate casing section and dynamically killed from this point. The exploration well directional plans develop the majority of their vertical depth within the first part of the well path. The estimated time to drill the relief wells is approximately 40 days, including the mobilization. Mobilization is simplified due to unique design features, allowing it to be broken down into smaller modules for transportation via ice road. The Nordic rig preparation would be started during the capping system mobilization and intervention to reduce the time required for a possible relief well and prepare for the contingency plan.

Nordic rig #4 would be mobilized on the ice road to the primary location on an ice pad adjacent to the Spy Island Drillsite (SID). A secondary location on SID could also be used pending evaluation of the size and type of incident requiring the relief well. The relief rig will not be mobilized during the shoulder season as no drilling will take place during this period.

- With the planned spud of the first well in December, the unknown hydrocarbon interval will not be reached until the ice road and pads have been established in early February.
- Should the main bore be flow tested, the well would be completed with a xmas tree installed by the end of February.
- Should the sidetrack be drilled from the first well, it would be completed and secured with a xmas tree installed by the end of March, according to the proposed timeline (being the main bore flow test alternative to the sidetrack).
- The same operative sequence of the first well is planned for the second well.

Table A-2 – General Specifications for the Relief Rig

Item	Description
Moving System	Self-powered, self-moving when assembled
Pulling Capacity	350 ton
Main Generators	3 - 3512C Cat, 3150 kW continuous power
Emergency Generator	1 - cold-start C-9 275Kw Cat
Mast	Triple mast, 800K lb pull, 400K lb setback
API	built to API 4F , -45°F
Drawworks	1800 HP AC , 90K lb single line capacity
Top Drive	800 HP Tesco 350T, cont torque 37.5L ft-lb @ 112 RPM
BOP Stack	13-5/8" 5000 psi with double ram and annular
Mud Pits	750 bbl system
Solids Control	2- Mongoose shale shakers
Pumps	2 - 1000 HP Rigmaster six-plex pumps (1500 HP motors)
Winterization	4.2MM BTU heater, 2 - 100HP boilers

(h) Contact information

Name	Title	Phone Number	Email
Brian Mamelli	Regulatory Affairs & Technical Program Manager	(713) 393-6324	brain.mamelli@enipetroleum.com
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Figure A-1. WASTE ESTIMATED TO BE GENERATED, TREATED AND/OR DOWNHOLE DISPOSED OR DISCHARGED TO THE BEAUFORT SEA

Please specify if the amount reported is a total or per well amount and be sure to include appropriate units.

Projected generated waste			Projected ocean discharges		Projected Downhole Disposal
Type of Waste	**Composition**	**Projected Amount**	**Discharge rate**	**Discharge Method**	**Answer yes or no**
EXAMPLE: Cuttings wetted with synthetic based fluid	*Cuttings generated while using synthetic based drilling fluid.*	*X bbl/well*	*X bbl/day/well*	*discharge overboard*	
Brine			N/A	N/A	No
Water-based drilling fluid			N/A	N/A	Yes
Cuttings wetted with water-based fluid			N/A	N/A	Yes
Oil-based drilling fluid			N/A	N/A	Yes
Cuttings wetted with oil-based fluid			N/A	N/A	Yes
synthetic-based drilling fluid			N/A	N/A	Yes
Cuttings wetted with synthetic-based fluid			N/A	N/A	Yes
EXAMPLE: Sanitary waste water	*Sanitary waste from living quarters*	*X bbl/well*	*X bbl/hr/well*	*chlorinate and discharge overboard*	
Domestic wastewater treatment plant effluent	*160 Bbls / Day*		N/A	N/A	Yes
Drill NN-01 (80 days)	Domestic wastewater treatment plant effluent	12,800	N/A	N/A	Yes
Drill NN-01 ST-01 (20 days)	Domestic wastewater treatment plant effluent	3,200	N/A	N/A	Yes
Drill NN-02 (90 days)	Domestic wastewater treatment plant effluent	14,400	N/A	N/A	Yes
Drill NN-02 ST-01 (26 days)	Domestic wastewater treatment plant effluent	4,160	N/A	N/A	Yes
Sanitary wastewater	N/A	N/A	N/A	N/A	N/A
Deck Drainage			N/A	N/A	N/A
Well treatment fluids			N/A	N/A	Yes
Well completion fluids			N/A	N/A	Yes
Workover fluids			N/A	N/A	Yes
Reverse osmosis unit concentrate	*1,600 Bbls / Day*		N/A	N/A	Yes
Drill NN-01 (80 days)	Reverse osmosis unit concentrate	128,000	N/A	N/A	Yes
Drill NN-01 ST-01 (20 days)	Reverse osmosis unit concentrate	32,000	N/A	N/A	Yes
Drill NN-02 (90 days)	Reverse osmosis unit concentrate	144,000	N/A	N/A	Yes
Drill NN-02 ST-01 (26 days)	Reverse osmosis unit concentrate	41,600	N/A	N/A	Yes
Blowout preventer fluid			N/A	N/A	No
Boiler Blowdown			N/A	N/A	Yes
Pit rinse			N/A	N/A	Yes
Rig wash			N/A	N/A	Yes
Vac truck/supersucker rinse water			N/A	N/A	Yes
Hydraulic and lube oils from rig and support equipment maintenance			N/A	N/A	No
Glycol from rig and support equipment maintenance			N/A	N/A	Yes
Will you produce hydrocarbons? If yes, fill in the produced water.					
Produced water			N/A	N/A	
Please enter individual or general to indicate which type of NPDES permit you will be covered by.			General - APDES		
NOTE: If you do not have a type of waste for the activity being applied for, enter N/A for all columns in a row.			NOTE: No discharges to the Beaufort Sea are anticipated		

CHEMICAL PRODUCTS {30 CFR 550.213(c)} Please provide a brief description, quantities to be stored, storage method, and rates of usage.				
Type of Chemical	**Description**	**Quantity Used**	**Storage Method**	**Rates of Usage**
Water Base Mud Products				
pH modifier	Sods Ash (sodium carbonate)	2,428 Lbs	Sack	202 Lbs / day
Viscosifier	M-I Gel (Silica, crystalline (Cristobalite, quartz, Tridymite))	242,800 Lbs	Bulk	20,233 Lbs / day
Filtration Control	Polypac Supreme UL (Carboxymethylcellulose (CMC) sodium salt)	7,284 Lbs	Sack	607 Lbs / day
Viscosifier (Rheological Modifier)	Flowzan (Xanthan gum)	4,856 Lbs	Sack	405 Lbs / day
Mineral Oil Base Mud Products				
Mineral Oil	LVT 200 Base Oil (Petroleum Distillate, hydrotreated light)	19,583 Bbls	Bulk	93 Bbls / day
Viscosifier	VG Supreme / TruVis (Bentonite / Organophillic Clay)	58,456 Lbs	Sack	277 Lbs / day
Lime	Lime (Lime)	146,140 Lbs	Sack	693 Lbs / day
Emulsifier	Actimul RD (Modified tall oil soap)	233,824 Lbs	Sack	1,108 Lbs / day
Wetting Agent	VersaWet (Tall oil fatty acid, Rosin, Tall Oil Pitch)	29,228 Lbs	Sack	139 Lbs / day
Viscosifier (Rheological Modifier)	HRP (Unknown (liquid in 5 gal cans -or - 55 gal drums))	1,735 gal	can drum	8 gal / day
Brine Phase	CaCl2 Brine (Water Wetting Phase)	7,892 Bbls	Bulk	37 Bbls / day
Graded Limestone	SAFECARB 20 (Seepage Loss)	1,315,260 Lbs	Bulk	6,234 Lbs / day
Graded Limestone	SAFECARB40 (Weighting Agent)	1,315,260 Lbs	Bulk	6,234 Lbs / day
Barium Sulphate	Barite (Weighting Agent)	2,075,188 Lbs	Bulk	9,835 Lbs / day
Cement				
Cement Blend 1	Arcticset LIGHT III (Dry Blend Cement- (10.7 ppg / Yield 2.77 cf/sx / Bulk Factor 2.20 cf/cf))	6,758 cubic Ft	Bulk	31 cubic Ft / Day
Cement Blend 2	DeepCRETE (Dry Blend Cement- (12.5 ppg / Yield 1.56 cf/sx / Bulk Factor 1.80 cf/cf))	1,608 cubic Ft	Bulk	7 cubic Ft / Day
Cement Blend 3	15.8ppg UniSLURRY (Dry Blend Cement- (15.8 ppg / Yield 1.16 cf/sx / Bulk Factor 1.00 cf/cf))	24,443 cubic Ft	Bulk	113 cubic Ft / Day

Figure A-2 – Proposed Chemical Products

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NO CHANGES NECESSARY
FOR THIS SECTION

NO CHANGES NECESSARY
FOR THIS SECTION

NO CHANGES NECESSARY
FOR THIS SECTION

NO CHANGES NECESSARY
FOR THIS SECTION

NO CHANGES NECESSARY
FOR THIS SECTION

SECTION G OIL SPILL INFORMATION

In accordance with 30 CFR 254.50, owners or operators of facilities located in State waters seaward of the coastline must submit a spill response plan to BSEE for approval. The owner or operator may choose one of three methods to comply with this requirement: 30 CFR 254.51, 254.52, or 254.53. Eni has selected 30 CFR 254.53, "Submitting a Response Plan Developed Under State Requirements." A cross-reference for additional plan requirements is presented as Table G-1 as an attachment under this section.

Eni will ensure that renewals are submitted according to BSEE renewal timeframe as dictated in 18 AAC 75.460. BSEE has currently indicated that a renewal frequency coinciding with the ODPCP renewal (every five years) is required.

(a) Oil spill response planning

Eni has in place an ODPCP approved by the State of Alaska (ADEC Plan #: 16-CP-5116).

Despite the very low likelihood of a large oil spill event, Eni has designed a response program based on a regional capability of responding to a range of spill volumes, from small operational spills up to and including a worst-case discharge (WCD) from an exploration well blowout. Eni's program is developed to fully satisfy federal and State oil spill planning requirements. The federally-approved OSRP and State-approved ODPCP present specific information on the response program that includes a description of personnel and equipment mobilization, the Incident Management Team (IMT) organization, and the strategies and tactics used to implement effective and sustained spill containment and recovery operations.

Eni is committed to conducting safe and environmentally responsible operations in Nikaitchuq. To achieve this goal, oil spill prevention is a priority in all operations. Prevention practices include personnel training programs and strict adherence to procedures and management practices. All project personnel, including employees and contractors, involved in oil spill contingency response would receive discharge prevention and response training as described in the OSRP and ODPCP. Training drills also would be conducted periodically to familiarize personnel with onsite equipment, proper deployment techniques, and maintenance procedures.

(b) Location of primary oil spill equipment base and staging area

Alaska Clean Seas (ACS) serves as Eni's primary response action organization for spill response. The ODPCP incorporates by reference, wherever applicable, the ACS Technical Manual, which consists of Volume 1, Tactics Descriptions, and Volume 2, Map Atlas. Volume 1 describes the tactics that can be used in responding to a variety of spill situations. Volume 2 provides maps and a narrative description of resources at risk and key response considerations.

The ODPCP relies, in part, on information provided in the ACS Technical Manual. This Plan references specific tactics descriptions, maps, and incident management information contained in the ACS Technical Manual.

Spill response equipment is available from various sources. A certain amount of equipment is stored on site. Heavy equipment used on site for operational purposes could be used for spill response. ACS maintains an inventory of spill response equipment and has contracts for additional equipment. Equipment of other North Slope operators could be made available to Eni through their Mutual Aid agreements. See Section 3.6 of the ODPCP for more information on available equipment.

Transport options for mobilizing equipment and personnel are summarized in Table 1-5 of the ODPCP. These options vary with the season and weather conditions, and include marine vessels, helicopters, fixed-wing aircraft, road vehicles, hovercraft, and Rolligons. ACS Technical Manual, Volume 1, Tactics L-1, L-3, L-4, and L-6, provide detailed information on transportation and are incorporated here by reference.

Onshore areas of Nikaitchuq are on the North Slope gravel road infrastructure, allowing transport via highway vehicles. During the open water season, SID is accessible via barge, crew boat, and other boats. During most winters, Eni may build an ice road from OPP to SID, allowing access by highway vehicles. When an ice road is constructed, it is usually available for use between early to mid-February to mid to late May. Start and end dates vary from year to year, depending on weather and other factors. During winters when an ice road is not constructed, Eni will give close consideration to accessibility to spill response equipment. Spill response equipment that cannot be transported to SID via available means (e.g., hovercraft or helicopter) will be maintained on site until adequate transportation means are available.

During the times of year when SID is not accessible via either marine vessels or highway vehicles, Eni plans to continue to use a hovercraft to transport personnel, supplies, and equipment to SID.

Transportation times would be unaffected by freeze-up and breakup conditions for modes of transport other than vessels. ACS bay boats can be used to transit in ice up to 4 inches thick during freeze-up, but with some limitations. Other vessels would not be used during this time. During breakup, ACS vessel response is limited to airboats. Other transport options then could be hovercraft and helicopter.

The ice road to SID would be generally unsuitable for surface travel after mid to late May due to melting of the surface of the sea ice and/or potential overflooding from the Colville River breakup. During freeze-up, ice is either unable to support surface traffic or is unstable because of ice movement. Normally, ice will not be sufficiently thick or stable for surface transportation until after mid to late December.

Transportation to SID during the spring breakup (May and June) period would be generally limited to helicopters, hovercraft, airboats, and possibly small-tracked/wheeled all-terrain vehicles (ATVs). ATVs would be less likely to be used during freeze-up due to the possible occurrence of thin ice or patches of open water due to relative instability of ice.

North Slope-based helicopters typically have limited capabilities but could be available relatively rapidly from various Alaska locations in the event of emergencies. If needed, larger, heavy-lift helicopters would likely be mobilized from the Lower 48 states and could require up to a week to arrive on site. General information on availability and capabilities of various Alaska-based helicopters are in the ACS Technical Manual, Volume 1, Tactic L-4.

Washout of the Kuparuk River bridge, which may occur for a few days between mid-May and mid-June, could impact spill response times. Deployment times vary, depending on availability, location, and weather conditions. When the river precludes bridge traffic, Nikaitchuq may rely more on Mutual Aid resources from Kuparuk, and some equipment could be transported to the area via aircraft landing at the Kuparuk airstrip.

Marine vessel access is available from approximately July through September to mid-October. ACS has contracts with the major North Slope marine contractors.

Name(s) of Spill Removal Organization(s) for Both Equipment and Personnel

If onsite resources are insufficient for spill response, the IMT will be activated. The Incident Commander will make an initial assessment and, if required, will initiate the call for mobilization/deployment of additional manpower and equipment. Onsite personnel, including the Nikaitchuq-based ACS Technicians, will continue to perform the immediate response activities, to the extent they can do so safely, until additional resources arrive. They will determine safety procedures, notify government agencies and Eni personnel, and proceed with source-control measures, as appropriate. See the response scenarios in Section 1.6 of the ODPCP for descriptions of such actions for various types of spills.

The primary response action contractors for Nikaitchuq are ACS and Witt O'Brien's. Contractual agreements with these organizations are provided in Appendix A. Additional resources can be accessed through contracts maintained by ACS and other organizations. The ACS Technical Manual, Volume 1, Tactics Descriptions, incorporated here by reference, provides information on the following:

- Mutual Aid agreements between North Slope operators (Tactic L-8);
- ACS master service agreements for equipment and services (Tactic L-9); and
- Accessing non-obligated resources from sources such as other oil spill cooperatives, the State, the federal government, and other contingency plan holders in Alaska (Tactic L-10).

The Oil Spill Removal Organizations (OSROs) would lead the spill response efforts in the offshore, nearshore, and shoreline environments. The OSROs' response personnel and oil spill response (OSR) equipment would be maintained on standby while critical exploration drilling operations into liquid hydrocarbon-bearing zones are underway and provide offshore, nearshore, and shoreline response operations in the unlikely event of an actual oil spill incident.

Table G-1 – Cross-Reference to BSEE Regulations [30 CFR 254.53]

Citation (30 CFR)	Section Title	Location (Section of State ODPCP or BSEE OSRP)
254.53	Submit a Response Plan Developed Under State Requirements.	BSEE has been provided a copy of Eni's State-approved ODPCP, as well as the periodic modifications.
(a) (1)	Be consistent with the requirements of the National Contingency Plan and appropriate Area Contingency Plan(s).	BSEE OSRP and Statement in beginning pages of ODPCP
(a) (2)	Identify a qualified individual and require immediate communication between that person and appropriate Federal officials and response personnel if there is a spill.	BSEE OSRP, Section 7 ODPCP Sections 1.1, 1.2.4 and 3.3; Table 1-3
(a) (3)	Identify any private personnel and equipment necessary to remove, to the maximum extent practicable, a worst-case discharge as defined in 254.47. The plan must provide proof of contractual services or other evidence of a contractual agreement with any OSROs or spill management team members who are not employees of the owner or operator.	Personnel: ODPCP Section 3.8 Equipment: ODPCP Section 3.6 and Appendix A Alaska Clean Seas Statement of Contractual Terms: ODPCP Section 3.8 and Appendix A
(a) (4)	Describe the training, equipment, testing, periodic unannounced drills and response actions of personnel at the facility to ensure both the safety of the facility and the mitigation or prevention of a discharge or the substantial threat of a discharge.	ODPCP Section 3.9 NPREP Reference: BSEE OSRP, Section 8
(a) (5)	Describe the procedures to periodically update and resubmit the Plan for approval of each significant change.	BSEE OSRP, Section 5 ODPCP
(b) (1)	A list of facilities and leases the Plan covers and a map showing their location.	ODPCP Sections 1.8 and 3.1.1
(b) (2)	A list of the types of oils handled, stored, or transported at the facility.	ODPCP Section 3.1 and Appendix B
(b) (3)	Name and address of the State agency to which the Plan was submitted.	ODPCP Forward Material – ADEC approval letter
(b) (4)	The date the Plan was submitted to the State.	ODPCP Forward Material – ADEC approval letter
(b) (5)	If the Plan received formal approval, the name of the approving organization, the date of approval and the copy of the State agency's approval letter, if issued.	ODPCP Forward Material – ADEC approval letter
(b) (6)	Identification of any regulation or standards used in preparing the Plan.	ODPCP Introduction
254.54	Description of steps taken to prevent spills of oil or mitigate a substantial threat of such a discharge, including applicable industry standards.	ODPCP Section 2

(c) Calculated volume of worst-case discharge scenario

Comparison of the WCD for the first 24hrs of flow for the two locations. In addition the first 24hrs of a generic (not location specific) vertical completion is added for reference.

	NN02 (1,000ft Hz.) STB	*NN01 (600ft Hz.) STB*	*Vertical STB*
First 24hrs	25,957	19,920	3,634

(d) Description of Worst Case Discharge Scenario

This section summarizes the main finds of the WCD estimation for Eni's Nikaitchuq North exploration well NN01 and for the Nikaitchuq North appraisal well NN02.

The Exploration Plan consists of two potential phases:

- Mainbore (slant section) to reservoir target (with option to flow test)

  and/or

- Horizontal Sidetrack to execute a flow test

Both wells will intersect the main target reservoir up to two times in cascaded contingent sidetrack operations with increasing complexity and appraisal goals. After the main bore is drilled, in case of oil discovery and based on the reservoir properties, the possibility to perform a flow test in the initial wellbore or, alternatively, in a lateral sidetrack, is foreseen.

For the appraisal phases for each well, the horizontal wellbore is deemed of the greatest exposure in terms of a WCD scenario. For assurance this has been confirmed by Nodal Analysis which has been used to benchmark the two wellbore geometries against each other.

The actual WCD calculation is discussed in a successive section (Reservoir Simulation Description – appraisal well NN 02. In this, a reservoir simulation tool was used as the main tool in estimating the WCD as it was deemed relevant to capture the transients associated to a horizontal wellbore. Numerical simulations showed that the rates of the appraisal well NN02 are higher than the exploration well NN01. Thus, the horizontal completion of the appraisal well NN02 is deemed the largest exposure in terms of WCD and is subject to a more detailed discussion in the simulation section for this WCD.

In terms of potential analogs, Nuiqsut and Alpine have been considered representatives of two extremes. The latter, with better reservoir quality and lighter oil, has been chosen for the WCD case. In particular, the Alpine analog case from Eni's internal geologic model was selected as input to simulation. This model captures known features derived from seismic data, such as mapped horizons, interpreted faults, and seismic trended properties.

Summary of Results

Comparison of the WCD for the first 24 hours of flow for NN01 and NN02. In addition, the first 24 hours of a generic (not location-specific) vertical completion is added as guideline for a near vertical completion exposure

	NN02 (1,000ft Hz.) STB	NN01 (600ft Hz.) STB	Vertical STB
First 24 hrs	25,957	19,920	3,634

The table below summarizes potential volume discharge at the end of the first day, day 30, and day 33 when well control would be regained for the appraisal well NN02; the selected WCD scenario:

Time days	Oil Cumulative STB	Gas Cumulative MSCF
1	25,957	30,841
30	414,155	517,188
33	446,535	558,305
40	519,445	650,324

NO CHANGES NECESSARY
FOR THIS SECTION

NO CHANGES NECESSARY
FOR THIS SECTION

SECTION J LEASE STIPULATIONS INFORMATION

In accordance with 30 CFR 550.222, Eni adheres to lease stipulations for Unit leases OCS-Y-1757 and OCS-Y-1754.

(a) Stipulation No. 1 Protection of Biological Resources

If biological populations or habitats that may require additional protection are identified in the lease area by the Regional Supervisor, Field Operations (RS/FO), the RS/FO may require the lessee to conduct biological surveys to determine the extent and composition of such biological populations or habitats. The RS/FO shall give written notification to the lessee of the RS/FO's decision to require such surveys.

Based on any surveys the RS/FO may require of the lessee or on other information available to the RS/FO on special biological resources, the RS/FO may require the lessee to:

1) Relocate the site of operations;
2) Establish, to the satisfaction of the RS/FO on the basis of a site-specific survey, either that such operations will not have a significant adverse effect on the resource identified, or that a special biological resource does not exist;
3) Operate during those periods of time, as established by the RS/FO, that do not adversely affect the biological resources; and/or
4) Modify operations to ensure significant biological populations or habitats deserving protection are not adversely affected.

If any area of biological significance should be discovered during the conduct of any operations on the lease, the lessee shall immediately report such findings to the RS/FO and make every reasonable effort to preserve and protect the biological resource from damage until the RS/FO has given the lessee direction with respect to its protection.

The lessee shall submit all data obtained in the course of biological surveys to the RS/FO with the locational information for drilling or activity. The lessee may take no action that might affect the biological populations or habitats surveyed until the RS/FO provides written directions to the lessee with regard to permissible actions.

Eni's Proposed Actions:

The Nikaitchuq North Exploration Drilling Project has been designed to minimize impacts to biological populations and habitats by using existing infrastructure, limit operational windows, following other measures designed to mitigate impacts, and conduct activities in a manner similar to Eni's current practices.

Eni will use existing facilities to the extent practicable, including drilling from SID. In general, no improvements will be required for on-island facilities on SID. The drill rig proposed to be used for the Nikaitchuq North Exploration Drilling Project is Doyon Rig No. 15, which is already located at SID. The existing OPP and NOC facilities will provide logistic support for the Nikaitchuq North Project.

Eni will conduct drilling operations during winter frozen ice conditions and summer open water conditions as shown in the schedule included in this EP. This will result in mitigation of the following impacts:

- Drilling will be conducted within the barrier islands, where fewer species of marine mammals are present (e.g., bowhead whales) compared to outside the barrier islands due to shallow water depths, reducing the risk of impacts to these species.
- Consistent with ongoing operations, Eni is proposing to conduct summer drilling activities Between July 15 and September 15, 2018 during open water conditions as authorized by ADEC.
- Eni will limit summer (open water) drilling to wells without a lateral. By limiting the drilling activities to wells without a lateral, Eni is reducing the risk of environmental impacts to marine mammals, birds, and other receptors. The WCD for wells without a lateral is 3,634 STB, as detailed in ADEC approved ODPCP, Section 5.
- Eni will drill wells with a lateral during winter (frozen ice) conditions. A detailed winter exploration WCD response scenario is provided in Section 1.6.13.7 of the approved ODPCP and the approved BSEE OSRP.

Mitigation measures that Eni has in place to mitigate impacts to wildlife are provided in Section K of this EP and Section 5 of the EIA. These measures include facility infrastructure design, food handling practices, personnel training, and monitoring and deterrence activities outlined in the Eni Polar Bear Interaction Plan.

Eni’s proposed Nikaitchuq North activities are very similar to those that Eni has previously carried out as part of the Nikaitchuq Development Project. A comparison between activities for the Nikaitchuq North Project and activities for Nikaitchuq Development Project is presented in Section 2.4 of the Nikaitchuq North Project EIA (Tables 2-6 and 2-7).

(b) Stipulation No. 2 Orientation Program

The lessee shall include in any exploration or development and production plans submitted under 30 CFR 250.203 and 250.204 a proposed orientation program for all personnel involved in exploration or development and production activities (including personnel of the lessee’s agents, contractors, and subcontractors) for review and approval by the RS/FO. The program shall be designed in sufficient detail to inform individuals working on the project of specific types of environmental, social, and cultural concerns that relate to the sale and adjacent areas. The program shall 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. This guidance will include the production and distribution of information cards on endangered and/or threatened species in the sale area. The program shall be designed to increase the sensitivity and understanding of personnel to community values, customs, and lifestyles in areas in which such personnel will be operating. The orientation program shall also include information concerning avoidance of conflicts with subsistence, commercial fishing activities, and pertinent mitigation.

The program shall be attended at least once a year by all personnel involved in onsite exploration or development and production activities (including personnel of the lessee’s agents, contractors, and subcontractors) and all supervisory and managerial personnel involved in lease activities of the lessee and its agents, contractors, and subcontractors.

The lessee shall maintain a record of all personnel who attend the program onsite for so long as the site is active, not to exceed five years. This record shall include the name and date(s) of attendance of each attendee.

Eni's Proposed Actions:

Training that Eni currently provides meets the requirements of Stipulation 5. Training includes the following:

- Eni is a member of the North Slope Training Cooperative (NSTC) and requires all unescorted employees, contractors, and subcontractors to maintain a current NSTC certification. This certification is obtained by completing an eight-hour course that includes information on North Slope wildlife, the dangers associated with some species, and the importance of not disturbing animals or their habitat. Personnel are provided with copies of the Alaska Safety Handbook and the North Slope Field Environmental Handbook at NSTC training.
- Eni provides annual refresher training to all onsite employees and contractors on spill prevention and response, avoiding conflicts with subsistence users and wildlife. Information is provided on birds, fish, and marine mammals in the area, including threatened and endangered species. Workers are directed to give wildlife the right-of-way, not approach or harass animals, not disturb habitat, and report any wildlife issues to Security. During times when threatened and endangered species are likely to be in the area, posters with information on these species are posted on the Health, Safety, and Environment (HSE) bulletin boards and in various other high-traffic areas.
- Eni provides annual training to all onsite employees and contractors on the Polar Bear Interaction Plan, which includes information on polar bears, their habitat and behavior, safety issues, bear monitoring program, reporting requirements, and polar bear avoidance and encounter procedures.
- Records of training are maintained in a learning management system database.

As part of the Nikaitchuq North Project, Eni will develop and distribute information cards on endangered and/or threatened species in the project area. Posters with this information may also be developed and posted in common areas.

Current Eni operations are performed on established pads, roads, and pipeline corridors, all of which were cleared for archeological sites prior to construction. The proposed Nikaitchuq North Project would use the same facilities currently used. Off-pad operations are generally limited to spill response training and pipeline inspections and maintenance and are performed in areas near the pads, i.e., in areas with no identified archaeological sites. In the event of an off-pad spill, steps would be taken to protect and avoid archaeological sites.

(c) Stipulation No. 3 Transportation of Hydrocarbons

Pipelines will be required **if**:

- Pipeline rights-of-way can be determined and obtained;
- Laying such pipelines is technologically feasible and environmentally preferable; and
- In the opinion of the lessor, pipelines can be laid without net social loss, taking into account any incremental costs of pipelines over alternative methods of transportation and any incremental benefits in the form of increased environmental protection or reduced multiple-use conflicts. The lessor specifically reserves the right to require that any pipeline used for transporting production to shore be placed in certain designated management areas. In selecting the means of transportation, consideration will be given to recommendations of any advisory groups and federal, state, and local governments and industry.

Following the development of sufficient pipeline capacity, no crude oil production will be transported by surface vessel from offshore production sites, except in the case of an emergency.

Determinations as to emergency conditions and appropriate responses to these conditions will be made by the RS/FO.

Eni's Proposed Actions:

The Nikaitchuq North Project is an exploration project and does propose any new pipelines. Stipulation 3 is not applicable.

(d) Stipulation No. 4 Industry Site-Specific Bowhead Whale-Monitoring Program

Lessees proposing to conduct exploratory drilling operations, including seismic surveys, during the bowhead whale migration will be required to conduct a site-specific monitoring program approved by the RS/FO; unless, based on the size, timing, duration, and scope of the proposed operations, the RS/FO, in consultation with the NSB and the Alaska Eskimo Whaling Commission (AEWC), determine that a monitoring program is not necessary.

The RS/FO will provide the NSB, AEWC, and the State of Alaska a minimum of 30, but no longer than 60, calendar days to review and comment on a proposed monitoring program prior to approval. The monitoring program must be approved each year before exploratory drilling operations commence.

The monitoring program will be designed to assess when bowhead whales are present in the vicinity of lease operations and the extent of behavioral effects on bowhead whales due to these operations. In designing the program, lessees must consider the potential scope and extent of effects that the type of operation could have on bowhead whales. Experiences relayed by subsistence hunters indicate that, depending on the type of operations, some whales demonstrate avoidance behavior at distances of up to 35 miles. The program must also provide for the following:

- Record and report information on sighting of other marine mammals and the extent of behavioral effects due to operations;
- Invite an AEWC or NSB representative to participate in the monitoring program as an observer;
- Coordinate the monitoring logistics beforehand with the Bowhead Whale Aerial Survey Project (BWASP);
- Submit daily monitoring results to the BWASP;
- Submit a draft report on the results of the monitoring program to the RS/FO within 60 days following the completion of the operation (the RS/FO will distribute this draft report to the AEWC, NSB, State of Alaska, and National Oceanic and Atmospheric Administration Fisheries [NOAA]); and
- Submit a final report on the results of the monitoring program to the RS/FO (the final report will include a discussion of the results of the peer review of the draft report and the RS/FO will distribute this report to the AEWC, NSB, State of Alaska, and NOAA Fisheries).

Lessees will be required to fund an independent peer review of a proposed monitoring plan and a draft report on the results of the monitoring program. This peer review will consist of independent reviewers who have knowledge and experience in statistics, monitoring marine mammal behavior, the type and extent of the proposed operations, and an awareness of traditional knowledge. The peer reviewers will be selected by the RS/FO from experts recommended by NSB, AEWC, industry, NOAA Fisheries, and BOEM. The results of these peer reviews will be provided to the RS/FO for consideration in final approval of the monitoring program and the final report, with copies to the NSB, AEWC, and State of Alaska.

In the event the lessee seeks an LOA or Incidental Harassment Authorization (IHA) for incidental take from the NOAA Fisheries, the monitoring program and review process required under the LOA or IHA may satisfy the requirements of this stipulation.

Lessees must advise the RS/FO when seeking an LOA or IHA in lieu of meeting the requirements of this stipulation, and provide the RS/FO with copies of all pertinent submittals and resulting correspondence. The RS/FO will coordinate with NOAA Fisheries and advise the lessee if the LOA or IHA will meet these requirements.

This stipulation applies to the blocks for the time periods discussed below and will remain in effect until termination or modification by the Department of the Interior, after consultation with NOAA Fisheries and NSB.

Eni's Proposed Actions:

Lease Stipulation No. 4 requires lessees proposing to conduct exploratory drilling operations during the bowhead whale migration conduct a site-specific monitoring program, unless, based on the size, timing, duration, and scope of the proposed operations, the RS/FO, in consultation with others determines that a monitoring program is not necessary. Eni's proposed exploration wells in Harrison Bay Block 6423 (Lease OCS-Y-1753), Block 6374 (Lease OCS-Y-1754), and Block 6373 (Lease OCSY-1757) are located within the Central Fall Migration Area of Lease Stipulation No. 4. The Central Fall Migration Area listed time period is September 1 through October 31.

Eni has submitted a request to BOEM to make a determination that a bowhead monitoring program is not necessary. This request is based on the size, timing, duration, and scope of the proposed operations.

<u>Timing and Duration</u>

Consistent with ongoing operations, Eni is proposing to conduct summer drilling activities between July 15 and September 15, 2018 during open water conditions as authorized by ADEC. as shown in the schedule included in this EP. Drilling will be conducted during winter frozen ice conditions and summer open water conditions, within the barrier islands, where fewer species of marine mammals are present (e.g., bowhead whales) compared to outside the barrier islands due to shallow water depths, reducing the potential for impact to these species.

<u>Size and Scope of Proposed Operations</u>

Eni proposes drilling up to four exploratory wells from SID in State waters with two main boreholes and two sidetracks going into federal OCS leases. Drilling will take place from SID, which is located within the barrier islands. Use of the existing gravel island will mitigate the following impacts:

- Eliminate the need for a drilling platform (e.g., temporary island) or transportation of installation of a mobile offshore drilling unit (e.g., jackup rig or drillship) that would result in impacts from transportation, discharges associated with installation, noise, and emissions.
- Reduce underwater noise transmission from drilling activities.
- Use existing facilities, avoiding impacts associated with the transportation of materials and construction of additional facilities.
- Use existing WIFs for waste disposal, eliminating discharge of drilling wastes to land or waters of the Alaskan Arctic.

- The SID location is within the barrier islands in 6 to 8 feet of water, outside of the main fall migration path of the bowhead whale, reducing the potential for impacts to bowhead whales.
- Barging and use of hovercraft and crew boats will utilize routes in shallow water inshore of the barrier islands, outside of the main fall migration path of the bowhead whale, reducing the potential for impacts to bowhead whales.

(e) Stipulation No. 5 Conflict Avoidance Mechanisms to Protect Subsistence Whaling and Other Subsistence Harvesting Activities

Exploration and development and production operations shall be conducted in a manner that prevents unreasonable conflicts between the oil and gas industry and subsistence activities, including, but not limited to, bowhead whale subsistence hunting.

Prior to submitting an exploration plan or development and production plan (including associated oil spill contingency plans) to BSEE for activities proposed during the bowhead whale migration period, the lessee shall consult with the directly affected subsistence communities, Barrow, Kaktovik, or Nuiqsut, NSB, and AEWC to discuss potential conflicts with the siting, timing, and methods of proposed operations and safeguards or mitigating measures that could be implemented by the operator to prevent unreasonable conflicts. Through this consultation, the lessee shall make every reasonable effort, including such mechanisms as a conflict avoidance agreement, to assure that exploration, development, and production activities are compatible with whaling and other subsistence hunting activities and will not result in unreasonable interference with subsistence harvests.

A discussion of resolutions reached during this consultation process and plans for continued consultation shall be included in the EP or the development and production plan. In particular, the lessee shall show in the plan how its activities, in combination with other activities in the area, will be scheduled and located to prevent unreasonable conflicts with subsistence activities. Lessees shall also include a discussion of multiple or simultaneous operations, such as ice management and seismic activities, that can be expected to occur during operations in order to more accurately assess the potential for any cumulative effects. Communities, individuals, and other entities involved in consultation shall be identified in the plan. The RS/FO shall send a copy of the EP or development and production plan (including associated oil spill contingency plans) to the directly affected communities and the AEWC at the time they are submitted to allow concurrent review and comment as part of the plan approval process.

In the event no agreement is reached between the parties, the lessee, AEWC, NSB, NOAA Fisheries, or any of the subsistence communities that could be affected directly by the proposed activity, may request that the RS/FO assemble a group consisting of representatives from the subsistence communities, AEWC, NSB, NOAA Fisheries, and the lessee(s) to specifically address the conflict and attempt to resolve the issues before making a final determination on the adequacy of the measures taken to prevent unreasonable conflicts with subsistence harvests. Upon request, the RS/FO will assemble this group if the RS/FO determines such a meeting is warranted and relevant before making a final determination on the adequacy of the measures taken to prevent unreasonable conflicts with subsistence harvests.

The lessee shall notify the RS/FO of all concerns expressed by subsistence hunters during operations and of steps taken to address such concerns. Lease-related use will be restricted when the RS/FO determines it is necessary to prevent unreasonable conflicts with local subsistence hunting activities.

In enforcing this stipulation, the RS/FO will work with other agencies and the public to assure that potential conflicts are identified and efforts are taken to avoid these conflicts.

Subsistence whaling activities occur generally during the following periods:

- ***August to October:*** Kaktovik whalers use the area circumscribed from Anderson Point in Camden Bay to a point 30 kilometers north of Barter Island to Humphrey Point, east of Barter Island. Nuiqsut whalers use an area extending from a line northward of the Nechelik Channel of the Colville River to Flaxman Island, seaward of the Barrier Islands.
- ***September to October:*** Barrow hunters use the area circumscribed by a western boundary extending approximately 15 kilometers west of Barrow, a northern boundary 50 kilometers north of Barrow, then southeastward to a point about 50 kilometers off Cooper Island, with an eastern boundary on the east side of Dease Inlet. Occasional use may extend eastward as far as Cape Halkett.

Eni's Proposed Actions:

Eni has a stakeholder engagement process and consults with local government officials, including the NSB and other local stakeholders such as Native corporations, regarding potential impacts from Eni's operations. Eni has consulted with local stakeholders about the Nikaitchuq North Project, including AEWC, Kuukpik Corporation, and Nuiqsut's Mayor. Eni has also introduced the Nikaitchuq North Project to the NSB Planning Director. Further discussion of Eni's stakeholder engagement is provided in Section 6 of the EIA, including a list of local stakeholder consultation meetings (Table 6-2 of the EIA). Eni plans to continue stakeholder consultation throughout this project.

Eni will communicate with subsistence users in the area to ensure that its activities are compatible with whaling and other subsistence activities. One of the major ways this is done is through a Conflict Avoidance Agreement. A Conflict Avoidance Agreement is an agreement between industry participants (typically operators with active operations in the Beaufort and Chukchi seas, or geophysical companies with operations in the Beaufort or Chukchi seas) and the village Whaling Captains' Associations and AEWC. Conflict Avoidance Agreements outline communication measures, avoidance guidelines, and mitigation measures to be followed by industry participants to avoid impacts to the bowhead whale hunt. Eni has signed Conflict Avoidance Agreements since 2011 and anticipates continuing to participate in the Conflict Avoidance Agreement process for the foreseeable future.

As a participant in the Conflict Avoidance Agreement, Eni will abide by Section 2, A(3), "…Vessels shall be operated at speeds necessary to ensure no physical contact with whales occur and to make any other potential conflicts with bowhead whales or whalers unlikely." All Eni captains will give way and let subsistence hunting vessels pass first as necessary per International Regulations for Preventing Collisions at Sea 1972. Eni's vessel speed will be reduced during inclement weather conditions in order to avoid collisions with any marine mammal and or subsistence hunting vessel. Eni recognizes the importance of monitoring our vessel wake in the presence of other vessels and will be mindful to avoid potential interference with subsistence hunting vessels.

Eni operates in a safe and respectful manner in the waters near Oliktok Point and Spy Island, with all efforts to mitigate potential impacts to subsistence hunting vessels during the months of open water season. Eni's vessels will at all times be under the command of experienced and licensed captains that demonstrate respect and courtesy to all mariners, including subsistence hunters. Eni vessel traffic will use regular routes within a narrow corridor between OPP and SID to reduce the affected area, as shown in Figure 2-3 within the EIA located in Appendix O of this EP.

As is Eni's policy, all vessels are certified by the USCG and technically accepted by Eni prior to performing any activities offshore. Eni is also in alignment with the *Global Corporate Marine Manual*, which is published by Eni headquarters in Milan to ensure that all Eni locations operate with acceptable standards. Operations are supervised by a dedicated marine advisor who will ensure that vessels meet Eni specifications, maintenance programs are acceptable, and crew training is current. The marine advisor will also conduct routine vessel inspections.

Eni utilizes a public boat ramp at Oliktok Point that has a beach that is accessible 24 hours per day. Contracted vessels will not be left unattended in a manner that could block subsistence hunters' access to the boat ramp.

Eni currently conducts year-round activities at its onshore facilities at OPP and SID, which require transportation of goods and personnel between OPP and SID. The activities proposed for the Nikaitchuq North Project are consistent with Eni's existing Nikaitchuq Development activities conducted in previous years.

No multiple or simultaneous operations are proposed for this project. Eni is unaware of other activities proposed for Harrison Bay that may, in combination with Eni's proposed activities, result in unreasonable conflicts with subsistence activities.

(f) Stipulation No. 6 Pre-Booming Requirements for Fuel Transfers

Fuel transfers (excluding gasoline transfers) of 100 barrels or more occurring three weeks prior to or during the bowhead whale migration will require pre-booming of the fuel barge(s). The fuel barge must be surrounded by an oil spill containment boom during the entire transfer operation to help reduce any adverse effects from a fuel spill. This stipulation is applicable to the blocks and migration times listed in the stipulation on industry site-specific bowhead whale monitoring. The lessee's oil spill contingency plans must include procedures for the pre-transfer booming of the fuel barge(s).

Eni's Proposed Actions:

Eni will not be conducting fuel transfers for this exploration project. Stipulation 6 is not applicable.

(g) Stipulation No. 7 Lighting of Lease Structures to Minimize Effects to Spectacled and Steller's Eiders

In accordance with the Biological Opinion for the Beaufort Sea Lease Sale 186 issued by the USFWS on October 22, 2002, and the USFWS's subsequent amendment of the Incidental Take Statement on September 21, 2004, lessees must adhere to lighting requirements for all exploration or delineation structures so as to minimize the likelihood that migrating spectacled or Steller's eiders will strike these structures.

Lessees are required to implement lighting requirements aimed at minimizing the radiation of light outward from exploration/delineation structures to minimize the likelihood that spectacled or Steller's eiders will strike those structures. These requirements establish a coordinated process for a performance-based objective rather than pre-determined prescriptive requirements.

The performance-based objective is to minimize the radiation of light outward from exploration/delineation structures. Measures to be considered include, but need not be limited to, the following:

- Shading and/or light fixture placement to direct light inward and downward to living and work structures while minimizing light radiating upward and outward;
- Types of lights;
- Adjustment of the number and intensity of lights as needed during specific activities;
- Dark paint colors for selected surfaces;
- Low reflecting finishes or coverings for selected surfaces; and

- Facility or equipment configuration.

Lessees are encouraged to consider other technical, operational, and management approaches to reduce outward light radiation that could be applied to their specific facility and operation.

If further information on bird avoidance measures becomes available that suggests modification to this lighting protocol is warranted under the Endangered Species Act (ESA) to implement the reasonable and prudent measures of the Biological Opinion, BOEM will issue further requirements based on guidance from the USFWS. Lessees will be required to adhere to such modifications of this protocol. The BOEM will promptly notify lessees of any changes to lighting required under this stipulation.

These requirements apply to all new and existing OCS oil and gas leases issued between 156° W longitude and 146° W longitude for activities conducted between May 1 and October 31. BOEM encourages operators to consider such measures in areas to the east of 146° W longitude because occasional sightings have been made of eiders that are now listed and because such measures could reduce the potential for collisions of other, non-ESA listed migratory birds that are protected under the Migratory Bird Treaty Act.

Nothing in this protocol is intended to reduce personnel safety or prevent compliance with other regulatory requirements (e.g., U.S. Coast Guard or Occupational Safety and Health Administration) for marking or lighting of equipment and work areas.

Lessees are required to report spectacled and/or Steller's eiders injured or killed through collisions with lease structures to the Fairbanks Fish and Wildlife Field Office, Endangered Species Branch, Fairbanks, Alaska at (907) 456-0499. Following the instructions provided at this number is recommended for the proper handling and disposal of the injured or dead bird.

Lessees must provide BOEM with a written statement of measures that will be or that have been taken to meet the objective of this stipulation. Lessees must also include a plan for recording and reporting bird strikes that occur during approved activities to the BOEM. This information must be included with the EP when it is submitted for regulatory review and approval pursuant to 30 CFR 250.203. Lessees are encouraged to discuss their proposed measures in a pre-submittal meeting with the BOEM and USFWS.

Eni's Proposed Actions:

A Biological Opinion for the Nikaitchuq Development Project was issued by the USFWS in 2006 to mitigate the risk of bird strikes. Eni has developed procedures to meet these requirements and will continue to follow them as part of the Nikaitchuq North Project. Mitigation measures addressed in the Biological Opinion include reducing reflection, reducing and light loss, use of strobe lighting, and monitoring for bird strike evidence. More information on bird strike mitigation efforts can be found in Section 3.10 of the Nikaitchuq North Project EIA.

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SECTION K ENVIRONMENTAL MITIGATION MEASURE INFORMATION

(a) Measures taken to avoid, minimize, and mitigate impacts

The Council on Environmental Quality (40 CR 1508.20), identifies mitigation as:

- Avoiding the impact altogether by not taking a certain action or parts of an action.
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- Compensating for the impact by replacing or providing substitute resources or environments

The following mitigation measures were developed to avoid, minimize, or reduce potential environmental impacts of the Nikaitchuq North Exploration Drilling Program.

Lease Stipulations

Eni acquired the OCS leases from Armstrong Alaska, Inc., which purchased the leases during the Oil and Gas Lease Sale 195. Eni must adhere to the lease stipulations from this lease sale.

Applicant Proposed Mitigation Measures

Substantial mitigation measures have been incorporated into the Nikaitchuq North Exploration Drilling Project.

- Eni will use extended reach drilling (ERD) to allow drilling from the existing SID, resulting in mitigation of the following impacts:
  - Eliminate the need for a drilling platform (e.g., temporary island) or transportation and installation of a mobile offshore drilling unit (e.g., jackup rig or drillship) that would result in impacts from discharges associated with transportation, installation, noise, and emissions.
  - Reduce underwater noise transmission from drilling activities.
  - Use existing facilities, which avoids impacts associated with the transportation of materials and construction of additional facilities.
  - Use existing WIFs for waste disposal, eliminating discharge of drilling wastes to land or waters of the Alaskan Arctic.
  - The SID location is within the barrier islands, outside of the main fall migration path of the bowhead whale, reducing the potential for impacts to bowhead whales.
  - Barging and use of hovercraft and crew boats will utilize routes in relatively shallow water inshore of the barrier islands, outside of the main fall migration path of the bowhead whale, reducing the potential for impacts to bowhead whales.
- Eni will conduct drilling operations during the winter frozen ice conditions and summer open water conditions as shown in the schedule included in this EP. This will result in mitigation of the following impacts:

  - Drilling will be conducted within the barrier islands, where fewer species of marine mammals are present (e.g., bowhead whales) compared to outside the barrier islands due to shallow water depths, reducing the risk of impacts to these species.
  - Consistent with ongoing operations, Eni is proposing to conduct summer drilling activities between July 15 and September 15, 2018 during open water conditions as authorized by ADEC..
  - Eni will limit summer (open water) drilling to wells without a lateral. By limiting the drilling activities to wells without a lateral, Eni is reducing the risk of environmental impacts to marine mammals, birds, and other receptors. The WCD for wells without a lateral is 3,634 STB, as detailed in approved ODPCP, Section 5.
  - Eni will drill lateral wells during winter (frozen ice) conditions. A detailed winter exploration WCD response scenario is provided in Section 1.6.13.7 of the approved ODPCP and the approved BSEE OSRP.
- Eni has existing procedures in place to mitigate impacts to wildlife:
  - Food handling and storage procedures, such as secure storage of food, to avoid attracting wildlife.
  - Waste management procedures including management of putrescible wastes (e.g., use of bear-proof dumpsters) and proper handling and disposal of chemicals and other wastes.
  - Bear cages at all facility exits to allow personnel to monitor for bears prior to exiting facilities.
  - Training personnel on procedures on how to handle human-animal interactions that ensure safety of workers and wildlife.
  - A Polar Bear Interaction Plan that includes monitoring for polar bears, deterrence activities (i.e., hazing), establishing setbacks of one mile from polar bear dens, and reporting of polar bear sightings to USFWS and the Alaska Department of Fish and Game (ADF&G).
  - Facilities at SID were designed and constructed to minimize the potential for bird strikes as per the Biological Opinion for the Nikaitchuq Development Project (see Section 3.10 of the EIA).
- Eni has the following procedures to provide economic and social benefits to NSB residents:
  - Provide contracting opportunities to NSB-based vendors. Local vendors currently under contract with Eni are provided in Section 3.18 of the EIA.
  - Support local (Nuiqsut) community activities. This includes sponsoring the annual Nuiqsut community Christmas party and contributing to Nalukataq (whaling festival) in Utqiaġvik and Nuiqsut.
  - Sponsored a health/job fair in Nuiqsut in 2016.
  - Sponsored an educational event in Nuiqsut. This includes sponsoring the Nuiqsut Trapper School participation in SchoolNet, an Eni world-wide program available in all countries where Eni has offices. Participants compete against students in other countries. As part of this program in 2012, eight sixth graders from the Nuiqsut Trapper School visited Italy, for winning that year's SchoolNet program contest.
- Eni consults and coordinates with subsistence users to mitigate impacts to substance activities:
  - Eni participates in the Conflict Avoidance Agreement negotiation with the AEWC and signs the Conflict Avoidance Agreement to mitigate impacts to subsistence. This is discussed in more detail in Section 6 of the EIA.
  - Eni provides emergency assistance to subsistence hunters in the vicinity of the Eni facilities.

- In 2009, Eni funded an expansion of the public dock at Oliktok Point to assist whalers in their travel between Nuiqsut and Cross Island.
- Eni provides materials as direct support to whaling activities (e.g., diesel fuel, tools, blankets).
- Eni, along with other operators, provides funds to the Nuiqsut Whaling Captains’ Association to offset expenses of whaling activities.

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