Husky Energy REPORT

REPORT TITLE

Delineation/Exploration Drilling Environmental Assessment (EA) Review for 2019

SUBMITTED TO

Canada-Newfoundland and Labrador Offshore Petroleum Board
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VERSION RECORD

VERSION	DATE	MODIFICATION DETAILS

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1.0 Introduction

Offshore oil and gas exploration and production programs generally encompass long periods of time and multiple, successive, operational steps. As a consequence, environmental assessments (EAs) of these programs address a variety of activities undertaken over a number of years.

Annual EA reviews are conducted to assist the C-NLOPB in fulfilling its responsibilities under the *Canadian Environmental Assessment Act* by ensuring that the scope of the assessment(s) and the mitigations committed to therein remain technically valid.

This EA review will address the Husky Delineation/Exploration Drilling Program for Jeanne d'Arc Basin Area (CEAR No. 07-01-28877) only. An amendment to extend the temporal scope for drilling activity from 2015 to 2020 was approved by the C-NLOPB on February 2, 2018.

EA reviews for other activities will be provided separately as schedules are confirmed.

2.0 Husky's Delineation/Exploration Drilling Program for Jeanne d'Arc Basin Area, 2008-2020

2.1 Project Description and Scope

2.1.1 Activities Covered

The environmental assessment of Husky Delineation/Exploration Drilling Program for Jeanne d'Arc Basin Area and Amendment addressed Husky's proposal for drilling 18 delineation and/or exploration wells from semi-submersible, or jack-up mobile drilling units, or drill ships within any current, or future Husky land holdings in the Jeanne d'Arc Basin area to the end of 2020. To date, 12 of 18 wells have been drilled as follows:

- White Rose K-03 - Delineation (Spud 21 Nov 2007 to Jan 2008)
- North Amethyst E-17 - Delineation (Spud 9 Aug 2008)
- White Rose E-28 - Delineation (Spud 13 Oct 2008)
- Glenwood H-69 - Exploration (Spud 25 Jan 2010)
- North Amethyst H-14 - Delineation (Spud 21 Mar 2010)
- Searcher C-87 - Exploration (Spud 8 Aug 2012)
- White Rose H-70 - Delineation (Spud 19 Aug 2013)
- White Rose H-70Z – Sidetrack (Commenced 26 Sep 2013)
- North Amethyst E-18 12A - Delineation (Spud 6 Dec 2013)
- Aster C-93A – Exploration (Spud 19 Dec 2014)

- White Rose A-78 Delineation (Spud 03 Feb 2017)
- White Rose A-24 Exploration (Spud 08 Mar 2018)

In support of drilling operations, the project includes marine support vessels for shipping goods and personnel to the MODU, helicopter support, shore-based facilities using existing facilities in St. John's Harbour, and abandonment. Vertical Seismic Profiling (VSP) and testing, and geohazard/well site surveys may be required for any of the 18 wells drilled.

2.1.2 Geographic Scope

The geographic (spatial) scope of the environmental assessment is depicted in Figure 2-1. The project area is depicted by the red rectangle.

2.1.3 Temporal Scope

With the 2018 EA Amendment approval, drilling and support activities associated with the drilling program, as outlined above, may be carried out year-round from 2008 through to the end of 2020.

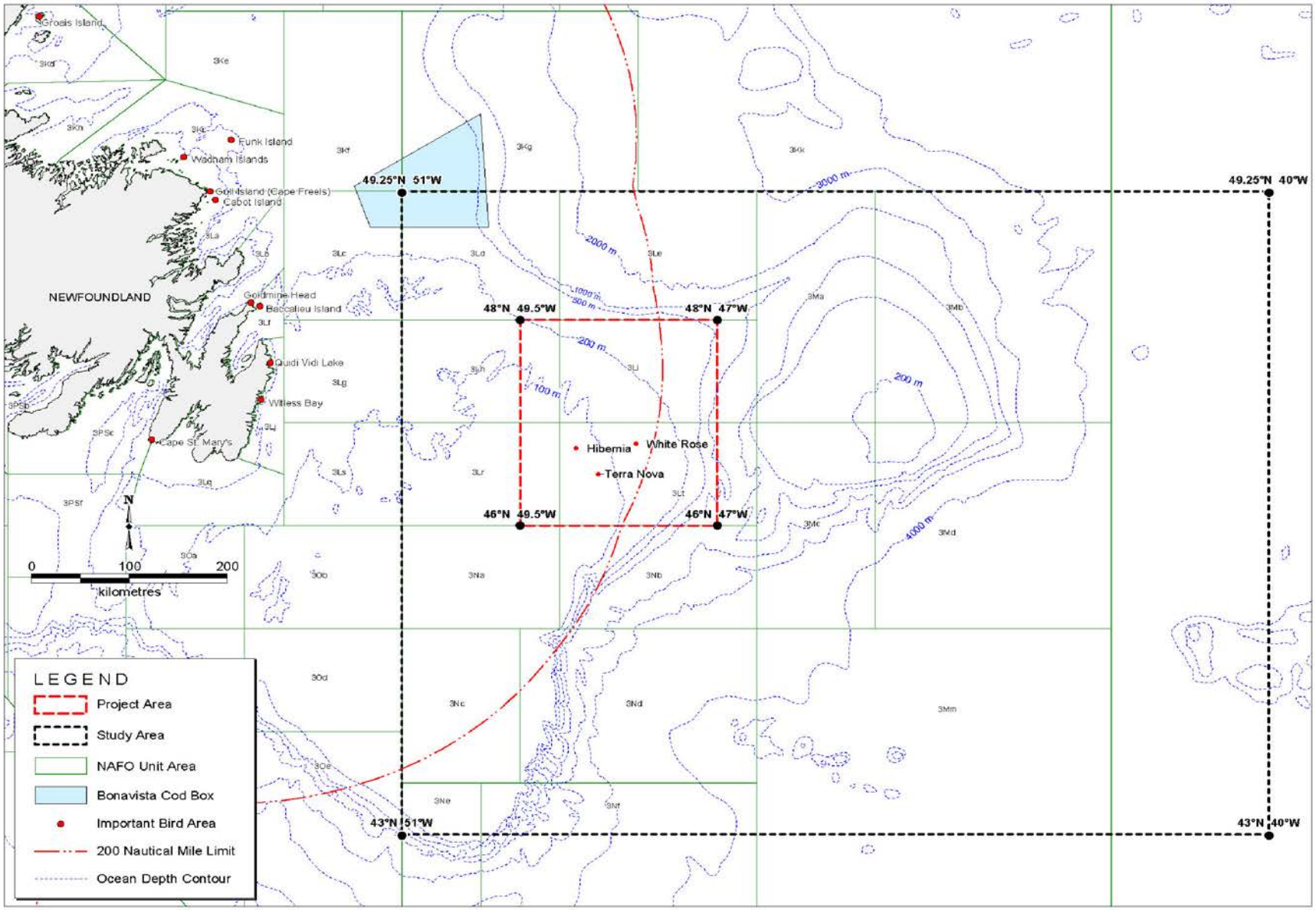

Figure 2-1 - Geographic Scope of Project Area

2.1.4 Planned Activities for 2019

There are four exploration/delineation wells currently scheduled for 2019:

1) March to May on EL 1122

2) May to July on SDL 1028

3) November to December on SDL 1025

4) December to February, 2020 on SDL 1028

The schedule of wells is subject to change by a number of factors, including weather and operational performance on each well. Figure 2-2 illustrates the area of interest for each well.

Two possible outcomes exist for either an exploratory well or delineation well; suspension or abandonment. For a suspended well, a suspension cap is installed to protect the wellhead connnector. The suspension cap protrudes above the seabed. Proper notification via Notice to Shipping is made to identify the subsea obstruction until it is removed. To abandon a well, all subsea infrastructure is removed upon completetion of the well, so there are no protuberances above the seabed.

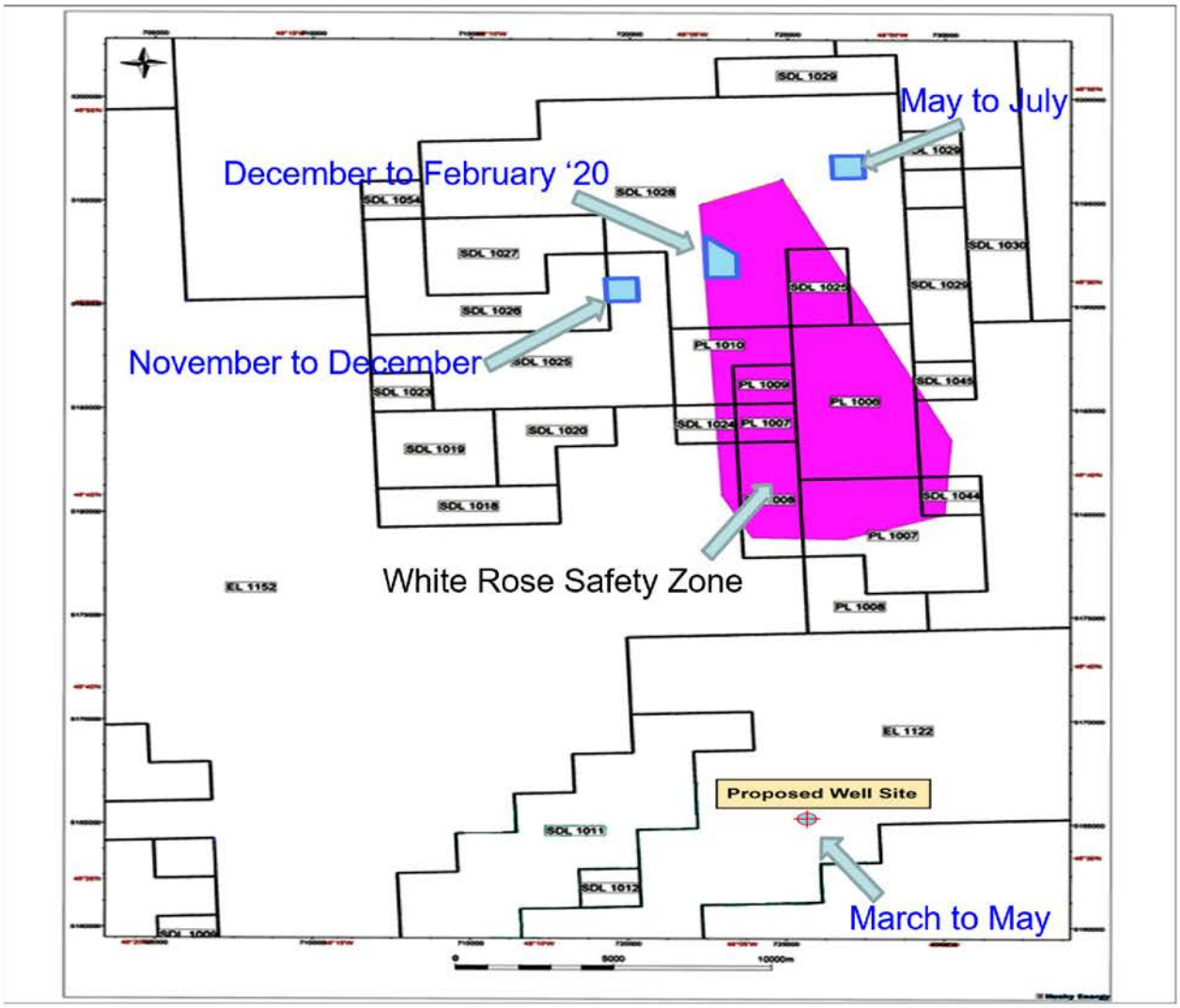

Figure 2-2 –Exploration Well Sites

2.2 Environmental Aspects

2.2.1 Fisheries

Fishing Industry representatives were notified by email on January 4, 2019 that the well that had been planned to begin in December, 2018, was now scheduled for February, 2019. Response with concerns was requested with an invitation to meet. No concerns or requests for meeting were received.

A subsequent email was sent on January 31 with a request for a meeting to review Husky's exploration drilling plans for 2019. A meeting was held with One Ocean and Groundfish Enterprise Allocation Council (GEAC) on February 7th and with the Fish, Food and Allied Workers (FFAW-Unifor) on February 8th. An electronic copy of the presentation used in those meetings was emailed to the Association of Seafood Producers (ASP), and Ocean Choice International (OCI), and the on February 6th including a map of wells locations and surrounding fisheries.

Industry stakeholders emphasized the importance of ongoing communication during drilling operations and rig tows. Husky committed to identification of standby vessels and advance notification of rig moves during crab fishing season.

Figure 2-3 shows commercial fish harvesting locations during 2005 to 2010 and Figure 2-4 to Figure 2-9 depict fishing activity from 2011 to 2016 (latest data available), respectively. Fisheries data post-2010 cannot be compared with previous data due to changes in the information released by Fisheries and Oceans Canada (DFO). Fishing activities in the Study Area have not changed significantly since the initial environmental assessment, although there have been relatively fewer catch locations within the Project Area since 2014.

As noted in previous updates, a directed fishery for American plaice and Atlantic cod has not existed for some time and this has not changed as of 2019 (NAFO 2019). While inshore harvesters are permitted to fish for Atlantic cod in the Project Area (within the 200 nm limit) during the 2J3KL stewardship fishery, it is not anticipated that there will be a directed fishery for cod in the area during 2019 (R. Lee, pers. comm., 2018). If in the future, a directed fishery is authorized then previous fishing patterns for these species and other species may be re-established in areas in and near the Jeanne d'Arc basin.

Husky understands that it is important to recognize that harvesters fish a resource, and not fixed points from year to year. Licenses are issued for large areas (e.g. NAFO subdivisions 3K or 3L) and fishing activity could take place anywhere within these areas and not just at the pattern of locations fished in recent years indicated by DFO data. Hence this requires that Husky continue to consult with the fishing industry on a regular basis to keep up-to-date with trends in fishing from year to year.

With regard to the conduct of its operations, Husky will continue to keep fishing interests informed of these activities during the operational planning phases. This will be done through the established One Ocean contacts and others as deemed necessary or as advised.

Since the approval of the initial environmental assessment, the fishing and oil and gas industries, through One Ocean, have completed many initiatives to help enhance

communication and collaboration between the two industries; most notably are the Communication Protocol and the Risk Management Matrix Guidelines. The Communication Protocol has been distributed to fishers and members of the petroleum industry and recommends communication procedures between fish harvesters and offshore installations and petroleum-related vessels during operational activities. The Risk Management Matrix is a risk-based decision matrix that defines the conditions under which oil and gas operators could employ either or both a Fisheries Liaison Officer or a guide vessel in support of certain oil and gas operations that have a potential to affect fisheries activities offshore. Other initiatives developed by One Ocean can be obtained on One Ocean's website (www.oneocean.ca).

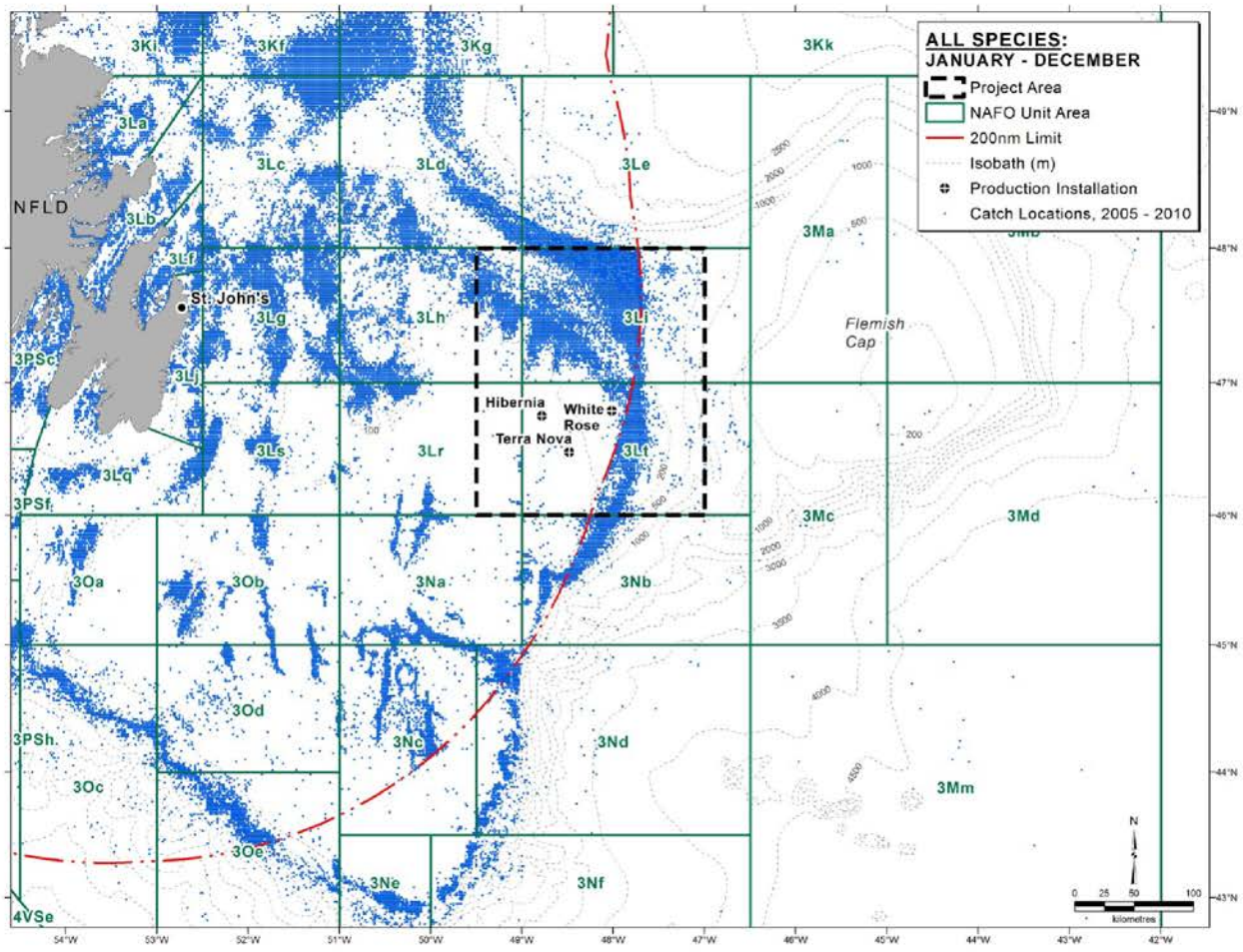

Figure 2-3 - Cumulative Pattern of Fishing Activity to 2005 - 2010 in Relation the EA Project Area

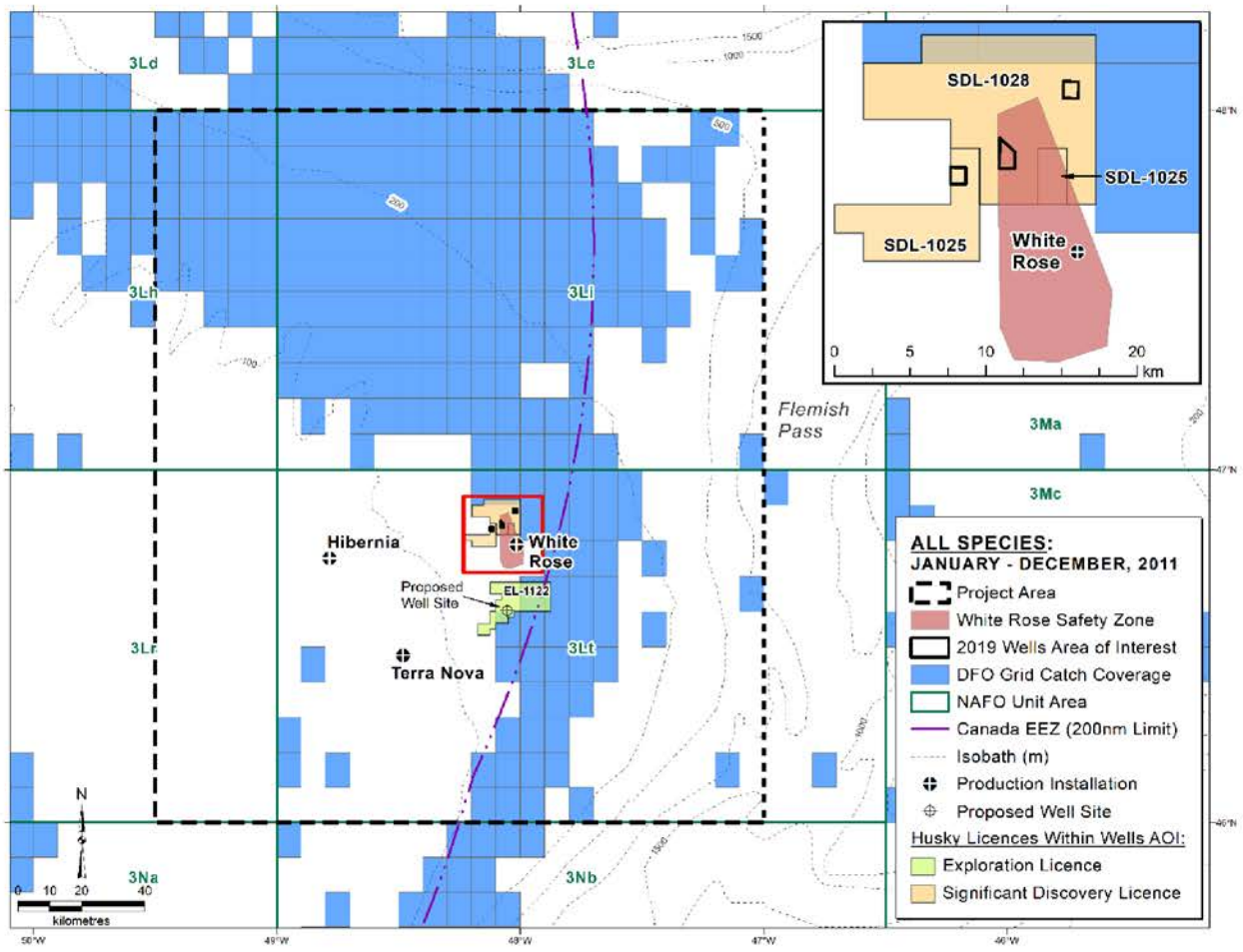

Figure 2-4 - Pattern of Fishing Activity in 2011 in Relation the EA Project Area

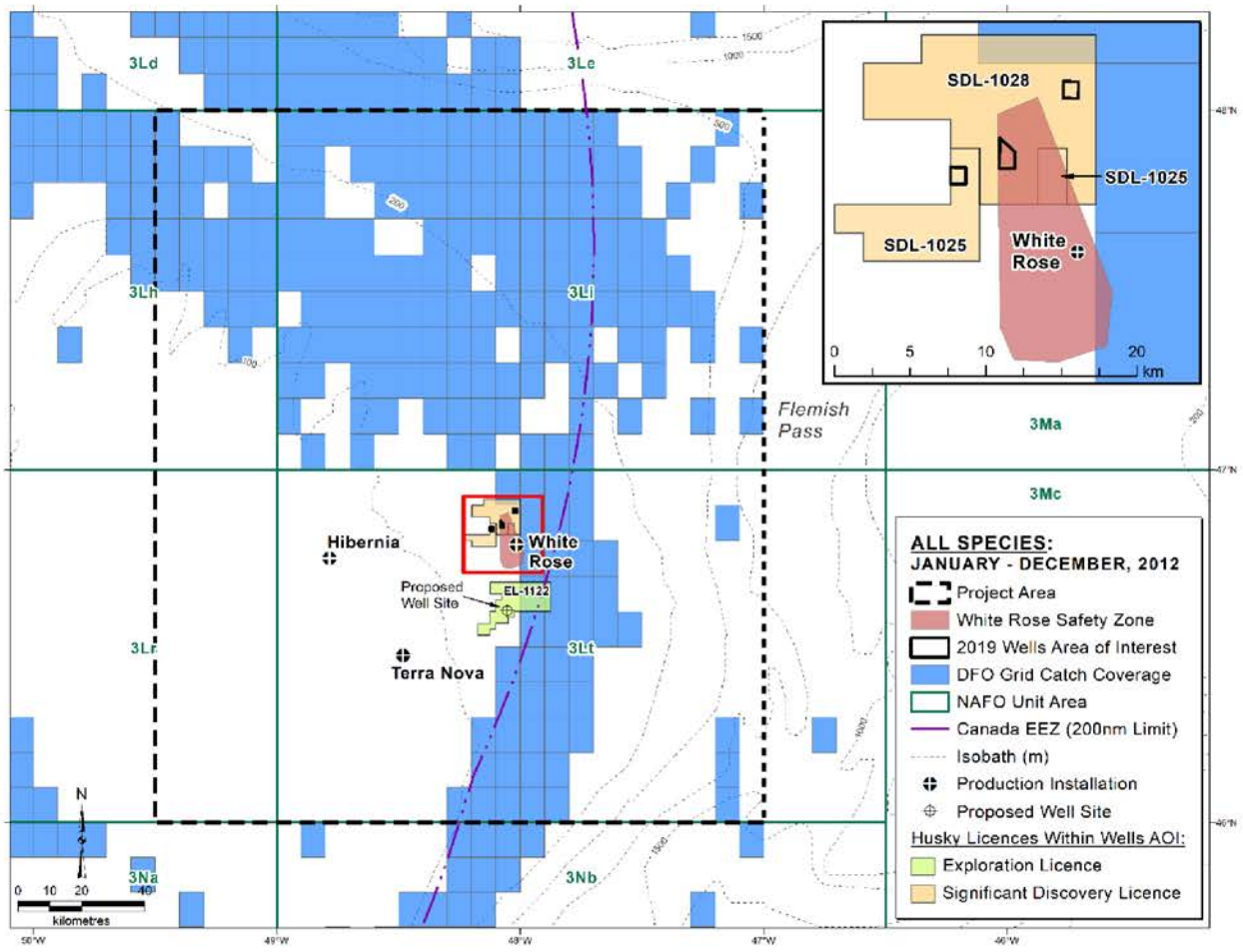

Figure 2-5 - Pattern of Fishing Activity in 2012 in Relation the EA Project Area

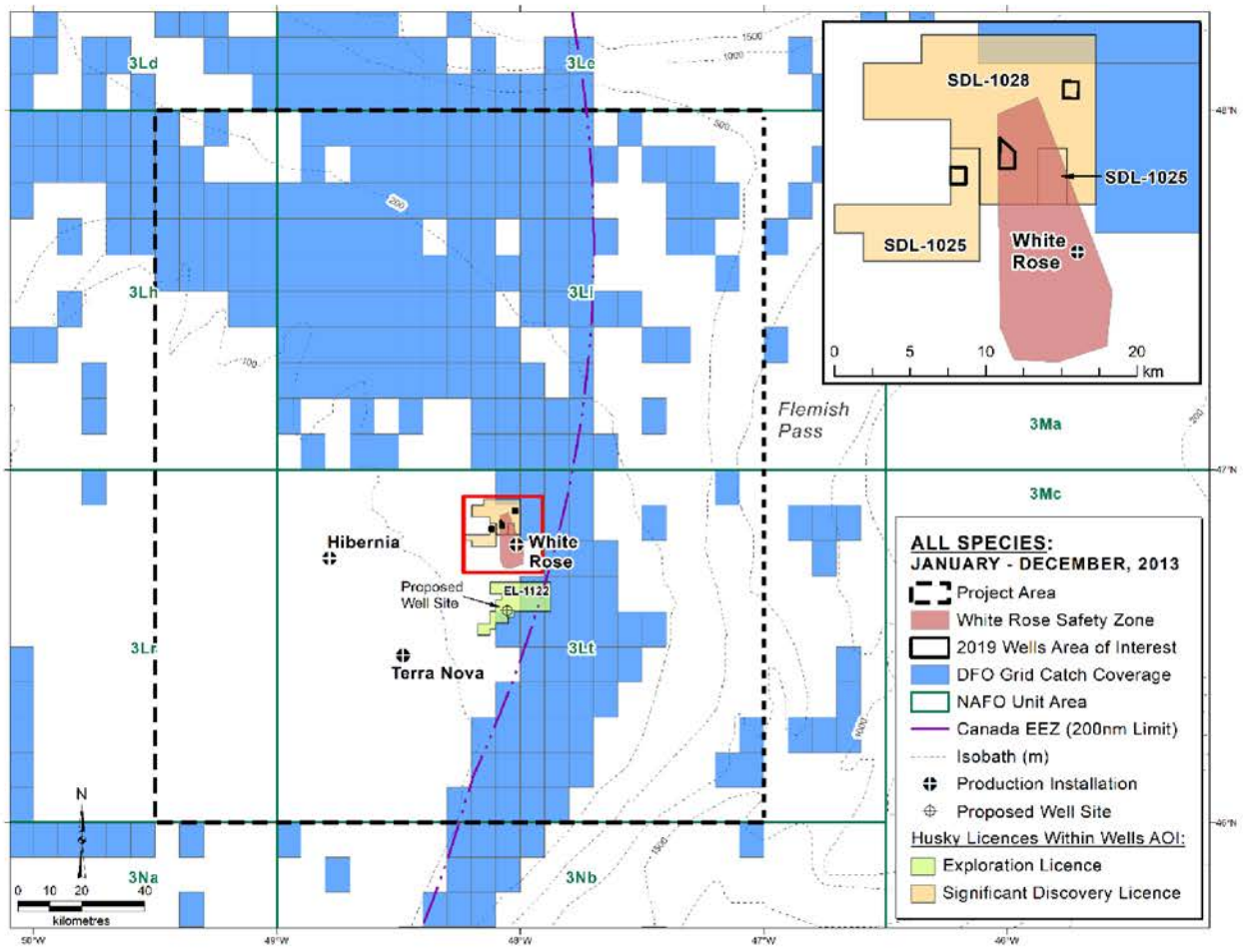

Figure 2-6 - Pattern of Fishing Activity in 2013 in Relation the EA Project Area

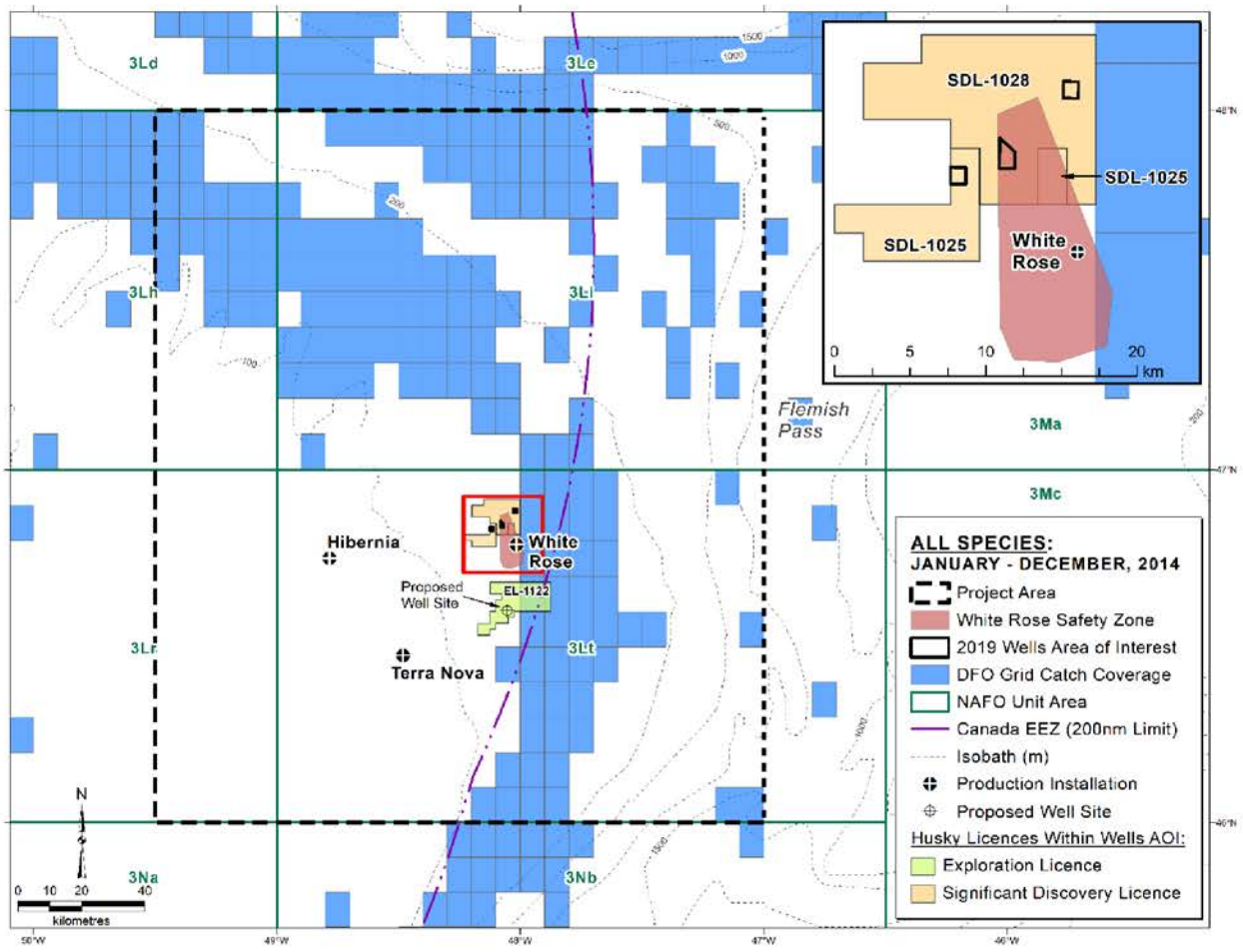

Figure 2-7 - Pattern of Fishing Activity in 2014 in Relation the EA Project Area

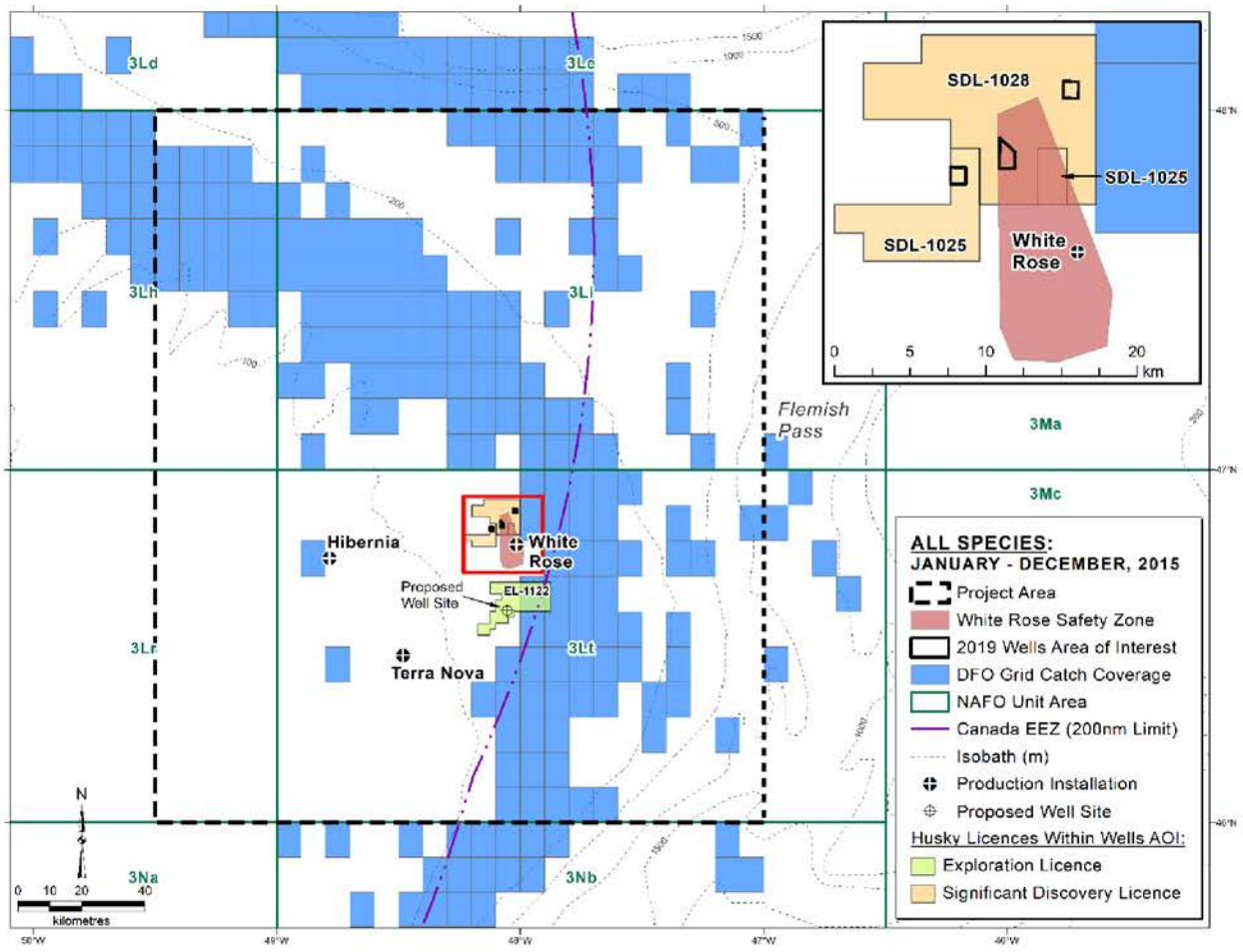

Figure 2-8 - Pattern of Fishing Activity in 2015 in Relation the EA Project Area

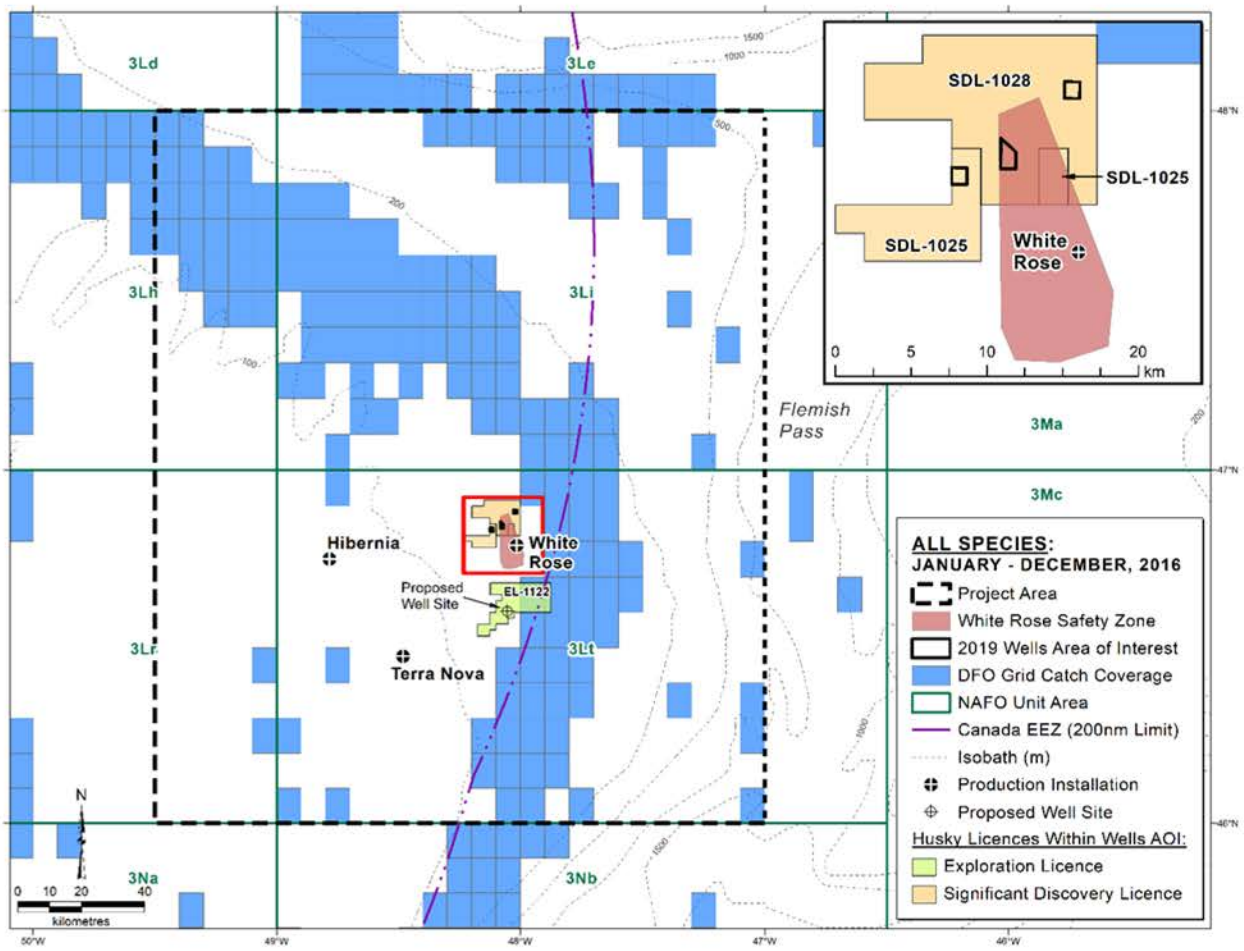

Figure 2-9 - Pattern of Fishing Activity in 2016 in Relation the EA Project Area

The eastern portion of the Project Area is beyond the Canadian Economic Exclusion Zone (EEZ). Fisheries beyond the Canadian EEZ are managed by NAFO, are predominantly conducted using trawling gear, and principally occur in the region delineated as the NAFO fishing footprint (Figure 2-10). The majority of the portion of the Project Area outside of the Canadian EEZ is within the fishing footprint; therefore, foreign fishing activities may occur in proximity to the delineation/exploratory drilling activity outside of the EEZ.

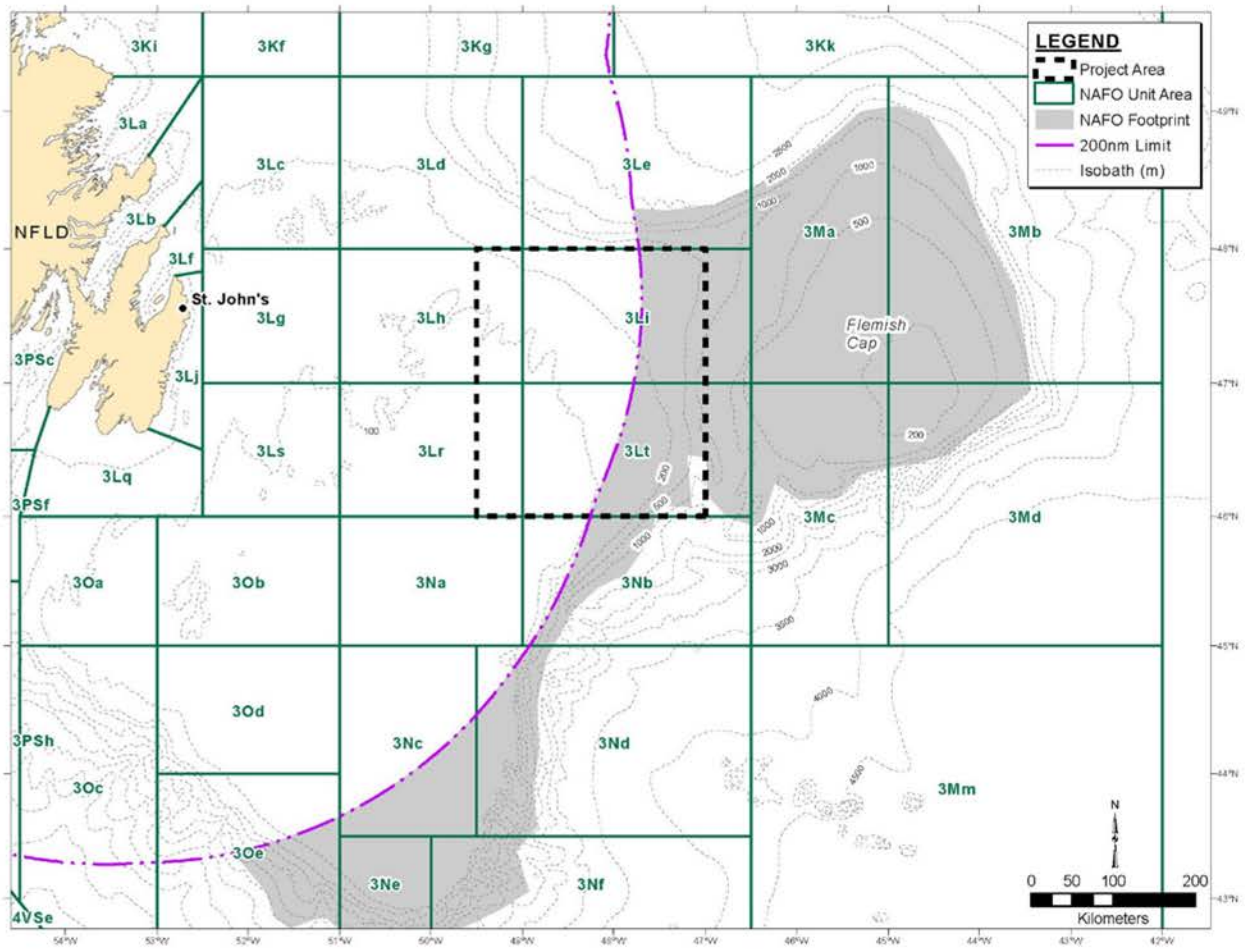

Figure 2-10 - NAFO Fishing Footprint in Relation to the EA Project Area

NAFO has identified 'Vulnerable Marine Ecosystem (VME) Elements' (topographical, hydrophysical or geological features which potentially support VMEs, including slopes, summits and flanks of seamounts and knolls, and canyons) and areas of significant coral and sponge concentrations within the NAFO Regulatory Area. Based on these identifications, NAFO seamount closure areas and coral/sponge closure areas were delineated and declared closed to all bottom fishing activities until at least 31 December 2020 (NAFO 2018). While no seamount closure areas occur within the Project Area, one coral/sponge closure area (Flemish Pass/Eastern Canyon) occurs partially within the southeast portion of the Project Area (Figure 2-11). Seamount closure areas and other coral/sponge closure areas nearest the Project Area are also included in Figure 2-11 to provide an indication of proximity. Although no new seamount closure areas have been designated since the 2018 EA Update (Husky 2018), the delineation coordinates of the New England Seamounts, located well southwest of the Project Area, were modified as of 2018 (NAFO 2018). A fourteenth NAFO coral/sponge closure area was introduced during 2017 and 2018, east of the Project Area and northeast of the Flemish Cap (see Figure 2-10 of the 2018 EA Update [Husky 2018]). While the latest GIS data available on the NAFO website (https://www.nafo.int/Data/GIS) indicates that this fourteenth closure area

has been removed for 2019; however, NAFO has not yet released its Conservation and Enforcement Measures 2019 document for verification.

Ecologically and Biologically Significant Areas (EBSAs) proximate to the Project Area are also shown in Figure 2-11. There have been recent modifications to DFO's EBSA boundaries within the NL Shelves Bioregion, although the Northeast Slope (formerly the Northeast Shelf and Slope) EBSA still partially overlaps the Project Area. This EBSA now overlaps a smaller portion of the Project Area, principally within the central-northern part of the Project Area. Although the research document and science advisory report for the NL Shelves EBSA boundary updates have been approved, they have not yet been officially released by DFO (N. Wells, Biologist, Aquatic Resources Division, DFO, pers. comm., 4 February 2019). The Convention on Biological Diversity (CBD) was introduced in 1993 as an initiative of the United Nations to support the world's growing commitment to sustainable development (CBD 2019). The Conference of the Parties of the CBD (CPCBD), first held in 1994, provides guidance and support for the identification of EBSAs beyond Canada's EEZ (CBD 2019). One CPCBD EBSA partially occurs within the eastern portion of the Study Area, including the Slopes of the Flemish Cap and Bank (see Figure 2-11). This EBSA hosts a high biodiversity of marine taxa, including commercial and at-risk species (e.g., wolffishes and northern bottlenose whale), and encompasses the NAFO coral/sponge closure areas along with a component of the Greenland halibut fishery grounds in international waters (CBD 2019).

There are no marine protected areas (MPAs), areas of interest (AOIs) or marine refugia within the Project Area (DFO 2018a,b; MCI 2019; ProtectedPlanet 2019). None of these sensitive areas overlap the planned 2019 well locations and/or areas of interest (see Figure 2-11).

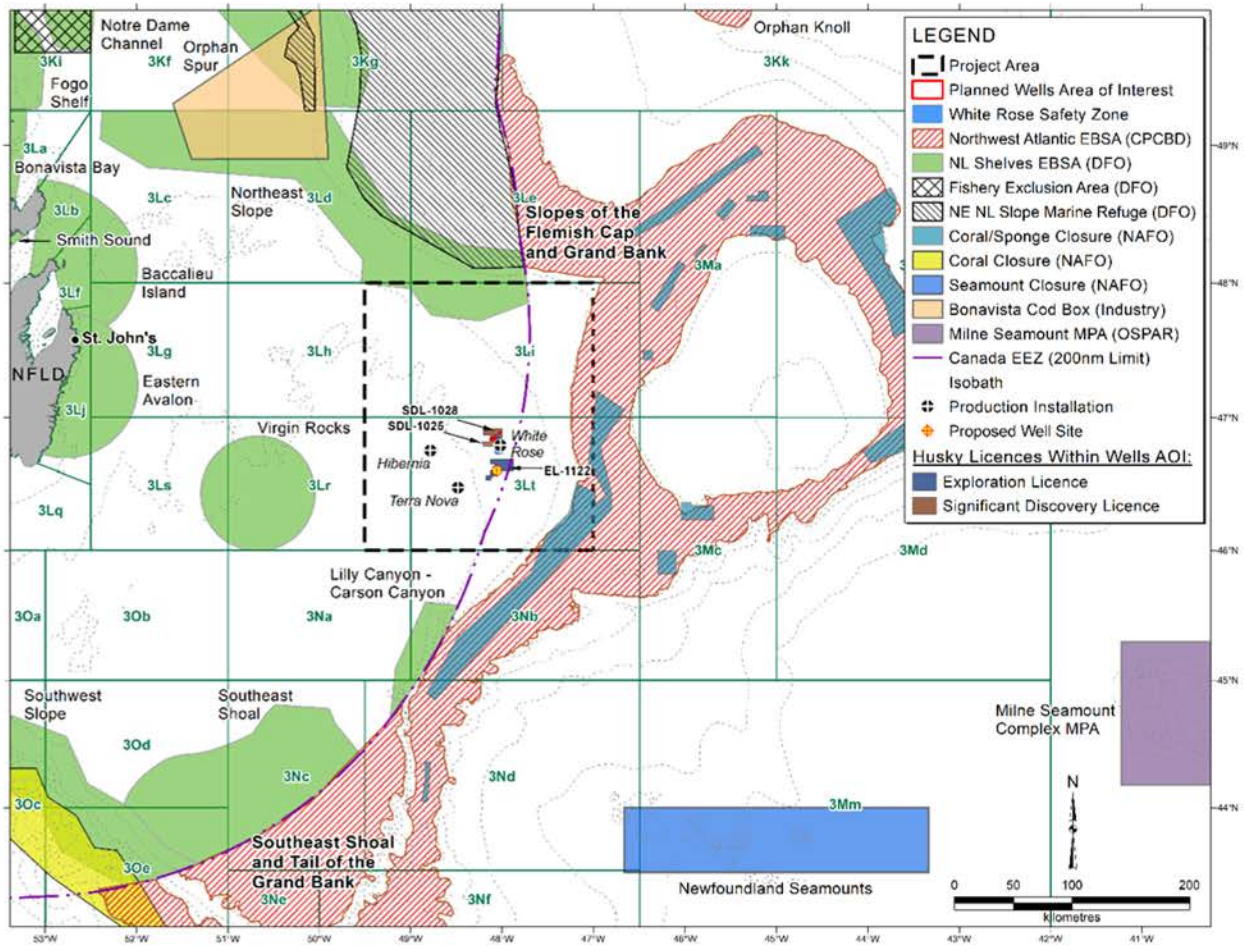

Figure 2-11 - NAFO Coral/Sponge Closure Areas and Nearest NAFO Seamount Closure Area in Relation to the EA Project Area

2.2.2 Species at Risk

An updated listing of SARA and COSEWIC species for the Grand Banks area relevant to this EA Update is provided in Appendix 1 (Table 1). SARA-listed species with final recovery strategies and the updated COSEWIC candidate species under consideration are noted. Proposed critical habitat for SARA-listed northern and spotted wolffishes, which was not included in the 2018 EA Update, overlaps with the northern portion of the Project Area but not with the planned 2019 well locations and/or areas of interest (Figure 2-12).

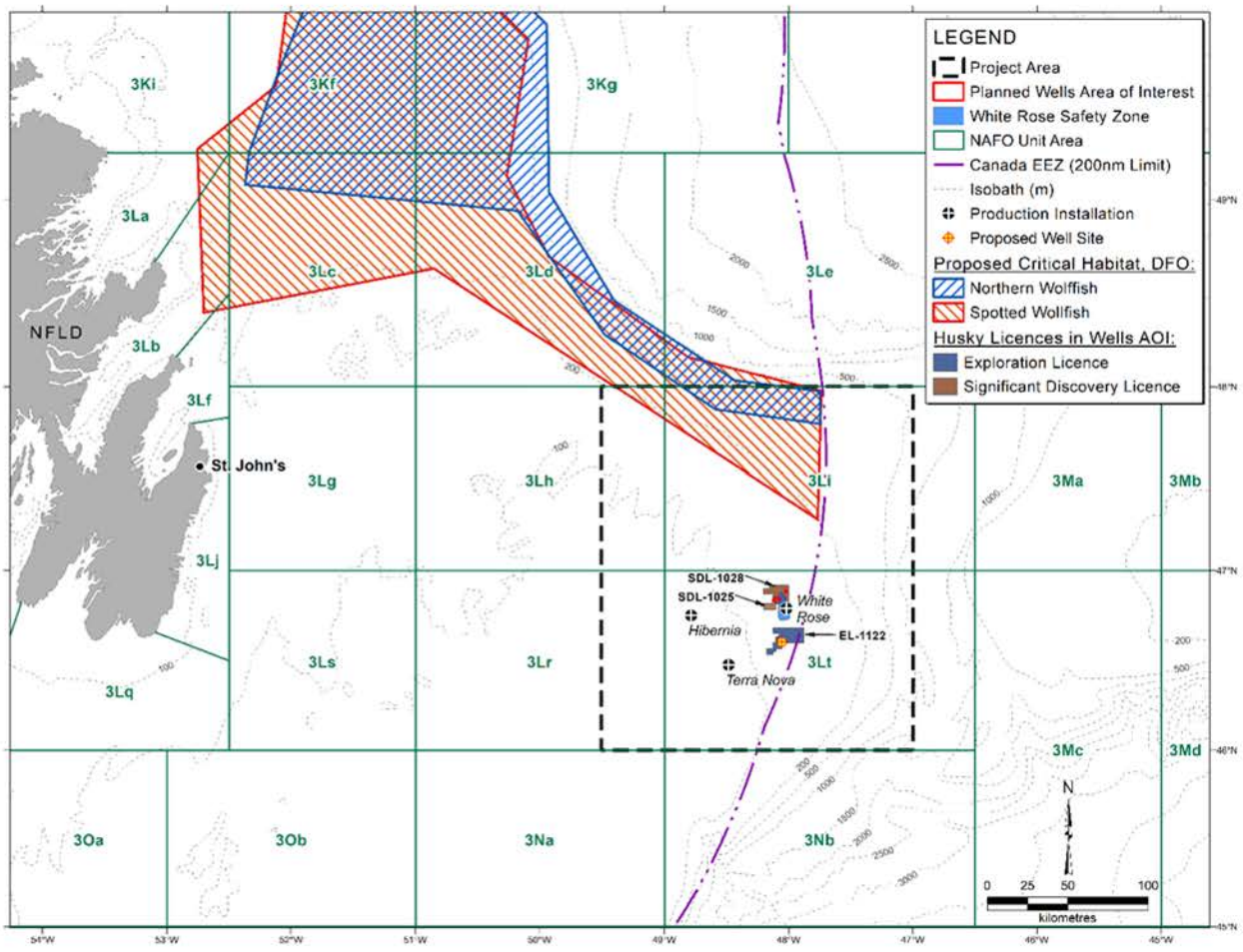

Figure 2-12 - Critical habitat relative to the EA Project Area.

The Scotian Shelf population of northern bottlenose whale was added to Appendix 1 (Table 1), as the potential exists for members of this population to be present within the Project Area. Roughhead grenadier have been removed (indicated by double strikethrough text in Appendix 1 (Table 1), as they are no longer under consideration by COSEWIC and have no status under SARA. Yellowtail flounder, hooded seal and sperm whale have been added as candidate species for assessment under COSEWIC since the 2018 EA Update (Husky 2018). There are two cetacean species (blue and North Atlantic right whales), two sea turtle species (leatherback and loggerhead), two bird species (Ivory Gull and Red Knot), and three fish species (white shark, northern wolffish and spotted wolffish) that are legally protected under Schedule 1 of SARA and have potential to occur in the Project Area. Atlantic wolffish, the Atlantic population of fin whales and Sowerby's beaked whales are designated as special concern on Schedule 1 of SARA.

Since preparation of the 2018 EA Update (Husky 2018), Action Plans have been proposed for leatherback sea turtle, the Northwest Atlantic population of blue whale, and northern and spotted wolffishes. A Recovery Strategy for northern and spotted wolffishes and Management Plan for Atlantic wolffish has been updated (from 2007 to 2018). A finalized Action Plan and Recovery Strategy are in place for the Scotian Shelf population of

northern bottlenose whale. A list of species-relevant Action Plans, Recovery Strategies and Management Plans is provided in Section 4.3.

As per the 2018 EA Update (Husky 2018), none of the Recovery Plans in place for SARA-listed species change the mitigation measures committed to by Husky for the scope of the operations addressed by the environmental assessment.

2.2.3 Mitigations

Husky regards the environmental predictions and consequent mitigations cited in the environmental assessment and subsequent significance determination that relates to CEAR No. 07-01-28877 as still valid and re-commits to implementing these mitigation measures for the activities to be carried out under the scope of this assessment this year.

The potential environmental effects of drilling activities as described in Section 2.1.4 are assessed to be *not significant* when evaluated against the assessment definitions and criteria applied to the valued ecosystem components addressed in the original assessment.

3.0 Concluding Statement

The activities Husky plans to carry out in 2019 have been reviewed and assessed to be within the spatial and temporal scope of the environmental assessment referenced herein.

The environmental effects predicted within the Delineation/Exploration Drilling Program for Jeanne d'Arc Basin Area (CEAR No. 07-01-28877) and Addendum are unchanged. Husky reaffirms its commitment to implement the mitigation measures proposed in Delineation/Exploration Drilling Program for Jeanne d'Arc Basin Area (CEAR No. 07-01-28877) and Addendum, as well as the associated Screening Decisions made by the C-NLOPB.

4.0 References

4.1 Original Husky Environmental Assessments

1. Husky Energy. 2012. Environmental Assessment of Husky's Jeanne d'Arc Basin/Flemish Pass Regional Seismic Program, 2012-2020. LGL Rep. SA1144. Prepared by LGL Limited in association with Canning & Pitt Associates Inc., St. John's, NL, and Oceans Ltd., St. John's, NL, for Husky Energy, St. John's, NL. 320 p. + appendices.

2. Husky Energy. 2012. Environmental Assessment of Husky's Jeanne d'Arc Basin/Flemish Pass Regional Seismic Program, 2012-2020 Addendum. LGL Rep. SA1144. Prepared by LGL Limited in association with Canning & Pitt Associates Inc., St. John's, NL, and Oceans Ltd., St. John's, NL, for Husky Energy, St. John's, NL. 14 p. + appendices.

3. Husky Energy. 2006. Husky White Rose Development Project: New Drill Centre Construction & Operations Program Environmental Assessment. LGL Rep. SA883. Rep. by LGL Limited, St. John's, NL, for Husky Energy Inc., Calgary, AB. 299 p. + App.

4. Husky Energy. 2007. Husky White Rose Development Project: New Drill Centre Construction & Operations Program Environmental Assessment Addendum. LGL Rep. SA883a. Rep. by LGL Limited, St. John's, NL, for Husky Energy Inc., Calgary, AB. 126 p. + App.

5. Husky Energy. 2007. Husky Delineation/Exploration Drilling Program for Jeanne d'Arc Basin Area, 2008-2017, Environmental Assessment. LGL Rep. SA935. Prepared by LGL, St. John's, NL, in association with Canning & Pitt Associates, Inc., Oceans Ltd., and PAL Environmental Services. Prepared for Husky Energy Inc., Calgary, AB. 231 p. + Appendices.

4.2 Other References

1. CBD (Convention on Biological Diversity). 2019. Ecologically or biologically significant marine areas. Available at https://www.cbd.int/ebsa/.

2. DFO (Fisheries and Oceans Canada). 2018a. Marine protected areas (MPAs), areas of interest (AOIs) and other measures. Fisheries and Oceans Canada, Government of Canada. Available at http://www.dfo-mpo.gc.ca/oceans/mpa-zpm-aoi-si-eng.html.

3. DFO. 2018b. Other effective area-based conservation measures. Fisheries and Oceans Canada, Government of Canada. Available at http://www.dfo-mpo.gc.ca/oceans/oeabcm-amcepz/index-eng.html.

4. Husky (Husky Energy). 2016. Husky Energy Atlantic Region Newfoundland and Labrador Offshore Area Environmental Assessment Review for 2016 (exploration drilling). Rep. No. AR-HSE-RP-4806. 26 p. + appendix.

5. Husky (Husky Energy). 2017. Husky delineation/exploration drilling environmental assessment review for 2017. Husky Rep. No. AR-HSE-RP-0860, Version 1. Rep. by Husky Energy, St. John's, NL for Canada-Newfoundland and Labrador Offshore Petroleum Board, St. John's, NL. 19 p. + appendix.

6. Husky (Energy). 2018. Husky delineation/exploration drilling environmental assessment review for 2018. Husky Rep. No. ED-HSE-RP-0035, Version 2. Rep by Husky Energy, St. John's, NL for Canada-Newfoundland and Labrador Offshore Petroleum Board, St. John's, NL. 20 p. + appendix.

7. MCI (Marine Conservation Institute). 2019. Atlas of marine protection. Available at http://www.mpatlas.org/map/mpas/#.

8. NAFO. (Northwest Atlantic Fisheries Organization). 2015. Northwest Atlantic Fisheries Organization conservation and enforcement measures. NAFO/FC Doc. 15/01. Serial No. N6409.

9. NAFO (Northwest Atlantic Fisheries Organization). 2017. Conservation and enforcement measures 2017. Northwest Atlantic Fisheries Organization. Serial No. N6638. FC Doc. 17-01. 80 p. + annexes.

10. NAFO (Northwest Atlantic Fisheries Organization). 2018. NAFO Conservation and Enforcement Measures 2018. NAFO/COM Doc. 18-01. Serial No. N6767. 84 p. + annexes. Available at https://www.nafo.int/Fisheries/Conservation .

11. NAFO. 2019. Annex I.A – Annual Quota Table (2019). NAFO Conservation and Enforcement Measures. Available at https://www.nafo.int/Fisheries/Conservation.

12. Protected Planet. 2019. Explore the world's marine protected areas. Available at https://www.protectedplanet.net/marine.

13. R. Lee, Industry Liaison, FFAW-UNIVOR, pers. comm., 1 February 2019.

14. N. Wells, Biologist, Aquatic Resources Division, DFO, pers. comm., 4 February 2019

4.3 Species at Risk Action Plans and Recovery Strategies

ALTRT (Atlantic Leatherback Turtle Recovery Team). 2006. Recovery strategy for leatherback turtle (*Dermochelys coriacea*) in Atlantic Canada. Species at Risk Act Recovery Strategy Series. Fisheries and Oceans Canada, Ottawa. vi + 45 p.

Beauchamp, J., H. Bouchard, P. de Margerie, N. Otis, J.-Y. Savaria. 2009. Recovery strategy for blue whale (*Balaenoptera musculus*), Northwest Atlantic population, in Canada [FINAL]. Species at Risk Act Recovery Strategy Series. Fisheries and Oceans Canada, Ottawa. 62 p.

DFO. 2007. Recovery strategy for the grey whale (Atlantic population) (*Eschrichtius robustus*) in Canada. Species at Risk Act Recovery Strategy Series. Department of Fisheries and Oceans, Ottawa. iv + 8 p.

DFO. 2008. Recovery strategy for the Atlantic walrus (*Odobenus rosmarus rosmarus*), Northwest Atlantic population, in Canada. Species at Risk Act Recovery Strategy Series. Fisheries and Oceans Canada, Ottawa. x + 11 p.

DFO. 2012. Assessment of Leatherback turtle (*Dermochelys coriacea*) fishery and non-fishery interactions in Atlantic Canadian waters. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2012/041.

DFO. 2013. Report on the progress of implementation of the recovery strategy for northern wolffish (*Anarhichas denticulatus*) and spotted wolffish (*Anarhichas minor*), and management plan for Atlantic wolffish (*Anarhichas lupus*) in Canada for the period 2008-2013. Species at Risk Act Recovery Strategy Report Series. Fisheries and Oceans Canada, Ottawa. vi + 16 p.

DFO. 2013. Report on the progress of recovery strategy implementation for the leatherback sea turtle (*Dermochelys coriacea*) in Canada for the period 2007-2012. Species at Risk Act Recovery Strategy Report Series. Fisheries and Oceans Canada, Ottawa. iv + 15 p.

DFO. 2014. Recovery strategy for the North Atlantic right whale (*Eubalaena glacialis*) in Atlantic Canadian waters [Final]. Species at Risk Act Recovery Strategy Series. Fisheries and Oceans Canada, Ottawa. vii + 68 p.

DFO. 2016. Action plan for the North Atlantic right whale (*Eubalaena glacialis*) in Canada: Fishery Interactions [Proposed]. Species at Risk Act Action Plan Series. Fisheries and Oceans Canada, Ottawa. v + 35 p.

DFO. 2016. Report on the progress of recovery strategy implementation for the blue whale (*Balaenoptera musculus*), Northwest Atlantic population, in Canada for the period 2009-2014. Species at Risk Act Recovery Strategy Report Series. Fisheries and Oceans Canada, Ottawa. ii + 14 p.

DFO. 2016. Recovery strategy for the northern bottlenose whale (*Hyperoodon ampullatus*), Scotian Shelf population, in Atlantic Canadian Waters [Final]. Species at Risk Act Recovery Strategy Series. Fisheries and Oceans Canada, Ottawa. vii + 70 p.

DFO. 2016. Report on the progress of recovery strategy implementation for the northern bottlenose whale (*Hyperoodon ampullatus*), Scotian Shelf population, in Atlantic Canadian Waters for the period 2010-2015. Species at Risk Act Recovery Strategy Series. Fisheries and Oceans Canada, Ottawa. iii + 47 p.

DFO. 2017. Management plan for the fin whale (*Balaenoptera physalus*), Atlantic population in Canada. Species at Risk Act Management Plan Series, DFO, Ottawa. iv + 28 p.

DFO. 2017. Management plan for the Sowerby's beaked whale (*Mesoplodon bidens*) in Canada. Species at Risk Act Management Plan Series. Fisheries and Oceans Canada, Ottawa. iv + 46 p.

DFO. 2017. Action plan for the northern bottlenose whale (*Hyperoodon ampullatus*), Scotian Shelf population, in Atlantic Canadian waters. Species at Risk Act Action Plan Series. Fisheries and Oceans Canada, Ottawa. iv + 37 p.

DFO. 2018. Recovery strategy for northern wolffish (*Anarhichas denticulatus*) and spotted wolffish (*Anarhichas minor*), and management plan for Atlantic wolffish (*Anarhichas lupus*) in Canada [proposed]. Fisheries and Oceans Canada, Ottawa. vii + 82 p.

DFO. 2018. Action plan for the leatherback sea turtle (*Dermochelys coriacea*) in Atlantic Canada [Proposed]. Species at Risk Act Action Plan Series. Fisheries and Oceans Canada, Ottawa. v + 29 p.

DFO. 2018. Action plan for blue whale (*Balanoptera musculus*), Northwest Atlantic population, in Canada [Proposed]. Species at Risk Act Action Plan Series. Fisheries and Oceans Canada, Ottawa. iv + 21 p.

DFO. 2018. Action plan for the northern wolffish (*Anarhichas denticulatus*) and spotted wolffish (*Anarhichas minor*) in Canada [Proposed]. Species at Risk Act Action Plan Series. Fisheries and Oceans Canada, Ottawa. v + 23 p.

Environment Canada. 2014. Recovery strategy for the Ivory Gull (*Pagophila eburnea*) in Canada. Species at Risk Act Recovery Strategy Series. Environment Canada, Ottawa. iv + 21 p.

Environment and Climate Change Canada. 2017. Recovery strategy and management plan for the Red Knot (*Calidris canutus*) in Canada. Species at Risk Act Recovery Strategy Series. Environment and Climate Change Canada, Ottawa. ix + 67 p.

Kulka, D., C. Hood, and J. Huntington. 2007. Recovery strategy for northern wolffish (*Anarhichas denticulatus*) and spotted wolffish (*Anarhichas minor*), and management plan for Atlantic wolffish (*Anarhichas lupus*) in Canada. Fisheries and Oceans Canada: Newfoundland and Labrador Region. St. John's, NL. x + 103 p.

Parks Canada Agency. 2016. Multi-species action plan for Gros Morne National Park of Canada. Species at Risk Act Action Plan Series. Parks Canada Agency, Ottawa. iv + 19 p.

5.0 Appendices

Appendix 1 - Current SARA Listed and COSEWIC Assessed Species in the Husky Project Area

Appendix 1: Current SARA1 Listed and COSEWIC Assessed Species in the Husky Project Area2

Table 1 - Current SARA Listed and COSEWIC Assessed Species in the Husky Project Area

Species		New Since Last Update			*SARA* Status noted as Schedules 1, 2 or 3			COSEWIC Status			
Common Name	Scientific Name	Drill Centres	Exp. Drilling	Seismic	Endangered	Threatened	Special Concern	Endangered	Threatened	Special Concern	Candidate[3]
Birds											
Ivory Gull	*Pagophila eburnea*				1			X			
Red Knot rufa subspecies	*Calidris canutus rufa*				1			X			
Marine Fishes											
White Shark (Atlantic population)	*Carcharodon carcharias*				1			X			
Northern Wolffish[4]	*Anarhichas denticulatus*					1			X		
Spotted Wolffish[4]	*Anarhichas minor*					1			X		
Atlantic Wolffish[4]	*Anarhichas lupus*						1			X	
Atlantic Cod	*Gadus morhua*						3				
Atlantic Cod (NL population)	*Gadus morhua*							X			
Atlantic Bluefin Tuna	*Thunnus thynnus*							X			
Porbeagle Shark	*Lamna nasus*							X			
Roundnose Grenadier	*Coryphaenoides rupestris*							X			
Cusk	*Brosme brosme*							X			
Smooth Skate (Funk Island Deep population)	*Malacoraja senta*							X			
Winter Skate (Eastern Scotian Shelf-Newfoundland population)	*Leucoraja ocellata*							X			
Lumpfish	*Cyclopterus lumpus*								X		
Atlantic Salmon (South NL population)	*Salmo salar*								X		
American Eel	*Anguilla rostrata*								X		
American Plaice (NL population)	*Hippoglossoides platesoides*								X		
Acadian Redfish (Atlantic population)	*Sebastes fasciatus*								X		
Deepwater Redfish (Northern population)	*Sebastes fasciatus*								X		
White Hake (Atlantic and Northern Gulf of St. Lawrence population)	*Urophycis tenuis*								X		
Shortfin Mako Shark (Atlantic population)	*Isurus oxyrinchus*									X	
~~Roughhead Grenadier~~	~~*Macrourus berglax*~~		~~X~~							~~X~~	
Smooth Skate (Laurentian-Scotian population)	*Malacoraja senta*									X	
Thorny Skate	*Amblyraja radiata*									X	
Spiny Dogfish (Atlantic population)	*Squalus acanthias*									X	
Basking Shark (Atlantic population)	*Cetorhinus maximus*									X	
Pollock	*Pollachius virens*										MPC
Atlantic Mackerel	*Scomber scombrus*										MPC
Greenland Shark	*Somniosus microcephalus*										MPC
Yellowtail Flounder	*Limanda ferruginea*		X								MPC

Species		New Since Last Update			*SARA* Status noted as Schedules 1, 2 or 3			COSEWIC Status			
Common Name	Scientific Name	Drill Centres	Exp. Drilling	Seismic	Endangered	Threatened	Special Concern	Endangered	Threatened	Special Concern	Candidate[3]
American Shad	*Alosa sapidissima*										MPC
Alewife	*Alosa pseudoharengus*										MPC
Marine Mammals											
Blue Whale (Atlantic population)	*Balaenoptera musculus*				1			X			
North Atlantic Right Whale[4]	*Eubalaena glacialis*				1			X			
Northern Bottlenose Whale (Scotian Shelf population)	*Hyperoodon ampullatus*		X		1			X			
Sowerby's Beaked Whale	*Mesoplodon bidens*						1			X	
Fin Whale (Atlantic population)	*Balaenoptera physalus*						1			X	
Harbour Porpoise (Northwest Atlantic population)	*Phocoena phocoena*					2				X	
Humpback Whale (Western North Atlantic population)	*Megaptera novaeangliae*						3			X	
Killer Whale (NW Atlantic / Eastern Arctic population)	*Orcinus orca*									X	
Northern Bottlenose Whale (Davis Strait-Baffin Bay-Labrador Sea population)	*Hyperoodon ampullatus*									X	
Cuvier's Beaked Whale	*Ziphius cavirostris*										HPC
Hooded Seal	*Cystophora cristata*		X								MPC
Sperm Whale	*Physeter macrocephalus*		X								MPC
Harp Seal	*Phoca groenlandica*										LPC
Sea Turtles											
Leatherback Sea Turtle (Atlantic population)	*Dermochelys coriacea*				1			X			
Loggerhead Sea Turtle	*Caretta caretta*				1			X			
Green Sea Turtle	*Chelonia mydas*										LPC

[1] Current as of 1 February 2019. Sources: SARA website (http://www.sararegistry.gc.ca/default.asp?lang=En&n=24F7211B-1) and COSEWIC website (https://www.canada.ca/en/environment-climate-change/services/committee-status-endangered-wildlife.html).

[2] Green shade means a final Recovery Strategy is in place, but no Critical Habitat has been identified with the exception of northern and spotted wolffishes, North Atlantic right whale, northern bottlenose whale (Scotian Shelf population) and leatherback sea turtle (see footnote 4). Note that two other species that have recovery strategies, Atlantic walrus and gray whale, have been extirpated from Eastern Canadian waters and therefore are not listed in the above table.

[3] Candidate COSEWIC species are classified as High (H), Medium (M), or Low (L) Priority Candidate (PC) species.

[4] A critical habitat statement exists for North Atlantic right whale; however, the critical habitats are near Nova Scotia and extend south into the U.S., well outside of the Project Area. Critical habitat has been identified for northern bottlenose whale (Scotian Shelf population); however, it is located along the Scotian Shelf (i.e., The Gully, Shortland Canyon and Haldimand Canyon). Critical habitat will be identified for leatherback sea turtle in an amended recovery strategy currently in development; it is anticipated that critical habitat will be located in Placentia Bay and the Cabot Strait/Gulf of St. Lawrence, far west of the Project Area. Critical habitat has been proposed for northern and spotted wolffishes in Newfoundland and Labrador waters, including within the northern portion of the Project Area.