Newfoundland Orphan Basin Exploration Drilling Program

Project Description

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List of Acronyms

ADW	Approval to Drill a Well
ASP	Association of Seafood Producers
BOP	blowout preventer
BP	BP Canada Energy Group ULC
CAPP	Canadian Association of Prawn Producers
CEA Agency	Canadian Environmental Assessment Agency
CEAA 2012	*Canadian Environmental Assessment Act*, 2012
CEPA	*Canadian Environmental Protection Act*
C-NLOPB	Canada-Newfoundland and Labrador Offshore Petroleum Board
CNSOPB	Canada-Nova Scotia Offshore Petroleum Board
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
DFO	Fisheries and Oceans Canada
DND	Department of National Defence
DP	dynamic positioning
EA	environmental assessment
EBSA	Ecologically and Biologically Significant Area
ECCC	Environment and Climate Change Canada
EEZ	Exclusive Economic Zone
EIS	Environmental Impact Statement
EL	Exploration Licence
FFAW-Unifor	Fish Food and Allied Workers-Unifor
FPSO	floating, production, storage and offloading
FSC	food, social and ceremonial
GEAC	Groundfish Enterprise Allocation Council
GHG	greenhouse gas
HSSE	health, safety, security and environment
km	kilometres
KMKNO	Kwilmu'kw Maw-klusuaqn Negotiation Office
LISA	Labrador Inuit Settlement Area
MARPOL	International Convention for the Prevention of Pollution from Ships
MCPEI	Mi'kmaq Confederacy of Prince Edward Island

MFN	Miawpukek First Nation
MMS	Mi'gmawei Mawiomi Secretariat
MODU	mobile offshore drilling unit
MPA	Marine Protected Area
MTI	Mi'gmawe'l Tplu'tagnn Inc.
NAFO	North Atlantic Fisheries Organization
NB	New Brunswick
NEB	National Energy Board
NGO	non-governmental organizations
NL	Newfoundland and Labrador
nm	nautical mile
NO_x	nitrogen oxides
NRCan	Natural Resources Canada
NS	Nova Scotia
OA	Operations Authorization
OCI	Ocean Choice International
OWTG	Offshore Waste Treatment Guidelines
P&A	plugged and abandoned
PEI	Prince Edward Island
PL	Production Licence
PM	particulate matter
PSV	platform supply vessel
QC	Quebec
QMFNB	Qalipu Mi'kmaq First Nation Band
ROV	remotely operated vehicle
SARA	*Species at Risk Act*
SBM	synthetic-based mud
SDL	Significant Discovery Licence
SEA	Strategic Environmental Assessment
SO_2	sulphur dioxide
VME	vulnerable marine ecosystem
VSP	vertical seismic profiling
WBM	water-based mud
WNNB	Wolastoqey Nation of New Brunswick

1 Introduction

BP Canada Energy Group ULC (BP) is proposing to conduct an exploration drilling program on Exploration Licences (ELs) 1145, 1146, 1148, and 1149 in the Orphan Basin, located between 270 and 470 km east of the Island of Newfoundland, Canada (the Newfoundland Orphan Basin Exploration Drilling Program; the Project). The Project may involve drilling up to 20 exploration wells over the term of the ELs (2017 to 2026), with an initial well proposed to be drilled in 2019 or 2020 pending regulatory approval.

Offshore exploration drilling, under certain circumstances, is a designated activity under the *Canadian Environmental Assessment Act, 2012* (CEAA 2012). This document is a Project Description, which is required to initiate a process to determine whether an environmental assessment (EA) is required under CEAA 2012 and assist regulatory agencies, Indigenous organizations, and stakeholders in identifying potential interests in the Project for consideration during Project planning and the EA review process (as required).

1.1 Project Context and Objectives

On November 9, 2016, the Canada-Newfoundland and Labrador Offshore Petroleum Board (C-NLOPB) announced BP and its co-venturers had been awarded exploration rights to ELs 1145, 1146, 1148, and 1149 with a work expenditure bid of $425,805,000. The term of these ELs extends from January 15, 2017 to January 15, 2026, with the first term ending January 15, 2023. The issuance of an EL confers the exclusive right to drill and test for petroleum within the ELs. BP is required to drill one exploratory well on or before the expiry date of the first term of each licence as a condition to maintaining tenure of the ELs for the second term.

BP shares these licences with co-venturers Hess Canada Oil and Gas ULC and Noble Energy Canada ULC. BP will serve as the operator for the exploration drilling program. Table 1 shows the size and interests in each of the ELs. Figure 1 shows the location of the licences.

Table 1 Licence Size and Interests

EL	Size	Interest
1145	233,654 ha	BP Canada Energy Group ULC (50%) Hess Canada Oil and Gas ULC (25%) Noble Energy Canada ULC (25%)
1146	192,807 ha	BP Canada Energy Group ULC (50%) Hess Canada Oil and Gas ULC (25%) Noble Energy Canada ULC (25%)
1148	252,482 ha	BP Canada Energy Group ULC (50%) Hess Canada Oil and Gas ULC (25%) Noble Energy Canada ULC (25%)
1149	164,249 ha	BP Canada Energy Group ULC (60%) Noble Energy Canada ULC (40%)

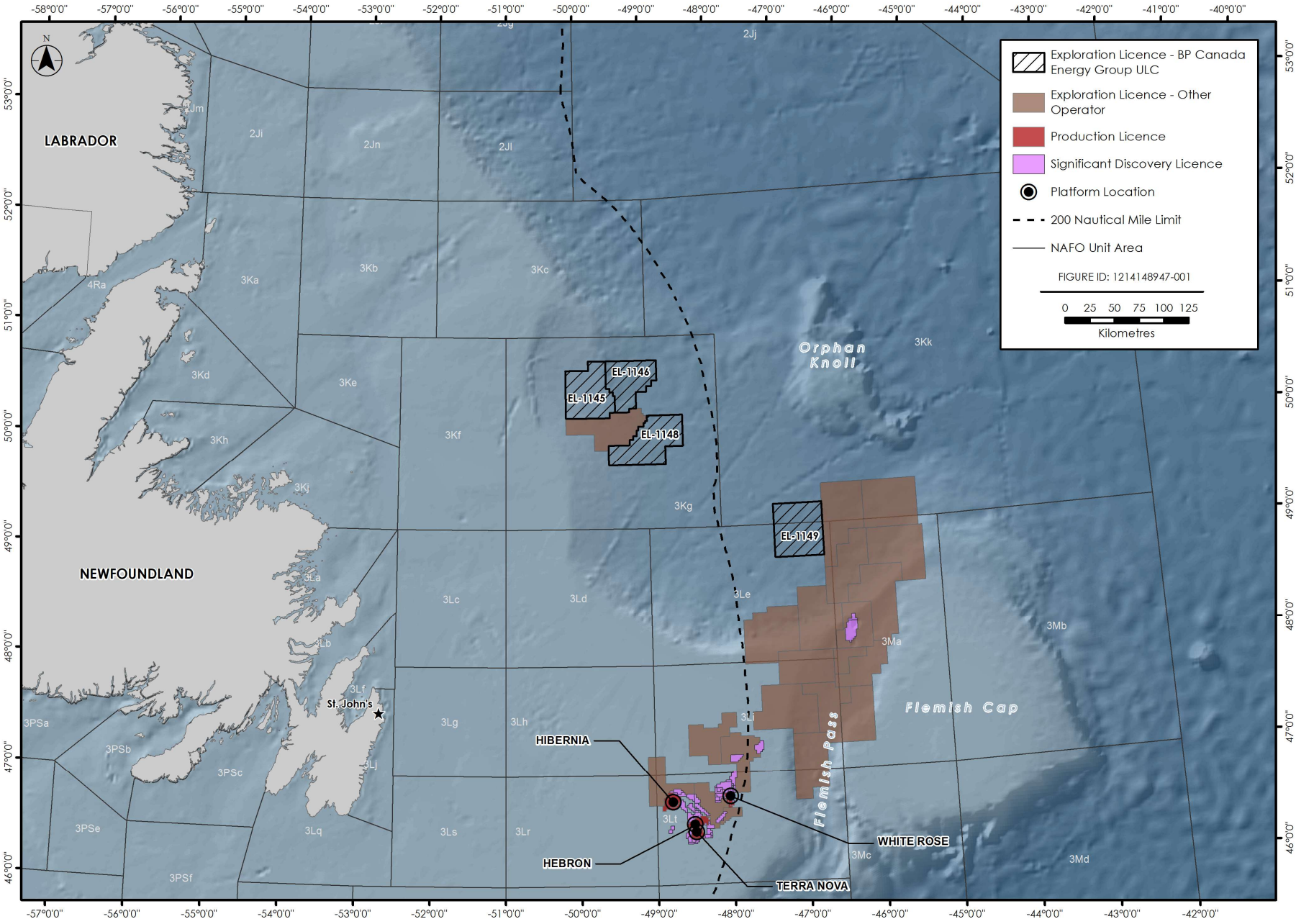


Figure 1 Location of Exploration Licences

BP is proposing the exploration drilling program to determine the presence, nature, and quantities of the potential hydrocarbon resource and to help BP fulfil its work expenditure commitments over the term of the licences.

1.2 Proponent Information

BP is a global energy company, operating in almost 80 countries around the world, with well-established operations in Europe, North and South America, Australasia, Asia, and Africa. BP has decades of experience managing the extraction of oil and natural gas in all types of environments around the world, both onshore and offshore. In Canada, BP focuses on developing energy from Canada's oil sands and is also pursuing offshore opportunities in Newfoundland and Nova Scotia.

Recognizing the need to work toward a lower carbon future, BP is evolving its energy strategy to produce energy more efficiently and remain competitive in a time when prices, policy, technology, and customer preferences are changing. One of these strategies involves investing in new large-scale gas projects and pursuing quality oil projects in core basins. This proposed exploratory program in the Orphan Basin is consistent with BP's strategic priorities. BP also holds interests in various licences in the Flemish Pass and Jeanne d'Arc Basin.

BP is dedicated to maintaining values of Safety, Respect, Excellence, Courage and One Team, upholding these values internally and externally in the areas it operates. Figure 2 summarizes BP's values.

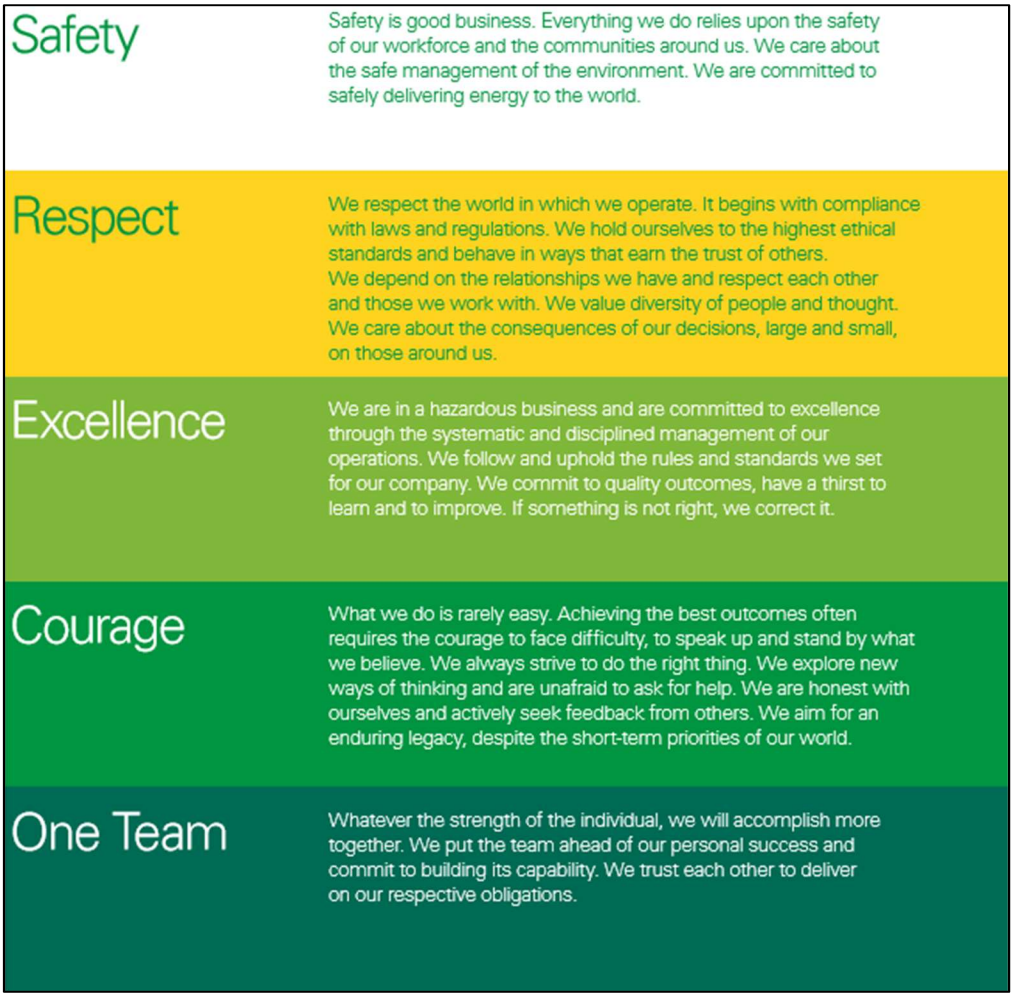


Figure 2 BP's Values

BP's health, safety, security, and environment (HSSE) goals are: no accidents, no harm to people, and no damage to the environment. Safety is at the heart of everything BP does as a company, driven by leadership and applied across all operations throughout the operating management system framework. Everyone who works for BP is responsible for his or her safety and the safety of colleagues, partners, suppliers, and local communities.

BP has established an office in Halifax, Nova Scotia, to oversee its planned deep-water exploration drilling offshore Nova Scotia. The proposed Scotian Basin Exploration Drilling Project involves drilling an initial well in Q2 of 2018, pending regulatory approval. BP intends to establish a physical presence in St. John's, Newfoundland ahead of and during the proposed drilling program, although preliminary planning is being conducted by BP staff based primarily in Halifax, with technical resources drawn from BP's Canadian headquarters in Calgary, Alberta, and BP's global operations in the United Kingdom and Houston, Texas.

All communications regarding the environmental assessment for the Project should be directed to the following contacts:

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1.3 Regulatory Context

1.3.1 Accord Acts

Petroleum activities in the Newfoundland and Labrador (NL) offshore area are regulated by the C-NLOPB, a joint federal-provincial agency reporting to the federal and provincial Ministers of Natural Resources. In 1986, the Government of Canada and the Province of Newfoundland and Labrador signed the Canada-Newfoundland and Labrador Offshore Petroleum Resource Accord to promote social and economic benefits associated with petroleum exploitation. The federal and provincial governments established mirror legislation to implement the Accord. The *Canada-Newfoundland and Labrador Atlantic Accord Implementation Act* and the *Canada-Newfoundland and Labrador Atlantic Accord Implementation Newfoundland and Labrador Act* are collectively referred to as the Accord Acts.

Under the Accord Acts, the C-NLOPB issues licences for offshore exploration and development, and is responsible for the management and conservation of offshore petroleum resources, and protection of the environment, as well as the health and safety of offshore workers, while enhancing employment and industrial benefits for Newfoundland and Labrador residents and Canadians.

Offshore petroleum activities and the C-NLOPB's decision-making processes are governed by a variety of legislation, regulations, guidelines, and memoranda of understanding. Exploration drilling programs require an Operations Authorization (OA) under the Accord Acts. Prior to issuing an OA, the C-NLOPB requires the following to be submitted:

- An Environmental Assessment Report
- A Canada-Newfoundland and Labrador Benefits Plan
- A Safety Plan
- An Environmental Protection Plan (including a waste management plan)

- Emergency Response and Spill Contingency Plans
- Appropriate financial security
- Appropriate certificates of fitness for the equipment proposed for use in the activities

For each well in the drilling program, a separate Approval to Drill a Well (ADW) is required. This authorization process involves specific details about the drilling program and well design.

There are several regulations under the Accord Acts that govern specific exploration or development activities. There are also various guidelines, some of which have been jointly developed with the Canada-Nova Scotia Offshore Petroleum Board (CNSOPB) and National Energy Board (NEB), which are intended to address environmental, health, safety, and economic aspects of offshore petroleum exploration and development activities. Of particular relevance to the EA of this Project are the Drilling and Production Guidelines (C-NLOPB and CNSOPB 2017), the Offshore Waste Treatment Guidelines (OWTG) (NEB et al. 2010) and the Offshore Chemical Selection Guidelines for Drilling and Production Activities on Frontier Lands (NEB et al. 2009).

1.3.2 Environmental Assessment

Offshore exploration drilling, under certain circumstances, is a designated physical activity subject to the requirements of the CEAA 2012. Section 10 of the *Regulations Designating Physical Activities* under CEAA 2012 includes:

> *The drilling, testing and abandonment of offshore exploratory wells in the first drilling program in an area set out in one or more exploration licences issued in accordance with the Canada-Newfoundland Atlantic Accord Implementation Act or the Canada-Nova Scotia Petroleum Resources Accord Implementation Act.*

The Project will constitute the first drilling, testing, and abandonment of offshore exploratory wells within the ELs issued to BP by the C-NLOPB. Following submission of this Project Description document, the Canadian Environmental Assessment Agency (CEA Agency) will conduct a screening process and determine the requirement for an EA under CEAA 2012. Should a federal EA process be required under CEAA 2012, it is expected that an Environmental Impact Statement (EIS) will be required and that the EIS will also satisfy the C-NLOPB requirements for an EA as part of the OA review process under the Accord Acts. Should a federal EA process not be required under CEAA 2012, BP will still prepare an EA Report to satisfy C-NLOPB requirements as part of the OA review process.

1.3.3 Other Regulatory Requirements and Interests

As defined by the Accord Acts, the Newfoundland and Labrador offshore area regulated by the C-NLOPB includes the greater of lands within Canada's 200 nautical mile (nm) Exclusive Economic Zone (EEZ) or to the edge of the continental margin. CEAA 2012 defines federal lands as those lands that include the continental shelf of Canada. Therefore, the Project will be carried out on federal lands under the jurisdiction of the C-NLOPB. There is no federal funding involved in this Project.

In addition to the OA and ADW from the C-NLOPB pursuant to the Accord Acts, and EA approval under CEAA 2012 (if required), the Project is subject to various federal legislative and regulatory requirements, including:

- *Canada Shipping Act*
- *Canadian Environmental Protection Act, 1999*
- *Fisheries Act*
- *Migratory Birds Convention Act, 1994*
- *Species at Risk Act* (SARA)
- *Navigation Protection Act*

A Migratory Bird Handling Permit will likely be required from Environment and Climate Change Canada (ECCC) to permit the salvage of stranded birds on offshore vessels during the Project.

A provincial EA under the *Environmental Protection Act* is not anticipated to be required based on the proposed Project scope. BP will not be constructing onshore facilities as part of the Project. No provincial or municipal permits are currently anticipated to be required for the Project, including for the onshore supply base which will be sited at an existing facility. There are two offshore supply bases on the east coast of the Island of Newfoundland, which have been providing support to offshore oil and gas activity in the Newfoundland offshore since the early 1990s. These are third-party facilities that have the necessary permits and approvals to undertake activities related to offshore oil and gas projects. No additional modifications or changes to the existing third-party supply base will be required for the purpose of supporting this Project. As a result of the forgoing, the supply base and associated activities are not considered to be within the scope of the Project assessment.

2 Project Description

2.1 Project Location

BP proposes to drill up to 20 exploration wells on ELs 1145, 1146, 1148, and 1149 during the term of the ELs. The ELs are located in the Grand Banks Region, with ELs 1145, 1146, and 1148 located in the West Orphan Basin within Canada's 200 nm EEZ, and EL 1149 located in the East Orphan Basin, beyond the EEZ. These ELs are between approximately 270 and 470 km east of the Island of Newfoundland. The ELs are approximately 350 km from St. John's; the nearest community is Elliston (approximately 280 km), on the Bonavista Peninsula. The nearest "residences" to the Project Area would be the SeaRose floating, production, storage and offloading (FPSO) vessel at Husky's White Rose oil development field, approximately 250 km from EL 1149. Water depths in these ELs range from approximately 1,000 to 3,000 m. Specific well sites are not yet known but drilling operations will be conducted within the defined boundaries of ELs 1145, 1146, 1148, or 1149.

A Project Area has been proposed that encompasses the four ELs and incorporates an approximate 20 km buffer. Further direction on setting spatial boundaries may be provided in the EIS Guidelines, should it be determined that a federal EA process under CEAA 2012 is required. The EIS would define study area boundaries that will extend beyond the Project Area based on potential environmental interactions with routine and unplanned Project activities and in recognition of potential cumulative environmental effects. Project Area coordinates are provided in Table 2; the Project Area is shown on Figure 3.

Table 2 Project Area Coordinates

Vertex Label	WGS 84		NAD83 UTM ZONE22N	
	X	Y	X	Y
A	50° 25' 55.634" W	50° 57' 47.150" N	539879.34	5645874.69
B	48° 33' 55.067" W	50° 57' 47.112" N	670967.10	5648542.28
C	46° 17' 33.285" W	49° 35' 59.349" N	840097.99	5504788.98
D	46° 19' 24.131" W	48° 46' 12.260" N	843582.30	5412452.89
E	47° 32' 58.040" W	48° 46' 12.260" N	753521.20	5407640.85
F	49° 49' 41.068" W	49° 39' 12.035" N	584589.89	5500748.33
G	50° 25' 55.634" W	50° 50' 12.038" N	540624.92	5548422.36

There are no zoning designations that apply to the Project Area. The Project will not take place on lands that have been subject to a regional study as described in Sections 73-77 of CEAA 2012; however, the Project Area falls within the study area for the Eastern Newfoundland Strategic Environmental Assessment (SEA) completed by the C-NLOPB in August 2014 (AMEC 2014) (refer to Figure 3).

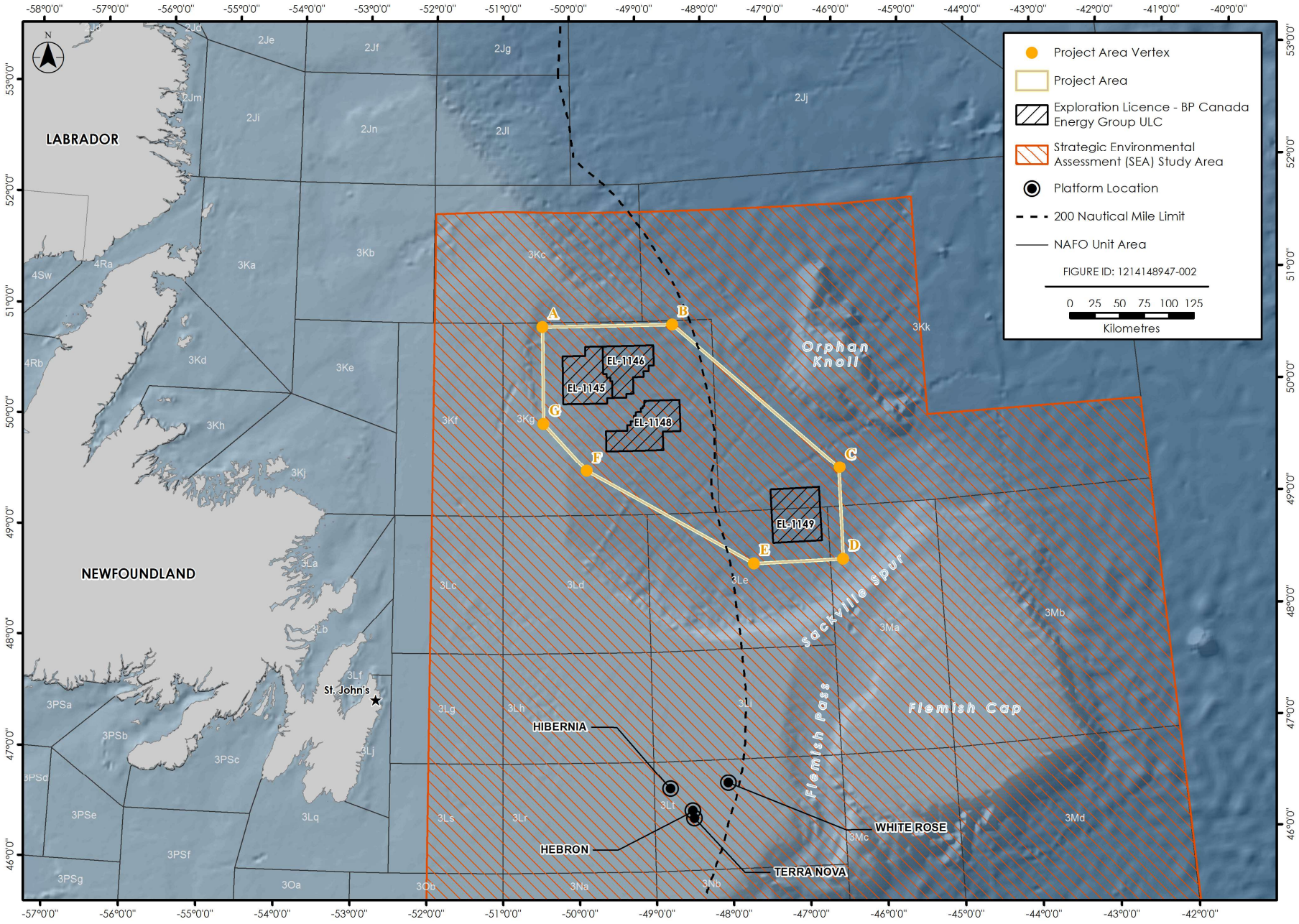
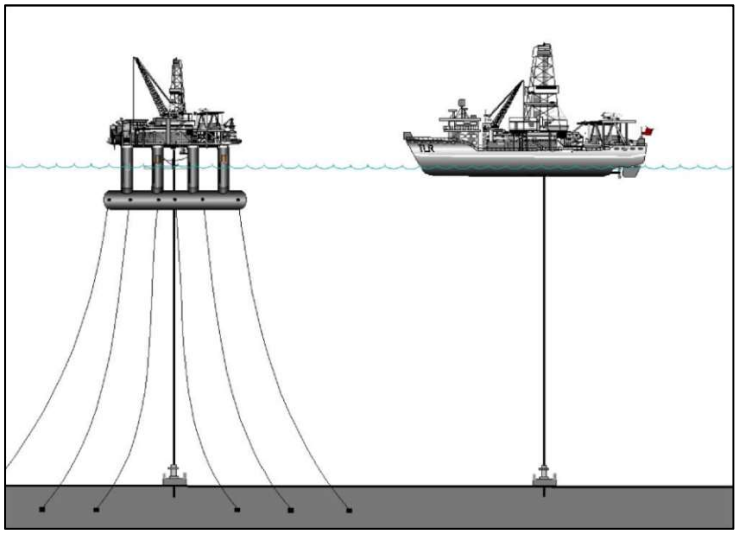


Figure 3 Project Area

2.2 Project Components and Activities

2.2.1 Drilling

Wells will be drilled using either a semi-submersible rig or a drillship, referred to generically as a mobile offshore drilling unit (MODU). The MODU will be procured by BP through a competitive bid process in accordance with the requirements of the Accord Acts. It is possible that the same MODU may not be used for drilling all wells in the drilling program. A semi-submersible rig would either be moored in position over the drilling site, or, as is more likely for this drilling program, maintained on station by dynamic positioning (DP). A drillship would maintain its position by DP. The standard mooring technique for a semi-submersible is an eight-point spread mooring arrangement using a combination of wire rope, chains, and anchors. The anchors are set in a pre-determined pattern using an anchor handling offshore vessel. In the DP mode, a semi-submersible or drillship maintains position using thrusters positioned on the hulls, which are controlled by a computerized positioning system. Figure 4 shows a schematic of a semi-submersible rig using mooring (rather than DP) and a drillship for comparison purposes.



Source: Adapted from MMS 2000

Figure 4 Schematic of Semi-submersible and Drillship

Prior to drilling, proposed wellsite locations are surveyed, generally using a remotely operated vehicle (ROV) to inspect the seabed for potential hazards and sensitive habitat (e.g., habitat-forming corals).

The drilling of an offshore well can be broken down into two phases: riserless drilling and riser drilling. Drilling fluid can be a water-based mud (WBM) or synthetic-based mud (SBM) suspension of clays and is used in well drilling to help equalize pressure, keep the drill bit cool, and flush out cuttings from the wellbore. The initial (i.e., surface) sections are normally drilled without a riser system, which serves as a conduit to bring mud and cuttings back to the drilling vessel in a closed loop system. These "riserless" sections are drilled using a WBM, with mud and cuttings returned to the seabed as permitted by the OWTG.

The well design has not yet been completed. In general, following the drilling of the initial sections, the drill string (assembly of drill pipes) is removed and a steel casing is cemented into place to prevent the wall of the well from caving in and prevent seepage of muds and other fluids. The casing also provides adequate pressure integrity to allow a blowout preventer (BOP) and riser system to be installed. The BOP is a critical piece of safety equipment which, in the event of an emergency or equipment failure, allows the wellbore to be closed, thereby preventing hydrocarbons from escaping the wellbore into the environment.

Once a riser system has been installed, the deeper (lower hole) sections of the wells may be drilled with SBM. The riser returns mud and cuttings to the drilling vessel in a closed loop system for treatment prior to disposal to the seabed in accordance with the OWTG. More information on the management of drilling waste is provided in Section 2.3.3. An unplanned or planned side-track (i.e., drilling a second wellbore away from an original wellbore) may be drilled to meet the Project objectives. Figure 5 presents a schematic demonstrating the initial drilling sequence of a well.

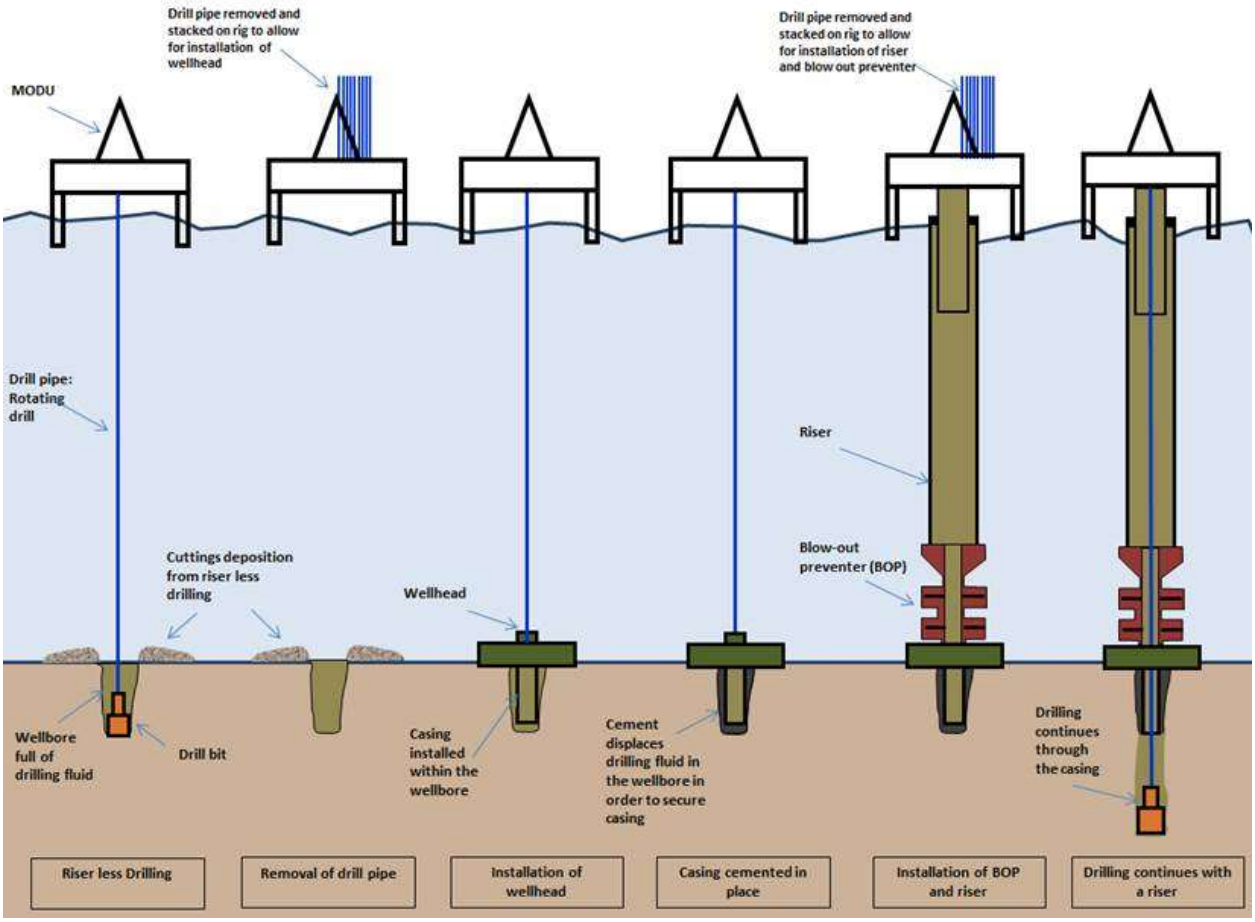


Figure 5 Initial Drilling Sequence

BP proposes to commence drilling in 2019 or 2020, pending regulatory approval. Depending on the results of the initial well, up to 20 wells may be drilled over the term of the ELs. It is anticipated that it will take approximately 60 days to drill each well.

2.2.2 Vertical Seismic Profiling

Following the drilling of each well to its target depth (where hydrocarbon reservoirs are predicted to be located), vertical seismic profiling (VSP) is conducted to obtain accurate "time to depth ties", which allows the correlation of seismic data (which is recorded in time measurements) to well depth (recorded in metres (m)). VSP operations involve deploying an acoustic sound source from the drilling or support vessel, while a number of receivers are positioned at different levels within the drilled hole to measure the travel time.

Typically, between three and six sound sources are used, with a volume of 150 to 250 cubic inches each, although there could be up to 12 sound sources in a larger array. These sound sources are generally positioned at 5 to 10 m water depth. VSP operations are typically of short duration, taking approximately one to three days to complete for each well. Specific details of the VSP program will depend on the geological target and the objectives of the VSP operation.

2.2.3 Well Evaluation and Testing

If exploration drilling results indicate the potential presence of hydrocarbons, the well will be evaluated and possibly tested to provide further information. Well evaluation is an important component of exploration drilling as it helps to determine the viability of a prospect and commercial potential of the reservoir. If a well test is required, it will be subject to BP's well test assurance process, which is designed to promote safe and efficient well test operations. In line with industry practice, well flow testing involves flowing the well fluids through temporary test equipment located on the drilling vessel, and requires flaring of gases or other hydrocarbons that come to surface for safe disposal.

Flaring activity will be carried out in accordance with industry standard and applicable regulations. It is anticipated that testing would occur over a one to three-month period after drilling is complete. As part of any well test program, there are likely to be separate periods of flaring that may comprise the following activities:

- A number of main flow test periods each involving approximately 24 hours of flaring for any one period
- Other flaring periods for operational purposes including flushing and/or bleeding off surface equipment (these periods are likely to last between one and six hours each and the flow rates during these periods are expected to be small)

2.2.4 Well Abandonment

All wells drilled in the drilling campaign will likely be permanently plugged and abandoned (P&A) after completion of data acquisition and evaluation programs, in accordance with BP recommended practice and any applicable regulations. Depending on the results of the well, it may be suspended and re-entered for additional data acquisition and evaluation before final P&A. Suspension and P&A procedures are designed to isolate the well and prevent the release of wellbore fluids to the marine environment.

P&A operations involve setting a series of cement and mechanical plugs within the wellbore, including plugs above any hydrocarbon-bearing intervals, at appropriate barrier depths in the well, and at the surface. A seabed survey is typically conducted for each well using an ROV to survey the seabed for debris.

2.2.5 Supply and Servicing

Offshore drilling operations will be supported by logistics arrangements for supply and servicing activity. Such arrangements will allow the transportation and movement of equipment and personnel between the MODU and land, and will allow sufficient stocks of equipment and supplies to be maintained for reliable, ongoing drilling operations.

Existing facilities in eastern Newfoundland will be used for supply, support, and logistical functions. These shore-based facilities are owned and operated by independent third-party service providers and currently service multiple operators and their activities. They are also certified as compliant port facilities under the *Marine Transportation Security Act*. Third-party services and support will be procured through a competitive bid process in accordance with the requirements of the Accord Acts. The Project will not require the development of new infrastructure or any upgrades to existing facilities to support Project operations. Third-party service providers will be responsible for maintaining applicable regulatory approvals to operate their facilities.

It is likely that two to three platform supply vessels (PSVs) will be required, with one vessel on stand-by at the MODU at all times. It is estimated that the PSVs will make a total of two to three round trips per week between the MODU and the supply base during the course of drilling each well. Existing shipping lanes will be used as practicable to reduce incremental marine disturbance. Where these do not exist, PSVs will follow a straight-line approach to and from port to the Project Area (refer to Figure 6). Once in the Project Area, the PSV will select the most appropriate route for reaching the destination. The PSVs will follow applicable Port Authority requirements when in a port and will be compliant with the *Eastern Canadian Vessel Traffic Services Zone Regulations* when operating in near-shore or harbour areas. PSV transit has an existing regulatory regime and best management practices and is an ongoing, routine activity among all operators in the region.

Aircraft (helicopter) support for the Project will be based at the St. John's International Airport. Helicopters will be used for crew changes on a routine basis and to support medical evacuation from the MODU and search and rescue activities in the area, if required. It is estimated that approximately two helicopter trips per day may be required to transfer crew and any supplies not carried by the PSV to the MODU. The MODU will be equipped with a helideck for safe landings.

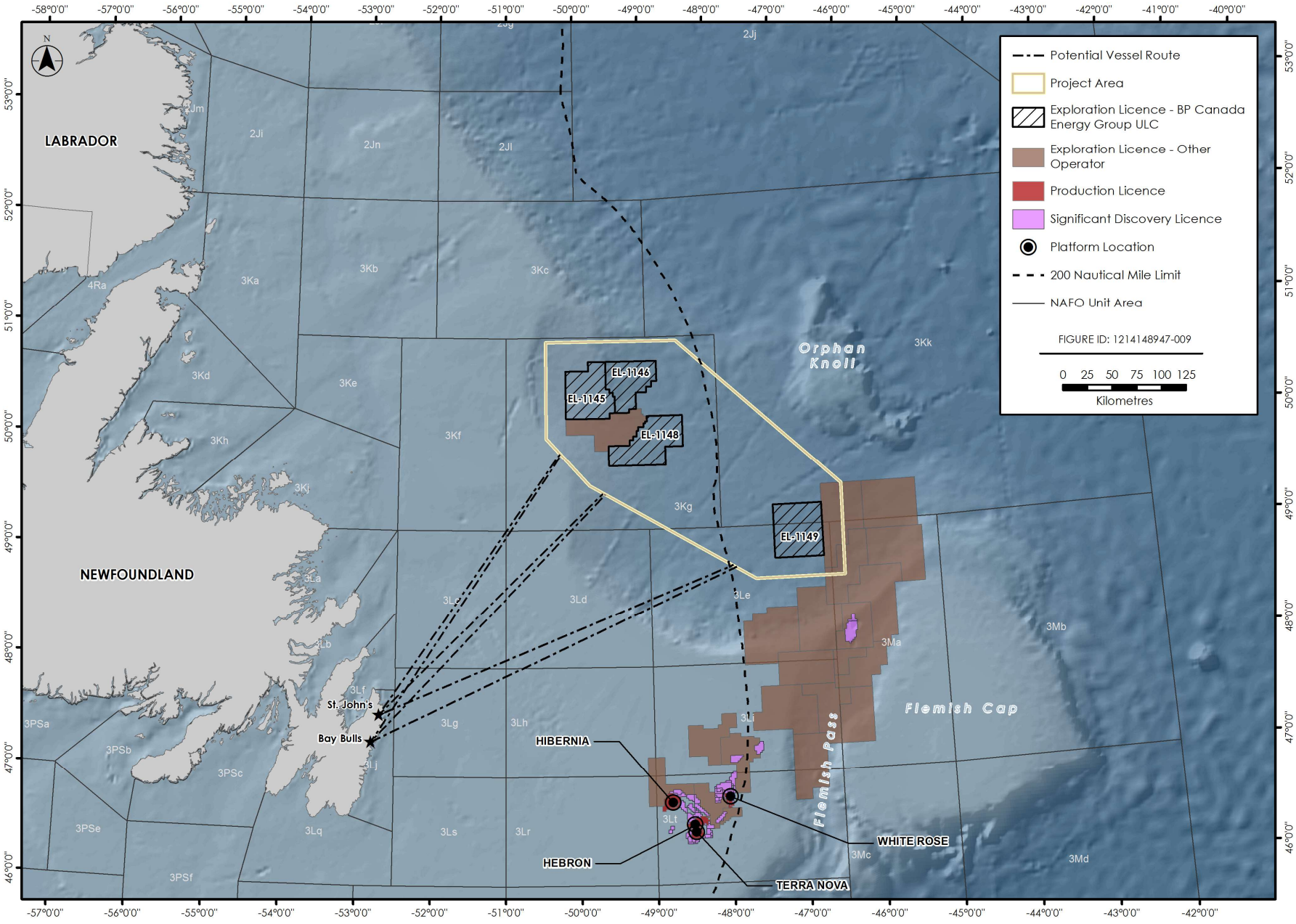


Figure 6 Potential Vessel Transit Routes

2.3 Emissions, Discharges, and Waste Management

Efforts will be made to reduce waste emissions and discharges generated during the Project. All waste generated will be managed and disposed according to regulatory requirements and applicable guidelines. Offshore waste discharges will be managed in compliance with the International Convention for the Prevention of Pollution from Ships (MARPOL) and/or the OWTG, as applicable. Wastes brought to shore for disposal will be managed in accordance with the Newfoundland and Labrador Waste Management Strategy and other applicable regulatory requirements (including municipal by-laws). A Waste Management Plan will be prepared as part of the OA application process with the C-NLOPB prior to drilling operations. The following subsections provide a general description of typical wastes to be generated over the course of Project activities and how these wastes will be managed.

2.3.1 Atmospheric Emissions

Atmospheric emissions expected to be associated with Project activities are primarily related to the combustion of marine fuel by the drilling vessel and PSVs. Emissions are also associated with short-term flaring during well testing, if testing is performed. These emissions will include carbon monoxide (CO), carbon dioxide (CO_2), sulphur dioxide (SO_2), nitrogen oxides (NO_x), and particulate matter (PM). BP will comply with the provincial *Air Pollution Control Regulations*, *Ambient Air Quality Objectives* under CEPA, regulations under MARPOL and the intent of the Global Gas Flaring Reduction Partnership (which seeks to increase the use of associated natural gas and thus reduce flaring and venting).

With respect to greenhouse gas (GHG) emissions, it is estimated that there could be approximately 300 tonnes of carbon dioxide equivalent (CO_2e) emissions associated with operational drilling and vessel traffic per day or approximately 18,000 tonnes CO_2e per well, assuming a 60-day drilling program. Assuming that there could be between zero to three wells drilled per year over the term of the ELs, annual GHG emissions resulting from the Project are estimated to be up to approximately 54,000 tonnes CO_2e. These emissions represent 1.10% of the total reported provincial GHG emissions for 2015 (4,924,713 tonnes CO_2e) and 0.01% of the national emissions (264,163,368 tones CO_2e) (ECCC 2017). If well flow testing is conducted, flaring will result in additional GHG emissions. Assuming approximately four well flow testing events over the life of the Project (one target tested per EL), it is estimated that an additional 17,448 tonnes of CO_2e could be emitted.

Artificial light emissions associated with the Project include navigation and deck lighting from the MODU and PSVs. Artificial lighting will be reduced to the extent that it does not affect worker and vessel safety. In the event of flaring during well testing, there will be temporary (e.g., up to two or three days) light and thermal emissions associated with the flare.

Atmospheric sound will be generated by the MODU, PSVs, and helicopter traffic. However, there is limited predicted interaction with human receptors given the distance of the MODU offshore and that the PSVs and helicopter will operate out of existing port and airport facilities. The sound generated by Project traffic will be comparable to existing vessel and helicopter traffic. Underwater sound is discussed in Section 2.3.2.

2.3.2 Underwater Sound

Underwater sound is generated by the MODU and PSVs as well as during VSP operations. The level of underwater sound generated is influenced by the type of drilling vessel (e.g., semi-submersible versus drillship) and method of positioning on station (e.g., use of thrusters for dynamic positioning versus anchoring). The propagation of underwater sound with distance from a source is influenced by water column and seabed characteristics. Underwater sound associated with the MODU is continuous during a drilling program. Underwater sound generated during VSP operations is impulsive, with higher sound level pulses occurring over of a much shorter duration (up to approximately three days, depending on the VSP method selected).

2.3.3 Drilling Waste

The initial (i.e., surface) sections are normally drilled riserless with WBM, with mud and cuttings returned to the seabed where they will accumulate near the wellhead. The discharge of WBM cuttings at the seabed, while drilling the first two hole sections, is accepted as industry standard practice and is consistent with the OWTG. Spent and excess WBM may be discharged from the drilling vessel without treatment as per the OWTG. The deeper (lower hole) sections of the wells will likely be drilled with SBM. The marine riser located between the BOP and the drilling vessel acts as a conduit for the return of drilling mud and cuttings back to the drilling vessel for treatment prior to disposal to the seabed in accordance with the OWTG.

On the drilling vessel, the drilled cuttings and drilling mud are separated and cleaned using solids control equipment. The mud returns carrying the drilled cuttings initially pass through a shale shaker, where the majority of mud is separated from the cuttings. Where SBM is used, cuttings from the shale shaker pass through a cuttings dryer, which removes SBM from cuttings. Residual synthetics-on-cuttings discharged to the marine environment is treated in accordance with the OWTG prior to discharge. Monitoring of the residual base mud-on-cuttings levels is carried out during well sections involving use of SBM. After recovery and treatment of drill muds, the drill cuttings are discharged from the drilling vessel at the well site. No surplus SBM is discharged to the sea; spent SBM that cannot be reused during drilling is brought to shore for disposal in an approved licensed facility.

The extent of drilling discharge deposition can only be predicted accurately through a drilling discharge dispersion modelling exercise, which will be carried out as part of the EIS. The zone of deposition would depend on the particle size distribution in the discharge stream, water depth, and currents. The depositional thickness will vary by water depth and is likely to be greater during the riserless drilling associated with the upper well section, as WBM cuttings are released directly at the seafloor, which limits the likelihood of cuttings distribution through the water column.

Cement is used to set the well casing strings during drilling. Prior to installation of the riser package (e.g., during drilling of the conductor and surface holes), surplus cement is discharged at the seafloor. Following installation of the riser, residual cement associated with drill cuttings and flushing of cement lines/tanks is discharged from the drilling vessel in accordance with industry practice. Surplus cement is brought to shore for disposal in an approved facility.

If a well test is deemed necessary, the wellbore fluids (gas and liquid phases) will be managed in accordance with industry standard practice and any applicable regulations.

2.3.4 Liquid Discharges

A number of liquid wastes could be generated from the MODU and/or the PSVs including:

- Produced water
- Bilge and deck drainage water
- Ballast water
- Grey / black water (sewage)
- Cooling water
- Well treatment fluids
- Fire control testing water
- BOP fluid

The OWTG contain performance targets for each of these discharges, including in some cases, required sampling and analysis prior to ocean discharge. Where discharges occur offshore, the points of discharge will be below the water surface. Liquid discharges that do not meet OWTG performance targets for ocean disposal are transported to shore for disposal at an approved licensed disposal facility.

2.3.5 Hazardous and Non-Hazardous Solid Wastes

Hazardous and non-hazardous solid wastes will also be generated by Project activities. Food wastes will be macerated in accordance with the OWTG prior to discharge at sea (below the water surface). All other solid waste generated offshore will be transported to shore for appropriate treatment and/or disposal in accordance with applicable regulations and municipal by-laws. Non-hazardous wastes may include domestic waste, scrap metal, recyclables, and other miscellaneous non-hazardous wastes. Hazardous wastes (including waste dangerous goods) could include oily waste (filters, rags, waste oil), waste chemicals and containers, batteries, and biomedical waste.

BP will retain a third-party licensed waste management contractor to manage and dispose of wastes transported onshore. Hazardous wastes will be disposed of at approved facilities in compliance with applicable regulations and approvals.

2.4 Project Schedule

BP proposes to commence exploration drilling with an initial well in 2019 or 2020 pending regulatory approval to proceed. Up to 20 exploration wells could be drilled over the term of the ELs (2017 to 2026) contingent on the drilling results of the initial well. Drilling activities will not be continuous and will be in part determined by rig availability and previous wells' results. It is anticipated that each well will take approximately 60 days to drill.

BP's preference is to conduct drilling between May and October, although the EIS (if required under CEAA 2012) will assume year-round drilling. VSP operations will take approximately one to three days per well and well testing, where required, would occur over a one to three-month

period. Well abandonment will likely be conducted following drilling and/or well flow testing. Wells may be designed for suspension and re-entry but this will be determined through further prospect evaluation.

2.5 Potential Accidental Events

BP uses a systematic process to identify and manage potential risks and unplanned events that could occur during its global activities. Multiple preventative and response barriers are put in place to manage risk, both in terms of the incident arising in the first place, and to mitigate and respond to incidents to manage potential consequences. Potential accidental events that could occur during exploration drilling and potentially result in a release to the environment, include vessel collision, dropped objects, loss of well control (e.g., blowout), and spills and releases from MODU or PSVs.

BP will conduct predictive spill modelling to help assess the risk of adverse environmental effects that might occur as a result of potential accidental events associated with the Project. Oil spill modelling will take into consideration the water depth and metocean conditions within the proposed drilling area, which would affect the behaviour of a subsea spill scenario. In general, because hydrocarbons released from a subsea spill in deep water would remain in the water column longer as it rose to the surface, the hydrocarbon would be subject to a greater degree of mixing, dissolution and natural dispersion than a subsea release in shallow water. A deep-water release would, therefore, be more likely to be transported by subsea currents and subject to spreading over a larger area than a shallow water release.

The EIS (if required under CEAA 2012) will also provide an overview of BP's overall oil spill preparedness and response capability which will include a range of specific response measures such as offshore containment and recovery, chemical dispersant use, in situ burning, shoreline protection and oiled wildlife response.

3 Environmental Setting

3.1 Physical Environment

3.1.1 Geology and Topography

The geology of the Eastern Newfoundland offshore area is complex and dynamic, and the current bedrock and surficial characteristics of the area have been shaped by various natural and human factors and processes over time (AMEC 2014). The eastern continental shelf was formed by extension during the breakup of Pangea and the opening of the Atlantic Ocean during the Late Triassic to Mid-Cretaceous, and is underlain by pre-rift basement rocks (Fader et al. 1989). A combination of rifting and salt tectonics in the area created a series of Mesozoic rift basins. The main sedimentary basins in the area include the Orphan, Flemish Pass, Jeanne d'Arc, and Carson basins (Fader et al. 1989).

The topography of Orphan Basin and surrounding areas includes at least four distinct types characterized by depth, location, and physiography (LGL 2003a, in LGL 2011a). These include: the eastern portion of the northeast Newfoundland Shelf (depths ≤200m); the northeast Newfoundland Shelf Slope (depths >200 to 2,000 m); the Orphan Basin proper (depths 2,000 to >3,000 m); and the Flemish Pass (depths >1000 m) (LGL 2003a, in LGL 2011a). Surficial sediment in this area ranges from fine muds and clays to extremely coarse boulders and bedrock (LGL 2011a).

The combination of stratigraphy, structure, and timing have been conducive to hydrocarbon generation and entrapment in the area (Bell and Campbell 1990). The primary reservoirs in the East Orphan basin are the shallow fluvial sandstones deposited during the Late Jurassic and Early Cretaceous periods of the Mesozoic Era. The primary exploration targets in the West Orphan basin are lower Tertiary basin floor fan sandstone reservoirs.

3.1.2 Climate

The area between the northern Grand Banks and the Orphan Knoll experiences weather conditions typical of a marine climate, including reduced visibilities, low cloud heights, and significant amounts of precipitation (LGL 2011a). The surrounding waters have a moderating effect on temperature, and in general, summers are cooler and winters are warmer than those in continental climates (LGL 2011a). Air temperatures in the Orphan Basin exhibit strong seasonal variations, with mean temperatures ranging from -2.9°C in February to 11.7°C in August (AMEC 2014). Throughout the year, the mean daily minimum and maximum temperatures generally range within approximately 3°C of the mean temperature (AMEC 2014).

The climate of the Project Area is dynamic and is largely controlled by the passage of high and low circulation systems. There is a prevailing westerly flow, typical of the upper layers of the atmosphere in the mid-latitudes, due to the normal tropical-to-polar temperature gradient (LGL 2011a). The mean strength of this westerly flow is stronger in winter months than during the summer months (LGL 2011a).

In the Orphan Basin, most of the observed precipitation events are in the form of rain and snow, while other precipitation types, such as mixed rain and snow, freezing rain, and hail, occur far less

frequently (AMEC 2014). The monthly frequency of rain events is lowest in January and February, when the frequency of snow events is at its peak (AMEC 2014). The monthly frequency of rain events is at its highest between the months of May and November, with maximum rain frequency in October, and the lowest frequency of snow events from June to September (AMEC 2014).

The Orphan Basin and Grand Bank areas experience seasonal sea or pack ice from January to April, with the maximum southern extent occurring from February to the middle of March (AMEC 2014). The Flemish Pass and Tail of the Grand Banks areas rarely experience sea ice (typically one or two weeks in mid-March when it is present) (LGL 2010; AMEC 2014). Icebergs can occur in the Orphan Basin, Grand Bank, and Flemish Pass areas from February to July, especially in the region nearest the Grand Banks (AMEC 2014); large icebergs are rarely seen in the Tail of the Grand Banks area (LGL 2010).

3.1.3 Ocean Currents

Large scale circulation off the coast of Newfoundland and Labrador is dominated by well-established currents that flow along the margins of the Continental Shelf (LGL 2011a). The two major current systems in the area are the Labrador Current and the North Atlantic Current (Colbourne and Foote 2000, in LGL 2011a). The main current in the Project Area is the Labrador Current which transports sub-polar water to lower latitudes along the Continental Shelf of Eastern Canada.

Within the Project Area, and in surrounding areas, the largest seas are typically found farthest offshore, usually during the winter season between the months of December and January (AMEC 2014). In the Orphan Basin, mean significant wave heights range from 1.7 m in July to 4.3 m in January, with maximum significant wave heights ranging from 6.3 m in July to 15.9 m in January (AMEC 2014). Significant wave heights exceeding 6 m are expected to occur during every month of the year (AMEC 2014).

3.1.4 Air Quality

Air Quality within the Project Area, and in surrounding areas, is anticipated to be good, with occasional exposure to exhaust products from PSVs, other marine traffic, helicopters, and existing offshore oil production facilities in the Jeanne d'Arc Basin (Hibernia, Terra Nova, White Rose, and Hebron). The general area also receives long-range contaminants from the Northeast Seaboard and industrial midwest of the United States (ExxonMobil Canada Properties 2011, in Husky 2012).

3.2 Biological Environment

3.2.1 Fish, Fish Habitat, and Aquatic Species

The eastern Newfoundland offshore area is a highly-productive ecosystem and there are many species of fish, marine mammals, sea turtles, and marine birds that occur, or could potentially occur, in the Project Area. Some of these species are listed as species at risk under SARA and / or are identified as species of conservation interest by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). There are currently 32 species of conservation interest (i.e., listed by SARA or assessed by COSEWIC) that could occur within the Project Area. Of these, there are 22

species of fish, seven species of marine mammal, two species of sea turtle, and one species of marine bird listed / assessed (see Table 3).

Table 3 Species of Conservation Interest with Potential to Occur in the Project Area and in Surrounding Areas

Species		Status	
Common Name	Scientific Name	SARA	COSEWIC
Fish			
White shark (Atlantic population)	*Carcharodon carcharias*	Schedule 1 Endangered	Endangered
Northern wolffish	*Anarchias denticulatus*	Schedule 1 Threatened	Threatened
Spotted wolffish	*Anarchias minor*	Schedule 1 Threatened	Threatened
Atlantic wolfish	*Anarchias lupus*	Schedule 1 Special Concern	Special Concern
Atlantic bluefin tuna (Grand Banks of Newfoundland only)	*Thunnus thynnus*	No Status	Endangered
Atlantic cod (Newfoundland and Labrador population)	*Gadus morhua*	No Status	Endangered
Cusk	*Brosme brosme*	No Status	Endangered
Porbeagle shark	*Lamna nasus*	No Status	Endangered
Roundnose grenadier	*Coryphaenoides rupestris*	No Status	Endangered
Winter skate (Eastern Scotian Shelf – Newfoundland population)	*Leucoraja oscellata*	No Status	Endangered
Acadian redfish	*Sebastes fasciatus*	No Status	Threatened
American eel	*Anguilla rostrata*	No Status	Threatened
American plaice (Newfoundland and Labrador population)	*Hippoglossoides platessoides*	No Status	Threatened
Atlantic salmon (South Newfoundland)	*Salmo salar*	No Status	Threatened
Atlantic salmon (Gaspe-Southern Gulf of St. Lawrence)	*Salmo salar*	No Status	Special Concern
Atlantic salmon (Outer Bay of Fundy)	*Salmo salar*	No Status	Endangered
Atlantic salmon (Eastern Cape Breton)	*Salmo salar*	No Status	Endangered
Atlantic salmon (Nova Scotia Southern Upland)	*Salmo salar*	No Status	Endangered

Species		Status	
Common Name	Scientific Name	SARA	COSEWIC
Atlantic salmon (Quebec Eastern North Shore population)	*Salmo salar*	No Status	Special Concern
Atlantic salmon (Quebec Western North Shore population)	*Salmo salar*	No Status	Special Concern
Atlantic salmon (Anticosti Island population)	*Salmo salar*	No Status	Endangered
Deepwater redfish (Northern population)	*Sebastes mentella*	No Status	Threatened
Shortfin mako shark (Atlantic population)	*Isurus oxyrinchus*	No Status	Threatened
White Hake (Atlantic and Northern Gulf of St. Lawrence population)	*Urophycis tenuis*	No Status	Threatened
Basking Shark (Atlantic population)	*Cetorhinus maximus*	No Status	Special Concern
Blue shark (Atlantic population)	*Prionace glauca*	No Status	Special Concern
Roughhead grenadier	*Macrourus berglax*	No Status	Special Concern
Spiny dogfish (Atlantic population)	*Squalus acanthias*	No Status	Special Concern
Thorny skate	*Amblyraja radiata*	No Status	Special Concern
Marine Mammals			
Blue whale (Atlantic population)	*Balaenoptera musculus*	Schedule 1 Endangered	Endangered
North Atlantic right whale	*Eubalaena glacialis*	Schedule 1 Endangered	Endangered
Fin whale (Atlantic population)	*Balaenoptera physalus*	Schedule 1 Special Concern	Special Concern
Sowerby's beaked whale	*Mesoplodon bidens*	Schedule 1 Special Concern	Special Concern
Harbour porpoise (Northwest Atlantic population)	*Phocoena phocoena*	Schedule 2 Threatened	Special Concern
Killer whale (Northwest Atlantic – Eastern Arctic population)	*Orcinus orca*	No Status	Special Concern
Northern bottlenose whale (Davis Strait – Baffin Bay – Labrador Sea population	*Hyperoodon ampullatus*	No Status	Special Concern

Species		Status	
Common Name	Scientific Name	SARA	COSEWIC
Sea Turtles			
Leatherback sea turtle (Atlantic population)	*Dermochelys coriacea*	Schedule 1 Endangered	Endangered
Loggerhead sea turtle	*Caretta caretta*	Schedule 1 Endangered	Endangered
Marine Birds			
Ivory gull	*Pagophila eburnea*	Schedule 1 Endangered	Endangered

A large number and variety of marine fish species are known to occur in Newfoundland and Labrador waters (Templeman 2010, in AMEC 2014). The occurrence of these species is based on their physiological and life history requirements, and their presence may vary according to habitat, environmental conditions, and life history stage (AMEC 2014). Fish species known to occur in the Project Area include wolffish, skate, hake, cusk, eel, spike, sculpin, sand lance, tuna, and shark species (AMEC 2014), and several other fish and shellfish species that are commercially important fish and shellfish species. A list of marine fish species of conservation interest is provided in Table 3.

Benthic invertebrate species known to occur in the Project Area, and in surrounding areas, include polychaetes, whelks, echinoderms, hydroids, isopods, crustaceans, molluscs, corals, and sponges. There is a high abundance and diversity of structure-forming benthic invertebrate species that occur in the Orphan Basin and in surrounding areas, including corals, sponges, and sea pens (AMEC 2014). Corals identified include alcyonaceans (small and large gorgonians, soft corals), pennatulaceans (sea pens), scleractinians (stony corals), and antipatharians (black corals). These coral, sponge, and sea pen communities provide nurseries, areas of refuge, and spawning and breeding grounds for a variety of species, including commercially-important species (Working Group on Ecosystem Approach Framework to Fisheries Management 2008; Baillon et al. 2012; FAO 2016).

The eastern Newfoundland offshore area supports a high abundance and diversity of marine mammal species. There are over 20 species of cetacean (whales, dolphins, and porpoises), and several species of seal that are known to occur in the region. These include mysticetes (baleen whales) such has minke and humpback whales, and odontocetes (toothed whales) such as sperm whales, dolphins, and porpoises. Some marine mammal species may occur in the region year-round, while many frequent the area seasonally and are most abundant during the summer and fall. Marine mammal species of conservation interest that may occur in the Project Area are listed in Table 3.

There are at least two species of sea turtle that may occur seasonally in the Project Area and in surrounding areas. These include the leatherback sea turtle and loggerhead sea turtle, both of which are listed species (see Table 3).

3.2.2 Marine Birds

The Project Area and surrounding areas, including the Flemish Pass, the Flemish Cap, and the deeper water associated with the Orphan Basin, is known to support an abundance of seabird species, with the highest density occurring during the spring and summer months (Templeman 2010; AMEC 2014). These include kittiwakes, fulmars, gannets, gulls, shearwaters, and storm-petrels. Other seabird species that may occur in the Project Area, and in surrounding areas, include puffins, razorbills, phalaropes, skuas, and jaegers.

One listed bird species, the ivory gull, has been identified to occur in or near the Project Area (see Table 3).

3.2.3 Special Areas

Multiple areas in offshore Newfoundland and Labrador have been identified by Fisheries and Oceans Canada (DFO) as Ecologically and Biologically Significant Areas (EBSAs). Two of these EBSAs overlap with the Project Area: the Northeast Shelf and Slope, and Orphan Spur (see Table 4 and Figure 7).

Table 4 Ecologically and Biologically Significant Areas within 150 km of the Project Area

EBSA	Purpose / Rationale for EBSA Designation
Northeast Shelf and Slope	• Contains two important coral areas: Tobin's Point and Funk Island Spur • Aggregations of spotted wolffish in spring • High concentrations of Greenland halibut in spring • Potentially important feeding area for marine mammals, such as harp seals and pilot whales
Orphan Spur	• High concentrations of several coral species • Aggregation of several fish functional groups, core species, and rare or endangered species • Aggregation of several seabird species • Aggregation area for female hooded seals
Sources: Templeman 2007; CPAWS 2009; DFO 2013, 2016	

The classification of an EBSA does not give the area any special legal status; however, EBSAs are considered in a broad range of coastal management and planning processes such as environmental assessments, environmental emergency response, sustainable fisheries policies and marine conservation planning (DFO 2014). EBSAs were originally identified through workshops and interviews with scientific experts, fisheries stakeholders, Indigenous communities, federal and provincial governments, academia, and conservation organizations (Doherty and Horsman 2007).

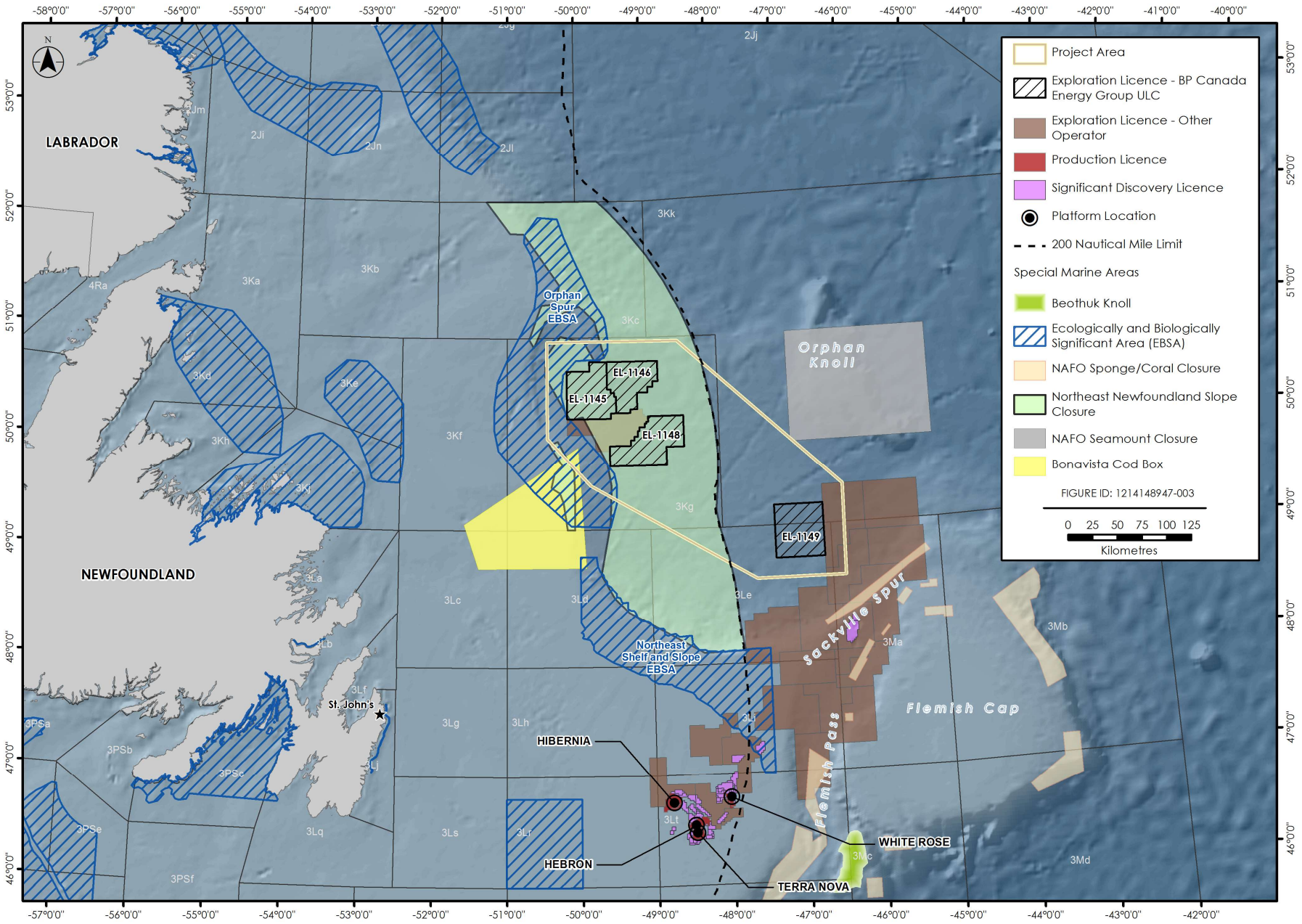


Figure 7 Special Areas in the Eastern Newfoundland Offshore Area

Currently, there are no Marine Protected Areas (MPAs) established within the vicinity of the Project Area. However, in December 2017, the Minister of Fisheries and Oceans and the Canadian Coast Guard announced the establishment of several marine refuges off the coasts of Nunavut and Newfoundland and Labrador. The Northeast Newfoundland Slope Closure, which overlaps with the Project Area (refer to Figure 7), has been established to contribute to long-term conservation of biodiversity by protecting corals and sponges from bottom contact fishing gear (Government of Canada 2017).

The Northwest Atlantic Fisheries Organization (NAFO) has identified multiple Vulnerable Marine Ecosystems in the eastern Newfoundland offshore area and some of these are located near the Project Area, including the Sackville Spur, Northern Flemish Cap, and Northeast Shelf and Slope (within Canadian EEZ) (see Table 5 and Figure 7).

Table 5 Vulnerable Marine Ecosystems within 150 km of the Project Area

Vulnerable Marine Ecosystems	Rationale for Identification / Designation
Sackville Spur	• High density of sponges
Northern Flemish Cap	• High density of sea pens, soft corals, and black corals • Solitary stony corals and small gorgonians also present • Area used by vulnerable fish species (northern wolffish and spiny dogfish)
Northeast Shelf and Slope (within Canadian EEZ)	• Abundance of gorgonian and black corals
Source: Working Group on Ecosystem Approach Framework to Fisheries Management 2008	

Outside of Canada's 200 nm EEZ, NAFO has identified vulnerable marine ecosystems (VMEs) that are regulated through their Conservation and Enforcement Measures, created to monitor and regulate bottom fishing activities by all member states of NAFO. These conservation and enforcement measures, such as carrying scientific observers on board to report any encounters with VME indicator species, are specific for bottom fishing activities and does not include oil and gas activities (NAFO 2016a).

NAFO has also designated Fisheries Closure Areas in the eastern Newfoundland offshore area, and some of these are located near the Project Area, including the Orphan Knoll, Sackville Spur, Northern Flemish Cap, and Northwest Flemish Cap (see Table 6 and Figure 7).

Additional special areas in or near the Project Area include the "Bonavista Cod Box", which is an important spawning and migration area for Atlantic cod, American plaice, and redfish (AMEC 2014). There is overlap between the northeast tip of the "Box" and the Project Area (see Figure 7).

Table 6 NAFO Fisheries Closure Areas within 150 km of the Project Area

Fisheries Closure Area	Rationale for Identification / Designation
Sackville Spur	• High coral and sponge concentrations

	• Extensive sponge grounds host a diversity of associated megafaunal species
Northern Flemish Cap / Northwest Flemish Cap	• High coral and sponge concentrations • Aggregations of sea pens that provide refuge for small planktonic and benthic invertebrates • Crinoids, cerianthids, and black corals associated with sea pens
Orphan Knoll	• Closed to protect seamounts • Biologically rich and complex area • Contains coral, including stony coral, and sponges
Sources: NAFO (2015, 2016a, 2016b); FAO (2016)	

3.3 Human Environment

3.3.1 Commercial and Aboriginal Fisheries

Commercial fishing activity occurs in the Project Area, and in surrounding areas; particularly in NAFO Unit Areas 3KLM, which overlap with the Project Area. The major sources of commercial species abundance data within the offshore Newfoundland region come from DFO surveys within Canada's EEZ, and from NAFO surveys outside the 200-nm limit. These surveys, along with domestic and international commercial fish landings, can indicate the most abundant species in an area. The Government of Canada has jurisdiction over commercial fisheries for sedentary and non-sedentary species within its 200-nm EEZ, and for sedentary species to the extent of the defined continental shelf. Beyond Canada's EEZ, NAFO has jurisdiction over the management of commercial fisheries for non-sedentary species, and the ability to designate protected areas (AMEC 2014).

Most commercial fishing activity in the vicinity of the Project Area occurs along the slope of the continental shelf, and along the slope of the Flemish Cap, where upwelling contributes to a highly productive marine environment (LGL 2008). Commercially-important fish species that occur in the Project Area, and in surrounding areas, include Atlantic cod, Greenland halibut, yellowtail and witch flounder, roughhead and roundnose grenadier, redfish, skate, capelin, and mackerel (Jacques Whitford Environment Limited (JWEL) 2002a; Suncor Energy 2013; AMEC 2014). Commercially-important invertebrate species found in the area include snow crab and shrimp. The commercial fishing footprint with reference to the Project Area (including NAFO fishing areas and Canadian commercial fishing activity from 2011-2015) is shown in Figure 8.

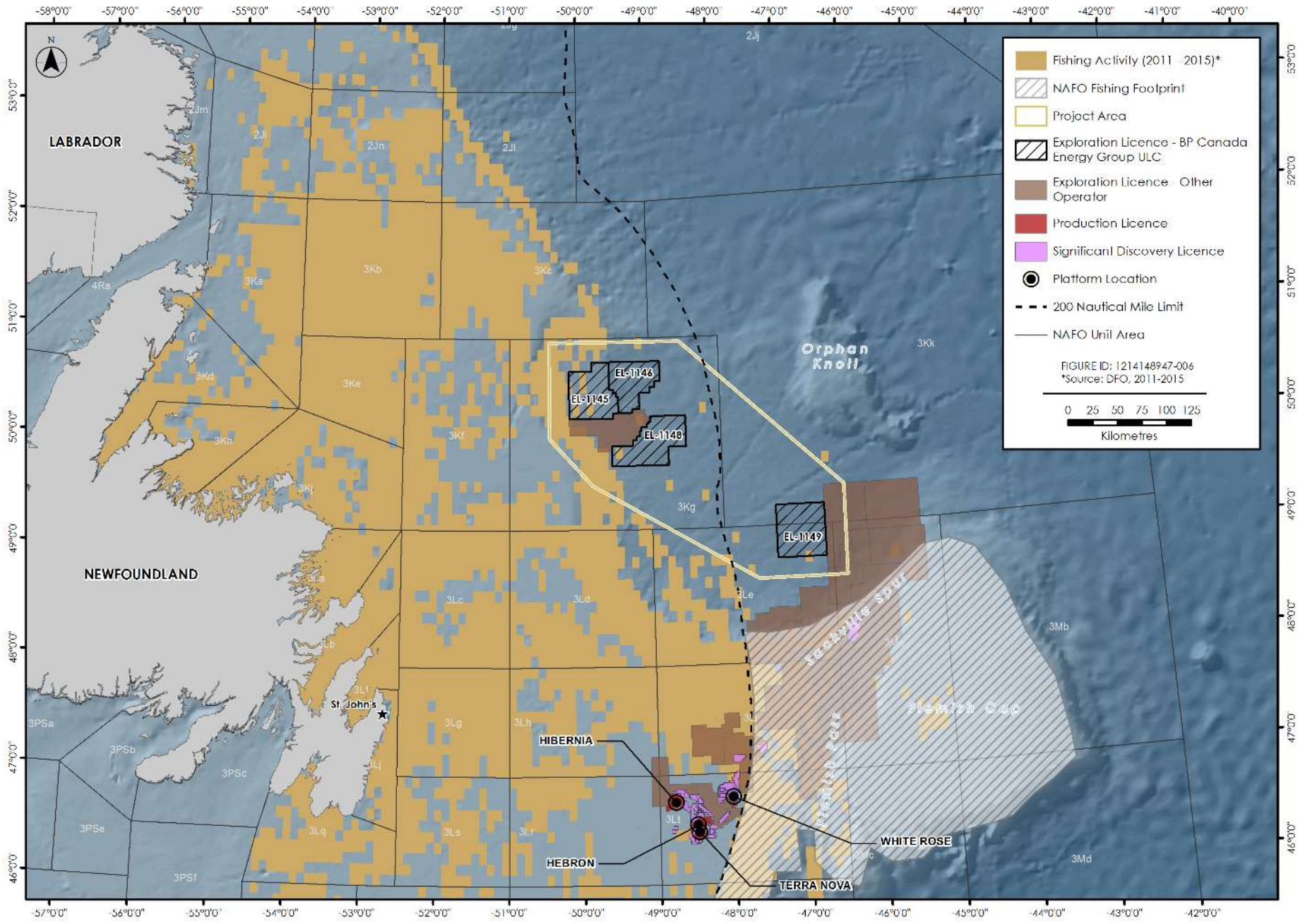


Figure 8 Commercial Fishing Activity in the Project Area and Surrounding Areas

A number of Indigenous groups have commercial communal fishing licences in the Project Area, and in surrounding areas, in NAFO Unit Areas 3KLM. A summary of commercial communal fishing licences issued under the Aboriginal Communal Fishing Licences Regulations is provided in Table 7. There are no food, social, and ceremonial (FSC) fisheries in the Project Area, or in surrounding areas. The only FSC fishery in Newfoundland and Labrador is a multi-species coastal fishery undertaken by Miawpukek First Nation in Conne River, over 500 km to the southwest of the Project Area.

Table 7 Commercial Communal Fishing Licences Issued to Newfoundland and Labrador Indigenous Groups in the Project Area and Surrounding Areas (NAFO Unit Areas 3KLM)

Group	Commercial Communal Fishing Licence
Innu Nation	Mid-shore enterprise (65 to 100 ft) with a groundfish licence permitting access to a variety of areas (Atlantic-wide), including NAFO Unit Areas 3KLMN, and an Area 6 (3K) shrimp licence. Also hold an inshore enterprise with a mobile gear and fixed gear groundfish licence that can operate in 3KL.
Nunatsiavut Government	Three inshore groundfish enterprises with access to NAFO Unit Areas 3KL. Also have two seal licences that permit access in Seal Fish Areas (SFAs) 4 – 33 (Atlantic-wide).
NunatuKavut Community Council	Nine inshore enterprises with access to NAFO Unit Areas 3KL groundfish. Two of these enterprises also have an Area 6 (3K) shrimp licence. Also have two seal licences permitting access in SFAs 4 – 33 (Atlantic-wide).
Miawpukek First Nation (MFN)	Nine enterprises that permit access to NAFO Unit Areas 3KL. Also hold one seal licence that permits access in SFAs 4 – 33 (Atlantic-wide).
Qalipu Mi'kmaq First Nation Band (QMFNB)	One inshore enterprise with a groundfish licence permitting access to NAFO Unit Area 3K, a shrimp licence for Area 6 (3K), and pelagic fishery access (herring, mackerel, and capelin) which occurs close to shore in 3KL.
Mi'kmaq Alsumk Mowimsikik Koqoey Association (formed by MFN and QMFNB under DFO's Aboriginal and Aquatic Resources Management Program)	One enterprise with a groundfish licence permitting access to NAFO Unit Areas 3KL.

3.3.2 Indigenous Communities

There are five Indigenous communities and/or governing bodies within Newfoundland and Labrador, three in Labrador (Nunatsiavut Government, Innu Nation, and Nunatukavut Community Council) and two on the Island of Newfoundland (Miawpukek First Nation; Qalipu Mi'kmaq First Nation) (Figure 9). EL 1145 is approximately 480 km to the nearest reserve (Miawpukek) (Figure 9).

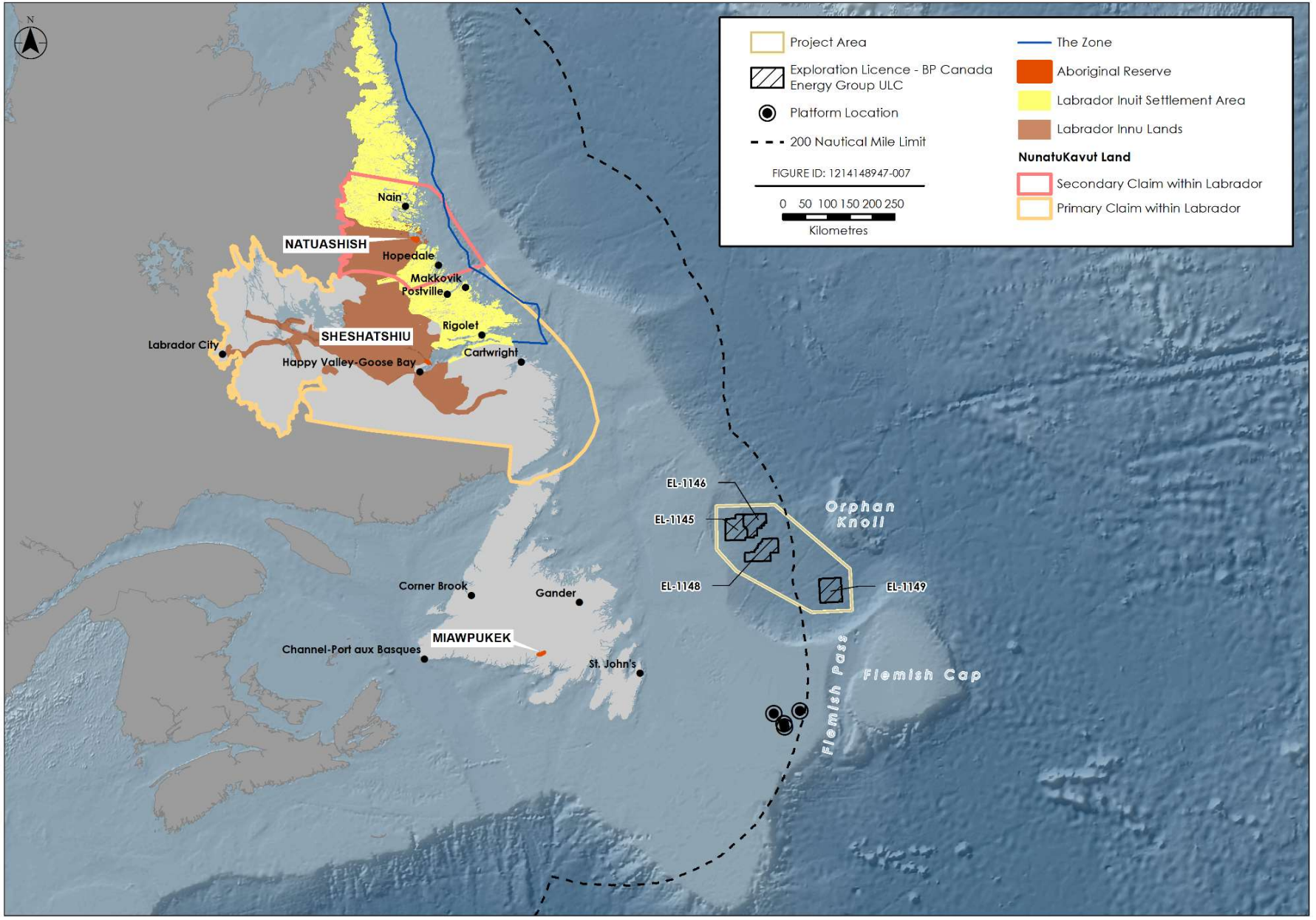


Figure 9 Indigenous Communities in Newfoundland and Labrador

Five Inuit Community Governments (representing Nain, Hopedale, Postville, Makkovik and Rigolet) comprise the Nunatsiavut Government (Nunatsiavut Government 2017)). The Labrador Inuit Land Claims Agreement delineates an established Labrador Inuit Settlement Area (LISA, approximately 72,500 km^2 of land in northern Labrador and 48,690 km^2 of the Labrador Sea) and sets out the details of land ownership, resource-sharing, and self-government within the LISA. EL 1145 is approximately 615 km to the LISA (560 km to The Zone; see Figure 9). Some Inuit are resident in other communities in Labrador (Happy Valley-Goose Bay, North West River, and Mud Lake) (Nalcor Energy 2011).

The approximately 2,200 Innu of Labrador (Mushuau Innu First Nation located in Natuashish and the Sheshatshiu Innu First Nation located in Sheshatshiu) are formally represented by Innu Nation. Most Innu live in the two Innu communities of Natuashish and Sheshatshiu (Innu Nation website); small numbers of Innu also reside in Happy Valley-Goose Bay (Nalcor Energy 2011). The Labrador Innu claim Aboriginal rights and title to much of Labrador. The Tshash Petapen / New Dawn Agreement was signed on November 18, 2011; negotiations are ongoing between Innu Nation and the Governments of Newfoundland and Labrador and Canada (Newfoundland and Labrador Intergovernmental and Indigenous Affairs Secretariat 2017).

NunatuKavut is the territory of the Inuit of NunatuKavut, who reside primarily in southern (Cartwright to L'Anse au Clair), central (Upper Lake Melville area), and western Labrador (Nalcor Energy 2011). The approximately 6,000 Inuit of south and central Labrador are represented by the NunatuKavut Community Council (NunatuKavut Community Council 2013). Their asserted Inuit land claim covers most of Labrador; and, although it has not been accepted for negotiation by the federal or provincial governments, the provincial Labrador and Aboriginal Affairs Office has advocated for a decision from the Federal Government on the NunatuKavut Community Council land claim (Newfoundland and Labrador Intergovernmental and Indigenous Affairs Secretariat 2017). EL 1145 is approximately 350 km to the Nunatukavut Community Council primary claim area within Labrador (see Figure 9).

The Miawpukek Mi'kamawey Mawi'omi First Nation Reserve is located on the south coast of the island of Newfoundland at the mouth of the Conne River (Miawpukek First Nation 2017). Miawpukek First Nation has a self-governing agreement (which is not a treaty or lands claims agreement within the meaning of sections 25 and 35 of the *Constitution Act, 1982*) that gives them the opportunity to govern their internal affairs and assume greater responsibility and control over decisions that affect their community (Indigenous and Northern Affairs Canada 2014).

Qalipu Mi'kmaq First Nation was established in 2011 as an *Indian Act* Band under the *Qalipu Mi'kmaq First Nation Act* (which is not a treaty or lands claims agreement within the meaning of sections 25 and 35 of the *Constitution Act, 1982*). The Qalipu are one of the largest First Nation groups in Canada, with approximately 24,000 members spread across many communities on the Island of Newfoundland (and abroad). There are no reserve lands; however, the Qalipu are made up of 66 traditional Mi'kmaq communities, spread out over nine Electoral Wards. The Qalipu central administrative office is in Corner Brook and there are three satellite offices located in Glenwood, Grand Falls-Windsor, and St. George's (Qalipu First Nation 2016).

For other similar EAs of projects in the eastern Newfoundland offshore region, the CEA Agency has identified Indigenous groups in New Brunswick (NB), Nova Scotia (NS), Prince Edward Island (PEI), and Quebec (QC) (CEA Agency 2017) (Table 8; Figure 10) that have the right to harvest Atlantic salmon (*Salmo salar*) for food, social and ceremonial purposes and/or harvest swordfish *(Xiphias gladius*) under commercial communal fishing licences in NAFO Areas 3, 4 and 5. While these Indigenous communities hold commercial communal licences for several species, the swordfish licence is the only licence which overlaps with the Project Area.

Table 8 New Brunswick / Nova Scotia / Prince Edward Island / Quebec Indigenous Groups with Food, Social and Ceremonial (FSC) Fisheries and/or Commercial Communal Swordfish Licences

Group Name	Provincial Origin
Elsipogtog First Nation	NB
Tjipõgtõtjg (Buctouche) First Nation	NB
Natoaganeg (Eel Ground) First Nation	NB
Ugpi'ganjig (Eel River Bar) First Nation	NB
Esgenoôpetitj (Burnt Church) First Nation	NB
Amlamgog (Fort Folly) First Nation	NB
L'nui Menikuk (Indian Island) First Nation	NB
Metepenagiag Mi'kmaq Nation	NB
Oinpegitjoig (Pabineau) First Nation	NB
Kingsclear First Nation	NB
Madawaska Maliseet First Nation	NB
Oromocto First Nation	NB
Saint Mary's First Nation	NB
Tobique First Nation	NB
Woodstock First Nation	NB
Passamaquoddy	NB
Acadia First Nation	NS
Annapolis Valley First Nation	NS
Bear River First Nation	NS
Eskasoni First Nation	NS
Glooscap First Nation	NS
Membertou First Nation	NS
Potlotek First Nation	NS

Group Name	Provincial Origin
We'koqmaq First Nation	NS
Sipekne'katik First Nation	NS
Paq'tnkek First Nation	NS
Pictou Landing First Nation	NS
Wagmatcook First Nation	NS
Millbrook First Nation	NS
Abegweit First Nation	PEI
Lennox Island First Nation	PEI
Conseil des Montagnais de Natashquan	QC
Conseil des Innus de Ekuanitshit	QC
La Nation Micmac de Gespeg	QC
Listuguj Mi'gmaq Government	QC
Micmacs of Gesgapegiag	QC

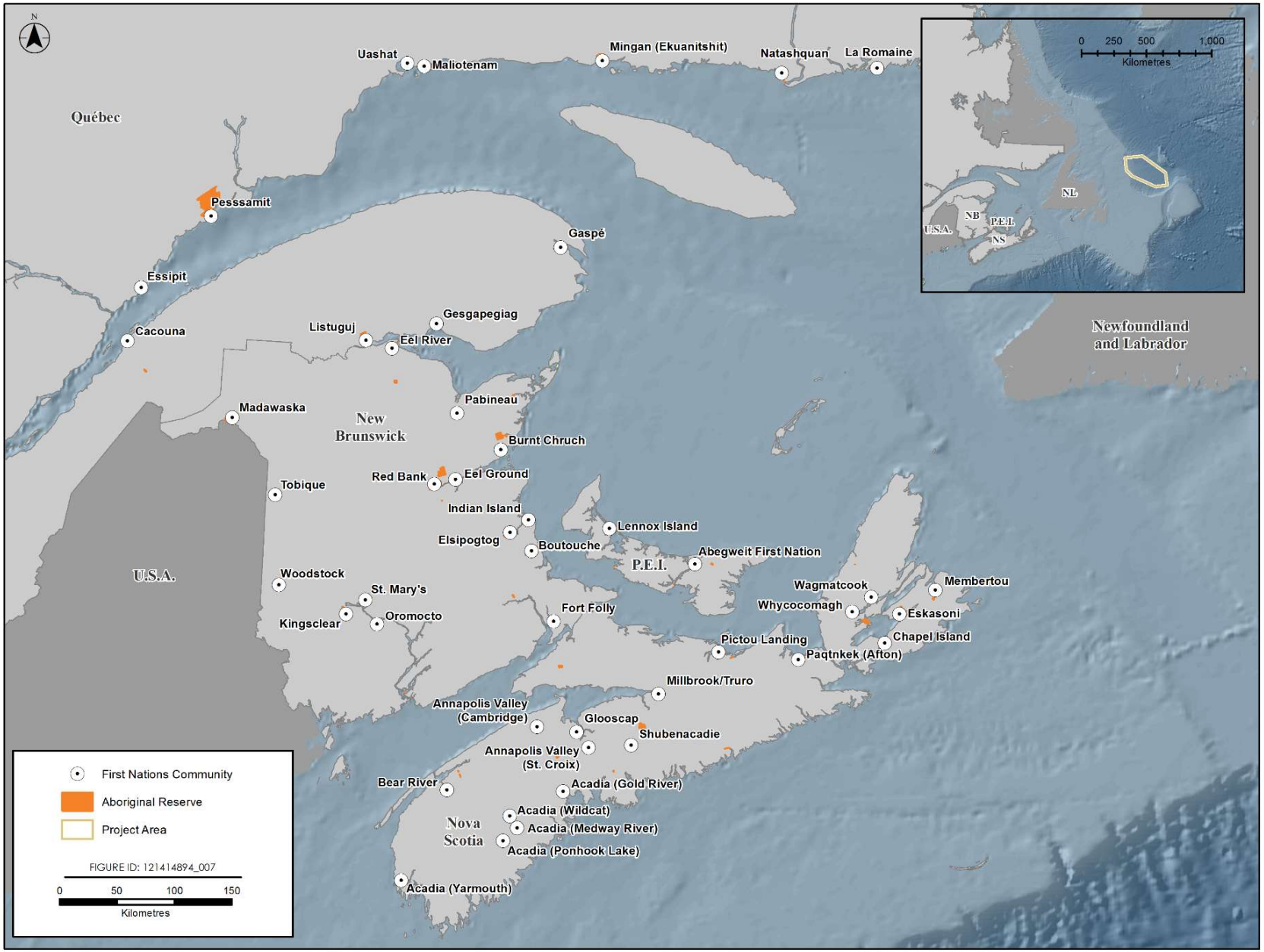


Figure 10 Indigenous Communities in New Brunswick, Nova Scotia, Prince Edward Island, and Quebec

3.3.3 Marine Shipping

International shipping lanes transit through the eastern Newfoundland offshore area, and there is potential for vessel traffic in the Project Area and in surrounding areas.

The eastern region of Newfoundland has approximately 17 ports that are used for both domestic and international shipping activities. Of these, there are nine ports that are used for both domestic and international shipping, four that are used exclusively for international shipping, and four that are used exclusively for domestic shipping (AMEC 2014). In 2011, there were approximately 698 international shipping movements in the eastern region of Newfoundland, handling 16,654 t of total tonnage (Statistics Canada n.d. a). In the same year and region, there were approximately 3,044 domestic shipping movements handling 27,248 t of total tonnage (Statistics Canada n.d. b).

Harbours are regulated under the federal jurisdiction of the *Fishing and Recreational Harbours Act*. DFO, through the Canadian Coast Guard, provides communication and traffic management services in certain Canadian ports.

The traffic lanes most commonly used in the eastern Newfoundland offshore area, including those that pass through the Project Area, are shown in Figure 11.

3.3.4 Marine Research

Marine research and scientific studies regularly occur in the Project Area, and in surrounding areas. DFO typically conducts research annually in the Project Area and in the Newfoundland and Labrador region as a whole. Activities include annual multi-species trawl surveys to monitor fish populations, collection of data from buoys and moorings for DFO's Rapid Climate Change program study, and the Atlantic Zone Off-Shelf Monitoring Program. Bottom trawl surveys typically occur in NAFO Unit Areas 3LNPs in the spring during the Spring Atlantic Zone Monitoring Program, and in Unit Areas 2HJ3KLMNO in the fall (AMEC 2014).

Other research activities, including collaborations between DFO and the Fish Food and Allied Workers (FFAW-Unifor), may occur within the Project Area during the duration of the Project. For example, post-season trap surveys are conducted in NAFO Unit Areas 2J3KLOPs4R, where approximately 1,500 stations are sampled annually.

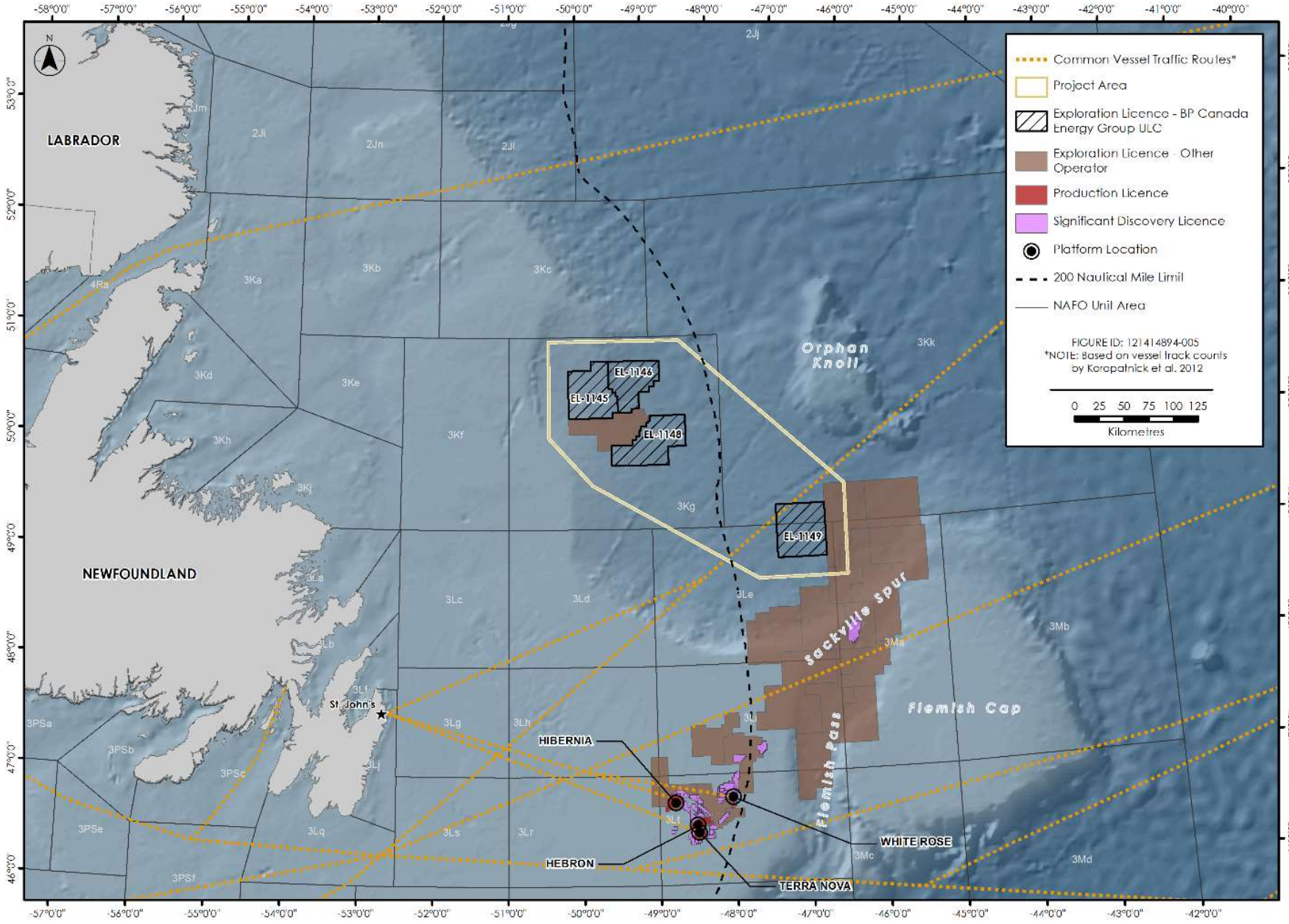


Figure 11 Common Vessel Traffic Routes in the Project Area and in Surrounding Areas

3.3.5 Other Offshore Oil and Gas Activity

Offshore oil and gas production has been occurring off the coast of Newfoundland and Labrador for approximately 20 years, and exploration in the region has occurred for a much longer period. Various international oil and gas operators have held, and currently hold, interests in the Newfoundland and Labrador offshore area. In 2013, the C-NLOPB moved into a scheduled land tenure system which divides offshore Newfoundland and Labrador into eight regions. There are currently 29 ELs, 55 Significant Discovery Licences (SDLs), and 11 Production Licences (PLs) in offshore Newfoundland and Labrador (C-NLOPB 2017) (Figure 12).

There are four producing oil fields on the Grand Banks in the Jeanne d'Arc Basin: Hibernia (Hibernia Management and Development Company Limited); Terra Nova (Suncor Energy Inc.); White Rose (Husky Energy Inc.); and Hebron (ExxonMobil Canada Properties).

The eastern Newfoundland offshore area is an area of high activity in terms of offshore oil and gas exploration, and some of these activities may occur in or near the Project Area during the life of the project. This includes exploration drilling in nearby licences and the presence of other marine vessels conducting geophysical and / or seismic surveys in or near the Project Area.

3.3.6 Department of National Defence Operations

The Royal Canadian Navy and Royal Canadian Air Force conduct routine surveillance operations throughout Atlantic Canadian waters, which may include aircraft or marine patrols within the Project Area. Military vessels, at times, also provide support to DFO research operations and fishery patrols (AMEC 2014).

The Department of National Defence have used many sites across Canada in the past for military training and weapons testing, and Legacy Sites exist across Canada's coastline where unexploded ordnance remains. There are 1,100 known unexploded ordnance sites that exist off Canada's east coast (AMEC 2014), though it is not anticipated that Legacy Sites currently exist within the Project Area. The location of identified Legacy Sites in the eastern Newfoundland offshore area is shown in Figure 13.

3.3.7 Additional Ocean Infrastructure

Marine subsea cables, both active and non-active, are known to occur in the eastern Newfoundland offshore area and within the Project Area (see Figure 13). Most of these cables connect North America to the United Kingdom and Europe, and span the Atlantic Ocean. There is also the potential for new subsea cables to be constructed in the Project Area during the duration of the Project. Marine cables have not been substantially affected by previous offshore exploration drilling projects in the eastern Newfoundland offshore area and are not anticipated to be affected by Project activities.

While shipwrecks have been identified in the eastern Newfoundland offshore area (AMEC 2014), there are no known shipwrecks in the Project Area (see Figure 13). Pre-drilling ROV surveys will confirm the absence of unidentified subsea infrastructure at well locations.

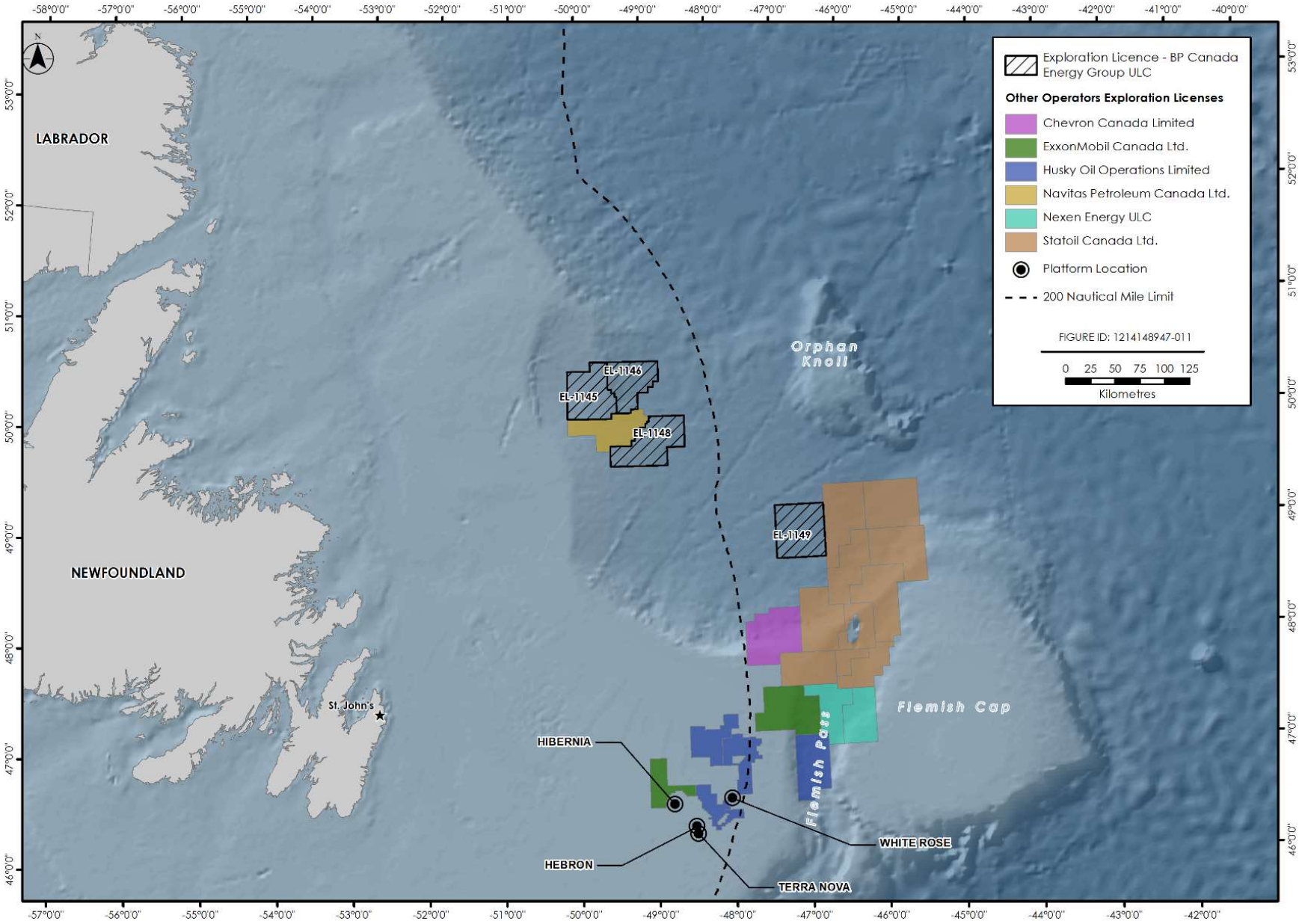


Figure 12 Exploration Licences in the Newfoundland Offshore Area

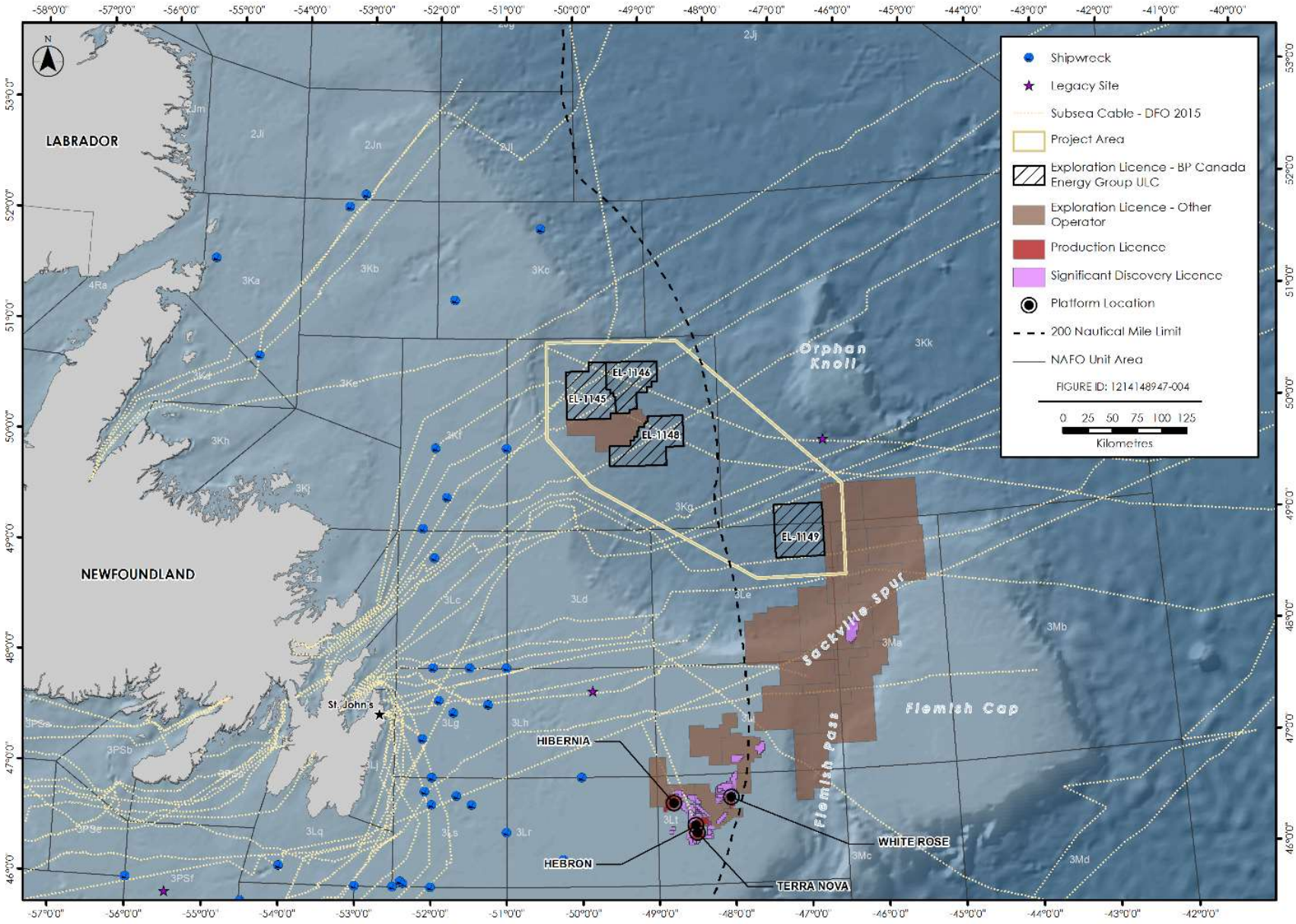


Figure 13 Locations of Known Shipwrecks, DND Legacy Sites, and Marine Subsea Cables in the Project Area and in Surrounding Areas

3.4 Existing Environmental Studies

Environmental assessments have been completed for various exploration drilling, production drilling, and seismic survey projects for approximately 25 years in the eastern Newfoundland offshore area. The primary studies that are cited in this Project Description to describe the existing environmental setting in the Project Area and surrounding areas (Orphan Basin), include project-specific EAs conducted for other projects with similar spatial boundaries. While none of the lands have been subject to a regional study as described in section 73 to 77 of CEAA 2012, an SEA for the eastern Newfoundland offshore region has been conducted (AMEC 2014) (which includes an update of the Orphan Basin SEA (LGL 2003a)). It is anticipated that the reports listed below, and other relevant studies, will provide sufficient data to characterize the existing environment in the Project Area, and to assess the potential environmental effects associated with the Project.

Key relevant environmental studies for consideration include:

- Eastern Newfoundland SEA (AMEC 2014)
- Environmental Assessment East Canada CSEM Survey, 2014-2018 (LGL Limited 2014)
- Suncor Energy's Eastern Newfoundland Offshore Area 2D / 3D / 4D Seismic Program, 2014-2024 (Suncor Energy 2013)
- White Rose Extension Project Environmental Assessment (Husky 2012)
- Hebron Project Comprehensive Study Report (ExxonMobil Canada Properties 2011)
- Environmental Assessment of Chevron's North Grand Banks Regional Seismic Program, 2011-2017 (LGL 2011a)
- Environmental Assessment of Statoil's Geophysical Program for Jeanne d'Arc Basin and Central Ridge / Flemish Pass Basins, 2011-2019. (LGL 2011b).
- Environmental Assessment of Husky's Jeanne d'Arc Basin / Flemish Pass Regional Seismic Program, 2012-2020 (LGL 2011c)
- Environmental Assessment of StatoilHydro Canada Ltd. Exploration and Appraisal/Delineation Drilling Program for Offshore Newfoundland, 2008-2016 (LGL 2008)
- Husky Delineation/Exploration Program for Jeanne d'Arc Basin Area, 2008-2017, Environmental Assessment (LGL 2007)
- Husky White Rose Development Project: New Drill Centre Construction and Operations Program Environmental Assessment (LGL 2006).
- Orphan Basin SEA (LGL 2003a)
- Orphan Basin Exploration Drilling Program Environmental Assessment (LGL 2005)
- Husky Lewis Hill Prospect Exploration Drilling Program Environmental Assessment (LGL 2003b)
- White Rose Oilfield Comprehensive Study (Husky Oil 2000)
- Flemish Pass Drilling Environmental Assessment (JWEL 2002a)
- Environmental Assessment of Exploration Drilling in Annieopsquotch (EL 1052), Bonnawinkle (EL 1056) and Gambo (EL 1048) Leases (JWEL 2002b)

4 Consultation and Engagement

BP recognizes the importance of early and ongoing Indigenous and stakeholder engagement that continues over the life of the Project. BP believes that it is important to maintain a social licence to operate in Newfoundland and Labrador by building relationships with Indigenous groups and key stakeholders. BP regards Indigenous and stakeholder engagement as a cyclical process as depicted in Figure 14 and explained below.

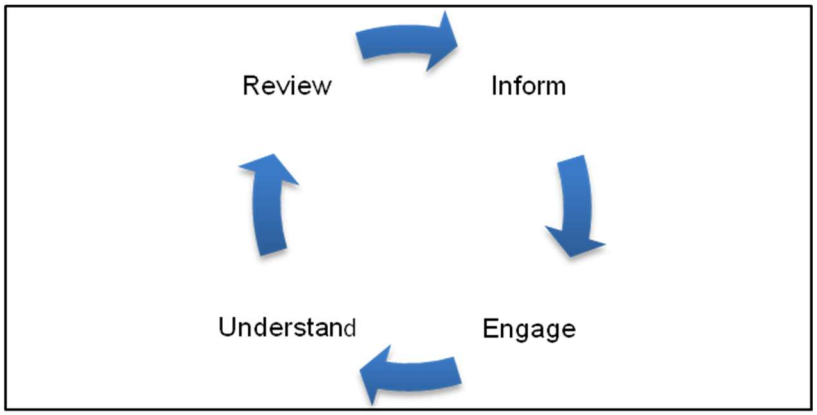


Figure 14 Cyclical Consultation and Engagement Process

- **INFORM (1)**: Provide accurate, relevant, timely and culturally appropriate information to Indigenous groups and stakeholders about the Project, its effects, and the EIS process.
- **ENGAGE**: Provide opportunities for Indigenous groups and stakeholders to express their opinions and concerns about the Project, and to seek broad Indigenous groups and stakeholder support for the Project and effects mitigation.
- **UNDERSTAND**: Enable the Project team to understand the concerns and priorities of Indigenous groups and stakeholders.
- **REVIEW**: Understand these concerns and priorities, and assess for incorporation into the design, construction and operation of the Project.
- **INFORM (2)**: Provide feedback to Indigenous groups and stakeholders as the Project develops so that the consultation process continues.

4.1 Indigenous Engagement

BP recognizes the potential for the Project to affect Indigenous interests and acknowledges the importance of engaging Indigenous organizations to provide Project information and obtain feedback on potential issues and concerns.

As noted in Section 3.3.2, there are several Indigenous organizations in Eastern Canada that hold commercial communal fishing licences for NAFO Divisions that overlap the Project Area, although it is currently not known whether or not any actual fishing takes place in the Project Area. There are no documented FSC licences within or near the Project Area. Species harvested for commercial or FSC purposes outside the Project Area may potentially interact with Project activities (planned or unplanned) during migration to traditional fishing grounds. There is also the potential for species at risk and/or of cultural importance to be present in the Project Area (e.g.,

Atlantic salmon). The list of Indigenous organizations that may have a potential interest in the Project includes groups and communities in Newfoundland and Labrador, Quebec, New Brunswick, Prince Edward Island, and Nova Scotia.

In recognition of this potential interest in the Project, BP emailed letters on November 7, 2017 to the following groups to introduce the Project and to inquire about potential interests and concerns as well as preferred method of engagement going forward.

Newfoundland and Labrador

- Labrador Inuit (Nunatsiavut Government)
- Labrador Innu (Innu Nation)
- NunatuKavut Community Council
- Qalipu Mi'kmaq First Nation Band
- Miawpukek Mi'kmamawey Mawi'omi (Miawpukek First Nation)

Quebec

- Mi'gmawei Mawiomi Secretariat (MMS) which represents the following Mi'gmaq First Nation groups:
  - Micmas of Gesgapegiag
  - La Nation Micmac de Gespeg
  - Listuguj Mi'gmaq Government
- Les Innus de Ekuanitshit
- Montagnais de Nutashkuan

New Brunswick

- Mi'gmawe'l Tplu'taqnn Inc. (MTI) which represents the following Mi'kmaq First Nation groups:
  - Fort Folly First Nation
  - Eel Ground First Nation
  - Pabineau First Nation
  - Esgenoôpetitj First Nation
  - Buctouche First Nation
  - Indian Island First Nation
  - Eel River Bar First Nation
  - Metepnagiag Mi'kmaq First Nation
- Elsipogtog First Nation
- Wolastoqey Nation of New Brunswick (WNNB), which coordinates consultation with the following five Maliseet First Nations (letters were sent to individual communities; follow up occurred with the WNNB):
  - Kingsclear First Nation
  - Madawaska Maliseet First Nation
  - Oromocto First Nation
  - St. Mary's First Nation
  - Tobique First Nation

- Woodstock First Nation
- Peskotomuhkati Nation at Skutik (Passamaquoddy)

Prince Edward Island

- Mi'kmaq Confederacy of PEI (MCPEI) which represents the following Mi'kmaq First Nations in consultation (letters were sent to individual communities; follow-up occurred with MCPEI):
  - Abegweit First Nation
  - Lennox Island First Nation

Nova Scotia

- Kwilmu'kw Maw-klusuaqn Negotation Office (KMKNO) which represents the following 11 Mi'kmaq First Nations in Nova Scotia in consultation and engagement (letters were sent to individual communities; follow-up occurred with the KMKNO):
  - Acadia First Nation
  - Annapolis Valley First Nation
  - Bear River First Nation
  - Eskasoni First Nation
  - Glooscap First Nation
  - Membertou First Nation
  - Paqtnkek Mi'kmaw Nation
  - Pictou Landing First Nation
  - Potlotek First Nation
  - Wagmatcook First Nation
  - We'koqmaq First Nation
- Sipekne'katik First Nation
- Millbrook First Nation

Representatives from the KMKNO in Nova Scotia, the MCPEI, and the WNNB received copies of the introductory letter sent to Chiefs and Council in individual communities as noted above. BP then followed up with emails and phone calls to confirm receipt of information and confirm interest in engagement. Refer to Section 4.3 for a record of engagement including issues and concerns raised to date.

BP recognizes that some of these groups may prefer to participate through the Crown consultation process, or may not have an interest in the Project. Ongoing engagement will include confirmation of appropriate organization and/or community contacts and methods for future engagement, learning more about how these groups may potentially be affected by Project activities, providing Project planning updates, and listening and responding to questions and concerns raised by Indigenous groups in a timely manner. Feedback obtained during engagement will be incorporated into Project planning as applicable and appropriate. The EIS (if required under CEAA 2012) will document concerns and priorities raised and demonstrate how these have influenced Project planning and/or been addressed in the EIS.

4.2 Stakeholder Engagement

BP employs a broad definition of stakeholders, to include fisheries organizations, environmental non-governmental organizations (NGOs), industry associations, government, and the interested public. Each of these groups is discussed below.

BP's stakeholder and community outreach objectives include providing transparent and factual information about its plans and activities and encouraging input from stakeholders. As an active member of the broader Atlantic Canada community, investing in local energy education and research initiatives and participating in association memberships, BP also has opportunities to develop and maintain positive working relationships with stakeholders.

4.2.1 Government and Regulatory Stakeholders

Regulatory stakeholders are typically engaged to confirm specific regulatory requirements/processes and/or data requests. Key regulatory stakeholders for the Project are listed below:

- C-NLOPB
- Government of Newfoundland and Labrador
  - Municipal Affairs and Environment
  - Fisheries and Land Resources
  - Natural Resources
- Government of Canada
  - CEA Agency
  - DFO
  - Canadian Coast Guard
  - Natural Resources Canada (NRCan)
  - Department of National Defence (DND)
  - Transport Canada
  - Environment and Climate Change Canada (ECCC)

As of December 31, 2017, BP has engaged the CEA Agency and the C-NLOPB to introduce the Project and gain an improved understanding of the regulatory process. BP also had an introductory meeting with DFO and ECCC to introduce the Project and discuss data resources and subject matter experts which may be engaged during the course of the EA process. BP will continue to engage these organizations and other government departments and agencies during the EA process and subsequent regulatory approvals for the Project.

4.2.2 Fisheries Stakeholders

A key form of mitigation of potential effects of the Project on fisheries is early and ongoing consultation with the fishing industry. The location and timing of fishing activities are important to consider when identifying potential fisheries stakeholders and scheduling meetings. The following is a list of initial fisheries stakeholders engaged for the Project:

- One Ocean
- Fish, Food and Allied Workers-Unifor (FFAW-Unifor)
- Association of Seafood Producers (ASP)
- Ocean Choice International (OCI)
- Groundfish Enterprise Allocation Council (GEAC)
- Canadian Association of Prawn Producers (CAPP)

One Ocean, which acts as a liaison between the oil and gas and fishing industries, has developed a consultation protocol which provides guidance on consultation approach. BP will work with One Ocean and conduct engagement in accordance with the consultation protocol.

In early October 2017, BP had an introductory meeting with the Director of One Ocean to provide a brief introduction and discuss plans for coordination of future engagement of fisheries groups. BP sent introductory letters and a Project location map to One Ocean, FFAW-Unifor, ASP and OCI on October 27, 2017, with a request to meet in late November 2017.

On November 29 and 30, 2017 BP met with these groups to introduce BP and proposed exploration plans. Key issues of concern raised by FFAW-Unifor, OCI and One Ocean included the cumulative reduction of available fishing areas due to marine conservation planning efforts (e.g., fisheries closure areas) and safety exclusion zones established for offshore oil exploration and development projects. All fisheries stakeholder groups indicated they had fewer concerns with drilling activities than with seismic exploration programs. BP confirmed it is not currently planning on conducting seismic exploration (other than a short-term VSP survey at each well).

These groups also indicated that the extent of potential interaction between BP's proposed drilling activities and fishing activities depends on the specific water depths in which BP plans to explore. Fishing in proximity to BP's Project Area extends to approximately 1500 m water depth, with turbot in particular being heavily fished along the edge of the continental shelf in this region. Water depths in BP's exploration licences range from a minimum of 970 m in EL 1145 to 2752 m in EL 1149. Although specific well locations are not known at this time, BP will continue to communicate with fisheries stakeholders as planning progresses to understand and reduce potential interactions and concerns.

During the November 29, 2017 meeting with One Ocean and OCI, it was recommended that BP also engage GEAC and CAPP. Introductory letters were sent to these groups on December 12, 2017. BP will continue to engage fisheries stakeholders throughout the EA and Project planning process to provide updates and obtain feedback. BP will document concerns and priorities raised and demonstrate how these have influenced Project planning and/or been addressed.

4.2.3 Other Public Stakeholder Groups

Other public stakeholders include industry associations and NGOs. Industry association stakeholder groups include commerce/trade organizations as well as industry associations and industry peers. Engagement with these stakeholders will be primarily related to promotional communications and/or local benefits/services. BP will monitor activities and communications

generated by these groups and participate in local industry events as appropriate including supplier information sessions, seminars, and conferences.

In addition, BP will also include pertinent Project information on its external website. www.bp.com/canada. Quarterly or semi-annual newsletters will be prepared and posted on the website.

4.3 Summary of Indigenous and Stakeholder Engagement to Date

Table 9 summarizes BP's engagement efforts as of December 31, 2017, including any questions or comments that have been raised.

Table 9 Summary of Engagement to Date (as of December 31, 2017)

Organization	Date	Type of Engagement	Purpose	Comments/Concerns
Indigenous Groups				
Newfoundland and Labrador				
Nunatsiavut Government	8-Nov-17	Email (Letter with map)	Introduce Project and request preferences for engagement	Initial concerns related to species of importance to both commercial and FSC fisheries, most notably migratory species; intend to participate in engagement and consultation
	29-Nov-17	Email	Follow-up email to confirm receipt of Project information and interest in Project	
	6-Dec-17	Email to BP	Acknowledged receipt of letter and expressed concerns	
	8-Dec-17	Phone Call	Continuing engagement	
Innu Nation	8-Nov-17	Email (Letter with map)	Introduce Project and request preferences for engagement	Would like more information on the Project and intend to participate in review process
	29-Nov-17	Email	Follow-up email to confirm receipt of Project information and interest in Project	
	5-Dec-17	Phone Call	Continuing engagement	
NunatuKavut Community Council	8-Nov-17	Email (Letter with map)	Introduce Project and request preferences for engagement	Would like more information on the Project; have commercial fishing licences near the Project Area; concerns include possible impacts of Project on whales, seals, migratory birds and fish – particularly migratory fish species, such as Atlantic salmon
	29-Nov-17 4-Dec-17	Emails	Follow-up email to confirm receipt of Project information and interest in Project	
	5-Dec-17	Phone Call	Continuing engagement	
Qalipu Mi'kmaq First Nation Band	8-Nov-17	Email (Letter with map)	Introduce Project and request preferences for engagement	Interested in knowing more about the Project and taking part in the consultation process as things move forward
	29-Nov-17 7-Dec-17	Emails	Follow-up email to confirm receipt of Project information and interest in Project	

Organization	Date	Type of Engagement	Purpose	Comments/Concerns
Miawpukek Mi'kmamawey Mawi'omi	8-Nov-17	Email (Letter with map)	Introduce Project and request preferences for engagement	Concerned about impacts of a potential spill on traditional "in-river" fisheries; salmon study provided recently by other operators is inconclusive; fish commercially for swordfish and other species in 3PS, and are looking to expand fishing into more areas that are within the Project Area
	29-Nov-17	Email	Follow-up email to confirm receipt of Project information and interest in Project	
	1-Dec-17	Phone Call	Discussion of potential interests and concerns	
Quebec				
Mi'gmawei Mawiomi Secretariat	8-Nov-17	Email (Letter with map)	Introduce Project and request preferences for engagement	No response received to date
	1-Dec-17	Email	Follow-up email to confirm receipt of Project information and interest in Project	
Les Innus de Ekuanitshit	8-Nov-17	Email (Letter with map)	Introduce Project and request preferences for engagement	No response received to date
	14-Dec-17	Email	Follow-up email to include additional email addresses	
Montagnais de Nutashkuan	8-Nov-17	Email (Letter with map)	Introduce Project and request preferences for engagement	No response received to date
	14-Dec-17	Email	Follow-up email to include additional email addresses	
New Brunswick				
Migmawe'l Tplu'taqnn Inc.	8-Nov-17	Email (Letter with map)	Introduce Project and request preferences for engagement	Received correspondence; will be participating in Project review
	28-Nov-17	Email	Follow-up email to confirm receipt of Project information and interest in Project	

Organization	Date	Type of Engagement	Purpose	Comments/Concerns
Elsipogtog First Nation	8-Nov-17	Email (Letter with map)	Introduce Project and request preferences for engagement	Expressed interest in the Project and requested discussion in January 2018
	29-Nov-17	Email	Follow-up email to confirm receipt of Project information and interest in Project and request phone meeting	
WNNB	29-Nov-17	Email	Follow-up email to confirm receipt of Project information and interest in Project	Received correspondence, will be participating in Project review on behalf of Wolastoqiyik in New Brunswick
Kingsclear First Nation[1]	8-Nov-17	Email (Letter with map)	Introduce Project and request preferences for engagement	See BP follow-up with WNNB
Madawaska Maliseet First Nation[1]	8-Nov-17	Email (Letter with map)	Introduce Project and request preferences for engagement	See BP follow-up with WNNB
Oromocto First Nation1	8-Nov-17	Email (Letter with map)	Introduce Project and request preferences for engagement	See BP follow-up with WNNB
Saint Mary's First Nation1	8-Nov-17	Email (Letter with map)	Introduce Project and request preferences for engagement	See BP follow-up with WNNB
Tobique First Nation[1]	8-Nov-17	Email (Letter with map)	Introduce Project and request preferences for engagement	See BP follow-up with WNNB
Woodstock First Nation	8-Nov-17	Email (Letter with map)	Introduce Project and request preferences for engagement	Expressed interest in the Project and requested discussion in January 2018
	29-Nov-17	Email	Follow-up email to confirm receipt of Project information and interest in Project and request phone meeting.	

Organization	Date	Type of Engagement	Purpose	Comments/Concerns
Peskotomuhkati Nation at Skutik (Passamaquoddy)	8-Nov-17	Email (Letter with map)	Introduce Project and request preferences for engagement	Community indicated lack of capacity to deal with numerous consultation requests; will be participating in Project review
	30-Nov-17	Email	Follow-up email to confirm receipt of Project information and interest in Project and request phone meeting.	
	11-Dec-17	Phone Call	Discussion of potential interests and concerns	
Prince Edward Island				
MCPEI	29-Nov-17 and 5-Dec-17	Email / voice mail	Follow-up email and phone call to confirm receipt of Project information and interest in Project	Will defer to Indigenous peoples of Newfoundland and Labrador; expressed concern about impact of drilling on migrating salmon populations
	6-Dec-17	Letter to BP	Acknowledge Project and indicate level of interest	
Abeqweit First Nation[2]	8-Nov-17	Email (Letter with map)	Introduce Project and request preferences for engagement	See BP follow-up with MCPEI
Lennox Island First Nation[2]	8-Nov-17	Email (Letter with map)	Introduce Project and request preferences for engagement	See BP follow-up with MCPEI
Nova Scotia				
KMKNO	24-Nov-17	Phone call	Follow-up email and phone call to confirm receipt of Project information sent to individual First Nations and confirm interest in Project	Received correspondence, will be participating in Project review
Acadia First Nation[3]	8-Nov-17	Email (Letter with map)	Introduce Project and request preferences for engagement	See BP follow-up with KMKNO

Organization	Date	Type of Engagement	Purpose	Comments/Concerns
Annapolis Valley First Nation[3]	8-Nov-17	Email (Letter with map)	Introduce Project and request preferences for engagement	See BP follow-up with KMKNO
Bear River First Nation[3]	8-Nov-17	Email (Letter with map)	Introduce Project and request preferences for engagement	See BP follow-up with KMKNO
Eskasoni First Nation[3]	8-Nov-17	Email (Letter with map)	Introduce Project and request preferences for engagement	See BP follow-up with KMKNO
Glooscap First Nation[3]	8-Nov-17	Email (Letter with map)	Introduce Project and request preferences for engagement	See BP follow-up with KMKNO
Membertou First Nation[3]	8-Nov-17	Email (Letter with map)	Introduce Project and request preferences for engagement	See BP follow-up with KMKNO
Paqtnkek Mi'kmaw Nation[3]	8-Nov-17	Email (Letter with map)	Introduce Project and request preferences for engagement	See BP follow-up with KMKNO
Potlotek First Nation[3]	8-Nov-17	Email (Letter with map)	Introduce Project and request preferences for engagement	See BP follow-up with KMKNO
Wagmatcook First Nation[3]	8-Nov-17	Email (Letter with map)	Introduce Project and request preferences for engagement	See BP follow-up with KMKNO
We'koqmaq First Nation[3]	8-Nov-17	Email (Letter with map)	Introduce Project and request preferences for engagement	See BP follow-up with KMKNO

Organization	Date	Type of Engagement	Purpose	Comments/Concerns
Millbrook First Nation	8-Nov-17	Email (Letter with map)	Introduce Project and request preferences for engagement	Interested in Project; will participate in review process
	1-Dec-17 and 5-Dec-17	Email and Phone Call	Confirm interest in Project and December 8 phone conversation	
	8-Dec-17	Phone Call	Discussion of potential interests and concerns	
Sipeke'katik First Nation	8-Nov-17	Email (Letter with map)	Introduce Project and request preferences for engagement	Project has potential to impact rights; interest in learning more about potential effects on fish and fish habitat specific to commercial fisheries species, FSC species, and SAR
Government and Regulatory Stakeholders				
CEA Agency	3-Nov-17	Meeting	Introduce Project, discuss EA process and plans for Indigenous and stakeholder engagement	Supportive of draft document reviews, provided guidance on level of detail/scoping in Project Description; awareness of potential consultation fatigue for potentially affected Indigenous groups
DFO	28-Nov-17	Meeting	Introduce Project, discuss EA process, relevant resources/experts and areas of interest	DFO is working with offshore interests to develop standard mitigation/best practices for corals and sponges; looks for opportunities to provide efficient technical advice to proponents
	12-Dec-17 27-Dec-17	Phone Calls and Emails	Obtain more information on fisheries closure areas	Fisheries closure area established December 21, 2017 (Northeast Newfoundland Slope, formerly Tobin's Point) to help protect corals and sponges from bottom gear fishing overlaps with BP's Project Area
ECCC	28-Nov-17	Meeting	Introduce Project, discuss EA process, relevant resources/experts and areas of interest	Interest expressed in further discussion of dispersant use and effects on birds
C-NLOPB	29-Nov-17	Meeting	Introduce Project, discuss EA and OA process	Will review EIS to confirm compliance with Accord Act requirements so separate EA submission is not required to satisfy Operations Authorization application process

Organization	Date	Type of Engagement	Purpose	Comments/Concerns
Fisheries Stakeholders				
One Ocean	4-Oct-17	Meeting	Introduce BP and seek advice on fishery stakeholder consultation	Reference to One Ocean Protocol for Consultation; fishers have good understanding of drilling process, will want to know BP and Project specifics; consider offering presentation on Deepwater Horizon learnings
	27-Oct-17	Email (Letter with map)	Letter with map to introduce the Project and request a meeting	One Ocean to attend meeting with other fisheries stakeholders in November 2017
FFAW-Unifor[4]	27-Oct-17	Email (Letter with map)	Letter with map to introduce the Project and request a meeting	Meeting scheduled for November 29, 2017
	29-Nov-17	Meeting	Introductory meeting to meet FFAW-Unifor and introduce BP and proposed exploration program	Concerned about cumulative loss of fishing access due to existing and proposed fisheries closure areas for marine conservation and fishing exclusion areas associated with offshore oil exploration and development; appreciates regular updates and informational presentations to facilitate meaningful engagement
Ocean Choice International[4]	27-Oct-17	Email (Letter with map)	Letter with map to introduce the Project and request a meeting	Meeting scheduled for November 29, 2017
Ocean Choice International (with One Ocean)	29-Nov-17	Meeting	Introductory meeting to meet OCI and introduce BP and proposed exploration program	Concerned about cumulative loss of fishing access due to existing and proposed fisheries closure areas for marine conservation and fishing exclusion areas associated with offshore oil exploration and development; extent of fisheries interaction with Project activities will depend on water depth of exploration wells (e.g., greater interaction if wells are in waters less than 1,500 m deep); fisheries and oil industry can co-exist but need to work together to mitigate risk

Organization	Date	Type of Engagement	Purpose	Comments/Concerns
Association of Seafood Producers[4]	27-Oct-17	Email (Letter with map)	Letter with map to introduce the Project and request a meeting	Meeting scheduled for November 30, 2017
	30-Nov-17	Meeting	Introductory meeting to meet ASP and introduce BP and proposed exploration program	Regular updates are appreciated, although majority of ASP membership is not harvesters so direct interactions with the Project will likely be limited to potential accidental events
GEAC[4]	12-Dec-17	Email (Letter with map)	Letter with map to introduce the Project	
CAPP[4]	12-Dec-17	Email (Letter with map)	Letter with map to introduce the Project	Requested water depths of proposed exploration wells; GEAC will represent offshore interests on behalf of CAPP

Notes
[1]Copied WNNB on correspondence
[2]Copied MCPEI on correspondence
[3]Copied KMKNO on correspondence
[4] Copied One Ocean on correspondence

5 Potential Project-Related Changes to the Environment and Scoping Considerations

5.1 Routine Project Activities

Project activities have potential to result in changes to the environment. Potential routine Project activities that may result in changes to the environment include:

- Presence and operation of a drilling vessel (including lights and flare, underwater sound and safety zone)
- VSP surveys (underwater sound)
- Discharges and emissions (e.g., drill muds and cuttings, liquid discharges, atmospheric emissions)
- Well abandonment
- PSV (underwater sound) and helicopter operations

Under CEAA 2012, the Project Description is required to describe potential changes to fish and fish habitat, aquatic species, and migratory birds that may be affected as a result of carrying out the Project. The Project Description must also provide information on the effects of any potential environmental changes to federal or transboundary lands as well as on Indigenous peoples.

An overview of the potential environmental interactions with routine Project activities that may result in changes to the environmental components identified in CEAA 2012 are provided in Table 10. Should a federal EA process be required under CEAA 2012, these potential interactions would be assessed in more detail in the EIS.

Table 10 Potential Environmental Interactions with Routine Project Activities

Environmental Component of Concern	Relevant Section of CEAA 2012	Potential Environmental Interactions
Fish, Fish Habitat, and Aquatic Species	5(1)(a)(i) 5(1)(a)(ii)	Routine Project activities have the potential to result in changes affecting fish, fish habitat, aquatic species as defined under SARA, marine mammals, and other aquatic species (including aquatic plants), due to the following interactions: • Aquatic species response to underwater sound emissions associated with PSV transit, drilling and VSP activities • Localized degradation and disturbance to the benthic environment (including benthic species) due to seabed disposal at drill site(s) (i.e., drill mud/cuttings, cement) including potential smothering and mortality of benthic organisms • Localized effects on marine water quality due to routine ocean discharges (e.g., waste water) from the drilling vessel and PSVs • Potential injury or mortality to marine mammal(s) from PSV collisions

Environmental Component of Concern	Relevant Section of CEAA 2012	Potential Environmental Interactions
Migratory Birds	5(1)(a)(iii)	Routine Project activities have the potential to result in changes affecting migratory birds, as defined under the *Migratory Birds Convention Act*, 1994, due to the following interactions: • Attraction of migratory birds to PSV and drilling vessel lighting (including flares) and discharges (e.g., food wastes) • Mortality or stranding of migratory birds on the drilling vessel or PSVs
Project Activities Occurring on Federal Lands	5(1)(b)(i)	Routine Project activities may result in changes to the environment that would occur on federal waters as a result of the Project Area being located within Canada's EEZ and thus within federal waters under the jurisdiction of the Government of Canada. These potential effects occurring in federal waters are described within this table. In addition to components of the environment previously addressed above (e.g., effects on water quality, fish, fish habitat, aquatic species and migratory birds) there could also be effects on the atmospheric environment (e.g., air emissions, sound emissions).
Transboundary Issues	5(1)(b)(ii)	In addition to components of the environment previously addressed above (e.g., effects on water quality, fish, fish habitat, aquatic species and migratory birds) there could also be effects on the atmospheric environment (e.g., air and noise emissions).
Health and Socio-Economic Conditions for Indigenous People	5(1)(c)(i)	Routine Project activities have the potential to result in the following changes to the environment that may affect Indigenous fishing activities, including those carried out under commercial communal licences in and around the Project Area, and associated potential effects to socio-economic conditions: • Establishment of a safety zone (fisheries exclusion zone) around the drilling vessel during drilling activities, as required by the C-NLOPB, and associated spatial and temporal restrictions on Indigenous fish harvesting activity • Fish species response to underwater sound emissions, including changes in behaviour and distribution of targeted species Routine PSV operations outside of the safety zone will be consistent with existing offshore and nearshore shipping traffic in the region and are not anticipated to result in any changes to the environment that would affect Indigenous fishing activities. Routine Project activities are not expected to result in any changes to the environment that would affect the health conditions of Indigenous peoples.

Environmental Component of Concern	Relevant Section of CEAA 2012	Potential Environmental Interactions
Health and Socio-Economic Conditions	5(2)(b)(i)	Routine Project activities have the potential to result in the following changes to the environment that may affect commercial fishing activities, including those carried out under commercial licences in and around the Project Area: • Establishment of a safety zone (fisheries exclusion zone) around the drilling vessel during drilling activities, as required by the C-NLOPB, and associated spatial and temporal restrictions on commercial fish harvesting activity • Fish species response to underwater sound emissions, and associated changes in behaviour and distribution of commercial fish species Routine PSV operations outside of the safety zone will be consistent with existing offshore and nearshore shipping traffic in the region and are not anticipated to result in any changes to the environment that would affect commercial fishing activities. Routine Project activities are not expected to result in any changes to the environment that would affect health conditions.
Physical and Cultural Heritage or Resources of historical, Archaeological, Paleontological, or Architectural Significance	5(1)(c)(ii) 5(1)(c)(iv) 5(2)(b)(ii) 5(2)(b)(iii)	Routine Project activities are not anticipated to result in any changes to the environment that would affect physical and cultural heritage areas or resources including shipwrecks that have been recorded in the Project Area. Information gathered during 3D seismic surveys previously conducted by others and pre-drill ROV site surveys in the Project Area will document the presence/absence of marine heritage resources on the seabed before any seabed disturbance takes place. If any concerns related to this matter are identified during Indigenous engagement for this Project, they will be considered in the EIS.
Current Use of Lands and Resources for Traditional Purposes by Indigenous People	5(1)(c)(iii)	Routine Project activities are not anticipated to result in any changes to the environment that would have an effect on the current use of land and resources for traditional purposes by Indigenous peoples, other than commercial communal fisheries and associated socio-economic interactions (discussed above), given the Project Area's water depth and distance from shore. Routine PSV activities will be consistent with existing shipping traffic in the region and are not anticipated to result in any changes to the environment that would have an effect on traditional Indigenous fisheries and resource use. Additional information regarding traditional Indigenous fisheries and traditional resource use will be gathered through Indigenous engagement, and concerns related to this matter identified during engagement will be considered in the EIS.

Environmental Component of Concern	Relevant Section of CEAA 2012	Potential Environmental Interactions
Other Changes to the Environment Directly Related or Necessarily Incidental to a Federal Authority's Exercise of a Power or Performance of Duty or Function in Support of the Project	5(2)(a) 5(1)(b)(i)	Routine Project activities authorized by the C-NLOPB have the potential to result in directly related or necessarily incidental changes to the atmospheric environment due to the following interactions with the environment: • Release of air emissions

5.2 Non-routine Project Activities

Environmental interactions can also occur from non-routine Project activities such as accidental events and malfunctions (refer to Table 11). Potential accidental events that could occur during exploration drilling include blowouts (uncontrolled release of hydrocarbons during drilling) and platform and vessel batch spills and releases (e.g., hydraulic fluid, drilling mud, diesel). Collectively, these accidental releases are referred to as "spills" A spill has the potential to occur in the offshore (e.g., during drilling) or nearshore (e.g., during PSV transit) environment. Spill trajectory modelling will be conducted as part of the environmental assessment process to predict areas that could potentially be affected by a spill. Potential environmental interactions can occur within the spill trajectory or as a result of transitory species or their prey travelling through an affected area.

Table 11 Potential Environmental Interactions with Accidents and Malfunctions during Project Activities

Environmental Component of Concern	Relevant Section of CEAA 2012	Potential Environmental Interactions
Fish, Fish Habitat, and Aquatic Species	5(1)(a)(i) 5(1)(a)(ii)	A spill during Project activities could potentially result in changes to fish, fish habitat, aquatic species as defined in SARA, marine mammals, and other aquatic species, including: • Reduced availability and quality of habitat • Degradation and reduction in marine water quality • Injury, mortality and/or reduced health for fish and other aquatic species
Migratory Birds	5(1)(a)(iii)	A spill during Project activities could potentially result in changes to migratory birds, as defined under the *Migratory Birds Convention Act*, 1994, including injury, mortality and/or reduced health for migratory bird species.

Environmental Component of Concern	Relevant Section of CEAA 2012	Potential Environmental Interactions
Project Activities Occurring on Federal Lands	5(1)(b)(i)	A spill during Project activities could potentially result in changes to the environment that would occur in federal waters as a result of the Project Area being located within Canada's EEZ and thus within federal waters under the jurisdiction of the Government of Canada. These potential effects occurring in federal waters are described within this table. Components of the environment not previously addressed above include potential effects on the atmospheric environment (e.g., air and noise emissions).
Transboundary Issues	5(1)(b)(ii)	A spill may result in transboundary effects outside of Newfoundland and Labrador or Canadian offshore areas. A spill may enter international waters, which fall outside the Canadian EEZ. Spill-related effects in international waters could include adverse effects to birds, fish, fish habitat, and commercial fisheries.
Health and Socio-Economic Conditions for Indigenous People	5(1)(c)(i)	A spill during Project activities could potentially result in the following changes to the environment that may affect Indigenous fisheries and associated socio-economic conditions: • Contamination-related closure of commercial fishing areas, and associated restrictions on commercial communal fish harvesting activity • Reduced catchability associated with damage to fishing gear (e.g., fouling) and changes in population health, behaviour, and distribution of commercial fish species as a result of marine pollution • Changes in population size and health of individuals among commercial fish species, and associated loss of income through reduced catch value • Loss or contamination of migratory birds or eggs harvested for food A vessel collision with fishing gear could also potentially result in changes to the environment that may affect human health and safety for Indigenous peoples.

Environmental Component of Concern	Relevant Section of CEAA 2012	Potential Environmental Interactions
Health and Socio-Economic Conditions	5(2)(b)(i)	A spill during Project activities could potentially result in the following changes to the environment that affect fisheries: • Contamination-related closure of commercial fishing areas, and associated restrictions on commercial fish harvesting activity • Reduced catchability associated with damage to fishing gear (e.g., fouling) and changes in population health, behaviour, and distribution of commercial fish species as a result of marine pollution • Changes in population size and health of individuals among commercial fish species, and associated loss of income through reduced catch value A vessel collision with fishing gear could also potentially result in changes to the environment that may affect human health and safety.
Physical and Cultural Heritage or Resources of historical, Archaeological, Paleontological, or Architectural Significance	5(1)(c)(ii) 5(1)(c)(iv) 5(2)(b)(ii) 5(2)(b)(iii)	A spill during Project activities could potentially cause a change to the environment that may affect physical and cultural heritage area (including shipwrecks). However, given the location of the Project offshore, and the ROV survey prior to drilling, non-routine Project activities are not expected to result in changes to resources of historical, archeological, paleontological, or architectural significance.
Current Use of Lands and Resources for Traditional Purposes by Indigenous People	5(1)(c)(iii)	A spill during Project activities could potentially result in the following changes to the environment that may affect traditional Indigenous fisheries, including the Aboriginal and/or Treaty rights to fish, in the area: • Contamination-related closure of traditional fishing areas, and associated restrictions on traditional fish harvesting activity • Reduced catchability associated with damage to fishing gear (e.g., fouling) and changes in population size, behaviour, and distribution of targeted fish species as a result of marine pollution • Changes in population size and health of individuals among targeted fish species, and associated reduction in fishery for traditional use These changes could potentially occur within the spill trajectory or as a result of migratory fish species transiting through the affected area.

Environmental Component of Concern	Relevant Section of CEAA 2012	Potential Environmental Interactions
Other Changes to the Environment Directly Related or Necessarily Incidental to a Federal Authority's Exercise of a Power or Performance of Duty or Function in Support of the Project	5(2)(a) 5(1)(b)(i)	A spill occurring as a result of Project activities authorized by the C-NLOPB could potentially result in temporary and localized changes to marine and atmospheric environment. These potential changes have been discussed above.

Spill prevention and response measures will be implemented to prevent and/or reduce risk of adverse environmental effects. If a federal EA process is required under CEAA 2012, the EIS will provide additional details regarding these preventative measures designed to prevent accidental events, and contingency and emergency response measures designed to minimize adverse environmental effects in the unlikely event that they should occur.

5.3 Scoping Considerations

If a federal EA process is required under CEAA 2012, the potential interactions of the Project will be evaluated in the EIS by considering individual biophysical and socio-economic components that could be affected by the Project, and resultant Project-related effects. Although final direction on these matters would be provided in the EIS Guidelines, the proposed valued components (VCs) to be assessed in an EIS (if required) include:

- Marine Fish and Fish Habitat (including species at risk and species of conservation concern)
- Marine and Migratory Birds (including species at risk and species of conservation concern)
- Marine Mammals and Sea Turtles (including species at risk and species of conservation concern)
- Special Areas
- Commercial Fisheries and Other Ocean Users
- Indigenous Communities and Activities

This scoping has been based on the interactions discussed in Tables 10 and 11, as well as guidance from previously completed C-NLOPB and CEA Agency scoping documents, SEAs, and project-specific EAs of offshore exploration projects. Species at risk and species of conservation concern are considered as part of the Fish and Fish Habitat VC, the Marine Mammals and Sea Turtles VC, and the Migratory Birds VC rather than as a stand-alone VC. The selection of VCs also considers relevant regulations and guidelines for routine exploration-related activities. It is recognized that Project-specific EIS Guidelines will be issued by the CEA Agency following a public review of the Project Description as well as input received from stakeholder and Indigenous engagement and that the final components to be assessed may change.

The selection of proposed environmental components considers existing facilities in eastern Newfoundland will be used for supply, support, and logistical functions. The Project will not require the development of new infrastructure or any upgrades to existing facilities to support Project operations. Third-party service providers will be responsible for obtaining and/or maintaining applicable regulatory approvals to operate their facilities. It is proposed that the scope of the EIS will therefore be limited to offshore components should a federal EA process be required under CEAA 2012. Logistical support from PSVs and helicopters is also well established for the offshore Newfoundland oil and gas industry but is proposed to be assessed as it travels from the onshore supply base to the MODU.

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Appendix A

Table of Concordance with CEAA Regulation SOR 2012-148 and the Guide to Preparing a Description of a Designated Project under CEAA 2012 (March 2015)

Regulation Clause	Guideline Section	Regulation SOR 2012-148 Requirement	Guidance to Support Regulation Requirement	Project Description Section(s)
General Information				
1	1.2.1	The name of the project	Name of the designated project.	**1**
1	1.1	The nature of the project	Describe the nature of the designated Project, and proposed location (2–3 paragraphs; note that additional location details are to be provided in section 3).	**1**
1	1.1	The proposed location of the project	Proposed location of the project.	**1.1, 2.1**
2	1.2	The proponent's name and contact information and the name and contact information of their primary representative for the purpose of the description of the project.	Provide proponent contact information: (a) Name of the designated Project. (b) Name of the proponent. (c) Address of the proponent. (d) Chief Executive Officer or equivalent (include name, official title, email address and telephone number). (f) Principal contact person for purposes of the Project description (include name, official title, email address and telephone number).	**1.2**
3	1.3	A description of and the results of any consultations undertaken with any jurisdictions and other parties including Aboriginal peoples and the public.	Provide a list of any jurisdictions and other parties including Aboriginal groups and the public that were consulted during the preparation of the Project description. (A description of the result of any consultations undertaken is to be provided in sections 6 and 7).	**4**

Regulation Clause	Guideline Section	Regulation SOR 2012-148 Requirement	Guidance to Support Regulation Requirement	Project Description Section(s)
4	1.4	The environmental assessment and regulatory requirements of other jurisdictions.	Provide information on whether the designated Project is subject to the environmental assessment and/or regulatory requirements of another jurisdiction(s).	**1.3**
4.1	1.5	A description of any environmental study that is being or has been conducted of the region where the project is to be carried out.	Provide information on whether the designated Project will be taking place in a region that has been the subject of a regional environmental study. Proponents are advised to contact the Agency during the preparation of the project description for information regarding any regional environmental studies that may be relevant.	**2.1, 3.4**
Project Information				
5	2.1	A description of the Project's context and objectives.	Provide a general description of the project, including the context and objectives of the project. Indicate whether the designated project is a component of a larger project that is not listed in the *Regulations Designating Physical Activities.*	**1.1**
6	2.2	The provisions in the schedule to the *Regulations Designating Physical Activities* describing the project in whole or in part.	Indicate the provisions in the schedule to the *Regulations Designating Physical Activities* that describe the designated physical activities that are proposed to be carried out as part of the designated project.	**1.3.2**
7	2.3.1	A description of the physical works that are related to the project including their purpose, size and capacity.	Provide a description of the components associated with the proposed project, including: Physical works associated with the designated project (e.g., large buildings, other structures, such as bridges, culverts, dams, marine transport facilities, mines, pipelines, power plants, railways, roads, and transmission lines) including their purpose, approximate dimensions, and capacity. Include existing structures or related activities that will	**2.2**

Regulation Clause	Guideline Section	Regulation SOR 2012-148 Requirement	Guidance to Support Regulation Requirement	Project Description Section(s)
			form part of or are required to accommodate or support the designated project.	
8	2.3.2	The anticipated production capacity of the project and a description of the production processes to be used, the associated infrastructure and any permanent or temporary structures.	Anticipated size or production capacity of the designated project, with reference to thresholds set out in the *Regulations Designating Physical Activities*, including a description of the production processes to be used, the associated infrastructure, and any permanent or temporary structures. The production capacity does not refer to the planned production capacity of a project but the maximum production capacity based on the project's design and operating conditions	**2.2**
	2.3.3		If the designated project or one component of the designated project is an expansion, describe the size and nature of the expansion with reference to the thresholds set out in the *Regulations Designating Physical Activities.*	Not Applicable
9	2.3.4	A description of all activities to be performed in relation to the project.	A description of the physical activities that are incidental to the designated project. In determining such activities, the following criteria shall be taken into account: • nature of the proposed activities and whether they are subordinate or complementary to the designated project; • whether the activity is within the care and control of the proponent; • if the activity is to be undertaken by a third party, the nature of the relationship between the proponent and the third party and whether the proponent has the ability to "direct or influence" the carrying out of the activity;	**2.2**

Regulation Clause	Guideline Section	Regulation SOR 2012-148 Requirement	Guidance to Support Regulation Requirement	Project Description Section(s)
			• whether the activity is solely for the benefit of the proponent or is available for other proponents as well; and • the federal and/or provincial regulatory requirements for the activity.	
10	2.4	A description of any waste that is likely to be generated during any phase of the project and of a plan to manage that waste.	Provide a description of any waste likely to be generated during any phase of the designated project and plans to manage that waste, including the following: a) Sources of atmospheric contaminant emissions during the designated project phases (focusing on criteria air contaminants and greenhouse gases, or other non-criteria contaminants that are of potential concern) and location of emissions. b) Sources and location of liquid discharges. c) Types of wastes and plans for their disposal (e.g., landfill, licensed waste management facility, marine waters, or tailings containment facility).	**2.3**

Regulation Clause	Guideline Section	Regulation SOR 2012-148 Requirement	Guidance to Support Regulation Requirement	Project Description Section(s)
11	2.5	A description of the anticipated phases of and the schedule for the Project's construction, operation, decommissioning, and abandonment.	Provide a description of the timeframe in which the development is to occur and the key project phases, including the following: a) Anticipated scheduling, duration and staging of key project phases, including preparation of the site, construction, operation, and decommissioning and abandonment. b) Main activities in each phase of the designated project that are expected to be required to carry out the proposed development (e.g., activities during site preparation or construction might include, but are not limited to, land clearing, excavating, grading, de-watering, directional drilling, dredging and disposal of dredged sediments, infilling, and installing structures).	**2.2, 2.4**
Project Location				
12	**3.0**	A description of the Project's location, including:	A description of the designated project's location, including:	**2.1**
12(a)	**3.1.1**	Geographic coordinates;	Coordinates (i.e. longitude/latitude using international standard representation in degrees, minutes, seconds) for the centre of the facility or, for a linear project, provide the beginning and end points	**2.1**
12(b)	**3.1.2, 3.1.3**	Site maps produced at an appropriate scale in order to determine the project's overall location and the spatial relationship of the project components;	Site map/plan(s) depicting location of the designated project components and activities. The map/plan(s) should be at an appropriate scale to help determine the relative size of the proposed components and activities.	**2.1**

Regulation Clause	Guideline Section	Regulation SOR 2012-148 Requirement	Guidance to Support Regulation Requirement	Project Description Section(s)
			Map(s) at an appropriate scale showing the location of the designated project components and activities relative to existing features, including but not limited to:	
			watercourses and waterbodies with names where they are known;	**Figure 3**
			linear and other transportation components (e.g., airports, ports, railways, roads, electrical power transmission lines and pipelines);	**Figures 11 and 13**
			other features of existing or past land use (e.g., archaeological sites, commercial development, houses, industrial facilities, residential areas and any waterborne structures);	**Figures 12 and 13**
			location of Aboriginal groups, settlement land (under a land claim agreement) and, if available, traditional territory;	**Figures 9 and 10**
			federal lands including, but not limited to National parks, National historic sites, and reserve lands;	**Figure 9**
			nearby communities;	**Figure 9**
			permanent, seasonal or temporary residences;	**Figure 9**
			fisheries and fishing areas (i.e., Aboriginal, commercial and recreational);	**Figure 8 and Table 7**
			environmentally sensitive areas (e.g., wetlands, and protected areas, including migratory bird sanctuary reserves, marine protected areas, National Wildlife areas, and priority ecosystems as defined by Environment Canada);	**Figure 7**

Regulation Clause	Guideline Section	Regulation SOR 2012-148 Requirement	Guidance to Support Regulation Requirement	Project Description Section(s)
			provincial and international boundaries.	**Figures 1 and 3**
	3.1.4		Photographs of work locations to the extent possible.	**N/A**
12(c)	**3.2**	The legal description of land to be used for the project, including the title, deed or document and any authorization relating to a water lot;	To the extent that is known at this time, describe the ownership and zoning of land and water that may be affected by the project, including the following: zoning designations.	**2.1**
			legal description of land to be used (including information on subsurface rights) for the designated project, including the title, deed or document and any authorization relating to a water lot.	**1.1, 2.1**
12(d)	**3.1.5**	The project's proximity to: any permanent, seasonal or temporary residences;	Proximity of the designated project to: any permanent, seasonal or temporary residences;	**2.1, 3.2.3, 3.3**
12(e)	**3.1.5**	traditional territories as well as lands and resources currently used for traditional purposes by Aboriginal peoples;	traditional territories, settlement land (under a land claim agreement) as well as lands and resources currently used for traditional purposes by Aboriginal peoples; and	**2.1, 3.3.2, Figures 9 and 10**
12(f)	**3.1.5**	any federal lands.	any federal lands.	**2.1, 1.3.3**
	3.2.3		Any applicable land use, water use (including ground water), resource management or conservation plans applicable to or near the project site. Include information on whether such plans were subject to public consultation.	**Not applicable**
	3.2.4		Describe whether the designated project is going to require access to, use or occupation of, or the exploration, development and production of lands and resources	**3.3.2, 5.1**

Regulation Clause	Guideline Section	Regulation SOR 2012-148 Requirement	Guidance to Support Regulation Requirement	Project Description Section(s)
			currently used for traditional purposes by Aboriginal peoples.	
Federal Involvement				
13	4.1	A description of any financial support that federal authorities are, or may be, providing to the project.	Describe if there is any proposed or anticipated federal financial support that federal authorities are, or may be, providing to support the carrying out of the designated project.	**1.3**
14	4.2	A description of any federal land that may be used for the purpose of carrying out the project.	Describe any federal lands that may be used for the purpose of carrying out the designated project. This is to include any information on any granting of interest in federal land (i.e., easement, right of way, or transfer of ownership).	**2.1**
15	4.3	A list of the permits, licences or other authorizations that may be required under any Act of Parliament to carry out the project.	Provide a list of any federal permits, licences or other authorizations that may be required to carry out the project.	**1.3.3**
Environmental Effects				
16	5.1	A description of the physical and biological setting.	A description of the physical and biological setting, including the physical and biological components in the area that may be adversely affected by the project (e.g., air, fish, terrain, vegetation, water, wildlife, including migratory birds, and known habitat use).	**3.1, 3.2**
17 (a)	5.2	A description of any changes that may be caused, as a result of carrying out the project, to a) fish as defined in section 2 of the *Fisheries Act* and fish habitat as	A description of any changes that may be caused as a result of carrying out the designated project to: a) fish and fish habitat, as defined in the *Fisheries Act;* b) marine plants, as defined in the *Fisheries Act*;	**5.1, 5.2**

Regulation Clause	Guideline Section	Regulation SOR 2012-148 Requirement	Guidance to Support Regulation Requirement	Project Description Section(s)
		defined in subsection 34(1) of that Act		
17(b)		b) aquatic species, as defined in subsection 2(1) of the Species at Risk Act		**5.1, 5.2**
17(c)	5.2	c) migratory birds, as defined in subsection 2(1) of the *Migratory Birds Convention Act, 1994*	c) migratory birds, as defined in the *Migratory Birds Convention Act, 1994*	**5.1, 5.2**
18	5.3	A description of any changes to the environment that may occur, as a result of carrying out the project, on federal lands, in a province other than the province in which the project is proposed to be carried out or outside of Canada.	A description of any changes to the environment that may occur, as a result of carrying out the designated project, on federal lands, in a province other than the province in which the project is proposed to be carried out, or outside of Canada	**5.1, 5.2**
19	5.4	Information on the effects on Aboriginal peoples of any changes to the environment that may be caused as a result of carrying out the project, including effects on health and socio-economic conditions, physical and cultural heritage, the current use of lands and resources for traditional purposes or on any structure, site or thing that is of historical, archaeological, paleontological or architectural significance.	A description of the effects on Aboriginal peoples of any changes to the environment that may be caused as a result of carrying out the designated project, including effects on health and socio-economic conditions, physical and cultural heritage, the current use of lands and resources for traditional purposes, or any structure, site or thing that is of historical, archaeological, paleontological or architectural significance.	**5.1, 5.2**
Proponent Engagement and Consultation with Aboriginal Groups				
	6.1		A list of Aboriginal groups that may be interested in, or potentially affected by, the designated project.	**3.3.2, 4.1**

Regulation Clause	Guideline Section	Regulation SOR 2012-148 Requirement	Guidance to Support Regulation Requirement	Project Description Section(s)
	6.2		A description of the engagement or consultation activities carried out to date with Aboriginal groups, including:	**4.1**
	6.2		names of Aboriginal groups engaged or consulted to date with regard to the designated project;	**4.1**
	6.2		date(s) each Aboriginal group was engaged or consulted; and	**4.3**
	6.2		means of engagement or consultation (e.g., community meetings, mail or telephone).	**4.3**
	6.3		An overview of key comments and concerns expressed by Aboriginal groups identified or engaged to date, including any responses provided to these groups.	**4.1, 4.3**
	6.4		A consultation and information-gathering plan that outlines the ongoing and proposed Aboriginal engagement or consultation activities, the general schedule for these activities and the type of information to be collected (or, alternatively, an indication of why such engagement or consultation is not required).	**4.1**
	6.4		The proponent is encouraged to provide background information on Aboriginal groups' potential or established Aboriginal or treaty rights. The proponent is also encouraged to provide information on the impact area of the designated project and how it overlaps with uses by Aboriginal groups that have potential or established Aboriginal or treaty rights.	**3.3.2**

Regulation Clause	Guideline Section	Regulation SOR 2012-148 Requirement	Guidance to Support Regulation Requirement	Project Description Section(s)
Consultation with the Public and Other Parties (other than Aboriginal Consultation Included Above)				
	7.1		An overview of key comments and concerns expressed to date by stakeholders and any responses that have been provided.	**4.3**
	7.2		An overview of any ongoing or proposed stakeholder consultation activities.	**4.2, 4.3**
	7.3		A description of any consultations that have occurred with other jurisdictions that have environmental assessment or regulatory decisions to make with respect to the project.	**4.2.1**
Summary				
20	8.0	Summary of the information required under section 1 to 19	Proponents are to include as part of the project description an executive summary that summarizes the information identified in Sections 1 to 7 of [the] Guide. Under CEAA 2012, the Agency is required to consult the public on a summary of the project description that has to be posted on the Agency's Internet site in both of Canada's official languages as required under the *Official Languages Act*. As a result, in order to be in a position to initiate the screening phase in a timely manner, the executive summary is to be prepared and submitted to the Agency in both English and French.	**Project Description Summary Document**