



**Petro-Canada
Exploration Drilling Program
Jeanne d'Arc Basin
2009-2017**

Scoping Document

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1 Purpose

This document provides scoping information for the environmental assessment of the proposed exploration drilling program (the Project) at various locations in the Jeanne d'Arc Basin area over the period 2009 through 2017. Petro-Canada is the project proponent. A Project Description had been submitted to the C-NLOPB on August 29, 2008 and a Scoping Document was developed by the C-NLOPB on October 16, 2008. The proposed project is located on the northeastern Grand Banks offshore Newfoundland, approximately 250 km east of St. John's (Figure 1.1 in the Project Description).

Included in this document is a description of the scope of the project that will be assessed, the factors to be considered in the assessment, and the scope of those factors.

The document has been developed by the C-NLOPB in consultation with the federal and provincial fisheries and environmental departments.

2 CEA Act Regulatory Considerations

The Project will require authorizations pursuant to Section 138 (1)(b) of the *Canada-Newfoundland Atlantic Accord Implementation Act* and Section 134(1)(a) of the *Canada-Newfoundland and Labrador Atlantic Accord Implementation Newfoundland and Labrador Act*.

The C-NLOPB has determined, in accordance with paragraph 3(1)(a) of the *Regulations Respecting the Coordination by Federal Authorities of Environmental Assessment Procedures and Requirements* (FCR), that an environmental assessment (EA) of the project under section 5 of the *Canadian Environmental Assessment Act* (CEA Act) is required.

Pursuant to Section 12.2 (2) of the CEA Act, the C-NLOPB will be assuming the role of the Federal Environmental Assessment Coordinator (FEAC) for this screening and in this role will be responsible for coordinating the review activities by the expert government departments and agencies that participate in the review.

The C-NLOPB intends that the environmental assessment submitted with any supporting documents, as may be necessary, will fulfill the requirements for a Screening. The C-NLOPB, therefore, pursuant to Section 17 (1) of the CEA Act, formally delegate the responsibility for preparation of an acceptable Screening environmental assessment report to Petro-Canada, the project proponent. The C-NLOPB will prepare the Screening Report, which will include the determination of significance.

3 Scope of the Project

The project to be assessed consists of the following components.

- 3.1 Drilling of a maximum of 18 single and/or dual side-track exploration or delineation wells, inclusive of routine activities such as pre-setting of anchors, geohazard/well site surveys, vertical seismic profiling (VSP), geotechnical borehole drilling and seabed sampling (coring, grabs, ROV surveying).
- 3.2 Operation of support craft associated with the above activities, including but not limited to mobile offshore drilling units (MODU), anchor handling tug supply (AHTS) vessels, supply/standby vessels, and helicopters.
- 3.3 Drilling activities are likely to commence in 2009 and typically last approximately 80 to 100 days per well to drill, complete, test and abandon. Depending on the type of rig used (*i.e.*, semi-submersible, jack-up, drill ship), drilling activities may occur throughout the year up to 2017. All wells will either be suspended or abandoned by the end of 2017.

4 Factors to be Considered

The environmental assessment shall include a consideration of the following factors in accordance with Section 16 of CEEA.

- 4.1 The purpose of the project.
- 4.2 The environmental effects¹ of the Project, including those due to malfunctions or accidents that may occur in connection with the Project, and any change to the Project that may be caused by the environment.
- 4.3 Cumulative environmental effects of the Project that are likely to result from the project in combination with other projects or activities that has been or will be carried out.
- 4.4 The significance of the environmental effects described in 4.2 and 4.3.
- 4.5 Measures, including contingency and compensation measures as appropriate, that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the project.
- 4.6 The significance of adverse environmental effects following the employment of mitigative measures, including the feasibility of additional or augmented mitigative measures.
- 4.7 The need for, and the requirements of, any follow-up program in respect of the Project consistent with the requirements of the CEA Act and the SARA.
- 4.8 Report on consultations undertaken by Petro-Canada with interested parties who may be affected by program activities and/or the public respecting any of the matters described above.

¹ The term "environmental effects" is defined in Section 2 of the *CEA Act*, and Section 137 of the *Species at Risk Act*.

5 Scope of the Factors to be Considered

Petro-Canada will prepare and submit to the C-NLOPB an EA for the physical activities as described in the project description "*Petro-Canada Jeanne d'Arc Basin Exploration Drilling Program, 2008-2016 Project Description*" (LGL Ltd. 2008), and as described above. The EA will address the factors listed above; the issues identified in Section 5.2, and document any issues and concerns that may be identified by the proponent through regulatory, stakeholder, and public consultation.

Program activities are proposed for the Jeanne d'Arc Basin area, an area that has been studied extensively in a number of recent environmental assessments. For the purposes of this assessment, the information provided in previous environmental assessment documents for offshore oil and gas activities in the Jeanne d'Arc Basin area can be used, where applicable, in support of the environmental assessment for the proposed drilling program. Where new or updated information (i.e., modeling, new field data) is not included, justification for the use of older information must be provided.

If the "valued ecosystem component" (VEC) approach is used to focus its analysis, a definition of each VEC (including components or subsets thereof) identified for the purposes of environmental assessment, and the rationale for its selection, shall be provided.

The scope of the factors to be considered in the environmental assessment includes the components identified in the "Summary of Potential Issues" setting out the specific matters to be considered in assessing the environmental effects of the project and in developing environmental plans for the project and the defined "Boundaries" (see below). Considerations relating to definition of "significance" of environmental effects are provided in the following sections.

Discussion of the biological and physiological environments should consider the data available for the project and study area. Where data gaps exist, the EA should clearly identify the lack of data available.

5.1. Boundaries

The EA will consider the potential effects of the proposed drilling program activities within spatial and temporal boundaries that encompass the periods and areas during and within which the project may potentially interact with, and have an effect on, one or more VEC. These boundaries may vary with each VEC and the factors considered, and should reflect a consideration of:

- the proposed schedule/timing of the drilling program and its ancillary activities;
- the natural variation of a VEC or subset thereof;
- the timing of sensitive life cycle phases in relation to the scheduling of proposed physical activities;

- interrelationships/interactions between and within VECs;
- the time required for recovery from an effect and/or return to a pre-effect condition, including the estimated proportion, level, or amount of recovery; and
- the area within which a VEC functions and within which a project effect may be felt.

The proponent shall clearly define and provide the rationale for the spatial and temporal boundaries used. The EA report shall clearly describe the spatial boundaries (i.e. Study Area, Project Area), and shall include figures, maps and the corner-point coordinates.

Boundaries should be flexible and adaptive to enable adjustment or alteration based on field data and/or modeling results. The Study Area and associated boundaries will be described based on consideration of potential areas of effects as determined by modeling (spill trajectory and cuttings dispersion), the scientific literature, and project-environment interactions (including transportation corridors). A suggested categorization of spatial boundaries follows.

5.1.1. Spatial Boundaries

Project Area

The area in which Project activities are to occur.

Affected Area

The area that could potentially be affected by project activities beyond the “Project Area”.

Regional Area

The area extending beyond the “Affected Area” boundary. The “Regional Area” boundary will also vary with the component being considered (e.g., boundaries suggested by bathymetric and/or oceanographic considerations).

5.1.2. Temporal Boundaries.

The temporal scope should describe the timing of project activities. Scheduling of project activities should consider the timing of sensitive life cycle phases of the VECs in relation to physical activities.

5.2. Summary of Potential Issues

The EA report for the proposed drilling program should contain descriptions of the physical and biological environments, as identified below. Where applicable, information may be summarized from existing environmental assessment reports for the Jeanne d’Arc Basin. However, where new information is available for any of the following factors, the new data and/or information must be provided. If information is not updated, justification must be provided. Where information is summarized from existing EA reports, it should be properly referenced, with specific reference to those sections of the existing EA report summarized.

The EA will contain descriptions and definitions of EA methodologies employed in the assessment of effects. Where information is summarized from existing EA reports, the sections referenced should be clearly indicated. Effects of relevant project activities on those VECs most likely to be in the Study Area will be assessed. Discussion of cumulative effects within the Project and with other relevant marine projects will be included. Issues to be considered in the EA will include, but not be limited to, the following.

5.2.1. Physical Environment

Provide a summary description of the following:

- Meteorological and oceanographic characteristics in the Study Area, including extreme conditions;
- Summary of sea ice and iceberg conditions, including iceberg scour of the seabed;
- Overview of physical environmental monitoring, observation and forecasting programs that will be in place during the project;
- Ice management/mitigation procedures to be implemented, and any change to the Project that may be caused by the environment; and
- Effects of the environment on the Project, including cumulative effects. The effects assessment should pay specific attention to effects of environmental factors on jack-up and deep water rigs, and mitigations that may be implemented to reduce these effects.

Marine Resources

5.2.2 Marine and/or Migratory Birds using the Study Area

Provide a summary description of the following:

- Spatial and temporal species distributions (observation/monitoring data collected during ongoing petroleum activities should be included);
- Species habitat, feeding, breeding, and migratory characteristics of relevance to the Study Area;
- Physical displacement as a result of vessel presence (e.g. disruption of foraging activities);
- Attraction of birds to vessel lighting and flares;
- Procedures for handling birds that may become stranded on vessels;
- Means by which bird mortalities associated with project operations may be documented and assessed;
- Means by which potentially significant effects upon birds may be mitigated through design and/or operational procedures;
- Effects of hydrocarbon spills from accidental events; and
- Environmental effects due to the Project, including cumulative effects.

5.2.3 Marine Ecosystem

Provide a summary description of the following:

- Description of coral communities likely present in the Study Area, and potential for coral communities to exist based on local habitat conditions;

- Characterization, including quantification to the degree possible, of the spatial area of seabed that is predicted to be affected by drill cuttings and other discharges, and subsea structures and the extent of impact on benthic communities (e.g., fish, shellfish, corals);
- Means by which potentially significant effects upon benthic communities, in particular corals, may be mitigated through design and/or operational procedures; and
- Assessment of effects, including cumulative effects.

5.2.4 Marine Fish and Shellfish

Provide a summary description of the following:

- Distribution and abundance of marine fish and invertebrate species utilizing the Study Area with consideration of critical life stages (e.g., spawning areas, overwintering, juvenile distribution, migration);
- Description, to the extent possible, of location, type, diversity and areal extent of marine fish habitat in the Study Area. In particular, those indirectly or directly supporting traditional, aboriginal, historical, present or potential fishing activity, and including any essential (e.g. spawning, feeding, overwintering) habitats;
- The means by which potentially significant effects upon fish (including critical life stages) may be mitigated through design, scheduling, and/or operational procedures; and
- Environmental effects due to the Project, including cumulative effects.

5.2.5 Marine Mammals and Sea Turtles

Provide a summary description of the following:

- Spatial and temporal descriptions (observation and monitoring data collected during exploration activities operated by Petro-Canada should be discussed);
- Description of marine mammal and sea turtle lifestyles/life histories relevant to Study Area;
- Means by which potentially significant effects upon marine mammals and sea turtles (including critical life stages) may be mitigated through design, scheduling, and/or operational procedures; and
- Environmental effects due to the Project, including cumulative effects.

5.2.6 Species at Risk (SAR):

Provide a summary description of the following:

- A description, to the extent possible, of SAR as listed in Schedule 1 of the *Species at Risk Act (SARA)*, and those under consideration by COSEWIC in the Study Area, including fish, marine mammals, sea turtles and seabird species;
- A description of critical habitat (as defined under SARA), if applicable, to the Study Area;
- Monitoring and mitigation, consistent with recovery strategies/action plans (endangered/threatened) and management plans (special concern);
- A summary statement stating whether project effects are expected to contravene the prohibitions of SARA (Sections 32 (1), 33, 58(1));

- Means by which adverse effects upon SAR and their critical habitat may be mitigated through design, scheduling, and/or operational procedures; and
- Assessment of effects (adverse and significant) on species and critical habitat, including cumulative effects.

5.2.7 “Sensitive” Areas

The information should include:

- A description, to the extent possible, of any “Sensitive” Areas in the Project Area, deemed important or essential habitat to support any of the marine resources identified;
- Environmental effects due to the project, including cumulative effects, on those “Sensitive” Areas identified; and
- Means by which adverse effects upon “Sensitive” Areas may be mitigated through design, scheduling, and/or operational procedures.

Marine Use

5.2.8 Noise/Acoustic Environment

Provide a description of the following:

- Noise and acoustic issues in the marine environment that may be generated from drilling operations (drill rig, thrusters-equipped vessels, VSP, and geohazard/wellsite survey programs) and abandonment (wellhead severance);
- Disturbance/displacement of VECs and SAR associated with drilling activities;
- Means by which potentially significant effects may be mitigated through design and/or operational procedures; and
- Assessment of effects of noise/disturbance on the VECs and SAR, including cumulative effects.

5.2.9 Presence of Structures and/or Operations:

Provide a description of the following:

- Size and location of temporary or project-life exclusion zones;
- Description of project-related traffic, including routings, volumes, scheduling and vessel types;
- Effects upon access to fishing grounds;
- Means by which potentially significant effects may be mitigated through design, scheduling and/or operational procedures; and
- Effects of physical presence of structures upon access to fishing grounds, fish research surveys and upon general marine traffic/navigation; including cumulative effects.

5.2.10 Discharges and Emissions

Provide a description of planned project discharges to the marine environment, including:

- Drilling muds, fluids, and cuttings, bilge water, grey water, black water, cooling water, deck drainage, blow out preventer fluid, ballast water;
- Characterization, quantification and modelling of expected discharges and the timing of discharges, including a description of the models employed; and

- Environmental effects of discharges, including cumulative effects.

5.2.11 Air Quality

Provide a description of the following:

- Annual estimates of rates and quantities of emissions (e.g. as reported through the NPRI and OWTG), and a description of potential means for their reduction and reporting;
- Implications for health and safety of workers that may be exposed to them;
- Mitigation and monitoring; and
- Assessment of effects, including cumulative effects.

5.2.12 Commercial Fisheries

Provide a description of commercial fisheries in the Study Area. The most recent data should be included, if available. The information should include:

- A description of fishery activities (including traditional, existing and potential commercial, recreational and aboriginal/subsistence and foreign fisheries) in the Study Area;
- Consideration of underutilized species and species under moratoria that may be found in the Study Area as determined by analyses of past DFO research surveys and Industry GEAC survey data, with emphasis on those species being considered for future potential fisheries, and species under moratoria;
- An analysis of the effects of Project operations and accidental events upon the foregoing;
- Fisheries liaison/interaction policies and procedures;
- Program(s) for compensation of affected parties, including fisheries interests, for accidental damage resulting from project activities;
- Means by which adverse effects upon commercial fisheries may be mitigated through design and/or operational procedures; and
- Environmental effects of the Project, including cumulative effects.

5.2.13 Accidental Events

The discussion should not be limited to crude oil, but should consider accidental releases of drilling fluids, drilling muds, and other hydrocarbons. The information should include:

- Quantification of blowout risk;
- Quantification of risk of petroleum/chemical spills of all volumes associated with the Project;
- Discussion of the potential for spill events from drilling activities to enter the marine environment;
- Modelled physical fate of oil spills, including descriptions of models and/or analyses that are employed and the physical data upon which they are based;
- Description of the marine area likely to be affected by hydrocarbons from a spill event that enters the marine environment;
- Fate of hydrocarbons in the marine environment, as determined by spill trajectory analysis;
- Mitigations to reduce or prevent such events from occurring;

- Contingency plans to be implemented in the event of an accidental release; and
- Environmental effects of any accidental events on all VECs identified, including those listed above. Cumulative effects should be included.

5.2.14 Environmental Management

Provide a general overall description of Petro-Canada's environmental management system and its components. It should include, but not be limited to:

- Pollution prevention policies and procedures;
- Fisheries liaison/interaction policies and procedures;
- Program(s) for compensation of affected parties, including fisheries interests, for accidental damage resulting from project activities; and
- Emergency response plan(s).

5.2.15 Biological and Follow-up Monitoring

Discuss the need for and requirements of a follow-up program (as defined in Section 2 of CEAA) and pursuant to the SARA. The discussion should also include any requirement for compensation monitoring (compensation is considered mitigation).

Detailed description of the monitoring and observation procedures to be implemented regarding marine mammals, sea turtles, and seabirds (observation protocols should be consistent with the C-NLOPB "*Geophysical, Geological, Environmental and Geotechnical Program Guidelines*" (2008)).

5.2.16 Abandonment/Decommissioning

Plans for abandonment and/or decommissioning of the Project area and associated facilities following termination of production, including any anticipated requirement for post-abandonment monitoring.

5.3 Significance of Adverse Environmental Effects

The Proponent shall clearly describe the criteria by which it proposes to define the "significance" of any residual adverse effects that are predicted by the EA. This definition should be consistent with the November 1994 CEAA reference guide "*Determining Whether a Project is Likely to Cause Significant Adverse Environmental Effects*", and be relevant to consideration of each VEC (including components or subsets thereof) that is identified. SARA species shall be assessed independent of non-SARA species. The effects assessment methodology should clearly describe how data gaps are considered in the determination of significance of effects.

5.4 Cumulative Effects

The assessment of cumulative environmental effects should be consistent with the principles described in the February 1999 CEAA "*Cumulative Effects Assessment Practitioners Guide*" and in the March 1999 CEAA operational policy statement "*Addressing Cumulative Environmental Effects under the Canadian Environmental Assessment Act*". It should include a consideration of

environmental effects that are likely to result from the proposed project in combination with other projects or activities that have been or will be carried out. These include, but are not limited to:

- Proposed and ongoing oil and gas activities under EA review (listed on the C-NLOPB Public registry at www.cnlopb.nl.ca);
- Seismic activities;
- Fishing activities, including Aboriginal fisheries; and
- Marine transportation.

6 Projected Timelines for the Environmental Assessment Process

The following are estimated timelines for completing the EA process. The timelines are offered based on experience with recent environmental assessments of similar project activities.

ACTIVITY	TARGET	RESPONSIBILITY
Submission of EA upon receipt of Scoping Document	8 weeks	Proponent
Prepare for EA review	~1 week	C-NLOPB
EA review	6 weeks	C-NLOPB & Regulatory Agencies
Compile comments on EA	2 weeks	C-NLOPB
Submission of EA Addendum/Response to EA Comments	4 weeks	Proponent
Review of EA Addendum/Response Document	3 weeks	C-NLOPB & Regulatory Agencies
Screening Report (Determination of Significance of Project Effects)	2 weeks	C-NLOPB
Total	26 weeks	