

# **Orphan Basin Exploration Drilling Program Scoping Document**

Prepared by

**Canada-Newfoundland Offshore Petroleum Board**

**January 26, 2005**

# Table of Contents

	<b>Page</b>
Table of Contents .....	i
List of Figures .....	i
1.0 Purpose .....	1
2.0 Regulatory Considerations .....	3
3.0 Scope of the Project .....	3
4.0 Factors to be Considered.....	4
5.0 Scope of the Factors .....	5
6.0 Spatial and Temporal Boundaries .....	6
7.0 Significance of Adverse Environmental Effects .....	7
8.0 Summary of Potential Issues .....	7
9.0 Public Consultation .....	11
10.0 References Cited.....	12
APPENDIX 1.....	13

# List of Figures

	<b>Page</b>
Figure 1. Location of Project Area. (LGL 2004) .....	2

# 1.0 Purpose

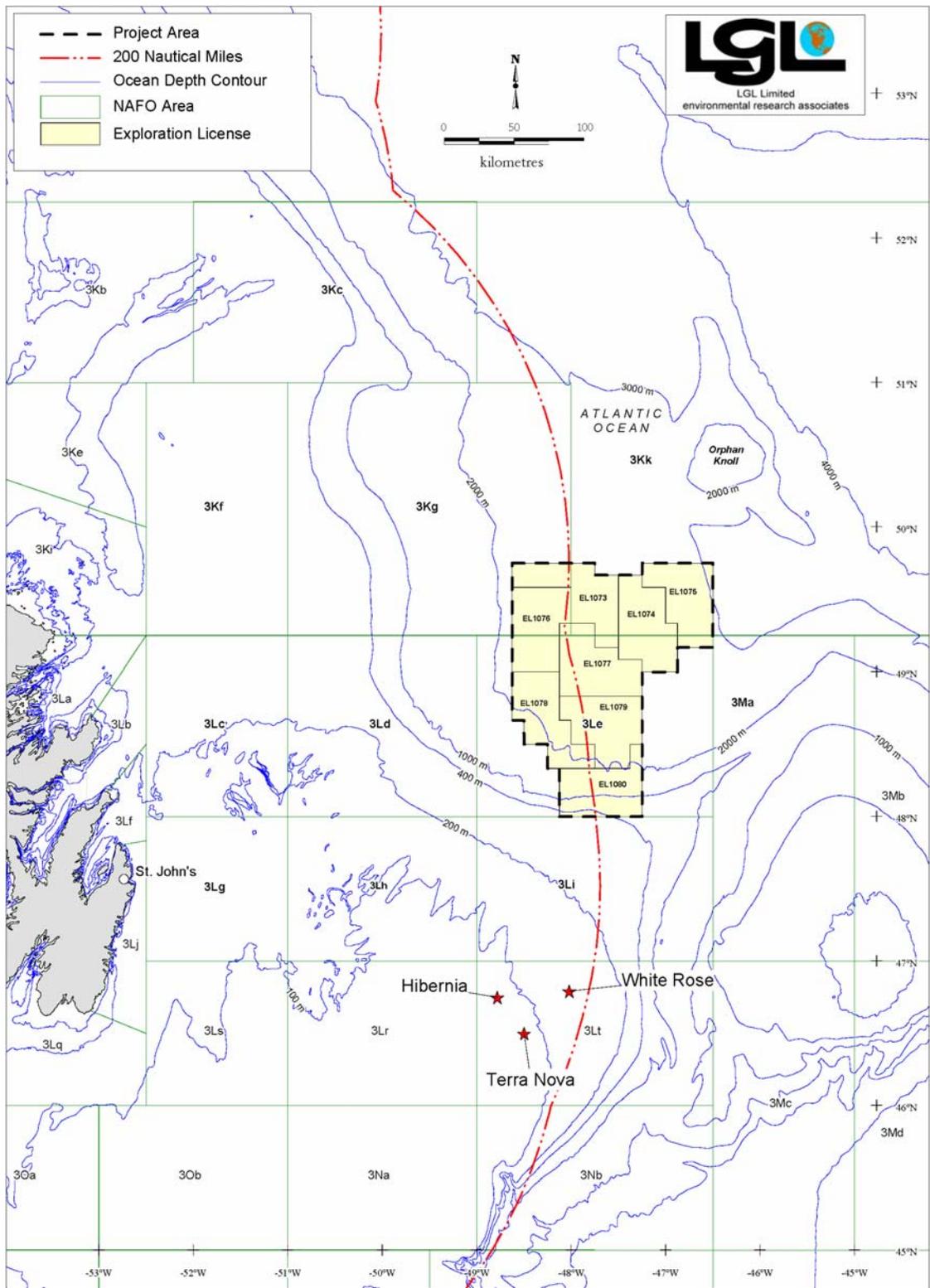
This document describes the scope for an environmental assessment (EA) of exploratory drilling in the Orphan Basin (the “Project”), in the Newfoundland and Labrador offshore area. It includes the scope of the Project, the factors to be considered, the scope of those factors, and other guidelines for preparing the EA/Comprehensive Study document.

Chevron Canada Resources, on behalf of its co-venturers ExxonMobil Canada Ltd and Imperial Oil Resources Ventures Limited is proposing an exploration drilling program within Exploration Licenses (ELs) 1073, 1074, 1075, 1076, 1077, 1078, 1079 and 1080 (Figure 1). The Project, entitled “Orphan Basin Exploration Drilling Program”, is anticipated to initially include up to three (3) exploratory wells, with potential for up to an additional nine (9) exploration and/or delineation wells depending on the success of the initial drilling program. The prospect, known as the Orphan Basin, is located in the NW Atlantic Ocean to the north of the Grand Banks. The nearest EL is located about 300-km northeast of St. John’s, Newfoundland and Labrador. Exploratory drilling operations are scheduled to possibly commence in 2006 and individual wells may be commenced at any time throughout the lifespan of the ELs (e.g., January 15, 2009 for Phase I of the Licences, or up to January 15, 2013 for Phase II).

The scoping document was developed by the Canada-Newfoundland Offshore Petroleum Board (C-NOPB or the “Board”), as Responsible Authority (RA). A draft version was made available for review by government departments and agencies including the Department of Fisheries and Oceans (DFO) Environment Canada (EC), Transport Canada, Natural Resources Canada, Department of National Defence, the Canadian Environmental Assessment Agency (CEA Agency), and C-NOPB’s other advisory agencies in the Governments of Canada and of Newfoundland and Labrador<sup>1</sup>. The draft report was also made available to the general public for comment. The following report incorporates the issues and comments raised during the review as they relate to the proposed exploratory drilling program.

---

<sup>1</sup>Appendix 1 contains a list of the departments and agencies consulted during the preparation of the document.



**Figure 1. Location of Project Area. (LGL 2004)**

## 2.0 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*. Subject to Section 5(1)(d) of the *Canadian Environmental Assessment Act (CEA Act)*, the C-NOPB as the RA must undertake an environmental assessment of the Project.

The Project as proposed is described in the Comprehensive Study List Regulations of the *CEA Act* (Part IV Oil and Gas Projects, Paragraph 15). The Board, in accordance with Section 21(2) of the *CEA Act* will prepare a report for the Minister of Environment regarding

- The scope of the project, the factors to be considered in its assessment and the scope of those factors
- Public concerns in relation to the project
- The potential of the project to cause adverse environmental effects, and
- the ability of the comprehensive study process to address issues relating to the project.

The Board will also recommend to the Minister to either continue with the environmental assessment by means of a Comprehensive Study, or to refer the Project to a Mediator or Review Panel.

*The C-NOPB intends that the environmental assessment report for the exploratory drilling programs submitted with any supporting documents as may be necessary will fulfill the requirements for a Comprehensive Study Report (CSR). The C-NOPB therefore, pursuant to Section 17(1) of the CEA Act, formally delegate the responsibility for preparation of an acceptable CSR to Chevron Canada Resources, acting on behalf of itself and its present and any future partners. The C-NOPB will prepare a decision respecting the significance of adverse environmental effects, as per Section 37(1) of the CEA Act.*

## 3.0 Scope of the Project

Chevron Canada Resources on behalf of its co-venturers is proposing to conduct an exploration drilling program in search of petroleum hydrocarbons in the Orphan Basin within ELs 1073 to 1080 (Figure 1). The ELs are situated at water depths ranging from 500 to 3,000-m, with most of these licenses between 2,000 and 3,000-m. The Prospect is located over 300-km northeast of St.

John's. Exploratory drilling operations are scheduled to possibly commence in 2006, depending on rig availability and regulatory approval, and individual wells may be commenced throughout the life of the licenses up to January 15, 2013. Up to three wells may be drilled in the initial program, with up to nine additional exploration/delineation wells should the initial program be successful.

Project components, typical of deep offshore exploratory drilling programs, will include:

- One and possibly two dynamically-positioned drill rigs (semi-submersible and/or drill ship)
- Offshore supply vessels (three per rig)
- Offshore helicopters (for crew change and light re-supply)
- Water-based and synthetic-based drilling fluid systems
- Vertical seismic profiling (VSP) equipment, including a seismic airgun array
- Well site surveys
- Well abandonment programs

## 4.0 Factors to be Considered

The Comprehensive Study shall include a consideration of the following factors as described in Subsections 16(1) and (2) of the *CEA Act*. Factors to be considered in accordance with Subsection 16(1) are:

- The environmental effects<sup>2</sup> of the Project, including the environmental effects of malfunctions or accidents that may occur in connection with the Project, and any cumulative environmental effects that are likely to result from the Project in combination with other projects or activities that have been or will be carried out;
- The significance of adverse environmental effects following the implementation of mitigative measures, including the feasibility of additional or augmented mitigative measures;
- Comments from the public that are received in accordance with the *CEA Act* and its regulations;
- Measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the Project; and
- The need for, and alternatives to, the Project

---

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

Factors to be considered in accordance with Subsection 16(2) are:

- The purpose of the Project;
- Alternative means of carrying out the Project that are technically and economically feasible, and the environmental effects of any such alternative means (based on CEA Agency Operational Policy Statements);
- The need for, and the requirements of, any follow-up program in respect of the Project; and
- The capacities of renewable resources likely to be significantly affected by the Project to meet the needs of the present and those of the future.

## 5.0 Scope of the Factors

Chevron Canada Resources will prepare and submit an environmental assessment to the C-NOPB for the Project as described above. The EA will address the factors listed above, and document any issues and concerns that may be identified by the Proponents through regulatory, stakeholder, and public consultation.

It is understood that the Proponents will use the “valued ecosystem component” (VEC) approach to focus the effects analyses. 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. Rationale will also be provided for potential VECs which may either not be included or may not be evaluated in any detail. As a minimum, VECs will include Marine Birds, Fish and Fish Habitat (including benthic habitat), Commercial Fisheries, Marine Mammals and Sea Turtles, Species at Risk, with emphasis on selected species of particular sensitivities or importance.

The scope of the factors to be considered in the EA pursuant to the *CEA Act* includes the components identified in the “Summary of Potential Issues” (see below), including specific definitions of effects (and significance thereof), environmental plans for the Project, and effects assessment within the “Spatial and Temporal Boundaries” identified below.

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

In addressing alternative means (as per Section 4.0), the EA should include a discussion of methods to reduce wastes and the discharges of those wastes.

## 6.0 Spatial and Temporal Boundaries

The Proponents shall clearly define, and provide the rationale for the spatial and temporal boundaries that are used in the environmental assessment. Boundaries should be flexible and adaptive to enable adjustment or alteration based on field data and/or modeling results.

Project Area boundaries will be those defined by the boundaries of the ELs (Figure 1). A larger 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). Within the Study Area sub-areas will be described such as 'project area,' 'affected area', etc. Vertical, horizontal and temporal distributions of VECs may also be used to aid in determining the EA boundaries.

The selection of spatial boundaries for the Study Area shall be consistent with the CEAA Operational Policy: *The Process for Defining the Spatial Boundary of a Study Area during an Environmental Assessment of Offshore Exploratory Drilling Projects*.

Boundaries may vary with each VEC and the factors considered, and should reflect a consideration of:

- The proposed schedule/timing of the drilling program;
- The natural variation of an ecosystem, VEC or subset thereof;
- Representative ecological areas or components such as slope and deep waters;
- Interrelationships/interactions between and within VECs;
- Timing of life cycle phases in relation to scheduling of Project activities (drilling, seismic, etc.)
- 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;
- The area within which a VEC functions and within which a Project effect may be felt; and

In addition, the assessment of cumulative environmental effects should be consistent with the principles described in the February 1999 CEA Agency's *Cumulative Effects Assessment*

*Practitioners Guide* and in the March 1999 the Agency's Operational Policy Statement *Addressing Cumulative Environmental Effects under the Canadian Environmental Assessment Act*, and will 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 other oil and gas activities, and fishing activities and marine transportation.

The Project time frame will include year-round operations possibly commencing in 2006 and continuing for the life of the exploration licenses.

## **7.0 Significance of Adverse Environmental Effects**

The Proponents shall clearly describe the criteria by which it proposes to define the “significance” of any adverse effects that are predicted by the environmental assessment. This definition should be consistent with the November 1994 Agency 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. The effects assessment methodology should clearly describe how data gaps are considered in the determination of significance of effects.

## **8.0 Summary of Potential Issues**

The environmental assessment will contain descriptions of the physical and biological environments and contain descriptions and definitions of EA methodologies. Where information is summarized from existing environmental assessment reports (Orphan Basin SEA (CNOBPB 2003) and Orphans Basin 3D Seismic Program Environmental Assessment Report (Chevron Canada Resources 2004), etc.) the sections referenced should be clearly indicated. Effects of relevant Project activities on those Valued Ecosystem Components (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. The EA will consider at least the following issues:

- **Physical Environment**

- Oceanographic (i.e., current regime, water column profile, bathymetry, substrate) and meteorological conditions, including extremes

- Geological characteristics (including predominant characteristics, substrate, seafloor stability/mobility extremes

Ice and iceberg conditions (including ice management plans)

Mitigations

Effects of the Environment on the Project, including cumulative effects

- **Discharges and Emissions**

Planned project discharges to the marine environment including, drilling fluids and cuttings, produced water, bilge water, “grey” water, “black” water, cooling water, deck drainage

Characterization, quantification and modelling (where appropriate) of expected discharges (e.g., concentration of metals, nutrients, hydrocarbons, biocides, etc., timing of discharges), including a description of the models employed (assumption used in modelling should be clearly stated)

Means for reduction re-use and recovery of wastes beyond those specified in regulations and guidelines, including a description of best available/practicable technology;

- **Air Quality**

Air emissions (nitrogen/sulphur oxides; VOCs; particulate matter; carbon monoxide)

Health and safety

Greenhouse gases (carbon dioxide, methane nitrous oxide; annual estimates of these emissions and a description of potential means for their reduction and reporting)

Estimates of rates and quantities of emissions

Mitigation and Monitoring

Assessment of effects, including cumulative effects

- **Noise/Acoustic issues/Disturbance**

Drill rigs/ships (drilling, thrusters, etc), seismic operations, abandonment (use of chemical explosives)

Assessment of effects of noise/disturbance on VECs, including cumulative effects

- **Ecosystem**

Plankton

Benthos (including deep sea corals)

Sensitive species

Characterization, including quantification to the degree possible, of the spatial area (including thickness) of seabed that is predicted to be affected by drill cuttings and other discharges

Assessment of effects, including cumulative effects

- **Marine Finfish and Shellfish**

Characterization of the existing environment

Species distributions in time and space (with consideration of critical life stages and representative ecological area (i.e., slope, deep water))

Description of finfish/shellfish life histories relevant to EA

Description of location, type, diversity and aerial extent of marine finfish and shellfish habitat in the study area, particularly those supporting fisheries

Identification of important spawning, feeding, migratory and essential habitats

Monitoring and mitigation of effects

Assessment of effects, including cumulative effects

- **Seabirds**

Species distributions in time and space

Description of seabird lifestyles/life histories relevant to the EA

Monitoring and mitigation of mortalities from stranding and/or oiling

Assessment of effects, including attraction to rigs and cumulative effects

- **Marine Mammals and Sea Turtles**

Species distributions in time and space

Description of marine mammal lifestyles/life histories (including critical life stages), and important areas (migration routes, feeding, nursery areas) relevant to the EA

Ship strikes

Monitoring and mitigation

Assessment of effects, including cumulative effects

- **Species at Risk** (relevant to *Species at Risk Act* and as listed by COSEWIC)

Description of relevant species in the Project/Study Area

Assessment of adverse and significant effects on species and critical habitat, including cumulative effects

A summary statement stating whether project effects are expected to contravene the prohibitions of SARA (Sections 32 (1), 33, 58(1))

Monitoring and mitigation, consistent with recovery strategies/action plans (endangered/threatened) and management plans (special concern)

Assessment of effects, including cumulative effects

- **Sensitive Areas**

Description of areas (essential, important or limiting habitat) such as, but not limited to deep sea corals, slope/shelf edge, etc,  
Monitoring and mitigation  
Environmental effects, including cumulative effects

- **Commercial, Recreational, Subsistence, Aboriginal, Foreign Fisheries**

Historical perspective and underutilized species  
Description of fisheries (i.e., species, location, vessel size, gear type, timing) in Project and Study Areas  
Access to fishing grounds in consideration of project operations and accidental events  
Mitigation policies and procedures, including fisheries liaison  
Compensation program (s) for accidental damage  
Assessment of effects, including cumulative effects

- **Marine Use**

Presence of vessels/rigs  
Marine traffic (project related traffic and general marine traffic patterns)  
Research cruises/surveys  
Mitigation/monitoring  
Assessment of effects, including cumulative effects

- **Accidental Events**

Oil spills and blowouts (probabilities, risk, behaviours, trajectories)  
Emergency Response Plans  
Mitigations (prevention and effectiveness of spill countermeasures)  
Assessment of effects, including cumulative effects

- **Environmental, Health and Safety Management Policies and Procedures**

Proponent's/Project environmental management system and its components, including, but not limited to pollution prevention policies and procedures, fisheries liaison/interaction policies and procedures, and program(s) for compensation of affected parties, including fisheries interests, for accidental damage resulting from project activities

- **Abandonment and Decommissioning**

Plans for abandonment of wellheads in the project area

- **Follow-up Monitoring**

Requirements of Follow-up Monitoring, as defined in Section 2 of the *CEA Act* and as required under the *SARA*

Marine bird and mammal observation programs  
Commitments to update mitigation and follow-up monitoring throughout project lifetime  
Describe how data collected will be publicly accessible

- **Summary of Effects and Mitigations**

The effects assessment will include, but not be limited to, the effects of routine activities, including discharges, noise (drill rig, supply vessel, VSP), attraction, and malfunctions and accidental events (e.g., spills). Well abandonment procedures and effects will also be discussed.

Mitigations, both routine and contingent, will be described for those activities that may adversely affect the environment and VECs. The effects described and summarized will be residual effects, in other words: those remaining after the application of routine mitigations. A Follow-up monitoring program will be outlined that will assess the effectiveness of mitigations and the accuracy of effects predictions.

## **9.0 Public Consultation**

Public input will be actively sought while the CSR is being prepared and while it is being reviewed. There are three opportunities for public consultation: (1) during the preparation of the scope of the EA, (2) during the preparation of the Comprehensive Study, and (3) during the comment period administered by the Agency on the completed CS Report.

The public will have up to 30 days to provide written comment to the Board on the Draft Scoping Document and a period, to be determined by the Board, to submit written comments to the Board on the draft EA Report (also considered to be the draft CS Report) provided by CCR; and a period, to be determined by the CEA Agency, to examine the CS Report. The Board will advertise, in local and community newspapers, the public consultation periods for the Scoping Document and EA Report, as well as, issuing news releases to encourage public participation.

The Board will receive all public comments on the Scoping Document and EA Report. The EA Track Report (as described in Section 2) will summarize public comments received on the scoping document, and document where changes were made to address public comment. The CS Report must demonstrate how public comments on the EA report were considered and note any changes made as a result of that consideration.

The Project will be listed on the CEA Agency Registry and relevant EA documents will be available on request to the C-NOPB or on the C-NOPB web site.

## 10.0 References Cited

CEA Agency website: [www.acee-ceaa.gc.ca/index\\_e.htm](http://www.acee-ceaa.gc.ca/index_e.htm)

C-NOPB website: [www.cnopb.nfnet.com](http://www.cnopb.nfnet.com)

LGL 2004. Orphan Basin 3D Seismic Program. Prepared for Chevron Canada Resources and ExxonMobil Canada Ltd.

LGL 2004. Orphan Basin Exploration Drilling Program Project Description. Prepared for Chevron Canada Resources

LGL 2003. Orphan Basin Strategic Environmental Assessment. Prepared for the Canada-Newfoundland Offshore Petroleum Board

# APPENDIX 1

## Departments and Agencies Consulted by C-NOPB

### **“Federal Authorities” under the *Canadian Environmental Assessment Act***

Natural Resources Canada

Department of Fisheries and Oceans

Environment Canada

Transport Canada

Department of National Defense

### **Other Departments/Agencies**

Canadian Environmental Assessment Agency

### **Provincial Departments (Government of Newfoundland and Labrador)**

Department of Mines and Energy

Department of Environment and Labour

Department of Fisheries and Aquaculture