

1 Purpose

This document provides scoping information for the Environmental Assessment (EA) of the proposed geohazard survey program, offshore Newfoundland in the Old Harry prospect in the Gulf of St. Lawrence and all other related activities (the Project). Corridor Resources Inc. (Corridor Resources) is proposing to undertake a wellsite geohazard survey and sediment sampling over the Old Harry Prospect in 2010. The objectives of the geo-hazard program are to: identify shallow geological hazards (i.e. Slump scars, channels, faulting, shallow gas accumulations, gas hydrates and shallow trap closure); acquire detailed bathymetry; identify surficial geology, boulder till, channel fill, slumping, faulting, gas-charged shallow sediments; determine the nature and characteristics of the seafloor sediments; identify iceberg scours, morphology of seabed depositional units, seafloor obstructions, and bedforms indicative of seafloor sediment dynamics; and locate and identify seafloor installations, wrecks and cables.

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.

This document has been developed by the Canada-Newfoundland and Labrador Offshore Petroleum Board (C-NLOPB) in consultation with federal and provincial fisheries and environmental departments¹.

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* (Accord Acts).

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 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 has determined that the environmental assessment report and any supporting documents to be submitted by Corridor Resources Inc. will fulfill the requirements of a Screening. The C-NLOPB, therefore, pursuant to Section 17 (1) of the CEA Act, formally delegates the responsibility for preparation of an acceptable Screening environmental assessment to Corridor Resources Inc., the project proponent. The C-NLOPB will prepare the Screening Report, which will include the determination of significance.

¹Appendix 1 contains a list of the departments and agencies consulted during the preparation of the document.

3 Scope of the Project

The project to be assessed consists of the following components:

- 3.1 The geohazard survey will be carried out in the Old Harry Prospect area (EL 1105) located in the Gulf of St. Lawrence (centered at approximately $48^{\circ} 03' 05.3''$ W; Longitude: $60^{\circ} 23' 41.7''$ N). The proposed geo-hazard survey is located approximately 70 km northeast of the Magdalen Islands and 80 km west-northwest of Cape Anguille, Newfoundland. The survey area is located within a physiographic feature called the Laurentian Channel. Water depths in the area of the proposed survey are approximately 470 m. The Old Harry prospect is a large, doubly plunging anticline in the north-eastern part of the Gulf of St. Lawrence. The structure is about 30 km long and 12 km wide.
- 3.2 The geo-hazard survey will be conducted using a standard suite of equipment typically utilized for wellsite/geohazard surveys. Approximately 160 line kilometres of shallow penetration, 2-D seismic data will be acquired during the survey. This work will require about 4 days on site survey time. The following geo-hazard survey equipment may be employed to investigate the proposed survey area: high resolution airgun seismic system, a side-scan sonar system, a sub-bottom profiler, echo-sounder, magnetometer, seabed camera system and sediment grab samples. High resolution, multi-channel seismic data will be acquired to two seconds depth, sampled at one millisecond. The data to be acquired will comprise 2D seismic reflection data, with a line spacing of 250 m and tie lines at 500 m. The acoustic source for the seismic data will comprise one or more airguns with a total operational volume of approximately 150 cubic inches. The exact airgun specifications will be provided when a contractor is selected. The receiver will be a single gun, multi-channel hydrophone streamer. Seabed images will be acquired by means of a side scan sonar or multi-beam echo sounder. A mosaic will be created based on geo-referenced data. If side scan sonar or multi-beam bathymetric systems identify potential debris, a proton magnetometer will be used. A camera system, sediment sampler and/or gravity-piston cores of the seafloor and near surface sediments will be used to corroborate the other data. High-resolution sub-bottom profiles will be acquired by means of a boomer or sparker acoustic source towed within the water column at approximately 20 to 40 m off the seabed. The depth of penetration for this system is expected to be between 40 to 100 m.
- 3.3 The timing of survey activities will be in the fall of 2010. The geo-hazard survey will require one trip out from port and return to port and is anticipated to take four days to complete the geo-hazard survey, dependent on weather. An additional 1 to 2 days will be required to complete seabed sampling, coring, and seabed photography.

4 Factors to be Considered

The EA shall include a consideration of the following factors in accordance with Section 16 of the CEA Act:

- 4.1 The purpose of the project;
- 4.2 The environmental effects² 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 have 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 programs in respect of the Project consistent with the requirements of the CEA Act and the SARA. (Refer to the Canadian Environmental Assessment Agency’s 2002 “Operational Policy Statement” regarding Follow-up Programs³); and
- 4.8 Report on consultations undertaken by Corridor Resources with interested other ocean users who may be affected by program activities and/or the general public respecting any of the matters described above.

5 Scope of the Factors to be Considered

Corridor Resources will prepare and submit to the C-NLOPB an EA for the above-described physical activity, and as described in the “*Proposed Geohazard Survey for the Old Harry Prospect*” (February 2010) project description.

The EA will address the factors listed above; the issues identified in Section 5.2 (following), and document any issues and concerns that may be identified by the proponent through regulatory, stakeholder, and public consultation.

It is recommended that the “valued ecosystem component” (VEC) approach be 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 EA, will include the components identified in Section 5.2 - 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 “Spatial Boundaries” identified below

² The term “environmental effects” is defined in Section 2 of the CEA Act.

³ CEA Agency Guidance documents and Operational Policy Statements are available on its web site: http://www.ceaa-acee.gc.ca/012/newguidance_e.htm#6.

(Section 5.1). Considerations relating to definition of “significance” of environmental effects are provided in the following sections.

5.1 Boundaries

The EA shall consider the potential effects of the proposed geohazard survey program 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 VECs. These boundaries may vary with each VEC and the factors considered, and should reflect a consideration of:

- the proposed schedule/timing of the geohazard survey program;
- the natural variation of a VEC or subset thereof;
- the timing of sensitive life cycle phases in relation to the scheduling of geohazard survey 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 that are used in its EA. The Study Area chosen shall be clearly described in the EA report. Boundaries should be flexible and adaptive to enable adjustment or alteration based on field data. The Study Area will be described based on consideration of potential areas of effects as determined by the scientific literature, and project-environment interactions. A suggested categorization of spatial boundaries follows.

5.1.1 Spatial Boundaries

Project Area

The area in which geohazard survey activities is to occur, including the area of the buffer zone normally defined for line changes.

Affected Area

The area which 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 geohazard survey program should contain descriptions of the biological and physical environments, as identified below. Where applicable, information may be summarized from existing environmental assessment reports for the Jeanne d’Arc Basin. The EA report should provide only summary descriptions of those biological and physical parameters. However, where new information is available, (*e.g.*, fisheries data) for any of the following factors, the new data and/or information should 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 shall 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 defined Study Area shall be assessed. Discussion of cumulative effects within the Project area and with other relevant marine projects shall be included. Issues to be considered in the EA shall include, but not be limited to, the following:

Physical Environment

5.2.1 The EA shall provide a brief summary description of the meteorological and oceanographic characteristics, including extreme conditions, and any change to the Project that may be caused by the environment.

Marine Resources

5.2.2 Marine and/or Migratory Birds

The EA shall provide a summary description, where applicable, of the information presented in existing environmental reports for the Jeanne d’Arc Basin. New or updated information should be provided, where applicable, to address any changes to the following:

- Spatial and temporal species distributions;
- Species habitat, feeding, breeding, and migratory characteristics of relevance to the Study Area;
- Noise disturbance from seismic equipment including both direct effects (physiological), or indirect effects (foraging behaviour, prey species, adult attendance at the nest);
- Physical displacement as a result of vessel presence (*e.g.* disruption of foraging activities);
- Attraction of, and increase in, predator species as a result of waste disposal practices (*i.e.*, sanitary and food waste);
- Nocturnal disturbance from light (*e.g.* increased opportunities for predators, attraction of birds to vessel lighting and subsequent collision, disruption of incubation);
- Procedures for handling birds that may become stranded on survey vessels;

- Means by which bird mortalities associated with project operations may be documented and assessed;
- Effects of hydrocarbon spills from accidental events, including fluid loss from streamers and operational discharges (e.g. deck drainage, gray water, black water);
- Means by which potentially significant adverse effects upon birds may be mitigated through design and/or operational procedures; and
- Environmental effects due to the Project, including cumulative effects.

5.2.3 Marine Fish and Shellfish

The EA shall provide a summary description, where applicable, of the information presented in existing environmental reports for the Jeanne d'Arc Basin... New or updated information should be provided, where applicable, to address any changes to 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 adverse effects upon fish (including critical life stages) and commercial fisheries may be mitigated through design, scheduling, and/or operational procedures; and
- Environmental effects due to the Project, including cumulative effects.

5.2.4 Marine Mammals and Sea Turtles

The EA shall provide a summary description, where applicable, of the information presented in existing environmental reports for the Jeanne d'Arc Basin. New or updated information should be provided, where applicable, to address any changes to the following:

- Spatial and temporal distribution;
- Description of marine mammal and sea turtle lifestyles/life histories relevant to the Study Area;
- Disturbance to/displacement of marine mammals and sea turtles due to noise and the possibility of ship strikes;
- Means by which potentially significant adverse 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.

5.2.5 Species at Risk (SAR)

Provide a summary description, where applicable, of the information presented in existing environmental reports for the Jeanne d'Arc Basin... New or updated information should be provided, where applicable, to address any changes to 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 mammal, 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 SAR and critical habitat, including cumulative effects.

5.2.6 “Sensitive” Areas

The EA shall provide a summary description, where applicable, of the information presented in existing environmental reports for the Jeanne d’Arc Basin. New or updated information should be provided, where applicable, to address any changes to the following:

- A description, to the extent possible, of any ‘Sensitive’ Areas in the Project Area (including the Laurentian Channel which is considered part of an Ecologically and Biologically Significant Area (EBSA) identified within the Placentia Bay Grand Banks (PBGB) large ocean management area (LOMA)), 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

5.2.7 Noise/Acoustic Environment

The EA shall provide a summary description, where applicable, of the information presented in existing environmental reports for the Jeanne d’Arc Basin. New or updated information should be provided, where applicable, to address any changes to the following:

- Disturbance/displacement of VECs and SAR associated with geohazard survey activities;
- Means by which potentially significant effects may be mitigated through design, scheduling and/or operational procedures; and
- Effects of seismic activities (direct and indirect) including cumulative effects, on the VECs and SAR identified within the EA. Critical life stages should be included.

5.2.8 Presence of Geohazard Survey Vessel(s)

The EA shall provide a summary description, where applicable, of the information presented in existing environmental reports for the Jeanne d’Arc

Basin. New or updated information should be provided, where applicable, to address any changes to the following:

- Description of project-related traffic, including routings, volumes, scheduling and vessel types;
- Effects upon access to fishing grounds;
- Effects upon general marine traffic/navigation, including fisheries research surveys, and mitigations to avoid research surveys;
- Means by which potentially significant effects may be mitigated through design, scheduling and/or operational procedures; and
- Environmental effects assessment, including cumulative effects.

5.2.9 Fisheries and Other Ocean Users

Provide a summary description, where applicable, of the information presented in existing environmental reports for the Jeanne d'Arc Basin. New or updated information should be provided, where applicable, to address any changes to the following:

- A description of fishery activities (including traditional, existing and potential commercial, recreational and aboriginal/subsistence and foreign fisheries) in the Project 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 fishers, and species under moratoria;
- Traditional historical fishing activity, including abundance data for certain species in this area, prior to the severe decline of many fish species (e.g., a general overview of survey results and fishing patterns in the survey areas for the last 20 years);
- An analysis of the effects of Project operations and accidental events upon the foregoing. The analysis should include consideration of recent scientific literature on effects of seismic activity on invertebrate species, including identified data gaps;
- 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 due to the Project, including cumulative effects.

5.2.10 Accidental Events

- Discussion on the potential for spill events related to the use and maintenance of streamers.
- Environmental effects of any accidental events arising from streamers or accidental releases from the seismic and/or support vessels (e.g., loss of product from streamers). Cumulative effects in consideration of other oil pollution events (e.g., illegal bilge disposal) should be included.
- Mitigations to reduce or prevent such events from occurring.
- Contingency plans to be implemented in the event of an accidental release.

Environmental Management

5.2.11 The EA shall outline Corridor Resources’s environmental management system and its components, including, but not limited to:

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

Biological and Follow-up Monitoring

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

Details regarding 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*” (May 2008)).

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 environmental 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, other geohazard survey activities; fishing activities, including Aboriginal fisheries; other oil and gas activities; and marine transportation. The C-NLOPB website list all current and active offshore petroleum activity within the NL offshore area, and provides a listing of activities undergoing environmental assessment.

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

**Corridor Resources Inc. – Old Harry – 2010 Geohazard Survey Program
Draft Scoping Document**

activities.

ACTIVITY	TARGET	RESPONSIBILITY
EA review upon receipt from Proponent	6 weeks	C-NLOPB & Regulatory Agencies
Compile comments on EA	1 week	C-NLOPB
Submission of EA Addendum/Response to EA Comments	2 weeks	Proponent
Review of EA Addendum/Response Document	3 weeks	C-NLOPB & Regulatory Agencies
Screening Report (Determination of Significance of Project Effects)	3 weeks	C-NLOPB
Total	15 weeks	

APPENDIX 1

Departments and Agencies Consulted by C-NLOPB

Federal Authorities under the *Canadian Environmental Assessment Act*

Department of National Defence

Environment Canada

Fisheries and Oceans Canada

Health Canada

Natural Resources Canada

Transport Canada

Other Departments/Agencies

Canadian Environmental Assessment Agency

Provincial Departments (Government of Newfoundland and Labrador)

Department of Environment and Conservation

Department of Fisheries and Aquaculture

Department of Natural Resources