

HEBRON DEVELOPMENT PROJECT

Canadian Environmental Assessment Act
SCOPING DOCUMENT

DEVELOPED BY:

Canada-Newfoundland and Labrador Offshore Petroleum Board
Fisheries and Oceans Canada
Environment Canada
Transport Canada
Industry Canada

June 2009

1. Purpose

This document provides scoping information for the Comprehensive Study environmental assessment of the proposed Hebron Development Project (the Project). ExxonMobil Canada Properties (EMCP), on behalf of its project Co-Venturers - ExxonMobil Canada Ltd., Chevron Canada Limited, Petro-Canada, StatoilHydro Canada Limited, and Nalcor Energy - is the project Proponent.

The Project includes all activities, as listed in Section 3 and the “*Hebron Project Description*” (EMCP 2009), for the following locations:

- Hebron Field – Jeanne d’Arc Basin, northeast Grand Banks; and
- Bull Arm Construction Site – Trinity Bay, NL (herein referred to as Bull Arm).

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 was developed by the Canada-Newfoundland and Labrador Offshore Petroleum Board (C-NLOPB), Fisheries and Oceans Canada (DFO), Environment Canada (EC), Transport Canada (TC), and Industry Canada (IC), in consultation with other departments and agencies in the Governments of Canada and of Newfoundland and Labrador.¹

2. Regulatory Considerations

The Project, as described in the “Hebron Project Description” (ExxonMobil Canada Properties, March 2009), describes the construction, installation, operation, maintenance, decommissioning and abandonment of a concrete gravity based petroleum production facility to be located in the Newfoundland and Labrador Offshore Area.

In order to proceed, the project will or may require the following authorizations, permits or approvals:

- C-NLOPB authorizations under sub-sections 138(1)(b) and 139(4)(a) of the *Canada-Newfoundland Atlantic Accord Implementation Act*,

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

- DFO authorization under section 35(2) of the *Fisheries Act* for the harmful alteration, disruption or destruction (HADD) of fish habitat. Based on the information available, DFO anticipates the following aspects of the Hebron development proposal will likely result in a HADD and require a *Fisheries Act* authorization. These items will be part of the scope of the project for which DFO will be responsible, including ensuring the implementation of mitigation measures and follow-up:
 - Bull Arm – Dredging and re-instatement of a marine berm or gate structure for the casting basin; and dredging requirements in Trinity Bay to facilitate tow-out;
 - Hebron Field – Footprint of the GBS; excavated glory holes and resulting dump site for spoils of excavated materials from the glory holes; and any dredging and/or smothering associated with installation of the Offshore Loading System and subsea flowlines;
 - All other works, temporary structures or activities related to the construction, operation, maintenance or decommissioning of the above mentioned works and activities impacting fish and fish habitat (e.g. backfilling/infilling, cofferdams, use of explosives, etc.);
- EC permit under paragraph 127(1) of the *Canadian Environmental Protection Act*, 1999 for disposal of a substance at sea;
- TC approval under Part 1, Section 5 of the *Navigable Waters Protection Act* for any man-made structure, device or thing, whether temporary or permanent, that may interfere with navigation within a 12 nautical mile limit of the coastal shoreline; and
- IC approval under paragraph 5(1)(f) of the *Radiocommunication Act* for sites on which radio apparatus may be located as well as the erection of such things as towers and masts, and for which Exclusion List paragraph 20 (Schedule I, Part I, General Project(s)) does not apply.

Each of the above named regulatory actions is named in the *Law List Regulations* of the *Canadian Environmental Assessment Act* (the Act), which means that the respective regulatory agency must ensure that a federal environmental assessment (EA) is carried out pursuant to Section 5(1)(d) of the Act, before their authorization, permit or approval can be granted. In the context of the federal EA, the agencies named above are referred to as responsible authorities, or RAs. The role of each RA in the EA will be focused on its primary area of responsibility.

The project as proposed is described in Section 11.1(b) of the *Comprehensive Study List Regulations* and, therefore, is subject to a comprehensive study level of assessment. Section 21.1 (1) of the Act requires that, for projects listed under these Regulations, the Minister of Environment must decide whether the environmental

assessment of the project continues as a comprehensive study or whether the project must be referred to a mediator or review panel (the “track decision”). This draft scoping document, therefore, has been developed based on the requirements of the Act for Comprehensive Studies. If the Minister’s decision is to refer the project to a review panel or a mediator, then this scoping document will no longer be valid.

The Canadian Environmental Assessment Agency (the Agency) will be the Federal Environmental Assessment Coordinator (FEAC) with respect to the assessment and in this role will be responsible for coordinating the review activities of the other responsible authorities as well as those of other expert government departments and agencies that participate in the review.

The C-NLOPB, Environment Canada, Fisheries and Oceans Canada, Transport Canada, and Industry Canada, pursuant to Section 17 (1) of the Act, formally delegate the responsibility for preparation of an acceptable environmental assessment report that satisfies the requirements of a Comprehensive Study environmental assessment to ExxonMobil Canada Properties Limited, the project proponent. The Project Proponent will also prepare the Comprehensive Study Report. However, the RAs will be responsible for the environmental assessment determination of significance to be included in the Comprehensive Study Report.

3. Scope of the Project

The scope of the project includes the combination of works and activities that must be considered during the environmental assessment. The project components that may influence the exercise of federal powers were chosen on analysis of the information submitted to the federal authorities by the proponent. For the purposes of applying the CEAA, the following components will be included in the scope of the project.

3.1 Project Components

3.1.1 Bull Arm – Great Mosquito Cove and Bull Arm (activities within or affecting the marine environment):

- (a) Dredging and re-instatement of a marine berm or gate structure (rows of sheet piles) for the casting basin in Great Mosquito Cove, may include the following activities: site surveys (geophysical, geological, geotechnical, environmental, etc.), sheet pile/driving, dredging, blasting, grouting, dewatering of casting basin, ocean disposal of berm material;

- (b) Construction of additional and/or strengthened mooring points at deepwater site may be required (activities may include chain laying and connection);
- (c) Completion of GBS construction at Bull Arm deepwater site and mating of the GBS with topside components and all ancillary activities);
- (d) Decommissioning (berm/gate removal) casting basin;
- (e) Tow out of the GBS platform to its offshore location through Trinity Bay; dredging activities may be required during tow-out; and
- (f) Operation of support craft associated with the above activities, including but not limited to vessels for the berm/mooring construction, diving programs, supply vessels, helicopters, tow vessels, barges, ROVs.

3.1.2 Hebron Field

- (a) Offshore site and clearance surveys, including geophysical, geological, geotechnical, environmental (including iceberg surveys);
- (b) Pre-drilling of up to 13 wells, prior to the installation of the GBS; may involve the exposure of wellheads on the seafloor for up to three years; and includes template installations (pile driven or grouted);
- (c) Installation of the GBS at its offshore location; may include site preparation activities such as clearance dredging, seafloor levelling, underbase grouting, offshore solid ballasting, docking piles, mooring points, and placement of rock scour on seafloor;
- (d) Operation, maintenance, modifications, decommissioning of the GBS petroleum production facility;
- (e) Drilling operations (exploration and development drilling), from the GBS and/or one or more MODUs of up to 70 wells, including well testing, workover of development wells, VSP programs, wellsite/geohazard surveys;
- (f) Construction, installation, operation, and maintenance of an offshore loading system (OLS); may include dredging activities for installation of offloading flowlines;
- (g) Construction, installation, maintenance, abandonment / decommissioning of up to 4 drill centres within the Hebron Field; may include the disposal of dredged material at one or more offshore locations;
- (h) Construction (including trenching, excavation, covering, and or spoil deposition), installation, maintenance, protection, and

abandonment/decommissioning of subsea flowlines to be connected to the GBS; and

- (i) Support activities, including diving programs, ROV surveys, and operation of support craft associated with the above activities, including but not limited to dredging vessels, mobile offshore drilling units, platform supply and standby vessels, helicopters, and shuttle tankers.

3.2 Project Timing

3.2.1 Bull Arm

- (a) Construction activities at Bull Arm will likely commence in 2012 with activities ongoing for approximately four years.

3.2.2 Hebron Field

- (a) Pre-drilling development wells will occur over at least a three year period, likely commencing in late 2012, with completion prior to the installation of the GBS;
- (b) Offshore construction, site preparation, and installation of the GBS will likely occur between 2015 to 2016; and
- (c) Production and drilling activities from the GBS will commence in 2016 or early 2017 and continue through the life of the project, estimated at 30 years. Other drilling activities from MODUs will occur as required throughout the life of the project.

4. Factors to be Considered

The comprehensive study shall include a consideration of the following factors, which include those prescribed by Section 16 of the Act:

- (a) Purpose of and need for the project;
- (b) Alternatives to the project;
- (c) Alternative means of carrying out the project which are technically and economically feasible and the environmental effects of any such alternative means;
- (d) The environmental effects² of the Project, including those due to 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, and the significance of these effects;
- (e) 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;
- (f) The significance of adverse environmental effects following the employment of mitigative measures;
- (g) The need for, and the requirements of, any follow-up program in respect of the Project (refer to the Canadian Environmental Assessment Agency's 2002 "Operational Policy Statement" regarding Follow-up Programs³);
- (h) The capacity of renewable resources that are likely to be significantly affected by the Project to meet the needs of the present and those of the future; and
- (i) Report on consultations undertaken by ExxonMobil with interested parties who may be affected by the Project and comments that are received from interested parties and the general public respecting any of the matters described above.

5. Scope of the Factors to be Considered

ExxonMobil Canada Properties will prepare and submit to the RAs an environmental assessment, which satisfies the requirements for a comprehensive study, for the above described physical works and activities, and as described in the project description "*Hebron Project Description*" dated March, 2009 (EMCP, 2009). The environmental assessment will address the factors listed above, as well as the issues identified in

² The term "environmental effect" is defined in Section 2 of the 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 5.3, and will document any issues and concerns that may be identified by EMCP through regulatory, stakeholder, and public consultations.

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 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 available data.

5.1 Cumulative Effects

The assessment of cumulative environmental effects should be consistent with the principles described in the February 1999 CEEA *Cumulative Effects Assessment Practitioners Guide* and in the March 1999 CEEA operational policy statement “*Addressing Cumulative Environmental Effects under the Canadian Environmental Assessment Act.*” Cumulative effects assessment must 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 the following activities:

- Proposed offshore oil and gas activities under EA review (listed on the C-NLOPB Public registry at www.cnlopb.nl.ca);
- Ongoing offshore oil and gas activities, including development drilling, production, exploration drilling and marine seismic surveys;
- Fishing activities; and
- Marine transportation.

5.2 Boundaries

The Comprehensive Study will consider the potential effects of the proposed physical works and physical 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 construction, operation, maintenance, and decommissioning phases of the proposed physical works and/or physical 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 works and/or physical activities;
- The 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 the Comprehensive Study. The spatial boundaries of the Study Areas, and those areas within the Study Areas (Project Area), shall be clearly described in the document using figures and maps as appropriate. The corner-points for all areas should be included.

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

5.2.1 Spatial Boundaries

Project area: All areas in which Project works and activities are to occur.

Affected area(s): The area(s) beyond the project area which could potentially be affected by Project works and activities beyond the project area.

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

5.2.2 Temporal Boundaries.

The temporal scope should describe the timing of Project activities at the Bull Arm and Hebron Field Study Areas. Scheduling of Project activities should consider the timing of sensitive life cycle phases of the VECs in relation to physical activities.

5.3 Summary of Potential Issues and Environmental Effects Assessment

The Comprehensive Study Report (CSR) should contain descriptions of the physical and biological environments, as identified below. The description of the environment and the effects assessment shall include the Bull Arm Study Area and the Hebron Field Study Area.

Program activities are proposed for the Jeanne d’Arc Basin, which has been studied extensively in a number of recent environmental assessments. For the purposes of this assessment, the information provided in the environmental assessment documents for the exploration and development programs on the Jeanne d’Arc Basin can be used in support of the environmental assessment for the proposed Hebron Project. However, where new information is required for any of the following factors, the new data and/or information must be provided. Where information is summarized from existing EA reports, it should be properly referenced, with the sections of the existing EA report. It should be noted that although information from previous EAs can be used, the CSR should provide enough detailed information to consider it an independent (*i.e.*, stand alone) document.

Physical, environmental, and monitoring data from offshore exploratory and production activities on the Jeanne d’Arc Basin have been collected for more than 10 years. This information must be considered and incorporated, where applicable, in the CSR.

The CSR should contain descriptions and definitions of EA methodologies employed in the assessment of effects. Effects of relevant Project works and activities on those Valued Ecosystem Components (VECs) likely to be in the Study Area(s) will be assessed. Discussion of cumulative effects within the Project and with other relevant marine projects will be included. Issues to be considered will include, but not be limited, to the following.

5.3.1 Physical Environment

A description of relevant physical environmental parameters, including the following elements:

- Meteorological and oceanographic characteristics of Study Areas, including extreme conditions;
- Site-specific sea ice and iceberg conditions, including iceberg scour of the seabed;
- Physical environmental monitoring, observation and forecasting programs that will be in place during the project;
- Ice management/mitigation procedures, including criteria respecting disconnection of project installations and assessment of the efficiency of detection and deflection techniques;
- Climate change scenarios (e.g., sea level rise, iceberg frequency, increased severity and frequency of storms) and the influence that these environmental changes and hazards may have on the Project shall be predicted and described; and
- Effects of the environment on the Project.

5.3.2 Marine Resources

5.3.2.1 Marine Ecosystem

Characterization, including quantification to the degree possible, of the spatial area of seabed that is predicted to be affected by dredging, trenching, dredge spoil disposal; footprint of GBS, glory holes, flowlines (including OLS), berm (Bull Arm) moorings (Bull Arm), MODU moorings; discharge of drill cuttings and other discharges.

5.3.2.2 Marine and/or Migratory Birds Using the Study Area(s)

- Spatial and temporal species distributions in Study Areas (observation/monitoring data collected during ongoing petroleum activities should be discussed);
- Species habitat, feeding, breeding, and migratory characteristics of relevance to the environmental assessment;
- Exposure to contaminants from accidental spills (e.g., fuel, oils) and operational discharges (e.g., deck drainage, gray water, black water);
- Attraction of birds to vessel lighting, flares, potential effects and mitigations;
- Noise disturbance from equipment including both direct effects (physiological), or indirect effects (foraging behaviour or prey species);
- 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);

- Procedures for handling birds that become stranded on offshore structures (rigs, supply vessels, construction vessels, etc.);
- Means by which bird mortalities associated with Project operations will be documented and assessed;
- Means by which potentially significant effects upon birds may be mitigated through design and/or operational procedures; and
- Environmental effects of the Project, including cumulative effects (e.g., other offshore oil and gas activities, hunting, fishing (long line by-catch), shipping).

5.3.2.3 *Marine Finfish and Shellfish:*

- Characterization of existing environment in the Study Areas;
- Distribution and abundance of species utilizing the Study Areas with consideration of critical life stages (e.g., spawning areas, overwintering, juvenile distribution, and migration);
- Description to the extent possible of location, type, diversity and areal extent of marine fish habitat in the Study Areas, in particular those indirectly or directly supporting traditional, historical, present or potential fishing activity, and including any critical (e.g. spawning, feeding, overwintering) habitats;
- Means by which potentially significant effects upon fish (including critical life stages) and commercial fisheries may be mitigated through design; scheduling, and/or operational procedures;
- Exposure to contaminants from accidental spills and operational discharges; and
- Environmental effects of the Project, including cumulative effects.

5.3.2.4 *Marine Mammals and Sea Turtles*

- Spatial and temporal distribution and abundance of species utilizing the Study Areas (observation and monitoring data collected during exploration and development activities should be considered);
- Description of marine mammal lifestyles/life histories relevant to Study Areas;
- Means by which potentially significant effects upon marine mammals/sea turtles (including critical life stages) may be mitigated through design, scheduling, and/or operational procedures;
- Exposure to contaminants from accidental spills and operational discharges; and
- Environmental effects of the Project, including cumulative effects.

5.3.2.5 *Species at Risk (SAR)*

- Description of species at risk as listed in Schedule 1 of the *Species at Risk Act (SARA)*, and those under consideration by COSEWIC in the Study Areas, including fish, marine mammals, sea turtles and seabird species;

- Description of critical habitat(as defined under SARA), if applicable, relevant to the Study Areas;
- Means by which adverse effects upon SAR and their critical habitat may be mitigated through design, scheduling, and/or operational procedures;
- Monitoring and mitigation, consistent with recovery strategies/action plans (endangered/threatened) and management plans (special concern);
- Environmental effects (adverse and significant) of the Project on SAR identified species and critical habitat, including cumulative effects;
- Exposure to contaminants from accidental spills and operational discharges; and
- A summary statement stating whether project effects are expected to contravene the prohibitions of SARA (Sections 32(1), 33, 58(1)).

5.3.2.6 Sensitive Areas

- Description (e.g. definitions, maps, photos as appropriate), of any sensitive areas in the Study Areas, such as important or essential habitat to support any of the marine resources identified, or areas identified through the Grand Banks-Placentia Bay Large Ocean Management Area (LOMA) Integrated Management Plan initiative (Ecologically and Biologically Significant Areas, Valuable Marine Ecosystems, Marine Protected Areas, etc.);
- Means by which adverse effects upon sensitive areas may be mitigated through design, scheduling, and/or operational procedures;
- Exposure to contaminants from accidental spills and operational discharges; and
- Environmental effects of the Project, including cumulative effects, on those sensitive areas identified.

5.3.3 Marine Use

5.3.3.1 Noise/Acoustic Environment

- Noise and acoustic issues in the marine environment that may be generated from construction activities at Bull Arm and Hebron Field (e.g., casting basin dewatering, mooring construction, pile driving, ocean disposal, glory hole excavation, berm/gate construction, pile driving); drilling operations (drill rig, thruster-equipped vessels, VSP/Geohazard programs, etc.) and abandonment (wellhead severance);
- Means by which potentially significant effects may be mitigated through design and/or operational procedures; and
- Assessment of effects of noise/disturbance on VECs, including cumulative effects.

5.3.3.2 Presence of Structures and/or Operations:

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

5.3.3.3 Traditional, Existing and Potential Commercial, Recreational and Subsistence Fisheries, including Foreign Fisheries

- Description of fisheries in Study Areas (including traditional, existing and potential commercial, recreational and subsistence);
- Traditional historical fishing activity – abundance data for certain species in this area, prior to the severe decline of many fish species (e.g., an overview of survey results and fishing patterns in the survey areas for the last 20 years);
- Consideration of underutilized species 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;
- 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.

5.3.4 Discharges and Emissions – Bull Arm and Hebron Field Study Areas

5.3.4.1 Construction and Operational Discharges

Planned project discharges to the marine environment, including but not limited to the following:

- Description and quantification of project discharges including, but not limited to: dredge spoil, rock fill or flow line insulation material, drilling fluids and cuttings, produced water; bilge water, produced sand, grey water, black water, cooling water, deck drainage, blow out preventer fluid; ballast water;
- Characterization, quantification and modelling of expected discharges (e.g., dredge spoil disposal, cuttings dispersion; concentration of metals, nutrients, hydrocarbons, biocides, etc., timing of discharges), including a description of the models employed;

- Means for reduction, re-use and recovery of wastes beyond those specified in regulations and guidelines, including an evaluation of the applicability of “best available/practicable technology” (e.g., cuttings re-injection and produced water re-injection) to the project; and
- Environmental effects of discharges on VECs, including cumulative effects (effects assessment should consider existing EEM data from petroleum production operations on the Jeanne d’Arc Basin).

5.3.4.2 Air Quality

Provide a description of the following:

- Description and annual estimates (rates and quantities) of air emissions associated with all project activities, including greenhouse gas emissions, emission rates that commensurate with the assessment of fate and effects, emissions and emission rates from upset conditions;
- Implications for health and safety of workers that may be exposed to them;
- Description of potential means for reduction, management, and reporting of above air emissions, taking into account existing best industry practices;
- Methodology for measuring or validating initial emission estimates;
- Mitigation and monitoring; and
- Assessment of fate and effects, including cumulative effects. Where potential effects may exist, proposed monitoring and mitigation plans to validate predictions should be described.

5.3.4.3 Accidental Events

The discussion should consider accidental releases of drilling fluids, hydrocarbons (including fuels), and/or chemicals that may be spilled and should address:

- Quantification of blowout risk, particularly of crude oil;
- Quantification of risk of hydrocarbon/chemical spills of all volumes, from all facilities associated with the project. Hydrocarbons must not be limited to crude oil, but also include synthetic/oil based drilling fluids, and refined hydrocarbons. NL offshore experience shall explicitly be considered as part of this discussion;
- Description of the marine area likely to be affected by hydrocarbons from a spill event in the marine environment;
- Fate of hydrocarbons in the marine environment, as determined by spill trajectory analysis and supported, where feasible, with modelling of weathering parameters such as evaporation, dispersion and emulsification. A description should be included of the models and/or analyses that are employed and the physical data upon which they are based;

- Mitigation measures to be employed to reduce or prevent such events from occurring;
- Contingency plans to be implemented in the event of a spill, including an analysis of the likely efficiency of spill response measures and any equipment upgrade or acquisition that may be required to support the Project;
- Environmental effects of hydrocarbon or chemical spills on all VECs identified, including losses from streamers (VSP and geohazard surveys) and drilling muds, with consideration of effectiveness of spill countermeasures; and
- Cumulative effects in consideration of “chronic” oil pollution on the Grand Banks (e.g. spills from other offshore operations, bilge dumping and other discharges from vessels), and with those of other offshore oil and gas activities.

5.3.5 Environmental Management

Provide a general overview of ExxonMobil Canada Properties’ environmental management system and its components, including, but not limited to:

- Pollution prevention policies and procedures;
- Environmental effects monitoring (see Section 5.3.6.1, below);
- Environmental compliance monitoring;
- Provisions for management system auditing;
- Chemical selection and management procedures;
- Fisheries liaison/interaction policies and procedures;
- Program(s) for compensation of affected parties, including fisheries interests, for accidental damage resulting from project activities;
- Emergency response plan(s); and
- Environment-related training of project employees and contractors, including project vessels.

5.3.6 Biological and Follow-up Monitoring

5.3.6.1 Follow-up Program

Discuss the requirements of a follow-up program (as defined in Section 2 of CEAA) identifying RA responsibility as per the scope, and as may be required pursuant to the SARA. The discussion should also include any requirement for compensation monitoring (including fish habitat) as compensation is considered mitigation under the CEAA.

5.3.6.2 Environmental Effects Monitoring (EEM)

- Characteristics of EEM programs for both operational and accidental discharges, including a description of the process by which these programs will be designed;
- Parameters to be monitored and the rationale for their choice, including specific consideration of marine birds, marine mammals and sea turtles, fisheries, fish and shellfish health/productivity and taint, fish habitat, and marine environmental quality;
- Linkage of monitoring hypotheses to testable hypotheses (where available) identified by environmental effects predictions;
- Requirements for site-specific baseline information to support monitoring programs;
- Interaction with other Jeanne d'Arc Basin petroleum production projects (Terra Nova, White Rose, Hibernia), including any regional monitoring considerations;
- Distinction of signal from noise in monitoring programs;
- Independent/peer review of monitoring results, including the means by which they will be made publicly available;
- Linkage of monitoring results into EMCP's environmental management system; and
- Potential for requirements for fish habitat compensation monitoring and ocean disposal (dredging operations) monitoring.

5.3.6.3 HADD

Discussion of the HADD and associated fish habitat compensation strategy, including options considered, in accordance with the Department of Fisheries and Oceans *Policy for the Management of Fish Habitat*.

5.3.6.4 Description of Monitoring and Observation Procedures

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

5.3.6.5 Emergency Response Plan

Risk-based determination of oil spill response needs, including those for small-volume spills. The CSR should identify:

- Types and location of response equipment; and
- Target times for equipment deployment.

5.3.7 Abandonment/Decommissioning

Plans for abandonment and/or decommissioning of the project area and associated facilities following termination of production, including design considerations relating to removal of the production platform, and any anticipated requirement for post-abandonment monitoring.

5.4 Significance of Adverse Environmental Effects

The Proponent shall clearly describe the criteria by which it proposes to define the “significance” of any adverse effects (i.e., following the employment of mitigative measures) that are predicted by the environmental assessment. 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. The effects assessment methodology should clearly describe how data gaps are considered in the determination of significance of effects.

APPENDIX 1

Departments and Agencies Consulted by the Responsible Authorities

“Federal Authorities” and likely “Responsible Authorities” under the *Canadian Environmental Assessment Act*

Environment Canada
Fisheries and Oceans Canada
Industry Canada
Natural Resources Canada
Transport Canada
Department of National Defence
Health Canada

Other Departments/Agencies

Canadian Environmental Assessment Agency
Major Projects Management Office

Provincial Departments (Government of Newfoundland and Labrador)

Department of Natural Resources
Department of Environment and Conservation
Department of Fisheries and Aquaculture