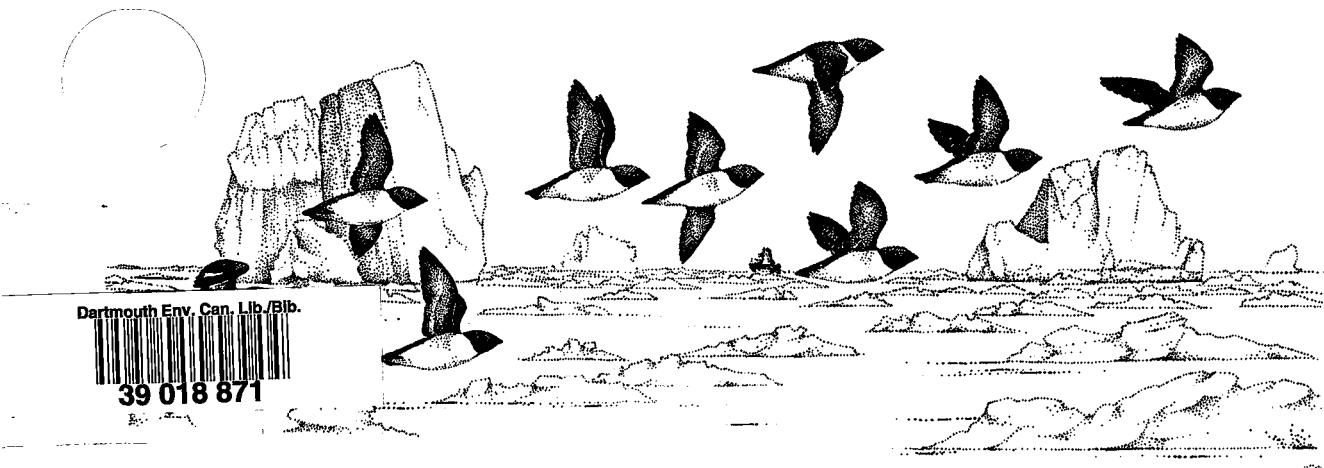


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Environment Canada Review
 of the
Hibernia Development Project
Environmental Impact Statement



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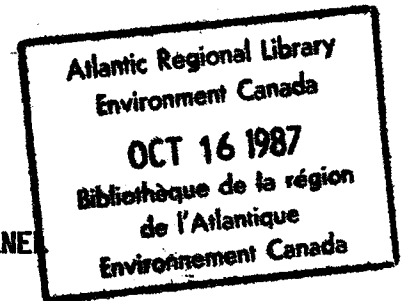
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ENVIRONMENT CANADA
REVIEW
OF THE
HIBERNIA DEVELOPMENT PROJECT
AS PRESENTED TO THE
HIBERNIA ENVIRONMENTAL ASSESSMENT PANEL



October, 1985

Position Statement

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The Environment Canada Position Regarding the Proposed
Hibernia Development Project and the Environmental Impact Statement as
Submitted by Mobil Oil Canada Limited and its Partners

Environment Canada has reviewed the Hibernia Environmental Impact Statement (May/85), the Environmental Impact Statement Update (August/85), and the Supplementary Information (September/85) submitted to the Hibernia Environmental Assessment Panel by Mobil Oil Canada Limited and its partners.

Environment Canada believes that the development of Hibernia petroleum resources could proceed in an environmentally acceptable manner. We are concerned with the lack of detail provided, which is essential to fully evaluate this project. This lack of detail presents problems in identifying and evaluating the risks to the environment. Without a proper evaluation of risks, management decisions on the project design, construction, operation and abandonment will have to be made with many uncertainties and unanswered questions. Consequently, the department has identified a number of key items that must be addressed during the early planning stages of the project. These include:

- . The boundaries of the assessment
- . The assessment of engineering risks
- . The assessment of environmental risks
- . Proposed mitigative measures
- . Proposed monitoring strategies.

The Boundaries of the Assessment

By focusing on the offshore structures and excluding evaluation of the coastal, transportation, and onshore components of this project, the scope of the impact analysis is incomplete. Impacts resulting from the Hibernia project and spinoff developments will extend beyond the immediate vicinity of the development. These can be significant and should be addressed.

Environment Canada is also concerned about the potential cumulative impacts which could arise from subsequent or associated offshore hydrocarbon

development and other activities on the Grand Banks. We believe that individual projects and their impacts must be evaluated within this broader framework to facilitate the overall resource management and environmental protection in an area which will be subject to increasing development pressures. To satisfy these concerns, Environment Canada recommends that:

- 1. The Panel advocate the establishment of a government and industry advisory mechanism: (i) to ensure that the full range of environmental matters are considered and resolved for the project and its associated developments from development plan approval and construction through to and including abandonment, and (ii) to develop a strategic plan to identify and resolve long-term environmental risks and resource conflicts throughout the Grand Banks.**

Assessment of Engineering Risks

Environment Canada recognizes that the most effective means of protecting the environment is by preventing pollution. To this end we stress the need for the design of a safe structure and associated facilities.

Meteorological and oceanographic factors have a significant effect on the design, construction, operation and safety of such developments. Although the Environmental Impact Statement presents a relatively complete and up to date data set, the data is not always interpreted to our full satisfaction. The present interpretation may lead to invalid design criteria. The use of remote sensors to detect icebergs is overstated. Under conditions of high sea states and poor visibility small bergs, (especially bergy bits and growlers), cannot be detected with a high degree of confidence. These factors are extremely important in relation to proper engineering design.

Environment Canada finds the information provided by the proponent on the choice of a gravity base structure to be incomplete. We assume that the proponent has evaluated and judged the risks from this structure to be acceptable. Since no such analyses have been provided for public review, Environment Canada recommends that:

2. The proponent provide the result of their risk studies focusing on such parameters as wave height, icebergs, sea ice and wind speed so that environmental risks of the proposed production facilities through construction, operation and abandonment can be evaluated prior to development plan approval.
3. The proponent provide details on the operation of a real time weather and ice forecasting system for the Hibernia area, prior to production of oil.

Assessment of Environmental Risks

The proponent has not adequately assessed the environmental risks associated with catastrophic events, such as a major oil spill, or chronic environmental deterioration from routine operations. Environmental risks were generally evaluated by rating impacts as "minor" or "negligible". Environment Canada's specific concerns regarding environmental risks pertain, as discussed below, to the potential for seabird population impacts, tanker accidents, and subsurface movement of emulsified oil.

The Grand Banks can be considered the ornithological crossroads in the North West Atlantic. Human induced changes in the marine environment may affect populations of seabirds which breed far from Newfoundland, as well as large local seabird populations. Canada is a signatory to the International Migratory Bird Convention and the potential for death of seabirds due to oil releases is a serious concern for Environment Canada.

The proponent assumes that there will be little or no risk to seabirds at the population level from chronic spills and assumes a high level of risk to individual animals only in the event of a major spill. Documented evidence indicates that bird mortality following an oil spill bears no predictable relationship to the amount of oil spilled. There is a definite risk of significantly reducing present population levels of seabirds on the Grand Banks through both catastrophic spills and routine oil discharges. Environment Canada recommends that:

4. **The proponent re-evaluate the potential for impacting seabirds at the population level from both chronic discharges and catastrophic spills prior to development plan approval and identify measures to offset adverse impacts to sea bird populations.**

In the event of a tanker accident, there exists a significant likelihood of oil affecting the shores of Newfoundland. Since this possibility has not been adequately addressed by the proponent, Environment Canada recommends that:

5. **The proponent evaluate the potential impact on shorelines of oil released as a result of a tanker accident and develop appropriate contingency plans prior to development plan approval.**

While the proponent has employed state of the art spill trajectory models, the scenarios developed have not incorporated the possible sub-surface movement of emulsified Hibernia crude. Since the movement of oil is important in determining those resources at risk, Environment Canada recommends that:

6. **The proponent, prior to production drilling, investigate and take appropriate action: (i) on the potential movement characteristics of Hibernia crude emulsions in the event of a major spill and include this information in its spill trajectory models, and (ii) for the behaviour and significance of oil in pack ice.**

Proposed Mitigative Measures

Fully effective oil spill containment and cleanup technology has not yet been demonstrated under open ocean conditions. The difficulty in both monitoring impacts of operational and accidental discharges and in effecting spill clean-up justifies the use of particular care in minimizing oil losses and discharges.

The proponent has stated that waste streams would receive treatment to reduce the oil content prior to discharge and dilution at sea. While we recognize that with the present level of technology "zero" discharge and "zero" loss of product to the environment may not be achievable. Because of the sensitivity of the Grand Banks ecosystem, emphasis should be placed on the development and use of best practical technology so that product waste losses to the environment are reduced or eliminated. For this reason, Environment Canada recommends that:

- 7. The proponent consider various mitigation measures such as injecting wastes into the structure, particularly produced water and displacement water, and the use of oil/oil displacement in storage cells on the production platform.**
- 8. The Panel endorse the continuation of existing industry-government programs to conduct further research on the subject of containment, cleanup and other mitigative measures.**

Proposed Monitoring Strategies

Existing and proposed regulations outline departmental requirements for compliance monitoring by the proponent. This section will address effects monitoring only.

While the proponent has outlined a monitoring program, it is focused on assessing impacts in the immediate vicinity of the well site. Studies to address cumulative and long term effects from this and other developments have not been considered in the Environmental Impact Statement. This approach will not facilitate comprehensive resource management and environmental protection within the Grand Banks area.

Environment Canada advocates the development and implementation of an environmental effects monitoring program in order to verify impact predictions, detect changes, evaluate the adequacy of regulated discharge requirements and define corrective measures. Effects monitoring and mitigation of potential environmental impacts resulting from this and other major projects represents a long term process which should be continued even beyond the life of the project.

Environment Canada believes that the development of an effects monitoring program should focus on components that act as a barometer of overall environmental degradation and be sensitive enough to measure not only mortalities but also the increasing stresses placed on the environment by the Hibernia development. Monitoring results should provide an early detection of impacts and serve as the basis for implementing actions to preserve the integrity of the Grand Banks ecosystem.

Environment Canada recognizes that the development of an effects monitoring program must be carefully designed and implemented. This would serve our requirements in a cost effective manner. There is a need to involve both government and industry. Environment Canada will assist in the development and application of suitable effects monitoring procedures and recommends that:

- 9. The proponent, in consultation with various government agencies, provide details of an effects monitoring program including impact hypothesis to address sublethal effects as well as short and long term chronic and cumulative impacts prior to approval of project startup.**
- 10. The proponent, in consultation with various government agencies, develop an action plan for monitoring valued ecosystem components in the event of a major oil spill prior to approval of project startup.**

Conclusion

The Grand Banks area provides a flow of benefits as a source of food, energy and raw materials, as a transportation medium, as a recreational area and as a vital part of the global life-support system. The security of this system, and the sustainability of the flow of benefits can only be maintained by ensuring a healthy ecosystem through good resource management and protection of the environment.

Environment Canada believes that the project could be developed and operated in an environmentally acceptable manner. This will require full evaluation of the risks as outlined in this statement, so that proper management decisions can be made through the life of the project. Specifically, there is a need:

- . to establish a management framework to ensure that all activities on the Grand Banks can proceed in a manner consistent with satisfying environmental quality objectives;
- . to demonstrate an adequate understanding and evaluation of the potential risks of the environment on the project;
- . to demonstrate an adequate understanding and evaluation of the potential risks of the project on the environment;
- . to develop contingency plans and outline remedial actions to minimize adverse impacts on the environment; and
- . to ensure that an adequate monitoring program is in place to measure change.

In summary, we believe that environmental protection should remain a high priority throughout all stages of the life of this project. This underlines the need for the proponent to work together with government agencies so that

informed management decisions concerning resource development and environmental protection can be made. Environment Canada is committed to cooperating with the proponent and the Canada/Newfoundland Offshore Petroleum Board in this regard.

ENVIRONMENT CANADA ROLE AND MANDATE

The environment provides the basic needs of mankind. It supplies food to eat, air to breath, water to drink and the habitat and shelter for man and all living things. A healthy environment is essential for human survival and well-being and for sustained economic and social development. The state of the environment also governs the degree to which the health and diversity of species and ecosystems can be maintained.

In a general sense, the environment may be defined as the biophysical system which interlinks the earth's natural resources such as sunlight, water, air and soil and all living organisms including mankind. The interrelationships and processes of this system are extremely complex and only partially understood. Changes in one part of the system, whether man induced or natural, may have unanticipated and long-term consequences for the stability, resiliency and diversity of the system as a whole.

The quality of the environment is influenced by the actions and decisions of all individuals in their day-to-day activities. Thus, all elements within society have a responsibility for the maintenance and enhancement of environmental quality. Since the environment is shared by all, governments have a particular stewardship role to play in ensuring that the environment is maintained in a state which will provide sustainable benefits to society.

The primary purpose of Environment Canada is "to foster harmony between society and the environment for the benefit of present and future generations of Canadians". In some respects, the responsibilities of Environment Canada are similar to those of other federal line departments with "sector-specific" mandates and programs. The department is responsible for fulfilling certain federal obligations concerning inland water resources, wildlife, parks, meteorology, sea ice, pollution control and certain other subjects. These responsibilities arise from the national mandates provided by the DOE Act and some thirteen other Acts administered by the Minister of the Environment that have specific natural resource management objectives.

Environment Canada is also responsible for performing certain other functions that bear on the policies and operations of all federal departments and agencies. It is Environment Canada's responsibility to provide the federal leadership and government-wide coordination necessary in working towards this object. This entails the conduct of research, the provision of scientific and public information and advice, the advocacy of environmental concerns, and the exercise of influence on the numerous policies and programs of all federal departments and agencies. To ensure that these efforts are effective, the Act provides the Minister with certain "horizontal" powers and roles to enable him to exercise the necessary influence on and coordination amongst the government's departments and agencies.

Both the "sector-specific" and "horizontal" roles of Environment Canada are focused on four principal objectives. These are:

1. To conserve and enhance Canada's renewable resources for sustained economic and social benefit;
2. To protect the environment from the adverse impact of human activities;
3. To facilitate the adaption of human activities to the environment;
4. To safeguard and foster public understanding and enjoyment of Canada's natural and historic heritage.

These objectives are pursued throughout the nation.

The associated activities are:

Environmental monitoring and scientific research. Environment Canada is one of the largest science and technology departments of the federal government. The pursuit of scientific and technical knowledge and the acquisition and analysis of environmental information concerning the state

and processes of the environment and its elements constitute a very significant proportion of its internal activities and programs. Technology transfer is an integral part of this activity. For example, the department, through the Atmospheric Environment Service, provides meteorological forecasting. Ice surveillance, icing, and wave climate studies are also conducted in conjunction with industry and other departments, thereby ensuring that design of structures and operations reflect environmental conditions.

Regulations, guidelines and codes of good practice. These are developed under authority derived from such federal legislation as the Fisheries Act, the Clean Air Act, the Ocean Dumping Control Act, and the Environmental Contaminants Act, in order to minimize adverse impacts of pollutants and toxic substances on human health and the environment. The environmental emergency program, based on a Cabinet Directive of 1973, gives the department a responsibility to ensure that appropriate mechanisms are in place to deal with emergencies. The department thus provides advice on environmental sensitivities and priorities, cleanup and protection techniques and equipment to industry, other government departments and provincial agencies.

Resource management and conservation. This is undertaken directly in areas within federal responsibility such as migratory bird management, the management of national parks and the preservation of cultural heritage, and federal land management, or jointly with the provinces if jurisdiction is concurrent, as in boundary water river basin programs.

Information, advice and technical services. This service is provided to a wide variety of users. Information and advice influences the environmental protection and resource management decisions of the federal government, other jurisdictions, and the private sector.

