Jacques Whitford

FINAL REPORT

Environmental Assessment for Sydney Harbour Access Channel Deepening and Sydport Container Terminal

Laurentian Energy Corporation

Project No. 1041307

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An Environment
of Exceptional
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FINAL REPORT TO **Laurentian Energy Corporation**
10 Marine Drive
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FOR **Environmental Assessment**

ON **Sydney Harbour Access Channel**
Deepening and Sydport Container Terminal

March, 2009

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EXECUTIVE SUMMARY

Laurentian Energy Corporation (LEC) is proposing to dredge a navigation channel in Sydney Harbour, and develop a marine container terminal facility in the Sydport Industrial Park, located in the Cape Breton Regional Municipality, Nova Scotia (the Project). The Project requires federal and provincial environmental approvals including federal and provincial environmental assessments. This report provides the basis for an Environmental Screening under the *Canadian Environmental Assessment Act (CEAA)* and satisfies the requirements for a Class I Registration under the Environmental Assessment Regulations of the Nova Scotia *Environment Act.*

The land and harbour conditions in Sydney are ideal for new terminal development and Sydney is well positioned to capture new cargo opportunities. The large order book of container ships in the 8,500 Twenty foot Equivalent Unit (TEU) container capacity and above means that increasingly large vessels will be deployed on the developing Suez to North American services corridor, positioning Sydney as the first deep water mainland port of call. The existing excellent rail connectivity provides strong competitive advantage for transferring cargoes to the U.S. Midwest. Once commissioned, the Sydport Container Terminal facility has a throughput capacity design of approximately 750,000 TEUs per year in each of two phases for a combined total capacity of 1.5 million TEU's. Containers will be transferred to or from vessels via rubber tire gantry or rail mounted gantry cranes. Inbound cargo will be transferred to rail cars destined for the U.S. Midwest or transshipped on smaller vessels to other ports.

Deepening the channel leading to the South Arm of Sydney Harbour will not only provide opportunities for the Project container terminal, but for future development and expansion opportunities of the Ports of Sydney and for other proponents. It is estimated that Project-related construction jobs will total approximately 100. According to the Ports of Sydney Master Plan, during operation an estimated 3,500 direct, indirect and induced full time equivalent positions will result from the Project. LEC is committed to enhancing local economic benefits for qualified local suppliers and local skilled labourers.

The Project will involve channel and berth dredging to accommodate Post-Panamax size container vessels (8,500 – 15,500 TEU container capacity), infilling of approximately 72 ha of land and construction and operation of a marine container terminal and on dock Intermodal Container Transfer Facility on the Sydport site. Construction of the proposed marine container terminal facility will occur in two phases: Phase I will consist of two berths (a total length of 800 m) capable of handling approximately 750,000 TEU's per year; as required, Phase II will involve the construction of two additional berths doubling the handling capacity. Confined Disposal Facility (CDF) structures will be used to contain dredge materials and provide a foundation for the terminal. Topside infrastructure, cranes, pavement, *etc.,* will be developed as commercial conditions warrant. The container terminal will be used to import and export containerized goods by rail and transshipment**.** It is anticipated that few, if any, trucks will carry cargo to or from the terminal. Bulk commodities such as coal are not planned to be handled by this facility.

This EA Report describes and evaluates the potential environmental and socio-economic effects of the Project during all Project phases. The evaluation includes proposed mitigative measures, where required, to eliminate or reduce adverse environmental effects arising from Project-related activities. The report is based on information collected during field surveys, modelling, and consultation with

government and non-government organizations, public consultation, and background research.

This document was developed with a focus on environmental issues of greatest concern, known as Valued Environmental Components (VECs). For the purposes of this study, the definition of the term VEC also includes socioeconomic considerations. A scoping process was undertaken to identify the VECs most appropriate for this assessment. This scoping included: regulator and stakeholder consultation; a public open house; regulatory issues and guidelines; and professional judgment. Specific guidance on the scoping of the environmental assessment was developed by LEC in consultation with responsible federal and provincial departments in a scoping document. The following VECs were selected for the assessment:

- Benthic Habitat Communities and Sediment Quality;
- Marine Fish and Water Quality;
- Marine Mammals and Marine-related Birds;
- Terrestrial Habitats and Wildlife;
- Atmospheric Environment;
- Land Use;
- Commercial Fisheries; and
- Archaeological and Heritage Resources.

Each of the VECs selected for the assessment was evaluated for potential interactions between the VEC and Project activities during all project phases (*i.e.,* construction, operation, decommissioning and abandonment) as well as malfunctions or accidents that may occur. These interactions were evaluated for potential significance after application of technically and economically feasible mitigative measures, where appropriate, to reduce or eliminate potential adverse Project-related environmental effects. The potential for cumulative environmental effects from the Sydport Project in conjunction with other past, present and likely future projects and activities was also evaluated. Environmental monitoring and follow-up measures are proposed and will be undertaken, where necessary, to ensure compliance with applicable regulations, standards, and guidelines, as well as to verify environmental effect predictions and refine mitigative measures where required.

Potential Project interactions, assessment boundaries, evaluation criteria, impact analysis, mitigative measures and proposed monitoring are presented for each VEC in Section 6 of the document. In general, any potential adverse residual environmental effects of routine Project activities will be short-term, localized, and/or of low magnitude; these effects can be effectively mitigated to acceptable levels though the application of technically and economically feasible measures, standard industry procedures, and adherence to applicable standards and regulatory guidelines. Dredging and infilling operations that will have adverse residual environmental effects on the benthic habitats in Sydney Harbour will be authorized by DFO contingent on the proposed habitat alteration, disruption, or destruction (HADD) compensation program proposed by LEC in accordance with the federal *Fisheries Act*. The residual environmental effects (*i.e.,* after application of mitigation and/or habitat compensation programs) from routine Project construction, operation and decommissioning and abandonment are therefore predicted to be not significant for all VECs. Examples of specific proposed mitigation

measures include intensive lobster fishing efforts in the dredge channel (subject to DFO approval) immediately prior to dredging. A positive effect on land use is predicted because Project development will result in an increase in the current use-value of industrial lands (in accordance municipal land use plans) to benefit of the people of Sydney and the CBRM.

In the highly unlikely event of a serious Project-related ship incident resulting in a large marine spill, significant adverse environmental effects are predicted for marine-related birds and fisheries resources; however, this significant event is highly unlikely to occur and response and contingency planning will be in place to limit adverse effects. Temporary and localized significant adverse effects on atmospheric resources (*i.e.,* exceeding air quality regulatory limits) and human health and safety could result due to Project-related fires; however, these accidents are unlikely to occur and would be rapidly controlled by trained first responders (*e.g.,* trained on-site crews and municipal emergency response forces). An Emergency Response and Contingency Plan are expected to reduce the magnitude of effects resulting from fire and other serious accidental events. In addition, design features and safety precautions at the facility will minimize the likelihood of significant effects due to fires.

Cumulative effects have also been evaluated as part of this assessment. Likely future projects and activities identified include the Muggah Creek Remediation Project, Other Port Terminal Development in Sydney Harbour (*e.g.,* Marine Atlantic dock upgrades, upgrades at Sydney Marine Terminal), and ongoing commercial fisheries activities. Several of these activities could have cumulative environmental interactions with residual environmental effects from the Sydport Project. Spatial separation will generally limit the potential for adverse cumulative effects in the marine environment, and mitigation and compliance with regulatory requirements will further minimize opportunities for cumulative adverse environmental effects. Significant adverse cumulative effects are predicted to be unlikely. Implementation of the mitigative measures contained in this report and adherence to applicable legislation and guidelines will ensure that significant cumulative environmental effects will be unlikely. Cumulative environmental benefits are expected to occur with respect to enhanced industrial land use for port development in Sydney Harbour from the combination of the Sydport Project, Muggah Creek remediation, and other terminal development consistent with the CBRM Planning Strategy and Ports of Sydney Master Plan.

Effects of the environment on the Project were evaluated as part of the assessment. Conditions evaluated include: extreme weather; sea ice; and climate change and sea level rise. The container facility and all related equipment will be fully weather-proofed and designed for a full range of climatic conditions, and container vessels are designed to be seaworthy in all types of weather. If the weather exceeds design criteria, container vessels will not dock or undock until conditions improve. Project design will incorporate an adequate factor of safety to deal with unanticipated changes in weather severity during the lifetime of the Project, including storms and sea level rise associated with climate change. Monitoring and/or contingency planning will also serve to minimize any adverse effects. Effects of the environment on the Project are therefore predicted to be not significant.

In conclusion, the Sydney Harbour Access Channel Deepening and Sydport Container Terminal Project are not likely to have significant adverse residual effects on the environment. The Project will contribute significantly to the economic development of Cape Breton and Nova Scotia by establishing Sydney Harbour as a key port of call for large post-panamax vessels that would otherwise not have been able to navigate in the harbour. Adverse environmental effects will be reduced to acceptable levels through the use of technically and economically feasible design and mitigation measures.

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