MARINE RENEWABLE-ELECTRICITY LICENCE

Province of Nova Scotia Marine Renewable-energy Act

LICENCE HOLDER:	BigMoon Canada Corporation
NUMBER:	2020-70-0003
EFFECTIVE DATE:	September 2, 2020
EXPIRY DATE:	10 th anniversary date of the Effective Date

Pursuant to Section 29 of the *Marine Renewable-energy Act*, this Licence granted to the Licence Holder is subject to the Terms and Conditions attached to and forming part of this Licence, for the following activities:

Decommissioning of the orphaned in-stream tidal energy generator at Berth D within the Fundy Ocean Research Centre for Energy (FORCE) Marine Renewable-electricity Area.

-and-

The design, construction, and operation of eight 500 kW in-stream tidal energy generators with an aggregate capacity of 4 MW, as detailed in Schedule A - Technical Description, at Berth D within the FORCE Marine Renewable-electricity Area.

For greater certainty, the activity authorized under this Licence and its terms and conditions is subject to the *Marine Renewable-energy Act* and its regulations.

John Dation

John Dalton Procurement Administrator September 1, 2020 Date Signed

MARINE RENEWABLE-ELECTRICITY LICENCE

TERMS AND CONDITIONS

Province of Nova Scotia

Marine Renewable-energy Act

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Terms and Conditions of License Approval

This approval is subject to the following conditions and obtaining all other necessary approvals, permits or authorizations required by municipal, provincial and federal acts, regulations and by-laws before constructing, installing, operating and decommissioning any device at Berth D within the FORCE Marine Renewable-electricity Area.

Licence

The following schedules are attached to and form part of this Licence:

- Schedule A BIGMOON CANADA RESPONSE NS TIDAL CALL FOR APPLICATIONS, dated June 29, 2020;
- Schedule B Survey of Berth D;
- Schedule C Project Plan; and

• Schedule D - Insurance Requirements.

The terms and conditions of this Licence document shall prevail over the Schedules.

Definitions:

Terms which are defined in either the *Marine Renewable-energy Act* or its regulations have the same meaning in these terms and conditions, unless otherwise provided.

In this Licence:

"Call for Applications" means the Call for Applications, Nova Scotia In-Stream Tidal Energy Demonstration Project at Berth D – Fundy Ocean Research Centre for Energy, dated April 29, 2020, as amended by Addendum #1, dated June 8, 2020 and Addendum #2, dated June 15, 2020.

"Decommissioning, Abandonment and Rehabilitation Plan" means the decommissioning, abandonment and rehabilitation plan required by subsection 44(2) of the *Marine Renewable-energy Act* and provided to the Minister in accordance with sections 19 and 20 of the *Marine Renewable-energy General Regulations*;

"Deployment" means the placement of a device or associated equipment in position ready for use;

"Effective Date" means the date that this Licence is effective, as noted at the head of this document;

"FORCE" means the Fundy Ocean Research Centre for Energy;

"Generation Facility" means one or more device(s) described in the Project Plan and Schedule A, together with all protective and other associated equipment and improvements as may be modified from time to time pursuant to the terms of this Licence;

"Fee Regulations" means the Marine Renewable-energy Fees Regulations;

"Minister" means the Minister of Energy and Mines for the Province of Nova Scotia;

"MRE-Act" means the Marine Renewable-energy Act;

"NSPI" means Nova Scotia Power Incorporated;

"Licence Area" means the area of submerged land for which the specific location has been determined by survey and defined as FORCE Berth D and as contained in Schedule B of this Licence;

"Licence Holder" means BigMoon Canada Corporation;

"Orphaned Turbine" is defined in Section 3.1

"Performance Security" means a certified cheque, government guaranteed bonds, debentures, term deposits, certificates of deposit, trust certificates or investment certificates assigned to the Nova Scotia Minister of Finance, or irrevocable and unconditional letter of credit, irrevocable letters of guarantee, performance bonds or surety bonds in a form acceptable to the Minister, in the amount of **\$4,500,000.00 CAD**.

"Program Administrator" means a representative of the Nova Scotia Department of Energy and Mines who has been assigned to receive information on the Department's behalf with respect to this Licence;

"Project Plan" means the project plan attached as Schedule C;

"Regulations" means the Marine Renewable-energy General Regulations;

"Technical Description" means the description of the technology contained in Schedule A of this Licence;

1.0 Scope of Approval

- **1.1** *Project Details*. This Licence is limited to the project as described in the Schedules attached to and forming part of this Licence.
- **1.2** *Project Technology.* The Licence for the project is limited to the technology as described in the Schedules attached to and forming part of this Licence and limited to the aggregate nameplate capacity first stated above.
- **1.3** *Licence Area.* The Licence Area is Berth D (12.56 hectares) as set out in Schedule B. Generator(s) authorized under this Licence shall be constructed, installed and operated within the Licence Area.
- **1.4** *Development and Operation.* The Licence Holder shall develop and operate the project as described in the Project Plan attached to and forming part of this Licence as Schedule C.
- **1.5** *Precedence of legislation.* In the event of a conflict between the *MRE-Act* and its regulations and the terms and conditions of this Licence, the *MRE-Act* and its regulations shall prevail.

2.0 General Terms and Conditions

- **2.1** *Renewal eligibility.* To be eligible to renew the term of the Licence, the Licence Holder must have fulfilled its obligations under this Licence, *MRE-Act* and its regulations and shall submit and receive written approval of a new project plan for the coming renewed term in accordance with the requirements and within the timelines of the *MRE Act* and its associated Regulations.
- **2.2** (a) *Other Approvals, Permits and Authorizations*. This Licence is subject to the terms and conditions herein, as well as the Licence Holder obtaining and maintaining all other necessary approvals, permits or authorizations under municipal, provincial and federal acts, regulations and by-laws.

(b) The Licence Holder must enter into a sublease agreement with FORCE and must maintain it for the duration of the term of this Licence or until such time as FORCE determines it is no longer required. If the sublease is revoked or terminated for non-compliance, FORCE will notify the Minister and the Minister may revoke or terminate this Licence immediately.

2.3 Until further notice, in accordance with Section 26 of the Regulations, the Minister has waived the rent and fees prescribed under Section 23 of the Regulations in relation to this Licence.

3.0 Orphaned Turbine Requirements

3.1 The Licence Holder shall retrieve and dispose of the orphaned
OpenHydro turbine ("the Orphaned Turbine") located in Berth D of the
Fundy Ocean Research Centre for Energy on or before December 31,
2024. The retrieval and disposal of the Orphaned Turbine must be done in

accordance with the approved Orphaned Turbine Decommissioning, Abandonment and Reclamation Plan.

- **3.2** If the Licence Holder fails to retrieve and dispose of the Orphaned Turbine on or before December 31, 2024 this will result in immediate forfeiture of the Performance Security as well as revocation of this Marine Renewable-Electricity Licence.
- **3.3** The Licence Holder shall abide by all the terms of this Licence including, but not limited to, paragraphs 7.1(a), 10.1(a), 10.2(a) and 11.3(a) of this Licence

4.0 Project Plan/Term of Licence

- **4.1** The full Generation Facility as described in the Technical Description (Schedule A) and Project Plan (Schedule C) shall be constructed and operational on or before December 31, 2024, unless granted a written extension by the Minister.
- **4.2** Any proposal by the Licence Holder for changes to any aspect of the project from that described in an approved Project Plan shall be submitted to the Minister for review and approval.
- **4.3** This Licence is valid from the date of issuance, expiring on the tenth anniversary date of the Effective Date.

5.0 Environmental Monitoring Plan

- **5.1** The Licence Holder shall not construct or install a generator, cable or other equipment or structure in the Licence Area until the Licence holder has submitted, and the Minister has approved, an Environmental Monitoring Plan. The Licence Holder shall implement and adhere to the Environmental Monitoring Plan following approval.
- 5.2 Unless otherwise approved, the Licence Holder shall submit an

Environmental Monitoring Plan to the Program Administrator for review and approval at least six (6) months prior to constructing or installing a generator, cable or other equipment or structure in the Licence Area.

- **5.3** The environmental monitoring plan (EMP) must be developed using relevant baseline data and identify appropriate environmental effects indicators. The plan shall consider project effects on, but not limited to, the following:
 - fish and lobster;
 - marine birds;
 - marine mammals;
 - acoustics;
 - physical oceanography;
 - currents and waves; and
 - benthic environment.

The EMP shall include contingencies to be implemented as alternative courses of action in the event mitigation and/or monitoring activities cannot be implemented, are not functioning as designed or do not provide expected results.

4.3 The Licence Holder shall update and revise the EMP to reflect best available and economic practices, methods, and technologies respecting environmental monitoring; changes in the Project Plan and circumstances of the project; and changes in the knowledge of, or actual changes in the physical, ecological, and environmental circumstances and impacts of the project.

- 4.4 The License Holder shall submit an initial status report on environmental monitoring equipment functionality to the Program Administrator prior to turbine operation and shall notify the Program Administrator of any malfunction or non-functioning of the equipment within twenty-four (24) hours.
- 4.5 Environmental effects monitoring reports shall be submitted in writing to the Minister at a schedule to be determined by the Nova Scotia Department of Energy and Mines.
- 4.6 Upon knowledge of serious harm to marine mammals, fish, marine invertebrates, and marine birds, the Licence Holder shall, without unreasonable delay, notify the Program Administrator and the Department of Fisheries and Oceans Canada.

6.0 Engagement Requirements

- **6.1** *Mi'kmaq Engagement Plan.* The Licence Holder shall not construct or install a generator, cable or other equipment or structure in the Licence Area until the Licence Holder has submitted, and the Minister has approved, a Mi'kmaq Engagement Plan. The plan shall outline ongoing and proposed engagement activities with the Mi'kmaq of Nova Scotia and shall include, as a minimum, a description and general schedule of activities under the authority of the Licence. The Licence Holder shall send a draft of this engagement plan to the Mi'kmaq of Nova Scotia and allow adequate time for feedback to be incorporated prior to submitting to the Department for approval. The Licence Holder shall implement the plan following approval. The plan shall be updated and resubmitted annually to the Minister for approval on or before January 31st throughout the term of this Licence.
- **6.2** The License Holder shall support the Province of Nova Scotia in its future and ongoing consultation processes with the Mi'kmaq of Nova Scotia related to this project, share information the Minister considers necessary or advisable, with the Mi'kmaq of Nova Scotia, and consider implementing

mitigation and accommodation measures to address any issues raised through consultation.

6.3 *Stakeholder Communication and Engagement Plan.* The Licence Holder shall not construct or install a generator, cable or other equipment or structure in the Licence Area before submitting a stakeholder communication and engagement plan to the Minister for approval. The plan shall outline ongoing and proposed engagement activities with stakeholders and shall include, as a minimum, a description and general schedule of activities under the authority of the Licence. The Licence Holder shall implement the plan following approval. The plan shall be updated and resubmitted annually to the Minister for approval on or before January 31, throughout the term of this Licence.

7.0 **Reporting Requirements**

7.1 *(a) Decommissioning Notice*. The Licence Holder shall notify the Program Administrator at a minimum, thirty (30) days prior to activities associated with the retrieval of the orphaned OpenHydro turbine.

(b) Deployment Notice. The Licence Holder shall notify the Program Administrator at a minimum, thirty (30) days prior to the Deployment or the testing of generator(s) or equipment under the authority of the Licence.

- **7.2** *Deadlines for ActivityReports.* The Licence Holder, throughout the term of the Licence, shall submit quarterly written reports ("Activity Reports") to the Minister detailing the activities carried on under the authority of the Licence:
 - a. by January 31, for activities between October 1 and December 31;
 - b. by April 30, for activities between January 1 and March 30;
 - c. by July 31, for activities between April 1 and June 30; and
 - d. by October 31, for activities between July 1 and September31.
- **7.3** *Content of Activity Reports.* At a minimum, the Activity Reports shall include:

- a. Detailed and up-to-date project schedule;
- b. Status update on operational aspects of the project;
- c. Operational capacity factor for each generator and calculation methodology;
- d. Progress updates on the activities outlined in the project schedule;
- e. Detailed and up-to-date procurement schedule;
- f. Amended procurement deadlines;
- g. Summary of any entities procured for goods/services;
- h. Financial statements related to procurement, construction, operations, and monitoring activities, with audited financial statements included at least once per calendar year;
- i. Data relating to socio-economic matters;
- j. Lessons learned deemed beneficial to the sector; and
- k. Any changes to the corporate structure of the Licence Holder or its major shareholders, including but not limited to changes of domicile, management, and corporate governance.
- **7.4** *Event notification.* The Licence Holder shall notify the Program Administrator within ten (10) business days upon reaching the following milestone(s):
 - a. Receipt of any federal, provincial, or municipal regulatory approvals;
 - b. Approval of additional funding or grants;
 - c. Completion of any NSPI grid interconnection activities;
 - d. Connection to the transmission or distribution grid;
 - e. Issuance of any manufacturing or fabrication contracts;
 - f. Installation of a generator and any cable or other equipment or structure used or intended to be used with a generator;
 - g. Reaching commercial operation under the power purchase agreement;
 - h. Achieving capacity factor;
 - i. Achieving capacity factor;
 - j. Exceeding capacity factor;
 - k. Commencement of decommissioning activities; and
 - I. Completion of decommissioning and rehabilitation activities.

- **7.5** *Press release notification.* The Licence Holder shall notify the Program Administrator at least one (1) business day prior to any press release related to the activities authorized under the Licence.
- **7.6** *Officer's and Director's Certificates.* The Licence Holder, upon request from the Minister, shall provide an officer's or director's certificate attesting to the truth, accuracy and completeness of any report and submission required under this Licence, or attesting to matters of compliance with this Licence.

8.0 Incident Reporting

- **8.1** The License Holder shall provide the Program Administrator, within seventy-two (72) hours, a report of any significant adverse environmental effects, accident or near miss, generator malfunction or impact to human health or safety together with a description of the response.
- **8.2** The Licence Holder shall notify the Program Administrator at least one (1) business day in advance of any press release or press-conference related to an incident or near-miss.
- **8.3** The Licence Holder shall ensure that:
 - a. Any incident or near-miss is investigated, its root cause and causal factors identified where possible and corrective action taken where applicable; and
 - b. Any incident or near-miss is investigated, its root cause, causal factors and corrective action taken must be submitted in writing to the Program Administrator no later than thirty (30) days after the day on which the incident or near-miss occurred.

9.0 Risk Management Plan

9.1 The Licence Holder shall not construct or install a generator, cable or other equipment or structure in the Licence Area, until the Licence holder has

submitted and the Minister has approved a Risk Management Plan. The Licence Holder shall implement and adhere to the Risk Management Plan following approval.

- **9.2** Unless otherwise approved, the Licence Holder shall submit a Risk Management Plan to the Program Administrator for review and approval at least six (6) months prior to taking any action authorized by this Licence.
- **9.3** The Risk Management Plan must be developed using relevant project information and shall contain all the information listed in Section 18 of the Regulations.
- **9.4** The Risk Management Plan shall be updated and resubmitted annually by the License Holder to the Minister on or before January 31, throughout the term of the License.

10.0 Decommissioning, Abandonment and Rehabilitation Plan

10.1 (a) In accordance with Section 19 of the Regulations, the Licence Holder shall not construct or install a generator, cable or other equipment or structure in the Licence Area until the Licence Holder has submitted and the Minister has approved a Decommissioning, Abandonment and Rehabilitation Plan for the orphaned in-stream tidal energy generator at Berth D within the FORCE Marine Renewable-electricity Area.

(b) Unless otherwise approved, in accordance with Section 19 of the Regulations, the Licence Holder shall not construct or install a generator, cable or other equipment or structure associated with project development in the Licence Area until the Licence Holder has submitted and the Minister has approved a Decommissioning, Abandonment and Rehabilitation Plan for the decommissioning of eight 500 kW in-stream tidal energy generators and associated infrastructure at Berth D within the FORCE Marine Renewable-electricity Area.

10.2 (a) Unless otherwise approved, the Licence Holder shall submit a Decommissioning, Abandonment and Rehabilitation Plan for the orphaned in-stream tidal energy generator at Berth D within the FORCE Marine

Renewable-electricity Area to the Program Administrator for review and approval prior to undertaking any activities under the authority of this Licence.

(b) Unless otherwise approved, the Licence Holder shall submit a Decommissioning, Abandonment and Rehabilitation Plan for the decommissioning of number (#) in-stream tidal energy generators and associated infrastructure at Berth D within the FORCE Marine Renewable-electricity Area to the Program Administrator for review and approval at least six (6) months prior to constructing or installing a generator, cable or other equipment or structure.

- **10.3** The Decommissioning, Abandonment and Rehabilitation Plan(s) shall be developed using relevant project information and shall contain all decommissioning activities and all of the information listed in Section 20 of the Regulations.
- **10.4** The License Holder shall update and revise the Decommissioning, Abandonment and Rehabilitation Plan(s) to reflect best available and economic practices, methods, and technology of decommissioning, abandonment and rehabilitation; changes in the Project Plan and circumstances of the project; and changes in the, or knowledge of the, physical, ecological, and environmental circumstances and impacts of the project.
- **10.5** Any proposal by the Licence Holder that proposes changes to any aspect described in an approved Decommissioning, Abandonment and Rehabilitation Plan(s) shall be submitted to the Minister for review and approval.

11.0 Financial Security and Insurance

- **11.1** *Insurance*. The License Holder shall provide proof of liability insurance to the satisfaction of the Minister prior to taking any action authorized by this Licence.
- **11.2** *Coverage.* The License Holder shall maintain its insurance coverage in full

force and effect for the term of the License and shall meet or exceed the terms and conditions as set out in Schedule D.

11.3 (a) The License Holder shall maintain financial security for the orphaned instream tidal energy generator at Berth D within the FORCE Marine Renewable-electricity Area, on terms and conditions acceptable to the Minister, until such time retrieval and disposal has been executed in accordance with an approved Decommissioning, Abandonment and Rehabilitation Plan.

(b) The License Holder shall provide financial security on terms and conditions acceptable to the Minister within sixty (60) days of notice of an approved Project Development Decommissioning, Abandonment and Rehabilitation Plan for the decommissioning of four (4) in-stream tidal energy generators and associated infrastructure at Berth D within the FORCE Marine Renewable-electricity Area.

- **11.4** The Licence Holder shall ensure that any security provided is kept in effect throughout the Licence term. Unless otherwise required, the Licence Holder shall renew security on an annual basis and provide proof of financial security annually on or before January 31, throughout the term of the Licence.
- **11.5** The Minister may determine the form, and for greater certainty the terms and conditions, in which financial security is provided, including any of the following forms:
 - a. Electronic transfer, cash deposit, or cheques made payable to the Minister of Finance, which the Province in its absolute discretion may cash at any time;
 - b. Government guaranteed bonds, debentures, term deposits, certificates of deposit, trust certificates or investment certificates assigned to the Minister of Finance; or
 - c. Irrevocable letters of credit, irrevocable letters of guarantee, performance bonds or surety bonds in a form acceptable to the Minister.

12.0 Performance Requirements

- **12.1** The Licence Holder shall provide final as-constructed drawings of the Generation Facility and all associated infrastructure to the Program Administrator no later than ninety (90) days upon reaching Commercial Operation.
- **12.2** The Licence Holder is subject to the following performance targets:
 - a. Capability of deployed generators(s) to be operated and controlled with consistency following installation;
 - b. Deployed generators operating and being controlled consistently;
 - c. Capability of turbines, blades, and other spinning or moving components representing a risk to human or wildlife health of being stopped, halted and braked when and if required; and Maintenance of an annual average capacity factor of at least (1/4% of stated capacity factor for each generator under the authority of the Licence).
- **12.3** The Licence Holder shall provide performance reports to the Program Administrator no later than January 31 of each year through the term of this Licence. At a minimum, the report must include the following for each generator installed:
 - a. Amount of energy generated;
 - b. Date(s) energy was generated;
 - c. Peak generation;
 - d. Capacity factor achieved and calculation methodology;
 - e. Number and date(s) of days deployed;
 - f. Number and date(s) of operating days;
 - g. Number and date(s) of maintenance days (planned and unscheduled);
 - h. The type of maintenance required; and,
 - i. A summary of operational issues impacting energy production or safe operation of the Generation Facility.

12.4 In the event any generator fails to meet the annual performance standard detailed in 12.2, the Licence Holder must submit a report to the Minister outlining a reasonable time-line and plan for restoration of the generator(s) to either render it fully functional or provide details for removing the generator(s) from the License Area. The Licence Holder must implement the restoration as submitted; any change is subject to prior approval of the Minister. The Licence Holder cannot invoke this provision within three years of it being previously invoked, and not more than twice overall.

13.0 Notice to Minister and Program Administrator

13.1 Notice, documents and other information required to be sent to the Minister of the Nova Scotia Department of Energy and Mines, shall be in writing and may be served by personal service, fax or electronically, addressed as follows:

Attention: Minister of Energy and Mines

Nova Scotia Department of Energy and Mines Joseph Howe Building 1690 Hollis Street PO Box 2664 Halifax, NS B3J 3J9

Phone: (902) 424-4575 Fax: (902) 424-0528

Email: energyminister@novascotia.ca

13.2 Notice and/or information required to be sent to the Program Administrator shall be in writing and sent via email to: <u>marinerenewables@novascotia.ca</u>

14.0 Notice to NSPI

14.1 In the event this Licence expires, is suspended or revoked, the Minister will provide written notice of this to NSPI.

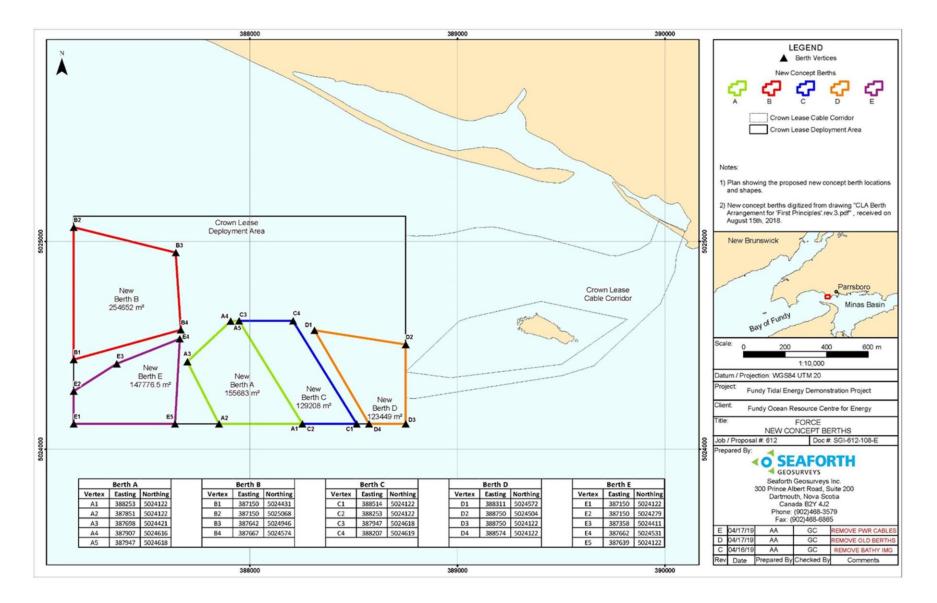
15.0 Standards

- **15.1** The Licence Holder must comply with industry standards for marine renewable energy conversion systems as they exist at the time of the issuance of this License and as amended, which may include, but may not be limited to, the International Electrotechnical Commission (IEC) Technical Committee (TC) 114.
- **15.2** At a minimum, the Licence Holder shall conduct itself with prudence and due diligence and with appropriate regard for matters of health, safety, and environment.
- **15.3** The Licence Holder shall at all times comply with all federal, provincial and municipal applicable laws and regulations.

Schedule A - Technical Description

BIGMOON CANADA RESPONSE NS TIDAL CALL FOR APPLICATIONS, dated June 29, 2020, is incorporated by reference.

Schedule B – Survey of Berth D



Schedule C – Project Plan

Refer to Appendix X of the BIGMOON CANADA RESPONSE NS TIDAL CALL FOR APPLICATIONS, dated June 29, 2020

Schedule D – Insurance Requirements

Commercial General Liability:

Commercial General Liability in an amount not less than \$5,000,000 inclusive per occurrence against bodily injury, personal injury and property damage and including liability assumed under this agreement and this insurance must:

- (a) include "Her Majesty the Queen in Right of the Province of Nova Scotia" as an additional insured
- (b) be endorsed to provide the Province with 30 days advance written notice of cancellation or material change; and
- (c) include a cross liability clause.

Automobile Liability:

Automobile Liability on all vehicles owned, operated or licensed by the Agreement Holder in an amount not less than \$5,000,000 per occurrence.

Professional Liability:

Professional Liability in an amount not less than \$5,000,000 per claim, insuring the Agreement Holder's liability resulting from errors and omissions in the performance of professional services under this agreement and this insurance must be endorsed to provide the Province 30 days advance written notice of cancellation.

Environmental Impairment Liability:

Environmental Impairment Liability (Pollution Legal Liability) insuring against bodily injury, property damage, and cleanup expenses (including removal and/or transit and disposal of contaminants) arising from gradual or sudden pollution events arising from the performance of this agreement by the Agreement Holder in an amount not less than \$5,000,000, and this insurance must include "Her Majesty the Queen in Right of the Province of Nova Scotia" as an additional insured for its vicarious liability as land owner, project owner, or party to this agreement, and be endorsed to provide the Province with

30 days advance written notice of cancellation or material change. If this insurance is written on a claims-made basis it must include the option to purchase an extended reporting period of 24 months beyond the date of cancellation or expiry of this agreement.

Watercraft Liability:

Watercraft Liability insurance on all watercraft operated or used in the performance of this agreement by the Agreement Holder (including rented watercraft), in an amount not less than the limits of liability imposed by the *Marine Liability Act* and in any event not less than \$5,000,000 inclusive per occurrence, and this insurance must:

- (a) include "Her Majesty the Queen in Right of the Province of Nova Scotia" as an additional insured
- (b) be endorsed to provide the Province with 30 days advance written notice of cancellation or material change; and
- (c) include a cross liability clause.
- (d) include coverage for marine towing operations.