

Environmental Assessment Approval

Approval Date: JUN 04 2019

Canso Spaceport Facility Project

Maritime Launch Services Limited

Canso, Guysborough County, Nova Scotia

Terms and Conditions for Environmental Assessment Approval

1 Definitions

- 1.1 Approval means the environmental assessment (EA) Approval terms and conditions, which relates to the Approval Holder and their Project situated at or near Canso, Guysborough County, Nova Scotia.
- 1.2 Environment Act means Environment Act 1994-95, c.1, s.1, and includes, unless the context otherwise requires, the regulations made pursuant to the Act, as amended from time to time.
- 1.3 Department means the Department of Environment (unless otherwise specified in the Approval conditions), and the contact for the Department for this Approval is: Antigonish Office, Regional Inspector.
- 1.4 Minister means the Minister of Environment.

2 Scope

- 2.1 Project means the Canso Spaceport Facility Project described in the EA Registration Information. Registration Information means the Registration Document and/or Focus Report for the Project submitted to the Department during the EA review.

3 General

- 3.1 The Approval Holder shall, within two years of the date of issuance of this

Approval, commence work on the Project unless granted a written extension by the Minister.

- 3.2 The Approval Holder shall provide written notification to the Department of the commencement date of the Project, at a minimum 30 days prior to the commencement.
- 3.3 The Approval Holder shall provide to the Department a concordance table detailing the status of the EA terms and conditions on January 31 of each year until released in writing by the Department.
- 3.4 Any proposal by the Approval Holder for expansion, modification or relocation of any aspect of the Project from that proposed in the Registration Information shall be submitted to the EA Branch for review and may require an EA.
- 3.5 Nothing in this Approval relieves the Approval Holder of the responsibility for obtaining and paying for all other licenses, permits, approvals or authorizations necessary for carrying out the Project which may be required by municipal by-laws or provincial or federal legislation. The Minister does not warrant that such licenses, permits, approvals or authorizations will be issued.
- 3.6 The Approval Holder shall not transfer, sell, lease, assign or otherwise dispose of this Approval without the written consent of the Minister. The sale of a controlling interest of a business or a transfer of this Approval from a parent company to a subsidiary or an affiliate is deemed to be a transfer requiring consent.
- 3.7 If there is a discrepancy between the Registration Information and the terms and conditions of this Approval, the terms and conditions of this Approval shall apply.
- 3.8 Upon any changes to the Registry of Joint Stock Companies information related to the Approval Holder, the Approval Holder shall provide a copy to the Department within 5 days of the changes.
- 3.9 Where a timeline is associated with a condition(s) of the Approval, the Approval Holder shall fulfil the requirements of the condition(s) within the

prescribed timeline, unless otherwise authorized in writing by the Department.

- 3.10 The Approval Holder shall immediately notify the Department of any incidents of non-compliance with this Approval.
- 3.11 The Approval Holder shall bear all expenses incurred in carrying out the environmental management and monitoring required under the terms and conditions of this Approval, including but not limited to, air dispersion and emissions modelling, worst-case scenario analysis, baseline and environmental monitoring, bird surveys and monitoring, and wildlife monitoring.
- 3.12 Unless specified otherwise in this Approval, all samples required to be collected by this Approval shall be collected, preserved and analyzed, by qualified personnel, in accordance with recognized industry standards and procedures that are deemed acceptable to the Department.
- 3.13 The Approval Holder shall ensure that this Approval, or a copy, is present at the Project site while personnel are on site and that personnel directly involved in the Project are made fully aware of the terms and conditions which pertain to this Approval.
- 3.14 The Approval Holder shall implement all of the plans or other programs required in this Approval once deemed acceptable by the Department.
- 3.15 The Approval Holder shall update and/or revise any of the plans, programs or other documents required in this Approval to reflect changes to the Project, and/or at a schedule acceptable to, or upon the request of, the Department.
- 3.16 Based on the results of analysis, assessments, models, surveys, monitoring programs, or other documents required in this Approval, the Approval Holder shall make necessary modifications to mitigation plans, monitoring programs and/or changes to Project operations to prevent unacceptable environmental effects, as required by the Department.
- 3.17 Where a condition of this Approval requires the Approval Holder to consult and/or request comments of a particular party or parties regarding the

content of a document, the Approval Holder shall: provide a written notice to each such party inviting comments on the document within a reasonable timeframe, provide a written explanation to each party how the comments are addressed and considered, as well as maintain a record of consultation with each party and provide a copy of such consultation to the Department.

4 Facility Development and Operation

- 4.1 At the request of the Department, the Approval holder shall reimburse the Department for the additional cost of all resources required to ensure environmental compliance for this Project, up to \$100,000 annually. This amount will include the cost for time of staff persons dedicated to the Project and will be due by January 31 of each year throughout the life of the Project, until released in writing by the Department.
- 4.2 Prior to Project commencement, the Approval Holder shall obtain Division IV (Dangerous Goods) Approval under the *Environment Act*.
- 4.3 The Approval Holder, as part of the application for Division IV (Dangerous Goods) Approval under the *Environment Act*, shall submit Project design details for all dangerous goods to be used including, but not limited to:
 - a) facility layout including permanent and temporary storage locations and handling equipment;
 - b) storage specifications including tankage for all products;
 - c) piping;
 - d) containment feature specifications including secondary containment;
 - e) ventilation and filtration systems;
 - f) alarms and controls including level, temperature and spill monitoring systems; and
 - g) other environmental and safety controls.
- 4.4 The Approval Holder, as part of the application for Division IV (Dangerous Goods) Approval under the *Environment Act*, shall submit detailed transportation and handling procedures for all dangerous goods, including but not limited to, nitrogen and liquid oxygen. The Approval Holder shall describe unique risks with transportation and handling of these materials,

including during de-fueling of the first and second stage of the launch vehicle, and how they will be mitigated.

- 4.5 The Approval Holder, as part of the application for Division IV (Dangerous Goods) Approval under the *Environment Act*, shall submit detailed design information for the deluge retention basin, including but not limited to size, liner details, secondary containment features, and connection to the site stormwater management plan.
- 4.6 The Approval Holder shall ensure that all wastes associated with the project, shall be disposed of in a manner acceptable to the Department.
- 4.7 Prior to Project operation, the Approval Holder shall submit detailed launch commit criteria to the Department, including but not limited to, atmospheric conditions, wind speed and direction and temperature. The Approval Holder shall describe site-specific considerations and supporting mitigation measures.
- 4.8 Prior to Project commencement, the Approval Holder shall submit an environmental protection plan to the Department for review. The plan shall be acceptable to the Department, prior to Project commencement.
- 4.9 The environmental protection plan shall include an environmental monitoring plan. The environmental monitoring plan shall include, but not be limited to:
 - a) baseline and environmental monitoring programs for surface water, groundwater, marine water, sediments and soil;
 - b) monitoring plans designed to validate impact predictions; and
 - c) sampling locations, parameters, monitoring methods, protocols and frequency.
- 4.10 The environmental protection plan shall identify potential impacts to aquatic and terrestrial habitats and wildlife and include protective measures that will be used during both routine operations and accidental occurrences.
- 4.11 The environmental protection plan shall address remediation in the event of project-related contamination and subsequent monitoring activities,

including but not limited to, the scope of delineation testing, environmental screening levels for potential contaminants of concern, remediation measures, clean-up criteria and habitat restoration measures. Consideration shall be given to means of accessing remote areas and measures to mitigate ecosystem impacts related to the remediation activities.

4.12 Prior to Project commencement, the Approval Holder shall provide a copy of the environmental protection plan accepted by the Department, to the Department of Lands and Forestry, Wildlife Division.

4.13 Prior to Project operation, the Approval Holder shall provide the Department of National Defence with a point of contact for the Project.

5 Water Resources

5.1 The Approval Holder shall not conduct any Project activities, or removal of vegetation within 30 metres of a watercourse and/or a wetland unless otherwise authorized in writing by the Department.

5.2 The Approval Holder, as a part of the application for Division I (Watercourse Alteration) Approval under the *Environment Act*, shall submit the results of a fish and fish habitat assessment completed for Watercourse 2 (as defined in the EA Registration Information).

5.3 The Approval Holder, as a part of the application for Division I (Watercourse Alteration) Approval under the *Environment Act*, shall submit an analysis of potential impacts to upstream and downstream watercourses and any existing water users, including mitigation measures.

5.4 Prior to Project commencement, the Approval Holder shall submit an erosion and sedimentation control plan, developed by a qualified professional engineer or geoscientist, licensed to practice in the Province of Nova Scotia, to the Department for review. The plan shall be acceptable to the Department, prior to Project commencement.

5.5 Prior to Project commencement, the Approval Holder shall submit a stormwater management plan to the Department for review. The plan shall be acceptable to the Department, prior to Project commencement.

- 5.6 The Approval Holder shall develop the stormwater management plan in consultation with the Department's Sustainability and Applied Science Division. This plan shall include final design details and supporting rational completed by a qualified professional engineer or geoscientist, licensed to practice in the Province of Nova Scotia. The plan shall include details to support the mitigation of scour from discharge, matching pre- and post-development runoff discharge rates, potential spill containment and the collection/management of contaminated runoff, and consideration for the potential impacts of climate change on sizing requirements. The plan shall include emissions and discharge locations, monitoring requirements and criteria.
- 5.7 Prior to Project commencement, the Approval Holder shall obtain Division I (Water Withdrawal) Approval under the *Environment Act* from the Department, if required.
- 5.8 The Approval Holder, at their expense, shall replace any water supply which has been lost or damaged as a result of Project construction or operations, as authorized and required by the Department.

6 Flora and Fauna

- 6.1 Prior to commencement of the Project, the Approval Holder shall provide Nova Scotia Department of Lands and Forestry, Wildlife Division with digital way points and shape files revealing precise locations for wetlands and species listed under the *Species at Risk Act* and/or *Endangered Species Act* as well as all S1, S2 and S3 listed species under the Atlantic Canada Conservation Data Center, identified during field work within the area of the Project. The date of the above noted field data shall also be provided to the Department of Lands and Forestry. The Approval Holder shall provide written notification to the Department that the files have been provided to the Department of Lands and Forestry.
- 6.2 Prior to Project commencement, the Approval Holder shall submit a wildlife management plan to the Department for review. The plan shall be acceptable to the Department, prior to Project commencement.
- 6.3 The Approval Holder shall consult with the Department of Lands and

Forestry, Wildlife Division and Environment and Climate Change Canada prior to beginning development of the wildlife management plan. The plan and resulting mitigation measures shall be developed to the satisfaction of the Department of Lands and Forestry, Wildlife Division and Environment and Climate Change Canada and must be accepted by both departments for the Project to proceed.

- 6.4 The wildlife management plan shall include, but not be limited to:
- a) studies on the abundance, diversity, behaviour and potential impacts to birds using the site during spring and fall migrations and during the shorebird/seabird/waterfowl breeding season (approximately April 15 to July 31), conducted prior to Project commencement and acceptable results provided to the Department of Lands and Forestry, Wildlife Division and Environment and Climate Change Canada;
 - b) a complete description of acceptable survey and scientific/research methodologies to be used;
 - c) maps showing locations where seabird colonies, species at risk, species of conservation concern, gulls and terns are observed;
 - d) scientific evidence/models that assess the potential impacts of hydrazine chemicals on wildlife and wildlife habitat from routine operations and accidental occurrences;
 - e) maps showing locations of protected areas and parks;
 - f) a description of measures to mitigate effects to migratory birds, including ground nesting species and species that nest on human structures, and specifically measures to mitigate effects from noise, sonic boom, chemical substances used in launch activities and/or by-products or daughter products, accidents and malfunctions and cumulative effects from the Sable Wind Farm;
 - g) monitoring plans for migratory birds and species at risk;
 - h) a description of measures to mitigate effects to wildlife and wildlife habitat, including parks and protected areas; and
 - i) monitoring plans for wildlife and wildlife habitat with consideration for adaptive management.
- 6.5 The Approval Holder shall provide the results of surveys and monitoring required by the wildlife management plan to the Department of Lands and Forestry Wildlife Division and Environment and Climate Change Canada.

Based on the results of the monitoring plans required in this Approval, the Approval Holder shall make necessary modifications to mitigation plans and/or changes to Project operations to prevent unacceptable environmental effects, as required by the Department. This may include restricting launches during the key seasons if it is determined to be necessary through surveys and monitoring.

- 6.6 The Approval Holder shall clear vegetation outside of the breeding season for most bird species (April 15 to August 31), unless otherwise authorized in writing by the Department. Vegetation clearing shall be recorded in a daily log that shall be available for review by the Department indicating the date and time of the clearing operation and the contractor.
- 6.7 Prior to Project commencement, the Approval Holder shall provide a lighting management plan to the Department for review. The plan shall be acceptable to the Department, prior to Project commencement.
- 6.8 The Approval Holder shall develop the lighting management plan in consultation with the Department of Lands and Forestry, Wildlife Division and Environment and Environment and Climate Change Canada and based on the results of radar, acoustic and observational surveys and in consideration of the proximity to the Cape Sable Wind Farm.

7 Air Quality and Noise

- 7.1 The Approval Holder, as part of the application for Division IV (Dangerous Goods) Approval under the *Environment Act*, using the REEDM model or another acceptable air dispersion model, shall submit results of air emissions dispersion modelling including ambient concentrations and emission volumes of pollutants expected for the Project. The Approval Holder shall include modelling results for both routine operations, using detailed launch commit criteria, and worst-case accident and malfunction scenarios. The Approval Holder shall include the assumptions used in developing the model including, but not limited to, atmospheric conditions, wind direction, and temperature. The Approval Holder shall specify the maximum ambient concentration thresholds and provide a comparison to the model results.
- 7.2 The Approval Holder, as part of the application for Division IV (Dangerous

Goods) Approval under the *Environment Act*, using the AFTOX model or another acceptable spill emissions air quality dispersion model and applying the propellant quantities expected to be stored and used during a launch, shall calculate and submit the maximum distance downwind that would require evacuation in the event of a spill and compare it to the current receptor locations. The maximum distance downwind requiring evacuation under each worst-case scenario shall be considered by the Approval Holder in preparation of evacuation procedures in the event of a spill and connected to the emergency response plan.

- 7.3 The Approval Holder, as part of the application for Division IV (Dangerous Goods) Approval under the *Environment Act*, shall submit an air quality monitoring plan designed to validate the results of the air emissions model including, but not limited to, sampling locations, parameters, monitoring methods, protocols and frequency.
- 7.4 At the request of the Department, the Approval Holder shall develop and implement a dust monitoring plan. This plan shall include, but not be limited to, sampling locations, parameters, monitoring methods, protocols and frequency.
- 7.5 Prior to Project commencement, the Approval Holder shall provide the assumptions used in developing the RUMBLE noise model (as presented in the EA Registration Information) to Health Canada including, but not limited to, atmospheric conditions, temperature, ground attenuation factor(s), topography assumptions, wind strength and direction.
- 7.6 Prior to Project commencement, the Approval Holder shall provide a noise management plan to the Department for review. The plan shall be acceptable to the Department, prior to Project commencement.

8 Archaeological and Heritage Resources

- 8.1 The Approval Holder shall cease work and contact the Special Places Coordinator, Nova Scotia Department of Communities, Culture and Heritage (CCH) immediately upon discovery of an archaeological site or artifact unearthed during any phase of the Project. If the find is of certain or possible Mi'kmaq origin, the Approval Holder shall also contact the appropriate Mi'kmaq representatives as advised by CCH.

9 Public Engagement

- 9.1 Prior to Project operation, the Approval Holder shall provide the Department with a copy of the agreement between the Approval Holder and owners of all properties, including but not limited to, residences, business, campgrounds, and seasonal cottage owners located within the launch exclusion radius. The agreement shall be clear as to when and how these locations will be inaccessible during launches, evacuation plans and procedures that will be used by the Approval Holder to ensure the evacuation has occurred prior to the launch.
- 9.2 Prior to commencement of the Project, the Approval Holder shall establish a complaint resolution plan for receiving and responding to complaints related to the Project, including a reporting system which records and documents steps taken to determine the cause of complaint and the corrective measures taken to alleviate the cause and prevent its recurrence. The plan shall be acceptable to the Department, prior to Project commencement.
- 9.3 Prior to commencement of the Project, the Approval Holder shall appoint a contact person designated to deal with complaints and shall provide the contact information to the Department.
- 9.4 Prior to commencement of the Project the Approval Holder shall develop and implement a plan for the formation and operation of a Community Liaison Committee (CLC) including terms of reference, which meets the Department's Guide for the Formation and Operation of a Community Liaison Committee. The Approval Holder shall operate the CLC for the duration of the Project or until released in writing by the Department.

10 Engagement with the Mi'kmaq of Nova Scotia

- 10.1 At the request of the Department, the Approval Holder shall develop and implement a Mi'kmaq Communication Plan for the Project, which will include a process for communicating Project details and seeking input from the Mi'kmaq community.

11 Accidents and Malfunctions

- 11.1 Prior to Project commencement, the Approval Holder shall submit to the Department for review and acceptance the results of a potential worst-case scenario analysis for the Project. The analysis shall include the use of modelling where appropriate, and consider all scenarios, including failure of all launch vehicle stages and accident propagation.
- 11.2 The worst-case scenario analysis shall include calculated hazard zones as a function of quantity and environmental conditions for each scenario and provide a comparison to human health receptors. The Approval Holder shall provide references or supporting materials to justify the probability of occurrence and the suitability of the hazard zone for each worst-case scenario. The hazard zone for each scenario shall be considered by the Approval Holder in preparation of evacuation procedures and connected to the emergency response plan.
- 11.3 The Approval Holder, as part of the application for Division IV (Dangerous Goods) Approval under the *Environment Act*, shall submit an emergency response plan which meets the Department's Contingency Planning Guidelines to the Department for review. The plan shall consider Occupational Health and Safety and identify education and training requirements. The plan shall be acceptable to the Department, prior to Project commencement.
- 11.4 The emergency response plan shall include full hazard identification and qualitative and quantitative risk assessment (referencing human health receptors), including those which have or may have an environmental impact (directly or indirectly). The plan shall include in the hazard identification all potential emergencies and worst-case scenarios and the maximum hazard zone for each scenario. The plan shall provide prevention measures and address accidental occurrences including, but not limited to:
 - a) spills of dangerous goods or other hazardous materials;
 - b) failure of control measures;
 - c) fires;
 - d) launch failures;
 - e) unplanned or undesirable flight paths; and
 - f) accident propagation.

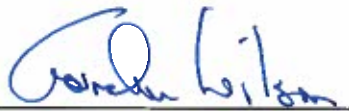
- 11.5 The emergency response plan shall include information on the expected effectiveness of spill response measures.
- 11.6 If applicable, the emergency response plan shall include measures to avoid or minimize risk of introducing chemicals used in fire suppression systems into the environment.
- 11.7 The emergency response plan shall include an emergencies communications plan and emergency procedures for surrounding communities including urgent immediate and long-term actions, which may include, but not be limited to, hotlines, incident status updates, injured wildlife reporting.
- 11.8 The emergency response plan shall be developed in consultation with local fire, emergency service providers, and spill response organizations/providers and demonstrate compliance with federal and provincial regulatory requirements. The Approval Holder shall demonstrate the necessary resources are in place to implement the plan.
- 11.9 The emergency response plan shall be kept on the Project site at all times when personnel are on site and made available to the Department upon request.
- 11.10 The emergency response plan shall be reviewed and updated annually, when changes are made to the Project that impact the emergency response plan, in the event of an incident and/or at the request of the Department. The plan shall be reviewed by the Approval Holder prior to each launch.

12 Rehabilitation

- 12.1 Prior to Project commencement, the Approval Holder shall provide a detailed rehabilitation plan to the Department for review. The Approval Holder shall update the plan every three years. The plan shall be acceptable to the Department.
- 12.2 Prior to Project commencement, the Approval Holder shall provide security in a form and amount acceptable to the Department to ensure

financial resources are in place to cover the cost of rehabilitation. The amount of the security shall be supported by a third-party cost estimate and reflect the rehabilitation plan.

- 12.3 The Approval Holder shall update and revise the security every three years throughout the life of the Project. The amount of the security shall be supported by a third-party cost estimate and reflect the rehabilitation plan accepted by the Department at that time.
- 12.4 The security shall be payable to the Department in the event of non-compliance by the Approval Holder of any terms of this Approval throughout the life of the Project and rehabilitation.
- 12.5 The Project shall be rehabilitated in a manner and at a schedule acceptable to the Department.
- 12.6 Re-vegetation shall be limited to the use of native species, unless otherwise authorized in writing by the Department.
- 12.7 Prior to Project commencement, the Approval Holder shall provide environmental liability insurance in a form and amount acceptable to the Department. The amount of the insurance shall be revised every three years throughout the life of the Project to reflect the current Project site conditions.
- 12.8 The security and insurance required by this Approval shall remain in effect until completion of Project rehabilitation to the satisfaction of the Department.

A handwritten signature in blue ink, appearing to read "Gordon Wilson", is written over a horizontal line.

Gordon Wilson, MLA
Minister of Environment