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March 17, 2011

RE: Information Request for NIRB review of the Baffinland Mary River Project Environmental Impact Statement

To Whom It May Concern:

Parks Canada Agency's mandate states:

> On behalf of the people of Canada, we protect and present nationally significant examples of Canada's natural and cultural heritage and foster public understanding, appreciation and enjoyment in ways that ensure their ecological and commemorative integrity for present and future generations.

Parks Canada has an interest in the review of the Baffinland Mary River Project because the project is located near Sirmilik National Park of Canada (hereafter Sirmilik National Park) and will include shipping through the area proposed for Lancaster Sound National Marine Conservation Area (NMCA), as well as proposed port infrastructure in Milne Inlet, which is within the proposed NMCA. The Government of Canada announced its position on a proposed boundary for the NMCA in December 2010 (as noted in the attached documents) as a starting point for consultations with communities and other interests.

We have focused our six information requests on issues related to these two protected areas.

1 **Reference:** (i) Guidelines and addendum for the preparation of an IES, Subsection 8.2.4, 'Economic development and self-reliance'
(ii) Guidelines and addendum for the preparation of an IES, Subsection 7.8, 'Cumulative effects'
(iii) Environmental Impact Statement, Volume 4, Section 5

Preamble: National parks are "dedicated to the people of Canada for their benefit, education and enjoyment" (s. 4(1)). In the case of

Sirmilik National Park, an experience of "wilderness" and remoteness is important for visitors enjoying the park.

In the Environmental Impact Statement (EIS), there does not appear to be any meaningful assessment of the impact of the project on 'wilderness experience', particularly in the context of Sirmilik National Park. Instead, a strictly numbers-based ('small size of eco-tourism') reason is briefly offered in the EIS as a reason for curtailing or not conducting the assessment. Given the importance of visitors to national parks, the fact that national parks are established for many generations and the project is expected to last many years, an assessment of effects on wilderness is still warranted.

Request: a) Please assess the implications of the project on 'wilderness' experience', particularly in the context of the presence of Sirmilik National Park and the proposed Lancaster Sound National Marine Conservation Area.

2 **Reference:** (i) Guidelines and addendum for the preparation of an IES, Subsection 8.1.13, 'Marine wildlife and marine habitat' (including subsection '3)', pertaining to the proposed establishment of a NMCA).

(ii) Guidelines and addendum for the preparation of an IES, Subsection 7.8, 'Cumulative effects'

(iii) Environmental Impact Statement, Volumes 8 Section 5 (marine) and 9 (cumulative)

(iv) Environmental Impact Statement, Volume 8, Appendix 8C-3

Preamble: A key tool in conducting environmental impact assessments is the use of thresholds of acceptable change. In the EIS, such thresholds are apparently used for marine mammals. Great care does need to be taken in the derivation of such thresholds, and this derivation must be available to scrutiny. The EIS further notes that the derivation of these thresholds is discussed in Appendix 8C-3. However, this Appendix has not been provided in either the packages sent directly to PCA, or on the NIRB registry. As such, no meaningful review of the marine mammal subsection of the EIS can yet be done.

Request: a) Please provide Appendix 8C-3.

3 **Reference:** (i) Guidelines and addendum for the preparation of an IES, Subsection 8.1.13, 'Marine wildlife and marine habitat' (including subsection '3)', pertaining to the proposed establishment of a NMCA.

(ii) Guidelines and addendum for the preparation of an IES, Subsection 8.1.11, 'Birds' (those with a marine component; a.k.a 'seabirds')

(iii) Guidelines and addendum for the preparation of an IES, Subsection 7.8, 'Cumulative effects'

(iv) Environmental Impact Statement, Volumes 8 Section 5 (marine), 6 (birds with a marine component), and 9 (cumulative)

Preamble: The extent to which marine wildlife and birds (those with a marine component) will actually show a response to disturbance, and the subsequent effects on these marine wildlife and birds (those with a marine component) from being displaced or alternatively not being able to be displaced, is dependent on how critical the habitat is to them, and on the availability of alternative habitat. Moreover, it is not just a space that defines suitable habitat, but numerous features that are often spatially unique and at times very rare. Furthermore, seasonality (timing) is often critical in and of itself. Additionally, habitat often can only support a limited number of animals and a limited amount of productivity; this is particularly true for northern environments. Finally, there is an energetic, physiological, reproduction, and survivability cost associated with being disturbed or displaced from habitat, be it 'habituated', 'temporarily', repeated temporarily, or permanently.

Thus, the context of the habitat availability, suitability, productivity, and actual use is very important during this review. Unfortunately, this context appears to be missing from the EIS.

Request: a) In the context of each population's distribution range, migratory patterns, and seasonality, please provide information to indicate the importance of the habitat that is being used by marine wildlife and birds (those with a marine component) which may be disturbed or displaced by the project.

b) Please assess the availability and accessibility of alternative suitable habitat which is not already being occupied to full capacity.

c) Commensurately, please use this information to assess the impact on marine wildlife and birds (those with a marine component) not just to the extent of presence, absence, and mortalities, but also population health, and local and regional ecological integrity.

d) Similarly, please use this information to assess the health and stress of individual marine wildlife and birds (those with a marine component), even if they do 'habituate'. Also, please clarify the evidence and probability for 'habituation'.

4 **Reference:** (i) Guidelines and addendum for the preparation of an IES, Subsection 8.1.13, 'Marine wildlife and marine habitat' (including subsection '3)', pertaining to the proposed establishment of a NMCA).

(ii) Guidelines and addendum for the preparation of an IES, Subsection 8.1.11, 'Birds' (those with a marine component)

(iii) Guidelines and addendum for the preparation of an IES, Subsection 8.1.3, 'Noise and vibration'

(iv) Guidelines and addendum for the preparation of an IES, Subsection 8.1.12, 'Marine environment, Marine water/ice, and Marine sediment quality'

(v) Guidelines and addendum for the preparation of an IES, Subsection 7.8, 'Cumulative effects'

(vi) Environmental Impact Statement, Volumes 8 (marine), 6 (birds with a marine component), 5 (air), and 9 (cumulative)

Preamble: Canada is a member of the Arctic Council. This Council produced the Arctic Marine Shipping Assessment (2009;

available at http://www.pame.is/amsa/amsa-2009-report), which amongst other things identified potential environmental impacts arising from shipping in the Arctic. The report includes sections on both ship-based impacts and potential disturbances from ships and shipping. While the EIS does address some of the issues noted by the Council, it appears that not all of them have been addressed. As well, when these issues are addressed, it appears that at times this assessment is limited, particularly with reference to the proposed national marine conservation area.

Request: a) Please ensure that all issues raised by the Arctic Council are addressed, and that this is done in the context of Sirmilik National Park and the proposed Lancaster Sound National Marine Conservation Area. Please include in this assessment the following specific matters:

I. Safe navigation in ice-covered waters depends much on the experience, knowledge and skill of the ice navigator. Currently, most ice navigator training programs are ad hoc and there are no uniform international training standards. To the extent that the project will entail travel through waters that are ice covered for a major part of the year, and may have ice present even in 'open water' season, please discuss how safe navigation will be ensured in these waters.

II. The accidental release of oil, toxic chemicals, or other deleterious substances can be considered one of the most serious threats to Arctic ecosystems as a result of shipping. Concentrated aggregations of birds and mammals, often in confined spaces such as leads and polynyas, increase the risk to the animals in the case of an oil spill in the Arctic. Even small spills can have large consequences if they occur where wildlife and birds are concentrated. How will the project evaluate and monitor these concentrations? How will the project mitigate in the event of an oil spill? Will the project have oil spill response capability in strategic locations along the shipping routes?

III. The introduction of invasive species into the Arctic marine environment from shipping can occur and the risk may be enhanced due to changing climate, possibly making conditions more favourable to some species.

The most risk exists where a transfer of organisms from ecosystems of similar latitudes and conditions can occur. Introduction can occur through both ballast water and hull fouling. The project has explained that ballast water will be exchanged offshore, apparently before the ships enter the Lancaster Sound region or come into port. What precautions are being considered with respect to hull fouling?

IV. Migratory marine mammals such as bowhead, beluga, narwhal and walrus have wintering areas in the southern extent of the sea ice zone, and spring migration routes into the Arctic through systems of leads and polynyas that are also used by many seabirds, ducks and other marine birds during spring migration. These migration corridors correspond broadly to the proposed main shipping routes and travel through geographic chokepoints. Hudson Strait and Eclipse Sound are such areas. What best practices and management measures is the project proposing:

a. to deal with noise disturbance in sensitive periods, around major bird colonies and marine mammal concentration areas, etc.?
b. to deal with icebreaker disturbance (i.e. artificially opened water channels can be problematic for marine mammals and other species, which confuse them for polynyas and can get trapped too far from the ice edge as the channel eventually refreezes)?
c. to prevent vessel collisions with marine mammals in areas where shipping routes coincide with seasonal migration and areas of aggregation and with more vulnerable species such as bowhead whales which are slower to react?

V. Ship emissions to the air (i.e. CO_2, NOx, CFCs, methane, particulate matter, etc.) have been associated with climate change effects and in the Arctic could have significant regional impacts on both human and environmental health. For example, black carbon, a component of particulate matter produced by marine vessels through the incomplete oxidation of diesel fuel, has been shown to accelerate ice melt. Effective reduction of ship emissions can be achieved through the application of feasible and best available technologies,

through air emissions reduction techniques and through effective implementation of relevant International Maritime Organisation (IMO) regulations. What is the project proposing to evaluate, monitor, and mitigate these potential effects?

VI. Please also clarify what typical discharges will occur both during transit and while in port, and assess the implications of these discharges. Alternatively, can the proponent unequivocally state that there will be no intentional discharge in Canadian waters? Notwithstanding the latter alternative, please address the matter of uncontrolled discharges such as Stern Tube Oil Release, including in the context of accumulations in the relatively narrow on confined leads that may be used as open water.

VII. The EIS does note that coal dust near the ore docks has the potential to be deposited on ice or snow surfaces, and to subsequently decrease the ice's albedo and increase the short wave radiation absorption, potentially resulting in an accelerated melt during spring. Please assess the impacts and mitigation arising from a similar deposit of black carbon throughout the length of the shipping transit through the study area.

5 **Reference:** (i) Guidelines and addendum for the preparation of an IES, Subsection 8.1.11, 'Birds'
(ii) Guidelines and addendum for the preparation of an IES, Subsection 7.8, 'Cumulative effects'
(iii) Environmental Impact Statement, Volume 6 (birds with a marine component) and 9 (cumulative)

Preamble: The EIS states that "... *no large, conspicuous seabird nesting colonies were recorded in the Project's LSA ...*'. This is incorrect'; the LSA and the RSA do incorporate areas where colonies are present. For example, the Cape Graham Moore colony on Bylot Island, which includes some 30,000 pairs of Thick-billed murres and 3,000 pairs of Black-legged kittiwakes. Similarly, nearby is the Buchan Gulf colony, which includes some 25,000 pairs of Northern fumars. Additionally, the area is known for having large aggregations of birds during migration, including the endangered Ivory gulls.

Moreover, it is quite possible that more colonies and sensitive species are present, but that at this time are unknown.

The EIS also states words to the effect of '*there have been no reports of noticeable long-term effects to birds in areas that have experienced the presence of sealift, navy, and cruise ships*'. The EIS appears to rely on this lack of reports to conclude that there is a lack of effects. However, it appears there has been very little if any actual monitoring for such effects.

Request: a) Please reassess the implications of the project on birds. Please include in this reassessment a closer consideration of such matters as disturbance during sensitive nesting and fledgling seasons, displacement, spills, and release of oily bilge waters or other contaminants. Please do so in the context of Sirmilik National Park and the proposed Lancaster Sound National Marine Conservation Area.

6 **Reference:** (i) Guidelines and addendum for the preparation of an IES, Subsection 8.1.13, 'Marine wildlife and marine habitat' (including subsection '3)', pertaining to the proposed establishment of a NMCA).
(ii) Guidelines and addendum for the preparation of an IES, Subsection 8.1.11, 'Birds' (those with a marine component)
(iii)Guidelines and addendum for the preparation of an IES, Subsection 7.8, 'Cumulative effects'
(iv)Environmental Impact Statement, Volumes 8 (marine), 6 (birds with a marine component), and 9 (cumulative)

Preamble: The EIS notes that "*shipping to Milne Port will only occur during open water periods and, therefore, no shipping-related effects to sea ice are anticipated along that route*". However, it is unclear what is meant by 'open water', or how much of this is likely to occur, or how much peripheral ice there will be. Note that very little information is provided in

the environmental impact statement about ice conditions in Milne Inlet, Eclipse Sound, and the northern route.

Request: a) Please clarify what is meant by 'open water'. Include in this clarification any enhancements to open water, such as pushing aside of ice flows (for example, during break-up, or when winds cause an accumulation) or encouragement of break-up (for example, when most of the route is open, but some sections of the route are slow to break-up).

b) Please also include a discussion of the effects of ship transit on peripheral ice (ice that is not in the channel used by the ships, but is still present along the periphery of the channel), and the consequent effect on seasonal habitat. Similarly, please assess the implications to ice-break up and ice-formation arising from such influences as ship wake.

d) Commensurately, please assess the environmental impacts of such actions and changes to ice.

We look forward to working with the Nunavut Impact Review Board and the proponent throughout the review. Please feel free to contact John Olyslager at 403-292-4775 or john.olyslager@pc.gc.ca if you should have any questions.

Sincerely,

N. Anilniliak

Nancy Anilniliak
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