

Environmental Protection Operations Directorate
Prairie & Northern Region
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ECCC File: 6100 000 011/001
NIRB File: 08MN053



January 10, 2022

via email at: info@nirb.ca

Karen Costello
Executive Director
Nunavut Impact Review Board
29 Mitik Street
P.O. Box 1360
Cambridge Bay, NU X0B 0C0

Dear Karen Costello:

RE: Environment and Climate Change Canada's Closing Statements to the Nunavut Impact Review Board for the Mary River Phase 2 Expansion Project Environmental Assessment

Environment and Climate Change Canada (ECCC) would like to thank the Nunavut Impact Review Board (NIRB) for the opportunity to participate in the hearing proceedings for the Mary River Phase 2 Project and would like to recognize the hard work of Board staff as well as the translators. ECCC would also like to thank the Proponent, the other interveners and community members for their participation and input.

Throughout the assessment process, ECCC has provided technical, science-based information and knowledge based on our mandate pursuant to the *Canadian Environmental Protection Act*, the pollution prevention provisions of the *Fisheries Act*, the *Migratory Birds Convention Act*, and the *Species at Risk Act*. These comments are intended to inform the assessment of this project's potential effects in the receiving environment and on valued ecosystem components.

As outlined in ECCC's final intervention to NIRB on January 18, 2021, ECCC had two outstanding final comments going into the public hearings:

1. ECCC-FC1 concerned Black Carbon Emissions; ECCC recommended that the Proponent require their shippers to use 0.1% sulphur Marine Gas Oil (MGO; distillate fuel) or equivalent-performing alternatives within the Canadian Exclusive Economic Zone (EEZ) to reduce black carbon emissions from project shipping. This recommendation has not been resolved by a commitment or condition from the Proponent, and thus remains outstanding.

2. ECCC-FC2 dealt with Acid Rock Drainage and Metal Leaching at the Waste Rock Pile, Quarries and Rail Line Rock cuts. ECCC agreed with the Proponent's request to further discuss and resolve our technical comments concerning sampling and assessment of acid rock drainage and metal leaching during the water license amendment process, and therefore, ECCC has no further comments on this item to provide to NIRB.

On April 8, 2021, ECCC provided NIRB with suggested wording for a proposed Term and Condition that would mitigate black carbon emissions resulting from the project by requiring ships to use MGO; distillate fuel. ECCC would like to revise the language of the proposed Term and Condition as follows in order to provide clarity concerning its geographic application (new additions in **bold**, deletions in strikethrough):

The Proponent shall require ore carrier vessels to use 0.1% Sulphur Marine Gas Oil (MGO; distillate fuel) while they are travelling **to or from Milne Port through the geographic area that is described as Shipping Safety Control Zones 9, 10, 13 and 15 in the Shipping Safety Control Zones Order, C.R.C., c. 356**~~through the Canadian Exclusive Economic Zone (200 nautical miles from shore, inclusive of the Nunavut Settlement Area and Regional Study Area).~~ The Proponent may also use equivalent-performing alternatives to achieve mitigation of atmospheric black carbon emissions. An equivalent-performing alternative is a fuel that reduces black carbon emissions by at least 80% (the mitigation level provided by MGO) compared to emissions from the combustion of heavy fuel oil. Such an alternative fuel must be confirmed to achieve this standard by a consensus-based internationally recognized scientific report such as the 4th IMO Greenhouse Gas Study, Arctic Monitoring and Assessment Programme under the Arctic Council, or the United Nations Framework Convention on Climate Change. Reporting Requirements: The Proponent shall provide vessel fuel records (including fuel identification, locations of fuel changes, and quantity consumed) to the Nunavut Impact Review Board as part of their Annual Report, for review.

The effects of global climate change are particularly evident in Canada's North, as temperature increases across the region have occurred at roughly three times the average global rate. Black carbon emissions contribute to climate change indirectly, as black carbon causes warming in the air column, and directly by accelerating sea-ice melt due to the phenomenon known as the albedo effect. The albedo effect is caused when the whiteness of the surface of snow and ice is decreased, causing increased sun absorption and therefore increased snow and ice melt. Snow and ice melting in the Arctic is already affected by climate change, and black carbon deposition in the Nunavut Settlement Area (NSA) from the project will exacerbate the issue.

ECCC's recommended Term and Condition will mitigate the effects of project-related shipping, focused on the portion of the EEZ that is within Canada's Arctic, as black carbon emissions emitted within this area will have an impact on the NSA. ECCC's recommendation would result in a reduction of black carbon emissions from the project by approximately 80% compared to the scenario of vessels using heavy fuel oil and would reduce the project's impacts on the NSA. The amended language in ECCC's recommended Term and Condition does not change the overall objective. The revisions are meant only to more explicitly define the area to which the Term and Condition should apply, that being the portion of the Canadian EEZ that is within Canada's Arctic

(defined as Shipping Safety Control Zones 9, 10, 13 and 15 in the *Shipping Safety Control Zones Order*, and herein referred to as the northern Canadian EEZ).

The Proponent made a Commitment (#235, filed April 9, 2021 and in updated commitments October 26, 2021) to require all ore carriers to use lighter distillate fuels (MGO or equivalent) within the NSA. The Proponent's commitment was further outlined in scenario 5 of their September 10, 2021 Written Comments. However, based on Baffinland's analysis this commitment would only reduce emissions by about 1.4 tonnes per year between 2025-2029 (62%) compared to ECCC's proposed Term and Condition (scenario 3) which would reduce black carbon emissions by about 4 tonnes per year (81%).

Due to the long-range transport of black carbon in the atmosphere, ships travelling throughout the northern Canadian EEZ will emit black carbon that will be deposited within the NSA. ECCC has studied and published¹ an assessment of the potential contributions of black carbon emissions from shipping in Canada's Arctic. ECCC found that although the highest atmospheric loading and deposition of black carbon from shipping are within a narrow band near shipping routes, the impacts are measurable on a regional scale. The combination of Arctic meteorology and the residence time of black carbon in the atmosphere results in shipping-related emissions being detected over the entire Eastern High Arctic, with peak impacts on Eastern Baffin Island. This project in particular is predicted to result in a 157% increase in shipping-related black carbon emissions, which without mitigation will impact the NSA. In order to minimize the regional impacts from project-related shipping on the NSA it would be necessary to mitigate the emissions throughout the entire northern Canadian EEZ rather than the narrower band of the NSA or territorial sea as committed to by the Proponent.

The United Nations International Maritime Organization (IMO) has recognized the urgency for the marine shipping industry to reduce greenhouse gas emissions broadly. Following the November 2021 meeting of the Marine Environmental Protection Committee (MEPC) the IMO adopted a Resolution, which Canada co-sponsored, urging shipping companies to switch to fuels that will emit less black carbon (MEPC.342(77), November 29, 2021). The resolution encourages Member States to address the threat to the Arctic from black carbon emissions, and recognizes the importance of ship operators to use distillates or alternative fuels to reduce black carbon emissions from ships operating "in or near the Arctic". ECCC's recommended Term and Condition is therefore specifically applicable to ships used by the Proponent for this project and it is consistent with international efforts to lower black carbon emissions both in or near Arctic waters.

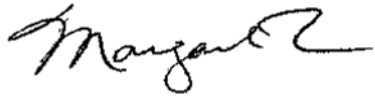
Environment Climate Change Canada looks forward to the Board's Final Report.

If you need more information, please contact Melissa Pinto at (867) 445-5384 or Melissa.Pinto@ec.gc.ca.

¹ Gong et al., 2018 Atmos. Chem. Phys., 18, 16653–16687, 2018

<https://doi.org/10.5194/acp-18-16653-2018>

Sincerely,

A handwritten signature in black ink, appearing to read "Margaret", followed by a stylized flourish.

Margaret Fairbairn
Acting Regional Director, EPOD-PNR

cc: Jody Small, Acting Head, Environmental Assessment North (NT and NU)