BAFFINLAND'S MARY RIVER PROJECT

INFORMATION REQUEST

FROM CANADIAN TRANSPORTATION STAFF

The Canadian Transportation Agency is an independent tribunal of the Government of Canada responsible for the approval of railway constructions under the legislative authority of Parliament. In 2008, the proposed construction of the rail line to service Baffinland's Mary River Mine Project was deemed to be subject to such an approval. Before it can review an application for the approval to construct and operate a railway line pursuant to Section 98 of the Canada Transportation Act, the Agency must ensure an environmental assessment has been completed. Agency staff are therefore participating in the environmental assessment of this project.

Following a review of the Environmental Impact Statement for the Mary River Project, Agency staff submit information requests regarding:

- the permafrost and the railway,
- emergency responses to a potential train derailment,
- railway noise and vibrations,
- potential collisions of caribou and trains,
- clarifications regarding railway components of the project

PERMAFROST

1. In volume 9, it is indicated (table 9-2.4) that geotechnical investigations would be relied upon to circumvent potential problems with ice rich soils, seismicity, floods, embankment stability, stability of overburden cuts, and of major rock cuts, bridges stability and tunnels stability. This could go as far as changing the alignment of the track.

   It is indicated that culverts and bridges would be designed to a return period of 1:200. *Please indicate if there are hydrology records extending over such a long period of time.*

EMERGENCY RESPONSE

2. Volume 10 describes Baffinland's environmental management system. The system includes policy orientations, roles and responsibilities for environmental protection, adherence to a precautionary approach to risk assessment, and the identification of certain regulations. Section 6.0 describes the company's Emergency and Spill Response Plan, including roles and responsibilities of key interveners in the event of a spill. Subsection 6.3.4 mentions that "An appropriate number of site personnel are

selected and appropriately trained to form the Emergency Response Team". Training will be provided and emergency response exercises conducted.

Train derailments do not seem to be covered as a possible source of spills of hazardous materials. The project site is remote and subject to rigorous winter conditions for most of the year. Distances and weather conditions may delay the deployment of emergency response personnel and resources – particularly those from outside the region that would be readily available in southern regions of the country. Although the presence of ice will prevent the immediate entry of petroleum products or other hazardous materials into water bodies, blowing snow may very quickly cover such spills and make it difficult to later locate and clean them.

How would human and material resources be quickly deployed to the site of a train derailment where fuel would have been spilled in proximity to a water body along the railway corridor? The EIS should describe tangibly how resources can be deployed to respond to environmental emergencies. This should include the deployment of Baffinland personnel and of outside resources when required.

RAILWAY NOISE AND VIBRATION

(The Agency's expertise and mandate are in regard to noise and vibration impacts to humans.)

3. Volume 5 - Atmospheric Environment, page 83 of 136, the last paragraph indicates a ground absorption of 0.8 for summer conditions was assumed.

   Please specify the ground absorption coefficient used for winter conditions and over water.

4. Volume 5 - Atmospheric Environment, page 88 of 136, third paragraph states "*...*consideration should be given to these dwellings, as it is important for worker health to maintain an adequate sleep environment....due to the nature of this project, a rating of NCB 33 or less is recommended for the work camps". Potential mitigation measures include relocation or reorientation of the dwellings, berms or noise walls, and upgraded building construction. Then on page 103 of 136, predicted worst-case sound levels at the worker accommodation building are presented in Table 5-3.9 as overall dBA values (which are assumed to be 1-hour outdoor L_{eq} values). There is a disconnect between pages 88 and 103 because the sound levels are presented as different units. Although there is reference to an indoor criterion of NCB 33, an evaluation of indoor noise at the worker accommodation building was not presented.

   The proponent should provide indoor sound levels at the worker accommodation building. Please describe if any of the proposed mitigation measures will be implemented into the design.

5. Comment 4 also applies to the Milne Port and Mine Site.

6. ISO and CSA standards suggest that certain noise characteristics may affect how people perceive sounds (e.g. low frequency content, tonality, and impulsiveness). These noise characteristics can be annoying and disruptive to people.

   Please indicate if any adjustment factors were applied to the predicted noise levels. Please provide a rationale if adjustment factors were not considered.

7. Volume 5 - Atmospheric Environment, page 91 of 136, second paragraph states that "*Construction noise effects are temporary in nature*".

   The proponent should clarify the duration of construction activities at Milne Port, Mine Site, and Steensby Port.

8. Volume 5 - Atmospheric Environment, page 103 of 136, states that the "Worst-case predicted operational noise levels are summarized in Table 5-3.9. Graphical representation of summer and winter operations is provided in Figures 5-3.9 and 5-3.10, respectively". According to Figure 5-3.9 on page 101 of 136, there does not appear to be any activities occurring in the rail yard, next to the accommodation complex.
   Please clarify why rail yard activities were not included in the worst-case operating scenario for the accommodation complex. It should be noted that a worst-case scenario of the Local Study Area (LSA) is not necessarily a worst-case scenario at the accommodation complex.

9. Comment 8 also applies to the Milne Port and Mine Site.

10. Volume 5 - Atmospheric Environment, pages 89, 90, and 92 of 136, state that construction noise may be “moderate to loud”. Given the location of the Milne Port and Steensby Port along the shoreline, there is some concern that noise due to construction may travel efficiently over water (due to reduced absorption and the effects of wind and temperature inversions).

    Please indicate if there are any noise sensitive receptors across or along the shoreline of the Milne and Steensby Ports, beyond the 3 km LSA.

POTENTIAL COLLISIONS OF CARIBOU AND TRAINS

11. In volume 6, p. 129, it is stated that caribou may use gravel roads in their efforts to avoid harassment from insects. Would the railway line not serve the same purpose? On p. 142 it is also stated “that snow accumulation [along railway] will likely facilitate caribou movement”. Although it is acknowledged that caribou mortality from collisions with trains may occur, little is said of the probability that caribou will use the railway as a trail and be on the line when a train passes. On p. 147, the EIS concludes that

"Currently, the caribou are in a trough of a population cycle. Consequently, a very low probability of direct project-related mortality is expected".

On what other factors, besides the limited number of caribou in the region, are these conclusions based?

12. *Who would provide the "repeated on-site observations of caribou behaviour along the transportation corridors" that would monitor caribou mortality and assess the need to "increase traffic controls including seasonal traffic limitations" proposed on p. 147?*

13. It is indicated (p. 139) that aerial surveys regarding caribou were conducted in 2010. Based on the surveys and other sources of information, fifty-two current caribou trails, 'key crossings', and 'broad crossing areas' were identified. It was concluded that "While most of the areas do contain small sections that may be barriers to caribou movement, overall caribou movement in the key and broad crossing area will not be affected by physical barriers". In some areas where embankments would be steep, it is proposed to make their inclination gradual and that fine fill material be placed to facilitate the crossing of caribou.

    What evidence exists of the permanence of these trails and crossing areas? Could the embankments adapted to facilitate crossing turn out to be underused while other sections of the railway line may turn out to be significant obstacles to caribou movement.

CLARIFICATIONS REGARDING RAILWAY COMPONENTS

14. **Number of bridges -** In Appendix 1B - 3 : p. 9 of 46: (French version - Popular Summary) "**Douze ponts** seront construits, les plus grands étant ceux qui traversent la rivière Ravn et le lac Cockburn...".

    In Appendix 1B - 2: p. 6 of 41: (English version - popular summary)."... The railway consists of a rail embankment, **wooden ties**, and steel rails. A total of **24 bridges** will be constructed for the railway, two tunnels, and extensive rock cuts along Cockburn...".

15. **Number of trains** - In Appendix 5C - 4: p. 12 of 32: "... The trains will have 4400 bhp engines, 2 locomotives and **110 wagons per train.**.."and under Schedule of Operations:"... **6 trains per day** will travel the railway corridor (145 km) between the Mine Site and Steensby Port ...".

    In Appendix 5C - 4 : p. 32 of 32: Table 5C-4-3-4: Qualitative Assessment of Fugitive Dust Emission from Train Operation: in Table 5C-4-3-4b. Fugitive Dust Emission from Trains: it is indicated: Total Emissions @ **144 Ore Cars and 2 Loaded Trips / Day (Tonnes)**

16. **Railway ties -** In Appendix 2A-2 p. 144 of 703: under reference 12: Matthew Pickard (Baffinland): “The substance they use in the south is called creosote and it makes the ties last longer. We will not be using creosote for this project. We are looking at using **cement or steel ties** with no chemicals. Good question.... "

    In Appendix 1B-3, p. 9 of 46: (French version of popular summary)" ... La voie ferrée consistera en un remblai pour la voie (lit de rail), de **traverses en bois** et de rails en acier...."

17. **Number of cars -** In Appendix 2A-2 p. 159 of 703: under reference 14:)"Matthew Pickard (Baffinland): Yes, one train will have **145 cars.**

Gatineau, Quebec
March 17, 2011