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APPENDIX

Socio-Economic Comments

The GN acknowledges the work done by Baffinland to establish the Mary River Socio-Economic Monitoring Working Group (MRSEMWG) and the ongoing effort to develop a monitoring program. The GN looks forward to continued collaboration between the MRSEMWG to finalize this socio-economic monitoring program.

Environment and Human Health Comments

The Government of Nunavut has identified a number of issues where current monitoring or mitigation efforts are insufficient or ineffective. It is important for Baffinland to work closely with the GN to resolve these issues as quickly as possible.

5.5 PERFORMANCE ON COMPLIANCE WITH AUTHORIZATIONS

5.5.3 Agency Inspections

In Table 5.4, the column for “Relevant Authorization/Legislation” is left blank for the GN Department of Health. The authorization/legislation should say: regulations under the *Public Health Act*.

5.6 COMPLIANCE WITH PROJECT CERTIFICATE

5.6.1 NIRB’s 2013 Site Visit

NIRB site visit:

“Condition 8 requires that air quality monitoring be performed at Mary River and Steensby Inlet Port site to demonstrate that pollutant emissions are within predicted levels. The Monitoring Officer noted that air quality monitoring stations had not been set up in order to collect air quality data.”

Baffinland response:

“As noted in Section 7.2, air quality monitoring was not implemented in 2013 given that construction activities were undertaken in the second half of the year only, focused on basic site capture. Air quality monitoring will be conducted in 2014 now that basic construction phase project infrastructure is in place.”

From section 7.2.1.2 (7.2 Atmospheric Environment):

“Since site capture activities were carried out only in the last five months of the year, the level of activity at the mine site was well below that expected in 2014 and predicted in the FEIS. Therefore, air quality monitoring was not justified to verify impact predictions. SO₂ and NO_x monitoring will be undertaken when site layouts and main infrastructure are built. Power generation is still ramping up. Baffinland plans to conduct SO₂ and NO_x monitoring in 2014.”

Term and Condition 8 is designated for the project phases of construction and operation, so it is unclear why the Proponent did not implement air quality monitoring in 2013, even with construction activities only occurring during part of the year. The GN expects the Proponent to start conducting air quality monitoring as soon as possible to be in compliance with this term and condition.

7.4 TERRESTRIAL ENVIRONMENT MONITORING

7.4.1.2 Vegetation Monitoring

Grazing/Browsing exclosures have not been deployed, although this is planned for summer 2014 as mentioned in Appendix G (2013 Terrestrial Annual Report) under section 2.4:

“Monitoring efforts in 2014 will expand to include vegetation abundance and species richness surveys for vegetation species used as caribou forage (such as lichens) near Project development areas. Vegetation parameters will focus on percent cover and/or biomass measures and will address concerns in regards to vegetation health, as well as wildlife and humans that may consume vegetation. Vegetation abundance monitoring is the final program to address effects to vegetation from Project related activities.”

This is to comply with Term and Condition 36 which states that “the Proponent shall establish an on-going monitoring program for vegetation species used as caribou forage (such as lichens) near Project development areas, prior to commencing operations.” The GN recommends this monitoring to start as soon as possible.

Appendix N1 TEMMP - Section 5.0 Reporting:

“Baffinland’s Environment Department will prepare an annual summary report on the status of the terrestrial environment. A detailed report illustrating trends of measurable parameters will be prepared every 5 years or as deemed necessary between all agencies and partners. Project terms and conditions regarding reporting requirements will be complied with and appropriately integrated into the annual report.”

Term and Condition 35 states that:

“The Proponent shall undertake monitoring of baseline metal levels in organ tissue from caribou harvested within the local study area, prior to commencing operations. The proponent is strongly encouraged to coordinate with local Hunters and Trappers Organizations regarding procurement of harvested caribou organs.”

In the event that Baffinland’s monitoring detects elevated levels of contaminants in country food, the GN recommends that before the public release of data, the results and analysis of metal levels in caribou organs be communicated to the GN Department of Health to determine if the levels warrant a public health concern, and possibly the issuance of consumption advisories or warnings to the general public. Only the GN Department of Health should issue such warnings.

7.4.1.3 Birds

The high variability of nesting rough-legged hawks, low number of gyrfalcons (not more than three nesting pairs seen in any year), and tolerance of peregrine falcons for disturbance suggest that past and current monitoring efforts are not interpretable. There does not appear to be any clear rationale for monitoring project impacts on these species. Mitigation of impacts by management of mine activities in the vicinity of nests does appear to be effective so far. More specific recommendations regarding bird monitoring were provided during the Terrestrial Environmental Working Group (TEWG) meeting in April, 2014.

7.4.1.4 Mammals

“Caribou were identified as the focal species upon which potential Project effects on wildlife will be evaluated due to their importance to local people and in consideration of their ecological role as the only ungulate on Baffin Island. Mammal work completed in 2013 included: Height-of-Land (HoL) caribou surveys, caribou fecal pellet collection, and incidental observations.”

Unfortunately, there is no methodology provided to show how the HoL surveys and incidental observations will do more than potentially provide *ad hoc* observations of avoidance behavior. The GN views the HoL surveys and incidental sightings insufficient for monitoring or mitigation of Mary River Mine impacts. Baffinland should work with the GN to implement programs that will be more effective in monitoring potential impacts.

Appendix N1 Terrestrial Environment Monitoring and Management Plan (TEMMP): section 4.5.3 caribou mortality:

“Project-related mortality on caribou will be tracked along with other wildlife species as part of the general wildlife monitoring (see Section 4.7). Additionally, Baffinland will monitor the potential for increased caribou mortality as an indirect result of the Project through increased harvester knowledge. This will be accomplished through tracking the number of hunters passing through and using the camp, and through a multi-year hunter harvest study which will include a summary of annual caribou harvest in the region. This hunter harvest study will be sponsored by Baffinland and done in coordination with local HTOs and the Government of Nunavut Department of Environment (GNDoE).”

Despite this section from Baffinland’s TEMMP, the impacts from increased access and sightability of caribou were neither acknowledged nor addressed. During the April 23, 2014 Terrestrial Environment Working Group (TEWG) meeting, Baffinland shared their hunter harvest log, which is a record of the hunters passing through and using the camp. In the year 2013, Baffinland recorded 76 caribou killed in this hunter harvest log.

It is understood that Baffinland does not have the authority to prohibit hunting by NLCA beneficiaries and that the mine site and surrounding area are part of a traditional caribou hunting area. The access impact is not to cause caribou hunting where caribou hunting did not occur previously. Rather, the impact is from an increase in the efficiency of hunters by communication of caribou sightings during mine activities, faster transit times to the hunting areas, reduced requirement for land skills (including navigation), safe camping in winter weather, and logistical assistance for fuel, food, and machine parts. The access impact has not caused caribou to decline to the current low numbers, but the access impact is contributing to the continued decline of caribou

in the North Baffin area by causing more caribou to be taken than would have been if the mine infrastructure had not been constructed.

Baffinland's position is that the port, mine site, tote road and railroad (all constructed within the core area for North Baffin caribou) do not constitute an impact on North Baffin caribou because caribou harvesting is not part of the mine operation. Given the very low numbers of North Baffin caribou remaining, preliminary estimates suggest that the increased legal harvest associated with the mine site infrastructure may be sufficient to prevent recovery of the population without immigration from South Baffin areas.

The harvest management authority for Nunavut caribou is GN Department of Environment subject to the decision process described in the NLCA. The GN strongly believes that the appropriate response for Baffinland to monitoring and mitigating this impact is to support GN population monitoring programs and to support/collaborate in any GN harvest population monitoring initiatives.

In section 7.4.2 (Predicted Effects Evaluation), Baffinland indicates that "Robust statistical procedures are being used to determine the efficacy of survey data to detect Project-related changes in the terrestrial environment." This statement seems to be true for contaminant and dust impact work, and for some terrestrial bird surveys. However, we see no statistical analyses for cliff nesting raptors, caribou, or other terrestrial mammals. Mitigation seems to occur as a circumstantial response to individuals or groups of individuals, but there is no coordinated mitigation plan in place. We feel that necessary monitoring and mitigation is occurring for some but not all species. In particular we find monitoring and mitigation work for caribou impacts is insufficient. Baffinland should work closely with the Government of Nunavut to ensure adequate monitoring and mitigation for this important species is taking place.

Appendix A – Concordance to Project Conditions: Term and Condition 35: the report reference listed is Section 7.4.1.4, but no mention of Term and Condition 35 or baseline metal levels in caribou organs monitoring is contained in this section, nor section 7.4.1.2 (vegetation monitoring).

7.5 MARINE ENVIRONMENT MONITORING

7.5.1 Marine Wildlife

There is no direct mention of NIRB conditions for polar bears in either the initial or early revenue certificates, instead the term "marine mammals" is found throughout the project certificate document. However, both condition 105 and 120 do mention polar bears as follows:

"Commentary: Unless otherwise stated, the term "marine mammals" as used throughout the Project Certificate includes polar bears."

The Annual Report confirms that Baffinland's contribution to monitoring and mitigation of impacts on polar bears was not significant. The GN does not consider the current Baffinland approach to polar bear monitoring and mitigation to be sufficient or consistent with the current NIRB certificate conditions which direct that polar bears will be treated equally to the other marine mammals. Polar bears are the only species listed under Schedule 1 of the *Species At Risk Act* of all Baffinland impacted marine mammals.

The GN disagrees with Baffinland's conclusions in 7.5.3 because Baffinland has done nothing (independently or cooperatively) to: "strengthen baseline (background knowledge on natural variability) and refine study designs" for polar bears. There have been no "supplemental baseline surveys and pilot scale monitoring" for polar bears. Polar bears are currently recorded incidentally when conducting surveys of other marine mammals, such as narwhal. On this basis, it does not seem reasonable to assume that "mitigation measures are effective" (7.5.4).