Indian and Northern Affairs Canada
Affaires indiennes et du Nord Canada

Water Resources Division
Nunavut Regional Office
Iqaluit, NU X0A 0H0

Our File: 9545-3-2MRYG / CIDMS 152016
Your File: 2BE-MRY

June 6, 2007

Richard Dwyer
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Nunavut Water Board
Gjoa Haven, NU X0B 1J0

Re: 2BE-MRY / Baffinland Iron Mines Corporation / Mary River Project / licence amendment application

On behalf of Indian and Northern Affairs Canada (INAC) I have reviewed the above-mentioned application. The following specialist advice has been provided pursuant to INAC's mandated responsibilities for the enforcement of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (NW&NSRT), *Arctic Waters Pollution Prevention Act* (AWPPA), and the *Department of Indian Affairs and Northern Development Act* (DIAND Act).

Baffinland Iron Mines Corporation (Baffinland) is applying for an amendment to its current Mary River Project Type B licence to allow the operation of a bulk sampling program. The project's current licence is specific to geotechnical and mineral resource exploration activities within the project area. The Mary River Project area is situated in the Qikiqtani Region having a general coordinate of 71˚18'30" north latitude, and 79˚23'30" west longitude. This proposed project was screened by the Nunavut Impact Review Board (NIRB) who provided a positive approval decision on May 4th, 2007.

Indian and Northern Affairs Canada recommends that the following comments be considered when reviewing this licence amendment application.

- The NIRB Screening Decision Report recommends that all geochemical analysis results pertaining to the waste rock and ore body samples must be reviewed by the NWB prior to the issuance of a water licence. This review includes an acid rock drainage analysis of an additional 25 waste rock and ore samples that were sent for review in April 2007. INAC requests that that any written documentation pertaining to a NWB review of submitted geochemical analysis results be posted on the NWB public registry.

Canada

Baffinland Iron Mines Corporation provided a Bulk Sampling Program Environmental Screening Document for review. Comments are identified by sections presented in the report.

SECTION 2 - PROJECT DESCRIPTION

2.16 - CAMP AND RELATED FACILITIES

2.16.1 - Mary River Camp

- The proponent states that existing pit latrines will be used for the treatment of sewage and gray water generated at the Mary River Camp until an approved packaged sewage treatment plant is installed. INAC recommends that the proponent estimate the impact of pit latrine use and alternative treatment methods to surface water quality. The proposed 100 person occupancy of the Mary River bulk sampling program camp is quite large and domestic wastewater disposal may negatively impact surrounding freshwater sources if not managed properly (as much as 25 cubic metres of domestic wastewater will be released into pit latrines on a daily basis). Should the environmental impact of alternative wastewater treatment practices be more acceptable than that of pit latrines, the proponent would be expected to implement such practices to demonstrate its responsible management of waste products.

2.19 - WASTE MANAGEMENT

2.19.1 - Landfill Design Considerations

- Baffinland should provide a detailed analysis of the areas in which it may establish a non-hazardous solid waste landfill. Such an analysis should describe the landfill's proximity of local freshwater sources, site access, and an evaluation of ground surface characteristics. INAC is appreciative of the proponent's intention of establishing a landfill on non-frost/thaw susceptible soils that are generally free draining. However, detailed information is required to instil confidence that the landfill will be adequately designed.

2.19.2 - Proposed Landfill Design Parameters

- Baffinland should state whether any precipitation runoff diversion berms will be constructed to protect the integrity of land-filled non-hazardous solid waste.

- Baffinland should explain why a precipitation runoff collection area is not considered to be a necessary landfill design component. Empty oil pans and fuel tanks will be placed in the landfill. Should hydrocarbons or trace metals be leached from the landfill area, INAC expects that the proponent will implement adequate effluent treatment measures to protect the quality of receiving

freshwater sources. The proponent is encouraged to abide by the Canadian Council of Ministers of the Environment Guidelines for the Protection of Freshwater Quality in its operation of a non-hazardous solid waste landfill.

SECTION 6 - IDENTIFICATION OF IMPACTS AND PROPOSED MITIGATION

6.1 - PHYSICAL ENVIRONMENT

6.1.4. - Hydrology/Limnology

6.1.4.1 - Potential Impacts

- INAC is appreciative of Baffinland's preliminary evaluation of baseline water quality and limnology characteristics at Sheardown Lake. Baffinland indicates that the use of a packaged sewage treatment plant is anticipated to release effluent into this lake with biochemical oxygen demand and total suspended solid concentrations of 20 milligrams per litre. The proponent should demonstrate that the quality of treated effluent will not be detrimental to Sheardown Lake. The Environmental Screening Report lists potential issues associated with the discharge of treated sewage effluent to aquatic ecosystems but does not provide any analysis for consideration (e.g., nitrate and ammonia release may be toxic to aquatic life).

- Baffinland should provide design specifications of the packaged sewage treatment plant that it intends to use at its Mary River Camp. In addition, the provision of effluent quality results from this system's use by other operators would be beneficial to understand its efficiency.

- Baffinland states that the impact of released treated sewage effluent in Milne Inlet is likely to have localized impacts that are negligible or small owing to the rapid dilution and low rate of anticipated effluent discharge. INAC recommends that a detailed analysis of the impact of treated sewage effluent in Milne Inlet be provided, considering the characteristics of the receiving marine environment, the quality of treated sewage effluent, and the hypothesized mixing zone.

6.1.5. - Water Quality

6.1.5.1 - Potential Impacts - Release of Runoff from Bulk Sampling Pits

- Baffinland should develop a blasting operations quality control plan to promote efficient use of explosives. Residual ammonia-nitrogen generated from blasting can harm the quality of local freshwater sources. Relying on particle dispersion and volatilization is not an adequate means of mitigation. INAC recommends that a plan be devised which will monitor the results of explosive

use and outline specific measures to reduce the generation of residual ammonia-nitrogen if necessary.

6.1.5.2 - Proposed Mitigation

- Baffinland has indicated that excavated ore may have the potential to generate acid or leach metals. INAC recommends that a geochemical analysis of the ore properties be conducted to gain an understanding of its potential to harm the quality of freshwater when exposed to oxygen and water as well as to determine what detailed mitigation measures are required to control potential acidic and metal leachate. INAC also recommends that a detailed geochemical analysis of the calcareous sandstone and its interaction with acidic and metal leachate to determine whether its application to the bulk sample pits and stockpile areas is adequate.

SECTION 8.0 - MONITORING PLAN

8.3 CONSTRUCTION ENVIRONMENTAL MONITORING PLAN

- Baffinland should provide a copy of its proposed Construction Environmental Monitoring Plan for review. INAC understands that the aim of this plan is to outline environmental commitments, requirements, and best practices to ensure effective implementation of environmental protection measures. A copy of this plan should be reviewed to demonstrate the capability of Baffinland to mitigate human induced impacts to the quality of freshwater that are considered detrimental. This plan should clearly indicate which aspects of the proposed bulk sampling program it is applicable to and which project personnel are responsible for its implementation.

8.6 - WATER QUALITY

8.6.4 - General Site Drainage and Stormwater

- Baffinland should specify how it will determine when it is necessary to treat water collected within fuel tank farm containment areas and the means of treating contaminated water.

- The proponent should describe how it intends to release water collected in fuel tank containment areas (i.e., Will any sedimentation control measures be implemented?).

Indian and Northern Affairs Canada requests notification of any changes in the proposed project, as further review may be necessary. Please contact me should you have any questions or comments with regards to the foregoing. I can be reached by telephone at (867) 975-4555 or by email at abernethyd@inac-ainc.gc.ca.

Sincerely,
Original Signed

David W. Abernethy
Water Resources Coordinator

Cc. Jim Rogers, Manager of Water Resources – Indian and Northern Affairs Canada, Nunavut Regional Office