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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

EXPLORATION/ REMOTE CAMP SUPPLEMENTARY QUESTIONNAIRE

Applicant: Baffinland Iron Mines Corporation **Licence No:** _____
(For NWB Use Only)

ADMINISTRATIVE INFORMATION

1. Environment Superintendent: Cheryl Wray
Tel: (416) 364-8820 Fax: (416) 364-0193 E-mail: cheryl.wray@baffinland.com
2. Project Manager: Al Gorman
Tel: Office (416) 364-8820 Fax: (416) 364-0193 E-mail: al.gorman@baffinland.com
3. Does the applicant hold the necessary property rights? **Yes**
4. Is the applicant an 'operator' for another company (i.e., the holder of the property rights)?
If so, please provide letter of authorization. **No**
5. Duration of the Project

<input type="checkbox"/>	One year or less
<input checked="" type="checkbox"/>	Multi Year:

Start and completion dates: _____

If Multi-Year indicate proposed schedule of on site activities

Start: January 1, 2008 Completion: December 31, 2010

CAMP CLASSIFICATION

6. Type of Camp

<input type="checkbox"/>	Mobile (self-propelled)	March through October
<input checked="" type="checkbox"/>	Temporary	
<input checked="" type="checkbox"/>	Seasonally Occupied	
<input type="checkbox"/>	Permanent	
<input type="checkbox"/>	Other	

Steensby Inlet and Rail Camps

7. What is the design, maximum and expected average population of the camp?

The number of on-site workers varies both seasonally and between years. 2008 represents the peak year of activity within the scope of the current work program, including the addition of the drills and support camps proposed with this application. In 2008, the total number of workers on site (including all camps) is estimated to average approximately 200 people and peak at approximately 315 people. The number of people based out of the Rail and/or Steensby Inlet Camps may be higher than 40 (i.e. closer to 45 or 50) during peak times.

Whereas Mary River and Milne Inlet Camps are operated throughout the year in support of the bulk sample program, the proposed Steensby and Rail Camps are expected only to operate seasonally. The 8-12 person fly camp at Deposit No. 4 (when established) is also only a seasonal operation.

8. Provide history of the site if it has been used in the past.

Seasonal camps for approximately 8-12 people were designated in previous applications for Steensby Inlet and Deposit No. 4. In 2007, a seasonal camp was established at Steensby Inlet to support on-ice port site drilling and geotechnical drilling in the general southern areas of the potential rail alignment. A camp at Deposit No. 4 has not yet been established. The area selected for the Rail Camp does not show any evidence of previous use.

CAMP LOCATION

9. Please describe proposed camp location in relation to biogeographical and geomorphological features, and water bodies.

Rail Camp: This camp is situated on an outwash plain of sand and gravel, approximately 35 m from a nearby lake with gently sloping banks along the shoreline.

Steensby Inlet Camp: This camp is situated on an outwash plain of sand and gravel, more than 35 m from the high tide mark.

10. How was the location of the camp selected? Was the site previously used? Was assistance from the Regional Inuit Association Land Manager sought? Include maps and/or aerial photographs.

Rail Camp: The site is undisturbed. An archaeological survey of the site was completed in September 2007. No archaeological sites were identified.

Steensby Camp: The site was used as a camp by Baffinland in 2007. An additional archaeological survey will be completed to allow for expansion of the camp and installation of a potable water supply. The camp will remain within the existing footprint as much as possible.

See attached letter and figures for further details showing camp locations and layouts.

11. Is the camp or any aspect of the project located on:

<input checked="" type="checkbox"/>	Crown Lands	Permit Number (s)/Expiry Date	<u>N2006C0036/April 2009</u>
<input type="checkbox"/>	Commissioners Lands	Permit Number (s)/Expiry Date	
<input checked="" type="checkbox"/>	Inuit Owned Lands	Permit Number (s)/Expiry Date	<u>Q05L2C14/ Dec 2008</u>

Both camps are located on Crown Land and Baffinland is seeking an amendment to its current land use permit to incorporate these changes.

12. Closest Communities (direction and distance in km):

See attached figure

13. Has the proponent notified and consulted the nearby communities and potentially interested parties about the proposed work?

Yes.

Baffinland has, and continues to consult its stakeholders, including nearby communities as to its activities associated with the Mary River Project. The exploration, geotechnical, and bulk sample programs underwent NIRB Screenings under Part 4 of the Nunavut Land Claims Agreement (NLCA) which included consultation with communities and other stakeholders. Baffinland has established locally staffed community liaison offices in Clyde River, Pond Inlet, Arctic Bay, Igloolik and Hall Beach as one mechanism for ongoing information sharing. Public Meetings were held in September 2007 in each of these communities to discuss ongoing work at the Mary River Project including the submission of a detailed Project Description and associated regulatory applications in support of a full-scale mining proposal. Reference at these meetings was made to the need to make changes to existing permits in support of the current work at Mary River.

Senior management of Baffinland routinely meets with its stakeholders; regularly scheduled meetings with the Hamlet Councils in Igloolik and Pond Inlet in early December will include discussion regarding the proposed activities which are the subject of this application. Plain English/Inuktitut briefings to the communities are concurrently being circulated through our community liaison offices and radio announcements will be made notifying the public of these plans.

14. Will the project have impacts on traditional water use areas used by the nearby communities?
Will the project have impacts on local fish and wildlife habitats?

No

PURPOSE OF THE CAMP

15.

<input checked="" type="checkbox"/>	Mining (includes exploration drilling)
<input type="checkbox"/>	Tourism (hunting, fishing, wildlife observation, adventure/expedition, etc.)
(Omit questions # 16 to 21)	

☐ Other

16. Activities (check all applicable)

<input type="checkbox"/>	Preliminary site visit
<input type="checkbox"/>	Prospecting
<input checked="" type="checkbox"/>	Geological Mapping
<input checked="" type="checkbox"/>	Geophysical Survey (aerial magnetometer survey)
<input checked="" type="checkbox"/>	Diamond drilling
<input checked="" type="checkbox"/>	Reverse circulation drilling
<input type="checkbox"/>	Evaluation Drilling/Bulk Sampling (also complete separate questionnaire)
<input checked="" type="checkbox"/>	Other: <u>Geotechnical drilling; trenching; test pitting; geophysical surveys</u>

No new activities associated with exploration or geotechnical investigations are proposed with this application.

17. Type of deposit (exploration focus):

<input type="checkbox"/>	Lead Zinc
<input type="checkbox"/>	Diamond
<input type="checkbox"/>	Gold
<input type="checkbox"/>	Uranium
<input checked="" type="checkbox"/>	Other: <u>Iron Ore</u>

DRILLING INFORMATION

18. Drilling Activities

<input checked="" type="checkbox"/>	Land Based drilling
<input checked="" type="checkbox"/>	Drilling on ice

No new drilling activities are proposed with this application. Collectively, the ten (10) drills will be used for exploration and land and ice-based geotechnical investigations.

Exploration will continue on mining leases 2483, 2484, and 2485 (Deposit Nos. 1, 2, 3, 3B, and 4). Baffinland is currently negotiating an agreement with the NTI which may result in future drilling on lands adjacent to leases 2483 and 2484. Drilling on Deposit Nos. 1, 2, 3 and 3B are supported by the Mary River Camp, whereas an 8-12 person camp (included in the scope of previous permit applications but not yet established) will support preliminary exploration activities at Deposit No. 4.

Detailed geotechnical investigations (i.e. drilling and test pitting) will continue generally along the potential rail alignment between Mary River and Steensby Inlet, and for the mine site infrastructure, open pit overburden, potential wind and hydro-electric power sites, potential borrow pits, quarry sites and railway ballast, and port facilities at Steensby. Both land-based and on-ice drilling will be conducted. The geographic area of drilling is reduced from our 2006

application, with the removal of plans to drill additional holes at Milne Inlet. Drilling will generally be focused at Steensby Inlet, the potential rail alignment and borrow sources. On-ice drilling will be limited to the Steensby Inlet and various other locations which will be drilled under frozen conditions. Locations selected for bridge abutments along the potential rail alignment will require on-ice drilling. Final drillhole locations have not yet been confirmed, but approval to drill within 30 m of any watercourse will be sought from the NWB in accordance with the terms of the current license. Anticipated completion of a definitive feasibility study in 2007 requires continued geotechnical study to aid in mine planning process.

The number of holes drilled in any one season will be dependent on realized program efficiency, with the ultimate number of holes required for mine planning purposes determined based on field results.

19. Describe what will be done with drill cuttings?

Drilling activity already takes place under the scope of existing approvals. This application does not contemplate any changes to the management of cuttings. The management of cuttings is described in the existing Site Water Management Plan prepared under the terms of the water license.

20. Describe what will be done with drill water?

Drilling activity already takes place under the scope of existing approvals. This application does not contemplate any changes to the management of water. The management of drill water is described in the existing Site Water Management Plan prepared under the terms of the water license.

21. List the brand names and constituents of the drill additives to be used? Includes MSDS sheets and provide confirmation that the additives are non-toxic and biodegradable.

Additives used for exploration drilling are listed in the existing Spill Contingency Plan. This plan contains MSDS sheets for each additive and the plan is updated annually.

No additives are currently used for the geotechnical drilling activities. The use of sodium chloride based brine is currently being considered for geotechnical drilling investigations in the area of the future mine site infrastructure at Mary River. Should Baffinland seek to transition to add salt to the water used for geotechnical drilling, the existing Site Water Management Plan would be updated accordingly.

22. Will any core testing be done on site? Describe.

No changes are contemplated. Visual logging (at the drill) and minor rock strength testing (in core logging area, not at the drill) is completed on site for exploration core. For geotechnical drilling, visual logging is completed on site at the drill. Soil testing is completed in the lab at Mary River for index properties.

SPILL CONTINGENCY PLANNING

23. The proponent is required to have a site specific Spill Contingency Plan prepared and submitted with the application. This Plan should be prepared in accordance with the *NWT Environmental Protection Act, Spill Contingency Planning and Reporting Regulations, July 22, 1998* and *A Guide to the Spill Contingency Planning and Reporting Regulations, June 2002*. Please include for review.

The Spill Contingency Plan was updated in August 2007 and was submitted to the NWB for approval. This plan is updated on an annual basis and will be updated to incorporate changes discussed herein.

24. How many spill kits will be on site and where will they be located?

Spill kits of appropriate size and content are strategically placed at areas with the highest potential for risk of spills associated with Project activities. Spill kits are in place at each drill, at the fuel storage areas, and in areas that equipment is refueled. The Spill Contingency Plan provides further details on the Spill Kits used on-site.

Specific to this application, spill kits will be in place at the Steensby Inlet and Rail Camps, and with each of the additional drills proposed. At the camps, spill kits will be located adjacent to the fuel storage areas, helicopter refueling area, and adjacent to the diesel-electric generator used for site power. A spill kit will be in place at each exploration and geotechnical drill set-up.

25. Please describe the types, quantities, and method of storage of fuel and chemicals on site, and provide MSDS sheets.

The Mary River project is currently serviced by an annual sealift to Milne Inlet as well as regular air freight. Additional barrel fuel, if required, is sourced from the nearby communities of Pond Inlet or Igloolik. Whereas historically, the Mary River Project was serviced entirely by barrel fuel, in 2007, bulk fuel storage systems have been established to support the larger amount of fuel required by the bulk sample program. The 2007 sealift mobilized approximately 8,000,000 L of bulk and 264,000 L (1320 drums) of barreled P50; 250,000 L of bulk and 947,920 L (4740 drums) of barreled Jet-A; 8200 L (41 drums) of gasoline; and 1000 tonnes of drilling salt. Fuels (bulk and barreled) and lubricants are stored in lined containment areas at Milne and Mary River camps. A small, rotating cache of barrel fuel is maintained at Steensby Inlet in a lined containment area.

To support the 2008 drilling season, materials and supplies, including fuel will be mobilized from Milne Inlet and Mary River to the proposed camps at Rail Camp and Steensby Inlet. A sealift direct to Steensby Inlet is proposed to commence in 2008 to support the 2009 drill season. The Steensby Inlet sealift will supply annual fuel requirements for the Steensby Inlet and Rail Camps, through the use of barrel fuel.

Lined storage areas will be provided at the two noted camps of sufficient size to support an annual re-supply of the estimated volume of fuel required for a typical drilling season.

	Estimated Volume to be Stored at Each Project Location	
Fuel Type	Rail Camp	Steensby Inlet Camp
Diesel (P50)	200,000 L (1000 drums)	400,000 L (2000 drums)
Jet-A	200,000 L (1000 drums)	400,000 L (2000 drums)
Av-gas	None	None
Gasoline	2000 L (< 10 drums)	2000 L (< 10 drums)
Chemical Type		
Calcium chloride salt	None	None

MSDS sheets are included in the Spill Contingency Plan.

WATER SUPPLY AND TREATMENT

26. Describe the location of water sources.

See attached letter and figures for camp water source locations. Water sources for drilling will be provided to the NWB prior to use.

27. Estimated water use (in cubic metres/day):

<input checked="" type="checkbox"/>	Domestic Use:	Water Source:	See attached letter and figures
<input checked="" type="checkbox"/>	Drilling:	Water Source:	See attached letter and figures

No change to the amount of water allocated for drilling and other uses under the water license is requested. The drills used for both exploration and the geotechnical program (Longyear 38 and Longyear 70, or similar) use up to 45 litres/minute when operating, which equates to a theoretical maximum water draw of 585 m³/d if all drills ran continuously for 24 hours. However, this does not take into account the actual up time of the drills. Up time is a function of mechanical availability, utilization, and down time required to move the drills (a frequent occurrence for the geotechnical program). The water license requirement of 455 m³/d is equivalent to approximately 78% of the theoretical maximum water draw. Based on actual field experience, the drills are expected to operate at less than 78% up time and therefore are expected to meet the allocated water consumption for drilling of 455 m³/d (Part C, Item I). The total authorized volume of water of 535 m³/d (60 m³/d for potable water plus 455 m³/d for drilling plus an unallocated 20 m³/d) provides an additional contingency.

No change is requested to the amount of water allocated for domestic use. During use, each of the proposed satellite Steensby Inlet and Rail camps are estimated to require approximately 4 m³/d of domestic water based on a consumption rate of 100 litres/person/day (based on field experience) for camps using latrines at camp design capacity. The theoretical maximum water use based on current operating experience if all camps were operating at design population is as follows:

Mary River Camp: 34 m³/d (based on sewage plant design capacity)

Milne Inlet Camp: 13 m³/d (based on sewage plant design capacity)
Midway Camp: negligible (emergency shelter)
Deposit No. 4 Camp: negligible (8-12 person camp)
Rail Camp: 4 m³/d (based on 100 litres/person/day consumption)
Steensby Inlet Camp: 4 m³/d (based on 100 litres/person/day consumption)

If Steensby Inlet Camp is supplied with sea water treated using a desalination plant, its' consumption will not be reported as water use under the water license. Salt removed by the desalination system will be returned to Steensby Inlet.

28. Describe water intake for camp operations? Is the water intake equipped with a mesh screen to prevent entrapment of fish? (*see DFO 1995, Freshwater Intake End-of-Pipe Fish Screen Guideline*) Describe:

All water intakes (camp water supply and drill rig water pumps) will be equipped with fish screens.

29. Will drinking water quality be monitored? What parameters will be analyzed and at what frequency?

Yes, drinking water quality will be monitored. At least one drinking water sample has been collected from each potential water source for each camp. All drinking water samples will be analyzed according to the Canadian Council of Ministers of the Environment (CCME) Guideline for Canadian Drinking Water Quality. Once the camps are established and using the water, drinking water sources will be sampled weekly.

30. Will drinking water be treated? How?

Rail Camp: Drinking water will be treated using an ultra-violet (UV) disinfection system. The UV treatment system treats water that is drawn from holding tanks before use.

Steensby Inlet Camp: Drinking water, if sourced from the unnamed in-land freshwater lake will be treated using an ultra-violet (UV) disinfection system. Water, if sourced from Steensby Inlet will be treated using a pre-engineered reverse osmosis desalination treatment plant. Water from the desalination plant will be stored in tanks and treated using an ultra-violet (UV) disinfection system before use.

31. Will water be stored on site?

Yes, water for camp use will be stored in appropriately sized tanks.

WASTE TREATMENT AND DISPOSAL

32. Describe the characteristics, quantities, treatment and disposal methods for:

For each of the Steensby Inlet and Rail Camps:

- ☒ Camp Sewage (blackwater)
Outhouses will be provided with toilet wastes collected and incinerated
- ☒ Camp Greywater
Greywater will be disposed of in a sump established at each camp
- ☒ Solid Waste
Combustible solid wastes will be managed using a dual-stage forced air incinerator provided at the camp site.
- ☒ Bulky Items/Scrap Metal
Scrap metal and some plastics will be salvaged as much as possible. Any which can't be salvaged and any other bulky items or scrap metal will be transported to the Mary River Camp and disposed of in the proposed landfill site.
- ☒ Waste Oil/Hazardous Waste
Waste oil and other hazardous waste will be collected and returned to Mary River or Milne Inlet for transportation off site. Used batteries will be collected in a sealed container and transported off site to Montreal.
- ☒ Empty Barrels/Fuel Drums
Empty fuel drums will be crushed at Mary River and shipped off site for disposal or recycling.
- ☐ Other:

33. Please describe incineration system if used on site. What types of wastes will be incinerated?

A dual-stage, forced air incinerator will be provided at each of the camps. Kitchen and toilet wastes will be incinerated. Manufactured toilets (i.e. Pacto) will be used to collect toilet wastes for incineration.

34. Where and how will non-combustible waste be disposed of? If in a municipality in Nunavut, has authorization been granted?

Non-combustible wastes will be returned to the Mary River camp for disposal in the non-hazardous landfill contemplated in the existing water license. Hazardous and recyclable wastes will be returned to Mary River in preparation for shipment off site.

35. Describe location (relative to water bodies and camp facilities) dimensions and volume, and freeboard for all sumps (if applicable).

Greywater sumps will be located close to the kitchen and showers/laundry. The conceptual locations of these are shown on the attached figures. The dimensions, volume and freeboard of the sumps will be suitable for the anticipated greywater volumes for each camp.

36. Will leachate monitoring be done? What parameters will be sampled and analyzed, and at what frequency?

Not applicable; no leachate is expected at any of these camps.

OPERATION AND MAINTENANCE

37. Have the water supply and waste treatment and disposal methods been used and proven in cold climate? What known O&M problems may occur? What contingency plans are in place?

The camps proposed are seasonal in nature. The proposed water supply and waste treatment/disposal methods have been used previously on this project or, in the case of Pacto toilets, have been operated successfully at exploration camps throughout Nunavut.

ABANDONMENT AND RESTORATION

37. Provide a detailed description of progressive and final abandonment and restoration activities at the site.

The existing Abandonment and Restoration Plan will be updated to include these camps. The A&R methodologies for these camps will remain consistent with those of the rest of the project.

BASELINE DATA

39. Has or will any baseline information be collected as part of this project? Provide bibliography.

<input checked="" type="checkbox"/>	Physical Environment (Landscape and Terrain, Air, Water, etc.)
<input checked="" type="checkbox"/>	Biological Environment (Vegetation, Wildlife, Birds, Fish and Other Aquatic Organisms, etc.)
<input checked="" type="checkbox"/>	Socio-Economic Environment (Archaeology, Land and Resources Use, Demographics, Social and Culture Patterns, etc.)
<input type="checkbox"/>	Other: _____

In support of the work conducted to date, some of this information has been collected in the general areas where these activities have been planned. Some site specific reconnaissance has been completed at the Rail Camp and Steensby Inlet for the purposes of camp siting. The Steensby Inlet Camp area requires further archaeological assessment to establish the larger camp. The Rail Camp has already been surveyed archaeologically and no sites were identified.

REGULATORY INFORMATION

40. At a minimum, you should ensure you have a copy of and consult the documents below for compliance with existing regulatory requirements:
- ✓ ARTICLE 13 - *NCLA -Nunavut Land Claims Agreement*
 - ✓ NWNSRTA - *The Nunavut Waters and Nunavut Surface Rights Tribunal Act, 2002*
Northwest Territories Waters Regulations, 1993
 - ✓ NWB - Water Licensing in Nunavut - Interim Procedures and Information Guide for

Applicants

- √ NWB - Interim Rules of Practice and Procedure for Public Hearings
- √ RWED - *Environmental Protection Act, R-068-93-Spill Contingency Planning and Reporting Regulations, 1993*
- √ RWED A Guide to the Spill Contingency Planning and Reporting Regulations, 2002
- √ NWTWB - Guidelines for Contingency Planning
- √ *Canadian Environmental Protection Act, 1999 (CEPA)*
- √ *Fisheries Act, RS 1985 - s.34, 35, 36 and 37*
- √ DFO - Freshwater Intake End of Pipe Fish Screen Guideline
- √ NWTWB - Guidelines for the Discharge of Treated Municipal Wastewater in the NWT
- √ Canadian Council for Ministers of the Environment (CCME); Canadian Drinking Water Quality Guidelines, 1987
- √ Public Health Act - Camp Sanitation Regulations
- √ Public Health Act - Water Supply Regulations
- √ Territorial Lands Act and Territorial Land Use Regulations; Updated 2000