Fisheries and Oceans Canada | Pêches et Océans Canada

P.O. Box 358
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Your file *Votre référence*
2AM-MRY

March 22, 2013

Our file *Notre référence*
07-HCAA-CA7-0050

Damien Cote
Executive Director
Nunavut Water Board
Gjoa Haven, NU
X0B 1J0

Dear Mr. Cote:

Subject: Fisheries and Oceans Canada Final Written Submission for the Mary River Project; Type A Water Licence Application.

Fisheries and Oceans Canada would like to thank the Nunavut Water Board (NWB) for providing an opportunity to participate in the review of the Type A Water Licence Application for the Mary River Project.

Attached is Fisheries and Oceans Canada's final submission with respect to the water licence application and the supporting documents as it relates to your mandate. DFO looks forward to participating in the Nunavut Water Board Final Hearing for the Mary River Project. If you have any questions please contact Georgina Williston at 613-925-2865 ext 131 or by email at Georgina.Williston@dfo-mpo.gc.ca.

Yours sincerely,

for A/RD

Dale Nicholson
Regional Director, Ecosystems Management
Central and Arctic Region
Fisheries & Oceans Canada

copy: Derrick Moggy – Fisheries and Oceans Canada
Georgina Williston – Fisheries and Oceans Canada
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Canada

Fisheries & Oceans Canada

INTERVENTION COMMENTS

Mary River Project- Baffinland Iron Mine Corporation
Type A Water Licence Application

Submission to the Nunavut Water Board
March 22, 2013

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Executive Summary

Fisheries and Oceans Canada (DFO) has reviewed the application and supporting documents submitted to the Nunavut Water Board (NWB) by Baffinland Iron Mines Corporation (BIMC) for the Mary River Project - Type A Water Licence Application. DFO comments are based upon our departmental mandate under the *Fisheries Act*; specifically the management and protection of fish, and their habitat. DFO's primary focus in reviewing proposed developments in and around fisheries waters is to ensure that the works and undertakings are conducted in such a way that the proponents are in compliance with the applicable provisions of the *Fisheries Act*. The habitat protection provisions of the *Fisheries Act* are administered through the guidance of DFO's Policy for the Management of Fish Habitat (1986).

There is the potential for silt and sediment to be released into waterbodies in the project areas as a result of installation of watercourse crossings and infrastructure construction. The sediment and erosion control plan presented in the Type A Water Licence Application does not provide sufficient detail on the mitigation measures which will be implemented to avoid negative impacts to fish and fish habitat. The proponent has committed to updating this plan and DFO recommends that the revised plan be submitted to DFO for review prior to the commencement of construction activities which have the potential to introduce silt and sediment into fish bearing waterbodies.

The construction of the rail line will require the use of explosives in and near fish bearing waters. DFO's Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters (Wright and Hopky, 1998) offers guidance on the use of explosives to ensure no harm to fish and fish habitat. The proponent has committed to developing a Blasting Management Plan which will incorporate DFO's guidelines, including a description of mitigation measures and monitoring which will be conducted. DFO recommends that this plan be submitted to DFO for review and approval prior to the commencement of blasting activities in or near fish habitat.

The development of the Mary River Project will result in the harmful alteration or disruption or the destruction (HADD) of fish habitat in both the freshwater and marine environment. Impacts in the freshwater environment are the result of the installations of watercourse crossings and lake encroachments associated with the railway and access road construction. The proponent has submitted a Conceptual Fish Habitat Off-Setting Plan and the proponent continues to work towards the finalization of this plan. DFO recommends that the proponent continue community consultations to ensure that their input is incorporated into the plan. DFO also recommends that the proponent continue to collect sufficient baseline data to support the monitoring of newly construction fish habitat.

ᓇᐃᒃᓕᒋᐊᕐᓯᒪᔪᑦ ᐅᖃᐅᓯᒃᓴᐃᑦ

Fisheries and Oceans Canada (DFO) ᐃᒪᕐᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᕿᒥᕈᓯᒪᒃᒪᑕ ᐱᓇᓱᑎᒥᒃ ᐊᒻᒪᓗ ᑎᑎᕋᕐᓯᒪᔪᓂᒃ ᑐᓂᔭᐅᓯᒪᔪᓂᒃ ᓄᓇᕗᕐᒥ ᐃᒥᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᓐᓄᑦ Nunavut Water Board (NWB) ᑎᑎᕋᕐᑕᐅᔪᑦ ᐅᑯᓇᖓ ᐸᕕᓐᓚᑦ ᐅᔭᕋᒃᓯᐅᕐᑎᑦ Baffinland Iron Mines Corporation (BIMC) ᓄᓗᔭᓂ ᐅᔭᕋᒃᓯᐅᕐᓂᖏᓐᓄᑦ - ᐊᑐᕐᑕᐅᓂᖓ ᐃ ᐃᒥᕐᒧᑦ ᐱᔪᓐᓇᐅᑎᑕᕋᓱᒃᑐᑦ ᐱᓇᓱᑎᖓ. ᐃᒪᕐᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᐅᖃᐅᓯᒃᓴᖏᑦ ᒪᓕᒃᓯᒪᓪᓗᑎᒃ ᐱᖁᔭᑎᒍ ᐊᑐᕐᑕᐅᔭᕆᐊᓕᑦ ᐱᔾᔪᑎᒋᓪᓗᒋᑦ *Fisheries Act*; ᐱᓗᐊᕐᑐᒥᒃ ᐊᐅᓚᑕᐅᓂᖏᑦ ᐊᒻᒪᓗ ᓴᐳᑎᔭᐅᓯᒪᓂᖏᑦ ᐃᖃᓗᐃᑦ, ᐊᒻᒪᓗ ᐃᖃᓗᖃᕐᓂᐅᔪᑦ. ᐃᒪᕐᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑐᕋᒐᖃᕐᓗᑎᒃ ᕿᒥᕈᓚᐅᕐᑐᑦ ᐅᔭᕋᒃᑕᕈᒪᓂᖏᓐᓂᒃ ᖃᓂᒋᔭᓂ ᐊᕙᑕᓂᓗ ᐃᖃᓗᖃᕐᓂᐅᔪᑦ ᐃᒪᐃᑦ ᓴᓇᔭᐅᔪᑦ ᐊᒻᒪᓗ ᐱᓕᕆᐊᖑᔪᑦ ᐊᑐᕐᓯᑦᑎᐊᕋᓗᐊᕐᒪᖓᑕ ᖃᐅᔨᒪᔭᐅᔪᒪᓪᓗᑎᒃ ᐱᔭᕆᐊᕐᖃᕐᑎᑕᐅᓂᖏᑦ ᒪᓕᒃᑐᒋᑦ ᐱᖁᔭᓂ *Fisheries Act*. ᐃᖃᓗᖃᕐᓂᐅᔪᑦ ᓴᖁᑎᓯᒪᔭᐅᔭᕆᐊᖃᕐᓂᖏᑦ ᐅᖃᕐᓯᒪᓂᖏᑦ ᐱᖁᔭᓂ *Fisheries Act* ᐊᐅᓚᑕᐅᒃᒪᑕ ᐃᑲᒧᕐᑐᐃᓪᓗᑎᒃᓗ ᐃᒪᕐᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᐊᑐᐊᒐᖏᓐᓂᒃ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᐃᖃᓗᖃᕐᕕᐅᔪᑦ (1986).

ᑲᑕᒐᕐᓂᑯᓂᒃ ᓱᕈᕐᓂᒃᓗᓐᓂᑦ ᐃᒪᓄᐊᖃᐃᑐᐃᓐᓇᕆᐊᖃᕐᒪᑕ ᐃᖃᓇᐃᔭᕐᕕᐅᔪᓂ ᐊᕿᒃᓯᓇᓱᒃᑎᓪᓗᒋᑦ ᐃᑲᕈᑎᓂᒃ ᐊᒻᒪᓗ ᐱᖁᑎᓂᒃ ᓴᓇᑎᓪᓗᒋᑦ. ᑲᑕᒐᕐᓂᑯᐃᑦ ᐊᒻᒪᓗ ᓄᖑᑉᐸᓪᓕᐊᔪᑦ ᐊᐅᓚᑕᐅᒐᔭᕐᓂᖏᑦ ᐸᕐᓇᐅᑎᑦ ᓴᕿᑕᐅᔪᑦ ᐱᔪᓐᓇᐅᑎᖓᓂ ᐃᒥᕐᒧᑦ ᐱᔪᓐᓇᐅᑎᖓᓂ ᐱᓇᓱᑎᖓᓂ ᐅᖃᕐᓯᒪᑦᑎᐊᖏᒻᒪᑕ ᐊᕿᒋᐊᕈᑎᒃᓴᓂᒃ ᐊᑐᕐᑕᐅᒐᔭᕐᑐᓂᒃ ᐃᖃᓗᖃᕐᓂᐅᔪᑦ ᐊᓯᓪᓕᕐᑕᐅᒃᐸᑕ ᖃᓄᐃᓕᐅᕋᔭᕐᒪᖓᑕ ᐃᖃᓗᐃᑦ ᐃᖃᓗᖃᕐᓂᐅᔪᓪᓗ. ᐅᔭᕋᒃᓯᐅᕈᒪᔪᑦ ᐅᖃᕐᓯᒪᒃᒪᑕ ᓄᑕᖑᕆᐊᕐᓯᒪᔪᓂᒃ ᑐᓂᓯᓂᐊᕐᓂᕋᕐᓗᑎᒃ ᐸᕐᓇᐅᑎᓂᒃ ᐃᒪᕐᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᐱᖁᔨᕗᑦ ᑐᓂᓯᖁᔨᓪᓗᑎᒃ ᐊᕿᒋᐊᕐᓯᒪᔪᓂᒃ ᓄᑕᖑᕆᐊᕐᓯᒪᔪᓂᒃ ᐸᕐᓇᐅᑎᓂᒃ ᐃᒪᕐᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᕿᒥᕈᓂᐊᕐᑕᖏᓐᓂᒃ ᓴᓇᒋᐊᓚᐅᖏᓐᓂᖏᓐᓂ ᐊᐅᓚᔭᒋᐊᓚᐅᖏᓐᓂᖏᓐᓂ ᓱᕈᕐᓂᒃ ᑲᑕᒋᕐᓂᑯᓂᒃᓗᓐᓂᑦ ᐱᑕᖃᓕᕐᑎᑦᑎᑐᐃᓐᓇᕆᐊᖃᕐᓂᖏᓐᓄᑦ ᐃᖃᓗᖃᕐᓂᐅᔪᓄᑦ ᐃᒥᕐᓄᑦ.

ᓴᓇᔭᐅᓂᖓ ᓄᓇᓯᐅᑎᑯᑕᒃ ᐊᖁᑕ ᐊᑐᕆᐊᖃᕐᓂᐊᕐᒪᑕ ᖃᕈᑎᓂᒃ ᓇᓚᓂ ᖃᓂᒋᔭᓂᓗᓐᓂᑦ ᐃᖃᓗᖃᕐᓂᐅᔪᑦ ᐃᒥᐅᑦ. ᐃᒪᕐᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᐊᑐᐊᒐᖏᑦ ᐊᑐᕐᑕᐅᓂᖏᓐᓄᑦ ᖃᕈᑎᑦ ᓇᓚᓂ ᖃᓂᒋᓂᓗᓐᓂᑦ ᑲᓇᑕᒥ ᐃᖃᓗᓕᕆᓂᐅᑦ ᐃᒥᖓᓂ (Wright and Hopky, 1998) ᐅᖃᕐᓯᒪᒃᒪᑦ ᒪᓕᒃᑕᐅᔪᓐᓇᕐᑐᓂᒃ ᖃᕈᑎᑦ ᐊᑐᕐᑕᐅᓂᐊᕐᑎᓪᓗᒋᑦ ᐃᖃᓗᐃᑦ ᖃᓄᐃᓕᔭᐅᖁᓇᒋᑦ ᐃᖃᓗᖃᕐᓂᐅᔪᓪᓗ. ᐅᔭᕋᒃᑕᕋᓱᒃᑐᑦ ᐊᖏᕐᓯᒪᒃᒪᑕ ᐊᕿᒃᓯᓂᐊᕐᓂᕋᕐᓗᑎᒃ ᖃᕐᑎᑦᑎᒐᓚᖓᑕ ᐸᕐᓇᐅᑎᓂᒃ ᐱᖃᓯᐅᔾᔨᓯᒪᔪᓂᒃ ᐃᒪᕐᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᐊᑐᐊᒐᖏᓐᓂᒃ ᒪᓕᒃᓯᒪᔪᓂᒃ, ᐱᖃᓯᐅᑎᓪᓗᒋᑦ ᑎᑎᕋᕐᓯᒪᔪᓂᒃ ᐊᕿᐊᕈᑕᐅᒐᔭᕐᑐᓂᒃ ᐊᒻᒪᓗ ᖃᐅᔨᓴᐅᑕᐅᓂᐊᕐᑐᓂᒃ. ᐃᒪᕐᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᐱᖁᔨᕗᑦ ᐸᕐᓇᐅᑎᑦ ᑐᓂᔭᐅᖁᓪᓗᒋᑦ ᐃᒪᕐᒥᐅᑕᓕᕆᔨᒃᑯᓐᓄᑦ ᕿᒥᕈᔭᐅᓂᐊᕐᒪᑕ ᐊᒻᒪᓗ ᐊᖏᕐᑕᐅᓇᓱᒃᓗᑎᒃ ᐱᒋᐊᓚᐅᖏᓐᓂᖏᓐᓂ ᐃᖃᓇᐃᔭᕆᓂᐊᕐᑕᖏᓐᓂ ᖃᕐᑎᑦᑎᑲᑕᓚᐅᖏᓐᓂᖏᓐᓂ ᓇᓚᓂ ᖃᓂᒋᔭᓂᓗᓐᓂᑦ ᐃᖃᓗᖃᕐᓂᐅᔪᑦ.

ᓄᓗᔭᓂ ᐅᔭᕋᒃᓯᐅᕐᑎᓪᓗᒋᑦ ᐊᑦᑕᕐᓇᕐᑐᓂᒃ ᐅᕙᓗᖓᓂᑦ ᐊᓯᕈᐃᔭᓐᓇᕐᑐᓂᒃ ᐅᕙᓗᖓᓂᑦ ᓱᕋᐃᔭᓐᓇᕐᑐᓂᒃ (HADD) ᐃᖃᓗᖃᕐᕕᐅᔪᓂᒃ ᐃᒥᑐᐃᓐᓇᕐᒥᑦᑐᓂᒃ ᐃᒪᓂᑦᑐᓂᒃᓗ. ᐃᒃᐱᒃᓇᐳᑎᒐᔭᕐᑐᑦ ᐃᒥᑐᐃᓐᓇᕐᒥᑦᑐᓄᑦ ᐊᕿᒃᓯᓇᓱᒃᑎᓪᓗᒋᑦ ᐃᑲᕈᑎᓂᒃ ᐊᒻᒪᓗ ᑕᓯᐅᑦ ᖃᓂᒋᔭᒍᑦ ᐊᖁᓯᐅᕐᑎᓪᓗᒋᑦ ᓄᓇᓯᐅᑎᑯᑕᒃᑯᑦ ᐊᖁᑎᒥᒃ ᐊᒻᒪᓗ ᐊᖁᑕᐅᓂᐊᕐᑐᒥᒃ ᓄᓇᓯᐅᑎᓄᑦ, ᐅᔭᕋᒃᑕᕋᓱᒃᑐᑦ ᑐᓂᓯᓯᒪᔪᑦ ᐃᒪᐃᑲᔭᕈᑎᒃ ᖃᓄᐃᓕᐅᕈᑕᐅᓚᔭᕐᓂᖏᓐᓂᒃ ᐸᕐᓇᐅᑎᓂᒃ ᐊᒻᒪᓗ ᐅᔭᕋᒃᑕᕋᓱᒃᑐᑦ ᓱᓕ ᐊᕿᒃᓱᐃᕙᓪᓕᐊᒃᒪᑕ ᐸᕐᓇᐅᑎᒥᒃ. ᐃᒪᕐᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᐱᖁᔨᕗᑦ ᐅᔭᕋᒃᑕᕋᓱᒃᑐᑦ ᓄᓇᓕᒃᓂ ᖃᐅᔨᒋᐊᕐᕕᖃᐅᖃᑦᑕᕐᓗᑎᒃ ᐅᖃᐅᓯᐅᔪᑦ ᐃᓄᖏᓐᓄᑦ ᐃᓚᐅᑎᑕᐅᖁᓪᓗᒋᑦ ᐸᕐᓇᐅᑎᒧᑦ. ᐃᒪᕐᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᐱᖁᔨᒋᕗᑦ ᐅᔭᕋᒃᑕᕋᓱᒃᑐᑦ ᖃᐅᔨᓴᐅᑎᓂᒃ ᐱᒋᐊᕐᕕᐅᔭᓐᓇᕐᑐᓂᒃ ᑲᔪᓯᓗᑎᒃ ᖃᐅᔨᓴᕐᓂᐅᒐᔭᕐᑐᒧᑦ ᐊᑐᕐᑕᐅᓂᐊᕐᑐᒥᒃ ᓄᑕᒥᒃ ᐃᖃᓗᖃᕐᕕᐅᔪᒥᒃ ᓴᓇᓂᐊᕈᑎᒃ.

Introduction

The *Constitution Act* (1982) provides the federal government with authority for sea, coastal and inland fisheries within Canada's territorial boundaries. Fisheries and Oceans Canada (DFO) exercises this authority under the *Fisheries Act*. Specifically, DFO is responsible for the management and protection of fish and marine mammals and their habitats. There are two fundamental provisions in the *Fisheries Act* that pertain to the conservation and protection of fish habitat. One is section 35 of the Act that prohibits any works, undertakings or activities that result in the harmful alteration or disruption or the destruction of fish habitat without an authorization from the Minister of Fisheries and Oceans or through a regulation under the *Fisheries Act*. The other is section 36 that prohibits the deposit of deleterious substance into fish bearing waters unless authorized by a regulation under the Act or by another law of Parliament. Environment Canada, on behalf of the Minister of Fisheries and Oceans, administers section 36 of the *Fisheries Act.* DFO relies upon advice provided by Environment Canada regarding issues pertaining to the control of pollutants affecting fish and fish habitat. There are other sections of the *Fisheries Act* that pertain to the conservation and protection of fish and fish habitat and these include sections 20 (fishways), 30 (fish guards) and 32 (destruction of fish) among others.

DFO's Policy for the Management of Fish Habitat ("the Habitat Policy"), introduced in 1986, provides general guidance on the application of the habitat protection provisions of the *Fisheries Act* and applies to all projects that have the potential to harm fish habitat. The long-term objective of DFO is to achieve a net gain in the productive capacity of fish habitat for Canadian fisheries resources. A fundamental strategy for achieving this is to prevent the further loss of productive capacity of existing habitats. Productive capacity is defined in the Habitat Policy to mean the maximum natural capacity of habitats to produce healthy fish, safe for human consumption, or to support or produce aquatic organisms upon which fish depend. DFO will apply the No Net Loss principle by avoiding impacts, applying mitigation and, failing that, balance unavoidable habitat losses through habitat compensation on a project-by-project basis. The Habitat Policy also places emphasis on integrated resource planning and review of project proposals on an ecosystem basis taking into account Fish Habitat Management plans and/or Fisheries Management Plans where they exist.

Under the *Nunavut Land Claims Agreement*, DFO participates in the regulatory review process led by the Nunavut Water Board (NWB). In this context, DFO has reviewed the Type A Water Licence Application and supporting documents as submitted by Baffinland Iron Mines Corporation (BIMC) for impacts to fish and fish habitat. DFO respectfully submits the following comments as expert advice to the NWB to assist in their review of this project. The comments are generally classified under the categories listed in NWB's Pre-Hearing Decision Report dated January 25, 2013. Should new information be obtained, any changes in DFO's recommendations will be brought to the attention of NWB.

1. Identifying the Terms and Conditions of the Nunavut Impact Review Board (NIRB) Project Certificate # 005 relevant to the Type A Water Licence Application.

DFO has identified several Terms and Conditions within the NIRB Project Certificate #005 which are relevant to Type A Water Licence Application. These terms and conditions fall into the following categories; Blasting Management Plan (13, 44, 48, 117) Installation of watercourse crossings (16, 19, 47) , Sediment and Erosion Control Plan (22, 43) and Fish Habitat Offsetting Plan (45, 115,128) and are consistent with the recommendations provided to the NWB in our technical review comments and this final submission.

2. Term of the Type A Water Licence

The proponent has requested a 25 year licence term in the Type A water licence application. During the Technical meeting and Pre-hearing Conference held in Pond Inlet, Environment Canada recommended a shorter term of 10-12 years be considered to provide an opportunity to verify the environmental impact predictions and the suitability of the licence terms and conditions. DFO supports this recommendation as it will provide an opportunity to revisit licence conditions related to impacts on fish and fish habitat with sufficient monitoring data and experience to make sound recommendations on any changes. Further, it will provide an opportunity to accommodate public concerns expressed at the technical meeting about the length of the licence.

DFO Recommendation

- DFO recommends that the term of the Type A water licence not exceed 12 years.

3. Type and Amount of Security

The construction of the rail line and port infrastructure will result in the harmful alteration or disruption or the destruction of fish habitat subject to authorization under subsection 35 (2) of the *Fisheries Act*. Financial security in the form of an irrevocable letter of credit as a condition of such authorization will be required for the construction and monitoring of the fish habitat off-setting features.

DFO Recommendation:

- DFO recommends that the amount of security required for ensuring *Fisheries Act* authorization conditions are met, be based on a cost estimate for the construction and monitoring of the fish habitat features to be provided by the proponent to DFO for review and subject to DFO approval once the Fish Habitat Off-Setting Plan has been finalized. This security amount will be identified as a condition of the paragraph 35(2)(b) authorization.

4. Construction of Infrastructure

4.1 Watercourse Crossings

Construction of the railway and access road will involve the installation of bridges and culverts which have the potential to impact fish and fish habitat. To mitigate potential fish passage issues at these crossings, numerous design features that promote fish passage have been considered and will be incorporated into the design where feasible.

DFO acknowledges that the Aquatic Effects Monitoring Framework (February 2013) contains the general approach to "Post Construction Performance Monitoring" to determine if fish passage has been maintained at the watercourse crossings and to implement corrective measures should issues be identified through the monitoring program.

DFO Recommendations:

- DFO recommends that BIMC provide stream crossing design criteria, final crossing designs and site specific mitigation measures to DFO for review upon completion of the detailed engineering phase.
- DFO recommends that the proponent develop the detailed methodology for the "Post Construction Performance Monitoring" presented in the Aquatic Effects Monitoring Framework (February 2013) and submit it to DFO for review.

5. Management Plans

5.1 Sediment and Erosion Control Plan

There is the potential for fine sediment to be released into project waterbodies as a result of the infrastructure and watercourse construction, operation and decommissioning. Sedimentation can be directly harmful to fish by affecting their ability to feed and migrate and may result in egg mortality in the substrate.

The current plan does not provide sufficient detail on the mitigation measures which will be implemented to avoid negative impacts to fish and fish habitat resulting from either in-water works or works occurring adjacent to water bodies. DFO acknowledges that the proponent has committed to addressing the previous DFO recommendations, including:

- DFO recommends that BIMC provide detailed sediment and erosion control plans for the installation of watercourse crossings, water intake structures and lake encroachment areas.
- A monitoring plan to ensure that all sediment and erosion control measures are functioning as intended should be developed. This should include contingency measures if it is found that some measures are not functioning as intended.
- BIMC should provide detailed dewatering and fish removal plans for the installation of the watercourse crossings, which will occur during the open water season. The dewatering plan should also include the methodology for maintaining flows downstream of the dewatered area i.e. use of pumps or diversions.

DFO recommendation:

- DFO recommends that theses plans be submitted to DFO for review prior to the commencement of any construction activities which have the potential to introduce silt and sediment into fish bearing waterbodies.

5.2 Blasting Management Plan

Section 32 of the *Fisheries Act* prohibits the destruction of fish by means other than fishing. The *Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters* (Wright and Hopky, 1998) offer guidance on the use of explosives to ensure no harm to fish and fish habitat. In Nunavut, DFO uses a more protective overpressure threshold of 50 kPa in order to take the intensifying effects of ice cover into consideration.

DFO acknowledges that the proponent has committed to developing a Blasting Management Plan which will incorporate DFO's guidelines, including a description of mitigation measure and monitoring that will be conducted.

DFO Recommendation:

- DFO recommends that the detailed blasting management plan be submitted to DFO for review and subject to DFO approval prior to the commencement of construction activities involving blasting in near fish habitat.

5.3 Fish Habitat Off-Setting Plan (No Net Loss Plan)

The development of the Mary River project will result in the harmful alteration or disruption or the destruction (HADD) of fish habitat in both the freshwater and marine environment. Impacts in the freshwater environment are the result of the installations of watercourse crossings and lake encroachments associated with the railway and access road. DFO acknowledges that the proponent has submitted a Conceptual Fish Habitat Off-Setting Plan and the proponent continues to work towards finalizing this plan.

DFO Recommendation:

- DFO recommends that consultations with communities and other interested stakeholders continue to ensure that input from the potentially impacted communities and stakeholders can be incorporated into the design of the Fish Habitat Off-Setting Plan.
- DFO recommends that the proponent continue to collect sufficient baseline data to support the monitoring program which will be associated with the Fish Habitat Off-Setting Plan.
- DFO recommends that detailed construction plans for offsetting measures be submitted to DFO and NWB for review and subject to approval prior to the commencement of any construction activities related to offsetting measures.

6. Monitoring - Aquatic Effects Monitoring Program (February 2013)

6.1 Target Study #1

The Aquatic Effects Monitoring Program (AEMP) Framework (February 2013) contains the outline for a potential targeted study to monitor the effects related to the introduction of dust and other sources of suspended solids, in surface waters and subsequent deposition on aquatic habitat.

DFO Recommendation:

- DFO recommends that this potential targeted study be included in the Final Aquatic Effects Monitoring Program.
- DFO recommends that adequate baseline data be collected to support this monitoring program and that the detailed methodology be developed and submitted to DFO for review.

6.2 Target Study #2

Stream diversions in the Mine Area have the potential to affect the ability of juvenile Arctic char to access small tributaries in the spring as well as the ability of Arctic char to move out of these streams into lakes for overwintering in the fall. There are 5 tributary streams which will be affected by diversions in the mine area.

The AEMP Framework (February 2013) contains the outline of a potential targeted study to monitor these five streams in the spring and fall during the initial years of operation to determine if mitigation measure will need to be implemented.

DFO Recommendation:

- DFO recommends that this potential targeted study be included in the Final Aquatic Effects Monitoring Program.
- DFO recommends that adequate baseline data be collected to support this monitoring program and that the detailed methodology be developed and submitted to DFO for review.

7. Mine Closure and Reclamation Plan

7.1 Decommissioning of watercourse crossings

It is proposed that all watercourse crossings will be removed from the Tote Road, access Road and railroad to allow creeks and rivers to return to natural drainage conditions. The current plans provided lacks sufficient detail to ensure that the crossing locations will be stabilized and fish passage will be maintained.

DFO Recommendation:

- DFO recommends that the proponent develop detailed plans for the decommissioning of the watercourse crossings to ensure the removal of watercourse crossings and the associated rock fill. The plan should include measures which will be taken to ensure that fish passage is maintained, the bed and banks of the watercourse are stable.
- Sediment and erosion control plans, dewatering plans and fish salvage plans should also be included to ensure there are no negative impacts to fish and fish habitat resulting from the removal of the watercourse crossing.

Conclusion

The environmental assessment review and the regulatory phases have identified potential impacts to fish and fish habitat. DFO is of the opinion that the incorporation and implementation of the proposed mitigation measures presented in the NWB submission, in addition to our recommendations, will address the identified concerns. Furthermore, DFO is confident the Fish Habitat Off-Setting Plan will address residual losses to fish habitat through the development of enhancements that demonstrate no net loss of fish habitat productive capacity within the affected watersheds.