



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

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June 29, 2007

Our file      Notre référence  
NU-02-0117

Miramar Hope Bay Limited

c/o Larry Connell, P.Eng.  
General Manager, Environmental  
300-889 Habourside Drive  
North Vancouver, B.C.  
V7P 3S1

Dear Mr. Connell:

**SUBJECT: Authorization for the harmful alteration, disruption or destruction of fish habitat pursuant to subsection 35(2) of the *Fisheries Act***

The harmful alteration, disruption or destruction of fish habitat arising from the infilling of fish habitat as a result of the jetty construction on the southeast shore of Roberts Bay in the West Kitikmeot Region of Nunavut is hereby authorized pursuant to subsection 35(2) of the *Fisheries Act*. This Authorization shall be conditional upon implementation of measures specified in the attached document.

The environmental impacts of this undertaking have been reviewed by Fisheries and Oceans Canada in accordance with the *Canadian Environmental Assessment Act*. This review concluded that the project is not likely to cause significant adverse environmental effects if the mitigation and compensation measures specified are implemented.

Failure to comply with any of the conditions specified on the attached Authorization may result in a contravention of section 35 of the *Fisheries Act*.

**NOTE:** None of the foregoing should be taken to imply Authorization of this undertaking in accordance with any section of the *Fisheries Act* other than section 35. Also note that Authorization under the *Fisheries Act* does not release the proponent from the requirements of any other federal, territorial or municipal legislation.

Please contact Amy Liu at (867) 979-8007 or by fax at (867) 979-8039 should you have any questions or require additional information.

Sincerely,

***Original Signed by:***

Keith Pelley  
Acting Area Director  
Eastern Arctic Area  
Fisheries and Oceans Canada

Copy: Terri Maloof – Miramar Hope Bay Limited  
Gary Ash – Golder Associates Limited  
Jim Rogers – Indian and Northern Affairs Canada  
Spencer Dewar – Indian and Northern Affairs  
Jim Morrell – Transport Canada  
John Cowan – Transport Canada  
Cindy Parker – Environment Canada  
Andrew McAllister - Natural Resources Canada  
Earle Baddaloo – Government of Nunavut  
Leslie Payette - Nunavut Impact Review Board  
Phyllis Beaulieu – Nunavut Water Board  
Dionne Filiatrault – Nunavut Water Board



## AUTHORIZATION FOR WORKS OR UNDERTAKINGS AFFECTING FISH HABITAT

### Authorization issued to:

Miramar Hope Bay Limited  
300-889 Harbourside Drive  
North Vancouver, British Columbia  
V7P 3S1

Tel: (604) 985-2572  
Fax: (604) 980-0731

### Location of Project

The jetty associated with the Miramar Hope Bay Limited underground gold mine ("Doris North Project") is located on the southeastern shore of Roberts Bay in the West Kitikmeot Region of Nunavut. (UTM Zone 48, UTM Easting 541803, UTM Northing 7543202). Fish habitat compensation involves the creation of eight (8) rock spurs attached to the jetty and six (6) nearshore rock spurs also located on the southeastern shore of Roberts Bay, just west of the jetty.

### Valid Authorization Period

The valid authorization period for the harmful alteration, disruption or destruction of fish habitat associated with the construction of the jetty is:

From: To:  
Date of Issuance June 30, 2008

The valid periods for other conditions of the authorization are as set out below.

### Description of Works or Undertakings (Type of work, schedule, etc.)

The harmful alteration, disruption or destruction hereby authorized is the infilling of fish habitat, as a result of the jetty (103 metres long by 6 metre wide) construction to facilitate tugs and barges operating for the Doris North Project (underground gold mine), affecting 1,584 square metres of fish habitat in Roberts Bay.

### Conditions of Authorization

1. The conditions of this Authorization notwithstanding, should the above works or undertakings, due to weather conditions, different soil or other natural conditions, or for any other reason, appear, in the opinion of the Department of Fisheries and Oceans ("DFO") likely to cause greater impacts than the parties previously contemplated, then DFO may direct Miramar Hope Bay Limited (hereafter referred to as the "Proponent"), and its agents, and contractors, to suspend or alter works and activities associated with the project, to avoid or mitigate adverse impacts to fisheries resources. DFO may also direct the Proponent and its agents, and contractors, to carry out at the Proponent's expense any works or activities deemed necessary by DFO to avoid or mitigate further adverse impacts to fisheries resources. In circumstances where DFO is of the view that greater impacts may occur than were contemplated by the parties DFO may also modify or rescind this authorization. If the authorization is to be changed the Proponent will be given an opportunity to discuss any proposed modifications or rescission.
2. Conditions that relate to the Proponent plan:
  - 2.1. The Proponent confirms that all plans and specifications relating to this authorization have been duly prepared and reviewed by appropriate professionals working on behalf of the Proponent. The Proponent acknowledges that they are solely responsible for all design, safety and workmanship aspects of all the works associated with this Authorization.
  - 2.2. The construction of the jetty shall comply with those criteria as identified within this Authorization. Harmful alteration, disruption or destruction of fish habitat other than that specifically identified within this Authorization is prohibited.
  - 2.3. Works and undertakings shall be conducted in accordance with the practices outlined in the following reports, and as approved by DFO:
    - 2.3.1. Jetty Plan, Drawing Number J-01, Sheet 6, Revision No. A, designed by SRK Consulting, dated October 2006.



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- 2.3.2. Jetty Typical Sections and Details – Sheet 1 of 2, Drawing Number J-02, Sheet 7, Revision No. A, designed by SRK Consulting, dated October 2006.
  - 2.3.3. Jetty Typical Sections and Details – Sheet 2 of 2, Drawing Number J-03, Sheet 8, Revision No. A, designed by SRK Consulting, dated October 2006.
  - 2.3.4. Doris North Project “No-Net-Loss” Plan (NNLP) – Update and Detailed Design Drawings, prepared by Golder Associates Limited, Gary Ash, dated May 2007.
  - 2.3.5. Roberts Bay Fish Habitat Compensation Jetty Spur Design, Project Number 06-1373-026, Figure 1, prepared by Golder Associates Limited, dated April 24, 2007.
  - 2.3.6. Revised Water License Application Support Document – Doris North Project, Nunavut, Canada, prepared by Miramar Hope Bay Limited, dated April 2007.
  - 2.3.7. Supporting Documents S10m Supplemental to Revised Water License Application Support Document– Doris North Project, Nunavut, Canada, prepared by Miramar Hope Bay Limited, dated April 2007.
  - 2.3.8. Memorandum regarding Miramar Doris North Project – Jetty Construction Timing and Monitoring, prepared by Golder Associates Limited, Gary Ash, dated June 21, 2007.
  - 2.3.9. Letter regarding Doris North Jetty Letter of Credit, signed by Miramar Hope Bay Limited, A. David Long, dated June 21, 2007.
  - 2.3.10. The above documents and drawings are hereafter referred to as the “Plan”. Where contradictions exist, the most recent version shall apply.
3. Conditions that relate to the mitigation of potential harmful alteration, disruption or destruction (“HADD”) of fish habitat. The following measures shall be implemented to avoid the unauthorized HADD of fish habitat:
- 3.1. No in-water work shall occur between July 15 and August 15 to protect critical spawning and rearing periods for any fish species in Roberts Bay.
  - 3.2. A qualified biologist or environmental inspector shall be on site during all in-water construction, compensation and restoration works to ensure implementation of the designs as intended in the Plan and conditions of this Authorization.
  - 3.3. All materials and equipment used for the purpose of all work phases shall be operated and stored in a manner that prevents any deleterious substance (e.g. petroleum products, silt, debris, etc.) from entering the water.
    - 3.3.1. Any stockpiled materials shall be stored and stabilized above the ordinary high water mark of any water body.
    - 3.3.2. Vehicle and equipment re-fuelling and maintenance shall be conducted above the ordinary high water mark of any water body.
    - 3.3.3. Any part of equipment entering the water shall be free of fluid leaks and externally cleaned/degreased to prevent any deleterious substance from entering the water.
  - 3.4. Only clean, competent, certified non-acid generating rock and material free of fine particulate matter shall be placed in the water.
  - 3.5. Material used for habitat compensation features shall not be taken from below the ordinary high water mark or shoreline of any water body.
  - 3.6. Sediment and erosion control measures shall be implemented prior to work, and maintained during the work phases, to prevent entry of sediment into the water or the movement of re-suspended sediment.
    - 3.6.1. All disturbed areas shall be stabilized upon completion of work and restored to a pre-disturbed state or better.
    - 3.6.2. Sediment and erosion control measures shall be left in place and maintained until all disturbed areas have been stabilized.
4. Conditions that relate to the compensation for the loss of 1,584 square metres of fish habitat as defined in the Plan.
- 4.1. The amount of fish habitat compensation gained shall equate to 3,368 square metres.
    - 4.1.1. Eight (8) rock spurs (15 metres long by 5 metres wide) shall be constructed attached to the jetty.
    - 4.1.2. Six (6) rock spurs (20 metres long by 5 metres wide) shall be constructed nearshore, just west of the jetty, in the winter season.
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4.1.2.1. The Proponent shall prepare a detailed Compensation Plan for the nearshore rock spurs, including revised plans, and submit it for DFO review and approval prior to implementation. This detailed Compensation Plan shall be submitted on, or before, **September 15, 2007**.

5. Conditions that relate to Monitoring.

5.1. The approved Monitoring Plan shall be implemented in the following years: the year of mine construction (i.e. 2008), Year-2 of mine operation (i.e. 2010), Year-2 of active mine post-closure (i.e. year prior to jetty lowering to below high water level 2012), Year-1 post-lowering of jetty (i.e. 2013), and Year-2 post-lowering of jetty (i.e. 2014). The detailed Monitoring Plan shall include, but not be limited to, the following:

5.1.1. The stability and successful utilization of all compensation features shall be assessed according to the schedule in 5.1 above.

5.1.1.1. The use of rock spur structures, both off the jetty and nearshore, as rearing and feeding habitat for fish shall be monitored using a Control/Impact (CI) design study as described in the Plan and according to the schedule in 5.1 above.

5.1.1.2. Fish presence shall be monitored using sampling methods as described in the Plan and according to the schedule in 5.1 above.

5.1.2. If at any time during the monitoring period, compensation features are not functioning as intended, measures shall be identified to reduce the risk of future failure and additional compensation shall be created to meet the No-Net-Loss guiding principle using an adaptive management approach.

5.2. A photographic record of before, during and after construction, showing that all works and undertakings have been completed according to the approved Plan and conditions of this authorization, shall be submitted to the Iqaluit, NU office of the Department of Fisheries and Oceans, Fish Habitat Management, Eastern Arctic Area, on or before, **December 31** of each year being monitored, according to the schedule in 5.1 above.

5.2.1. The photographic record shall include, but not be limited to, a record of the sediment and erosion control measures, compensation measures including the jetty rock spurs and the nearshore rock spurs.

5.2.2. The photographs for each pre-construction, during construction, post-construction time periods shall be taken from the same vantage point(s) and general direction.

5.2.3. All photographs shall be clearly labelled as to date and vantage points. The photographic vantage points and viewing directions shall be indicated, and clearly indexed to the photographs, on a plan view drawing of the construction site(s).

5.3. A written report summarizing the above monitoring results (as described in sections 5.1 and 5.2 above) shall be submitted to the Iqaluit, NU office of the Department of Fisheries and Oceans – Fish Habitat Management, Eastern Arctic Area on, or before, **December 31** of each year being monitored, according to the schedule in 5.1 above.

5.4. The effects of the jetty on nearshore sediment transport shall be monitored during the operation of the project and during closure to the point where the jetty is lowered.

5.4.1. Annual bathymetric surveys shall be conducted to determine the extent of sediment deposition adjacent to the jetty.

5.4.2. A written report summarizing the results of the bathymetric surveys shall be submitted to the Iqaluit, NU office of the Department of Fisheries and Oceans – Fish Habitat Management, Eastern Arctic Area on, or before, **December 31** of each year, according to the schedule in 5.4 above.

6. Any deviation from the approved plans, the construction schedule, mitigation, compensation and/or monitoring measures stated above must be discussed with, and approved in writing by the Iqaluit, NU office of the Department of Fisheries and Oceans, Fish Habitat Management, Eastern Arctic Area.

7. All mitigation, compensation and monitoring measures shall be implemented to the satisfaction of the Iqaluit, NU office of the Department of Fisheries and Oceans, Habitat Management, Eastern Arctic Area.

8. Conditions that relate to the financial security as indicated in the irrevocable Letter of Credit in the amount of \$67,608.00.

8.1. The proponent shall deliver to DFO on, or before, **July 2, 2007** a letter of credit from a Canadian Bank in the amount of \$67,608.00 in a form acceptable to DFO which shall automatically renew each year and must be payable to Fisheries and Oceans Canada – Eastern Arctic Area-Iqaluit office. The letter of credit may be used in any manner deemed appropriate to DFO in relation to this Authorization. The letter of credit shall be returned upon satisfactory completion of the above noted habitat compensation works and monitoring program.

8.2. Upon successful completion of Miramar Hope Bay Limited responsibilities under the **compensation and monitoring conditions** of this Authorization, as determined by Fisheries and Oceans Canada, the original Letter of Credit shall be returned to the financial institution, referred to on the Letter of Credit, for cancellation.

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- 8.3. Where at any time DFO determines that the amount of security deposit it holds falls below an amount which, in DFO's view, is necessary to satisfy the Proponent's obligations under this Authorization, DFO may request, in writing, that the Proponent deposit with DFO additional security in an amount and form determined at that time by DFO. The Proponent shall comply with DFO's request within 30 (thirty) days from the date it receives the request.
9. Written notification of the commencement of works or undertakings shall be provided to the Iqaluit, NU office of the Department of Fisheries and Oceans, Habitat Management, Eastern Arctic Area, by e-mail to [NunavutHabitat@dfo-mpo.gc.ca](mailto:NunavutHabitat@dfo-mpo.gc.ca) or fax at (867) 979-8039 not less than 10 days prior to the initiation of said works or undertakings.
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The holder of this authorization is hereby authorized under the authority of section 35(2) of the *Fisheries Act*, R.S.C., 1985, c.F. 14, to carry out the work or undertaking described herein. This authorization is valid only with respect to fish habitat and for no other purposes. It does not purport to release the applicant from any obligation to obtain permission from or to comply with the requirements of any other regulatory agencies.

Failure to comply with any condition of this authorization may result in charges being laid under the *Fisheries Act*.

This authorization form shall be held on site and work crews shall be made familiar with the conditions therein.

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Date of Issuance: June 29, 2007

Approved by: [Signature]  
Bob Lambe

Title: Regional Director General, Central and Arctic Region  
Fisheries and Oceans Canada

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