



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

Western Arctic Area  
Suite 301, 5204-50<sup>th</sup> Avenue  
Yellowknife, NT X1A 1E2

Secteur de l'Arctique  
Suite 301 5204, 50<sup>e</sup> Avenue  
Yellowknife (NT) X1A 1E2

**MVEIRB file**  
EA0809-001

**DFO file**  
07-HCAA-CA6-00126

Mr. Alan Ehrlich  
Mackenzie Valley Environmental Impact Review Board  
5102-50<sup>th</sup> Ave  
Yellowknife, NT X1A 2N7

December 16, 2011

**Subject: DFO Response to Review Board – Round 2 Information Request #8**

Dear Mr. Ehrlich:

Fisheries and Oceans Canada – Western Arctic Area (DFO) has considered the Review Board's Round 2 Information Request #8 directed to our department and has prepared the attached response.

Should you have any questions or would like further clarification on the issues raised in the information request, please do not hesitate to contact Pete Cott by telephone at (867) 669-4913, by fax at (867) 669-4940, or by e-mail at [pete.cott@dfo-mpo.gc.ca](mailto:pete.cott@dfo-mpo.gc.ca).

Sincerely,

Larry Dow  
A/ Area Director  
Western Arctic Area  
Central and Arctic Region, Fisheries and Oceans Canada

Copy: Bev Ross – DFO  
Julie Dahl - DFO  
Corrinne Gibson – DFO  
Sarah Olivier – DFO  
Morag McPherson – DFO  
Rick Walbourne – DFO  
Pete Cott - DFO  
Adrian Paradis - AANDC

## **Review Board IR# 8 Fish habitat, creek diversion and risk management trade-offs**

**To:** Department of Fisheries and Oceans

### **Reference**

Technical Session Oct. 18 p235

### **Terms of Reference Section**

ToR s.3.2.5 Accidents and Malfunctions

ToR s.3.5.2(2) Fish and Aquatic Habitat

“A description of potential impacts to fish and fish habitat, including predicted habitat losses or gains from the proposed development”

### **Preamble**

The DAR indicates that the majority of Baker Creek at the project site was constructed to convey surface water across the project site. Much of Baker Creek on the mine site appears to be a human-constructed diversion channel. At the completion of the remediation and rehabilitation works Baker Creek will remain a human-constructed diversion channel but with the addition of engineered habitat features.

Fisheries and Oceans Canada made a number of statements at the technical sessions (October 18, 2011, p235-237) about Baker Creek regarding the possible importance of Baker Creek to Arctic grayling in the region and the uncertainty of Arctic grayling productivity/habitat availability in other streams in the region, such as the Yellowknife River. Fisheries and Oceans Canada also stated “in terms of population information, we don't know the importance of Baker Creek to the overall grayling populations in Yellowknife Bay. There hasn't been that study done”.

The Review Board is interested in the views of Fisheries and Oceans Canada in reconciling the habitat value of Baker Creek against the risks to the project from creek flooding or overtopping, and related contingencies regarding the diversion of Baker Creek.

### **Request:**

1. Has Fisheries and Oceans Canada conducted any studies using defensible methods that support its statements regarding the regional importance of fish habitat in Baker Creek and the availability of habitat in other water bodies such as Yellowknife River?
2. Taking into consideration the risk analyses in the first round of information responses and the discussions at the Technical Session, in DFO's opinion, what level of risk to the project from Baker Creek would be enough to justify diverting it?

## **Fisheries and Oceans Canada (DFO) Response:**

### **1. Has Fisheries and Oceans Canada conducted any defensible studies that support its statements regarding the regional importance of fish habitat in Baker Creek and the availability of habitat in other water bodies such as the Yellowknife River?**

Baker Creek has been altered over time as a result of mining operations on the Giant Mine site, as outlined in detail in Appendix B, Supporting Document A6 of the Developer's Assessment Report (DAR), "*Baker Creek Fish Habitat & Rehabilitation Study for Abandonment and Restoration Planning*" (Dillon 1998). The creek was a natural feature of the area prior to mine development, and although it has been altered, it continues to flow through the same drainage and has maintained some of its original characteristics. There are 7 reaches that have been assigned to the creek on the mine site itself, and Reaches 1, 3 and 4 have been constructed as re-alignments around mine features. Although Baker Creek has been impacted by historical activity, studies undertaken on the creek have shown that it provides a variety of habitats for fish and wildlife. Additional information related to the existing habitat in Baker Creek is provided in the reports included in the DAR Appendix B, Supporting Document A – Environmental Conditions and Supporting Document G – Baker Creek, as well as the additional 5 years of studies that have been undertaken on Baker Creek by the Giant Mine team between 2007 and 2011.

As stated during the technical sessions and as the Review Board stated in its preamble, Fisheries and Oceans Canada (DFO) made comments regarding the *possible* importance of Baker Creek to Arctic grayling in the region and the *uncertainty* of Arctic grayling productivity/habitat availability in other streams in the region, such as the Yellowknife River. These statements would imply that there is a measure of uncertainty regarding the availability of similar Arctic grayling habitat in the region. DFO is not aware of any studies that have been undertaken related to Arctic grayling populations in Yellowknife Bay, therefore the importance of Baker Creek in terms of its contribution to the Arctic grayling population in the Local Study Area is unknown. DFO is currently unaware of any similar creek habitat or any other documented Arctic grayling spawning locations in the Yellowknife Bay area.

### **2. Taking into consideration the risk analyses in the first round of information responses and the discussions at the Technical Session, in DFO's opinion, what level of risk to the project from Baker Creek would justify diverting it?**

In order to determine the level of risk to the project that would justify diverting Baker Creek, the benefits of diverting the creek would have to be weighted against the potential impacts of eliminating of a large portion of Baker Creek (including the off-site portion), as well as the construction, and operation of the North Diversion, as well as on-site water management independent of Baker Creek. A contingency plan to divert Baker Creek off-site should the creek pose an unacceptable risk to Giant mine site was introduced during the Giant Mine Technical Sessions in October 2011. As stated in our Round 2 Information Requests, until a conceptual design is provided with an effects assessment,

both for the new channel as well as the permanent or temporary loss of Baker Creek, DFO does not have enough information to assess the potential impacts of the construction and operation of the North Diversion on fish and fish habitat. The draft Baker Creek North Diversion Feasibility Evaluation, (Golder Associates Technical Memorandum 123 dated September 26, 2011) provides data sources, methods, and results for the evaluation of Baker Creek, North Diversion alternatives to assess if the diversion of Baker Creek is physically possible. Please note that the determination of a threshold of risk to mine infrastructure that would warrant a large scale diversion/ re-construction of Baker Creek would be outside of DFO's mandate and expertise.

It remains DFO's understanding that the North Diversion was proposed as a contingency should there be initiating events at the site that would result in Baker Creek negatively impacting other areas of the Giant Mine site. The risk evaluation for this project is more complex and includes mine workings, and other components of the project that fall outside of DFO's mandate. DFO will provide an opinion to the Review Board on our evaluation of the potential risks and impacts to fish and fish habitat related to the project as proposed.

Should the Giant Mine team decide to incorporate relocation of Baker Creek as a permanent or temporary option, then sufficient information is required to evaluate the significance of those impacts as well as the requirements under subsection 35(2) of the *Fisheries Act*.