

**Environment Canada's Submission to  
the Nunavut Impact Review Board  
Regarding the  
Draft Environmental Impact Statement  
Submitted by Miramar Hope Bay Ltd.  
for the Doris North**

***Pre-Hearing Conference  
Conformity and Adequacy Review***

April 2003

## 1.0 Introduction

Environment Canada (EC) has reviewed the draft Environmental Impact Statement (EIS) submitted by Miramar Hope Bay Ltd. (Miramar) for the Doris North Project. Miramar is proposing to construct, operate, and eventually decommission a gold mine on Inuit Owned Land in the Hope Bay Belt area of the West Kitikmeot region of Nunavut. The project is located at the north end of Doris Lake, approximately 160 km southwest of Cambridge Bay, NU. The project proposes to extract approximately 458,000 tonnes of ore and process it at a rate of 690 tonnes per day to yield 307,000 ounces of gold over a 24 month operating period.

The Nunavut Impact Review Board (NIRB) has scheduled a Pre-Hearing Conference (PHC) to discuss a conformity analysis of the draft EIS and the identification of major issues. This submission takes into consideration all of the documents submitted with the Draft EIS, as well as the December 19, 2002 letter sent from Environment Canada to Miramar regarding the consideration of marine aspects in the EIS and the March 14 letter regarding water balance calculations.

Environment Canada is of the view that the Doris North Draft EIS largely conforms to the NIRB Final EIS Guidelines distributed on October 15, 2002. EC has, however, identified a number of inadequacies in the information provided. The following observations and recommendations are based on the information provided by Miramar. Should new or additional relevant information be brought forward by Miramar or be identified during the PHC, this submission will be re-examined. Within the context of the additional information, any changes in EC's recommendations will be brought to the attention of the NIRB.

In addition, **EC would like to emphasize that given the short review period established by the NIRB, a full technical review of the document has not been completed.** Once the technical review of the Doris North Draft EIS has been completed, EC will notify Miramar as well as the NIRB of any additional issues/information requests that may arise.

## 2.0 Environment Canada

The mandate of EC is defined by the *Department of the Environment Act*. This *Act* provides the Department with a general responsibility for environmental management and protection in terms of the need to foster harmony between society and the environment for the economic, social, and cultural benefit of present and future generations of Canadians. The Department shares this responsibility with the provinces and territories. Environment Canada is also responsible for providing specialist or expert information and knowledge for the preservation and enhancement of environmental quality.

The operations of the Miramar Doris North Gold Mine Project are subject to the following statutes administered by Environment Canada: Section 36(3) of the *Fisheries Act*, the *Canadian Environmental Protection Act (CEPA)*, the *Migratory Birds Convention Act*, the *Canada Wildlife Act*, and the *Species at Risk Act*.

Environment Canada's submission is based primarily on its mandated responsibility for the enforcement of Section 36(3) of the *Fisheries Act*. This section of the *Fisheries Act* prohibits the "...deposit of a deleterious substance of any type in water frequented by fish..." A first step towards compliance with this requirement is demonstrating that the effluent is non-acutely lethal. This may be demonstrated by an acute lethality determination such as *Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout* (Reference Method EPS 1/RM/13, July, 1990) and amendments (May 1996), or other techniques and procedures.

### 3.0 Adequacy Review

In general, EC finds the draft EIS to be well organized and formatted. The Doris North Draft EIS addresses most of the items found in the Final EIS Guidelines. However, EC believes that additional baseline information specific to the Doris North Site needs to be collected by Miramar in order to verify many of the assumptions made throughout the body of the EIS. Without site-specific baseline information, it is difficult for EC to determine if the assessment of the impacts presented by Miramar is accurate.

Environment Canada recommends that a number of areas be given further attention in the final Environmental Impact Statement.

- *Waste handling/treatment/disposal facilities for the Doris North Site.* Additional details concerning the location of the treatment facilities, the location of the quarry where non-hazardous waste will be stored, and the disposal location for any sludges generated are required. This information should include detailed maps indicating the location of the facilities as well as any outflow pipes or sumps.
- *Impact of the project on migratory birds:*
  - The impacts of the project on migratory birds during all stages of the project. Environment Canada does not agree with Miramar's assumption in Section 5.3.9 that aside from accidents or malfunctions, no portion of the project will cause wildlife mortality. If construction occurs during the nesting season, there is a high probability that eggs and nests of migratory birds will be destroyed. Additionally, the potential for contact between migratory bird nests and infrastructure and/or personnel also exists. Hence, EC recommends that additional information regarding the potential impacts of the project on birds, as well as appropriate mitigation measures be considered.
  - The potential for interactions between marine shipping and migratory birds. Marine traffic has the potential to disturb migratory birds and other wildlife and should be included in the EIS.
  - The lack of baseline migratory bird data in the marine habitat. Since migratory birds use coastal area to stage and nest, EC believes it would be prudent to survey marine waters and coastal habitats for bird use, especially during the period when marine traffic would be occurring.
  - The scope of the Wildlife Management Plan. Environment Canada recommends that migratory birds be incorporated into the plan.

- Clarification of the methodology used to collect the data in the “Terrestrial Wildlife of Hope Bay, Nunavut (An Integration of Data Collected from 1994-2001)”. Additional information is necessary regarding the size of the transects used for breeding birds, as well as an indication of why the species diversity index was used rather than an index of species richness during the ground surveys for breeding birds. A species diversity index does not equal the number of species per hectare. Rather, this type of measurement is better referred to as an index of species richness. The dates that the aerial surveys of waterfowl were conducted should also be included in the methodology, and an explanation of why no transects were flown over the marine areas of Robert’s Bay should also be discussed.
- *Cumulative effects assessment.* Environment Canada recommends that information be provided to ensure that the EIS adequately addresses the intent of the cumulative effects assessment outlined in the Final EIS Guidelines:
  - A clear indication of the size of both the temporal and spatial study area used for the cumulative effects assessment.
  - Additional information regarding why projects were included or excluded from the cumulative effects assessment.
  - An assessment of the potential cumulative effects of increased marine traffic. This includes the entire marine shipping route (including transboundary areas) that will be used in supplying the Doris North site.

The proponent states that “Coupled with the NIRB guidelines, the Canadian Environmental Assessment Act [CEAA] requires that the environmental effects of existing projects or other planned projects that will be carried out must be examined in combination with the environmental effects of the projects(s) being proposed. By implication, only projects or activities that have already been approved must be taken into account...” The Agency's 1994 Reference Guide did advise that the assessment of cumulative effects in relation to future projects should focus exclusively on imminent projects, that is, projects that have been approved but not yet implemented or proposals waiting planning or other formal approval. However, the 1999 Canadian Environmental Assessment Agency’s Operational Policy Statement addressing cumulative environmental effects does not imply that only those projects that are *approved* need to be considered, but rather that the selection of future actions to be considered in the cumulative effects assessment should reflect “the most likely future scenario”. The Agency position has evolved to better reflect the broad objectives of the Act and the "best practices" approach of the Practitioners Guide. Therefore, recognizing the considerable development potential in the Hope Bay Belt, EC believes that the cumulative effects assessment of the EIS needs to be improved upon.

- *The abandonment and restoration plan.* Environment Canada recommends that the following items be addressed:
  - The cost and feasibility of going beyond mere reclamation by enhancing wildlife habitats as requested in the Final EIS Guidelines.
  - The potential for a longer monitoring period. The EIS Guidelines state that “the proponent shall discuss post-closure monitoring of such environmental components as wildlife, re-vegetation, landform stability, and water quality”. The Draft EIS discusses post closure monitoring of water quality (Section 4.0, M-8), however wildlife, re-vegetation and landform stability have not been addressed. The proponent also indicates that “it is expected that monitoring would be ongoing at a reduced frequency for several years after reclamation is complete...” The land use objective for the mine site at closure also needs to be identified.
  - Further justification for, or alternatives to, Miramar’s preliminary plan to leave the majority of the infrastructure at the site after mine closure to support ongoing mineral exploration.
- *The assessment of the impacts of the project on air quality.* Environment Canada recommends that:
  - The proponent quantify the Project’s emissions and provide complete air quality modelling. Given the current lack of information, it is not possible to assess potential impacts to the environment, human health, plant phenology, wildlife, or the changes in albedo that may affect snowmelt. In addition, it is not possible to estimate whether ambient Air Quality Guidelines and Standards will be exceeded.
  - The proponent provide a complete list of all the emission control technologies being employed and the equipment they will be attached, the pollutants being controlled and the efficiency of the control technology, in order to understand the full benefit of the mitigation efforts proposed.

Environment Canada would like to commend Miramar for using emission control technologies. As part of the Canada-Wide Standards, the Keeping Clean Areas Clean strategy requires proponents to use the best available technology to mitigate adverse environmental impacts due to atmospheric emissions. Miramar has stated the emissions control technology will be installed on underground diesel mining equipment and the smelter (section 5.3.2.5).

- *The hydrology information presented in the draft EIS.* Environment Canada has concerns with the derivation of hydrology information in the draft EIS. These concerns were identified in a letter to Miramar dated March 14, 2003.
- *Impact of the project on water quality.* Environment Canada requests the following information:
  - Environment Canada also has concerns with the information presented in support of the EIS predictions for the potential impacts of acid rock drainage. Both the number of tests and types of tests were insufficient to base assessment predictions on. Given

that there are at least eight rock types capable of having high acid-generating potential and that each type should be tested two or three times, EC recommends that Miramar conduct 16 to 24 geochemical column leach tests. The duration of the tests should exceed 80 weeks.

- Descriptive statistics for results of water quality samples should be provided, along with results of the field QA/QC program.

#### **4.0 Summary**

Environment Canada has completed its conformity and adequacy analysis of the Doris North Draft EIS. While EC is of the view that the Draft EIS is generally in conformity with the EIS Guidelines, EC also made note of several areas where additional information is required.

As previously stated, given the tight timelines that interested parties were given for the review of this project, EC was unable to perform a thorough technical review of the Doris North Draft EIS in time for this submission. As such, EC would like to inform the NIRB that if additional major issues become apparent during the course of the ongoing technical review, EC will notify Miramar and the NIRB of such issues as they arise in order to ensure that they are addressed in the final EIS.