MEMORANDUM

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DATE: 28 March 2008 Project No. 08-1373-0004

TO: Mr. Michael Meyer, Hope Bay Mining Ltd.
Mr. Chris Hanks, Hope Bay Mining Ltd.

FROM: Golder Associates Ltd., Edmonton, AB

RE: Proposal for the Development of an Aquatic Effects Monitoring Plan

1 Introduction

Hope Bay Mining Ltd. (HBML) (formerly Miramar Hope Bay Ltd.) proposes to construct, operate and reclaim a small underground gold mine (average throughput of 720 tonnes per day) that will have a two year life. The project is located in the West Kitikmeot Region of Nunavut, 685 km northeast of Yellowknife and 125 km southwest of Cambridge Bay. The mine is on Inuit owned land, approximately 5 km south of the Arctic Ocean. The nearest communities are Umingmaktok, located 75 km to the southwest, and Bathurst Inlet, located 160 km to the southwest.

In part because of the expected short mine life, the proponent has been requested to prepare and undertake an Aquatic Effects Monitoring Plan (AEMP), in consultation with Environment Canada, for the Doris North Gold Project. Following is a proposal for the development of the detailed AEMP over the next several months. The proposal below identifies the types of sample areas, study components, a draft table of contents of the detailed AEMP, as well as the schedule for the AEMP development and implementation. This approach has been discussed with Anne Wilson of Environment Canada, who has indicated she is supportive of the development timeframe.

2 Purpose of the AEMP

Schedule A of the Doris North Gold Project Water Licence defines an Aquatic Effects Monitoring Plan (AEMP) as "a monitoring program designed to determine the short- and long-term effects in the aquatic environment resulting from the Project, to evaluate the accuracy of impact predictions, to assess

the effectiveness of planned impact mitigation measures and to identify additional impact mitigation measures to avert or reduce environmental effects."

A proposal for the development of a revised AEMP study design is a condition of the recently approved Water Licence (Water Licence # 2AM-DOH0713) issued by the Nunavut Water Board. Preparing the detailed AEMP study design will involve the following tasks:

- **Consultation with Environment Canada** – liaising with regulators will be required to incorporate feedback from Environment Canada (this has been initiated).
- **Guidance Document Review** – various guidance documents pertaining to development of Environmental Effects Monitoring (EEM) programs pursuant to the Metal Mining Effluent Regulations (MMER) will be reviewed to incorporate current and appropriate methods in developing the AEMP for the Doris North Project. Incorporating steps outlined in the MMER guidance documents will enable the AEMP to be consistent with MMER requirements, which is also a condition of the Water License.
- **Analysis and Reporting** – a report outlining the various components and monitoring schedule of the AEMP will be prepared taking into consideration comments from regulators and MMER requirements.

It is important to note that the AEMP is to support the development Doris North Project. To date, all needed approvals for this project are not completed. Specifically lacking is the completion of the placement of Tail Lake on Schedule 2 of the MMER by Environment Canada. Golder Associates have been notified by Hope Bay Mining Ltd., that until this amendment is completed, the work under the AEMP will not be undertaken due to regulatory uncertainty.

3 AEMP Study Design Outline

The AEMP study design will closely follow the EEM technical guidance document to ensure that the MMER requirements are met while avoiding duplication of monitoring effort. Water quality sampling will also be conducted to meet the requirements of Part J of the Water Licence. This proposal outlines the proposed AEMP study design format.

Study Area and Sampling Locations

The study design proposed for the AEMP and the future EEM study is expected to be a Multiple Control/Impact design. This design consists of two or more

reference areas and a series of downstream exposure areas representing near-field and far-field areas. This design was selected as the most appropriate because there is no opportunity to select upstream reference streams or lakes that are similar to the streams and lakes that will be exposed to the effluent discharged from Tail Lake. Two reference streams and two reference lakes will be selected to characterize natural variation in biological communities.

Fish Survey

The AEMP fish survey is required to determine if there have been changes in fish growth, reproduction, condition, and survival. The AEMP will be designed to assess baseline conditions in the proposed reference areas and future exposure areas using the EEM recommended methods, health parameters and statistical analyses to supplement the existing baseline prior to development.

Benthic Invertebrate Community Survey

The AEMP and EEM benthic invertebrate community survey is required to determine if future mine effluent is having an effect on fish habitat. The AEMP will be designed to assess benthic invertebrate baseline conditions in the proposed reference areas and future exposure areas using the EEM recommended methods, community parameters and statistical analyses.

Water Quality Survey

The purpose of monitoring water quality in an AEMP program is to evaluate mine-related changes in water chemistry in the exposure area. Water quality monitoring is also required in the Effluent and Water Quality Monitoring Studies component of the MMER. Water quality samples will be collected at sampling locations to fulfil the requirements of EEM and Part J of the Water Licence. As requested by Environment Canada, chlorophyll *a* samples will be collected in reference and exposure areas to assess potential nutrification effects on primary production.

Sediment Chemistry Survey

The purpose of monitoring sediment chemistry in an AEMP program is to evaluate mine-related changed in sediment chemistry in the exposure area. A sediment quality survey will be conducted in conjunction with the benthic invertebrate community survey. The sediment quality component will be to collect sediment samples in each study area and lake to document background concentrations of sediment quality parameters that will be monitored during future AEMP and EEM studies.

4 Timing for completion of the Detailed AEMP

Consultation with Environment Canada (Anne Wilson, Yellowknife) with regard to the requirements for the AEMP was initiated in early February 2008, and has been ongoing. The schedule for completion of the detailed AEMP design for approval by the Nunavut Water Board is as follows:

- Preparation of a draft design, based on input from Environment Canada received to date, and continued consultation;
- Submission of a draft AEMP for review by Environment Canada (and Nunavut Water Board, if applicable) by 30 April 2008.
- Finalization of the detailed AEMP design, incorporating Environment Canada and Water Board comments by 30 May 2008.
- Implementation of AEMP baseline data collection will commence only after Tail Lake is placed on Schedule 2 of the MMER.

As noted earlier, the AEMP program will not proceed until the completion of the amendment to Schedule 2 of the MMER. Therefore, the dates listed above may be modified if delays in the completion of the amendment occur.

5 Closure

We trust the above meets your present requirements. If you have any questions or require additional details, please contact the undersigned.

GOLDER ASSOCIATES LTD.

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