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NUNAVUT WATER BOARD  
NUNAVUT IMALIRIYIN KATIMAYINGI  
OFFICE DES EAUX DU NUNAVUT

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File: 2AM-DOH0713/Amendment 2

February 15, 2011

Mr. Chris Hanks  
Director, Environmental & Social Responsibility  
Hope Bay Mining Ltd.  
Suite 300, 889 Harbourside Drive  
North Vancouver, BC V7P 3S1

By email: [chris.hanks@newmont.com](mailto:chris.hanks@newmont.com)

**Subject: Licence 2AM-DOH0713 Type A Licence, Hope Bay Mining Limited, Doris North Project; Amendment No.2, Expansion of fuel storage and containment facility, airstrip and bypass road expansion, and revised location of cyanide/reagent storage facility.**

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Dear Mr. Hanks,

Please find attached Amendment No.2 to Water Licence No. 2AM-DOH0713 Type "A" issued to Hope Bay Mining Ltd (HBML) by the Nunavut Water Board (NWB) (**Motion 2010-27-L01**) pursuant to its authority under Article 13 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada* and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (NWNSRTA).

The terms and conditions of the original Licence related to water use and waste disposal remain an integral part of this approval. Please note that the Amendment, as issued, must be approved by the Minister under s. 56 of the NWNSRTA and accordingly, the NWB has forwarded the issued Amendment to the Minister for his consideration.

The NWB recommends that the Licensee consult the comments received by interested persons<sup>1</sup>. This information is attached for your review.

Sincerely,

Thomas Kabloona  
Chair, Nunavut Water Board

TK/tla

Enclosure: Licence No. **2AM-DOH0713 - Amendment No.2**  
Comments – INAC, EC

Cc: Distribution – Kitikmeot

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<sup>1</sup> Environment Canada, dated December 3, 2010; Indian and Northern Affairs Canada, dated December 3, 2010.

## LICENCE AMENDMENT No. 2

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<b>Licensee:</b>	<b>HOPE BAY MINING LTD.</b>
<b>Licence No:</b>	<b>2AM-DOH0713      Type "A"</b>
<b>Licence Issued:</b>	<b>September 19, 2007</b>
<b>Minister Approval of Licence:</b>	<b>November 5, 2007</b>
<b>Amendment No. 1 Issuance:</b>	<b>August 4, 2010</b>
<b>Minister Approval of Amendment No. 1:</b>	<b>September 17, 2010</b>
<b>Amendment 2 Issuance:</b>	<b>February 15, 2011</b>
<b>Licence Expiry:</b>	<b>September 30, 2013</b>

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The Licence issued September 19, 2007 and subsequently approved by the Minister on November 5, 2007, with an expiry date of September 30, 2013 shall be amended to include the following terms and conditions, with respect to the use of water and deposit of waste, to allow the Hope Bay Mining Ltd (HBML or Licensee) to:

- Expand the Roberts Bay fuel storage and containment facility;
- Expand the project's all-weather airstrip and construct a bypass road; and
- Revise the location of the cyanide and reagent storage facility.

The amendment does not change the water use and waste disposal practices approved under the current existing Type A Licence. The three (3) undertakings mentioned above shall be carried out in accordance with the plans submitted in support of the amendment application dated October 29, 2010 and the conditions of approval contained herein.

The project is located in an area that is absent of an approved regional land use plan and is therefore exempt from a Nunavut Planning Commission land use plan conformity determination. In addition, the amendment application was exempt from environmental assessment screening by the Nunavut Impact Review Board on January 14, 2011.

Comments on the amendment application were submitted to the NWB by Indian and Northern Affairs Canada (INAC) and Environment Canada (EC). No major issues were identified by parties during the review of the amendment application that would prevent the undertakings identified in the application from proceeding. Parties were generally supportive of the application, subject to the existing Licence conditions and additional recommendations made in their submissions concerning the amendment. Specific issues are addressed below.

### **Expansion of the Roberts Bay Fuel Storage and Containment Area**

HBML will expand the existing Fuel Storage and Containment Facility to add four new 5.7 Million Litre (ML) diesel fuel tanks and one 1.5 ML fuel tank for bulk storage of Jet A fuel. The facility expansion will be located at a site approximately 100 m south of the existing 5.7 ML fuel tank at Roberts Bay. HBML is not able to locate the new tanks immediately adjacent to the existing tank in Quarry 1, as ground preparation requires blasting, which poses a risk of damaging the existing tank.

The expansion of the Fuel Storage and Containment Facility will increase the total site diesel fuel storage capacity from 14 ML to 36 ML and will allow for the storage of 1.5 ML of Jet A fuel. Installation of the additional tanks is intended to eliminate the requirement for fuel barges to over-winter in Roberts Bay.

In order to install the fuel tanks, an existing outcrop will be drilled and blasted to create a level base. The lined and bermed secondary containment design will be similar to that used for the existing fuel tank. Also, Appendix A of the application describes the removal of overburden which will be disposed of at an existing overburden storage dump, located immediately east of the existing Roberts Bay fuel tank facility. This involves the construction of a sedimentation control berm along the downstream edge of the storage area using run of quarry material. INAC provided recommendations for this structure, which are addressed below.

Regarding the expansion of the fuel storage facility, EC requested that HBML ensure that the Spill Contingency Plan and Emergency Response Plan be updated prior to construction. The requirement to update management plans was also identified by INAC. In accordance with Schedule B, Item 8 of the Licence, the Licensee shall revise applicable management plans, as and where necessary to reflect all of the approved project changes. In this case, the NWB finds that the revised management plans must be submitted prior to commissioning of the new facilities. The Licensee is directed to the comments received and should consult with the NWB as well, regarding the specific plans to update.

Finally, with respect to the expansion of the fuel storage, INAC observed that HBML proposed that an additional monitoring station and discharge point be established at the new fuel storage and containment site through an amendment to Part G, Item 22 of the Licence. The effluent quality limits and discharge criteria specified in the licence for the current fuel storage and containment facility would apply at this monitoring station. The NWB agrees with the proposal and has expanded the description of monitoring station ST-6 to include the additional sump and now refers to stations ST-6a and ST-6b.

### **Expansion of the All-Weather Airstrip and Bypass Road**

A widened section of the all-weather supply road between Roberts Bay and the Doris North site currently operates as both an airstrip and road. Using the rock quarried during the construction of the expanded Fuel Storage and Containment Facility, and additional material from the new quarry #5, HBML will construct a short all weather service road that will bypass the airstrip.

The existing airstrip will also be expanded to an overall length of 1,795 m and width of 46 m to permit the landing of larger aircraft at site. The bypass road will be 2.9-km long, located on the east side of the airstrip. These measures will improve safety by eliminating vehicle traffic from the airstrip and will also eliminate transport delays caused by the need to wait for aircraft using the airstrip.

In its comments, EC recommended mitigation measures to be applied during construction and emphasized the need to ensure that quarry material used for construction is non-acid generating. Quarry material has been characterized and was found to be consistent with the previously approved quarries 1, 2 and 4. SRK Consulting provided a technical memo on the quarry material on behalf of HBML concluding that:

Special management plans are not required to prevent acidic drainage from developing in this material. SRK recommends a monitoring program to verify the characteristics of these materials following construction. The program would include visual inspection and sampling of both solid materials and seepage flowing from infrastructure, as has already been conducted for the existing Doris North camp, airstrip and roads. (Technical Memo - App B, Adobe pg 21).

INAC recommended that the monitoring be applied to the material quarried from both the new Roberts Bay fuel storage and containment site and where a cut is required to meet obstacle limitations for an expanded airstrip (Quarry 5). From a compliance perspective, INAC also recalled that HBML is expected to satisfy Part D, Items 21 and 22 of the licence concerning the implementation of a Quarry Rock Seepage Monitoring and Management Program and the submission of summary reports that discuss and interpret geochemical data derived from samples. The NWB agrees with INAC's view and also notes Part D, Item 10 that applies to the new construction quarrying activity.

INAC noted the likelihood that de-icing fluids will be periodically required and applied to aircraft before takeoff and therefore is concerned that HBML should develop procedures for managing these fluids as they can negatively impact water sources if mitigation measures are not in place. In the event de-icing fluid may be used at site, the Licence has been amended through the addition of Part G, Item 32, which requires the submission of a management plan for the activity.

Finally, INAC observed that the Appendix A document submitted by HBML references a stream that passes through the proposed airstrip expansion area and bypass road. INAC recommended that construction only occur when the stream is not flowing and appropriate mitigation measures should be established to prevent the entry of sediment into water. The NWB is of the view that the existing conditions of the Licence adequately address this concern, in particular Part D, Items 4, 5, 6, 7, 15, 16, 17, 18 and 19 apply to the undertaking.

### **Revised Location of the Cyanide and Reagent Storage Facility**

HBML will relocate the project's reagent and cyanide supply to secondary containment facilities to be built at the Lower Reagent Pad situated along the all-weather access road that connects Roberts Bay and the Doris Camp. The amount of reagent and cyanide to be stored on site has not changed from the original proposal. Both reagent and cyanide storage and containment areas will be designed to the same standards describe in the application. Each of these facilities will have a sump within their respective secondary containment areas for the collection of surface water and/or chemical spills.

INAC noted HBML's proposal to test sump effluent and, if it meets Licence discharge criteria, it will be pumped out and spread out on the tundra or used as dust suppressant on the roads. Or, if the liquid does not meet the Licence discharge criteria, it will be pumped into appropriate containers for proper off-site disposal at a registered hazardous waste disposal site. However, the NWB notes that the applicable effluent discharge limits and associated discharge and management requirements are included under Part G, Item 21 of the Licence. Those requirements are maintained as applicable for this amendment. An additional monitoring station has been added to the program to cover the sumps.

### **Additional Considerations**

The NWB reminds HBML that Part D, Item 27 of the Licence requires that the construction of engineered structures be supervised and field checked by an appropriately qualified and experienced Engineer in such a manner that the project specification can be enforced and, where required, the quality control measures can be followed. The Licensee shall also ensure that the construction records of all engineered structures are maintained and made available at the request of the Board and/or an Inspector. As recommended by INAC this requirement also applies to the construction of the sedimentation control berm at the overburden dump. Furthermore, the new facilities are subject to the requirement of Annual Geotechnical Inspection requirements under Part J, Items 18 and 19 of the Licence.

The Licensee is reminded that in accordance with Part H, Item 3, as-built plans and drawings of the amended facilities are to be provided within ninety (90) days of completion. The plans and drawings shall be stamped by an Engineer. The as-built drawings may be provided within the Construction Summary Reports required by Part D, Item 26 of the Licence.

Finally, the NWB has been notified by INAC of its intent to revisit the reclamation security estimate for the Project. The NWB will address security in accordance with Part C of the Licence once more information is submitted.

Pursuant to its authority under Article 13 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada* and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*, and subject to approval by the Minister, with respect to an application for an amendment dated October 29, 2010 made by Hope Bay Mining Ltd. (HBML or Licensee), the NWB hereby issues the following Licence amendment:

### **SCHEDULE A      SCOPE, DEFINITIONS AND ENFORCEMENT**

**Amend Definition**      **“Fuel Storage and Containment Facility”** means the facilities designed for the bulk storage of fuel at the Doris North Plant site and Roberts Bay as illustrated in the Revised Water Licence Application Supporting Document S4 entitled “Engineering Drawings for Tailings Containment Area and Surface Infrastructure Components”, DWGS S-05 and S- 06 dated Mar 2007, SRK Job Number ICM014.008; and the Water Licence Pre-Hearing Technical Meeting Information Supplement Figure 1, Project Number 334499, as well as the facility expansion described in the amendment 2 application dated October 29, 2010 with Engineered drawings Attached as Appendix A to SRK Consulting memo dated September 22, 2010.

**Amend Definition**      **“Quarry”** means the four (4) areas of surface excavation for extracting rock material for construction purposes as identified in section 2.4.15 of the Revised Water Licence Application Support Document, April 2007 as well as the borrow source #5 required for the construction of the airstrip bypass road and airstrip expansion described in the amendment 2 application dated October 29, 2010.

**Insert Definition**      “**Reagent and Cyanide Storage Facility**” means the engineered storage and containment areas described in the amendment 2 application dated October 29, 2010 with engineered drawings attached as Appendix A to SRK Consulting memo dated September 21, 2010.

**SCHEDULE J**      **CONDITIONS APPLYING TO GENERAL AND AQUATIC EFFECTS MONITORING**

Amend Schedule J, Table 2-Monitoring Requirements as follows:

**Amend**                      ST-6a and ST-6b: Discharge from the Roberts Bay Fuel Storage and Containment Area Sumps.

**Insert ST-11 (new station) to Table 2**

Station	Description	Phase	Monitoring Parameters	Frequency
ST-11 (new)	Discharge from the Reagent and Cyanide Storage Facility Sumps.	Construction, Operation, Closure	G, HC and D	Once before any discharge, daily when discharging onto the tundra

**PART F**                      **CONDITIONS APPLYING TO WATER MANAGEMENT**

**Amend Item 4**              The Licensee shall carry out regular inspections of all water management structures during periods of flow (rock drains, culverts, sedimentation and pollution control ponds and associated diversion berms, reagent and cyanide storage facility sumps, and sedimentation control berm at the overburden dump) and the records be kept for review upon request of an Inspector. More frequent inspections may be required at the request of an Inspector.

**PART G**                      **CONDITIONS APPLYING TO WASTE MANAGEMENT AND WASTE MANAGEMENT PLANS**

**Amend Item 19**              The Licensee shall operate the Sewage Treatment Plant, Landfill, Landfarm, Fuel Storage and Containment Facilities, Sedimentation Pond, Pollution Control Pond, and the Reagent and Cyanide Storage Facility sumps to the satisfaction of the Inspector.

**Amend Item 21**              The Licensee shall operate and maintain the Sedimentation Pond and Reagent and Cyanide Storage Facility sumps in accordance with the following:

**Amend Item 21(a)**      Water discharged from the Sedimentation Pond and Reagent and Cyanide Storage Facility Sumps at monitoring stations ST-1 and ST-11 respectively shall not exceed the following Effluent quality limits:

(no change to limits which remain in Licence).

**Amend Item 22(e)** Water discharged from the Fuel Storage and Containment Facility Sumps at monitoring stations ST-5, ST-6a and ST-6b shall not exceed the following effluent quality limits:

(no change to limits which remain in Licence)

**Insert Item 32** The Licensee shall submit to the Board for approval, a Plan to manage aircraft de-icing fluid used at the all-weather airstrip. The Plan shall be submitted at least three (3) months prior to the anticipated use of de-icing fluid and shall also cover on-site storage and containment requirements.

**PART J**                      **CONDITIONS APPLYING TO GENERAL AND AQUATIC EFFECTS MONITORING**

**Insert Item 18(p)**      p. Sedimentation control berm at the overburden dump.

**Amend Item 20(e)**      Roberts Bay Fuel Storage and Containment Area Sumps;

**Insert Item 20(h)**      Reagent and cyanide storage facility sumps.

**All remaining terms and conditions of the Licence 2AM-DOH0713 Type ‘A’ dated September 19, 2007 and Amendment No. 1 dated August 4, 2012 remain in effect.**

This Licence Amendment No.2, issued and recorded at Gjoa Haven, NU on February 15, 2011.



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**Thomas Kabloona,**  
**Nunavut Water Board**  
**Chair**

**APPROVED**  
**BY:**

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**Honorable John Duncan, M.P.**  
**Minister of Indian and Northern**  
**Affairs Canada**

**DATE AMENDMENT APPROVED:** \_\_\_\_\_