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Climate Change Canada

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September 21, 2016

EC file: 6100 000 010 034  
NWB file: 2AM-DOH1323

Sonia Aredes  
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Via email to [licensing@nwb-oen.ca](mailto:licensing@nwb-oen.ca)

**RE: TMAC-Doris North Project - Comments regarding blackline version of Water  
Licence 2AM-DOH1323 (Public Hearing Exhibit # 22)**

Attention: Ms. Aredes,

Environment Canada and Climate Change Canada (ECCC) has reviewed the Water Licence amendments proposed by TMAC as presented in the above noted draft licence and is submitting comments in the attached table. Note that, due to time constraints, ECCC did not carry out a detailed review of the schedules included in the document.

ECCC's specialist advice is provided in context of the *Canadian Environmental Protection Act, 1999*, and the pollution prevention provisions of the *Fisheries Act*.

Should you have any questions regarding the foregoing please contact Mark Dahl at (204) 983-4815 or via email at [mark.dahl@canada.ca](mailto:mark.dahl@canada.ca).

Sincerely,

Mark Dahl  
Coordinator, Environmental Assessment and Marine Programs  
Prairie and Northern Region

cc: Georgina Williston, Head, Environmental Assessment North (NT and NU).  
Mark Dahl, Environmental Assessment Coordinator, PNR.  
ECCC Review Team

Attachment: ECCC Comment Table

**Canada**

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## ECCC comments on Draft Water Licence

| TERM #   | RELEVANT PORTION OF BLACKLINE VERSION/TMAC COMMENT  | ECCC COMMENT   |                                      |   |                         |    |     |   |
|--|---|--|--------------------------------------|---|-------------------------|----|-----|---|
| <b>PART B GENERAL CONDITIONS</b>                                 |   |  |                                      |   |                         |    |     |   |
| 4  | "Note that the conditions set out in this Licence have been drafted on the assumption that the plans reviewed during the current Amendment process will be approved with Licence issuance"  | ECCC disagrees with the assumption that the plans will be approved at time of licensing – ECCC notes that changes are being made and those changes will require review and approval  |                                      |   |                         |    |     |   |
| 6  | "The Licensee shall review the Plans referred to in this Licence, as required by changes in status of the project, operation and/or technology, and modify the Plan accordingly. Revisions to the Plans shall be submitted to the Board in the form of an Addendum to be included with the Annual Report <u>or otherwise from time to time as necessary</u> "   | ECCC – plan changes can be significant and should be reviewed and have board approval  |                                      |   |                         |    |     |   |
| 14   | TMAC suggests this condition should be deleted  | Agree  |                                      |   |                         |    |     |   |
| <b>PART D CONDITIONS APPLYING TO CONSTRUCTION AND OPERATIONS</b> |   |  |                                      |   |                         |    |     |   |
| 8  | In years when construction has occurred, the Licensee shall submit <del>on</del> <u>an</u> annual Construction Monitoring Report no later than March 31 in the year following the calendar year being reported. The report shall be developed in accordance with Schedule D, Item 1.  | ECCC suggests that "construction" be more clearly defined.   |                                      |   |                         |    |     |   |
| 18   | <p>All surface runoff during the construction of any facilities, where flow may directly or indirectly enter <del>to</del> a water body, shall meet the following effluent quality limits:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Parameter</th><th>Maximum Average Concentration (mg/L)</th><th>Maximum concentration of Any Grab Sample (mg/L)</th></tr> </thead> <tbody> <tr> <td>Total Suspended Solids*</td><td>50</td><td>100</td></tr> </tbody> </table> <p>* or equivalent turbidity concentrations, as approved by the Board</p> | Parameter  | Maximum Average Concentration (mg/L) | Maximum concentration of Any Grab Sample (mg/L) | Total Suspended Solids* | 50 | 100 | ECCC notes that the relationship between Turbidity and Total suspended Solids is site- specific. ECCC agrees that Turbidity is a useful management tool but a site specific relationship must be developed before it can replace Total Suspended Solids or otherwise be used as a regulatory tool |
| Parameter  | Maximum Average Concentration (mg/L)  | Maximum concentration of Any Grab Sample (mg/L)  |                                      |   |                         |    |     |   |
| Total Suspended Solids*  | 50  | 100  |                                      |   |                         |    |     |   |
| <b>Part E CONDITIONS APPLYING TO WATER USE</b>                   |   |  |                                      |   |                         |    |     |   |
| 1  | "For clarity, non-consumptive uses and diversions are permitted water uses in accordance with this Licence and are not limited by volume."  | ECCC notes that this is not consistent with other (municipal) water licenses that use bleeder water in winter and return it to the source. Non consumptive uses should be identified and included in Licence volume limits.  |                                      |   |                         |    |     |   |
| <b>PART F CONDITIONS APPLYING TO WATER MANAGEMENT</b>            |   |  |                                      |   |                         |    |     |   |
| 1  | <p>TMAC suggests reducing this condition to "The Board has approved with issuance of the licence the plan entitled "Hope Bay Water Management Plan" dated August 2016, as may be revised from time to time in accordance with Part B, Item 6."</p> <p>TMAC also noted that "this suggested revision assumes plan approval at the time of licence issuance."</p>   | ECCC disagrees with the assumption that plans will be approved at time of licence issuance. Parties need the opportunity to review the final versions of the plans. ECCC's submissions at the final hearing assumed that management plans would undergo further review and revision. ECCC suggests that a written review |                                      |   |                         |    |     |   |



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|   |  | process and Board approval are required for the plans.  |
| PART G CONDITIONS APPLYING TO WASTE MANAGEMENT AND WASTE MANAGEMENT PLANS |  |   |
| 3b  |  | ECCC notes a typo ("nd " in the table under "Maximum Allowable Grab sample Concentration for Total oil and Grease"  |
| 3c  | "All effluent from the Domestic Wastewater Treatment Plant shall be discharged approximately west of the facility laydown areas"   | For clarification ECCC suggests the following revision to the proposed wording: "For tundra discharge all effluent from the Domestic Wastewater Treatment Plant shall be discharged approximately west of the facility laydown areas"   |
| 4   | "The suggested revision assumes plan approval at time of licence issuance"   | ECCC disagrees with the assumption that the plans will be approved at time of licensing – ECCC notes that changes are being made and those changes will require review and approval. ECCC suggests that timelines for review and approval of the next iteration of plans should also be provided.   |
| 5   | The Licensee shall dispose of all food waste in an incinerator designed for this purpose and meets the requirements of the Canada-Wide Standards for Dioxins and Furans and the Canada-Wide Standards for Mercury emissions <u>as amended from time to time.</u> "   | ECCC notes that while the Canada-Wide Standards are not likely to be amended, other standards may be developed.   |
| 7   |  | ECCC disagrees with the assumption that the plans will be approved at time of licensing.  |
| 10  | The Board has approved the Hope Bay Mining Ltd., Hazardous Waste Management Plan, March 2012 (Rev 1.1) September 2016 as may be revised <u>and approved</u> from time to time in accordance with Part B, item 6. The Licensee shall submit to the Board for review, three (3) months prior to operations, a revised plan, which shall include a review of all hazardous materials used and hazardous wastes produced at the Project. | ECCC disagrees with the assumption that the plans will be approved at time of licensing. ECCC notes that the September 2016 plan has yet to be submitted and that approval is not included in the revised term. ECCC suggests that term #10 be revised to avoid the assumption that the existing plan has been approved and to include Board approval |
| 14  | The revisions to the text assumes approval of the "Hope Bay Project Doris North Waste Rock and Ore Management Plan."   | ECCC disagrees with the assumption that the plans will be approved at time of licensing. ECCC suggests that neither the Parties nor TMAC should assume approval of the current version of the plan.   |
| 21  | The Licensee shall operate the Domestic Wastewater Treatment Plant, Landfill, Landfarm, fuel storage and Containment Facilities, Sedimentation Pond, Pollution Control Ponds, and the Reagent and Cyanide Storage Facility sumps <u>to the satisfaction of the inspector in accordance with generally accepted industry best practice.</u>   | ECCC does not agree with the removal of "to the satisfaction of the inspector" from condition 21.<br>ECCC suggests that, should TMAC's additional text be adopted, the term "generally accepted best practice" should   |

|   |  | be defined.<br>ECCC also notes that the Department does not inspect the structure of the TIA but ECCC enforcement may inspect to confirm conformity with section 36 of the Fisheries Act.   |                                      |   |          |     |     |                   |      |      |   |
|---|--|---|--------------------------------------|---|----------|-----|-----|-------------------|------|------|---|
| 23  | Consider removal of clause in its entirety or alternatively (b) and (c) as each of these waters is now considered mining and milling contact water and is therefore under the jurisdiction of the MMER. This is the prevailing regulatory treatment for these waters and as such provisions in this water license are not required.        | ECCC disagrees with the removal of this condition. Any effluent upstream of the marine outfall has the potential to impact fresh water and is therefore under the NWB jurisdiction. Subsequent MMER regulation of the contact water when it is discharged as effluent does not preclude upstream discharges being regulated, especially as TMAC wants to retain the option of tundra discharge. |                                      |   |          |     |     |                   |      |      |   |
| 23  | <table border="1"> <thead> <tr> <th>Parameter</th><th>Maximum Average Concentration (mg/L)</th><th>Maximum Concentration in any Grab Sample (mg/L)</th></tr> </thead> <tbody> <tr> <td>Total CN</td><td>1.0</td><td>2.0</td></tr> <tr> <td>Total Zinc – T-Zn</td><td>0.01</td><td>0.02</td></tr> </tbody> </table>                         | Parameter   | Maximum Average Concentration (mg/L) | Maximum Concentration in any Grab Sample (mg/L) | Total CN | 1.0 | 2.0 | Total Zinc – T-Zn | 0.01 | 0.02 | ECCC suggests that the Maximum Average concentration values for CN and T- Zn be revisited as CN appears high (equivalent to MMER) and the T-Zn value is below CCME. |
| Parameter   | Maximum Average Concentration (mg/L)   | Maximum Concentration in any Grab Sample (mg/L)   |                                      |   |          |     |     |                   |      |      |   |
| Total CN  | 1.0  | 2.0   |                                      |   |          |     |     |                   |      |      |   |
| Total Zinc – T-Zn   | 0.01   | 0.02  |                                      |   |          |     |     |                   |      |      |   |
| 25  | "The suggested revision assumes plan approval at the time of Licence issuance"   | ECCC notes that the suggested revision presupposes plan approval at the time of licence issuance. ECCC disagrees with the assumption that the plans will be approved at time of licensing, changes are being made to plans and those changes will require review and approval.  |                                      |   |          |     |     |                   |      |      |   |
| 32  | The Licensee shall ensure that the flow from the Tailings Impoundment Area into Doris Creek at monitoring station TL-4 does not exceed 10% of the background flow in Doris Creek, as measured at monitoring station TL-2 at the time of discharge.   | ECCC disagrees that this condition should be removed because it no longer applies rather ECCC suggests that the condition be modified to address closure discharge.   |                                      |   |          |     |     |                   |      |      |   |
| <b>PART I CONDITIONS APPLYING TO CONTINGENCY PLANNING</b>                   |  |   |                                      |   |          |     |     |                   |      |      |   |
| 1   | "The suggested revision assumes plan approval at the time of Licence issuance"   | ECCC notes that the suggested revision presupposes plan approval at the time of licence issuance. ECCC disagrees with the assumption that the plans will be approved at time of licensing, changes are being made to plans and those changes will require review and approval.  |                                      |   |          |     |     |                   |      |      |   |
| <b>PART J CONDITIONS APPLYING TO GENERAL AND AQUATIC EFFECTS MONITORING</b> |  |   |                                      |   |          |     |     |                   |      |      |   |
| 1   | The Licensee shall install and maintain flow meters or other such devices, or implement suitable methods required for the measuring of water use and Effluent discharge volumes, <u>where such discharges are made to the terrestrial environment or freshwater and to be operated and maintained to the satisfaction of an Inspector.</u> | ECCC disagrees with the added text as it will still be important to understand the volume of effluent going to the marine environment for spill contingency. planning   |                                      |   |          |     |     |                   |      |      |   |
| 7   | TMAC suggested deleting this clause  | ECCC disagrees with the deletion of this  |                                      |   |          |     |     |                   |      |      |   |



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|    | "Additional monitoring may be requested by the Board or by the inspector."   | clause in its entirety however ECCC suggests that "or by the inspector" be deleted.   |
| 9  | All analyses shall be conducted as described in the most recent edition of "Standard Methods for the Examination of Water and Wastewater" or by other such methods <u>approved by applicable legislation or policy</u> or a qualified Analyst.   | ECCC disagrees with the added text as it is unclear how "applicable policy" would be defined.   |
| 13 | TMAC recommended removal of the reference to combined tailings which was achieved by modifying a) and b) but item c) was deleted in the process.   | ECCC recommends retaining "c) The monthly quantity of ore processed."   |
| 20 | <p>The Licensee shall visually monitor and record observations, to be made available to an Inspector upon request, on a daily basis during periods of discharge onto the tundra from:</p> <ul style="list-style-type: none"> <li>a) Landfill Sump;</li> <li>b) Sedimentation Pond;</li> <li>c) Landfarm Sump;</li> <li>d) Plant Site Fuel Storage and Containment <u>Facility Area</u> Sump;</li> <li>e) Roberts Bay Fuel Storage and Containment <u>Facility Area</u> Sumps;</li> <li>f) <u>Domestic Wastewater Treatment Plant</u> (during the <u>Construction phase</u>); and</li> <li>g) h) Reagent and <u>Cyanide</u> <u>Storage</u> <u>Facility</u> sumps.</li> </ul> <p><u>The Licensee shall visually monitor and record observations, to be made available to an Inspector upon request, on a monthly basis during periods of discharge onto the tundra from the Domestic Wastewater Treatment Plant.</u></p> | <p>ECCC disagrees that monthly monitoring is sufficient. The Doris North Project is located in a region where permafrost degrades fast when thermally challenged. Thermally induce erosion could become well established over the course of a month.</p> <p>Further ECCC notes that the condition lists many sources of tundra discharge water but ECCC understood that tundra discharges would be composed solely of effluent from secondary containment areas and from the Waste Water Treatment plant.</p> |

#### PART K CONDITIONS APPLYING TO GENERAL AND AQUATIC EFFECTS MONITORING PLANS

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| 7 | <del>The Board has approved with issuance of the licence the Plan entitled "Hope Bay Project Doris. The Licensee shall submit to the Board for review, six (6) months prior to Operations, a revised Doris North Gold Mine Mine Project: Aquatic Effects Monitoring Plan, August 2016" as may be revised from time to time in accordance with Part B, Item 6. (AEMP) that has been developed in consultation with Environment Canada. The revised AEMP shall consider modifications and advances in schedule which are consistent with the objectives and requirements of the MMER.</del> | ECCC notes that the suggested revision presupposes plan approval at the time of licence issuance. ECCC disagrees with the assumption that the plan will be approved at time of licensing, changes are being made to plans and those changes will require review and approval. |
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#### PART L CONDITIONS APPLYING TO ABANDONMENT, RECLAMATION AND CLOSURE

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| 5 | <del>The Board has approved with issuance of the licence the Plan entitled "Doris Mine Interim Closure and Reclamation Plan, Hope Bay, Nunavut, September 2016" as may be revised from time to time as otherwise expressly noted in this Licence. the "Doris North Closure and Reclamation Plan, Hope Bay Mining Ltd." prepared by SRK Consulting (Canada) Inc., 1CH008.065, August 2012. The Licensee shall submit to the Board for review, within sixty (60) days of approval of the Licence, a revised closure plan, addressing the technical comments received and based on the response submission of the Applicant on February 14, 2013.</del> | ECCC notes that the suggested revision presupposes plan approval at the time of licence issuance. ECCC disagrees with the assumption that the plan will be approved at time of licensing, changes are being made to plans and those changes will require review and approval. |
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| 8 | <p>The Licensee shall submit to the Board for approval, <del>within eighteen (18) months of the start of Operations</del> <u>six (6) months prior to the start of Closure</u>, a Final Mine Closure and Reclamation Plan prepared in accordance with the Mine Site Reclamation Guidelines for the Northwest Territories, 2006 and consistent with the INAC Mine Site Reclamation Policy for Nunavut, 2002 <u>as may be revised from time to time</u>. The Final Plan shall incorporate revisions, which reflect the pending closed status of the mine, and include the following:</p> <ul style="list-style-type: none"> <li>a. Soil Quality Remediation Objectives along with CCME Guidelines and the Government of Nunavut Environmental Guideline for Site Remediation;</li> <li>b. Environmental Site Assessment plans in accordance Canadian Standards Association (CSA) criteria; and</li> <li>c. Evaluation of the Human Health and Ecological Risk Assessment.</li> </ul> | <p>6 months may not allow sufficient time for review and approval of the plan prior to implementation. ECCC suggest that 12 months prior to start of Closure may be more appropriate submission deadline.</p> |
|---|---|---|