ᓄᓇᕗᑦ ᐃᒪᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ
NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

File No: 2AM-DOH1323/
Amendment No.1

November 4, 2016

Honourable Carolyn Bennett, M.D., P., M.P.
Minister of Indigenous and Northern Affairs Canada
21st Floor, 10 Wellington
Gatineau, Quebec K1A 0H4

Email: carolyn.bennett@parl.gc.ca

By Courier, Email and Regular Mail

Subject: NWB Type "A" Water Licence No. 2AM-DOH0713 Amendment No.1– Doris North Project, Nunavut; TMAC Resources Inc.

Dear Honourable Minister Bennett:

Please find enclosed Amendment No.1 to Type "A" Water Licence No. (the Amended Licence), issued by the Panel of the Nunavut Water Board (NWB) duly authorized to consider the Application of TMAC Resources Inc. (TMAC) to amend Licence 2AM-DOH1323 received by the NWB on June 15, 2015 (the Amendment Application). The Amended Licence authorizes the use of water and deposit of waste associated with a Mining Undertaking (as defined under Schedule 1 of the *Nunavut Water Regulations*) at the Doris North Gold Mine Project (the Project) in support of all phases of the Undertaking, which includes the Construction, Operations, Closure, Reclamation, and Post-Closure Monitoring of the Project. The Project is located on Inuit Owned Lands (IOL) in the West Kitikmeot Region of Nunavut, approximately 125 kilometers (km) south of Cambridge Bay and 150 km north of Omingmaktok (Bay Chimo).

As indicated in the NWB's Reasons for Decision accompanying the Amended Licence, in deciding to issue the Amended Licence the NWB considered the extensive written and oral submissions provided by TMAC, and interveners during the NWB's processing of the Amendment Application including the Kitikmeot Inuit Association, Environment and Climate Change Canada, Fisheries and Oceans Canada, Indigenous and Northern Affairs Canada and Natural Resources Canada. The NWB also considered the comments and questions of community members participating in the public meetings and Public Hearing associated with the Amendment Application, as well as determinations made by the Nunavut Planning Commission (NPC) and the Nunavut Impact Review Board (NIRB).

NPC in its response to the NWB and the NIRB, dated September 16, 2015, indicated that because the Amendment Application was in relation to a project proposal that had been previously assessed by the NPC and the NIRB under the Nunavut Land Claims Agreement (NLCA) and was received prior to July 9th, 2015

the Amendment Application was exempt from processing under the requirements of the *Nunavut Planning and Project Assessment Act*, S.C. 2013, c. 14, s. 2 and could be processed in accordance with the NLCA provisions alone. At that time the NPC also indicated that the NPC's correspondence from 2010 confirming that the Project is in an area without an approved land use plan still applies, and therefore a conformity determination by the NPC under the NLCA was not required.

As requested by TMAC, the NIRB's assessment of the amendments to the original Project and reconsideration of the terms and conditions in the NIRB Project Certificate No. 003 and the NWB's consideration of the Amendment Application were conducted in a co-ordinated process to the extent possible. On September 23, 2016 the NIRB completed the assessment and reconsideration process and issued amended Project Certificate No. 003 that authorized the amendments to the Doris North Gold Mine Project as proposed by TMAC to proceed to the licensing stage of the regulatory process in accordance with revised terms and conditions.

In accordance with section 56 of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*, the Amended Licence requires your approval in order to take effect and be valid. As such, the NWB submits the attached Reasons for Decision including Records of Proceedings rendered by the NWB, and a copy of Licence No. 2AM-DOH1323 – Amendment No.1 for your review and decision.

Should you have any questions and/or require clarification on the above or wish to discuss further, please contact the undersigned in writing.

Sincerely,

Thomas Kabloona
Nunavut Water Board, Chair

cc: John Roberts, TMAC Resources Inc.
Doris North Distribution List
NWB Public Registry

Enclosures: Water Licence No.2AM-DOH1323 – Amendment No.1
Reasons for Decision Including Record of Proceedings

NUNAVUT WATER BOARD

WATER LICENCE NO: 2AM-DOH1323 – AMENDMENT NO.1

TABLE OF CONTENTS

TABLES

Licence No. 2AM-DOH1323 – Amendment No.1

Pursuant to the Nunavut Waters and Nunavut Surface Rights Tribunal Act and the Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada, the Nunavut Water Board, hereinafter referred to as the Board, hereby grants to

TMAC RESOURCES INC.

(Licensee)

95 WELLINGTON STREET WEST, SUITE 1010 BOX 44 TORONTO ON M5J 2N7

(Mailing Address)

hereinafter called the Licensee, the right to alter, divert or otherwise use Water or deposit Waste for a period subject to restrictions and conditions contained within this Licence:

Licence Number/Type:	**2AM-DOH1323 TYPE "A" – AMENDMENT NO.1**
Water Management Area:	**QUEEN MAUD GULF WATERSHED NO.30**
Location:	**DORIS NORTH PROJECT KITIKMEOT REGION, NUNAVUT**
Purpose:	**WATER USE AND THE DEPOSIT OF WASTE**
Description:	**MINING UNDERTAKING**
Quantity of Water not to be Exceeded:	**480,000 CUBIC METRES *PER ANNUM***
Date Licence Issuance:	**AUGUST 16, 2013 (AMENDED NOVEMBER 4, 2016)**
Expiry of Licence:	**AUGUST 15, 2023**

This Licence Amendment No.1 issued **(Motion Number 2016-11-P7-08)** and recorded at Gjoa Haven, Nunavut includes and is subject to the annexed conditions.

Thomas Kabloona
Nunavut Water Board
Chair

APPROVED BY:

Minister of Indigenous and Northern Affairs Canada

DATE LICENCE AMENDMENT APPROVED: _____

PART A SCOPE, DEFINITIONS AND ENFORCEMENT

1. SCOPE

a. This Amended Licence authorizes TMAC Resources Inc. ("TMAC" or the "Licensee") to use Waters and deposit Waste in support of a Mining Undertaking classified as per Schedule 1 of the Regulations, at the Doris North Project (Project) as outlined in the Type "A" Water Licence Application (the Application) submitted to the Nunavut Water Board (NWB) on August 10, 2012 and in the Application for an Amendment of the Water Licence submitted to the NWB on June 15, 2015.

The Doris North Project is located at the following general geographical coordinates:

	Latitude	Longitude
Project Extents	68° 11' 13" N	106° 39' 15" W
	68° 10' 43" N	106° 36' 31" W
	68° 06' 56" N	106° 31' 37" W
	68° 02' 55" N	106° 37' 00" W
Camp	68° 08' 07" N	106° 36' 52.6" W

The 2AM-DOH1323 Water Licensee authorizes TMAC to conduct mining, milling and associated activities at the Doris North Project in the Kitikmeot Region of Nunavut (68° 09' N, 106° 36' W). The activities and facilities included under the scope of this Licence are as follows:

Scope of Existing Type "A" Water Licence No. 2AM-DOH1323

The scope of the Existing Type "A" Water Licence No. 2AM-DOH1323 that still applies to the Doris North Project includes, in general, as follows:

- The use of Water from Doris Lake for mining, milling and associated activities and domestic purposes;
- The use of Water from Windy Lake for domestic purposes;
- The quarrying of materials from specified locations;
- The development and operation of site facilities;
- The construction of access and site roads, airstrip and airstrip bypass road, water crossings, and lay down areas;
- The construction of waste rock storage pads;

- The construction and operation of a Domestic Wastewater Treatment Plant (WWTP);
- The construction and operation of a Landfill and Landfarm;
- The construction and operation of sedimentation and pollution control ponds;
- The management and disposal of Wastes associated with the Domestic Wastewater Treatment Plant, sedimentation and pollution control ponds, Landfill and Landfarm, and other Wastes as described in the Application;
- The handling and storage of petroleum products and hazardous materials including explosives, cyanide and other reagents;
- The construction of dams, spillway, and shoreline erosion control needed for the operation of the Tailings Impoundment Area (TIA);
- The extraction of portal development rock, waste rock and ore from underground via decline;
- The deposition of tailings into the Tailings Impoundment Area;
- The disposal of Waste Rock, including potentially acid generating rock, and cyanide leach residue as mine backfill;
- The use of Waste Rock from underground for construction as approved by the Board in accordance with conditions of PART G;
- The diversion of site runoff Water to Water management facilities, including the Tailing Impoundment Area (TIA); and
- The progressive reclamation of on-site facilities and infrastructure.

The additional scope based on the Amendment Application includes in general, as follows:

- The construction of additional surface infrastructure, including Doris Central and Doris Connector vent raise pads, Doris Central and Connector vent raise access roads, Roberts Bay Expanded Laydown Area, a temporary ore storage and laydown area on Pad U and its associated Pollution Control Sedimentation Pond, the use of Quarry 3 as a landfill and the Roberts Bay Discharge System and Access Road;
- A mining rate of up to 2,000 tonnes per day of ore (annual average);

- A mill with a design milling throughput of 2,000 tonnes per day of ore (annual average);
- The discharge of mine water to Roberts Bay, initially discharged into the TIA;
- The subaerial deposition of flotation tailings in the TIA;
- Prior to tailings being deposited into the TIA, the controlled discharge of effluent from the TIA to Doris Creek;
- Following tailings deposition to the TIA, TIA Effluent will discharge to Roberts Bay in accordance with the Metal Mining Effluent Regulations (MMER) and other applicable legislative requirements;
- During post-closure, Effluent from the TIA will be discharged to inland freshwater (Doris Creek).

b. This Licence is issued subject to conditions contained herein with respect to the use of Waters and the deposit of Waste of any type in any Waters or in any place under any conditions where such Waste or any other Waste that results from the deposits of such Waste may enter any Waters. Whenever new Regulations are made or existing Regulations are amended by the Governor in Council under the Act, or other statutes imposing more stringent conditions relating to the quantity, type or manner under which any such Waste may be so deposited, this Licence shall be deemed to be subject to such requirements.

c. Compliance with the terms and conditions of this Licence does not absolve the Licensee from responsibility for compliance with all applicable legislation, guidelines and directives.

2. DEFINITIONS

a. The Licensee shall refer to Schedule A for definitions of terms used in this Licence.

3. ENFORCEMENT

a. Failure to comply with this Licence will be a violation of the Act, subjecting the Licensee to the enforcement measures and the penalties provided for in the Act.

b. All inspection and enforcement services regarding this Licence will be provided by Inspectors appointed under the Act.

c. For the purpose of enforcing this Licence and with respect to the use of Water and deposit of Waste by the Licensee, Inspectors appointed under the Act, hold all powers, privileges and protections that are conferred upon them by the Act or by other applicable laws.

PART B GENERAL CONDITIONS

1. This Amended Licence incorporates the scope of the Existing Type "A" Water Licence No. 2AM-DOH1323 where appropriate and most of the scope of the Amendment No.1 Application. To the extent that any required reports, studies or plans having not yet been received, accepted or approved by the Board, the requirements associated with such documents are now brought forward under this Amended Licence.

2. The Water Use fee amount shall be determined in accordance with Section 12 of the *Regulations*.

3. Payment of fees shall be made in accordance with Section 12(6) and 12(7) of the *Regulations.*

4. The Licensee shall file an Annual Report with the Board no later than March 31 in the year following the calendar year being reported. The Annual Report shall be developed in accordance with Schedule B.

5. The Licensee shall, for all Plans submitted under this Licence, include a proposed timetable for implementation. Plans submitted cannot be undertaken without the subsequent written Board approval and direction. The Board may alter or modify a Plan if necessary to achieve the legislative objectives and will notify the Licensee in writing of acceptance, rejection or alteration of the Plan.

6. The Licensee shall, for all plans submitted under this Licence, implement the plan as approved by the Board in writing. Any changes to the plans deemed significant shall be considered as an amendment to the plan(s) or as a modification and must be submitted to the Board for approval in writing. The Board has approved under this 2AM-DOH1323 Amendment No.1 Water Licence, or carried forward from the Existing Licence 2AM-DOH1323, the following plans for implementation under the relevant sections in the Amended Licence:

   a. Hope Bay Mining Ltd., Quality Assurance and Quality Control Plan, 2AM-DOH0713, 2BB-BOS0712, 2BE-HOP1222, HB-QA-ENV-MP-001, November 2012 (REV 7.1);
   b. Hope Bay Project Quarry A, B & D Management and Monitoring Plan - Revision 01 (SRK 2010a);
   c. Hope Bay Mining Ltd., Hazardous Waste Management Plan, March 2012 (Rev 1.1)

d. Landfarm Management and Monitoring Plan, March 2014;
e. Revised Spill Contingency Plan, Hope Bay, Nunavut, April 2016;
f. Revised Domestic Wastewater Treatment Plan Doris Project, Nunavut, April 2016;
g. Doris North Mine Interim Closure and Reclamation Plan, June 2015;
h. Hope Bay Project Doris Aquatic Effects Monitoring Plan, August 2016;
i. Hope Bay Project Groundwater Management Plan, August 2016;
j. Hope Bay Project, Tailings Impoundment Area Operations, Maintenance, and Surveillance Manual, August 2016;
k. Waste Rock and Ore Management Plan Hope Bay Project, August 2016; and
l. Hope Bay Project Water Management Plan, August 2016

7. The Licensee shall update for submission to the Board for review as required under the relevant sections in the Amended Licence, the following management plans:

a. Quality Assurance and Quality Control Plan;
b. Quarry A, B & D Management and Monitoring Plan;
c. Landfarm Management and Monitoring Plan;
d. Landfill Management Plan;
e. Spill Contingency Plan, Hope Bay, Nunavut;
f. Domestic Wastewater Treatment Plan Doris Project, Nunavut; and
g. Hope Bay Project Water Management Plan.

8. In the event that a Plan is found to be unacceptable to the Board, the Licensee shall provide a revised version to the Board for review within thirty (30) days of receiving notification by the Board.

9. 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 in the form of an Addendum to be included with the Annual Report.

10. Every Plan to be carried out pursuant to the terms and conditions of this Licence, shall become a part of this Licence, and any additional terms and conditions imposed upon approval of a Plan by the Board become part of this Licence. All terms and conditions of the Licence should be contemplated in the development of a Plan where appropriate.

11. The Licensee shall retain and have a copy of this Licence available at the site of operations at all times.

12. Any communication with respect to this Licence shall be made in writing to the attention of:

Manager of Licensing
Nunavut Water Board
P. O. Box 119
Gjoa Haven, NU X0B 1J0
Telephone: (867) 360-6338
Fax: (867) 360-6369
Email: licensing@nwb-oen.ca

13. Any notice made to an Inspector shall be made in writing to the attention of:

Water Resources Officer
Nunavut District, Nunavut Region
P.O. Box 100
Iqaluit, NU X0A 0H0
Telephone: (867) 975-4295
Fax: (867) 979-6445

14. The Licensee shall submit all reports, studies, and plans to the Board following the NWB's Guide 8, unless otherwise requested or approved by the Board. Reports or studies submitted to the Board by the Licensee shall include an executive summary in English, Inuktitut, Inuinnaqtun and French.

15. The Licensee shall confirm that all document(s) or correspondence submitted by the Licensee to the Board is received and acknowledged by the Manager of Licensing.

16. The Licensee shall notify the Board of any changes in operating plans or conditions associated with this project at least sixty (60) days prior to any such change.

17. The Schedules attached to this Licence form part of the Licence and provide instructive details regarding the requirements associated with specific terms and conditions in the main body of the Licence and are provided in the Schedule to provide greater clarity and as an aid to interpretation for the Licensee. If the Board subsequently determines that an item in the Schedule requires revision in order to better reflect the intent and objectives of the Licence, the Board may, in its discretion, and upon providing written notice to the Licensee of the revision, revise the item in the Schedule. Unless the Board directs otherwise, such a revision to an Item in the Schedule will not be considered to be an "amendment" to the Licence.

18. The Licensee shall post signs in the appropriate areas to inform the public of the location of the Water Supply Facility and the Waste Disposal Facilities. All signs, must be in English, Inuktitut, Inuinnaqtun and French and shall be located and maintained to the satisfaction of an Inspector.

19. This Licence is assignable as provided in Section 44 of the *Act*.

20. The expiry or cancellation of this Licence does not relieve the Licensee from any

obligation imposed by the Licence, or any other regulatory requirement.

PART C CONDITIONS APPLYING TO SECURITY

1. The Licensee shall, within thirty (30) days following the approval of this Licence by the Minister:

   a. furnish and maintain security with the Minister in the amount of thirteen million ninety thousand dollars ($13,090,000); and
   b. file evidence, in writing, that is acceptable to the Board, and with notice to the Minister and the Kitikmeot Inuit Association, verifying that the Licensee has furnished and maintained reclamation security in an amount of no less than seventeen million six hundred thirty five thousand six hundred and fifty dollars ($17,635,650) with the Kitikmeot Inuit Association for the purposes of reclamation consistent with the purposes set out in s. 76(2)(b) of the Act and as applicable to reclamation of the Mining Undertaking described in the Licence.

2. The Licensee must ensure that the security furnished and maintained under Part C, Items 1(a) and (b), is no less than thirty million seven hundred and twenty five thousand six hundred and fifty dollars ($30,725,650) and that the security is in the form, of the nature, subject to applicable terms and conditions, in accordance with the Regulations, or that is otherwise satisfactory to the Minister.

3. If the Licensee fails to provide evidence of the security required under Part C, Item 1(b), or if, during the term of the Licence, the Licensee fails to maintain the security required under Part C, Item 1(b), the Licensee shall, within thirty (30) days of the Licensee's failure, furnish and maintain such additional security with the Minister as is required to ensure that the total reclamation security held under Part C, Items 1(a) and (b) is no less than thirty million seven hundred and twenty five thousand six hundred and fifty dollars ($30,725,650) as prescribed under Part C, Item 2.

4. The Licensee is required to provide the Board and the Minister with at least sixty (60) days written notice prior to any material change affecting the reclamation security arrangements between the Licensee and the Kitikmeot Inuit Association, including, but not limited to changes to the form of security, quantum of security or terms associated with holding, accessing or releasing the security. Notwithstanding this requirement, should the Licensee or the Kitikmeot Inuit Association become aware of, or cause any change to, the amount or terms of security referred to in Part C, Item 1(b), the Licensee or the Kitikmeot Inuit Association will promptly notify the Board.

5. The Licensee shall submit to the Board for approval, at least two years following approval of the Amended Licence and prior to September 30, 2019, and again at least twelve (12) months prior to Closure, an updated estimate of the total mine closure restoration liability using the current version of RECLAIM, its equivalent or other

similar method approved by the Board in writing, in accordance with principles of the INAC "Mine Site Reclamation Policy for Nunavut" (2002). Upon the Project entering into or being maintained in Care and Maintenance, an updated estimate of total mine closure restoration liability shall be submitted, as above, within twelve (12) months of entering Care and Maintenance and every three (3) years thereafter.

6. The Licensee shall furnish and maintain such further or other amounts of security as may be required by the Board, based on the updated estimate of current mine reclamation liability under PART C, Item 5.

7. The Licensee, the Minister, or the Kitikmeot Inuit Association may apply to amend the amount of security required to be held under the Licence. Any submission requesting a review of the security provisions of the Licence shall include supporting evidence to justify the amendment and will be processed by the Board as an amendment to the terms and conditions of the Licence.

8. Upon the Board receiving a request under PART C, Item 7 to amend security, or upon receiving an updated reclamation cost estimate as required under PART C, Item 5, the Board, may on its own initiative, or upon application by the Licensee, the Minister and/or the Kitikmeot Inuit Association, conduct a periodic review of the outstanding reclamation liability associated with the Undertaking and may, as the Board considers appropriate, amend the amount of security required to be held under PART C, Items 1 and 2.

9. If the Board determines it to be necessary, or upon the request of Licensee, the Minister and/or the Kitikmeot Inuit Association, the Board may issue further directions under this Part with respect to the process for amending the amount of security to be furnished and maintained under the Licence.

10. The security referred to in PART C, Item 1 shall be maintained until such time as it is fully or in part refunded by the Minister pursuant to Section 76(5) of the *Act*. This clause shall survive the expiry of this Licence and remains in force until amended by the Board under this Part or until full and final reclamation has been completed to the satisfaction of the Minister.

PART D CONDITIONS APPLYING TO CONSTRUCTION AND OPERATIONS

1. The Licensee shall use fill material for construction from an approved source that shall be free of contaminants.

2. The Licensee shall implement preventive and mitigation measures to prevent any chemicals, fuel or Wastes associated with the undertaking from entering any Water body.

3. The Licensee shall locate equipment storage areas on gravel, sand or other durable land, a distance of at least thirty-one (31) metres above the ordinary High Water Mark of any Water body in order to minimize impacts on surface drainage and water quality.

4. The Licensee shall implement sediment and erosion control measures where necessary, during all phases of the Project to prevent entry of sediment into Water.

5. The Licensee shall undertake appropriate corrective measures to mitigate impacts on surface drainage resulting from the Licensee's operations.

6. The Licensee shall limit any in-stream activity to the low Water period and this activity is prohibited during fish migration unless otherwise approved by the Board or Fisheries and Oceans Canada.

7. The Licensee shall conduct construction monitoring during periods where construction activities are undertaken.

8. The Licensee shall, during periods of Construction activities. submit an 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 G, Item 1.

9. The Licensee shall identify and tag any potentially acid generating rock identified through the Quarry Rock Construction Monitoring program for removal to the Temporary Waste Rock Pile, for ultimate disposal underground.

10. The Licensee shall monitor the underground backfill and mine Waste placement underground during Operations to confirm that the proposed closure and reclamation targets of returning all waste rock and leach tails underground are achieved.

11. The Licensee shall construct and operate the Fuel Storage and Containment Facility(s) to meet, at a minimum, all applicable legislation and industry standards that include the following:

    a. *Environmental Code of Practice for Aboveground Storage Tank Systems Containing Petroleum Products, 2003; CCME,* PN 1326*;* and
    b. *National Fire Code, 2010.*

12. The Licensee shall, for the purposes of bridge construction, ensure that all activities remain outside of the natural channel width by the placement of abutments, footings or armouring above the ordinary High Water Mark so that there is no restriction to the natural channel processes.

13. The Licensee shall submit to the Board for review, thirty (30) days prior to construction, updated for construction drawings of the Doris Central and Connector

vent raise access roads and Roberts Bay Discharge access road. This submission shall also include the following:

a. The thickness of the various materials used at any coarse rock drain locations and for the general road fill;
b. Details for the management of surface water adjacent to the access roads, including any contingency plans should coarse rock drains fail to operate and;
c. Be stamped and signed by the appropriately qualified Engineer.

14. The Licensee shall conduct all activities, including the construction and maintenance of the all-weather roads, in such a way as to minimize impacts on surface drainage and shall immediately undertake any corrective measures in the event the Licensee's activities cause significant pooling of Water or any impacts on surface drainage.

15. With respect to access road, pad construction or other earthworks where direct or indirect flow into a Water body is possible, the deposition of debris or sediment into or onto any Water body is prohibited. These materials shall be disposed at a distance of at least thirty-one (31) metres from the ordinary High Water Mark in such a fashion that they do not enter the Water.

16. The Licensee shall monitor all activities for signs of erosion and shall implement and maintain sediment and erosion control measures prior to the undertaking to prevent entry of sediment into any Water body.

17. The Licensee shall conduct visual inspections for all construction activity during spring freshet and during and after remarkable rainfall events with sampling of runoff/seepage where turbidity is evident.

18. All surface runoff during the construction of any facilities, where flow may directly or indirectly enter a Water body, shall meet the following Effluent quality limits:

Parameter	Maximum Average Concentration (mg/L)*	Maximum Concentration of Any Grab Sample (mg/L)*
Total Suspended Solids	50.0	100.0

*Or equivalent turbidity concentrations, as approved by the Board in writing.

19. The Licensee shall operate the Domestic Wastewater Treatment Plant in accordance with conditions provided in PART G, Item 3 with Effluent compliance at monitoring station ST-8 during discharge to the tundra.

20. The Licensee shall conduct a Quarry Rock Seepage Monitoring and Management Program in accordance with the approved Hope Bay Project Doris North Waste Rock and Ore Management Plan and the approved Hope Bay Project Quarry A, B & D Management and Monitoring Plan, and in accordance with the following:

a. The seep survey shall measure pH and Electrical Conductivity (EC) levels in the precipitation runoff and snowmelt that comes into contact with rock along the roadways, building pads and quarry sites;
b. The seep survey shall measure pH and EC levels at several reference points on the tundra not subject to mine influences;
c. The quarry rock seepage program shall be conducted on any ephemeral seepage present at the time of the quarry rock seepage monitoring program and not at pre-determined seepage stations;
d. A minimum of at least 10% of the total sample set shall be submitted for secondary analysis, regardless of the values of measured field pH and EC; and
e. The Quarry Rock Seepage Monitoring Program shall be expanded beyond the 100 samples to include monitoring of all rock drains.

21. The Licensee shall provide a report, as an addendum to the Annual Report submitted in the year following data collection, that presents the data collected from the Quarry Rock Seepage Monitoring and Management Program conducted under PART D, Item 20. The report shall include a discussion of the interpretation of geochemical data and shall be presented to the Board for review.

22. The Licensee shall use fill material for construction only from approved sources that has been demonstrated by appropriate geochemical analyses to not produce Acid Rock Drainage and to be Non-Metal Leaching, and free of contaminants.

23. The Licensee shall not use Waste Rock from underground for any purpose, including the construction of any infrastructure, unless otherwise approved by the Board under PART G, Item 19 and in accordance with the plan provided under PART G, Item 15, revised and approved accordingly.

24. The Licensee shall construct and maintain all containment and runoff control structures to prevent non-permitted releases of Wastes to the terrestrial environment or groundwater systems.

25. The Licensee shall submit to the Board for review, with the Construction Monitoring Report referred to under PART D, Item 8, and following completion of each facility designed to contain, withhold, divert or retain Waters or Wastes, a Construction Summary Report prepared by a qualified Engineer(s) that shall include as-built drawings, documentation of field decisions that deviate from original plans and any data used to support these decisions.

26. The Licensee shall, during the construction of all engineered structures designed to contain, withhold, divert or retain Waters or Wastes, provide the required supervision and field checks 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 maintain all construction

records of all engineered structures, as above, to be made available at the request of the Board and/or an Inspector.

27. The Licensee shall direct all runoff and seepage from the Temporary Ore and Waste Rock Pads to the Pollution Control Ponds for collection and transfer to the Tailings Impoundment Area.

28. The Licensee shall consider the principles of Adaptive Management in Construction and Operations.

PART E CONDITIONS APPLYING TO THE USE OF WATER

1. The Licensee shall obtain fresh Water for domestic camp use, mining and milling and associated uses, from Doris Lake at Monitoring Station ST-7 using the Fresh Water Intake. Domestic Water may also be obtained from Windy Lake at Monitoring Station ST-7a and shall not exceed 22,995 cubic metres per year. Drill Water may also be obtained from Doris Lake in locations proximal to the drilling targets. The total volume of the use of Waters from all sources and for all purposes shall not exceed 480,000 cubic meters per year.

2. The Licensee shall maximize to the greatest practical extent, the use of reclaim Water from the Tailings Impoundment Area for use in the mill.

3. The Licensee shall not use streams as a Water source unless authorized and approved by the Board in writing.

4. The Licensee shall maintain the Fresh Water Intake at Doris Lake and Windy Lake to the satisfaction of the Inspector.

5. The Licensee shall equip all Water intake hoses with a screen of an appropriate mesh size to ensure that fish are not entrained and shall withdraw Water at a rate such that fish do not become impinged on the screen.

6. The Licensee shall not remove any material from below the ordinary High Water Mark of any Water body unless authorized by an Inspector or the Board in writing.

7. The Licensee shall provide the controls necessary to prevent erosion to the banks of any body of Water. Sediment and erosion control measures shall be implemented prior to and maintained during the operation to prevent entry of sediment into Water.

PART F CONDITIONS APPLYING TO WATER MANAGEMENT

1. The Board has approved, with the issuance of this amended Licence, the Plan entitled "Hope Bay Project Water Management Plan" dated August 2016. The Licensee shall

submit to the Board for review within sixty (60) days of issuance of this Licence, a revised Water Management Plan. The revised Plan shall include the following:

a. A frequency of calibration for the Water and Load Balance Model, in the "Documentation and Reporting" Section of the Water Management Plan;
b. An updated Table A4, that takes into consideration the recommendations received during the review period and matches the Closure Objectives stated under the Approved 2015 Closure and Reclamation Plan, Section 5, Closure Activities;
c. Identify and explain the significance of all drainage facilities and key Water bodies within the project area; and
d. An update of Table A2 according to Schedule J in the Water Licence.

2. 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 the 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.

3. The Board has approved, with the issuance of this amended Licence, the Plan entitled "Hope Bay Project Groundwater Management Plan" dated August 2016. The Plan shall be reviewed annually in order to capture any revisions or updates necessary to adapt to changing circumstances regarding groundwater inflows and discharge rates.

PART G CONDITIONS APPLYING TO WASTE MANAGEMENT AND WASTE MANAGEMENT PLANS

1. The Licensee shall provide at least ten (10) days' notice to the Inspector prior to any planned discharges from any Facilities. The notice shall include the estimated volume proposed for discharge and location.

2. The Licensee shall perform all land applied discharges in a manner that prevents erosion at the point of discharge and downstream.

3. The Board has approved the plan "Domestic Wastewater Treatment Management Plan, Doris Project, Nunavut, dated April 2016". The Licensee shall, within sixty (60) days of issuance of this Licence, submit a revised Plan to the Board for review, that takes into consideration the recommendations received during the technical review of the Plan

4. The Licensee shall operate the Domestic Wastewater Treatment Plant in accordance with the following:

a. All Sewage and Greywater shall be collected and treated in the Domestic Wastewater Treatment Plant;
b. All Effluent discharged from the Domestic Wastewater Treatment Plant to the tundra at monitoring station ST-8 shall not exceed the following Effluent quality limits:

Parameter	Maximum Allowable Concentration (mg/L)
pH	6-9
Total Suspended Solids (TSS)	100
BOD_5	80
Fecal Coliforms	10,000 CFU/ 100mL
Total Oil and Grease	5 and no visible sheen

c. All Effluent discharged from the Domestic Wastewater Treatment Plant to the tundra shall be discharged to the west of the facility laydown areas or as otherwise approved by the Board in writing;
d. Once the Tailings Impoundment Area is operational, all treated Effluent from the Domestic Wastewater Treatment Plant shall be discharged to the Tailings Impoundment Area, or as required, as per Item 3(c) to the tundra provided the criteria set out in 3(b) are met; and
e. The Licensee shall provide at least ten (10) days written notice to the Inspector prior to any planned discharge from the Domestic Wastewater Treatment Plant to the tundra. The notice shall include the volume proposed for discharge and the discharge location.

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 Canada-Wide Standards for Mercury emissions or other standards as they become available.

6. The Licensee shall not open burn plastics, wood treated with preservatives, electric wire, Styrofoam, asbestos or painted wood in order to prevent the deposition of Waste materials (e.g. products of incomplete combustion, leachate from contaminated ash residual, etc.) from impacting any surrounding Waters, unless otherwise approved by the Board in writing.

7. The Licensee shall submit to the Board for approval in writing, at least six (6) months prior to use of the Landfill, a Landfill Management Plan. The Plan shall consider the following:
   a. Recycling/segregation Waste program;
   b. Incineration technology selected;
   c. Waste audit – amount and types of Wastes to be incinerated or otherwise disposed;
   d. Consolidation of Wastes;
   e. Operational and maintenance records;
   f. Operator Training;

g. Emission measurements;
h. Incinerator Ash disposal;
i. Monitoring, characterization, and
j. disposal of incinerator ash.

8. The Licensee is authorized to dispose of and contain all non-hazardous solid Wastes at the Landfill, or as otherwise approved by the Board in writing.

9. The Board is in receipt of the Hope Bay Mining Ltd., Hazardous Waste Management Plan, March 2012 (Rev 1.1) for use during Care and Maintenance. 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.

10. The Licensee shall submit to the Board for approval, within sixty (60) days of issuance of the Amended Licence, a revised Quarry A, B & D Management and Monitoring Plan, to include:
    a. Management and monitoring of Quarry 3

11. The Licensee shall backhaul and dispose of all hazardous Wastes, and non-combustible Waste generated through the course of the operation at a licensed Waste disposal site.

12. The Licensee shall maintain records of all Waste backhauled and records of confirmation of proper disposal of backhauled Waste. These records shall be made available to an Inspector upon request.

13. The Board has approved, with the issuance of this Licence, the Landfarm Management and Monitoring Plan, dated March 2014. The Licensee shall within sixty (60) days of issuance of this Licence, submit a revised Plan to the Board for review that takes into consideration the recommendations received during the technical review of the Plan.

14. The Board has approved, with the issuance of this Licence, the plan entitled “Waste Rock and Ore Management Plan, Hope Bay Project, Nunavut, dated August 2016 with the addendum submitted in September 2016.

15. The Licensee shall submit to the Board for approval in writing, at least sixty (60) days prior to planned implementation, any changes that are contemplated to the geochemical confirmatory sampling and testing program or the criteria for using non-mineralized Waste Rock for construction as outlined in the approved Waste Rock and Ore Management Plan, approved as per PART G, Item 14, including a description of and justification for the change.

16. The Licensee shall identify and tag any potentially acid generating rock identified through the Quarry Rock Construction Monitoring program for removal to the Temporary Waste Rock Pile, for ultimate disposal underground.

17. The Licensee shall submit to the Board as part of the Construction Monitoring Report referred to in PART D, Item 8, a Waste Rock and Quarry Monitoring Report. The Report shall be developed in accordance with Schedule D, Item 1(d).

18. The Licensee shall store all potentially acid generating rock at the Temporary Waste Rock Pad prior to ultimate disposal underground as mine backfill, unless otherwise approved by the Board in writing.

19. All Waste Rock brought to the surface from underground shall be managed in accordance with the approved Plan submitted under PART G, Item 14 and:

    a. Stored on the Temporary Waste Rock Pad;
    b. Stored at other locations as identified in the approved Waste Rock and Ore Management Plan, and
    c. Managed as otherwise approved by the Board in writing

20. The Licensee shall segregate mineralized from un-mineralized Waste Rock on the Temporary Waste Rock Pad.

21. The Licensee shall operate and maintain all Waste management facilities to the satisfaction of the Inspector.

22. All Water from the Pollution Control Pond, the Sedimentation Ponds and the Cyanide Storage Sumps shall be directed to the Tailings Impoundment Area, unless otherwise authorized by the Board in writing.

23. The Licensee shall operate and maintain the Sumps associated with the site, in accordance with the following:

    a. Water discharged from the Landfill Sump at monitoring station ST-3 shall not exceed the following Effluent quality limits:

Parameter	Maximum Allowable Concentration (mg/L)
pH	6.0-9.0
Total Suspended Solids (TSS)	15.0
Total Ammonia –N	2.0
Free Cyanide (CN)	0.005
Total Oil and Grease	5 and no visible sheen on Water surface

Total Aluminium – T - Al	1.0
Total Arsenic – T-As	0.05
Total Copper – T-Cu	0.02
Total Iron – T- Fe	0.3
Total Lead – T- Pb	0.01
Total Nickel – T- Ni	0.05
Total Zinc – T - Zn	0.01

b. Water from the Landfill Sump that is acceptable for discharge under PART G, Item 24(a), may be discharged to the tundra or as designated by an Inspector;

c. Water discharged from the Landfarm Sump at monitoring station ST-4 shall not exceed the following Effluent quality limits:

Parameter	Maximum Allowable Concentration (mg/L)
pH	Between 6.0-9.0
Total Suspended Solids (TSS)	15.0
Total Oil and Grease	5 and no visible sheen
Total Ammonia-N	2.0
Total Lead	0.01
Benzene	0.37
Toluene	0.002
Ethyl Benzene	0.090

d. Water from the Landfarm Sump that is acceptable for discharge under PART G, Item 24(c) may be discharged to the tundra or as designated by an Inspector;

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:

Parameter	Maximum Allowable Concentration (mg/L)
pH	Between 6.0-9.0
Total Suspended Solids (TSS)	15
Total Oil and Grease	5
Total Lead	0.01
Benzene	0.37
Toluene	0.002
Ethyl Benzene	0.090

f. Water from the Fuel Storage and Containment Facility Sumps that is acceptable for discharge under PART G, Item 24(e) may be discharged to the tundra or as designated by an Inspector; and

g. Sump Water from the Landfill, Landfarm and Fuel Storage and Containment Facility that does not meet the criteria in PART G, Items 24(a),(c) and (e) respectively shall be directed to the Tailings Impoundment Area.

26. The Board has approved with the issuance of this Licence the document entitled Hope Bay Project, Doris Tailings Impoundment Area Operations, Maintenance, and Surveillance Manual, dated August 2016 with addendum in September 2016.

27. The Licensee shall operate and maintain the Tailings Impoundment Area (TIA) to engineering standards such that:

a. The Licensee shall operate with a minimum freeboard limit of one (1) meter below the top of the North and South Dams or as recommended by a Geotechnical Engineer;
b. Implement contingency measures where necessary to prevent overtopping of the North Dam;
c. Implement the Shoreline Erosion Protection and Adaptive Management strategies as required;
d. The Licensee shall collect and return seepage from the TIA, as determined by monitoring and follow-up water quality analyses;
e. The Licensee shall carry out, at a minimum, weekly inspections during any period in which site is occupied and Water is being actively managed, to identify and remediate where necessary, areas of concern including issues of seepage, cracking, and ponding for all structures associated with the TIA including the North and South Dams, Emergency Dump Catch Basins, pipeline(s), pumps, mill tailings discharge points and other associated structures. During Care and Maintenance, inspections shall be carried out on a monthly basis, at a minimum, weather permitting;
f. The Licensee shall consult the Geotechnical Engineer when significant issues associated with the TIA are observed and implement the Engineer's recommendations as necessary;
g. The solids fractions of all mill tailings (except for filtered cyanide leach residue placed underground as mine backfill) shall be deposited and permanently contained within the Tailings Impoundment Area;
h. An annual Geotechnical inspection shall be carried out in accordance with PART J, Item 16;
i. The Licensee shall, during periods of active Water management for construction, operations and closure, conduct a daily visual assessment of suspended sediment in the Tailings Impoundment Area;
j. The Licensee shall perform more frequent inspections of the facilities at the request of an Inspector;
k. The Licensee shall place all filtered cyanide leach residue underground as mine backfill to remain frozen within permafrost; and
l. The Licensee shall maintain records of all inspections for the review of an Inspector upon request.

28. The Licensee shall implement the Tailings Water Management Strategy as outlined in the Hope Bay Project, Doris Tailings Impoundment Area Operations, Maintenance, and Surveillance Manual, submitted under PART G, Item 26.

29. Prior to any deposition of tailings to the Tailings Impoundment Area, all Water discharged from the Tailings Impoundment Area at monitoring station TL-4 shall not exceed the following Effluent quality limits:

Parameter	Maximum Average Concentration (mg/L)	Maximum Concentration of Any Grab Sample (mg/L)
pH	Between 6.0 – 9.5	Between 6.0 – 9.5
Total Suspended Solids (TSS)	15.00	30.00
Chloride	120	640
Total Arsenic - T-As	0.50	1.00
Total Copper - T-Cu	0.30	0.60
Total Cyanide –T-CN	1.00	2.00
Total Lead – T-Pb	0.20	0.40
Total Nickel – T-Ni	0.50	1.00
Total Zinc – T-Zn	0.50	1.00
Radium 226	0.37 Bq/L	1.11 Bq/L
Biological Oxygen Demand (BOD_5)	80	160
Fecal Coliform	10,000 CFU/100 mL	10,000 CFU/100 mL
Total Ammonia-N	6	-
Total Oil and Grease	5	10
Benzene	0.37	-
Toluene	0.002	-
Ethyl Benzene	0.090	-

30. The Licensee shall demonstrate that Effluent discharged, from monitoring station TL-1 and TL-4 is non-acutely toxic in accordance with PART J, Item 8.

31. Prior to any deposition of tailings to the Tailings Impoundment Area, during periods of Effluent discharge, Water quality in Doris Creek at monitoring station TL-3 shall not exceed the greater of the background Water quality at the time of discharge as measured at monitoring station TL-2, or the following Water quality limits:

Parameter	Maximum Concentration of Any Grab Sample (mg/L)
pH	Between 6.0-9.0

Total Suspended Solids (TSS)	15.0
Total Oil and Grease	5
Chloride	120
Free Cyanide (WAD)	0.005
Total Cyanide	0.010
Total Ammonia N	1.54 at pH 7.5 and temperature of 20 degrees C[1]
Nitrate N	2.9
Nitrite N	0.060
Total Aluminum – T-Al	0.100
Total Arsenic – T-As	0.0050
Total Cadmium – T-Cd	0.000017
Chromium (VI)	0.0010
Total Copper – T-Cu	0.002
Total Iron – T-Fe	0.300
Total Mercury – T-Hg	0.000026
Total Molybdenum- T-Mo	0.073
Total Nickel – T-Ni	0.025
Total Lead – T-Pb	0.001
Total Selenium – T-Se	0.0010
Total Silver – T-Ag	0.0001
Total Thallium – T-Tl	0.0008
Total Zinc – T-Zn	0.030

1. Total Ammonia concentration discharge varies with pH and temperature as per Schedule G

32. The Licensee shall ensure that prior to any deposition of tailings to the Tailings Impoundment Area, the flow from the Tailings Impoundment Area into Doris Creek from 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

33. The Licensee shall, upon commencing of the Operations Phase and the planned deposition of tailings into the Tailings Impoundment Area, cease any discharge of Effluent at monitoring station TL-4, from the Tailings Impoundment Area to Doris Creek, or any other fresh Water location.

34. The Licensee shall, on a monthly basis during Operations and tailings deposition and at a minimum, annually during Construction or Care and Maintenance, input average monthly Water quality, hydrology and climate monitoring data into the water quality model and perform the following assessment:

    a. Compare the predicted water quality in the Tailings Impoundment Area to the measured water quality. If the difference between predicted and measured values is 20% or greater, then the cause(s) of the difference shall be identified and the water quality model shall be re-calibrated; and
    b. Compare the predicted Water elevation in the Tailings Impoundment Area to the measured elevations. If the difference between predicted and measured

elevations is greater than 0.1m, then the Licensee shall re-calibrate the volume rating curve

c. Report the results in accordance to Schedule B Item 4

35. The licensee shall submit to the Board for approval in writing, at least three (3) months prior to the anticipated use of de-icing fluid, a plan to manage aircraft de-icing fluid used at the all-weather airstrip. The Plan shall also address on-site storage and containment requirements.

PART H CONDITIONS APPLYING TO MODIFICATIONS

1. The Licensee may, without written consent from the Board, carry out Modifications to the Water Supply Facilities and Waste Disposal Facilities provided that such Modifications are consistent with the terms of this Licence and the following requirements are met:

   a. The Licensee has notified the Board in writing of such proposed Modifications at least sixty (60) days prior to beginning the Modifications;
   b. Such Modifications do not place the Licensee in contravention of the Licence or the *Act*;
   c. Such Modifications are consistent with NIRB Project Certificate;
   d. The Board has not, during the sixty (60) days following notification of the proposed Modifications, informed the Licensee that review of the proposal will require more than sixty (60) days; and
   e. The Board has not rejected the proposed Modifications.

2. Modifications for which all of the conditions referred to in PART H, Item 1 have not been met can be carried out only with written approval from the Board.

3. The Licensee shall provide as-built plans and drawings of the Modifications referred to in this Licence within ninety (90) days of completion of the Modification. These plans and drawings shall be stamped by an Engineer.

PART I CONDITIONS APPLYING TO CONTINGENCY PLANNING

1. The Board has approved the Plan entitled “Spill Contingency Plan, Hope Bay, Nunavut” dated April, 2016. The Licensee shall within sixty (60) days of issuance of this Licence, submit a revised Plan to the Board for review that takes into consideration the recommendations received during the technical review of the Plan. Any change in the status of the Project and operations will require a review and resubmission as per PART B, Item 9.

2. The Licensee shall prevent any chemicals, petroleum products or Wastes associated with the project from entering Water. All sumps and fuel caches shall be located at

a distance of at least thirty-one (31) metres from the ordinary High Water Mark of any adjacent Water body and inspected on a regular basis.

3. The Licensee shall provide secondary containment for fuel and chemical storage as required by applicable standards and acceptable industry practice.

4. The Licensee shall perform regular inspections of Fuel Storage and Containment Facilities, Sumps, Emergency Dump Catch Basins, other fuel tanks and connectors for leaks and movement and shall keep a written log of inspections to be made available to an Inspector upon request. More frequent inspections may be required at the request of an Inspector.

5. If, during the period of this Licence an unauthorized discharge of Waste and or Effluent occurs, or if such discharge is foreseeable, the Licensee shall:

   a. Employ the Emergency Response and Spill Contingency Plan;
   b. Report the incident immediately via the 24-Hour Spill Reporting Line (867) 920-8130, to the Inspector at (867) 975-4295 and to the Kitikmeot Inuit Association at (867) 982-3310; and
   c. For each spill occurrence, submit a detailed report to the Inspector, no later than thirty (30) days after initially reporting the event, which includes the amount and type of spilled product, the GPS location of the spill, and the measures taken to contain and clean up the spill site.

6. The Licensee shall, in addition to PART H, Item 5, regardless of the quantity of releases of harmful substances, report to the NWT/NU Spill Line if the release is near or into a Water body.

7. The Licensee shall submit to the Board for review, at least sixty (60) days prior to operation of the Roberts Bay Discharge System, an addendum to the Spill Contingency Plan detailing spill prevention measures along the pipeline.

8. The Licensee shall, within ninety (90) days of providing notification under PART L, Item 2 of this Licence, submit to the Board for approval in writing, an addendum to the Spill Contingency Plan, detailing the changes in operations, personnel, responsibilities, availability of equipment and access to the site for assistance.

PART J CONDITIONS APPLYING TO GENERAL AND AQUATIC EFFECTS MONITORING

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, where such discharges are made to land or inland Waters, to be operated and maintained to the satisfaction of an Inspector.

2. The Licensee shall, during operations, install appropriate instrumentation in Doris Creek at Monitoring Station TL-2, to monitor flow when ice conditions allow for such measurements to be taken, on a real time and continuous basis.

3. The Licensee shall undertake the Water Monitoring Program detailed in the tables of Schedule J or as may be directed by the Board after consulting with the Licensee and other interested parties.

4. Water quality monitoring shall be carried out in accordance with the Quality Assurance/Quality Control Plan, approved by an Analyst and submitted to the Board as per Part K, Item 2.

5. The Licensee, in consultation with an Inspector, shall establish the locations and GPS coordinates for all monitoring stations referred to in Schedule J.

6. The Licensee shall install and maintain, to the satisfaction of an Inspector, signs that identify monitoring stations. The signs shall be posted in English, Inuktitut, Inuinnaqtun and French.

7. Additional monitoring may be directed by the Board.

8. The Licensee shall conduct Acute Lethality Testing in accordance with and as required by the Metal Mining Effluent Regulations.

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 approved by an Analyst.

10. All compliance analyses shall be performed in an accredited laboratory according to ISO/IEC Standard 17025. The accreditation shall be current and in good standing.

11. The Licensee shall measure and record all flow and volume measurements on a monthly basis, during Operations and any use of Waters (unless otherwise stated):

    a. The volume of freshwater obtained from Windy Lake for domestic use;
    b. The volume of freshwater obtained from Doris Lake for domestic use;
    c. The volume of freshwater obtained from Doris Lake for process water and other uses;
    d. The volume of reclaim water obtained from Tailings Impoundment Area for process water at Monitoring Station TL-8;
    e. Tonnes of Waste Rock stored on the Temporary Waste Rock Pad and at other locations approved by the Board in writing, during Construction, Operations and Closure.;
    f. Tonnes of Waste rock returned underground on a monthly basis during Construction, Operation and Closure; and

g. The volume of sewage sludge removed from the Wastewater Treatment Plant and the locations or method of sewage sludge disposal during Construction, Operation and Closure;
h. Report the data in accordance to Schedule B, Item 17.

12. The Licensee shall measure and record in tonnes (unless otherwise stated) including the location of disposal (temporary and permanent) for the following:

a. The daily dry tonnes of tailings placed in the Tailings Impoundment Area;
b. The daily dry tonnes of cyanide leach tailings placed underground; and
c. The monthly quantity of ore processed.

13. The Licensee shall undertake the Thermal Monitoring Program detailed in Table 3 of Schedule J or as may be directed by the Board after consulting with the Licensee and other interested parties.

14. The Licensee shall continue to monitor thermistors located between the Tailings Impoundment Area and Doris Lake and between Doris Lake and the underground workings. The monitoring shall be consistent with the baseline thermal monitoring program and shall be included in Table 3 of Schedule J.

15. The Licensee, in consultation with an Inspector, shall establish and confirm the locations and GPS coordinates for all monitoring stations referred to in PART J, Item 3.

16. The Licensee shall undertake a geotechnical inspection annually between July and September, by a Geotechnical Engineer. The inspection shall be conducted in accordance with the *Canadian Dam Safety Guidelines* where applicable and take into account all major earthworks, including the following:

a. Tailings Impoundment Area North Dam, Interim Dike and South Dam;
b. Geotechnical instrumentation and associated monitoring data;
c. A description of geophysical and permafrost conditions at the project site;
d. Tailings Impoundment Area shoreline and erosion strip survey monitoring results;
e. Emergency Dump Catch Basins;
f. All weather access roads;
g. Landfill;
h. Landfarm;
i. Fuel Storage and Containment Facilities at the Plant Site and Roberts Bay site;
j. Sedimentation Pond;
k. Pollution control Ponds;
l. Sumps;
m. Underground mine openings;
n. Groundwater conditions underground; and

o. Rock temperature measurements and groundwater inflow in the underground mine workings.
p. Sedimentation control berm at the overburden dump.
q. Doris North Camp Area Diversion Berm

17. The Licensee shall submit to the Board for review, within ninety (90) days of completion of the geotechnical inspection, the Geotechnical Engineer's inspection report. The report shall include a cover letter from the Licensee outlining an implementation plan addressing each of the Geotechnical Engineer's recommendations and shall include the following:

a. All quantities in cubic meters of dike seepage from the North and South Dams pumped back into the Tailings Impoundment Area;
b. As-built drawings and a summary of the mitigation works undertaken along the shoreline of the Tailings Impoundment Area in response to erosion, as stipulated in the Shoreline Adaptive Management Plan; and
c. All data and information generated from the monitoring of all project geotechnical instrumentation.

18. The Licensee shall visually monitor and record observations, to be made available to an Inspector upon request, during periods of discharge onto the tundra from:

a. Landfill Sump (on a daily basis);
b. Landfarm Sump (on a daily basis);
c. Plant Site Fuel Storage and Containment Facility Sumps (on a daily basis);
d. Roberts Bay Fuel Storage and Containment Facility Sumps (on a daily basis);
e. Domestic Wastewater Treatment Plant (on a weekly basis); and
h. Reagent and Cyanide Storage Facility Sumps (on a daily basis).

19. The Licensee shall, within thirty (30) days following the month being reported, submit to the Board a monthly monitoring report in an electronic. The Report shall include the following:

a. All data and information required by this Part and generated by the Monitoring Program in the Tables of Schedule J;
b. An assessment of data to identify areas of non-compliance with regulated discharge parameters referred to in Part G;
c. During Operations, a summary of monthly operational assessments of the water balance and water quality model; and
d. Reports should document the Doris North Camp Diversion Berm's effectiveness of diverting runoff away from the camp area. As minimum, conditions during spring freshet, major rain events, and periods of sustained precipitation should be monitored. Documented information can include flow measurements, photographs and notes.

PART K CONDITIONS APPLYING TO GENERAL AND AQUATIC EFFECTS MONITORING PLANS

1. The Board is in receipt of the plan HOPE BAY MINING LTD., Quality Assurance and Quality Control Plan, 2AM-DOH0713, 2BB-BOS0712, 2BE-HOP1222, HB-QA-ENV-MP-001, November 2012 (REV 7.1) that was found to be acceptable to an Analyst by letter dated November 22, 2012.

2. The Licensee shall submit to the Board for review, at least three (3) months prior to Operations, a Quality Assurance / Quality Control Plan that includes a cover letter from the accredited laboratory confirming approval of the Plan for analyses to be performed under this Licence. The QA/QC Plan shall be prepared and updated as needed in accordance with and in consultation with the accredited laboratory conducting the analyses. This Plan shall be developed in accordance with current Standard Methods and the 1996 Quality Assurance (QA) and Quality Control (QC) Guidelines for Use by Class "A" (INAC).

3. The Licensee shall annually review the approved QA/QC Plan and modify the Plan as necessary. Proposed changes shall be submitted to an Accredited Laboratory for approval.

4. The Board has approved with the issuance of this Licence, the Plan entitled "Hope Bay Project Doris, Aquatic Effects Monitoring Plan", dated August 2016 and addendum submitted in September 2016.

PART L CONDITIONS APPLYING TO ABANDONMENT, RECLAMATION AND CLOSURE

1. The Licensee shall notify the Board in writing, at least sixty (60) days prior to any intent to achieve Recognized Closed Mine status.

2. The Licensee shall notify the Board, a soon as practically possible, of any intent to enter into a Care and Maintenance Phase.

3. The Licensee shall, upon providing notice to the Board as per PART L, Item 2, review all operational plans and submit revised Plans to reflect the Care and Maintenance status, to the Board for approval in writing, within three (3) months of providing notice.

4. The Licensee shall provide to the Board in writing, at least thirty (30) days advanced notification of the initial start of Operations or change of Project Phase. Notification may be provided separately or in accordance with the monthly monitoring report as per PART J, Item 19.

5. The Board has approved with the issuance of this Licence the Plan entitled "Doris Mine Interim Closure and Reclamation Plan, Hope Bay, Nunavut", dated June 2015 and the addendum submitted in September 2016.

6. The Licensee shall submit to the Board for approval in writing, at least two years following approval of the Amended Licence and prior to September 30, 2019, a revision to the closure plan referred to in PART L, Item 5.

7. The Licensee shall submit, subject to PART L. Item 8, to the Board for approval in writing, prior to September 30, 2022, a revision to the closure plan referred to in PART L, Item 5.

8. The Licensee shall submit to the Board for approval, twelve (12) months prior to planned Closure, a Final Mine Closure and Reclamation Plan prepared in accordance with the *Mine Site Reclamation Guidelines for the Northwest Territories, 2007* and consistent with the INAC *Mine Site Reclamation Policy for Nunavut, 2002.* The Final Plan shall incorporate revisions, which reflect the pending closed status of the mine, and include the following:

    a. Soil Quality Remediation Objectives along with CCME Guidelines and the Government of Nunavut *Environmental Guideline for Site Remediation*;
    b. A Protocol for the disposal of any contaminated soil into the underground mine at closure;
    c. Environmental Site Assessment plans in accordance with Canadian Standards Association (CSA) criteria; and
    d. An Evaluation of the Human Health and Ecological Risk Assessment.

9. The Licensee shall, should the Project remain, or be in Care and Maintenance, submit an updated estimate of total mine closure restoration liability, within twelve (12) months of entering Care and Maintenance and every three (3) years thereafter.

10. The Licensee shall include, with the Plan submitted under PART L, Items 6, 7 and 8, an updated estimate of the total mine closure restoration liability using the current version of RECLAIM, its equivalent or other similar method approved by the Board in writing, in accordance with principles of the INAC "Mine Site Reclamation Policy for Nunavut" (2000).

11. The Licensee shall, if not approved by the Board, revise the Plan(s) referred to in this Part and resubmit to the Board for approval within thirty (30) days of receiving notification of the Board's decision.

12. The Licensee shall submit to the Board for approval, at least twelve (12) months prior to the start of Closure works, engineering drawings and specifications of the tailings final cover system design.

13. The Licensee shall complete all reclamation work in accordance with the Plan(s) referred to in this Part, as and when approved by the Board in writing.

14. The Licensee shall carry out progressive reclamation of any components of the project no longer required for the Licensee's operations.

15. All roads and airstrip, if any, shall be re-graded to match natural contour to reduce erosion.

16. The Licensee shall remove any culverts and restore the drainage to match the natural channel. Measures shall be implemented to minimize erosion and sedimentation.

17. In order to promote growth of vegetation and the needed microclimate for seed deposition, all disturbed surfaces shall be prepared by ripping, grading, or scarifying the surface to conform to the natural topography.

18. Areas that have been contaminated by hydrocarbons from normal fuel transfer procedures shall be reclaimed to meet objectives as outlined in the Government of Nunavut's Environmental Guideline for Site Remediation, 2010. Materials such as soil and rock that have been contaminated by hydrocarbons may be disposed of in the underground mine to remain frozen with permafrost. The use of reclaimed soils for the purpose of back fill or general site grading may be carried out only upon consultation and approval by the Government of Nunavut, Department of Environment and an Inspector.

19. The Licensee shall contour and stabilize all disturbed areas to a pre-disturbed state upon completion of work.

20. The Licensee shall consult traditional land users, land owners, and other stakeholders on the proposed post-closure land use criteria. Particularly, the proposal to leave certain facilities in place and confirm the soil quality remediation objectives.

Schedules are provided for:

A – Definitions
B – General Conditions
D – Conditions Applying to Construction
G – Conditions Applying to Waste Management and Waste Management Plans
J – Conditions Applying to General and Aquatic Effects Monitoring

PART M SCHEDULES

Schedule A. **Definitions**

In this Licence: 2AM-DOH1323

"**Abandonment**" means the permanent dismantlement of a facility so it is permanently incapable of its intended use. This includes the removal of associated equipment and structures;

"**Act**" means the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*;

"**Acid Rock Drainage (ARD)**" means the production of acidic leachate, seepage or drainage from underground workings, ore piles, waste rock, and portal development rock that can lead to the release of metals to groundwater or surface Water during the life of the Project and after Closure;

"**Acutely Lethal Effluent**" means Effluent as defined in the *Metal Mining Effluent Regulations* SOR/2002-222 dated 6 June 2002 and amended on March 2 2012;

"**Adaptive Management**" means a way of managing risks associated with uncertainty and provides a flexible framework for the mitigation measures to be implemented and actions to be taken when specified thresholds are exceeded;

"**Aliquot**" means the amount comprising a known fraction of a whole and constituting a sample used for analysis;

"**Amendment**" means a change to terms and conditions of this Licence requiring correction, addition or deletion of specific terms and conditions of the Licence; also, modifications inconsistent with the set terms and conditions of the Licence;

"**Amended Licence** "means Licence 2AM-DOH1323 Amendment No.1;

"**Analyst**" means an Analyst designated by the Minister under Section 85 (1) of the *Act*;

"**Annually**" means, in the context of monitoring frequency, one sampling event occurring every 365 days with a minimum of 200 days between sampling events;

"**Aquatic Effects Monitoring Plan (AEMP)**" means a monitoring program designed to determine the short and long-term effects to inland Waters 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;

"**Beach Laydown Area**" means the area designed for temporary storage of equipment and materials at Roberts Bay as indicated in the document "Doris North Project 2011 Construction Summary", with engineered drawings attached as Appendix L for the Robert Bay Laydown Area, December 2011, DWGS N0 DN-RB-00 to 04, Rev AB, as built drawings and as described in the document Doris North Project: Roberts Bay Laydown Expansion Design Brief and related Engineering Drawings, May 2015 of the Amendment Application;

"**Board**" means the Nunavut Water Board established under Article 13 of the *Nunavut Land Claims Agreement* and under Section 14 of the *Act*;

"**Canadian Council of the Ministers of the Environment" (CCME)** is the primary minister-led intergovernmental forum for collective action on environmental issues of national and international concern. CCME sets guidelines for environmental protection across Canada such as the Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life;

"**Care and Maintenance**" in respect of a mine, means when the Licensee ceases construction, production or commercial operation temporarily for an undefined period of time;

"Closure" means when a mine ceases operations without the intent to resume mining activities in the future;

"**Commercial Operation**" in respect of a mine, means an average rate of production that is equal to or greater than 25% of the design rated capacity of the mine over a period of 90 consecutive days;

"**Construction**" means any activities undertaken to construct or build any component under the scope of this Licence associated with, the development of the Doris North Mine Project,

"**Dam Safety Guidelines**" means the *Canadian Dam Association (CDA) Dam Safety Guidelines (DSG), January 1999* or subsequent approved editions;

"**Deleterious Substances**" means a substance as defined in Section 34(1) of the *Fisheries Act;*

"**Deposit**" means the placement of Waste rock, tailings or other solids materials on land or in Water;

"**Discharge**" means the release of any Water or Waste to the receiving environment, other than discharge to the marine waters;

"**Dissolved Metals**" means the suite of metals referred to as MD in Schedule J Table 1 entitled Monitoring Groups. Dissolved metals shall be analyzed on a filtered sample;

"**Domestic Waste**" means all solid Waste generated form the accommodations, kitchen facilities and all other site facilities, excluding those industrial and hazardous Wastes associated with the mining and processing of ore;

"**Effluent**" means treated or untreated liquid Waste material that is discharged into the environment from a structure such as a settling pond, landfarm or a treatment plant;

"**Emergency Dump Catch Basin**" means a facility designed to contain tailings and reclaim water from the tailings and reclaim pipelines;

"**Engineer**" means a professional engineer registered to practice in Nunavut in accordance with the *Consolidation of Engineers and Geoscientists Act S. Nu 2008, c.2* and the *Engineering and Geoscience Professions Act S.N.W.T. 2006, c.16 Amended by S.N.W.T. 2009, c.12*;

"**Engineering Geologist**" means a professional geologist registered with the Association of Professional Engineers, Geologist and Geophysicists of Nunavut and whose principal field of specialization is the investigation and interpretation of geological conditions for civil engineering purposes;

"**Engineered Structure**" means any facility, which was designed and approved by a Professional Engineer registered with the Association of Professional Engineers, Geologists and Geophysicists of Nunavut;

"**Environmental Assessment**" means, for the purpose of this licence, the totality of the Nunavut Impact Review Board (NIRB) Public Registry as established under the authority of Article 12 of the NLCA, this includes everything that was submitted by the Licensee to the NIRB, the scope of which is consistent with the Water Licence Application;

"Existing Licence" means Licence No. 2AM-DOH1323 prior to any amendments;

"**Explosives Mixing and Storage Facility**" means a facility designed for the storage of ammonium nitrate, detonators and explosives; and designed for the mixing and storage of Ammonium Nitrate Fuel Oil (ANFO), as indicated in the document "Doris North Project: 2011 Construction Summary", and illustrated in the attached document "Engineering Drawings for DN Explosives Facility", Nov 2011, DWGS N0 TL-EXP-00 to 03, Rev 1 and DWGS N0 TL-EXP-04 to 08, Rev 0 (issued for construction drawings, IFC);

"**Float Plane Dock**" means the infrastructure designed to allow for the offloading of supplies from a Twin Otter Plane using a Bobcat forklift, as indicated in the document "2AM-DOH0713 Proposed, Issued for Construction and As built Drawings, April 2010, and illustrated in the attached document "Proposed IFC/ As Built Drawings", DWG N0 s-24, Rev C (IFC);

"**Freeboard**" means the vertical distance between the water level and the top of the containment element (i.e. a liner), within a dam or any other channel or pond used for containment of site runoff;

"**Fresh Water Intake**" means the infrastructure required for extraction of Water from Doris Lake and as required for extraction of fresh Water from Windy Lake, as indicated in the document entitled "2AM-DOH0713 Proposed, Issued for Construction and As built Drawings, April 2010, and illustrated in the attached document "Proposed IFC/ As Built Drawings", DWGS N0 0002 Rev1, DWGS 0003 Rev 2, as built; and in the Water Licence Renewal Application, August 2012, supporting document "Proposed Freshwater Intake – Doris Windy";

"**Frozen Core**" means a permafrost core comprising frozen ice-saturated aggregate material and functioning as an impervious seepage barrier;

"**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 indicated in the documents "Doris North Project 2012 Construction Summary", and illustrated in the attached document Engineering Drawings for the Robert Bay Fuel Tank Farm, May 2012, DWGS N0 RBTF-00 to 02 and RBTF-04 to 07, Rev AB1, as built; and in the document entitled "Doris North Project: 2011 Construction Summary", and illustrated in the attached document Engineering Drawings for the Roberts Bay Quarry 1 Fuel Tank Farm, December 2011, DWGS N0 RB-Q1TF-00 to 05, RB-Q1TF-09 to 10, RB-Q1TF-12 to 14 Rev 2, and RB-Q1TF-06 to 08, RB-Q1TF-11 and 15 Rev 1, IFC, and in the attached document Engineering Drawings for the DN Fuel Tank Farm, December 2011 DWGS N0 DNTF-01 to 07 Rev AB, as built;

"**Geotechnical Engineer**" means a professional engineer registered with the Association of Professional Engineers, Geologist and Geophysicists of Nunavut and whose principal field of specialization with the engineering properties of earth materials in dealing with man-made structures and earthworks that will be built on a site. These can include shallow and deep foundations, retaining walls, dams, and embankments;

"**Grab Sample**" means an undiluted quantity of material collected at a particular time and place that may be representative of the total substance being sampled at the time and place it was collected;

"**Greywater**" means the component of Effluent produced from domestic use (i.e. washing, bathing, food preparation and laundering), excluding sewage;

"**Ground Ice**" means ice that occupies fractures in rock and soil below the ground surface and may be present as ice inclusion in permafrost, soil or rock, as pore ice, lense ice or massive ice;

"**Ground Water**" means Water that occupies pores and fractures in rock and soil below the ground surface in a liquid or frozen state;

"**Hazardous Waste**" means a contaminant which is a dangerous good that is no longer used for its original purpose and is intended for recycling, treatment, disposal or storage;

"**High Water Mark**" means the usual or average level to which a body of Water rises at its highest point and remains for sufficient time so as to change the characteristics of the land (ref. Department of Fisheries and Oceans Canada, Operational Statement: Mineral Exploration Activities);

"**ICP Metals Scan**" means, for the purpose of the Licence, elements detected in an inductively coupled plasma (ICP) mass spectrometer. Metal parameters should be consistent with baseline data previously collected and include any other metals of concern or interest;

"**Inspector**" means an Inspector designated by the Minister under Section 85 (1) of the *Act*;

"**Interim Closure and Reclamation Plan**" means a conceptual detailed plan on the reclamation of mine components which will not be closed until near the end of the mining operations, and operational detail for components which are to be progressively reclaimed earlier in the mine life;

"**Interim Dike** "means a homogeneous ROQ rock fill dike constructed within the confines of the TIA, designed to retain tailings solids, as described in the 2015 Amendment Application;

"**Landfarm**" means a lined, engineered area designed to contain and treat hydrocarbon impacted sediment and soil using bioremediation as indicated in the document "Doris North Project 2012 Construction Summary", and illustrated in the attached document "Engineering drawings for the DN Land Farm", April 2012, DWGS N0 LF-00 and LF-02 to 08, Rev AB, as built;

"**Landfill**" means a facility designed to permanently contain solid, non-combustible, non-hazardous Waste materials, as described in the Type A Water Licence Amendment Application No. 4 submitted to the Nunavut Water Board in August 2012 and as described in the 2015 Amendment Application, document (P6-4 Landfill Doris North Project: Quarry #3 Non-Hazardous Waste Landfill Design Brief).

"**Licence**" means this Type "A" Water Licence 2AM-DOH1323, issued by the Nunavut Water Board in accordance with the *Act*, to TMAC Resources Inc. (TMAC) for the Doris North Project;

"**Licensee**" means to the party to whom Licence 2AM-DOH1323 is issued to or assigned;

"**Maximum Average Concentration**" means the average concentration of any four consecutively collected samples taken from the identical sampling location and taken during any given timeframe;

"**Metal Leaching**" means the mobilization of metals into solution under neutral, acidic or alkaline conditions;

"**Mine Water**" means any Water, including groundwater, that is pumped or flows out of any underground workings or open pit;

"**Minister**" means the Minister of Indigenous Affairs and Northern Development Canada (INAC);

"**Modification**" means an alteration to a physical work that introduces a new structure or eliminates an existing structure and does not alter the purpose or function of the work, but does not include an expansion;

"**Monthly**" means, in the context of monitoring frequency, one sampling event occurring every thirty (30) days with a minimum of 21 days between sampling events;

"**North Dam**" means the infrastructure designed as a Water retaining structure utilizing a central frozen core with a geosynthetic clay liner (GCL) installed against the upstream side of the core, as illustrated in the document "North Dam As Built Report", submitted on December 2012, with attached document "Engineering Drawings for the North Dam, DNP", September 2012, DWGS No DN-ND-00 to 27 and DN-ND-29 to 31, Rev AB, as built drawings;

"**Nunavut Land Claims Agreement**" **(**NLCA) means the "*Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada*," including its preamble and schedules, and any amendments to that agreement made pursuant to it;

"**Nutrients**" means the suite of parameters referred to as N1 and N2 in Schedule J Table 1 entitled Monitoring Groups;

"**Operations Phase**" means the period during which the ore is extracted from the mine and processed to produce the final product (gold). The Operations Phase starts with the ore extraction, mining, and includes the milling and extraction of the valuable minerals as described in the Revised Water Licence Application, Supporting Documents, and Technical Meeting Information Supplement documents submitted to the Board throughout the regulatory process;

"**Operator**" means the person who operates, has control or custody of, or is in charge of a mine or recognized closed mine;

"**Ore Stockpile**" means the above-ground facility designated for the temporary storage of ore to be processed in the mill;

"**Pollution Control Pond**" means a facility designed to temporarily contain stormwater runoff (contact Water) from the camp mill pad, specifically the temporary Waste rock pile, the ore stockpile, the crusher and mill yard areas as indicated in the document "Doris North Project 2012 Construction Summary", and illustrated in the document "Engineering Drawings for the DN Camp Area", May 2012, DWGS N0 DN-DMC-011, DN-DMC-014, DN-DMC-032 and DN-DMC-033 to 039, Rev AB, as built drawings; further described in the SRK Memo, submitted with the Amendment Application, Doris North Project: Expanded Laydown Area (Pad U) dated May 29, 2015

"**Portal Development Rock**" means rock that will be produced at the beginning of mine life, as the underground access ramp is driven from the collar location to the ore body;

"**Progressive Reclamation**" means actions that can be taken during mining operations, in locations where the Licensee has confirmed that mine areas and facilities will not be used in future, before permanent Closure, to take advantage of cost and operating efficiencies by using the resources available from mine Operations to "close certain parts of the operating areas". It enhances environmental protection and shortens the timeframe for achieving the reclamation objectives and goals;

"**Project**" means the Doris North Project as outlined in the NIRB amended Project Certificate No.003, dated September 23, 2016, and supplemental information submitted by the Licensee to the Nunavut Impact Review Board (NIRB) as well as the 2015 Water Licence Amendment Application, Supporting Documents, and Technical Meeting Information Supplement documents submitted to the Nunavut Water Board throughout the regulatory process

"**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.

"**Quarterly**" means, in the context of monitoring frequency, one sampling event occurring every 3 months with a minimum of ninety (90) days between sampling events;

"**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; and as indicated in the document "Doris North Project 2011 Construction Summary", and illustrated in the attached document Engineering Drawings for the DN Reagent and Cyanide Storage Facility, November 2011, DWGS N0 DN-CRSF-00 to 05 Rev 0 and DN-CRSF-00 to 05 Rev A, IFC;

"**Reclaim System**" means the facility used to pump water from the Tailings Impoundment Area to the plant as described in the Revised Water Licence Application Supporting Document S10j entitled "Water Management Plan" and illustrated in the Revised Water Licence Application Supporting Document S4 entitled "Engineering Drawings for Tailings Containment Area and Surface Infrastructure Components" DWG T-11 dated Mar 2007, SRK Job Number ICM014.008;

"**Reclamation**" means the process of returning the mine sites and affected areas to viable and, wherever practicable, self-sustaining ecosystems that are compatible with a healthy environment and with human activities;

"**Receiving Environment**" means both the freshwater and terrestrial environments that receive any discharge resulting from the Project;

"**Recognized Closed Mine**" means a recognized closed mine as defined by section (1) of the *Metal Mining Effluent Regulations* SOR/2002-222 dated 6 June 2002, with amendments;

"**Regulations**" means the *Nunavut Waters Regulations* SOR/2013-69 18th April, 2013;

"**Roberts Bay Discharge System** "means the infrastructure constructed to discharge mine Water and TIA Effluent from the Marine Outfall Mixing Box to the Roberts Bay marine environment and consists mainly of an insulated pipeline as described in the Amendment Application;

"**Sedimentation Pond**" means a facility designed to temporarily contain stormwater runoff from the ground surfaces of the camp mill pad including the camp, mill and laydown and chemical reagent storage area as indicated in the document "Doris North
Project 2012 Construction Summary", Appendix B, and illustrated in the attached document Engineering Drawings for the DN Camp Area, May 2012, DWGS N0 DN-DMC-011, DN-DMC-014, DN-DMC-032 and DN-DMC-041 to 044, Rev AB, as built drawings;

"**Seepage**" means any Water that drains through or escapes from any structure designed to contain, withhold, divert or retain Water or Waste. Seepage also includes any flows that have emerged from the toe, or as a result of runoff from overburden storage areas, Waste Rock Storage Facilities, and Ore Stockpile Areas; (note roads, dams, pads, quarries);

"**Sewage**" means all toilet Wastes and greywater;

"**Shoreline erosion protection**" as described in the Water Licence Application Supporting Document S-1 Appendix G;

"**South Dam**" means the infrastructure designed as a Water and solids retaining structure utilizing a frozen core foundation with a geosynthetic clay liner (GCL) installed against the upstream side of the core, as illustrated in the Application for Water Licence Amendment;

"**Spillway**" means an engineered structure to facilitate the emergency release of Water or Waste from a facility. The spillway elevation is the elevation at which Water or Waste begins to flow through the spillway structure as illustrated in the Revised Water Licence Application Supporting Document S4 entitled "Engineering Drawings for Tailings Containment Area and Surface Infrastructure Components" DWG T-08, SRK Job Number ICM014.008;

"**Sump**" means a containment facility for the collection of surface drainage;

"**Surface Drainage**" means all surface Waters resulting from the flow over, through or out of an operations area and is collected by means of engineered structures considered under the Storm Water Management Facilities;

"**Tailings Impoundment Area**" means the Water body designated as a Tailings Impoundment Area under Schedule 2 of the *Metal Mining Effluent Regulations.*

"**Talik**" means a layer or body of *unfrozen* ground occurring in a permafrost area due to a local anomaly in thermal, hydrological, hydrogeological or hydrochemical conditions;

"**Temporary Waste Rock Pad**" means the engineered facility designed for the storage of Waste Rock and potentially acid generating rock, as illustrated in the Engineering Drawings (specifically DN-DMC-01 and 06) for the Doris North Camp Area, Doris North Project, Nunavut, Canada, prepared by SRK Consulting for Hope Bay Mining Ltd., Project No. 1CH008.027, dated September 29, 2010 and further design as submitted under the Waste Rock Management Plan and approved by the Board in writing. And also means the Waste Rock Pad, "Pad T" authorized under the Doris North Waste Rock and Ore Management Plan, Revision 02, dated April 2015, approved by the NWB by Motion No. 2015-P7-001;

"Temporary Ore Storage Pad" means the engineered facility designed to provide additional laydown and storage to support underground operations as well as to serve as temporary ore storage as described in the Memo "Doris North Project: Expanded Laydown Area (Pad U), dated May 29, 2015, authored by SRK Consulting and associated drawings, drawings No. DN-WRE-00 to 04;

"**Traditional Knowledge**" means the practical knowledge that has been gathered through the experience of living in close contact with nature and has been passed along or communicated orally, and handed down from generation to generation;

"**Total Metals**" means the suite of metals referred to as MT in Schedule J Table 1 entitled Monitoring Groups. Total metals shall be analyzed on an un-filtered sample;

"**Use**" means use of Water s defined in section 4 of the *Act*;

"**Waste**" means waste as defined in section 4 of the *Act*;

"**Waste Disposal Facility**" means all site infrastructure designed to contain Waste on a temporary or permanent basis including the Landfill, Landfarm, Tailings Impoundment Area, site Sumps, Pollution Control Ponds, and Sedimentation Pond;

"**Waste Rock**" means all unprocessed rock materials that are or were produced as a result of mining operations and having no current economical value;

"**Wastewater**" means the Water generated by site activities or originates on-site that requires treatment or any other Water management activity;

"**Domestic Wastewater Treatment Plant (WTP)**" means the Sani-Membrane Bio-Reactor system designed for the treatment of sewage described in the document "Wastewater Treatment Management Plan", March 2012 and further approved Plans; and as indicated in the document "2AM-DOH0713 Proposed, Issued for Construction and As built Drawings", April 2010, and illustrated in the attached document "Proposed IFC/As built drawings, Feb 2010" DWGS N0 004 to 007, Rev 2, as built.

"**Water or Waters**" means water as defined in section 4 of the *Act*;

"**Water Supply Facility**" means the Fresh Water Intake, the Reclaim System and associated infrastructure;

"**Weekly**" means, in the context of monitoring frequency, one sampling event occurring every 7 days with a minimum of 5 days between sampling events.

Schedule B. **General Conditions**

The Annual Report referred to in Part B, Item 4 shall include the following:

1. Summary of monitoring reporting performed in accordance with Part J, Item 21. The Summary shall include conversion of daily volumes and tonnages to monthly and annual volumes and tonnages.

2. A Geochemical Monitoring and Waste Rock Storage Assessment that includes the following:

    a. For the tailings solids:
        i. All geochemical data appended;
        ii. All tonnage data appended and locations of disposal;
        iii. Discussion of geochemical data (static and kinetic, if applicable) with relevant figures and calculation of NNP and NPR; and
        iv. Geochemical interpretation of data.
    b. For tailings supernatant:
        i. All geochemical data appended; and
        ii. Figures depicting time series of constituent concentrations and loads.
    c. For waste rock:
        i. Tonnage of mineralized and un-mineralized Waste Rock placed on the Temporary Waste Rock Pad and in other locations as approved by the Board in writing; and
        ii. Tonnage of Waste rock placed underground.
    d. For cyanide leach residue:
        i Presentation of results of bi-annual underground inspection of the following:
            - Location of inspection;
            - Geochemical and inspection data of any samples taken from seepage from the cyanide leach residue including geochemical discussion of results.

3. Include the report referenced in Part D, Item 21, that presents the data collected from the Quarry Rock Seepage Monitoring and Management Program conducted under Part D, Item 20. The report shall include a discussion of the interpretation of geochemical data and shall be presented to the Board for review.

4. A summary of the results of the monthly Water balance and Water quality model assessments referred to in Part G, Item 34 and any re-calibrations that have been carried out. The report shall include:

    a. Relevant supporting data;
    b. a comparison of measured Water balance and Water quality values to predicted values;

c. Monitoring and internal modelling results;
d. a discussion of any discrepancies in model inputs; and
e. Identification of any necessary adaptive management strategies.

5. An update on the current capacity of the Tailings Impoundment Area;

6. A record of measurements of the following:

a. The flows (m^3/day) at monitoring stationTL-2,
b. A record of measurements of Doris Lake Water Level

7. Annual review of and submission of any revisions to the Management Plans or Emergency Response or Contingency Plan in the form of either addenda or revised Plan;

8. A list and description of all unauthorized discharges including volumes, spill report line identification number and summaries of follow-up action taken;

9. The results of the Aquatic Effects Monitoring Program and in accordance with Part J, Item 3;

10. Annual adjustments to reclamation security estimates including any additional security that may be required or reductions in security requirements for progressive reclamation actions;

11. A summary of any closure and reclamation work undertaken and an outline of any work anticipated for the next year, including any changes to implementation and scheduling

12. Incineration stack testing results when stack testing is required;

13. Annual Landfill Management report;

14. A summary of modifications and/or major maintenance work carried out on the Water Supply and the Waste Disposal Facilities, including all associated structures, and an outline of any work anticipated for the next year;

15. A summary report describing public consultation and participation with local organizations and the residents of the nearby communities, including a schedule of upcoming community events/information sessions;

16. GPS locations of monitoring stations as confirmed with the Inspector Part J, Item 5;

17. A summary of the data requested under Part J Item 11;

18. A summary of actions taken to address concerns or deficiencies listed in the inspection reports and/or compliance reports filed by an Inspector; and

19. Any other details on Water use or Waste Disposal requested by the Board by November 1st of the year being reported.

Schedule D. **Conditions Applying to Construction**

1. The Construction Monitoring Report referred to in Part D, Item 8 shall include the following, where applicable:

    a. Blast vibration monitoring for quarrying activity carried out in close proximity to fish bearing Waters;
    b. Monitoring of the performance of erosion protection measures employed by the construction contractor;
    c. Monitoring for sediment release from construction areas;
    d. Waste Rock and Quarry Monitoring Report referred to in Part G, item17, including the following:
        i. A summary of the geochemical inspections;
        ii. Results of the seep surveys;
        iii. Results of geochemical sampling and analysis; and
        iv. A summary of all mitigation activities undertaken as a result of monitoring.
    e. Monitoring of contractor's activity to minimize ground impacts to the tundra (i.e. keeping vehicles off the tundra and on constructed roadways);
    f. Summary of the construction of the South Dam and the Interim Dike;
        i. Laboratory results of subsurface investigations of the dam foundations from undisturbed samples;
        ii. Details of the geotechnical instrumentation and monitoring plan proposed to monitor the performance of the dams; and
        iii. Results of subsurface investigations and laboratory analyses must be reviewed by MHBL and the dam design modified accordingly under the supervision of a Geotechnical Engineer.
    g. Summary of the Quarry Rock Seepage Monitoring Program referred to in Part D, Item 20; and
    h. Construction Summary Reports referred to in Part D, Item 25.

2. The report shall discuss the monitoring results, analysis and any mitigation measures employed as a result of the monitoring, for each of the items listed above

Schedule G. **Conditions Applying to Waste Management and Waste Management Plans**

CCME - Water Quality guidelines for total ammonia for the protection of aquatic life ($mg \cdot L^{-1}$ NH_3)

Temp (ºC)	**pH**							
	6.0	**6.5**	**7.0**	**7.5**	**8.0**	**8.5**	**9.0**	**9.5**
0	231	73.0	23.1	7.32	2.33	0.749	0.250	0.042
5	153	48.3	15.3	4.84	1.54	0.502	0.172	0.034
10	102	32.4	10.3	3.26	1.04	0.343	0.121	0.029
15	69.7	22.0	6.98	2.22	0.715	0.239	0.089	0.026
20	48.0	15.2	4.82	1.54	0.499	0.171	0.067	0.024
25	33.5	10.6	3.37	1.08	0.354	0.125	0.053	0.022
30	23.7	7.50	2.39	0.767	0.256	0.094	0.043	0.021

Schedule J. **Conditions Applying to General and Aquatics Effects Monitoring**

Table 1 MONITORING GROUPS

Group	Analytical Parameters	Measurement Units	Colour Reference
General (**G**)	pH	pH units	**Red**
	TSS	mg/L	
Nutrients (**N1**)	Total Ammonia-N	mg-N/L	**Blue**
	Nitrate-N		
	Nitrite-N		
Nutrients (**N2**)	Orthophosphate-P	mg/L	**Orange**
	Total Phosphate-P		
Total Metals - Unfiltered (**MT**)	T-Aluminum	mg/L	**Green**
	T-Arsenic		
	T-Copper		
	T-Iron		
	T-Nickel		
	T-Lead		
	T-Zinc		
Dissolved Metals - Filtered (**MD**)	D-Iron	mg/L	**Purple**
	D-Copper		
	D-Arsenic		
	D-Zinc		
	D-Cadmium		
	D-Nickel		
Biological (**B**)	Biological Oxygen Demand	mg/L	**Yellow**
	Fecal Coliforms	CFU/100 mL (colony forming units)	
Hydrocarbons (**HC**)	Total Oil and Grease	mg/L	**Dk. Green**
	T-Lead		
	Benzene		
	Toluene		
	Ethyl-Benzene		
Discharge (**D**)	Flow	m^3/day	**Grey**
	Volume	m^3	
	Duration	Day	

GROUP REFERENCE

STATION / PARAMETER	TL-1	TL-2	TL-5	TL-6	TL-7	TL-11	TL-12	ST-1	ST-2	ST-3	ST-4	ST-5	ST-6 a&b	ST-7	ST-7a	ST-8	ST-9	ST-10	ST-11	ST-12	ST-13
pH	x	x	x			x	X	X	x	X	X	X	x	X		x	x		x		X
Electrical Conductivity						x	x														
TSS	x	x	x				X	X	X	X	X	X	X	X		X	X	x	X		X
TDS	x	x					x														
Cl	x	x					x	x	x					X							x
Free CN	x	x	x			x				X				X	X				X		
Total CN	x	x	x			x	X	X	X	X				X	X				x		X
WAD CN			x		x	x	X														
Total Ammonia-N	x	x	x			x	X	X	X	X	X			X	X				X		X
Nitrate-N	x	x	x			x	X	X	X					X	X						X
Nitrite-N	x	x	x			x	X	X	X					X	X						X
Sulphate			x			x	X	X	X	X											X
Orthophosphate-P	x	x												X	X						
Total Phosphate-P	x	x												X	X						
T-Al	x	x	x	x				X	X	X				X	X				X		X
T-Ag	x	x												X	X				X		
T-As	x	x	x	x				X	X	X				X	X				X		X
T-Ca	x	x												X	X				X		
T-Cd	x	x	x	x										X	X				X		
T-Cr	x	x	x	x										X	X				X		
T-Cu	x	x	x	x				X	X	X				X	X				X		X
T-Fe	x	x	x	x				X	X	X				X	X				X		X
T-Hg	x	x	x	x										X	X				X		
T-K	x	x																			
T-Mo	x	x	x	x										X	X				X		
T-Mg	x	x																			
T-Na	x	x																			

T-Ni	x	x	x	x				X	X	X				X	X				X		X
T-Pb	x	x	x	x				X	X	X	X	X	x	X	X				X		X
T-Se	x	x	x	x										X	X				X		
T-Zn	x	x	x	x				X	X	X				X	X				X		X
T-Tl	x	x												X	X				X		
T-Radium 226																					
Dissolved Oxygen & Redox Potential	x																				
Acute Lethality	x																				
Flow		x					X			X	X	X	x	X	X	X	X		X		
Volume		x					X			X	X	X	x	X	X	X	X		X		
Water Level	x																			x	
Ice Thickness																				x	
Total Metals by ICP-MS*			x				x	X	x												X
Total Metals ICP-MS including Sulphur				x	x																
Trace Metals by ICP-MS						x															
Alkalinity						x	X	X	x												X
Acidity						x															
Dissolved Fe																					
D-Cu																					
D-As																					
D-Zn																					
D-Cd																					
D-Ni																					
BOD_5															X	X	X				
Fecal Coliforms	X														X	X	X				
Cyanate			x		x																
Thiocyanate			x		x																
Moisture content					x																

Total Oil and Grease	X	x						X	x	X	X	X	x	X	X	x	x		X		X
Benzene	X										X	X	x						X		
Toluene											X	X	x						X		
Ethyl-Benzene	X										X	X	x						X		
Tonnage				X	x																
Chemical Oxygen Demand																					
Total Inorganic Carbon				X	x																
Chlorophyll a														X							

***** (definition: metals consistent with baseline data previously collected and any other metals of current interest)

Table 2 MONITORING REQUIREMENTS

Station	Description	Phase	Monitoring Parameters	Frequency during Care and Maintenance prior to any deposit of Tailings to the TIA	Frequency during Operations and any time after initial deposit of Tailings to the TIA
TL-1	TIA at the Reclaim Pipeline	Operation, Care and Maintenance, Closure, Post Closure (for up to nine (9) years after cessation of mining)	**G, N1, N2, MT** and TDS, Cl, Free CN, Total CN, T-Ag, T-Ca, T-Cd, T-Cr,T-Hg, T-K, T-Mo, T-Mg, T-Na, T-Se, T-Tl, HC, FC	Three times per week for one (1) week prior to discharge and two times per week for two (2) weeks after discharge commences, then reducing to once per week during remainder of annual discharge period	Monthly during Operations, Closure and Post Closure. Annually during Care and Maintenance.
			Dissolved Oxygen and Redox Potential	Every second month	Annually
			Acute Lethality	Once prior to discharge	Annually during Post-Closure
			B	Daily during periods of discharge	Annually
TL-2	Doris Outflow Creek - upstream (at the flow monitoring station adjacent to the bridge)	Closure, Post Closure (for up to nine (9) years after cessation of mining)	**G, N1, N2, MT** and TDS, Cl, Free CN, Total CN, T-Ag, T-Ca, T-Cd, T-Cr, T-Hg, T-K, T-Mo, T-Mg, T-Na, T-Se, T-Tl, Oil and Grease	One duplicate sample collected prior to discharge; single samples collected twice per week for two(2) weeks after discharge commences, then reducing to once per week during the remainder of annual discharge period	Annually during Care and Maintenance Annually for 2 years prior to Post-Closure, and during Post-Closure, Increase to three times per year (under ice, freshet, and pre-freeze up), two years prior to breach of the North Dam.
		Operation	**D**	Daily during periods of discharge from Tail Lake	Daily upon commencement of mining in or beneath the Doris Lake Talik.

TL3	Doris Outflow Creek (~80m downstream of the base of the waterfall)	Care and Maintenance, prior to any deposit of tailings to the TIA	G, N1, N2, MT and TDS, Cl, Free CN, Total CN, T-Ag, T-Ca, T-Cd, T-Cr, T-Hg, T-K, T-Mo, T-Mg, TNa, T-Se, T-Tl,Total Oil and Grease	One duplicate sample collected prior to discharge; single samples collected twice per week for two(2) weeks after discharge commences, then reducing to once per week during the remainder of annual discharge period	Inactive
			D	Daily during periods of discharge from Tail Lake	
TL-4	TIA Discharge End-of-Pipe	Care and Maintenance, prior to any deposit of tailings to the TIA	G, N1, N2, MT, and TDS, Cl, Free CN, Total CN, T-Ag, T-Ca, T-Cd, T-Cr, T-Hg, T-K, T-Mo, T-Mg, TNa, T-Se, T-Tl, T-Radium 226	Weekly during periods of discharge	Inactive
			Acute Lethality	Once approximately midway through annual discharge	
			B	Monthly	
			D	Daily during periods of discharge from Tail Lake	
TL-5	Effluent from Process Plant (tailings slurry/ water)	Operations	**G, N1, MT**, and Free CN, Total CN, WAD CN, Sulphate, T-Cd, T-Cr, T-Hg, T-Mo, T-Se, and Total Metals by ICP-MS		Quarterly
			Cyanate and Thiocyanate		
TL-6	Tailings Discharged into TIA (Solid Component) taken from a valve in the	Operations	Tonnage of dry tailings solids		Monthly during periods of discharge
			MT and T-Cd, T-Cr, T-Hg, T-Mo, T-Se,		Sampled on a weekly basis with analyses carried out monthly on a

	mill at the discharge end of the mill tailings pumps		Total Inorganic Carbon and Total Metals by ICP-MS (must include Sulphur)		composite sample of the TL-6 weekly samples
TL-7	Detoxified tailings sent underground as backfill	Operations	Dry tonnage of detoxified tailings sent underground; WAD CN, Total Inorganic Carbon, Total Metals by ICP-MS (including Sulphur), Moisture content of backfill trucked underground,		Monthly
			Cyanate and Thiocyanate		Quarterly
TL-8	Reclaim water pumped from TIA to Mill Process water tank taken from a valve at the discharge end of the reclaim water pump	Inactive			Inactive
TL-9	Detox tailings reactor tank (650-TK-565)	Monitoring and reporting is captured within the Water Management Plan.			Monitoring and reporting is captured within the Water Management Plan.
TL-10	Water Column in deepest portion of Tail Lake and at a location away from the TIA Reclaim water floating pump house, sampled at surface, mid-depth and near bottom.	Inactive			Inactive

TL-11	Seepage from underground backfilled stopes	Operations	Visual inspection for seepage. If seepage present parameters to be monitored include **N1** and pH, EC, Trace metals by ICP-MS, Alkalinity, Acidity, Sulphate, Total and WAD CN		Survey Twice annually
TL-12	Mine Water Discharge Point	Operations during continuous pumping	Chloride, TDS and nitrate:		Weekly
			Total Ammonia, Nitrate, Nitrite, pH, EC, ICPMS Metals, alkalinity, sulphate, TSS, major ions and Total and WAD Cyanide		Monthly
			D		daily during periods of discharge
ST-1	Sedimentation Pond	Construction, Operation, Care and Maintenance, Closure	**G, N1, MT** and Total Sulphate, Total CN, Total Oil and Grease, Alkalinity, Chloride, and Total Metals by ICP-MS	Annually	Annually
ST-2	Pollution Control Pond	Construction, Operation, Care and Maintenance, Closure	**G, N1, MT** and Total Sulphate, Total CN, Total Oil and Grease, Alkalinity, Chloride, and Total Metals by ICP-MS	Annually	Annually
ST-3	Discharge from Non-hazardous Landfill pollution control sump	Construction, Care and Maintenance, Operation, Closure	**G, MT** and Total Ammonia-N, Total Sulphate, Total and Free CN, Total Oil and Grease,	Once before any discharge, daily when discharging onto the tundra	Annually. Once prior to every discharge onto the tundra
			D	Daily during periods of discharge	Daily during periods of discharge
ST-4	Discharge from Landfarm sump	Construction, Operation, Care and	**G, HC, total Ammonium, total Lead**	Once before any discharge, daily when discharging onto the tundra	Annually. Once prior to every discharge onto the tundra.

		Maintenance, Closure	**D**	Daily during periods of discharge	Daily during periods of discharge
ST-5	Discharge from the Plant Site Fuel Storage and Containment Area Sump	Construction, Operation, Care and Maintenance, Closure	**G, HC, Total Pb**	Once before any discharge, daily when discharging onto the tundra	Annually. Once prior to every discharge onto the tundra
			D	Daily during periods of discharge	Daily during periods of discharge
ST-6a And ST-6b	Discharge from the Roberts Bay Fuel Storage and Containment Area Sumps	Construction, Operation, Care and Maintenance, Closure	**G, HC, Total Pb**	Once before any discharge, daily when discharging onto the tundra	Annually. Once prior to every discharge onto the tundra
			D	Daily during periods of discharge	Daily during periods of discharge
ST-7	Freshwater pumped from Doris Lake	Construction, Operation, Care and Maintenance, and Closure	**G, N1, N2, MT** and Free CN, Total CN, T-Ag, T-Cd, T-Cr, T-Hg, T-Mo, T-Se, T-Tl, and Total Oil and Grease, Cl		Monthly during periods pumping
			D		Monthly during periods of pumping
			Cl-*a*		Annually
ST-7a	Freshwater pumped from the Windy Lake freshwater intake	Construction, Operation, Care and Maintenance. Closure	**G, N1, N2, MT** and, T-Ag, T-Cd, T-Cr, T-Hg, T-Mo, T-Se, T-Tl, Tca, and Total Oil and Grease		Monthly during periods of pumping
			B		
			D		
ST-8	Discharge from Wastewater Treatment Plant bio-membrane	Construction, Operation, Care and Maintenance, Closure	**G, B,** and Total Oil and Grease		Monthly when discharge to the Tundra, Annually when discharge to the TIA
			Location of discharge		Monthly during periods of Discharge
			D		Daily during periods of discharge

ST-9	Runoff from Wastewater Treatment Plant discharge - downstream of wastewater treatment plant discharge point and just prior to flow entering Doris Lake	Construction, Operation, Care and Maintenance, Closure	**G, B,** and Total Oil and Grease	Monthly	Monthly when discharged to the tundra
ST-10	Site Runoff from Sediment Controls	Construction, Operations, Closure	TSS or Turbidity (following development and approval of a site-specific TSS-Turbidity)	Daily during periods of discharge	Daily during periods of discharge
ST-11	Reagent and Cyanide Storage Facility Sumps.	Construction, Operation, Care and Maintenance, Closure	G, HC , MT, Total Ammonia, Total and Free Cyanide, and D	Annually	Annually
ST-12 (NEW)	Doris Lake	Operation, Closure	Water Level		Monthly
			Ice Thickness		Annually in April
ST-13 (New)	Pollution Control Pond associated to Pad U	Construction, Operation, Care and Maintenance, Closure	**G, N1, MT** and Total Sulphate, Total CN, Total Oil and Grease, Alkalinity, Chloride, and Total Metals by ICP-MS	Annually	Annually
Monitoring Strip #1	Shoreline (location provided in S4 DWG T-14 dated March 2007)	Construction, Operations, Closure	Erosion via bathymetric survey of the underwater section of the monitoring strip down to the original Tailings Impoundment Area water level of 28.3 m	Annually	Annually
Monitoring Strip #2	Shoreline (location provided in S4 DWG T-14 dated March 2007)	Construction, Operations, Closure	Erosion via bathymetric survey of the underwater section of the monitoring strip down to the original	Annually	Annually

			Tailings Impoundment Area water level of 28.3 m		
Monitoring Strip #3	Shoreline	Inactive	Inactive	Inactive	Inactive
Monitoring Strip #4	Shoreline	Inactive	Inactive	Inactive	Inactive
Monitoring Strip #5	Shoreline (location provided in S4 DWG T-14 dated March 2007)	Construction, Operations, Closure	Erosion via bathymetric survey of the underwater section of the monitoring strip down to the original Tailings Impoundment Area water level of 28.3 m	Annually	Annually
Monitoring Strip #6	Shoreline (location provided in S4 DWG T-14 dated March 2007)	Construction, Operations, Closure	Erosion via bathymetric survey of the underwater section of the monitoring strip down to the original Tailings Impoundment Area water level of 28.3 m	Annually	Annually

Table 3 THERMAL MONITORING

Station	Location	Location Reference	Phase		Frequency Prior to Operations; During Care and Maintenance	Frequency during Operations
T1	Jetty - Inactive	SD4 - DWG J-01	Operation		Inactive	Inactive
T2	Jetty - Inactive	SD4 - DWG J-01	Operation		Inactive	Inactive
T4	Beach Laydown - Inactive	SD4 - DWG S-01	Operation		Inactive	Inactive
T5	Fuel Storage and Containment Facility at Robert's Bay - Inactive		Operation		Inactive	Inactive
T7	Airstrip - Inactive	SD4 - DWG S-03	Operation		Inactive	Inactive
T8	Airstrip - Inactive	SD4 - DWG S-03	Operation		Inactive	Inactive
T9	Airstrip -Inactive	SD4 - DWG S-03	Operation		Inactive	Inactive
T-1	Bridge Abutment	SD4 - DWG S-12	Operation		D	A
T-2	Bridge Abutment	SD4 - DWG S-12	Operation		D	A
DOR-1	Camp - Inactive	to be confirmed	Operation		Inactive	Inactive
DOR-2	Camp - Inactive	to be confirmed	Operation		Inactive	Inactive
DOR-3	Pollution Control Pond	PCP-1	Operation		D	A
DOR-4	Sedimentation Pond - Inactive	to be confirmed	Operation		Inactive	Inactive
DOR-5	Float Plane Dock Laydown Area - Inactive	to be confirmed	Operation		Inactive	Inactive
DOR-6	Road	Doris-Windy All Weather	Operation		D	A
DOR-7	Road	Doris-Windy All Weather	Operation		D	A
DOR-8	Road	Doris-Windy All Weather	Operation		D	A
DOR-9	Road	Doris-Windy All Weather	Operation		D	A
DOR-10	Road	Doris-Windy All Weather	Operation		D	A
SRK-53	Shoreline - Inactive	to be confirmed	Operation, Closure		Inactive	Inactive

SRK-54	Shoreline - Inactive	to be confirmed	Operation, Closure		Inactive	Inactive
SRK-55	Shoreline	TIA East Shore	Operation, Closure			IA
SRK-56	Shoreline	TIA West Shore	Operation, Closure			IA
SRK-57	Shoreline	TIA East Shore	Operation, Closure		D	B
SRK-58	Shoreline	TIA West Shore	Operation, Closure		D	B
	North Dam	SD4 - DWG T-09	Operation, Closure		C	C
	South Dam	SD4 - DWG T-10	Operation, Closure		C	C

A - Monthly, increasing if warming trend is observed
B – Monthly
C - Monthly readings taken manually; data loggers installed to collect continuous data at key locations. Frequency maintained until dam reaches pseudo steady state conditions. The frequency may then be reduced but will have to coincide with the peaks of the annual climatic cycles
D – Annually at the end of summer when the active layer should be at maximum thickness.
AWM – Monthly during periods of active water management (Prior to Operations and during Care and Maintenance)
IA – Inactive