



# **NUNAVUT WATER BOARD**

**AMENDED WATER LICENCE NO: 2AM-MEL1631**



## TABLE OF CONTENTS

PART A:	SCOPE, DEFINITIONS AND ENFORCEMENT .....	1
1.	SCOPE .....	1
2.	DEFINITIONS .....	3
3.	ENFORCEMENT .....	3
PART B:	GENERAL CONDITIONS.....	4
PART C:	CONDITIONS APPLYING TO SECURITY .....	7
PART D:	CONDITIONS APPLYING TO CONSTRUCTION.....	9
PART E:	CONDITIONS APPLYING TO WATER USE AND MANAGEMENT .....	12
PART F:	CONDITIONS APPLYING TO WASTE DISPOSAL AND MANAGEMENT ..	15
PART G:	CONDITIONS APPLYING TO MODIFICATIONS.....	19
PART H:	CONDITIONS APPLYING TO EMERGENCY RESPONSE AND CONTINGENCY PLANNING .....	19
PART I:	CONDITIONS APPLYING TO GENERAL AND AQUATIC EFFECTS MONITORING .....	20
PART J:	CONDITIONS APPLYING TO ABANDONMENT, RECLAMATION AND CLOSURE .....	24
SCHEDULES .....		26
Schedule A:	Scope, Definitions, and Enforcement .....	27
Schedule B:	General Conditions .....	36
Schedule D:	Conditions Applying to Construction .....	39
Schedule I:	Conditions Applying to General and Aquatic Effects Monitoring .....	40
TABLE 1 – MONITORING GROUP .....		41
TABLE 2 – MONITORING PROGRAM .....		42



**Licence No: 2AM-MEL1631**

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

**AGNICO EAGLE MINES LIMITED**

(Licensee)

**145, KING STREET EAST, SUITE 400, TORONTO, ONTARIO M5C 2Y7**

(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:	<u><b>2AM-MEL1631 / Type "A"</b></u>
Water Management Area:	<u><b>WILSON WATERSHED (13)</b></u>
Location:	<u><b>MELIADINE GOLD PROJECT KIVALLIQ REGION, NUNAVUT</b></u>
Purpose:	<u><b>WATER USE AND DEPOSIT OF WASTE</b></u>
Description:	<u><b>MINING UNDERTAKING</b></u>
Quantity of Water not to be Exceeded:	<u><b>62,000 CUBIC METRES ANNUALLY FOR CONSTRUCTION, 742,000 CUBIC METRES ANNUALLY FOR OPERATION, AND 4,000,000 CUBIC METRES ANNUALLY FOR CLOSURE (AS PER PART E)</b></u>
Date Licence Issuance:	<u><b>MAY 13, 2021</b></u>
Expiry of Licence:	<u><b>MARCH 31, 2031</b></u>

This Licence issued (**Motion Number # 2021-02-P15-05**) and recorded at Gjoa Haven, Nunavut includes and is subject to the annexed conditions.

\_\_\_\_\_  
Lootie Toomasie  
Nunavut Water Board  
Hearing Chair

**APPROVED** \_\_\_\_\_  
**BY:** Minister of Northern Affairs

**DATE**  
**LICENCE**  
**APPROVED:** \_\_\_\_\_



**PART A: SCOPE, DEFINITIONS AND ENFORCEMENT**

**1. SCOPE**

- a. This Licence authorizes Agnico Eagle Mines Limited (“AEM” or “Licensee”) to use Water and deposit Waste in support of a Mining Undertaking classified as per Schedule 1 of the *Regulations*, at the Meliadine Gold Project (Project) as outlined in the Type “A” Water Licence Application submitted to the NWB on August 27, 2020 (Application) and as reviewed throughout the regulatory process.

The Licensee may conduct mining and associated activities at the Meliadine Gold Project in the Kivalliq Region of Nunavut, located at the following project extents:

Project Extents	Latitude	Longitude
Mine Site	63° 2' 53.091" N	92° 16' 16.651" W
	63° 2' 50.722" N	92° 9' 10.809" W
	63° 1' 1.463" N	92° 9' 13.978" W
	63° 1' 3.829" N	92° 16' 19.377" W
All-weather Access Road	63° 1' 19.309" N	92° 11' 26.684" W
	63° 1' 16.230" N	92° 3' 10.432" W
	62° 47' 58.542" N	92° 3' 36.080" W
	62° 48' 1.592" N	92° 11' 48.601" W
Itivia, Rankin Inlet Area	62° 48' 9.519" N	92° 6' 4.112" W
	62° 48' 9.283" N	92° 5' 27.421" W
	62° 47' 52.933" N	92° 5' 27.925" W
	62° 47' 53.169" N	92° 6' 4.610" W
Camp	63° 2' 24.180" N	92° 13' 44.288" W

and including, in general, as follows:

- Withdrawal and use of Water from Meliadine Lake for mining and associated activities and domestic purposes;
- Withdrawal and use of Water from Meliadine Lake for re-flooding of Tiriganiaq 1 and Tiriganiaq 2 open pits following pit development;
- Dewatering of Lakes A54, H17, H19 and H20, and draining of ponds;
- Quarrying of materials from specified locations;
- Development and Operation of the site facilities;
- Construction of access and site roads, Water crossings, industrial pad, and laydown areas;



## Nunavut Water Board | Water Licence No: 2AM-MEL1631

- Construction and Operation of a potable Water treatment plant and associated causeway and intake;
- Construction and Operation of a Landfill, Landfarm, and Incinerator;
- Construction and Operation of a Water Collection Ponds, retention dikes, retention berms, jetties, dams, pump systems, pipeline, and channels;
- Construction and Operation of Treatment Plants;
- Construction and Operation of fuel tanks, dispensing storage facilities and associated secondary containment areas for the bulk storage of fuel at the Mine Site and at the Itivia Site Fuel Storage and Containment Facilities;
- Construction and Operation of the Rankin Inlet By-pass Road;
- Operation of the All-weather Access Road and associated infrastructure;
- Extraction of overburden, Waste Rock and ore from the Tiriganiaq gold deposit via two open pits and one underground mine;
- Construction and Operation of a temporary overburden stockpile;
- Construction and Operation of ore stockpiles;
- Construction and Operation of Waste Rock Storage Facilities (WRSF);
- Construction and Operation of a Tailings Storage Facility (TSF);
- Processing of ore using a conventional gold-milling circuit;
- Development and Operation of an Emulsion Plant;
- Construction of berms required for the Operation of the Tailings Storage Facility (TSF);
- Deposition of dry stack tailings into the Tailings Storage Facility (TSF);
- Disposal of cyanide leach residue within the Tailings Storage Facility (TSF);
- Disposal of Waste Rock and Overburden within two Waste Rock Storage Facilities (WRSF);
- Use of Waste Rock for Construction as approved by the Board in accordance with conditions of [Part D](#);
- Management and disposal of Waste associated with the Sewage Treatment Plant, Water Collection Ponds, Landfill, Landfarm, Incinerator and other Wastes as described in the Application;
- Handling and storage of petroleum products and hazardous materials including explosives, cyanide and other reagents;
- Diversion of site runoff Water to water management facilities;



- Controlled and regulated discharge of Effluent from Control Pond No. 1 (CP1), after treatment at the Contact Water Treatment Plant, to Meliadine Lake through an effluent Diffuser, or as otherwise approved by the Board; and
  - Progressive Reclamation and Abandonment planning of on-site facilities and infrastructure.
- b. This Licence is issued subject to conditions contained herein with respect to the use of Water 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 under the *Act* 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, upon promulgation of such regulations, 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 may 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 Waters 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. The amount of Water use fees shall be determined and payment of those fees shall be made by the Licensee in accordance with section 12 of the *Regulations*.
2. The Licensee shall file an Annual Report with the Board no later than March 31<sup>st</sup> in the year following the calendar year being reported. The Annual Report shall be developed in accordance with [Schedule B](#).
3. The Licensee shall retain and have a copy of this Licence available at the site of operations at all times.
4. 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](mailto:licensing@nwb-oen.ca)

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

Manager of Field Operations  
Nunavut District, Nunavut Region  
P.O. Box 100  
Iqaluit, NU X0A 0H0 Telephone:  
Telephone: (867) 975-4284  
Fax: (867) 979-6445

6. The Licensee shall submit one (1) electronic copy of all reports, studies, and plans to the Board unless otherwise requested by the Board. Reports or studies submitted to the Board by the Licensee shall include an executive summary in English, Inuktitut, and French.
7. This Licence is assignable as provided in Section 44 of the *Act*.
8. The Licensee shall ensure that any document(s) or correspondence submitted by the Licensee to the Board is received and acknowledged by the Manager of Licensing or delegate.
9. The Licensee shall notify the Board of any changes in Project phases and/or operating plans or conditions associated with this Project at least sixty (60) days prior to any such change.



10. The Licensee shall, for all Plans submitted under this Licence, include a proposed timetable for implementation. Plans submitted cannot be undertaken without 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.
11. Unless otherwise directed by the Board in writing, in the event that a Plan is not found acceptable to the Board, the Licensee shall provide a revised version to the Board for review within thirty (30) days of notification by the Board.
12. 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 reviewed by the Board to determine the process for the Board's review and approval of the amendment to the plan(s). Reflecting the scale and scope of the future changes of an approved plan, the Board may subsequently process the changes as solely an amendment to the plan, as a Modification under [Part G](#) of the Licence, or as an Amendment to the Licence. The Board has approved the following Plans for implementation under the relevant sections in the Licence:
  - a. Ammonia Management Plan, Version 3, March 2021;
  - b. Aquatic Effects Monitoring Program (AEMP) Design Plan, Version 1, June 2016;
  - c. Borrow Pits and Quarries Management Plan, Version 6, March 2018;
  - d. Bulk Fuel Storage Facility: Environmental Performance Monitoring Plan, Version 1, August 2019;
  - e. Dust Management Plan, Version 6, June 2020
  - f. Environmental Management and Protection Plan (EMPP), Version 9, March 2019;
  - g. Freshet Management Plan, Version 6, March 2020;
  - h. Groundwater Management Plan, Version 6, January 2021;
  - i. Hazardous Materials Management Plan, Version 5, March 2018;
  - j. Incineration Management Plan, Version 6, February 2019;
  - k. Itivia Oil Handling Facility Oil Pollution Emergency Plan, Version 3.1, April 2020;
  - l. Landfarm Management Plan, Version 3, February 2019;
  - m. Landfill and Waste Management Plan, Version 7, March 2019;
  - n. Meliadine Interim Closure and Reclamation Plan – Update 2020, Revision 2, January 28, 2021;
  - o. Mine Waste Management Plan, Version 7, March 2021;
  - p. Ore Storage Management Plan, Version 3, March 2021;
  - q. Quality Assurance and Quality Control Plan, Version 3, March 2019 (accepted);
  - r. Risk Management and Emergency Response Plan, Version 4, April 2015;
  - s. Roads Management Plan, Version 8, December 2019;
  - t. Sediment and Erosion Management Plan, Version 3, March 2021;
  - u. Spill Contingency Plan, Version 10, December 2019;
  - v. Water Management Plan; Version 10, August 2020;
  - w. Water Quality and Flow Monitoring Plan, Version 2, March 2020; and
  - x. Water Quality Management and Optimization Plan, Revision 4a, November 13, 2020.





13. The Licensee shall, within sixty (60) days of the approval of this Licence by the Minister, submit to the Board for review the following updated management plans to reflect the proposed changes and to take into account commitments made during the technical review of the Application and Public Hearing process:
  - a. Water Management Plan;
  - b. Groundwater Management Plan
  - c. Waste Management Plan; and
  - d. Interim Closure and Reclamation Plan.
14. The Licensee shall, at least six (6) months prior to initiating the discharge of Contact Water through any means other than those approved under [Part F, Item 3](#), submit to the Board for approval all relevant updated management plans to reflect the associated changes to management of Water on site. The updates are to take into account commitments made during the technical review of the Application, as well as the issues discussed at the Public Hearing, where applicable.
15. 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 shall be contemplated in the development of a Plan where appropriate.
16. The Licensee shall review the Plans or Manuals referred to in this Licence as required by changes in operation and/or technology and modify the Plans or Manuals accordingly. Revisions to the Plans or Manuals are to be submitted in the form of an Addendum to be included with the Annual Report required by [Part B, Item 2](#), complete with a revisions list detailing where significant content changes are made, and should incorporate design changes and adaptive engineering required and implemented during construction and on the basis of actual site conditions and monitoring results over the life of the Project.
17. The Licensee shall post signs in the appropriate areas to inform the public of the location of the Water Supply Facilities and the Waste Disposal Facilities. All signs must be in English, Inuktitut and French and shall be located and maintained to the satisfaction of an Inspector.
18. The expiry or cancellation of this Licence does not relieve the Licensee from any obligation imposed by the Licence, or any other regulatory requirement.
19. The Schedules attached to this Licence provide details regarding the requirements associated with specific items in the main body of the Licence and are included 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 any of the Schedules requires revision in order to better reflect the intent and objectives of the Licence, the Board may at its discretion, and upon consulting and providing written notice to the Licensee and interested parties, revise the Schedule accordingly. Unless the Board directs otherwise, such revision may not necessarily be considered as an "Amendment" to the Licence.



20. The Licensee is encouraged to adopt an Adaptive Management approach to the management of uncertainty regarding potential for effects associated with the Undertaking, including identifying mitigation, monitoring or management actions to be taken when specified thresholds and triggers identified in an Adaptive Management Plan are exceeded.
21. Prior to the Licensee undertaking the mitigation, monitoring or management actions specified in an Adaptive Management Plan, the Licensee shall ensure that, reflecting the scale and scope of the actions proposed, all applicable regulatory requirements have been met, including, without limitation, applicable land use planning and impact assessment requirements under the *Nunavut Agreement* and the *Nunavut Planning and Project Assessment Act*, and completion of any Modification or Amendment processes required under the *Act*, the *Regulations* and/or this Licence.
22. Unless otherwise stated, references in the Licence to any specific legislation, policy, guideline or other regulatory requirement are deemed to refer to the regulatory requirement as may be amended or as may be expressly replaced by successor legislation, policy, guidelines or other regulatory requirements after the Licence is approved by the Minister.

#### **PART C:      CONDITIONS APPLYING TO SECURITY**

1. The Licensee shall, within thirty (30) days following the approval of this Licence by the Minister, furnish and maintain security with the Minister in the amount of **\$34,843,623**. As set out in the *Meliadine Security Management Agreement*, the amount secured under this Part constitutes 50% of the total global security amount of **\$69,687,246** that is required to reclaim the Undertaking and reflects that the other 50% of the global security amount will be held outside the Licence by the Kivalliq Inuit Association, in accordance with the terms and conditions of the *Meliadine Security Management Agreement*.
2. The security held under Part C, Item 1 shall be in the form, of the nature, and subject to such terms and conditions, as prescribed by the Act and Regulations.
3. The Licensee shall, within ten (10) days after furnishing security with the Minister, provide evidence to the NWB and the Kivalliq Inuit Association, that the security has been received by the Minister, indicating the amount, form, nature and conditions of the security.
4. The Licensee shall, within ten (10) days after furnishing security with the Kivalliq Inuit Association, provide evidence to NWB and to the Minister, that it has been received by the Kivalliq Inuit Association, indicating the amount, form, nature and conditions of the security.
5. The Licensee shall provide the Board with at least ninety (90) days written notice prior to any party's termination of the *Meliadine Security Management Agreement*, or any material change to the *Meliadine Security Management Agreement* that may affect the amount of security held under Part C, Item 1.



6. The Licensee shall provide the Board with at least ninety (90) days written notice prior to any material changes to the Undertaking or the risk of environmental damage associated with the Undertaking that could result in a material change to the reclamation liability associated with the Undertaking (including, but not limited to, updates to the reclamation cost estimate arising from unexpected changes or modifications of the works and activities associated with the Undertaking), a release, in whole or in part, of reclamation security held under this Part by the Minister pursuant to Part C, Item 11 and Section 76(5) of the *Act*.
7. The Licensee shall, within six (6) months following commencement of Commercial Operation and at the time the Licensee files the Final Reclamation and Closure Plan as required under the Licence, submit to the Board for review in writing an updated reclamation cost estimate, using the RECLAIM Reclamation Cost Estimating Model (Version 7.0 or the most current version at the time the updated reclamation cost estimate is submitted to the Board).
8. Upon the Board receiving notice under Part C, Items 5 or 6, or upon receiving an updated reclamation cost estimate as required under Part C, Item 7, the Board, may on its own initiative, or upon application by the Licensee, the Minister and/or the Kivalliq 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 held under Part C, Item 1. Any submission requesting an amendment to 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.
9. In addition to the process for amending security under Part C, Item 8, the Licensee may, at any time, submit an application to the Board for a change to the amount of security outlined in Part C, Item 1. The submission shall include supporting evidence to justify the amendment. The Licensee's request to amend security will be processed by the Board as an amendment to the terms and conditions of the Licence.
10. If the Board determines it to be necessary, or upon the request by the Licensee, the Minister and/or the Kivalliq Inuit Association, the Board may issue further directions under this Part with respect to the process for the Board's conduct of periodic reviews of security and associated amendments to the amount of security to be furnished and maintained under the Licence.
11. The Licensee shall maintain the security deposit referred to in Part C, Item 1 until such time as the Minister is satisfied that the Licensee has complied with all provisions of the approved Abandonment and Restoration Plan. This clause shall survive the expiry of the Licence or renewals thereof and until full and final reclamation has been completed to the satisfaction of the Minister.



**PART D: CONDITIONS APPLYING TO CONSTRUCTION**

1. The Licensee shall, at least sixty (60) days prior to Construction, submit to the Board for review final design and for-Construction drawings accompanied with a detailed report described in Part D, Item 2 and stamped and signed by an Engineer, for the following:
  - a. Engineered Water works, including: Water Intake and causeway water control structures (dikes, berms, jetties, channels) and Water crossings (culverts, bridges);
  - b. Engineered Waste disposal facilities, including: all Treatment Plants, Meliadine Lake Outfall Diffuser, Waste Rock Storage Facilities, Overburden stockpiles, Tailings Storage Facility (including thermal installation and monitoring), Landfill, Landfarm, and Incinerator;
  - c. Engineered Fuel Storage Containment Facilities (Meliadine Site and Itivia Site); and
  - d. All other infrastructure that require Engineer's approval.
2. The detailed report(s) referred to in Part D, Item 1 shall include:
  - a. Design rationale, requirements, criteria, parameters, standards analysis, methods, assumptions and limitations;
  - b. Site specific data and analysis to support the design and management decisions;
  - c. Geochemical analysis of Waste Rock and fill, demonstrating their Acid Rock Drainage and Metal Leaching characteristics;
  - d. Construction methods and procedures regarding how infrastructure will be put in place, including quality assurance and quality control measures and equipment to be used;
  - e. Technical specifications for sedimentation, erosion control and bank stabilization measures, including proposed materials, location and extent, place methods and quantities required; and
  - f. Timetable for submission, including date of Construction and proposed date of commissioning of infrastructure.
3. The Licensee shall, within ninety (90) days of completion of each facility designed to contain, withhold, divert or retain Waters or wastes, submit to the Board for review a Construction Summary Report prepared by a qualified Engineer that includes as-built plans and drawings, documentation of field decisions that deviate from original plans and any data used to support these decisions in accordance with [Schedule D, Item 1](#).
4. The Licensee shall provide a brief summary of the Construction Summary Report required by Part D, Item 3, within the Annual Report required by [Part B, Item 2](#).
5. The Licensee shall construct and operate the Fuel Storage and Containment Facilities to meet, at a minimum, all applicable legislation and industry standards that include the following:



- a. *Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products, 2003; CCME PN1326 (Updated in 2013) or most recent;*
  - b. Relevant standards of the Canadian Standards Association (CSA); and
  - c. *National Fire Code, 2015 or most recent.*
6. The Licensee shall cease works on Water crossings/ bridges, should the results of downstream monitoring under [Part I, Item 10](#) exceed the upstream monitoring results for Total Suspended Solids concentration (mg/L) by twenty percent (20%).
  7. The Licensee shall use Waste Rock and fill material for construction, including the construction of any infrastructure, only from approved sources that have been demonstrated by appropriate geochemical analyses to not produce Acid Rock Drainage and to be Non-Metal Leaching, and free of contaminants.
  8. The Licensee shall monitor for signs of erosion and implement and maintain sediment and erosion control measures prior to and during the Construction and Operation where necessary to prevent entry of sediment into Water.
  9. The Licensee shall conduct daily visual inspections for Construction activity during spring freshet and during and after remarkable rainfall events, with sampling of runoff/Seepage where turbidity is evident.
  10. The Licensee shall construct and maintain all containment and runoff control structures to prevent escape of Wastes to surface Waters.
  11. The Licensee shall direct contact runoff and Seepage to the Collection Ponds for storage and transfer to the Control Pond No.1 (CP1).
  12. All Waters from dewatering activities at Monitoring Program Stations MEL-D-1 through MEL-D-TBD shall be directed to Meliadine Lake and shall not exceed the following Effluent quality limits:

Parameter	Maximum Average Concentration	Maximum Authorized Concentration in a Grab Sample
Total Suspended Solids (TSS) (mg/L)	15.0	30.0
pH	6.0 to 9.5	6.0 to 9.5

13. All Waters, exceeding the Effluent quality limits under Part D, Item 12, shall be released to CP1.
14. The Licensee shall implement the *Borrow Pits and Quarries Management Plan* and the *Roads Management Plan* as approved by the Board under [Part B, Item 12](#).



15. The Licensee shall designate an area for the deposition of excavated and stockpiled materials, with respect to access roads, laydown area, pad construction or other earthworks, at a distance of at least thirty-one (31) metres from the ordinary High Water Mark, in order to prevent the deposition of debris or sediment into or onto any Water body.
16. The Licensee shall maintain a minimum of thirty-one (31) metres undisturbed buffer zone between the periphery of quarry sites and the ordinary High Water Mark of any Water body unless otherwise approved by the Board in writing.
17. The Licensee shall not excavate and/or remove material from the quarry beyond a depth of one (1) metre above the ordinary High Water Mark or above the Groundwater table, to prevent the potential contamination of surface and Groundwater. The quarrying shall be in accordance with all applicable legislation and industry standards including the *Northern Land Use Guidelines, Pits and Quarries* (INAC, 2009, or as revised).
18. All surface runoff and/or discharge from drainage management systems, at the Monitoring Program Stations MEL-SR-1 to MEL-SR-TBD referred to in [Part I, Item 10](#), during the Construction/Operation of any facilities and infrastructure associated with this project, including laydown areas and All-weather Access Road, where flow may directly or indirectly enter a Water body, shall not exceed the following Effluent quality limits:

Parameter	Maximum Average Concentration	Maximum Authorized Concentration in a Grab Sample
Total Suspended Solids (TSS) (mg/L)	50.0	100.0
Oil and Grease	No Visible Sheen	No Visible Sheen
pH	6.0 to 9.5	6.0 to 9.5

19. The Licensee shall, during the Construction of all engineered structures, provide the required supervision and field checks by an appropriately qualified 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 to be made available at the request of the Board and/or an Inspector.
20. The Licensee shall conduct all activities in a manner so as to minimize impacts on Surface Drainage and immediately undertake any corrective measures required in the event of any impacts on Surface Drainage.
21. The Licensee shall locate stream crossings to minimize approach grades. Approaches shall be stabilized during Construction and upon completion of the project, to control runoff, erosion and subsequent siltation to any Water body.





22. The Licensee shall limit any in-stream activity to low Water periods. In-stream activity is prohibited during fish migration.
23. The Licensee shall not cut any stream bank or remove any material from below the ordinary High Water Mark of any Water body.
24. The Licensee shall, for the purposes of culvert and bridge construction, ensure that all activities remain outside of the natural channel width by the placement of abutments, footings or armoring above the ordinary High Water Mark so that there is no restriction to the natural channel processes.
25. Machinery is not permitted to travel up the stream bed and fording of any Water body is to be kept to a minimum. Machinery and equipment should be well cleaned and free of oil and grease and other pollutants and maintained free of fluid leaks.
26. The Licensee shall ensure that pollutants from machinery fording the crossings do not enter Water.
27. The Licensee shall locate equipment storage areas on gravel, sand or other durable land, at 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.
28. The Licensee shall not utilize any equipment or vehicles in the course of this undertaking unless the ground surface is in a state capable of supporting the equipment or vehicles without rutting or gouging. Overland travel of equipment or vehicles shall cease if rutting occurs.
29. The Licensee shall not store material on the surface of frozen streams or lakes except what is for immediate use.
30. The Licensee shall determine all monitoring locations based on operational and site specific requirements to be recorded and reported within the monthly and annual reports required under [Part B](#), [Schedule B](#) and [Part I](#).

## **PART E: CONDITIONS APPLYING TO WATER USE AND MANAGEMENT**

1. The Licensee shall obtain all fresh Water for domestic camp use, mining and milling, and associated uses from Meliadine Lake at Monitoring Program Station MEL-11 using the Fresh Water Intake, or as otherwise approved by the Board in writing. The total authorized volume of Waters for all purposes shall not exceed sixty two thousand (62,000) cubic metres *per year* during Construction and seven hundred and forty two thousand (742,000) cubic metres *per year* during Operations of the Project.



2. The Licensee shall obtain all fresh Water from Meliadine Lake for domestic camp use and re-flooding of Tiriganiaq 1 and 2 Pits and associated uses, or as otherwise approved by the Board in writing. The total authorized volume of Waters for re-flooding of pits shall not exceed four million (4,000,000) cubic metres *per* year during Closure of the Project.
3. The Licensee shall obtain all Water for use in dust suppression from ponded Water (against the AWAR), small ponds proximal to the road and/or from the Meliadine River, or as otherwise approved by the Board in writing. The total authorized volume of Waters for all purposes referred to in Part E, Items 1 and 2 shall be inclusive of the amounts required for dust suppression.
4. The Licensee shall maximize to the greatest practical extent, the use of Reclaim Water from Contact Water management facilities for use in the mill, drilling, and for dust suppression. The Licensee may use Reclaim Water for dust suppression in areas where any direct flow into a waterbody is not possible and no additional impacts are created.
5. The Licensee shall not use streams as a Water source unless authorized and approved by the Board in writing.
6. 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.
7. The Licensee shall not remove any material from below the ordinary High Water Mark of any Water body unless authorized by the Board in writing.
8. The Licensee shall undertake appropriate corrective measures to prevent and/or mitigate impacts to surface Water resulting from the Licensee's Operation.
9. The Licensee shall implement sediment and erosion control measures prior to and maintain such measures during the undertaking to prevent entry of sediment into Water.
10. The Licensee shall implement the *Water Management Plan* as approved by the Board under [Part B, Item 12](#). The Licensee shall, at least six (6) months prior to initiating the discharge of Contact Water through any means other than those approved under [Part F, Item 3](#), update the *Water Management Plan* to reflect any changes in management of Water on site and shall submit the updated Plan to the Board for approval in writing.
11. The Licensee shall, at least ninety (90) days prior to starting of the next phase (Closure, Post-closure) of mine development, submit an updated *Water Management Plan* to the Board for approval in writing to reflect all changes in operations and/or technology. The Plan shall include updated Water Balance and Water Quality Forecast, and an action plan to be implemented, if predicted Water quality indicates that treatment is necessary.
12. The Licensee shall review the *Water Management Plan* on an annual basis and submit an updated version of the Plan with a summary of changes to the Board for review within the





annual report submission, if significant content changes are required.

13. The Licensee shall, at a minimum of once every year following commencement of Operations, submit to the Board for review an updated Water Balance and Water Quality Forecast. This update shall include all monitoring parameters and shall identify which Mean Annual Concentrations are within 10% of the respective Maximum Average Concentrations for regulated parameters. Additionally, the Mean Annual Concentrations for all monitoring parameters in the current reporting year shall be compared to those reported in the previous year, and if the respective concentrations are increased by more than 20%, a detailed technical assessment identifying specific sources of loadings and the proposed parameter forecasts shall be provided to the Board for review.
14. The Licensee shall, on an annual basis during Closure, compare the predicted Water quantity and quality within the pits to the actual measured Water quantity and quality. Should the difference between the predicted and measured values be 20% or greater, then the cause(s) of such difference(s) shall be identified and the implications of the differences shall be assessed and reported to the Board.
15. The Licensee shall implement the *Groundwater Management Plan* as approved by the Board under [Part B, Item 12](#). The Licensee shall, at least six (6) months prior to initiating the discharge of Contact Water through any means other than those approved under [Part F, Item 3](#), update the *Groundwater Management Plan* and submit the updated Plan to the Board for approval in writing.
16. The Licensee shall carry out the inspections of all Water management structures Weekly during periods of flow (rock drains, culverts, sedimentation and pollution control ponds and associated diversion berms, reagent and storage facility sumps, and the sedimentation control berm at the overburden dump) and Monthly thereafter, and the records of all inspections shall be maintained for review upon request of an Inspector. More frequent inspections may be required at the request of an Inspector.
17. The Licensee shall not breach dikes until the Water quality in the re-flooded area meets the *CCME Water Quality Guidelines for the Protection of Aquatic Life*, baseline concentrations, or appropriate Site-Specific Water Quality Objectives (SSWQO), such as the pit lake predictions in the *Final Environmental Impact Statement* (FEIS, 2014, Table 7.4-22, or more recent SSWQO). If Water quality parameters are above the *CCME Guidelines* and/or *FEIS* predictions, a site specific risk assessment must be conducted in order to identify the SSWQO for the site that are protective of the aquatic environment. Where the SSWQO are required, the SSWQO shall be incorporated into the approved *Final Reclamation and Closure Plan*.
18. The Licensee shall implement measures to minimize the generation and deposition of dust and/or sediment into Water arising from road use.
19. The Licensee shall provide at least sixty (60) days' notice to the NWB and Inspector prior to the change of Water use associated with changes in Project phases, as per [Part B, Item 9](#).



**PART F: CONDITIONS APPLYING TO WASTE DISPOSAL AND MANAGEMENT**

1. The Licensee shall direct all Sewage and Greywater to the Sewage Treatment Plant for treatment prior to releasing to CP1, or as otherwise approved by the Board in writing.
2. The Licensee shall direct all Contact Water from the Collection Ponds to CP1, or as otherwise approved by the Board in writing.
3. The Discharge of Effluent from the Final Discharge Point at Monitoring Program Station MEL-14 shall be directed to Meliadine Lake through the Meliadine Lake Outfall Diffuser and shall not exceed the following Effluent quality limits:

Parameter	Unit	Maximum Average Concentration	Maximum Authorized Concentration in a Grab Sample
<b><i>Conventional Constituents</i></b>			
pH		6.0 to 9.5 <sup>(a)</sup>	6.0 to 9.5 <sup>(a)</sup>
Total Dissolved Solids (TDS) (calculated)	mg/L	3,500	4,500
Total Suspended Solids (TSS)	mg/L	15 <sup>(a)</sup>	30 <sup>(a)</sup>
<b><i>Nutrients</i></b>			
Total Ammonia (NH <sub>3</sub> -N)	mg-N/L	14	18
Total Phosphorous (P)	mg-P/L	2.0	4.0
<b><i>Total Metals</i></b>			
Aluminum (Al)	mg/L	2.0	3.0
Arsenic (As)	mg/L	0.3	0.6
Cyanide (CN)	mg/L	0.5	1.0
Copper (Cu)	mg/L	0.2	0.4
Lead (Pb)	mg/L	0.1 <sup>(a)</sup>	0.2 <sup>(a)</sup>
Nickel (Ni)	mg/L	0.5 <sup>(a)</sup>	1.0 <sup>(a)</sup>
Zinc (Zn)	mg/L	0.4	0.8
<b><i>Other</i></b>			
Total Petroleum Hydrocarbons (TPH)	mg/L	5.0	5.0

<sup>(a)</sup> *Metal and Diamond Mining Effluent Regulations (SOR/2002-222).*

4. The Discharge of Effluent from the Final Discharge Point at Monitoring Program Station MEL-14 shall be demonstrated to be non-Acutely Lethal under the following test and additional future tests in accordance with the *Metal and Diamond Mining Effluent Regulations (MDMER)*:
  - a. Acute Lethality of Effluents to Rainbow Trout (as per Environment Canada's



Environmental Protection Series Biological Test Method EPS/1/RM/13, Second Edition, December 2000, as amended in May 2007 or within any more recent amendments).

5. The Discharge of Effluent onto land from the Fuel Storage Facility at the Itivia Site, at Monitoring Program Station MEL-25, shall not exceed the following Effluent quality limits:

Parameter	Unit	Maximum Average Concentration	Maximum Authorized Concentration in a Grab sample
pH		6.0 to 9.5	6.0 to 9.5
Total Suspended Solids (TSS)	mg/L	15	30
Benzene	µg/L	370	370
Toluene	µg/L	2	2
Ethylbenzene	µg/L	90	90
Lead (Pb)	mg/L	0.1	0.1
Oil and Grease	mg/L	5 and no visible sheen	5 and no visible sheen

6. The Licensee shall, under Part F, Item 5, discharge Effluent to a location at a distance of at least thirty-one (31) metres above the ordinary High Water Mark of any Water body, in such a manner as to minimize surface erosion to where direct flow into a Water body is not possible and no additional impacts are created, or as otherwise approved by the Board in writing.
7. All Effluent at Monitoring Station MEL-25, that exceeds the Effluent quality limits under Part F, Item 5, shall be transferred to CP1.
8. The Licensee shall confirm compliance with Effluent quality limits referred to in Part F, Items 3 and 5 prior to Discharge.
9. The Licensee shall implement the *Water Quality Management and Optimization Plan* as approved by the Board under [Part B, Item 12](#). The Licensee shall, within sixty (60) days of approval of the Licence by the Minister, update this Plan to incorporate the requirements of [Part F, Items 3](#) and a discussion on the Site Specific Water Quality Objectives for Chloride discussed during the technical review of the Application, and submit the updated Plan to the Board for approval in writing.
10. The Licensee shall operate all Treatment Plants in accordance with the following Operation and Maintenance Manuals that were previously approved by the Board:
- “*Operation and Maintenance Manual, Freshwater Treatment Plant Upgrade*”, dated June 2020;
  - “*Operation & Maintenance Manual (OMM), Sewage Treatment Plant Upgrade*”,



dated July 17, 2020;

- “*Operation and Maintenance Manual, Effluent Water Treatment Plant (EWTP)*”, dated January 2021;
- “*Operation & Maintenance Manual, Saline Water Treatment Plan*”, dated July 2018;
- “*PALL Agnico, Two 450 GPM Reflex CCRO units, Operation and Maintenance Manual*”, dated April 10, 2018; and
- “*Operation and Maintenance Manual, Saline Effluent Treatment Plant (SETP) Upgrade*”, dated June 2020.

11. The Licensee shall provide at least ten (10) day notice to the Inspector prior to any planned Discharge from any facility. The notice shall include the estimated volume proposed for Discharge and the receiving location.
12. The Licensee shall locate areas designated for Waste disposal at a minimum distance of thirty-one (31) metres from the ordinary High Water Mark of any Water body such that the quality, quantity or flow of Water is not impaired, or as otherwise approved by the Board in writing.
13. The Licensee shall implement the *Mine Waste Management Plan*, as approved by the Board under [Part B, Item 12](#). The Licensee shall review the *Mine Waste Management Plan* on an annual basis and submit an updated version of the Plan with a summary of changes to the Board for review within the annual report submission, if significant content changes are required.
14. The Licensee is authorized to dispose of and contain all non-hazardous, solid Wastes at the Meliadine Non-Hazardous Waste Landfill in accordance with the *Landfill and Waste Management Plan* approved by the Board under [Part B, Item 12](#), or as otherwise approved by the Board in writing.
15. The Licensee is authorized to dispose of all acceptable food waste, paper waste and untreated wood products in an Incinerator in accordance with the *Incineration Management Plan* approved by the Board under [Part B, Item 12](#), which may include an Adaptive Management approach for use of a Composter or as otherwise approved by the Board in writing.
16. The Licensee shall not open burn plastics, wood treated with preservatives, electric wire, Styrofoam, asbestos or painted wood to prevent the deposition of waste materials of incomplete combustion and/or leachate from contaminated ash residual, from impacting any surrounding Waters, unless otherwise approved by the Board in writing.
17. The Licensee shall remove from the Project site, all solid and liquid Hazardous Wastes generated through the course of the Project’s activities, for disposal at an approved hazardous waste disposal facility in accordance with the *Hazardous Materials Management Plan* approved by the Board under [Part B, Item 12](#).



18. The Licensee shall incorporate Seepage management at Quarries using best management practices including ditches, diversions, sumps and berms where necessary.
19. The Licensee shall maintain records of all Waste backhauled and confirmation of proper disposal through the use of Waste manifest tracking systems and registration with the Government of Nunavut, Department of Environment. These records shall be made available to an Inspector upon request.
20. The Licensee shall dispose of / treat all petroleum hydrocarbon contaminated soils in the Landfarm facility in accordance with the *Landfarm Management Plan* approved by the Board under [Part B, Item 12](#).
21. The Licensee shall dispose of tailings and operate the Tailings Storage Facility (TSF) in accordance with the *Mine Waste Management Plan* approved by the Board under [Part B, Item 12](#), *Guide to the Management of Tailings Facilities (Mining Association of Canada, September 2011, or more recent)* and with relevant engineering standards, such that:
  - a. Adaptive Management strategies shall be implemented as required;
  - b. Management and operation of the TSF shall be re-evaluated, if tailings chemistry is different than predicted in the FEIS 2014, or other tailings characterizations provided by the Licensee (e.g. PAG instead of non-PAG);
  - c. Seepage from the TSF shall be collected in Collection Pond No.3 (CP3) and monitored for Water quality;
  - d. Weekly inspections, at a minimum, shall be carried out during any period in which the 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 TSF structures and other associated structures;
  - e. A Geotechnical Engineer shall be consulted when significant issues associated with the TSF are observed, and the Engineer's recommendations shall be implemented as necessary;
  - f. The portion of the mill tailings (filtered cyanide leach residue) that is not used by the paste backfill plant for placement underground as mine backfill shall be deposited and permanently contained within the TSF;
  - g. An annual Geotechnical inspection shall be carried out in accordance with [Part I, Item 14](#);
  - h. More frequent inspections of the facilities shall be performed at the request of an Inspector; and
  - i. Records of all inspections shall be maintained and made available for the review of an Inspector upon request.



**PART G: CONDITIONS APPLYING TO MODIFICATIONS**

1. The Licensee may, without written consent from the Board, carry out Modifications 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 the NPC Land Use Planning and the NIRB Screening Determinations;
  - d. The Board has not, within 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 any of the conditions referred to in Part G, Item 1 have not been met can be carried out only with approval from the Board in writing.
3. Applications for modifications shall contain:
  - a. A description of the facilities and/or works to be constructed;
  - b. The proposed location of the structure(s);
  - c. Identification of any potential impacts to the Receiving Environment;
  - d. A description of any monitoring required, including sampling locations, parameters measured, and frequencies of sampling;
  - e. A proposed schedule for Construction;
  - f. Drawings of Engineered Structures stamped by an Engineer; and
  - g. Proposed sediment and erosion control measures.
4. The Licensee shall, within ninety (90) days of completion of the Modification, provide to the Board as-built plans and drawings of the Modifications referred to in this Part. These plans and drawings shall be stamped by an Engineer.

**PART H: CONDITIONS APPLYING TO EMERGENCY RESPONSE AND CONTINGENCY PLANNING**

1. The Licensee shall implement the *Spill Contingency Plan*, the *Hazardous Materials Management Plan*, the *Risk Management and Emergency Response Plan*, and the *Itivia Oil Handling Facility Oil Pollution Emergency Plan* as approved by the Board under [Part B, Item 12](#). The Licensee shall comply with the Plan(s), and any changes deemed significant shall require the submission and subsequent approval of the Board in writing.



2. The Licensee shall prevent any chemicals, petroleum products or unauthorized Wastes associated with the Project from entering Water.
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 weekly inspections of Fuel Storage and Containment Facilities for leaks and settlement, and shall keep a written log of inspections to be made available to an Inspector upon request. More frequent inspections may be requested by an Inspector.
5. The Licensee shall, upon providing notification with respect to Care and Maintenance under [Part J, Item 4](#), submit to the Board an Addendum to the *Emergency Response Plan* and the *Spill Contingency Plan*, detailing the changes in operations, personnel, responsibilities, availability of equipment and access to the site for assistance.
6. The Licensee shall keep a copy of the *Emergency Response Plan* and the *Spill Contingency Plan* at each site of operation.
7. The Licensee shall conduct emergency maintenance and servicing on equipment, in designated areas, and shall implement measures to collect motor fluids and other Waste to prevent and contain spills.
8. The Licensee shall, subject to Section 16 of the *Regulations*, report any unauthorized deposits or foreseeable unauthorized deposits of waste and/or discharges of Effluent, and:
  - a. Employ the *Spill Contingency Plan*;
  - b. Report the incident immediately via the 24-Hour NWT/NU Spill Reporting Line (867) 920-8130 and to the Inspector at (867) 975-4284; or at 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.
9. The Licensee shall, in addition to Part H, Item 8, regardless of the quantity of release of a harmful substance, report to the 24 hour NWT/NU Spill Reporting Line, if the release is near or into a Water body.

**PART I: CONDITIONS APPLYING TO GENERAL AND AQUATIC EFFECTS MONITORING**

1. The Licensee shall implement the *Environmental Management and Protection Plan* (EMPP) as approved by the Board under [Part B, Item 12](#). The *EMPP* shall include the following where applicable:





- a. Comprehensive Receiving Environment monitoring to identify changes to the aquatic environment associated with mine activities;
  - b. Linkage between monitoring results and Adaptive Management response;
  - c. Sampling and analysis plans;
  - d. Thresholds for contaminant levels in CP1 and triggers for mitigation measures; and
  - e. Monitoring under Fisheries Authorizations, NWB Licence Compliance Monitoring, *Metal and Diamond Mining Effluent Regulations (MDMER)* Environmental Effects Monitoring, and Groundwater Monitoring.
2. The Licensee shall implement the *Aquatic Effects Monitoring Program (AEMP) Design Plan* as approved by the Board under [Part B, Item 12](#). The Licensee shall update the *AEMP Design Plan* for submission to the Board for approval, within the 2021 Annual Report. The updates are to take into account the results of the monitoring of the Receiving Environment during the 2020 Discharge.
3. The Licensee shall implement the Plan entitled “*Monitoring Plan for the Phase 1 All-Weather Access Road between Rankin Inlet and the Meliadine site*”, dated January 2012, that was previously approved by the Board with the issuance of Water Licence No: 2BW-MEL1215 related to AWAR construction/ operation. The Licensee shall, within sixty (60) days from the approval of the Licence by the Minister, submit to the Board for review an updated version of this Plan to incorporate, at a minimum, the changes in Licences and the contact information.
4. The Licensee shall install and maintain flow meters or other such devices, or implement suitable methods required for the measuring of the use of Water and Effluent discharge volumes, to be operated and maintained to the satisfaction of an Inspector.
5. The Licensee shall undertake the Water Monitoring Program provided in Tables 1 and 2 of [Schedule I](#). The Licensee shall establish the locations and GPS coordinates for all monitoring stations in consultation with an Inspector.
6. The Licensee shall install and maintain signs that identify monitoring stations. The signs shall be posted in English, Inuktitut and French.
7. The Licensee shall conduct Acute Lethality testing at Monitoring Program Station MEL-14 in accordance with [Part F, Item 4](#) and [Schedule I](#).
8. The Licensee shall measure and record the following on a Monthly basis in cubic metres or as otherwise stated:
  - a. The volume of fresh Water obtained from Meliadine Lake at Monitoring Program Station MEL-11;
  - b. The volume of fresh Water transferred to the Meliadine Lake during lakes’ dewatering activities;
  - c. The volume of fresh Water obtained along the road and Meliadine River for dust suppression activities;





- d. The volume of Effluent discharged from Final Discharge Point at Monitoring Program Station MEL-14;
  - e. The volume of Reclaim Water obtained from the CP1;
  - f. The volume of Effluent discharged onto tundra at Monitoring Program Station MEL-25 or transferred to CP1 from the Itivia Site Fuel Storage and Containment Facility;
  - g. The volume of Effluent and fresh Water transferred to the pits during pits' flooding;
  - h. The volume of Sewage sludge removed from the Sewage Treatment Plant and the locations or methods of Sewage sludge disposal;
  - i. Quantity of waste placed within the Landfill and Landfarm;
  - j. Tonnes of ore stockpiled and ore processed through the mill;
  - k. Tonnes of Waste Rocks placed within the Waste Rock Storage Facilities; and
  - l. The daily tonnes of dry combined tailings placed within the Tailings Storage Facility.
9. The Licensee shall, within thirty (30) days following the month being reported, submit to the Board a Monthly Monitoring Report. The Report shall include:
- a. All data and information required by this Part and generated by the Monitoring Program in the Tables of Schedule I;
  - b. An assessment of data to identify areas of non-compliance with regulated Discharge parameters referred to in [Part D](#) and [Part F](#).
10. The Licensee shall complete Water quality testing immediately upstream and downstream of Water crossings, any significant Water seeps in contact with the roads and any significant Water seeps/runoff originating from borrow pits and quarries, during blasting activities, periods of flow and following significant precipitation events at Monitoring Program Stations MEL-SR-1 through MEL-SR-TBD, prior to Construction, on a weekly basis during Construction and on a monthly basis upon completion of Construction, in accordance with the [Part D, Item 18](#) and [Schedule I](#) of the Licence.
11. The Licensee shall implement the Plan entitled "*Bulk Fuel Storage Facility: Environmental Performance Monitoring Plan*" as approved by the Board under [Part B, Item 12](#). The Licensee shall, within sixty (60) days of approval of this Licence by the Minister, submit to the Board for review a plan for the environmental and performance monitoring of the Itivia Site Fuel Storage and Containment Facility. The Plan shall include the following:
- a. An assessment of performance;
  - b. Location, environmental setting and the potential for leaks or Seepage that could impact Water;
  - c. An assessment of the need for, and if required, the design for installation, monitoring, and maintenance of vertical Groundwater monitoring wells to be installed in accordance with the *Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products, 2003*; *CCME PN1326 (Updated in 2013)* or most recent; and
  - d. Recommended sampling for ongoing monitoring of the integrity of the secondary containment.



12. The Licensee shall undertake the Waste Rock Storage Facilities' and Tailings Storage Facility's Thermal Monitoring Program detailed in the *Environmental Management and Protection Plan* and *Mine Waste Management Plan* as approved by the Board under [Part B, Item 12](#).
13. The Licensee shall undertake a geotechnical inspection, to be carried out annually by a Geotechnical Engineer, between the months of July and September. The inspection shall be conducted in accordance with the *Canadian Dam Safety Guidelines*, where applicable, and take into account all major earthworks included within Schedule I.
14. The Licensee shall submit to the Board, as part of the Annual Report required under [Part B, Item 2](#), a 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.
15. The Licensee shall, at least sixty (60) days prior to constructing Collection Pond No.2 (CP2), conduct a detailed geotechnical investigation to characterize the overburden in the vicinity of CP2 to determine depth to bedrock. During this campaign, thermistors shall be installed to assess permafrost depth. Based on the results of this investigation, an assessment of a liner shall be conducted and summarized in the Design Report to be provided to the Board, as required under [Part D, Item 1](#).
16. The Licensee shall obtain a digital photographic record of all the watercourse crossings before, during, and after construction has been completed.
17. The Licensee shall implement the *Quality Assurance / Quality Control (QA/QC) Plan* as accepted by the Board under [Part B, Item 12](#). This Plan shall be maintained in accordance with current Standard Methods and the *1996 Quality Assurance (QA) and Quality Control (QC) Guidelines for Use by Class "A" Licensees in Meeting SNP Requirements* (INAC).
18. 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 acceptance.
19. 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.
20. 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.
21. As noted in [Part B, Item 19](#), changes to the Schedules, including [Schedule I](#), which provides details on the Monitoring Program, may, at the Board's discretion, be considered without requiring an Amendment to the Licence. Any request for changes to the Monitoring Program shall be submitted to the Board for approval and shall include the justification for the changes requested.



22. Additional monitoring may be imposed by the Board or by the Inspector.

**PART J: CONDITIONS APPLYING TO ABANDONMENT, RECLAMATION AND CLOSURE**

1. The Licensee shall implement the *Meliadine Interim Closure and Reclamation Plan (ICRP)* approved under [Part B, Item 12](#).
2. The Licensee shall, within eighteen (18) months of approval of this Licence by the Minister, submit to the Board for approval an updated *Interim Closure and Reclamation Plan* prepared in accordance with the *Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories* (MVLWB/AANDC, 2013) and consistent with the *Mine Site Reclamation Policy for Nunavut* (INAC, 2002). In addition to the information required in the Guidelines and Policy, the updated ICRP shall also include the following information:
  - Additional details on the Closure and post-Closure soil and Water quality Monitoring Programs, as information becomes available from operational data and from future versions of all applicable management plans.
3. The Licensee shall submit to the Board for approval, at least twelve (12) months prior to the expected end of planned mining, a *Final Closure and Reclamation Plan*. The *Final Closure and Reclamation Plan* shall incorporate revisions, which reflect the pending closed status of the mine, and include:
  - Soil Quality Remediation Objectives (SQRO) reflecting the applicable *CCME Guidelines* and the *Government of Nunavut Environmental Guideline for Site Remediation*;
  - Environmental Site Assessment plans in accordance with the applicable Canadian Standards Association (CSA) criteria; and
  - An evaluation of the Human Health and Ecological Risk associated with the Closure options proposed.
4. The Licensee shall notify the Board in writing, at least sixty (60) days prior to, or as soon as practically possible, of the Licensee's intention to enter into a Care and Maintenance Phase.
5. The Licensee shall provide to the Board for review, within thirty (30) days of the Licensee providing notice of intent to enter into Care and Maintenance under Part J, Item 4, a *Care and Maintenance Plan* that details the Licensee's plans for maintaining compliance with the Terms and Conditions of the Licence.



6. The Licensee shall revise and provide to the Board for approval in writing, within ninety (90) days of the Licensee providing a notice of intent to enter into Care and Maintenance under Part J, Item 4, all operational Plans to reflect the Care and Maintenance status.
7. 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.
8. The Licensee shall review the Plans referred to in this Part as required by changes in operation and/or technology and modify the Plans accordingly. Revisions to the Plans should incorporate design changes and adaptive engineering required and implemented during Construction and on the basis of actual site conditions and monitoring results over the life of the Project.
9. The Licensee shall implement Progressive Reclamation, including progressive covering of the tailings and re-vegetation, if practically possible.
10. 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 version or current version in place at the time of Reclamation).



## **SCHEDULES**

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Schedule A: Scope, Definition, and Enforcement

Schedule B: General Conditions

Schedule C: No Schedule for Security

Schedule D: Conditions Applying to Construction

Schedule E: No Schedule for Water Use and Management

Schedule F: No Schedule for Waste Disposal and Management

Schedule G: No Schedule for Modifications

Schedule H: No Schedule for Emergency Response and Contingency Planning

Schedule I: Conditions Applying to General and Aquatic Effects Monitoring

Schedule J: No Schedule for Abandonment, Reclamation and Closure



## Schedule A: Scope, Definitions, and Enforcement

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In this Licence: **2AM-MEL1631**

**“2020 Discharge”** means the time-limited discharge (May 2020 – October 2020) of Effluent from CPI through the Final Discharge Point at Monitoring Program Station MEL-14 to Meliadine Lake, as indicated in the Emergency Amendment, dated April 29, 2020.

**“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, open pits, ore piles, Waste Rock, construction 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”** in respect of an effluent as defined in the *Metal and Diamond Mining Effluent Regulations* (SOR/2002-222, dated June 6, 2002, last amended on June 18, 2020, and as may be further amended from time to time).

**“Adaptive Management”** means a management approach that describes a way of managing risks associated with uncertainty and provides a flexible framework for mitigation, monitoring and management measures to be implemented and actions to be taken, when specified thresholds are exceeded. Measures may include special studies, operational changes, revised or new Water and Waste management systems, structures and/or facilities or implementing mitigation activities to prevent, stabilize or reverse a change in environmental conditions or otherwise protect the Receiving Environment;

**“Addendum”** means the supplemental text that is added to a full plan or report, usually included at the end of the document and is not intended to require a full resubmission of the revised report. It may also be considered as an appendix or supplement;

**“All Weather Access Road (AWAR)”** means an All Weather Access Road and associated Water crossings between the Hamlet of Rankin Inlet and the Meliadine Mine Site, as described in the *Roads Management Plan*, dated December 2019;

**“Amendment”** means a change to any terms and conditions of this Licence through application to the NWB, requiring a change, addition, or deletion of specific terms and conditions of the Licence not considered as a Modification;

**“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;

“**Application**” for the purposes of this Licence includes the totality of relevant documents filed by Agnico Eagle Mines Limited on the NWB and NIRB Public Registries in support of Water Licence Amendment Application submitted to the NWB on August 27, 2020, as well as all supporting documents and Technical Meeting information supplemental documents;

“**Appurtenant Undertaking**” means an undertaking in relation to which a use of Water or a deposit of Waste is permitted by a licence issued by the Board;

“**Aquatic Effects Monitoring Program (AEMP)**” means a Monitoring Program designed to determine the short and long-term effects in the aquatic environment resulting from the Project, to evaluate the accuracy of impact predictions, to assess the effectiveness of planned impact mitigation measures and to identify additional impact mitigation measures to avert or reduce environmental effects;

“**Biannually**” means, in the context of monitoring frequency, one sampling event occurring every six months with a minimum of one hundred eighty days between sampling events;

“**Board**” means the Nunavut Water Board established under Article 13 of the *Nunavut Agreement* and under section 14 of the *Act*;

“**Borrow Pits**” means sites used for the purpose of extracting materials, such as gravel or sand, for the construction of site infrastructure and facilities;

“**By-pass Road**” means an approximately 5 km road and associated Water crossings around the Hamlet of Rankin Inlet from Rankin Inlet’ Itivia Laydown Area to the AWAR, as described in the *Roads Management Plan*, dated December 2019;

“**Canadian Council of Ministers of the Environment (CCME)**” means the organizations of Canadian Ministers of Environment that 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 the status of the facility, when the Licensee ceases production or Commercial Operation temporarily for an undefined period of time;

“**Closure**” means when an Operator ceases Operations at a facility without the intent to resume mining activities in the future;

“**Collection Pond**” or “**Containment Pond**” means a facility designed to temporarily contain runoff from areas impacted by mining activities and from site infrastructure, as described in the *Water Management Plan*, dated August 2020;





**“Collection Pond No.1”** or **“Control Pond No.1”** or **“Containment Pond No. 1”** or **“CP1”** means a final site-wide Contact Water Collection Pond, as described in the *Water Management Plan*, dated August 2020.

**“Commercial Operation”** in respect of a mine, means an average rate of production equal to or greater than 10% of the design-rated capacity of the mine over a period of ninety (90) consecutive days, as defined in the *Metal and Diamond Mining Effluent Regulations* (SOR/2002-222, dated June 6, 2002, last amended on June 18, 2020, or a more recent version);

**“Construction”** means any activities undertaken to construct or build any component, or associated with the development, of the Meliadine Gold Project;

**“Contact Water”** means any Water that may be physically or chemically affected by mining activities;

**“Contact Water Treatment Plant”** means the Actiflo<sup>®</sup> system referred to in the *Water Management Plan*, dated August 2020, as the Effluent Water Treatment Plant (EWTP), which is designed to treat Contact Water contained in CP1 to reduce Total Suspended Solids (TSS) prior to its discharge to the outside environment or for further re-use as a Reclaim Water by the process plant;

**“Dam Safety Guidelines”** means the *Canadian Dam Association (CDA) Dam Safety Guidelines* (DSG, 2007 or subsequent approved editions);

**“Deposit”** means the placement of Waste Rock, tailings or other materials on land or in Water;

**“Diffuser”** or **“Meliadine Lake Effluent Diffuser”** means an Effluent discharge pipeline within a Water body designed to discharge and enhance mixing of Effluent in the Receiving Environment, as described in the *Water Management Plan*, dated August 2020;

**“Discharge”** means the release of any Water or Waste to the Receiving Environment;

**“Dissolved Metals”** means the suite of metals referred to in the *Water Management Plan*, dated August 2020, and in Group 2 of Table 1 – Monitoring Groups located in Schedule I of this Licence. Dissolved metals shall be analyzed on a filtered sample;

**“Effluent”** means treated or untreated liquid Waste material that is discharged into the environment from a site Water management facility, such as a settling pond, tankfarm or a treatment plant;

**“Emulsion Plant”** means a facility designed for manufacturing of emulsion-based explosives, as indicated in the *Explosives Management Plan*, dated March 2021;

**“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*;





**“Engineered Structure(s)”** means any facility, which was designed and approved by an Engineer;

**“Final Discharge Point”** in respect of an effluent, means an identifiable discharge point of a mine, beyond which the operator of the mine no longer exercises control over the quality of the Effluent, as defined in the *Metal and Diamond Mining Effluent Regulations* (SOR/2002-222, dated June 6, 2002, last amended on June 18, 2020, or a more recent version);

**“Fresh Water Intake”** means the infrastructure required for extraction (pump system) of Water from Meliadine Lake, including the causeway, as indicated in the *Water Management Plan*, dated August 2020;

**“Fuel Storage and Containment Facilities”** means the facilities designed for the bulk storage of fuel at the Meliadine Site and the Itivia Site Fuel Storage and Containment Facilities, as described in the *Hazardous Materials Management Plan*, dated March 2018;

**“Geotechnical Engineer”** means a professional engineer registered with the Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists, 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;

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

**“Hazardous Waste”** means materials or contaminants, which are categorized as dangerous goods under the *Transportation of Dangerous Goods Act* (1992, c. 34, last amended on August 28, 2019 or a more recent version) and/or that is no longer used for their 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*);

**“Incinerator”** means the dual chamber, high temperature facility designed with the capacity to service the camp as described in the *Incineration Management Plan*, dated February 2019;

**“Inspector”** means an Inspector designated by the Minister under section 85 (1) of the *Act*;



**“Interim Closure and Reclamation Plan”** or **“ICRP”** means a conceptual detailed plan addressing the Reclamation of mine components, which will not be closed until the end of the Operation, and operational detail for components, which are to be progressively reclaimed throughout the mine life;

**“Itivia Laydown Area”** means the area designed for temporary storage of equipment and materials at Itivia Site in Rankin Inlet, as indicated in the *Hazardous Materials Management Plan*, dated March 2018;

**“Itivia Site Fuel Storage and Containment Facility”** means the fuel storage and containment facility at Itivia Site in Rankin Inlet, as described in the *Hazardous Materials Management Plan*, dated March 2018;

**“Itivia Site”** means the Itivia Laydown Area and its facilities, including the fuel storage and containment facility, in Rankin Inlet, as described in the *Hazardous Materials Management Plan*, dated March 2018;

**“Landfarm”** means a lined engineered facility designed to contain and treat petroleum hydrocarbon contaminated sediment and soil using bioremediation, as described in the *Landfarm Management Plan*, dated February 2019;

**“Landfill”** means a facility designed to dispose of non-salvageable, non-hazardous, non- putrescible solid Wastes from the Construction, Operation, and Closure of the Project, as described in the *Landfill and Waste Management Plan*, dated March 2019;

**“Licence”** means this Type “A” Water Licence No: 2AM-MEL1631, including any amendments, issued by the Nunavut Water Board in accordance with the *Act*, to Agnico Eagle Mines Limited for the Meliadine Gold Project;

**“Licensee”** means the entity, to whom the Licence is issued or to whom the Licence is subsequently 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;

**“Mean Annual Concentration”** means the average value of the concentrations measured in all composite or grab samples collected from each final discharge point during each year when a deleterious substance is deposited;

**“Meliadine Security Management Agreement”** means the agreement between the Kivalliq Inuit Association (KIA), Agnico-Eagle Mines Limited (Proponent) and Her Majesty Queen in Right of Canada, as represented by the Minister of Northern Affairs (Minister), signed by the KIA, Proponent, and by the Minister that applies with respect to the Proponent’s Meliadine Gold Project.



“**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 Northern Affairs;

“**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;

“**Monitoring Program**” means the program to collect data on surface Water and Groundwater quality to assess impacts to the environment of an Appurtenant Undertaking;

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

“**Nunavut Agreement**” 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 in the *Water Management Plan*, dated August 2020, and in Group 2 of Table 1 – Monitoring Groups located in Schedule I of this Licence;

“**Operation**” or “**Operations**” means the entire set of site activities (excluding Construction, Care and Maintenance, and decommissioning activities) associated with mining, processing and recovery of gold at the Meliadine Gold Project;

“**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, as indicated in the *Ore Storage Management Plan*, dated March 2021;

“**Progressive Reclamation**” means actions that can be taken during mining Operations before permanent Closure, to take advantage of cost and operating efficiencies by using the resources available from mine Operations to reduce the overall reclamation costs incurred. It enhances environmental protection and shortens the timeframe for achieving the reclamation objectives and goals;

“**Project**” means the Meliadine Gold Project, as outlined in the Final Environmental Impact Statement, Addendum, and supplemental information submitted by Agnico Eagle Mines Limited (Agnico Eagle) to the Nunavut Impact Review Board (NIRB) as well as the associated Water Licence Applications, Supporting Documents, and Technical Meeting Information Supplement documents submitted by Agnico Eagle to the NWB throughout the regulatory process;



**“Quarry”** or **“Quarries”** means the area of surface excavation for extracting rock material for use as construction materials in the development of site infrastructure and facilities;

**“Quality Assurance / Quality Control (OA/OC)”** Quality Assurance means the system of activities designed to better ensure that quality control is done effectively; Quality Control means the use of established procedures to achieve standards of measurement for the three principle components of quality: precision, accuracy and reliability;

**“Receiving Environment”** means both the aquatic and terrestrial environments that receive any discharge resulting from the Project;

**“Reclaim Water”** means the Water pumped from the Control Pond No.1 (CP1) or the Contact Water of Effluent Treatment Plant to the mill for reuse;

**“Reclamation”** means the process of returning a disturbed site to its pre-development or natural state, or a state that prevents environmental impacts or threats to human health and safety;

**“Reference Method EPS 1/RM/13”** means Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout (Reference Method EPS 1/RM/13), Second Edition, December 2000, as amended in May 2007, or within any more recent amendments;

**“Regulations”** means the *Nunavut Waters Regulations* (SOR/2013-69);

**“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 through open pits, runoff from Waste Rock Storage Facilities, Ore Stockpile areas, Quarries, Landfill or Landfarm areas;

**“Sewage”** means all toilet Wastes and Greywater;

**“Sewage Treatment Plant”** means the structure designed for the treatment of Sewage as indicated in the *Water Management Plan*, dated August 2020;

**“Site Specific Water Quality Objectives”** or **“SSWQO”** means a numerical concentration established as a target value, which has been established for specified Waters;

**“Soil Quality Remediation Objectives”** or **“SORO”** means the numerical concentration established as target value for soil quality remediation for contaminated sites, as determined with guidelines provided by the *Canadian Council of Ministers of the Environment (CCME) Canada – Wide Standards for Petroleum Hydrocarbons (PHC) in Soil* (January 2008, or any more recent amendment) and/or the *Government of Nunavut Environmental Guideline for Contaminated Site Remediation* (March 2009).



“**Sump**” means a structure or depression that collects, controls, and filters liquid Waste before it is released to the environment. This structure should be designed to prevent erosion while allowing percolation of liquid Waste;

“**Surface Drainage**” means Contact Waters resulting from the flow over, through or out of an Operation area that are collected as described in the *Water Management Plan*, dated August 2020;

“**Tailings Storage Facility**” means the engineered facility designated to receive dry stack tailings, as described in the *Mine Waste Management Plan*, dated March 2021;

“**Tiriganiaq Open Pit 1 and 2**” means two of the Meliadine Gold mine deposits to be developed using a traditional open-pit mining method and underground mining, as described in the *Mine Plan*, dated March 31, 2021;

“**Total Metals**” means the suite of metals referred to in the *Water Management Plan*, dated August 2020, and in Group 2 of Table 1 – Monitoring Groups located in Schedule I of this Licence. Total metals shall be analyzed on an un-filtered sample;

“**Treatment Plants**” means the facilities designated for the treatment of Water and Wastewater on site, as described in the *Water Management Plan*, dated August 2020, which includes the potable Water Treatment Plant (WTP), also referred to as Freshwater Treatment Plant, Sewage Treatment Plant (STP), Contact Water or Effluent Water Treatment Plant (EWTP), Saline Water Treatment Plant (SWTP), Reverse Osmosis (RO) Plant, and Saline Effluent Treatment Plant (SETP);

“**Underground Mine**” means the underground workings at the Project as described in the *Mine Plan*, dated March 31, 2021;

“**Undertaking**” means an undertaking, in respect of which Water is to be used or Waste is to be deposited, of a type set out in Schedule I of the *Regulations*;

“**Use**” in relation to Waters, means use as defined in section 4 of the *Act*;

“**Waste**” means Waste as defined in section 4 of the *Act*;

“**Waste Disposal Facilities**” means all site infrastructure designed for the disposal of Waste including the Landfill, Incinerator, Landfarm, Sewage Treatment Plant, Tailings Storage Facility and Waste Rock Storage Facilities;

“**Waste Rock**” means all rock materials, except ore and tailings, that are produced as a result of mining operations and have no current economic value;

“**Waste Rock Storage Facilities**” or “**WRSF**” means the engineered structure or structures designed for the placement of Waste Rock, as described in the *Mine Waste Management Plan*, dated March 2021;



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

“**Water**” or “**Waters**” means water as defined in S.4 of the *Act*;

“**Water Supply Facilities**” means the facilities designated for the supply of Water including the Fresh Water Intake, the Reclaim Water system and all 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**

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The Annual Report referred to in [Part B, Item 2](#) shall include:

### **CONSTRUCTION**

1. For structures constructed to withhold Water or Waste:
  - a. An overview of methods and frequency used to monitor deformations, Seepage and geothermal responses;
  - b. A comparison of measured versus predicted performance;
  - c. A discussion of any unanticipated observations including changes in risk and mitigation measures implemented to reduce risk;
  - d. As-built drawings of all mitigation works undertaken;
  - e. Any changes in the design and/or as-built condition and respective consequences of any changes to safety, water balance and water quality;
  - f. Data collected from instrumentation used to monitor earthworks and an interpretation of that data;
  - g. A summary of maintenance work undertaken as a result of settlement or deformation of dikes, dams and berms;
  - h. The daily, monthly and annual flow volumes of any watercourse diverted during Construction activities and
  - i. The daily, monthly and annual quantities of Seepage from dikes, dams and other structures in cubic metres.

### **WATER**

2. Monthly and annual volume of fresh Water obtained from Meliadine Lake.
3. Monthly and annual volume of fresh Water transferred to Meliadine Lake as a result of dewatering activities.
4. Monthly and annual volume of fresh Water obtained from Meliadine River for road dust suppression activities.
5. Updated Water Balance and Water Quality Forecast, as required under [Part E, Item 13](#).

### **WASTE**

6. Summary of the Adaptive Management procedures implemented to minimize the discharges into Meliadine Lake during the pre-freshet, open-water and pre-freeze periods.
7. Discussions on the available storage capacity for both saline and fresh Water, including the volumes of Water transported to Melvin Bay and the volumes of Water discharged to Meliadine Lake, as well as the projected volumes of water requiring storage in the upcoming year.
8. Discussion on the behavior of the Total Dissolved Solids (TDS) concentrations in surface Contact Water reporting to CP1 during the reported year, and, if any TDS concentration peaks are observed, identification of potential sources that might have contributed to higher loads of TDS.





9. Geochemical monitoring results including:
  - a. Operational acid/base accounting and paste pH test work used for Waste Rock designation (PAG and NPAG rock);
  - b. As-built volumes of Waste Rock used in Construction and sent to the Waste Rock Storage Facilities with estimated balance of acid generation to acid neutralization capacity in a given sample, as well as metal toxicity;
  - c. All monitoring data with respect to geochemical analyses on site and related to roads and quarries;
  - d. Leaching observations and tests on pit slope and dike exposure;
  - e. Any geochemical outcomes or observations that could imply or lead to environmental impact;
  - f. Geochemical data associated with tailings, cyanide leach residue, and bleed from the cyanide destruction process including an interpretation of the data; and
  - g. Results related to the Borrow pits/ Quarries and roads, including the All-weather Access Road.
10. Update on the current capacity of the Tailings Storage Facility.
11. Summary of quantities and analysis of Seepage and runoff monitoring from the Landfill, Landfarm, Waste Rock Storage Facilities, Borrow pits and Quarries.
12. Summary report of all general Waste disposal activities including monthly and annual quantities in cubic metres of Waste generated and locations of disposal.
13. Report of Incinerator test results including the materials burned and the efficiency of the Incinerator as they relate to Water and the deposit of Waste into Water.

## **SPILLS**

14. List and description of all unauthorized discharges including volumes, spill report line identification number and summaries of follow-up actions taken.

## **MODIFICATIONS**

15. Summary of modifications and/or major maintenance work carried out on all Water and Waste related structures and facilities.

## **MONITORING**

16. The results and interpretation of the Monitoring Program in accordance with [Part D](#), [Part I](#) and [Schedule I](#).
17. The results of monitoring related to the Environmental Management and Protection, including:
  - a. Aquatic Effects Monitoring Program;
  - b. Metal and Diamond Mining Effluent Regulation (MDMER) Monitoring;
  - c. Mine site Water quality monitoring, including Groundwater monitoring; and
  - d. Visual AWAR Water quality monitoring.





## **CLOSURE**

18. Summary of any progressive reclamation and closure work undertaken, including photographic records of site conditions before and after completion of Operations, and an outline of any work anticipated for the next year, including any changes to implementation and scheduling.
19. Summary of on-going field trials to determine effective capping thickness for the Tailings Storage Facility and Waste Rock Storage Facilities for the purpose of long term environmental protection.
20. Updated estimate of the current restoration liability based on Project development monitoring, results of restoration research and any changes or modifications to the Appurtenant Undertaking.

## **PLANS/REPORTS/STUDIES**

21. Summary of any studies requested by the Board that relate to Water use, Waste disposal or Reclamation, and a brief description of any future studies planned.
22. Where applicable, revisions as Addendums, with an indication of where changes have been made, for Plans, Reports, and Manuals.
23. Executive summary in English and Inuktitut for all updated plans, reports, or studies conducted under this Licence.

## **GENERAL**

24. Summary of actions taken to address concerns or deficiencies listed in the inspection reports and/or compliance reports filed by an Inspector.

## **OTHER**

25. Summary of public consultation and participation with local organizations and the residents of the nearby communities, including a schedule of upcoming community events and information sessions.
26. Any other details on Water use or Waste disposal requested by the Board by November 1<sup>st</sup> of the year being reported.



## **Schedule D: Conditions Applying to Construction**

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1. The Construction Summary Report referred to in [Part D, Item 3](#) shall include:
  - a All final design and construction drawings shall be stamped and signed by an Engineer;
  - b Site specific data and analysis, including Geochemical analysis of Waste Rocks and fills, demonstrating their Non Acid Rock Drainage and Non Metal Leaching characteristics, to support the design and management decisions;
  - c Summary of Construction activities including photographic records before, during and after Construction;
  - d As-built drawings;
  - e Documentation of field decisions that deviate from original plans and any data used to support these decisions;
  - f Discussion of mitigation measures implemented during Construction and the effectiveness of these measures;
  - g Construction monitoring summary including Monitoring undertaken in accordance with [Part D](#);
  - h Blast vibration monitoring for activities carried out in close proximity to fish bearing Waters;
  - i Monitoring for sediment release from Construction areas; and
  - j Monitoring and reporting on use of Water to manage dust emissions from crushing and construction activity.



## **Schedule I: Conditions Applying to General and Aquatic Effects Monitoring**

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1. The Annual Geotechnical Inspection referred to in [Part I, Item 14](#) shall include:
  - a. Dikes;
  - b. Berms;
  - c. Collection Ponds;
  - d. Channels;
  - e. Jetties;
  - f. Water Intake causeway;
  - g. All Weather Access Road (AWAR) and site roads, in particular bridges and culverts;
  - h. Sumps;
  - i. Industrial Pads;
  - g. Open Pits;
  - k. Ore Stockpiles;
  - l. Underground portals;
  - m. Tailings Storage Facility;
  - n. Waste Rock Storage Facilities;
  - o. Landfill;
  - p. Landfarm;
  - q. Fuel Storage and Containment Facilities at Meliadine site and Itivia site;
  - r. Geotechnical instrumentation and associated monitoring data; and
  - s. A description of geophysical and permafrost conditions at the Project site.



**TABLE 1 – MONITORING GROUP**

Group	Parameters
1	pH, turbidity, hardness, total alkalinity, sodium, magnesium, potassium, calcium, fluoride, silicate, chloride, sulphate, total dissolved solids (TDS; calculated <sup>(a,b)</sup> ), total suspended solids (TSS), total cyanide, ammonia nitrogen, nitrate, nitrite, phosphorus, orthophosphate, Total Metals (aluminum, arsenic, barium, cadmium, chromium, copper, iron, lead, manganese, mercury, molybdenum, nickel, selenium, silver, thallium, and zinc).
2	<p><b>Total and Dissolved Metals:</b> aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, iron, lead, lithium, manganese, mercury, molybdenum, nickel, selenium, silver, strontium, thallium, tin, titanium, uranium, vanadium, and zinc.</p> <p><b>Nutrients:</b> ammonia-nitrogen, total Kjeldahl nitrogen, nitrate-nitrogen, nitrite-nitrogen, orthophosphate, total phosphorus, total organic carbon, dissolved organic carbon, and reactive silica.</p> <p><b>Conventional Parameters:</b> bicarbonate alkalinity, chloride, carbonate alkalinity, turbidity, conductivity, hardness, calcium, potassium, magnesium, sodium, sulphate, pH, total alkalinity, TDS (calculated<sup>(a,b)</sup>), TSS, total cyanide, free cyanide, and weak acid dissociable (WAD) cyanide.</p>
3	<p><b>MDMER parameters:</b> total cyanide, arsenic, copper, lead, nickel, zinc, radium-226, TSS, pH, sulphate, turbidity, and aluminum.</p> <p><b>MDMER additional requirements:</b> Effluent volumes and flow rate of discharge, Acutely Lethality tests (Rainbow Trout and <i>Daphnia magna</i>) and Environmental Effects Monitoring (EEM).</p>
4	Total arsenic, total copper, total lead, total nickel, TSS, ammonia, benzene, toluene, ethylbenzene, xylene, total petroleum hydrocarbons (TPH), and pH.
Full Suite	Group 2, TPH, and turbidity.
Flow	Flow data-logger.
Field measurements	Field pH, specific conductivity, dissolved oxygen, and temperature.

**MDMER** - Metal and Diamond Mining Effluent Regulations (SOR/2002-222).

<sup>(a)</sup> Standard Methods (Method 1030E, APHA 2012)<sup>1</sup>

<sup>(b)</sup>  $\text{TDS}_{\text{Calc}} (\text{mg/L}) = (0.6 \times \text{Total Alkalinity as CaCO}_3) + \text{Sodium} + \text{Magnesium} + \text{Potassium} + \text{Calcium} + \text{Sulfate} + \text{Chloride} + \text{Nitrate} + \text{Fluoride} + \text{Silicate}$

Where: Nitrate is the  $\text{NO}_3^-$  anion (multiply nitrate as nitrogen result by 4.427);  
Silicate is the  $\text{SiO}_3^{2-}$  anion (multiply reactive silica as  $\text{SiO}_2$  result by 1.266)

<sup>1</sup> American Public Health Association (APHA, 2012). Standard Methods for the Examination of Water and Wastewater, 22nd Edition, with updates to 2015. Washington, DC, USA.



**TABLE 2 – MONITORING PROGRAM**

Station	Description	Phase	Monitoring Parameters	Frequency
MEL-D-1 to TBD	Dewatering: Water transferred from lakes to Meliadine Lake during dewatering of these lakes	Construction	As per <a href="#">Part D, Item 12</a>	Prior to discharge and Weekly during discharge
			Volume (m <sup>3</sup> )	Daily during periods of discharge
MEL-SR-1 to TBD	Surface Runoff: runoff downstream of Construction areas at Meliadine Site and Itivia Site, Seeps in contact with the roads, earthworks and any Runoff and/or discharge from borrow pits and quarries	Construction and Operations	As per <a href="#">Part D, Item 18</a>	Prior to Construction and Weekly during Construction
			Group 1	Monthly during open water or when water is present upon completion
MEL-11	Fresh Water Intake from Meliadine Lake	Construction, Operation, and Closure	Full Suite	Monthly during periods of intake
			Volume (m <sup>3</sup> )	Daily during periods of intake
MEL-12	<i>Contact Water Treatment Plant (pre- treatment): coming from CP1, off the pipe and not in the pond</i>	<i>Construction (prior to release), Operations, and Closure</i>	<i>Group 1</i>	<i>Monthly during periods of discharge</i>
MEL-13 <sup>(a)</sup> (and AEMP Stations)	Mixing zone in Meliadine Lake and MDMER exposure stations for final discharge point within mixing zone	Construction (prior to release), Operations, and Closure	Full Suite, Group 3 (MDMER)	Monthly during periods of discharge
MEL-14	Contact Water Treatment Plant from CP1 (post-treatment): end of pipe in the plant before offsite release	Construction (upon effluent release), Operations, and Closure	Full Suite, Group 3	Prior to discharge and Weekly during discharge
			Volume (m <sup>3</sup> )	Daily during periods of discharge



Station	Description	Phase	Monitoring Parameters	Frequency
			Acute Lethality	Once prior to discharge and Monthly thereafter
MEL-15	Local Lake E-3	Operations, and Closure	Group 2	Biannually during open-water
MEL-16	Local Lake G2	Construction, Operations, and Closure	Group 2	Biannually during open-water
MEL-17	Local Pond H1	Construction, Operations, and Closure	Group 2	Biannually during open-water
MEL-18	Local Lake B5	Construction, Operations, and Closure	Group 2	Biannually during open-water
MEL-19	CP2, Collection of drainage from WRSF3	Construction, Operations, and Closure	Group 1	Monthly during open-water or when Water is present
MEL-20	CP3, Collection of drainage from dry stacked tailings	Operations, and Closure	Group 1	Monthly during open-water or when Water is present
MEL-21	CP4, Collection of drainage from WRSF1	Operations, and Closure	Group 1	Monthly during open-water or when Water is present
MEL-22	CP5, Collection of drainage from WRSF1 or as specified in the Water Management Plan	Construction, Operations, and Closure	Group 1	Monthly during open-water or when Water is present
MEL-23	CP6, Collection of drainage from WRSF3	Construction, Operations, and Closure	Group 1	Monthly during open-water or when Water is present
MEL-24	Seepage from the Landfill between the Landfill and Pond H3	Construction, Operations, and Closure	Group 1	Monthly during open-water or when Water is present



Station	Description	Phase	Monitoring Parameters	Frequency
MEL-25	Secondary containment area at the Itivia Site Fuel Storage and Containment Facility	Construction, Operation, Closure	Group 4, Volume (m <sup>3</sup> )	Prior to discharge or transfer of Effluent
Monitoring Legend: Green - Regulated; Blue - General Aquatic; Red - Verification				
<b><u>Regulated Monitoring</u></b> occurs at Monitoring Program Stations in licences or regulations. It includes discharge limits that must be achieved to maintain compliance with water licence or regulation (i.e., <i>Metal and Diamond Mining Effluent Regulations</i> ). Enforcement action may be taken if discharge limits are exceeded.				
<b><u>General Aquatic Monitoring</u></b> is subject to compliance assessment to confirm sampling is carried out using established protocols, including quality assurance/quality control provisions, and addresses identified issues. General monitoring is subject to change as directed by an Inspector, or by the Licensee, subject to approval by the NWB.				
<b><u>Verification Monitoring</u></b> Program to be carried out for operational and management purposes by Licensee. Monitoring parameters may vary between locations. Monitoring parameters and locations are internal for Licensee.				

Notes: as per the *Metal and Diamond Mining Effluent Regulations (MDMER)*, samples for Effluent characterization and Receiving Environment must be collected quarterly or at least one month apart while Effluent is being deposited.

<sup>(a)</sup> Alternative monitoring approaches, such as installation of the remote monitoring stations, will be considered to enable the Licensee to continue to collect the necessary data, if limitations (i.e. ice cover on Meliadine Lake) arise while the proposed Monitoring Program is being carried out.

CP – Collection Pond; WRSF – Waste Rock Storage Facilities.