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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

**File: 2AM-MRY2540/D1**

August 26, 2026

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**Subject: Licence No: 2AM-MRY2540 Type A – Notification of Construction of the Mary River Mine Site Water Treatment Ponds by Baffinland Iron Mines Corporation for the Mary River Project**

Dear Elisabeth Luther:

On June 26, 2026, the Nunavut Water Board (NWB or the Board) received a Notification of Construction of the Mary River Mine Site Water Treatment Ponds including the Design Basis Memo (Notification) from Baffinland Iron Mines Corporation (Baffinland or Licensee). This notification is required under Part D, Item 1 of the type A Water Licence 2AM-MRY2540 (Licence).

The Notification stated that Baffinland plans to construct two lined Mine Site Water Treatment Ponds to treat impacted water collected in totes. The attached Design Basis Memo indicated the following construction activities:

- Base preparation: Subgrade preparation will be required for the native ground underlying the future pond prior to placement of berms. The area under the pond (87m x 75m) is to be levelled.
- Berm construction: Construction of berms with rock fill, featuring 2:1 interior and exterior slopes on the north, south, and west sides of the pond, and 5:1 interior and exterior slopes on the east side. The gentler slope on the eastern berms is intended to facilitate equipment access.
- Liner placement: The ponds will be lined with non-woven geotextile and geomembrane layers between aggregate and sand layers.
- Liner anchoring: Anchor liners on slide slopes at the top of berms.

Baffinland noted that each pond will have a capacity of approximately 2,331 $m^3$, for a total combined volume of 4,662 $m^3$, and the total surface area of the two ponds is 6,500 $m^2$. Altered drainage patterns, and erosion/sedimentation risks during construction will be managed through routine inspections and if required, adaptive management corrective actions utilizing existing Surveillance Network Program (SNP) monitoring locations in accordance with the Licence and the Surface Water and Aquatic

Ecosystem Management Plan (SWAEMP). Baffinland noted the construction is planned to begin on August 21, 2026, with completion anticipated within four weeks of starting the work.

On June 26, 2026, the NWB distributed the Notification for public review and interested parties were invited to provide comments. Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) submitted comments on July 14, 2026. Baffinland provided response to CIRNAC's comments and recommendations on July 28, 2026. Following are CIRNAC's recommendations and summary of Baffinland's responses:

**Permafrost Risk** – *CIRNAC recommended that Baffinland complete additional pre-construction subsurface investigations to confirm the presence or absence of ice-rich soils within the pond footprint. Additionally, expand the permafrost monitoring program that includes thermistors to assess long-term performance of the ponds and associated berms.*

Response: Baffinland stated that pre-construction geotechnical investigations were completed and that based on the investigation results, above-ground design was selected to minimize disturbance to existing ground conditions. Baffinland also noted that this design approach has been successfully implemented at the Project site and has demonstrated satisfactory performance in existing ponds. Baffinland committed to completing additional test pits prior to construction, installing thermistors to monitor ground temperatures, and incorporating the proposed ponds into the existing annual geotechnical inspection program. Baffinland also noted that annual inspections of existing ponds have not identified concerns related to structural slumping or foundation instability.

**Protection Measures** – *CIRNAC recommended Baffinland install an appropriate groundwater monitoring network around the proposed ponds prior to commissioning, including upgradient and downgradient monitoring locations, to collect baseline groundwater quality data. Monitoring parameters should include, at a minimum, pH, conductivity, ammonia, major ions, hydrocarbons (PHCs), BTEX, and any other site-specific contaminants of concern. Also provide details regarding contingency measures for liner failure and seepage detection. If this is already completed, CIRNAC requests Baffinland share these lab reports.*

Response: Baffinland stated that groundwater in the vicinity of the proposed ponds has already been characterized through the existing groundwater monitoring program, which includes pH, conductivity, ammonia, major ions, PHC F1-F4, VOCs including BTEX, PAHs, and total and dissolved metals. Baffinland identified existing background, upgradient, cross-gradient and downgradient monitoring wells and noted that no baseline pre-Project disturbance data exists. Baffinland reported that exceedances of several parameters have been measured at the Hazardous Waste Berm Facility between 2023 and 2025, while exceedances have not been measured at MS-HWB-25-01, located approximately 120 m downgradient of the facility and upgradient of Camp Lake.

Baffinland further stated should groundwater monitoring identify contaminant concentrations above existing levels, or annual geotechnical inspections identify evidence of instability, the affected pond would be emptied as appropriate to facilitate an investigation and corrective measures would be implemented based on the findings. Baffinland further stated that continuous permafrost substantially limits deeper groundwater flow pathways and that the most relevant potential seepage pathway is shallow seasonal active-layer flow.

**Monitoring** – *CIRNAC recommended that Baffinland provide additional information regarding the expected treatment performance of the proposed pond system, including anticipated reductions in ammonia, hydrocarbons, and oil and grease, proposed water quality objectives, operational monitoring requirements, and contingency measures should treatment targets not be achieved. Provide a pH management and monitoring plan for water stored within the ponds. Approvals shouldn't be issued until such time as an approved monitoring program for the ponds have been submitted and reviewed.*

Response: Baffinland stated that the proposed ponds would form part of a controlled, batch-based wastewater treatment and discharge system involving solids separation, sedimentation, oil and grease flotation, and pH adjustment to approximately 11.5 to promote ammonia volatilization, followed by neutralization and additional filtration or polishing as required. Baffinland noted that several years of pilot-scale and operational trials have demonstrated that existing treatment equipment can reduce petroleum hydrocarbons, oil and grease, PAHs, suspended solids and associated metals to concentrations that meet applicable Water Licence requirements, and that ammonia has been addressed through secondary treatment using the sewage wastewater treatment plant. Baffinland stated that treatment performance would be endpoint-controlled, with water remaining within containment until monitoring confirms that applicable Water Licence criteria and pond-specific discharge requirements are met. No discharge would occur while water remains at elevated treatment pH, while visible sheen or free product is present, or before confirmatory analytical results are available. The monitoring program would include routine pH and TAN monitoring, inspection for oil, sheen and solids, final laboratory analysis, and PHCs, TSS, metals, PAHs and other applicable parameters. Baffinland committed to preparing a pond-specific monitoring and pH-management procedure before commissioning and proposed that construction approval proceed subject to the condition that no treated water be discharged until the operating, monitoring, pH-management and discharge procedures have been submitted and reviewed by the NWB. If treatment objectives are not achieved, Baffinland stated that the water would remain contained and may be subject to extended retention, further pH adjustment, additional mixing or recirculation, additional settling, repeat oil-water separation or filtration, transfer to the second pond, secondary treatment through the sewage treatment plant where appropriate, or off-site disposal.

The NWB asked for confirmation from CIRNAC on whether the Baffinland's response addressed their concerns. Since CIRNAC did not submit a follow-up, the NWB assumes Baffinland addressed their concerns. Copy of the Notification and related submissions can be accessed through the NWB's Public Registry site using the following Link:

https://public.nwb-oen.ca/registry/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-MRY2540%20BIMC/3%20TECH/5%20CONST%20(D)/Water%20Treatment%20Ponds/

The Licensee is advised that the Board's review of the Notification is a confirmation that the proposed activity is consistent with the existing terms and conditions of the Licence, provided the commitments made during the review of the Notification are fulfilled. More specifically:

- To address the issues related to permafrost risk, additional test pits will be completed prior to construction to further verify site conditions; thermistors will be installed to monitor ground temperatures, consistent with the recommendations of the Design Basis Memo submitted as attachment with the Notification; and the proposed ponds will be incorporated into the

existing annual geotechnical inspection program to monitor their ongoing performance throughout their operational life.

- To address the concerns related to protection measures, if groundwater monitoring identifies contaminant concentrations above existing levels, or if annual geotechnical inspection identifies evidence of geotechnical instability, the affected pond will be emptied as appropriate to facilitate an investigation and appropriate corrective measures will be implemented based on the findings of the investigation.
- With regard to the monitoring and treatment, operational control measures as outlined in Baffinland's response to comments and recommendations will be implemented. A pond-specific monitoring and pH-management procedure will be prepared before commissioning. Water will remain within containment until monitoring confirms that all applicable Water Licence criteria and pond-specific discharge requirements are met. No discharge will occur while water remains at the elevated treatment pH, visible sheen or free product is present, or confirmatory analytical results are not yet available. No treated water will be discharged until the operating, monitoring, pH-management, and discharge procedures have been submitted to NWB for review.

It should be noted that the Board's acceptance is NOT intended or offered as any representation regarding the suitability of the plans nor third-party verification of the design, construction, planning or engineering discussed in the Notification. Further, in keeping with Part D Item 3 of the Licence, the Licensee shall within ninety (90) days of completion of the proposed construction works, submit to the Board for review a Construction Summary Report 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 of the Licence.

Should you have any questions regarding the above, please contact the NWB Licensing Department by email to licensing@nwb-oen.ca or by phone at (867) 360-6338.

Sincerely,



Abid Jan
Technical Advisor
Nunavut Water Board

aj/rh

Cc: Distribution List – Mary River