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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

Licence No.: 2AM-MRY1325 – Amendment No. 1
/TR/J2

September 19, 2016

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Subject: Licence No. 2AM-MRY1325 – Amendment No. 1; Submission of Interim Closure and Reclamation Plan (Revision 4), Dated October 30, 2015, by Baffinland Iron Mines Corporation for the Mary River Project

Dear Messrs. Burlingame, McPhee, and Millard:

Background

On October 30, 2015, the Nunavut Water Board (“NWB” or “Board”) received, from Baffinland Iron Mines Corporation (“BIMC” or the “Licensee”) as part of BIMC’s 2016 Work Plan submission, a draft plan entitled *Interim Closure and Reclamation Plan* (“ICRP” or “Plan”) (BAF-PH1-830-P16-0002, Rev 4), dated October 31, 2015. The Plan was submitted to satisfy the requirement included under Part J, Item 2 of the terms and conditions in Licence No. 2AM-MRY1325 / 2AM-MRY1325 – Amendment No.1, issued to the Mary River Project (the “Project”), a mining project located approximately 160 kilometres south of Pond Inlet, in the Qikiqtani Region, Nunavut.

A final version of the above-mentioned Plan, dated October 30, 2015, was received on November 4, 2015 (with minor corrections to references) and following an internal review, the NWB distributed it for public review and comments, on the date of receipt, under a common cover letter that addressed all of the documents received with the 2016 Work Plan submission. Separate deadlines, however, were included in the distribution letter for interveners’ submissions pertaining to the ICRP, the 2016 Work Plan, and the Aquatic Effects Monitoring Plan (AEMP). Prior to the deadline for submissions related to the final version of the ICRP, comments¹ were received from Indigenous and Northern Affairs Canada (INAC) (previously known as Aboriginal Affairs and Northern Development Canada (AANDC)), Environment and Climate

¹Indigenous and Northern Affairs Canada (INAC), January 4, 2016; Environment and Climate Change Canada (ECCC), January 4, 2016; Qikiqtani Inuit Association (QIA), January 5, 2016.

Change Canada (ECCC) (previously known as Environment Canada (EC)) and the Qikiqtani Inuit Association (QIA). A summary of the comments and recommendations received from interveners for the final version (Revision 4) of the Plan is included in **Appendix A** of this document.

Submission History

The Type “A” Water Licence No. 3AM-IQA1325 (Type “A” Licence), issued to Baffinland Iron Mines Corporation on June 10, 2013, included under Part J, Item 1 of the Licence terms and conditions, approval of the Plan entitled *Preliminary Mine Closure and Reclamation Plan* (Appendix 10G), dated February 2012. Further, a requirement was included under Part J, Item 2 of the Type “A” Licence requiring the Licensee to submit an Interim Closure and Reclamation Plan (ICRP) to the Board for approval within sixty (60) days of commencing the Operations Phase of the Project.

With BIMC’s decision to undertake an Early Revenue Phase (ERP), which partially transitioned the Project to its Operations Phase, the Licensee requested and following due process received, on July 21, 2015 from the Board, Amendment No. 1 to Type “A” Water Licence No. 2AM-MRY1325 (the “Amended Licence”) to authorized the ERP. Similar to the condition included under Part J, Item 2 in the Type “A” Licence, a condition was included in the Amended Licence for submission, for the Board’s review and approval, of a revised version to Revision 3 of the ICRP, within sixty (60) days following approval of the Amended Licence that addressed interveners’ comments and recommendations. It should be noted that prior to submission of Revision 3 to the ICRP, three (3) previous versions of the Plan were submitted; however, none of those versions were approved by the Board mainly due to the extent and nature of interveners’ comments and recommendations received.

As mentioned in the Background section above, the current version of the Plan being considered by the Board is for Revision 4, dated October 30, 2015 and received on November 4, 2015. As the general contents of the October 30, 2015, final version of the Plan and October 31, 2015 version are generally the same combined with the fact that a specific and extensive review was conducted for the final version of the Plan, the Board has decided to approve the final version to ensure that an acceptable approved Plan is in place that can serve as a basis when addressing future revisions to the Plan submitted for consideration.

To provide context and some historical perspective about the Plan, the following sections summarizes the procedural and review processes for most versions of the ICRP submitted by BIMC to date and reviewed by the Board, excluding the March 2016 updated version to Revision 4 of the Plan. However, full details on information received for the various versions of the Plan, including interveners’ submissions, can be accessed through the link to the NWB’s ftp site provided below.

ICRP, Revision 0

Based on information provided by BIMC, the initial version of the Plan entitled *Interim Closure and Reclamation Plan* (ICRP) (H349000-1000-07-126-0012), Revision 0, dated June 7, 2013, was submitted for the Board’s review and approval in 2013. Although the NWB’s FTP site appears to lack specific details regarding this Plan, hence the exclusion of relevant comments for this version of the Plan in **Appendix A**, the Board can confirm that this Plan was not approved under the Type “A” Licence.

ICRP, Revision 1

The first revision of the ICRP (BAF-PH1-830-P16-0012), Revision 1, dated March 2014, was submitted as part of the 2013 Annual Report for the Type “A” Licence, which also include several other revised or updated management plans. The NWB distributed all of the documents contained in the 2013 Annual Report on May 23, 2014; however, no comments have been received to date with respect to the Annual Report and the updated or revised management plans included in the submission. Specific interveners’ comments and recommendations provided for the Plan were excluded from **Appendix A**’s summary as an updated version of the Plan was submitted soon thereafter to supersede Revision 1.

ICRP, Revision 2

The second revision of the ICRP (BAF-PH1-830-P16-0012), Revision 2, dated June 27, 2014, was received on June 27, 2014 and distributed on July 15, 2014 for public review and comments with the deadline for submissions set for September 15, 2014. Prior to the submission deadline, comments² were received from Aboriginal Affairs and Northern Development Canada (AANDC), Environment Canada (EC) and the Qikiqtani Inuit Association (QIA). In response to interveners' comments and recommendations, BIMC provided correspondence³ on October 3, 2014 outlining the issues that it committed to addressing in subsequent update to the Plan. A summary of the interveners' comments and recommendations received for Revision 2 of the ICRP is included in **Appendix A**.

The same version of the Plan, Revision 2, was also received as part of Amendment No. 1 Application on July 21, 2014. Consequently, interveners' comments and recommendations pertaining to the Plan were provided as part of their overall technical review submissions⁴ regarding the Amendment Application.

ICRP, Revision 3

The third version of the ICRP (BAF-PH1-830-P16-0012), Revision 3, dated March 19, 2015 was received on April 10, 2015 together with the 2014 Annual Report for the Project and distributed on May 6, 2015 for a thirty (30) day public comment and review period with the deadline for submission set for June 6, 2015. Before the deadline for comments elapsed, AANDC requested⁵ that the submission deadline be extended to June 22, 2015, which the NWB granted⁶ following consultation with BIMC. Subsequent to the Board's granting of AANDC's extension request, the Board issued correspondence⁷ confirming a separate request from EC to further extend the submission deadline to June 26, 2015, which the Board also granted. On or prior to the June 26, 2015 deadline for submissions, comments⁸ were received from AANDC, the Department of Fisheries and Ocean (DFO) Canada, EC, and the QIA. A summary of the comments and recommendations received for the March 19, 2015 version of the Plan, Revision 3, is provided in **Appendix A**.

ICRP, Revision 4

As mentioned in the Background section of this document, the fourth revision of the ICRP (BAF-PH1-830-P16-0012), Revision 4, dated October 31, 2015 was submitted to the Board for review and approval on October 30, 2015. The final version of the same Plan, dated October 30, 2015, was submitted on November 4, 2015 (the "Plan") and included some minor formatting corrections. This is the version of the Plan that is currently considered by the Board. The Plan was distributed for public review and comment on November 4, 2015, together with the 2016 Work Plan including the Marginal Closure and Reclamation Financial Security Estimate, and the Aquatic Effects Monitoring Plan. Submissions⁹, with respect to the October 30, 2015 version of Plan, were received from INAC, ECCC, and the QIA and are included in **Appendix A** of this correspondence.

It should be noted that the Licensee provided on March 31, 2016, a joint submission with the QIA that included an updated version of the final version of the ICRP, Revision 4, dated March 31, 2016. The

² Aboriginal Affairs and Northern Development Canada (AANDC), September 15, 2014; Environment Canada (EC), September 12, 2014; and the Qikiqtani Inuit Association (QIA), September 15, 2014.

³ Letter from O. Curran, BIMC, to P. Beaulieu, NWB; Cc'd S. Bathory – QIA, M. Dahl – EC, M. Ball and J. Allen – AANDC; D. Hohnstein, and S. Joseph – NWB; and E. Madsen and J. Millard – BIMC; Re: Next Update for the Interim Closure and Reclamation Plan, October 3, 2014.

⁴ Aboriginal Affairs and Northern Development Canada (AANDC), September 19 and November 14, 2014; and the Qikiqtani Inuit Association (QIA) September 16 and November 14, 2014.

⁵ Email from S. Forte, AANDC, to P. Beaulieu, Licensing, NWB; Cc'd K. Costello –INAC et al, Re: 2AM-MRY1325 Extension Request for Comments Regarding Baffinland's Interim Abandonment and Restoration Plan, May 20, 2015.

⁶ Email from R. Ikkutisluk, NWB to E. Allain – AANDC, & O. Curran – BIMC; Cc'd to Mary River Distribution List Re: 2AMMRY1325 Extension Request Granted for Comment Deadline – Baffinland Iron Mines Interim Abandonment and Restoration Plan, June 1, 2015

⁷ Email from P. Beaulieu, NWB, to E. Madsen, O. Curran, and J. St. Paul Butler, BIMC; Cc'd to D. Hohnstein and S. Joseph, NWB, Re: 150602 2AM-MRY1325 Env. Canada Request Extension AEMP and AR-OMLE, June 2, 2015.

⁸ Aboriginal Affairs and Northern Development Canada (AANDC), June 26, 2015; the Department of Fisheries and Ocean (DFO) Canada June 26, 2015; Environment Canada (EC), June 26, 2015; and the Qikiqtani Inuit Association (QIA), June 1, 2015.

⁹ Indigenous and Northern Affairs Canada (INAC) January 4, 2016; Environment and Climate Change Canada (ECCC), January 4, 2016; and the Qikiqtani Inuit Association, January 5, 2016.

updated version to Revision 4 of the Plan included some minor changes in the Plan's details that were not significant enough to warrant changing the revision of the Plan. The cover letter accompanying the joint submission indicated that the QIA issued conditional approval for the updated version of Plan as well as provided additional direction to BIMC on obtaining complete approval of the Plan in accordance with requirements contained in the QIA's commercial lease agreement. The cover letter of the joint submission also included timelines for submission of additional revisions to the ICRP for the QIA's consideration. The NWB commends both the QIA and BIMC for the joint submission; however, the parties should note that because the October 30, 2015 final version of the Plan has been specifically and thoroughly reviewed by intervening parties and is the current Plan being considered by the Board, the March 31, 2016 version is not addressed in this correspondence. The Board, nevertheless, expects BIMC to address any outstanding issues identified in the March 31, 2016 version or preceding versions or revision of the Plan in its next update or revision to the ICRP.

It must also be stated that as the Board is not preview to or involved in the commercial lease agreement that exists between the QIA and BIMC, any commitments made between the two parties regarding the ICRP may not necessarily apply to similar requirement(s) in the Type "A" Licence or the Amended Licence. Notwithstanding the aforementioned, the Board requests that it be kept informed of the progress made on commitments between the two parties regarding the Plan so that consideration may be given to potential opportunities to minimize duplication of requirement(s) and/or review(s), where possible.

Decision

Board has reviewed the various versions or revisions of the Interim Closure and Reclamation Plan (ICRP) including the October 30, 2015 final version (Revision 4) of the Plan received on November 4, 2015, in the context of applicable guidelines/policies and the requirement(s) in Licence while considering the relevant comments and recommendations provided by intervening parties. The guidelines and policies considered in the Board's review of the Plan included the *Mine Site Reclamation Policy for the Nunavut* (INAC, 2002) and the *Mine Site Reclamation Guidelines for the Northwest Territories* (INAC, 2007). The review placed particular emphasis on the October 30, 2015 version (Revision 4) of the Plan given that it is the current version being considered by the Board as the **most** extensively and specifically reviewed version.

The review determined that while some sections of the Plan as stated below and reflected in interveners' comments and recommendations will require additional and specific information, the Plan is generally functional and consistent with the relevant requirement(s) in the Amended Licence and applicable guidelines/policies from a holistic perspective. The Board has, therefore, approved the Plan under **Motion No. 2016 – A1-006**. It should be noted that the Board's approval of the above-mentioned version of Plan does not necessarily prevent the Board from approving or accepting for implementation future versions of or revisions to the Plan.

With approval of the Plan, the Board understands, as stated by the Licensee, that the Plan is a "living document" that will require periodic updates over time to include more details on current, new, and evolving aspects of the Project not currently included, and to address any outstanding and recurring comments and recommendations in **Appendix A** that are provided for the various versions or revision to the Plan. The Board recommends, however, that the Licensee ensure that the next revision or update to the Plan clearly address, through inclusion of an appropriate concordance table, any unaddressed interveners' comments and recommendations summarized **Appendix A** as well as the following items:

- a. The topic of backfilling the open pit and of effluent water quality for the open pit in Section 9.2 of the Plan should take into consideration the fact that these aspects of the Project were not directly assessed and included in the Nunavut Impact Review Board's Project certificate and will need to be considered by the NIRB and the NWB at an appropriate time in the future and as part the appropriate application process.
- b. Section 13 of the Plan should include more specific details on mine closure and post-closure

monitoring and reporting requirements instead of relying almost entirely on referencing relevant management plans that may contain the information.

- c. Section 14.1.2.1 of the Plan should include updated information on the final mine closure estimate as well as financial security posted for the project;
- d. Where currently feasible, the Plan should include anticipated and specific cleanup criteria and closure objectives; and
- e. Where feasible, the Plan should holistically include details on post-reclamation risks to human, wildlife health, and the environment.

Copies of the approved version of the Interim Closure and Reclamation Plan, Revision 4, dated October 30, 2015 as well as other versions of the Plan can be accessed through the NWB's Public Registry and File Transfer Protocol (FTP) site using the following link:

[ftp://ftp.nwb-oen.ca/registry/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-MRY1325%20BIMC/3%20TECH/10%20A%20and%20R%20\(J\)/](ftp://ftp.nwb-oen.ca/registry/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-MRY1325%20BIMC/3%20TECH/10%20A%20and%20R%20(J)/)

If you have any questions related to technical aspects of the review and the above, please contact sean.joseph@nwb-oen.ca. For questions regarding administration matters, please contact the NWB's Licensing Department at (867) 360-6368 or by email to licensing@nwb-oen.ca.

Sincerely,

Thomas Kabloona
Nunavut Water Board, Chair

TK/sj

Attachment: Appendix A

Cc: Qikiqtani Distribution List

Appendix A: Summary of Interveners' Comments Received for Various Version of the ICRP

ICRP	Intervener Submission	Item No.	Comment Description
<i>Revision 2, dated June 27, 2014</i>	<i>AANDC, September 15, 2014</i>	1	The FEIS Preliminary MCRP (February 2012) did not include the ERP road haul option. The ERP components identified above are covered in Sections 6 and 7 of the Interim MCRP (27 June 2014), which deal with temporary and long-term temporary mine closure, respectively, without being specific to location. In Section 8, Final Mine Closure and Reclamation Measures, these same project components are again addressed (including the removal of buildings and infrastructure, removal of machinery, equipment and storage tanks) on a generic basis.
			One deficiency of the Interim MCRP (27 June 2014) is that the financial cost of final closure and reclamation measures as provided in Section 12.1 (page 68) and Appendix B, Table B-13 (page 105) is identical to that provided in the FEIS Preliminary MCRP (February 2012). This means that the estimate provided for final closure cost (\$518,711,208) does not include the ERP. The final closure cost estimate for Milne Inlet of \$7,311,986 (Appendix B, Tables B-13 and B-16) does not include reclamation/closure of more laydown areas, additional camp facilities, the ore stockpile and runoff ponds, the ore dock or the ore handling facilities associated with the ERP. With the ERP infrastructure in place, the Milne Inlet Port final closure cost estimate should be higher.
			BIMC acknowledges that the final closure estimate provided in the Interim MCRP (Section 1- Executive Summary, page 11) is the same as the earlier estimate based on the original FEIS project description. BIMC contends that an updated determination of closure and reclamation security is captured on an annual basis during the ASR process. To this end BIMC have provided the “2014 Marginal Reclamation and Closure Security Estimate” (2014 MRCSE) in Attachment 4 of their amendment application. AANDC note however that this marginal security estimate (broken into “approved” and “ERP” components) is the same as originally submitted during the ASR late last year and has not been updated to reflect the comments posted at that time and the outcomes of negotiations earlier this year. Specifically, AANDC prepared a submission on 18 December 2013 to the NWB concerning the water licence 2AM-MRY1325 and the Annual Security Review under Part C and Schedule C of the Type ‘A’ water licence. The submission outlined the agreed-upon increases in security for the “approved” project at that time based on changes to assumptions related to explosives liability and Jet-A fuel tank reclamation. These increases are not reflected in Attachment 4 of the licence amendment package.
			It is expected that written approval from the NWB will be sought prior to commencement of mining operations in accordance with Part J, Item 2 of 2AM-MRY1325. AANDC will continue to review the Interim MCRP as part of the amendment application and expect that further revisions will be

			required as a result of the amendment application and ASR processes.
EC, September 12, 2014	1	It would appear that some words are missing from this sentence which makes the meaning unclear. EC requests that the proponent clarify their intention regarding the management of effluents.	
	2	To prevent detrimental effects on migratory birds, nests and eggs and to help maintain sustainable populations of migratory birds, Environment Canada recommends that proponents know their legal obligations; avoid engaging in potential destructive or disruptive activities in key sensitive periods and locations; and develop and implement appropriate preventative and mitigation measures to minimize the risk of incidental take.	
		To reduce the risk of incidental take of nests and eggs of migratory birds, Environment Canada recommends that demolition activities be avoided during the migratory bird nesting season. It is important to note that breeding periods may vary from year to year due to climatic conditions. If nests containing eggs or young of migratory birds are found, all disruptive activities in the nesting area should be halted until nesting is completed. Any nest found should be protected with a buffer zone appropriate for the species and the surrounding habitat until the young have naturally left the vicinity of the nest. Moreover, if there are migratory bird nests where work is proposed, options like avoiding, adapting, rescheduling or relocating activities that could disturb or destroy the nests should be considered. EC recommends the Proponent consult the fact sheet “Planning Ahead to Reduce Risks to Migratory Bird Nests” available at: http://www.ec.gc.ca/paom-itmb/ for further guidance.	
	3	The proponent should be prepared to remediate unacceptable runoff water quality from the ore stockpile should it occur. EC, therefore, suggests that the proponent proactively develop a contingency plan to manage contaminated runoff from the waste rock stockpile	
	4	EC acknowledges and welcomes the planned implementation of contingency measures and the development of adaptive management strategies. EC would appreciate the opportunity to review these plans and updates when they are available.	
QIA, September 15, 2014	1	Many of BIMC’s activities associated with the Mary River Project occur on Inuit Owned Lands (IOL) and therefore are administered through a Commercial Lease (No: Q13C301) between BIMC and QIA. QIA notes that BIMC has not received QIA approval of this updated Interim Mine Closure and Reclamation Plan, as per Section 12.1 of the Commercial Lease. The QIA therefore recommend that the NWB consider this no-compliance with the Commercial Lease, along with Part A, Item 1c of the Water Licence, in their review and approval Process of the ICRP (as per Part J, Item 2 of the Water Licence).	
	2	Page 16 of the ICRP stated that BIMC proposes to use the Annual Security Review process “as an avenue to facilitate any additional discussion of closure & reclamation strategy...”. QIA accepts that financial liability should be calculated using information presented in the closure and reclamation plan; however, QIA does not agree that the Annual Security Review be the avenue to discuss closure and reclamation strategy. The Annual Security Review meetings are established for the purpose of evaluating security for the forthcoming year and this focus should not change. Meetings to discuss	

			the ICRP, which QIA does agree could be held, should occur independently. Further, as noted above, the Commercial Lease must be observed in the approval of the closure and reclamation planning and this process is independent from the Annual Security Review and is required to take place prior to submissions related to the Water Licence.
		3	<p>The ICRP is completed to a conceptual to preliminary level of detail. There is not a clear distinction of the reclamation objectives and criteria for each mine component. As a result, further interpretation is required to understand which objectives and criteria apply as a measure of success full reclamation. Further, many of the criteria listed are not measurable. Thus, when assessing success of closure of a mine component, the measure of success is not quantitative. Additionally, select listed criteria would be better described as an objective given the general nature of the statement. As one example, a criterion for removal of buildings and infrastructure is to “restore the natural use by wildlife”. There is no measure of success for this statement. This statement lends itself better as an objective with an example of a criterion specific to how this statement would relate to the acceptable material types that remain on the ground to achieve the restoration.</p> <p>It is recommended that a summary of each mine component reclamation activity, objectives, and criteria is developed to address the above concerns. QIA notes that Section 11 of the ICRP attempts to summarize some of this information.</p>
		4	<p>Select specific items that require further attention within the ICRP include, but are not limited to the following:</p> <ul style="list-style-type: none"> a. The frequency for updating the ICRP is not detailed within the document. A schedule should be proposed for review and approval. The schedule should also include descriptions for when completion of certain components of the ICRP can be expected to occur, i.e. when the application of the results of reclamation research can be expected to occur. b. Page 11 states that the “airstrips will remain in place and left in good working order unless otherwise directed by regulatory agencies or the Land Owner...”. This is an example where the closure scenario is assumed by BIMC but has not been agreed to by applicable parties. The default scenario should be to remove the liability (in this case the airstrip) unless an alternative is demonstrated to be otherwise acceptable (i.e., the approval of the landowner). c. Section 2.5.1 provides a description of authors that certify the reports contents. QIA notes that the ICRP is not signed and stamped by a qualified professional registered with the Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists (NAPEG) and it is unclear if the authors are registered with NAPEG. QIA recommends that closure and reclamation planning is an activity that requires a qualified professional registered with NAPEG to certify.

			<p>d. Table 3-1 lists the major project components but does not distinguish activities occurring on Crown lands or IOL. It is recommended that there is consistency between the component names between the ICRP and the security estimate to ensure liabilities are captured. Additionally, it is recommended that Table 3-1 be updated to include land ownership.</p> <p>e. Section 3.2.2 states that the reclamation planning for the railway, Steensby camp and other exploration camps along the railway corridor and exploration areas are addressed in the Exploration Closure and Reclamation Plan. QIA notes that some of the railway and Steensby activities are within the scope of the Type “A” Water Licence and exploration is within the scope of the exploration Type B Water Licence. QIA recommends that the project have a single closure and reclamation plan to limit the potential for closure activities to be missed and/or limit conflicts in the reclamation goals, objectives and criteria between multiple plans.</p> <p>f. Section 4 provides generic cross-references to the Final Environmental Impact Statement (FEIS) where information pertaining to pre-development site conditions may be reported. No specific pre-development site conditions are described in this section of the ICRP. Additionally, the cross-references provided are simply an entire volume of the FEIS, which is not useful in understanding the pertinent information that are needed to justify the closure goals, objectives, criteria and post-closure monitoring. The ICRP should summarize and present the critical information to understand the pre-development site conditions and not cross-reference entire volumes of the FEIS.</p> <p>g. Section 5 outlines the proposed progressive reclamation. Reclamation activities are summarized; however, these activities are not tied to a specific closure objective and criteria. In some instances, the activity describe could also be interpreted as an objective or criteria.</p> <p>h. Section 5.1.1 outlines that studies will be undertaken to understand best practices to complete a reclamation activity. Additionally, within Section 8, there is uncertainty in the closure activity associated with select mine components (e.g., open pit) that warrant additional study and research. The ICRP should include a reclamation research section that summarizes the research needed to address reclamation uncertainties. The ICRP does not address reclamation research.</p> <p>i. Section 8 does not state the year final closure and reclamation commences. QIA notes that the timing for submission of the Final Closure and Reclamation Plan is listed as “within twelve (12) months prior to the expected end of mining”. QIA notes that this timeframe is in compliance with Part J, Item 4 of the Water Licence; however, may be too short for QIA approval requirements. Additionally, a schedule for post-operations should be presented in the ICRP that clearly depicts and describes the activities within, and duration of, interim care and maintenance,</p>
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			<p>active reclamation, and post-closure monitoring and maintenance. The ICRP has only been developed to a conceptual level in this regard.</p> <p>j. Section 8 notes that roads “with the exception of the public Milne Inlet Tote Road” will undergo reclamation. Further discussion on this limitation is provided in Section 8.5. The exclusion of the Milne Inlet Tote Road from reclamation planning is not acceptable to QIA. The reclamation of the Milne Inlet Tote Road bridges, culverts, road surface and associated quarries/borrows is the responsibility of BIMC as they have created the current liability. QIA understands that BIMC may have upgraded the road since their involvement in the project; however, that upgrade was required for BIMC operations and BIMC is responsible for the upgrades and maintenance of the road during its use. If the Milne Inlet Tote Road does not undergo closure and reclamation, it will result in environmental impacts as a result of deterioration of the infrastructure over time.</p> <p>QIA notes that Section 10 states that all water crossing along the Milne Inlet Tote Road will be removed. This statement appears to contradict Section 8 as noted above.</p> <p>k. Section 8 provides a minimum of a five-year post closure period for monitoring and treatment. QIA notes that a five-year timeframe is likely underestimated. No information has been presented that links the predicted post-closure condition to the monitoring program. For example, the open pit has considerable uncertainty regarding the timing to fill.</p> <p>l. Section 9 of the ICRP provides a summary of the proposed post mine closure monitoring. The focus of this section appears to be limited to monitoring about mine infrastructure. There are limited details regarding the monitoring program and schedule. Additionally, the ICRP is silent on the post closure monitoring associated with items relative to wildlife, marine, and socio-economics.</p>
		5	<p>Page 12 states that BIMC “has committed to establish an advisory group focused on reclamation of the Project that will allow for local community input and involvement”. QIA agrees that community input and involvement are critical to successful reclamation planning for activities that occur on IOL and look forward to BIMC’s recommendation on how engagement can meaningfully be completed. To date, engagement by BIMC has largely been focused on initial permitting and licensing to support construction and operation of the project. Discussion with communities has not focused on closure and reclamation. BIMC notes in Section 13 of the ICRP that closure was discussed at the hearings related to the Project Certificate; however, it is QIA’s opinion that this form and degree of engagement is insufficient to address the topic of closure and reclamation. Furthermore, it is QIA’s opinion that engagement of communities is an activity that should be planned and conducted jointly with QIA.</p>

			QIA is also interested to understand the specifics regarding the group participants, mandate, and function at a greater level of detail. At that time further recommendations can be provided specific to this topic.
		6	RECLAIM has been applied as the basis for the interim estimate of the financial costs for final closure and reclamation (see Section 12). The use of RECLAIM is not in compliance with the QIA A&R Policy. Further, QIA does not agree with the reclamation security amount presented within Section 12 of the ICRP. Specifics regarding reclamation security have been addressed under separate covers to BIMC and QIA has not repeated these reviews herein.
<i>Revision 3, dated March 19, 2015</i>	<i>AANDC, June 26, 2015</i>	1	<p>The Interim Closure and Reclamation Plan (BAF-PH1-830-P16-0012 Rev 3) was reviewed but the plans and documents it refers to were not. Comments are presented below and AANDC expects to have further comments during the Annual Security Review process.</p> <p>Three referencing errors were noticed in the document, on pages 68, 96 and 125.</p>
		2	<p>Baffinland details activities associated with long-term temporary mine closure, such as the removal from site of hazardous waste and explosives. These activities would take place if the Project ceases operation for a period greater than a year, but no timeline has been proposed. This contrasts with the final mine closure and reclamation activities for which a three-year schedule is proposed in table 6-1.</p> <p>AANDC recommends that the ICRP set timelines for long-term mine closure activities.</p>
		3	<p>Baffinland states they anticipate the open pit will take an estimated 85 to 150 years to passively fill with water from natural sources. They also state they expect closure to take three years with post-closure monitoring to be required over a five-year period.</p> <p>One of the pit closure objectives is that “<i>Surface runoff and seepage water quality is safe for humans and wildlife.</i>” It will not be possible to determine the pit lake water quality and its influence on surface runoff and seepage water until the pit has filled and equilibrated. Without accelerated pit filling, closure for the pit would take much longer than the three years planned.</p> <p>AANDC recommends that the ICRP include either or both:</p> <ul style="list-style-type: none"> • accelerated open pit filling as a planned activity rather than a potential one; • a modified mine closure and post-closure monitoring timeline to reflect the lengthy period before pit closure.
		4	The preferred option pit filling alternative is the Mary River, at MR-12, the east pond discharge location. This location is not identified on either Mine Site drawing and though it is understood that the discharge location is not yet precisely determined since neither the waste rock stockpile nor its east pond have yet been built. Figure 3.2 from the Aquatic Effects Monitoring Plan has a SNP seasonal

		<p>discharge station labelled MS-09 described as “waste rock stockpile east pond stormwater”. It is not clear where MR-12 is located. If it is located near MS-09 or next to the east pond, it is on a tributary to the Mary River rather than on the main branch. The hydrology monitoring station H7 was on this tributary and the four years of recorded data have much smaller flows than the 78 million cubic metres annual total flow volume for MR-12.</p> <p>The annual total flow volume measured at nearby hydrology monitoring station H6, which is on the Mary River more closely resembles the flow presented in the ICRP. Yet the predicted 10-year dry flow at this station is much lower than for MR-12.</p> <p>The Department of Fisheries and Oceans’ (DFO) “Framework for Assessing the Ecological Flow Requirements to Support Fisheries” states that:</p> <p><i>Cumulative flow alterations <10% in amplitude of the actual (instantaneous) flow in the river relative to a “natural flow regime” have a low probability of detectable impacts to ecosystems that support commercial, recreational or Aboriginal fisheries. Such projects can be assessed with “desktop” methodologies.</i></p> <p>Periodic pumping from the Mary River at a rate of 8700 m³ of water per hour over 4 months is proposed, which is approximately to the total yearly volume withdrawal proposed (25 000 000 m³) divided by the number of hours in 4 months. It does not seem to take into account the variability of flows between months and the need for instantaneous flow alterations in the river to be less than 10% in amplitude.</p> <p>AANDC recommends that: a) the position of potential water withdrawal location MR-12 be located on a map or figure and b) the hydrological data used to determine permissible annual water take be identified and presented.</p> <p>AANDC recommends that Baffinland begin collecting data at the location where they plan to withdraw water since the Framework for Assessing the Ecological Flow Requirements recommends a minimum of 20 years of river flow data to establish the “natural flow regime”. This data will be critical in accurately evaluating the 10-year dry flow. AANDC also recommends that the ICRP incorporate a pit filling scenario that is respectful of DFO guidelines.</p>
	5	<p>In Table 6-1 a closure objective included for site wide for Milne Port, Tote Road, Mine Site, Railway, and Steensby Port is the following:</p>

			<i>Landscape features (shape and vegetation) match aesthetics of the surrounding natural area.</i> All other closure objectives in Table 6-1 are echoed in section 9 in the appropriate subsections, however the aesthetic objective is not referred to. AANDC recommends that the ICRP clarify which of the final mine closure and reclamation measures the aesthetic objective will be applied to.
		6	<p>The minimum thickness of the cover for the waste rock stockpile is not defined. The first paragraph of section 9.1 specifies the maximum thickness, stating:</p> <p><i>Mine planning will ensure that at closure the exterior of the dump consists of a layer of non-PAG (potential acid generating) material up to 50 m thick.</i></p> <p>The following paragraph states that the “<i>surficial “active” zone, ..., will not reach the 50 m thickness of non-PAG material in the long-term ...</i>” as if the cover thickness is determined at 50 m. AANDC recommends that the ICRP define the minimum waste rock stockpile cover thickness.</p>
		7	Baffinland expects sampling of revised and approved SNP locations to occur once a year, during a low flow period at the end of summer and to focus on surface water quality monitoring. Sampling during low flow is a good time for recording high concentrations for certain criteria. However other criteria, such as total suspended solids, would be higher during the high-flow conditions of freshet. Appropriate sampling periods could be discussed when revising the Surveillance Network Program.
		8	<p>This comment is the same as was made in AANDC’s Technical Review Memorandum submitted September 15, 2014. The financial cost of final closure and reclamation is identical to that provided in the Preliminary Mine Closure and Reclamation Plan (February 2012), Interim Abandonment and Reclamation Plan (June 2013) and Interim Mine Closure and Reclamation Plan (June 2014). This means that the estimate provided for final closure cost (\$518 711 208) does not include changes related to the Early Revenue Phase. Baffinland has developed a financial security estimate addendum to incorporate the changes but have not modified the ICRP to present the amended final closure cost of \$526 526 287.</p> <p>AANDC recommends that the ICRP present a final closure cost which includes all components of the Mary River Project including the additional infrastructure necessary for the Early Revenue Phase.</p>
	DFO, June 26, 2015	1	As part of the final mine closure and reclamation, DFO notes that BIMC has proposed accelerated open pit refilling options via pumping water from nearby water sources. Specifically, DFO notes that BIMC suggests four water sources that may be used for filling the pit: Sheardown Lake, Camp Lake, Mary Lake and Mary River. Based on the pumping costs associated with pumping distance and the maximum water extraction limits, BIMC considered Mary River as the preferred water source for pit filling. Additionally, BIMC states “ <i>It has been calculated that the Mary River can run at the “10-year-dry” conditions, which runs approximately 67% less than the mean flow, with no loss of habitat or damage to the aquatic ecosystem. The difference between the mean flow and the 10-year-dryflow</i>

			<p><i>provides us with a volume of 25,000,000 m³</i>. BIMC also states that <i>"Mary River is expected to freeze solid during the winter months"</i> and as such pumping from Mary River would have to occur during the summer months only.</p> <p>Based on the information provided above it is DFO's interpretation that the "10 year dry" is the minimum flow conditions for the Mary River that avoids negative impacts to fish and fish habitat and that pumping will not occur when flow is at or below this rate. According to Table 9-1, on average 25,000,000 m³ of water would be available each year and this value was used in setting the optimum pumping rate. These estimates are based on average flow rates, however, flows do vary and in the case of higher than average flows, DFO assumes that flow in excess of the pumping rate (which has a fixed maximum) would remain in the Mary River. DFO also assumes that flows that are less than average would be pumped if greater than the low flow limit (10-year-dry) and no water would be pumped at flows that are at or below the low flow limit. When flows are less than average, it would take more than 2 years to fill the pit.</p> <p>1. DFO requests that Baffinland confirm whether our interpretation of the proposed pit refilling scenario is correct.</p> <p>It is DFO's opinion that flows which are 67% less than the mean flow seem quite low to avoid negative impacts to fish and fish habitat in the Mary River. The <i>"Framework for assessing the ecological flow requirements to support fisheries in Canada"</i> (DFO- CSAS 2013-0 17) recommends the following:</p> <ul style="list-style-type: none"> • Cumulative flow alterations <10% in amplitude of the actual (instantaneous) flow in the river relative to a "natural flow regime" have a low probability of detectable impacts to ecosystems that support commercial, recreational or Aboriginal fisheries. • Cumulative flow alterations that result in instantaneous flows < 30% of the mean annual discharge (MAD) have a heightened risk of impacts to fisheries. <p>Also of note is that for cumulative water use > 10% of instantaneous discharge or that results in flows < 30% of the mean annual discharge (MAD), a more rigorous level of assessment is recommended to evaluate potential impacts on ecosystem functions which support fisheries. The science advice recommends, as a basis to assess the impacts of flow alteration on fisheries, a minimum of 20 years of river flow data is to establish the "natural flow regime".</p>
		2	<p>DFO requests that Baffinland provide the rationale for selecting the 10-year-dry discharge as the low flow criteria to avoid negative impacts to fish and fish habitat. Additionally, DFO requests that Baffinland confirm that adequate baseline data on fish and fish habitat in the Mary River has been</p>

			collected, to support these conclusions.
		3	<p>Based on the information provided there is uncertainty regarding the location and corresponding baseline hydrological data used in the calculations provided in Table 9. I for the proposed Mary River water withdrawal location.</p> <p>2. DFO requests that Baffinland provide the baseline hydrological data on which their calculations were based as well as methodology used to derive the volumes.</p>
	EC June 26, 2015	N/A	EC provided comments; however, the comments were not specific to the ICRP.
	QIA, June 1, 2015	1	<p>The Qikiqtani Inuit Association (QIA) would like to thank the Nunavut Water Board (NWB) for the opportunity to provide review comments¹ regarding Baffinland Iron Mines Corporation's (BIMC) Interim Closure and Reclamation Plan (ICRP) and Aquatic Effects Monitoring Plan (AEMP), which were included within the 2014 Annual Report submittal.</p> <p>QIA has issued approval to BIMC on the use of ICRP r.3 for Inuit Owned Lands, as per Commercial Production Lease Q13C3013. No review comments are provided to the NWB at this time.</p> <p>The NWB requested a review of AEMP r04 in their May 6, 2015 notice¹. The same AEMP r.0 was the subject of review, as requested by the NWB⁵, on October 14, 2014. The QIA provided review comments on this version of the AEMP on November 14, 2014⁶. No additional review comments are provided at this time.</p> <p>As noted in QIA's intervention to the recent Type A amendment application, "Based on discussions with NWB staff (on April 9, 2015), the July, 2014 AEMP has not received NWB approval". It is unclear why the NWB has reissued a request to receive review comments on the AEMP r. 0.</p>
Revision 4, dated October 30, 2015	INAC, January 4, 2016	1	<p>Indigenous and Northern Affairs Canada (INAC) notes that none of the seven comments it made on the previous version of this plan (Rev 3) in its June 26, 2015. Technical Review Memorandum have been addressed. This is particularly disappointing because one of the comments (2.2.7) was from an earlier memorandum, submitted September 15, 2014. We are attaching the June 26, 2015, submission as annex A Comments 2.2.1 to 2.2.7 of the document form the first seven comments for Rev 4 of the ICRP as they remain relevant.</p> <ul style="list-style-type: none"> • Long term mine closure activity timeline • Accelerated open pit filling • Mary River option for accelerated pit filling

			<ul style="list-style-type: none"> • Aesthetic closure objective • Waste rock stockpile cover thickness • Timing of post closure Surveillance Network Program (SNP) Monitoring • Ultimate Project Closure and reclamation cost
		2	<p>In the projected Project lifecycle, the railway construction phase is “up to five years beginning in 2015”</p> <p>This is inconsistent with the submitted work plans which do not include railway Construction and should be updated</p>
		3	<p>The final closure activities for permanent closure of the landfarm in Table 6 1 are as follows:</p> <ul style="list-style-type: none"> • Year 0: Site audit • Years 1 & 2: Routine inspection of facilities • Year 3: Application of cover material (if required) and rehabilitation (re-grading and scarification) of all surfaces <p>This is inconsistent the text description in Section 9.10 which states hydrocarbon impacted soil will be remediated on site in the landfarms or removed offsite. The schedule in Section 10.2 also lists treatment of contaminated soil in landfarms rather than routine inspections. INAC recommends that the Table 6 1 be modified to reflect activities planned at the landfarms.</p>
		3	<p>The final closure activities in Table 6-1 for permanent closure of the site wide railway include activities for year 0, year TBD, year TBD +1, year TBD +2, year TBD +3. If year 0 is not counted, this comprises four years of activities. In the executive summary, well as in Sections 9 and 10.1 of the document, closure activities are described as achievable and scheduled over three years.</p> <p>INAC recommends that the licensee clarify if railway reclamation activities will extend a year beyond all the other reclamation activities.</p>
	<i>ECCC, January 4, 2016</i>	1	<p>The "Associated Monitoring Programs" listed in Table 6 for "Railway- Borrow Pits and Quarries" are incorrect. The current list includes geotechnical/engineering monitoring; flora and fauna monitoring; and environmental site assessment but the correct associated monitoring program is aquatic monitoring.</p> <p>The monitoring program associated with Railway Borrow Pits and Quarries should be corrected to read 'Aquatic Monitoring'.</p>
		2	<p>In the comments submitted to the NWB and NIRB on June 2015 ECCC requested that the proponent define the phrase "unacceptable environmental risk". The term "unacceptable environmental risk" is</p>

			<p>used in various places throughout the plan and although the proponent has indicated that this a commonly used term it is still unclear what would determine if a risk was "unacceptable" and who would make that determination.</p> <p>Baffinland should clarify what will be used to determine if a risk is acceptable and who will make the determination.</p>
QIA, January 5, 2016	1		In accordance with Section 12.1, of Commercial Production Lease (CPL) Q13C301 which states the ICRP “ <i>require[s] the approval of the Landlord acting reasonably prior to submission of such plans to Governmental Authorities</i> ”. QIA is hereby notifying the NWB that on October 23 rd , 2015 QIA issued BIMC a conditional approval of the ICRP, with direction to BIMC on how to achieve complete approval from QIA. This correspondence is attached to provide context for the benefit of the NWB. Here QIA would like to highlight that the comments submitted to BIMC in October 2015 are an extension of the <u>same</u> comments that have been supplied to BIMC in March 2015 and Fall 2014. Submission of QIA technical comments to BIMC have also followed in-person meetings, notably during a series of meetings in January, June and August 2015.
	2		Furthermore, QIA notes that the ICRP has yet to gain QIA approval since the ICRP (BAF-PH1-830-P16-0012, Rev.2) was first presented on July 2nd, 2014. ² In other words, despite repeated efforts on behalf of QIA to direct the proponent on where to improve the ICRP such improvements have yet to occur to a complete or satisfactory level. Aside from the current NWB request for comments there are other implications for not having a completed ICRP such as; continued conditional compliance with Q13C301, limitations on all parties when assessing financial security cost estimates under the Annual Security Review, administrative and subject specific complications relative to future water licence amendment applications (i.e. type-A amendments in relation to the Phase II Project Proposal).
	3		QIA will continue to work with BIMC to bring the ICRP into compliance with Q13C301. Additionally, QIA does not deem “conditional approval” as a meaning required edits can be prolonged indefinitely. QIA believes its direction to BIMC has been reasonable in nature, consistent with existing guidelines in other northern jurisdictions, and aligned with planned document revision timelines. QIA pledges to advise the NWB if and when there is a change to the status of the ICRP under Q13C301.