

**Final Submission Regarding
Baffinland Iron Mines Corporation
Type A Water Licence Renewal Application
for the Mary River Project**

Aboriginal Affairs and Northern Development Canada

Final Submission to the Nunavut Water Board

April 22, 2015

EXECUTIVE SUMMARY

Aboriginal Affairs and Northern Development Canada (AANDC or the Department) has participated in the ongoing review of Baffinland Iron Mines Corporation's (Baffinland or BIMC) application (the application) for the amendment of Type A Water Licence 2AM-MRY1325 (Type A licence or 2AM-MRY1325) for the Mary River Project.

The intent of Baffinland's requested amendment is to consolidate under one licence all requirements for the construction and operation of the Mary River Project. It principally consists of transferring the rights and obligations of Type B water licence 8BC-MRY1416 to 2AM-MRY1325. The application also includes requests for increasing capacity at Milne Port and additional water withdrawal for dust suppression along the Tote Road.

Two technical issues raised by AANDC have been resolved through discussion with Baffinland. The third technical issue relates to the reclamation cost estimates associated with the fully developed mine site, and with the site development under the Early Revenue Phase as detailed in the 2015 Work Plan. The reclamation cost estimates and review process have been addressed through the Annual Security Review and the Type A water licence amendment application process reviews.

ᐃᐃᐃ ᐃᐃᐃ ᐃᐃᐃ ᐃᐃᐃ ᐃᐃᐃ ᐃᐃᐃ

TABLE OF CONTENTS

EXECUTIVE SUMMARY	ii
ᐃᔭᓕᑦᑲᓂᓄᓇ ᐅᓂᑯᓴᑦ	iii
TABLE OF CONTENTS	iv
INTRODUCTION	1
COMMENTS ON THE TYPE A AMENDMENT APPLICATION	2
1.0 Technical Comments Discussed at Technical Hearing	2
2.0 Outstanding Issues	2
2.1 Water withdrawal quantities	2
2.2 Interim Closure and Reclamation Plan	3
CONCLUSION	5

INTRODUCTION

Aboriginal Affairs and Northern Development Canada (AANDC or the Department) has participated in the ongoing review of the Baffinland Iron Mines Corporation's (the Licensee or BIMC) application (the application) for the amendment of Type A Water Licence 2AM-MRY1325 (Type A licence or 2AM-MRY1325). The Department retained SNC-Lavalin Inc. to conduct a technical review of the application throughout the Nunavut Water Board's (Board or NWB) water licence application process. Their comments have been included in the AANDC letters to the NWB.

On October 3, 2014, AANDC conducted a completeness review of the application which included information requests and comments regarding proposed changes to the water licence. AANDC submitted a technical review of the application on November 14, 2014 and participated in a Technical Meeting and Pre-Hearing Conference (TM-PHC) via teleconference on January 28 and 29, 2015. On February 25, the NWB distributed the Pre-Hearing Conference Decision inviting interested parties to submit additional written submissions by April 17, 2015.

Out of the three technical issues discussed at the TM-PHC, two were resolved through discussions with Baffinland. The third issue, regarding reclamation security, was discussed during the Annual Security Review process that was initiated October 7, 2014 by the NWB with the final decision on the financial reclamation security required released on February 11, 2015. Outstanding issues regarding securities are discussed in the cover letter for this final written submission.

Following the TM-PHC, Baffinland submitted a letter on February 6, 2015 that includes an updated Type A Water Licence Application. Comments are made on this submission, in the context of AANDC policy and relevant legislation. Comments are structured as issues and supported by observations made during the course of the application review and recommendations are made directly to the Board.

COMMENTS ON THE TYPE A AMENDMENT APPLICATION

1.0 Technical Comments Discussed at Technical Hearing

The Technical Review AANDC submitted to the Board on November 14, 2014 brought to light three issues:

- Monitoring of Milne Port ore stockpile runoff ponds;
- Design of Milne Port ore stockpile runoff ponds; and
- Interim closure and reclamation plan and security estimate.

The first two issues were addressed in the letter Baffinland *Responses to Agency Technical Comments on the Amendment to the Type "A" Water Licence 2AM-MRY1325* submitted on December 5, 2015. The last was dealt with during the Annual Security Review as well as during the technical review process.

2.0 Outstanding Issues

During the TM-PHC, uncertainty about the water withdrawal quantity came to light. Baffinland has clarified their position in an updated Type A Water Licence Application. AANDC reviewed this new information and has some concerns discussed below.

2.1 Water withdrawal quantities

Reference

- BIMC memo from Knight Piésold: Supplementary Technical Information for additional water withdrawal locations and water quantities along the Tote Road subject to this Amendment (July 16, 2014)
- BIMC Updated Type A Water Licence Application (February 6, 2015)
- BIMC Consequential Amendments to Type A Water Licence 2AM-MRY1325 (February 6, 2014)

Background

The Knight Piésold memo submitted with the initial amendment application stated that *"the estimated maximum daily water consumption for road dust suppression has been rounded upward from the expected 1,325 m³ to 1,500m³, from all water sources along the tote road."* The newly modified application requests 2,788.5 m³/day for dust suppression, *"due to the requirement to have operational flexibility in the licence. ...Therefore, Baffinland may focus dust suppression efforts on a portion of the road, requiring more water to be taken from certain water sources on certain days, whilst not requiring any water from other sources."*

AANDC questions the necessity of increasing the daily withdrawal quantity for

operational flexibility. If efforts are being focused on one segment of the road and more water is applied there, the increased water withdrawal in that area should be compensated by a decrease in other road segments.

The values presented for water withdrawal rates were calculated using stream discharge estimated from the catchment area based on a relationship developed using stream gauging data from 2006-2011. It is not clear if these calculations took into account how several sub-catchments can feed into a larger catchment. Seven of the water stations proposed along the tote road appear to be in the Phillips' Creek catchment, for a total withdrawal of 2119.5 m³/day. This is in addition to the 367.5 m³/day requested for the Milne Port site from the same catchment and would add up to 3% of the creek flow, as estimated using a 1.03 L/s·km 10-year dry unit runoff. Given that there is no discharge data available for Phillips' Creek, the data used for developing the 10-year dry unit runoff is not necessarily representative of the whole catchment and the uncertainty has not been estimated, there may be significant error in the 3% estimate.

Recommendation

AANDC recommends that a) the maximum daily water consumption for road dust suppression be limited to 1 500m³/day unless Baffinland can provide sound justification to use more than 1 500 m³/day and more site specific discharge data; b) the streams and monitoring methods used to determine low flow years that constitute a restriction for certain stations be agreed upon and representative of the catchments water is abstracted from.

2.2 Interim Closure and Reclamation Plan

Reference

- BIMC Interim Mine Closure and Reclamation Plan Document No. BAF-PH -1-830-P16-0012, dated June 27, 2014.
- BIMC Final Environmental Impact Statement (FEIS) Closure and Reclamation – Financial Security Estimate Addendum (Ref H349001-0000-07-220-0001) prepared by Hatch on behalf of BIMC, dated March 25, 2015.
- BIMC Mary River Project 2015 Work Plan, dated October 31, 2014.
- BIMC Mary River Project 2015 Work Plan Addendum, dated December 12, 2014.
- AANDC letter to the NWB regarding the technical review of the Mine Closure and Reclamation Plan, dated September 15, 2014.
- AANDC letter to the NWB regarding the technical review of the Mine Closure and Reclamation Plan, dated November 14, 2014.
- AANDC letter to the NWB regarding the technical review of the amendment application dated January 12, 2015.
- AANDC letter to the NWB regarding the Annual Security Review, dated December 5, 2014.

- AANDC letter to the NWB regarding the Annual Security Review dated January 22, 2015.
- SNC-Lavalin Environmental Inc. Letter to AANDC regarding the Annual Security Review, dated December 4, 2014.

Background

Mine closure and reclamation costs have been reviewed through two processes occurring between August 2014 and April 2015: 1) annual security review (ASR) process; and 2) water licence amendment review process

1) Annual Security Review

The ASR process is based on the 2015 Work Plan for the Early Revenue Phase and includes the review of the highest reclamation cost anticipated by BIMC for the upcoming 2015 site development and activities. AANDC has provided review comments on the 2015 Work Plan reclamation cost estimates in two letters to the NWB dated December 5, 2014 and January 22, 2015. Additional comments have been provided in the cover letter to this final written submission to the NWB and will not be further detailed within this section.

2) Water Licence Amendment Technical Review

The highest reclamation cost was estimated for the 'Ultimate Project' by BIMC in their Interim Mine Closure and Reclamation Plan (IMCRP), dated June 27, 2014. The Ultimate Project is defined as the full development of the Mine Site, Milne Port, Steensby Port, and the two transportation corridors (Tote Road to Milne Port, and railway to Steensby Port). The reclamation costs were estimated by applying the unit costs developed by Hatch Engineering, in their *Hatch Assessment Methodology*, then entered into the AANDC Reclaim Model (ver 6) spreadsheet according to geographical - based areas then further subdivided into specific facilities and activities. Based on this 2012 estimation method the mine closure and grand total reclamation cost is estimated to be **\$518,711,208**.

As part of the Type A water licence amendment technical review process, the June 27, 2014 IMCRP was assessed by SNC-Lavalin Inc (SNC) on behalf of the Department. SNC's review comments on the security estimates are included in the AANDC written submissions to the NWB dated September 15, 2014, November 14, 2014, and January 12, 2015.

The key issue raised by SNC-Lavalin, was that the cost estimate associated with the Early Revenue Phase site development activities were not included in the IMCRP (dated June 27, 2014). That is, there was no change to the reclamation estimate in the June 27, 2014 from what was submitted in the FEIS Preliminary MCRP (dated February 2012).

BIMC submitted the updated Final Environmental Impact Statement (FEIS) Closure and Reclamation – Financial Security Estimate Addendum on March 25, 2015. This

document includes the updated reclamation cost estimate for the Ultimate Project. The same reclamation estimation method used in 2012 was applied to the March 2014 cost estimate to include the additional Early Revenue Phase site development and activities. The revised financial security estimate provided by BIMC for the Ultimate Project closure and reclamation has increased by \$ 7,815,079 to a grand total **\$526,526,287**.

Recommendation

The amended water licence should reference under Part J, the most recent mine closure and reclamation plan (issued June 27, 2014) and security cost estimates (issued March 25, 2015) for the Ultimate Project development

CONCLUSION

Based on the information available it is recommended that the amendment be accepted with consideration of the department's recommendations provided on security and as stated in the cover letter to this final written submission.