



Water Resources Division  
Resource Management Directorate  
Nunavut Regional Office  
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Your file - Votre référence  
2AM-MRY1325  
Our file - Notre référence  
GCDocs#109238384

January 31, 2023

Robert Hunter  
Licensing Administrator  
Nunavut Water Board  
P.O. Box 119  
Gjoa Haven, NU, X0B 1J0  
E-mail: [licensing@nwb-oen.ca](mailto:licensing@nwb-oen.ca)

**Re: Crown-Indigenous Relations and Northern Affairs Canada's (CIRNAC)  
Review of Baffinland's 2023 Workplan and Recommendation on proceeding with  
the Security for the Mary River Project, Water Licence 2AM-MRY1325  
Amendment No. 1**

Dear Mr. Hunter,

Thank you for the December 16, 2022 invitation to review the 2023 Workplan and Annual Security Review (ASR) Process submitted by Baffinland Iron Mines Corporation under Type A, Water Licence No. 2AM-MRY1325. CIRNAC has retained SNC-Lavalin to review and provide a recommendation whether the information presented in Baffinland's 2023 Workplan and 2022 Annual Security Review (2023 Submission) will warrant a full and detailed review of closure liabilities. This review is attached in Annex A.

Upon review CIRNAC has not identified any material changes proposed in the 2023 workplan, however, notes that there remain uncertainties unresolved from the previous ASR including the waste rock facility, contaminated soil treatment and Interim Closure and Reclamation Plan.

In the 2023 Workplan under section 3 "Annual Scope of Operations and Work" Baffinland discusses a plan to amend the Project Certificate No. 005 with the submission of a sustaining operations proposal. CIRNAC is of the opinion that any ASR review may only take place once Baffinland has provided all required information. This will avoid having to reopen or restart the ASR to include any amended workplan that includes further material changes.

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) examined the application pursuant to its mandated responsibilities under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Crown-Indigenous Relations and*



*Northern Affairs Act.* Please find CIRNAC comments and recommendations in the attached Technical Memorandum.

If there are any questions or concerns, please contact me at (867) 975-3876 or [lauren.perrin@rcaanc-cirnac.gc.ca](mailto:lauren.perrin@rcaanc-cirnac.gc.ca) or Andrew Keim at (867) 975-4550 or [andrew.keim@rcaanc-cirnac.gc.ca](mailto:andrew.keim@rcaanc-cirnac.gc.ca).

Sincerely,

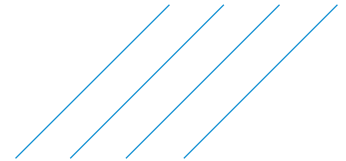
*Andrew Keim*

- for

Lauren Perrin,  
Water Management Specialist



## Annex A



# Memorandum

To: Lauren Perrin and Andrew Keim

From:	Karola Toth and Jonathan Croston	Email:	Karola.Toth@snclavalin.com
Date:	2023-01-24	Phone:	647-234-0552
Ref:	cc:		

**Subject** Mary River – 2023 Work plan and 2022 Annual Security Review Recommendation

The purpose of this memorandum is to provide CIRNAC with a recommendation whether the information presented in BIMC's 2023 Workplan and 2022 Annual Security Review (2023 Submission) will warrant a full and detailed review of closure liabilities.

SNCL has reviewed the workplan and the associated security assessment that was available on the Nunavut Water Board Website: [ftp://ftp.nwb-oen.ca/registry/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-MRY1325%20BIMC/3%20TECH/2%20SECURITY%20\(C\)/2022/](ftp://ftp.nwb-oen.ca/registry/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-MRY1325%20BIMC/3%20TECH/2%20SECURITY%20(C)/2022/). We have further reviewed the Excel version of the EBS provided by BIMC following our kick-off meeting to make the assessment.

SNCL has noted concerns regarding unsecured liabilities associated with contaminated lands and the waste rock facility in our review of BIMC's submission in 2022. It was noted that with respect to the waste rock, the ICRP (2018) is not aligned with current site conditions for waste rock management and BIMC's EBS does not accurately reflect the ICRP nor the Phase 1 Waste Rock Management plan (2020). The funds set aside to close this facility are inadequate. This item is not addressed in the current 2023 Submission beyond noting that they note CIRNAC's concerns. At the end of the 2022 review period, it was recommended that resolution of these liabilities be carried into the Phase 2 licensing stage for resolution. Phase 2 of the project has not received approval as such this gap is still unresolved. There is no additional information presented in 2023 Submission regarding this matter as such a detailed review of the 2023 Submission will not materially impact this gap. In any outcome of the decision around whether to proceed or not with a detailed review process, SNC-Lavalin is recommending that CIRNAC continue to note this concern to BIMC and seek to have this resolved in the future. A potential process to resolve this may be through the Amendments



to the Project Certificate No. 005 once BIMC submits their Sustaining Operations Proposal in February of 2023. It is our understanding from other communications with CIRNAC that BIMC has indicated such intent.

Regarding the ASR process in 2023 we have the following findings:

1. The activities proposed in the 2023 Work Plan are considered to not be likely to present significant closure risks or to present significant financial liabilities for closure.
2. The activities proposed for 2023 introduce an overall reduction of liabilities by ~2.6M (Table 9-3 Column C). The accuracy of the additional reduction proposed through the deferral of some activities (~2M) would require a detail review, however this review will not significantly improve the outcome of the ASR process as the chances of finding large deviations given the work proposed may be small.
3. BIMC are proposing to reduce their financial liabilities by ~\$17M (Table 9-3, column F). Ms. Lauren Perrin has received verbal confirmation from BIMC that the \$17M reduction is aligned with the “Tranches” noted and reviewed in 2022. These items were already reviewed last year and as such no further review in 2023 is recommended of these items. It is however recommended that any comments associated with the Tranches be carried forward as it is unclear how BIMC has addressed those comments.

Given the above findings SNC-Lavalin is of the opinion that performing a detailed review of the 2023 Submission will not add additional value to CIRNAC at this time and recommends carrying forward the comments that have been identified at the end of 2022 to BIMC for consideration. The extent of how these items were closed off is unclear as the review process in 2022 did not conclude. These comments are reproduced below for reference.

### Summary of Findings from 2022

Table A below presents a summary of the findings or clarifications to be requested to BIMC.

Table A: Summary of Findings or Clarifications to be Requested to BIMC

Issue/Discrepancy	Description	Recommendations/Requests to BIMC	Issue identified by CIRNAC in previous reviews
Contaminated Soils in Ore Storage Areas	The ICRP mentions assessment and removal of contaminated soils will occur at closure. We are assuming this requires comparison of soil bulk chemistry to background conditions specific to the area of the mine (i.e., Milne Port, Tote Road and Mine Area). We also assume removal would include onsite landfilling.	Based on corporate experience at mine closure projects, we expect the residual soils under the ore storage areas will contain metal concentrations greater than background conditions.  BIMC is requested to provide information as to where these items are captured in the estimate.  Should they not be present, CIRNAC requests that additional studies be initiated to	



		confirm these areas are chemically stable and not leaching to nearby water bodies and/or are posing a risk to human health or ecological terrestrial receptors. Following that costs for mitigation of potential impacts should be included in the annual security review.	
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Table J (Cont'd): Summary of Findings or Clarifications to be Requested to BIMC

Issue/Discrepancy	Description	Recommendations/Requests to BIMC	Issue identified by CIRNAC in previous reviews
Expanding the groundwater monitoring and sampling program.	Some piezometers were installed near the landfill at the Mine Site and a commitment was made to expand the program. In the ICRP, restoration is described as “The renewing, repairing, cleaning-up, remediation or other management of soil, groundwater or sediment so that its functions and qualities are comparable to those of its original, unaltered state.” The ICRP also states the requirement for monitoring of surface and groundwater to ensure discharge criteria are met. The effects assessment in the ICRP did not consider groundwater transport as a point or non-point source.	BIMC should include costs to monitor groundwater where ML/ARD effects to receiving water bodies and ecological receptors are possible. These areas would include the mine workings, WRF, select water storage ponds, ore storage areas and crusher area.	
Water Treatment	Runoff from the WRF shows impacts from ML/ARD. Ongoing water treatment was recommended during operations until the pond water meets the water quality objectives. Post closure water quality was not predicted as part of the water quality model. This remains as a large uncertainty for the review team.	Include contingency for water treatment as per the closure plan until geochemical modelling and groundwater and surface water monitoring and sampling suggest otherwise.	
MS-08 Liner Observations	There were no observations recorded in the geotechnical inspection report. Some	Include observations if possible and incorporate into future monitoring events. Include costs for seepage or	



	<p>iron staining was observed in sediments downgradient of the WRF treatment plant and MS-08.</p> <p>The liner for pond MS-08 capturing runoff from the WRF is an important item. Some observations about its integrity would have been reassuring, the photos appear to indicate liner is under stress (See Figure 27).</p>	<p>groundwater sampling in this area, if determined to be feasible.</p>	
<p>Expansion of the mine site landfill (2021-10, 2022-1) and landfarm (2019-18)</p>	<p>The landfarm is lined but the landfill is not. It is unclear how water is being managed at landfill. Red staining and seepage observed in the geotechnical inspection report can indicate water quality issues that may require mitigation.</p>	<p>Do the result of the preliminary groundwater monitoring program suggest impacts to Sheardown Lake are possible? How will water management occur at this proposed landfill area?</p>	
<p>New Ore Stockpile Area (2022-2) &amp; Run of Mine Stockpile (2019-23)</p>	<p>Expansion of the crude ore stockpile area where visible iron staining in ephemeral channel is noted directly adjacent to the Mary River. Located near the Explosive Magazine storage area. Discharges to Mary River with iron staining visible in satellite imagery.</p>	<p>How will water management occur at this proposed storage area? Will it report to the proposed sediment pond to the northwest? Will this new pond be lined?</p> <p>Ore stockpile areas can be long term sources of contamination post closure. What is BIMC plan to ensure chemical stability here post closure?</p>	
<p>Damaged liners and culverts</p>	<p>Damaged liners (MP-05 settling pond and HBW-1) and culverts (CV-114D) were documented in the geotechnical inspection report with a recommendation to repair them as soon as practically possible.</p>	<p>BIMC should consider allocating costs for additional repairs.</p>	



CIRNAC awaiting disturbed area calculation	CIRNAC is awaiting receipt of results of BIMCs disturbed area calculation based on satellite imagery.	BIMC to complete assessment and provide results to CIRNAC for inclusion into security estimate.	
Phase 2 Equipment Mobilization	Costs remain in the 2022 EBS for Phase 2 Equipment mobilization/ demobilization. These costs are summarized in section 5.4.1 above.	Phase 2 items will continue to be included within this year's estimate with an understanding that these costs represent only demobilization costs. Once Phase 2 approval is received these items will have to have decommissioning costs carried as well within the EBS and therefore Reclaim models.	
Phase 2 Equipment Demobilization	Costs for Demobilization included in Table 3-6 of the 2018 Marginal Closure and Reclamation Financial Security Estimate are not included in the EBS. These costs are summarized in section 5.4.1 above.	BIMC to confirm whether the Phase 2 line items from the 2018 Work Plan have been revised to what is currently in the EBS for Phase 2, or if they should be inserted into the EBS as separate, additional line items.	
BIMC Owned Equipment numbers and associated security	Small discrepancies were noted between the 2021 Addendum and 2022 EBS for BIMC owned equipment.	Review 2022 EBS compared to the 2021 Work Plan Addendum Table 8.2 to ensure all BIMC owned equipment has been accounted for (i.e., security in place or removed for mobilized, deferred, or demobilized equipment, respectively). See Section 5.4.2 for a list of noted discrepancies.	
2021 Addendum Tranche 1 and Tranche 2 cost reductions do not match 2022 EBS values.	The 2022 EBS does not include indirects outlined in the 2021 Addendum resulting in a missing cost reduction of \$(3,612,000) in the EBS. Similarly, the 2022 EBS allocates a cost reduction \$265,850 more than the 2021 Addendum for Tranche 2.	BIMC should review and confirm the EBS to include line items matching the 2021 Addendum summary table including the addition of cost reductions to indirect items and verifying the cost reduction associated with the demobilization of 3 <sup>rd</sup> party equipment (Tranche 2).	
Column G Table 9.3 of the BIMC 2022 Work Plan appears to be	In Table 9.3 of the 2022 Work Plan, the total in Column G does not equal a summation of columns	Correct column "G" of Table 9.3 in the 2022 Work Plan.	



calculated incorrectly.	C, D, E & F. Note that this error is in addition to the Column "C" issue mentioned above, not a result of it.		
Several items in the 2022 EBS are missing from the text of the 2022 Work Plan	Details of difference is discussed above in this Section 5.4.	Revise 2022 Work Plan and associated appendices to include missing items.	
Table 8.1 of the 2022 Work Plan lists fuel as a volume, while the 2022 EBS lists fuel as a lump sum \$62,000.	It is unclear how BIMC has calculated the lump sum cost of \$62,000 based on the fuel volumes presented in Table 8.1.	Provide rationale for calculation of \$62,000 fuel cost in Section 8.1 of 2022 Work Plan.	

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