



Water Resources Division
Resource Management Directorate
Nunavut Regional Office
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Your file - Votre référence
2AM-LUP2032
Our file - Notre référence
CIDM# 1290242

October 9, 2020

Mr. Richard Dwyer
Manager of Licensing
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU, X0B 1J0
E-mail: licensing@nwb-oen.ca

**Re: Crown-Indigenous Relations and Northern Affairs Canada Comments for
Lupin Mine Incorporated Response to CIRNAC Comments for Water Licence 2AM-
LUP2032 Conditions E 25-TM-Dome Design and Condition E-27 Exposed Tailings
Preliminary Cover Design**

Dear Mr. Dwyer,

Thank you for your October 6, 2020 invitation to review and comment on the response provided by Lupin Mines Incorporated (LMI) to Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) comments, submitted on August 25, 2020 for Water Licence 2AM-LUP2032 commitments regarding the conditions E 25-TM-Dome Design and condition E-27 Exposed Tailings Preliminary Cover Design.

CIRNAC conducted the review of the response pursuant to its mandated responsibilities under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*, the *Department of Crown-Indigenous Relations and Northern Affairs Act*, and associated policies. Please find below CIRNAC comments and recommendations to the Nunavut Water Board for consideration.

1. CIRNAC COMMENTS ON CONDITION 25 – Dome Design

CIRNAC COMMENT 1 – Lack of erosion controls on 10% slopes of esker cover

Comment: LMI's September 30, 2020 reply indicates that the nature of the cover material is such that it will seal armour as surface erosion removes fines and annual inspections and equipment will be on site to monitor and repair if erosion is an issue.



It is unclear as to what assumptions have been made with respect to the anticipated design flows during both the freshet and summer storm events. CIRNAC does not agree with LMI's indication that during the freshet the dome cover will remain frozen (ponding of water on top of the dome would result in thawing of the upper portions of the esker cover) and thus protect the esker cover from scour and/or erosion. Furthermore, the gradation of the esker material may be such that the fine-grained sands and silts could be easily removed during intense precipitation events, thus resulting in esker covers being compromised. There was also no information provided to confirm that the riprap to be used in the chutes is sufficiently sized to remain stable during the high intensity runoff events.

LMI's also references the FCRP (Section 4.3.2.3) in the response that indicates that annual inspections will identify areas of mitigation work and these maintenance activities can be done using light construction equipment has not been accounted for in the security estimate for the mine site. The cost of mobilizing equipment to complete the necessary repair work would be expensive and needs to be accounted for in the security if the current dome construction design plan is accepted. CIRNAC is not confident that the design provided is sufficient for a long-term walk away solution.

CIRNAC Recommendation: CIRNAC recommends that interested parties are provided the opportunity to review the recently submitted FCRP, and that the cost of this potential post-closure work is considered in the reclamation security.

CIRNAC COMMENT 2 – lack of information to demonstrate stability of designs

LMI's September 30, 2020 reply indicates that additional design details will be provided in their "Subsequent Issued for Construction Drawings" and provided additional comments on the intent of the designs. CIRNAC anticipates the opportunity to review the "Subsequent Issued for Construction Drawings" from LMI to confirm if it addresses CIRNAC's questions. More detailed topographic information is also required to ensure that water runoff is not allowed to migrate tangentially along the toe of the dome embankment. This work should be done in advance of the dome construction work so it is clear to all parties involved as to the work required to properly install the esker dome cap.

CIRNAC Recommendation: CIRNAC recommends that the 'Subsequent Issued for Construction Drawings' be provided by LMI for review in advance of the dome construction work.

CIRNAC COMMENT 3 - Notes on the design plan and lack of specific information on related underlying works

LMI's September 30, 2020 reply indicates that the intent of the 8 June 2020 Technical memo was to address the specific requirements of Part E Item 25 of the Water Licence 2AM-LUP2032. LMI notes that clean-up work began in 2020 and were undertaken in accordance with their clean-up protocol (as summarized below).



LMI's reply states that "Note 1 is deliberately stated in general terms in order to require the Contractor to comply with any relevant terms in the water licence and the PCR". LMI further states that the relevant background documents are publicly available and contain extensive information on location and nature of various aspects of soil and rock requiring cleanup; that LMI has developed a protocol for cleanup activities (field screening and laboratory testing) to establish excavation limits; and that disposal of the materials into the crown pillar and openings and shafts has been described in the FCRP; and that WSCC Chief Inspector of Mines Approval was granted 29 June 2020. CIRNAC suggests that it is challenging to expect the general contractor responsible for the construction of the esker dome cover to read both the requirements of the NWB and FCRP in sufficient detail to ensure that all engineering aspects of the work are appropriately addressed. LMI should ensure that there is a sufficient level of detail provided on the Issued for Construction drawings that will provide clarity to all program stakeholders to fully understand the work to be done, and ensure inspectors have the means by which to ensure the work is being executed in accordance with the design documents.

CIRNAC has not seen the referenced approval document granted by the WSCC Chief Inspector of Mines approving the disposal of waste rock in the crown pillar opening. Furthermore, it is incumbent on LMI to provide more than a conceptual plan on how this material will be placed into the crown pillar opening and shafts.

CIRNAC Recommendation: CIRNAC recommends the following;

- i. The recently submitted FCRP be provided for review by interested parties.
- ii. LMI to ensure that there is a sufficient level of details provided on the Issued for Construction drawings that will provide clarity to all program stakeholders to fully understand the work to be done, and inspectors have the means by which to ensure the work is being executed in accordance with the design documents.

2. CIRNAC COMMENTS ON CONDITION 27 – Exposed Tailings Preliminary Cover Design

CIRNAC COMMENT 4 - Exposed Tailings Preliminary Cover Design

LMI's September 30, 2020 reply referred to the previously provided "decision matrix" and supporting information provided in response to Commitment No. 8 from the Technical Meeting/Pre-Hearing Conference and also referred to Appendix H-1 and H-10 of the recently submitted FCRP (28 September 2020). CIRNAC has not reviewed the referenced FCRP document. CIRNAC's design request emanated from review of LMI's previous submissions.

CIRNAC Recommendation: CIRNAC recommends that the recently submitted FCRP be provided for review by interested parties.



CIRNAC appreciates the opportunity to participate in this review. If there are any questions, please contact me at (867) 975-4550 or godwin.okonkwo@canada.ca

Sincerely,

Godwin Okonkwo
Manager, Water Resources