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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

File No: 2AM-LUP2032

September 27, 2021

Karyn Lewis
Project Manager
Lupin Mines Incorporated
76 Richmond Street East, Suite 330
Toronto, ON M5C 1P1

Email: k.lewis@mandalayresources.com

**RE: NWB Technical Review of the Post Closure Monitoring Plan and the QA/QC Plan;
Lupin Mine Project; Water Licence No: 2AM-LUP2032**

Dear Ms. Lewis:

The Nunavut Water Board (NWB or Board) has completed its technical review of documents entitled *Post Closure Monitoring Plan* (PCMP), dated April 2021, and *Water Quality Monitoring Plan and Water and Soil Quality Assurance/Quality Control Plan* (QA/QC Plan), dated August 2020, which were provided to the Board by Lupin Mines Incorporated (LMI or Licensee) on April 09, 2021 and March 16, 2021 to fulfill the requirements of Part J, Item 13 and Part J, Item 7 of Water Licence No: 2AM-LUP2032 (Licence), respectively.

Upon receipt, both submissions were distributed for public review. With respect to the PCMP, comments were received from the Kitikmeot Inuit Association (KIA), Crown-Indigenous Relations and Northern Affairs (CIRNA) and from Environment and Climate Change Canada (ECCC). With respect to the QA/QC Plan, comments were received from CIRNA and ECCC. In response to these comments, LMI provided their responses on June 15, 2021, July 5, 2021, July 29, 2021, and August 17, 2021.

All correspondence relevant to these submissions is available from the NWB's FTP site using the following link:

<ftp://ftp.nwb-oen.ca/registry/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-LUP2032%20LMI/3%20TECH/J%20MONITORING/>

The Board notes that with respect to CIRNA's concern regarding the 5 years post closure monitoring term being inadequate to provide the evidence of physical and chemical stability and a firm recommendation to extend active monitoring to a ten (10) year term, followed by fifteen (15) years of passive monitoring, the NWB would like to remind that the currently approved *Final Closure and Reclamation Plan* (FCRP), dated August 2020, defines the active closure period (Phase 1) as "*the 2.5 year period during which active on-site reclamation work is completed*" and the passive closure period (Phase 2) as "*the period of (5) years following the completion of active reclamation work.*" Keeping in mind that these definitions were previously reviewed and agreed upon by all interested parties, the Board decided to retain the existing timelines in the submitted PCMP. However, the Board notes that all monitoring should be carried out as prescribed in the Water Licence until the Licence expires or until the closure objectives for the mine site outlined in Section 1.2 of the PCMP can be confirmed by CIRNAC and the NWB, which is also reflected in the following LMI's commitment:

Environmental monitoring will be conducted through Phase 2 to determine the success of the reclamation measures and confirm that the closure objectives have been achieved. The adaptive monitoring framework outlined in Section 6.2.6 allows for enhanced monitoring, if closure objectives of physical stability, chemical stability, and future use and aesthetics are not met by the end of the passive closure period in 2026. In this case, an extended passive monitoring period would be considered depending on the magnitude and spatial extent of the concern.

With respect to the KIA's and ECCC's concerns regarding inclusion of potential triggers that may warrant increases in monitoring or other remedial measures, LMI provided the following clarifications:

"The PCMP is a living working document that will be updated as new information and results are obtained. [...] This does not exclude the possibility that enhanced monitoring could be implemented, if required, under the adaptive management framework in the FCRP. In this case, changes in the monitoring requirements would be carried forward into updated version of the PCMP's."

"The Tailings Containment Area (TCA) has a clearly defined trigger for pH as outlined in Section 6.2.2. In this case, if TCA water quality begins to approach the minimum thresholds identified for the transition from active to passive closure monitoring, then increased monitoring will need to be employed. More general triggers are proposed for other Mine areas, and include, for example, an increase in a parameter concentration relative to pre-remediation conditions."

The area of concern is also dependent on the nature of the change that is observed in the monitoring dataset. This could be, for example, a change in seepage quality from the waste rock dome that indicates residual soils contamination that may be entering the receiving environment. The area of concern in this case, would be the seepage source, pathway, and receiving environment."

With respect to the KIA's and CIRNA's concerns regarding lower discharge pH limits, LMI clarified that any discharge from the TCA would still be "*subject to the Water Licence requirements until such time that the Water Licence is amended.*" Additionally, in its response, LMI committed to make changes to section 6.2.2 of the PCMP to remove reference to discharging from TCA at a PH of 5.5.

Additionally, the Licensee committed to continue visual inspection for signs of active oxidation and seepage during Phase 2 monitoring and to include this information in a PCMP addendum.

The Licensee also clarified that all non-hazardous waste materials generated by demolition of the landfill monitoring wells would be placed into the existing landfill facility and emphasized that "*LMI ... does not plan on placing anything other than waste rock into the Waste Rock Dome.*"

Additionally, the Licensee committed to update all figures that were found inadequate as per CIRNA and to update the wording in Section 1.4 of the PCMP to clarify that an Inspector has the authority to request additional monitoring or changes to monitoring without approval by the Board.

Considering the Board's technical review of the Post Closure Monitoring Plan, including Interveners comments/recommendations and Licensee's responses, the Board finds the PCMP functional and generally satisfying the requirement of Part J, Item 13 of the Licence, and by copy of this letter has approved the PCMP through the Board Motion No. 2021-A1-06, dated September 27, 2021, as required by Part J, Item 13 of the Licence, subject to conditions/commitments discussed above.

After completing the technical review of the QA/QC Plan entitled Water Quality Monitoring Plan and Water and Soil Quality Assurance/Quality Control Plan, dated August 2020, the Board acknowledges that this QA/QC Plan generally satisfies the Licence requirements, and by copy of this letter has accepted this QA/QC Plan, as required by Part J, Item 7 of the Licence. The Board commends the Licensee's commitment to address all comments provided by CIRNA and ECCC in the next version of the QA/QC Plan to be provided to the NWB with the 2021 Annual Report.

The NWB also notes that in their comments for the QA/QC Plan, ECCC recommended "*removing daily cyanide monitoring requirements, reducing them to quarterly monitoring during discharge as all of the 2018 monitoring results were below detection limits.*" LMI further agreed with this proposal, as follows: "*LMI would support ECCC's recommendation that the NWB consider removing daily cyanide monitoring requirements, reducing them to quarterly monitoring during discharge under 2AM-LUP2032 – Schedule J, Table 1.*"

The Board would like to remind the Licensee that while such revisions can be processed in accordance with Part B, Item 17 of the Licence without necessarily requiring an "Amendment" to the Licence, the NWB will appreciate if the Licensee submit an official request for modification of Schedule J, Table 1 which will allow the Board to initiate a publicly open and transparent process.

Should you have any questions, please feel free to contact the undersigned at (867) 360-6338 (extension 29) or sergey.kuflevskiy@nwb-oen.ca, at your convenience.

Sincerely,



Sergey Kuflevskiy
Technical Advisor
NUNAVUT WATER BOARD

Cc: Distribution List – Lupin