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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

File No.: 2AM-LUP1520 /
Amendment Request

March 28, 2017

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RE: Licence No. 2AM-LUP1520 – Nunavut Water Board (NWB) Decision Regarding Request of Indigenous and Northern Affairs Canada (INAC) under Part C, Item 3 of the Licence to Amend the Amount of Security Held under the Licence

As set out in the Nunavut Water Board's (NWB or Board) Decision¹ recommending the issuance of Type "A" Water Licence No. 2AM-LUP1520 (the Water Licence) in 2015 and reaffirmed by the Board during the Board's revisiting of the amount of reclamation security,² as subsequently required by the Minister of Indigenous and Northern Affairs Canada (the Minister), the amount of financial security fixed by the Board and required to be posted by the Licensee, Lupin Mines Incorporated (LMI or the Licensee) under Part C, Item 1 of the Water Licence, is currently \$25.5 million. By virtue of amendments to the Water Licence issued by the NWB and approved by the Minister, Part C, Item 3 of the Water Licence allows for either the Licensee or the Minister to

¹ Nunavut Water Board, Reasons for Decision, 2AM-LUP1520, May 15, 2015 at pp. 40-47.

² Nunavut Water Board, Type "A" Water Licence No. 2AM-LUP1520 – Renewal and Amendment, Further Consideration of Quantum of Security, August 21, 2015 at pp. 5-8.

apply to change the amount of security that must be held under Part C of the Licence upon the provision of evidence in support of such a request. On January 22, 2016, the NWB received a request from Indigenous and Northern Affairs Canada (INAC) as set out under Part C, Item 3, requesting that the amount of reclamation security required under the Licence be increased from \$25.5 million to \$45.5 million (the Amendment Request). As outlined in detail in the decision that follows, the Board's duly appointed decision-making Panel³ for this file, the Lupin Panel (P11 or the Panel) met on March 17, 2017 and by Motions No. 2016-17-P11-05 and 2016-17-P11-06 has decided the following respectively:

- To amend Part C, Item 1 of Licence No. 2AM-LUP1520 to approve an increase in reclamation security from \$25.5 million to \$34.65 million, and also to amend related requirements set out in Part I, Item 2 (Amendment No. 1); and
- To provide this decision and amendment to Licence No. 2AM-LUP1520 (Amendment No. 1) to the Minister for her review and approval.

The amount of security required to be posted following the Panel's consideration of the Amendment Request is based on an estimate of the highest reclamation liability for land and water associated with the Mining undertaking at the Lupin Mine, a gold mine located approximately 285 kilometres southeast of Kugluktuk, in the Kitikmeot Region of Nunavut. The Lupin Mine has been under care and maintenance since 2005, but as indicated by LMI during the Board's consideration of the Water Licence renewal and amendment in 2014-2015, the resumption of active mining operations is planned for the site at some time in the near future.

The Amendment Request under Part C, Item 3 of the Water Licence

On January 22, 2016, the NWB received a request from Indigenous and Northern Affairs Canada (INAC) to amend Type "A" Water Licence No. 2AM-LUP1520 (the Water Licence) as provided for under Part C, Item 3 of the Water Licence (the Amendment Request). The scope of the Amendment Request was limited to a change in the amount of security held under the Licence under Part C, Item 1. Specifically, INAC requested that the reclamation security held under the Licence be increased from \$25.5 million to \$45.5 million.

In initial support of the Amendment Request, INAC provided the following:

- A cover letter dated January 22, 2016 requesting that the Board increase the amount of security required to be held under the Water Licence, with the following attachments provided in support of INAC's request:
 - Closure Cost estimate report prepared by ARCADIS for INAC (October 22, 2015) in support of the revised estimate reclamation estimate of \$45,545,336; and
 - Assessment of Potential Fugitive Tailings Report prepared by ARCADIS for INAC (October 30, 2015).

³ The Panel was appointed by the Board as provided for under s. 29(1) of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*, S.C. 2002, c. 10, which states:

The Board may establish panels of the Board and delegate any of its powers, duties and functions to them.

These materials are available from the Board's public registry at the following link:

<http://www.nwb-oen.ca/public/registry/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-LUP1520%20LMI/1%20APPLICATION/2016%20Amendment/>

The Procedural History of the Amendment Request

Although a detailed summary of key activities and documentation supporting INAC's January 22, 2016 request to increase the amount of reclamation security required under the Licence (the Amendment Request) is attached as Appendix A, the NWB specifically highlights three key procedural aspects of the Board's consideration of the Amendment Request below.

Parties are also invited to review all non-confidential information associated with the Board's consideration of the Amendment Request on its public registry. For further details, consult the NWB's public registry using the following link:

[http://www.nwb-oen.ca/public/registry/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-LUP1520%20LMI/3%20TECH/2%20SECURITY%20\(C\)/2016/](http://www.nwb-oen.ca/public/registry/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-LUP1520%20LMI/3%20TECH/2%20SECURITY%20(C)/2016/)

The first key procedural aspect highlighted by the Board relates to the timeline for the Board's processing of the Amendment Request. Although the Amendment Request was filed with, and acknowledged by the Board more than one year ago and it therefore appears on its face that the Board has exceeded the nine (9) month timeline for processing an amendment as set out in s. 55.2 of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*, S.C. 2002, c. 10 (NWNSRTA), the Board notes that under s. 55.4 of the NWNSRTA, the time spent by the Board awaiting receipt of information and studies from the applicant, INAC and the Licensee, LMI, is not included in the calculation of the legislated time limit. As set out in the attached Appendix A, approximately half of the fourteen (14) months that elapsed during the NWB's consideration of the Amendment Request has consisted of the Board awaiting information and submissions from either LMI or INAC. Additional time that is also excluded from the Board's processing timeline involved the Board awaiting information from the parties during several extensions of comment and submission deadlines that were requested by the parties and were granted by the Board throughout the Board's processing of the Amendment Request. Reflecting these circumstances, the Board has not exceeded the time limit in s. 55.2 of the NWNSRTA and has not, therefore, sought an extension to the timeline for processing the Amendment Request under the NWNSRTA.

Secondly, the Board also wishes to highlight that as outlined in the Board's correspondence on February 18, 2016 and as reiterated several times during the Board's consideration of the Amendment Request, the Board concluded that the amendment to reclamation security as requested by INAC does not constitute an amendment to the use, flow or quality of water or an alteration to the term of the Water Licence. On this basis, the Board has exercised the Board's discretion to not hold a Public Hearing prior to the disposition of the Amendment Request (as set out in s. 9 of the *Nunavut Waters Regulations*, SOR/2013-69).⁴

⁴ As set out in s. 9(1):

The third procedural aspect in the Board's consideration of the Amendment Request that the Board wishes to highlight involves the Board's retention of a third party reclamation consultant/contractor to assist the Board. When it became apparent that there were significant divergences and no likelihood of agreement about some key assumptions underlying the reclamation security estimates of LMI and INAC, the NWB decided, in August 2016, to retain a third party reclamation consultant/contractor to review the submissions of the parties provided to date and to provide recommendations to the NWB regarding an appropriate reclamation security estimate.⁵ The NWB consulted with LMI and INAC to identify a suitable and neutral third party reclamation consultant/contractor and Knight Piésold (KP) was retained by the Board to complete this work. At the request of the parties, representatives from KP, LMI, INAC and the NWB attended a site visit at the Lupin Mine Site on October 6 and 7, 2016 to supplement KP's desktop review of the LMI and INAC reclamation estimates. In early December 2016 the NWB circulated KP's Third Party Review Report to the parties, posted the Report to the registry and invited interested parties to provide the Board with any comments on the Report by mid-January 2017. Following the submission of comments by LMI and INAC, the Board hosted a teleconference on February 17, 2017 to give the parties an opportunity to discuss KP's Third Party Review Report and to provide their final comments to the Board staff prior to the Amendment Request being remitted to the Panel for decision-making.

The NWB's Jurisdiction to Fix the Amount of Security Required under the Water Licence

The Board's general jurisdiction to require a licensee to furnish security is established under s. 76 of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* as follows:

76. (1) The Board may require an applicant, a licensee or a prospective assignee to furnish and maintain security with the Minister in the form, of the nature, subject to such terms and conditions and in an amount prescribed by, or determined in accordance with, the regulations or that is satisfactory to the Minister.

The limits on the Board's assessment of the amount of reclamation security are set out under s. 10 of the *Nunavut Waters Regulations*, SOR/2013-69 as follows:

10. (1) For the purposes of subsection 76(1) of the Act, the Board may fix the amount of security required to be furnished by an applicant for a licence, a licensee or a prospective assignee in an amount not exceeding the aggregate of
(a) the costs of the abandonment of the undertaking;

For the purposes of section 13.7.3 of the Agreement and subsection 52(1) of the Act, no public hearing is required in respect of an application for (a) an amendment to a type A licence that does not affect the use, flow or quality of waters or alter the term of the licence;

⁵ Section 30 of the NWNSTRA permits the NWB to retain such a third party contractor/consultant on the following basis:

The Board may...engage the services of such agents, advisers and experts as are necessary for the proper conduct of its business...

- (b) the costs of the restoration of the site of the undertaking;*
- (c) the costs of any ongoing measures that may remain to be taken after the abandonment of the undertaking; and*
- (d) the compensation that a person, including the designated Inuit organization, who is adversely affected by the use of waters or deposit of waste may be entitled to under section 13 of the Act.*

In respect of this Licence specifically, in 2015 when the Board issued the Water Licence, there was a considerable focus on the appropriate amount of reclamation security. The Board's decision to maintain the amount of reclamation security under the renewed and amended licence at \$25.5 million became the basis for then Minister Valcourt's initial decision to reject the Board's decision to issue a renewed and amended licence for the undertaking. In his letter rejecting the issuance of the Water Licence, he requested that the Board reconsider the amount of reclamation security fixed by the Board under the Water Licence in order to ensure that the amount required to be posted under Part C, Item 1 of the Water Licence was adequate.⁶

In response, the Board provided INAC and LMI with an opportunity to provide the NWB with additional information that had not been provided during the Public Hearing to demonstrate that the amount was or was not adequate. Following the Board's consideration of the additional submissions of the parties at that time, the Board decided the following:

Consistent with the Board's original decision and as set out in Part C, Item 1 of the Proposed Licence, the Board has concluded that the evidence before the Board indicates that the \$25.5 million reclamation estimate provided by LMI is a more reasonable reflection of: 1) the costs of the abandonment of the undertaking; 2) the costs of the restoration of the site of the undertaking; and 3) the costs of any ongoing measures that may remain to be taken after the abandonment of the undertaking. The Board does not find that the AANDC [as the Ministry was then referenced, now INAC] estimate is grounded in a current and accurate assessment of the existing site conditions, nor was the Board provided with a compelling basis to support adopting the worst case scenario assumptions and a significant contingency for uncertainty.⁷

Although the Board was not prepared to amend the amount of security in August 2015, the Board did note that INAC had plans for a site visit in the Fall of 2015 to support the updating and refinement of the reclamation estimate provided by INAC during the Board's consideration of LMI's 2014 application to amend and renew the previous water licence. In order to allow INAC to bring this updated information before the Board with a request to amend the amount of security fixed under the Water Licence, the Board made an amendment to Part C, Item 3 of the Water Licence as follows:

In trying to balance the expectations of all licensees, and the Applicant in respect of this Application specifically, for certainty and finality under a water licence with the on-going public interest in ensuring that the reclamation security in place remains adequate and

⁶ Correspondence of the Honourable Minister B. Valcourt to T. Kabloona, Chairperson, NWB, June 23, 2015 at p. 3.

⁷ Nunavut Water Board, Type "A" Water Licence No. 2AM-LUP1520 – Renewal and Amendment, Further Consideration of Quantum of Security, August 21, 2015 at p. 7.

appropriate throughout the term of a licence, the Board has determined that it is appropriate to replace the current term and condition under Part C, Item 38 [sic 3] of the Proposed Licence with an amended term and condition. While the original term and condition only recognizes the ability of LMI to trigger a change to the amount of security to be held under the Proposed Licence, the Board's suggested substitute clause would expressly allow both the Minister and the Applicant to apply for an amendment to the amount of security required to be held under Part C, Item 1, whenever either party has evidence to support such an amendment. The Board's recommended replacement of Part C, Item 3 would, for example, allow AANDC to apply to update the security amount if the updated reclamation estimate submitted to the Board in November 2015 supports that a reassessment of the adequacy of the security held under the Proposed Licence is warranted.⁸

On October 5, 2015 the Minister approved the issuance of the renewed and amended Water Licence. The terms and conditions in relation to fixing and amending the amount of security that should be held under the Water Licence are set out as follows under Part C of the Water Licence:

- 1. The Licensee shall, within sixty (60) days following approval of the Licence by the Minister, furnish and maintain reclamation security with the Minister, in the amount of \$25.5 million dollars, in the form that is satisfactory to the Minister.*
- 2. The Licensee shall furnish and maintain such further or other amounts as may be required by the Board based on required periodic estimates of current mine reclamation liability.*
- 3. The Licensee or the Minister may apply to change the amount of security held under Part C, Item 1 and/or Part C, Item 2 of the Licence. Any request to change the amount of security shall be supplemented by submission(s) that include supporting evidence to justify the request and will be processed by the Board as an amendment to the terms and conditions of the Licence.*
- 4. The Licensee shall, in the year 2017, reassess and update the reclamation security for the Project and submit to the Board for review a copy of the updated assessment on or before September 30, 2017.*
- 5. The Licensee shall, with the exception of an amendment application submitted by the Minister under Part C, Item 3, submit an updated security assessment as part of any application to renew and/or amend the Licence, or notification to commence active reclamation of the Project site, if the application is submitted prior to, or subsequent to the assessment required under Part C, Item 5. The updated security assessment shall take into consideration the latest version of RECLAIM and address any changes to the reclamation security previously assigned under Part C, Items 1, 2, 3, 4, and 5 as well as any changes in the Project scope associated with the application.*

⁸ Nunavut Water Board, Type "A" Water Licence No. 2AM-LUP1520 – Renewal and Amendment, Further Consideration of Quantum of Security, August 21, 2015 at p. 8.

Summary of Submissions Received during the Board's Consideration of the Amendment Request

During the course of the Board's review of the Amendment Request, there were two distinct bases for technical comments and procedural and process comments provided by LMI and INAC. The first focus was on INAC's Amendment Request and the second was on the Knight Piésold Third Party Review and associated Third Party Review Report. The summary of submissions provided below outlines both sets of submissions separately. Please note that the Board considered the submissions filed in respect of the Amendment Request in their entirety. The following summaries of the submissions are provided for ease of reference only. For a full understanding of the information considered by the Board in respect of the Amendment Request, please consult the original materials as filed on the NWB's public registry (at the links provided above).

Submissions Related to the Amendment Request

LMI's Submissions

February 9, 2016:

- LMI expressed the view that INAC's Amendment Request did not meet the requirement as outlined under Part C, Item 3 of the Licence to provide evidence to support the Amendment Request because INAC did not present any evidence of a change in circumstances regarding the reclamation estimate for the project, but instead relied on the previous arguments put forward by INAC during the Board's consideration of the 2014 renewal and amendment application related to worst-case scenario and uncertainties; and
- LMI suggested that INAC's reliance on the Final RECLAIM Estimate dated October 22, 2015 to support an increase in security was in actuality not based on new evidence.

March 25, 2016:

- LMI asserted that INAC's RECLAIM estimate (as prepared by INAC's consultant, ARCADIS) was mostly a recalculation that included new rates and not any substantive new information regarding the current site conditions. In addition, LMI stated that INAC's estimate was not supported by contractors' estimates but instead relied solely on RECLAIM unit rates or INAC's contractors' experience with other projects;
- LMI indicated that INAC's estimate did not fully account for changes or improvement in site conditions in some cases and reclamation measures that have been successfully undertaken; and
- LMI indicated that sampling conducted on behalf of LMI suggested that the tailings deposits are historical in nature and may not be current deposits and indicative of on-going tailings deposition.

August 10, 2016:

- LMI reiterated that although LMI continued to assert that the December 2014 estimate of reclamation security, which is approximately \$24.1 million, is reasonable, LMI agreed that because \$25.5 million had been posted under the previous Water Licence, LMI would not request a reduction to the security posted under the Water Licence;
- LMI addressed the key differences between INAC's and LMI's submissions arising from

differing assumptions, unit cost calculations and cost allocations for Tailings Management, Mobilization/Demobilization, Management of Chemicals, and Contingency; and

- LMI also noted that since INAC's site visit in 2015, additional equipment has been returned to the site, and LMI backhauled additional hazardous wastes for disposal off-site.

INAC's Submissions

June 30, 2016:

- INAC stated that, based on their updated estimate, INAC had concluded that LMI's reclamation estimate and the current security posted under the Water Licence of \$25.5 million is inadequate and that INAC's reclamation security estimate of \$45.554 million is more appropriate for potential remediation of the site;
- The approximately \$20 million difference between INAC's and LMI's estimates was largely attributed to higher costs in INAC's estimate associated with Tailings Management, Mobilization and Demobilization, Managing Chemicals, and Contingency and INAC outlined why the Board should prefer INAC's estimates over LMI's estimates.

September 12, 2016

- INAC reiterated its position that the reclamation security for the project should be set at \$45.5 million; and
- INAC provided additional information regarding agenda items discussed during the teleconferences held in August for the Amendment Request.

Submissions Related to the Knight Piésold Third Party Review Report

The Knight Piésold Third Party Review Report

As noted above, as part of the NWB's licensing process for INAC's Amendment Request, on the basis of consultation and input received from LMI and INAC as to acceptable consultants and scope, in September the NWB retained Knight Piésold of North Bay, Ontario (KP) to undertake a third party review of the security estimates and information provided by INAC and LMI.

The draft scope of work circulated to INAC, LMI and posted on the NWB public registry in the Board's correspondence on September 8, 2016 required the third party reclamation consultant/contractor to conduct their review of LMI's reclamation security estimate and INAC's reclamation security estimate with an awareness of the following outstanding issues where there was disagreement:

- a. Effect and extent of material changes to site conditions since the Licence was issued in 2015:
 - i. Increased petroleum hydrocarbon contamination flagged by INAC over that included in LMI's original estimate;
 - ii. Remedial/waste management work completed by LMI since LMI/INAC estimates prepared; and
 - iii. Spills/releases or other additional contaminant impacts identified since LMI /INAC estimates prepared;

- b. Accounting for interim care and maintenance;
- c. Appropriate term for post-closure monitoring and maintenance;
- d. Closure planning costs (including potential amendments to the Licence and associated hearings, applications and reports);
- e. Use of fuel left on-site (and contribution to mobilization and demobilization costs as well as waste disposal costs);
- f. Tailings cover requirements (past, existing and future during 5-year term of the Licence);
- g. Changes in unit rates since LMI/INAC estimates prepared;
- h. Chemical and waste management/disposal requirements upon site closure and reclamation;
- i. Mobilization/De-mobilization requirements for equipment required to complete closure and reclamation;
- j. Selection of appropriate contingency amount (overall and in specific sections); and
- k. Potential “double counting” in INAC’s building decommissioning estimates (use of LMI’s higher unit costs without the recognition that these costs included a number of items that were then added on top of the unit costs in other sections of INAC’s estimate).

The draft scope of work also required Knight Piésold to provide the NWB with a report summarizing their findings regarding an acceptable security estimate for the undertaking (INAC’s value, LMI’s value or a value derived from the analysis of both INAC’s and LMI’s estimate).

Aspects of the Knight Piésold review included a visit to the Lupin Mine Site along with representatives from the NWB, INAC, and LMI, October 6 – 7, 2016. Following the site visit, KP provided the NWB with a written site visit report. In addition, KP reviewed the estimates provided by both INAC and LMI in addition to relevant management plans and guidelines to prepare its third party review report.

On December 7, 2016, the NWB received and distributed for technical comment and public review the Third Party Review Report generated by Knight Piésold (KP). The KP Third Party Review Report examined the reclamation security proposed by LMI and INAC and made recommendations regarding direct and indirect costs as well as overall reclamation security for the project. The following summarizes key issues discussed in the Third Party Review Report:

- KP noted that there were disagreements between the parties on the following direct cost items: Tailings management; Rock Pile; Building and Equipment; Chemicals/Contaminated Soil Management; and Interim Care and Maintenance;
- KP also identified that there were differences in the LMI and INAC estimates with respect to indirect cost items such as mobilization/demobilization, post-closure monitoring and maintenance, engineering, project management, health and safety monitoring and QA/QC,

bonding insurance, and contingency;

- KP reviewed the estimates and assumptions of both LMI and INAC and determined that a reasonable estimate of the amount of reclamation security for the project was \$34.650 million. KP based this estimate on:
 - The unit rates set out in the current version of RECLAIM (version 7.0);
 - Available guidance from the Nunavut Mine Reclamation Policy and the MacKenzie Valley Land and Water Board draft guidelines for developing reclamation security estimates;
 - Consistency with the Interim Abandonment and Reclamation Plan for the site (IARP); and
 - KP's own experience in estimating mine closure costs and supervising mine reclamation programs.

KP expressly identified that the estimate did not include a technical review of the adequacy of closure measures proposed in the IARP and did not verify quantities presented in the Parties' reclamation security estimates.

KP's findings in general were as follows:

KP found that despite areas of substantial disagreement between the Parties, there were items and components where there was close alignment between the estimates. It is evident that both Parties had given careful consideration in developing their respective reclamation security estimates. Though the mine owner's costs [LMI] were generally lower than INACs, there were a number of site-specific unit rates applied in the owner's cost estimate that were at the upper end or higher than the most recent RECLAIM unit rates. There were several instances where KP's recommended cost estimates were lower than one or both parties.⁹

KP made the following specific findings:¹⁰

- Direct costs
 - **Underground Mine:** KP's estimate differed slightly from INAC's estimate in terms of the costs to reclaim the underground mine based on KP's acceptance that hazardous materials have largely been removed from the underground.
 - **Tailings Containment Area:** KP's estimate differed from INAC's estimate based on KP's accepting that lesser quantities of cover would be required (consistent with the IARP estimate of cover), but was higher than LMI's estimate based on higher unit rates adopted by KP.
 - **Rock Pile:** KP noted that the discrepancy between the parties was based on unit rates to relocate acid-generating or metal leaching waste rock. KP adopted a more suitable unit rate based on studies and experience that was higher than LMI and lower than INAC.
 - **Buildings and Equipment:** Although KP made slightly different assumptions regarding less hazardous materials remaining in buildings on-site, KP also made

⁹ Knight Piésold, Third Party Technical Review of Reclamation Security Estimates for the Lupin Gold Mine, Nunavut, dated December 6, 2016, at p. ii.

¹⁰ Summarized and paraphrased for ease of reference from Knight Piésold, Third Party Technical Review of Reclamation Security Estimates for the Lupin Gold Mine, Nunavut, dated December 6, 2016, at p. iii-iv.

some differing unit assumptions, with the result that KP's recommended estimate for this category was similar to both LMI and INAC.

- **Chemicals/Contaminated Soil Management:** Noting this was an area of substantial disagreement between the parties, KP recommended that INAC's conservative assumption about hazardous material removal be used but that LMI's estimated quantity of contaminated soil be carried forward.
- **Interim Care and Maintenance:** KP noted that LMI did not include a cost for this aspect of reclamation in their estimate. Further, it was noted that INAC included this as an annual cost for 5 years in their estimate. KP concluded that the cost should be included, but that 3 years is a reasonable time period for interim care and maintenance.
- Indirect costs
 - **Mobilization/Demobilization:** KP noted that at the site visit it was agreed that the mobilization/ demobilization costs should be based on construction of only a portion of the winter road (assuming that the road will already be constructed to the Gahcho Kue Mine).
 - **Post-Closure Monitoring and Maintenance:** KP noted that INAC suggested a 100-year post-closure monitoring period on the basis that the tailings contained arsenic and may be acid-generating. KP recommended adopting LMI's period of 25 years as appropriate on the basis that long term/indefinite water treatment is not required.
 - **Engineering:** LMI estimated engineering costs should be 4% of direct costs and INAC estimated engineering costs to be 10% of direct costs. On the basis of the Mackenzie Valley Land and Water Board (MVLWB) draft guidelines, KP recommends engineering costs should be based on 8% of the direct costs, as a final Abandonment and Reclamation Plan remains to be developed.
 - **Project management:** KP accepted INAC's assumption that project management costs should be 5% of direct costs, not 4% as proposed by LMI.
 - **Health & Safety / Monitoring and QA/QC:** KP agreed with LMI that these costs are already included in the engineering, project management and contractor unit rates and should not also be included in a separate category.
 - **Bonding/ Insurance:** KP concluded that these costs are already included in third party contractor rates.
 - **Contingency:** KP concluded that the 10% contingency factor proposed by LMI is too low and that the 20% contingency factor proposed by INAC is too high. Based on the MVLWB guidance, KP adopted a 15% contingency factor as this more appropriately reflects the level of understanding of closure and reclamation costs associated with the site.

LMI's Submission

January 19, 2017

- LMI noted that many key areas of the Third Party Review Report supported LMI's assumptions and recommendations;
- However, LMI challenged the assumptions made by KP with respect to:
 - The costs included in KP's estimate of mobilization/demobilization for disposal of

- fuel remaining on-site as hazardous waste, and transporting replacement fuel to support reclamation to the site;
 - The camp rates; and
 - The basis for specific unit rates such as placement of cover and fill;
- LMI disagreed with INAC's suggestion that the 2016 IARP should not have been consulted by KP in the preparation of the Third Party Review Report;
- LMI stated that INAC appeared to have misunderstood KP's conclusion that no further security is required for additional contamination in the absence of further delineation studies; and
- LMI challenged INAC's conclusions that because KP's values for unit cost, direct cost and the 3-year period for interim care and maintenance differed from INAC's assumptions and were different than INAC's experience at other sites it should be assumed that the amount of security proposed by KP in the Third Party Review Report is inadequate.

February 20, 2017

- LMI provided additional information after the teleconference hosted by the NWB on February 17, 2017 to break out the air transportation costs for mobilization/demobilization of personnel as included in LMI's 2014 reclamation cost estimate. LMI also provided a break down of actual camp costs for the last four years as compared to the LMI estimate included in the 2014 reclamation cost estimate. LMI also clarified their position that any fuel remaining on-site at the time of reclamation should not be treated as a waste requiring disposal and should also be considered to be available to any third party responsible for carrying out reclamation at the site.

March 14, 2017

- LMI indicated disappointment that following the February 17, 2017 teleconference that KP did not issue an updated Report, as it is LMI's perspective that KP did not rely on the most up to date reclamation estimate provided by LMI after the original estimate that was submitted with the renewal Application in 2014.
- LMI also expressed their view that the Third Party Review Report largely represented an *"equal division between the various participants in the process"* rather than *"a fair and accurate review that considers the relevant evidence as well as any relevant agreements between the parties"*.
- On these bases, LMI concluded that: *"We object to KP's Report and where KP's estimate diverges from LMI/Golder's estimate, in our view the NWB should prefer the LMI/Golder estimate."*

INAC's Submission

January 19, 2017

- INAC expressed the view that as the basis for some of the assumptions in the Third Party Review Report was KP's review of different documents, assumptions, and observed site conditions that were not available to INAC during the preparation of INAC's 2015 estimate, a direct comparison of KP's and INAC's estimates is inappropriate and unlikely to arrive at the same outcome.
- Specifically, INAC noted that the Third Party Review Report made numerous references

to the Interim Abandonment and Reclamation Plan (2016) and a Norwest (2016) document. INAC noted that as the 2016 IARP is not yet approved by the NWB it is inappropriate for KP to base assumptions on the plans set out in the 2016 IARP as these may not, ultimately be the same as the plans actually approved by the NWB.

- INAC noted that differences between KP's and INAC's estimates can be accounted for by different unit cost or quantities assigned to different activities, and lower values generally assigned by KP for indirect costs;
- INAC indicated that KP's assumption that the period for care and maintenance should be 3 years rather than 5 years, is inconsistent with INAC's recent reclamation experiences;
- INAC indicated that KP's consideration of reclamation/remediation activities completed since INAC's August 2015 site visit were not appropriate;
- INAC challenged KP's assertion that until further delineation is conducted the quantity of contaminated soil to be remediated should not be based on INAC's projection of assumed additional contamination arising from observations of INAC's Field Operations personnel. INAC responded that the worst case assumption about the potential for contamination is warranted as reclamation security must be protective of the Crown against unsecured potential future liabilities; and
- INAC questioned whether the Third Party Review Report was validly within the scope of KP's retainer as it was INAC's understanding that KP would choose between the two reclamation security estimates already filed by LMI and INAC and would not be generating a third reclamation estimate. INAC indicated that it appeared that KP had generated their own reclamation estimate on which INAC was being asked to provide comments.

SUMMARY OF RECLAMATION ESTIMATES PROVIDED BY ALL PARTIES

Table 1 that follows summarizes the proposed reclamation estimates provided by the various parties initially at the time LMI submitted the Licence amendment and renewal in 2014 and as subsequently modified and updated during the Board's consideration of the Amendment Request.

Table 1:
Amount of Security as Provided in the Submissions of the Parties 2014-2016

Party -Submission	Reclamation Security Estimate	Difference Between Proposed Amount and Current Security
LMI – October 2014 Estimate	\$21,239,220	Propose decrease of \$4,260,780 to current security
LMI – December 2014	\$24,100,388	Propose decrease of \$1,399,612 to current security
LMI – As Expressed At the Public Hearing (February 2015) and in response to Amendment Request	\$25,500,000	Propose no change to current security
INAC – December 2014 Estimate	\$43,480,155	Propose increase of \$17,980,155 to current security
INAC – January 2016 Estimate	\$45,545,336	Propose increase of \$20,045,336 to current security
KP – December 2016	\$34,649,091	Propose increase of \$9,149,091 to current security

Key Differences in Assumptions Affecting the Parties’ Assessments of the Amount of Security

As discussed extensively by LMI and INAC in their written submissions there are four key issues that account for a significant portion of the differences (approximately 75%) between the estimates of LMI and INAC.

1. Tailings Area - a difference in unit rates for earthworks used by LMI and INAC, as well as a 30% increase from 2014 to 2015 in the RECLAIM model used by INAC. (Resulting in an approximately \$3.9 million difference);
2. Mobilization/Demobilization - A difference in the assumptions made about whether, upon reclamation by a third party, fuel that remains on-site will be usable (and if unusable whether the fuel will have to be disposed of as a hazardous waste as itemized in #3 below) and also will be available (i.e. unencumbered) for the contractor’s use. If assumed not to be usable and available, the additional cost of bringing fuel on-site must be included (~\$3.2 million difference);

3. Chemical/Special Waste Disposal – as noted in #2 above, there is was disagreement between the parties in relation to the management of fuel that may remain on-site at the time of reclamation as a waste. The INAC and KP estimates both assumed that the on-site fuel will be unusable at the time of reclamation, and therefore the fuel will have to be treated as a waste. (Approximately \$4.7 million difference)
4. INAC has assumed 20% contingency on direct costs as opposed to the 10% used by LMI. (\$3.5 - \$4 million difference). The KP estimate based on the guidance from the Mackenzie Valley Land and Water Board draft guidelines was 15% on direct costs.

In addition, upon review of the KP Third Party Review Report, the following two additional issues were identified as accounting for some of the differences between KP's estimate and the reclamation security estimates of INAC and LMI:

- Differences between the INAC and KP estimates of potential soil contamination in the tank farm area; and
- A difference between the KP estimated camp costs and the LMI estimated camp costs (as supported by information on actual camp costs).

The Board's Findings with Respect to Key Assumptions Affecting the Amount of Security

Unit Rate Cost Estimates -- General

Overall, the Board notes that a central difference in approach to the development of the reclamation security estimates between LMI, INAC and KP arises from LMI's reliance on actual costs to establish unit costs and the use by INAC and KP of estimated unit costs (see for example LMI's submission on camp costs filed with the Board on February 20, 2017). While the Board recognizes the importance of the reclamation security estimates adequately reflecting the practical reality of reclamation at a particular site, the Board must also be mindful that reclamation estimates need to be premised on the assumption that the Licensee, who is familiar with the site and has established working relationships with service providers such as camp caterers, charter operators, etc. will no longer be associated with the site and all of the existing relationships with contractors will also no longer be in place. To avoid a reclamation estimate becoming too closely tied to an individual Licensee and the specific contractual arrangements that the Licensee enjoys at a given point in time, assumptions made on the basis of actual costs must be compared to more general unit cost estimates as provided for in the RECLAIM model to ensure that the estimates truly represent not only the reality of actual costs but also the reality that it will not be the Licensee but a third party reclamation contractor carrying out the reclamation.

On this basis, the Board has accepted that adoption of reasonable unit costs based on estimates (the approach taken by INAC and KP) is the more appropriate approach when preparing a reclamation cost estimate that is premised on the assumption that the Licensee and any of their contractual and preferred pricing arrangements with third parties will not be available if INAC has to realize on the security posted under the Licence.

Unit Rate Cost Estimate -- Cover Placement on the Tailings Containment Area (TCA)

The unit rate used by LMI in their reclamation estimate was \$7.24/m³, and the RECLAIM 7 unit rate of \$9.30/m³ was adopted by INAC and KP. During the Board's consideration of the Amendment Request, LMI provided information that their actual costs for this type of work in 2016 was \$7.02 m³, and LMI argued that this substantiated the use of \$7.24/m³ in their reclamation estimate.

However, as noted in the first paragraph of this section, the adoption of unit rates based primarily on actual costs does not fully reflect that the development of a reclamation estimate is premised on the assumption that the Licensee is no longer present on-site and that a third party contractor will be retained to undertake the reclamation without the benefit of any third party contractor agreements between LMI and their suppliers or contractors. Consequently, the Board does not have reassurance that the reduced rates actually paid by LMI will be available in future to a third party contractor undertaking this work in future.

On this basis, the Board has concluded that the use of the standard RECLAIM 7 unit rates is to be preferred to the unit rates used by LMI.

Unit Rate Cost Estimate – Camp Costs

During the February 17, 2017 teleconference and in written follow up on February 20, 2017, LMI asserted that its actual costs at site over the past four years have averaged \$60 per person per day. While INAC and KP had adopted the higher end RECLAIM rate of \$175 per person per day.

Again, recognizing that there is no guarantee that a third party contractor would be able to support staff at the highly competitive rate obtained by LMI, the Board accepts that the use of the higher end RECLAIM rate of \$175 per person per day is prudent, reasonable and best reflects the standard approach to developing reclamation cost estimates.

The Use of Fuel Remaining On-site in the Reclamation

As identified during the renewal process, a central difference in base assumptions involved the question of whether any fuel that remained on-site at the time of the reclamation would (a) be usable and (b) if so whether the fuel would be made available to the third party contractor conducting the reclamation. The Board recognizes that LMI has undertaken sampling to establish that the current volume of fuel at the site (just under 2 million L of fuel by the most recent estimate provided by LMI during the February 17, 2017 teleconference) has been at the site approximately 5 years and is currently of sufficient quality to continue to be used. Although all parties conceded that the question of when/if the conditions at site will degrade the fuel and render it no longer usable was outside the scope of the expertise and investigations of the parties during the preparation of their estimates, LMI assumed the entire volume would be usable at closure and INAC and KP assumed none of the fuel remaining on-site would be usable and included disposal costs for this fuel and mobilization costs for bringing the fuel required to support site reclamation to the mine site.

LMI and INAC also discussed during the February 17, 2017 teleconference that there may be some tools such as contractual agreements that could be put into place to ensure that usable fuel would be available to a third party contractor, but INAC made it clear that this type of agreement should not result in fuel costs being removed from the aggregate reclamation security estimate, but perhaps could be considered by INAC as an additional form of security that could be combined

with security held in the usual form to make up the total reclamation security amount. As the Board recognizes that the discussion of this way of accounting for the fuel that may be available on-site is a very novel option that is in preliminary discussions only, the Board simply notes that INAC and KP have indicated that the standard approach is that there should be no reduction from the reclamation security estimate to reflect fuel that may remain on-site.

Although the Board recognizes that LMI has established that the fuel currently on-site continues to be usable, the Board also notes that there is considerable uncertainty regarding what the condition and quantity of the fuel remaining on-site will be in the future when reclamation activities commence. Given these uncertainties, the Board accepts INAC's and KP's views that it is standard practice in reclamation estimating to assume that on-site fuel cannot be used, will require disposal and that replacement fuel will need to be brought to site.

Assessing Extent of Tank Farm Contamination

The Board notes that LMI's estimate (as adopted by KP) assumes approximately 40,000 m³ of contaminated soil will require remediation. On the basis of visual observation of surface staining of soils around the satellite tank farm, INAC had asserted that this volume should be increased by 25%. Although INAC's inspection reports identify this surface staining, there was no evidence before the Board that would suggest that LMI's estimate of contaminated soil does not appropriately account for the impacts associated with the surface staining and the rationale for an increase of 25% was not before the Board. Based on the information before the Board to date, and in the absence of greater delineation of contamination in that area, the Board accepts that the use of LMI's estimate continues to be appropriate for the purpose of developing a reclamation security estimate.

Project Engineering, Project Management and Contingency Rates

LMI has asserted that, given that the site is developed and much of the reclamation planning has been undertaken the estimated engineering costs should be limited to 4% of direct costs. INAC, indicating that this aspect of the estimate should be based on the third party engineering costs, which would be more extensive than LMI's costs, advocated that the engineering costs should be 10% of direct costs. KP proposed a third rate of 8% of the direct costs, basing the rate on the Mackenzie Valley Land and Water Board (MVLWB) draft guidelines. The Board finds that the engineering costs as recommended by KP and based on the MVLWB guidance reflects that some of the engineering associated with the conduct of reclamation of the site has been developed and could likely be referenced by a third party contractor ultimately responsible for undertaking closure and reclamation, but that is reasonable to assume that some engineering would still be required to finalize these plans. On this basis, the Board has determined that it is reasonable to adopt 8% of direct costs to account for the engineering likely to be required by a third party undertaking reclamation.

With respect to project management costs, KP and INAC both adopted 5% of direct costs as an appropriate estimate for project management costs, while LMI proposed that 4% is appropriate. The Board has determined that, reflecting that the reclamation estimate should be based on the costs of a new third party becoming involved at the site it is reasonable to adopt the higher value of 5% to ensure that the resources necessary to properly manage the reclamation project are provided for.

With respect to the appropriate rate of contingency that should be built into the reclamation security estimate, LMI asserted that due to the extent of knowledge about the site and stage of

reclamation planning (with some reclamation activities having already commenced) that a contingency factor of 10%, which is at the lower end of the scale should be applied. In contrast, INAC indicated that there remain some significant unknowns at the site and that this factor must also reflect that there is always uncertainty associated with future reclamation by a third party contractor likely new to the site. Accordingly, INAC prepared their reclamation security estimate on the basis of a 20% contingency factor. Having reviewed both estimates and based on the MVLWB guidance, KP based the reclamation security estimate presented in the Third Party Review Report on adopting a 15% contingency factor.

The Board has determined that while there is considerable information available in respect of reclamation at the site in its current state that likely justifies a lower contingency than recommended by INAC, the Board also recognizes that there remain some uncertainties that would only be determined at the time of reclamation that support a higher contingency than was used by LMI. The Board accepts that the 15% contingency factor recommended by KP reasonably reflects the state of knowledge about the site balanced with the uncertainties surrounding reclamation into the future and as conducted by a third party contractor.

The Board's Disposition of the INAC Amendment Request

As detailed in the preceding section, the Board has determined that reflecting the Board's determinations in respect of the key assumptions that are reasonable and that provided the basis for the reclamation security estimates provided to the Board during the Board's consideration of the Amendment Request, the reclamation security estimate provided by KP in the Third Party Review Report accurately represents the costs of the abandonment of the undertaking, the costs of the restoration of the site surrounding the undertaking and the costs of any ongoing measures that may remain to be taken after the abandonment of the undertaking as required under s. 10 of the *Nunavut Waters Regulations*.

Consequently, by Motion 2016-17-P11-05, the Lupin Panel has decided to:

amend Part C, Item 1 of Licence No. 2AM-LUP1520 to approve an increase in reclamation security, from the current **\$25.5 million to \$34.65 million** and also to make related amendments to Part I, Item 2 of the Water Licence to reflect this change.

The Board highlights that, as outlined in Amendment No. 1, the additional **\$9.15 million** required to be filed under amended Part C, Item 1, must be filed within sixty (60) days following approval by the Minister of Amendment No. 1. In addition, the Board notes that the security posted under the Water Licence must be held in the form required under the *Nunavut Waters Regulations* and acceptable to the Minister of INAC.

As set out in s. 56 of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*, as the Board has recommended an amendment to the Water Licence, the Board is providing this decision and a copy of the Amendment (Licence No. 2AM-LUP1520 – Amendment No. 1), consisting of the amended sections of the Water Licence, to the Minister for her review and approval. The amendment will not take effect unless and until the Minister has approved Amendment No. 1.

If you have any questions or require further direction with respect to this matter, please contact the Board's Executive Director, Stephanie Autut at (867) 360-6338, ext: 22 or via e-mail: stephanie.autut@nwb-oen.ca or Director of Technical Services, David Hohnstein at his direct line (780) 443-4406 or via e-mail: david.hohnstein@nwb-oen.ca.

Regards,

NUNAVUT WATER BOARD

Thomas Kabloona
Chairperson

Appendix A: List of Key Documentation and Activities Associated with the Security Amendment Request

Date	Submission
January 22, 2016	NWB received INAC's request under Part C, Item 3 of the Water Licence to amend the amount of security required to be posted under Part C, Item of Licence No. 2AM-LUP1520 (the Water Licence) (the Amendment Request)
February 1, 2016	NWB acknowledged receipt of INAC's Amendment Request
February 9, 2016	NWB received comments from LMI regarding the adequacy of evidence provided by INAC to support the Amendment Request
February 18, 2016	NWB issued correspondence indicating that the request filed by INAC met the threshold requirements for the Board to consider the Amendment Request and inviting interested parties to provide comments on the request by March 18, 2016 (extended to March 25, 2016). The NWB identified that as the Amendment Request was not considered by the Board to be an amendment to the use, flow or quality of water or an alteration to the term of the Water Licence, the Board would not be required to hold a Public Hearing prior to the disposition of the Amendment Request (as set out in s. 9 of the <i>Nunavut Waters Regulations</i>).
March 25, 2016	NWB received a comment submission from LMI regarding the Amendment Request
April 20, 2016	NWB issued correspondence regarding the proposed next steps for the Board's consideration of INAC's Amendment request. The correspondence also included a request for INAC to address the issues raised in LMI's submission on or before May 20, 2016
May 2, 2016	NWB received a request from INAC to extend the deadline for comments from May 20, 2016 to June 20, 2016 to allow for LMI and INAC to have discussions and resolve issues
May 6, 2016	NWB granted INAC's request to extend the submission deadline to June 20, 2016 following consultation with LMI
June 17, 2016	NWB received another request from INAC to extend the deadline for INAC's submission from June 20 to 30, 2016
June 30, 2016	NWB received a submission from INAC in response to LMI's March 25, 2016 submission.
July 5, 2016	NWB issued follow-up correspondence regarding the process for the amendment request including details related to a teleconference tentatively scheduled for July 27, 2016 (rescheduled at the request of the parties to August 18, 2016)
August 8, 2016	NWB received the following documents from LMI: <ul style="list-style-type: none"> • Fuel Tank Decommissioning and Compliance Activities, Lupin Site, October 25, 2014 • Water Licence Inspection Form • LMI Labor Summary
August 11, 2016	NWB distributed the documents included in LMI's August 8, 2016

Date	Submission
	Submission
August 11, 2016	NWB received and distributed LMI's response to INAC's June 30, 2016 submission
August 8, 2016	NWB distributed a copy of the draft Agenda for the August 18, 2016 teleconference
August 17, 2016	NWB distributed a copy of the finalized agenda for the August 18, 2016 Teleconference
August 18, 2016 and August 24, 2016	The NWB hosted a Teleconference (originally scheduled for one day, August 18 and extended by agreement with the parties to August 24) to discuss outstanding technical issues and included a discussion of process, timing and outcome of NWB selection and appointment of a neutral third party reclamation contractor to review submissions of the parties provided to date and to provide recommendations to the NWB regarding an appropriate reclamation security estimate
August 19, 2016	NWB distributed correspondence that included a list of parties' commitments made during the August 18, 2016 Teleconference
August 29, 2016	NWB received a request from INAC to extend the deadline for INAC to provide information from September 6 to 9, 2016.
August 31, 2016	NWB requested public comments regarding INAC's extension request LMI provided a listing of suggested consultants that could be retained by the NWB to conduct the Third Party review
September 6, 2016	NWB received an additional request from INAC to extend the submission deadline for INAC's correspondence from September 9 to 12, 2016, which the NWB granted
September 8, 2016	NWB issued correspondence regarding the next steps in the Board's consideration of INAC's Amendment Request
September 12, 2016	NWB received and distributed a submission from LMI in accordance with commitments made during the August 18, 2016 Teleconference NWB received and distributed correspondence from INAC regarding a commitment made during the August 18, 2016 Teleconference.
October 6 and 7, 2016	Representatives from the NWB, LMI, INAC and Knight Piésold (the NWB's third party consultant/contractor) attend a site visit in support of the preparation of Knight Piésold's Report reviewing the amount of reclamation security as proposed by the LMI and INAC during the Board's review of the Amendment Request (KP's Third Party Review Report)
December 7, 2016	NWB distributed correspondence including KP's Third Party Review Report and invited interested parties to provide the Board with any comments on the report by January 12, 2017
December 20, 2016	NWB extended the deadline for submission of comments and recommendations on KP's Third Party Review Report by one week to January 19, 2017, as requested by INAC
January 19, 2017	NWB received INAC's submission regarding KP's Third Party Review Report

Date	Submission
	NWB received LMI's submissions regarding KP's Third Party Review Report
January 20, 2017	NWB distributed the submissions of INAC and LMI received on January 19, 2017
February 7, 2017	NWB issued correspondence to all parties regarding the remaining stages in the Board's consideration of the Amendment Request, including the scheduling of a teleconference for February 17, 2017 to solicit comments on KP's Third Party Review Report and reiterating that as the Amendment Request was not considered by the Board to be an amendment to the use, flow or quality of water or an alteration to the term of the Water Licence, the Board would not be holding a Public Hearing prior to the disposition of the Amendment Request (as set out in s. 9 of the <i>Nunavut Waters Regulations</i>)
February 15, 2017	NWB distributed a copy of the draft Agenda for the February 17, 2017 Teleconference and invited public comments
February 16, 2017	NWB distributed the finalized Agenda for the February 17, 2017 Teleconference
February 17, 2017	NWB hosted a teleconference with representation from LMI, INAC, Knight Piésold and the NWB to address comments and issues raised by the parties in respect of KP's Third Party Review Report and also to address general process-related matters arising from parties' comment submissions
February 20, 2017	LMI provided additional information to as promised during the February 17, 2017 Teleconference
March 10, 2017	NWB issued correspondence to the parties to confirm that based on the information exchanged during the teleconference and the subsequent information provided by LMI on February 20, 2017, KP's Third Party Review Report did not require any revisions and the Report would be considered by the NWB as filed in December, 2016. On this basis, the NWB indicated that the Amendment Request was being remitted to the NWB's duly appointed decision-making panel (Lupin Panel P11) and a written decision would be forthcoming.
March 14, 2017	LMI provided correspondence requesting a response from Knight Piésold as to why potential corrections to assumptions provided in KP's Third Party Review Report that may have been based on KP's "erroneous" consideration of LMI's original estimate (attached to the Water Licence Renewal and Amendment Application in 2014) rather than the updated December 2014 cost estimate were not considered to be necessary