

Date: September 30, 2015

- To: Oscar Flores, Mine Manager New Afton Mine
- Cc: Diane Howe, Deputy Chief Inspector, Reclamation and Permitting, MEM Heather Narynski, A/ Manager, Geotechnical Engineering, MEM

Re: <u>Review of Letter of Assurance Submission from June 30, 2015</u>

The Ministry of Energy and Mines (MEM) has engaged a consulting firm to evaluate the consistency and compliance of your letter of assurance in response to the Chief Inspector's orders issued on February 3, 2015. This review has determined that your submission satisfies the requirements of the order.

Below is a summary of the assessment made by your Qualified Professional Engineer (QPE) with associated plans/schedule to address the gaps identified:

Status of Foundation Condition

"Overconsolidated slickensided glaciolacustrine soil has been encountered over a 100 m length along the left abutment of Dam A, and in a single drill hole on the left end of Dam C. The majority of the New Afton and Pothook TSF dam footprints are founded on basal till, waste rock, or bedrock. The design model of the TSF was deemed satisfactory, but given the relatively local lateral extent of glaciolacustrine units defined by the Independent Expert Engineering Investigation and Review Panel in their report, additional test holes were prescribed to confirm that smaller deposits of potentially weaker materials did not exist to the extent that stability models would be affected."

The QPE has stated that:

• "Drilling has been completed at Dam A, and laboratory testing should be completed in July, 2015. Review of the recently-encountered glaciolacustrine material at Dam C is in progress. A site investigation report that includes dam foundation data collected in 2015 will be ready about 2 months after the final laboratory testing data are received. Stability assessments are currently underway and are expected to be completed by late July. Preliminary stability modeling of the existing TSF indicates that where glaciolacustrine materials have been encountered at Dam A and Dam C, the current design satisfies the required stability criteria. However, changes to the design of future raises at the left

abutment of Dam A may be required. This will likely include locking the downstream toe of this portion of the dam into existing topography by extending the downstream shell."

Status of Water Balance Adequacy

"The water balance for the New Afton mine is characterized as a "negative" water balance, i.e. mine operations are only maintained by make-up water imported from Kamloops Lake. It should be noted that the "negative" water balance also occurs even in wet years. The design of the facility allows for storage without discharge of an extreme storm event plus freeboard per the Canadian Dam Association's Dam Safety Guidelines (CDA 2013)."

Status of Filter Adequacy

"Satisfactory filter installation for TSF dams is supported by the construction record reporting. Given that much of the New Afton TSF dams and the Pothook dams are lined with a 60 mil LLDPE geomembrane, the traditional piping criteria are not applicable to these portions of the impoundment. However, the design considers that bedding material should not erode should it be subject to high seepage velocities caused by possible liner damage. BGC does not consider the record of construction for the South Dam and West Dam to be satisfactory."

The QPE has recommended that:

• "To mitigate potential issues with the South Dam and West Dam, BGC has proposed that the upstream face of the dams be lined with a 60 mil LLDPE geomembrane with bedding materials satisfying filter criteria. The retrofit is only possible because neither dam yet impounds any water or tailings. The construction of the retrofit is planned for early 2016 prior to the South and West Dams providing any containment of tailings or process affected water."

MEM supports the proposed plan of action. Please ensure that all work as outlined above is completed within the specified timeframe. MEM will be following-up by January 15, 2016 and 2017 to obtain a status update with respect to the work completed and commitments made.

The orders issued on February 3, 2015 have been requested to provide assurance the conditions at the Mount Polley dam do not exist in other facilities. Please ensure that you are meeting your other ongoing requirements to ensure Tailings Storage Facility safety with respect to the following:

- Satisfying any outstanding orders from previous Ministry inspection reports.
- Satisfying any outstanding recommendations from previous Dam Safety Inspections (DSI) or Dam Safety Reviews (DSR).

It is expected that you will ensure dam safety management is continuously reviewed, improved and refined throughout the life of mine.

Thank you for your submission to the orders of February 3, 2015.

Sincerely,

Al Hoffman, P. Eng. Chief Inspector of Mines Ministry of Energy and Mines