



Date: September 30, 2015

To: Kevin McMurren, Mine Manager
Barkerville Gold Mines Ltd., QR Mine

Cc: Diane Howe, Deputy Chief Inspector, Reclamation and Permitting, MEM
Heather Narynski, A/ Manager, Geotechnical Engineering, MEM

Re: **Review of Letter of Assurance Submission from June 30, 2015**

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

"The available foundation characterization data reviewed for the QR Mine TSF did not indicate the presence of glacio-lacustrine deposits. A review of the test pit logs indicated that the foundation predominantly consists of sandy and gravelly silty till deposits."

Status of Water Balance Adequacy

"The QR Mine TSF has not been filled to capacity and no further tailings are planned for deposition in the facility. The facility does not presently receive or hold water from mining operations. While seepage is currently collected, when the seepage return pumps are removed at closure the seepage has been calculated to exceed the maximum rate allowable to provide sufficient water cover over the impounded tailings after closure (KCB, 2010)."

The QPE has recommended that:

- *"The water balance should be revised to reflect planned conditions (once long-term planning regarding the facility is complete)."*
- *"Trial grouting program should be conducted and an overall seepage mitigation plan should be developed (once long-term planning regarding the facility is complete)."*

Status of Filter Adequacy

"Gaps exist within the as-built records of the dam fill zones. In addition, the design and the as-built gradations of the filters do not meet one or more of the assessed filter criteria. No immediate further assessment of the filters is deemed necessary in order to evaluate filter adequacy, based on the following: No documentation or observations of local deformations/washouts, voids, or piping are indicated; Filter performance has been demonstrated by clear seepage and retention of tailings in the impoundment; The low permeability core zones are wide in relation to the dam height and the upstream transition zones offer additional protection. There is, however, a requirement for ongoing monitoring of the seepage to check for continuing filter adequacy."

The QPE has recommended that:

- *"The need for slope monitoring equipment should be assessed. Slope monitoring needs to be developed during 2015 DSI (expected by end of Q3 2015)."*
- *"Continued monitoring of seepage from the facility is recommended, including for presence of suspended solids. (Ongoing)."*

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 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,

A handwritten signature in black ink, appearing to read 'Al Hoffman', is written over a horizontal line.

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