



**C.**

April 24, 2014

Julie L'Heureux  
Water Manager  
Snap Lake Mine  
De Beers Canada Inc.  
c/o Det'on Cho Logistics Ltd.  
101 McMillan Street, PO Box 2608  
Yellowknife, Northwest Territories X1A2P9

Dear Ms. L'Heureux;

Further to our discussion and our visit to Snap Lake in early March, we were asked to comment on the ability to provide a grout curtain as an impermeable barrier between the lake and the developed mine.

To accomplish this objective all known and unknown pathways that hydraulically connect the developed mine and the lake need to be grouted.

Upon review and analysis of the available data provided, we have determined that while this option is technically possible it is far from practical due to the following:

- a) There are 6 known families of faults hydraulically connecting the lake and the mine. Some faults are more than 2km long and approximately 30m wide. The time required to drill and grout even one of these faults would be extremely lengthy with a probable duration of 1 to 4 years per fault. The operation itself would be extremely costly (with estimates ranging from \$200 million upwards) and would have other cost implications through the impact of the mining production rates.
- b) It is our understanding that while there are some detailed reports on the hydraulic pathways, the information is still insufficient for a detailed grout program. This severely minimizes the possibility for precision grouting of the main feeder conduits and therefor limits the probability of success.
- c) There is limited information on the infill of the faults (such as percentages of fines, clays, etc.) which is important for a grouting program. Based on the provided information and what was actually observed, the infill of the faults may vary drastically therefore meaning that the permeability of these faults may also vary and may result in some formations that are not injectable through conventional permeation grouting techniques. Collection and analysis of the data needed would take a dedicated engineering team two or more years.
- d) The developed mine is a very large area. A complete grout curtain would have to cover the entire area taking several years of grouting operations (unless the inflow can be attributed to a relatively small and clearly defined point of entry – which, from our understanding it is not).
- e) A grout curtain located above the mining horizon may not provide a solution to the high TDS inflows as these inflows may have different driving forces therefore additional grouting may be required to seal these inflows.

In conclusion – while it is technically possible to grout the faults or other hydraulic paths (as if water can travel through a media, a type of grout can also travel through the same media); However, the geological mapping of the pathways may not be complete and the cost and time associated with such an investigation and grouting program would be enormous and therefore impractical.

We hope this answers your inquiry. Please contact me directly for further information or details.

Sincerely,

A handwritten signature in black ink, appearing to read "John B. Bann". The signature is fluid and cursive, with the first name "John" and last name "Bann" clearly distinguishable.

General Manager