



Snap Lake Environmental Monitoring Agency
Main Floor, Lahm Ridge Tower
4501 Franklin Avenue
P.O. Box 95, Yellowknife, NT X1A 2N1
Phone: 867-765-0961 FAX: 867-765-0963
Website: www.slema.ca

Marc Casas
Regulatory Officer
Mackenzie Valley Land and Water Board
7th Floor – 4910 50th Avenue
P.O.Box 2130
Yellowknife, NT X1A 2P6

File: MV2001L2-0002

July 20, 2012

Re: 2011 Annual Reporting

Dear Mr. Casas,

The Snap Lake Environmental Monitoring Agency (SLEMA) would like to provide the Mackenzie Valley Land and Water Board (MVLWB) with the following comments on the annual reports reviewed as below.

- Water Licence 2011 Annual Report,
 - Appendix I 2011 Acid Rock Drainage (ARD) and Geochemistry Monitoring Report (2011 ARD), and
 - Appendix II 2011 Dam Inspection Report.
- Aquatic Effects Monitoring Program 2011 Annual Report (2011 AEMP, Water Quality),
- Streamflow and Lake Elevation Monitoring Program 2011 Annual Report, and
- Air Quality, Meteorological Monitoring and Emissions Reporting 2011 Annual Report

1. Water Licence 2011 Annual Report

Section 22 of the Report summarizes the sampling activities at each SNP station, but does not summarize the compliance of each station as previous annual reports did. It is recommended that De Beers provide compliance summary in the Report.



Snap Lake Environmental Monitoring Agency
Main Floor, Lahm Ridge Tower
4501 Franklin Avenue
P.O. Box 95, Yellowknife, NT X1A 2N1
Phone: 867-765-0961 FAX: 867-765-0963
Website: www.slema.ca

Section 25 of the Report summarizes 32 events of unauthorized discharge (spill), but some information is out of date, e.g. the volume of 11-391 and 11-469. Table 25-1 should be updated.

2. 2011 ARD

No concerns are raised. The report recommendations are supported.

3. 2011 Dam Inspection Report

The Engineer from Golder Associates Ltd. identified a lot of issues via site inspection. SLEMA appreciate his key observations and recommendations, which are highlighted as follow.

- A significant quantity of water was observed in the North Pile sumps and Water Management Pond (WMP) during the geotechnical inspection.
 - The design intent of the sumps is to be maintained at the minimum practicable levels at all times.
 - The practice of pumping water into the North Pile sumps for storage violates the design objective of these structures; the sumps are not water storage facilities.
- The mine plan is not communicated to the various mine departments within De Beers; this is a key risk to the operations at the Snap Lake Mine
 - The quantity and schedule of waste rock. Ore, Processed Kimberlite (PK) streams, and waste streams must be communicated to key personnel at the mine.
 - In the absence of an up-to-date and communicated mine plan, the performance of the North Pile operation and development will be challenged to continue and will likely result in unwarranted future operational and environmental risks
- A monitoring program for the North Pile facility and the WMP dams is in place. Data are being collected by De Beers; however, there are major deficiencies in interpretation and use of those data.
 - De Beers has not interpreted and summarized those data in a reasonably usable format for operational purposes.
 - Golder recommends that De Beers form their own suitably staffed geotechnical department for the North Pile at the Snap Lake Mine.
 - This department would liaise with De Beers' key personnel involved in the operation of the North Pile to ensure timely and effective communication and coordination.



Snap Lake Environmental Monitoring Agency
Main Floor, Lahm Ridge Tower
4501 Franklin Avenue
P.O. Box 95, Yellowknife, NT X1A 2N1
Phone: 867-765-0961 FAX: 867-765-0963
Website: www.slema.ca

The Report provides evidence for SLEMA to question the effectiveness of mine site Environmental Management System (EMS/ISO 14001: 2004), which is said to have been certified since the mine construction.

- There were evident deficiencies in the Plan-Do-Check-Act cycle of De Beers mine site EMS. Consequently, those deficiencies resulted in poor water management, and incidents/spills reoccurred in the North Pile.

SLEMA would like to reaffirm the recommendation made in the letter dated December 6, 2011.

- De Beers to overhaul their EMS, and
- De Beers to submit their EMS audit report in a timely manner.

4. 2011 AEMP (Water Quality)

SLEMA has been concerned about the uptrend of Total Dissolved Solids (TDS) levels in Snap Lake. Figure 2-8 and 2-9 of the Report show that observed whole lake average TDS levels in 2011 are higher than those predicted in 2011 modeling, and the cumulative load of TDS in 2011 is close to the EA prediction, and higher than the Upper Bound Load used in 2011 modeling, respectively. It is also stated in the Report that if predictions continue to diverge from observed conditions, the model will be refined as necessary; and the model will be reviewed in 2013. SLEMA is looking forward to reviewing the refined model.

Reporting of Water Quality and Fish Tasting is satisfactory. The efforts in targeted Water Quality Monitoring Programs, especially the Downstream Sampling Program, and application of Weight of Evidence approach in Quality Integration, are appreciated. No concerns are raised for 2011 AEMP Water Quality Monitoring.

5. Streamflow and Lake Elevation Monitoring Program 2011 Annual Report

No concerns are raised.



Snap Lake Environmental Monitoring Agency
Main Floor, Lahm Ridge Tower
4501 Franklin Avenue
P.O. Box 95, Yellowknife, NT X1A 2N1
Phone: 867-765-0961 FAX: 867-765-0963
Website: www.slema.ca

6. Air Quality, Meteorological Monitoring and Emissions Reporting 2011 Annual Report

SLEMA is concerned with the poor data collection of total precipitation (rainfall and snow) and particulate monitoring. It is recommended that De Beers improve the data collection of total precipitation and particulate monitoring. Apart from these concerns there are no further issues.

If you have any questions whatsoever please feel free to contact the undersigned or David White at 867-765-0961 / dwhite@slema.ca.

Sincerely,

A handwritten signature in black ink, appearing to read 'J. Weyallon', on a light blue background.

Johnny Weyallon
Chairperson