



Snap Lake Environmental Monitoring Agency
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Laurie McGregor
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Conservation, Assessment and Monitoring
Department of Environment and Natural Resources
Government of the Northwest Territories
P.O. Box 1320, Yellowknife, NT X1A 2L9

November 27, 2014

Subject: De Beers 2013 Environmental Agreement Annual Report

Dear Ms. McGregor,

Snap Lake Environmental Monitoring Agency (SLEMA) has reviewed the 2013 Environmental Agreement Annual Report (EAAR 2013), and would like to provide the Department of Environment and Natural Resources (ENR) the following comments.

De Beers adequately summarized the monitoring activities and results for 2013, and improved the report presentation by adding three photos of the North Pile, which show changes from 2011 to 2013. However, De Beers failed to acknowledge the non-compliance event that happened in 2013.

De Beers reported the exceedance of Chloride, which occurred in September and October 2013, in Table 2-1 (page 7) and Section 4.1.10 (page 60), but did not mention it in Section 5 (Summary of Compliance), Section 7 (Summary of Mitigative Measures), and Section 9 (Summary of Public Concerns). SLEMA believes that the exceedance event is a non-compliance against the Water Licence, Part F, Item 9, and should be reported in detail in Sections 5, 7 and 9, even if De Beers was able to re-establish compliance in a timely fashion.



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There is one statement about Mitigative Measures in the Executive Summary that

- *"The AEMP annual report demonstrates that the Snap Lake Mine's impact is similar to what was predicted in the Environmental Assessment. This demonstrates that the mitigative measures being used by De Beers are working effectively. Two response Framework levels were triggered in the 2013 AEMP. Response Plans were also submitted in 2013 for TDS, Strontium and Nitrogen. A Water License Amendment request was submitted in December 2013 to change water license effluent quality criteria for Total dissolved solids and its constituent ions."*

The two underlined sentences are contradictory. If mitigative measures were effective, De Beers would not have had to request to amend the water licence limits in December 2013.

If you have any questions whatsoever please feel free to contact Philippe di Pizzo at 867-765-0961 / exec@slema.ca.

Sincerely,

A handwritten signature in black ink, appearing to read "J. Weyallon".

Johnny Weyallon
Chairperson



Environment
Canada

Environnement
Canada

Environmental Protection Operations Directorate (EPOD)
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November 27, 2014

EC file: 5100 000 034/004
MVLWB file: MV2011L2-0004

Laurie McGregor
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Department of Environment and Natural Resources
Government of the Northwest Territories (GNWT)
PO Box 1320
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via email

RE: MV2011L2-0004 – De Beers Canada Inc., Snap Lake Mine – Environmental Agreement 2013 Annual Report

Environment Canada (EC) has reviewed the above Annual Report (the Report) submitted by De Beers Canada Inc. and can offer the following comments at this time:

- Section 3.2.1 Air Quality and Emissions Monitoring and Management Plan (AQEMMP) indicates the last AQEMMP was submitted in 2007 and would be updated every 5 years. EC is unaware of any subsequent updates. EC would like to request a timeline for when De Beers plans on reviewing the AQEMMP?
- Table 4.1 Summary of 2013 Report Submissions for the Snap Lake Mine indicates that the 2013 Air Quality Meteorological and Emissions Report was submitted on June 2014. EC would like a copy of this report.
- Section 3.2.6 North Pile Management Plan – The Report indicates that the North Pile Plan is currently under review and will be updated in 2014. When will the expected update be submitted?
- Section 10.0 Summary of new technologies investigated. De Beers outlined two new technologies currently being researched:
 1. Conceptual studies for nitrates and TDS treatment technologies
 2. North Pile West Cell Design and Future Requirements based on mine rates.

No summary of these activities was provided in the Report. EC understands there may be ongoing activity to finalize the results from these studies, however EC would like to request follow up information on these investigations and a summary outlining the studies currently underway.

The review was conducted pursuant to EC's mandated responsibilities arising from the Canadian Environmental Protection Act, 1999, the pollution prevention provisions of the Fisheries Act, the Migratory Birds Convention Act and the Species at Risk Act.

Should you have any questions or wish clarification on any aspect of this letter, please contact me at (867) 669-4724 or sarah-lacey.mcmillan@ec.gc.ca.

Sincerely,

Sarah-Lacey McMillan
Senior Environmental Assessment Coordinator

cc: Loretta Ransom A/Head Environmental Assessment North (NT & NU), EPOD

**Government of the Northwest Territories Review of the De Beers Canada Inc.
2013 Snap Lake Environmental Agreement Annual Report**

The Government of the Northwest Territories (GNWT) has reviewed the 2013 Snap Lake Environmental Agreement Annual Report and provides the following comments and recommendations to De Beers Canada Inc. (De Beers).

1. Topic: General formatting and editing

Comment:

There are multiple typos as well as grammar errors throughout the document.

Recommendation:

It is recommended that future Annual Reports be edited more thoroughly than the 2013 Annual Report to prevent the submission of a report with editorial errors.

2. Topic: General formatting and editing

Comment:

Page numbers are missing from the Plain Language Summary portion of the Annual Report.

Recommendation:

It is recommended that the Plain Language Summary in future Annual Reports contain page numbers.

3. Topic: General formatting and editing

Comment:

There are a number of citations within the Annual Report that are not included in the Reference section (Section 11.0).

Recommendation:

It is recommended that future Annual Reports be edited more thoroughly than the 2013 Annual Report to prevent the submission of a report with missing citations.

4. Topic: General formatting and editing

Comment:

One of the goals of the Annual Report is to illustrate environmental trends over the life of the Project. Visuals such as graphs can assist in identifying and illustrating trends.

Recommendation:

The GNWT recommends that De Beers make an effort to incorporate more visuals (graphs, charts, etc.) that will help illustrate environmental changes over time.

5. Topic: Aquatics (Plain Language Summary)

Comment:

The Aquatics section of the Plain Language Summary state that "Concentrations of most other water quality parameters in Snap Lake are below guidelines with the exception of E. coli and total coliforms". No further details are provided in the body of the Annual Report.

Recommendation:

The GNWT would like De Beers to clarify if this finding is a spike in raw-water readings or a recorded presence of colony-forming units in treated water. Possible causes and actions taken to address the issue should be noted in De Beers' response.

Information presented in the Plain Language Summary should also be presented in the main body of the Annual Report.

6. Topic: Compliance (Plain Language Summary)

Comment:

There is no mention of a land lease inspection requirement in the Compliance section of the Plain Language Summary.

Recommendation:

Land lease inspection requirements should have been included under Compliance, whether or not a lease inspection was conducted in 2013. The Compliance section should identify the authority and instrument under which an inspection was conducted (e.g., x (number of) lease inspections conducted under the authority of four land lease agreements, xx permit inspections, conducted under the authority of the Class A land-use permit, etc.).

7. Topic: Fish Abundance

Comment:

Page 8 and 65 notes that the relative abundance of lake trout, round whitefish and longnose sucker was higher in Snap Lake than the reference lakes which De Beers suggests indicates that the current level of TDS is not limiting the fish community. A comparison of current relative abundance of these species against baseline in Snap Lake is also required to support this statement. For example, the relative abundance of these species may have already been higher in Snap Lake than the reference lakes prior to mine operations therefore this information may not be an indication of effects of TDS on these species.

Recommendation:

The GNWT recommends that in addition to a comparison of relative abundance of fish species in Snap Lake to the reference lakes, a comparison of baseline data of these parameters within Snap Lake is also required to understand any effects that the current conditions may have.

8. Topic: Water Balance

Comment:

In Table 2-1, it was noted that according to water balance calculations the Snap Lake mine had a net gain of approximately 456, 672 m³. However, later it is noted that in 2013 the estimated water balance model (submitted as a part of EA1314-02) predicted that the Snap Lake water losses and gains were 17,372,299 m³ and 40,581,097 m³, respectively. This would indicate a net gain in excess of 20,000,000 m³. There appears to be a high level of discrepancy between the water balance calculation and the 2013 water balance model results. The nature of these values and any discrepancies should be discussed.

Recommendation:

- a) The GNWT recommends that De Beers provide clarity on how the water balance values were derived and discuss any discrepancies in the water balance estimates.
- b) The GNWT recommends that De Beers confirm the most accurate values for water balance for the Snap Lake Mine and outline any potential impacts this may have on the downstream receiving environment.

9. Topic: Summary of Compliance Reports Required under the Snap Lake Mine's Regulatory Approvals - Interim Closure and Reclamation (C&R) Plan

Comment:

The Interim Closure and Reclamation (C&R) Plan listed in Table 3-1, page 13 is required by the lease agreements; therefore, there is a need to add a reference to land leases.

Recommendation:

The GNWT recommends the following be added to the source of requirement for the C&R Plan on Table 3-1, page 13: "Land Leases: in Leases #75M/10-1, #75M/10-3 and #75M/10-4, clauses 15, 21 and 25, and in Lease #75M/10-2, clauses 16, 22 and 26".

10. Topic: Summary of Compliance Reports Required under the Snap Lake Mine's Regulatory Approvals - Domestic Waste and Sewage Management Plan

Comment:

The Domestic Waste and Sewage Management Plan listed in Table 3-1, page 13 is one of the components of the Waste Management Plan required by Lease #75M/10-4; therefore, there is a need to add a reference to the land lease.

Recommendation:

The GNWT recommends the following addition to the source of requirement for the Domestic Waste and Sewage Management Plan on Table 3-1, page 13 as follows: "Land Lease #75M/10-4, clause 34".

11. Topic: Summary of Compliance Reports Required under the Snap Lake Mine's Regulatory Approvals – Hazardous Materials Management Plan

Comment:

The Hazardous Materials Management Plan listed in Table 3-1, page 13 is one of the components of the Waste Management Plan required by Lease #75M/10-4; therefore, there is a need to add a reference to the land lease.

Recommendation:

The GNWT recommends the following addition to the source of requirement for the Hazardous Materials Management Plan on Table 3-1, page 13: "Land Lease #75M/10-4, clause 34".

12. Topic: Summary of Compliance Reports Required under the Snap Lake Mine's Regulatory Approvals – Spill Contingency Plan

Comment:

Not all relevant lease clauses have been cited as a source of requirement for the Spill Contingency Plan on Table 3-1, page 14.

Recommendation:

The GNWT recommends the source of requirements for the Spill Contingency Plan be amended for Land Lease information as follows "Lease #75M/10-1, clause 46; in Lease #75M/10-2, clause 47; and in Leases #75M/10-3 and #75M/10-4, clause 45".

13. Topic: Report Submissions

Comment:

The GNWT would like to ensure that the obligations of land leases for the Snap Lake Project are acknowledged.

Recommendation:

No mention is made in the Annual Report of the reports that are required under the leases and under Article 10.1(c)(ii) of the Agreement. De Beers should remedy this ongoing gap in lease compliance in the 2014 report and future reports by adding a section 4.3, "Land Lease Regulatory Reporting" to section 4.0 "Report Submissions".

14. Topic: Groundwater Flow Update

Comment:

Section 4.2.1 provides a Groundwater Flow Model Update and notes that the updated groundwater flow model predicts that the maximum inflow could be approximately 60,000 m³/day based on future mining plans and the existing geologic model. It is stated in other documents (submitted as part of EA1314-02) that in excess of 90,000 m³/day is predicted as the "worst case" scenario for anticipated discharge water.

Recommendation:

The GNWT requests clarification on the amount of water anticipated as groundwater inflow. The GNWT request that the mine also clarify its maximum quantity of anticipated discharge water. Any additional sources of mine water

to the discharge water should also be described (seepage water, surface runoff, etc.).

15. Topic: Summary of Compliance – Land Leases

Comment:

No land lease inspections were conducted in 2013.

Recommendation:

The GNWT recommends that De Beers note on page 81 that no land lease inspections were conducted in 2013.

In future Annual Reports if there were lease compliance issues or observations that were noted or discussed by an Inspector in any of the inspections undertaken then a summary of those issues or observations should be captured.

16. Topic: Summary of Compliance – Chloride Exceedances

Comment:

The GNWT agrees with the Snap Lake Environmental Monitoring Agency's (SLEMA) request that De Beers include chloride exceedances in the Summary of Compliance. The GNWT acknowledges that De Beers included this information in their December 10, 2014 response letter to reviewer's comments on the Annual Report.

Recommendation:

None

17. Topic: Summary of Compliance – Air Exceedances

Comment:

Four air quality action levels were triggered in 2013 because the observed percentage increase exceeded the allowable year-to-year percentage increases as defined in the Air Quality and Emissions Monitoring and Management Plan (AQEMMP).

Recommendation:

While the GNWT recognizes that NWT Ambient Air Quality Standards were not exceeded, the GNWT recommends that air quality exceedances be included in the summary of compliance section of the Annual Report as they represent a non-compliance event.

18. Topic: Summary of Adaptive Measures

Comment:

The Plain Language Summary lists a number of items under the Adaptive Measures heading. These items are not included in the Summary of Adaptive Measures (Section 8.0) on page 87.

Recommendation:

Information presented in the Plain Language Summary should also be presented in the main body of the Annual Report.

19. Topic: References**Comment:**

The GNWT would like to ensure that the obligations of land leases for the Snap Lake Project are acknowledged.

Recommendation:

Under References (Section 11.0) the following should be added to reflect the existence of and obligations under the four land leases: "NWT Lease Numbers as follows: #75M/10-1-2 (2004) and Amendment (2011), #75M/10-2-2 (2004) and Amendments (2009, 2011 and 2014 pending), #75M/10-3-2 (2004) and Amendments (2009, 2011), and #75M/10-4-2 (2004) and Amendments (2009, 2011 and 2014 pending)."