



# **Snap Lake Environmental Monitoring Agency**



2009-2010

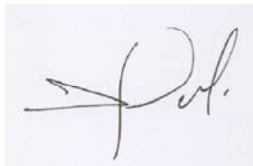
ANNUAL REPORT

## Table of Contents

Message from the Chairperson.....	2
Dogrib Translation.....	3
Chipewyan Translation.....	4
What is SLEMA.....	5
What are SLEMA's Responsibilities.....	5
How is SLEMA Structured.....	6
Snap Lake Diamond Mine.....	9
Agency Activities 2009-2010.....	11
Environmental Agreement.....	12
Environmental Agreement Annual Report.....	12
Update of Management Plans.....	12
Wildlife and Vegetation.....	13
Air Quality.....	15
Water Licence.....	15
Water Quality.....	15
Concern on TDS Levels in Snap Lake.....	16
Concern on Fluoride Levels in Snap Lake.....	19
AEMP Review.....	19
Hydrology.....	22
North Pile.....	23
Acid Rock Drainage.....	24
Land Use Permit.....	25
Fisheries Authorization.....	26
Community Engagement.....	26
Briefing Aboriginal People.....	26
Workshops.....	27
Mine Site Visit.....	27
Traditional Knowledge Camp.....	28
Fish Tasting Event.....	31
Assessment of the Mine.....	32
Assessment of Regulators.....	32
Financial Report.....	34
Summary of SLEMA Comments from 2009 to 2010.....	45
Acronyms.....	54

## Message from the Chairperson

It is my pleasure to present the 2009-2010, Snap Lake Environmental Monitoring Agency (SLEMA) Annual Report. We have put together information that we hope will provide you with a summary of our many activities. During the year SLEMA has actively reviewed plans and reports produced by De Beers. SLEMA undertook an extensive review of Aquatics Effect Monitoring Program, as well as the Wildlife Monitoring Program. SLEMA has provided all the stake holders with a monthly report of changes and events at the mine, as well as a summary of SLEMA activities. SLEMA has strongly encouraged De Beers to integrate Aboriginal Traditional Knowledge into the monitoring programs at Snap Lake. To this end SLEMA held two workshops with the elders, government and DeBeers, which culminated in a TK camp held in the area of impact of Snap Lake in September 2010. SLEMA will continue to observe and comment on the activities at the Snap Lake Mine and to push for greater Aboriginal involvement. Working with Government, Aboriginal communities and De Beers, SLEMA will endeavor to watch over the activities at the Snap Lake Mine, to ensure that the mines impact on this pristine environment is minimal.

A handwritten signature in black ink, appearing to read 'Johnny Weyallon', is centered on a light blue rectangular background.

Johnny Weyallon

Chairman

## Dogrib Translation

2009-2010 xo gha Snap Lake Environmental Monitoring Agency (SLEMA) wenıht'èkò gha nıht'è sidla hq't'e. Nıht'è k'è t'ası hazq k'è eghàlats'ıda sù dek'èht'è. Xo gha SLEMA wenıht'è De Beers nıht'è ageèhı sù hazq weghageèda hq't'e. SLEMA sù de? Aquatics Effect Monitoring Program eyıts'q Wildlife Monitoring Program k'è eghàlagıda. SLEMA dıne hazq gha sa tat'è sombak'è ayı ıadı agıla eyıts'q ayı k'è eghàlageèda ghq nıht'è ehtı hq't'e. SLEMA, De Beers ts'q hagedı, t'ası k'è eghàlageèda sù, Aboriginal Traditional Knowledge xè Snap Lake ndè eyıts'q tı hoidı ha gıwq gedı hq't'e. Ekıyeh gots'q SLEMA nàke eht'à workshop t'à qhda, ndèts'q k'aowoh eyıts'q De Beers Snap Lake TK camp September 2010 egeeadı hq't'e. SLEMA wenıht'èkò gots'q Snap Lake edaànı eghàlageèda sù wehoidı ha hq't'e, eyıts'q de? dıne sqı ndè hodı k'è eghàlagıde ha gıwq gedı. SLEMA, Snap Lake sombak'è t'ası hazq hogıhdı ha, ndè t'asawode ch'a..

## Chipewyan Translation

### **T'ą Betł'as Náyatı Dēneba Yatı Nj̄řą**

Senie řat'e dŷ ředire Snap Lake Environmonet Monitoring Agency (SLEMA) hŷlye bets'ı 2009-2010 ghayé řerehtł'ıs ghayé řąłtue yełts'ı ní nuweba yłłá. řediri bet'á hanı dé xa yatı sŷghá-u řelá nılya nıde yıdhēn t'a ghádálada xářą sí ghą. řeyı xaye gháre SLEMA De Beers bets'ı t'at'u řegálahena chu řerehtł'ıs heghą sí yehenełŷ řat'e. SLEMA řeyı t'a řate dánıłŷı sí řeyı Aquatic Effects Monitoring Program chu, tth'ı Wildlife Monitoring Program. T'ą harelyŷ stake holder dąlı sí řeyı t'a SLEMA za řąłtu řeyēr tsamba k'é řasie ředŷ řane-ú náhadher dé ghą řerehtł'ıs yeba nıłı-u, tth'ı SLEMA ředenŷ tth'ı t'ahet'ı sí ghą. SLEMA řeyı De Beers řaté t'a ts'ēn yełra sí řeyēr Snap Lake řeghádálada řeyı Dēne Ch'anie t'ahet'ı xa hubets'ı řasie hadı ghálahena dé. Dŷ đırı belą ts'ēn xa dé SLEMA náke workshops helts'ı řeyı řalnedhé-u, government chu, tth'ı De Beers bexel, řeyı t'ó beghą nŷřót'e sí řeyı TK camp řŷřą řeyēr Snap Lake gá řeyundzı Za 2010 ghayé kú. SLEMA řeyı řąłŷ řeyēr Snap Lake Mine t'at'u yalnŷı-u tth'ı yeghą řesadı sí xat'éé xat'e xel tth'ı Dēne ts'ı řēné hárelyu bexel xářą xa. řeyı Government-u, Háyurłla Dēne nárede sí-u tth'ı De Beers bexel řeghálahena xa, SLEMA řeyēr Snap Lake Mine řeghálada řaté yalnı huréłdzáy xat'e, xat'u dé řeyı tsamba k'é t'á ní t'at'u benat'ı dúé hŷł'ēth dzélthır ch'á xa.

## **What is SLEMA**

The Snap Lake Environmental Monitoring Agency's (SLEMA) Board was established under direction of the De Beers Snap Lake Diamond Project Environmental Agreement, established between De Beers, Government of Canada, Government of the Northwest Territories and the four affected Aboriginal Organizations. The Aboriginal representatives originate from the Tlicho Government, Yellowknives Dene First Nation, North Slave Metis Alliance and the Lutsel K'e Dene First Nation. The mandate of SLEMA is to support the aboriginal parties in protecting the environment, support liaison between the parties, support De Beers and Government in protecting the environment, review environmental performance, serve as a public watchdog for the regulatory process, and provide a public repository for reports and plans in relation to the Snap Lake Project

## **What are SLEMA's Responsibilities**

SLEMA's mandate is established under Article IV Section 4.2 of the Environmental Agreement and are as follows.

- (a) support the Aboriginal Parties' efforts to protect the environmental interests on which they rely;
- (b) support collaborative and information-based liaison amongst all the Parties;
- (c) support De Beers, Canada, and GNWT in their respective efforts to protect the environment;
- (d) review and monitor the environmental performance of the Project using western science and traditional knowledge;
- (e) work with De Beers to mitigate environmental impacts of the Project thereby mitigating the potential for socio-economic effects;
- (f) serve as a public watchdog of the regulatory process and the implementation of this Agreement;

(g) make recommendations to any body having regulatory or management responsibility for a matter, for the achievement of the purposes and guiding principles in this Agreement;

(h) facilitate programs to provide information to and consult with the members of the Aboriginal Parties;

(i) report to the Parties and the public on the Monitoring Agency's activities and the achievement of its mandate; and

(j) provide an accessible and public repository of environmental data, studies and reports relevant to the Monitoring Agency's mandate.

### **How is SLEMA Structured**

SLEMA is directed by a board of eight individuals with two representatives each from the four signatory aboriginal groups. The board takes direction from two panels, a science panel and a traditional knowledge panel. SLEMA also has two full time employees, an Executive Director that administers the agency and an Environmental Analyst, who reviews documents from De Beers and also provides direction to the board.

**Executive Board Members:**



**Johnny Weyallon**

Chairperson

Tlicho Government



**Rachel Crapeau**

Vice Chairperson

Yellowknives Dene  
First Nation



**Charlie Catholique**

Secretary

Lutsel K'e Dene First  
Nation



**Sheryl Grieve**

Treasurer

North Slave Metis  
Alliance



**Board Members:**



**Greg Empson**

Yellowknives Dene  
First Nation



**Danielle De Fields**

North Slave Metis  
Alliance



**Noel Drybones**

Tlicho Government



**James Marlowe**

Lutsel K'e Dene First  
Nation

**Traditional Knowledge Panel:**

**Eddie Camille and Harry Apples, *Tlicho Government***

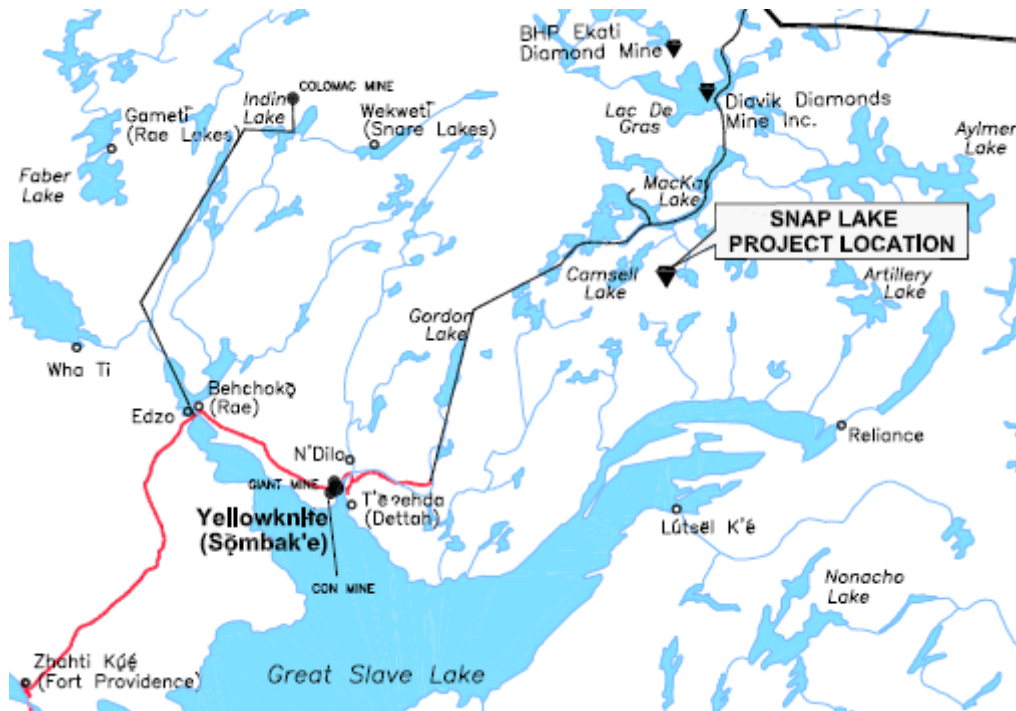
**Eddie Jones and Wayne Langenham, North Slave Metis Alliance**

**Albert Bouche and Madeline Drybones, Lutsel K'e Dene First Nation**

**Mike Francis and Alfred Baillargeon, Yellowknives Dene First Nation**

## Snap Lake Diamond Mine

The Snap Lake Mine (Mine) is a diamond mine owned and operated by De Beers Canada Inc. (De Beers), and is located about 220 kilometres northeast of Yellowknife, Northwest Territories (NWT). De Beers received regulatory approval for the Mine in 2004, which included Environmental Agreement, Water Licence, Land Use Permit, Land Lease, and Fisheries Authorization. Mining began in 2007 and is expected to continue for 22 years.



Map 1. Location of Snap Lake Diamond Mine

Due to the economic downturn in 2009, the Mine was operating at a reduced capacity. Only 345,000 tonnes of kimberlite were processed, and 444,000 carats of diamond were produced.

The Mine was built and is being operated with a commitment to maintaining the highest environmental management standards. The Snap Lake Mine is the only diamond mine in the NWT that has certified its environmental management systems to the high international standard, ISO 14001, through advanced exploration, construction and operations.



- |                            |                          |                           |                             |
|----------------------------|--------------------------|---------------------------|-----------------------------|
| 1—Air Strip                | 7—Construction Camp      | 13—FAR                    | 19—Mine Dry/Admin           |
| 2—Crusher/Waste Management | 8—Fuel Storage           | 14—Satellite Welding Shop | 20—Permanent Camp           |
| 3—AN Storage               | 9—Tire Shop              | 15—Satellite Mine Shop    | 21—Process Plant            |
| 4—Emulsion Plant           | 10—Fresh/Fire Water Pump | 16—WTP/Power House        | 22—Water Management Pond    |
| 5—North Pile               | 11—Cement Storage        | 17—Heated Storage         | 23—Organic Waste Collection |
| 6—East Cell                | 12—Satellite Mobile Shop | 18—Main Shops/Warehouse   | 24—Lay Down/Cold Storage    |

**Photo 1. Mine Site**

There were thirteen inspections conducted by Indian and Northern Affairs Canada (INAC) in 2009, and all issues brought up by the Inspector were addressed or are being addressed.

Within 2009, approximately 298,512 tonnes of coarse reject and 405,649 m<sup>3</sup> of slimes were deposited in the North Pile Starter Cell. Underground de-watering continued throughout the year even during the short shutdown period in the summer, and 6,181,879 m<sup>3</sup> of mine water, collected runoff and process water were treated in the Water Treatment Plants and discharged into Snap Lake. In addition, 165,067 m<sup>3</sup> of water were recycled in the Mine.

De Beers adopted mitigative measures and adaptive measures in 2009 as follow:

- Signage being installed at the SNP stations and repair to the eroded area at the historic Nitrate Storage pad.
- Continued monitoring of the temporary Nitrate containment facilities, establishment of three new monitoring stations to monitor run-off, excavation of

ice and sludge from the Water Management Pond to increase its capacity, and improvements to the Ammonia Nitrate Source Control Plan.

In 2009 De Beers extended its Land Use Permit to May 4, 2011. In 2010 De Beers began the development of the North Pile East Cell, and completed the construction of the permanent camp and the storage facility for Ammonia Nitrate.

### **Agency Activities 2009-2010**

- During the 2009-2010 reporting period, SLEMA sent out 26 comment letters. The documents reviewed include, but are not limited to, update of four management plans, extension of Land Use Permit, 5-Year AEMP review, annual reports under the Environmental Agreement, Water Licence, Fisheries Authorization, monthly reports of Surveillance Network Program (SNP), INAC inspections reports, and comments made by stakeholders.
- Monthly Environmental Update, which outlines the updates of the Mine, the inspections and the regulators, and comments and recommendations made by SLEMA, has been created since July 2009, and distributed to board members, Science Panel members, Aboriginal communities, and INAC Inspector.
- In addition to the monthly distribution of Monthly Environmental Update, SLEMA strived to reach communities and made presentations to North Slave Metis Alliance (March 19, 2010) and staff of Yellowknives Dene First Nation (April 14, 2009).
- SLEMA held three wildlife workshops (June 1, 2010, December 10, 2009 and May 27 and 28, 2009) and one AEMP workshop (December 11, 2009) with elders from four communities.
- SLEMA made one site visit of the North Pile (June 23, 2009) and observed two fish tasting events (September 14, 2010 and September 15, 2009).
- SLEMA has been promoting Traditional Knowledge (TK) based monitoring. One initiative for caribou and dustfall monitoring was conducted at King Lake Rapids during September 22 to 26, 2010.

## **Environmental Agreement**

### **Environmental Agreement Annual Report**

De Beers 2008 Environmental Agreement Annual Report was submitted in March 2010. De Beers made some improvements in report presentation such as more detailed summary of monitoring programs, and promised providing additional detail concerning the analysis of the monitoring results.

SLEMA found the Report to be acceptable for the purpose of the Environmental Agreement.

### **Update of Management Plans**

Article 6.2 of the Environmental Agreement requires that De Beers shall provide the Signatory Parties and SLEMA with updated copies of its environmental management plans, not later than six months before the commencement of commercial production. De Beers officially opened the mine on July 25, 2008. However, only the following have been updated and submitted by April 2009:

- Emergency Response and Spill Contingency Plan (February 2009),
- Air Quality and Emissions Monitoring and Management Plan (August 2008),
- Wildlife Management Plan (April 2008), and
- QA/QC Plan (2008).

SLEMA requested that De Beers update its environmental management plans to reflect the change from a project to a mine on April 23, 2009. By the end of October 2010, following environmental management plans had been updated:

- Hazardous Materials Management Plan (July 2009),
- Ore Storage, Waste Rock and Processed Kimberlite Management Plan (January 2010),
- Domestic Waste and Sewage Management Plan (March 2010), and
- Water Management Plan (June 2010).

Two management plans are to be updated:

- Adaptive Management Plan, and
- Interim Mine Closure and Reclamation Plan.

## Wildlife and Vegetation

During Community Workshop for Diamond Mines Wildlife Monitoring Program Revisions in 2010, De Beers proposed a few changes for its wildlife monitoring program, which include data contribution to Canadian Peregrine Falcon Survey, bear hair-snagging, and discontinued spring caribou aerial surveys.

2009 Environmental Agreement Annual Report was submitted in October 2010, and presented the recent results of vegetation and wildlife monitoring programs.

Vegetation in Snap Lake area was predicted to be impacted by the Mine. Satellite pictures of the Mine indicated that the total size of area impacted by the Mine in 2008 was less than expected. All vegetation communities were impacted less than expected, except for the esker. Although dustfall exceeded the Alberta Ambient Air Quality Objective for commercial and industrial properties at one sampling location for four consecutive months, overall, dust did not appear to have an effect on vegetation at the Mine site.

Monitoring indicators for caribou, grizzly bear and wolverine all indicated low levels of activity in 2009, but this might be likely related to the recent declines in the Bathurst caribou herd. The number of occupied nests of peregrine falcon was found to be the lowest yet recorded in 2009, but the total number of chicks observed to be within the range observed during the baseline studies. Incidents in 2009 were mostly related to fox and wolverine at site, and some isolated incidents included caribou and grizzly bear. Wildlife mortalities have been very rare at Snap Lake, but in 2009 a ground squirrel, a fox and a wolverine, were all found dead within the mine boundaries.

Anne Gunn, a biologist with 30 years experience with the Government of the Northwest Territories, works with SLEMA on the science panel to review the Wildlife Effects Monitoring Program Report. In 2010 she reviewed the 2008 Annual Report and made a number of comments.

- Problems as noted previously with clarity of data presentation and omissions remain. Omissions include an Executive Summary with no results.
- De Beer's intention is every 3 years to undertake detailed analyses and discussion of the wildlife monitoring data. The annual report format is to include

cumulative data from previous years but this is inconsistent. For example there is no comparison of Wildlife Incidences with previous years.

- No Discussion of cumulative effects.
- Omission of the reporting of environmental variability. Observation of these events assists in discriminating between project related and environmental effects.
- Use of endpoints for detecting mine-related effects. De Beers refers to the use of measurable endpoints or indicator variables (such as abundance, distribution, probability of occurrence). There is no explanation of how the endpoints will be used to separate project-related effects from natural environmentally caused ones.
- The three listed objectives for caribou are vague. The objectives need to be broken down into measurable components with testable research hypotheses. The aerial survey design will need to be re-considered in light of the Zone of Influence and reduced caribou abundance.
- Report lists wildlife mitigation practices but the report does not assess their use and usefulness.
- The report lists the species listed by COSEWIC but not those listed by ENR as having a conservation status of concern. It is not explained why De Beers has dropped 13 bird species which ENR rates as 'sensitive'. The 2008 WEMP also does not explain whether COASEWIC listed species that occur within the study area receive any particular monitoring relative to any recovery or management plans.
- The dates of migration are dependent on the dates of the first and last aerial surveys – the table should include the dates for the 'triggers' for when the surveys were undertaken (satellite-collared caribou, camp sightings).
- The report is incorrect in stating that precision is increased by reducing strip width. Reducing transect width will reduce bias (visibility bias). Reducing strip width also lowers the % coverage which is then a reduction in precision.

## Air Quality

Mine operation such as combustion of diesel fuel, movement of vehicles/equipment, and airstrip activities, may generate air quality problems of dustfall, toxic gas and greenhouse gas emissions.

De Beers Meteorological and Air Quality Monitoring Program include three components: meteorological, particulate monitoring and passive gas monitoring. Monitoring results in 2008 show that territorial air quality guidelines were not exceeded, except for some occasions of fine dust. In addition, more greenhouse gases in 2008 were produced than those in previous year because De Beers used more diesel fuel.

SLEMA notice that the sum total of all PCDD (dioxins) and PCDF (furans) compounds in 2007 was found to exceed the CCME Canada-Wide Standard for total PCDD and PCDF incinerator emission concentration by 54.8%. SLEMA recommended in its review on the 2007 Meteorological Monitoring and Emissions Reporting Annual Report that De Beers conduct stack testing in 2008 to confirm the compliance of incinerator emission. However, no stack testing for incinerator was conducted in 2008. SLEMA would like De Beers to confirm the compliance as soon as possible.

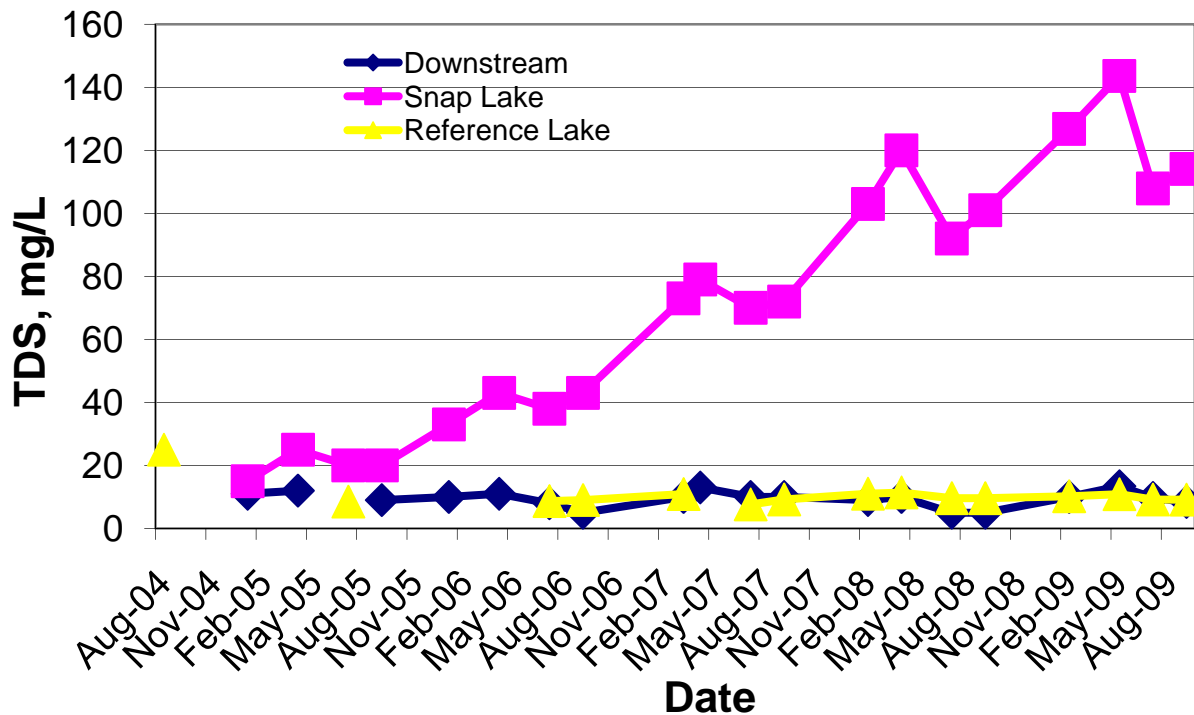
## Water Licence

### Water Quality

Total Dissolved Solids (TDS) is an aggregate indicator of the presence of a broad array of chemical contaminants, thus it is chosen to reflect water quality change in Snap Lake. The figure below displays the significant change of TDS levels in Snap Lake from 2005 to 2009.



**Figure 1. Total Dissolve Solids in Snap Lake, Reference Lake and Downstream**

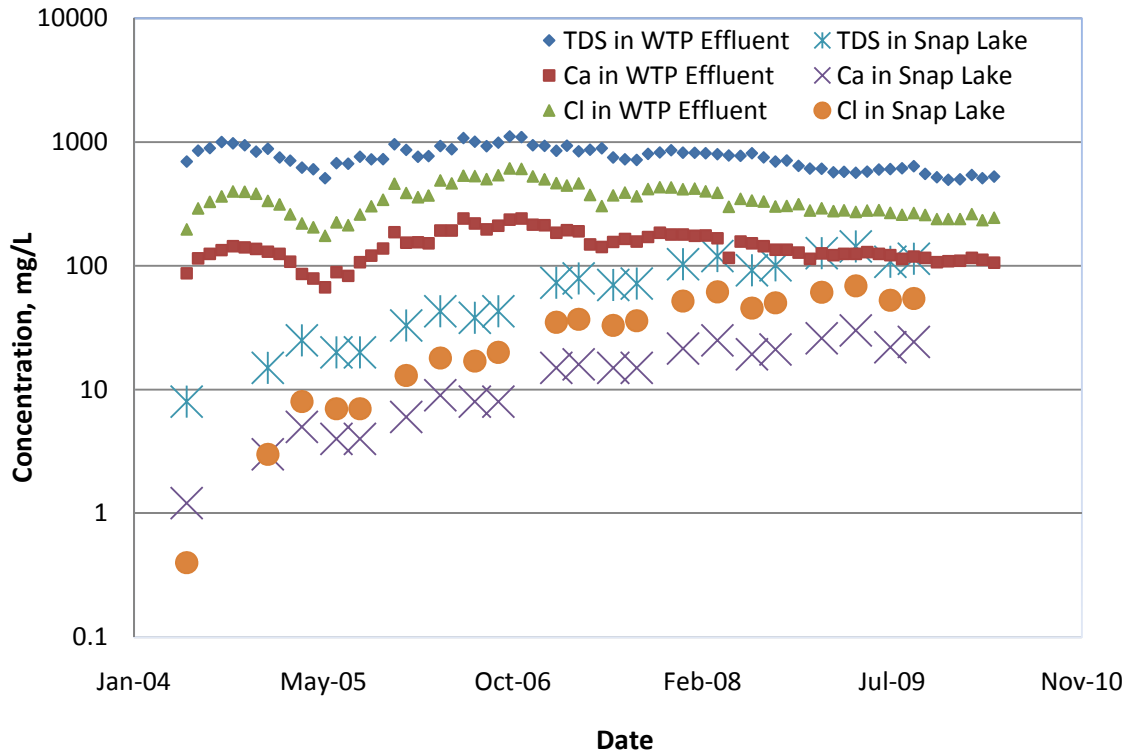


Aquatic Effect Monitoring Program 2009 Annual Report states that **the major ion composition in Snap Lake closely reflects the ionic composition of the treated effluent**. The similarity of ion composition also demonstrates the change of water quality in Snap Lake.

**Concern on TDS Levels in Snap Lake**

The observed whole-lake average concentrations of TDS, Calcium and Chloride in Snap Lake show a clear uptrend (see Figure 2). The reason is the discharge of mine effluent from the Water Treatment Plant (WTP), which has been containing high concentrations of TDS, Calcium and Chloride.

**Figure 2. TDS, Calcium and Chloride in WTP Effluent and Snap Lake**



The uptrend of TDS concentrations was predicted in the Environmental Assessment Report (EAR) for Snap Lake Diamond Project. However, the extent of the increase of TDS concentrations observed from the monitoring data appears to be more than EAR expected. That indicates a potential for TDS concentrations to increase faster than expected and exceed the Water Licence limit.

SLEMA developed a water quality model, based on Mass Balance and Water Balance, in order to predict the whole-lake average concentrations of TDS, Calcium and Chloride.

Modeling results show that TDS levels in Snap Lake may exceed the Water Licence limit (see Figure 3) and Chloride levels may exceed the EAR prediction (see Figure 4). SLEMA raised the concerns and provided recommendations for De Beers.

- De Beers to conduct comprehensive water quality modeling and compare the modeling results with EAR predictions and action levels of Adaptive Management Plan to confirm whether they will be exceeded or not.
- De Beers to consider a study plan for pollution prevention or source control, i.e. taking proactive initiatives to reduce the minewater quantity and reduce TDS concentrations in minewater.

Figure 3. Prediction of TDS Concentrations in Snap Lake

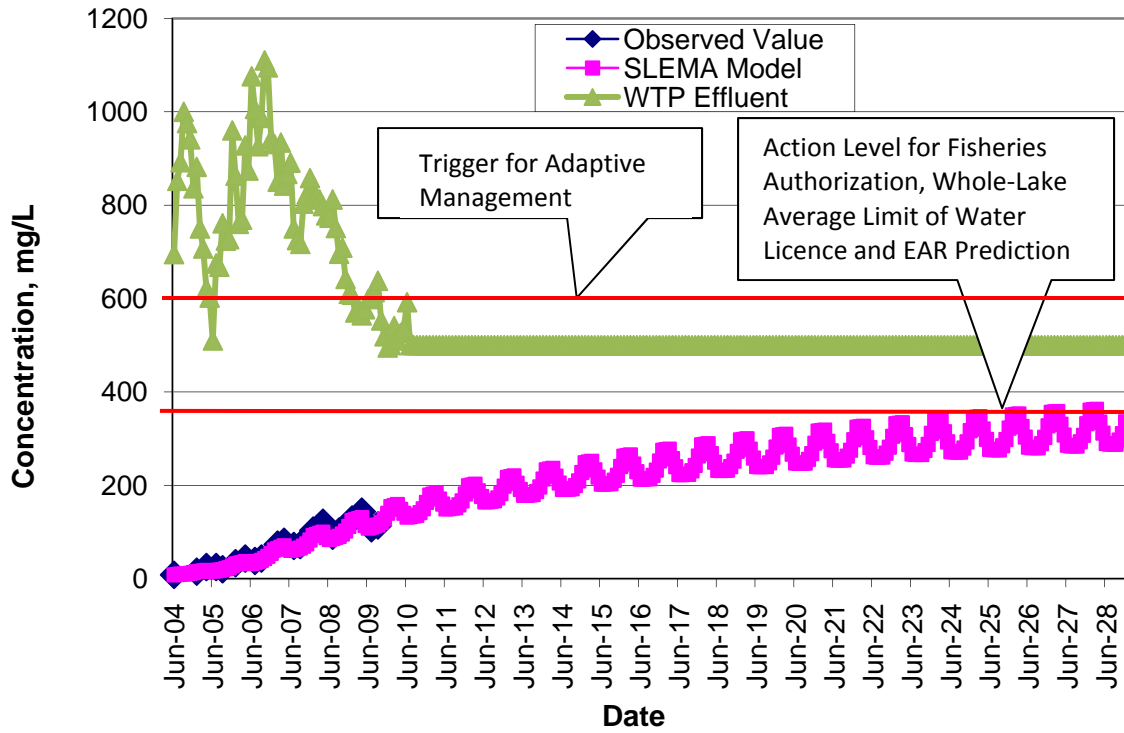
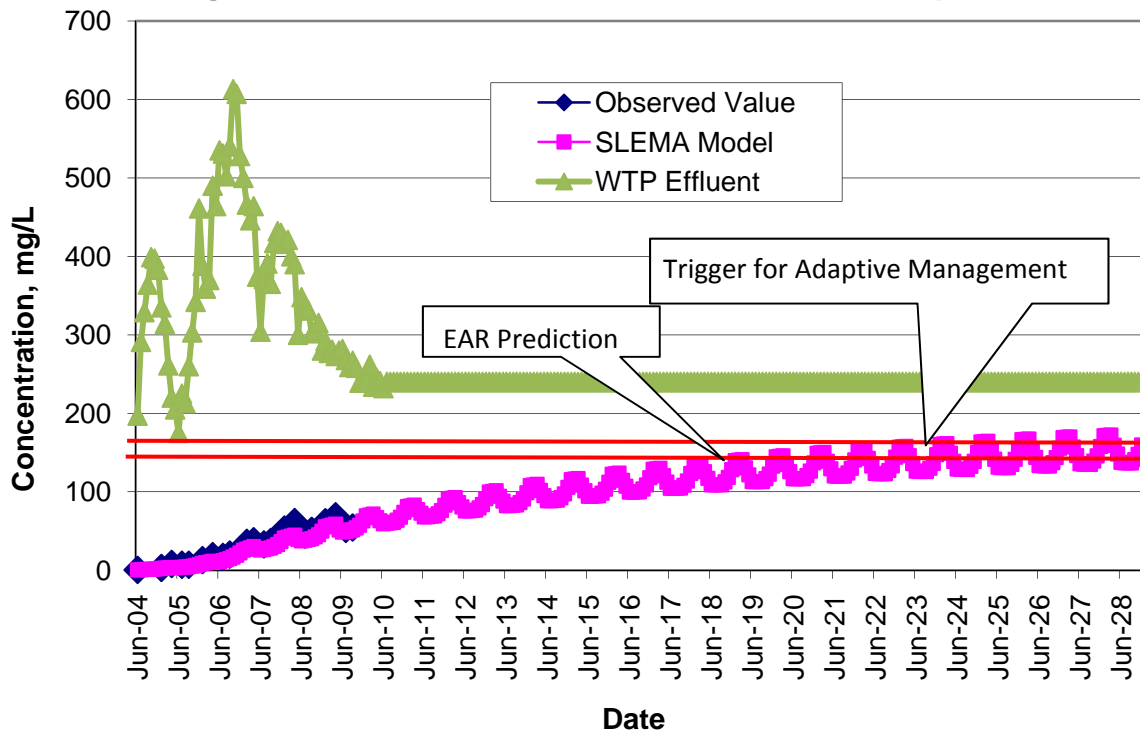


Figure 4. Prediction of Chloride Concentrations in Snap Lake



## Concern on Fluoride Levels in Snap Lake

It was reported that approximately one third of the fluoride results in 2009 Snap Lake samples collected were marginally higher than the interim CCME guideline for inorganic fluorides of 0.12 mg/L. Although the toxicity of fluoride is expected to decrease with increases in hardness, chloride and calcium, it will remain a concern till De Beers provides further evidence to convince stakeholders that the observed fluoride concentrations are not expected to cause effects to aquatic biota in Snap Lake.

To address the concern, SLEMA recommended De Beers take actions such as:

- Determine the origin of the Fluoride, the pathways and the cycle.
- Determine the spatial extent of elevated Fluoride within Snap Lake.
- Include Fluoride as one of the parameters in sediment analysis to assess future levels of change in concentration.
- Determine effects on northern species of invertebrates and fish at certain concentrations of Fluoride and water hardness, and develop an effect threshold for Fluoride for Adaptive Management.
- Update the Adaptive Management Plan, and include an action plan for Fluoride should it reach the trigger limit.

## AEMP Review

Aquatic Effects Monitoring Program (AEMP) is a requirement of Water Licence. The core of the AEMP is monitoring of water quality, plankton, sediment quality, benthic invertebrates, fish tasting and fish health. All monitoring components, with the exception of fish health, are undertaken annually. Fish health monitoring occurs on a five-year cycle.

## *Aquatic Effects*

The following figure illustrates the aquatic effects of the Mine.



### *5 Year AEMP Review*

Water Licence requires that De Beers review and update the objectives and methodology of the AEMP every five years. MVLWB approved De Beers AEMP On July 26, 2005, and then De Beers was required to submit a revised AEMP on July 26, 2010.

De Beers requests, On February 1, 2010, that MVLWB allowed them to forgo the five year review period for three reasons – stakeholders capacity for review of three major regulatory items (new Land Use Permit, Water Licence renewal and AEMP review), excessiveness or consistency of AEMP review with Water Licence renewal, and lack of feedback from stakeholders regarding AEMP results.

SLEMA issued a letter regarding this issue on February 25, 2010. SLEMA did not support De Beers request, but recommended an extension rather than forgoing the 5-year AEMP review. Further, SLEMA recommended that with time the AEMP review period should be change to 3 years from 5 years for the purpose of consistency with other two diamond mines. As a result, on March 19, 2010, MVLWB advised De Beers that an extension to September 30, 2010 for submission of the updated AEMP is acceptable.

De Beers submitted the Draft 5-Year Review of the AEMP on July 19, 2010 after a start-up meeting with stakeholders on June 16. Then De Beers held a follow-up meeting on September 17 before submitting the final report – 5-Year AEMP Review and Conceptual AEMP Update on September 30. SLEMA had been actively involved in the review during the process.

### *Review of AEMP 2008*

SLEMA engaged Mr. Barry Zadajlik to review the AEMP 2008 Annual Report. He also offered comments and recommendation for the AEMP 5-Year Review in the meeting on September 17, 2010, on behalf of SLEMA.

The comments and recommendations of his review are highlighted as follow.

- Monitoring for the sake of monitoring is a waste of time and money. Monitoring to detect early changes that lead to adaptive management so as to prevent undesirable changes is what an AEMP should do. Unfortunately if there are no action levels the AEMP may not be very helpful - like having a television crew filming a disaster when there is no rescue team - great coverage but no help.
- It is in De Beers best interest to sample intensively along isopleths corresponding to cutpoints for spatial extent of levels of change (1%, 10% and 20% of the Snap Lake), which were defined in the Environmental Assessment Report (De Beers

2002, Table 9.4-15). The reason is that, in accordance with the Environmental Assessment, decisions are made on the basis of percentage of Snap Lake that is adversely affected.

- In general, the AEMP 2008 report is very well laid out with the necessary information presented in the appropriate sections in a logical and clear manner.
- If follow-up blasting monitoring program prescribed by MVEIRB in 2003 is not carried out, it should be implemented.
- Mercury (Hg) concentrations should be watched carefully due to proximity to the CCME Guideline for the Protection for Aquatic Life. Also Hg in edible fish tissues should be monitored and possibly also in small bodied fish or benthic macroinvertebrates to provide an early warning of undesirable changes.
- De Beers should commit to consistent long-term monitoring using the same techniques, locations and depths. Synoptic sampling of all measurement endpoints is strongly encouraged.
- De Beers should investigate adjustment of the plankton monitoring stations to make all plankton sampling locations consistent with water quality monitoring stations which is standard practice for monitoring the aquatic environment.
- De Beers should also collect 1cm sediment samples in conjunction with the samples being collected now (the top 5 cm from an Ekman grab) to enable a correlation to be established. Once a suitably strong correlation is established the deeper sampling may be discontinued.
- Every reasonable effort should be made to ensure that holding times of samples are not exceeded.

## Hydrology

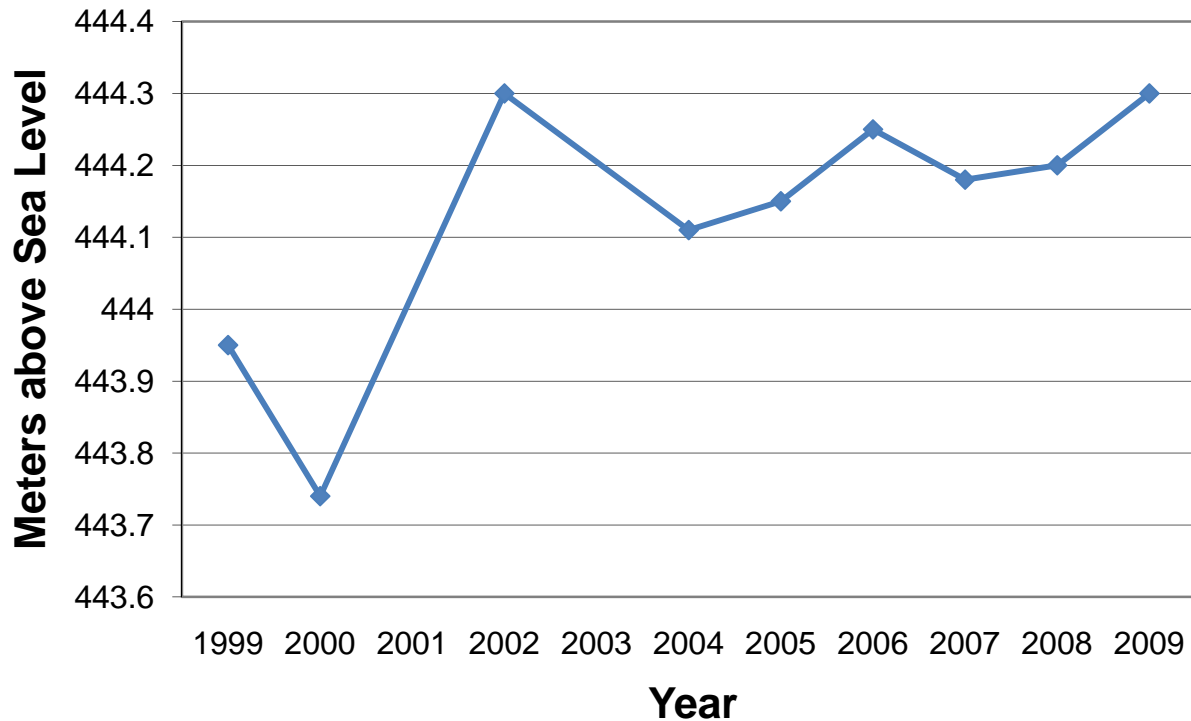
De Beers submitted Streamflow and Lake Elevation Monitoring Program 2008 Annual Report in October 2009. The results indicated that 2008 water levels and streamflow were near normal. Snap Lake water elevations remained within the normal range, and exhibited similar increases and decreases as other monitored lakes.

SLEMA identified one problem in the water balance analysis of the annual report. Normally the larger the stream discharge is, the larger the flow from drainage area is. However, the data from 2007 annual report and 2008 annual report displayed

abnormality. SLEMA requested De Beers to provide explanation and detailed calculation for inflow from drainage areas.

Lake water elevation data from the Water Licence 2009 Annual Report show higher annual average elevation in 2009, but still within the normal range (see Figure 6).

**Figure 6. Water Elevations in Snap Lake**



### North Pile

The North Pile Waste Rock and Processed Kimberlite Storage Facility (North Pile) is the surface storage facility for waste rock and processed kimberlite (PK, the waste material and water mixture that is left over after the mills removes the diamonds) produced during the operation of the Mine. The North Pile is located to the west of the Plant Site as shown in Photo 1. The North Pile will be developed in three cells in the following order:

1. Starter Cell; Berm Raise;
2. East Cell; and



### 3. West Cell.

In November 2008, De Beers required a 4 meter raise to the Starter Cell to increase capacity so De Beers could continue mining and milling operations. SLEMA reviewed the Starter Cell Phase III Embankment and Development Detailed Design and issued a comments letter in May 2009. SLEMA preferred smaller footprint of the North Pile to keep the facility further from Snap Lake, and elders from Traditional Knowledge Panel were concern with the increase present on the landscape and increase in the amount of dust that might result from increasing the height further. In June 2009, SLMEA made a site visit and De Beers engineers described their plans and answered questions from elders.

The development of the East Cell is currently ongoing. SLEMA has been uncomfortable with the proximity of the PK deposition area to the north arm of Snap Lake. The 5 spills within the North Pile Starter Cell footprint from 2006 to 2010 demonstrate the possibility of process water seeping through the access road to downstream tundra and further to Snap Lake. The East Cell is only 50 meters away from Snap Lake, and the chance of process water spills is even bigger than in the Starter Cell. The SLEMA issued a letter in November 2009 and expressed the concern. It was recommended that all parties need to exercise a particularly high level of due diligence in this case, and a vigorous or more robust assessment of the plans and designs of the East Cell development should be required.

### **Acid Rock Drainage**

Based on 2009 Acid Rock Drainage and Geochemistry Monitoring Report, no visible signs of incipient ARD were observed in rock exposed in site infrastructure during the 2009 site inspection. However, concentrations of either ammonia-N or nitrate-N of runoff near the ammonia nitrate (AN) storage pad and access road (in SNP 02-07 and SNP 02-09, Photo 2) have been high since 2006, sometimes even exceeded the Water Licence limit. The monitoring results demonstrated the SLEMA concern that acid rock drainage might not be an intermediate concern rather than the elevated concentrations of nitrate and ammonia of runoff near the explosive storage facility.

A cold storage building with a cement floor to be used for the storage of AN and other raw material should have been included on-site as part of the facilities of Snap Lake Mine. However, De Beers did not complete the construction of the Facility until September 2009.



**Photo 2. Locations of SNP Stations**

The relocation of AN bags from the temporary storage sites to the permanent storage facility was done, and 3 sub-stations of SNP 02-07 (SNP 02-07.4, 02-07.5 and 02-07.6) were added into the Surveillance Network Program (SNP) and established around the permanent storage facility, as shown in the above photo. Based on monitoring results of SNP 02-07 and SNP 02-09 in June and July 2010, concentrations of either ammonia-N or nitrate-N of runoff were lower than those in previous years. SLEMA will continuously pay attention to this issue.

### Land Use Permit

De Beers requested an extension to its Land Use Permit MV2001C0012 for the Snap Lake Mine on March 12, 2009. Before request submission, De Beers undertook community engagement activities regarding the request. SLEMA supported De Beers extension request.

On April 23, 2009, Mackenzie Valley Land and Water Board (MVLWB) approved De Beers request and extended Land Use Permit MV2001C0012 to May 4, 2011.

## **Fisheries Authorization**

Monitoring and annual reporting of Dissolved Oxygen (DO) and TDS is required under the authority of Fisheries Authorization.

The monitoring results since 2006 confirmed that

- DO concentrations did not appear to have decreased as a result of Mine water discharge,
- TDS concentrations remained below the predicted maximum and Water Licence limit, and
- DO and TDS levels in Snap Lake remained within a healthy range for fish and other aquatic life.

Since 2005, profile measurements (DO concentration, pH, water temperature, and specific conductivity) were made using a YSI 650 MDS water quality meter and YSI 600 QS multi-parameter water quality probe equipped with a 60-metre underwater cable. Winkler titration been performed to confirm the calibration of the YSI DO meter and accuracy of the field measurements.

From 2007 to 2009, Golder Associates, De Beers consultant and the writer of the DO Annual Reports, had questioned the use of commercial kit for Winkler titration and recommended the standard Winkler technique to confirm the calibration of the YSI DO meter and accuracy of the field measurements. The reason is, that the commercial kit's achievable accuracy is low (1 to 1.5 mg/L DO), which could not match with the YSI probe's accuracy (0.2 to 0.3 mg/L DO), however, the standard Winkler technique has an accuracy of 0.1 mg/L DO and could match the YSI probe's accuracy. SLEMA issued two letters (dated December 22, 2008 and March 9, 2010) and supported the recommendation.

De Beers appeared not to accept the recommendation during the 2009-2010 monitoring period. SLEMA reaffirm the recommendation in September 2010.

## **Community Engagement**

### **Briefing Aboriginal People**

There has been some discussion and a formal complaint from the Yellowknives Dene and Lutsel K'e Dene that SLEMA has not done enough to meet and discuss with the communities. SLEMA has made an effort to be open to the communities and the board has full membership from the effected communities. That being said there was much more SLEMA can do to engage the communities. Upon receiving the letters from Lutsel K'e and the Yellowknives SLEMA contacted the communities. SLEMA made a presentation to the staff of the YKDFN, who observe mining activities and land issues, and SLEMA also met with the chiefs of the Yellowknives. SLEMA also offered to do the same for Lutsel K'e and the Tlicho and is just waiting for the opportunity. SLEMA has made annual presentations to the North Slave Metis Alliance membership. SLEMA has also developed a more comprehensive distribution list, going beyond the board members, including staff and elected officials from all the effected communities.

## Workshops

Through 2009 and 2010 SLEMA has held 3 wildlife workshops and one aquatic workshop with its Traditional Knowledge (TK) Panel, Science Panel and De Beers. The Aquatics workshop held in December 2009 involved a presentation by Dr. Barry Zajdlik, who reviewed the Aquatic Effects Monitoring Program (AEMP) for SLEMA. The presentation was to the board and TK Panel. This presentation and the following discussion helped to bring a better understanding of the AEMP programs to the board and elders allowing Dr. Zajdlik a platform to raise his concerns. The three wildlife workshops involved a presentation of the Wildlife Effects Monitoring Programs (WEMP) and results to the SLEMA Board and and TK panel. The presentation was made by Golder and Associates on behalf of De Beers. This presentation has been made periodically at previous workshops and has been well presented, allowing a greater understanding of the programs, results and trends. Wildlife workshops held in December 2009 and June 2010 were utilized to plan for the TK dustfall and caribou camp, which was executed in September 2010.

## Mine Site Visit

One mine site visit was made on June 23, 2009. The participants involved were elders of the TK panel, some board members and the SLEMA staff. The purpose of the visit was to have a critical look at the processed Kimberlite storage area, or the north pile as it is often referred to. There were two proposed construction projects that precipitated the desire to view this area of the mine. De Beers was proposing to raise the height of the current ore storage area by 4 meters, and the initiation of the construction of the

East Cell was also immanent. The visit was informative, allowing the elders to visualize the proposed development. In relation to previous visits though, it was abridged, and could have been more comprehensive.

### **Traditional Knowledge Camp**

One of the Snap Lake Environmental Monitoring Agency (SLEMA) main objectives, is to see the gradual integration of Traditional Knowledge into the Wildlife Effects Monitoring Programs at Snap Lake. This is a goal of the communities, that make up the Snap Lake Environmental Monitoring Agency and is also a commitment made by DeBeers in the Environmental Assessment Phase of the project. To this end SLEMA has held periodical workshops with DeBeers and Elders from the communities to try and establish how Traditional Knowledge can be merged into the greater program. Following two final workshops held in late 2009 and early 2010, a proposal was finalized and SLEMA and DeBeers came to agreement as to how the program was to be carried out. The work was to have two thrusts, one was to observe caribou on the ground and to allow elders to assess the relative abundance and health of the animals. The other was to assess dust fall in plots surrounding the mine.

As with any project performed in the barrens, plans have to be flexible, as weather can quickly degrade the best made plans. Initially there was a series of plots for dust-fall monitoring around the circumference of the mine that the elders were to examine. When we arrived at the camp we realized that this portion of the project had to be postponed due to heavy snowfall that had recently fallen. The caribou portion of the project was still possible and was to be the focus of the camp.

The participants were:

- Harry Apples (Elder Tlicho)
- Noel Drybones (Elder Tlicho)
- Wayne Langenham (Elder North Slave Metis Alliance)
- Mike Francis (Elder Yellowknives Dene First Nations)
- Donald MacInnis (cook)
- Mabel Bouvier (cook)
- Alex Hood (De beers Canada)
- Andre Boulanger (De beers Canada)
- David White (SLEMA)

**Wednesday September 22, 2010** – Arrived and established camp Andre Boulanger, Alex Hood and David White did a ground reconnaissance to the ridge behind the camp.



There was sign of fox and snow bunting were seen in large flocks.

**Thursday September 23, 2010** – The Elders performed a ground survey for caribou in which they walked a 2 kilometre loop behind the camp onto a ridge. The ridge afforded excellent view of the surrounding countryside and the Mackay Lake Hunting lodge was visible at about 7km. There was abundant evidence of historic caribou activity including

numerous wide multiple trails worn in the ground and previous years shed antlers. The elders commented that there had been no caribou through the area in a few years.

Snow Geese, Buntings and Ptarmigan were observed. All the elders present were involved in this walk. It was determined that it was unlikely to see any caribou on foot from the location of the camp so it was decided that a number of flights would be made to try and locate caribou by air affording the elders a chance to observe caribou.



In the afternoon a helicopter flight was performed that included Alex Hood, Noel Drybones and Mike Francis as observers. This is designated as flight 1 (Map 2). During the flight, 1 bull musk-ox was observed, but no caribou were seen.

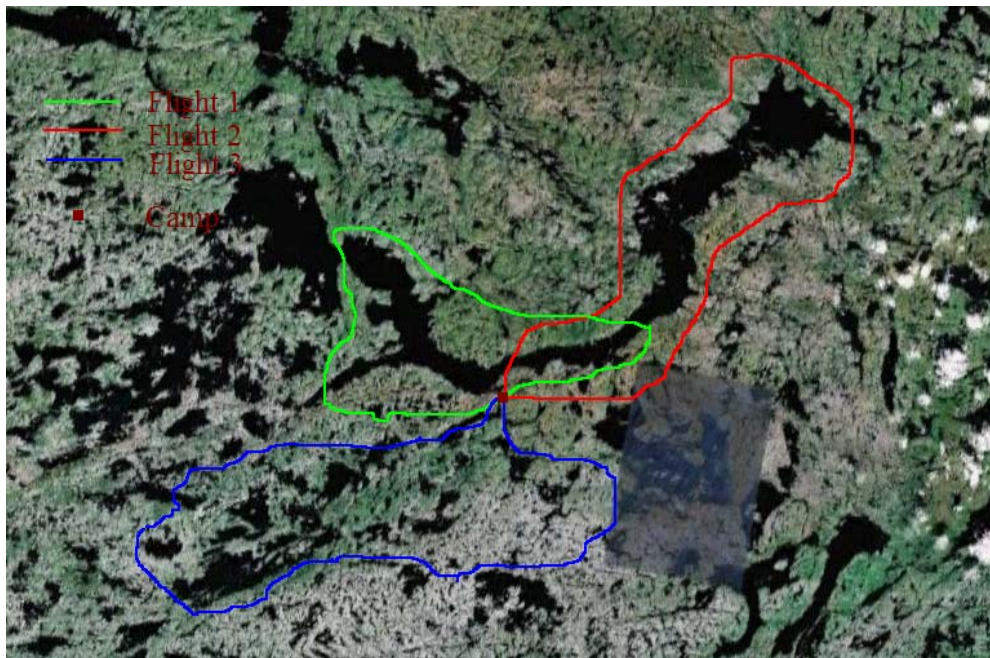


**Friday September 24, 2010** – Weather was poor with steady showers for the morning. Weather cleared in the afternoon and Wayne Langenham, Andre Boulanger and David White travelled South east on a ground searching for signs. No caribou again were sited. One pile of older caribou scat was found. 3 Ptarmigan, small flocks of buntings and two Rough Legged Hawks were seen.

**Saturday September 25, 2010** – One helicopter flight with Harry Apples, Andre Boulanger and Wayne Langenham as observers was flown in the morning (flight 2, Map

2). No Caribou were seen. In the afternoon another flight with Mike Francis, Noel Drybones and Alex Hood as observers (flight 3, Map 2). Again no caribou were seen.

**Sunday September 26, 2010** – Camp was broken down and participants departed around noon.



Map 2. Location of the Camp and the Route of 3 Flights

#### Conclusion:

This camp was a pilot project and needs to be judged on a number of criteria, including but not exclusively by the results. From a most basic level there were some set backs. The dustfall component was not possible due to weather considerations. This is always a possibility when performing work in a difficult environment. The total lack of caribou was disappointing. The inability of elders to assess living caribou is counteracted by the fact that the complete lack of caribou, in an area that in recent history had been present in large numbers was itself an important finding. The large and extensive number of trails tells a story of decades of caribou traversing the area. In recent times caribou numbers must have been large and predictable enough to encourage investors to build an extensive lodge to service large numbers of sport hunters within the study area. One legend from the hay day of the Mackay Lake Hunting lodge describes how sport hunters would have a competition to see who could shoot a trophy caribou closest to the lodge. The lodge now sits empty, closed indefinitely and for sale well below its previous market

value. The complete lack of caribou in an area and at a time that should have seen caribou in the hundreds and thousands is a good baseline observation. If caribou numbers start to recover, this camp's findings are a good starting point to assess recovery.

From the perspective of just the camp and transportation to the area, the camp was well planned. The supplies were not lacking in any significant way. The location was well chosen by the TK panel as it was obviously a good area historically for caribou as seen by the numerous trails and the close proximity to the Mackay Lake hunting lodge. De Beers was fully engaged and covered the majority of the costs including the purchase of the shelters and the transportation of the materials to the location. From a logistical perspective the camp was a great success in that it was executed safely and efficiently in a way that was comfortable for the elders and respectful of the land around the area. The lack of wildlife observations was valuable information of its own, and no effort was spared to cover the area surrounding the camp. The most significant and tangible benefit of the camp was that Elders from different communities could come together with employees of the Snap Lake Mine and share an experience and knowledge of the land, recognizing each other's value as people.

### Fish Tasting Event

The fish tasting event was a commitment made by DeBeers in the initial environmental negotiations and is found in the Environmental Agreement and in the Fishery Authorization issued by the Federal Department of Fisheries and Oceans. De Beers has



been fully engaged in this commitment since 2004 and it has been running as an annual event in August or September, with the exception of 2008 where due to the inability to catch any fish it was cancelled. The 2009 season and 2010 season were held, and in 2009 8 fish were caught and 6 fish in 2010. The fish were described as healthy during the necropsy in 2009.

Some fish were seen to have parasites in 2010 but were deemed ok for tasting. During the 2009 tasting fish taste was called good. In 2010 taste was called good, but elder for Lutsel Ke, Madeline Drybones described the fish as tasting mossy, but that this was normal in smaller tundra lakes like Snap Lake.



## **Assessment of the Mine**

De Beers runs the Snap Lake Diamond Mine in a way that maintains the majority of its environmental commitments.

SLEMA is pleased that De Beers kept consistent environmental management practices as normal during the short shutdown period in the summer of 2009. In addition to the annual fish tasting event, De Beers initiated a TK based monitoring program in September and set up a dustfall and caribou observation camp. SLEMA encourages De Beers to take more efforts in incorporating TK into its monitoring program.

However, there is always room to improve. SLEMA encourages De Beers to continue to update its management plans in a timely manner and continue to improve the quality of the plans.

## **Assessment of Regulators**

SLEMA not only monitors the environmental performance of De Beers Snap Lake Diamond Mine, but also the government agencies that regulate the Mine. The regulators remain effective in making sure that De Beers runs the Mine in a way that maintains the majority of its environmental commitments.

Mackenzie Valley Land and Water Board (MVLWB): MVLWB formally requested in December 2009 that De Beers provide its historic and current raw water quality data in a usable format for regulators and reviewers SLEMA appreciated the request because the raw data allowed Science Panel to better analyze the water quality change in Snap Lake. SLEMA also appreciated MVLWB's denial in December 2009 of the Ore Storage, Waste Rock and Processed Kimberlite Management Plan and denial in November 2009 of De Beers work request of grubbing of the East Cell ditches and sumps in advance of development activities.

Indian and Northern Affairs Canada (INAC): SLEMA is pleased with the timing and detail of INAC inspections. The INAC inspector has been showing great diligence and initiative, and he produced high quality inspection reports and exchanged ideas with SLEMA board members in meetings. INAC also contributed to the review of 5-Year AEMP Review, the update of four management plans and East Cell development.

Department of Fisheries and Oceans (DFO): DFO made great comments on 5-Year AEMP Review and East Cell development. DFO staff is helpful in providing reference information such as fluoride issues to SLEMA.

Environment Canada (EC): EC contributed to the review of 5-Year AEMP Review, and the update of four management plans.

Department of Environment and Natural Resources (ENR/GNWT): ENR contributed to the review of waste management issues and air quality issues.

## **Financial Report**

Snap Lake Environmental Monitoring Agency

Financial Statements

March 31, 2010

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## Snap Lake Environmental Monitoring Agency

### Financial Statements

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March 31, 2010

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	Page
Auditors' Report	3
Statement of Operations	4
Statement of Changes in Net Assets	5
Statement of Financial Position	6
Statement of Cash Flows	7
Notes to the Financial Statements	8 - 11

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## **Auditors' Report**

### **To the Members of Snap Lake Environmental Monitoring Agency**

We have audited the statement of financial position of Snap Lake Environmental Monitoring Agency as at March 31, 2010 and the statements of operations, changes in net assets and cash flows for the year then ended. These financial statements are the responsibility of the Agency's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

In our opinion, these financial statements present fairly, in all material respects, the financial position of the Agency as at March 31, 2010 and the results of its operations and its cash flows for the year then ended in accordance with Canadian generally accepted accounting principles.

**Yellowknife, Canada  
June 14, 2010**



**Chartered Accountants**

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## Snap Lake Environmental Monitoring Agency

### Statement of Operations

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For the year ended March 31,	2010	2009
<b>Revenues</b>		
De Beers Canada Mining Inc.	\$ 484,544	\$ 487,014
Interest income	-	2,175
Transferred from deferred revenue	20,306	105,679
Transferred to deferred revenue	(352)	(20,306)
	<b>504,498</b>	<b>574,562</b>
<b>Expenditures</b>		
Capacity funding	-	96,750
Honorarium	152,418	154,342
Insurance	2,200	2,395
Interest and bank charges	957	2,056
Office and administration	36,039	36,531
Professional fees	41,908	26,235
Rent	26,730	25,830
Travel and accommodation	44,374	42,906
Wages and benefits	196,991	185,955
	<b>501,617</b>	<b>573,000</b>
<b>Excess of revenues over expenditures before other item</b>	<b>2,881</b>	<b>1,562</b>
<b>Investment in fixed assets</b>	<b>2,881</b>	<b>1,562</b>
<b>Excess of revenues over expenditures</b>	<b>\$ -</b>	<b>\$ -</b>

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**Snap Lake Environmental Monitoring Agency****Statement of Changes in Net Assets**

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<b>For the year ended March 31,</b>	<b>2010</b>	<b>2009</b>
<b>Net assets, beginning of year</b>	<b>\$ 8,524</b>	<b>\$ 13,838</b>
<b>Excess of revenues over expenditures</b>	<b>-</b>	<b>-</b>
	<b>8,524</b>	<b>13,838</b>
<b>Investment in fixed assets</b>	<b>2,881</b>	<b>1,562</b>
<b>Amortization</b>	<b>(3,715)</b>	<b>(6,876)</b>
<b>Net assets, end of year</b>	<b>\$ 7,690</b>	<b>\$ 8,524</b>

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## Snap Lake Environmental Monitoring Agency

### Statement of Financial Position

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March 31,	2010	2009
<b>Assets</b>		
<b>Current</b>		
Cash	\$ 31,593	\$ 500,553
Prepaid expenses	5,474	33,189
	37,067	533,742
<b>Equipment (note 4)</b>	7,690	8,524
	\$ 44,757	\$ 542,266
<b>Liabilities</b>		
<b>Current</b>		
Accounts payable and accrued liabilities	\$ 36,715	\$ 28,892
Deferred revenue (note 5)	352	504,850
	37,067	533,742
<b>Net assets</b>		
<b>Investment in fixed assets</b>	7,690	8,524
	\$ 44,757	\$ 542,266

Approved by the members:

\_\_\_\_\_ Director

\_\_\_\_\_ Director



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## Snap Lake Environmental Monitoring Agency

### Statement of Cash Flows

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For the year ended March 31,	2010	2009
<b>Cash provided by (used for)</b>		
<b>Operating activities</b>		
Excess of revenues over expenditures before other item	\$ 2,881	\$ 1,562
Change in non-cash working capital items		
Accounts receivable	-	15
Prepaid expenses	27,715	69,865
Accounts payable and accrued liabilities	7,823	11,415
Deferred revenue	(504,498)	399,171
	(466,079)	482,028
<b>Investing activity</b>		
Purchase of equipment	(2,881)	(1,562)
<b>Increase (decrease) in cash</b>	(468,960)	480,466
<b>Cash, beginning of year</b>	500,553	20,087
<b>Cash, end of year</b>	\$ 31,593	\$ 500,553

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## Snap Lake Environmental Monitoring Agency

### Notes to the Financial Statements

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March 31, 2010

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#### 1. Organizational purpose

Snap Lake Environmental Monitoring Agency ("the Agency") is a non-profit organization incorporated under the *Societies Act* of the Northwest Territories. It is exempt from income tax under Section 149(1)(l) of the *Income Tax Act*.

The mission of the Agency is to oversee environmental management of the De Beers Snap Lake Diamond Project.

The Agency was incorporated and commenced operations on December 10, 2004.

#### 2. Significant accounting policies

The following is a summary of the significant accounting policies used by management in the preparation of these financial statements.

##### (a) Financial instruments – recognition and measurement

Section 3855 requires that all financial assets and financial liabilities be measured at fair value on initial recognition except for certain related party transactions. Measurement in subsequent periods depends on whether the financial asset or liability has been classified as held-for-trading, available-for-sale, held-to-maturity, loans and receivables or other liabilities.

Financial instruments classified as held-for-trading are subsequently measured at fair value and unrealised gains and losses are included in net income in the period in which they arise. Cash has been classified as held-for-trading.

Available-for-sale assets are those non-derivative financial assets that are designated as available-for-sale or are not classified as held-for-trading, held-to-maturity, or loans and receivables. Available-for-sale assets are subsequently measured at fair value with unrealised gains and losses recorded in other comprehensive income until realized, at which time they will be recognized in net income. No assets have been classified as available-for-sale.

Held to maturity assets are those non-derivative financial assets with fixed or determinable payments and fixed maturity that the Agency has an intention and ability to hold until maturity, excluding those assets that have been classified as held-for-trading, available-for-sale, or loans and receivables. They are subsequently measured at amortized cost using the effective interest method. No assets have been classified as held to maturity.

Financial instruments classified as loans and receivables are non-derivative financial assets resulting from the delivery of cash or other assets by a lender to a borrower in return for a promise to repay on a specified date or dates, or on demand, usually with interest. These assets do not include debt securities or assets classified as held-for-trading. They are subsequently measured at amortized cost using the effective interest method.

Accounts payable and accrued liabilities are classified as other financial instruments and are measured at cost or amortized cost.

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## Snap Lake Environmental Monitoring Agency

### Notes to the Financial Statements

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March 31, 2010

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#### 2. Significant accounting policies (continued)

##### (b) Financial instruments - disclosure and presentation

Section 3861 establishes standards for presentation of financial instruments and non-financial derivatives and identifies the information that should be disclosed about them. Under the new standards, policies followed for periods prior to the effective date generally are not reversed and therefore, the comparative figures have not been restated.

##### (c) Equipment

Equipment is recorded at original cost plus any costs of betterment less accumulated amortization and excludes any assets not in current use. Amortization is calculated by the declining balance method at the annual rates set out in note 4.

##### (d) Investment in fixed assets

Investment in fixed assets represents the accumulated cost of acquired capital assets net of disposals and amortization.

##### (e) Revenue recognition

The Agency follows the deferral method of accounting. The Agency recognizes unrestricted contributions when they are received or receivable if the amount receivable can be reasonably estimated and its collection is reasonably assured. Restricted contributions are recognized as revenue when the terms and conditions are met. The portion of revenue related to projects not completed at year end is deferred. This will be brought into income as the goods and services are acquired. Contributions for projects for which unexpended funds must be reimbursed at the end of the fiscal year are shown as contributions repayable.

##### (f) Use of estimates

The preparation of financial statements in conformity with Canadian generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the balance sheet date and the reported amounts of revenues and expenses during the year. Actual results could differ from those estimates.

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## Snap Lake Environmental Monitoring Agency

### Notes to the Financial Statements

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March 31, 2010

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#### 3. Future changes to significant accounting policies

##### International Financial Reporting Standards

In January 2006, the CICA Accounting Standards Board (AcSB) adopted a strategic plan for the direction of accounting standards in Canada. As part of that plan, accounting standards for publicly accountable entities, and other entities that so-choose, will converge with International Financial Reporting Standards ("IFRS"). Implementation for entities that either are required or elect to convert to IFRS will be mandatory for fiscal years beginning on or after January 1, 2011, but earlier adoption is permitted. The Society has elected to adopt IFRS effective for the fiscal year beginning on April 1, 2011. The impact of the transition to IFRS on the Agency's financial statements has not yet been determined.

#### 4. Equipment

				2010	2009
	Rate	Cost	Accumulated amortization	Net book value	Net book value
Furniture and fixtures	20%	\$ 9,925	\$ 5,730	\$ 4,195	\$ 4,588
Computer equipment	45/55%	16,605	13,111	3,494	3,538
Computer software	100%	10,069	10,068	1	398
		\$ 36,599	\$ 28,909	\$ 7,690	\$ 8,524

#### 5. Deferred revenue

		2010	2009
De Beers Canada Mining Inc.	\$	352	\$ 426,816
Department of Indian Affairs and Northern Development		-	78,034
	\$	352	\$ 504,850

#### 6. Supplemental cash flow information

		2010	2009
Interest paid	\$	957	\$ 2,056
Interest received	\$	-	\$ 2,175

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## Snap Lake Environmental Monitoring Agency

### Notes to the Financial Statements

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March 31, 2010

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**7. Economic dependence**

The Agency receives all of its contribution funding from De Beers Canada Mining Inc. Management is of the opinion that operations would be significantly affected if the funding was substantially curtailed or ceased.

**8. Commitments**

The Agency has entered into a premises lease commencing June 1, 2010 and expiring May 31, 2013 for \$2,500 per month plus GST (Year 2 \$2,640 per month, Year 3 \$2,700 per month).

**9. Comparative figures**

The financial statements have been reclassified, where applicable, to conform to the presentation used in the current year.

**10. Financial instruments**

The following sections describe the Agency's financial risk management objectives and policies and the Agency's financial risk exposures.

The Agency does not have formalized financial risk management objectives and policies.

**Credit risk**

Credit risk arises from the potential that a counter party will fail to perform its obligations. The Agency is exposed to credit risk from contributors. However, De Beers Canada Mining Inc. typically provides funding in advance which mitigates the risk.

**11. Capital disclosures**

The Agency's objectives when managing capital are:

- (a) To safeguard the Agency's ability to continue as a going concern, so that it can continue to benefit the Territory.
- (b) To provide an adequate return on investment of capital by providing services commensurate with the level of risk.

The Agency manages the capital structure in the light of changes in economic conditions and the risk characteristics of the underlying assets. The Agency monitors capital on the basis of working capital. Working capital is calculated as current assets minus current liabilities.

## Summary of SLEMA Comments from 2009 to 2010

The comments and recommendations for those documents reviewed by SLEMA from 2009 to 2010 are summarized as follow.

### Summary of SLEMA Comments from 2009 to 2010

Date	Addressee	Concern	Subject	Comment	Recommendation	Feedback/Response
11/02/2010	MVLWB		5-Year Review, AEMP	SLEMA found the Report of 5-Year AEMP Review and Conceptual AEMP Update to be satisfactory.		
10/22/2010	DFO		DO TDS	1. SLEMA reaffirms the recommendation on the use of the standard Winkler technique in the calibration of field DO meter. 2. DFO is referred to SLEMA modeling results on TDS.		
10/22/2010	De Beers		Water Quality	1. In response to De Beers request on modeling, equation, assumptions, calculation platform and data sources of SLEMA water quality model are provided. 2. the analysis of correlation between TDS, Calcium and Chloride is also provided.		

## Summary of SLEMA Comments from 2009 to 2010

Date	Addressee	Concern	Subject	Comment	Recommendation	Feedback/Response
10/22/2010	MVLWB		5-Year Review, AEMP 2008	<p>1. Monitoring for the sake of monitoring is a waste of time and money. Monitoring to detect early changes that lead to adaptive management so as to prevent undesirable changes is what an AEMP should do.</p> <p>2. It is in De Beers best interest to sample intensively along isopleths corresponding to cutpoints for spatial extent of levels of change (1%, 10% and 20% of the Snap Lake.</p> <p>3. In general, the AEMP 2008 report is very well laid out with the necessary information presented in the appropriate sections in a logical and clear manner.</p> <p>4. Follow-up blasting monitoring program should be implemented.</p> <p>5. Mercury (Hg) concentrations should be watched carefully due to proximity to the CCME Guideline for the Protection for Aquatic Life.</p>	<p>1. De Beers should commit to consistent long-term monitoring using the same techniques, locations and depths. Synoptic sampling of all measurement endpoints is strongly encouraged.</p> <p>2. De Beers should investigate adjustment of the plankton monitoring stations to make all plankton sampling locations consistent with water quality monitoring stations.</p> <p>3. De Beers should also collect 1cm sediment samples in conjunction with the samples being collected now (the top 5 cm from an Ekman grab) to enable a correlation to be established.</p> <p>4. Every reasonable effort should be made to ensure that holding times of samples are not exceeded.</p>	

## Summary of SLEMA Comments from 2009 to 2010

<b>Date</b>	<b>Addressee</b>	<b>Concern</b>	<b>Subject</b>	<b>Comment</b>	<b>Recommendation</b>	<b>Feedback/Response</b>
09/02/2010	MVLWB	TDS, Calcium and Chloride	Lake Water Quality, AEMP	<p>1. The model forecasts required by Sampling Plan for TDS, Calcium and Chloride (March 2005) have been outstanding.</p> <p>2. SLEMA modeling results show that TDS level in Snap Lake is expected to be above the EAR prediction and Water Licence limit (350 mg/L) in 2026, and Chloride level is expected to be above the EAR prediction (137 mg/L) in 2019 and above the trigger for adaptive management (160 mg/L) in 2024.</p>	<p>1. De Beers to conduct comprehensive water quality modeling and annual mass balance modeling, and fulfill the reporting requirement prescribed in the Sampling Plan.</p> <p>2. De Beers to consider a study plan for pollution prevention or source control.</p> <p>3. De Beers to re-establish the action level for TDS and update Adaptive Management Plan.</p>	<p>1. De Beers requested further information about SLEMA model. (09/09/2010)</p> <p>2. During the 5-Year AEMP Review, De Beers committed to completing hydro-geological model by January 2011 and site and lake models by April 2011, developing TDS benchmark by June 2011 and Management Response Plan by June 2012.</p>
08/30/2010	MVLWB		5-Year Review, AEMP	<p>1. The draft report is acceptable.</p> <p>2. The reduction of monitoring station number within Snap Lake may impact the calculation of the whole lake average concentrations of parameters.</p> <p>3. The proposal of increasing the number of downstream monitoring stations is supported</p> <p>Note: Further comments were provide by Science Panel member, Barry Zajdlik in the 5-Year AEMP Review meeting. (09/16/2010)</p>	De Beers to establish a set of "milestone" predictions of parameters for Year 5, 10, 15, 20, etc., based on water quality modeling results.	De Beers submitted the report for 5-Year AEMP Review and Conceptual AEMP Update. (09/30/2010)



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07/29/2010	MVLWB	Fluoride	Lake Water Quality, AEMP	Spot sampling has demonstrated that Fluoride levels have changed in Snap Lake, in some instances more than double the original background level and above the CCME interim guideline (0.12 mg/L) for the protection of aquatic life. This requires an explanation and consideration of future action should Fluoride levels continue to grow.	<ol style="list-style-type: none"> <li>1. De Beers to determine the origin of the Fluoride, the pathways and the cycle.</li> <li>2. To determine the spatial extent of elevated Fluoride within Snap Lake.</li> <li>3. To include Fluoride as one of the parameters in sediment analysis.</li> <li>4. To determine effects on northern species of invertebrates and fish, and develop an effect threshold for Fluoride for Adaptive Management.</li> <li>5. To include an action plan for Fluoride in the updated Adaptive Management Plan.</li> </ol>	De Beers provided the profiles for minewater Fluoride, effluent Fluoride and effluent Calcium, and safe concentrations of Fluoride for Rainbow and Brown Trout (5.1 and 7.5 mg/L) from a study of a northern United States river with hard water. (08/25/2010)
07/19/2010	MVLWB		ARD and AEMP 2009	<ol style="list-style-type: none"> <li>1. 2009 Acid Rock Drainage and Geochemistry Monitoring Report (ARD 2009) meets the reporting requirement.</li> <li>2. Two concerns were raised while AEMP Water Quality Section was reviewed.               <ol style="list-style-type: none"> <li>1) Fluoride levels above the CCME interim guideline (0.12 mg/L) for the protection of aquatic life;</li> <li>2) Possibility of TDS level in Snap Lake above Water Licence limit (350 mg/L) after SLEMA modeling.</li> </ol> </li> </ol>	<ol style="list-style-type: none"> <li>1. De Beers to conduct literature review for the impacts of Fluoride on aquatic life.</li> <li>2. De Beers to re-assess its mining plan and re-evaluate its water quality model system, and provide up-to-date predictions.</li> </ol>	

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06/22/2010	MVLWB		WMP	The June 2010 version of Water Management Plan (WMP) was well prepared, compared to the August 2009 version. No major concerns are raised but a few editorial comments.		
05/07/2010	INAC		EAAR 2008	2008 Environmental Agreement Annual Report (EAAR 2008) was found to be acceptable.	More improvements in the report presentation are expected.	INAC found it to be satisfactory. (06/28/2010)
04/30/2010	MVLWB		WLAR 2009	No major concerns are raised but a few editorial comments for 2009 Water Licence Annual Report (WLAR 2009).	De Beers to continue its efforts in correcting the problems of the rainfall and snowfall monitor and take full advantage of the data for analysis.	
04/15/2010	MVLWB		Closure	The submission of 2009 Annual Mine Reclamation Status Report was past due.	Even if there is “nothing to report”, that is also a status of mine reclamation and De Beers has to comply with the reporting requirement and report the “nothing to report” status in time.	The report was approved by MVLWB. (04/29/2010)
03/09/2010	De Beers		Multiple Reports	No major concerns are raised for 2009 Annual Reports for Dissolved Oxygen and Total Dissolved Solids, Streamflow and Lake Elevation Monitoring Program 2008 Annual Report, ARD 2008, and 2008 Meteorological Monitoring and Emissions Reporting Annual Report.	SLEMA supports the use of the standard Winkler technique in the calibration of field DO meter.	

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02/25/2010	MVLWB	To forgo the 5-Year Review	AEMP	De Beers request to forgo the AEMP review for an unspecified period of time would affect timelines pertaining to field seasons, documents review and the impending Water Licence renewal.	<ol style="list-style-type: none"> <li>1. SLEMA recommends an extension (to September 30) rather than forgoing the review.</li> <li>2. With time the review period should be changed to 3 years for the purpose of consistency with other two diamond mines.</li> </ol>	<ol style="list-style-type: none"> <li>1. MVLWB extended the review to September 30. (03/19/2010)</li> <li>2. AEMP 5-Year Review completed as scheduled. (09/30/2010)</li> </ol>
01/21/2010	MVLWB		Plans	No major concerns are raised for Domestic Waste and Sewage Management Plan (June 2009), Hazardous Materials Management Plan (July 2009), and Ore Storage, Waste Rock, and Processed Kimberlite Management Plan (January 2010). Cross referencing among the Plans is problematic.	There are too many editorial problems in the Water Management Plan (August 2009), and De Beers is recommended to resubmit the Plan after improvement.	<ol style="list-style-type: none"> <li>1. Three Plans were approved by MVLWB. (02/05/2010)</li> <li>2. Water Management Plan was updated in June 2010.</li> </ol>
11/26/2009	MVLWB	North Pile	PK Storage	The proximity of the processed kimberlite (PK) deposition cells (East Cell of the North Pile) to Snap Lake is of great concern. The 5 spills within the North Pile footprint from 2006 to 2010 demonstrate the possibility of process water seeping through the access road to downstream tundra and further to Snap Lake.	SLEMA feels that all parties need to exercise a particularly high level of due diligence in this case. This requires a vigorous or more robust assessment of the plans and designs.	

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11/05/2009	MVLWB		SNP	<p>1. Temporary termination of SNP 02-03 is acceptable. The monitoring station has to be re-established after the ore is processed. Permanent termination of the monitoring station can be considered during Water Licence renewal.</p> <p>2. Weekly sampling for SNP 02-16i due to the flight schedule change is acceptable but De Beers has to make sure appropriate alternation of Sunday to Thursday sampling.</p>	<p>1. De Beers to improve its proactive planning of activities.</p> <p>2. To reduce the impact of missing data of Friday and Saturday samples, it is recommended that De Beers conduct in-house monitoring of time sensitive parameters of samples taken on every other Friday and Saturday, alternately.</p>	MVLWB approved De Beers request for amendment of SNP 02-03 and SNP 02-16i. (12/03/2009)
06/19/2009	MVLWB		SNP		SLEMA supports the request of the sampling frequency of SNP 02-16i from every 6 days to every 7 day during 2009 shutdown period.	The request was approved by MVLWB. (07/02/2009)
05/28/2009	MVLWB		North Pile	<p>1. SLEMA prefers smaller footprint of the North Pile to keep the facility further from Snap Lake.</p> <p>2. The Elders from SLEMA's Traditional Knowledge Panel are concerned with increased presence on the landscape and increase in the amount of dust that may result from increasing the height further.</p>	As a result of the concerns SLEMA is unable, at this time, to recommend the approval of the North Pile Cell Phase III Embankment and Development Detailed Design.	<p>1. SLEMA made a site visit in June 2009 and De Beers described the plans to the elders.</p> <p>2. The request to raise the height of the Starter Cell was approved with conditions. (07/02/2009)</p>

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04/23/2009	De Beers	Reporting			De Beers to include SLEMA in all future submissions of reports and plans relating to the Snap Lake Mine in regards to environmental monitoring.	
04/23/2009	De Beers		Air	<ol style="list-style-type: none"> <li>1. Air Quality, Meteorological Monitoring and Emission Reporting 2007 Annual Report fulfils the related requirements.</li> <li>2. Further details in emissions estimation are requested.</li> <li>3. The data recovery of wind speed and wind direction, and snow fall monitoring should be improved.</li> </ol>	Stack testing is recommended to confirm the compliance of incinerator dioxins and furans.	
04/23/2009	De Beers	Plans out of date		Environmental Agreement requires that De Beers shall provide the Signatory Parties and SLEMA with updated copies of its environmental management plans, not later than six months before the commencement of commercial production. De Beers officially opened the mine on July 25, 2008. However, a few environmental management plans are outstanding.	De Beers to update plans for .adaptive management, .water management, .closure and reclamation, .ore, waste rock and PK, .waste and sewage, and .hazardous materials.	The Plans were updated from 2009 to 2010, except for Adaptive Management Plan and Interim Mine Closure and Reclamation Plan.

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04/09/2009	De Beers		WLAR	<p>1. Improvement of format and contents were observed in the Water Licence 2007 Annual Report (WLAR 2007).</p> <p>2. WLAR 2007 fulfils the reporting requirements.</p> <p>3. A few concerns are raised:                      .high nutrients loading,                      .non-compliance of zinc,                      .cancellation of field surveys,                      .TDS and chloride levels, and                      .toxicity testing failures.</p>	<p>1. Fish tissue samples should be taken and analyzed in the future fish tasting events.</p> <p>2. AEMP should be updated.</p>	
04/07/2009	MVLWB		LUP		SLEMA supports the request for extension to Land Use Permit (LUP) with condition.	MVLWB extended LUP MV2001C0012 to May 4, 2011. (04/23/2009)
03/05/2009	MVLWB		North Pile	<p>The Ore Storage, Waste Rock, and Processed Kimberlite Management Plan (November 2008) seems to be a draft document.</p> <p>2. The design for the North Pile East Cell is justifiable, and the only concern is whether the buffer zone (50 meters) between the North Pile and Snap Lake is enough.</p>	<p>1. De Beers to improve the document quality prior to next submission.</p> <p>2. De Beers to closely monitor the water levels in sumps, ditches and Snap Lake, especially during spring freshets period, and to keep water level in sumps and drainage ditch below the water level in Snap Lake.</p>	The Ore Storage, Waste Rock, and Processed Kimberlite Management Plan (November 2008) was not approved by MVLWB, and De Beers was required to resubmit the Plan by January 8, 2010. (12/17/2009)
03/05/2009	MVLWB	Ammonia Nitrate		SLEMA appreciates the efforts De Beers has taken to try to meet the authorization deadline of February 16, 2009, and will support the extension request to temporary ammonia nitrate (AN) storage with conditions.		De Beers built a permanent facility for AN storage and relocated AN to the facility in September 2009.

## Acronyms

AN – Ammonia Nitrate

ARD – Acid Rock Drainage

AEMP – Aquatic Effects Monitoring Program

CCME – Canadian Council of Ministers of the Environment

DFO – Department of Fisheries and Oceans

EA – Environmental Agreement

EAR – Environmental Assessment Report

EC – Environment Canada

ENR – Environment and Natural Resources (GNWT)

GNWT – Government of the Northwest Territories

INAC – India and Northern Affairs Canada

LKDFN – Lutsel Ke Dene First Nations

MVLWB – Mackenzie Valley Land and Water Board

NSMA – North Slave Metis Alliance

PK – Processed Kimberlite

SLEMA – Snap Lake Environmental Monitoring Agency

SNP – Surveillance Network Program

TDS – Total Dissolved Solids

TK – Traditional Knowledge

YKDFN – Yellowknives Dene First Nations