



May & June 2020  
Environmental Update  
for SLEMA Board  
July 07, 2020

# Outline

1. Mine Update
2. SNP Reports
3. Inspection Reports
4. Update of the Water Licence and Land Use Permit Review Process for Snap Lake Mine Closure
5. Environmental Agreement Update
6. SLEMA's Activities



# Acronyms

- AEMP – Aquatic Effects Monitoring Program
- ARD – Acid Rock Drainage
- DFO – Fisheries and Oceans Canada
- ECCC – Environment and Climate Change Canada
- ECM – Extended Care and Maintenance
- ENR – Department of Environment and Natural Resources, GNWT
- EQC – Effluent Quality Criterion
- GNWT – Government of the Northwest Territories
- MVEIRB – Mackenzie Valley Environmental Impact Review Board
- MVLWB – Mackenzie Valley Land and Water Board
- PK – Processed Kimberlite
- SNP – Surveillance Network Program
- TDS – Total Dissolved Solids
- WEMP – Wildlife Effects Monitoring Program
- WTP – Water Treatment Plant
- WMP – Water Management Pond



# 1. Mine Update

- The Snap Lake Mine is currently on Extended Care and Maintenance (ECM);
- All personnel left the site on September 5th, 2019 and returned on April 22, 2020 resuming Care & Maintenance activities at site;
- During this period of time two SNP Reports were submitted by DeBeers corresponding to April 2020 and May 2020.





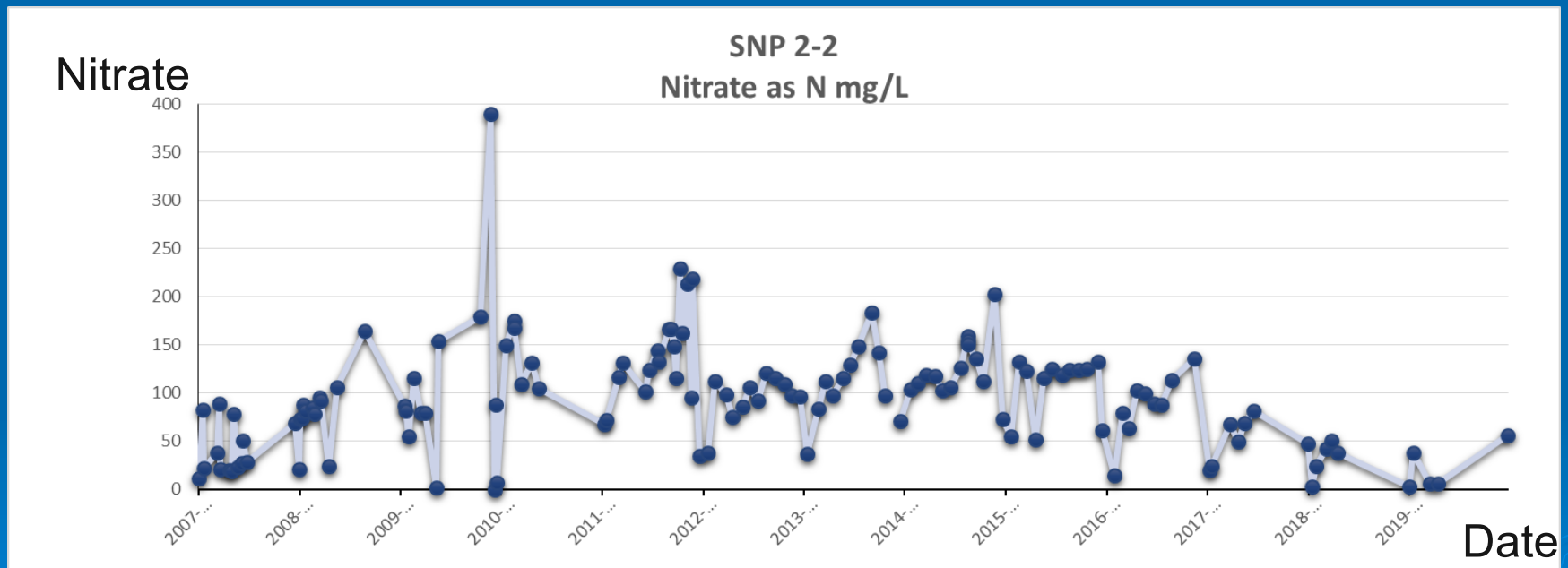
## 2. SNP Reports for April and May 2020

- April SNP Report: No sampling was conducted;
- May SNP Report: Monitoring of Snap Lake Mine was carried out at the following SNP monitoring stations:
  - SNP02-02 North Pile Collection Ditch;
  - SNP02-06 Uncontrolled surface runoff at Quarry Site;
  - SNP02-14 Water Management Pond;
  - SNP02-15 Water Intake;
- SNP02-16i Sewage Discharge from Sewage Treatment Plant prior to mixing with Water Treatment Plant Effluent



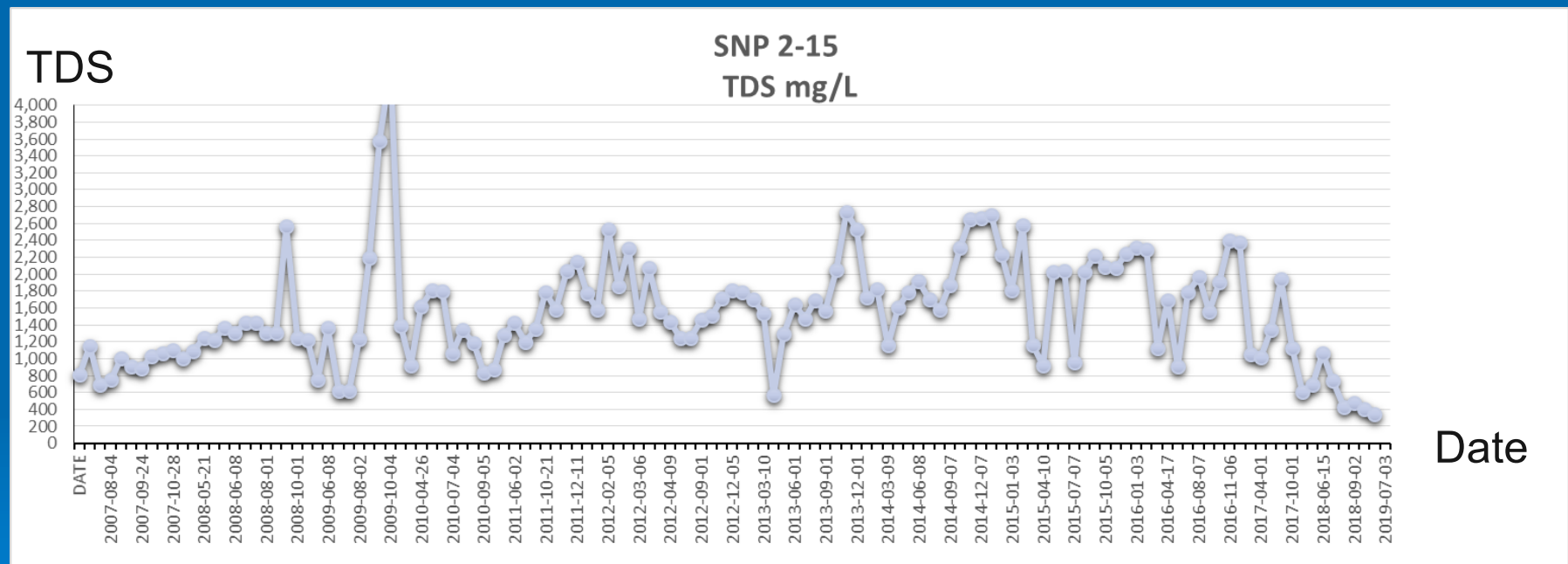
## 2. SNP Reports for April & May 2020

- Graph 1: Nitrate in SNP02-02 North Pile Collection Ditch, Data 2007-2020



## 2. SNP Reports

- Graph 2 TDS in mg/L at SNP 02-15 Snap Lake Water Intake, Data from 2007 to 2019



## 2. SNP Reports for April and May 2020

- Other regulatory monitoring included:

Air Quality Monitoring;

Fuel Inspections,

Geotechnical monitoring;

Wildlife;

Meteorological data downloads



### 3. GNWT Inspector's Report

- May 22, notice of Non-Compliance with Water Licence MV2011L2-0001 Part G, Condition #1

The Inspector's notice to DeBeers is due to the failure to complete under-ice sampling for the 2020 season, at the following locations:

- Snap Lake diffuser area: SNP 02-20d, 02-20d, 02-20f
- Snap Lake main basin: SNAP03, 05, 06, 08, 11A



### 3. GNWT Inspector's Report

#### ➤ Notice of Non-Compliance (cont.)

Non-compliance due to the failure to complete the under-ice sampling at the following locations:

- Snap Lake Northwest Arm: SNAP23, 29
- Northeast Lake: NEL01, 02, 05
- Lac Capot Blanc: LCB-1, 2A, 7, 8; LCB Outlet 1, 2A
- Upstream of King Lake: KING01
- MacKay Lake: Node 22, MCKY-WEST-3





### 3. GNWT Inspector's Report

#### ➤ Notice of Non-Compliance (cont.).

According to DeBeers:

- DeBeers was unable to conduct the AEMP under-ice sampling requirements due to unique circumstances related to the COVID-19 global pandemic;
- Seasonal opening date was pushed back from March 27th, to April 23rd, 2020.
- As a result of the delay, ice conditions at the mine were deemed unsafe for personnel to conduct field operations



### 3. GNWT Inspector's Report

- Notice of Non-Compliance (cont.).

Finally, the Inspector informed that “no further enforcement action would be pursued due to the unique circumstances presented by the ongoing COVID-19 global pandemic”.



### 3. GNWT Inspector's Report

#### ➤ June 4 Inspection Report

An Inspection of the Snap Lake Diamond Mine Project was conducted by Inspector Joe Heron on June 4th, 2020;

The following areas were inspected:

- North Pile & North Pile Perimeter Sumps
- Water Management Pond
- Water Treatment Plant
- Waste Transfer Area & Landfill
- Site Storage Facilities
- Snap Lake Mine Quarry



### 3. GNWT Inspector's Report

#### ➤ June 4 Inspection Report:

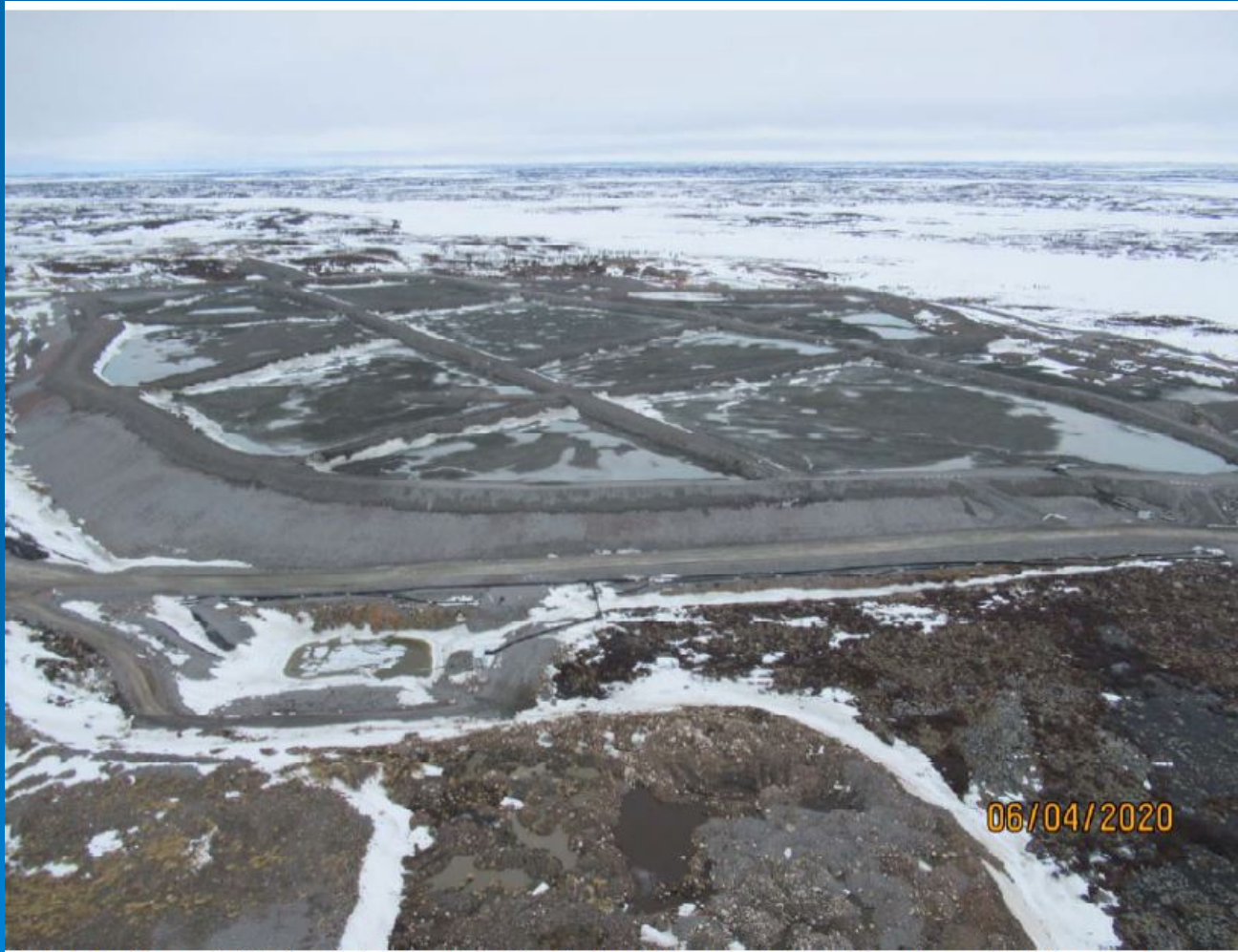
No major concerns were reported by the Inspector regarding the inspected facilities

Next, pictures taken at site are shown





### 3. GNWT Inspector's Report



**Photo 1:** Looking west at the Snap Lake Mine North Pile. The North Pile perimeter Sump #2 can be seen in the foreground.



### 3. GNWT Inspector's Report



Photo 2: Looking south at perimeter Sump #3. The eastern edge of the North Pile can be seen on the right.





### 3. GNWT Inspector's Report



Photo 3: Looking south at the North Pile perimeter Sump #4.



### 3. GNWT Inspector's Report



Photo 4: Sump #5 is located north and west of the North Pile.





### 3. GNWT Inspector' Report



Photo 5: Looking north at the Water Management Pond. Sump #3 can be seen in the top of the photo.



### 3. GNWT Inspector's Report



**Photo 6:** Looking west at the main site. Water levels at the underground are monitored at the buildings on the bottom-left and at the mine underground access portal.





### 3. GNWT Inspector's Report



Photo 7: Once the site water from the mine WMP is treated, tested and deemed acceptable for discharge, the water is discharged through the mine diffuser seen in the bottom-right.



### 3. GNWT Inspector's Report



**Photo 8:** Freshwater required for camp use is drawn from Snap Lake at the fresh water intake in the bottom right. Near the centre of the photo are the site bulk fuel storage & distribution facilities.





### 3. GNWT Inspector's Report



**Photo 9:** Looking west at the camp Waste Transfer Area, camp incinerators and the burn pit. The North Pile perimeter Sump #1 can be seen in the right of the photo.





### 3. GNWT Inspector's Report



**Photo 10:** Looking west at the decommissioned AN facility Emulsion Plant. The site vegetation test plots can be seen in the centre-left of the photo.





### 3. GNWT Inspector's Report



Photo 11: Looking west at Laydown #1 with the mine airstrip in the background.



### 3. GNWT Inspector's Report



Photo 12: Looking east at the site quarry located south of the main mine facility.





### 3. GNWT Inspector's Report



Photo 12: Looking east at the site quarry located south of the main mine facility.



## 4. Update of Regulatory Process for Snap Lake WL Amendment – Renewal

On May 21 the MVLWB informed all parties that Water Licence MV2019L2-0004 was approved. by the Minister of Environment and Natural Resources in accordance with the Mackenzie Valley Resource Management Act and Waters Act.

- This Licence has been approved for a period of 15 years effective June 14, 2020 and expiring June 13, 2035.





## 5. Update of Environmental Agreement

- On May 13, as per the Snap Lake Environmental Agreement Item 10.1, DeBeers submitted the following documents:
  - Air Quality Meteorological Monitoring and Emissions 2019 Annual Report;
  - Hydrology 2019 Annual Report;
  - Wildlife Effects Monitoring Program 2019 Annual Report;



## 5. Update of Environmental Agreement

### ➤ May 13 DB's submissions:

- Wildlife and Wildlife Habitat Protection Plan 2019 Annual Report;
- Vegetation Monitoring 2019 Annual Report.

These reports will be distributed for review to all Environmental Agreement signatories, and SLEMA



## 6. SLEMA ACTIVITIES UPDATE

- 1) SLEMA Review of the SNP monthly reports  
SLEMA reviewed monthly SNP reports submitted by DeBeers and found them acceptable and did not find any major issues.
- 2) SLEMA exchange of emails with DeBeers regarding the Plankton Response Plan  
SLEMA comments on AEMP DeBeers Plankton trigger notification recommending the submission of a Response Plan prompted an email from DeBeers with clarifications about why a response plan is not required.





## 6. SLEMA ACTIVITIES UPDATE

- 2) SLEMA exchange of emails with DeBeers regarding the Plankton Response Plan (cont.)

DeBeers' response addressed SLEMA's concerns and we agreed that a Response Plan was not required at this time.

