



**INDUSTRIAL WATER USE INSPECTION REPORT, Pg. 2**

Date: August 18<sup>th</sup>, 2021

Water License: MV2019L2-0004

**Explanatory Remarks**

An Inspection of the Snap Lake Mine Project was conducted by Inspector Joe Heron (Resource Management Officer III) on August 18<sup>th</sup>, 2021. The Inspector was accompanied by Mr. Kyle Emslie (Environmental Coordinator, Snap Lake Mine) and all findings of the inspection were discussed onsite. At the time of inspection, there were 20 persons onsite.

**North Pile Facility & Water Management**

The majority of pumping activities at the North Pile cells has been completed for the season (Photos #1 & #2) with the electrical submersible pumps and diesel (Godwin) pumps being removed from the North Pile. The pumps have been staged in the site buildings for the season and will be readied for the next seasons pumping activities. In the event of heavy precipitation this year, the pumps can be easily deployed to pump water from the North Pile cells into the North Pile sumps where the water can be further managed, treated and discharged.

It should be noted the staff gauges within the North Pile Sumps needed to be surveyed into place or required maintenance to ensure accuracy. The staff gauges must be properly in place in the North Pile sumps prior to the summer shutdown to ensure water levels within the sumps are being properly monitored at all times as per the approved mine *Water Management Plan*. The onsite sumps appeared to have adequate capacity to assist management of the winter snowfall and spring freshet.

As part of the seasonal shutdown activities at the mine, water within the sumps was pumped down with the water reporting to the mine Water Management Pond (WMP – Photos #3-#11). Once at the WMP, the water is treated through the mine Water Treatment Plant (WTP) and/or the modular water treatment plant. If the water does not meet EQCs after treatment, the water is re-treated through a closed circuit until EQCs are achieved and the water is then pumped out through a discharge diffuser into Snap Lake (Photo #12).

On July 12<sup>th</sup>, 2021 personnel at the Snap Lake Diamond Mine commenced the decommissioning of the Reverse Osmosis (RO) Treatment Plant due to the reduced water use onsite. The modular Water Treatment Plant (WTP) has been deemed sufficient to treat the volumes of water currently requiring treatment at the mine (Photos #13-#15). As seen in Photo #16, the RO filter membranes have been removed for storage and the membrane tubes have been cleaned. The plant will be commissioned during the Spring/Summer 2022 season and no further concerns were noted by the Inspector regarding the water treatment and water management activities at the Snap Lake Diamond Mine.

**Hydrocarbon Management**

The Inspector was informed the containment structures are monitored on an ongoing basis and pumped out as water accumulates with the water reporting to the mine WMP. No major hydrocarbon staining was noted on the ground at the mine and spills are being recorded, cleaned up and disposed of as the spills occur. Though not a major concern, the Licensee is reminded to diligently monitor secondary containment structures at the Snap Lake Diamond Mine to ensure adequate capacity is available in the event of spills (Photos #17-#19).

**Spills**

Currently, there are three (3) open reportable spills at the Snap Lake Mine:

NT-NU 2017-440: On December 7<sup>th</sup>, 2017 a day tank at the mine auxillary genset overtopped and ~5,903 L of diesel fuel was spilled (Photo #20). The spill is currently under the jurisdiction of *Environment and Climate Change Canada* (Federal Government).

NT-NU 2021-311: On July 26<sup>th</sup>, 2020 seepage outside the north wall of the North Pile sump PS3 was discovered by staff. As per the Engineer’s Recommendations, a dye test commenced July 19<sup>th</sup>, 2021 and on July 26<sup>th</sup>, 2021 testing results showed the origin of the seepage to be from PS3. A follow-up report and water testing results were forward to the Board and the Inspector on August 24<sup>th</sup>, 2021.



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<p><b>Explanatory Remarks</b></p> <p>Mitigative measures taken by mine personnel included pumping the water levels below 446.1 MASL at PS3 to prevent headpressure from pushing water under the containment wall, the installation of a sediment fence to prevent potential sediment flushing into Snap Lake, and the establishment of an interceptor ditch with a submersible electrical pump (Photos #21 &amp; #22). Should seepage be captured in the interceptor ditch, the water will be pumped back into the PS3 sump. The Licensee must ensure the sump and interceptor ditch are diligently monitored to ensure the minewater remains contained within the North Pile sump system.</p> <p>The Engineers Recommendations regarding the steps to be taken to resolve the seepage area is currently under development and is due mid-September 2021.</p> <p><u>NT-NU 2021-352</u>: On August 17<sup>th</sup>, 2021 a flex line within the containment berm of the 12-million L tank farm failed and an undetermined amount of fuel spilled into containment (Photos #23 &amp; #24). As per Water Licence MV2019L2-0004 Part H, Condition #4 d), the follow-up report is due September 16<sup>th</sup>, 2021 and must include the final volume of fuel spilled and remediation efforts.</p> <p><b>Waste Management</b></p> <p><u>Landfill</u>: It appeared only acceptable waste continues to be deposited into the Snap Lake Mine landfill and no concerns were noted (Photo #25).</p> <p><u>Incineration</u>: Waste metals and ash collected from the site incinerators and burn area is tested and disposed of at the mine landfill or is containerized and shipped offsite for disposal at an approved facility (Photos #26-#30). As seen in Photo #31, a containment tray with hydrocarbons used for fire response training was near capacity and needed to be adequately addressed. This Inspector was informed the hydrocarbons will be containerized to await disposal at an approved facility.</p> <p><u>Hazardous Waste</u>: Hazardous waste appeared to be properly containerized, staged and labeled at the mine Waste Transfer Area to await offsite disposal at approved facilities (Photos #32-#34).</p> <p><u>Sewage</u>: No concerns were noted regarding the ongoing sewage management activities at the Snap Lake Diamond Mine (Photos #35 &amp; #36).</p> <p><b>Conclusion</b></p> <p>Overall, the Snap Lake Diamond Mine appears to be operating in compliance with the conditions annexed to Water Licence MV2019L2-0004. Due to changes regarding onsite activities, weekly updates are now provided to the Inspector. The Inspector is pleased with the efforts of personnel at the Snap Lake Diamond Mine to comply with the conditions annexed to Water Licence MV2019L2-0004 and its associated plans.</p>
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Completed off Site  
Representative's Signature

Joseph Heron  
Inspector



Inspector's Signature