



Government of Northwest Territories
Gouvernement des Territoires du Nord-Ouest

FEB 15 2017

MR. KIERON TESTART
MLA, KAM LAKE

Oral Question 484-18(2): Kam Lake Environmental Assessment

This letter is in follow-up to the Oral Question you raised on February 1, 2017 regarding the remediation of Con Mine and an environmental assessment for Kam Lake.

Miramar Northern Mining Limited (MNML) is responsible for the remediation of the Con Mine site. All current remediation activities at Con Mine are regulated under Water Licence MV2007L8-0025, issued by the Mackenzie Valley Land and Water Board (MVLWB) in 2008.

The Water Licence requires that activities at the Con Mine be completed to prevent the long term release of contamination from the site to the local environment. MNML has taken steps to collect and direct any surface runoff from the site, including areas bordering near Kam Lake, to its central water control area (i.e. the Pud tailings system). This water is stored onsite and treated to meet standards set in the Water Licence for the protection of the environment, prior to discharge. Treated water is released into the Meg-Keg-Peg lake system, located to the south of the property, and ultimately flows downstream into Great Slave Lake.

Under its water licence, MNML is required to do monitoring during its remediation program. This monitoring includes all surface runoff water, seepage collection pond water and treated water released to the environment. MNML's monitoring requirements also include monitoring the water quality of Kam Lake during the open water season each year. All monitoring results collected as a requirement of the water licence are available publicly and can be found on the MVLWB public registry.

Additionally, for your information, monitoring is required where treated effluent is released under the Metal Mining Effluent Regulations (MMER) Environmental Effects Monitoring (EEM) program, administered by Environment and Climate Change Canada (ECCC). This information can be requested through ECCC, although generally it can also be found on the MVLWB public registry.

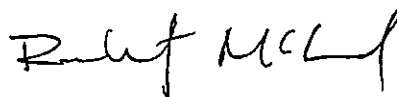
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Furthermore, I understand that there has been additional monitoring and research in Kam Lake over the years, with some of the earliest work dating back to the 1970s. This work included sampling undertaken on lake sediment in Kam Lake. I have attached a short list of published studies which you may find useful.

Also, as mentioned in my verbal response, there is a current study on mercury and other metals on large-bodied fish funded by the Cumulative Impact Monitoring Program and Polar Knowledge Canada. This study includes Kam Lake and the analysis is ongoing.

Finally, with respect to Departmental involvement in Con Mine remediation activities, officials with the Department of Environment and Natural Resources review all submissions made by MNML regarding remediation of the site, sampling results and EEM reports. Technical staff will also participate fully in the Board process to renew the existing water licence, which is set to expire in November 2018.

I trust this response addresses your questions regarding Kam Lake.



Robert C. McLeod
Minister
Environment and Natural Resources

Attachment

- c. Clerk of the Legislative Assembly
Legislative Coordinator, Executive

Attachment: Oral Question 484-18(2): Kam Lake Environmental Assessment

The following source is used to provide a list of published studies that includes data or references information collected from Kam Lake.

Galloway, J. M., Palmer, M., Jamieson, H. E., Patterson, R. T., Nasser, N., Falck, H., Lemay, D. 2015. Geochemistry of lakes across ecozones in the Northwest Territories and implications for the distribution of arsenic in the Yellowknife region. part 1: Sediments. Geological Survey of Canada Open File 7908. doi:10.4095/296954

The following list below includes the published studies cited from the source above. These studies were conducted on water and sediment in the Yellowknife Area.

Bright, D.A., Coedy, B., Dushenko, W.T., Reimer, K.J. 1994. Arsenic transport in a watershed receiving gold mine effluent near Yellowknife, Northwest Territories, Canada. *The Science of the Total Environment* 155: 237-252.

Bright, D.A., Dodd, M., Reimer, K.J. 1996. Arsenic in sub-Arctic lakes influenced by gold mine effluent: the occurrence of organoarsenicals and 'hidden' arsenic. *Science of the Total Environment* 180: 165-182.

Dushenko, W.T., D.A. Bright, and K.J. Reimer. 1995. Arsenic bioaccumulation and toxicity in aquatic macrophytes exposed to gold-mine effluent: relationships with environmental partitioning, metal uptake and nutrients. *Aquatic Botany* 50: 141-158.

Environmental Sciences Group (ESG) 2001. Arsenic levels in the Yellowknife area: Distinguishing between natural and anthropogenic inputs. Report prepared for Yellowknife Arsenic Soil Remediation Committee (YASRC). Report number RMC-CCE-ES-01-01, 57 p.

Falk, M.R., Miller, M.D., Kostiuk, S.J.M. 1973a. Biological effects of mining wastes in the Northwest Territories. Technical Report Series No. CEN/T-73-10. Department of Environment, Fisheries, and Marine Service, Fisheries Operation Directorate. Central Region.

Falk, M.R., Miller, D.M., Kostiuk, S.J.M. 1973b. Data supplement to: Biological effects of mining wastes in the Northwest Territories. Technical Report Series No. CEN/T-73-10. Department of Environment, Fisheries, and Marine Service, Fisheries Operation Directorate. Central Region.

Koch, I. 1998. Arsenic and Antimony Species in the Terrestrial Environment. Ph.D. Thesis. University of Waterloo, Waterloo, Ontario.

Wagemann, R., Snow, N.B., Rosenberg, D.M., Lutz, A. 1978. Arsenic in sediments, water and aquatic biota from lakes in the vicinity of Yellowknife, Northwest Territories, Canada. *Archives of Environmental Contamination and Toxicology* 7: 169-191.