



NORTHERN
WATERWORKS INC.
Water Treatment Specialists

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Mark Vermette,
Chief Administrative Officer
Municipality of Red Lake

RE: Evolution Mining Sewage Diversion Project

Mr. Vermette,

In 2017, the operator of the Red Lake Gold Mines (then Goldcorp, now Evolution Mining) approached the Municipality of Red Lake and proposed a concept of diverting domestic wastewater from their Shaft # 3 Complex, which they currently treat onsite using a rotating biological contactor (RBC), to the Balmertown Wastewater Treatment Plant.

Evolution Mining and their consulting engineers, Keewatin-Aski Ltd. have provided the Municipality of Red Lake and Northern Waterworks Inc. with relevant data to support the concept, including:

- Historical flow data
- Wastewater characteristics (water quality) data
- Engineered drawings

Based on our review of the data provided, we believe the Balmertown Wastewater Treatment Plant has sufficient pumping capacity to accept the additional wastewater flows from the Shaft # 3 Complex.

Based on our review of the data provided, we believe the wastewater characteristics are acceptable, and wouldn't be expected to interfere with the biological treatment processes of the Balmertown Wastewater Treatment Plant. Given high pH and alkalinity of the wastewater from Evolution Mining, it is possible there may actually be a net benefit to the biological treatment process.

We do have some concerns with the increased solids loading that would result from the proposed wastewater diversion project. At the present time, solids byproducts from this facility are dewatered using a 6-bag (permeable) dewatering system. The solids (sludge) bagging system is capable of processing up to 12 bags of sludge per day (2 bagging runs x 6 bags per run), and is typically operated Monday through Friday. Currently, the sludge bagging system is

unable to withdraw solids at a sufficient rate to maintain proper food to microorganism ratios, and must be periodically augmented by hauling liquid sludge using a vacuum truck. The additional solids loading on the treatment facility caused by the proposed wastewater diversion project could be expected to increase the frequency and volume of sludge that will need to be withdrawn as liquid using the vacuum truck. Bagged sludge is disposed of at the Municipal Landfill Site, liquid sludge is deposited into drying beds owned by the Municipality of Red Lake (Balmertown Sludge Disposal Site, Sully Lake Sludge Disposal Site). These drying beds are also operating at or near their capacity.

It is possible that accepting the proposed wastewater diversion may necessitate an increase to the sludge handling capacity at the Balmertown Wastewater Treatment Plant (bagging system) and/or at the Municipal sludge drying beds (Sully Lake Sludge Disposal Site, Balmertown Sludge Disposal Site), both of which would be accomplished through capital improvements.

Aside from the challenges related to solids handling, we believe the Balmertown Wastewater Treatment Facility can accept the proposed wastewater diversion from Evolution Mining's Shaft # 3 Complex without any adverse consequences.

Please contact us at your convenience if you have any questions or require further information.

Regards,

[original signed]

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