

## Federal & Provincial Government Expert Concerns with New Prosperity Mine Proposal

### 1. Deteriorating Fish Lake Water Quality & Unproven “Aquarium” Lake Recirculation

#### Environment Canada

“The Proponent’s modelling suggests water quality in Fish Lake may be **marginal** for the protection of aquatic life.” ([EC Panel Submission, July 25, 2013, CEAR #738, p. 10](#)).

“There are **few, if any, examples** of lake recirculation at the scale proposed by the Proponent” ([EC Panel Submission, July 25, 2013, CEAR #738, p. 11](#)).

“Environment Canada is concerned that the recirculation mitigation measure proposed to manage water quality and the biological productivity of Fish Lake is **unproven** at this scale...the **high level of uncertainty** regarding the Proponent’s recirculation scheme is a particular concern given the stated goal of preserving Fish Lake.” ([EC Panel Submission, July 25, 2013, CEAR #738, p. 12](#)).

#### Department of Fisheries and Oceans

“The Proponent’s mitigation and adaptive management plan to preserve the functioning of Fish Lake using a recirculated closed system **uses unprecedented and untested technology** ... DFO is not aware of any examples of wilderness lakes or watersheds that have been subject to a recirculation program.” ([DFO Panel Submission, July 23, 2013, p. 14, CEAR #691](#)).

“The New Prosperity Mine configuration was modified by from the original plan to prevent the immediate destruction of Fish Lake to create a tailings pond. In the New Prosperity Mine configuration, the Fish Lake watershed could be extensively altered, requiring intensive engineering efforts to maintain flows and lake levels. While Fish Lake itself would not be directly destroyed, as noted by the Proponent in the 2012 EIS, **the lake is predicted to experience eutrophication and contamination with development of the mine.**” ([Supplemental DFO Panel Submission, August 4, 2013, CEAR #886, p. 15](#)).

#### Ministry of Energy and Mines

“MEM believes that in the context of preserving Fish Lake and its tributaries there remain uncertainties around the ability to limit and collect the expected volumes of seepage from the TSF, and the ability to effectively treat water to maintain water quality in Fish Lake and its tributaries. This leads MEM to conclude that, as detailed in the EIS and supporting documents, **the ability to prevent adverse effects to Fish Lake and its tributaries from a water quality perspective is uncertain.**” ([MEM Panel Submission, August 6, 2013, CEAR #873, p. 3](#)).

“Taseko has proposed relying on adaptive management including water treatment to mitigate adverse effects to Fish Lake water quality and to conclude no significant adverse effects to Fish Lake. Since the effectiveness of the proposed treatment processes to decrease metal concentrations to the design specifications has not been fully provided, **MEM believes that Taseko’s conclusion of their ability to prevent adverse effects to Fish Lake is also uncertain.**” ([MEM Panel Submission, August 6, 2013, CEAR #873, p. 2](#)).

“Recirculation of Fish Lake flows in an effort to preserve the ecological values of Fish Lake and its tributaries is a very significant commitment. Fresh water diversion and flow augmentation through pumping and piping are sometimes applied at BC minesites, however not typically at this scale or for this length of time.” ([MEM Panel Submission, July 19, 2013, CEAR #655, p. 16](#)).

“The predicted average model results indicate BC fresh water aquatic life water quality guidelines will be exceeded in Fish Lake, Upper Fish Creek, and Tributary 1 for aluminum, cadmium, iron, lithium, selenium, silver and thallium. Predicted average pit lake concentrations also exceed guidelines for antimony, arsenic, cobalt, mercury and zinc.” ([MEM Panel Submission, July 19, 2013, CEAR #655, p. 20](#)).

“MEM notes that the proposed membrane water treatment, sulphide reduction, and ion exchange **water treatment technologies are not widely used in mining applications, and none are currently in use at British Columbia minesites.** The information provided on water treatment in the supplemental response provides very high level concepts but does not provide design level information that demonstrates that target objectives can be met. **Water treatment is a primary mitigation strategy for this project and it should be demonstrated to be feasible at the EA phase, especially since it is key to conclusions on project related effects.**” ([MEM Comment on Adequacy of June 5, 2013 Supplemental Information, Submitted June 14, 2013, CEAR #541, p. 2](#)).

“Seepage from the TSF is a very significant management issue for the Prosperity project, given the directive to protect the integrity of Fish Lake. There is large uncertainty regarding the spatial extent and hydraulic conductivity of the TSF till foundation materials and the current assumptions of its effectiveness to limit seepage have not been justified are considered potentially not conservative. Sensitivity analyses show that significantly higher seepage rates than used in the water quality loading models could occur.” ([MEM Panel Submission, July 19, 2013, CEAR #655, pp. 14-15](#)).

### **Ministry of Environment (Forests, Lands and Natural Resource Operations)**

“**Concerns have been raised...over the possibility of deteriorating water quality in the Fish Lake system.** This could result in the loss or reduction of the productive capacity of the lake and unsuitable water quality for other uses including wildlife habitat use. These concerns stem from the high degree of uncertainty surrounding the capability and feasibility of the water quality mitigation measures (i.e. mixed levels of success for treatment and the lack of previous experience combining treatments on a lake) to treat water so as to avert irreversible impacts to water quality and aquatic life. **Should such a scenario play out, there is a substantially greater risk of irreversibly damage to the Fish Lake ecosystem and the wildlife use of the**

system either directly by exposure to algal bloom toxins or indirectly by avoidance of the area due to poor water quality.” ([BC Environmental Assessment Office Panel Submission, July 19, 2013, p. 16/56 of PDF, CEAR 654](#)).

## 2. Long-term Liabilities to Taxpayers & Questionable Economics of the Project

### Ministry of Energy and Mines

“While detailed costing is reviewed at the *Mines Act* permitting stage when setting the financial security requirements, **the full costs of treatment should be fully evaluated by the Proponent at the EA stage as it has the potential to affect the economics of a project. MEM expects that the amount of financial security that could be required to fund this scale of long-term liability would be very high and are likely unprecedented in the province.**” ([MEM Panel Submission, July 30, 2013, CEAR #787, p. 5](#)).

“In addition to the requirements for Fish Lake water treatment, the open pit lake may require water treatment prior to spilling at Year 48. The potential additional treatment requirements and costs associated with it have not been scoped in the EA or in these review comments.” ([MEM Panel Submission, July 30, 2013, CEAR #787, p. 5](#)).

“An assessment of the potential effects to predicted water quality in Fish Lake, Fish Lake Tributaries, and the pit lake are documented in the Impact Assessment starting on pages 761, 764, and 769, respectively. **The summary water quality effects assessment for Fish Lake, Fish Lake tributaries, adjacent streams and rivers and adjacent lakes all conclude that water quality conditions could become significantly adverse (pages 793-796) if left unmitigated.**” ([MEM Panel Submission, July 19, 2013, CEAR #655, p. 21](#)).

“MEM concludes it is reasonable to assume that TSF water will need to be relayed to the open pit in the long term and Fish Lake may require re-circulation for at least 100 years, and perhaps in-perpetuity.” ([MEM Panel Submission, July 19, 2013, CEAR #655, p. 21](#)).

“Based on preliminary cost information submitted for project configuration T2 (IR#4a), it appears that the costs for water treatment and for some aspects of water management, may not have been fully factored into the project. Water treatment is a significant undertaking, and the current proposed water treatment systems are known to be very expensive. **The proponent should consider the full costs of these environmental protection requirements, as they have the potential to significantly affect the economics of the project.**” ([MEM Panel Submission, July 19, 2013, CEAR #655, p. 27](#)).

### 3. Risks to Taseko River & Other Nearby Lakes

#### Environment Canada

"Environment Canada is concerned that the Proponent may have underestimated the potential impacts of the Project on water quality in Wasp Lake, Little Onion Lake and Big Onion Lake. Given that these lakes drain to the Taseko River, **Environment Canada is also concerned that the Proponent may have underestimated impacts on water quality in the Taseko River.**" ([EC Panel Submission, July 25, 2013, p. 19, CEAR #738](#)).

#### Department of Fisheries and Oceans

"Natural Resources Canada recently expressed concern that Taseko's seepage rate estimates for the TSF [Tailings Storage Facility] may be **11 times higher** than those modeled in the EIS [Environmental Impact Statement] ... as a result, groundwater seepage estimates that were modeled in the EIS may be underestimated. If actual baseline groundwater seepage contributions into Taseko River are significantly higher than those modeled, then **development of the Project could result in impacts to Taseko River that have not been considered by the Proponent.**" ([DFO Panel Submission, July 23, 2013, p. 13, CEAR #691](#)).

#### B.C. Ministry of Environment

"There are concerns regarding the modeling of groundwater movement and the lack of on-site monitoring wells. Furthermore the mitigation method of recycling the water back from intercepting wells downslope may not be effective because the pathways for groundwater movement are not completely understood. **There exists the potential for the movement of contaminated groundwater from the mine site into other surrounding watersheds downslope including the Taseko River**" ([BC Environmental Assessment Office Panel Submission, page 7/56 of PDF, CEAR 654](#)).

"**Water from the seepage ponds are to be discharged to Big Onion Lake and Wasp Lake. These lakes are expected to see deteriorating water quality. Creeks leading from these lakes go to Beece Creek and Taseko River, highly valuable fish streams. Pit Water is expected to be discharged to Fish Creek long after the mining is completed. This water will receive little dilution in Fish Creek before it enters Taseko River**" ([BC Environmental Assessment Office Panel Submission, page 35/56 of PDF, CEAR 654](#)).

**\*NOTE: This document does not try to provide a comprehensive list of comments on impacts to Tsilhqot'in culture, rights and use.**