



***INDEPENDENT ENVIRONMENTAL MONITORING AGENCY***

P.O. Box 1192, Yellowknife, NT X1A 2N8 ■ Phone (867) 669-9141 ■ Fax (867) 669-9145  
Website: [www.monitoringagency.net](http://www.monitoringagency.net) ■ Email: [monitor1@yk.com](mailto:monitor1@yk.com)

May 17, 2010

Eric Denholm  
Superintendent—Traditional Knowledge and Permitting  
EKATI Diamond Mine  
BHP Billiton Canada  
#1102, 4920 - 52nd Street  
Yellowknife NT X1A 3Z1

Dear Mr. Denholm

**Re: Use of Nitrate Ideal Performance Standard in Ekati Water Management**

The Agency has concerns about the applicability and use of the nitrate Ideal Performance Standard (IPS) in managing mine water discharges from the Ekati diamond mine.

We noted that BHPB first presented the nitrate IPS during the renewal of the Sable, Pigeon and Beartooth water licence, as a preferred alternative to the current CCME nitrate water quality objective. While the Agency did not object to the use of the nitrate IPS in our May 18, 2009 submission to the Wek'eezhii Land and Water Board on the draft amalgamated water licence, we stated that the proposed Effluent Quality Criterion (EQC) for nitrates into Horseshoe Lake appeared to be high and we requested further rationale. We subsequently learned that BHPB now uses the nitrate IPS in determining the acceptability of discharges from the Long Lake Containment Facility (LLCF) into the downstream environment.

To better inform ourselves about the nitrate IPS, the Agency arranged a presentation from the author of the relevant Environment Canada publication, Martha Guy. We acknowledge that the methodology to develop the IPS contains more recent and relevant study results in developing water quality objectives for nitrate. However, we note the following quote from the Environment Canada nitrate IPS report:

Although there may be low level effects on weight of lake trout at the proposed IPS value, no effects on survival would be expected as McGurk *et al.* (2006) also reported a MATC for lake trout mortality of 886 mg NO<sub>3</sub>-L<sup>-1</sup> (Table 8). **CCME (2007) recommends using the lower point [13 mg NO<sub>3</sub>-L<sup>-1</sup> or 2.95 mg/L NO<sub>3</sub>-N-L<sup>-1</sup>] as the criterion in watersheds where Lake trout occur and are considered an important component of the ecosystem.** [pg. 36, emphasis added]

The CCME 2007 reference is to the following:

Canadian Council of Ministers of the Environment. Approved Draft 2007.  
CCME. A protocol for the derivation of water quality guidelines for the protection of aquatic life. To be published in: Canadian environmental quality guidelines, 1999, Canadian Council of Ministers of the Environment, Winnipeg.

We are concerned about how the nitrate IPS may be applied to and used to determine the acceptability of discharges from the LLCF. We are concerned that downstream lake trout may be subjected to chronic effects of nitrate discharges from the LLCF.

We trust that BHPB will provide a full explanation as to how the nitrate IPS is used to determine the timing and quantity of discharges from the LLCF and why the nitrate IPS is used given that lake trout are an important species found downstream.

We look forward to your reply and an opportunity to discuss it.

Sincerely

A handwritten signature in black ink, appearing to read "W. Ross".

Bill Ross  
Chairperson

cc. Society Members  
Kathy Racher, WLWB  
Anne Wilson, Environment Canada  
Bruce Hanna, Fisheries and Oceans