



***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)

September 24, 2012

Eric Denholm  
Superintendent-Traditional Knowledge and Permitting  
EKATI Diamond Mine  
BHP Billiton Canada  
1102 4920 52 Street  
Yellowknife NT X1A 3T1

Dear Eric

**Re: Early Adoption of the Proposed Nitrate SSWQO at Ekati**

The Agency appreciates the work done by BHP Billiton (BHPB) towards an early adoption of the Site-Specific Water Quality Objective (SSWQO) for nitrate discharge at the Ekati diamond mine. The meeting with other interested parties and BHPB's consultants, Marc Wen and Peter Chapman, on September 18, 2012 was very helpful in better understanding BHPB's research and concerns. We recognize that there are no legal requirements or water licence conditions that prevent BHPB from immediately implementing the proposed nitrate SSWQO for Ekati and we appreciate the opportunity for early dialogue on this issue.

The early adoption of the proposed SSWQO for nitrate for use at Ekati is linked closely with BHPB's overall water licence renewal application and issues such as the use-protection approach. The Agency has concerns about this approach in terms of the acceptability of the magnitude of downstream water quality changes. It is unclear to us how the use-protection approach is consistent with the precautionary principle and BHPB's Zero Harm policy. We may submit additional comments and concerns on the use-protection approach and the proposed SSWQO for nitrate during the water licence renewal process.

The Agency supports efforts to ensure that there is a thorough peer review of BHPB's proposed SSWQO for nitrate and the recent Nautilus Environmental study on the relationship between nitrate toxicity and water hardness.

The Agency is also concerned that the water likely to be discharged through the Long Lake Containment Facility (LLCF) as a result of early adoption of the nitrate SSWQO will also contain elevated hardness related to calcium and magnesium. In the 2006 Aquatic Effects Monitoring Program, a multi-variate analysis suggests that hardness was one of the key causes of declines in cladocera populations (a favoured food source for fish) downstream of the LLCF. The Agency would like to see a more rigorous chemical characterization of the water likely to be

discharged under the proposed SSWQO for nitrate, and the potential biotic consequences of such discharge. A scenario should be run using the updated LLCF water quality model to better identify other contaminants of concern beyond nitrate. Such a scenario would also be useful to design a special study to properly monitor downstream aquatic effects especially as a result of increased levels of nitrate, hardness, TDS, and other likely contaminants of concern.

The Agency appreciated the verbal responses from BHPB on previous efforts at source reduction for nitrates at Ekati. We believe it would be useful to document this longer term approach including with some comparison with other diamond mine efforts to reduce nutrient enrichment from explosive use during mining.

Finally, we urge BHPB to engage Aboriginal parties should the company wish to proceed with the early adoption of the SSWQO for nitrate as the basis for future discharges from the Long Lake Containment Facility.

We look forward to further opportunities to discuss water quality at Ekati.

Sincerely,

A handwritten signature in black ink, appearing to read "W.A. Ross". The signature is fluid and cursive, written in a professional style.

Bill Ross  
Chairperson

cc. Kathy Racher, WLWB  
Society Members  
Bruce Hanna, Fisheries and Oceans  
Lisa Lowman, Environment Canada