



INDEPENDENT ENVIRONMENTAL MONITORING AGENCY

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Brent Murphy
Chief Environment Officer--Operations
BHP Billiton Diamonds Inc.
#1102, 4920 52nd Street
Yellowknife NT
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Dear Brent

Re: AEMP Re-evaluation

As requested by BHPB during the November 21-22, 2006 technical meeting to discuss the AEMP Re-evaluation, the Agency would like to provide the following initial comments.

We note from our representatives at the meeting that it was well attended by regulators. The tone of both days of the session was generally open and constructive and we thank BHPB for the opportunity to discuss the AEMP and potential changes for the 2007-9 work.

As expressed by others at the meeting, the Agency found it difficult to properly prepare for the meeting given the very short time to review materials provided just in advance of the discussions. The Agency may also wish to submit additional comments to the Wek'ezhii Land and Water Board when the formal review begins and depending on how BHPB responds to these initial concerns.

We have organized our initial comments around the following areas:

- Scope of the AEMP re-evaluation and information or analytical gaps;
- Changes to future aquatic monitoring and reporting; and
- Resolution of methodological issues.

Scope of the Re-evaluation and Gaps

The Agency is generally pleased and supportive of the current AEMP and many of the proposed changes. However, we do differ with the company in that the Agency is of the view that the scope of the re-evaluation should not be limited to the methods for collecting data but should also involve the results observed, and some discussion of which water quality variables are being analysed and reported on in the AEMP. For this reason, we feel it is



essential that the results of the LLCF water quality studies be available for the WLWB to conduct a proper re-evaluation of the AEMP. The LLCF water quality studies are critical to a number of on-going regulatory requirements including the AEMP re-evaluation. For example, should the LLCF water quality study indicate an expected increase in a water quality variable not now being analysed and reported on annually, it would be appropriate to add that variable to the analysis and reporting. We encourage BHPB to complete and submit the LLCF water quality studies as soon as possible to allow the WLWB, the Agency, and others, to conduct an informed and timely re-evaluation of the AEMP.

Time-of-travel from the LLCF to Lac de Gras or the number of times each lake is flushed per year on an annual basis, at peak discharge, and during times of no discharge, would be helpful to assist in the interpretation of downstream water quality throughout the year. Time-of-travel data would assist in explaining downstream water quality data which could otherwise be regarded as anomalous and discarded.

We applaud the efforts of BHPB and its consultants in conducting the multivariate analysis. Unfortunately, neither nitrate nor molybdenum (both variables of interest) were included in the analysis owing to a high percentage (greater than 40%) of missing data or values below the detection limit. We suggest that BHPB should explore the water quality database for both molybdenum and nitrate to allow inclusion of these parameters in a multivariate analysis, particularly for plotting against biological data using Bray-Curtis dissimilarity values.

Changes to Future Aquatic Monitoring and Reporting

The Agency supports multivariate analysis being conducted as part of the analysis for future AEMP reporting, at least every third year. The results of multivariate analysis go far beyond the univariate approach in the current AEMP in that water quality changes are shown to be the likely agent influencing changes in zooplankton communities.

Detailed analysis of low abundance zooplankton species (e.g. Cladocera) can identify specific patterns not seen in the total zooplankton composition. The fact that these changes can be evaluated against changes in water quality variables related to the LLCF and KPSF is a clear advantage of multivariate analysis over the existing AEMP data analysis methods. The Agency suggests that BHPB should, in annual AEMP reports, conduct and report on multivariate analysis linking water quality to biological changes.

There is considerable reluctance to carry out fish palatability tests using standard methods because it is “too risky” to subject human participants to fish captured “within the plume”. Such tests were requested by Aboriginal communities during the water licensing and the Agency is of the view that properly administered taste tests could be carried out using scientifically defensible methods with little risk to the taste panel. We believe that BHPB should discuss the fish palatability testing directly with Aboriginal communities and that alternative methods should be explored and presented to the Wek’ezhii Land and Water Board if agreement is reached.

BHPB has stated that it will be conducting tests for metals and hydrocarbons in fish muscle and liver. The Agency supports continued metals analysis of fish flesh, and given the interest shown by Aboriginal communities, suggests that additional analysis be done for the presence of chlorinated organics in fish muscle and liver.

The multivariate analysis helped to show that shallow depth benthos sampling results in lakes are too variable naturally to be a useful monitoring tool. The Agency supports a move to focus sampling only on mid-depth (5-10 metres) and deep (more than 10 metres) sampling.

The Agency remains interested in hearing more about how BHPB intends to comply with the new water licence requirement for cumulative effects assessment on Lac de Gras (Part I, section 3 (h)).

Resolution of Methodological Issues

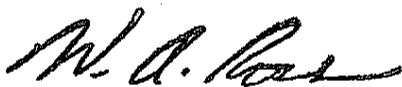
There are two fundamental issues that require further work in the view of the Agency. In-lake variability testing to resolve questions of pseudo-replication, and what constitutes acceptable effect in waters downstream from BHPB.

The Agency supports a program of in-lake sampling to determine if lake samples are true replicates or pseudo replicates. Perhaps two lakes should be investigated-a large volume lake such as Leslie or Slipper and a lake with two inflows, such as Moose.

The Agency supports the development of a framework to help define acceptable aquatic effects of discharges from Ekati. At the meeting, representatives of the Department of Indian Affairs and Northern Development volunteered to coordinate a workshop which would help clarify what is apparently ill-defined in the original EIS. The Agency would be pleased to participate in this effort.

In conclusion, we trust that you will find our comments constructive and helpful as we work together to maintain good water quality downstream of Ekati now and for future generations. We would be happy to meet with you to discuss any of the matters we have raised.

Sincerely,



Bill Ross
Chairperson

cc. Society Members

Sarah Baines, Wek'eezhi Land and Water Board
Scott Stewart, DIAND Water Inspector