INDEPENDENT ENVIRONMENTAL MONITORING AGENCY
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David Scott
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Dear David

Re: Air Quality Monitoring at Ekati Diamond Mine

As a result of the EIR (Environmental Impact Review) 2006 Air Quality Monitoring technical session held on March 7, 2006 and subsequent discussions with regulators later in March, several issues have emerged with respect to air quality monitoring at Ekati.

The effective implementation of air quality monitoring at Ekati has been a learning experience and significant progress has recently been made with the work on the CALPUFF modeling and that the purchase of new incinerators is a commendable initiative by BHPB. We understand that reports will soon be available on the CALPUFF model development and results, as well as the results of the 2005 air, snow and vegetation monitoring programs. However, there are some issues and concerns that remain outstanding.

Ambient Air Quality Monitoring

BHPB made a clear commitment to establish an ambient air quality monitoring program for SO_2, NO_2 and total suspended particulates as early as December 1995 in a response to the EARP Panel request for additional information. This commitment was further formalized in the Environmental Agreement article 7.2 (h) where BHPB is required to carry out ambient air quality monitoring with a goal of ensuring that there are no significant adverse environmental effects and that compliance with regulatory requirements is achieved. Such monitoring is also to be used to determine the environmental effects of the project, test impact predictions and measure the performance of operations and effectiveness of impact mitigation. The Environmental Agreement further requires BHPB to consult and cooperate with agencies undertaking cumulative effects monitoring programs.

The current air quality monitoring at Ekati does not meet the commitments made by BHPB.

GNWT has ambient air quality guidelines in place and there are Canadian Ambient Air Quality Objectives and Canada Wide Standards, but it is not known with any certainty

whether the Ekati mine meets these standards. BHPB's commitment to meet these objectives and standards is found in s. 1.2 of its Air Quality Management Plan.

At the request of the Agency and others who reviewed the 2001 air quality monitoring program results, BHPB began efforts to improve air quality monitoring early in 2004 by hiring Rescan to develop a new air dispersion model to, among other things, better predict ambient air quality at and around the mine site for comparison against the above mentioned air quality objectives and standards (see page 7 of the February 5, 2004 letter from Rescan to BHPB).

We note that both Environment Canada and GNWT wrote to BHPB during the model development and review of the emission inventory with constructive comments to assist with the improvement to air quality modeling and monitoring (see letters dated April 21, 2004 and April 5, 2005). We are not aware of any formal reply by BHPB or response to the request from these regulators for a meeting to further assist the company and its consultants. It is apparent that there has been very little interaction between the company and the relevant government air quality officials over the past several years, despite the requirement in the Environmental Agreement for BHPB to take the initiative in this regard.

It seemed very clear to the Agency from the outset that much of the modeling work was aimed at both ambient air quality and deposition concerns to improve understanding of ambient air quality at the mine site and to improve monitoring, especially snow deposition and, if found necessary, ambient air quality monitoring such as the placement of the high volume samplers. During the EIR 2006 Technical Session, we were surprised to hear from BHPB that it had no intention of using CALPUFF to predict ambient air quality. Environment Canada and GWNT staff present also raised these concerns.

In our view BHPB should:

1. *Use the CALPUFF model to predict ambient air quality at the mine site and for the surrounding areas to prove compliance with national and GWNT air quality objectives and standards. The modeling exercise, based on current understanding may well lead reasonable reviewers to the conclusion that these objectives are being met. In such a case, BHPB should then apply more formally to the appropriate parties for authority to drop the required ambient air quality monitoring if that is the course the company wishes to take. If there is no clear indication that air quality objectives and standards are being met, BHPB may be advised to design and implement an ambient air quality monitoring program as it is currently required to do. Such an exercise would properly focus on any matters of concern identified through the modelling exercise.*

2. *Work more collaboratively with Environment Canada and Government of the NWT air quality officials in designing and implementing air quality modeling and, if needed, monitoring program.*

Quality Assurance and Quality Control

While there was some useful discussion at the EIR 2006 Air Quality Technical Session, BHPB now needs to deliver the results of the air quality, snow sampling and vegetation sampling programs in a timely fashion. GNWT has recommended changes to the sampling protocols for the snow program and high volume sampler (see letter from GNWT dated July 23, 2003). The need for these changes was highlighted at the March 2006 meeting when it was shown that nitrates measured in snow around the mine site appear to be lower than background levels found at an accredited national monitoring network site at nearby Snare Rapids, a result that seems most unlikely.

To remedy this, we suggest the following:

3. *BHPB work collaboratively with Environment Canada and Government of the NWT air quality staff in reviewing air quality and deposition sampling protocols to ensure proper QA/QC. This review should be completed within six months and any changes should be incorporated into an updated Air Quality Management Plan.*

Incinerators

It is good news that BHPB has committed to the purchase and installation of new, more efficient incinerators that have the potential to significantly reduce air emissions. However, BHPB's current Waste Management Plan does not provide any specific details on the operation of incinerators.

To fix this, we recommend the following:

4. *BHPB revise its Waste Management Plan to more clearly set out requirements for incinerator operator training and certification (very helpful – some say necessary – for effective use of the incinerators) and to require waste segregation to ensure that as little plastic as possible enters the incinerators (helpful or necessary to reduce generation of dioxins and furans).*

5. *BHPB conduct regular (at least annual) stack testing of incinerators on site to ensure safe and effective operation and the results should be reported publicly. These commitments should be included in the revised Waste Management Plan.*

The discussion at the EIR 2006 air quality technical session indicated, encouragingly, that BHPB and its consultants intend to look at potential linkages amongst various data sets collected as part of different monitoring programs. To better understand any potential linkages between the incineration of materials on site and contaminants in fish, the Agency suggests the following:

6. *Fish samples collected as part of the five-year sampling program should be analyzed for organochlorines to determine whether there have been any effects on*

Kodiak Lake fish compared to fish sampled from other lakes (i.e. Vulture, Moose, Nema and Slipper).

We look forward to BHPB's response.

Sincerely,

-ORIGINAL SIGNED BY-

Bill Ross
Chairperson

cc. Society Members
Dave Fox, Environment Canada
Graham Veale, Environment and Natural Resources, GNWT
Ed Hornby, District Manager, South Mackenzie District - DIAND