

Mackenzie Valley Environmental Impact Review Board

Our File EA01-004

April 4, 2003

Mr. Robin Johnstone
Senior Environmental Manager
De Beers Canada Mining Inc.
300-5102 50th Avenue
Yellowknife, NT X1A 3S8

Dear Mr. Johnstone:

**Re: The Record for the DeBeers Canada Inc. Snap Lake Diamond Project
Environmental Assessment – Socio-economic and Wildlife Questions**

As part of its preparations for the March 26th-27th, 2003 pre-hearing conference for the Snap Lake Environmental Assessment (EA), the Mackenzie Valley Environmental Impact Review Board (Review Board) conducted a review of the information filed to date on the public record for this proceeding.

The Review Board must ensure that there is sufficient evidence on the record to provide a foundation for any analysis which will be undertaken after the completion of the public hearings and for any recommendations which may be included in the Report of the Environmental Assessment sent to the Federal Minister. The Review Board also wants to ensure that the discussion of the proposed Snap Lake project at the hearings will be undertaken on the basis of the best available evidence.

As a result of the review of the record referred to above, the Review Board has concluded that there are two areas of general importance to the EA where the filed information is not sufficient to meet these needs. Specifically, the Review Board is concerned about the adequacy of the information addressing socio-economic issues and impacts, including cumulative impacts, and it has similar concerns about the information related to wildlife and the impacts of the proposed project on wildlife. In light of these concerns, the Review Board intends to ensure that it has a basis for making the determinations required by subsection 128(1), as well as sufficient information to address section 115(a) and, in particular section 115(b) of the *Mackenzie Valley Resource Management Act*.

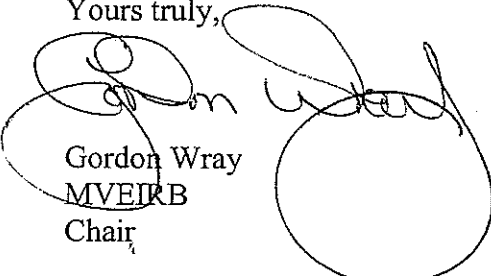
Consequently, the Review Board has prepared a number of questions, which are attached for De Beers Canada Mining Inc. (De Beers). These questions are intended to address

and alleviate the Review Board's concerns with respect to the public record and the hearing. The attached questions largely stem from previously raised questions or issues, for which sufficient information has not yet been placed on the public record.

Your timely response would be appreciated. The Review Board encourages De Beers to make every effort to file the relevant information and provide written answers to the questions in its hearing submissions due April 11th, 2003. If all of the questions cannot be answered by these dates, De Beers is advised that it should be prepared to address the outstanding questions at the public hearing.

Should you have any questions, please feel free to call Glenda Fratton at (867) 766-7052.

Yours truly,



Gordon Wray
MVEIRB
Chair



Economics

Q. (1)

Preamble

In the Project Terms of Reference De Beers is required to provide a prediction of the northern benefits of the Proposed Project. The positive economic benefits to the NWT are expected to fall into three basic areas. These are positive increases in: (1) tax revenues, (2) employment and (3) business opportunities.

De Beers' estimate of corporate tax and royalty revenue in the De Beers Snap Lake Diamond Project Environmental Assessment Report (EAR) was consistent with a value of output of \$5.1 billion. De Beers subsequently put on the public record an Erratum Sheet that gave a revised estimate of the project output of \$3.9 billion. De Beers, although it agreed to it at the Technical Sessions, has not yet filed revised tax estimates.

To date De Beers' has not committed to "targets" for either northern employment or business spending. Instead De Beers' used direct northern employment assumptions in the EAR that were for "modeling" purposes only. The assumptions were 40%, 60% and 60% for the construction, operations and closure phases respectively. De Beers stated that these were assumptions for modeling purposes only and did not clearly state that they constituted their best prediction of employment participation in the NWT. In addition, this data was provided at the NWT level only and no information was given separately for the "primary impacted" or "catchment" communities in the NWT.

The baseline data used for these modeling assumptions was from the NWT Bureau of Statistics Labour Force Survey which was undertaken during the period Jan-Feb of 1999. This survey estimated the unemployment rate at 13.7% and that there were 3,170 persons unemployed in the NWT. Statistics Canada's current monthly labour force for the NWT shows that there has been a substantial reduction in the unemployment rate in the NWT since 1999 and with it a reduction in the number of NWT residents available to meet the employment requirements of the Proposed Project. For example, for the period Jan-Feb of 2003, Statistics Canada estimates the unemployment rate at about 5.9% and about 1,300 persons unemployed (although only data for Feb 2001 would have been available to the Proponent at the time the EAR was compiled). Given the more current labour market information, all employment predictions need to be properly tested to ensure that they are still valid and adjustments made if required.

This can be achieved by at least two methods. The first is to use the baseline data from the Socio-Economic Impact Assessment (SEIA) section of the EAR and complete a comprehensive quantitative cumulative assessment by incorporating the employment data from the BHP and Diavik mines – something which has not been completed by the Proponent in the EAR. The second is to test the employment impacts for reasonableness against current labour market information – again something that was not done in the EAR.

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In short the main question to be answered is: Given reduced unemployed levels, can the current NWT labour market absorb the level of employment predicted from the Proposed Project? The answer to this question is essential to confirm in-migration estimates and understand the potential impacts to both social and cultural aspects of the project along with the physical infrastructure that may result.

To facilitate a better understanding of the project impacts it is also necessary to have the labour market data broken out for Yellowknife and the rest of the direct impact and catchment communities identified in the Environmental Assessment Report (EAR). It would be most desirable to have a breakdown by community but this is likely unreasonable due to the small populations and the level of uncertainty (for example BHP and Diavik did not provide community specific data in their SEIAs).

De Beers' also did not provide, for any phase of the Proposed Project, an estimate of the percentage of the total purchases of goods and services that would be made in the NWT. The Proponent indicated that the NWT Bureau of Statistics Input-Output Model was used to estimate the NWT impact. This is not the same thing as a commitment to contract out a certain percentage of purchases to northern businesses. The input-output model provides an estimate of the level of production in the NWT which results from the purchases of goods and services in the north. This is not the same thing as the level of contract spending that occurs in the NWT.

The level of anticipated spending in the NWT should be made clear.

Request

Please provide the following:

1. A copy of a revised Section 5.3.2.3.5 of the EAR including Tables 5.3-3, 5.3-4, 5.3-5 and 5.3-6 so that all tax revenues are consistent with the level of production of \$3.9 billion.
2. Please confirm, by answering "yes" or "no", if the northern percentage rates for employment that were adopted for the modeling purposes (40% for construction, 60% for operations and 60% for closure) constitute De Beers' prediction for potential impacts on the NWT labour force.

(i) If the answer is "yes", please provide the following:

- a) Employment estimates for construction, operation and closure for the following geographic areas: (1) Yellowknife, (2) the other primary impact communities, (3) the catchment communities, (4) the remainder of the NWT and, (5) southern Canada.
- b) A quantitative analysis that supports the reasonableness of these estimates given the current labour market situation. This quantitative analysis must take into account the employment impacts of the BHP-Billiton and Diavik Mines since Jan-Feb of 1999 and the current labour

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market as represented by Statistics Canada's Monthly Labour Force Survey.

- c) Please confirm that it is De Beers' prediction that 150 operating jobs will be filled by persons who migrate to Yellowknife and there will be no in-migration as a result of operations to the other primary impact or catchment communities.
- d) A short description of the methodology employed as well as caveats as to the level of uncertainty reflected in each of the estimates.

(ii) If the answer is "no", please provide the following:

- a) New employment estimates for construction, operation and closure for the following geographic areas: (1) Yellowknife, (2) the other primary impact communities, (3) the catchment communities, (4) the remainder of the NWT and, (5) southern Canada.
 - b) A quantitative analysis that supports the reasonableness of the above estimates given the current labour market situation. This quantitative analysis must take into account the employment impacts of the BHP-Billiton and Diavik Mines since Jan-Feb of 1999 and the current labour market as represented by Statistics Canada's Monthly Labour Force Survey.
 - c) Revised estimates of in-migration to the NWT that result from this new employment data. Please provide this information for the following geographic areas: (1) Yellowknife, (2) the other primary impact communities, (3) the catchment communities, and (4) the remainder of the NWT.
 - d) A short description of the methodology employed as well as caveats as to the level of uncertainty reflected in each of the estimates.
- 3. The estimate of the level of production estimated by the NWT Bureau of Statistics Input-Output Model in dollars and percentage of total that would occur in the NWT for the construction, operation and closure phases of the Proposed Project.
 - 4. A prediction of the dollar value and percentage of the total contract spending by De Beers in the NWT for the construction, operation and closure phases of the Proposed Project.

Q. (2)

Preamble

One important method of maximizing benefits to the NWT of the Proposed Project is to limit the number of southern residents who would fill jobs at the mine but live in homes in southern Canada and fly-in and fly-out to the mine site.

Request

Please answer the following questions:

1. How many of the 500 operating jobs would be deemed management and subject to a 4-3 rotation (four days in and three days out)? Will De Beers make it Company policy and mandatory for these employees to live in the NWT? If not, what is De Beer's prediction of how many of these employees would live in Yellowknife or other communities in the NWT and how many in southern Canada?
2. What measures does De Beers currently have, or is proposing to implement, that would encourage prospective employees in the south to move to the NWT? Please list and describe the form of these incentives separately (i.e. a bonus to offset the higher costs of living in the NWT, etc.).

What is the policy of De Beer's regarding the transportation costs of employees that live in locations outside of the NWT. Will it be the policy of De Beers not to pay for the transportation costs for employees living outside of the NWT to pick-up points in the NWT? If not, what exceptions will be made and what is the rationale for these exceptions?

Cumulative Effects

Q. (3)

The terms of reference require the identification of *assumptions, models, information sources used, ...* in the EAR. The proponent indicates that the method used to undertake the effects analysis follows the classic environmental assessment (EA) approach of issue identification, profiling (e.g., baseline data collection), impact prediction and analysis, mitigation, and evaluation. With respect to cumulative effects analysis, scenarios were developed and tested. For the socio-economic cumulative effects analysis, five (5) impact scenarios were considered. These are:

- employment opportunities and income levels;
- increased demand for skilled labour;
- regional economic development;
- changes in social capacity; and
- changes in Aboriginal cultural practices and traditions.

These scenarios were derived from the direct impacts of the project and the assumed impacts from the other projects in the vicinity of the proposed project. Overall, the approach to cumulative effects assessment described in the EAR appears to be as follows:

1. Identify issues from a variety of means (EA Terms of Reference, traditional knowledge, community consultation, discussions with territorial and federal regulators, scientific literature, professional experience) and develop key questions based on these issues for consideration in the Cumulative Effects Assessment (CEA) (Section 12.1.4.1 of the EAR).
2. Identify *linkage between residual impacts on components due to Snap Lake Diamond Project and one or more of the other projects* (Section 12.1.4.2 of the EAR) based on key questions. The other projects were those for which environmental assessments had been completed.
3. Where a linkage is found, *analysis of cumulative impacts is completed on the residual impacts from each project*. The analysis is quantified where possible.
4. Describe cumulative impacts using criteria such as magnitude, duration, and geographic extent.
5. Estimate the overall environmental consequence by combining magnitude, geographic extent, duration, and reversibility.

Request

1. Verify and clarify the relationship between the issues identified on pages 5-95 to 5-104 of the EAR and the five categories identified in CEA Section 12.2 in the EAR.
2. The cumulative effects assessment process described in Chapter 12 makes use of residual effects resulting from direct impacts. Due to “uncertainties”, many of the residual effects for socio-economic impacts could not be adequately described (page 12-20 of the EAR). Please:
 - a) Verify and clarify the process followed for cumulative effects assessment for socio-economic impacts and how it relates to issues identified by the communities.
 - b) Verify and clarify the methodologies, models, and information sources used for completing this analysis (e.g., journal articles, conference proceedings, community interviews, etc.). Describe how these were applied.. Also, be explicit about the derivation of the five categories listed in Section 12.2 of the EAR. Be explicit about the “multiple scenarios” mentioned on page 12-23 of the EAR and their role in the cumulative effects analysis of socio-economic impacts.
3. Explain the origins/ derivation of the predicted impacts listed on page 5-124 of the EAR. Explain the relationship of the predicted impacts (p. 5-124, EAR) and the five (5) categories used for the cumulative effects analysis.

Q. (4)

Preamble: Employment opportunity and income levels

The EAR in 12.2.3.1 discusses “*What socio-economic cumulative impacts will the Snap Lake Diamond Project have on employment opportunity and income levels?*”. This discussion focuses on employment opportunities and employment rates. The impact is discussed in terms of job creation estimates and that the impact on the communities **should** increase employment rates and disposable income. There is no apparent attempt to verify this by surveying the available skills in communities. Likewise, there is no discussion of salary dollar pressures on sectors not related to mining and the ability to attract employees, though there is the assumption that employment opportunities in the NWT may attract labour from other provinces (p. 12-27). There is also no quantified discussion of in-migration and the cumulative impact of immigration. The price of in-migration (e.g., lack of housing), need for new facilities and improved education system were featured as issues for Yellowknife (p. 5-102).

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Request

1. Please provide a quantified cumulative effects analysis of the impact of in-migration on Yellowknife addressing the issues raised on p. 5-102.
2. Please provide a cumulative effects analysis of the salary dollar pressures on sectors not related to mining and ability to attract employees.

Q. (5)

Preamble: Mitigation for socio-economic impacts

Terms of Reference lines 256-260 instructed De Beers to describe each impact identified and the proposed mitigation measure(s) for all phases of the proposed development (i.e., construction, operation, closure and post-closure). De Beers was to describe planned mitigation measures.

In Section 5.3.3 Socio-Economic Impact Assessment of the EAR, De Beers lays out the predicted direct, indirect and induced social impacts on individuals, families and communities. These are summarized in Table 5.3.7 (in the EAR). Increased risks of community dysfunction, family problems and personal stress. Increased rates of alcohol problems, gambling, family violence, marital problems and child neglect are among the potential impacts noted.

In Section 5.3.4.1 of the EAR De Beers notes that "Many of the mitigation measures cannot be done by the proponent acting alone. While De Beers is committed to doing its utmost to develop and implement these mitigation measures, success will depend on government and community partnerships." In the pages that follow there are numerous references to De Beers "acting as a catalyst..." "playing a substantial role in facilitating..." "work closely with communities..." "support initiatives and resources...", "seek collaboration with..." While these expressions provide a good general sense of De Beers' intentions for supporting mitigating measures, they are lacking in specific detail.

Request

Describe what resources De Beers will be contributing to the mitigation of socio-economic impacts.

Wildlife Resources

Caribou

Q. (6)

Preamble

Barren-ground caribou population dynamics are influenced by a number of factors that affect the energetic balance of individuals. Influencing factors include weather, range condition, insect abundance, and human disturbance, all of which act synergistically. Data from Ekati demonstrated that mine disturbance may influence the amount of time caribou spend feeding. Other behavioural effects from industrial activity have also been documented for barren-ground caribou. Behavioural changes may influence energetic balance and reproductive success. Examination of the relationship between disturbance and energetics is important to assessing the Snap Lake project in terms of both local and cumulative effects on the Bathurst Caribou Herd.

Request

Please provide the following:

Using modelling methods developed by Resources, Wildlife & Economic Development (RWED) and Canadian Wildlife Service (CWS) and extrapolating from data used for the Diavik environmental effects report, please provide the following:

1. An estimate of predicted trends in long-term reproductive output for caribou exposed to the Snap Lake project. In your calculations, please provide an expected range of impact, based on variation in forage condition and insect abundance.
2. An estimate of predicted trends in long-term reproductive output for caribou exposed to cumulative effects from the winter road, Ekati mine, Lupin mine, Diavik mine, and Snap Lake mine. In your calculations, please provide an expected range of impact, based on variation in forage condition and insect abundance. This analysis should include an estimate of the number of caribou that may be exposed to a combination of these five disturbances.
3. The probability of long-term declining, stable, and increasing population trends for the following scenarios: i) current harvest rates without consideration of existing industrial disturbance; ii) current harvest rates and existing cumulative industrial disturbance, iii) current harvest rates and the projected cumulative industrial disturbance with the addition of the Snap Lake project.

Carnivores

Q. (7)

Preamble

There is a moderate to high level of uncertainty associated with some aspects of the EAR related to grizzly bears. The magnitude of potential impacts on grizzly bear abundance were compared to natural range of variation; however, natural range of variation for grizzly bear populations was not measured and there was no discussion of how data from other studies could be used to predict natural range of variability. De Beers stated that there was a moderate level of uncertainty over the environmental consequence for wildlife-human interactions and a high level of uncertainty over the reversibility of mortality in the short term. Much of this uncertainty results from a limited amount of baseline information and published studies of grizzly bears in the Central Arctic. This does, however, result in unanswered questions and a lack of confidence in the conclusions of the EAR. New information sources were identified by GNWT in their technical report, submitted in February 2003. Use of this information may provide valuable guidance to the Board in determining significance of environmental impacts from the proposed project.

Request

Please provide the following:

1. An estimate of the natural range of variation for grizzly bear mortality in the RSA using McLoughlin *et al.* (2003a) and De Beers' predicted number of grizzly bears potentially present within the RSA.
2. Based on this estimation, provide an indication of the rate of mine-related mortality that would fall within that range.
3. Provide a comparison of how this estimated mortality rate compares with that associated with other mines in the NWT.

Q. (8)

Preamble

In their technical report, submitted in February 2003, GNWT referred to a population viability analysis for barren ground grizzly bears in the Central Arctic, conducted by McLoughlin *et al.* (2003b)¹. McLoughlin *et al.* suggest that any increase in mortality for grizzly bears may considerably impact conservation prospects for the population. Human disturbance has the potential to influence reproductive success and mortality of individuals through influences on

¹ McLoughlin, P.D., M.K. Taylor, H.D. Cluff, R.J. Gau, R. Mulders, R.L. Case, and F. Messier. 2003b. Population viability of barren-ground grizzly bears in Nunavut and the Northwest Territories. Arctic. In Press.

foraging behaviour, denning behaviour, direct mortality, and indirect mortality. Individual-level effects can influence population dynamics over an area that extends beyond that individual's home range and can influence the long-term viability of the population as a whole. Cumulative effects analysis for grizzly bear populations should, therefore, include consideration of behaviour and mortality effects from all natural and non-natural sources within the Slave Geological Province.

Request

Please provide the following:

1. An estimate of how cumulative effects from existing industry-related mortality may influence population viability as described in McLoughlin *et al.* (2003b).
2. Using data provided in McLoughlin *et al.* (2003b) and extrapolating mortality data from existing mines within the Slave Geological Province, provide a 'worst-case' and 'best case' estimate of the influence of the Snap Lake project on the long-term population viability for grizzly bears within the Slave Geological Province.

Commitments

Q. (9)

Preamble

De Beers made a series of commitments (i.e., monitoring, mitigation measures) throughout the EA process: in its EAR, Technical Sessions and Information Requests. It will be important for the Review Board to consider all commitments made by De Beers in the EA proceeding.

Request

Please clearly and specifically list all commitments made by De Beers over the course of the EA proceeding. The list should be presented in the form of a table with sections that separate the commitments according the major headings used in the EAR. Please also reference where in the documents (e.g., EAR, Technical Sessions, Information Requests) the commitments were made.