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November 1, 2002

GLL 22-933

Mackenzie Valley Environmental Impact Review Board
Box 938, 5102-50th Avenue
Yellowknife, NT
X1A 2N7

Attention: Mr. Joe Acorn, Environmental Assessment Officer

Dear Mr. Acorn:

Re: Rationale of Technical Issues, De Beers Snap Lake Diamond Project

Please find attached the above noted document that contains a list and description of outstanding issues that the technical review team considers necessary to be resolved at the upcoming technical sessions. The technical review team includes Gartner Lee Limited, Consilium, EBA Engineering Consultants Ltd, A.J. Keen Mining Consultants Inc., and Roy Ellis.

The issues were identified through a review of all rounds of IRs and responses (Rounds 1, 2, 3a and 3b) issued by the Review Board. The review included an analysis of the IRs and responses, and a Technical Workshop held in Calgary on October 15 and 16, 2002. The review did not cover subjects/disciplines for which the team does not have expertise (i.e., air quality).

The document contains rationale for each issue, based on the following four questions:

- What is the issue?
- Why is it an issue?
- How will resolution of the issue add value to the EA?
- Who should address the issue?

Please note that through further assessment of the issues raised since the Calgary workshop and in our assessment of the Round 3b responses, additional issues have emerged that we believe are worthy of discussion at the technical sessions. These issues are listed and discussed in the attached document.

Our assessment following the workshop also identified several issues that are either no longer perceived to be EA issues or are covered off by other issue topics/rationale:

- North Pile – Geothermal Stability/Seepage
- Mine Design – Cement Type/Content in the Paste Backfill
- Effects of Dust
- Loss of Language and Culture (covered under other issue topics)

As discussed we will provide a separate letter outlining our thinking behind this.

It is our understanding that the attached document will be circulated to the parties of the Snap Lake Environmental Assessment prior to the pre-technical session conference to be held on November 8, 2002

We trust that this submission meets the Review Board's requirements. Should you have any questions please don't hesitate to call me at 403-262-4299, extension 120 or Glenda Fratton at extension 121.

Yours truly,
GARTNER LEE LIMITED

S. R. Morison

Stephen R. Morison, M.Sc.
Manager, Northern Canada

Rationale of Technical Issues
De Beers Snap Lake Diamond Project

Prepared for
Mackenzie Valley Environmental Impact Review Board

GLL 22-933

November 1, 2002

Table of Contents

Page

1.0 Environmental Impacts

1.1 Water Quality/Quantity

1.1.1 Water Treatment Plant – Operation and Capacity

IR Response Number(s)

This issue was not raised as an IR but emerged during discussion at the Calgary Technical Workshop (October 15 & 16, 2002).

What is the Issue?

Does the water treatment plant have sufficient capacity if mine inflows or water seeping from the north pile are greater than expected? The initial modular plant to be constructed in 2004 is reportedly for 20,000m^3/day, which is less than the eventual maximum inflow predicted for the mine. We recognize that the modular approach allows the plant to be expanded as necessary but request that De Beers provide the results of a sensitivity analysis to demonstrate that treatment can deal with contingencies.

Does the water treatment plant have sufficient capacity to deal with excess water stored in the water management pond during shut down periods for routine or unexpected repair and maintenance or due to process upsets? Water quality from the plant will be monitored and the plant will have to be shut down occasionally due to process problems or for maintenance.

Will the proposed water treatment plant process adequately treat wastewater and prevent impacts in Snap Lake? The plant is predominantly a filtration plant, which will not remove dissolved ions such as chloride that is present in deep groundwater and nitrates and ammonia from blasting residues. There is almost no information provided on the design and operation of the water treatment plant. Although there was reportedly pilot scale testing completed of the water treatment plant process, we could not find any actual data.

De Beers have also based their analysis of effects to sediments and water quality on a presumed effluent level of 5 mg/L for TSS. This represents a very high level of treatment, but has not been substantiated.

Why is it an Issue?

If the water treatment plant does not have enough capacity to treat the influent amount of water or if the plant process does not effectively remove all contaminants then it may be necessary to discharge untreated water to Snap Lake. The mine cannot operate without continuous 24 hour/day pumping for dewatering. If the plant cannot achieve stated levels of TSS then the effects analysis is incorrect.

How will resolution of this issue add value to the EA?

Discharge of untreated water is potentially a very large, rapid impact on aquatic resources in Snap Lake. The Water Treatment Plant is the most important mitigation proposed to ensure no effects to the aquatic environment. Substantiation of treatment plant capacity and effluent characteristics is required to ensure that impact predictions are valid and that the plant has the capacity to address uncertainties in influent volumes.

In summary, an analysis of treatment plant capacity, substantiation of effluent quality and contingencies to substantiate EA predictions of effects to Snap Lake during construction and operating phases is required. This information will ultimately be used to develop the Water License.

Who should provide the response?	De Beers

1.1.2 Water Treatment Plant – Water Management Pond

IR Response Number(s)	This issue was not raised as an IR but emerged during discussion at the Calgary Technical Workshop (October 15 & 16, 2002).
What is the Issue?	The issue largely relates to whether the following have been appropriately considered in De Beers' contingency planning: 1. Does the Water Management Pond (WMP) have sufficient contingency capacity if the volume of seepage from the North Pile or from other sources exceeds predictions ? 2. Does the WMP have sufficient capacity if the water treatment plant has operational or maintenance issues that prevent discharge to Snap Lake for a period of days or weeks?
Why is it an Issue?	If the pond does not have enough capacity to store water in excess of predictions or caused by treatment plant operational/maintenance problems, then it may be necessary to discharge untreated water to Snap Lake. Discharge of untreated water is potentially a very large, rapid impact on aquatic resources.
How will resolution of this issue add value to the EA?	Substantiation of Water Management Pond Storage Capacity is required to ensure that impact predictions will not be invalidated by discharge of untreated effluent into Snap Lake. The WMP is a key component of the strategy to mitigate water quality impacts of the project. In summary, an analysis of WMP storage capacity to substantiate mitigation of excess volume to the Water Treatment Plant and EA predictions of effects to Snap Lake during construction and operating phases is required. This information will ultimately be used to develop the Water Licence.
Who should provide the response?	De Beers

1.1.3 Groundwater - Impacts on Lakes (quantity/quality)

IR Response Number(s)	1.45, 1.46, 1.47, 1.48, 1.57, 2.3.11, 2.6.2, 3.8.6, 3.8.10, 3.9.5, , 3.10.6, 3.10.7, 3.10.8, 2.1.5, 2.4.16
What is the Issue?	There is very little real data to document which lakes have taliks that extend the bottom of the permafrost to depths of more than 200m. DeBeers has assumed that lakes that are more than 600m wide have taliks that extend down to the regional groundwater flow system. They also assume that the surface water elevations in these larger lakes are equivalent to the groundwater elevations in the deep (>200m) regional groundwater flow system. There are very few functioning groundwater monitors (all near lakes) that can be used to determine groundwater elevations and regional groundwater flow directions. Therefore there is considerable uncertainty about the ultimate direction of contaminated groundwater flow away from the mine when pumping is stopped at closure. There is also uncertainty regarding the quality of contaminated groundwater that moves away from the mine at closure and the degree of attenuation and natural

renovation that will occur along the flow path to discharge points in adjacent lakes.

The EA documents and IRs provide data which show that groundwater quality varies with depth, for key impact parameters such as total phosphorus and orthophosphate and also for major ion chemistry. Table 3.8.10 (from response 3.8.10) shows that total phosphorus in groundwater ranges from 0.01 to 0.29 mg/L (average = 0.10) and orthophosphate from 0.002 to 0.057 (average 0.012 mg/L) at various mine depths. It is not clear if the mine water quality estimates are based on average chemistry of groundwater from all depths or on depth-specific groundwater quality and of how these have been translated into loadings.

Why is it an Issue? It is not clear that the long term water quality impacts on adjacent lakes after mine closure can be accurately determined with the available information.

Loading estimates must be clarified to verify impact predictions to Snap Lake during mine operations, and of lake response time after mine closure.

There are uncertainties in the predicted response of Snap Lake to phosphorus loading and loading estimates must be understood to help resolve this.

Knowing the quality of the groundwater inflows to the mine over time is required to assess the ability of the treatment plant to protect water quality in Snap Lake.

How will resolution of this issue add value to the EA? Resolving this issue would allow better assessment of potential long term regional effects on surface water quality and aquatic life and of impacts to Snap Lake during mine operations and post closure. The information to verify predictions of effects to Snap Lake during operations and post closure is required to resolve the issue.

Who should provide the response? De Beers

1.1.4 Groundwater - Inflows to Mine and Pumping System

IR Response Number(s) 2.3.8, 2.4.13, 2.4.14, 2.4.37, 3.4.13, 2.4.17, 2.4.21, 3.4.12, 4.1.5

What is the Issue? Uncertainties associated with the predicted quantity and quality of groundwater inflows to the mine. Appendix IX.3 (Predicted Quantity of Water Discharged) on page 11 states that the ground water flow model is based on "very limited data" and notes the need for a comprehensive uncertainty analysis. Appendix B Analysis of sensitivity and uncertainty is not included in the report (available on request).

Uncertainties associated with the mine pumping system, capacities and ability to handle operational upsets, breakdowns or emergencies.

Why is it an Issue? Knowing the maximum quantity of the inflows is required to ensure that there is adequate capacity in the water treatment plant and water management pond. Mine inflows make up about 90% or more of the water that requires treatment. Mine inflows are predicted based on hydraulic conductivity (permeability) values of the fractured rock that vary over several orders of magnitude. However, when De Beers assesses the uncertainty of the predicted inflows they

	look only at one and two standard deviations from their predicted inflow amounts, which seems to underestimate potential variations that would arise from an analysis of variability in all the input parameters to the model. Knowing the quality of the groundwater inflows to the mine over time is required to assess the ability of the treatment plant to protect water quality in Snap Lake. Knowing that the mine pumping system can handle emergencies etc is required to be sure that resulting productions disruptions, water surges into the system and any other resulting upsets can be handled by the proposed facilities.
How will resolution of this issue add value to the EA?	The above information is required to substantiate the treatment requirements for the Water Treatment Plant, verify predictions of effects on water quality in Snap Lake and the capability of the proposed mine pumping system to handle emergencies.
Who should provide the response?	De Beers

1.1.5 Increase in Total Dissolved Solids (TDS) in Snap Lake

IR Response Number(s)	This issue was not raised as an IR but emerged during discussion at the Calgary Technical Workshop (October 15 & 16, 2002).
What is the Issue?	TDS levels are projected to increase 20-fold in Snap Lake during the life of the mine.
Why is it an Issue?	While there are no CCME water quality guidelines for TDS , such a significant increase is likely to cause sublethal impacts on benthic and planktonic community associations which could eventually shift community structure. This could subsequently affect potable water supplies for the mine by increasing TDS levels to up to 300 mg/L (Fig 9.4-14) and shift phytoplankton associations to include more taste and odour producers which upon chlorination, can make the water even less palatable.
How will resolution of this issue add value to the EA?	This request is intended to generate more in-depth review of the potential impacts of such a major increase in TDS loads to the lake and to the Lockhart River watershed. We understand that the Mackenzie Valley Land and Water Board may have done a review on this issue. Information that addresses this issue would provide a better understanding of the potential effects of the increase in TDS.
Who should provide the response?	De Beers

1.1.6 Treatment of Drinking Water

IR Response Number(s)	This issue was not raised as an IR but emerged during discussion at the Calgary Technical Workshop (October 15 & 16, 2002).
What is the Issue?	De Beers will treat drinking water for the camp by chlorination but have not indicated if water will be filtered to remove potential pathogenic parasites such as *Giardia* or *Cryptosporidium* whose spores are resistant to chlorination.
Why is it an Issue?	*Giardia* or *Cryptosporidium* can pose a threat to the health of mine staff if not treated.
How will resolution of this issue add value to the EA?	A discussion on the water filtration will help clarify the potential for effects to human health.
Who should provide the response?	De Beers and GWT.

1.1.7 Accuracy of Phosphorus Model

IR Response Number(s)	1.53, 3.8.9, 3.3.5 , 4.1.8
What is the Issue?	De Beers have provided an inaccurate model and invalid prediction of the response of Snap Lake to phosphorus inputs (primarily from ground water contributions to mine water) over the life of the mine. This is a technical disagreement between reviewers and De Beers EA and IR responses. The problem is that De Beers will increase the loading of phosphorus to Snap Lake but predict a decreased concentration in the lake. They state that this is so because "the concentration of P in the discharge is the same as the concentration in Snap Lake" and because algal uptake and settling will remove P from the water column. Table 9.4.2 in the EA shows median baseline concentrations of total phosphorus and orthophosphate of 0.009 mg/L and 0.002 mg/L respectively in Snap Lake. p. 9-232 of the EA states that *"Predicted phosphorus concentrations in the combined discharge ...median = 10 µg/L were similar to baseline water inflows to Snap Lake ..."* and Table 9.4.18 shows the average annual concentration of 0.008 µg/L of phosphate in the mine water discharge and Table 9.2.1 shows that groundwater contains, on average, 0.09 mg/L of total phosphorus. Our criticism is that De Beers' analysis equates phosphate in the discharge to total phosphorus in the lake to conclude that loadings will not change. The lake only contains 0.002 mg/L of phosphate, however, and so the mine water discharge represents a five fold increase in phosphate concentration. The analysis (IR Response 3.8.9(a)) also concludes that the algal population will increase on account of taking up phosphate from the discharge and will then settle to the bottom and decrease the overall concentration of phosphorus in the lake. The existing algal population in the lake (i.e. pre mine) are also taking up phosphate and settling to the bottom but the lake concentration is at steady state. The logic of this analysis would require that algae increase in response to the mine water discharge and then take up additional natural phosphorus, in

order to decrease lake concentrations. It also assumes that the settling is instantaneous, and that the organic phosphorus in the algae is not included in the total; phosphorus budget and that algae are not recycling phosphorus.

The IR response also states that most of the mine water phosphorus is mineral phosphorus, but provides no substantiation for that claim. Table 3.8.10 shows that groundwater contains, on average, 0.1 mg/L of total, 0.059 mg/L of dissolved and 0.012 of orthophosphate, leaving 0.029 mg/L (on average) unaccounted for and no breakdown of the dissolved fraction.

Why is it an Issue?	Decreasing concentrations in response to increasing loads has not been shown to be a valid EA prediction. De Beers have continually mis-stated total phosphorus as phosphate in their IR responses.
How will resolution of this issue add value to the EA?	We recognize that De Beers have committed to phosphorus removal from the mine water discharge as mitigation but an accurate model of response in Snap Lake is required in order to a) confirm EA predictions of no effect, b) set Water Licence Limits and c) develop monitoring programs.
Who should provide the response?	De Beers

1.1.8 Water Quality – Impacts on North and Northeast lake

IR Response Number(s)	4.1.9
What is the Issue?	Post closure modelling predicts influx of contaminated groundwater to North and NE lakes. DFO is concerned about : • inhibition of under ice mixing because of density differences • development of oxygen deficient water quality • pH and nitrate toxicity, and • resultant effects on aquatic life
Why is it an Issue?	Post closure effects on aquatic life may not have been accurately assessed.
How will resolution of this issue add value to the EA?	Resolving this issue would allow better assessment of potential long term regional effects on surface water quality and aquatic life post closure.
Who should provide the response?	De Beers

1.2 Aquatic Habitat

1.2.1 Impact on Lake Sediments

IR Response Number(s)	1.62
What is the Issue?	Our original issue was that metals in mine water discharge may react with fines and settle out in Snap Lake. This could result in contaminated sediments to be deposited in the lake which is contrary to EA predictions that sediments would not be impacted. De Beers responded that TSS fines in the discharge would "likely" have very low reactivity, as reactive sediments would be retained in the treatment system and so they discounted any link between project activities and sediment contamination. A mass balance (24,000 m^3/day of mine discharge @ 0.078 µg/L Cd and 5 mg/L TSS) shows that full reactivity of Cd with sediments would result in sediment concentrations of 14 mg Cd/kg of sediment. The qualifier of "likely" regarding sediment reactivity with metals is insufficient rationale to discount the project/sediment linkage.
Why is it an Issue?	Contaminated sediments should be assessed as a potential project impact to aquatic life.
How will resolution of this issue add value to the EA?	Resolving this issue will provide an assurance that the EA predictions around impact on aquatic habitat are defensible.
Who should provide the response?	De Beers

1.2.2 Lake Level Fluctuations

IR Response Number(s)	3.10.17b ,3.10.17c
What is the Issue?	A qualitative rather than a quantitative response was provided by De Beers in response 3.10.17 (parts b and c), which reduces our confidence in the assessment of impacts related to lake level fluctuations. It is noted that quantitative information on lake bathymetry and habitat distribution has been collected by De Beers. Could De Beers prepare a plan view of the lake showing existing (natural) surface area variations and another showing area flooded or exposed during mine construction and operation? It may be possible to show this on the same map. Near-shore habitat mapping that has been done could be overlain to allow quantification of potential fish habitat impacts.
Why is it an Issue?	If the operations cause a consistently lower lake level or lower flows in outlet streams at critical periods for fish, effects on fish could be more significant than predicted. It is therefore important to have quantified the impacts appropriately.
How will resolution of this issue add value to the EA?	A quantitative analysis will provide more confidence and certainty in the impact predictions.

Who should provide the response?	De Beers

1.2.3 Inadequate Baseline Information on Lake in Headwaters of S-27

IR Response Number(s)	2.1.1
What is the Issue?	There is a lack of fisheries information on a lake that is situated partially within the Local Study Area. This lake is the most easterly lake of the headwaters of stream S-27 (Figure 9.5-3 of the EAR).
Why is it an Issue?	There is some question as to whether there is potential for this lake to be affected by the project. No fish nor fish habitat information is provided nor is there an assessment of project effects related to this lake
How will resolution of this issue add value to the EA?	This information will fulfill the study area impact analysis and provide a more complete EA.
Who should provide the response?	De Beers

1.2.4 Pore Water Quality/Northeast Lake Habitat

IR Response Number(s)	4.1.12
What is the Issue?	There is no documentation of the distribution and abundance of Lake Trout (and other fish) spawning and rearing habitat in Northeast Lake.
Why is it an Issue?	Introduction of groundwater with mine related contaminants has the potential to negatively impact spawning and rearing habitat in NE Lake over the long term. It has been stated that 85% of the probable discharge area is coarse rocky substrate. The percentage of available spawning and nursery habitat available in Northeast Lake and assessment of the percentage that may be negatively impacted is required.
How will resolution of this issue add value to the EA?	This information will better characterize the potential effects to spawning and nursery habitat in Northeast Lake.
Who should provide the response?	De Beers

1.3 Wildlife and Wildlife Habitat

1.3.1 Lack of Wildlife Baseline Information

IR Response Number(s)	2.5.15, 2.5.18
What is the Issue?	The results of the wildlife surveys represent two years of baseline information. It is questionable whether two years of data is enough upon which to base impact predictions. This potentially calls into question whether or not sound impact predictions were made about the effects of the mine on wildlife.
Why is it an Issue?	Lack of sufficient baseline data means that assumptions about impacts may not be defensible over the long term. Examples of limited data collection include: • limited baseline data and analysis for grizzly bears calling into question the home range(s) and number of bears that might exist within or move through the RSA. This makes it difficult to perform a meaningful assessment of the potential effects of the mine on grizzly bears in the RSA. • limited aerial survey data for caribou calling into question the seasonal distribution of caribou within the RSA. Without adequate data for caribou track counts, it is impossible to estimate the probability of caribou encountering the mine or assess caribou/road interactions. • limited survey data for raptors calling into question whether suitable nesting habitat can be measured, and whether productivity and occupancy can be reasonably predicted. • limited amount of snow tracking data for wolverines calling into question the impact of the mine on the local wolverine population. The lack of information available for wildlife increases the uncertainty in assessing impact predictions. There appears to be little explanation how uncertainty in the data has been incorporated into the impact assessment and how it influenced the analysis. If additional wildlife surveys were completed since this report was written, a re-analysis of the data would help support or refute the predictions made.
How will resolution of this issue add value to the EA?	The ability to assess the impact of the mine on wildlife is questionable without adequate baseline information. This information is required in order to make a proper assessment of the impacts on wildlife.
Who should provide the response?	De Beers

1.3.2 Wildlife Study Design

IR Response Number(s) 2.5.19, 2.5.22, 2.5.21, 4.11.21, 2.5.33, 3.10.22, 3.10.23

What is the Issue? The baseline data collection and study design for the wildlife program appears to have been limited in certain aspects and this may have affected the outcome of the effects analysis. Listed below are some examples of limited data collection and study design in the EAR.

Grizzly bears

De Beers states that "*Baseline studies completed during 1999 and 2000 found no active bear dens located within the RSA, but because searches for dens were restricted to esker habitat, the likelihood of finding dens in other habitats with the RSA was low.*" It would seem that De Beers restricted their survey to esker habitat only and neglected to survey other habitat types within the RSA. Further, during their esker surveys they monitored for the presence of dens, but did not collect information on other bear sign (tracks, scat, etc).

Raptors

Raptor surveys were conducted in conjunction with the carnivore surveys, and consequently were limited in time and effort. By doubling up the surveys, the amount of data that could have been collected was likely reduced.

Wolverines

In Response 2.5.21a, De Beers states that they are moderately confident in the impact predictions associated with changes in abundance, movement and behaviour of wolverines, however the design of the snow track survey does not actually allow for the measure of these parameters.

Why is it an Issue? Grizzly bears

Current research on grizzly bears in the central Arctic (McLouglin, P.D. 2000. *The Spatial Organization and Habitat Selection Patterns of Barren-ground Grizzly Bears in the Central Arctic*. Ph.D. Thesis, University of Saskatchewan, Saskatoon, Sk) indicates that bears may prefer to den in heath tundra, with limited use of esker habitat. In fact, esker habitat accounted for only 13% of the dens located. In the EAR, impact predictions regarding grizzly bear movement and behaviour as a result of mining activity and habitat fragmentation were anticipated to be low. However, the scientific uncertainty associated with this prediction was moderate, since den surveys were conducted for only two years and restricted to esker habitat. Based on the fact that the study design did not include systematic use of habitat classification data for measuring preferred grizzly bear habitat within the RSA, it is difficult to estimate the presence of bears in the area, or their use of preferred habitat. With so much uncertainty in results, impact predictions become questionable.

Raptors

The lack of a systematic approach to raptor surveys may have impaired De Beers ability to identify suitable nesting habitat in the area and measure raptor

productivity. Raptor surveys were performed along with carnivore surveys, thereby limiting the amount of time and effort allotted for nest searches, locating breeding pairs, etc. If more time was designated towards the raptor surveys (i.e., a more thorough search of raptor habitat), it is possible that more data on raptor use in the area may have been collected. Without this information, it difficult to know whether a reasonable assessment of suitable nesting habitat and productivity has been identified. Without this knowledge, there is little confidence in impact predictions.

Wolverines

The wolverine snow track survey, by its design, cannot estimate abundance, movement and behaviour of wolverines. At best it can measure presence or absence of wolverines in the area. However, due to a number of limitations, both inherent in the study design (variability in conditions, interpreting significance of results), and particular to the Snap Lake surveys (few surveys, variability in approach) it is questionable whether the results provide a reasonable indication of the presence of wolverines. Without a reliable measure of wolverines in the area, it becomes almost impossible to make a prediction about the impact the mine may have on the local wolverine population.

How will resolution of this issue add value to the EA?

Based on the results of a two-year baseline study, De Beers makes conclusions about the baseline conditions of the Snap Lake area and provides impact predictions on the effect of the mine on wildlife. In some instances, De Beers acknowledges a moderate level of uncertainty in the results of their baseline studies. Due to the degree of uncertainty, confidence in the validity and accuracy of baseline results, and ultimately impact predictions, is weakened and needs to be resolved. Resolution of this issue would add confidence to proposed mitigation measures. This may require a review of the study design and identification of the limitations within the methodology. Other mitigation measures may include a new study design, based on a systematic approach and/or enhanced monitoring.

Who should provide the response?

De Beers

1.3.3 On-site Wildlife Management

IR Response Number(s)

2.2.12, 2.5.25, 2.5.29

What is the Issue?

On-site wildlife management practices referenced in section 10.4.24.2 of the EAR lack detail with regards to protocol, policy, and/or procedure that is already being implemented and that will be implemented after the mine is operational. The EAR provides little information on implementation, standard operating procedures (SOPs), policing, contingency plans, worse-case scenarios, and consequences. There is no description of thresholds for, or criteria of wildlife-conflicts or other potential wildlife management issues. This information will help confirm that human-wildlife interactions will be appropriately and effectively mitigated.

Why is it an Issue?

Without the establishment of a pre-defined wildlife management plan (i.e., feeding wildlife, human-wildlife conflict resolution, caribou removal from the airstrip, right of way on roads, use of shelters, etc), the risk of human injury,

human-wildlife conflicts, and wildlife deaths increases. Using a standardized approach to wildlife management, with an established set of criteria and thresholds, helps reduce the potential for human-wildlife conflicts and places the De Beers in a proactive position rather than reactive one.

How will resolution of this issue add value to the EA?	By providing information on the policies and procedures associated with wildlife attractants, interactions, removal, etc., an assessment and evaluation of the efficacy, appropriateness, and applicability of mitigation measures associated with wildlife management practices can be made.
Who should provide the response?	De Beers

1.3.4 Waste Management

IR Response Number(s)	2.5.30, 2.2.12
What is the Issue?	The waste management practices (Section 10.4.2.4.4 of the EAR) lack details pertaining to protocol, policy, and procedures. There are no details on implementation, training, waste collection, storage, disposal, incineration, contingency, etc. Waste management becomes an issue from the moment a camp is established. To effectively mitigate potential wildlife problems and other impacts on the environment, a pre-defined program needs to be in place.
Why is it an Issue?	Using a formalized and site-wide approach to waste management will help reduce wildlife attractants, minimize wildlife-human conflicts, and reduce the number of animals being removed or killed, and ultimately places the De Beers in a proactive position rather than a reactive one.
How will resolution of this issue add value to the EA?	By providing information on the policies and procedures associated with waste management, an assessment of the adequacy, efficiency and efficacy of the waste management program (including associated training, procedures, and mitigation measures) can be made.
Who should provide the response?	De Beers

1.3.5 Wildlife Training

IR Response Number(s)	2.5.24
What is the Issue?	De Beers listed general topics that would be covered with respect to training employees about wildlife-related issues, however they failed to provide a description of training in terms of scope, implementation, approach, audience, access, and availability of training.
Why is it an Issue?	Training is the first step to ensuring policies and procedures are followed correctly. In order to implement and maintain an effective waste management or wildlife management program, and therefore mitigate and minimize the impacts of the mine on wildlife, a training program for all employees needs to be established.

How will resolution of this issue add value to the EA?	Information on the scope, content, and approach of on-site training is required in order to perform an assessment of the adequacy of a proposed training program.
Who should provide the response?	De Beers

2.0 Geotechnical

2.1 North Pile – Residual Fe/ARD

IR Response Number(s)	3.3.2, 4.1.1
What is the Issue?	Kimberlite rejects in the waste rock pile contain residual ferric iron from processing and this has generated low pH seepage at the Ekati mine. This is a new issue. De Beers response focuses on long term weathering of kimberlite but does not respond to Environment Canada's concerns about residual Fe from processing.
Why is it an Issue?	Low pH seepage may inhibit water treatment and may also continue during the post closure period as a threat to water quality.
How will resolution of this issue add value to the EA?	Improve the validity of predictions regarding post closure seepage and runoff quality.
Who should provide the response?	De Beers, incorporating data from the Ekati Mine and Environment Canada.

2.2 North Pile – Slope Stability, Rate of Freeze Back/Seepage Pressures

IR Response Number(s)	1.11a to c, 2.4.24 a to c, 2.4.35 a & b, 3.4.16 a to c, 3.4.20 a to d, 3.8.2 a to c
What is the Issue?	The geothermal analyses reported by De Beers indicates higher rates of freeze-back than we have observed in other tailings disposal in circumpolar regions with similar climates. Our observations have been for tailings with roughly the same solids content as for the processed kimberlite (PK) mix proposed by De Beers. The geothermal calibration curves presented in the IRs also indicate that the model predicted ground temperatures to be up to 3 C degrees colder (in the depth ranges of 1 to 10 m below ground surface) than the measured ground temperatures in all four seasons. Therefore the model would be expected to predict higher rates of freeze-back.
Why is it an Issue?	Different rates and patterns of freeze-back of the PK Mix paste disposed of in the North Pile can influence the design assumptions made regarding internal drainage of the pile. Also influenced is the distribution of frozen and unfrozen zones in the pile for a period of several years after completion of the pile. Pore pressures in unfrozen zones that are potentially higher than expected by De Beers may develop and for longer periods of time than presently predicted if actual conditions are different than what is represented by the De Beers geothermal and seepage models.
How will resolution of this issue add value to the EA?	Higher than expected pore pressures in unfrozen zones due to impeded internal drainage could reduce the predicted Factor of Safety against failure of the presently proposed shell and PK Mix configuration. Mitigative measures

described by Golder Associates Ltd. in their report to De Beers on the North Pile include constructing a much more substantial shell. This type of construction may be prudent in areas of the North Pile where a slope failure would have a serious consequence to the environment.

Judging from the Environmental Assessment Report De Beers have stated that they will be carrying out further "field tests" - - "as part of the construction and operation of the starter cell - - to optimize the design [of the shell]".

Therefore the shell design is ongoing and subject to the results of field tests and further study. The nature of the field tests proposed by De Beers is unclear. Is De Beers prepared to adequately instrument and monitor the performance of the North Pile for the mine life as well as after closure of the mine?

Resolving this will clarify that De Beers is committed to providing adequate geotechnical instrumentation, monitoring and ongoing analysis to enable the designers to check their design assumptions and to make whatever design changes are necessary.

Who should provide the response? De Beers

3.0 Social, Economic and Cultural Components

3.1 Cultural Resources/Land and Resource Use

3.1.1 Accommodating Cultural Practices

IR Response Number(s)	1.32, 2.2.7
What is the Issue?	The issue is the possibility of having a more flexible work schedule than the 2 weeks in and 2 weeks out to accommodate attendance at events and practices important to Aboriginal people. DeBeers suggests that individuals can take advantage of their scheduled time off and annual leave; or a combination thereof. There is no indication that any other accommodation will be made.
Why is it an Issue?	DeBeers indicates a willingness to combine annual leave with rotational leave to permit "traditional seasonal activities". Still unanswered is how far beyond this DeBeers could go to accommodate cultural events and practices.
How will resolution of this issue add value to the EA?	The issue is important to the traditions of aboriginal communities and was raised as an issue by each of the communities. What will need to be considered is whether a large mine can organize its labour practices to permit some employees to work seasonally. Alternatively, if the 2 by 2 rotation is not an issue to provide evidence of that from the existing diamond mine operations.
Who should provide the response?	DeBeers

3.1.2 Adequacy of Mitigation

IR Response Number(s)	1.31(a); 1.37; 2.2.6(a); 2.5.52(a), 1.36, 2.2.6(d), 2.2.7 1.31(a) 1.37, 4.8.3, 4.11.26
What is the Issue?	Many of the proposed mitigation measures identified for social, cultural and economic issues were dependent on the creation of partnerships with the federal and territorial governments, local learning institutions, other mining companies, community agencies, and each individual community. For example, • interaction between wage and traditional economies, • family support services; • language and culture loss; • on-site education; • traditional Aboriginal practice support; and • so forth. The issue that remains is the extent to which effective mitigation responses can be developed cooperatively and in a timely manner among industry, government and the communities. Failure to do so will have bearing on the efficacy of the mitigation measures.

Also, commitments of other partners to a mitigation program will have financial implications to the other partners. It is not currently known the degree to which the other potential partners have agreed to assist with the mitigation measures.

Why is it an Issue? What appears to be shaping up in the EAR is a mitigation program that will require a great deal of cooperation, and possibly financial commitment, among different parties. What has not been documented is the degree to which all of the players are able to come up with strategies, plans and programs to deal with the impacts of the development. For example, the GNWT has been identified as a partner in training programs geared towards capacity building. What has not been provided is whether the GNWT has responded in the affirmative to provide programming to allow community members to take advantage of employment opportunities at DeBeers.

How will resolution of this issue add value to the EA? The issue is important to the settling of social, cultural and economic issues identified in the course of the environmental assessment process. DeBeers did make commitments it felt were within their sphere of management e.g., money management training, cultural awareness programming, etc. However, it also identified other measures that required a sharing of responsibility. An indication of the status of developing these partnerships would confirm the efficacy of a proposed mitigation measure. If work has not proceeded on these other measures then an indication of contingencies would be an appropriate affirmation that the issues are appropriately mitigated.

Who should provide the response? Primarily DeBeers; GNWT; appropriate federal departments; and communities

3.2 Economy

3.2.1 Prediction of and Commitment to Northern Benefits

IR Response Number(s) 1.28(b), 1.41(a), 2.5.46(b)

What is the Issue? De Beers has not committed to "hiring targets" for Aboriginals or Northerners nor has it provided "spending targets" for the purchase of goods and services in the NWT.

Why is it an Issue? The De Beers was asked in the TOR 459-464 and 488-491 to provide an estimate of the economic impact of the proposed project on the northern economy and without these targets or estimates it is not possible to access the benefit of the project to the north. The De Beers is undertaking only to "do their best" but not committing to any level of benefit.

How will resolution of this issue add value to the EA? One of the primary benefits to the NWT will be the economic benefits of the mine through employment and the provision of goods and services to the project. Without "targets" based on the De Beers' analysis there is in effect no estimate of the benefit of the project to the NWT.

Who should provide the response? De Beers

3.2.2 Adequacy of Economic Data (Statistical Information)

3.2.2.1 Other Operating Surplus

IR Response Number(s)	1.22(a)
What is the Issue?	The De Beers did not provide an estimate of "other operating surplus" in its estimate of direct GDP, as requested in IR 1.22a. This results in an incomplete measure of the impact of the proposed project on territorial and Canadian GDP.
Why is it an Issue?	GDP provides the most complete measure of the value of the proposed project to the economies of the NWT and Canada.
How will resolution of this issue add value to the EA?	A complete estimate of the impact on the territorial or Canadian GDP will provide a more complete picture of the economic impact of the project and also provide the basis for the estimation of corporate taxes and royalties.
Who should provide the response?	De Beers

3.2.2.2 Inconsistent Labour/Employment Data

IR Response Number(s)	1.24(b)
What is the Issue?	The amount of labour income and the number of persons employed reported on Table 5.3-2 (in the EAR) for the induced impacts of the proposed project on the NWT economy do not appear to be consistent.
Why is it an Issue?	Either the labour income estimate appears to be too large (which could lead to an over estimate of tax revenues) or the employment impacts are too small (which could lead to an underestimate of the socio-economic impacts). This inconsistency should be resolved and one consistent set of labour income and employment estimates should be produced for induced economic activity.
How will resolution of this issue add value to the EA?	It will improve the analysis of the economic impact of the mine and the resulting socio-economic impacts.
Who should provide the response?	De Beers and/or the GNWT Bureau of Statistics

3.2.2.3 Tax Benefits

IR Response Number(s)	1.26(a), 1.26(b), 1.26(c)
What is the Issue?	The estimates provided by the De Beers for federal and territorial corporate taxes do not appear to be consistent with the De Beers estimate of the value of the project and the effective tax rates used in the analysis.
Why is it an Issue?	One of the major beneficial impacts of the proposed project will be tax revenues.

How will resolution of this issue add value to the EA?	It will clear up confusion over the level of tax benefits predicted in the EA.
Who should provide the response?	De Beers

3.3 Government (Municipal/Territorial/Federal/First Nations)

3.3.1 Adequacy of Regional (highways, education, hospitals) and Community Infrastructure

IR Response Number(s)	2.5.52(d), 2.5.55,2.5.44(a), 1.38 and 4.8.2 directed at DeBeers 4.8.2 directed to GNWT. There was no information requested from DeBeers in this question.
What is the Issue?	The issue is an induced cumulative effects issue that asks how the activities of DeBeers will impact on the Regional and Community infrastructure of the Mackenzie Valley. Each new development results in a change in the use of infrastructure. This issue, however, is recognized as being something that is beyond the scope of response for a single developer. It would seem that government along with other stakeholders should be examining the issue of overall impact on infrastructure and undertaking appropriate planning. Further, DeBeers cites literature that the impacts to communities from the development are manageable, and even positive. By only presenting the positive impacts, essential mitigation measures and lessons learned from other developments in the NWT and jurisdictions may be overlooked.
Why is it an Issue?	In areas of rapid development e.g., Fort McMurray, infrastructure is often put under a lot of pressure. Roads are required to handle more traffic than they were designed to handle, schools are required to handle more students than they are designed for, and medical facilities become overstrained. What is not known in response to these cumulative developments is the capacity of the Regional and community infrastructure to handle another development, and how it will be handled.
How will resolution of this issue add value to the EA?	A discussion of these issues is needed to determine where strains on the infrastructure capacity may be expected. A long-term solution outside of this process may need to be developed that would enable government and stakeholders to address "what if" questions – e.g., what if demands on infrastructure of certain types doubled? What additional capacity would then be needed?
Who should provide the response?	Federal and territorial governments plus key stakeholders. DeBeers should be required to provide better estimates of potential infrastructure use.

3.4 Community

3.4.1 Adequacy of Mitigation Measures – Continued Consultation/Liaison

IR Response Number(s)	1.30(a) & (b), 2.5.7(a to g), 4.11.10
What is the Issue?	In the EAR and in the IRs, DeBeers provides considerable evidence of consultation to date. For continued consultation it intends to appoint two Community Liaison personnel based in Yellowknife but visiting primary communities regularly. It will evaluate the effectiveness of this approach and make adjustments as required. There is some question of how the proposed Mine Management Advisory Committee (MMAC) will figure into on-going consultation. DeBeers wants to begin the MMAC, with appointments from each primary community, before construction and keep it going through the closure phase. The MMAC is to have "high level" input into the management of the mine through regular reviews of mine performance and policy, and community consultation."(Table 14.2-1) DeBeers also notes that it will develop the make-up of the MMAC through community consultation.
Why is it an Issue?	The creation of the MMAC appears to be a reasonable measure, but it raises the question of how you keep a ongoing group like this independent and, as necessary, critical of mine management? However, a more general question arises – that of how various consultation initiatives might fit together into an integrated system and not get in each other's way. The Community Liaison personnel will presumably move about the primary communities attempting to resolve problems as they arise. At the same time, the MMAC will serve as a conduit of information from the communities to mine management and back again. Also at the same time consultation may be underway with regard to other large industrial projects. It must also be considered that many of the most able people from the communities will be employees of the mine. Will they be in a position to speak out on issues that may arise in their communities? It should be noted that NSMA raises the issue of the mine draining the communities of "human capital" – i.e. "brains" and people who can fix things.
How will resolution of this issue add value to the EA?	That consultation should take place is not an issue. However, how it should occur to be fair and representative, and how much there should be to avoid overload, need careful consideration.
Who should provide the response?	GNWT and DeBeers

3.4.2 Adequacy of Mitigation Measures – Fly-in/fly-out, Directly to Communities

IR Response Number(s)	1.35, 2.5.47
What is the Issue?	As is the case with many isolated modern mines, the employee work schedule will involve having employees rotate by flying them into the mine site from communities and then back again. However, flight patterns to and from communities are still to be determined. DeBeers says it intends direct flights to and from the communities, when possible, and it appears to have made a commitment not to fly to the communities via Yellowknife, except for people that live in the general Yellowknife area.
Why is it an Issue?	The concern about Yellowknife is that employees from other communities will get off the aircraft and stay there, spending their paychecks instead of taking them home. On the basis of experience with other isolated mines, this concern is legitimate.
How will resolution of this issue add value to the EA?	Given that a commitment has been made with respect to flying in and out of communities directly where feasible and given that information has already been gathered on employee potential in communities, it should be possible to give an indication of which communities they expect to be able to fly into and out of directly. Alternatively, a summary of the ability of mines to do this could be derived from the experiences of BHP and Diavik. This issue was important to the communities and an example of where it might be feasible would add credence to the proposed mitigation.
Who should provide the response?	DeBeers.

4.0 Scope of Development

4.1 Confirmation of Production Rates

IR Response Number(s)	1.17, 2.6.5; 2.4.11; 2.5.60; 3.11.3; 4.8.9.
What is the Issue?	Confirmation of the ore production rate, in consideration of the following: • The re-examination by De Beers of the mining dilution %. • The complex mining method, requiring a large number of working places, backfilling, water inflows etc. • The ongoing exploration and resource assessment. • Rationale for the selected rate. • The capacity of the proposed mine site facilities.
Why is it an Issue?	• De Beers indicate in IR response 1.17 and IR response 2.6.5 that the mining dilution numbers are being revised. Any increase in dilution may affect the economics of the project resulting in a review of the production rate. • Increases in dilution may increase the size of the North Pile storage area. • Changes to the production rate have impacts on the mine life, socio-economics of the project and the proposed site facilities.
How will resolution of this issue add value to the EA?	Confirmation of the production rate will provide more certainty and less conjecture to the components of the project being considered in the EA.
Who should provide the response?	De Beers

5.0 Abandonment and Restoration

5.1 Reclamation/Closure Planning

IR Response Number(s)	1.19; 2.4.4; 3.8.4; 4.9.10; 1.14; 2.4.8; 3.9.1.
What is the Issue?	While De Beers has provided a more detailed breakdown of the closure costs, the Reclamation and Closure Plan needs to be expanded to provide information on all aspects of the closure process.
Why is it an Issue?	The proposed reclamation/closure plan does not give a complete picture of the site at closure and does not discuss the following items: • Progressive reclamation. • Disposal methods and locations. • Proposals for monitoring progress, completed work and post closure monitoring and parameters to be monitored. • Contingency plans if closure targets are not met. • Specific accepted protocols and standards used to generate the plan.
How will resolution of this issue add value to the EA?	It will provide a better understanding of the closure process, allowing the reviewers to assess the suitability of the Plan and the closure targets.
Who should provide the response?	De Beers

5.2 Revegetation

IR Response Number(s)	1.1, 1.6, 1.8, 2.5.24e
What is the Issue?	We agree with DeBeers that there are limitations (e.g., cold climate, lack of previous studies) to revegetation and the development of a revegetation plan in northern environments. We also recognize the need for the plan to be flexible, as pointed out by DeBeers (Appendix III-11 of the EAR). DeBeers states that "the primary management objective will be to create a stable landscape that will encourage colonization, encroachment and regeneration of endemic plant species." (p. III.11-3 of the EAR). To have success in the reclamation of the site, more specific revegetation objectives need to be developed and consideration (at the conceptual level for the purposes of the EA) is needed with respect to how these objectives might be met: • Will wildlife habitat and biodiversity be considered in reclamation/revegetation planning? If so, what are the objectives in this regard and how will the objectives be met? • DeBeers predicts that a total of 39% of ELC units will be lost or altered within the LSA due to mine development (p. 10-84 of the EAR). Is there any intention to provide appropriate conditions to restore ELC units that are

not expected to reestablish on their own? (e.g., sedge wetlands, open spruce forests)? If so, what are the objectives and how will they be met?

- Only 11 plots were sampled in the LSA as part of the baseline ELC program (IR Response 1.1a). Does DeBeers feel that this provides adequate information on which to base reclamation/revegetation objectives?
- DeBeers mentions in Appendix III.11 that test plots will be used. Is there a conceptual design for the use of test plots? How will the plots be set up and what exactly will be measured in them, and how? How will the test plot information from BHP-Ekati be applied to the Snap Lake site?
- DeBeers recognizes that natural soils at the site are lacking. How will soils be considered in the revegetation plan? Is it feasible to salvage, stockpile and replace some of the soils? If so, where in the LSA will this be done and how will this be done?

Why is it an Issue?	Revegetation is integral to the success of mine site reclamation, and therefore must be given appropriate consideration.
How will resolution of this issue add value to the EA?	Additional details are required to confirm our level of confidence in the revegetation planning that will occur during regulatory stages and throughout the life of the mine.
Who should provide the response?	DeBeers

6.0 Cumulative Impacts

6.1 Methodology

6.1.1 General CEA Methodology

IR Response Number(s)	4.8.1
What is the Issue?	De Beers states that it followed, with modifications, the Canadian Environmental Assessment Agency process for cumulative effects analysis captured in the *Cumulative Effects Assessment Practitioners Guide.* While additional information was provided on how Cumulative Effects Assessment (CEA) was completed, there still exists a lack of detail/ transparency on the steps between scoping and linkage determination and analysis. The premise of the linkage analysis undertaken by De Beers seems to revolve around the key questions asked and not, "*are there residual effects from the development and how do these effects relate or interact with the effects of other projects*". It would be useful to have a fuller discussion on this matter. The *Practitioners Guide* under 3.3.2.1 outlines an example of the use of a linkage approach. In the *Cold Lake Oil Sands Project* example, clear hypothesis statements are made and these are linked to VECs. How De Beers got from development specific impacts to the key questions is still not apparent, though the response in the IR (4.8.1) did help clarify matters. While it may be that De Beers followed acceptable CEA procedure, the process is not easily traceable. The presentation of one or two examples starting from a direct effect through to completion of linkage analysis would be beneficial.
Why is it an Issue?	It is not readily apparent that De Beers followed the process laid out in the *Practitioners Guide.* If the modifications made are too substantial, then the entire cumulative effects assessment process could be called into question.
How will resolution of this issue add value to the EA?	Cumulative effects analysis is a necessary aspect of any environmental assessment. If the evaluation is at too gross a level, then it can easily be found that no cumulative effects exist.
Who should provide the response?	De Beers

6.1.2 Socio-economic – Categories of Analysis

IR Response Number(s)	4.8.3
What is the Issue?	Concern similar to the issue (summarized above) related to Response 4.8.1 Approximately 20 issues were identified in the communities (p 5-95 and 5-104, EAR). These were reduced to 5 broad categories of analysis (Section 12.2, EAR). De Beers was asked in IR 4.8.3 to show the relationship between the 20 issues and the 5 categories. De Beers did respond to the IR but did not provide an example, as requested, i.e., show how issues relate to categories. This example could be done in a tabular form, i.e., effect, mitigation, residual effect, other projects, residual effects of other projects, determination of likelihood of a relationship, CEA mitigation measure.
Why is it an Issue?	There is no obvious or apparent linkage between the 20 issues and the 5 categories. In particular, there is no indication or summary of the issues not covered. It is not likely that there will be 100% mitigation and no residual effects.
How will resolution of this issue add value to the EA?	It will show how the identified development specific issues were linked to the environmental effects of other developments.
Who should provide the response?	De Beers

6.1.2 Consideration of Other Developments

IR Response Number(s)	4.8.5 and 4.8.6
What is the Issue?	De Beers responded with information on how other developments were considered in the CEA process. They indicated that advanced exploration activities were considered and largely rolled into the entire process. With respect to tourism camps, they were considered in two (2) specific situations, within the context of cumulative effects assessment - traditional land use and environmental noise. They noted in the EAR and the IR response that environmental assessments to date have not been done for tourism camps, and impact information is not necessarily available for consideration. What is still not known from the responses is whether De Beers considered and discounted projects in the vicinity of their project. The ToR (Line numbers 538 to 539) requires that De Beers *report and describe developments considered but not included in the cumulative effects assessment, and rationale for the decision.* De Beers seems to have limited its identification of other developments to those that are in the environmental evaluation stream or were required consideration in the Terms of Reference. Further, it is unclear if the only source of information for impact identification and analysis was environmental assessments. To use alternative information sources would be consistent with the recommended process defined in the *Practitioners Guide.* Finally, in completing its CEA evaluation, did De Beers also consider the activities at these camps, and not just their physical presence? For example, if some of the seasonal camps are hunting camps, is there a Cumulative effect on

	caribou, etc. between the camps and the proposed development?
Why is it an Issue?	CEA requires the use of any information available for the analysis. This is a principle in the *Practitioners Guide*. To limit the analysis for CEA to situations where environmental assessments are completed may result in the failure to identify all potential CEA.
How will resolution of this issue add value to the EA?	Cumulative effects analysis is a necessary aspect of any environmental assessment. If the evaluation fails to consider all available information, it can easily be found that no cumulative effects exist.
Who should provide the response?	De Beers

6.2 COSEWIC Wildlife Species

IR Response Number(s)	Not applicable
What is the Issue?	The reversibility of the potential impact of change in movement and behaviour for COSEWIC (Committee on the Status of Endangered Wildlife in Canada) listed species. The EAR, chapter 12, indicates that after the cessation of the mining activity any changes in movement and behaviour will reverse. This is difficult to accept when no data was collected mapping movement and corridors for the COSEWIC listed species in the RSA. Further, the analysis seems to fail to account for the long-term nibbling effect all the mines in the region will have on movement and behaviour. With each of the mines contributing to the same effect and with the mines in the region to be expected to operate for approximately 15-25 years (or longer if exploration activities result in more mining opportunities), it seems that further evaluation needs to be done of this cumulative impact.
Why is it an Issue?	COSEWIC species are already in a vulnerable state and to not fully consider the impacts on their populations could put them into a more vulnerable state.
How will resolution of this issue add value to the EA?	This information will assist with significance determination, as well as, possible mitigation measures that may be applied collectively by all the developments in the region.
Who should provide the response?	De Beers; GNWT

6.3 Employment Predictions

IR Response Number(s)	This issue was not raised as an IR but emerged during discussion at the Calgary Technical Workshop (October 15 & 16, 2002).
What is the Issue?	There is no quantitative analysis presented in the EA with respect to employment predictions. The De Beers has presented a list of projects and labour requirements but has not undertaken any analysis of the aggregate level of labour demand on the NWT labour market.
Why is it an Issue?	In order to provide a realistic estimate of northern employment impacts and the level of potential in-migration to the NWT, the proposed project must be analyzed taking into account other major projects which are competing for labour. For example, the De Beers used the winter of 1999 as the base period to represent the labour market in the local and regional study areas. Since the winter of 1999 the operation of the Ekati mine and the construction of Diavik Project have had large impacts on the NWT labour market and substantially reduced unemployment from the winter 1999 levels. By the time the proposed project is in operation Diavik will be in full operation and Ekati will have undergone a significant expansion further changing the NWT labour market. These quantitative changes must be taken into account in the cumulative impact analysis.
How will resolution of this issue add value to the EA?	It will provide more evidence of the reasonableness of the expected employment and other economic impacts of the proposed project on the NWT economy.
Who should provide the response?	De Beers

7.0 Biodiversity

7.1 Methodology/Scope

IR Response Number(s)	1.2b, 3.8.1ab, 3.10.20
What is the Issue?	DeBeers defines biodiversity as "the variety of life at all levels of organization from gene to landscapes, and the ecological and biological processes through which these levels are connected" (p. 10-55 of the EAR). Baseline biodiversity was characterized in the EAR at the landscape and ecosystem level using selected indices for both the RSA and LSA. However, in doing so, no apparent consideration was given to wildlife, fish or aquatic species and habitat as indices of biodiversity. With respect to species at the ecosystem level, only plant species were considered in examining richness and diversity. In this sense, it appears that baseline biodiversity was only partially characterized in the EAR. From the EAR, it is clear that DeBeers has data on wildlife, fish and aquatic species; but it is not clear why DeBeers did not include these data in their characterization of baseline biodiversity. The resultant impact assessment on biodiversity may therefore be flawed. We would like to seek clarification on DeBeers' rationale for their approach to characterizing baseline biodiversity.
Why is it an Issue?	The present rate of decline in biodiversity is seen to be a serious global environmental threat. The greatest threat to biodiversity is the alteration or disturbance of ecosystems (Canadian Biodiversity Information Network – website). Recognition of the world-wide impact of this decline prompted the global community to negotiate the United Nations Convention on Biological Diversity, of which Canada ratified. (*A Guide on Biodiversity and Environmental Assessment*, April 1996). Appropriate consideration of biodiversity in the context of major development is therefore important.
How will resolution of this issue add value to the EA?	Resolution of this issue is necessary to confirm our level of confidence in DeBeers' characterization and assessment of biodiversity.
Who should provide the response?	DeBeers