

February 7, 2003
(Sent)

Review of Agreements/Disagreements - Resolved/Unresolved Concerns/Issues and Commitments Made at the MVEIRB Technical Sessions for DeBeers Snap Lake Diamond Project

Comment Colour Legend:

- Yellow – De Beers Canada Mining Inc.
- Blue – Natural Resources Canada
- Pink – MVEIRB
- Green – Dogrib Treaty 11 Council
- Teal – Environment Canada

Introduction, Procedures, Scope and Methodology - November 25, 2002

<u>Legend:</u>	
Commitments:	in bold
Disagreements:	<u>underlined</u>
Likely Resolved:	<i>italicized</i>
Not resolved:	shaded
Questionable Resolution:	outlined

Amendments to Explanation of the Procedures:

It was agreed that two changes would be made to the one pager, "Explanation of the Procedures".

1. Under the second bullet under "Purpose", the underlined, italicized section was added to the following statement: -If, after discussion, this is no longer an issue, *it is documented and*, it drops of the table.
2. Under the sixth step of "Process", the underlined, italicized section was added to the following statement: 6. The groups will determine whether, as a result of discussion: 1) *It is likely* the issues *have* been resolved.

Opening Remarks on Purpose and Process by Gordon Wray, MVEIRB Chairman:

In February 2002, DeBeers submitted their Environmental Assessment Report. These technical sessions are to prepare the board for the public hearings scheduled for March 24 – 28th, 2003. When the MVEIRB completes its review, it will report to the minister of DIAND with its recommendations. The ultimate decision of how to implement the MVEIRB's recommendations lies with DIAND. This is not the last chance to discuss technical issues, nor is it the last step in the process. The MVEIRB is a quasi-judicial board – meaning that the MVEIRB must base their decisions on public record information. These hearings are also quasi-judicial and are not legally binding. This

allows for an open exchange of information that will be placed on the public record and will be used to help guide MVEIRB's decisions. The MVEIRB has included this step to bring together people to discuss issues and find out if they are being properly addressed as well as to try and resolve issues brought up during the next two weeks if possible. Commitments, resolutions and any information formalized from the meetings will be placed onto the public record.

Outcomes of the Discussion Regarding the Process of the Technical Sessions:

- Technical session notes and transcripts of the tapes will be placed on the public registry taken will be posted by the MVEIRB on the public registry in draft form and participants will have the opportunity to submit corrections once posted. ~~Commitment~~
- All items placed on the public registry will Transcripts, tapes, and outcomes noted at the technical sessions will be the items going to the board to assist the Board with their decision making process.
- These sessions are meant to be informal – not legally binding – ultimately it is the board's role to determine the outcomes of the sessions.
- As suggested, step 6 will not be removed from the "Process" section of the one pager, "Explanation of the Procedures". The attempt will be made for the groups to determine whether, as a result of discussion: 1) It is likely the issues have been resolved or 2) whether it is still unresolved and should be referred to the board.
- Any issues not discussed/resolved at the end of the day, may be presented by participants in a technical report with the recommendation of how to address the issue.
- If parties here can not agree with what falls within the terms of reference of the technical sessions, it will be up to the board to deal with the question of what falls within the terms of reference.

Scope and Methodology:

The following questions were addressed to DeBeers.

Concern: Without detailed proposals of the monitoring programs for Snap Lake, how can it be determined whether or not there will be appropriate mitigation?

Response: The Snap Lake mine development will have the benefit of utilizing BHP's & DIAVIK's monitoring program examples. DeBeers is confident that the mitigation measures will be appropriate. ~~Questionable Resolution~~

Concern: Will there be sufficient baseline data to develop proper monitoring programs?

Response: The key question is, do we have enough information to identify what monitoring is required? The DeBeers answer is yes. ~~Not resolved-~~

Concern: BHP and DIAVIK have worked together to create consistent monitoring protocols. How is DeBeers planning to work in cooperation with the other two mines?

Response: DeBeers has initiated a relationship with the other two mines and is prepared to work with them in the future. ~~Likely Resolved-~~

Concern: How does DeBeers plan to use elders and traditional knowledge with respect to monitoring?

Response: DeBeers plans to follow the lead of the elders and develop contributions together. *-Likely Resolved-*

Concern: DeBeers willingness to support a traditional knowledge panel of elders, as part of the EA agreement, to ensure the continuation of traditional knowledge use in monitoring methods.

Response: DeBeers is interested in incorporating information and experience the elders have to offer, but they don't know in what form it will take yet. The form it takes is dependant on the interests of the communities. *-Likely Resolved-*

DeBeers will provide a digital copy of their Power Point presentations to the MVEIRB for submission to the Public Registry –Commitment.

Review of Agreements/Disagreements - Resolved/Unresolved Concerns/Issues and Commitments Made at the MVEIRB Technical Sessions for De Beers Snap Lake Diamond Project

Water Quality and Quantity

<u>Legend:</u>	
Commitments:	in bold
Disagreements:	<u>underlined</u>
Likely Resolved:	<i>italicized</i>
Not resolved:	shaded grey
Questionable Resolution:	outlined

Day Two – Morning Session (November 26, 2002)

NRCAN Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ Not convinced of the groundwater conceptual model (re: groundwater flow system) and therefore are unsure of fundamental predictions related to issues like the impacts of inflow volumes and rates. ▪ The broad ground water flow system will recharge to Snap Lake and nearby lakes with taliks via radial flow. Didn't see any head data implying this in the EA. Do you have such data? ▪ Have you observed abnormal heads at Snap Lake? ▪ Why wasn't the head data used in the calibration of numerical flow data? 	<ul style="list-style-type: none"> ▪ The groundwater conceptual model is based on regional groundwater flow models and assumptions, modelling of inflow volumes and assumptions; there is a possibility of higher flows. ▪ The head data is incorporated in the North Lakes report. Elevation of water in Snap Lake shows a downward gradient. ▪ No abnormal heads have been observed around Snap Lake. ▪ All lake levels were used. All of head measurements in underground borehole results were of short static tests and did not represent steady state or long-term values. They would not have been appropriate for calibration.
Issue re: validity of conceptual groundwater model and calibration of head data were not resolved.	

Dogrib Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ Surface water in lakes is the only head data used in the model and therefore surface water is fully connected to ground water system? ▪ Does De Beers plan to test its groundwater conceptual model validity, what kind of time frame would be involved to confirm model results? 	<ul style="list-style-type: none"> ▪ Confirmed. ▪ Intention is to apply data and revise model as we move forward.
Issue re: further questions regarding ground water model.	

NSMA/MVEIRB Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ Issue re: flow toward North Lake after closure - some uncertainty in EA. What monitoring is proposed and timeframe/issues to confirm model results? ▪ Model suggests water goes from Snap to North Lake and then to....where? ▪ (Stated within a brief overhead presentation for comment...) Ground water is not necessarily going to the North or Northeast Lakes - it may be going elsewhere. It does not make sense that as presented water would go down, up and then back down. It makes more sense for water to go under the lake instead of up again as presented. 	<ul style="list-style-type: none"> ▪ All directions of flow were considered in the Environmental Impact Assessment. Evidence so far indicates that east and west directional flow is not a preferred pathway. We are confident in our original predictions that flows go to the North and Northeast Lake. ▪ After North Lake water goes to Camsell or Mackay Lake of lower elevations. But remember most of the ground water goes through Northeast Lake and will be highly reduced in concentrations. ▪ Deferred for North Lakes discussion on Day 3. ▪ <u>Recognize that there is radial groundwater flow from Snap Lake but that the focus of the discussion on the North Lakes is because the groundwater that would flow in this direction will have passed through the former mine.</u>
<p>Not resolved - concerns regarding regional ground water flow directions in the model. Important issue: regional ground water data insubstantial and monitoring would be needed to improve it. To be continued in North Lakes discussion on Day 3...</p>	

Dogrib Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ Regarding the calibration to mine inflows, how is the model 	<ul style="list-style-type: none"> ▪ Lake levels are like a boundary condition and establish water table

<p>calibrated and how are the surface water levels used in the calibration?</p> <ul style="list-style-type: none"> ▪ What areas were calibrated? ▪ How confident are you in water level variation being 5 to 12 m and how will the variation change over time? ▪ Since lakes outside of study area are based on map data and have not been surveyed, concerned about the precision of information, how well variance in elevation is known and how representative the model established is. ▪ Since 13 m is a small difference in elevation, relatively 5 m in overall gradient change is significant. Uncomfortable with the assumption that if all lakes are altered 5 m, that they will all change equally at the same time over the next 30 to 40 years. 	<p>regional levels and levels throughout the entire model. Excavated areas provided specific area inflow values. Leakance factor is very important and the area specific inflow values were used to calibrate model to be area specific.</p> <ul style="list-style-type: none"> ▪ There were two types of calibration. One re: hydraulic stress, to make sure the regional water table model was the best possible representation. This was done using lake levels, which mirror the water table. The second calibration involves induced changes in water levels. This calibration is not yet complete because the stresses have not been large enough. Calibration to inflows is done for areas in which we have data. ▪ The water levels in Snap Lake were surveyed, and are well known. The water levels of the North and Northeast Lake were initially based on relative elevations from a topographic map. Surveys since have confirmed relative elevations. ▪ With respect to the regional slope (flat, sloping land) we expect levels to vary no more than 5 m. There is likely data to confirm. Northeast Lake is 13 m lower than Snap Lake. If the level in one rises, all others rise as well. ▪ The 5 m difference will be over 1500 m, so very small with respect to uncertainty and sensitivity analysis. Differences in elevations will have a much secondary impact to ground water flow. Water does not necessarily flow proportionately with gradient (generally will). Other than water
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	levels, other variables are taken into consideration by using Darcy's Law to predict other changes. The driving force in the equation is however, gradient.
Questionably Resolved: Is there an unresolved issue here?	

MVEIRB Concern:	De Beers Response:
<ul style="list-style-type: none"> Issue regarding product from uncertainty analysis. How do you go from ranges of sensitive parameters to 1 or 2 standard deviations? Reason for concern is the end result of figuring out how much water must be treated. In terms of inflow, what if you find higher permeability as you go deeper? 	<ul style="list-style-type: none"> A fairly standard statistics analysis has been done based on data from underground flow testing. Range is tighter sometimes at this stage of the model with the high amount of variables, so we made assumption on data we have seen and expect all parameters to have a range. We also simulated subsidence so hydraulic conductivity is enhanced by a factor of 10. Subsidence = beam action, material bends and fractures increase. Conversely upper part of beam, fractures get tighter so assumed reduction of inflows. This is additional conservatism. We assumed the worst-case scenario.
Not resolved	

MVEIRB Concern:	De Beers Response:
<ul style="list-style-type: none"> How did you come up with the leakance factor? Was there any testing on sensitivity of lake inflow sediment affects on hydraulic conductivity? 	<ul style="list-style-type: none"> Darcy's law, how much flow would occur as a function of K, works in broad flow field. The leakance factor has a physical basis of the rock fractures. Locally, there is a lot more resistance to flow. Best value is derived from model; therefore there is a focus on monitoring inflows and recalibrating models. Not directly, most sensitive parameter is leakage factor.
Questionably Resolved: Is there an unresolved issue here?	

INAC Concern:	De Beers Response:
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<ul style="list-style-type: none"> Site-specific information is the best available information. To what extent have you considered additional data provided in the North Lake study to confirm previous EA predictions of ground water constituents (levels of chloride and TDS) in terms of releases of wastewater into Snap Lake? North Lake data showed within the upper end of the range and therefore possibly the mean is not reflected appropriately. Perhaps +1 standard deviation does not adequately reflect the range. Recommendation is to review this information and re-run the GoldSim model with higher levels of chloride as well as different amounts of other major ions like phosphorous. Also look at what kinds of results are generated within chloride levels in lake over time. 	<ul style="list-style-type: none"> Even though North Lake data was not available during the EA we did go back and consider it. The data falls within the range (+1 standard deviation) observed in granite boreholes. Very confident that data used in the assessment is appropriate. Concentrations we found in wells between Snap Lake and North Lake were similar to the average range in Snap. Concentration near North Lake was higher but higher concentrations at depth are expected due to movement underground. North Lake flows upward and Snap Lake flows downward. Concentrations in discharge areas are generally high. Concentrations near Snap Lake in EA are appropriate for impact assessment.
<p>Recommendation still stands – issue not resolved. The concern regarding the concentration of chloride and total dissolved solids estimates in ground water is still outstanding. Missing the evaluation of the potential for higher levels. It was commented that the Dogrib supports the above concern.</p>	

MVEIRB Concern:	De Beers Response:
<ul style="list-style-type: none"> If you are using a total ground water flow for mine, does utilising averages for values of chloride and phosphorous in the inflow model give a good representation of what to expect (ground water chemistry also changes with depth)? As mine proceeds deeper, water comes in at different depths and flow – was this considered? For the average chemicals used, are there any depths where ground water inflow is greater than other depths within the mine? 	<ul style="list-style-type: none"> Using average concentration for mine - took into account that water would come in from various levels. By using granitic variation, we feel changes in concentrations of water flowing into mine will be taken into account. No levels that are higher. Upwelling of deep saline water via variable density modeling is also accounted for in predictions. We indicated an increase because you

	are getting higher values over time.
Variation of quality of chemicals with depth with respect to average mine water quality is not resolved but there may be the means to resolve it shortly.	

Dogrib Concern:	De Beers Response:
<ul style="list-style-type: none"> Clarify – mine inflow quantities and the mine inflow chemistry was not varied through time? Why use chloride to represent others? 	<ul style="list-style-type: none"> Average values were used for general water chemistry from mine with respect to connate water. Variation over time was used with respect to lake water values for all parameters except chloride. For chloride we varied pumping time. Our studies indicated chloride is the main parameter that would change with depth.
Specific questions regarding groundwater remain unresolved.	

NRCan Concern:	De Beers Response:
<ul style="list-style-type: none"> Concern regarding fracture flows and how certain features such as the Snap and Krackle faults and high flows associated with contact between metavolcanics and granite are represented in the ground water model. Issue with the assumptions of volume of flow into the mine and the probability that it may be higher. Is there any intention to incorporate the above mentioned features into flow model? 	<ul style="list-style-type: none"> Based on implicitly incorporated fractures and current field data to date, at this time there is no plan to explicitly include them. Fractures are incontinuous and none of the tests are run for more than an hour, therefore you end up with a high-end result adding conservatism. An early version of the model had Snap and Krackle faults in it, but we did not find any enhanced properties with this data.
Issue of treatment of fractures in flow model is not resolved.	

DFO Concern:	De Beers Response:
<ul style="list-style-type: none"> Regarding recent testing results of paste backfill on ground water. In the EA ground water in contact with the paste had high levels of chromium and pH (recent values not as high). How were the tests conducted? 	<ul style="list-style-type: none"> Tests for the EA were conducted under conservative conditions utilising uncured (not fully solidified) watered paste. For the recent tests, paste was solidified and water washed over was tested. The changes in pH and chromium arise from the cured/solidified form and are more representative of what will happen in the mine.

<ul style="list-style-type: none"> Can continuing test results be provided to parties for review? Is it still part of the EA? Drop in chromium is a result of pH or any other factors? Could you describe different diffusion rates of water going through paste? Will there be substantial contact with paste? 	<ul style="list-style-type: none"> The data used in the EA is conservative but still representative (for our purposes). The new data supports the EA. Ongoing test work becomes a licensing issue eg. Land and Water Board could put a number of conditions on the water licence for further test work and required reporting. Happy to share additional data included within licensing. Not expecting things to increase over time – but any new data would be released. Drop is primarily due to pH because changes from Chromium VI to Chromium III (hydroxide precipitates). With respect to diffusion rates, EA assumed that water at closure has the chemistry of the paste backfill. 14% of the original water entering mine system estimated to be affected by paste backfill. Testing now has much lower than 14% water coming off paste; we'll have a better grasp after testing is complete. Very confident that diffusion will be very low relative to what was done in the EA.
<p>Paste influence on ground water issue will not be resolved until testing is concluded.</p>	

DFO Concern:	De Beers Response:
<ul style="list-style-type: none"> Data presented as kinetic test results in table as proof of how conservative EA results were. Is the data in the kinetic column week five results? Average tests over a five-week period? Or minimum results over a five-week period? In the Diavik review there was an increase in parameters several weeks into the kinetic tests. Were there any unexplained increases in your data? 	<ul style="list-style-type: none"> The data was week five data. With respect to an increase over time, it is very different from Diavik tests because of the materials being tested. Chemical reactions of sulphides could cause an increase over time but in our case there is minimal (very low concentrations) sulphide in the rock types. We do not expect an increase over time because the main change in chemistry from these cells is from leaching which

	occurs at the start (which would have happened before testing).
<i>Likely resolved.</i>	

Dogrib Concern:	De Beers Response:
<ul style="list-style-type: none"> Out of the six parameters, not all values decreased, aluminium increased slightly. How do you expect that to change over the long term? 	<ul style="list-style-type: none"> That value is a change of 0.1 mg/L and (I am speculating) I am of the opinion that those values are reasonable.
Questionably Resolved: Is there an unresolved issue here?	

Due to a lack of resolution of issues up until now and limited time, it was suggested that hydro geologists and hydro geochemists got together outside of the session. De Beers made their office available for meeting space. **Notes would be taken at any “break out session” meetings and brought back to the session to include in the session record.**

Yellowknives Dene First Nation Comment: We want issues to be resolved daily. We are interested in water flow on land and groundwater flow movements and don't like to hear about waiting until Land and Water Board Licensing.

Day Two – Afternoon Session (November 26, 2002)

DFO Concern:	De Beers Response:
<ul style="list-style-type: none"> The 10 days of capacity in the water treatment pond – is that assuming you are starting empty? 	<ul style="list-style-type: none"> Starting at approximately 20% full, therefore there will be capacity for about 200 000 m³.
<i>Likely resolved.</i>	

MVEIRB Concern:	De Beers Response:
<ul style="list-style-type: none"> If flows are higher than predicted – what is the capacity situation – increased footprint? 	<ul style="list-style-type: none"> Yes, there is an allowance for an increased footprint, however we do not anticipate it, but we have extra capacity. <p><i>The above comment referred to treatment capacity only. De Beers said they have enough space to build a larger treatment plant, but no footprint for extra storage requirements.</i></p>
<i>Likely resolved.</i>	

DFO Concern:	De Beers Response:
<ul style="list-style-type: none"> Indicate what the underground 	<ul style="list-style-type: none"> Temporary because we would not

<p>mine water storage volumes are and define “temporary” storage?</p> <ul style="list-style-type: none"> ▪ Is limited storage in mine workings a contingency or active component? 	<p>be using it on a permanent basis due to lack of necessity. Capacity for 200 000 m³ and if necessary an additional 30 000 m³ is available below mine workings. Beyond that, have the ability to begin flooding the mine.</p> <ul style="list-style-type: none"> ▪ Contingency.
Likely resolved.	

MVEIRB Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ Are the pilot water treatment plant testing results available anywhere? 	<ul style="list-style-type: none"> ▪ Results summarized in EA appendix 9.8-13.
Likely resolved.	

INAC Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ With respect to the possibility of an emergency shutdown, if it is assumed that the shutdown would not be longer than one day, is there anything in the system that would require more than one day in middle of winter to fix? ▪ If pond is filled with water all the time, does this affect the balance of impacts? 	<ul style="list-style-type: none"> ▪ Can't think of one that would affect the process. Most equipment is twinned, the only unit that would take longer than one day would be the thickener and mine water can bypass to water management pond. ▪ During operation the waste water management pond would be approximately 20% filled, leaving 200 000 m³ – we want to retain capacity - it is not our intention to operate it at maximum levels. The modeling regarding discharge rates didn't account for storage in water management pond (water will be going to water treatment plant)—it is in place as a contingency and does not affect balance of impacts.
Likely resolved.	

EC Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ After a biological upset, how long would it take for treatment microbes to get back up to capacity? 	<ul style="list-style-type: none"> ▪ The biological process is less forgiving to upsets and needs well trained, skilled operators. As there will be an incremental need for

	sewage treatment capacity, there will be more than one stand alone sewage treatment plant in place – this will provide flexibility to rectify problems and would protect against the problems of one system being down.
<i>Likely resolved.</i>	

INAC Concern:	De Beers Response:
<ul style="list-style-type: none"> Waste Water treatment plant designed explicitly to treat particulates, if dissolved metal levels are higher than anticipated, could plant handle it? Specifically for cadmium? 	<ul style="list-style-type: none"> The cemented paste backfill creates a high pH condition in the mine water which assists with removal of metals from the mine water. Before indicating what model modifications to make, I would need to know which particular metal(s) I was dealing with. Knowing the exact metal would allow us to determine the required coagulant to remove the remaining metal(s) in solution. Cadmium responds well to high pH environments – hydrosulfide solutions have been used for a coagulant by others. We are looking to accomplish less than 1 ppm concentration, which the sulphide would accomplish.
Satisfied but not resolved will continue discussions further...	

EC Concern:	De Beers Response:
<ul style="list-style-type: none"> If ferric sulphate was added into the treatment stream, would there be an increase in iron levels in Snap Lake? 	<ul style="list-style-type: none"> The iron would precipitate out and would form part of sulphate loading. Doseage: in area of 20-30 ppm depending on additional level used.
<i>Likely resolved.</i>	

EC Concern:	De Beers Response:
<ul style="list-style-type: none"> Capacity of waste water management pond is small relative to surface spring inflows, wondering what prepared to do to ensure can deal with the flows? 	<ul style="list-style-type: none"> Install 1050% overcapacity in water treatment plant over the years. Will always have this 1050% overcap. Intend to increase capacity as the mine

	water flows increase. If flows are higher, will ensure capacity increases before reaching this level.
<i>Likely resolved.</i>	

Dogrib Concern:	De Beers Response:
<ul style="list-style-type: none"> What is the best guess at the minimum number of storage capacity days at any day and time? Do we have 10 days or have we lost that if flows are higher? Therefore the sensitivity of the storage component is based on predictions and factors re: mine inflows and outflows. If you are off by a factor of 1 or 2, you have reduced the available storage at the start. There appears to be some uncertainty (as with tests and predictions), we want to know one, how good those number are and two, at what point would De Beers be willing to flood their mine? 	<ul style="list-style-type: none"> We will have lost the ten days of storage capacity if flows are higher but we plan to have more control of mine flows as project proceeds. Storage capacity in the water management pond will be approximately 250 000 m³, plus the underground 30 000 m³ equalling a total of 280 000 m³. From there the days of storage are dependent on flows. True – but remember we always have the overcapacity in the treatment plant and if absolutely necessary we could use the entire mine storage area although that would mean ceasing operations. If volumes of water vary by factor of 2 or 3, the changes would be drastic, but to achieve approximately a 50% difference in the expected value, the K value would be increased/decreased by 10 times, which requires a very substantial shift. It all comes down to dollars and cents but we never want to be in the situation where we have to shut down mine, I believe we'd come up with another solution (other contingencies) before it came to that. We are comfortable with the risks were taking now, and the level of conservatism that we've used. We can't foresee accidental things that happen on the surface that could lead to untreated discharge, but as far as mine water, it would go

<ul style="list-style-type: none"> We want to see those ultimate scenarios at this stage of the process. There could be other scenarios but I'm not willing to present them right now. There could be other scenarios that we need to address. 	<p>underground before intentionally discharging it to Snap Lake.</p>
<p><i>Likely resolved – may be other scenarios to present later.</i> Stated Commitment: De Beers is willing to absorb the risk of flooding the mine before letting out untreated water into Snap Lake (disregarding accidents).</p>	

EC Concern:	De Beers Response:
<ul style="list-style-type: none"> Comment. Good point regarding surface spring flows – they could lead to much higher volumes of water than the waste-water management pond can hold. Need to make certain that De Beers has the ability to treat this within a 2 week period in addition to mine water discharges. 	
<p>Questionably resolved. Issue re: there must be consideration regarding the need for capacity/treatment of the surface spring flows into the water management pond.</p>	

YDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> Diavik experienced problems with keeping phosphorus below limits that you are proposing. How does De Beers' sewage treatment plant differ from Diavik's? Is the SBR system used elsewhere in the territories? 	<ul style="list-style-type: none"> Have discussed the Diavik sewage treatment plant with Diavik operators. Diavik's phosphorous removal is chemical (precipitate P using Al). And DDML (Diavik Diamond Mines Inc.) use different treatment processes – they use an RBC (Rotating Biological Contractor) and extended aeration processes. De Beers use a Sequencing Batch Reactor (SBR). <p>We have no opinion on why it does or does not meet their limits. However we will have two sewage treatment plants and we are very confident we will meet our limits due to a two-stage process and use of ferric sulphate – that is the</p>

	<p>current set up at the exploration camp presently at Snap Lake.</p> <ul style="list-style-type: none"> ▪ Yes it is currently being used at the exploration camp at Snap Lake.
Questionable Resolution: satisfied with answer but needs to do more research individually.	

NSMA Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ What are the predicted removal-projections for phosphorous and total suspended solids (TSS)? ▪ During heavy flows, what mechanism for early warning monitoring system is in place to prevent flocculants being released into Snap Lake? 	<ul style="list-style-type: none"> ▪ Can calculate it, but I don't have the right numbers in front of me. In terms of phosphorous what we are looking at would be 15 mg/L in raw, and down to .2 mg/L treated. I can't remember TSS raw, but the assumed design value was around 3-400mg/L treated. ▪ Firstly, flocculants addition rates are 1-2 ppm and are mechanical. For dosage to be higher it requires a malfunction of the pump. Additionally, turbidity is monitored and the pressure dropper will sense information and adjust accordingly. There is also an alarm system to alert the operator to particular irregular functions. The most typical situation of flocculent release would be in a spill situation; however the floor drainage area storing the flocculants is contained as a precaution.
<i>Likely resolved. Information helped but may be linked to tomorrows discussions.</i>	

DFO Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ Clarification – the sewage treatment plant filter stage takes out the flocculent material and precipitates iron hydroxide and the sulphur ends up as part of the effluent and would be 50 ppm? If correct, what are the impacts on water quality in Snap Lake? 	<ul style="list-style-type: none"> ▪ Technical explanation of precipitates etc....then ...If you had 20-50 ppm of sulphate in the sewage treatment plant at a discharge rate of 200 m³/day, it would not have a large effect. ▪ The increase in sulphate loadings from the mine versus the sewage treatment plant is only a fraction of a percent of the concentration

	that would occur from the mine. The effect would be minimal.
<i>Likely resolved. This addresses the concern.</i>	

Dogrib Concern:	De Beers Response:
<ul style="list-style-type: none"> Is dilution the solution? What if one sewage treatment system is working and the other is not, will you need to discharge from the system? Has the total sulphate loading into Snap Lake over the long term been addressed? 	<ul style="list-style-type: none"> If the water treatment plant is down and other contingencies (ie. using the second batch tank at the sewage treatment plant) were capitalized – dilution would not be the solution – if that was the case then there would be a mine shut down situation. This discussion will continue tomorrow, loading to the lake is the main issue, if take out the mine water, there is no increase in loading and no adverse effects on lake.
Questionably Resolved: Is there an unresolved issue here?	

INAC Concern:	De Beers Response:
<ul style="list-style-type: none"> What is the proportion of total loading due to the mine site for the water management plant and sewage treatment plant? Given the concerns of the phosphorous levels in the lake, what if any contingencies are available for refining the water treatment plant to further reduce releases of phosphorous? 	<ul style="list-style-type: none"> Around 5%. We have the capability of adding ferric sulphate, mainly as a coagulant for metals (not specifically phosphorous) but if for some reason phosphorous levels were elevated in mine water - the ferric addition would remove it. However, looking at 10 ppb now (approaching solubility levels), it would not be practical to use it due to the flows involved.
Satisfied but questionably resolved – will carry discussion over to tomorrow.	

MVEIRB Concern:	De Beers Response:
Two questions: one is it possible to remove TDS from effluents and two is this expensive	<ul style="list-style-type: none"> Reverse osmosis can deal with this problem but it is not efficient and there is not a practical alternative for Snap Lake based on flow rates and the issue of dealing with reject solution

DFO Concern:	De Beers Response:
<p>Two questions: one is it possible to remove TDS from effluents and two is this expensive?</p> <ul style="list-style-type: none"> ▪ If zones of high flow are encountered, and grout is reduced, and the TSS load increases, would this decrease the efficiency of the water treatment plant and cause the need for backflushing of filters. 	<p>Reverse osmosis can deal with this problem but it is not efficient and there is not a practical alternative for Snap Lake based on flow rates and the issue of dealing with reject solution.</p> <ul style="list-style-type: none"> ▪ The filters can handle higher solid loading and what happens is backwash frequency increases which increases the efficiency of the system - dirty product water that usually discharges is used to clean the filter.
Likely Resolved.	

DFO Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ Explain high pH with respect to minewater interaction. ▪ In the presented results, there was a decrease in pH – certain things precipitated out. ▪ At that pH they'll be precipitated out? Or in dissolved form? 	<ul style="list-style-type: none"> ▪ The predicted pH and dissolved metal concentrations are not dependent on pH. ▪ Special metals have lower solubility at a low pH. Dissolved concentrations expected in mine are lower than 11 pH. Those metals drop out on a metal by metal basis. With respect to mine water pH, it is expected to be 6.5-7.1 pH. ▪ There is an additional degree needed in precipitation but it is not required. This will be expanded on in presentations tomorrow.
Questionably Resolved: Is there an unresolved issue here?	

Dogrib Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ Clarification of phosphorous reduction. Started with 15 mg/L and working towards target. If initial level is higher, how does that affect your predictions on reaching the target? 	<ul style="list-style-type: none"> ▪ We still have two steps: <ol style="list-style-type: none"> 1) biological (which will reduce P concentrations the most); and 2) precipitation. The filtration is driven by solubility so (if needed) we would only have to increase ferric sulphate amounts. There is also potential for upgrading the filter

<ul style="list-style-type: none"> ▪ An increase in ferric sulphate would that increase the sulphate discharge. 	<p>system if needed.</p> <ul style="list-style-type: none"> ▪ Yes, but it is a minor amount. We also have the option of adding ferric sulphate to biological part of system.
<p>Questionably Resolved: Is there an unresolved issue here?</p>	

General Comment: General consensus indicated that most were unhappy with the morning session however, the last two hours were closer to the productive level of what was generally envisioned at the technical sessions. General consensus indicated that most were dissatisfied with the format and expectations regarding resolutions during the morning session, however, the last two hours were closer to what was envisaged for the technical sessions.

It was agreed that a “break out session” would be held at 6:00 pm on the 3rd floor of the Scotia Centre in the De Beers office to attempt to further resolve issues. See Appendix A – Hydrogeology Breakout Session, Day 2 Evening, November 26, 2002. For the “Hydrogeology Breakout Session”, and all of the evening breakout sessions to follow, unlike the daily technical sessions, no transcripts were prepared; no facilitators from the daily sessions were present; De Beers chaired the meeting, and De Beers were the note takers.

Review of Agreements/Disagreements - Resolved/Unresolved Concerns/Issues and Commitments Made at the MVEIRB Technical Sessions for DeBeers Snap Lake Diamond Project

Water Quality and Quantity

<u>Legend:</u>	
Commitments:	in bold
Disagreements:	<u>underlined</u>
Likely Resolved:	<i>italicized</i>
Not resolved:	shaded grey
Questionably Resolved:	outlined

Day Three – Morning Session (November 27, 2002)

DeBeers provided an answer for NSMA that they were unable to provide in the Day Two session as follows:

Regarding the efficiency of the sewage treatment plant, the preliminary design criteria for calculating TSS were 97.5% and 98.7% phosphorous removal efficiency.

INAC Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ To what extent have releases of metals from the water treatment plant the potential to change properties like pH (causing the metals to be more bioavailable)? ▪ The pH adjustment could be used or will be used? ▪ Regarding pathways for metals to reach lake sediments, has direct uptake by algae (and release to sediments as algae dies off) been considered in the EA? 	<ul style="list-style-type: none"> ▪ Changes in metal properties – specifically pH have been considered. In order to prevent a change of pH in Snap Lake, we have a pH adjustment in the treatment process. Therefore, before release into Snap Lake, the pH is adjusted and we don't expect there to be further effects on Snap Lake. ▪ The pH adjustment will be used if required. ▪ We considered that pathway on a qualitative basis. Forms of phosphorous in minewater discharge aren't expected to be at a high proportion of metals. The majority of metals are associated

<ul style="list-style-type: none"> It is important to make sure that thresholds used for evaluation do not have adverse effects on particular species and are representative of the community. Regarding the use of Canadian water quality guidelines, there is a major difference between the CCME (Canadian Council of Ministers of the Environment) suggested approach and the EA approach (USEPA?) regarding species sensitivity analysis and the use of lowest observable effect (LOE) levels. To what extent did you review acute toxicity values when evaluating level of confidence? 	<p>with particulates and are not biologically available. There is not a substantial pathway for increasing metal concentrations in sediments.</p> <ul style="list-style-type: none"> Yes acute data was considered when developing species distribution. Where available we used chronic data and where not available we used an acute/chronic ratio to predict a chronic effect. A hardness correction was made as well. Database, information was used to calculate the geometric mean (to remove lab technique issues – also focusing on most common measured values for those tests). The value was adjusted and chronic values were applied. We did consider acute toxicity values, but did the evaluation based on geometric mean values and we feel this a good representation of the species.
<p>Not Resolved: INAC will do further analysis and address further.</p>	

MVEIRB Concern:	De Beers Response:
<ul style="list-style-type: none"> Data presented for the water treatment plant pilot testing showed a large reduction in total phosphorous (100 ug/L untreated to 1 ug/L treated). Is this over estimating? There was suggestion to combine STP and WTP effects to determine total effects. 	<ul style="list-style-type: none"> Regarding the issue of the sewage treatment plant (STP) and phosphorous removal, the results of the pilot work would seem conservative. But the pilot was taken from minewater samples. Sewage water has orthophosphate concentrations far higher than minewater. Also, modelling work presented, looked at all inputs from mine water and surface runoff. There are basically two systems: tests on real samples and modelling with predictions. Pilot work was done to simulate the number of flow sheets. The preferred sheet is the thickener, then flocculation, then filtration. The pilot used coagulation prior to filtration. We expect some phosphorous removal

<ul style="list-style-type: none"> ▪ We might want to try rerunning the eutrophication model with 20 ug/L and look at the range of results. ▪ So you're happy with 10 ug/L of orthophosphate used in model? Responses seem to depend on assumptions on the organic form of phosphorous not being available – do you think it would be worthwhile to address this in the model? ▪ Is it the assumption that overtime the phosphorous in the minewater will not contribute to biologically available phosphorous? ▪ Under the winter model, in parts, dissolved oxygen levels are in a sensitive range (3-7?) for fish (ie. lake trout). Relating to the distribution of the sensitive range in the water column – what are your opinions on the proportion of water affected by low dissolved oxygen levels? ▪ 28 m depth is close to outflow/diffuser? 	<p>in that process, however modeling remains conservative because it assumes that some stays in solution and is not precipitated out by coagulants.</p> <ul style="list-style-type: none"> ▪ An average was used in the modeling, which better represents the total amount of orthophosphate rather than one particular sample at 20 ug/L. ▪ The model does incorporate organic phosphorous and does account for uptake of orthophosphate and the conversions between the organic form and orthophosphate form via mineralization (ie. death of algae). This is included already in the RMA model. ▪ The majority of the organic phosphorous will be filtered out as a particulate. The amount remaining will be very small. We believe we are being conservative in the total amount of phosphorous discharge to water that could become biologically available. ▪ The proportion of the water column that could experience levels of 3-7 will be small. It would occur where depth is 28 m. The average depth of Snap Lake is only 6m. With respect to ecological influence, we will carry the discussion over to tomorrow's session in the aquatic resources section. ▪ Diffuser is about 11 m depth.
<p><i>Some clarified - Likely resolved/Some need further clarification - Not resolved</i></p>	

DFO Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ Regarding the percentage of affected species versus concentrations - cladocerans most sensitive – was this just for 	<ul style="list-style-type: none"> ▪ For the majority of cases it was true, in all cases shrimp cladocerans were at a low level.

<p>chromium or was it for all four metals of concern including cadmium and copper also?</p> <ul style="list-style-type: none"> ▪ With respect to protecting most sensitive species and life stages, do you have any data for chronic effects on neonates – are these more sensitive? ▪ In terms of defining level of effects of impacts, DeBeers referred to literature that suggests if 20% of the lake community is affected it destabilizes the ecosystem. That 20% threshold actually refers to a species or a community. Once 20% of the species is destroyed there is a concern. DeBeers used this number and went to 1% (claiming conservativeness) but focused on populations and lake areas. There is a big difference between % of species affected and % of area. ▪ Looked at fish assessment data, but water quality analysis treats lake as uniform with respect to fish habitat. The north arm of the lake has lower fish habitat value. Discharge locations tend to be at the deepest part of the lake but these areas can be disproportionately crucial to fish habitat. Concerned with applications to whole lake as though it is uniform in habitat. ▪ What impacts will increased turbidity have on plant production and fish foraging? 	<ul style="list-style-type: none"> ▪ Not sure if neonates were final endpoints. If there was a measured chronic value, we would use that over an acute value. ▪ Concern over applying 20% threshold of organisms to area – wasn't way that was intended. What we did was define effects based on species and area of effect and brought it to another level of conservatism. We used HC20 and then assumed higher magnified effects would have to be over 20% of lake. We reduced it further to 1% that could be affected. Trying to make sure that assumptions were protective of organisms (allowing a high degree of confidence that effects were negligible). ▪ By looking at the area around the discharge and considering it uniform (for the purpose of the water quality assessment) sensitive habitats are not explicitly considered. ▪ The effect of discharge on lake turbidity will be very low - close to anything you would see in Snap Lake normally (<5mg/l of solids). We do not expect discharge will have a measurable increase on Snap Lake turbidity.
<p><i>DFO was satisfied with the response regarding toxicity data – Likely resolved. The issue of threshold effect area was not resolved and will be discussed further. DFO was satisfied with response regarding impacts of increased turbidity – Likely resolved.</i></p>	

EC Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ Loss of phosphorous in biomass algae to sediments is not an absolute reduction in phosphorous. Are we really seeing a net decrease in total phosphorous? ▪ So phosphorous is not available at all when objects settle to bottom? Has model been run with some phosphorous being taken up? Phosphorous could be used in food chain, etc...will leave to sidebar. 	<ul style="list-style-type: none"> ▪ In order to see a greater loss of phosphorous from the water column, you can have higher settling rate or more algae in the water column taking up more phosphorous. There is no reason to expect increase in settling because of more algae in water column. Settling rate did not vary. The total amount of phosphorous does not increase, but becomes more bioavailable. With stimulated algae growth, then more phosphorous settles out of the water column. Because phosphorous becomes more available, more goes into algae and therefore more algae settles out. Hence model achieves new balance and system creates a new equilibrium. ▪ It is true that phosphorous settles and collects in bottom and the model doesn't show that release of phosphorous into the water column. Yes phosphorous may be taken up by grazers and later released into the water column. But the model is calibrated (looking at a net loss of nutrients to sediment) without including the effects of phosphorous loss due to settling. The model is representing a net loss rather than a greater amount going into settlement.
Not resolved – Planning to resolve phosphorous monitoring question in the evening session.	

Doug EC Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ The graph of volume of water from mine to treatment plant – translates to model inflow. The value on graph is the expected value, but did you run the model with one to two standard deviations higher than 	<ul style="list-style-type: none"> ▪ We modeled expected flows. We have not modeled larger flows.

expected?	
Stated to be answered. Likely resolved. Not Resolved	

DFO Concern:	De Beers Response:
<ul style="list-style-type: none"> Regarding the phosphorous modelling, and taking into account the change in algal community with respect to change in phosphorous - are you anticipating that the community will not change? Greater or lower settling rate? With the increase in settling rate of algae to sediment, we've had experience with similar examples. The end result was a lot of nutrient release from sediment after the fact (due to low oxygen conditions). The increase of algal biomass to sediments results in an increase in release of nutrients from sediments. In the case of phosphorous, are you confident this will not happen? If the target TSS discharge to Snap Lake is approximately 5 mg/L and it is claimed that at 5 mg/L (at rest) this sediment will not settle, since the background level in Snap Lake is also 5 mg/L – how can this be? If it were true, there would not be any sediment in Snap Lake presently? You are saying that the only material settling in Snap Lake is coming from natural runoff? Therefore, if organic and produced within the lake itself - unless it exceeds 5 mg/L none would settle? 	<ul style="list-style-type: none"> Modelling did not consider changes in the algal community. Modelling is based on total phytoplankton and total settling rate for phytoplankton. Secondary effects on algal community would be addressed tomorrow. Yes, we have a high degree of confidence that potential effects on dissolved oxygen have been predicted conservatively. A change in algal biomass and release of nutrients is expected and has been included and we are confident in predicted maximal changes in dissolved oxygen. True, natural streams will introduce natural sediments that will settle. However, with the minewater treatment, the system is not natural and is different. Solids introduced will settle and the minewater treatment process removes the settleable solids before discharge. This is why settling is not expected. Essentially correct. The water treatment process removes settleable solids from the effluent before release into Snap Lake. Watershed inflows (ie. total suspended solids in streams) are still very low, though higher than treated water discharge. Accumulation of settlements in arctic lakes occurs very slowly and is largely organic coming from watersheds or developed in the lake itself. No. Filtration removes the coarser fractions that will settle. The solids that pass through the filter are not

	setttable or they would have been removed. This is different than what occurs naturally in Snap Lake in terms of organic/inorganic sediments introduced through surface inflows.
Not resolved: to further discuss the phosphorous model in the evening "break out" session.	

NSMA Concern:	De Beers Response:
<ul style="list-style-type: none"> Regarding toxicity benchmarks: was there any consideration given to looking at potential stimulatory effects on test species rather than acute and chronic endpoints focusing primarily on toxic inhibitory effects? I support DFO's comment regarding 1% of the lake affected. It relates to potential stimulatory effects. Thermal differences or increases in food may act as fish attractants causing vulnerabilities within the 1% area. Is it correct that phosphorous loading from the sewage treatment plant is not included in the modeling? 	<ul style="list-style-type: none"> In our assessments we strictly looked at inhibitory effects. Regarding temperature differences in discharge: one of our concerns was that the temperature of discharge in the winter would be warmer than the annual lake temperatures. In order to address this concern, the temperature differences were designed to be small enough to prevent an effect on aquatic organisms. The model included total phosphorous loading from the minewater and the sewage treatment plant.
Questionably Resolved: there will be further discussion.	

Dogrib Concern:	De Beers Response:
<ul style="list-style-type: none"> How were Cladocerans determined to be the most sensitive species? The graph only plotted species most affected (at low levels), so how did you rule out other species? Regarding the percentage of the species affected: there seems to be a large amount of fish affected at a higher percent - why not at lower percentage? 	<ul style="list-style-type: none"> The graph is a plot of data available. Fish species are not visible at the lower end because of a lack of sensitivity. Their lack of sensitivity ruled them out. The plot is a cumulative proportion of the community. The response of a species is on the bottom. Gets less sensitive as you move up on the line. As concentration increases you will eventually affect 100% of the community.

<ul style="list-style-type: none"> Regarding the 20% area and benchmarks for the area: concern is that assumes lake circulation complete and homogeneity of habitats. Claiming conservatism by reducing benchmark to 1%. Most of species diversity is exhibited by very small zone in lake, how can that assumption be valid? 	<ul style="list-style-type: none"> This will be addressed in the aquatic resources discussion tomorrow.
Not resolved – Happy to meet later and try to resolve.	

Day Three – Afternoon Session (November 27, 2002)

Dogrib Concern:	De Beers Response:
<ul style="list-style-type: none"> Continued from morning session...Concern on use of geodetic mean – question is related to a number of issues. Regarding the assumed modelled flow rate, if only expected flows are modelled there is no sensitivity. What would be the effect of an increase, and would you consider this in modelling? I want more of a quantitative answer than the qualitative answer given. Do we have more of a quantitative feel for a proportional decrease that can be applied into a systematic model framework? The mean phosphorous level of 10 ug/L given - how many samples is that based on? 	<ul style="list-style-type: none"> We did use expected flows for Snap Lake in modelling. Keep in mind regarding higher flows - loading and flows are not directly related. With increased inflows, water comes from the overlying lake. The majority of mass (ie. metals) comes from ground water. With proportional increase in inflows, the proportion of loading is smaller due to increase in volumes. Pilot test results for one sample shows treatment can remove orthophosphate component. We assumed conservative levels in minewater and this combined with the above point on proportion gives confidence in predictions. The qualitative answer is what can be provided today. We have looked at expected minewater discharge concentrations and have been conservative in estimates we believe the potential effects have been addressed for project and the current model is effective. The 10 ug/L mean (for phosphorous concentration) was based on approximately 30 samples of groundwater inflow. When calculated we looked at not only ground water inflow – we also

	<p>looked at advanced exploration project observances.</p> <p>Concentrations were adjusted based on additional values taken from weekly or more frequent samples taken during the advanced exploration project.</p>
<p>Not resolved - level of conservatism is important – mean values used when predicting flow rates is a concern. I'd like further consideration to be given to models used.</p>	

DEO EC Concern:	De Beers Response:
<ul style="list-style-type: none"> Regarding the 230 m mixing zone - is there any way to reduce that 1% zone? What treatment can be applied to reduce that zone? From our perspective, treatment should be designed using the best available technology rather than working back from a negligible level. 	<ul style="list-style-type: none"> The model area calculated (230 m) was based on maximum concentrations at any time in the mine during operations that could be above the site-specific benchmark. The radius around the discharge equals approximately 1% of the lake. We are very confident that impacts to aquatic organisms within the lake are negligible. For most substances, the impacts would be significantly lower than 1% (eg. cadmium). For the purposes of the EA, we assumed treatment would reduce TSS and metals accordingly. We do not see a reason to look beyond the level of treatment proposed, as effects do not warrant it.
<p><i>Likely Resolved: stated satisfaction with response regarding the mixing zones.</i></p>	

YDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> Regarding the cadmium CCME guideline readjustment 150-180... does this capture the TDS expected in Snap Lake from mining operations? 	<ul style="list-style-type: none"> Yes. The 180-hardness was selected due to the increase in hardness with minewater discharge. The model predicts changes in hardness and concentration meaning it can be representative of a particular time and point in lake, based on hardness through recalculations.

<ul style="list-style-type: none"> Did you look at anything with hardness above 180? 	<ul style="list-style-type: none"> As hardness increases, toxicity is reduced. Effects on reduced toxicity were not taken into account due to hardness above 180. We consider that conservative.
Questionably Resolved- may be expanded upon later.	

INAC Concern:	De Beers Response:
<ul style="list-style-type: none"> Regarding mixing of minewater beyond the initial 60m mixing zone - when you calibrated the model, did you use measured current values for Snap Lake? Did you have good wind and bathymetry data? 	<ul style="list-style-type: none"> No, we adjusted values to be within ranges that would be expected from similar areas (ie. Diavik – Lac de Gras areas). It is difficult to predict a current at any one point and time. We are trying to accurately reproduce the overall flow pattern in the lake instead. Good characterization of circulation in lake can be done with a good understanding of wind and bathymetry without actually having measured values in the lake. A great deal of time was spent collecting appropriate data and the level of confidence in that data is high.
Questionably Resolved.	

INAC Concern:	De Beers Response:
<ul style="list-style-type: none"> To what extent is DeBeers willing to consider undertaking further analysis (ie. rerunning numbers in models etc.)? A list of issues to be raised: <ol style="list-style-type: none"> nutrient modeling baseline levels of phosphorous impact of selection of benchmarks (including TDS) 	<ul style="list-style-type: none"> Concern is that the process will be dragged out ...this can go on forever. We're satisfied with work done to date and have done a good job. Through the result of discussions and the outcome of technical reports, we may want to rerun some things. We are interested in talking, however, DeBeers needs to be provided with specific issues.

<p>4. assessment criteria applied and the effect of the process</p> <p>5. assumptions regarding levels of phosphorous emanating from mine</p>	
<p>Commitment: DeBeers wants something specific to answer to and INAC has set a goal to conduct further analysis and have discussions with DeBeers' consultants (prior to the technical reports) to get things resolved within the 1st couple of weeks of January.</p>	

DFO Concern:	De Beers Response:
<ul style="list-style-type: none"> What does 'Snap Lake area' include with respect to water quality/toxicity data? Regarding baseline oxygen levels and winter modelling: model presented earlier had a 3-7 mg/L range – where would this drop in oxygen apply? Would this level of oxygen concentration only be found in deeper locations of lake? Is the model output telling us that in the deeper portion of the lake, oxygen levels could vary 3-7 mg/L or during half of year would it be closer to 3mg/L? What is the timing for those deeper ranges? Lake trout require oxygen levels greater than 5mg/L, since deeper overwintering habitat quality would be decreased, my question tomorrow will be related to habitat 	<ul style="list-style-type: none"> It was determined by toxicity data set. Our approach was to utilize available toxicity data for known species – we ignored warm water species and considered all arctic species. Therefore if species were known to the arctic, we had to have toxicity data that would pass the screening test. This extended to other aquatic organisms as well. Yes. Based on our winter sampling, the range was 5-8 mg/L, we tried to find deeper depths because deeper areas of lakes (where current is much slower) have more limited circulation and you have oxygen reductions as it moves down the column. It is only in those areas that we expect the 3-7 oxygen levels. In the early spring prior to breakup. In terms of areas, the best way to address that question is using a bathymetry map.

<p>quality.</p> <ul style="list-style-type: none"> ▪ Regarding plume delineation: how was the plume delineated? As a function of currents in lake? If so, did it include TDS modeling? <ul style="list-style-type: none"> ▪ Image pictured was that the RMA model works well in the summer but that the model isn't the best tool to use in the winter and in winter there is a higher concentration of TDS moving into lower areas of lake? But the concentration of TDS levels is not higher than that of base levels. Regarding mixing zone boundaries and scale of impacts: Three step process for assessment: <ol style="list-style-type: none"> 1. Parameter below guideline, no further assessment. 2. Parameter at mixing zone below guideline, no further assessment. 3. If exceeded guideline at boundary, further assessed for impacts in lake. ▪ Why change in scale on boundary? Why the move from the end of the pipe to the 60 m and to the 1%? How was that arrived at? Other US legislation allows for lake level assessment, why done in this 	<ul style="list-style-type: none"> ▪ 1% area shown on map represents an actual modeled area predicted by the RMA model. Circulation in Snap Lake is accounted for. A discharge turbulent condition pulls in water from the surrounding area and equilibrates TDS levels between discharge and ambient water. In open water, there is enough turbulence in water column to maintain this mixing. In winter, due to ice cover, mixing is somewhat different. The density difference is small and there will be initial mixing under ice (only initial mixing was accounted for), but as discharge moves away settling will occur and will cause slightly higher TDS levels (in open water) moving down and away from the discharge area. ▪ Yes – essentially correct, you are referring to mixing zone and we refer to it as maximum concentration of Snap Lake. Mixing zone equals the predicted effects in the lake. <ul style="list-style-type: none"> ▪ Not for legislated reasons – done to provide a systematic approach for assessing effects. We wanted illustrate that we could meet target water quality guidelines. That was the best practical technology here.
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<p>instance?</p> <ul style="list-style-type: none"> Why aren't there multiple treatment options for treating the 1% of the lake that is affected by discharges? Why have you selected the chosen option? 	<p>Most maximum concentrations predicted in Snap Lake are below guidelines.</p> <ul style="list-style-type: none"> The purpose of EA to identify and minimize impacts to the point where they are negligible. If we have a high degree of confidence that effects are negligible, we would not recommend a level of treatment beyond that which would be required. We are confident that this is the best option.
<p><i>Question regarding toxicity data was satisfied – Likely Resolved.</i> Question regarding oxygen levels some questions answered but will follow up with tomorrow – Not Resolved. Question regarding TDS – still have issues that may be resolved in Day 4, the WTP and discharges are still an issue (how & why mixing zones are selected) – Not Resolved.</p>	

Dogrib Concern:	De Beers Response:
<ul style="list-style-type: none"> Uncertainties with the modelling used to predict effects. Did you exclude north arm from modelling circulation – why <u>not</u>? In terms of % area used to calculate the threshold - why wasn't the area fully utilized as much as the other area? Fair to consider lake homogeneously? The model used to define the initial <u>pollution-dilution</u> zone assumes that you have an infinite supply of water. Diffuser very close to shore, is the model valid in that setting? Regarding the dilution zone, unstable flow, 60m. Can you comment on the possibility of broadened predictability – as much as 120m zone? 	<ul style="list-style-type: none"> The north arm was not excluded from assessment. The model did include north arm calculated inflows/outflows and currents from Snap Lake. In terms of specific species utilization, this discussion is better suited for tomorrow. CORMIX model does consider distance from shore in terms of discharge. The CORMIX model cannot account for the finite volume of water in lake, which is why we didn't use the CORMIX model by itself. The CORMIX model was used to predict the amount of near-field dilution at a particular point in time. We combined CORMIX with RMA to help account for its deficiencies. A broadened zone would be more difficult to predict turbidity efficiently.

<ul style="list-style-type: none"> ▪ Plot of settling rates - dependent on TSS. How big is the coarse vs fine particle size? ▪ Therefore no matter what the particle size, you can reduce turbidity. ▪ How is pH adjusted? ▪ Have these adjustments been considered in the modeling? Or would it have no effect? 	<ul style="list-style-type: none"> ▪ Particle size is not that important, more important is the chemicals you use to clump the particles and remove them. The treatment process leaves you with a very fine fraction. ▪ Typically for a drop in pH, acid or carbon dioxide is used. For an increase in pH, sodium hydroxide is usually used. This would be determined on a case-by-case basis. ▪ The actual quantity used would be extremely small. For example: carbon dioxide added would be only a few ppm. It would be the same for the reverse situation. It does not add anything significant to the chemistry.
Not Resolved	

MVEIRB Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ How can we reduce the mixing zone? Areas affected - assume no reduction in treatment of metals through mine water treatment system. Perhaps it is overly conservative? Since treatment is a proven technology (with contingency is built into it), why not instead of not assuming treatment, assume treatment, plug into model and see what effect you get? 	<ul style="list-style-type: none"> ▪ The process of selecting the system for water treatment was fairly intense (iterative and based on guidelines). We looked at 4 different options and reagents. The conclusion from work done was precipitation. Reverse osmosis was an alternative that would achieve potentially lower values but requires a memory and it has a reject stream that all materials removed are concentrated in. This stream can be 10-15% of what dealing with and then you have to find a way of dealing with this waste stream. At the flows we are looking at, it is not practical to consider this based on expected flows and cost. We have a design that is flexible. We suspect the full-scale plant will treat to better levels than predicted, as the numbers used

	were so conservative.
Questionably Resolved.	

It was agreed that a “break out session” would be held at 6:00 pm on the 3rd floor of the Scotia Centre in the De Beers office to attempt to further resolve issues. See Appendix B Phosphorous Breakout Session, Day 3 Evening, November 27, 2002.

See Appendix C for the Water Quality Breakout Session held also on the evening of November 27, 2002.

These notes are not complete because there was a session in the afternoon on the North Lakes which included a discussion of groundwater issues. NRCan raised concerns and then summarized at the end that those concerns/issues had not been resolved. There should be notes regarding those decisions.”

**Review of Agreements/Disagreements - Resolved/Unresolved
Concerns/Issues and Commitments Made at the MVEIRB Technical
Sessions for DeBeers Snap Lake Diamond Project**

Aquatic Habitat and Aquatic Organisms

<u>Legend:</u>	
Commitments:	in bold
<u>Disagreements:</u>	<u>underlined</u>
<i>Likely Resolved:</i>	<i>italicized</i>
Not resolved:	shaded
Questionable Resolution:	outlined

Day Four – Morning Session (November 28, 2002)

Disagreement: Whether or not the assessment of the No Net Loss (DFO)/habitat compensation policy is covered under the Terms of Reference for the Environmental Impact Assessment for Snap Lake - or whether or not it is a separate process.

DFO did not see it being a separate process for two reasons:

1. The Terms of Reference required that the No Net Loss (NNL) principle be utilized for no net loss accounting - and information be provided within the Environmental Assessment (EA). This involves quantifying habitat that is likely to be lost and compensated for.
2. The NNL information requirements are similar to that of the EA regarding habitat loss and the proposal to offset of these. DFO requires this information before entering the permitting phase and from their point of view the EA is the best place to do this.

DeBeers understood it to be a separate process:

Under the Terms of Reference DeBeers was asked to provide an overview of how the project related to the NNL policy and how DeBeers would work with the NNL policy. DeBeers' understanding was that the issue of compensation and incorporation of NNL policy was not covered under the Terms of Reference. An Information Request (IR) from DFO on the compensation issue with respect to the EA was rejected. It was stated that DeBeers has no problems with submitting information providing that it fits within the EA purposes that DeBeers has.

MVEIRB's point of view:

There is a request to the board to include the NNL policy. The Board has the authority to interpret the policy. Board staff and DFO entered an agreement to harmonize the processes and it says that *to the extent possible*, the EA will attempt to capture DFO assessment requirements to make it more efficient for developers (DeBeers would like to see a copy of the MVEIRB/DFO agreement). Interpretation is that the purpose of the EA is to provide information on how the project affects the environment. The issue of compensation is not within MVEIRB's legal authority but DFO's methodology is to be incorporated into the EA. It is an issue of interpreting the Terms of Reference. It is not MVEIRB's job to tell DFO how to do their job.

Commitment/Conclusion:

In an exchange between Julie Dahl, DFO and John McConnell, De Beers, it was determined that De Beers concern was habitat compensation under the Terms of Reference, while DFO was interested in the baseline data used in the decision making process in order to ensure the information needed to fulfill requirements under the Fisheries Act was available. De Beers committed providing that information to DFO.

~~Since the Terms of Reference specifically asks how NNL will be achieved and it is pertinent to the EA impacts and the EA process is the same as what DFO requires for NNL determination – it should not be a separate process. Once DFO provides DeBeers with clarification of the additional information required, DeBeers will provide additional information (as an appendix to the EA to be placed on the public record) to DFO.~~

YDFN Comment:

Something should be done regarding the NNL policy. We are most interested in habitat loss and ground water quality.

INAC Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ Baseline data serves two purposes: <ol style="list-style-type: none"> 1. To support EA impact hypothesis; and 2. To support impact assessment. Overall conclusion is that we are likely to support the EA process with respect to #1 but we do not feel there is enough information to support #2. We feel the federal government has not efficiently provided their expectations and are prepared to work with other federal departments (EC and DFO) to figure out specific concerns and 	

share the input to add to the process.	
Yet to be resolved: Issue with adequate baseline data - relevance and appropriateness. Issue with collecting additional data.	

DFO Concern:	De Beers Response:
<ul style="list-style-type: none"> With respect to the determination of a non-fish bearing water body, particularly smaller lakes, the presence of fish is critical in classifying habitat. Were the observations capture or visual? You are acknowledging that if there was not a particular fish observation – there is still the potential for its presence? The observations documented are inadequate. Each lake should have observation times of at least 48 hours, including both night and daytime observations in order to collect more data and present a strong statement of fish presence. I suggest talking to community people for their local knowledge and experience of lakes. 	<ul style="list-style-type: none"> Both observations and capture were part of the assessment as supplemental observations. They were not used as stand alone criteria to determine fish bearing status. Yes. We did evaluate a number of water bodies. We captured fish using suggested methods in several lakes. We did fish even those lakes that freeze to the bottom in winter (1-2 m in depth). However not all water bodies were covered.
Not Resolved – Issue with adequacy of baseline data.	

DeBeers Concern:	DFO Response:
<ul style="list-style-type: none"> Is there a DFO guideline (any kind of document published by DFO) on determining fish existence in small lakes? That information seems critical to the determination of NNL. 	<ul style="list-style-type: none"> No we would like to develop one. We would like to envision this as part of baseline protocol.
Question answered – however lack of information remains. Questionably Resolved???	

YDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> Is all of the information presented just from Golder Associates? 	<ul style="list-style-type: none"> The information is reported from Golder Associates professionals. While the information is reported from Golder, there is an identified need for Traditional Knowledge (TK). Community members were present on various surveys and were a key part of adding a TK angle.

<ul style="list-style-type: none"> There was a young man who did work in Snap Lake before it was DeBeers. He collected fish and noted size of fish. The fish were delivered to Dettah and the size was interesting (4-17 inches in size). We wanted the information collected in order to share the information with the elders. He shared the information and we were interested in working with him further. He wasn't contracted again because Golder took over. So far our experience has been that we weren't asked to be part of the baseline data collection. If we had been part of it we would have a much higher comfort level with the baseline data collected. We are also wondering if some of baseline data included information from the small British Columbia company that did the work before? 	<p>Beyond that, we did not have any site-specific information other than the Lutsel K'e report.</p> <ul style="list-style-type: none"> There was a company name change, but Golder was involved in the baseline data collection since 1998, before DeBeers took over. Off the top of my head I do not know the answer to the last question.
Not resolved	

NSMA Concern:	De Beers Response:
<ul style="list-style-type: none"> Which communities had members involved in surveys? We don't believe the NSMA was involved but we would like it clarified. 	<ul style="list-style-type: none"> Don't know but we will get back to you.
Commitment: DeBeers will get back to the NSMA regarding the above question. Currently Not Resolved.	

MVEIRB Concern:	De Beers Response:
<ul style="list-style-type: none"> Concerned about the vulnerabilities associated with stream S-27 and lakes drained by S-27 with respect to a road in the vicinity that goes to an explosives plant (infrastructure impacts). Same applies to explosive store area? Why wasn't the baseline of North 	<ul style="list-style-type: none"> The road is cited to go along the height of the land and avoid any potential stream crossings or water bodies...we evaluated area in terms of hydrology and change in watershed. Yes. We did this. The assessment

<p>East Lake sampled for young of the year fish or fish-spawning habitat (85% of groundwater from mine would be through lake trout spawning habitat)? Why were impacts not assessed for zooplankton, phytoplankton, etc.?</p> <ul style="list-style-type: none"> How protect for toxicity to fish life, eggs, and young of the year? So, you did apply assessment to eggs and young of the year? 	<p>showed that water quality would be met within the water column and within pore water substrates.</p> <ul style="list-style-type: none"> CCME water quality guidelines are intended to protect the most sensitive life stage of the most sensitive species. Yes it isn't in the North Lakes report, but it is in EA and in order to be most conservative, it was assumed that anywhere groundwater came up it was spawning or rearing habitat.
<p><i>Likely Resolved. Stated that concern over stream S-27 was addressed and young of the year and fish-spawning habitat in the North East Lake was also addressed.</i></p>	

YDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> It was mentioned previously that water has some salinity in it. If study done, can I get a copy? I want to know, in that kind of environment, what the state of fish health is and what they taste like. 	<ul style="list-style-type: none"> Rick will provide you with that information Rachel. We do not have any information on taste though.
<p>Not Resolved – to be resolved.</p>	

Dogrib Concern:	De Beers Response:
<ul style="list-style-type: none"> To follow up on the concern with baseline data in general... S-27 did not seem to be adequately covered. Focus seems to just be on fish -not an ecosystem approach. Lack of coverage of other organisms for eg. food supply impacts could affect downstream fish. Assessment focused only on fish and if they could migrate in and out of these lakes. If there is no connectivity, it is less of a concern. But bugs that can migrate may provide a good food source for fish further down. Want to know directly and indirectly affected lakes and 	<ul style="list-style-type: none"> Criteria presented are specific to fish bearing ecosystem aspects (i.e. runoff and nutrient supply). But we also looked water quality, and potential pathways for change (sediment release, air deposition, dust etc.) - those are evaluated through other linkages and are in the aquatic resources section. In S-27, we assumed there were fish present and we evaluated the potential effects at the ecosystem level based on all the potential pathways for changes that could affect the aquatic ecosystem.

<p>streams.</p> <ul style="list-style-type: none"> ▪ Were zooplankton and other such organisms specifically addressed? ▪ What about the other smaller water bodies that you assumed did not have fish, did you also assume the existence of a food supply (microbes)? ▪ It is clear that the assessment is based on the assumption that water bodies supplied a component of food supply. But in relation to Snap Lake - did you discount the importance of smaller water bodies? ▪ With respect to evaluating changes over time, if you haven't evaluated zooplankton etc., how do we know what changes we'll see in these water bodies? If you haven't collected enough baseline information, how can we say what impact is really going to occur here? ▪ Disagree. As part of the rationale for characterizing biological or physical processes, you have to collect baseline data; you can't assume that you know all impacts, so you have a control point to assess your hypothesis. Suggest that you be more aggressive in collecting data in different areas (areas of impact, areas of no impact and areas of potential impact). In order to determine impacts it is necessary to develop a good monitoring program. 	<ul style="list-style-type: none"> ▪ They were not surveyed but were assumed to be present. ▪ Yes, and with an ecosystem perspective we looked at size of sub-basins (amount of interception) and we determined (if the watershed was isolated) how much of the Snap Lake area is impacted? 1.4% of watershed. ▪ Not exactly. We are looking at measurable effects levels (ecology end points). A second biodiversity assessment looked at the broader biodiversity aspects with VECs, which included bog water, etc. Those types of habitat affected by the project footprint and the post-project footprint. There was an assessment of that change. ▪ We presented information to allow for the first step in the EA. Once we completed that, we identified the area with potential for effect, then you can identify what detailed information you need to define a monitoring program to identify the change. Until that is done, we cannot design a monitoring program that can measure and monitor that change through time.
<p>Not Resolved – adequacy of baseline data.</p>	

YDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ Were streams evaluated as far as their potential as a food source for downstream water bodies (they should be considered as part of fish habitat)? ▪ Was the nutrient capacity factored into the total fish habitat effect? 	<ul style="list-style-type: none"> ▪ Yes, we did survey streams and potential flow. Ephemeral streams only flow one to two weeks per year and it is difficult to establish a community in that situation. We did collect water quality samples and nutrient data on those streams to get an idea of their contribution to the fisheries. ▪ Yes. We looked at ecological end points and a way to detect measurable ecological changes. Levels of disturbance and areas of intercepted flow in relation to the rest of the Snap Lake watershed were part of the assessment.
Likely resolved???	

NSMA Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ Regarding monitoring methods with respect to angle fishing: we (with the support of elders) do not agree that this method is a useful way of collecting, or recording accurate baseline data. 	
Issue with baseline methods and habitat assessment - Not Resolved.	

INAC Comment: Baseline data should provide data for assessing effects when mine is in full operation. It is important to have the data prior to the mine construction phase because later on the question will be focused around whether or not the information is truly baseline data.

DFO Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ Four samples of invertebrate surveys were taken in Snap Lake: three in the littoral zone and one at the water quality station. Were any samples taken in very deep areas? ▪ Do you expect a difference in communities in the deeper spots compared to other referenced lakes? 	<ul style="list-style-type: none"> ▪ There were five open water sample stations for benthic invertebrates, and three sample stations for qualitative observations. The depth of sampling was standardized to be between 7-8 m for purposes of standardizing habitat. No samples were taken in the deepest areas. ▪ No – what was collected was expected and the same trends were seen in example lakes.

<ul style="list-style-type: none"> What is the estimated biomass of the invertebrate population in Snap Lake compared to reference lakes? 	<ul style="list-style-type: none"> Will have to look into it and get back to you.
Not Resolved.	

NSMA Concern:	De Beers Response:
<ul style="list-style-type: none"> I support comments regarding the need for monitoring designs that would require a substantial pre-operational database to have for comparative analysis. Fish may not necessarily be the best monitoring tool. Invertebrates may be an option... Can you be more specific regarding the ecological endpoints used in your analysis in the EA? Those endpoints were not applied to all water bodies studied, were some discounted? How did you screen out endpoints? 	<ul style="list-style-type: none"> Non-fish aquatic organisms as a receptor, then fish health & habitat and ultimately populations. Refer to linkage diagram in EA section 9.5.2 for a description of how potential project activities lead to the effects provided in EA.
Not Resolved. Issues with further collection as a part of monitoring programs.	

NSMA Concern:	De Beers Response:
<ul style="list-style-type: none"> The board feels that the future and current incorporation of Traditional Knowledge is an important component of habitat assessments and the collection of baseline data. We have concerns with the present lack of incorporation. 	<ul style="list-style-type: none"> As stated in EA, it is the intention of DeBeers to incorporate Traditional Knowledge and to develop monitoring programs in conjunction with communities, regulatory authorities and government.
Not Resolved. Outstanding concerns with lack of incorporation of traditional knowledge in baseline data and lack of commitment for community consultation.	

INAC Concern:	De Beers Response:
<ul style="list-style-type: none"> With respect to the bioaccumulation of cadmium (mg/kg), what was the source of the presented benchmark? I find it surprising that the number for human health and wildlife were both the same. Technical recommendation: suggest 	<ul style="list-style-type: none"> The source was USEPA data. The specialist that can expand on that question is not here. The number may seem like a large number of fish for human consumption (that number is the same for wildlife) but it may be a merging point (merging the gap between wildlife and humans - adding conservatism for humans). That may be the case, but I can refer you to the specialist.

that modeling be redone, model should present actual concentration of cadmium in mine water then people could go back and use their own criteria to use in the model.	
Not Resolved – waiting for additional information. DeBeers committed to have the appropriate specialist send the reference.	

DFO Concern:	De Beers Response:
<ul style="list-style-type: none"> With respect to the assessment for cadmium, if the levels in discharge did not exceed the benchmarks, you did not go any further in the assessment. Is that right? I thought it was guidelines and not benchmarks – why the difference? How does that relate to the assessment done for cadmium discharge levels? Is there a comparison of the two? A statement in the presentation today, referred to concentrations of various parameters of discharge guidelines and cadmium was screened out of the assessment for bioaccumulation because it was not above the benchmark. Yesterday we were told that it was screened out because it was less than water quality guidelines??? 	<ul style="list-style-type: none"> For the water quality assessment specifically, discharge levels are being compared to Canadian water quality guidelines. What was referred to earlier was specific to the cadmium bioaccumulation assessment done. Cadmium used levels at end of pipe and that is what you see the results from. As part of the water quality assessment, we went through a process for those that did not meet guidelines (CCME), developed site-specific benchmarks and assessed impacts on water quality. For cadmium (and others not screened out by the maximum level comparison), they were also carried forward to aquatic resources section where effects were further determined. Cadmium has the potential to bioaccumulate and was carried forward. Cadmium was not screened out as part of the water quality assessment and therefore was carried forward as part of the bioaccumulation assessment. There was an error in the bullet in the presentation. All parameters not screened out were carried forward.
<i>Regarding the issue of the assessment of cadmium – Likely Resolved.</i>	

Correction re: DeBeers bioaccumulation statement above. The effects of cadmium were considered negative. On that basis it was not carried further for assessment.

The bioaccumulation work for cadmium was done as a response to and Information Request.

Day Four – Afternoon Session (November 28, 2002)

NSMA Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ For the initial invalid selenium results, where were samples taken for that analysis? ▪ Those were analytical values not modeled? ▪ Were new values used for reanalysis? ▪ Are the samples representative of samples once the mine is operational? With respect to processing of rock, is there potential for greater release of selenium or other metals? ▪ Could I get information on your RBC, specifically on what consumption rates the guideline was based on (particularly for human health)? 	<ul style="list-style-type: none"> ▪ From the mine water underground. ▪ Yes. ▪ The original analysis was done using a mass spectrometer. With the mass spectrometer, there can be interference with other compounds in the water and we were getting false positives. We reanalyzed the same samples with atomic adsorption - eliminating the potential for interference. We have high confidence in the new result values. ▪ Selenium was evaluated to take into account release during processing. ▪ That information may be in the EA. Or may be in an Information Request – will get back to you.
<p>Not Resolved: Still further questions regarding selenium. DeBeers will get back to NSMA regarding the location of the requested information.</p>	

DFO Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ Regarding the NNL habitat accounting (9.12): various types of habitat were quantified for various types of fish species. In the main body of the report (9.5) fish habitat is classified in various ways. I suggest more information be provided to DFO as to why lakes within the project footprint 	<ul style="list-style-type: none"> ▪ Will provide this information as part of information to be provided to DFO as previously discussed.

were/were not included within the habitat accounting (NNL)? Non-fish bearing lakes are fish habitat and should be taken into NNL consideration in the future.	
Not Resolved.	

INAC Concern:	De Beers Response:
<ul style="list-style-type: none"> Concern regarding results of change in TDS and abundance of various major ions: expecting to see an assessment of effects of changes in the community and resulting interactions. We want a comment on how profound changes that will happen in Snap Lake are assessed as a consequence. 	<ul style="list-style-type: none"> Will check on that in the EA, but quite sure we discussed a potential shift in community structure.
Not Resolved – still an issue. DeBeers committed to getting back to INAC regarding the above.	

Dogrib Comment: INAC's concerns regarding changes in Snap Lake due to TDS level changes are supported. A 5X level change of TDS seems profound. We'd also like a comment on how they assessed that as a consequence.

Dogrib Concern:	De Beers Response:
<ul style="list-style-type: none"> If the predicted chlorine level is 157 mg/L and the benchmark is 150 mg/L. How good is the prediction and do we feel comfortable having them so close to the benchmark? If you put a level of confidence around that number, what would it be? Point being the accuracy of predictions relative to guidelines. Please have Ken get back to me. 	<ul style="list-style-type: none"> The work done to predict chlorine concentration levels in the EA is based in part on advanced exploration project results. The level of activity that would affect results was higher than would be expected during full mine operations and in that respect the predictions are conservative. We are confident in predictions and they are likely higher than we would see during operation. Can't provide a percentage. Ken may be the person to answer that question. An additional level of conservatism was used for chlorine. We used the expected value for the majority of compounds, but we used 1 standard deviation above the expected level for the chlorine assessment. This

	shows more conservatism.
Not Resolved.	

DFO Concern:	De Beers Response:
<ul style="list-style-type: none"> My concerns are alleviated regarding selenium and sampling integrity, but I am also wondering if at the advance exploration project stage, what kind of other metals would come out of the paste? On page nine of the EA, regarding the TDS levels discussion: a raise TDS of 10-20% – (presently 330 mg/L?) is this referring to the whole lake, or where in the lake do these levels occur? It is crucial to know how much habitat will be affected in the lake. Levels of TDS have significant impacts on lake trout populations. Also, with respect to the impact assessment of areas, from effluent studies proposed, effluent will settle. Regarding TDS effects on fish, was consideration made regarding the effects of TDS on lake trout, specifically? Lake trout as a freshwater species need to be looked at separately as they are most sensitive to saline conditions. OMNR – SJ Kerr. David Evans, Trent U with MNR. 	<ul style="list-style-type: none"> This answer requires Ken DeVos expertise. We'll take this comment to him and provide the information to the public registry These values were taken from the water quality section of the report and we'll have to get back to you. Regarding the effects of TDS on lake trout: their preferred range was presented. No public data on effects of TDS on lake trout in the upper levels. A number of trout are very capable of going in and out of salt water – for example salmonids are a species very tolerant of saline conditions throughout their life cycle. Do you have a specific reference for salinity ranges and tolerance for lake trout?
Not Resolved – still issues with the affects of TDS	

YDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> Cadmium levels in Snap Lake were above CCME guidelines and double some of the reference lake levels – it may not be a problem as several other sites also had these levels. However with respect to the baseline data samples used, could they have been affected by adjacent access roads? If the answer is yes, 	<ul style="list-style-type: none"> We are confident that the level of activity that had gone on prior to sample collection would not have affected the sediment chemistry and that the samples do reflect baseline sediment quality in Snap Lake. Variability in clean lakes is a common phenomenon and levels above sediment quality guidelines

the adequacy of baseline data for sites sh-1 and sh-2 is at stake.	in lakes are common.
<i>Likely Resolved – the question of samples being true to baseline data was stated to be resolved.</i>	

NSMA Concern:	De Beers Response:
<ul style="list-style-type: none"> Regarding phosphorous inputs: with an increase in phosphorous loading to Snap Lake there would be a change in the nitrogen/phosphorous ratio. This may cause a shift in various communities and potential development of toxic blue greens - putting some species at a disadvantage. What ratios were predicted? 	<ul style="list-style-type: none"> The nitrogen/phosphorous ratio are 25:1 (pre-project), and 1000:1 during project operation due to nitrate in the water column.
Not Resolved – answered but still an issue.	

INAC Concern:	De Beers Response:
<ul style="list-style-type: none"> We expected to see a more concrete impact hypothesis (with the use of more quantitative methods) with respect to the changes in relation to nutrient addition. We are looking for testable impact assessment data with progress that can be monitored. Regarding the inadequacy of baseline data: From INAC's perspective with respect to the CE assessment – what has been done in the EA is not as good as it should be. Some of the effects of mining activities and discharges are still being discussed. A number of changes are anticipated in response to mining activities (metals levels, nutrient levels and TDS levels) and we do not see the evaluation of the interactive effects of mining activities in the EA. What are the interactive effects of the different types of stressors? We are also looking for a broader assessment of 	<ul style="list-style-type: none"> We took a top level perspective. Problem is that planktons change drastically due to many factors and this causes difficulty in making precise predictions. To solve this we looked at it on a very community based level as to who does and does not dominate the community and we based our predictions on that. We focused on where there is a geographical overlap and a measurable effect. Quandary is "What is measurable"? "How do we collect that information"? "What information already exists"? We must recognize what is beyond the mandate of the EA (eg. tourism camps effects). The focus has been on projects with some measurable effect. We're not contributing to deposition of organochlorines, (discussed in an IR) and it is well beyond the proponent's scope to expand to a state of the art CE assessment at that level.

<p>regional CE and broader activities (eg: exploration within Lockhart, deposition of organic chlorides).</p> <ul style="list-style-type: none"> You didn't address the issue of interactive effects of multiple stressors of the mine development itself. 	<ul style="list-style-type: none"> That is a difficult question and I don't know how to answer that. The approach throughout the EA, was to look for measurable pathways and assess those. We have done what we can in terms of cumulative effects being a developing science.
Not Resolved – stated to still be an issue.	

There was a short discussion on how interactive effects fit into the Terms of Reference for the EA and the conclusion was that interactive effects within the project were not explicitly stated by the board in the EA Terms of Reference. The board has adopted the CEA guide (on MVEIRB's website) for cumulative effects assessment. The EA Terms of Reference and the CEA guide are the two documents that provide direction for the cumulative effects assessment for the Snap Lake EA.

Dogrib Comment: Outstanding issues with cumulative effects assessment, whatever the interactive effects (inter-project effects) are called (within cumulative effects or not), they should be addressed in the environmental impacts assessment process. The assessment should be taken to that level. Linkage process appears piecemealed and the potential additive and synergistic effects seem lost.

DFO Concern:	De Beers Response:
<ul style="list-style-type: none"> Following up on an earlier comment regarding a shift in community dominance. Were your statements based on whole lake assessment? Did you take into account localized effects and did you look at shift in nitrogen/phosphorous ratio when you stated that there wouldn't be a shift in community? How confident are you that there will be no change in community? Graph showed oligotrophic to mesotrophic after. From experience nutrient additions 	<ul style="list-style-type: none"> We are not expecting to see a shift in blue greens due the phosphorous becoming limiting (nitrogen/phosphorous ratio of 1000:1). The assessment was based on the whole lake. Snap Lake is already mesotrophic and we are confident that community will stay the same. That was the trophic status based solely on chlorophyll a levels. I took it one step further to see what the communities looked like based on chlorophyll a levels and they are closer to the mesotrophic line. I am confident there will be no

to oligotrophic lakes in BC caused a change in phytoplankton and zooplankton communities. When you change nitrogen/phosphorous ratios as much as you will (to 1000:1) I find your conclusion that there will be no overall change - difficult to justify.	community shift because you are describing a change of trophic levels through nutrient addition. Because the lake is already mesotrophic, you would not see this.
Not Resolved – still a concern related to change in community structure - perhaps a technical paper to follow.	

Dogrib Concern:	De Beers Response:
<ul style="list-style-type: none"> Regarding oligotrophic and mesotrophic levels, there was a 50 cm change in lake levels - is that based on measured levels or extrapolation? If there will be a 50 cm change, how much of the change have you observed to date? When you observed the change – what was the actual measurement the extrapolation was based on? You calculated the change based on expected runoff? Did you look at runoff due to vegetation decrease? What was % area of mine footprint of watershed? 	<ul style="list-style-type: none"> The 50 cm difference is based on generated data from site ranges for 22 years of recorded data. Under the baseline conditions, we have a range of 50 cm at present. Have to check to see what actual range is. In part true. One of the factors was flow increase. Yes. Approximately 1.5%.
Questionably resolved??? May still have concerns.	

MVEIRB Concern:	De Beers Response:
<ul style="list-style-type: none"> Regarding the dissolved oxygen (DO) drop to 3 mg/L (CCME guideline 5.5 mg/L) - what areas of the lake and species are affected by this? Recommended that DeBeers provide the area and volume of the lake below the CCME guideline information. 	<ul style="list-style-type: none"> We do not have that information. DeBeers will consider the recommendation.
Not Resolved – still has question of how much area of the lake will dip below the CCME guidelines.	

MVEIRB Concern:	De Beers Response:
<ul style="list-style-type: none"> Regarding the potable the drinking water supply for the mine: The presence of blue green algae is often associated with taste and odour problems and when chlorinated, the problem gets worse. There is the increase in TDS levels also. Has there ever been any parasitic and pathogenic work done? I suggest talking with the Stanton Regional Health board regarding drinking water. I was unaware of the filtration process – my concern been addressed. 	<ul style="list-style-type: none"> We will be treating water with chlorination and filtration processes and we will meet appropriate drinking water standards for NWT and maintain a healthy workforce.
<i>Likely Resolved- stated to be resolved.</i>	

YDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> Concerned about change of trophic status (oligotrophic to mesotrophic?) of the whole of Snap Lake. Concerned that there may be localized effects. Has localized eutrophication been considered (eg; cyanophyte blooms along shore)? This could be toxic to wildlife drinking water. Are you suggesting that you may want to look at that in the future – think about it as a future monitoring consideration? 	<ul style="list-style-type: none"> Modeling is capable of predicting localized concentrations, but the effects analysis has not yet gone to that level. Will take that into consideration as it has not been considered to date.
Not Resolved – concerned about localized effects.	

DFO Concern:	De Beers Response:
<ul style="list-style-type: none"> Regarding the slide on Snap Lake community dominance, were those dominances concluded based on biomass or density? In sampling for baseline, did you sample for rotifers and do you have data on this? DO levels are modeled to drop as low as 3 mg/L with baseline of 5-8 	<ul style="list-style-type: none"> We looked at both density and biomass. Yes. Over-wintering habitat is very important in small lakes as fish are

<p>mg/L...if the low level of oxygen is limited to deep areas of the lake and the overall impact to Snap Lake is low due to spatial and temporal limits into the deep areas, if the few deep areas are critical to over-wintering for particular species and are at oxygen levels that will kill fish - can you suggest it is not likely that impacts would be higher than predicted in any way?</p> <ul style="list-style-type: none"> ▪ I'll accept that for now. With respect to the whole lake, if oxygen levels drop below 5 in any area of the lake, and if there is an alteration in fish habitat, we will need to see compensation in some form (losses must be evaluated due to all impacts in Snap Lake). ▪ To follow-up on an earlier response regarding relation of impacts of deep holes. It was suggested that in smaller, single basin lakes with only deep hole, that holes are more important. What about the fish that habitually seek deep fish habitat? What about the effects on access ways? 	<p>restricted to one space only. In a larger lake like Snap Lake, there is access to other areas based on its size. Winter has better foraging in shallower areas. In relation to over-wintering habitat, these areas not critical for fish.</p> <ul style="list-style-type: none"> ▪ In relation to this the loss of habitat due to the seasonal change in DO would be temporary. With respect to habitat destruction it could be best dealt with external to the EA process, but will report back to public registry. ▪ For small lakes, the deep hole is important because fish are restricted to that hole due to ice cover. In larger lakes, fish are not restricted to that hole and there is more depth of water and movement under ice. The selection of over-wintering habitat is not necessarily dependent on depth – it is also on foraging, temperature and DO. People fish for lake trout during winter in shallower waters. It is known they don't preferentially go deep.
<p>Not Resolved – concerns related to change in community and deep over-wintering habitat is still an issue. Further encourage modelling of oxygen and <u>if deep holes would be how many holes are affected.</u></p>	

Dogrib Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ To follow-up on the issue of low oxygen levels. If we have deep holes with low DO – will fish avoid the low oxygen areas or will they swim through them? Are we losing temporary habitat? ▪ Therefore we are temporarily losing habitat. Are there any other guidelines or areas that could be 	<ul style="list-style-type: none"> ▪ We did indicate in the EA that there was a low effect due to this temporary effect. ▪ Benthic invertebrates have much lower oxygen requirements, fish require the most oxygen and that is

<p>affected?</p> <ul style="list-style-type: none">▪ Should the oxygen deficient environment be something we should be concerned about and at what level is there cause for concern?	<p>why the CCME guidelines use the fish requirements (fish being the most sensitive). There are not CCME guidelines for anything other than fish.</p> <ul style="list-style-type: none">▪ This has been covered in the EA.
<p>Not Resolved – still a concern.</p>	

YDFN Comment: Fish go deeper as it gets colder. From our perspective the concern is what is available to eat. In the winter, some fish are caught with skinny bodies and big heads – not much to eat. Isadore would like to comment on the habitat of fish changing tomorrow. With respect to cumulative effects of the lake itself on animals – the elders are concerned with localized cumulative effects (eg. effects on animals that eat fish). If the water is contaminated, trappers will know not to bother to go there as usual because the animals will not go there.

**Review of Agreements/Disagreements - Resolved/Unresolved
Concerns/Issues and Commitments Made at the MVEIRB Technical
Sessions for DeBeers Snap Lake Diamond Project**

Wildlife and Wildlife Habitat

<u>Legend:</u>	
Commitments:	in bold
<u>Disagreements:</u>	<u>underlined</u>
<i>Likely Resolved:</i>	<i>italicized</i>
Not resolved:	shaded
Questionable Resolution:	outlined

Day Five – Morning Session (November 29, 2002)

YDFN Elders Comments/Questions:

- Even without formal educational background we have a good understanding of the land and environment and a wealth of knowledge to share upon request.
- It is important for the miners to understand the effects of the mining area on wildlife (eg. migration paths), water (and water flows) and land (and their interconnection) in order to consider how best to work with the wildlife.
- Our land is of great value to our people and it must be treated with utmost care. Good monitoring practices are necessary to ensure that the land and water and animals remain free of contamination.
- The caribou migration patterns are changing. We must monitor the changes (possibly due to development) in order to decide how best to deal with the impacts related to hunting (eg. needing to travel further to hunt).
- Monitoring is also important in order to ensure that animal mortality rates, in the vicinity of the mine, do not get out of hand.
- Our people are dealing with the repercussions of the past mines' land and water contaminants (also affecting the wildlife in these areas).
- It is the wildlife, water (vast flow with large effect) and fish (many animals eat fish) not only in the Snap Lake area but also beyond the Snap Lake area that we want to protect.
- The water around Snap Lake is close to a hunting area at Mackay Lake. Any activity will affect this.
- The Camsell Lake area is a hunting, fishing and trapping area. These areas like in Lac de Gras – remain hunting, fishing and trapping areas of our people. It is important that reclamation be done to best of our abilities so that all wildlife and fish can return and live in those areas once the mine has shutdown.

- Our people want to be involved and aware of the mines activities and operations and areas of contamination. For people making their living off the land it is important to know where the contaminated areas are (in order to avoid them while hunting, fishing, trapping and travelling). We all have to live and work together to protect our environment.
- Young people are still interested in working out on the land. They should have the ability to hunt, trap and possibly work as biologists with the fish and wildlife in the future.
- The affects on the environment may last longer than the mine itself. How will the mine be dealt with at the end of its life? The mine area should be free of contaminants for wildlife roaming back into the area after the mine life.
- Why are more caribou ill today then in the past? And what kinds of sickness do they have?
- We live and survive by the caribou. Why has migration patterns changed for caribou?
- Some of the roads within the mining area are built up too high for the caribou to pass – how does that affect the caribou?
- People that grew up, worked, and travelled across the land, should be employed to gather and collect baseline data on wildlife and work with the mines. Aboriginal people that have worked directly with wildlife can provide real information and it would help us to put faith in the data collected.
- If you are blasting along lakes there is the potential for polluting the water and killing the fish nearby.
- The animals are feeding on the dust (covering their food) from the many mines that we have here in the territories and eating food possibly contaminated with blasting chemicals.
- All of our ancestors have travelled across the land. There is evidence of our people's bones on the land (placed on top of arbours). We expect help and benefits for as long as the mine exists on our land, and agreements should be renewed as the mine expands. We must work together in order to move forward.

Resources, Wildlife and Economic Development, GNWT – Response to Elders Questions

Regarding Caribou:

- Response to question regarding the sickness in caribou: In the summer of 2000/2001, it was unusually wet. There were increases in the reports of cases of the disease called foot rot. Foot rot starts with a small cut on the foot from rocks and such and it spreads to an infection.
- Response to question regarding changes in migration: Over the decades we expect to see changes in migration and ranges. Over the short term, we also see changes- caribou migrate seasonally. Some changes are associated with poor weather – some caribou travel further and reach the edges of their range. It is hard to discriminate to determine the integral effects. We are aware of the changes, but to say what is causing those changes at the moment is very difficult.

YDFN Comment: With respect to mitigation, we want to be part of decision the making process. At any Traditional knowledge gathering session, we want to be there to give input on how to best solve situations.

YDFN Concern:	RWED Response:
<ul style="list-style-type: none"> Please elaborate on the possible causes of foot rot and mitigation measures. 	<ul style="list-style-type: none"> There are two problems with the roads: <ol style="list-style-type: none"> The large boulders at roadside – cause panicked caribou to cut their legs. The crush on top of the road – small and sharp, easily finds its way between the hooves – causing cuts. We don't know what the main cause of foot rot is. Before we can answer the questions fully, we need to understand how common foot rot is, its relation to wet and dry summers and where the original injuries are taking place. In order to assess the relation to mining, we need to look at foot rot before and after it reaches the mines. We are developing a proposal to further assess the situation.

De Beers Question:	YDFN Response:
<ul style="list-style-type: none"> There was a lot of discussion yesterday as to where fish in deeper lakes (100ft or so) tend to spend their winter, given your experience in fishing, what are your thoughts? Would you find lake trout in deep or shallow water in middle of winter? How deep do your nets go down? 	<ul style="list-style-type: none"> In the fall, they go to the shallow, reedy areas and in mid-winter, they go to the middle of lake where it is most deep. Because we catch them by net, that is how we know where the fish are. In the middle of winter, the fishnets freeze if you fish too shallow. During the coldest months of year, we catch fish in the deepest area of the lake.

YDFN Comments/Concerns:	De Beers Response:
<ul style="list-style-type: none"> We have not heard any mention of moose or wolves with respect to animals considered in presentations – why? 	<ul style="list-style-type: none"> We studied many different types of wildlife and chose to discuss a few of those species today (grizzlies, wolverines, raptors and caribou) based on what it seemed most

<ul style="list-style-type: none"> ▪ We are most interested in hearing about the mines effects on the animals we consume like caribou, fish and ducks. 	<p>people were interested in (via previous interests and concerns expressed). Any questions on other animals are welcome.</p> <ul style="list-style-type: none"> ▪ Regarding moose: there have only been a few recorded sightings at Snap Lake. Regarding wolves: we flew along eskers in the area to look for wolf dens. Dean Cluff joined us on two of those surveys and we found and visited four dens. Regarding birds: we have done surveys to look for small birds and ptarmigan and also have surveyed for waterfowl (counting ducks on lakes). Regarding fish: we have completed many studies of fish in the area of Snap Lake and other lakes. We observed the type of fish and the type of contaminants within the fish. ▪ We assessed the effects of what the project would be, in order to prevent effects to people from eating the fish and caribou.
Questionably Resolved.	

MVEIRB Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ Regarding the bear survey and the significant selection of esker habitat by the bears (based upon availability). Bears may prefer to den in the heath tundra. How does this match your earlier statement from your presentation? <p>Baseline studies found no active bear dens in the regional study area because it was restricted to eskers. Confusing. Please explain if surveys for dens was done off esker.</p>	<ul style="list-style-type: none"> ▪ The number of bear dens located in esker habitat was only 13% of the 56 dens found. But when we did the analysis of the number of dens found in each habitat relative to the availability of the habitat, there was still significant selection of bears to den on eskers. Based on that, we focused our surveys on the eskers. ▪ Grizzly bears do use the regional study area. We also did surveys for bears in riparian and shrub habitats in 2001 and 2002. The surveys in 2001 confirmed the impact predictions but we have not reanalyzed results versus impact predictions from this year yet. The percentage of plots of grizzly bears

<ul style="list-style-type: none"> Are you confident with the impact predictions in the first two years given this extra information? Is the extra two years of data available? 	<p>was about 50-60%, and does support our baseline data that grizzly bears do use the regional study area.</p> <ul style="list-style-type: none"> John yes. De Beers chose to continue with the wildlife monitoring and has produced a report for 2001 (submitted to RWED) though it has not been circulated as of yet – it will be placed on public registry and the same will be done for the 2002 report.
Questionably Resolved???	

Dogrib Concern:	De Beers Response:
<ul style="list-style-type: none"> With respect to the 6-8 grizzly bears in regional study area - how much will that vary over time and what is typical population of the region? In percentage what do the 6-8 grizzly bears relate to? Over what timeframe will these bears use the regional study area? Over the 25 year mine life, regarding the impacts - would the mine be an attractant or deterrent to the bears of the area? Will the number of bears using the area increase or decrease? 	<ul style="list-style-type: none"> The number of bears is an estimate of the number of bears that have the potential to use the regional study area – they are not necessarily within the regional study area. The timeframe is from their emergence in the spring to their hibernation in the fall. There is no indication that bears hibernate in the regional study area at this time. Over the 25-year life of the mine, we estimated that the number of bears would stay the same but that the individuals will change with time. There are several ways to interpret the impacts of the mine on the grizzly bears. Habitat is one – we have a small footprint, which restricts potential influence. Regardless of natural variances in grizzly populations, the key issue is how many grizzly bears we have the potential to impact. We need to have effective mitigation measures in place to ensure we minimize the impacts.

Questionably Resolved???

NSMA Concern:	RWED/De Beers Response:
<ul style="list-style-type: none"> The grizzly bears live in the barren land areas; do they actually go into the tree line area around Snap Lake? 	<ul style="list-style-type: none"> RWED: We didn't have any collared grizzlies in this specific area, but we have tracked grizzlies in Kugluktuk and Great Bear Lake and grizzlies can be expected to use the areas right at edge of the tree line and areas similar to Snap where there are out pockets of trees. We'd expect grizzlies make quite a bit of use of the Snap lake area. De Beers: We have observed very few grizzlies at Snap Lake but in the surveys since 2001, we've been looking in surrounding areas of the regional study area for signs (scat, hair, tracks etc.) of use (rather than just dens). We fly out with people of communities and fly to where we'd expect to see grizzly bears. There is use of the area and in some areas the use is closer towards the pockets of trees near Camsell Lake—close to the area where we see caribou come through.
Likely Resolved.	

RWED Concern:	De Beers Response:
<ul style="list-style-type: none"> We have a concern regarding the lack of interpretation and lack of use of a 1.1 million dollar project (conducted due to a lack of BHP project baseline data). De Beers has not made full or appropriate use of the study. What is the effect of dust, noise, aircraft etc., on habitat surrounding the footprint, on grizzlies (full zone of influence?)? We believe that information is available. The estimated number of 6-8 grizzlies using the regional study area is reasonable, but within that number there may be 1 or 2 breeding females in that range 	<ul style="list-style-type: none"> We don't yet know the zone of influence for Snap Lake. We are not going to know it until we've built the mine and monitored (post construction) to establish the zone of influence. We have estimated a similar zone of influence to BHP but our zone has a smaller footprint and it is likely that the zone will be smaller. We agree that the past performance (of grizzlies) relating to habitat use does not mean there won't be dens there in future. The research regarding grizzly bear habitat was adapted into our study methods. We recognise that

<p>(which would have more of an impact on population dynamics). The WKSS shows there may be several nodes of adult female bears. As a precautionary principle, (assuming the above is correct) the assessment should incorporate the possibility of these types of nodes. Lack of dens observed to date is not very informative with respect to grizzly ecology– the area may serve as potential habitat (and therefore may be of greater impact). Bears do not necessarily reuse dens. My concern is that there may be a need to revisit conclusions (and challenge assumptions) regarding bears. Mitigation aspects are critical in determining what impacts there may be if bears are displaced.</p> <ul style="list-style-type: none"> ▪ Could you be more specific in what you mean by assuming that your zone of influence was similar to BHP's? ▪ Since we don't really know what the zone of influence is, we can't do anything to address that hypothesis. In BHP and Diavik, they took advantage of information from studies in other areas and researched a hypothetical zone of influence. It seems De Beers has ignored the zone of influence because they cannot identify it. 	<p>breeding females are critical to the population, but we will provide important management measures for all grizzlies; - male or female. The work done at BHP is extremely valuable.</p> <ul style="list-style-type: none"> ▪ We haven't got an analysis of the BHP data yet. What we have seen over the last couple of years is that there is some space between the core area of BHP and the use of areas. Our assessment was qualitative.
<p>Not resolved. De Beers and RWED agreed to meet and work together (possibly Monday night) to resolve issues in detail.</p>	

MVEIRB Comment: We need more specific questions. How many of 6-8 bears would breeding females cause a higher impact? Using the precautionary principle, what is the impact to females near a mining area? What is the impact to female/male habitat denning?

Day Five – Afternoon Session (November 29, 2002)

NSMA Concern:	De Beers Response:
<ul style="list-style-type: none"> There is concern regarding the indication of preference of grizzlies for eskers. How is the given impact assessment affected considering that most of the disturbance happens on eskers but most of the bears are habituated outside the eskers? Yes – I'll need to see the numbers of impacts of bears of the other habitats. 	<ul style="list-style-type: none"> We did assess the impact to grizzly bear den sites. We also looked at the direct loss of habitat (ie. spruce forest habitat) the eskers are the preferred habitat that could be directly impacted by the physical footprint of mine. Does that clarify your question? The numbers are also provided in an information request from RWED also.
Not Resolved.	

Chris O'brien Concern:	De Beers Response:
<ul style="list-style-type: none"> I thought De Beers said most dens were on eskers but I've since found out that most dens are not on the eskers. So De Beers did not look for dens off the eskers – just looked for the signs of bears in the non-esker parts??? It is confusing, what is the concern - that you don't have good baseline information or that the interpretation of information is lacking? Are we limited by lack of ability of anyone to predict the impacts of the mine on grizzly bears? 	<ul style="list-style-type: none"> De Beers focused on looking at eskers because it was the most likely habitat. The needle in a haystack analogy is a good one. The EA looked at all kinds of habitats and what the impact on the use for the grizzlies would be.
Questionably Resolved???	

RWED Rephrased Concerns: What does De Beers consider to be the zone of influence of their project with respect to the grizzly bears use of the landscape? How will the project relate to activities and home ranges of bears? Regarding impacts at the population level - how many grizzly bears will be killed at the site over the years? What are the ages and sexes of the population and the different predicted impacts? What may the effects be on denning habitat and the changes in opportunities for bear's use of a particular habitat as a result of mine activities and what would be the scale of the impacts with respect to adult females versus males?

Dogrib Concern:	De Beers Response:
<ul style="list-style-type: none"> Has De Beers looked off eskers for 	<ul style="list-style-type: none"> Yes we have looked for bear dens

<p>dens?</p> <ul style="list-style-type: none"> Can you describe the off-esker survey and the level of effort? What was the number of bear dens found? Having not found any bear dens what was your approach to estimating impacts to denning areas? Do you have enough baseline information to predict impacts and then continue monitoring to assess if the impacts are occurring? 	<p>off eskers.</p> <ul style="list-style-type: none"> What we did in 2001 and 2002 was to select plots (polygon 30%) within the riparian, shrub and wetland habitats within the regional study area. It was not restricted to plots – if there was an area suitable for bear density nearby – it was checked also. The number of plots and time spent in each was also given. The surveys are done each year. No dens were detected. The purpose of continuing the survey is to look for signs in the regional study area to ensure the bears are still present. It also provides an opportunity to find dens (in the future) in the regional study area. It is not a process of elimination – it is an opportunity to find a needle in a haystack. Given that we found no bear dens, we could say that there is no potential impact. But we have not taken that approach and we are still treating it as a potential impact.
Questionably Resolved???	

MVEIRB Concern:	De Beers Response:
<ul style="list-style-type: none"> How are you applying your principle of conservatism to the EA with respect to grizzlies? Are you taking appropriate mitigation measures to ensure grizzlies are not affected? If you had assumed the worst-case scenario (ie. female dens), that would add conservatism. 	<ul style="list-style-type: none"> We applied the principle of conservatism in this case. We took the maximum estimate of bears in the regional study area and will assume dens are present. There will be likely fewer bears there and no dens but the opposite assumption was made to add the element of conservatism to the EA. What we have done in the EA and baseline is looked at areas where bears are most likely to be affected. We assumed a large number and then applied mitigation in terms of project effect. With respect to

	habitat (regardless of the number of bears in the area) the area being directly altered is very small. The conservatism applied in predictions shows up in the analysis and is part of the reason why we are applying impact management measures.
<i>Likely Resolved.</i>	

YDEN Concern:	De Beers Response:
<ul style="list-style-type: none"> What are the cumulative impacts of activities (i.e. noise from blasting, helicopters and drilling) on grizzly bears? Will it drive the grizzlies away to the tree line? Due to the effects of future weather changes, the muskox may enter into the Snap Lake regional study area. Will the introduction of new animals be monitored as a part of cumulative effects monitoring? What is the definition of zone of influence? Was the map shown earlier (with circle) – outlining the zone of influence or the regional study area? Is it safe to say the zone of influence will change depending on species and stressors? 	<ul style="list-style-type: none"> With respect to the muskox – we will be recording incidental wildlife observations and the muskox would be recorded under a rare species observation category until a need is identified for their specific monitoring. With respect to driving the grizzlies to the tree line – the EA addresses the issue of disturbance to the grizzlies. With respect to defining the zone of influence, it is the spatial/geographical extent of the mine operations - an area where the habitat effectiveness or suitability is changed due to disturbance from the mine. The circle was outlining the regional study area. We can make assumptions about what the zone of influence is, but it will need to be confirmed by monitoring. The zone of influence will change according to the parameters discussed.
<i>Likely Resolved???</i>	

NSMA Concern:	De Beers Response:
<ul style="list-style-type: none"> Does the baseline data include types of habitat lost near the airstrip? Will there be any birding or nesting areas destroyed? 	<ul style="list-style-type: none"> Yes - it also includes habitat lost with the extension of the runway and the lay down areas. Yes – we assume in the EA that birds will no longer nest within the footprint area of the mine (550 hectares).
<i>Questionably Resolved???</i>	

YDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> If due to weather changes, species ranges do move further north or south into the regional study area, what would trigger De Beers to start monitoring the species? 	<ul style="list-style-type: none"> The EA doesn't go to that extent, De Beers will respond to community concerns and interests and our monitoring programs will reflect priority concerns.
Questionably Resolved???	

LDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> Earlier reference was made to some traditional knowledge studies carried out, some were done with the community of Lutsel K'e, please expand on the details (which studies and when were they conducted). 	<ul style="list-style-type: none"> The Lutsel K'e study referred to, included community considerations of the effects of the Snap Lake project on the environment. One point highlighted was that De Beers should ensure they take a very proactive role with respect to garbage and wildlife attractants.
Likely Resolved.	

YDFN Question/Concern:	RWED Response:
<ul style="list-style-type: none"> How old do grizzlies live to be? At the beginning of April last year - while doing a wilderness study at Snap Lake a grizzly bear was out of hibernation. I was wondering if the smells from the mining company might have drawn him out of hibernation? 	<ul style="list-style-type: none"> Our studies show that grizzly bears live to be around twenty eight to thirty years old and can generally produce cubs until twenty-five. We do have records of areas where adult males come out of their dens in April but to answer your specific question we cannot speculate on why that bear was out of its den.

YDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> Will there be policies developed for procedures for mine personnel to report dead or injured wildlife? 	<ul style="list-style-type: none"> Yes those plans currently exist under EMS and an overview will be provided on Monday in the mitigation and management section.
Likely resolved.	

Dogrib Concern:	RWED Response:
<ul style="list-style-type: none"> Can you (or have you) put together a map of migratory patterns through the Snap Lake area with the use of traditional knowledge to help develop it? 	<ul style="list-style-type: none"> We have a map (showed on overhead) that shows baseline data for major migratory pathways and the use of the area based on ten satellite collared cows from 1996-

	2001 including all seasons. We can see a concentration of migration north and south of Mackay Lake. Looking at the Snap Lake area specifically, we can see a large number of movements through the area.
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NSMA Concern:	De Beers Response:
<ul style="list-style-type: none"> Have those lines been translated into a probability of caribou passing through the site? Since the probability of encounter is 100% we want to know how many animals would be effected and what proportion of the population that number represents? 	<ul style="list-style-type: none"> The probability of caribou going through the regional study area is 100%. Caribou are undoubtedly going to encounter the mine site. We don't know the number of caribou that will encounter the mine site – how much further would this get us in terms of reducing the impact?
Not Resolved.	

RWED Concern:	De Beers Response:
<ul style="list-style-type: none"> As part of De Beers' baseline work, they did not do a probability analysis for risk of caribou encountering the mine. It is possible to build probability models that give the risk of encounter and the associated magnitude. If De Beers doesn't want to do the analysis to build the models, then they should add uncertainty to the final impact assessment. There are two options: <ol style="list-style-type: none"> Redo the assessment to use all of the information; or Change the assessment rating from high confidence to low. De Beers could extend their timeline of assessment data to include other available data. De Beers could have done a formal 	<ul style="list-style-type: none"> We did use the information from satellite collars (only ten individuals) to get an understanding of when animals moved through the area, but that information was not used alone. We collected a variety of information. A key part of determination was based on the ground surveys. We spoke with people working at Snap Lake, pilots from Air Tindi, and people from Mackay Lake Lodge. We followed up with comparing the satellite information. We did a reconnaissance study of the trails and looked at main migratory pathways – historical trails, etc. We state in the EA that animals and caribou will come through the regional study area and that elders

<p>GIS analysis (which was what was committed to) or they could have just described it with the information available. With inadequate baseline data – De Beers’ ability to assess changes due to the mine site will be poor as will be their ability to rate the magnitude of impacts. Their ability to set appropriate surveys (timing, distribution etc.) will also be decreased. The timing of surveys relates to the type of information available for collection.</p> <ul style="list-style-type: none"> ▪ I realized that De Beers did use other information, but I’m not convinced that De Beers used the collar information to its full capacity. It is agreed that the consequence is key. De Beers made a confidence rating that the consequence to the caribou is low. Given the lack of baseline data, perhaps De Beers should reduce their stated confidence. I don’t share your confidence levels. We would be glad to work with you on the inclusion of appropriate information and would be glad to share models. 	<p>have told us that the number varies from year to year. We can do all the probability analysis that we want but the critical issue is what is the consequence of the caribou moving through the area? How can we design the project to minimize the impacts on the caribou? We know from work at BHP that we can assume that there will be a disturbance to caribou. The focus should be on the consequence. In the EA we included the issue of uncertainty in caribou impact predictions. Monitoring will be important to further determine what the consequences and impacts will be and to further reduce them.</p>
<p>Not Resolved. To be resolved?</p>	

YKDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ We’ve seen many dead fish around areas of blasting, if you are blasting underground in the water, how do you think the chemicals will affect the fish and where would the water from Snap Lake flow? Flow areas should also be considered areas of potential contamination. Will sediments on lake bottom be disturbed? If there will not be immediate effects, will there be effects later on? 	<ul style="list-style-type: none"> ▪ Snap Lake is part of the Lockhart River system and the water flows through Mackay Lake to Snap Lake. Blasting will occur underground – a considerable distance beneath Snap Lake. We monitored the effects of blasts (during the advanced exploration project) in the lake directly above the blasts and found the effects met guidelines (peak particle velocity and pressure change). There was not an adverse effect on fish in deep

<ul style="list-style-type: none"> ▪ Will there be the same lack of effect in 15-20 years? 	<p>or shallow waters. Any chemicals from blasting will go to the mine surface and be treated in a water treatment plant, before going into Snap Lake.</p> <ul style="list-style-type: none"> ▪ In 15-20 years, the mining will be occurring much farther under the lake. Testing was done at the closest point relative to the lake. As mining continues, the effects on the fish will become less and less as we will have much more rock above our heads.
Questionably Resolved???	

YDFN Elders Comments/Questions:

- In the past the Dene people lived more closely with the animals. All native people understand the laws of nature and caribou.
- We understand that the caribou have their own migration paths. Before Yellowknife, there used to be a lot of caribou living in this area, but in the past seventy years (and since Con mine and Giant mine), they've stopped travelling here. Caribou are being monitored in ways they are not accustomed to (with collars and helicopters).
- Today, there are many changes globally. Animals communicate with each other and they used to also communicate with the Dene people but due to changes the animals are not at peace any longer. There have been instances of bears killing people in different areas.
- We need to respect the animals and use all parts of the animals.
- In the past mines didn't consult our people (the mines affect our people and our animals – in good ways as well as bad). We have benefited from the mining industry and government, but we still want to make sure that the land and water that we live by is not contaminated. Animals and people are interconnected with the land and water and if we contaminate those we will contaminate ourselves. We have to work together if we are going to live here together.
- If you are looking for people to collect data you should hire those who work on the land and understand the land as well as youth who are skilled at traditional knowledge. It seems like our traditional knowledge information is not kept and or put to good use. You are using western science and comparing traditional knowledge – it is separate.
- It is important that when blasting you consider safety and prevent contamination and that you be aware of pockets of water under the lake.
- There are many variables and potential changes that must be considered (eg. environmental changes ie. ozone depletion, climate warming). What will be the effects on hauling (re: winter roads) if we don't have freeze-up 20 years from now?

- If you build roads around site area – how do you expect animals to go over steep hills or roads? Caribou could be hurting and injuring themselves.
- The benefit agreements are welcome. Our people appreciate the benefits. This is our land – we want to make sure we get benefits that come from mining in our area. In the past our people didn't see any of the benefits from the mines – only the repercussions (our people have died from the effects of contaminants from the mines). If you want to work on our land you have to ask us.
- We want to be kept informed of what could and may happen – the change in approach from not consulting us to consulting us suits us – you should use the knowledge that we have.
- We want our young people to be trained and employed with the mine until the end of the mines life. Use our skills and traditional knowledge as a resource.

YDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ When testing for the effects of blasting on fish, what was the shallowest depth of rock between a blast and the bottom surface of the lake? 	<ul style="list-style-type: none"> ▪ There was 450 ft or 143 m of rock between the blast and the bottom surface of the lake.
<i>Likely Resolved.</i>	

DFO Comment: For point of clarification: Chemicals from blasting will not percolate through the rock. The water treatment plant is designed to treat any residues. There is however still a predicted increase in nitrogen in Snap Lake.

YDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ With respect to cumulative effects on the winter road going to Diavik, BHP and Snap Lake – did anyone do any studies of the effects on the lakes? It is likely that beavers and muskrats in the lakes with a lot of traffic cannot survive. In the spring, who will clean up the oils/fuel? We've never seen anyone cleaning it up. The mess is visible in the spring on satellite images. The road has been there 30 years already; in another 10 years from now what will be it's state? 	<ul style="list-style-type: none"> ▪ The EA did not do studies of fish and furbearers affected by the winter road.
<i>Answered but not resolved.</i>	

NSMA Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ The movement of caribou seems to be unpredictable due to a variety of activities within their range (mines, 	<ul style="list-style-type: none"> ▪ We have met with elders of various groups. Not as often as we should – not due to lack of desire, but due to

<p>outfitters etc.). With that conclusion my recommendation is for De Beers (with the help of the elders) to take measures to mitigate the caribou herd travelling through the area. The elders need to discuss this, would De Beers/elders be interested in something to that affect?</p> <ul style="list-style-type: none">▪ With the proper resources I (Bob Turner) can likely do that.	<p>the elders lack of availability (because of the large number of people wanting to meet with them). We welcome the opportunity to meet with elders of all regions together if Bob Turner can pull that together.</p>
<p><i>Likely Resolved.</i></p>	

YDFN Elder Comment: If De Beers is going to meet with elders, there are five regions in the area and I am not sure of their schedule. We are guided through Rachel Crapeau and her staff – arrangements are made through them.

Review of Agreements/Disagreements - Resolved/Unresolved Concerns/Issues and Commitments Made at the MVEIRB Technical Sessions for DeBeers Snap Lake Diamond Project

Wildlife and Wildlife Habitat

<u>Legend:</u>	
Commitments:	in bold
<u>Disagreements:</u>	<u>underlined</u>
<i>Likely Resolved:</i>	<i>italicized</i>
Not resolved:	shaded
Questionable Resolution:	outlined

Day Six – Morning Session (December 2, 2002)

YDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> In 25 yrs from now, nearing mine closure, if the area is contaminated, is there anything in the agreement to clean up the mines in the future? If the value of diamonds goes down in the future, would the mine close? 	<ul style="list-style-type: none"> There is always a possibility that a mine could be shut down due to economic reasons, however experience is on our side. As part of the permitting process, De Beers will have to produce a security bond to ensure that funds are set aside for clean up at any stage of mine development.
Questionably Resolved???	

YDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> When the revegetation programs begin, will you have protocols in place to determine what is successful reclamation? How will you know that plant life is successfully reclaimed in terms of sustainability? Will you be able to assure the people that there will be no heavy metals or other contaminants taken up by plants and eaten by wildlife? How will 	<ul style="list-style-type: none"> This is specific to the licensing process – you are jumping ahead of us. Protocols will be developed for revegetation.

success be measured?	
Likely Resolved. Satisfied that De Beers is making a commitment to design protocols for monitoring reclamation success.	

RWED Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ How is 'equivalent capability' defined with respect to reclamation? What is the confidence level that, as a part of the reclamation effort, models will be established with capability? How did you arrive at the confidence level? What is the basis of the statement that the north pile will be established as a health boulder land class unit – does a health boulder on top of the north pile have the same value as the same class elsewhere around mine site? ▪ In the EA, 8 species of raptors were found in the regional study area. Is that information available in a referenced table? ▪ Please provide that information. Our experience is that nesting habitat is limited in the tundra environment. Is there any possibility that nest sites will be close to the mine? Will you address the issue of other birds nesting in the area that don't make their own nests (eg. peregrines)? What are the impacts on raptors of the mine infrastructure as an attractant? ▪ This has become a recent issue at other mines with pit walls (eg. 	<ul style="list-style-type: none"> ▪ The person that can respond to your questions will be here on Wednesday. ▪ Yes, it is available. ▪ When looking for nesting raptors, we focused essentially on preferred habitat - primarily cliffs but also looked for other nesting areas with preferred features. We searched for other species in relation to the mine site and we didn't identify any rough legged hawk nests that other raptors were nesting on. The assessment of impacts by mine infrastructure was not discussed in the EA because it did not come up as an issue during consultation. It may be a more recent phenomenon. We would need to develop a policy and practice on how we would encourage or discourage birds of prey utilising mine infrastructure for nesting. We are interested in RWED's position on the utilisation of infrastructure.

BHP) and other infrastructure. We would need a policy in place – we can discuss it at a later date.	
<i>Likely Resolved once DeBeers provides raptor information. Not Resolved - further issues deferred til Wednesday.</i>	

YDFN Concern:	DIAND Response:
<ul style="list-style-type: none"> Are you depositing money in case wildlife on the land and water are affected? In addition to the reclamation work to be done, is there going to be some kind of deposit put by for further effects to the water and land? One of our concerns is that white people seem to place more importance on the short term money benefits coming from exploiting the land than the impacts to the environment itself (water, land and animals). Does the security deposit mentioned relate to all the land and water animals? 	<ul style="list-style-type: none"> Reclamation has to do with trying to restore land. It is recognized that it is difficult to restore the land back to its original condition, but every effort will be made to do so. If all those efforts are made, including water, then wildlife, fish and birds will hopefully come back and re-populate the area.

RWED Concern:	De Beers Response:
<ul style="list-style-type: none"> Is there a compensation mechanism set by De Beers to address the issue of wildlife loss? 	<ul style="list-style-type: none"> De Beers' policy for dealing with first nations includes a policy of compensation when there is a demonstrated loss of harvest.
<i>Likely Resolved.</i>	

MVEIRB Concern:	De Beers Response:
<ul style="list-style-type: none"> What areas (in addition to eskers) of preferred habitat were focused on for the raptor study? 	<ul style="list-style-type: none"> Before we started we used a topographic map to identify cliffs/eskers/areas that supported nesting habitat. The map shows the majority of eskers to the south with the exception of pieces dotted around the area. We flew along eskers and deviated where we saw cliffs or what would look like an area that would support nesting and we hiked around areas. A lot more habitat was visited during an additional 11 km intensive survey, which provided additional focus.
<i>Likely Resolved. Stated to be resolved.</i>	

EC Concern:	De Beers Response:
<ul style="list-style-type: none"> Are mitigation measures regarding migratory birds in a wildlife management plan or is it part of the EA report? Do you have a plan in place to account for migratory birds? Section 6 of the migratory birds act states that no one shall destroy migratory bird nesting. During construction and production, have you thought about identifying nests prior to activities and providing buffer zones? 	<ul style="list-style-type: none"> The wildlife mitigation measures are incorporated into the wildlife plan. All wildlife management issues are incorporated under EMS. You do not have this. We will have to include that as a component of the wildlife procedures.
<p><i>Likely Resolved. Would like to see the monitoring plan regarding migratory birds when there is the chance.</i></p>	

RWED Concern:	De Beers Response:
<ul style="list-style-type: none"> We will have to work together to resolve previously stated issues with respect to concerns for consequences to caribou. If issues cannot be resolved then there should be reduced confidence in impact ratings. With respect to thresholds for triggering mitigation activity – how was caribou abundance scaled? How did De Beers arrive at less than 1% of the herd (could be dealing with a few to thousands)? How will De Beers work to coordinate monitoring of caribou with BHP and Diavik? I understand the tailings pond will be fenced, what will be the triggers/thresholds with respect to herding caribou traffic? What specifics are made available? Discussions on this can continue from here. It seems that you are asking us to take a lot on trust and that you are telling us the details will all be worked out, instead of presenting a 	<ul style="list-style-type: none"> These are extremely important issues. De Beers is prepared to work with RWED, we cannot provide all of those specifics (as they are being worked through) but it is De Beers intention to approach RWED to discuss those issues and work together to resolve them and identify things like thresholds when deciding to implement mitigation measures. Wildlife has the right of way no matter what the numbers, but the details will change depending on the numbers.

<p>plan, like Diavik did. In addition to the communities and regulators, use Diavik and BHP as a resource. Different numbers of caribou require different mitigation measures.</p> <ul style="list-style-type: none"> ▪ With respect to reference made to 'further monitoring' for distribution and abundance of caribou - will this further monitoring include behavioural data and how will it compare to Diavik and BHP – will monitoring be standardized? It not only relates to how monitoring is done, but it is a key question with respect to cumulative effects. ▪ So we are correct in assuming that De Beers will be using the same techniques as other companies and stakeholders? 	<ul style="list-style-type: none"> ▪ The project specific information (referred to) collected with monitoring initiatives will be standardized where necessary to go along with the techniques that already exist. We have access to people knowledgeable about the BHP and Diavik monitoring and mitigation techniques in order to be able to standardize techniques. ▪ Yes.
<p><i>Likely Resolved – re: standard-monitoring techniques.</i> Not Resolved until De Beers and RWED resolve issues further – whether De Beers is revisiting the adequacy of baseline data or revising the level of confidence. It is resolved to the extent that we've identified a need to work together. There is still the issue of the 1% - Anne's calculations are closer to 10% - still a lot of issues to be resolved.</p>	

MVEIRB Comment: To put things in context, De Beers is specifically required to describe the objectives, approach and methodologies of their monitoring programs (section 2.11 of the Terms of Reference).

YDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ How are you going to reclaim the underground mine that is proposed to date? I am concerned about animals that will venture into the area later on. When working underground, what kind of chemicals will you be using and how will they affect the animals and water (pumped back to surface for treatment)? 	<ul style="list-style-type: none"> ▪ When the mine is closed, entrances will be capped (with concrete). Rock will be placed overtop of that in order to get the topography as close to the original topography as possible. Ammonia nitrate in the explosives (mixed with fuel oil) will be the most significant chemical used. Water from the mine will be pumped to the surface and treated in the water treatment plant before it is released into Snap Lake.
<p>Questionably Resolved???</p>	

EC Comment: While mine water is treated before it reaches Snap Lake it is not clean of nitrogen.

RWED Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ Since 1998, 16 wolverines were killed or removed from mines in Lac de Gras. Mines serve as a sink for wolverines. In the EA report there was not a lot of analysis on how many adult wolverines may reside in the Snap Lake regional study area. Over the last three years, De Beer's has been doing a snow tracking survey to estimate wolverine numbers within the regional study area. This survey method presents limitations. It is difficult to conduct and difficult to interpret the number of tracks per km (how many transient versus resident animals and how many total animals are represented by tracks). Given the limitations it is not clear how reliable these studies are. Can these snow pack densities adequately predict the impacts? ▪ The location of the mine is close to the Bathurst calving grounds. You may get transient animals that will further confuse your winter track counts. Track counts are a crude instrument for indicating change. Despite the best efforts to limit odours and wastes, evidence suggests that wolverine mortalities are inevitable. The baseline work should have looked at cumulative effects and mortality impacts within the regional study area and over a broader regional perspective. RWED is willing to work with De Beers on identifying better methods to evaluate and quantify wolverine abundance within the regional study 	<ul style="list-style-type: none"> ▪ The track surveys are valuable with respect to determining wolverine presence, but the reality is that as you pointed out, the track surveys will be poor for determining wolverine abundance. The reasons why the 16 individuals were removed are critical. We have gained knowledge from the experience of what happened to those 16 wolverines. Daily mitigation can be successful. We have done that prior to and during the advanced exploration project. The snow track surveys do not adequately address issue of abundance - we are happy to work with RWED in the application of techniques for monitoring purposes to come to a better understanding on the potential abundance of wolverine populations in the regional study area. Our focus will be on ensuring effective mitigation.

area.	
Not Resolved – still concerned about baseline work that has been and sufficient analysis of wolverine densities in the regional study area, impact predictions and adequate monitoring. Commitment of RWED and De Beers work together further re: identifying better methods to indicate wolverine numbers.	

MVEIRB Concern:	RWED/De Beers Response:
<ul style="list-style-type: none"> There are a few studies where animals were trapped and relocated. What were the wolverine success rates? Was there any indication on whether the wolverines thrived or not? 	<ul style="list-style-type: none"> RWED: To date, we have relocated eight wolverines. One adult female from Diavik was moved to the tree line, a couple of months later she was killed as a problem animal at Mackay Lake. Unless the animals are collared it is difficult to follow up. Relocation as a management strategy is a last resort – and is often unsuccessful as a long-term solution. De Beers: We don't see relocation as an answer, because it doesn't solve the problem permanently. In absence of information on survival, one principle of conservation should be considered as a direct impact. Protection must be a cooperative effort among all parties in the region (outfitters, etc).
Questionably Resolved???	

RWED Concern:	De Beers Response:
<ul style="list-style-type: none"> Snow tracking has many flaws. We'd like to hear other alternatives from De Beers. De Beers acknowledged that 2 or 3 years of baseline is small period of time to make impact predictions. Will De Beers continue to monitor denning habitat? I understand De Beers is looking to reduce wildlife conflicts. With respect to the permeability of your footprint – are you looking to completely exclude animals or for them to travel through unhindered? 	<ul style="list-style-type: none"> You are the experts. Monitoring activities will continue after the EA as long as communities and regulators identify it as an impact. Fencing will be used as a method of exclusion. Problems may be created if animals get inside. The approach De Beers wants to move towards reflects our belief that wildlife doesn't belong in an industrial setting. We will discuss deterrence methods with respect to

	animals moving through/towards the mine, we will leave animals alone as long as they are a safe distance away from the mine and there is no posed danger. We have not worked out details of negative reinforcement methods.
<i>Questionably Resolved???</i>	

RWED Concern:	De Beers Response:
<ul style="list-style-type: none"> Will the incinerator be enclosed in a kitchen/building (concerns re: attractants and mitigation)? Will there be an enclosed corridor? It appears as though De Beers' analysis of attractants was not thorough – not inclusive of all the potential attractants on site (eg. kitchen fan). The analysis seems lumped together – De Beers cannot determine successful mitigation methods if they have not looked at each individual impact. Will De Beers look at each potential attractant and determine mitigation measures for each attractant? Will that information be provided to us so we can go through it and assess that work? Do you have consequences in place for personnel caught feeding wildlife? Buildings are not skirted all the way down to the ground in some places – will De Beers commit to ensure that this will be done? 	<ul style="list-style-type: none"> It is De Beers' intention not to have food waste outside at all (for carrying purposes etc.). De Beers intent is to go through that in a systematic way. Yes. We presently have a disciplinary policy on site that addresses a series of items – feeding wildlife is one of them. Disciplinary action taken is a step process that starts with advice notices and counselling and can ultimately lead to dismissal. We have to be proactive in all mitigation measures and will ensure that skirting is completed.
<p><i>Incinerator concern – Likely Resolved. Analysis of attractants – Not Resolved – until further systematic information is provided to RWED. Issue re: feeding wildlife – Likely Resolved. De Beers committed to ensure building skirting is completed - Likely Resolved.</i></p>	

MVEIRB Concern:	De Beers Response:
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<ul style="list-style-type: none"> When will policies and procedures (in place beforehand) in terms of training employees (including feed back loops and consequences) be available for our review? Do you have something in place that can be reviewed Within the ISO system, periodic reporting and periodic auditing is required. Would these reports be made public? Will procedures and policies be developed in conjunction with other mines, communities, RWED, etc.? 	<ul style="list-style-type: none"> We only have two to three people on site at any one time but we have had over a hundred in the past. Many of those procedures are in place and we plan to implement EMS-ISO 14001, and be registered by the end of the year. If the interest exists, Wednesday at lunch we are willing to make a presentation on ISO 14001 (crowd was receptive)– what it is and what procedures are put in place to obtain registration. Yes – audits will be made available to the public. That has been the approach to date. There are lessons to learn from the other mines, regulators, community members and elders.
<i>Likely Resolved.</i>	

YDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> How is it possible to monitor wildlife (eg: hawks, birds, raptors) from the air? How can you tell from the air how many nests there are? Did you also walk on the land? We are concerned about the origin of your monitoring data. 	<ul style="list-style-type: none"> We did get out of the helicopter and spend a lot of time on the ground. We used methods most appropriate depending on the species with respect to timing and minimizing disturbance.
Questionably Resolved???	

Chris O'Brien Concern:	De Beers Response:
<ul style="list-style-type: none"> It was suggested that there will be inevitable wolverine mortalities and it was suggested that De Beers do some estimation on impacts of the mine on the regional wolverine population. Would you be willing to do that? 	<ul style="list-style-type: none"> It was done in the EA.
Questionably Resolved???	

RWED Concern:	De Beers Response:
<ul style="list-style-type: none"> I didn't see much discussion in the EA with respect to cumulative 	<ul style="list-style-type: none"> We didn't do a cumulative impacts study or a population viability

impacts.	analysis. The number of wolverines impacted depends on the population within the Slave Geological Province - that information starts with RWED. This can be discussed further during cumulative effects discussions.
Questionably Resolved???	

Day Six – Afternoon Session (December 2, 2002)

Chris O'Brien Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ Earlier De Beers mentioned that there would be compensation if the mine affects caribou. Is the De Beers policy that there will be compensation if there is proven loss of harvest (caused by De Beers)? How can that be proven? It gets into cumulative effects and long-term effects on the Bathurst herd. ▪ My problem is with the following question: "How can any one company be proven responsible for loss of harvest?" It seems to me that all of the companies that work within the Bathurst caribou range should be part of an agreement and that no one company should be solely blamed for the decline of a caribou herd. There are many that should be compensated - but the question is how to deal with compensation? Otherwise we could be looking at seriously reduced caribou populations. This may be something that the board can look at. ▪ With respect to reclamation, BHP originally said that they would reclaim their area to a productive landscape; it later changed to reclamation to a stable environment – that is quite a change. Giant mine 	<ul style="list-style-type: none"> ▪ This policy is being utilised in northern Ontario where an exploration project is being carried out crossing an existing trap line. Compensation is measured with respect to the trap line lost. It is a case where compensation is relatively measurable. With respect to the Bathurst herd, loss of harvest compensation will be addressed in Impact Benefit Agreements (IBAs). ▪ Deferred to Wednesday afternoon.

is to be reclaimed to an industrial landscape – what is De Beers' intention? What sort of reclamation - productive, stable or industrial landscape?	
Questionably Resolved – issues of compensation. Not Resolved – issues to be deferred to Wednesday regarding end land use goals (reclamation).	

YDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> With respect to compensation for loss of harvest ...we are concerned about the movement of the caribou migration away from traditional hunting areas. If it is shown that it is a cumulative effect and that De Beers is a contributor, the communities want to know if De Beers is prepared to fund transport for the hunters of the communities to travel farther in order to get the harvest for the year? 	<ul style="list-style-type: none"> This should be addressed through IBAs. There are a lot of issues to be addressed in the IBAs.
Not Resolved – to be resolve at a future date when negotiating IBAs.	

NSMA Concern (including RWED comments):	De Beers Response:
<p><u>NSMA Presentation:</u> the following four questions were presented regarding the problem of weaknesses in data and increased uncertainty:</p> <ol style="list-style-type: none"> 1. Can new information, including TK, be provided on the movements of animals? 2. Can new impact definitions reflect the measurements actually taken in the field? 3. Will monitoring programs include measurements that can detect trends? 4. How will adaptive management reflect the monitoring results and TK? 	

<ul style="list-style-type: none"> ▪ NSMA: Can you give some specifics on where collected information (eg. VEC information) is from? ▪ NSMA: What do you anticipate to be the process of information collection, particularly with respect to timelines? ▪ NSMA: Is De Beers willing to make commitments to gather TK information before work begins on site in order to refine mitigation measures before work begins on site? 	<p><u>Response to Question One:</u></p> <ul style="list-style-type: none"> ▪ With respect to the movements of animals we are interested in any new information (traditional knowledge or satellite tracking) to further show the movements of animals. ▪ One example of information came from Dean Cluff's work – studying wolf behaviour within the regional study area. A second example of information is traditional knowledge. The NSMA has expressed an interest in contributing TK and we are open to hearing people's interests and collecting further information to expand on the information collected to date. ▪ We will add new information as soon as it becomes available. We are prepared to refine mitigation measures and monitoring techniques as new information is collected – it is a continual work in progress. ▪ We can 't make a specific commitment. It depends on the abilities and interests of the communities. We can't make commitments before we know what kind of traditional knowledge (TK) exists. There would also need to be a process for flow of information and we don't know what the communities timelines are at this point. <hr/> <p><u>Response to Question Two:</u></p> <ul style="list-style-type: none"> ▪ We try to quantify and be transparent in the way we describe impact characteristics. We want impact assessment parameters to be consistent with other projects. Changing definitions does not change the impacts. We focused on measurable parameters that will give us meaningful information.
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<ul style="list-style-type: none"> ▪ Your approach is very transparent, however there are definitions that are not being measured. While definitions are clear at the end, we do not understand the level of consequence (most important). ▪ RWED: What is meant by 'natural range of variation' (its definition is required in order to understand the application of magnitude)? Would it require all field measurements? How can it apply to specific examples? Please also explain the 'application of magnitude'? How is it applied if there are problems with baseline and what natural range of variation do you use? ▪ RWED: You didn't present any variance attached to your measurements. What is the variance attached to baseline measurements and what is the variation - natural or statistical? ▪ NSMA: You mentioned this has to do with the certainty of predictions. The question relates to what you think the impact measurement is. Give us a statement of prediction. 	<ul style="list-style-type: none"> ▪ We can speak to each instance, but you need to be specific in order for us to answer to each particular instance. ▪ Natural range of variation reflects the baseline conditions, assuming that the project is not yet in progress. We have baseline measurements of caribou during the past four years (in the regional study area), for the relative abundance, the behaviour of groups, and the group composition. ▪ We are having problems nailing down where and how this issue gets resolved. There are issues related to natural variance and impact assessment ratings. I'm not sure what that answer is. It all comes down to: how sure are we about the impacts. For example – how sure are we that caribou will come through the property? We are sure. How sure are we that the caribou will not be impacted by the project? The focus again comes back to what we will do about those animals that enter the mine site. I'm not sure at this stage where we are going. Unsure if this is another look at the EA. Do we need to revise monitoring and mitigation? Define relationship. Monitoring includes parameters that are measurable, directly or indirectly. I will leave it open for discussion. ▪ Perhaps we can't do our prediction of impact rating based on something that doesn't include the definition of natural variability. ▪ We need to think more on this we cannot respond further at this stage.
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	<p><u>Response to Question Three:</u></p> <ul style="list-style-type: none"> Monitoring programs implicitly have to focus on measurable parameters, whether a direct effect or measurement (eg. number of habitat units lost within mine footprint). It is very much dependent upon the specific indicator. It mainly depends on species.
<ul style="list-style-type: none"> When or how can we get anything tangible with respect to ISO 14001? We need assurance monitoring programs are capable of detecting changes – this may prompt an adaptive management response. Primary concern with measurements comes from baseline data. It is not trivial to come up with good data. How will effects of the project be determined? NSMA: That is very much what we wanted to hear. 	<p><u>Response to Question Four:</u></p> <ul style="list-style-type: none"> Adaptive management is a tool that includes monitoring. ISO mantra: plan, do, check and act. Monitoring issues come under check. Monitoring results can include traditional knowledge as well as scientific. Through adaptive management we can respond to identified requirements for future changes. What you are asking us to do is apply good practice. You are asking us that if something is not working – what we will do to fix it? We’ve been doing this all the way along. It is good practice and it is the way business should be done. ISO 14001 commits us to good practices (international standards with an audit function). With respect to how we are going to monitor the effects of the project, these programs are going to be developed in conjunction with regulators. We want to put in place a rigorous monitoring program and we want to work with communities and governments to do that.
Not Resolved – good informative discussion, still some issues.	

RWED Concern:	De Beers Response:
<ul style="list-style-type: none"> Could De Beers explain the rationale for deleting the 	<ul style="list-style-type: none"> In our opinion, resilience had limitations that outweighed the

<p>assessment of residual impacts? We understand that there is controversy related to it but it doesn't make sense to drop discussion surrounding residual impacts. Resilience is a measure of change that could address different species and can act as a mechanism to measure cumulative effects. It allows you to measure different components on an individual level or on a level within the project. It allows for the measurement of effects of different projects. The exclusion of the assessment of residual impacts reduces the value of grading impacts and removes a mechanism to assess cumulative effects. Please explain the rationale for omitting it.</p> <ul style="list-style-type: none"> ▪ What were the limitations? Reversibility is part of resilience. Resilience lends itself to more direct measurements and has a greater role in monitoring. ▪ Part of the Diavik EA was looking at changes in caribou body condition – that approach was turned into a model, which measured resilience. For caribou, the techniques and definitions exist to apply resilience. There is literature also published on how to apply resilience to ecosystems. 	<p>benefits and we therefore excluded it. Any proponent has the option of which tools to use. Instead of using resilience we used reversibility.</p> <ul style="list-style-type: none"> ▪ It is one thing to define natural variation; resilience is in the same ballpark. Resilience is the adaptive ability of a species or population to respond to sudden changes in the environment and how much they can absorb or adjust to persist. You can write words around those things, but to actually measure at this point in time with limited knowledge, we thought it would add more uncertainty into the EA. ▪ For every paper published on how to apply, there is a paper on how not to apply. It was considered and De beers chose a different path.
<p>Not Resolved - Disagreement with respect to resilience</p>	

YDFN Comment: Our people have a lot of skilled hunters (that will be going out hunting soon) and there are opportunities to collect information on the state of caribou (eg. fatness, taste of caribou meat, pregnancies, calve sizes). We support the questions that

Anne Gunne of RWED has been asking. We are interested in working with the studies and sharing information. We can learn from people like Anne who have worked with caribou for many years and at the same time we can also share our wealth of information and traditional knowledge. We could help with the above-mentioned type of study to provide information for your project.

De Beers Comment: As previously stated, we are interesting in working with communities and governments – community partnerships is a goal of De Beers as is the incorporation of traditional knowledge.

RWED Comment: The Bathurst Caribou Management Planning Committee (BCMPC) is looking at monitoring programs for a wider range of the Bathurst caribou herd and we look very much to the communities to provide the type of information that Rachel of YDFN discussed. We use the knowledge of community hunters to assess the health of the range. A key to overall monitoring is resilience – a healthy population has the ability to withstand the impacts on it.

YDFN Comment: We understand what the BCMPC is because we are a part of it. My concern is that we want to be the people working with the companies working out on the land. The elders would be more comfortable if we worked together and it was our people reporting the studies monitoring wildlife health. We are concerned about the baseline data collected. Activities in the slave geological area are having an impact on the movement of the caribou. We believe the monitoring methods should be universal. It is a concern for us that there are not any of our members sitting on the MVEIRB.

Chris O'Brien Concern:	De Beers Response:
<ul style="list-style-type: none"> De Beers says it is up to them to determine methods used to assess impacts. Why reinvent the wheel? If two other mines have set examples, why is De Beers doing their own thing? If there are blanks to be filled in, why not go back and fill them in and (if what RWED is saying is right) you will have a more certain understanding of what the impacts will be. Otherwise confidence levels are questionable. The other apparent option is to lower confidence levels. If you use a different approach how will your results compare with respect to understanding cumulative effects of everything (not just your mine) going on in the region. 	<ul style="list-style-type: none"> We have not been sticking with BHP's and Diavik's methods because we were with the understanding (through consultations) that they had improvements to make. We want to do the best EA that we can. We disagree with comments that we are swimming against the current. We are given the Terms of Reference, and there was a conformity period. We have done what the board expects of us.
Questionably Resolved???	

MVEIRB Comment: De Beers is correct to an extent. The board did not require De Beers to provide the use of residual effects through the use of resilience. It will be up to the board to decide upon the significance of methods they have chosen. They have made a case for why doing what they are doing, it is up to anyone else to make a case to the board that their method is unsuitable and provide suggestion for alternatives. Conformity does not mean adequacy. It is the adequacy that the technical sessions are designed to question.

NSMA Concern:	De Beers Response:
<ul style="list-style-type: none"> With respect to earlier discussion regarding monitoring programs and adaptive management – is De Beers willing to commit to providing the parties with a work plan, describing where in the plan you will fit steps like ISO 14001 and when you hope to have draft or proposed monitoring plans in place and when you plan to do community consultations? Will you make the commitment to provide parties with timelines for that information? 	<ul style="list-style-type: none"> Yes.
<p><i>Likely Resolved.</i> De Beers Committed to provide the above work plan to the parties.</p>	

MVEIRB Concern:	De Beers Response:
<ul style="list-style-type: none"> In the absence of having indication of tolerance to change (thresholds), how do you propose to implement adaptive management programs? In order to be aware of meaningful change thresholds are required. Example: Suppose a particular species population is at risk of going extinct (cumulative effects is an issue because there are many industries in the area) in a certain area. We need to know how much more pressure it can take (an indicator or a threshold). 	<ul style="list-style-type: none"> Provide an example of a threshold that would relate to adaptive management. From a management perspective, the key with respect to cumulative effects (CE) is that the Snap Lake project would contribute to CE. Thresholds cannot be developed in isolation. There is no substitute for land use planning – threshold levels could be set appropriately at this level. Take wolverines for example: mining is a portion of the impacts that occur on this population - there are additional effects from sport hunters. It is not

<ul style="list-style-type: none"> ▪ If collective forces (re: cumulative effects) threaten the caribou – the solution must be collective. What elements of the Snap Lake project are De Beers willing to engage in adaptive management or what additional methods are you willing to commit to - to lower the residual impact to caribou? ▪ <u>Disagree: Impacts of your project that are identified in the EA should translate into the elements of your project that are affecting the caribou.</u> ▪ The mitigation measures proposed for key wildlife species in the EA are those that De Beers has control over. In the absence of a land use plan and regional monitoring programs – has any effort been made to contact other agencies or mines etc. that contribute to cumulative effects to see if there is a coordinated response that can be implemented until such land use plans are in place? ▪ Why didn't you include outfitters in the cumulative effects analysis? 	<p>up to De Beers to consider what the effects of sport hunting are on the wolverine population. The threshold should be defined elsewhere, but that is not to say that thresholds would not be incorporated into adaptive management programs. Regional monitoring programs would be good for this.</p> <ul style="list-style-type: none"> ▪ That question is inappropriately hypothetical. We couldn't quantify what portion of impact our project was responsible for. ▪ In the EA, we've identified project components that are likely to affect the caribou. ▪ We don't have a mine in place; our efforts have been focused on reducing impacts to the environment, involving CE managed on a regional basis. There is a lot of cooperation with the different mining companies, but that leaves out a substantial portion of land users. More efforts need to be focused to collect and group cumulative effects information from outfitters and other land users. ▪ Outfitters were included in the cumulative effects analysis for noise and traditional land use. They were not included for wildlife (the only other component for CE) because we don't know what the actual effects are. We were not able to identify the influence of hunters directly on animals and the indirect effect on the land and animals of
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<ul style="list-style-type: none"> ▪ Did you review preliminary screenings or land use plan applications that DIAND has on these camps? Impacts of camps are documented and reported in blue guidance documents. I was also thinking about hunting camps not just advanced exploration projects. ▪ I was wondering if you conducted research at the Land and Water Board to look for land use plans and water licenses applied for in the proximity of your camp or between you and other diamond mines and if the information was factored into the cumulative effects assessment. ▪ With respect to the CE chapter, regarding mine closure – will the direct habitat be ongoing until reclamation is conducted? When is the resolution to have the reclamation completed? ▪ Within the cumulative effects analysis structure – did you consider synergistic effects (dealing with induced or direct effects)? 	<p>the presence of the camps.</p> <ul style="list-style-type: none"> ▪ Which of those camps are specific to the Snap Lake area? <p>No we did not.</p> <ul style="list-style-type: none"> ▪ The reference of direct habitat loss stopping with closure, means that at the end of the project no further losses will be direct. For the sake of conservation, we are assuming that habitat loss will be reversible in the long-term. ▪ No – Because we didn't have enough information to look at the interaction.
<p>Not Resolved – better informed but there will be further questions on Friday re global CE.</p>	

Chris O'Brien: Not Resolved - We didn't get far with the determination of the existence of thresholds – still an issue.

MVEIRB Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ I realize biodiversity is not explicitly part of the Terms of Reference – but can you briefly explain the approach of the coarse and fine filter approach on measuring biodiversity? ▪ To clarify with respect to the fine filter: in the EA, the coarse filter was landscape and you used ecosystem approach at a species level with the fine filter? 	<ul style="list-style-type: none"> ▪ It was not part of the Terms of Reference; we basically took a coarse filter approach on a landscape level with an ecosystem perspective. ▪ At the ecosystem level we still considered it to be relatively coarse because it does not get down to the species level.

<ul style="list-style-type: none"> ▪ In your approach, was your intent to look at biodiversity or just a component of biodiversity? ▪ In the EA, - particular reference - Do you mean wildlife, aquatic or plant species? ▪ If biodiversity is supposed to be covered in a broad sense – it does not specifically consider wildlife. ▪ In the ecosystem approach there were high medium and low rankings for the potential of supporting biodiversity for each ELC. How did you come up with the rankings? ▪ How did you add up each of the components? ▪ How did you come up with high? ▪ That is what I'm looking for. 	<ul style="list-style-type: none"> ▪ Our approach was to cover biodiversity components not addressed in other parts of the report. ▪ Plant species richness. ▪ That is why it is a coarse filter approach. ▪ The ELC with higher species diversity was given a higher ranking. ▪ There were a number of elements: species richness, percent cover of vegetation etc. ▪ A matrix was set up and criteria was rated. Numbers represented each of the categories. Once the number was looked at it was fit into a category of high, medium and low.
Likely Resolved – satisfied with discussion – will follow up with matrix for further info.	

YDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ What are De Beers' current plans in place for development? ▪ Would it be beneficial to see exploratory camps (ie. Kennedy Lake) included within certain aspects of the CE assessment (ie. access roads, drilling mud disposal)? ▪ The Terms of Reference includes (pg 17, TOR) 'areas of high development potential within claim block' - does De Beers feel they met this requirement? ▪ Will the EA for projects such as the Jericho project (Tahera) at Contwoyto be incorporated as it applies to CE? 	<ul style="list-style-type: none"> ▪ There are no current plans but we continue to carry our exploration. ▪ For exploration camps to date drilling has been conducted under separate land use plans and accessed by helicopter. ▪ Yes. We are continuing exploration but to date we've had no success at finding another economical deposit within the claim block. ▪ (Outside of the Terms of Reference) We will look at the Tahera information to see if there is information worth incorporating.

<ul style="list-style-type: none"> ▪ To be continued at the public hearing... 	<p>But this is not directly related to this EA.</p>
<p><i>Likely Resolved – re exploration camps.</i> Not Resolved – still a desire to see new information (ie. Tahera project) incorporated.</p>	

RWED Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ What was the rationale behind the asymmetry in the use of uncertainty? ▪ It is not clear what the basis for the conservatism is. It comes back to how you rate the residual impacts. Also what is causing your uncertainty should be clarified also – it is important to identify the point of uncertainty. Components of uncertainty relate back to adaptive management and so forth (knowledge gap). ▪ What you are uncertain about and why – relates to how impacts are rated and how that changes as a result of adaptive management. 	<ul style="list-style-type: none"> ▪ It is treated asymmetrically because we are trying to overestimate the potential for impact. We chose to exaggerate potential impacts (reduce mistakes) wherever possible. ▪ Those components of uncertainty are where we need to target management. We minimize/close the gap with need for management – sample size is reflected in the monitoring plans. ▪ No further comment. We will take your thoughts and think about it.
<p><i>Partly Likely Resolved – issues with uncertainty/asymmetry. Some further discussion required.</i> Not Resolved – resilience is still an issue</p>	

MVEIRB Comment: Before the public hearing in March all parties have the opportunity to bring forward items to be added to the agenda.

Review of Agreements/Disagreements - Resolved/Unresolved Concerns/Issues and Commitments Made at the MVEIRB Technical Sessions for DeBeers Snap Lake Diamond Project

Geotechnical

<u>Legend:</u>	
Commitments:	in bold
Disagreements:	<u>underlined</u>
Likely Resolved:	<i>italicized</i>
Not resolved:	shaded
Questionable Resolution:	outlined

Day Seven – Morning Session (December 3, 2002)

LDFN Elder Comment: We are concerned about potential for contamination to Snap Lake because it is close to our community. We have raised concerns with De Beers in the past when they have visited our community. Water is especially important to keep clean because all living things need and use it. We are concerned about the reduced amount of caribou migrating around our community, since the diamond mines have been developed in the north – all of the mining companies are in the path of the caribou migration. Caribou eat the mud from the tailings ponds. We have noticed some injured (limping) unhealthy caribou – they may be sick from eating mud from the tailings ponds. We assumed the technical sessions would be the best place to bring up these issues.

DIAND Concern:	De Beers Response:
<ul style="list-style-type: none"> We have a concern with the potential for additional water through elevated moisture content of the paste backfill causing an increase in water being delivered to the north pile. There are a number of factors that may cause the temptation to increase the water content of the paste backfill. For example: 1) The paste will be abrasive and cause wear and tear on pipes and pumps; and 2) The pumping pressure/energy requirement to dewater the tailings 	<ul style="list-style-type: none"> Please present a specific question.

<p>is dependent on the moisture content.</p> <ul style="list-style-type: none"> ▪ What is the anticipated moisture content of the paste backfill? If the suggested factors lead additional water in the paste, how much larger would the ponds need to be? ▪ We recognize that you anticipate experimental start up but are you stating that there won't be more water in the system than you can handle? ▪ Please describe the anticipated geometry of the internal ponds associated in each of the main cells of the north pile. And will the ponds be static in location or will they move as the cells are constructed? ▪ The 10 000 m³ pond would require a basic shape (understanding of geometry) - surface area, depth etc. – have you looked into it? 	<ul style="list-style-type: none"> ▪ Maximum amounts of water are expected during spring and it is only during spring runoff that we'd be pumping additional water. With respect to the specifics of pumping additional water – the draw back is that there would be more water in the north pile. We have done a lot of testing of the paste backfill and we know the material well with respect to how it handles. We've got additional ponds to handle more water and we can treat the water. The pond water is pumped to the water treatment plant and the ponds would not retain greater quantities of water in the north pile itself. ▪ We want to optimize management of the system and we have a good understanding of it. We have sufficient capacity to handle the amount of water coming off the north pile. ▪ The internal ponds will be a maximum of 10 000 m³. The intention is to keep them as small as possible – there purpose will be more of a surge pond than anything in order to contain runoff. The ponds will be relatively static in plan location but they will rise as PK is deposited. ▪ Specifics will be addressed in a detailed design.
<p><i>Likely Resolved -with respect to elevated moisture content – there are no further questions. Not Resolved – are a number of related issues on water and additional water in the pond. Likely Resolved – questions related to the operations of the pond, discharge, paste and water management – satisfied. Not Resolved – there are still some uncertainties that will be addressed as they are outlined in the detailed design – there are remaining uncertainties with how the design will manage previous issues there may be implications for freezing and closure.</i></p>	

EC Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ The concern is related to valid data on water levels in Snap Lake and the level of consistency with the 50 m difference between the highest possible water level and the north pile. How many benchmarks exist around Snap Lake that allow precise measurements of lake water levels and level variances due to seasonal changes and general climate variation (wetter/dryer seasons). Have long-term variations been considered? ▪ There are benefits in making sure that data exists with respect to constructing flow lines. 	<ul style="list-style-type: none"> ▪ We presented that type of information last week and the appropriate expert is not available to provide you with further information at this time. There is a graph related to high and low water levels that was based on field measurements of Snap Lake and regional data.
<i>Likely Resolved.</i>	

YDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ As a follow up to the previous question, we are curious if in fact the Snap Lake water level has changed – believed it changed 14cm? If the levels change during the mine life naturally or due to operations, would the 50 m buffer zone remain? 	<ul style="list-style-type: none"> ▪ The 50 m buffer zone will be maintained and details will be provided on the background to the public record. ▪ I recollect the 14cm (as a maximum incorporating natural water level fluctuations) to be correct.
Not Resolved – to be resolved. De Beers committed to answer Tim’s question re the variation of levels of Snap Lake.	

DIAND Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ Are the water management practices of the PK planned around the pile being frozen or unfrozen? ▪ Why, if the pile is to be unfrozen at times, is there not a liner placed around the pile? ▪ Why has it been demonstrated in the thermal model that the ground would be frozen – when it makes no material difference with respect to the north pile design? 	<ul style="list-style-type: none"> ▪ We recognize that there will be frozen and unfrozen parts and we have designed a system to accommodate both states. ▪ We did seepage modelling of the pile in a thawed condition and determined that a liner was not needed because relatively benign water comes off the pile. ▪ If the ground is frozen there will be less seepage. Conservatively, we looked at what we could expect in the worst case, unfrozen scenario.

<ul style="list-style-type: none"> ▪ We have a concern with the potential concentration of solutes during the freezing process: do you anticipate seasonal seepage throughout the year – even during winter? ▪ If the material is well drained and therefore dry at the edge of the pile, how can it be considered frozen? ▪ The material that seeps out will effectively be stored there in winter because of the lack of water. Early in the spring and summer, this material will be ejected and hopefully collected by ditches. The concentration of dissolved materials may be very different from that of materials in spring runoff. 	<ul style="list-style-type: none"> ▪ We've tried to accommodate seepage output at a maximum - ditches will collect any seepage. We feel the pile will tend to be frozen – but there will be seasonal thaw and freeze in toe areas, especially around ditches. ▪ The material will be cold and have a small water content - that will freeze it. ▪ A presentation this afternoon will likely answer some of your questions.
<p>Not Resolved - issues if pile is not kept frozen and how much water would be need to be handled in totally unfrozen conditions – if we are dealing with frozen versus unfrozen conditions, we may be dealing with two completely different situations with respect to quantities of water to be dealt with.</p>	

MVEIRB Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ How does the deposition of the PK differ with respect to BHP in terms of water content and BHP's issues related to the deposition of PK (into the BHP PK containment area)? It is important to recognize that Snap Lake's material is very different from the BHP's. 	<ul style="list-style-type: none"> ▪ I don't know the specifics of BHP's PK deposition process. Coming from a non-paste technical person, I will describe why De Beers selected the paste. De Beers did not want to deal with slurry material because there is a larger amount of water to deal with. With a larger amount of water, the level of risk presented to the environment is increased. De Beers is aware of operational issues associated with pumping a thicker consistency, but the advantages of the paste offset its operational disadvantages.
<p>Questionably Resolved???</p>	

DIAND Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ Reference was made that the volumetric water content of full mix paste is 48% (almost half water) for 	<ul style="list-style-type: none"> ▪ For visual comparison: the paste coming out of the pipe looks like wet concrete. There is a big

<p>some other mixes it may be as low as 40%. I thought that the mechanical operation was higher. Point is - that is a lot of water going to the north pile to be managed.</p> <ul style="list-style-type: none"> ▪ We have a concern with how much of the natural water content of the paste will remain saturated in the paste once the material is free draining- if it drains out where will it go - to ponds in the north pile? 	<p>difference between paste and slurry.</p> <ul style="list-style-type: none"> ▪ De Beers recognizes that DIAND needs resolution regarding this issue. We cannot provide the answer at this time. We will have to get back to you.
<p>Not Resolved De Beers committed to get back to DIAND with respect to how much of the natural water content of paste will stay in paste and where naturally drained water will drain.</p>	

NRCan Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ Since NRCan's expert was unable to attend, the following issues regarding paste backfill were stated for the record: <i>1) Issue:</i> Insufficient information on chemical reactivity/stability and structural stability of paste backfill, under low temperature conditions. <i>Reason for Issue:</i> Long-term stability of this material in regards to metal release and structural stability should be assessed for impact on underground water quality. MMSL does not possess expertise in paste backfill – but recommends that this area be examined. <i>2) Issue:</i> Some confusion about the proposed use of PAG rock (250,000t) for underground concrete/paste backfill (3-17). Chemical reactivity or stability of PAG for use in underground concrete/paste backfill, under low temperature conditions is not provided. Is there a rationale for not disposing of the PAG rock in the base of the north pile? <i>Reason for Issue:</i> Use of acid-generating material in paste backfill may increase possibility of metal 	<ul style="list-style-type: none"> ▪ The first issue was dealt with last Tuesday. A lot of the same people from De Beers are here this week. Maybe we could have a side bar discussion.

release.	
Not Resolved – to be resolved.	

DIAND Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ We have concerns with the efficiency regarding the capture rate of ditches. How did you go about determining the 90% efficiency to the ditches and the 10% bypass to Snap Lake of water remaining in the north pile with the seepage model? ▪ How are the fractured bedrock areas of the north pile foundation being taken into consideration with respect to the efficiency of the ditches? ▪ Did you excavate test pits to look for vertical ice in addition to the drilling program? ▪ If ice wedges exist, there would be considerable potential for seepage to bypass ditches. Have you modeled larger seepage effects? ▪ I agree with the concept of studying the terrain in detail, but has De Beers considered what the effects might be on Snap Lake if a higher amount of seepage bypasses the ditch? 	<ul style="list-style-type: none"> ▪ The seepage model was used to look at flow lines and determine what was bypassing the system. ▪ In terms of ice lenses in the rock - the drilling program did not encounter significant masses of ice in the bedrock, except in bog areas. We didn't see ice in the bedrock itself. We will design a plan to handle ice wedges with respect to the ditches within the detailed engineering design if and when they exist. ▪ We didn't excavate test pits in north pile. We did use ground penetrating radar and saw very little ice if any in that area. ▪ We are proposing that an external berm will have a trench in full perimeter – we will identify ice wedges specifically at that time and the design will deal with them. ▪ We plan to apply mitigation and then identify what residual impacts may occur. With respect to mass loading, the current mass load runs through the water treatment plant where TSS are removed. We have accounted for the mass load reaching Snap Lake via seepage path or water treatment plant.
Not Resolved – questions related to discharge are satisfied but there are still some uncertainties.	

DIAND Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ What is the depth of the perimeter ditch mentioned? ▪ If the active layer is 8 m deep then the top of any ice wedges will be at least 8 m because they won't go into the active layer. The ditch at 2 m will have 6 more m to go before hitting permafrost. ▪ The point is not associated with maintenance but with an unplanned conduit for seepage. If the ice bridges are 8 m below the ground surface – they are difficult to locate. 	<ul style="list-style-type: none"> ▪ It will also be a part of the detailed engineering plan but it is planned that it extends through the soils and bedrock. ▪ I agree that if the active layer is at the top of the ice at 8 m there will be concerns regarding the impacts on the active layer. We have further testing to do. We may change the depth of the ditch depending on what happens.
Questionably Resolved.	

Day Seven – Afternoon Session (December 3, 2002)

DE BEERS ANSWERED THE FOLLOWING QUESTIONS FROM DAY FOUR:

1. With the processing of rock, is there potential for selenium release?

Answer: We have potential selenium values that have been accounted for in kinetic test work and in the water quality estimates.

2. What kind of other metals could come out of the paste?

Answer: We will expand on this today, that information is provided and accounted for in the EA in section 3.3 and appendix 9.1 in the water assessment.

3. What is the level of confidence of the TDS number used in the mine water?

This was discussed early last week in a presentation (Tuesday morning). The average TDS used for mine water is 900 mg/L or with one standard deviation: 1350 mg/L. The chlorine component was assessed at average plus one standard deviation for mine water.

DIAND Concern:

- There are concerns regarding the thermal modeling of the north pile. Most of the diagrams indicate that the pile will be below zero degrees - implicating that the pile will be frozen (security of that judgement is required).
- The quality of the pore water in the north pile is influenced by the rate of freezing of the north pile. The final destination of the pore water is an issue. The flow of heat within the pile is (presented to be) by conduction. The movement of pore water within the pile and the heat the pore water carries is not included within the presented model. There are two boundary conditions modeled, governing the freezing behaviour:
 1. Geothermal flux
 2. Heat exchange at pile surface - In the model the surface temperature is determined from the air temperature by applying a 'n' factor. The 'n' factor is a transfer function that makes air temperature a surface temperature.
- Issues with geothermal flux: The flow of heat within the pile is governed by thermal properties (heat capacity, thermal conductivity, latent heat etc.). As salt concentration varies, freezing temperatures are influenced. De Beers used a geothermal flux of 0.004 watts/m^2 which is based on a number used to make the model fit field conditions – but it was not an actual field value. In the field we can expect ten times as much heat than was used in the models. It is possible that as much as ten times more heat will reach the bottom of the pile.
- Issues with 'n' factors: On the north side of the pile, the ground temperature is cooler than on the south side of the pile due to the sun. De Beers used one 'n' factor for the whole pile (which seems reasonable at the EA phase). However, in winter (most important with respect to the freezing of the pile), 'n' factors vary during the season. The 'n' factor value for the winter of .5 (published in a paper) is presented. Critical point: in the winter the 'n' factor varies with snow depth; if the 'n' factor is one used for the whole of the winter (as a single value) you are missing out on the conditions - it does not describe conditions (ie. snow depth and latent heat trapped at the bottom of the pile). Thermal properties are most important with respect to the distribution of latent heat, which governs the speed, and proportion of soil water turning into ice. Figure 3.4.17-4 re latent heat distribution remains an issue (former IR issue). A freezing characteristic of soil was required. Further lab tests are most likely required. Detailed concerns regarding thermal properties provided in the original EA require clarification.
- Issue with Table 10.2.7: there are typos or inconsistencies in this table.

All of the above issues are resolvable.

De Beers Response:

- Can you make comments on how all of those remarks ultimately affect the EA?

DIAND Concern:

- There is not a concern with stability. The concern is with pore water management. If pore water is released from the pile to the lake after freezing in the pile, the pore water may have elevated concentrations of dissolved materials. We have insufficient information at this time to determine how high concentrations will be. Initially, I thought this was not an issue because I thought the pile would be frozen. But I am not convinced the pile will be completely frozen and I am now concerned about the release of fluids into the local area close to the pile near the lake. I agree that if we take total volume of the lake and add material from the pile, an argument could be made that the impact would be small. But if the repeated discharge from the pile is in a small part of the lake, the impact on that bit of lake could be greater than the impact on the whole lake. I don't think the model is inappropriate - just that boundary conditions of the model (as summarized above) don't have all of the information that would allow me to resolve this in my mind and I consider this an unresolved issue at this point.

De Beers Response:

- We would like to think about it and get back to you.

Not Resolved – to be resolved.

MVEIRB Comment: In EBA's arctic experience with other mine tailings, that are slightly wetter than what De Beers is expecting, EBA has observed rates of freezing that were slower than were expected from other geothermal modelling.

Also, the De Beers geothermal model calibration results, predict ground temperatures for the top 10 m below ground surface, that appear to be up to 3 Celsius Degrees colder than the measured ground temperatures. This difference between predicted and measured ground temperatures was observed for all four seasons. Therefore we would expect the De Beers geothermal model to predict higher rates of freeze-back of the North Pile than may actually occur.

With regard to the slope stability of the North Pile, it is very positive that De Beers is starting out with a strong containment shell. We would expect that any proposal to construct the shell differently than described in your presentation today, would be based on new information and the results of monitoring and instrumentation. There is much to learn from field measurements about the rate of freeze-back, as well as seepage and pore pressures associated with the North Pile construction.

In summary, the MVEIRB does not wish to raise a new issue with respect to this subject but does wish to express that we share DIAND's concerns about the accuracy of the De Beers geothermal model and rate of freeze-back predictions for the North Pile. MVEIRB Comment: Tailings tend to be wetter than what De Beers is expecting and rates of freezing are slower than expected from modeling. The calibration in the top 10 m appears to be off in comparison to measured ground temperatures in all four seasons (related to freezing rates). Concerns are shared with DIAND with respect to the thermal model and freeze-back timelines (may be longer than timeframe estimated by De

Beers). It is very positive that you are starting out with a strong containment section. Based on monitoring and instrumentation, there is much to learn about the rate of freeze-back and seepage and pore pressures associated with that (which is valuable information for De Beers). In summary there is not so much of an issue but support for DIAND concerns on the accuracy of the thermal model and rate of freeze-back.

NRCan Concern:	De Beers Response:
<ul style="list-style-type: none"> When I compare modeled air temperatures for the Snap Lake area, the simulated air temperature data is much colder than what is recorded at Snap Lake. There is up to a 5-6 degree difference in the winter months. Are you using air temperature data that are <u>relevant relative and that reflect current conditions?</u> <u>The use of inappropriate climate data could be another source of error in addition to those mentioned by DIAND and may be part of the reason the simulated ground temperatures and active layer thickness are less than observed values.</u> <u>If you are off on the air temperature data that you are using to drive the model is invalid – the errors are compounded throughout the simulation and there will be errors in the final results.</u> <u>it throws off a lot of other factors.</u> Are you taking into account that the climate may change and that there may be warmer temperatures during the life of the project? With respect to the ponds in the north pile - have you considered the effects of the removal of organic matter <u>such as warming and increases in active layer thickness</u> (seepage/ground warming beneath the pile etc.)? 	<ul style="list-style-type: none"> There is a long history of air temperature measurements in Yellowknife and Lupin and only a couple of years at Snap Lake. Our focus was to ensure the stability of the structure should temperatures continue to rise causing the pile not to freeze solid. Thermal modelling was done to understand how to operate the pile (frozen and unfrozen layers etc.). We started to look at what mitigation measures were needed to build into the system to handle those things. Yes. Concerns with increased active layer, massive ground ice relating to the stability of the pile were addressed. We addressed this within the seepage model of the EA. There should be a small impact on the pile itself. We are also already looking at the thawed layer for bypass water.
<p>Not Resolved – thermal modelling concerns on a whole are unresolved. Discussion tomorrow will continue regarding the climate data model and organic materials with respect to the permafrost regime.</p>	

DIAND Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ Acid rock drainage issues with respect to potential contingencies should kimberlite not react as predicted. Kimberlite predictions for EKATI were proven to be inaccurate. In light of the difficulty of kimberlite predictions it would be prudent to determine what contingency measures are available if the kimberlite should prove not to be predictable. Could this be undertaken? Please comment. ▪ Not proposing – but should kimberlite produce a lower pH as with EKATI, is there potential for De Beers to provide a contingency plan should it happen at Snap Lake? ▪ With respect to the iron levels of water coming off the north pile...in the context of water treatment, iron is usually a mechanism that allows arsenic to precipitate. I noticed that there is the assumption that arsenic will precipitate – is that in the absence of iron? 	<ul style="list-style-type: none"> ▪ What are you proposing? ▪ As indicated in the EA, De Beers already committed to operate the water treatment (and monitoring) until the water meets acceptable criteria. Your point is well taken that we need to ensure that we have thought through a contingency for it. At this stage, we have not worked through it. We are at the process stage and through adaptive management we will work through this. ▪ The mass for arsenic is based on very conservative values via kinetic test work. We looked at particular values and chemicals that could be used to reduce those numbers. If we see iron from kinetic test results, an increase in arsenic is expected. If we don't see iron, we don't expect to see arsenic (due to reduction).
<p>Not Resolved – my recommendation is for some sort of contingency to be thought through as a way to address the issue before it happens. <i>Likely Resolved – issues regarding iron and arsenic.</i></p>	

MVEIRB Concern:	DIAND Response:
<ul style="list-style-type: none"> ▪ What would be a reasonable contingency plan – in your opinion? 	<ul style="list-style-type: none"> ▪ The types of things that might be looked at in terms of a contingency plan are: the volume, pore water quality, the scale of impact from EKATI. There might be a need to

	<p>increase the cover (to better protect the kimberlite) or decrease the amount of pore water quantity. Scope out the worst-case scenario and develop a long-term contingency plan.</p> <ul style="list-style-type: none"> ▪ The kimberlite predictions done are absolutely standard I am just trying to cover what happened at EKATI.
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DIAND Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ Regarding the water quality model on the north pile - takes 2 m active layer into several layers, then takes kinetic test reactions to determine temperature, volume of 2 m X by mass load – the mass load was reduced by order of magnitude to get more realistic values. From my point of view, the scaling is off for temperature and grain size. ▪ Do you have a feeling for what solubility constraints you would have had if you had not reduced by order of magnitude? ▪ There are a number of layers that can take up mass loading. Recommendation: look at assumptions in models to see what the impacts may be. ▪ Please clarify the 3% cut off for granite. 	<ul style="list-style-type: none"> ▪ With respect to scaling from lab to field, the rationale for reduction was based on the experience of myself and other geochemists. Additionally we measured data from metaval runoff collected. And runoff is much lower than what was expected given mass loading rates. ▪ Solubility constraints were applied only for minerals for that could be adjusted. ▪ If the pile were thawed there would be other mechanisms that would come into play (i.e. solubility constraints.....) We didn't look at other mechanisms for mass loading because we did not want to pile assumption on assumption. If you have a mass release in pile and freezing now (assumed) to address that concern but there will be greater seepage if pile is unfrozen. We feel that loading in assessment used for seepage is appropriate. ▪ I would have to check the EA. We've stated the .3 - cut off guidelines are suggested to be .3. If it was expected to be in mineralized terrain – it is appropriate to look at values in more detail. That is not what we have here – we are looking at

<ul style="list-style-type: none"> I question the selection of .3 as a cut-off. The kinetic tests have been conducted on lower values than that. My thought is that they should be lower and looked at closer, as I do not feel that is considerably conservative. It will likely not affect your mine plans but I don't think that .3 is sufficiently justified. One of impacts that need to be addressed is concentration impact in the north arm at the north shore. There may be significant impacts on mass loading. 	<p>massive granite extrusions. We don't expect a large amount of sulphide but will continue to monitor sulphides.</p> <ul style="list-style-type: none"> We will respond to that tomorrow.
<p>Not Resolved - Rationale for reducing mass load by order of magnitude: I want to further consider response in conjunction with a number of other assumptions. .3 cut-off for granite is Not Resolved. Not Resolved - N arm re thermal model</p>	

DIAND Concern:	De Beers Response:
<ul style="list-style-type: none"> Issue of cryoconcentration is one that is not completely resolved because rate of salt rejection from ice layers depends on freezing rate. Increase in concentration depends in part upon how quickly the material freezes. Once the PK is frozen, the frozen portion is relatively clean. The unfrozen portion is enriched with expelled materials. Water quality is connected to speed at which the pile freezes – it is also linked as salt increases rate of freezing within pore water. Because it is related non-linearly it is hard to predict. The board may consider this satisfactory at the EA level, but when at the detailed level, there will be requirement for testing of this material itself. At the moment the freezing rates of the pile are not understood sufficiently for analysis. 	<ul style="list-style-type: none"> Regarding the comment that there has to be a testing of this material, at what volume do you mean?

<ul style="list-style-type: none"> ▪ Temperature on 'x' and the amount of freezing on 'y' is an arbitrary assignment. A relatively straightforward laboratory test will indicate the rate of freezing. Lab tests to determine the unfrozen water content of material and freezing test that determines rejection of salt from dissolved materials could go a long way to resolving the issue and would tell us the cryoconcentration level and the rate at which dissolved materials move away from the frost layer. ▪ Something like that in principle is reasonable, but we would like to see a hypothetical argument that if you did find this, what you would do about it. What would be implemented to satisfy us that there would not be adverse impacts? It comes back to contingencies. 	<ul style="list-style-type: none"> ▪ What is the magnitude of the issue? Is it a fair statement to say that we could deal with this in the test cell and in the first couple of years of operation to give an indication of what will happen. ▪ Liners can be a solution. Again, we want to make sure we understand issues and the magnitude of issues. Perhaps we can get together over the next couple of days so both sides fully understand the concerns so that we can deal with it as an issue.
Not Resolved – looking forward to further discussions.	

EC Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ I agree with DIAND's concerns regarding kimberlite and I expect that we will get surprises from kimberlite drainage. Thinking of the consequences is smart – the main parameters are testable and treatable due to ditches. Will any of the kimberlite used in the construction of berms be in contact with water (downstream)? If so, will collection ditches still be in place at that point? Is the ditch filled in to some degree and can that maintain acceptable water quality? What about weathering of cover? 	<ul style="list-style-type: none"> ▪ For sections of kimberlite within the constructed berms – the kimberlite will be on the outside of the berm and covered in granite (5 m layer). Ditches in the water collection system and water treatment plant will stay in place until the water quality is confirmed. There will be a long period of monitoring allowing for adjustments to the design as we go.
Likely Resolved.	

Review of Agreements/Disagreements - Resolved/Unresolved Concerns/Issues and Commitments Made at the MVEIRB Technical Sessions for DeBeers Snap Lake Diamond Project

Geotechnical, A&R and Air Quality

<u>Legend:</u>	
Commitments:	in bold
Disagreements:	<u>underlined</u>
Likely Resolved:	<i>italicized</i>
Not resolved:	shaded
Questionable Resolution:	<u>outlined</u>

Day Eight – Morning Session (December 4, 2002)

A “break out session” was held on the 3rd floor of the Scotia Centre in the De Beers office to attempt to further resolve issues. See Appendix D North Pile (Geotechnical) Breakout Session, Day 7 Evening, December 3, 2002.

NRCan Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ Why wasn't any ground penetrating radar work done to look for massive ice in eskers given that in the same types of sediments at BHP and DIAVIK – <u>masses of ice</u> were massive ice was found? Implications relate to the impacts of disturbing ground ice. ▪ <u>There are ponds that have been attributed to melting of massive ice in the esker so it</u> is likely that there are <u>massive ice masses</u> bodies out there. It will also need to be considered with respect to reclamation. ▪ It seems assumptions have been made on how thick permafrost is and on the size of taliks under the lakes. The distribution of taliks <u>and</u> in permafrost has <u>an</u> affects on the 	<ul style="list-style-type: none"> ▪ The area affected has been small in the past. Prior to any future work being done it would be prudent to commit to do a ground penetrating radar survey. We will commit to do that work before any future work is done on an esker site. ▪ _____ ▪ _____ ▪ Regional 2D modeling on the thermal regime has not been done. Some thermistors have been installed on the north lake and near Snap Lake. There is some understanding of the permafrost thickness under and near the lakes.

<p>groundwater regime as well. <u>There are numerous lakes in this region and their influence together on the ground thermal regime and distribution of permafrost and taliks has not been determined.</u> Is there no intention to do <u>2D</u> thermal modeling and determine the thickness of permafrost and how taliks may be distributed under the lakes?</p> <ul style="list-style-type: none"> ▪ How certain are you that those taliks, you <u>have determined</u> decide are there, are the only connection between the lakes and the groundwater? The implications are on the movement of groundwater from the mine workings and so forth. 	<p>The concern is the influence of all the lakes together with their taliks. We have lots of lakes and not just one lake that determine the talik size – it's the impacts of all lakes together. This has an affect on the environment as an impact for groundwater modeling.</p> <ul style="list-style-type: none"> ▪ We feel we have enough data and have made the correct decision. It is now up to others to recommend to the board that data is inadequate for whatever reason.
<p><u>Likely Resolved – for the moment. NRCan is considering DeBeers response before determining if the issue is resolved.</u></p>	

DIAND Comment: Configurations of taliks could be estimated from information provided even though they have not been delineated.

NRCan Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ De Beers is claiming that the water management pond containment does not depend on frozen conditions. On the other hand, there is a talik that the dam sits on at the south end of the water management pond and the extent of the talik (vertically and laterally) is unclear. If there is climate-warming seepage could occur in the ground beneath the dam. ▪ Is there any thawing around the water management pond itself or seepage from it due to thawing of underlying material? 	<ul style="list-style-type: none"> ▪ I can't recall the thickness of the talik offhand – it is approximately 13m. For two years there has not been any changes in thermal conditions in the area of the dam (the conditions are fairly stable). The design is reliant on bedrock. Some seepage will occur as warming of the bedrock occurs. That has been incorporated into the water quality model and used in the EA. We are not relying on the frozen condition. ▪ To my knowledge, there have been no observations of seepage. However, it is inappropriate to comment until we have re-consulted the report on the performance of the dam to date.

Likely Resolved – for the moment NRCan is considering De Beers response before determining if the issue is resolved

MVEIRB Concern:	De Beers Response:
<ul style="list-style-type: none"> Is the talik of the water management pond and Snap Lake overlapping? Based on modeling, will the two ever connect? 	<ul style="list-style-type: none"> The talik of the water management pond does not connect to the deep talik of Snap Lake. There is only a shallow connection. The dams will be raised and the pond will be maintained as low as possible for future storage requirements. We would not expect taliks to develop significantly beyond what it is now.
Questionably Resolved???	

DFO Concern:	De Beers Response:
<ul style="list-style-type: none"> Is there a distance away from large lakes (i.e. Snap Lake) where taliks are non-existent? And how does it relate in terms of the water management. 	<ul style="list-style-type: none"> The distance is specific for each lake for how far the talik extends under the shoreline. In the water management pond we know there is one talik that extends towards Snap Lake and we have accounted for this in the water quality model. The taliks are not deep enough to link up with the flow of ground water.
Questionably Resolved???	

DIAND Comment: The depth and configuration of unfrozen ground beneath the lake depends of four variables – all are charted within this study (temperature of permafrost surrounding the lake, geothermal gradient, temperature at the bottom of the lake, and width of the lake). With the four variables we can estimate the thickness and shape of the taliks. We can also determine whether they are through taliks (connect with unfrozen ground at depth) or if they are confined by permafrost. For lakes of similar size in other Canadian regions calculations indicate that the taliks beneath lakes are confined and don't connect with permafrost at depth. The calculation is very straightforward and I can provide a reference.

YDFN Concern:	DIAND Response:
<ul style="list-style-type: none"> Specifically lakes n15 and n16 are not wide enough to have a talik to connect with deep ground water (lakes about 50m wide)? Does that seem valid? 	<ul style="list-style-type: none"> Characteristically the width of the lake is the most variable condition. Temperature at the bottom of the lake does not vary much on an annual basis. Width tends to be the key for lakes of that size and where permafrost thickness is about 200m,

	- in general they are not through taliks. Be clear that the specific calculations have not been done for the lakes.
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NRCan Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ With respect to the impact of mine infrastructure... there is some organic material around the airstrip construction area. Will you be putting fill on top of the organic material? ▪ This is one area where may have high ice content – are you prepared to deal with sediment that may build-up-thaw settlement that may occur there? ▪ I understand the that thawing of permafrost surrounding the ramp and ventilation raises will not result in protects against structural impacts but have you considered thermal warming impacts with respect to seepage and possible increase of seepage (causing water flow enhancement)? ▪ With respect to the operation window of the winter road – over the next few years the traffic will be the heaviest. De Beers has calculated how many days the road will be open. A linear warming trend has been considered in the analysis. Examination of the air temperature data however indicates that the rate of warming has been greater since the 1970s. Have you taken this more recent climate-warming data-into account? ▪ Snowfall early in the season can be important – did you look at the probability of this occurring? ▪ Even the date of the first snowfall variances may be useful. 	<ul style="list-style-type: none"> ▪ At this stage, we are proposing to spread a fill across the area. ▪ Yes it will be an ongoing maintenance issue until it stabilizes. ▪ We addressed this last week during the water quality sessions. There is limited recharge in the area and the potential amount of seepage will be small when compared with that of the mine. ▪ We require that the winter road be open past 2010 and then until the end of the mine life for resupply of consumables. We have a presentation to give on the winter road in terms of analyzing weather and ice data and the capacity of the winter road. ▪ Yes, we tried, but snow depth data was too scattered.
Likely Resolved – for the moment	

DIAND Concern:	De Beers Response:
<ul style="list-style-type: none"> In terms of expected use of the road and the statistical analysis done - is there any use in doubling the limits away from the mean (i.e. 2 standard deviations from the mean – a more common confidence interval) and increasing the confidence interval to the 95%? According to the statistical analysis done, over a twenty-year period, you are dealing with 8 years of predictions being outside of the mean. 	<ul style="list-style-type: none"> We believe we pushed the statistics far enough. We have to be prepared for the possibility that we could have a limited number of operation days for the winter road (minimum 60 days). The purpose of the analysis is to determine how to optimize the use of the winter road without compromising safety. We are using the minimum of the 60-day operational window as part of risk management.
Not really a concern???	

YDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> My concerns are regarding accidental spills. Would the difference in the length of time the road was open (within the minimum to maximum range), affect the management of the traffic on the road? What is the probability of a diesel spill (i.e. truck through the ice) - one in one hundred yrs or once in the lifetime of the mine? What happens to leaks of hydraulic fluids and oils on the winter road? Are they cleaned up? 	<ul style="list-style-type: none"> Not really. There is a set traffic management practice (rules are rigid and safety based). It just means that trucks may be backed up but if necessary pre-allocated time spots are given to truckers and can be reassigned in the case of back ups. It is based on a risk assessment and we could look at the worst-case scenario – once in the lifetime of the mine. If a truck breaks through the ice they have a characteristic way breaking through and the tankers float. As long as there is a good valving system on the tanker there is no spill. You can just pump it out with another tanker. So as far as a truck going through the ice the consequences (in terms of spill) are very minor. There is rigid spill cleanup protocol on the winter road. There is a rapid response to any spill of any size. Trucks carry full clean-up gear for those types of spills. Since they occur on the ice they are easy to clean up with loaders.
Likely Resolved.	

DIAND Concern:	De Beers Response:
<ul style="list-style-type: none"> It was indicated that in the future, the road might need to withstand 12,000 loads (round trips) per winter at a maximum. If there is the minimum sixty winter road operation days, that would represent 200 round trips. If fifty, 240 round trips. Are you confident the road can handle this on any one day? 	<ul style="list-style-type: none"> I don't expect 12,000 loads in a period of 60 days could be done – but there is no way of knowing that at this point. Safety comes first and foremost.
<p>Questionably Resolved – there is concern that when a large amount of money is at stake – there may be pressure put on the road operators.</p>	

YDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> Our concern is related to the impacts (structural disturbance, degradation of permafrost, reduced caribou pathway use) of removal of granular material from the eskers. What quantity of granular material is removed and what methods are associated with removal? 	<ul style="list-style-type: none"> The area of the esker to be impacted is about three times the size of this room. The eskers in that area are not continuous. The idea is not to cut the esker off, but to remove the granular material and then recontour it. Where esker material was removed last, there were caribou tracks over the recontoured surface. Material is removed from the top and the side in order to maintain the structural stability of the esker. We don't intend to disturb the ground ice.
<p>Questionably Resolved – there may be further discussions on wildlife use of the eskers and how best to remove the material – a site visit will likely be required.</p>	

NRCAN Concern:	De Beers Response:
<ul style="list-style-type: none"> Since NRCAN's expert was unable to attend, the following issue regarding 'lime treatment plant for metal removal' was stated for the record: <i>1) Issue:</i> Water treatment process of filtration for removal of suspended solids appears adequate. Proponent also noted that addition of high-density sludge treatment plant might be necessary depending on metal concentration of effluent. Lime treatment produces hydroxide 	<ul style="list-style-type: none"> It is unfortunate that NRCAN has been attending the hearings in a hit and miss fashion – we could have addressed these issues last week.

<p>sludge that will require disposal site or co disposal option. No mention of management of generated lime sludge. In addition, leachability of generated sludge should be examined for long-term storage.</p> <p><i>Reason for Issue:</i> Large amounts of lime sludge may be generated depending on the metal and suspended solids in effluent. Disposal and stability of sludges should be considered in planning steps.</p> <ul style="list-style-type: none">▪ Our expert is not in the office for about three weeks due to other commitments.	
Not Resolved – to be resolved.	

Day Eight – Afternoon Session (December 4, 2002)

MVEIRB Concern:	De Beers Response:
<ul style="list-style-type: none"> With respect to production rates: it was previously stated (IR) that De Beers was re-examining the host rock dilution at 20%. If dilution increases, the amount of the waste rock to north pile would be greater. 	<ul style="list-style-type: none"> The mining method is constantly being refined. At the time of the EA we were forecasting 23 million tonnes of rock being processed (at 20% dilution). Now we are forecasting 26 million tonnes of rock being processed (at close to 30% dilution). Capacity within the north pile is situated such that the impact on surrounding landforms (due to the increased height) will not be great. The resource is not defined 100% and the north pile design can extend to the west boundary and there is room for perimeter expansion in the north pile.
<p><i>Likely Resolved. This concern is considered "Resolved" in the opinion of Gauthier Lee on behalf of the MVEIRB.</i></p>	

De Beers Comment: Point of clarification from earlier discussions - the peat from the airstrip will be excavated and made available (stockpiled) for use in reclamation.

LDFN Comment:

Don't mistake our silence for consent with what is being discussed here. We are interested in the information presented at these sessions but we need presentations to be made to our members within our language without the complex technical words. In order for us to understand things need to be explained with more time and compared to things we understand.

LDFN Elder Comment/Concern:

- The caribou and fish in the area that I grew up provided us with food and clothing – the caribou were always plentiful and fat and the fish were healthy – we are concerned that this is not the case anymore.
- In the last three years, caribou are very different from what I was used to. The caribou are suffering. We have found puss inside the meat and stomach. We cannot eat those caribou so we leave them for the scavengers and just skin them.
- Since the mining has started we have observed skinny, starving and injured caribou.
- We are concerned about the caribou licking the sand and eating the mud and drinking the water around contaminated mining areas.
- We are concerned about caribou not migrating into our area in the future.

- If we had the choice to have diamonds or caribou – we would choose the caribou. We live by the caribou.

YDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ Does De Beers have plans to put any measures in place to prevent the introduction of non-indigenous plant species? BHP had a problem with invasive species being introduced via seeds coming in on the boots of workers from the south. ▪ Are there time periods allotted for monitoring various aspects of mine after mine closure? ▪ Will the northeast lake be monitored for water and sediment quality generations down the road – to monitor the possible contaminants released into the ground water from the closed mine shafts? 	<ul style="list-style-type: none"> ▪ That is a new issue and we haven't worked through it. But with respect to exotic species overall, we are not planning to use them in our revegetation plans. ▪ We plan to make the most of the 20 odd years we have to experiment with the starter cell area. Our approach is going to be to let nature take its course as much as possible. We want to look for opportunities where we can assist (not drive) natural encroachment of the native species. We will have a good handle on the monitoring timeframes but the details are yet to be developed - not to come for a few years yet.
<i>Invasive species – Likely Resolved. Monitoring timeframes – Not Resolved.</i>	

DFO Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ What do you expect to see after reclamation is 'completed'? ▪ How do you know when these goals are achieved? And how will success be measured? 	<ul style="list-style-type: none"> ▪ We will work to establish a landscape profile that will promote the succession of local species. We will monitor the species for response. The success of reclamation is beyond plant growth - to the processes occurring. ▪ The monitoring programs will cover: % cover, species richness, and soil processes. For heath boulder – the % cover of vegetation on average is only 20%. Therefore

	<p>we are not expecting a lush cover in the short term or the long term. We will have achieved our goal when we see natural ecosystem processes regained.</p>
<i>Likely Resolved – re goals.</i>	

MVEIRB Concern:	De Beers Response:
<ul style="list-style-type: none"> What are the plans or goals with respect to reclamation and revegetation of the north pile? 	<ul style="list-style-type: none"> We will start with covering it with granite. Our emphasis is on the reintroduction of natural species and to see how well material scraped up locally helps the natural species and processes return and recolonize naturally. We plan to watch and see what happens and identify where we can assist the process along. The starter cell of the north pile will be the first to be contoured and capped and used to understand the process.
<i>Likely Resolved – for the moment.</i>	

DIAND Concern:	De Beers Response:
<ul style="list-style-type: none"> Are there any other effects other than aesthetic or ecological that you plan to achieve through revegetation specifically on the north pile? The presentation of revegetation has been exclusively in terms of species and their abundance and distribution. My concerns are that the long-term manipulation of the surface of the pile may have implications on the internal nature of the pile (i.e. thermal conditions). Will the reclamation program consider the long-term conditions within the structure? Thermal conditions within the north pile are not understood or determined in a way that DIAND considers reliable at this time, therefore long term projections of pile freezing is still an issue that is 	<ul style="list-style-type: none"> No.

unresolved.	
Not Resolved. We'll take a look at the information and decide if it is resolved.	

DIAND Concern:	De Beers Response:
<ul style="list-style-type: none"> Did De Beers examine options for alternative use of the site or consult with first nations with respect to alternative site use? Does the revegetation plan include the reestablishment of fungi species? Has De Beers examined the use of processed kimberlite for sustaining productivity? 	<ul style="list-style-type: none"> No. There have been informal discussions but there is plenty of time in the next twenty years to have those discussions. Yes, and their relationships. No. We are aware of kimberlite being used as a growth medium but not in relation to indigenous species.
Questionably Resolved???	

MVEIRB QUESTION TO GNWT:

Question: Is the GNWT responsible for providing seed banks to proponents who wish to revegetate?

Answer: We do not have a policy on provision of seeds, but we do supply seedlings for some areas and are more than happy to share these with De Beers.

De Beers Comment: De Beers considers that natural process of invasion more closely approximates a genetic source of biodiversity.

YDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> With BHP's revegetation program they identified various heavy metals that were being absorbed by certain species of vegetation (grass spp. and carrot spp.). Has De Beers looked at those types of contaminants that may be subject to plant uptake and the animals that may be affected by eating those types of plants? That issue is not totally resolved in my mind. What is the link between the vegetation and the effects on the wildlife eating it? 	<ul style="list-style-type: none"> Contaminant uptake in plants has not been looked at. There are critical differences with BHP revegetation (kimberlite growth medium versus granite growth medium) and the Snap Lake revegetation of the north pile (the largest area for reclamation). The north pile will be capped with .5m of quarried granite and revegetation will occur on top of that through natural processes with natural species. We will think more about the linkage.

<ul style="list-style-type: none"> What will remain within the mineshafts after closure? We are concerned about the diesel oil or other fumes (due to spills) locked into shafts. Will there be any contained items placed in the shafts? If you are attempting to revegetate the Snap Lake area in the future - is there a need for seed collection in the Snap Lake area? We have done work looking at arsenic content of berries –is this something that we could perhaps work on together? 	<ul style="list-style-type: none"> Minor spills will be managed and cleaned up throughout the mining operation. Anything stored underground will not be hydrocarbon based or hazardous. All equipment/machinery will be washed down of oil, etc. and if that can't be done, it will be taken off site. Only inert materials would be broken down and stored. That is a good example of community involvement with respect to monitoring and would be very useful.
<p>Questionably Resolved – would like to see more work done on the uptake of contaminants as a part of the reclamation plan. Materials left in the mineshafts will be of continuing concern.</p>	

DFO Concern:	De Beers Response:
<ul style="list-style-type: none"> What are De Beers plans to see that drainage patterns are reclaimed adequately? 	<ul style="list-style-type: none"> We have not considered this specifically as of yet.
<p>Not Resolved.</p>	

DIAND Concern:	De Beers Response:
<ul style="list-style-type: none"> There are long term closure issues with best managing PAG materials of the north pile with respect to the variety of rates of freezing and the 2 m lift. There may be implications if materials don't freeze back (if there is rapid freezeback there is not much of a source). Please clarify with respect to the 	<ul style="list-style-type: none"> I agree that with respect to thermal modelling that some assumptions would have to be revisited if there are significant changes in the north pile. With respect to placement of metavolcanic rock – the strategy for encapsulation is sound in any case (freeze-back or no freeze-back). Reason being that metavolcanic material, if acid generating, will have to react with the oxygen in the atmosphere and by encapsulation we are eliminating that option. Also, by placing it in a starter cell at higher elevation contact with water will be minimized. On the surface in the health boulder

<p>revegetation implied for the starter cell – we previously thought the north pile would be a mound of granite boulders about 10-25 cm in diameter.</p> <ul style="list-style-type: none"> ▪ If the pile were to thaw - do any of your seepage models show the material remaining in saturated state, or would the water level drop and avoid this? ▪ If we were to envision material in starter cell, several meters deep, the saturated zone of the water table - would the uppermost layer of metavolcanics be situated to be excluded? ▪ In that case, wouldn't it be better to have it in the east cell versus the starter cell, which is a higher elevation? ▪ With respect to arguments made as to how best to manage PAG materials, further consideration needs to be given to a different approach if the situation is that things are not rapidly freezing (base of the pile may be problematic). Thermal conditions of the north pile are not well understood and any assumptions that are made on them remain unresolved. 	<p>complex, there is some vegetation. So instead of burying it we will salvage it and place it on top of the pile. Through time there will be some organic accumulation in the rocks that will encourage localized growth.</p> <ul style="list-style-type: none"> ▪ We haven't calculated the level of saturation above the static surface. ▪ We are working towards that but we have not done the detailed layout of the berms. The idea is to get it to the lowest part so it will be saturated. ▪ We want to contain it as soon as possible and start the reclamation.
Not Resolved.	

MVEIRB Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ How has wildlife habitat been considered in the reclamation plan? ▪ Are certain areas that will be disturbed more important to particular wildlife habitat - do you have certain targets for that? 	<ul style="list-style-type: none"> ▪ We want to promote the natural vegetation community. The assumption is that with the success of providing a similar vegetation community we will be providing similar habitat. ▪ No.

<ul style="list-style-type: none"> With respect to soil handling and pre planning. Has De Beers located areas where soil will be salvaged? Are there targeted areas to which to move this soil? Are there details worked out as to how you will stock pile material? Will it be targeted towards establishing certain communities that will have a more difficult time establishing on their own? 	<ul style="list-style-type: none"> The details have not been worked out but we plan to be opportunistic with respect to the collection of soil (i.e. from the north pile and the airstrip). No.
Questionably Resolved – got answers – hopes De Beers will consider information.	

DIAND Concern:	De Beers Response:
<ul style="list-style-type: none"> How did De Beers arrive at the A&R goals presented today? How certain is De Beers in what they presented today as a final goal for A&R? What information is available on alternatives, cost considerations etc. factored into the decision making process? Is information available on alternatives examined? Note: the purpose of the hearing according to the Terms of Reference with respect to options for closure is to provide clear direction on rationale of alternatives, costs, details, methods and materials etc. we are not convinced this has been arrived at to date. 	<ul style="list-style-type: none"> We covered the basic concepts and a number of things will be factored in and most likely refined a number of times over the life of the mine. We plan to have more details on the closure and reclamation (most detailed engineering plans are on hold) plan within the next couple of months and the plan presented today is subject to change. We haven't looked at a lot of alternatives. We selected the best practices based on the experience of the consultants involved in the project.
Questionably Resolved??? Need to further assess information available.	

DIAND Concern:	De Beers Response:
<ul style="list-style-type: none"> With respect to natural contaminant collectors in the area – has there been any sampling of plants, lichen or fungi? If not would it be 	<ul style="list-style-type: none"> Further consideration will be given to this. We have taken samples of lichens for metals, and some vegetation and soil testing has been

possible for De Beers to do some biochemical analysis?	used in the wildlife health assessment for baseline work. With respect to selectively planting or encouraging natural contaminant collectors – that could be problematic.
Questionably Resolved???	

EC Concern:	De Beers Response:
<ul style="list-style-type: none"> We appreciate that work done has been approached with a conservative nature, but modeling is only as good as the information you are putting into the models. Information to determine the emission values is limited (not to the fault of the proponent). There is a fair bit of uncertainty covered with conservativeness. You showed PM 10 levels estimates are near exceedance and PM 2.5 level estimates are approaching exceeding levels. We encourage De Beers to be proactive and set up monitoring to ensure that standards of PM 2.5 and PM 10 will not be exceeded. Is De Beers planning on putting that into their monitoring network? 	<ul style="list-style-type: none"> De Beers is committed to operating within existing standards and laws. We are also committed to conducting consultations and developing resulting monitoring programs with the goal of confirming impact predictions. Basically you have highlighted your interest and we will consider the suggestion.
Not Resolved – remains to be seen if De Beers will monitor PM 10 and PM 2.5.	

GNWT Concern:	De Beers Response:
<ul style="list-style-type: none"> With respect to the impacts of emissions, De Beers mentioned that certain emission impact estimates were conservative. What was this based on? What is the expected fuel consumption of the mine? Have impacts of hydrocarbon based emissions deposits over the land (soil with respect to effects on wildlife) been considered? Will air quality be monitored and tracked? Will there be fairly comprehensive emissions tracking to ensure not 	<ul style="list-style-type: none"> When the preliminary estimated fuel emissions were considered all inputs of fuel usage were considered. Since then, the engineering team has been optimizing energy efficiency and as an aspect of the environmental management system fuel consumption is tracked to confirm estimates. Fuel use is estimated to be 45 million litres used each year. The EA incorporated wildlife, vegetation and health sections re:

exceeding emissions in models?	emissions impacts. Monitoring will take place to confirm impact predictions. Mon programs will be developed in conjunction with consultation. Emissions presented in the EA are consistent with the project design on which the application is based.
<i>Likely Resolved – most concerns were addressed in presentations and satisfied for now, as De Beers will be tracking emissions.</i>	

LDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> 45 million litres - how many truckloads is that? Has De Beers looked at other sources of energy? 	<ul style="list-style-type: none"> Possibly 1125 truck trips to the mine each year for fuel. Yes. We have looked at solar, and wind power alternatives etc. (they are listed in the EA).
<i>Likely Resolved.</i>	

YDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> How will De Beers deal with amount of dust that will be raised during construction of north pile, camp, airstrip, and haul roads etc.? Has the build up of the amount of exhaust from mining equipment been taken into consideration? Is there going to be some kind of sensors at vents and monitoring of emissions underground? Ensure that there are monitoring programs for aquatics, dust effects on plant life, and water quality on water bodies that are within the main deposition zones. 	<ul style="list-style-type: none"> De Beers intends to suppress and minimize dust from roadways and mine activities in and around the site. This mine is different from large open pit mines, there is limited truck haul, and a covered conveyor belt to minimize the dust transports ore. Yes the underground mine vent system changes air and keeps it clean – air quality guidelines are in place and will be met. The main measurements underground are taken by hand but there it is also sensed. We are really concerned where our people will be working. There will be sensors underground and at intakes and exhausts and various emissions will be measured also.
<i>Likely Resolved.</i>	

Review of Agreements/Disagreements - Resolved/Unresolved Concerns/Issues and Commitments Made at the MVEIRB Technical Sessions for DeBeers Snap Lake Diamond Project

Socio-economic

<u>Legend:</u>	
Commitments:	in bold
Disagreements:	<u>underlined</u>
Likely Resolved:	<i>italicized</i>
Not resolved:	shaded
Questionable Resolution:	outlined

Day Nine – Morning Session (December 5, 2002)

De Beers Comment: The audit is complete and we have been recommended for registration under ISO 14001.

MVEIRB Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ Are you going to address the hard issues (ie. people moving away from their home communities – family problems) at any point or are we done? 	<ul style="list-style-type: none"> ▪ Something that should be considered is that we are looking at a project with a 25-year or more life. We have been told by people of the communities to date that they have had both positive and negative experiences. We can identify issues as we go and put impact management measures in place as we go. We are only in the position to identify a need for communications and partnerships in order to identify how some things can be collectively addressed. We must recognize that there are a lot of players with respect to facing the challenges and impacts – De Beers, individuals, communities and governments. Different communities have different expectations and make different

<ul style="list-style-type: none"> I recognize the comments but it still seems very conditional. I'll let it go for the moment. 	<p>decisions – those are up to the community and subject to change with time. We could put a harder edge to it, but we would rather be approximately correct than precisely wrong.</p>
<p>In Gartner Lee's opinion (on behalf of the MVEIRB), it is believed that the issue is "Not Resolved" Likely Resolved <i>stated not to be an issue.</i></p>	

GNWT (David) Concern:	De Beers Response:
<ul style="list-style-type: none"> Accepting this difficulty in making strongly accurate predictions, is it fair to expect that over the 25-year life span, De Beers will enhance its monitoring activities to address impacts at an early stage? 	<ul style="list-style-type: none"> Monitoring is the key to recognizing changes occurring and there will have to be effective monitoring at the community level with community, government and corporate involvement.
<p>Not Resolved – to be resolved – perhaps this afternoon.</p>	

GNWT (Andy) Concern:	De Beers Response:
<ul style="list-style-type: none"> Regarding the impact prediction slide - is there a relative weighting to those impact predictions? 	<ul style="list-style-type: none"> There is no weighting amongst those elements, however recent experience in communities adds value to the analysis.
<p>Questionably Resolved??? Will need to think more about it.</p>	

Roy Ellis Concern:	De Beers Response:
<ul style="list-style-type: none"> <u>Issue 1:</u> The lack of detailed level of impacts – positive and negative. Details are needed to quantify impacts on the territory. <ul style="list-style-type: none"> No specific commitments made to employment targets or northern business targets – no commitment to percentages De Beers worked out in economic models. Statements of goals to employ as many northerners as possible – those are goals not targets. Will De Beers commit to their best-estimated target? <u>Issue 2:</u> The lack of the estimate of GDP for NWT and Canada over the 	<ul style="list-style-type: none"> <u>Issue 1:</u> Detailed impact predictions: <ul style="list-style-type: none"> Employment targets – we will not commit to specific employment targets – our goal is to employ as many northerners as possible. We feel it will be more appropriate to address mitigation (further details will follow in this afternoon's presentation). We are committed to working in the north and spending as much as we can in the north. <u>Issue 2:</u> GDP estimate: <ul style="list-style-type: none"> What has been provided in the

<p>life of the project.</p> <ul style="list-style-type: none"> ▪ Needed to evaluate the northern wealth created by the project. ▪ All the base information is given - why has it not been provided? ▪ <u>Issue 3</u>: Technical issue on model - concern that employment numbers presented as a result of the model (not committed to) and induced impacts on labour income were inconsistent. The methodology doesn't explain those numbers. ▪ <u>Issue 4</u>: What is your best estimate of royalty/tax impacts (depending on the value of the project it may need to be readjusted)? What is the value of the project? 	<p>EA is the portion that will accrue to NWT. Company profit information will not be provided for proprietary reasons.</p> <ul style="list-style-type: none"> ▪ <u>Issue 3</u>: Inconsistent induced impacts: will be handled as mentioned for issue 1 – largely connected. ▪ <u>Issue 4</u>: Tax revisions: De Beers committed to revise and produce a new set of tax estimates.
<p><i>Likely Resolved – tax revisions (Issue 4). Not Resolved – Issue 1, 2 or 3.</i></p>	

Note: In a follow-up conversation later in the day – it was noted that two of the above outstanding issues were resolved.

MVEIRB Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ At what point will the traditions/lifestyles of the communities begin to change irreversibly (thresholds?) due to the impacts of economic issues and employment with the mines? Is De Beers going to consider the irreversibility of impacts in primary and perhaps catchment communities? ▪ I don't think thresholds are as complex as we think. Thresholds may be applied as precautionary principles (i.e. project can go ahead provided it does not cross the identified thresholds). 	<ul style="list-style-type: none"> ▪ The issue of thresholds in a social context is very difficult to establish. <ul style="list-style-type: none"> ▪ people are adaptable and thresholds change over time ▪ many variables are involved (i.e. government policies, regional mines, cultural pursuits...) ▪ We plan to provide support for traditional and cultural pursuits. We have recognized issues and plan to monitor impacts and anticipate problems and apply adaptive management as required on a community basis.
<p>Not Resolved - irreversibility of impacts in small communities – still an issue.</p>	

YDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ With respect to the 'primary source data slide' De Beers mentioned that 	<ul style="list-style-type: none"> ▪ In our visits to communities we talked with various key

<p>information was obtained from in person interviews, communities, government and NGOs. Are the survey/interview results available (names of people involved and questions asked etc.)? Who did you talk to (elders, community people, community committees)? Is the information available in the EA?</p> <ul style="list-style-type: none"> ▪ If you took the elders to the site to look at the caribou movement during migration, if you took the opportunity to ask one or two questions was that considered part of consultation? ▪ Did you meet with the YDFN chief in council and explain the project? 	<p>administrative people, elders, chief in council, etc. In some cases we went to communities more than once. We also had access to reports from other consulting firm visits. We do have lists of dates, places and people. We conducted site visits to Snap Lake for elders. Interviews were semi-structured – we asked a few questions on issues/concerns or past experiences and then let the discussion go in the direction people wanted to take it. In the EA issues and concerns were listed by primary community and summarized for all the communities.</p> <ul style="list-style-type: none"> ▪ If concerns were expressed, we recorded them as feedback. Feedback is different than information representative of the community or traditional knowledge (TK). TK is restricted to documents in existence or through the likes of the Lutsel'Ke TK assessment of the Snap Lake project. ▪ There were a number of meetings both formal and informal. We made many attempts to have formal presentations with chief in council and communities but we were not able to do this - assumed due to capacity problems within the community.
<p>Not Resolved – would like to see the information.</p>	

NSMA Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ <u>Issue 1:</u> We provided De Beers with NSMA baseline data and do not feel it was incorporated adequately. Will you commit to developing more extensive baseline data for predictions? ▪ <u>Issue 2:</u> Communities seem to be assessed at an equal level and 	<ul style="list-style-type: none"> ▪ <u>Issue 1 and 2:</u> At this point in the EA, De Beers will not consider renewing the SEIA regarding baseline data nor will we consider attributing impacts to individual communities. Our current approach to the SEIA realizes the range of responses among (individuals,

<p>lumped together. We have stated that all communities are not addressed on an equal level on the socio-economic front - the Metis have been treated differently. We have not had access to the same benefits regarding land base access and employment opportunities with the government. Will De Beers commit to assessing each community individually in the impact predictions?</p> <ul style="list-style-type: none"> ▪ Issue 3: With respect to the triangulation method in the SEIA - there was not a complete record of consultation and the concerns the public raised did not seem to be addressed. We want to ensure the adequacy with respect to the level of consultation. ▪ Issue 4: With respect to methodology, is there any attempt to factor in uncertainties related to production rates? There is nothing legislated to control the intensity or use of development (production rate). Will De Beers commit to a production rate for the life of the mine? If not, how will De Beers commit to address the socio-economic impacts related to this change. 	<p>families, communities etc.). It is our intent (outlined in the EA) to ensure mitigation and monitoring measures are appropriate for communities, including the NSMA. Community specifics will be incorporated into mitigation and monitoring.</p> <ul style="list-style-type: none"> ▪ Issue 3: Triangulation is a technique used when dealing with qualitative information. As the information is analyzed, you periodically check back to make sure that you are being consistent with what people have said. It is used as a way of validating information and we are confident that we have applied it correctly. ▪ Issue 4: Production rate is engineered and designed and we feel it is appropriate based on the type of deposit and dimension. I think our projected production rate (3000) may be at the upper end. If we were to significantly increase production (perhaps double) due to increased reserves we would make necessary applications to the MVLWB in order to make that increase.
<p>Not Resolved – we'll consider information but all remain issues and will likely be brought forward further.</p>	

GNWT (David) Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ Were the consultations conducted, just with primary communities or catchment communities also? ▪ I am concerned with the level of consultation with respect to 	<ul style="list-style-type: none"> ▪ Within the SEIA, our consultations were with primary communities. ▪ Some of those questions will be answered in presentations this

employment and training with government officers. Who have you consulted with? Have any assumptions been made (i.e. referenced partners).	afternoon. We have not made any assumptions – we have simply put forward suggested mitigation measures – to address education and skills concerns within communities.
Not Resolved – issues with thoroughness of consultation - may be addressed this afternoon in presentations.	

GNWT (Chaim) Concern:	De Beers Response:
<ul style="list-style-type: none"> The Snap Lake project is a segment of a larger picture for De Beers...if it was necessary to reduce overall production – what might be the effects on the Snap Lake project and how would De Beers go about it (i.e. consultation)? Would you consider including a review of De Beers' experiences learned (could be utilized for impact predictions) with other communities around the world into the EA (conclusions to draw from etc.)? 	<ul style="list-style-type: none"> Economic conditions change – diamonds are subject to consumer demand. If prices change and result in a need for production rate changes – those are economic decisions (not requiring consultation). De Beers has invested a great deal of money in the Snap Lake deposit and will invest money in production. Reduced productivity is highly unlikely but if necessary the upside is a longer lasting mine. No. We are very proud of De Beers' reputation in South Africa. The Terms of Reference restricted us to dealing with Canadian operations in a Canadian context. There are also a lot of cultural differences between here and South Africa.
Likely Resolved – re: production rates. Not Resolved – hope De Beers will take notice of the benefit of including sources of past experiences since it is within the Terms of Reference.	

MVEIRB Comment: The above question is within the Terms of Reference. Section 2.14 of Terms of Reference 'shall explain its experience...do remit to similar operations outside Canada'....

NSMA Comment: There is also clear indication in legislation that other countries references are relevant.

De Beers Comment: The Terms of Reference discuss the idea of similar regulatory scenarios. There are fundamental differences between regulatory agencies in Canada and South Africa. We are limited with respect to providing culturally appropriate SEIA. We are using experience gained in South Africa where we see that these pieces can fit in the

NWT context. We have met the Terms of Reference with respect to providing background.

NSMA Comment: As an aboriginal organization, we do not support the comment that a decision about production changes (up or down) would not require consultation (being an economic decision). There is an ongoing duty to consult aboriginal organizations as active decisions are made on a day-to-day basis.

CARC Concern:	De Beers Response:
<ul style="list-style-type: none"> With respect to commitments for training, employment, business and purchasing - has De Beers made these kinds of commitments in other parts of the world where they operate, and if they have, how are they formalized? De Beers states that they are not prepared to make any commitments as part of the EA, for training, employment, business and purchasing. Is De Beers prepared to make those types of commitments as part of socio-economic agreements or IBAs? That is how it worked in the past with BHP and Diavik – a process was also set out for monitoring and how commitments would be met. Do you think socio-economic agreements are a mandatory management measure? I'd like the GNWT to respond to the last question also. 	<ul style="list-style-type: none"> This would more appropriately be answered this afternoon. Some of the issues are covered in socio-economic agreements and IBAs with local communities. We have begun these discussions with GNWT and aboriginal groups and will finalize shortly.
Not Resolved – to be resolved may be this afternoon.	

YDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> With respect to the EA section on corporate history and De Beers' relationship with aboriginal communities. I was looking for local and aboriginal concerns with De Beers' operations and how De Beers was able/unable to mitigate concerns. People of Kimberley in South Africa were disappointed that their young people were left out of 	<ul style="list-style-type: none"> As it relates to mitigation - we will address it this afternoon after the presentations.

the processing etc. and did not receive economic benefits. Do you agree with the assessment and do you see it as a weakness?	
Not Resolved – may be resolved this afternoon.	

Day Nine – Afternoon Session (December 5, 2002)

LDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> Is there any documentations/details of the meetings and or consultations in Lutsel'Ke? We wrote letters addressing our concerns with your consultation process and requested that action be taken. You need to be speaking to the right people in order to hear the concerns on behalf of the community. We are not happy with the extent of socio-economic consultation to date. 	<ul style="list-style-type: none"> We visited on January 21 and 22, 2002 (stated names and place).
Questionably Resolved???	

Department of Health and Social Services Concern:	De Beers Response:
<ul style="list-style-type: none"> Please clarify what the Wellness and Support Program entails. Please comment on the Drug and Alcohol Awareness Program on site and in primary communities. 	<ul style="list-style-type: none"> All we know at this point is that we have a responsibility in that area - it would require expert input of other organizations. Essentially the answer is the same as above. The guide is our start to identify a number of areas that we want to start partnering up to develop. Will be looking to your department for advice on what we will put in place.
Not Resolved – to be resolved as programs become more detailed in future.	

CARC Concern:	De Beers Response: (including an MVEIRB comment)
<ul style="list-style-type: none"> Procedural issue: Has the HRD program been submitted to the Board and public for review? Issue identified – intervenors here have not had the opportunity to 	<ul style="list-style-type: none"> No. The geoscience forum was first release of the information. It will be circulated to intervenors and submitted to the public registry. <u>MVEIRB</u>; we did have a pre-hearing conference I was unaware

<p>review the material presented.</p> <ul style="list-style-type: none"> ▪ What is the relationship of this to the EA (plus supplemental information)? ▪ What are the costs to implement measures outlined here and how much are you prepared to contribute to these? ▪ Can you commit to providing the Board with costs for these? If this is to mitigate socio-economic impacts of the project, the Board should know costs involved. What is De Beers prepared to commit financially to these programs? ▪ Does De Beers contemplate setting up a social fund in the NWT? Can you provide any details? 	<p>of the documents presented. Options if attendees are concerned: 1) technical paper or 2) bring concern to hearing in March.</p> <ul style="list-style-type: none"> ▪ This HRD document is a guide we've developed. The EA outlines 14 areas of impact management; the HRD program was identified as covering off those areas. There are no other parts to the document. There is a document from Genesis to De Beers (that relates to the document) but it is not public, nor is it complete. It costs out initiatives and suggests partner negotiations and funding arrangements. The work is only just starting. This is a guide and a first step. ▪ Not all of the costs have been worked out. Some of the costs for the programs we plan to initiate next year have been costed out. With partners, we can make the program a lot better. We will initiate programs whether government assists or not. The discussions we've already had show excitement from the government. Money is not the problem usually, it is getting programs going and getting long-term commitments. ▪ We will take it into consideration. We have not identified a total financial commitment. We need to discuss and develop partnerships and get an idea of how much some more of the programs cost. We will go from there. ▪ Yes, a similar fund will be contemplated once we have operating mines in Canada. Not a lot of thought has been put into details. It would be something similar to South Africa in terms of money and programs supported.
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Questionably Resolved???

YDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> Issues with consultation: The 11 times that De Beers consulted with our community people (N'Dilo and Dettah) through site visits and community/individual visits is not enough. What would be ideal would be for De Beers to come to the community and meet with the several groups/committees that represent our people (we have more than just Chief and Council and the Land and Environment Committee). The others within our community would benefit from learning more about the Snap Lake project. We did not have the chance to review the HRD program guide. We consider the consultation incomplete. 	<ul style="list-style-type: none"> You are right. We would like to have had many more meetings with the YDFN. We made many requests to meet with the community and we can only assume that due to capacity problems the community has not been able to accommodate us. We did have a good meeting with the Land and Environment Committee two weeks ago. As suggested, we welcome the opportunity for a future meeting – involving those other mentioned committees representing the YDFN.
Questionably Resolved???	

GNWT (David) Concern:	De Beers Response:
<ul style="list-style-type: none"> With respect to the De Beers fund in South Africa (\$3 million) - what percentage of gross annual resource take does this represent? Is it a per capita investment? Please list the projects you undertake. Is the per capita rate in South Africa reflective of what it would here, or is De Beers contemplating a different rate? Will the company be implementing on the same dividend basis? 	<ul style="list-style-type: none"> The public listing is the De Beers internationally accepted investment to social funds. The per capita can be calculated but we don't have it at the moment. We would most likely be aiming at the same investment levels as elsewhere with the same order of magnitude related to profits.
Questionably Resolved???	

NSMA Concern:	De Beers Response:
<ul style="list-style-type: none"> With respect to partnerships, priorities should be going to the aboriginal groups. The success 	<ul style="list-style-type: none"> Aboriginal groups are priority. Tracking of project success and social impacts within the

<p>rates of aboriginal benefits or negative impacts haven't been measured well to date. We would like to see some sort of process where aboriginal groups is a priority and track individual groups as to whether there is a success rate and if it is incorporated into the training programs.</p> <ul style="list-style-type: none"> ▪ When and how did De Beers meetings take place with the NSMA? ▪ In the SEIA, impacts specific to the NSMA communities have not been studied. How will mitigative measures be able to address the specific community concerns? We don't believe monitoring with respect to the effects on different aboriginal groups and impacts predicted was done adequately. 	<p>communities is addressed in the draft. The government is working on a better information system to assist the process of tracking. With work on a better information system we would hope to be able to relay specific successes.</p> <ul style="list-style-type: none"> ▪ Several meetings were held with the NSMA (listed some) at various times to develop impact measures etc. Information identified in terms of issues and concerns were sent back for comments and feedback. This information can be retrieved from records. ▪ We do have a section in the EA that addresses each community separately. The information was summarized and assembled to assess impacts. We also reviewed additional literature. Concerns from the communities are fairly consistent. But there are some differences in each community, which is to be expected. Our approach with impact management measures was to determine what De Beers could do to mitigate the effects and we discussed this in communities with individuals.
Questionably Resolved???	

YDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ Is De Beers prepared to enter into agreement for specific targets for employment levels for aboriginals in north? ▪ Is De Beers prepared to commit to a secondary development of a diamond industry in the north? 	<ul style="list-style-type: none"> ▪ We don't want to enter into specific targets for employment but that may be discussed later in socio-economic agreements and IBAs. ▪ I am not sure what you are looking for in terms of commitment. We certainly support GNWT efforts in building the secondary diamond industry and our efforts will focus on socio-economic discussions over the next few months.

<ul style="list-style-type: none"> ▪ Have community programs discussed the issue compensation for lost opportunities with respect to hunting & fishing due to the mine? ▪ What repercussions or consequences does De Beers anticipate if they cannot meet their targets (hiring targets, education, etc.)? ▪ In the absence of specific targets - you are asking us to believe/trust you and accept this without any sanction on what might be reasonable under the circumstances? 	<ul style="list-style-type: none"> ▪ No, I would suggest that would be considered if brought up as part of IBA negotiations. ▪ In both cases, in the EA we commit to the target to hire as many aboriginals as possible. ▪ The key point is that we have made a lot of commitments over last eight days. The EA has a table of corporate commitments. We're adding to that table as we go through the process and checking them off as they are completed. Until the water license, land use permits, etc. under the regulatory process or the environmental agreements/socio-economic agreements under the non-regulatory process are complete, and all you are left with is our word.
Questionably Resolved???	

MVEIRB Comment: Point of clarity with respect to mitigative agreements: until agreements are on the public record they do not exist in the Board's mind.

YDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ How will the elders benefit from the mine? We are concerned about our less educated youth getting into trouble with the courts etc. We would like to start an elders justice committee to get the troubled youth back on track in the education system and employed. That is something that the elders can do. ▪ Will you continue diamond mining until the resource is depleted? If you find more diamonds will you extend the life of the mine? 	<ul style="list-style-type: none"> ▪ The elders can benefit through the impact benefit agreements (IBAs). There are other areas we should look at and we can have those discussions. ▪ De Beers does carry out exploration work and if we find more diamonds we would like to build more mines in the NWT. In terms of the Snap Lake resource there is 20-25 years worth of mining, but it would be great if the resource expands and if

	we can extend the life of the mine we will.
Questionably Resolved???	

MVEIRB Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ The Human Resources Development (HRD) plan presented is impressive. Considering that it is a big undertaking and would need partnerships (governments, communities, other developers and stakeholders) in order to be implemented, how much of it could be done in the next five and ten years (keeping in mind the resource is projected to last twenty)? What kind of planning process will be set in place to match the vision? ▪ My suggestion is that a year from now a progress report (the first of periodic progress reports) be made (not necessarily by De Beers) to the public and the board identifying accomplishments and obstacles (i.e. partnership access to funding) with respect to the emerging partnership in the NWT and the HRD plan. Any comments? ▪ The expressions of wanting to partner are good and well worth hearing – plan A could be great, but that route will be challenging as a contingency I'd like to see a plan B. 	<ul style="list-style-type: none"> ▪ Our approach is holistic (including partners) and it will take a year just to get the structure and partners in place. The initial approach is to talk to the partners (government, communities, etc.) we have identified. From there the process will be built upon starting with the essentials (i.e. incentives to stay in school, training etc.). ▪ It is a big undertaking. Diavik is doing similar work. We see Diavik and BHP as key partners. It won't be just De Beers leading the way. ▪ Good advice.
<p>In Gartner Lee's opinion (on behalf of the MVEIRB), it is believed that the issue is "Not Resolved" Questionably Resolved???</p>	

Department of Health and Social Services Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ We welcome the opportunity to work in partnership on a number of the initiatives in the HRD program. The EA speaks to the role of medical services on site – will it be available 24 hours a day, seven days a week? Will there be available backup? Please define the 	<ul style="list-style-type: none"> ▪ Medical services will be available 24-7 on site. Regarding medical personnel staying on site, our understanding is that the Stanton medivac policy is that medivac already has medical personnel on the flight to return with the injured person. Physician assistants are

<p>EA term 'physician assistant'.</p> <ul style="list-style-type: none"> There is legislation around the practicing of the need to perform medical services and the position of 'physician assistant' is not recognized. 	<p>contracted through medic north – I am not sure what their qualifications are but that can be followed up.</p> <ul style="list-style-type: none"> Thank you we will follow that up.
Not Resolved – to be resolved.	

NSMA Concern:	De Beers Response:
<ul style="list-style-type: none"> With respect to timeline and possible steps in initiating the HRD program. Would De Beers commit to provide a work plan tied into the mine plan re: wildlife monitoring and mitigative programs – could you incorporate the stages of these program initiatives into that? 	<ul style="list-style-type: none"> Maybe.
Questionably Resolved???	

LDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> We have not had the opportunity to review the HRD program guide either. With respect to partnerships Lutsel'Ke believes in partnerships – but they can be costly and ineffective in the end. We've heard a lot about the possibility of a socio-economic agreement, in kind partnerships, implementation funding, and the not yet identified potential partnerships. There are other ways this can be done. northern Saskatchewan communities have different funding arrangements. What kind of partnerships with government has been established so far and how have they worked? How will things be worked out to ensure that we have a plan and have a measure for success? 	<ul style="list-style-type: none"> We've also heard good things about northern Saskatchewan and we'd be interested to hear how funding works. The partnerships established to date (listed) have worked out very well (partners listed). With respect to the evaluation of partnerships – one of the elements that Genesis is developing is a tracking process so that we can annually come up with something that will measure the programs from year to year.
Questionably Resolved???	

Review of Agreements/Disagreements - Resolved/Unresolved Concerns/Issues and Commitments Made at the MVEIRB Technical Sessions for DeBeers Snap Lake Diamond Project

Socio-economic and Cultural

<u>Legend:</u>	
Commitments:	in bold
Disagreements:	<u>underlined</u>
Likely Resolved:	<i>italicized</i>
Not resolved:	shaded
Questionable Resolution:	outlined

Day Ten (December 10, 2002)

GNWT Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ Following up on concerns regarding production rates from yesterday, due to various sources (stock market/investment documents-disclosing production plans for each mine) it appears that De Beers goal is to increase production rates from 3000 to 4500 to 6000 per day. It was mentioned yesterday that consultation would take place if the production rate was significantly increased (i.e. double) – Has a false statement been made? ▪ For the production of Snap Lake diamonds, will De Beers set up a sorting facility in Yellowknife or will it be sorted elsewhere (i.e. London) and how will sorting take place? What would be the time span and the number of local NWT jobs associated with the facility? 	<ul style="list-style-type: none"> ▪ The information included in the referred document represents the best projection that could be made at any point in time and was also based on information inherited from the previous company. The implication is that the mine is designed for a production rate of 3000 and we need to first demonstrate that we can mine at that rate. The entire operations of the mine are designed presently for the 3000 mine capacity. ▪ The intention is to sort NWT product in Yellowknife. The degree to which this is done will meet the requirements of the Canadian regulations. The details of sorting compared to elsewhere would be decided based on the available skill levels once we are up and running. Final sorting would be done in London but a greater part of the sorting would be done in

<ul style="list-style-type: none"> What are the limitations associated with branded diamonds – why would you forego the premiums that your competitors receive (re: mixing of diamonds from various productions)? 	<p>the NWT. At the production level of 1.5 million carats per annum, we do not see a huge number of sorters required (also will be dependant on skill levels) – maybe six employees would be required. Sorting productions from other companies have not yet been considered but may be an option.</p> <ul style="list-style-type: none"> With respect to the limitations around branding - there are already large number of specifically Canadian branded goods being promoted. Based on our current marketing research, De Beers' interpretation is that the market would be stressed by additional Canadian brands. Snap Lake production would be on the market in 4 – 5 years from now and we intend to keep an eye on the market. Where necessary we hope to be able to provide an identified supply of Snap (exclusively Canadian) goods for local supply.
<p><i>Likely Resolved - 3000 being the correct production rate, the question is resolved.</i> <i>Likely Resolved – De Beers' statement of supplying Snap Lake goods to the NWT as Canadian goods is very significant and resolves the NWT's issue of lost value due to mixing.</i></p>	

LDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> With respect to the agreement that De Beers had with BHP to market their Canadian diamonds - were those diamonds from De Beers and would they be mixed? With respect to the EA decision making process - should the socio-economic agreements and/or the impact benefit agreements (IBAs) be in place before the Board makes a decision, considering that the Board will make their decisions based only on information on the 	<ul style="list-style-type: none"> The previous agreement that De Beers had with BHP was for marketing 35% of production – the agreement was not renewed. During mixing production – diamond do get mixed with other diamonds from other parts of world. With respect to the Board waiting for agreement information before making a decision - if these are an important part of mitigation, the Board may choose to wait until the information is on the public registry. The case would have to be made to the Board. There are

public registry?	provisions for providing confidential agreements to the Board between two parties - that will not be disclosed but will be taken into account.
Questionably Resolved???	

CARC Concern:	De Beers Response:
<ul style="list-style-type: none"> With respect to the commitment for De Beers to be prepared to sell Canadian rough diamonds to organisations in Yellowknife for cutting and polishing. Are you prepared to go further to say that those diamonds will be from the NWT? Is De Beers negotiating directly with the GNWT and/or aboriginal organisations – or is it all rolled together somehow? 	<ul style="list-style-type: none"> To clarify, the diamonds we are discussing are NWT diamonds. The details of the rough diamond supply will be negotiated as part of the socio-economic agreements to be made. The agreements are separate agreements that are negotiated separately. The GNWT and aboriginal groups for the socio-economic agreements and aboriginal groups on IBAs or participation agreements.
Likely Resolved.	

GNWT Concern:	De Beers Response:
<ul style="list-style-type: none"> We place a high priority on sustaining aboriginal languages. Considering that the primary languages of the communities are aboriginal, what mitigation measures will de Beers take at site (re: language programs, signage etc.) to ensure the preservation of the aboriginal languages? Regarding funding to existing programs – be specific - would this be once a year, once every five years, have you thought this through? 	<ul style="list-style-type: none"> We realize this is a difficult issue dear to the hearts of aboriginal communities. Safety is a major concern – the mines act stipulates that the language of operation is English. There will be language programs (on site, software, in communities...) to assist people with language training. We will be looking at many things (signage, design of accommodation, incorporating traditional foods in menus etc.). We will do our best to make aboriginal people most comfortable – this is their home. We haven't thought it through, it will be discussed with respect to funding made available as a part of negotiations (socio-economic agreements/IBAs), it will be tied to

	operating costs etc. We would like to look at all partnership opportunities.
Questionably Resolved???	

MVEIRB Comment: In Gartner Lee's opinion (on behalf of the MVEIRB), it is believed that the above issue is "Not Resolved". Many of the mitigation commitments remain to be negotiated/completed and the timing of these measures is post project.

YDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> With respect to partnerships - has De Beers considered partnering with other mining companies to do joint employee assistance programs for families (of primary and secondary communities) working at the mines? 	<ul style="list-style-type: none"> Certainly, so far we have talked a lot about government partnerships but we hope to have partners within the private sector – other diamond mines, contractors in town. The apprenticeship program is a good partnership example – we'd like to reach out to as many people as we can.
Likely Resolved.	

GNWT Concern:	De Beers Response:
<ul style="list-style-type: none"> On the apprenticeship side, how many people on site are you expecting to be trades people? You are committing to 10 apprenticeships. The trade's ratio in NWT is usually 1:1 but in some circumstances, it is increased. Would De Beers commit to not just 10 on site, but a minimum of 10 and a maximum of what the level would permit – not just committing to the minimum of 10? There is limited capacity at the moment, but if we move beyond that we would have more apprenticeships. I am hearing that your intention is to maximize the number of apprenticeship and journeymen (very positive). Will De Beers require other contractors on site to hire apprentices from NWT? My concern is that contractors actively solicit northern apprentices. 	<ul style="list-style-type: none"> We have that number - but will have to get back to you later today. Without having the exact number of apprenticeship/journeyman, we cannot make a commitment. Certainly our desire is to increase this number over time. The trades training program will be helpful towards helping individuals develop their math and science skills to get into the apprenticeship program. We need a balance between the trades program, apprenticeship program and total number of journeymen. The number of contractors on site is yet to be determined. We commit in the EA that the contractors will be subject to De Beers' policies and commitments and we made the commitment to maximize aboriginal employment.

<ul style="list-style-type: none"> ▪ The GNWT apprenticeship program gives wage subsidies to employers who take apprenticeships on for the first three years at varying degrees. The demand on this is draining. Will De Beers be looking for wage subsidies from the GNWT or will they solely use company resources? ▪ Noted positions in training program: 10 apprenticeships, 20 underground, and another 10 positions for people within three years of production. Is the one to three year phase necessary? Would you be willing to start with the construction phase so that upon opening you are maxed out on the positions committed to? ▪ How will De Beers plan on reporting northern employees? Suggested example: by community, by priority group and job categories, and by number of people recruited within the NWT versus external and reported by place of residence. One concern is that people get hired as an NWT resident and move to Edmonton later – without it being indicated/changed in the statistics. It is very important to us as a territory (department under funded) to be able to account for all persons (and we need your help). Where we find people migrating we would like to have that information in order to consider mitigation measures to give them the incentive to stay here. ▪ We have been having problems with identifying northerners. 	<ul style="list-style-type: none"> ▪ We see wage subsidies similar to other partnerships and are looking to take full advantage of them and other programs that are out there. ▪ It is our intent to try and maximize aboriginal and northern employment throughout construction and bring on apprenticeships at the earliest stage possible. The reason we said three years for meeting commitments, was that the document was written over a year ago and it was difficult to foresee what impact Diavik would have on the labour force. I'd like to point out that these are minimums not maximums. ▪ Is the health card not a sufficient verification of residency? ▪ This is an area we can look at and discuss – we have an obligation to employee confidentiality but there may be a better system that we can
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<ul style="list-style-type: none"> ▪ Will De Beers be putting corporate initiatives in place to encourage relocation to the north? ▪ Will De Beers fly people in from other communities further away to fulfill the mines desire to hire more northerners? ▪ Will you consider an access site south of the lake? ▪ Was the \$3 million spread over other countries than South Africa, or is it solely to that country? ▪ Is De Beers able to make the commitment to protect employee pensions – even in the event of mismanagement/change of ownership etc.? 	<p>work out together.</p> <ul style="list-style-type: none"> ▪ We already have a northern benefits package that is added to salaries along with a relocation package. ▪ Our primary focus is on those identified. We have also identified catchments for business opportunities. ▪ Yes we would. Hay River is an obvious location with a major airport. We won't make a commitment, but it makes logical sense. We are committed to maximize the number of northerners and providing transport could be key. However the emphasis will focus on the primary communities. ▪ The reference was solely for South Africa. ▪ That situation has not been anticipated. We are unsure as to what kind of means would be necessary for that kind of protection. We would like to hear more on how that can be arranged and we commit to incorporate it.
Likely Resolved.	

CARC Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ With respect to the De Beers fund mentioned yesterday - De Beers committed to set up a similar fund for Canada – would De Beers commit to one specific for the NWT? ▪ Please provide as much detail as possible on how the fund would be set up, contribution amount etc. before these proceedings close. ▪ What sort of consultation process 	<ul style="list-style-type: none"> ▪ Yes, we have a central national fund managed on a localized basis. It would include representatives from a wide range of impacted communities and stakeholders who have autonomy on how the funds are dispersed. ▪ We will make the commitment to provide something in writing well in advance of the hearings in March. ▪ The consultation would take place

<p>does De Beers envision with respect to consulting with stakeholders regarding a significant production rate increase?</p> <ul style="list-style-type: none"> ▪ Is De Beers prepared to make a similar commitment if there is a reduction in the rate of production? ▪ Is De Beers willing to provide whatever costs are available regarding mitigation measure programs (eg. community education facilities, adult learning centres etc.) It is an issue in terms of their success? What is the source of inability to set clear targets re: training etc. (is it due to problems with data, predictions, uncertainty around partnerships)? ▪ Issue regarding commitments re: hiring etc...turned into issue of timing, commitments forming in socio-economic agreements, the Board should make their decision once commitments have been made...unresolved. 	<p>in a number of identified forums (eg. regulatory process, socio-economic agreements, IBAs etc.).</p> <ul style="list-style-type: none"> ▪ It would be a required consultation as part of relationships with aboriginal groups – likely not under the regulatory process, but dependent on the order of magnitude of changes we are talking about. ▪ Partnerships aren't in place, plans are progressive over a five-year period, and we don't see the benefit at this point in providing costing. One example: infrastructure costs re adult learning centres have been costed out. They are planned entirely at De Beers' expense – but we will be looking for long term commitments for staffing the facilities. ▪ De Beers would like to have as many agreements signed as soon as possible. De Beers must work with the timelines of other parties. Our preference is to also to see socio-economic agreements in place before a final decision on the EA.
<p>Not Resolved- last concern. <i>Previous concerns – Likely Resolved.</i></p>	

GNWT Comment: The GNWT would like to see the socio-economic agreements in place before the Board decision is handed down.

YDFN Concern:

In addition to De Beers, this information has been put together for the GNWT wildlife people and government departments with fiduciary obligations to consult with the YDFN. The information was tabled and a hard copy was passed along to De Beers. The following questions/concerns were raised:

- Regarding areas of importance to the YDFN potentially affected by the Snap Lake project – how thorough was the consultation process with respect to seeking traditional trapping, fishing and hunting areas? Specified information indicated that traps, trap lines were not identified within the regional study area and in excess of 70 consultations occurred over a period of 3 years. Of the 70, there were 6 in Dettah, 2 in Ndilo and four site visits? People currently trapping have not confirmed the trapping information that De Beers has presented.
- We want a commitment from De Beers to clarify their information presented (might work well in information gathering session). It should be noted that the consultation process is incomplete and it is important for the company to hear the concerns regarding trap lines and traditionally used areas.
- A more appropriate term for consultation is 'information gathering session'.
- We are uneasy with the information that since no harvesting is currently taking place that there will be little impact to aboriginal communities. This limits our people for future years.
- De Beers did not identify wolf-hunting trails as BHP did.
- There should be acknowledged compensation/unlimited access to traditional routes to get to local trap areas (i.e. Mackay Lake).
- We want to deal with impact compensation to trappers on an organization basis – through the YDFN representative bodies, not on an individual basis. Future loss must be avoided where possible, and when lost compensated for.
- We have a camp located south of Mackay that was not recognized.
- There is a serious problem with the assumption that there is no link between the mine and areas of special significance for aboriginal people. There was not significant consultation with the YDFN. We want De Beers to approach us for a discussion before the public hearings in March. We want to resolve issues to our satisfaction before signing off on the EA.
- In light of all this, 100 yrs from now, who will tell the children that the animals, land and water in the area are safe?
- Session on caribou – maybe we can get a date set before the end of this session – maybe January?
- If there are further economic discussions regarding diamonds in the north – we'd like to be part of those.
- Is De Beers to give charity to the homeless (food, shelter etc.)?

De Beers Response:

- The De Beers fund would be designed to address issues (for all communities of the north) you've touched on. It is a social investment managed by a local committee who influences how the money is spent. We would like to see the funds go towards the charities you choose.
We are interested working to further resolve issues to provide information in a format appropriate to your elders and Land and Environment Committee. We look forward to meetings (with the YDFN and at the caribou session) and we are happy to discuss a date to continue the process.

MVEIRB Comment: Sections in the EA estimate that all existing and proposed mines in the Slave Geological Province will close within a twenty-year time period. There is an imbalance with respect to the expected life of the mine with the impacts (eg. migration from small to large communities) of disruption to the communities. Sustainable development in that perspective, relates to sustaining mine development and activities with respect to the type of economies being developed.

NSMA Concern:	De Beers Response:
<ul style="list-style-type: none"> ▪ Considering mine design in looking at cumulative effects, did De Beers take into account that many of the mines would be closing within a few years of each other? 	<ul style="list-style-type: none"> ▪ As a part of setting production rates, we did consider 1) the life of the project and 2) the mine life. Also we are continuing exploration, which is an indication that we want to see it go longer but the reality is that this is the extent of the deposit, as we know it to date.
Questionably Resolved???	

MVEIRB Comment: In Gartner Lee's opinion (on behalf of the MVEIRB), it is believed that the above issue is "Not Resolved".

YDFN Concern:

Presentation - YDFN – Health and Social Development:

- It is really important for young people to understand the programs we have available. We have programs to deal with social problems and to help people change their lifestyle and to turn to elders for their support and guidance. We have an on-the-land program to help the youth of today maintain their cultural heritage.
- We would like to deliver programs and facilitate workshops to the mine employees. In order to do this we need more staff and funding resources.
- Our counselling services are offered in aboriginal languages – it is really important for our people to feel comfortable and be able to express themselves. The families of the people working at the mines (children left behind during the 2 weeks out) are very much affected also. We work on both ends – with the employees and the families to help ease the transition of the coming and going.
- Services are provided also to people that are not band members, but are living within the community.
- Our programs are expanding and have been going since 1994. We undertake all kinds of work – one-to-one visits, presentations (ie. National Addictions Awareness Week) whatever we do in one community we do in the others. Things are slowly changing for the better. Some people with prior addictions have overcome them.

De Beers Comment: The Employee Assistance Program offers a counselling service using a southern counselling company. **We will reconsider that - realizing that it was culturally insensitive.**

MVEIRB Concern:

- How does De Beers intend to deal with the mitigation of cumulative effects beyond the life of the mine (other mines, government cooperation etc.)?
- I don't expect more than that as an answer at the moment but twenty-

De Beers Response:

- We have put emphasis on impact management measures and partnering emphasis, which will increase transferable skills so that employees can find other employment. During the 25yrs, we can develop a range of other activities that can benefit from mining but not be solely geared towards mining. The government also plays a role in encouraging exploration in the NWT and to put forward incentives to ensure future mine development. The Slave Geological Province has a great mineral resource.

five years is not very long and the issue should be dealt with.	
Questionably Resolved???	

MVEIRB Concern:	De Beers Response:
<ul style="list-style-type: none"> What kind of information was used to identify CE for other projects (ie. data sources, effects analysis), what kind of information did you collect and what kind of reports did you draw on, etc.? Did any of these data effects talk to residual effects of these projects? We will follow-up in a side bar. 	<ul style="list-style-type: none"> We included things like the Wildlife Effects Monitoring report, the West Kitikmeot Slave Study and had access to a list of issues identified for by communities and government for Ekati and Diavik, similar to issues for De Beers. That is what the cumulative effects analysis is – the focus is on residual impacts. We will send the side bar information back to the attendees.
Not Resolved – to be resolved in a side bar.	

Roy Ellis Concern:	De Beers Response:
<ul style="list-style-type: none"> There is an issue with lack of quantitative analysis related to employment. You collected baseline data and linkages of overlap, have done extensive work re the labour force and other work has been done since on the labour market, you have the impact of Diavik and BHP quantified but you haven't done a quantitative analysis re baseline and added projects. We would have expected to see quantitative analysis with respect to things like housing capacity – is the labour market able to absorb the employment impact. Will you undertake this type of quantitative analysis (and use the information to show the effects of impacts)? I'm not sure there is an answer in that comment (there are a lot of things GNWT doesn't do). You are saying that the baseline is inadequate to do the analysis. You have the information - I'm asking you to take next step and do the 	<ul style="list-style-type: none"> The cumulative effects of the Snap Lake project have been completed as presented in the EA (table 5.3-2 and appendix 5.2). With respect to presenting cumulative effects of the project itself – it has been done (employment, GDP, and income level). Government or individuals cannot do this on their own. We've determined skill levels and the numbers required. Much of the data crucial to this planning is in the hands of private companies. There is a significant gap in available information. Partnerships to collect that data and build a dataset that all employers could draw upon - encouraging. The assessment done is reasonable considering existing information. We predicted that the market could take in the entire labour force. De Beers' position is that it is not so for this project and they have come up with more intense impact management measures and

analysis.	programs to counteract this. I am unsure of the value of further analysis.
Not Resolved – will likely follow up.	

NSMA Concern:	GNWT/De Beers Response:
<ul style="list-style-type: none"> The issue is with cumulative impacts with respect to increased populations and potential employees (increased pressure on resources by development). The government is the largest employer in the NWT and the majority of their employees are based in Yellowknife. The diamond mines employees are also likely to be mostly based in Yellowknife. This is not always a benefit – the government should decentralize. Will the government commit to monitoring local resources for impacts? Will De Beers commit to addressing physical cumulative effects and commit to prioritizing the benefits to aboriginal people (ie: hiring, etc.)? 	<ul style="list-style-type: none"> <u>De Beers:</u> Yesterday we presented a range of items that we feel go some ways toward dealing with negative impacts. I'm not sure De Beers can solve all of the impacts – it takes a collective approach. <u>GNWT:</u> We will take make sure that the appropriate people are aware of your question and respond at a later time.
Not Resolved with GNWT (will wait for written response).	

MVEIRB Concern:	De Beers Response:
<ul style="list-style-type: none"> In reviewing chapter 12 of the EA, most of the mitigation measures were those for which De Beers has control. There is no control over effects of other projects. Left with a series of residual effects – where identified cumulative effects were not able to bring to zero. Nibbling effects were created here – what about a collaborative approach to mitigation (other mines, government)? Going beyond monitoring – it is just collecting information and does not address impacts – should be followed up through land use 	<ul style="list-style-type: none"> Mitigation is focused on minimizing effects that may contribute to CE on a regional basis. We are interested with cooperating in achieving this through future initiatives (whether it be through the proposed single regional monitoring agency etc.). There are a lot of things that should be happening that are beyond a single proponent – we state that CE monitoring is no substitute for land use planning. That was exactly our point. Very interested to hear RWED's approach (re harvesting levels etc.). (RWED stated initiatives being

planning.	taken).
In Gartner's opinion (on behalf of the MVEIRB), it is believed that the issue is "Not Resolved" Questionably Resolved???	

Chris O'Brien Comment: De Beers asked how it all feeds back into harvesting levels, but how does all this feed back into determining limit to development? Developing thresholds and limits to development have been discussed but it is other wise just an open-ended process and we keep having more mines. What are the limits on what the natural environment can take? This knowledge has to feed back in so we can say 'this is too much'. We are not at that stage yet, but should be working towards this.

YDFN Concern:	De Beers Response:
<ul style="list-style-type: none"> Given the YDFN concern regarding landfills at closure of mines – is it possible to receive a list of materials that will be put underground/landfilled at closure. 	<ul style="list-style-type: none"> Yes.
<i>Likely Resolved.</i>	

Closing Comments/Concerns Dene Nation
<ul style="list-style-type: none"> Building upon issues raised regarding consultation, we will look into whether consultations have been sufficient. We are not anti-development but we want to ensure that the occurring development is good development.

Closing Comments/Concerns LDFN
<ul style="list-style-type: none"> We are not against development as long as it does not damage the land. We are open to sharing our land but not at our expense. The LDFN has a spiritual connection with the Lockhart River to Lady of the Falls - water is of enormous concern for the elders of Lutsel K'e. Support for development will cease to exist if the water will become contaminated. Duty to consult is an important issue for us. We need to be able to understand in order to make good decisions. Our language is important and we need to maintain it so that future generations can enjoy our culture, the land and carry on the activities of our forefathers. The mining is important today but it will not always be here. People moving from other areas to work at the mine will leave when the mine closes but our people that live here will remain and will have to deal with any remainder effects forever.

Closing Comments/Concerns CARC

- It is commendable that the Board obtained independent technical experts – this is an important step and should be continued.
- Due to a capacity issue, CARC was only able to attend a couple of days of the sessions – not due to lack of interest. It would benefit the technical sessions to provide participant funding – the Board denied CARC's request and we hope that the Board in the next budget will request participant funding from DIAND.
- We would have found it much more useful had the technical reports been completed prior to the technical sessions – that way it would help to understand where the areas of disagreement may be.
- The Board may have only scheduled 5 days for hearings – even though these pre-hearing sessions are meant to fine-tune the concerns – that amount of time would be tight.

Closing Comments/Concerns NSMA

- The large amount of information provided only a few days before the start of the technical sessions added a great deal of strain to our aboriginal organization. Requests for the Boards reasons for rejecting particular information requests is outstanding and has been put off for a while; this puts parties at a disadvantage and causes the process to be less effective.
- The structure of this process, it is not at all sensitive to needs of aboriginal communities. There is not an adequate amount of time to get community feedback. Prior planning needs take place to allow time for consultation at the community level. We hope that flexibility is added to this process and work plan and deadlines meet the needs of aboriginal communities.
- We support the concern of only having 5 days for the hearing. We do not anticipate that concerns can be concluded within 5 days given time constraints.