

DE BEERS CANADA INC.
GAHCHO KUÉ PROJECT

FINAL WRITTEN ARGUMENT
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I. INTRODUCTION

1. Pursuant to the Hearing Directive issued by the Mackenzie Valley Environmental Impact Review Board (“MVEIRB” or “Review Board”) Gahcho Kué Panel (the “Panel”) on December 10, 2012, this submission constitutes the final written argument of De Beers Canada Inc. (“De Beers”) as it pertains to the Gahcho Kué Project (the “Project”).
2. In this final argument, De Beers does not respond to every recommendation proposed by each party. De Beers already comprehensively responded to these recommendations in its responses to technical reports.¹ However, Aboriginal Affairs and Northern Development Canada (“AANDC”) has, in its closing argument, revised one of its recommendations and reiterated another. These are specifically addressed beginning at paragraph VI(D).
3. The Project is a joint venture between De Beers and Mountain Province Diamonds, and De Beers is the operator of the Project.

II. TRADITIONAL KNOWLEDGE

4. De Beers funded six traditional knowledge studies with the Deninu Kué First Nation (“DKFN”), Lutsel K’e Dene First Nation (“LKDFN”), North Slave Métis Alliance, Northwest Territory Métis Nation, Tłı̨chǫ Government and Yellowknives Dene First Nation (“YKDFN”). The Tłı̨chǫ Government and DKFN submitted their studies to both De Beers and the MVEIRB. The LKDFN submitted their study to the MVEIRB, and on December 24, 2012, the MVEIRB provided a copy of the LKDFN study to De

¹ See Public Registry Documents 340, 341, 342, 344, 345, 346, 347, 348, 353, 354, and 361.

Beers. The submitted studies have informed the Project design and monitoring and management plans. De Beers has listened to the communities and an example of this is removing the raised lake compensation options from the No-Net-Loss Plan and undertaking additional validation regarding potential connections between the Project and the Hoarfrost River. Information from traditional knowledge studies will also be used to inform monitoring and management plans, including closure plans, during the licensing and permitting phase of the Project.

III. LEGAL ISSUES

(A) Review Board Jurisdiction and Mandate

5. The Review Board is established under the *Mackenzie Valley Resources Management Act* (the “Act”).² The Act gives the Review Board jurisdiction for environmental assessment and environmental impact review of developments in the Mackenzie Valley.³ The Mackenzie Valley is defined as part of the Northwest Territories (“NWT”) excluding the Inuvialuit Settlement Region, the Nunavut Settlement Area and Wood Buffalo National Park of Canada.⁴
6. The mandate of the Review Board is to ensure that the environmental impact of the Project as proposed by De Beers receives careful consideration taking into account the concerns of Aboriginal people and the general public.⁵ The guiding principles of

² *Mackenzie Valley Resources Management Act*, S.C. 1998, c. 25 [the “Act”], at s. 132(1).

³ *Ibid.* at s. 114.

⁴ *Ibid.* at s. 2.

⁵ *Ibid.* at s. 114.

the Review Board state that its processes should be carried out in a timely and expeditious manner having regard to:

(a) the protection of the environment from the significant adverse impacts of proposed developments;

(b) the protection of the social, cultural and economic well-being of residents and communities in the Mackenzie Valley; and

(c) the importance of conservation to the well-being and way of life of the aboriginal peoples of Canada to whom section 35 of the *Constitution Act, 1982* applies and who use an area of the Mackenzie Valley.⁶

7. When conducting an environmental impact review, pursuant to Sections 117(2) and (3) of the Act, the Panel must consider the following factors:

- the impact of the development on the environment, including the impact of malfunctions or accidents that may occur in connection with the development and any cumulative impact that is likely to result from the development in combination with other developments;
- the significance of any such impact;
- any comments submitted by members of the public in accordance with the regulations or the rules of practice and procedure of the Review Board;
- where the development is likely to have a significant adverse impact on the environment the need for mitigative or remedial measures;

⁶ *Ibid.* at s. 115.

- the purpose of the development;
 - alternative means, if any, of carrying out the development that are technically and economically feasible, and the impact on the environment of such alternative means;
 - the need for any follow-up program and the requirements of such a program;
 - the capacity of any renewable resources that are likely to be significantly affected by the development to meet existing and future needs; and
 - any other matter, such as the need for the development and any available alternatives to it, that the Review Board or any responsible minister, after consulting the Review Board, determines to be relevant.⁷
8. De Beers submits that all of the above factors have been comprehensively addressed in the Environmental Impact Statement and through the environmental impact review process.
9. The Panel's remaining task is to issue a report containing a summary of the public comments and the Panel's recommendations.⁸ The Panel's decision will contain a recommendation for the Minister of AANDC ("Minister"). For the reasons contained herein, De Beers submits that the Panel should recommend that the Minister approve the Project as proposed by De Beers.⁹

⁷ *Ibid.* at s. 117(2)-(3).

⁸ *Ibid.* at s. 134.

⁹ *Ibid.* at s. 134(2).

(B) Review Board Measures

10. According to the Act, the Panel may recommend mitigative or remedial measures where the development is likely to have a significant adverse environmental impact.¹⁰ The Review Board's *Environmental Assessment Guidelines* state that the Panel's report must clearly state any necessary conditions and why they are required.¹¹ After a final decision is made by the Minister, regulatory authorities will implement the recommendations to the extent of their authority.¹² The *Environmental Assessment Guidelines* state that any proposed measures should include a clear explanation of why they are required and fall within the jurisdiction of the implementing regulatory authority. As set out beginning at Section (C) below, De Beers submits that the existing regulatory authorities in the NWT have the requisite jurisdiction to impose any environmental mitigation measures that the Panel may recommend.
11. De Beers has consulted with Aboriginal groups to develop the proposed mitigation measures. This included evaluations of confidence levels in the effectiveness of those measures as required by the Terms of Reference ("TOR") for its Environmental Impact Statement.¹³
12. In summary, De Beers submits that measures recommended by the Panel should:
- fall within the TOR established for the Project;

¹⁰ *Ibid.* at s. 117(2)(d).

¹¹ Mackenzie Valley Environmental Impact Review Board, *Environmental Impact Assessment Guidelines* (March 2004) ["*Guidelines*"], at page 44.

¹² *Guidelines*, at page 45.

¹³ Mackenzie Valley Environmental Impact Review Board, *Terms of Reference for the Gahcho Kué Project Environmental Impact Statement* (5 October 2007), at pages 15 and 20.

- relate to a specific and significant adverse environmental impact of the Project pursuant to Section 117(2) of the Act;
- contain a clear explanation of why the measure is required;
- fit within the jurisdiction of the implementing regulatory agency; and
- respond to consultation with affected/impacted Aboriginal groups on the proposed measure.

(C) No Regulatory Gap

13. During the hearing for the Project, Panel Counsel questioned the Government of the Northwest Territories (“GNWT”) on its position that a regulatory gap existed in the field of air management between the GNWT and the federal government. Panel Counsel asked why the GNWT didn’t simply introduce air management legislation.¹⁴
14. Mr. Gavin More, on behalf of the GNWT, said that while incinerators fall under the jurisdiction of the Mackenzie Valley Land and Water Board (“MVLWB”), the federal regulator (AANDC) does not fulfill air management programs typically covered by provinces and therefore there is a regulatory gap. Mr. More went on to say that this may change after devolution of additional powers from the federal government to the GNWT.¹⁵

¹⁴ Mackenzie Valley Environmental Impact and Review Panel, Gahcho Kué Project Environmental Impact Hearing, Transcript, December 7, 2012, at page 216.

¹⁵ Mackenzie Valley Environmental Impact and Review Panel, Gahcho Kué Project Environmental Impact Hearing, Transcript, December 7, 2012, at page 217.

15. De Beers submits that no regulatory gap exists and that the decision by the GNWT to not regulate certain air management issues does not mean that it is unable to do so. The NWT *Environmental Protection Act* (“EPA”) allows for the regulation of contaminants including gas and odours.¹⁶ Section 1 contains the following pertinent definitions:

“contaminant” means any noise, heat, vibration or substance and includes such other substance as the Minister may prescribe that, where discharged into the environment,

- (a) endangers the health, safety or welfare of persons,
- (b) interferes or is likely to interfere with normal enjoyment of life or property,
- (c) endangers the health of animal life, or
- (d) causes or is likely to cause damage to plant life or to property;

“substance” means any solid, liquid, gas, odour or organism or combination of any of them. [emphasis added]

16. Pursuant to Section 5(1) of the EPA, “no person shall discharge or permit the discharge of a contaminant into the environment.” This, by definition, includes air emissions. Pursuant to Section 5(3), it is contemplated that there will be regulations authorizing certain discharges. In addition, other discharges, such as those for solely

¹⁶ *Environmental Protection Act*, RSNWT 1988, c. E-7.

domestic purposes or for combating a forest fire are exempted from the prohibition in Section 5(1).

17. The NWT Minister of Environment and Natural Resources can make regulations under the EPA as follows:

34. (1) Subject to subsection (2), the Commissioner, on the recommendation of the Minister, may make regulations

(a) prescribing any matter that may be prescribed under this Act;

(b) respecting contaminants or the concentration of contaminants that may or may not be discharged into the environment;

(c) respecting the maximum permissible concentration of a contaminant in the environment;

(d) respecting acceptable levels of contaminants within other substances;

(e) respecting the reporting of discharges of contaminants or the likely discharge of contaminants;

...

(u) respecting any other matter necessary to carry out the purposes and provisions of this Act. [emphasis added]

18. These regulation-making powers under the EPA have been used by the GNWT to enact the *Asphalt Paving Industry Emissions Regulations*.¹⁷ These regulations establish limits on the emission of pollutants into the ambient air resulting from the operation of an asphalt paving plant.

¹⁷ *Asphalt Paving Industry Emissions Regulations*, RRNWT 1990, c E-23.

19. The EPA and *Asphalt Paving Industry Emissions Regulations* demonstrate that the GNWT has the jurisdiction to regulate air emissions. Similarly, pursuant to the *Wildlife Act* and the *Species at Risk (NWT) Act*, the GNWT has broad and extensive powers regarding the management wildlife and wildlife habitat. Therefore, De Beers submits that there is no regulatory gap in the NWT as it pertains to air or wildlife.

20. As a result, there is no reason for the Panel to make recommendations or impose measures to address perceived regulatory gaps. This erroneous perception of a regulatory gap has been relied upon by some to justify oversight agencies and other initiatives. These are unnecessary and duplicative. The various regulatory authorities, including the GNWT, Fisheries and Oceans Canada (“DFO”), AANDC, Environment Canada (“EC”), Transport Canada (“TC”) and the MVLWB, together have all of the regulatory authority required to regulate the environmental issues associated with the Project.

(D) Memoranda of Understanding with the GNWT

21. Although there does not exist a regulatory gap, De Beers remains committed to entering into memoranda of understanding with the GNWT regarding both air and wildlife. This is because this has been the practice in the past, and because the GNWT views these Memoranda as being of assistance and creating transparency.¹⁸

22. De Beers has already developed and submitted the Project’s air and wildlife management and monitoring plans (Wildlife Effects Monitoring Program, Wildlife and Wildlife Habitat Protection Plan (WEMP Appendix C), Air Quality and

¹⁸ GNWT Final Comment Report, December 20, 2012, at page 5.

Emissions Monitoring and Management Plan, Incinerator Management Plan) in consultation with GNWT and EC. These will be refined where required in consultation with the GNWT and EC pursuant to the Memoranda, and with input from parties.

(E) Application of the *Fisheries Act*

23. While asking questions of DFO during the hearing,¹⁹ and in its Closing Comments,²⁰ the YKDFN expressed concern regarding the fish-out of the areas of Kennady Lake that will become the water management pond (“WMP”, Areas 3 and 5) and a potential contravention of Section 36(3) of the *Fisheries Act*.

24. The construction and operation of the Project will cause a harmful alteration, disruption or destruction of fish habitat, as Areas 2 through 7 of Kennady Lake will need to be dewatered to allow safe access and mining of the three diamond-bearing kimberlite pipes located under the lakebed. During operations, Areas 6 and 7 will be completely dewatered and Areas 2 through 5 will be partially dewatered. As such, De Beers will need to obtain a Section 35(2) *Fisheries Act* authorization prior to conducting dewatering activities in Kennady Lake. In addition, a fish-out will be conducted, in consultation with DFO and Aboriginal communities, to remove fish from Areas 2 through 7, which includes the WMP, prior to and during the dewatering of Kennady Lake.²¹

¹⁹ Mackenzie Valley Environmental Impact and Review Panel, Gahcho Kué Project Environmental Impact Review Hearing, Transcript, December 7, 2012, at pages 276-278.

²⁰ Yellowknives Dene First Nation Closing Comments, at page 2.

²¹ De Beers Environmental Impact Statement, at Section 8.10.3.2 and EIS Update.

25. Accordingly, De Beers will be fishing-out Areas 2 through 7 and obtaining a Section 35(2) authorization prior to dewatering and establishing the WMP and other Project components. Therefore, the carrying out of Project activities will not result in a contravention of Section 36(3) of the *Fisheries Act*. De Beers agrees with DFO's position that the Section 35(2) authorization will be for all of the physical impacts that will create an isolated, controlled basin, that will not be further subject to the pollution prevention provisions of the *Fisheries Act*.²² Of course, waters outside this area will continue to be subject to the prohibition in Section 36(3) of the *Fisheries Act*.

IV. NI HADI YATI

(A) Overview

26. Ni Hadi Yati was developed by affected Aboriginal groups as an alternative to the Adaptive Management Advisory Committee ("AMAC") that De Beers had proposed at the May 2012 technical sessions. De Beers was invited to attend a meeting by the Akaitcho Dene (including LKDFN, YKDFN and DKFN) and Tłchq Government to discuss an alternative to AMAC in October of 2012. As noted during the hearings, Ni Hadi Yati's purpose is to provide Aboriginal groups with the technical capacity to review and provide input into the development of environmental monitoring and management plans and resulting information for the life of the Project. Ni Hadi Yati is not an independent oversight body or monitoring agency, and does not have an enforcement role.

²² *Supra* note 19.

(B) Alternative Position

27. During the public hearing, many of the parties to Ni Hadi Yati were asked the question: What if the parties can't agree on the contract terms and the Ni Hadi Yati forum doesn't materialize? First, and as stated in the joint closing submission from the Ni Hadi Yati participants, based on the parties' level of collaboration to date, De Beers is confident that this initiative will be realized and the parties to Ni Hadi Yati have agreed to develop a schedule to finalize the contract. De Beers has invited the North Slave Métis Alliance and Northwest Territory Métis Nation to participate in those discussions.
28. However, if Ni Hadi Yati is not finalized, De Beers submits that no back-up agency or fallback alternative is required. As stated, Ni Hadi Yati's purpose is to provide Aboriginal groups with the technical capacity to review and provide input into the development of environmental monitoring and management plans and resulting information for the life of the Project without requiring inefficient duplication of resources and efforts. Ni Hadi Yati is not an independent oversight body or monitoring agency, and does not have an enforcement role.
29. As indicated above, there is no regulatory gap pertaining to the Project that needs to be addressed by Ni Hadi Yati or any other monitoring agency. Enforcement is the responsibility of AANDC and other existing regulators, including DFO, EC, GNWT, TC and MVLWB.
30. Ni Hadi Yati is intended to address Aboriginal capacity issues. As such, in the event Ni Hadi Yati is not finalized, De Beers remains committed to continuing dialogue with Aboriginal groups with a view to assisting them with capacity.. As examples,

- De Beers has already engaged in the collaborative development of the Wildlife Effects Monitoring Program, Wildlife and Wildlife Habitat Protection Plan, Air Quality and Emissions Monitoring and Management Plan, and Incinerator Management Plan. All of this was done with input from Aboriginal groups even though Ni Hadi Yati was not formalized.
31. De Beers has made the commitment to incorporate Traditional Knowledge for the life of the mine and has demonstrated its dedicated effort to do so during the environmental impact review process. As per the commitment, this will be carried forward regardless of whether Ni Hadi Yati is finalized.
 32. With respect to the capacity of Aboriginal groups to participate in the evolution of environmental monitoring and management plans and reviewing monitoring data reports, De Beers provided capacity funding on numerous occasions during the environmental impact review process to facilitate that engagement. Regardless of Ni Hadi Yati, De Beers has made the commitment to develop annual engagement plans that will consider the need for capacity funding for Aboriginal groups to participate in meetings to review reports and provide input on adaptive management.
 33. Even if Ni Hadi Yati is not finalized, the circumstances do not warrant the creation of another monitoring agency. There already exists in the NWT a comprehensive regulatory regime for the Project, which was asserted in the submissions by AANDC, EC, DFO, Natural Resources Canada and the GNWT in their closing remarks.

V. SOCIO-ECONOMIC ISSUES

34. There was no evidence presented in this proceeding disputing the significant and positive socioeconomic benefits that will result from the Project. Premier Bob McLeod summarized the potential benefits from the Project succinctly:

The Gahcho Kué Project is important to the long-term strategic interests of the Northwest Territories, to the continued strength of our economy, and the well-being of our people and communities.²³

35. Although no evidence was submitted to dispute the positive socio-economic benefits, some communities suggested that no benefits are flowing from the diamond industry and more specifically from De Beers' Snap Lake Mine to their communities. Mr. Glen Koropchuk, Chief Operating Officer for De Beers, outlined the benefits flowing from the Snap Lake Mine to NWT residents in his opening remarks at the Public Hearing on December 5th.

36. Development of the Project will result in significant economic benefits to the NWT. As noted by Mr. Koropchuk, the Project is a good-news story at a time when the North is facing economic challenges,²⁴ and the benefits of this Project, and of diamond mining in general, cannot be understated. Diamond mining is the largest sector within the NWT economy. It contributed 24% of NWT gross domestic product ("GDP") in 2011.²⁵ The estimated capital investment to build the Project will be

²³ Mackenzie Valley Environmental Impact and Review Panel, Gahcho Kué Project Environmental Impact Hearing, Transcript, December 5, 2012, at page 27.

²⁴ Mackenzie Valley Environmental Impact and Review Panel, Gahcho Kué Project Environmental Impact Hearing, Transcript, December 5, 2012, at page 33.

²⁵ GNWT Final Comment Report, December 20, 2012, at page 6.

approximately \$650 million. The full impact to total GDP for construction and operations will be approximately \$3.9 billion, of which more than 80% will flow to NWT.²⁶ As noted by Premier McLeod:

the people of the Northwest Territories have benefited substantially from the jobs and income diamond mining has providing. Spending by the mines has benefited Northern businesses and helped to create new economic opportunities. We have been mining diamonds in the Northwest Territories for 14 years now. Our government understands the benefits of diamond mining and we know how to manage the impacts.²⁷

37. In addition to significant benefits to the NWT, the Project will provide substantial socio-economic benefits directly to northern residents through employment and training. There will be 690 full-time equivalent positions created during the 2 years of construction, and 372 full-time equivalent positions during operations.²⁸ De Beers is committed to recruiting and employing as many Aboriginal and NWT residents as possible to fill these positions, building on its ongoing experience with recruitment, training and development and retention strategies already implemented for the Snap Lake Mine. During the life of the Project, De Beers commits to supporting training positions at the Project. These will include apprenticeships, trades training positions and the development of professional occupations. De Beers will report annually

²⁶ Mackenzie Valley Environmental Impact and Review Panel, Gahcho Kué Project Environmental Impact Hearing, Transcript, December 5, 2012, at page 39.

²⁷ Mackenzie Valley Environmental Impact and Review Panel, Gahcho Kué Project Environmental Impact Hearing, Transcript, December 5, 2012, at pages 25-26.

²⁸ Mackenzie Valley Environmental Impact and Review Panel, Gahcho Kué Project Environmental Impact Hearing, Transcript, December 5, 2012, at page 39.

regarding the number of current and cumulative placements in these training positions by hiring priority.²⁹ De Beers will be formalizing its commitments by entering into a Socio-Economic Agreement with the GNWT, which views a Socio-Economic Agreement as the most effective tool to manage socio-economic impacts.³⁰ The Agreement will serve as a follow-up program for the Project and it will be for the benefit of all people in the NWT.

VI. ENVIRONMENTAL ISSUES

38. During the course of the community hearings and technical hearings, parties raised various environmental issues associated with the Project.

(A) Fish Population Estimate

39. De Beers is confident that the fish population estimate for Kennady Lake has been appropriately enumerated for several reasons:

- The estimate of about 19,000 fish included fish larger than about 7 cm (not just greater than 18 cm as suggested in the DKFN hearing presentation) excluding fish that prefer shallow water near shore where hydroacoustic techniques are inappropriate.³¹

²⁹ De Beers Response to GNWT Technical Report, November 9, 2012, at pages 6-7.

³⁰ GNWT Final Comment Report, December 20, 2012, at page 6.

³¹ De Beers First Round Response to DFO and Environment Canada Information Requests, 3a.

- The fish density estimate for Kennady Lake (23.3 fish per hectare; with 90% confidence up to 51.2 fish per hectare)³² fall within the range of actual fish densities determined from fish-outs at other mine sites in the north, such as Meadowbank (Northwest Arm of Second Portage Lake – 23.7 fish/ha) (Azumith 2009)³³, Doris North (Tail Lake – 19.5 fish/ha) (Rescan 2012),³⁴ and Diavik (A154 and A418 [43.9 and 31.4 fish per hectare]) (McEachern et al. 2003).³⁵
- The survey was carried out during daylight due to safety considerations relating to working at night in the remote location.³⁶ The survey was carried out during daylight since waiting until later in the summer or autumn when darkness returns to the Arctic raises other confounding issues such as lake trout densities being higher due to spawning preparation.
- The survey used both side-looking and down looking transducers, so fish were assessed both in the upper part of the water column as well as deeper areas of the lake.³⁷

³² De Beers Environmental Impact Statement, at Section 8.3.8.2.3 Population Estimates, Section 8: Key Line of Inquiry: Water Quality and Fish in Kennady Lake (July 2011).

³³ Azimuth Consulting Group Inc. 2 (Azumith) (2009) Appendix C6 - Report: *Meadowbank Gold Project: 2008 Fish-Out of the Northwest Arm of Second Portage Lake*. Prepared for Agnico-Eagle Mines Limited - Meadowbank Division. March 2009.

³⁴ Rescan Environmental Services Ltd. (Rescan) (2012) *Doris North Gold Mine Project: 2011 Tail Lake Fish-out Report*. Prepared for Hope Bay Mining Ltd. by Rescan Environmental Services Ltd.

³⁵ McEachern, L.J., M.G. Kennedy and E Madsen. 2003. *Fish Salvage Activities Related to Diamond Mine Construction in the NWT*. De Beers (2012).

³⁶ De Beers Second Round Response to the DKFN's Information Request, 4.

³⁷ De Beers Response to DKFN Technical Report, November 13, 2012.

- The settings described by Dr. Plate are important only if using an echo counting technique to establish a population estimate, but for the Kennady Lake estimate, echo integration was used to determine the density estimates. This method does not require three pings to include a fish in the estimate, and does not require fish separation, as suggested by Dr. Plate in his presentation.³⁸
- For this Project, the fish-out of Areas 2 to 7 will be used to validate the fish estimate.

40. In summary, it is incorrect to say that the fish population has not been properly enumerated. Although there is a difference of opinion with respect to methods between De Beers and the DKFN technical reviewer, De Beers has provided an estimate of the fish population in Kennady Lake based on several years of sampling using multiple sampling methods including hydroacoustic sampling and stands by it. The estimate will be validated during the fish-out that will be conducted prior to and during the dewatering periods.

(B) Fish Out of Kennady Lake

41. During the community and technical hearings, several parties spoke about their concern of transferring fish from Kennady Lake to other water bodies. To clarify, De Beers does not plan to transfer fish from Kennady Lake and instead is developing a detailed *fish-out* plan whereby fish from Kennady Lake will be harvested.³⁹ The fish-out will involve Aboriginal communities, both in the harvesting activities but also the

³⁸ Mackenzie Valley Environmental Impact and Review Panel, Gahcho Kué Project Environmental Impact Hearing, Transcript, December 6, 2012, at pages 141-142.

³⁹ De Beers Draft Fish-Out Plan, October 4, 2012.

preparation and distribution of fish to communities for important cultural events. The fish-out will be administered by DFO.⁴⁰ The fish-out plan for the Project is based on DFO's protocol for northern lakes with the objectives being: 1) to engage local communities and ensure that fish harvested during the fish-out are fully utilized by traditional resource users, 2) to collect ecological information (biological, limnological, and habitat) on Arctic lakes in the NWT, and 3) to remove all fish from Areas 2 to 7 of Kennady Lake and Lake D1. The draft fish-out plan was posted to the public registry on October 4, 2012. A more detailed plan will be developed in consultation with DFO as part of the permitting process.

42. There will be opportunities for community members to continue to provide input to this plan, through continued engagement between DFO and De Beers, and to participate in the fish-out and the processing of the fish. Through use of local community members during the fish-out, De Beers will make sure that the fish will be removed in a respectful manner and are not wasted. The harvested fish will be offered to communities. Where possible, the timing of the fish-out will coincide with cultural events, such as Aboriginal days, and cultural camps and gatherings.

(C) Caribou

43. De Beers understands the importance of caribou to the Aboriginal groups in the NWT. This is why De Beers undertook a robust cumulative effects assessment approach that represented an important advancement in caribou impact assessment practice.⁴¹ This assessment included a consideration of both natural and human and

⁴⁰ De Beers 2011 Environmental Impact Statement Update, at Section 8.10.3.2.

⁴¹ De Beers Environmental Impact Statement, at Section 7: Key Line of Inquiry Caribou.

development related factors with an analysis to partition the relative contribution of these effects on caribou. The approach produced the first ever database of the locations and timeframes associated with developments on the entire Bathurst caribou range. This database allowed for the analysis of several cumulative effects assessment cases through time, from 1995 through to present and into the future to account for reasonably foreseeable developments.

44. Extensive models, with built-in conservatisms to ensure effects were not underestimated, were developed and applied for the analysis of cumulative effects, including, a habitat model, an innovative GIS analysis that mapped 194 individual collared caribou paths from 1996 through 2009, an energetics model that was tested with input from the GNWT and a population model that ran more than 50 scenarios over a 30 year period. This work demonstrated that the current level of anticipated development, the addition of the Project to the landscape, results in less than 1% direct habitat disturbed on the Bathurst caribou range and that there is no causal link between the current levels of development and the population status and distribution of the Bathurst caribou herd. Rather, the analysis indicates that most variation in caribou numbers is due to natural factors, with little influence from development. This conclusion is supported by cumulative assessment work and analysis undertaken by the GNWT (2009 *Decline of the Bathurst Caribou Herd 2006-2009: A Technical Evaluation of Field Data and Modelling*), which found that: “overall, effects of the mines to date have been limited and are unlikely to have been a major contributing factor in the rapid Bathurst decline from 2006 to 2009”. Further, demonstrated in the information provided by the GNWT in undertaking #3, the decline of caribou abundance began in the late 1980s prior to the construction and operation of the Ekati

and Diavik diamond mines. This period of decline aligns with Traditional Knowledge presented in GNWT undertaking #3 that indicates caribou populations cycle naturally between highs and lows over approximately thirty year periods. Finally, as demonstrated by the Project's cumulative effects assessment, the decline continued during 2006 to 2011 even though there was a decrease in industrial activity during this same time period. Therefore, with the detailed analyses presented, the prediction of no significant adverse effects on caribou with the addition of the Project to the landscape is reliable and conservative. While the recommendation for a range management committee for the Bathurst herd was made at the hearing, it is important to recognize such an initiative as a broader land use planning mechanism is beyond the scope of De Beers' role. Given the findings of the cumulative effects assessment outlined above, the establishment of such a committee is not required at this time to manage or mitigate effects of the Project or the limited cumulative effects from other developments. Existing initiatives that De Beers is participating in, such as the GNWT Barren-ground Caribou Management Strategy 2011-2015,⁴² should be carried out and then given due consideration prior to the creation of another overlapping initiative. The intent of this strategy, developed by the GNWT, is to provide a unifying framework that supports "*the vision and goals of the [NWT] Legislative Assembly's vision and goal maintaining an environment that will sustain present and future generations*".

45. During the public hearing, Mr. Kim Poole on behalf of the YKDFN stated that the Wildlife Effects Monitoring Plan (WEMP), as developed collaboratively with the parties and submitted by De Beers to the Panel on October 4, 2012, lacked key

⁴² GNWT 2011.

monitoring elements including: verifying the effectiveness of mitigation measures, monitoring caribou movement and barrier effects in relation to the Project Winter Access Road, zone of influence studies, and monitoring for a possible causal mechanism for zone of influence. Mr Poole's statements are in fact incorrect, as all of the above are captured in the monitoring plans submitted by De Beers. For example, monitoring to verify the effectiveness of mitigation measures is captured in the Site Surveillance Monitoring Plan (WEMP section 4 and 5.1.3), monitoring caribou movement and potential Project Winter Access Road barrier effects is included in section 4.4 of the WEMP, the zone of influence study is included in section 5.1.7 of the WEMP, and causal mechanisms are linked to other monitoring plans (WEMP Table 5-1) such as the air quality monitoring which includes a specific dustfall study with the objective to "provide data to help inform the suggested issue of dust deposition as a mechanism for caribou zone of influence (ZOI)" (AQEMMP Section 1.2). Nevertheless, De Beers remains committed to collaboratively working with Aboriginal groups and the GNWT on the understanding, refinement, and adaptive management of the Project's caribou monitoring plans.

46. De Beers has noted new recommended measures from the Tłı̨chǫ Government in its closing argument. The Tłı̨chǫ Government requested that the Panel require ZOI and caribou behaviour studies for the life of the Project. It is important to note that WEMPs are designed to be `living documents` that are adapted over the life of Projects based on lessons learned, advancements in technology, and emerging issues among other considerations. To require that a particular study or study design be implemented for the life of a Project limits adaptive management and monitoring. Therefore, while the WEMP will be initially implemented as submitted, the specific

monitoring studies must remain flexible so they can be adapted over time. Any measures requiring specific study approaches would hinder future advancements in the implementation of new monitoring approaches that may very well arise in the coming years.

(D) Water Quality

47. In its closing argument, AANDC revised its proposed recommendation regarding narrative statements to include a location (i.e., where they would apply) and a timeframe (the Project phase) for their narrative statements. Their modification resulted in two sets of narrative statements: one set focusing on Lake N11 and lakes downstream of Kennady Lake at all stages of the Project, and the other focusing on Kennady Lake during post-closure. De Beers has suggested narrative Site Specific Water Quality Objectives (“SSWQOs”) be consistent with the assessment end points which were developed based on the Terms of Reference. Moreover, De Beers’ commitment is to consider revisions to the SSWQOs narrative statements as part of the development of the Aquatics Effects Monitoring Program (“AEMP”) including consideration of traditional uses such that users can continue to drink the water, catch fish and eat the fish. De Beers therefore recommends that the Panel consider allowing for the refinement of these narrative statements as part of the water licence process.

48. As noted in AANDC’s presentation, consideration of significant effects to benthos and plankton should be considered. As stated at the hearing, as it pertains to lower organisms, structural changes will occur and would occur naturally but the

functionality of the food chain will be maintained.⁴³ Therefore, De Beers disagrees with the inclusion of narrative statements that reference benthos and plankton.

49. AANDC also recommends that SSWQOs be determined based on existing hardness conditions. De Beers agrees with AANDC that SSWQOs should be based on local ambient water quality conditions. However, the Canadian Council of Ministers of the Environment (“CCME”) guidelines do not state that ambient hardness is equivalent to baseline or historic hardness. There is absolutely no support for this position within the CCME guidelines. De Beers submits that AANDC’s proposed approach is contrary to sound science and that there is no rationale for AANDC’s approach. De Beers is of the view that when determining SSWQOs, consideration should be given to the actual ambient conditions at closure and not to a baseline condition that no longer exists is therefore not relevant at closure.
50. With respect to establishing baseline values for the derivation of SSWQOs for Kennady Lake and Lake N11 as suggested by EC and AANDC (e.g., 95th percentile and lake specific baseline values, respectively), this is more appropriately addressed in the MVLWB permitting process, which includes consultation steps with regulators and Aboriginal groups, which will be undertaken during the development of the AEMP.

(E) Lady of the Falls

51. De Beers understands the sacred value of the Lady of the Falls to the LKDFN. The environmental assessment concluded that Project effects to the aquatic environment

⁴³ Mackenzie Valley Environmental Impact and Review Panel, Gahcho Kué Project Environmental Impact Hearing, Transcript, December 7, 2012, at page 212.

- (e.g., water level, water flows and water quality) would not be expected to extend beyond the Local Study Area, which has a downstream boundary at the outlet of Kirk Lake. The location of the Lady of the Falls is 300 kilometres downstream from the outlet of Kirk Lake. Also, the average annual discharge from Kirk Lake represents approximately 2.5% of the annual average discharge from the Lockhart River at the mouth of Artillery Lake; the average annual discharge of Kennady Lake represents approximately 0.1% of the annual average discharge from the Lockhart River.
52. This issue was addressed in the Environmental Impact Statement as it was noted in the Terms of Reference (*i.e.*, Section 12 under Culture, Heritage and Archaeology and the Subject of Note 11.2: Impacts to Great Slave Lake). In Section 12: specifically-identified spiritual and cultural sites included Aylmer Lake, Artillery Lake, the Lockhart River, and “Old Lady of the Falls”.
53. The Lockhart River/Artillery Lake system, including the “Old Lady of the Falls”, and Aylmer Lake is approximately 70 kilometres from the Project. The north shore of the east arm of Great Slave Lake is about 75 kilometres from the Project. As a result, the Project will not be visible from any of these sites. Noise from Project mining operations will be noticeable up to 3.5 kilometres from the site, and people may notice noise from flights arriving and departing from the mine if they are within 5.5 kilometres of the airstrip. Ground vibrations due to blasting are not expected to be perceivable more than 4.4 kilometres away from the blasting site. As a result, noise from Project activities will not be heard at the culturally-important areas.
54. In Subject of Note 11.2: Impacts to Great Slave Lake – Lady of the Falls was not mentioned specifically because potential changes to the surface water flow rates and

surface water quality are not expected to be measurable in the Lockhart River for the following reasons:⁴⁴

- The deposition of air emissions is expected to have a negligible effect on water and sediment quality in regional waterbodies located more than 2 kilometres away from the Project site, as is the case for the Hoarfrost River watershed, the Lockhart River and Great Slave Lake.
- The Project is located entirely within the Lockhart River watershed; therefore, Project water releases and potential changes in surface water flow and/or quality within and downstream of Kennady Lake will have no effect on surface water flows, water levels or water quality in the Hoarfrost River watershed.
- Changes to surface water flows immediately downstream of Kennady Lake would not have a measurable effect on flows in the Lockhart River, because the Project is being designed to minimize the disruption of downstream flows and the watershed area for the Lockhart River upstream of Aylmer Lake (*i.e.*, where outflow from Kennady Lake joins with the Lockhart River) is approximately 400 times larger than the Kennady Lake watershed.
- Potential changes to water quality in waterbodies located immediately downstream of Kennady Lake are expected to have a negligible effect on aquatic health. Because the Kennady Lake watershed contributes

⁴⁴ Environmental Impact Statement Supplemental Information Submission. April 2012.

such a small proportion of the total flow to the Lockhart River where it joins at Aylmer Lake, no effects to water quality or aquatic health would be expected in the Lockhart River or in Great Slave Lake.

55. Because Project effects will not be measurable in the Lockhart River watershed, the Hoarfrost River watershed or in Great Slave Lake, the Project will not have a measurable effect to Lady of the Falls. Effects that are so small that they cannot be measured will therefore not be environmentally significant.
56. It has been suggested that discharges from the Project could enter the Hoarfrost River watershed via a connection between Kirk and Fletcher lakes. This issue was addressed in the hydrology baseline report, where it stated, “The apparent connection from Kirk Lake to Fletcher Lake was observed to be a channel-like feature which traverses the watershed divide between the two lakes, but does not function as a drainage course.”⁴⁵ This issue was again raised by LKDFN in July 2012, which allowed for summer ground-truthing under open water conditions by De Beers and the Water Survey of Canada (“WSC”).
57. The apparent connection was examined by the WSC for De Beers in September 2012. The WSC report prepared for De Beers in October 2012 stated, “From our observations in the area between Kirk and Fletcher Lakes, it appeared that the water level of either lake would have to increase a significant amount before any water would flow over the height-of-land between the two lakes.”⁴⁶ National Topographic

⁴⁵ Annex H, Section H5.2 Regional Drainage, at page H5-5.

⁴⁶ Water Survey of Canada. 2012. Hydrological Investigations of the Kirk Lake Watershed, DeBeers Canada - Gahcho Kué Exploration Site. 17 October 2012.

System (“NTS”) mapping also indicates that the elevation of Fletcher Lake is 4 metres greater than that of Kirk Lake (387 metres above sea level (“masl”) vs. 383 masl), so that if a connection was made, water would only flow from Fletcher Lake to Kirk Lake, and would not enter the Hoarfrost River watershed.

(F) Connection to Hoarfrost River

58. It has been suggested that discharges from the Project could enter the Hoarfrost River watershed via a connection between Kennady Lake (Area 7 and adjacent Lake X2) to the larger Fletcher and Walmsley lakes. This issue was raised in the LKDFN community hearing presentation.⁴⁷
59. All available data indicates that there is no surface hydraulic connection between the two lakes. This includes topographic mapping, satellite imagery and aerial photography. The area was also the subject of fisheries surveys including electrofishing along the entire Area 7 shoreline in that area.
60. The elevation of Kennady Lake (420.7 masl) is greater than that of Lake X2 (420.1 masl); however, there is approximately 125 metres of land between the two waterbodies, with a height of land in between, and there is no indication of any watercourse in that area. This location may provide a good portage route, but a surface water connection has not been observed over the course of the baseline survey period (1996 to present). Kennady Lake baseline hydrological modeling indicates a 100-year water level of about 0.6 metres above the low water level.⁴⁸ This is unlikely

⁴⁷ Mackenzie Valley Environmental Impact and Review Panel, Gahcho Kué Project Environmental Impact Hearing, Transcript, December 3, 2012, Community Hearing at Lutsel K'e.

⁴⁸ De Beers Gahcho Kué Project Fish and Aquatic Resources Baseline Report, at Section J4.

to cause water to spill across that height of land, but this will be confirmed during an open water season.

61. In the presentation by LKDFN on December 7, 2012 at the public hearing, the very coarse resolution mapping provided shows three suggested outlets (flow path) from Kennady Lake to the Hoarfrost river watershed. However, from the mapping De Beers has, the only spot where there is an adjacent Hoarfrost River watershed lake at a lower elevation than Kennady Lake is at Lake X2, at the west end of Area 7.⁴⁹

(G) Snap Lake Mine

62. De Beers has been actively addressing challenges at Snap Lake, which is an underground mine. The Project is an open pit mine, which has water management design elements different to Snap Lake Mine and an adaptive management program including several contingencies that have been developed based on key learnings from other mines. Specifically, water will be managed within a confined basin (controlled area) such that no water will be released unless it meets discharge criteria defined by the water licence. A robust and scientifically sound AEMP is being developed to carefully monitor water both within Kennady Lake and the downstream throughout all phases of the Project such that adaptive management measures, should they be required, can be established early on in the Project to meet closure objectives.
63. The LKDFN has asserted that waters downstream of the Snap Lake Mine are contaminated to a distance of 6 kilometres. This statement requires clarification. Specifically, the Environmental Assessment for the Snap Lake Mine was clear that,

⁴⁹ Water Survey of Canada. 2012. Hydrological Investigations of the Kirk Lake Watershed, DeBeers Canada - Gahcho Kué Exploration Site. 17 October 2012, at page 5.

during operations, treated effluent from the mine would be detectable as far as 44 kilometres downstream. In 2012, increased conductivity related to total dissolved solids (basically salt) was detected 6 kilometres downstream from the mine. Concentrations were low and this effect was anticipated by the Review Board when the Snap Lake Mine was approved by the MVEIRB.⁵⁰

VII. TECHNICAL ISSUES

(A) Water Treatment

64. The Water Management Plan is based on the ability to isolate a large proportion of the Kennady Lake watershed (the controlled area), a headwater watershed in the Lockhart River system, which provides for water storage capacity during the life of the mine, with minimal discharge to the adjacent receiving watersheds, to allow for extended periods of settling time and later the sequestering of water in the bottom of mined-out pits.

65. Ample operating storage space is created by the initial lake dewatering to allow safe access to mine the ore bodies, where 17-20 cubic metres of clear lake water will be pumped from Kennady Lake prior to initiation of mine construction.⁵¹ Following the dewatering, there is sufficient capacity to store the mine water generated within the controlled area, which includes groundwater inflows to the pits as they are being mined, water transfers between areas within the controlled area, and recycled mine process water that is sourced from the WMP. Water within the controlled area that

⁵⁰ De Beers Canada Inc. (De Beers). 2002. De Beers Snap Lake Diamond Mine Project Environmental Assessment Report. Submitted to the Mackenzie Valley Environmental Impact Review Board, February 18, 2002.

⁵¹ 2012 Environmental Impact Statement Supplement, at Section 3.9.4.

possesses high levels of total suspended solids (“TSS”) is treated within the Water Management Plan by the use of pumping with in-line flocculation to treat specific high TSS water streams into settling basins within the WMP. This simple and passive management plan is effective and proven water treatment. This system uses the same principles as utilized by mechanical water treatment plants with the exception that TSS are settled in a high volume/area settling ponds as opposed to settling tanks.

66. There is provision within the Water Management Plan to discharge water from the WMP for the first three years of operations, based on the expected water quality of the WMP.⁵² Extensive geochemical testing and water quality modelling has indicated that this water can be released to adjacent receiving waterbodies with no significant adverse effects. The Water Management Plan provides sufficient storage capacity to operate as a closed system for the balance of the mine operations period (*i.e.*, no water is required to be released from the control basin after Year 3 of mine operations through to the end of mine operations). There are available contingencies to deal with water if it does not meet discharge criteria for those first initial years when discharge is planned. The contingencies are listed below in descending order:⁵³
- No discharge. The system has the storage capacity to be operated as a closed system for two to three years.
 - Allowing for additional settling time (*e.g.* two years of settling time before discharging).

⁵² 2012 Environmental Impact Statement Supplement, at Section 8.8.

⁵³ De Beers Detailed Alternatives Analysis, June 19, 2012.

- Managing discharges at different times of the year when the water quality is acceptable (*e.g.* discharging clear runoff water from above the ice layer during initial runoff, and/or below ice from areas before open water periods).
- Separating lower quality water inflows (*e.g.* pit groundwater) and sequestering poor water in isolated areas within the controlled area (*e.g.* Area 6).
- Utilizing lower quality water preferentially in the process plant where the water will ultimately be directed to fine processed kimberlite containment facility and be largely sequestered within the pore spaces.
- Expanding the storage capacity in the controlled area (*e.g.* higher containment dikes).
- Lastly, and only if necessary, design and construction of a more active mechanical water treatment plant, based on a known water chemistry and quantity if it is deemed a viable solution.

67. Therefore, De Beers submits that there is no justification for a recommendation that a water treatment plant be incorporated into the Project design at this time. The Water Management Plan is robust and includes numerous contingencies which can be incorporated if necessary.

(B) Dewatering of Area 7

68. The water management strategy that was selected for the Project uses the natural physiography of the Kennady Lake watershed to establish a controlled area within which all Project disturbances would be contained, including the majority of the mine

- water generated from the Project. This chosen alternative included dewatering a portion of Kennady Lake to access the underlying kimberlite deposits. This alternative was shown to be the most technically viable, economically feasible and environmentally protective alternative.⁵⁴
69. In response to requests from EC and DFO, DeBeers looked at the possibility of excluding Area 7 from the controlled area, or early restoration to the downstream environment. Results of this analysis were submitted as Round 2 Information Request response EC 2.
70. Dewatering Area 7 cannot be assessed in isolation as it is an integral part of the development and water management plan of the proposed Project. The alternatives analysis is a product of this integrated approach and assessment work completed over the past 10 plus years. Areas within Kennady Lake were numbered to allow for convenient description to facilitate a better understanding of the Project activities and associated water management plan. However, these numbered areas of Kennady Lake cannot be separated without affecting the integrity of the overall water management plan including the ability to adaptively manage and implement contingencies if required.⁵⁵
71. In addition to the benefits outlined in the Detailed Alternatives Analysis and the 2012 EIS Supplement,⁵⁶ the rationale for including Area 7 within the control basin

⁵⁴ De Beers Detailed Alternatives Analysis, June 19, 2012, at Section 4.1.1.4.3.

⁵⁵ De Beers Detailed Alternatives Analysis, June 19, 2012.

⁵⁶ De Beers Detailed Alternatives Analysis, June 19, 2012; De Beers. Environmental Impact Statement Supplemental Information Submission, April 2012.

(Alternative B3) and its planned dewatering was based on the following technical, economic, and environmental considerations:

- Use of natural lake bathymetry and topography of the watershed defines the controlled area and dictates the best locations for dyke construction.
 - Dyke A is the main basin outlet control structure and is located where the lake is shallow, very narrow and forms a natural break in the topography.
 - Dyke A construction can be completed immediately prior to dewatering with negligible impact on the existing downstream aquatic ecosystem.
- The entire Project development area is contained within the basin created by diversion of the upper watersheds and the placement of Dyke A.
- Storage volumes in Area 7 provide important contingency during the operating life of the Project.

72. Exclusion of Area 7 would require the controlled area boundary to be established at the outlet of Area 6 by installation of Dyke K in approximately 8 metres of water, prior to dewatering (built in the wet), which presents several disadvantages that are detrimental to the Project and its environmental risk profile.

- Safety risk to those working under Dyke K – Dyke K would be located in relatively deep water (8 metres) and immediately upstream of active mine workings.
- Design changes to Dyke K - should Dyke K be the first dyke to be constructed instead of Dyke A, to exclude Area 7:

- Large volumes of fill would be deposited (on the order of 150,000 cubic metres) into Kennady Lake prior to dewatering and fish salvage.
 - Design to construct in the wet would result in substantial additional cost.
 - Sedimentation during construction - although mitigation, such as silt curtains, are available to limit the spread of sedimentation, the high level of activity in such a confined waterbody would make it challenging to control sediment dispersion into the lake and downstream, potentially affecting fish and fish habitat.
 - Schedule effects - constructing Dyke K first would add an additional year to the development schedule before dewatering of Kennady Lake could begin. Significant additional cost implications would arise due to scheduling, including the direct costs of supporting the construction effort for an additional year.
73. Extracting Area 7 from the integrated waste and water management plan associated with the Project is disadvantageous to the Project because it reduces operational flexibility and is contrary to the design objectives of technical feasibility, economic viability and minimization of environmental risk. Area 7 is the shallowest of all dewatered areas with an average depth of 3.96 metres, and contains only 38 hectares of overwintering habitat greater than 4 metres depth. Area 7 represents less than 10% of the total volume of Areas 2 to 7, and 14% of the surface area. The benefits of including Area 7 in the well designed and reviewed integrated plan far outweigh the disadvantages and significantly reduce environmental risk.
74. However, De Beers has committed to explore opportunities to restore Area 7 sooner in the Project schedule by minimizing the drawdown during construction and/or

supplemental refilling of Area 7 from water sources within, and outside of the controlled area. This would allow for restoration and reconnection of Area 7 with Area 8 earlier than initially planned. In any event, De Beers submits that there is no justification for a recommendation that Area 7 not be dewatered as part of the development of the Project.

VIII. CONCLUSION

75. De Beers submits that the evidence presented in this proceeding clearly establishes the following:

- (A) The Project will result in significant and positive socio-economic benefits to the NWT and its people, including Aboriginal persons;
and
- (B) The development of the Project will not result in any significant adverse environmental effects.

76. Therefore, De Beers submits that the Panel should recommend to the Minister that the Project be approved as proposed by De Beers. Assuming the Project is approved, De Beers looks forward to continuing to work with regulators and Aboriginal groups throughout the rest of the regulatory process and throughout the life of the Project.