

TERMS OF REFERENCE FOR AN ENVIRONMENTAL IMPACT REVIEW PANEL FOR THE PROPOSED GAHCHO KUE DIAMOND MINE PROJECT

The Mackenzie Valley Environmental Impact Review Board (Review Board), pursuant to its authority under section 128(1) of the *Mackenzie Valley Resource Management Act* (MVRMA); formed the opinion that the proposed DeBeers Gahcho Kue diamond mine development at Kennady Lake, NT is likely to be a cause of significant public concern. On June 12, 2006, the Review Board ordered an environmental impact review of the proposed Gahcho Kue development. The terms of reference for the Gacho Kue Panel are set out below:

1.0 DEFINITIONS

Unless otherwise noted, any terms used in this document which are defined in the *Mackenzie Valley Resource Management Act* (MVRMA) have the same meaning here.

2.0 PURPOSE OF THE TERMS OF REFERENCE

The purpose of these Terms of Reference is to establish an Environmental Impact Review Panel that meets the requirements of the MVRMA, and to set out the scope and process of the Gahcho Kue environmental impact review (EIR).

3.0 THE GAHCHO KUE REVIEW PANEL (Panel)

Panel Membership:

The Panel shall consist of 7 members appointed by the Review Board pursuant to section 132(3) of the MVRMA.

Quorum

A quorum for the Gahcho Kue Review Panel consists of 5 members, including the chairperson.

Length of Term for Panel member

Panel members shall serve for the full duration of the environmental impact review, i.e. until such time as the federal Minister and the responsible Ministers have made a final decision on the Gahcho Kue environmental impact review under section 135(1) of the MVRMA.

Replacing a Panel member

In the event that a member of the Panel is incapable of continuing to act as such, the Review Board will determine whether to appoint a replacement member. Any such replacement member will be appointed by the Review Board in a manner consistent with subsection 132(3) of the MVRMA.

Panel Orientation

Panel members will be provided with an orientation to their duties as members of the environmental impact review panel.

Code of Conduct

The Review Board's code of conduct applies to the Panel members. Each Panel member shall sign the Review Board member code conduct certificate accordingly.

Powers of the Panel

The Panel shall have the powers provided for by the MVRMA and as set out in subsection 133(1) of the Act which states: “A review Panel may exercise the powers and shall perform the duties of the Review Board in the conduct of an environmental impact review”.

Other

Gahcho Kue Review Panel members are protected from liability under section 20 of the MVRMA.

4.0 SCOPE OF THE EIR

The scope of the Development is described in Appendix 1. In carrying out the review, the Panel will address the factors outlined in Appendix 2. The Environmental Impact Review shall have regard to the protection of the environment from the significant adverse impacts of the Gahcho Kue development, and to the protection of the existing and future social, cultural and economic well-being of Mackenzie Valley residents and communities.

The review shall also ensure the concerns of aboriginal people and the general public are taken into account, and that regard is given to 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 in accordance with sections 114 and 115 of the MVRMA.

5.0 Use of Board Guidance

The Panel will apply the Review Board’ Rules of Procedure, its guidelines, reference bulletins, and relevant policies.

6.0 SPECIALIST INFORMATION TO THE GAHCHO KUE REVIEW PANEL

The Panel may obtain relevant scientific, technical, traditional knowledge, social, and economic expert information through the services of independent experts and also as available from government agencies and departments, in accordance with section 22 of the MVRMA. The Panel shall make best efforts to ensure the contribution of traditional knowledge to the environmental impact review.

7.0 COMPONENTS OF AN IMPACT REVIEW

Pursuant to section 134(1) of the MVRMA, an environmental impact review of a proposal for a development “*includes*:

(i) the preparation by the Review Board of terms of reference for the review Panel, after consultation with the responsible ministers, with any first nation affected by the proposal and with the Tlicho Government.

(ii) the submission of an impact statement by the applicant for a licence, permit or other

authorization or such other person or body as proposes to carry out the development, and its distribution in accordance with any guidelines issued under section 120 and any special instructions issued under subsection 133(2);

(iii) public notification, in accordance with any such guidelines, of the submission of the impact statement;

(iv) such analysis of the proposal as the review Panel considers appropriate; and

(v) public consultations or hearings in communities that will be affected by the development.”

8.0 STEPS IN THE REVIEW PROCESS

The main steps in the review by the Gahcho Kue Review Panel are as follows:

- 1) **Start up phase:** finalization of EIS terms of reference and EIR work plan.
- 2) **Analytical phase:** submission of an environmental impact statement (EIS) by the developer, a gap analysis, information requests, technical sessions, and technical reports by the parties.
- 3) **Hearing phase:** providing parties with the opportunity to address the Panel directly. The hearing phase also includes a time span during which additional material on issues arising during a hearing may be submitted.
- 4) **Decision phase:** after closing the public record, the Panel will examine the public record, seek clarification if required, deliberate, make its decision, and issue a report.

Details and tentative dates for completion of milestones will be outlined in the EIR Work Plan. The Work Plan may be amended as circumstances require by the Panel.

9.0 REPORTING AND DECISION MAKING

Reporting

The Panel shall issue a report containing a summary of comments received from the public, an account of the Panel's analysis, the conclusions of the Panel and its recommendation whether the proposal for the development be approved, with or without mitigative or remedial measures or a follow-up program, or rejected.

Decision by Ministers

In accordance with subsection 135(1) of the MVRMA the federal Minister and responsible Ministers “*may agree to:*

- (i) adopt the recommendation of the review Panel or refer it back to the review Panel for further consideration; or*
- (ii) after consulting with the review Panel, adopt the recommendation with modifications or reject it.”*

10.0 OTHER

Rules of Procedure

The Panel shall apply the Review Board's *Rules of Procedure for Environmental Assessment and Environmental Impact Review Proceedings, May 01, 2005* to the Gahcho Kue environmental impact review proceeding.

Administrative Matters

The Review Board shall prepare and administer a budget for the environmental impact review process including Review Board costs.

The Review Board staff shall provide administrative, technical and procedural support for the Panel.

Public Registry

A public registry will be established and maintained in accordance with the requirements of the MVRMA to allow the public access to documents related to the Environmental Impact Review. The public registry shall be located at the Review Board's office in Yellowknife, NT. There will be electronic access to the public registry to the extent possible.

Appendices

Appendices 1 and 2 are part of these Terms of Reference.

11.0 AMENDMENT

The Review Board may amend these terms of reference as required to ensure the effective and efficient conduct of the Gahcho Kue environmental impact review.

Appendix 1: SCOPE OF DEVELOPMENT

The Review Board's Report of Environmental Assessment defined the scope of the development as assessed. The same scope applies to the EIR. The Report of Environmental Assessment provides a summary of the development description; a more detailed description is found in DeBeers' application report to the Mackenzie Valley Land and Water Board. The following table from the Report of Environmental Assessment outlines the scope of the development:

Table 1: Development Overview

Phase	Components/Activities
Construction	Construction of mine facilities and associated works;
	Construction of dikes for dewatering of lake and diversion structures to lessen inflows to the watershed;
Mining Operations	Removal of waste rock, kimberlite and mine water from the open pits, including the use of explosives;
	Processing of ore to extract diamonds;
	Storage and handling of processed kimberlite;
	Storage and handling of waste rock;
	Removal of diamonds from mine site;
Water Management	Dewatering of Kennady Lake;
	Handling of mine water;
	Surface water management;
	Removal of water from Kennady Lake for use at the mine site, both by mining personnel and for mining operations, including dust control;
	Water treatment and sewage disposal;
Transport and Surface Structures	Use of the current Tibbitt-Contwoyto winter road;
	Construction of an access road from Tibbitt-Contwoyto winter road to project site;
	Construction/Upgrading of airstrip and air transport activities;
	Solid waste management and containment areas;
	Surface structures, including power plant, sewage and water treatment plants, camp facilities, roads, and ore processing plant;
Closure and Reclamation	Closure and reclamation of the mine site.

The scope of development is not limited to the specific methods or means for carrying out the development described in the *Application Report*, but includes alternative means to achieve the same ends.

Appendix 2: SCOPE OF ENVIRONMENTAL IMPACT REVIEW

Factors Required by the MVRMA

In reaching its conclusions the Panel shall consider the following factors pursuant to MVRMA sections 117(2) and (3):

- a) 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;
- b) the significance of any such impact;
- c) any comments submitted by members of the public in accordance with the regulations or the rules of practice and procedure of the Review Board;
- d) where the development is likely to have a significant adverse impact on the environment, the need for mitigative or remedial measures;
- e) the purpose of the development;
- f) 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;
- g) the need for any follow-up program and the requirements of such a program;
- h) the capacity of any renewable resources that are likely to be significantly affected to meet existing and future needs, and
- i) 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.

Issues Arising from Environmental Assessment

The Reasons for Decision and Report of Environmental Assessment (REA) for the environmental assessment of the proposed development (EA0607-008) identified a number of issues, listed in table 2 below. Moreover, the REA defined seven key lines of inquiry and thirteen subjects of note, as listed in table 3 below. The scope of the environmental impact review includes all the issues listed. The key lines of inquiry and subjects of note represent the primary and secondary focus for the impact review.

The key lines of inquiry and subjects of note are the results of efforts to prioritize issues during scoping. Key lines of inquiry are the areas of the greatest concern that in the Review Board's opinion require the most attention. Key lines of inquiry may encompass multiple issues raised during scoping and may overlap. Their purpose is to ensure a comprehensive analysis of issues that resulted in the significant public concern identified by the Review Board. Subjects of note are defined in the REA as areas that "stand out from the long list of issues and will require serious consideration".

All issues not falling under any of these “key lines of inquiry” or “subjects of note” will be tracked as other issues.

Table 2: Issues

<p>Wildlife Issues</p>	
<p>Carnivores</p> <ul style="list-style-type: none"> • carnivore attraction • human/bear encounters • increased carnivore mortality • noise/sensory impacts • key habitat loss in eskers • loss of prey sources for grizzly bears <p>Caribou</p> <ul style="list-style-type: none"> • exposure to contaminants • impacts to already vulnerable populations • effects on reproduction • cumulative impacts to population • impacts on caribou behaviour • hazards on site • migration routes • effects of tall waste pile on caribou and their predators 	<p>Changing Water Levels</p> <ul style="list-style-type: none"> • drawdown impacts on habitat • downstream impacts • Wildlife impacts from freeze-up/ breakup timing changes <p>Other Ungulates</p> <ul style="list-style-type: none"> • impact muskoxen distribution • impacts on moose • sensory disturbance to muskoxen <p>Traffic & Road Concerns</p> <ul style="list-style-type: none"> • impacts from traffic on winter roads • new access from spur road • aircraft traffic disturbance <p>Species at Risk</p> <p>General</p> <ul style="list-style-type: none"> • waste management impacts • impacts on small mammals <p>Birds</p> <ul style="list-style-type: none"> • disturbance • exposure to contaminants • habitat impacts
<p>Water Issues</p>	
<p>Water rights</p> <ul style="list-style-type: none"> • impacts on aboriginal water rights and spiritual concerns • impacts on navigability of downstream waters • interference with existing water users <p>Permafrost</p> <ul style="list-style-type: none"> • effects of permafrost freezeback on exposed lake bed • adequacy of permafrost monitoring and data to appropriately model mine components • problems with freezeback of processed kimberlite • implications of climate change on reclaimed mine components <p>Groundwater/Hydrogeology</p> <ul style="list-style-type: none"> • impacts of pits on movement and quality of groundwater • interaction between groundwater and submerged waste • relationships between taliks and groundwater flow regime • short term and long term impacts on groundwater flow • management of groundwater flows by DeBeers 	<p>Water quality</p> <ul style="list-style-type: none"> • end of pipe contamination • pits as long term contamination sources • geochemistry of waste rock and process kimberlite • turbidity during dewatering and rewatering lake • contamination runoff from PKC and waste rock • dust as water contamination • hydrocarbon contamination • Length and adequacy of long-term water quality monitoring <p>Surface Water/Watershed</p> <ul style="list-style-type: none"> • downstream effects of large water releases • reduced water flows as lake level is restored • ice quality on Kennady Lake and surrounding lakes • cumulative effects on Hoarfrost and Lockhart rivers and Great Slave Lake • extent of downstream effects <p>Water use and management</p> <ul style="list-style-type: none"> • water diversion effects • alterations to natural drainage

<p>Public Concern</p> <ul style="list-style-type: none"> • implications of water quality on human health • public notification of flooding events 	
<p>Fish Issues</p>	
<p>watershed impacts</p> <ul style="list-style-type: none"> • fish health • fish behaviour (increase and decrease in flow) • migration interruption • water chemistry alterations from deep ground water • chemistry changes in sediment and water • impacts of backfilling on aquatic biota • fluctuation of water flows <p>Road Effects</p> <ul style="list-style-type: none"> • ice road construction • erosion • water withdrawal • increased ice thickness • watercourse crossings • spills 	<p>Operations and Construction</p> <ul style="list-style-type: none"> • fish out • contaminant levels • Freshwater Lake impacts • habitat destruction and creation • noise and vibration on fish behaviour <p>Data</p> <ul style="list-style-type: none"> • baseline data • monitoring <p>Long term effects</p> <ul style="list-style-type: none"> • feasibility of recovery • physical changes to lake • addition of deep water habitat post-mine and impacts on the rest of the lake <p>Reclamation Methods</p> <ul style="list-style-type: none"> • alternative water sources • habitat creation • restocking of fish
<p>Misc. Issues</p>	
<p>Climate Change</p> <ul style="list-style-type: none"> • impact on project design • transportation alternatives • energy alternatives • creation of microclimate at mine site <p>Physical Stability</p> <ul style="list-style-type: none"> • waste rock and PKC co-disposal • impacts from changing permafrost <p>Geochemistry</p> <ul style="list-style-type: none"> • acid-generating rock impacts • composition of lake bed sediments 	<p>Air Quality</p> <ul style="list-style-type: none"> • increased dust from exposed lake bed • waste incineration impacts • impacts from emissions <p>Vegetation</p> <ul style="list-style-type: none"> • increase in invasive species • impacts from increased dust on vegetation • stress to rare plant populations <p>Emergency Measures</p> <ul style="list-style-type: none"> • impact of smaller spills
<p>Community Wellness Issues</p>	
<p>Employment</p> <ul style="list-style-type: none"> • discriminatory hiring policy and practices • cultural difference in workplace affecting job satisfaction • lack of opportunity for advancement • increased need for child care • gender inequities • frustration from hiring targets that have not been met <p>Community Capacity</p> <ul style="list-style-type: none"> • reduced involvement in communal activities • lack of control over pace of development • potential for growing sense of disempowerment • increasing out-migration/skills drain to larger 	<p>Training</p> <ul style="list-style-type: none"> • lack of diversity & adequacy of training opportunities • inability to meet educational requirements to access training • limited training available in outlying communities <p>Income and Expenses</p> <ul style="list-style-type: none"> • unhealthy lifestyle choices • money management issues • impacts from poor budgeting skills • increasing income disparities (haves/have nots) • increased cost of living • housing availability, adequacy and

<p>centres</p> <ul style="list-style-type: none"> • infrastructure pressures of increasing in-migration to regional centres • Shortage of locally available labour force for community services • lack of capacity to engage in monitoring & enforcement <p>Education</p> <ul style="list-style-type: none"> • incentives and disincentives to further education • need for increased educational programming to prepare for mine employment • lack of functional literacy 	<p>affordability</p> <p>Cultural/Population Health</p> <ul style="list-style-type: none"> • loss of language • reduced harvesting success • loss of traditional skills • decreased transfer of knowledge between generations • loss of spiritual connections and knowledge • physical impacts to health • loss of family cohesion related to rotational work schedules
Regional/Territorial Socio-Economic Issues	
<p>Heritage Resources</p> <ul style="list-style-type: none"> • physical disturbances to heritage sites • loss of spiritual value of place • loss of aesthetic value of place • loss of alternative uses of land <p>Labour Force</p> <ul style="list-style-type: none"> • problems with employee retention • lack of adequate Northern labour pool to staff mine • wage benefit drain from North <p>Government Capacity</p> <ul style="list-style-type: none"> • increasing costs and pressures on existing physical infrastructure • increased costs and pressures on existing social services • lack of adequate skills training programs for Northerners • increasing costs and pressures on regulation and monitoring activities 	<p>Regional Disparities</p> <ul style="list-style-type: none"> • widening income disparities between communities and regions • competition for access to benefits between communities • determination of "affected communities" <p>Northern Business</p> <ul style="list-style-type: none"> • distribution of spin off effects - flows from North • inflated wages/material costs - effects on local/regional businesses • secondary business development opportunities for Northern firms <p>Sustainable Economy</p> <ul style="list-style-type: none"> • over-reliance on one resource economy • impacts on alternative business opportunities/economic diversification

Table 3: Key Lines of Inquiry and Subjects of Note

Key Lines of Inquiry	
<ul style="list-style-type: none"> • Caribou • Water quality & fish in Kennady Lake • Downstream water effects • Long term biophysical effects/Closure and Reclamation 	<ul style="list-style-type: none"> • Substance abuse and decrease in family and community cohesion • Increasing social disparity • Long term social, cultural, economic effects
Subjects of Note	
<ul style="list-style-type: none"> • Aboriginal rights and the interconnectedness of issues • Training, education, and promotion 	<ul style="list-style-type: none"> • Infrastructure demands (physical and social) • Cultural sites and reduced cultural

<ul style="list-style-type: none"> • Impacts on tourism potential • Air quality • Species at Risk and migratory birds • Permafrost/Groundwater/Hydrogeology • Carnivore mortality • Alternative energy sources 	<p>activities</p> <ul style="list-style-type: none"> • Waste rock and processed kimberlite storage • Climate change impacts • Impacts on Great Slave Lake • Preliminary area of interest for proposed national park in the East Arm of Great Slave Lake
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The temporal scope of the environmental impact review extends from pre-development to closure and reclamation.

The geographical scope of the environmental impact review includes but is not limited to:

- impacts on caribou: the range of the caribou including the vicinity of the mine site, the access road from Mackay Lake, and the Tibbitt to Contwoyto Road from its southern end to the start of the access road at Mackay Lake;
- impacts on fish and other aquatic organisms: any water body crossed by the Tibbitt to Contwoyto Road portion listed above, all water bodies crossed by the Mackay Lake access road, Kennady Lake, and all water bodies downstream of Kennady Lake to Great Slave Lake; and
- socio-economic and cultural impacts: all communities in the Tlicho and Akaitcho regions.

Scope Changes

The Panel may consider additional issues, geographical areas, key lines of inquiry, subjects of note, and factors if warranted by the evidence. If the evidence warrants it, the Panel may also alter key lines of inquiry or subjects of note. If individual issues are resolved during the impact review to the satisfaction of the Panel, the Panel may remove these issues from further consideration.