



October 25, 2012

VIA EMAIL

Chuck Hubert  
Senior Environmental Assessment Officer  
Mackenzie Valley Environmental Impact Review Board  
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Yellowknife, NT  
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Dear Mr. Hubert,

**RE: Government of the Northwest Territories Technical Report for  
EIR0607-001 Gahcho Kue Diamond Mine Project,  
De Beers Canada Incorporated**

Attached to this cover letter is the Government of the Northwest Territories Technical Report for the De Beers Canada Incorporated Gahcho Kue Diamond Mine Project environmental impact review. It is requested this submission be posted to the Mackenzie Valley Environmental Impact Review Board public registry.

Please contact me at [gavin\\_more@gov.nt.ca](mailto:gavin_more@gov.nt.ca) or (867) 873-7107 if you may require any further details.

Sincerely

A handwritten signature in blue ink that reads "Gavin More". The signature is written in a cursive, flowing style.

Gavin More  
Manager  
Environmental Assessment and Monitoring  
Environment and Natural Resources

**Government of the Northwest Territories**  
**Technical Report for the Gahcho Kue Diamond Mine Project**

**EIR0607-001 [2006]**

**October 25, 2012**

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## Acronyms

AMC	Adaptive Management Committee
DBCI	De Beers Canada Incorporated
EA	Environmental Assessment
EIS	Environmental Impact Statement
ENR	Department of Environment and Natural Resources
GNWT	Government of the Northwest Territories
IBA	Impact and Benefit Agreement
IR	Information Request
IRR	Information Request Response
LSA	Local Study Area
MOU	Memorandum of Understanding
MVEIRB	Mackenzie Valley Environmental Impact Review Board
MVRMA	<i>Mackenzie Valley Resource Management Act</i>
NWT	Northwest Territories
RSA	Regional Study Area
SEA	Socio-Economic Agreement
SGP	Slave Geological Province
WEMP	Wildlife Effects and Monitoring Program (titled as a WMP by DBCI)
WWHPP	Wildlife and Wildlife Habitat Protection Plan (titled as a WMMP by DBCI)
WMP	Wildlife Monitoring Program
WMMP	Wildlife Effects Mitigation and Monitoring Plan
ZOI	Zone of Influence

## **1. Non-Technical Summary**

The Government of the Northwest Territories (GNWT) is an intervener to the De Beers Canada Incorporated (DBCI) Gahcho Kue Diamond Mine (Gahcho Kue Project) environmental impact review (EIR). This Technical Report has been issued after active EIR involvement and review of the DBCI environmental impact statement (EIS), participation in Information Requests and Responses, and review of other materials on the public registry. The GNWT has also met with DBCI on multiple occasions outside the EIR process to discuss possible effects of the Gahcho Kue Project and possible mitigation measures that may result.

### Wildlife

The GNWT agrees with the approach proposed in the DBCI Wildlife Monitoring Program (WMP) in terms of working cooperatively with partners and engaging in regional scale monitoring. The GNWT agrees with the list of WMP target species and is encouraged by DBCI commitment to participate in the joint regional grizzly bear program and the regional wolverine monitoring program. The WMP still requires further development, however, in order to accurately test predictions made in the DBCI EIS for the Gahcho Kue Project; further discussion of the caribou and wolf monitoring programs are needed. The GNWT recommends DBCI and the GNWT sign a Memorandum of Understanding (MOU) to provide further clarity on how these two parties can collaborate on regional wildlife monitoring programs and cumulative effects assessments for target species.

Concerns exist over the Gahcho Kue Project access road contributing to cumulative effects on Bathurst caribou due to mainly increased access for harvesters. The GNWT recommends to DBCI that the abovementioned MOU also provide clarity on how DBCI and the GNWT can work in collaboration with communities and Aboriginal government to jointly develop and implement a Road Access Management Plan.

The GNWT acknowledges DBCI has also made initial steps toward developing a Wildlife Effects Mitigation and Monitoring Plan (WMMP). This plan, however, is not developed sufficiently for the GNWT to evaluate the effectiveness of proposed mitigation for site-specific mine impacts on wildlife. In discussions with DBCI, GNWT understands DBCI is still developing this plan and continues to do so with relevant parties.

### Socio-Economics

General areas of outstanding socio-economic concern for the GNWT cover the subjects of employment and education; culture, heritage and archaeology; business development; and socio-economic monitoring and follow-up.

Under employment and education, the GNWT would like employment commitments provided; confirmation that Aboriginal and northern employment remains a priority and that DBCI and

contractors will show support for this through employment outcomes including education, training, advancement, promotion and other data; further detail on employee travel and relocation benefits; on-going monitoring and reporting on human resource activities that include, but are not limited to, those in the *Gahcho Kue Project Human Resource Strategy*. The GNWT would like clarification on the process and mechanisms DBCI will use to ensure contractors meet and follow commitments made by DBCI; and receive notification upon temporary and permanent lay-offs. The GNWT would like DBCI to ensure coordination with the GNWT in the development of the northern labour market and include all these activities in a socio-economic monitoring plan.

The GNWT would like to work in coordination with DBCI to support traditional language use and other cultural conservation and preservation activities. The Prince of Wales Northern Heritage Centre recommends DBCI immediately implement the October 2012 *Archaeological Management Plan*.

Regarding Business Development, the GNWT would like to ensure local, Aboriginal and northern businesses remain the priority for business opportunities associated with the Gahcho Kue Project. It is important that relationships with contractors and sub-contractors provide for full and fair opportunity for local, Aboriginal and northern businesses. The GNWT would like to see an updated procurement and business development strategy, including predictions for spending from northern businesses, as well as the adaptive management measures in place to protect northern business interest.

The GNWT worked with DBCI to address health and social service concerns. The GNWT and DBCI have agreed on commitments that will ensure impacts to the NWT health care system are minimized. There is a commitment to ensure management of records and operational procedures at Gahcho Kue Project work with GNWT procedures. Finally, there are reasonable commitments from De Beers with respect to Employee and Family Assistance Program, healthy foods at work, and a willingness by DBCI to work with the GNWT to address other social issues.

Overall, as the Gahcho Kue Project relates to socio-economic matters, the GNWT is recommending that a formal follow-up program, in the form of a Socio Economic Agreement (SEA) between the GNWT and DBCI, be a condition of project approval. A SEA would provide for monitoring and reporting of socio-economic concerns and allows for testing of predictions made by DBCI. A SEA allows for assessing the success of mitigation and public reporting, and allows for further discussions. This agreement would remain in place for the life of the project.

## **2. Introduction**

The GNWT promotes and supports the sustainable use and development of natural resources to protect, conserve and enhance the environment of the Northwest Territories (NWT) for the social and economic benefit of all residents. This responsibility is shared with Aboriginal, federal, territorial, and municipal governments, boards and agencies and every resident of the NWT.

The GNWT has been an active participant in the Gahcho Kue Project EIR: it has reviewed the EIS and participated in Information Requests and Technical Sessions. The GNWT has also met with DBCI and other parties during the EIR, where officials clarified information and discussed commitments to mitigate possible impacts from the Gahcho Kue Project. Summaries of discussions and agreed-upon commitments have been submitted to MVEIRB for posting to the public registry.

This submission represents the GNWT Technical Report for the Gahcho Kue Project EIR (EIR0607-001). The intent is to provide context to issues and propose mechanisms by which they can be resolved. The topics discussed in this report are outlined in the table of contents found on page i.

## **3. Air**

The GNWT has participated throughout the review and assessment of the air quality component for the Gahcho Kue EIR. Initial GNWT technical queries relating to air were alleviated through DBCI responses to GNWT IRs. Further, through the EIS (section 11.4.9) and a DBCI Information Request Response (IRR; to EC&GNWT\_3 on April 2, 2012), DBCI has committed to developing and implementing an Air Quality and Emissions Monitoring and Management Plan (AQEMMP) and an Incineration Management Plan (IMP).

Draft versions of the AQEMMP and IMP have been prepared and provided to the GNWT. The AQEMMP has been developed to include response planning and setting monitoring result levels to trigger adaptive management actions. The GNWT will continue to work with DBCI and Environment Canada to further develop these plans in order to ensure air quality emissions, and monitoring and incineration practices are conducted in accordance with applicable guidance documents; and, to ensure that applicable air guidelines and best management practices are implemented.

**Recommendation #1:**

The GNWT recommends DBCI commit to develop and implement an AQEMMP and IMP in consultation with the GNWT and Environment Canada.

## **4. Wildlife**

The GNWT, Department of Environment and Natural Resources is responsible for the stewardship of wildlife resources (other than species listed under the Migratory Birds Convention Act), which includes the collection of baseline information; assessing and monitoring the status of wildlife; wildlife habitat; species at risk; wildlife health; assessing impacts on wildlife from human activities; and regulating wildlife protection and use.

The primary purpose for Section 2 of this report is to provide a technical review of the October 4, 2012 draft WMP for the Gahcho Kue Project, which includes a WMMP. This review includes an assessment of whether the draft WMP is sufficiently robust to accurately test predictions made in the DBCI EIS for the Gahcho Kue Project. Many of the predictions made suggest that impacts of the Gahcho Kue Project on wildlife distribution and abundance will be of limited significance, in part because of various mitigation strategies proposed by DBCI (see Section 2 of the draft WMP).

### **4.1. Monitoring Programs and Mitigation Plans Terminology**

DBCI has committed to working with other parties to develop a WMP for the Gahcho Kue Project. It is recognized that what the GNWT typically refers to as a Wildlife Effects Monitoring Program (WEMP) and a Wildlife and Wildlife Habitat Protection Plan (WWHPP) are what DBCI refers to as a WMP and WMMP, respectively. General definitions of a WEMP and WWHPP have been provided in Section 4.1.1 and 4.1.2 of this report in order to clearly identify the differences between these two types of documents. The GNWT intends to provide more detailed outlines for WWHPP and WEMP documents in the future. These are intended to guide collaborative development of WWHPPs and WEMPs for the Gahcho Kue Project and future developments.

To ensure minimal confusion regarding a wildlife mitigation and employee/contractor guidance manual (i.e. WWHPP) versus a follow-up effects monitoring program (i.e. WEMP), the GNWT requests DBCI rename its WMMP to a WWHPP, and rename its WMP to a WEMP. Such renaming will help establish common language when developing industry-wide best practices



and guidelines. This consistency will be beneficial to governments, regulators and other future development projects.

#### **4.1.1. Wildlife Effects Monitoring Program (WEMP)**

A WEMP (titled as a WMP by DBCI) encompasses effects monitoring at a Local Study Area (LSA) and Regional Study Area (RSA) scale during the life of the project. In effect, it is a follow-up program as defined under the Mackenzie Valley Resource Management Act<sup>1</sup>. A WEMP details larger scale monitoring objectives and methods (e.g., monitoring wildlife species threatened by potential increases in harvester access due to project roads). The WEMP provides an avenue to test the effectiveness of impact predictions made by a developer during a project's environmental assessment or EIR, including mitigation techniques employed during the construction, operation, closure and post-closure phase of a project. A WEMP does not include mitigation measures per se as it, by definition, is strictly a process for monitoring and testing specific effects questions. The results of this will be used to support adaptive management approaches if needed and to contribute to cumulative impact strategies. Results from a well-designed WEMP can also be used to inform best practices associated with future development projects in the NWT and the Slave Geological Province (SGP).

An effective WEMP should:

1. Be focused on identified project Valued Ecosystem Components (VEC) that are typically found in or near the area surrounding the project;
2. Be conducted at a project local study area and/or project regional study scale that is appropriate to the proposed predictions for the project VEC;
3. Use tested standardized protocols/methods/approaches that are in use by other mines so that monitoring results can be combined at a regional scale;
4. Be developed and reviewed in collaboration with Aboriginal partners, government, regulatory agencies, and other interest groups including other mines; and
5. Be developed such that monitoring and mitigation techniques can be revisited and revised pending new information (i.e., developed using an adaptive management framework).

WEMP-related guideline information was provided to DBCI in the January 18, 2012 GNWT IR #5.

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<sup>1</sup> As stated in the *Mackenzie Valley Resource Management Act*, Part 5, Section 111, Definitions, "follow-up program" means a program for evaluating:

(a) the soundness of an environmental assessment or environmental impact review of a proposal for a development; and

(b) the effectiveness of the mitigative or remedial measures imposed as conditions of approval of the proposal.

The GNWT maintains that regional scale monitoring should take place as an active collaboration between governments, developers, Aboriginal groups, and other interested parties. For example, DBCI, Rio Tinto Canada Inc., and BHP Billiton are leading a joint regional scale program that is designed to monitor grizzly bear abundance and distribution in and around the mine areas via DNA sampling of hair snags (Rescan 2012). Information from this study can increase the understanding of the grizzly bear population and therefore assist in development of management options and cumulative effects assessment.

#### **4.1.2. Wildlife and Wildlife Habitat Protection Plan (WWHPP)**

The WWHPP (titled as a WMMP by DBCI) outlines the steps necessary to protect personnel, wildlife and wildlife habitat within the Project Development Area (PDA), also commonly described as a project's direct "footprint." A WWHPP documents the day-to-day standard operating procedures including mitigations, reporting, and best practices for the Project site.

The WWHPP requires the development of clear protocols and standard operating procedures for project employees and contractors to ensure the implementation of site-specific mitigation. The WWHPP must include measures for both compliance monitoring and reporting, and environmental monitoring and reporting. This helps ensure human safety by reducing the potential for interaction between people and wildlife; and reduces or prevents any direct impacts to wildlife from the PDA. The plan is required to provide a set of instructions to mine staff, to show diligence on part of the developer and to comply with legal requirements. Typically, site-specific management data is not directly relevant to regional scale monitoring, but some information may be incorporated into a regional scale monitoring program (e.g., tracking of on-site wildlife mortalities).

#### **4.2. DBCI WMP Review**

On October 4, 2012 DBCI posted a three-part draft WMP to the MVEIRB public registry. Part 1 contained species-specific monitoring plans for barren-ground caribou, grizzly bear, wolverine, raptors, small mammals, and upland birds. The GNWT agrees that the DBCI list of target species is appropriate for the Gahcho Kue Project WMP, with the exception that wolf-specific monitoring as it relates to barren-ground caribou is only briefly mentioned. DBCI has committed to working with other parties to develop a project specific WMP and has indicated a willingness to contribute to regional monitoring programs.

The GNWT believes that regional scale monitoring is most appropriate for many of the species listed in the WMP because they either have large home ranges or are wide-range species (e.g., barren-ground caribou). As such, mine impacts may be limited to only a small number of individuals, which may not translate into population level effects (exceptions to this could include a high number of site-specific mortalities). Regional scale monitoring programs can be used to track overall changes in wildlife abundance and distribution, which can be used by the GNWT and co-management partners to make management decisions related to such things as harvest and development for the region or population as a whole. While regional monitoring data is likely too coarse to tease out individual mine effects, it can be used in future cumulative effects assessments to make predictions about when development disturbance thresholds have been reached (as described in the Recovery Strategy for the Woodland Caribou, Boreal population, Environment Canada, 2012) or used to show how strategies like land use planning can be used to minimize development impacts on wildlife. The draft WMP also includes discussion on how DBCI will take an adaptive approach to monitoring and impact mitigation/management (i.e., adapt and revise approaches as needed pending new information). Department of Environment and Natural Resources (ENR), GNWT, agrees that this collaborative, multi-scale and adaptive approach to monitoring and mitigation is conceptually sound.

Data from the WMP should be robust enough to test the DBCI overall prediction that the Gahcho Kue Project will have limited impacts on wildlife at local and regional scales. In some instances, there is not enough information in the draft WMP for the GNWT to evaluate how information from monitoring programs will be used to test predictions made in the EIS. There is also no clear linkage made between how some of the information collected at the local scale (i.e., mine related mortalities and incidences of attractants) may link back to regional monitoring efforts. In addition, while the GNWT is comfortable with some of the DBCI regional monitoring commitments (e.g., grizzly bears, wolverines, and raptors), in other instances it is less clear of the DBCI approach or role in regional monitoring (e.g., caribou and wolf monitoring programs).

**Recommendation #2:**

- a. The GNWT recommends the effects follow-up programs be statistically robust and clearly indicate how DBCI will test the predictions made in the Gahcho Kue project EIS. Programs need to include detailed objectives, study designs, and an overview of how the data will be used to gauge mine effects (or lack thereof) and explain the linkages between local and regional monitoring programs.
- b. The GNWT believes that some effects follow-up programs might be needed after the closure of the mine. GNWT recommends that these specific programs be included in the closure and post closure plans.
- c. The GNWT recommends that DBCI and the GNWT enter into an MOU that provides

further clarity on how DBCI and GNWT can collaborate on regional wildlife monitoring programs and cumulative effects assessments.
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#### **4.2.1. Barren Ground Caribou**

The proposed project will be located within the range of the Bathurst barren-ground caribou herd, which has recently suffered a drastic decline in numbers as described in the 2011-2015 Barren-ground Caribou Management Strategy for the Northwest Territories. The GNWT currently has a regional monitoring program for the Bathurst herd. Changes in herd size, trend, and composition are regularly tracked through the use of collars and/or aerial surveys. The current GNWT monitoring program for the Bathurst herd is on herd numbers that are low and thus monitoring is relatively intense. Future monitoring program needs may change depending on herd size and trend (e.g., monitoring needs may lessen as herd size increases), and future discussions with GNWT's co-management partners.

The GNWT will be holding a cumulative effects workshop on caribou pending the completion of a 2008 Cumulative Effects Demonstration project report for the Bathurst herd. The GNWT understands that DBCI will participate in this workshop. The GNWT also expects that other interested parties will attend and participate in this workshop when it takes place.

Currently, there are a number of other developments within the Bathurst range. In addition to concerns over the individual impact of the Gahcho Kue project on the herd, there are concerns over the cumulative impact of having multiple developments within the Bathurst range (particularly when the herd is at such low population numbers) combined with winter roads that are needed to access the mines. In addition to the impact of the roads themselves (disturbance, increases in vehicular mortality, etc.), there is concern that increased road access will increase harvester access to the herd.

DBCI has identified a number of objectives that are to be included in the caribou component of the WMP, including those described in the Report on Diamond Mine Wildlife Monitoring Technical Workshop June 29, 2010 (Handley, 2010). Some details within the WMP as it relates to caribou remain unclear to the GNWT in terms of specific monitoring objectives, approaches, and analysis. For example, the WMP is not clear on how or if the Zone of Influence (ZOI) will be assessed, how the proposed transect distances were derived (e.g., if modeling was used to establish optimal transect spacing), and/or if the methods used to assess the ZOI are consistent with methods used at other mine sites (i.e., a standardized approach, which can then be potentially used to test ZOI at a larger scale for the Bathurst herd). It is not clear if the ZOI is meant to be included as part of local or regional scale monitoring (or both). It also is not clear if

DBCI intends to determine which mitigation strategies can be used to reduce the ZOI (assuming it exists), or if they intend to determine what factors may drive the ZOI.

**Recommendation #3:**

If DBCI does test for a ZOI, then the GNWT recommends that DBCI design a monitoring program using standardized protocols to properly assess if there is a ZOI around the Gahcho Kue project for caribou. This program could be expanded on to include determining if caribou behaviour changes in relation to mining activity and if a given mitigation strategy is effective at reducing ZOI. If DBCI does not test for a ZOI, then the GNWT recommends DBCI clarify what ZOI will be used around the project itself and the associated winter access roads.

Changes in caribou distribution and density may in part be tied to changes in wolf distribution and density, and as such wolf monitoring should be included in a cumulative effects monitoring program for barren-ground caribou. GNWT has an ongoing monitoring program to assess relative wolf abundance and distribution in the Bathurst caribou range. More recently, ENR has initiated a wolf predation study to determine the specific impact of wolves on Bathurst caribou demography. DBCI has provided support for this regional initiative in 2012 and it is the understanding of ENR that DBCI has confirmed support for the study in 2013. In the draft WMP, there is an unclear reference to wolf monitoring as it relates to barren-ground caribou monitoring, but there is no specific commitment to a wolf monitoring program per se.

**Recommendation #4:**

GNWT recommends further discussion between GNWT and DBCI on how to collaborate on (a) the caribou monitoring program; and (b) the regional wolf monitoring program and wolf predation study as it relates to the Bathurst herd (see Recommendation #2c).

#### **4.2.2. Grizzly Bears**

Given the challenge of obtaining adequate baseline data for grizzly bears and given the uncertainty in the potential significance and cumulative impacts of future resource development pressures, the GNWT is pleased that DBCI has committed to participating in a Joint Regional Grizzly Bear DNA study in partnership with BHP Billiton and Rio Tinto Canada Inc. (Rescan, 2012). By participating in and following the standardized approaches outlined in this regional study design, DBCI will be collecting data required at two scales. At the local scale, this study is expected to provide quantitative DNA data to address whether or not mine related activities influence the relative abundance and distribution of grizzly bears in the study area over time. At the regional scale, standardized survey efforts carried out over a study area of

30,000 km<sup>2</sup> can be expected to provide better data on the distribution and relative abundance of bears, which use large home ranges.

The GNWT understands that DBCI will participate in a follow-up workshop to:

- Discuss refinements to the grizzly bear study design based on results of 2012 fieldwork completed by BHP Billiton and Rio Tinto Canada Inc.;
- Review grizzly bear study area boundaries to ensure an appropriate sampling effort (distribution of cells) is reflected in the MacKay Lake area, along the tree-line, and along the eastern boundary;
- Establish a standardized study design once analysis of data from the entire study area is completed (i.e., review data from 2012 and 2013 surveys);
- Clarify roles and responsibilities of industry, government, monitoring agencies, and affected Aboriginal communities with respect to this program; and;
- Initiate discussions on how to assess, monitor, and manage the cumulative effects of human and natural disturbance on grizzly bears.

GNWT expects that other interested parties will attend and participate in this workshop when it takes place.

#### **4.2.3. Wolverine**

In April 2005, DBCI used a regional scale DNA wolverine sampling to assess the number and distribution of female and male wolverines within a regional study area surrounding Kennedy Lake (Figures 11.10-15 & 11.10-16, EIS). The same survey protocol was repeated in 2006 and provided very similar results. The GNWT believes that the 2005 and 2006 surveys provided DBCI with excellent baseline data (Boulanger and Mulders, 2007) from which to gauge the impacts of the mine during construction, operation, closure, and post-closure.

In the draft October 4 2012 WMP, DBCI again committed to conduct wolverine DNA surveys within the Gahcho Kue study area in 2013 and 2014. The GNWT is pleased by this initiative and believes the survey design will provide data robust enough to address the monitoring objective for “...provid[ing] estimates of wolverine abundance and distribution in the study area over time (Handley, 2010)”. In addition to addressing monitoring objectives committed to by DBCI, survey data can be used by the GNWT and its partners to address cumulative effects monitoring and management concerns for wolverines.

The GNWT understands that DBCI will participate in a follow up workshop to:

- Review the results of a multi-year analysis of survey data that the GNWT is conducting related to optimal cell size and optimal survey intervals for wolverines;
- Establish a standardized study design among all partners;
- Clarify roles and responsibilities of industry, government, monitoring agencies and affected Aboriginal communities with respect to this program; and
- Initiate discussions on how to assess, monitor, and manage the cumulative effects of human and natural disturbance on wolverines.

GNWT expects that other interested parties will attend and participate in this workshop when it takes place.

#### **4.2.4. Raptors**

Raptors and raptor nests are protected under the territorial *Wildlife Act*. While no clear objectives or predictions were specified in the WMP for raptors, DBCI did commit to conducting helicopter-based nest occupancy surveys to monitor the distribution, abundance and productivity of raptor nests within the RSA before, during and (presumably) after mine construction and use. DBCI survey efforts would focus on raptor species that are observed nesting within the project RSA, including peregrine falcon, gyrfalcon, rough-legged hawk, and short-eared owl. This data is to be collected and sent to the GNWT or the North American Peregrine Falcon Survey which occurs every five years (the next survey is scheduled for 2015).

Conducting this survey every five years during the thirteen-year life span of the Gahcho Kue Project will mean only three surveys will be completed by DBCI (2015, 2020, and 2025). Depending on the number of raptor sites in the area, the GNWT also suggests some surveys be conducted more frequently, allowing for a more robust data set from which to test the impacts of the mine (also see similar recommendations for more annual surveys in Handley (2010)).

The GNWT understands that DBCI will monitor raptors and if appropriate (i.e., enough data is available), test the following impact predictions, which are similar to what has been requested of other mines (Handley, 2010):

- If mine construction and operation has an impact on raptor nest occupancy, productivity, and production within the RSA;
- If pit walls or other infrastructure are used as nesting sites for raptors;
- What the overall impact of the mine is on direct raptor mortality within the RSA; and
- If mitigation and management actions meant to limit impacts on raptors are effective.

#### 4.2.5. Small Mammals

DBCI has committed to conducting small mammal monitoring, however, monitoring methods have not been clearly outlined. As such, the GNWT is willing to assist with this commitment by providing DBCI with its small mammal monitoring protocols (Outcrop Communications (a, b ,c), Krebs, 2008). The GNWT has been using these protocols since 1990. This will ensure that the DBCI approach is standardized with other small mammal programs conducted throughout the NWT.

#### 4.3. Increased Access and Cumulative Effects

There are a number of developments operating within the Bathurst barren-ground caribou range (Figure 1). In addition to concerns over the individual impact of the Gahcho Kue project on the herd, there are concerns over the cumulative impact of having multiple developments within the Bathurst range (particularly when the herd is at such low population numbers), combined with winter roads that are needed to access these developments. Although necessary for the Gahcho Kue Project, the Snap Lake and Gahcho Kue winter access roads may lead to increased harvest pressures on Bathurst caribou because of increased harvest access. Additional mortalities may stem from vehicle collisions along the roads.

**Recommendation #5:**

The GNWT recommends DBCI work in collaboration with the GNWT, communities, and Aboriginal governments to jointly develop and implement a Road Access Management Plan to proactively address uncertainties about wildlife mortalities, harvest and other issues as they arise along the Gahcho Kue Winter Access Road.

**Recommendation #6:**

GNWT recommends that any MOU between GNWT-ENR and DBCI provide clarity on how DBCI and GNWT-ENR can collaborate on the development and operation of check stations along the winter access road, and the development of public education programs and materials that emphasize respect for caribou and hunter excellence.

While an individual mine may have limited impact on wildlife distribution and abundance, its contribution to the overall amount of development on the landscape may be enough such that wildlife are significantly and adversely impacted (i.e., there may be a threshold of development disturbance above which a given species is negatively impacted—see Environment Canada, 2012 for an example). It is the accumulated effects of all development that is of primary



concern for all wildlife and it is consideration of these factors (in addition to natural factors and climate change) that should be included in cumulative effects-type assessments.

The GNWT believes that cumulative effects assessment, monitoring, and mitigation needs to be approached in a collaborative manner with its partners as it is not a task that can or should be taken up by a single agency. GNWT is in the process of hiring a Cumulative Effects Biologist to lead the cumulative effects program for ENR. The GNWT has asked DBCI in this Technical Report to contribute to regional study scale monitoring programs and to participate in a number of species-specific cumulative effects workshops (see above). The GNWT expects that other interested parties and management authorities will attend and participate in these workshops when they take place.

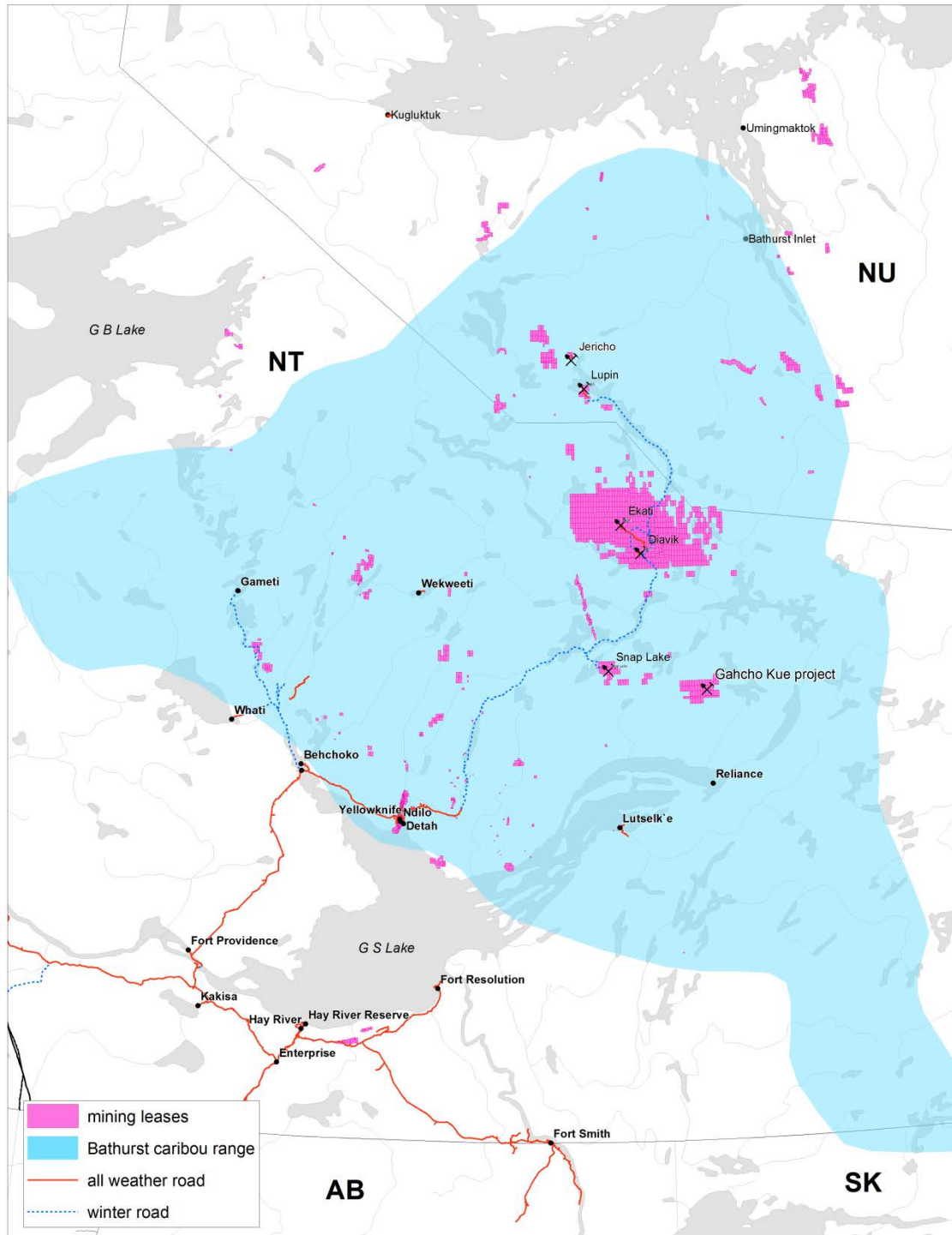


Figure 1: Showing developments operating within the Bathurst barren-ground caribou range, current mining leases, and the location of the proposed Gahcho Kue Project. The Bathurst barren-ground caribou range spans portions of the Northwest Territories (NT), Nunavut (NU), and Saskatchewan (SK). Other abbreviations include: Great Bear Lake (G B Lake); Great Slave Lake (G S Lake); and Alberta (AB).

#### **4.4. DBCI WMMP Review**

The GNWT acknowledges DBCI has made initial steps toward developing a WMMP. This plan, however, is not developed sufficiently for the GNWT to evaluate the effectiveness of proposed mitigation for site-specific mine impacts on wildlife. The draft WMMP provided in October needs to identify Standard Operating Procedures for dealing with potential wildlife issues (e.g., what will staff specifically do if a grizzly bear is near the base site; what type of skirting will DBCI use to keep wolverines from damaging buildings, etc.). In discussions with DBCI, GNWT understands that DBCI is still developing this plan and continues to do so with relevant parties. The GNWT recommends that DBCI refer to equivalent documents developed by other mines as references, as well as refer to the guides provided in Section 4.1.1 and 4.1.2. In addition, the GNWT can continue to offer advice with respect to further development and refinement of the WMMP.

#### **4.5. Reporting and Adaptive Management**

A draft Terms of Reference for the Adaptive Management Committee (AMC) was submitted by DBCI on June 29, 2012, and reference is made to the AMC by DBCI in the draft WMP. However, the function and structure of the AMC is still unclear.

**Recommendation #7:**

The GNWT recommends DBCI further elaborate on the structure and function of the AMC, including describing how decisions will be made within the terrestrial sub-group and how these decisions may or may not alter programs that are set out in the WMP and WMMP.

**Recommendation #8:**

The GNWT recommends DBCI describe its intended annual and periodic reporting procedures (particularly when DBCI will provide results from monitoring programs or evaluation by the AMC). The GNWT also recommends that monitoring results and analyses be completed prior to requesting the Annual Wildlife Research Permits for their upcoming field work.

### **5. Socio-Economics**

#### **5.1. Employment**

DBCI states that the Gahcho Kue Project is expected to employ, on average, between 365 - 372 full-time equivalents (FTEs) at its Gahcho Kue Diamond Mine Project during operations. (Environmental Impact Statement (EIS) 12.4.2 page 12-02) and 12.8.3.2 page 12-327). The number is expected to be approximately 690 during construction, and there would be fewer than 100 staff during mine closure and reclamation.

One FTE is the number of hours worked that add up to one full-time employee. The company “anticipates that a majority of its construction work force will reside outside of the Northwest Territories (NWT)” during construction (EIS page 12 -235), and approximately 137 positions would be filled by local labour during operations. (EIS 12.8.3.2 page 12 -327 and Table 12.6-4 page 12 -144)

DBCI has not included any Aboriginal and northern resident hiring predictions. The other diamond mine projects, including the DBCI Snap Lake mine SEA (3.4), as well as proposed projects such as Fortune Mineral’s NICO Project and Avalon’s Nechalacho Rare Earth Metals Project, all include Aboriginal and northern employment commitments.

DBCI has indicated that it “*wants to have as large an NWT resident workforce as possible*” and has identified hiring preferences: Aboriginal people living in the communities within the socio-economic Local Study Area (LSA); Aboriginal people living in the NWT; other NWT residents; those relocating to the NWT; and all other (EIS 12.4.3). It is unclear whether existing employees who may choose to move to the NWT are eligible for relocation assistance or if only potential new employees will receive this support.

In addition, the company’s *Gahcho Kue Project Human Resource Strategy (2012)* outlines a number of existing human resources systems, strategies and approaches to maximize northern hiring including broadening its hiring priorities, maintaining education, training and human resource partnerships, increasing committed recruitment activities and coordinating transportation to and from the mine site from small communities to pick up points or to the mine site. Clarification is required regarding travel allowances for NWT employees to pick up points as compared to travel allowances provided to southern employees who travel on direct charters to the mine site.

The GNWT recognizes the new and additional programs and initiatives DBCI has identified to support and maximize northern employment. However, further clarification is required to ensure current northern residents and employees are entitled to and receive the same employment incentives and benefits as southern or new employees.

**Recommendation #9:**

The GNWT recommends that the following issues be considered:

- information regarding quantitative Aboriginal and northern resident hiring predictions for each phase of the project.
- a forecast regarding how many workers and for which positions DBCI expects to hire southern workers for each phase of the project.
- development of apprentice and trade positions (EIS Table 12.7-1) in accordance with the requirements of the NWT *Apprenticeship, Trade and Occupations Certification Act* and

including filling these positions further to the identified hiring priorities. (EIS 12.4.3).

- provision of employment, training and economic development end points in Table 12.5-1 of the EIS (page 12 -118)
- DBCI report on its recruitment and employment outcomes and other indicators as per Snap Lake.
- expansion of pickup points beyond the LSA.  
details and clarification with respect to the travel allowances and employment incentives and benefits for NWT-based employees as compared to employees living outside the NWT.

## 5.2. Contractor Hiring and Employment

DBCI has also noted that through the tendering and hiring processes it will request and encourage its contractors follow the same hiring priorities to maximize Aboriginal and northern employment and that it will work with contractors to put into place programs that support training and development of a skilled northern workforce (IR TG-18-8 (18.3) and *Gahcho Kue Project Human Resource Strategy* (2012).

The GNWT recognizes DBCI efforts to work closely with its contractors to support employment, apprenticeship and business opportunities in accordance with the company's stated priorities and processes. DBCI commits to managing performance of its contractors through the supply chain policies and procedures. (IRR TG18\_8, 18.3)

### **Recommendation #10:**

The GNWT recommends that the following issues be considered:

- monitoring and reporting of contractor employment data and the programs and practices put in place to support training and development of a skilled northern workforce, including apprentices, be provided annually.
- clarification on the process that DBCI will use to ensure that contractors meet employment and recruitment commitments made by DBCI.

## 5.3. Closure

The Gahcho Kue Project will have an approximately 11 year mine life, which is shorter than the current operating diamond mines or the other proposed resource projects. The EIS makes reference to severe economic strain to the diamond market, as occurred in 2008, which could cause reductions and/or temporary suspension of mine production. Mining and processing productiveness would also impact the overall mine life and therefore employment.

Employment standards legislation requires employers to notify the GNWT in the event of a permanent lay-off of 25 or more employees. However, there is no provision to notify the GNWT in the event of a temporary lay-off that may increase the need for and impact the preparedness of the GNWT to respond to increased demand for supports and services.

**Recommendation #11:**

The GNWT recommends that the following issues be considered:

- temporary layoff notification by DBCI and its contractors to the GNWT.
- that DBCI and the GNWT work together to ease employees' transition to new jobs upon closure.

#### **5.4. Education, Training and Professional Development**

The DBCI *Gahcho Kue Project Human Resource Strategy* (2012) presents a number of programs and initiatives that support the education, training and professional development of a skilled northern workforce including an expanded scholarship program, promotion of the participation of women in mining and ongoing outreach activities.

A continued collaborative approach between government, industry, communities and training partners to promote and provide educational and employment opportunities to NWT residents has been noted.

The GNWT anticipates the completion of a booklet DBCI is producing that provides a description of the jobs within Gahcho Kue Project and the skills and qualifications required for each position. The GNWT expects that this information piece, the list of planned positions at Gahcho Kue (*Gahcho Kue Project Human Resource Strategy* (2012)), the activities and mitigations listed in Section 12.5.6 of the EIS and the implementation of the DBCI Apprenticeship Policy will further enhance employment and career options. Learning supports such as onsite educational support staff, the computer lab and additional mitigation approaches as outlined in the EIS page 12 – 240, will continue to build the capacity of the northern workforce.

DBCI has identified a range of mitigation measures, practices, strategies and tactics in the EIS and its *Gahcho Kue Project Human Resource Strategy* (2012) that will support the development of an educated and skilled NWT labour force. However, further specifics and reporting are required to ensure these activities continue to address and respond to the education, training, skill development, career advancement and employment needs of current and potential employees throughout the territory.

**Recommendation #12:**

The GNWT recommends that the following issues be considered:

- provide information about as well as monitor and report on the outcomes of its programs and initiatives including, but not limited, to recruitment, scholarships, apprentices, advancement and promotion of women and northerners, outreach activities, etc. as identified and committed to in the *Gahcho Kue Project Human Resource Strategy* (2012).
- provide further details about its Leadership Development Program and the Needs Assessment. (Human Resources Tactic #21 and # 13).
- continue to work with the GNWT and other organizations to plan, design and co-ordinate the delivery of education and literacy, pre-employment and on-the-job training, skill development, professional development and other related programs and services that support and inform employment and northern labour market development.
- provide details of the human resources development, orientation and training plans that expand upon the tactics identified in the *Gahcho Kue Project Human Resource Strategy* (2012)

## **5.5. Culture, Heritage and Archaeology**

DBCI has identified a variety of activities and actions in order to address concerns associated with the potential impacts of the project on local culture, heritage and archaeology. For example, DBCI requires all its employees take cultural awareness and cross-cultural training, supports the traditional pursuits of Aboriginal employees by offering flexible scheduling, within operational requirements, and provides volunteer incentives to those employees interested in volunteering their time for social or cultural programs or activities in their home communities. DBCI also works with community liaison staff to identify important cultural events and provides financial or in-kind support for local cultural, language and on-the-land programming (EIS Table 12.6-41).

The project will result in some changes to the cultural landscape and that some archeological sites will likely be impacted (EIS 12.7.5.5). DBCI has noted some mitigation measures and indicated that it will continue to work with the GNWT and communities with respect to cultural preservation and sustainability, including heritage and archeological sites. The Princes of Wales Northern Heritage Centre has worked collaboratively DBCI in the development of the October 2012 *Archaeological Management Plan* for the Gahcho Kue Project.

**Recommendation #13:**

The GNWT recommends that the following issues be considered:

- DBCI continue to work with the local government, employees, community members and the GNWT in ongoing support of traditional language use and cultural pursuits, as feasible, and the conservation and preservation of traditions, heritage and archaeological sites; and
- these activities be part of the DBCI socio-economic monitoring plan and used to inform strategies, policies and procedures.

**Recommendation #14:**

The Prince of Wales Northern Heritage Centre recommends DBCI immediately implement the October 2012 *Archaeological Management Plan*.

## 5.6. NWT Business Development

On page 33 of the Terms of Reference for the EIS it states that DBCI is to describe: an estimate of required contractor and subcontractor goods and services required through the different stages of the project life cycle, and opportunities for and capacities of local, regional and territorial businesses to compete for the right to supply required goods and services, both directly to the proposed development, as well as to meet new demand created by economic growth spurred by the development. This list of opportunities is to include estimates of what percentage of goods and services, might feasibly be provided by northern businesses, and discuss any plans, commitments or strategies the developer has for maximizing this percentage.

In the EIS Table 12.II.9.2-1, DBCI states the total gross NWT output from Business Demand is 36 percent (%). This suggests, though it is not entirely clear, that 36% is the level of expected NWT procurement from the Gahcho Kue Project. However, encouraging information is presented.

Of particular interest to the GNWT is the relationship between DBCI and its contractors. In the EIS 1.1.7 it states DBCI will ensure terms and conditions of contracts include the requirement of the contractors and its sub-contractors to meet DBCI commitments. Key performance indicators will be established to ensure that commitments, including regulatory requirements of DBCI, are measured and met by contractors and sub-contractors. Committed to northern contractor success, DBCI will put in place an action plan for the contractor or sub-contractors to improve key performance indicators, where necessary.

The GNWT would like clarification that confirms priority will be given to northern businesses in all DBCI operations. The following clause in the EIS raises concern that contractors will not be able to fill northern priority if they are also expected to conform to the following conditions:



All contractors to the Project will be expected to conform to the following general criteria: cost competitiveness; quality; ability to meet the technical specifications of prescribed goods and services; ability to supply and deliver the goods and services; timely delivery; safety, health, and environmental record; and degree of northern Aboriginal participation (EIS 12.4.17).

It remains unclear if commitments such as purchasing order of priority will be adhered to by contractors as well. The GNWT would like confirmation that northern businesses will still be given full and fair opportunity, despite the additional contractor conditions listed above. Will local, Aboriginal and northern business remain the priority for contractors as it is for DBCI operation? How will DBCI ensure that contractors will implement DBCI business priority given the conditions above?

The NWT Business Policy applied at the Snap Lake Mine has proven successful for northern businesses, so extending this Policy to Gahcho Kue will continue to provide positive results. The NWT Business Policy, as well as results from the business interview, demonstrates that DBCI is willing to provide procurement benefits locally and that the local community is ready to grow with increased demand.

Meeting minutes from December 20, 2011 recap the DBCI commitment to provide prior to the technical session an update on the procurement strategy, verify predicted purchases from northern businesses, and to clarify adaptive management measures that could be applied. DBCI was also to provide more information regarding its business development strategy and confirm that contractors will also adhere to DBCI commitments.

In response to the meeting minutes, on January 17, 2012 DBCI identified that a business strategy for Gahcho Kue will be similar to the Snap Lake strategy and restated commitments to the NWT Business Policy.

DBCI Information Request Response (IRR) GNWT 9-2, April 3, 2012 predicts that the NWT and Aboriginal business participation in the Gahcho Kue Project will be similar to the current participation in Snap Lake Mine. DBCI will continue to use a competitive bidding process for the Gahcho Kue Project. As a result, DBCI has not established specific procurement commitments for NWT or Aboriginal Business procurement.

DBCI also states that the procurement needs for the Gahcho Kue project will be sourced from NWT businesses as much as practical during constructions, operations, and closure and this will be guided by the NWT Business Policy (IRR GNWT 9-5).

An update on the procurement strategy has yet to be provided to the Public Registry, predicted purchases from NWT businesses has not yet been verified, and adaptive management measures that could be applied to Gahcho Kue procurement has not been outlined.

The methodology and assumptions applied in the estimation of procurement commitments for the Gahcho Kue Project remain unclear, as is the implementation of the NWT Business Policy with respect to building on the success of the Snap Lake procurement achievements.

DBCI has been able to achieve a significant level of procurement with the Snap Lake Mine (68% northern procurement in 2011). By December 31, 2010, cumulatively this had resulted in \$1.07 billion spent on NWT based contractors and suppliers, including \$676 million with Aboriginal owned businesses or Joint Ventures. Over the course of 2011, \$110 million was spent on NWT expenditures and \$39 million on Aboriginal owned businesses.

The GNWT would like to ensure that, at a minimum, the same levels of NWT procurement are achieved for the Gahcho Kue Project as they are at the Snap Lake Mine.

**Recommendation #15:**

It is recommended that NWT Business Procurement commitments be addressed:

- contractors will adhere to the commitments made by DBCI.
- local, Aboriginal and northern businesses remain the priority for contractors as they are for DBCI.
- northern businesses will be given full and fair opportunity, despite the additional contractor conditions.
- detail on how DBCI will ensure that contractors will implement DBCI's business priority given the expectations on contractor conditions.
- updated procurement and business development strategy.
- prediction of purchases from northern businesses.
- specify adaptive management measures to be applied under the procurement and business development strategies.

## **5.7. Health and Social Services**

The GNWT Department of Health and Social Services (HSS) has reviewed De Beers' Gahcho Kue project and initially identified the following issues with the project moving forward into construction:

- Impacts on the health care system caused by large in-migration of out-of-territory workers utilizing health and social services.

- In the event of a public health concern, HSS needed to ensure access to vaccination records of employees at camp in order to make public health decisions.
- Use of and access to GNWT emergency health services.
- Willingness of DBCI to work with HSS on social issues when appropriate.
- Commitment of DBCI to provide employees and their family member's access to an Employee and Family Assistance Program (EFAP or EAP).
- DBCI would provide healthy foods for workers at camp, particularly for those with, or at risk of developing, diabetes.

After meeting with DBCI multiple times, and submitting multiple Information Requests, it is the opinion of the HSS that the large majority of the concerns have been addressed.

Commitments that have been made by the DBCI are being put onto the Public Registry as they are now finalized. Outstanding issues are due to timing matters out of the control of DBCI and HSS. As part of the commitments to be put on the Public Registry, HSS and DBCI will meet at the appropriate time to resolve outstanding issues and hopefully include the discussion as part of a SEA.

## **5.8. Monitoring and Follow-up**

Public reporting is key to understanding the accuracy of a project's Environmental Assessment (EA). It is also important in determining potential adverse effects and enabling mitigation measures to be adjusted when necessary. The GNWT uses the information published by developers in the NWT to monitor and interpret the accuracy of the EA and also whether the socio-economic wellbeing of northerners is protected.

It is important that monitoring and reporting programs are designed in a way to test predictions made by the proponents; assess the effectiveness of mitigation and support adaptive mitigation; remain in place for the life of the project; and support and contribute to information on cumulative effects at a regional and territorial level.

DBCI committed to report publicly on a number of indicators, including:

- Hiring by Hiring Priority and job category, in total numbers and percentage of total hires;
- Hiring by NWT community in total numbers and percentage of total hires;
- Total employment in person years by Hiring Priority and job category in total numbers and percentage of the workforce;

- Total employment in person years by NWT community in total numbers and percentage of the workforce;
- Participation in and results of training activities undertaken by the company to increase NWT and Aboriginal employment in the Project (IRRs, page TG\_35-4).

In addition to the indicators committed to by DBCI, it is accepted practice for developers in the NWT to collect and annually report the socioeconomic data listed below to both the GNWT and the public.

Due to the inherent difficulty in predicting and assessing socio-economic effects there should be an emphasis on a follow-up program. This should focus on adaptive management processes where careful, relevant monitoring can help to continually refine mitigation measures to optimize project effects on the socio-economic environment. The GNWT advanced the idea of a formal follow-up program in the form of a SEA throughout this Environmental Impact Review and DBCI has expressed its interest in negotiating a SEA with the GNWT in the near future.

The *Mackenzie Valley Resource Management Act* (MVRMA), under section 117(3)(c) requires a Panel, in the determination of a project, to consider the need for any follow-up program including the requirements of such a program. The Act also states under section 117(2)(e) that the Mackenzie Valley Environmental Impact Review Board (MVEIRB) may include in consideration of the development any other matter determined to be relevant. The GNWT views these sections of the MVRMA consistent with a requirement for a follow-up program, as defined in the *Act*, when warranted. This is consistent with the GNWT's interpretation of similar provisions negotiated since 1998.

It is the GNWT's position that SEAs are best implemented as a follow-up program to Environmental Assessments or Environmental Impact Reviews (EIRs). Such an agreement with DBCI would confirm and formally recognize its socio-economic commitments regarding the Gahcho Kue Project and provide for ongoing monitoring and adaptive management with respect to associated socio-economic issues.

The negotiation of a SEA with DBCI for its Gahcho Kue Project is in accordance with the GNWT's Sustainable Development Policy.

DBCI has stated a willingness to discuss a SEA with the GNWT. The GNWT prefers the completion of Impact and Benefit Agreements (IBAs) prior to discussion on SEAs. However, it is important to distinguish IBAs are private contracts and, as such, the GNWT is not privy to the contents of these agreements. Additionally, IBAs are not directly linked to the EA, yet SEAs *are* directly linked to the EA: not as a mitigation measure, but rather as a follow-up program provided for by the MVRMA. A SEA negotiated between the GNWT and DBCI would be

consistent with or complementary to the provisions in any private IBAs or other similar agreements between Aboriginal organizations and DBCI.

The GNWT views SEAs as an essential tool to: monitor and test socio-economic predictions; evaluate successes; identify gaps when predictions are not met; as well as adaptive management measures to address unintended results. Ideally, the socio-economic commitments made by DBCI, including the items for reporting, will be formalized in a SEA. In order to link the SEA to the EA, the GNWT recommends a socio-economic follow-up program, in the form of a SEA between the GNWT and DBCI, be a condition of project approval.

**Recommendation #16:**

1. The GNWT recommends DBCI report publically annually on the following, in addition to the above indicators:
  - total number of NWT resident employees who resigned or who were laid off, fired or otherwise terminated in the previous year;
  - gross value of goods and services purchased during the calendar year by major category or purchase in relation to each phase of the project. ('Purchases' based on the gross value of all purchases of goods and services including both goods and services produced in the NWT and goods and services produced outside the NWT that are purchased through NWT businesses); and
  - business opportunities forecast and assessment for the upcoming year.

**Recommendation #17:**

2. The GNWT recommends that DBCI publicly report its results each year and to distribute a copy of the report to both the GNWT and to affected communities.

**Recommendation #18:**

3. The GNWT recommends that a formal follow-up program, in the form of a SEA between the GNWT and DBCI, be a condition of project approval for the Gahcho Kue Project.

## 6. References

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