Northwest Territories Environment and Natural Resources

June 1, 2009 VIA EMAIL

Alan Ehrlich
Senior Environmental Assessment Officer
Mackenzie Valley Environmental Impact Review Board
200 Scotia Centre
Box 938, 5102-50th Ave
Yellowknife, NT X1A 2N7

RE: Fortune Minerals Ltd. NICO Project - EA0809-004 [2009]- Scoping Comments

Dear Mr. Ehrlich:

Thank you for the opportunity to participate in the Fortune Minerals Ltd. NICO Project (NICO Project) environmental assessment (EA) Scoping Session held on April 23 in Yellowknife.

This letter is intended to confirm the issues GNWT recommends the Review Board consider during the development of the Terms of Reference for the Developers Assessment Report for the NICO Project.

ENVIRONMENTAL PROTECTION

The GNWT recommends that the Scope of the project include, but not be limited to the following environmental protection related issues:

Mine Rock Management Area (MRMA)

- Identification of process for segregation of mine rock with respect to acid rock drainage and metal leaching (ARD/ML) potential.
- Monitoring and mitigation measures employed to limit impacts from ARD/ML potential materials (i.e. rock containing elevated arsenic levels).
- Consideration of wildlife health and safety issues.

Tailing Management Area (TMA)

- A detailed Tailings Management Plan to evaluate the potential environmental impacts including consideration of an internal landfill, incorporation of sewage effluent and minewater.

- Further details on tailings management with respect to diverse tailing products; cyanide destruction tailings and iron-arsenic precipitate.
- Discussion and rationale on tailing disposal options (tailing pond versus paste backfill).
- An *Operations, Maintenance and Surveillance Plan* outlining roles and responsibilities for operations and scheduling for inspections and monitoring.
- Consideration of wildlife health and safety issues.

Permafrost

- Discussion of requirements for further permafrost investigation, delineation and approach to future mitigations.

Geochemical Characterization

- A Geochemical Characterization Plan/Program which fully characterizes waste rock, ore, tailing materials, describes the process to evaluate ARD/ML potential, management of materials, reporting and mitigation measures.

Water Quality

- Consideration for all aspects of water management in order to identify and predict water quality.
- Provide information on how arsenic solubility under site conditions (both acidic and neutral) is being considered in long-term mine planning and engineering designs.
- Details on management and monitoring for ARD/ML potential
- Clear understanding of hydrogeological site conditions.
- Further details on water control/management structures (i.e. drainage controls, sumps, water intake facilities, piping)

Blasting Impacts

- Description of handling and application procedures.
- Identification of mitigative measures to limit/prevent impacts.

Waste Management

Include full details on:

- *Waste* - Identify wastes, segregation measures, storage, disposal plans, contingencies, treatment, testing.
- *Sewage Treatment* – Demonstrate sewage treatment has been designed and approved by a qualified professional sanitation engineer. Demonstrate that the proposed incineration of sewage sludge is conducted in pathological incinerators, heated hearth type incinerators, or other specifically designed and controlled co-incineration units.
- *Incineration* – Incineration devices and practices should be fully addressed.
- *Landfarm* – Include details on landfarm siting, monitoring, treatment and decommissioning.
- *Wildlife Attraction* – discussion of potential wildlife attraction, population density changes and habituation and mitigations.

Air Quality

- Provide an assessment of air quality from equipment use, incineration and dust generation.

Emergency Response Plan

- Consideration for potential accidents, malfunctions and unplanned events.
- Preparation of a Spill Contingency Plan incorporating *GNWT's Guide to the Spill Contingency Planning and Reporting Regulations* and *INAC's Guidelines for Spill Contingency Planning.*

Conceptual Closure and Reclamation Plan

- A Closure and Reclamation Plan which follows an 'objectives-based' approach that defines clear statements of objectives and subsequent closure criteria for each mine component (refer to *INAC's Mine Site Reclamation Guidelines for the Northwest Territories*).
- Identify what standards mine components will be reclaimed to.
- Identify potential plans for the development of a Research Reclamation Plan.
- Include discussion on community consultation for evaluating closure options.

WILDLIFE

The GNWT recommends that the Scope of the project include, but not be limited to the following wildlife related issues. Background information accompanies each issue for clarification.

Carnivores

Carnivore attraction/ increased carnivore mortality

Carnivore attraction is a chronic issue experienced at other mines (Ekati[1], Diavik[2], Snap Lake[3]) and exploration camps. Carnivore attraction and habituation (either via improper waste management and/or creation of denning habitat) leads to defence of life and property kills, and/or relocation of animals. There is a high probability that, unless adequate care is taken with camp design, waste management, etc. carnivore attraction may occur at the NICO site. Animals that occur in the project area that may be affected include wolves, foxes, grizzly bears, and wolverines. The death of carnivores that have low population densities, and lengthy reproductive cycles – such as wolverines and grizzly bears, is a significant impact to regional populations and must be avoided.

[1] BHP Billiton. 2007. *EKATI Diamond Mine 2007 Wildlife Effects Monitoring Program*. Prepared for BHP Billiton Diamonds Inc. by Rescan Environmental Services Ltd.
[2] Rio Tinto. 2008. *Diavik 2007 Wildlife Monitoring Program*. Prepared for Rio Tinto by Golder and Associates.
[3] DeBeers Canada Inc. 2008. Snap Lake Mine: Analysis of Environmental Effects on Wildlife 1999-2007. Prepared for DeBeers Canada Inc. by Golder and Associates.

Human/animal interaction (also Increased carnivore mortality)

- Assessment of the risk of animal/human interaction and mitigations for the construction and operations phases.

Direct and Indirect habitat loss

- Assessment of the direct alterations to habitat (development on habitat), and disturbances that affect habitat quality (i.e. noise disturbance) and the potential decrease in habitat effectiveness for carnivores with emphasis on species at risk such as COSEWIC assessed species Grizzly Bear and Wolverine.

<u>Caribou</u>

Monitoring of caribou at the BHP Billiton EKATI and Rio Tinto Diavik diamond mines indicate that caribou from the Bathurst herd are responding to the developments and behaviour changes with proximity to the mines[4],[5]. The Bathurst caribou herd has winter range in the project area. The Bathurst Caribou herd has experienced significant population declines since 1986[6], therefore utmost care must be taken when new developments are proposed within this herds range.

Habitat Loss

- An assessment of the project effects and cumulative effects of direct and indirect habitat loss due to other developments within its range.

Exposure to contaminants/cumulative impacts

- Caribou moving through the project area may be at risk of health effects due to injection of dust contaminated foliage (from open pit mining activities), and/or toxic materials derived from the tailings, and other by-products of gold mining.

Potential effects on reproduction/cumulative impacts

- Disturbance of caribou while they are on their winter range may decrease their ability to maintain adequate fat reserves necessary for successful reproduction. This aspect of a large scale project must be addressed, particularly when this mine (if permitted) will be the 4th large scale project on the Bathurst herd's range.

Impacts on caribou behaviour/cumulative impacts

- A mine of the proposed duration (15 years) could potentially drastically (and permanently) alter the migration pattern of the Bathurst caribou herd.

Health and Safety hazards

- Precautions for maintaining health and safety of caribou if they do occur on the project area must be addressed. Mine sites such as the proposed NICO project,

[4] BHP Billiton. 2007. *EKATI Diamond Mine 2007 Wildlife Effects Monitoring Program*. Prepared for BHP Billiton Diamonds Inc. by Rescan Environmental Services Ltd.
[5] Rio Tinto. 2008. *Diavik 2007 Wildlife Monitoring Program*. Prepared for Rio Tinto by Golder and Associates
[6] Nishi J.S., B. Croft, J. Williams, J. Boulanger and D. Johnson. 2008. An Estimate of Breeding Females in the Bathurst Herd of Barren-ground Caribou, June 2006. Government of Northwest Territories File report# 137. 177 pp

present hazards for wildlife including (for example): open pits, drainage channels, access to contaminants, air and road traffic.

Raptors and other birds not included in the *Migratory Birds Convention Act*

Habitat Impacts/Health and safety concerns/Exposure to contaminants

Assessment of development activities and the potential negative effect birds by:

- Creating nesting habitat that may not necessarily be safe for nesting
- Alteration of water levels could potentially cause floods destroying low-laying nests
- Direct habitat loss (particularly important for species at risk)
- Indirect habitat loss (i.e. by noise disruptions, destruction of prey species habitat, attraction to development areas due to increased populations of prey species on the minesite)
- Access to early open water on tailings ponds (may expose birds to contamination)
- Access to tailings ponds at any time of year (same reasons as above)

Species at Risk

- Assessment of health and safety concerns for Species at Risk including an analysis of the short and long term affects (both direct and indirect) the proposed development may have on species at risk, and species at risk habitat.

SOCIO-ECONOMIC

The GNWT believes socio-economic matters need to be addressed in the Fortune Minerals NICO Project environmental assessment. Our experience indicates that explicit predictions regarding local and Northwest Territories (NWT) employment, northern contracting and procurement, travel policies, expected value of extracted resources, energy supply, road development and the net effect on government are necessary to understand the extent to which Proponent's mitigation measures will protect communities and residents from adverse effects to the environment, including effects to the social, economic or cultural environment over the life of the project.

The following issues are identified as needed to ensure adequate documentation to be able to assess the Proponent's statements.

Northern and Aboriginal Employment

- An assessment of the northern and Aboriginal employment benefits from the project during the pre-operation, operation, processing and closure/reclamation phases.
- A discussion of the economic opportunities associated with the employment of Northern and Aboriginal people, and how they can succeed at their jobs.

Training of Northerners

- A discussion of the proponent's plans for training of Northerners for mine employment, and transferable skills and how the training will provide individuals the opportunity for employment after the mine is shut down.

Contracting and Procurement

- A discussion and assessment of contracting and procurement from Northern and Aboriginal owned businesses in the NWT including secondary employment opportunities for NWT residents and its contribution to the NWT economy.
- The proponent clearly state how much of its procurement will be from northern and Aboriginal businesses during the pre-operation, operation, processing and closure/reclamation phases.

Energy Supply

- The use of alternative energy options should be considered and assessed. Specifically, the potential use of hydroelectricity as an energy source at some point in the future should be considered.

Travel and Site Access Policies

- A discussion of travel and site access policies and how they will enable Northern and Aboriginal people to be employed at remote mine sites.

Net Effect on Government

- An assessment of overall negative and positive impacts of the Fortune Minerals NICO project the net effect on government including government revenues, public infrastructure and services, quality of life, and the economy.

Follow-up Plans and Annual Reporting

- A discussion of that follow-up plans, monitoring plans and annual reporting that the proponent will undertake to demonstrate attainment of socio-economic commitments made during the EA process.

HERITAGE/CULTURAL RESOURCES

Archaeological Sites

The following information is required to make an adequate assessment of impacts to archaeological sites for the Fortune Minerals NICO Project:

- A summary of the results of previous archaeological studies on the mine site and access road.
- A summary of the results of the archaeological impact assessment (AIA) of the defined project footprint.
- An assessment of impacts to archaeological sites that will result from the Fortune Minerals NICO Project.
- Mitigation of potential impacts to archaeological sites.

Thank you for the opportunity to present to the Review Board issues that we believe should be scoped into this environmental assessment. If you have any questions please contact me by email (loretta_ransom@gov.nt.ca) or by phone at (867) 920-6593.

Sincerely,

Loretta Ransom
Environmental Assessment Analyst
Environmental Assessment and Monitoring