

Mandate and Key Findings of the Independent Environmental Monitoring Agency

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Independent Environmental Monitoring Agency

**Sustainable Development in the Diamond
Mining Sector**

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Independent Environmental Monitoring Agency

- **Ekati™ Mine project description**
- **Monitoring requirements for Ekati mine**
- **Community monitoring**
- **Independent Environmental Monitoring Agency - www.monitoringagency.net**
- **Key findings**

Ekati Mine

- **Diamond mine (Canada's first)**
- **Gem quality diamonds**
- **Northwest Territories**
 - Arctic barrens, 300 km NE of Yellowknife
- **Construction from 1996**
- **Operation from October, 1998**
- **Surface mining of kimberlite pipes (usually under lakes) – some underground mining**
- **Processing plant on site**

Panda Pit Ekati



Photo

BHP
Diamonds



Ekati Mine Location

Ekati Mine Project Description

- **Dewatering lakes for access to kimberlite pipes**
- **Explosives use (introduces nitrogen (ammonia) into waste rock)**
- **Road construction to link pipes**
- **Waste rock sent to waste rock piles (ARD)**
- **Kimberlite is processed on site to extract the diamonds and then the residue (tailings) is disposed of into Long Lake tailings pond**
- **Work camp for several hundred staff (“hotel” accommodates 600 persons)**

EIA Review for Ekati Mine

- **Full panel review 1994-1996**
- **1996 project approval**
- **Major affected people, aboriginal groups**
 - **Kitikmeot Inuit Association (Kugluktuk)**
 - **Dogrib Treaty 11 Council (Fort Rae)**
 - **Akaiicho Treaty 8 (Lutselke and Yellowknife)**
 - **North Slave Metis Alliance (Yellowknife)**
- **Approval subject to Environmental Agreement**
 - **BHPB (proponent), GNWT, Canada**

Monitoring Requirements for Ekati Mine

- **Water licences - water quality monitoring**
- **Fisheries authorisation - fish studies**
- **Renewable Resources - wildlife monitoring**
- **Operating Environmental Management Plan - monitoring programs (spills, safety, etc.)**
- **Impact Benefit Agreements with aboriginal groups (bilateral) - socioeconomic aspects - independent of Environmental Agreement**

Community Monitoring for Ekati Mine

- **Focus on**
 - **Wildlife – caribou**
 - **Wildlife – wolverine**
 - **Monitoring Agency liaison role**

Caribou



Photo BHP Diamonds

Community Monitoring Caribou

- **Caribou are the major VEC in the North**
- **Bathurst Caribou herd**
 - **375 000 animals**
 - **Migrate through mine site (up to 70 000)**
- **Elders on site visits**
- **Community observations**
- **Annual monitoring workshops**
- **Caribou management board**

Community Monitoring Caribou

- **Site visits to observe and offer advice**
 - **Airport avoidance**
 - **Road design**
 - **Tailings pond concerns**



Photo RWED

Government of
the Northwest
Territories

Community Monitoring Caribou

- **Community observations**
 - **Caribou fitness**
 - **Caribou injuries**

- **Caribou monitoring program**
 - **Radio collars**
 - **Community concerns**

Community Monitoring Caribou

- **Monitoring workshops**
 - **Aboriginal input**
 - **Government, industry, Agency input**
 - **Review monitoring results, adapt monitoring programs**
 - **Wildlife and aquatic effects (plus air quality and reclamation)**
 - **Annual events**

Elders visiting the poster display at the annual Workshop



Community Monitoring Archaeology



Community Monitoring Wolverine

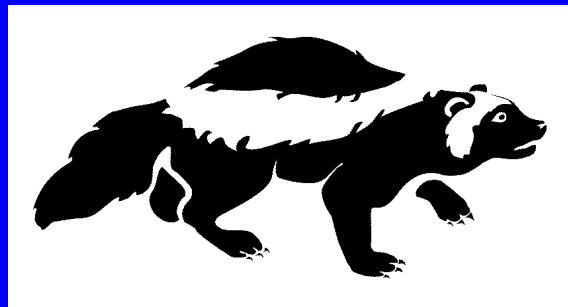


Community Monitoring Wolverine

- **Significant adverse cumulative impact**
 - **Ekati, Diavik and Winter Road operation**
 - **Poor food handling results in about 15 animals killed or relocated over three years of a population of about 20 animals**
 - **Food handling is better now**
- **Regular monitoring via snow tracks**

Community Monitoring Wolverine

- **Need to identify wolverine tracks**
 - **Get best tracker in the region - Allen Niptanatiak, of Kugluktuk (300 km north of mine)**
 - **Known as best wolverine trapper in the area**
 - **Commutes by snowmobile to mine site**



Community Monitoring Lessons

- **Community role in influencing monitoring is considerable**
 - **Concern with dust on vegetation – new monitoring program**
 - **Concern with tailings pond – vegetation to avoid attracting caribou (use of TK)**

Independent Environmental Monitoring Agency

- **Public watchdog for environmental management at the Ekati mine**
- **Seven members: BHPB, GNWT, Canada, and four aboriginal groups**
- **Seven board members appointed by seven members**
- **No “representation” - all board members have the same common mandate**
- **Budget about Can\$500 000/a provided by Mine operator - initially some funds came from governments**

Independent Environmental Monitoring Agency

- **In order to meet its mandate the Agency:**
 - **monitors and reviews environmental management plans and reports by BHP and government agencies**
 - **analyses issues to promote the identification, evaluation and management of environmental impacts**
 - **reviews the activities of regulatory agencies and their interactions with BHPB**
 - **monitors the progress of traditional knowledge studies funded by BHPB and conducted by aboriginal organisations**
 - **facilitates interaction between BHPB and aboriginal organisations to integrate traditional knowledge into BHPB's management plan**

Independent Environmental Monitoring Agency

- **In order to meet its mandate the Agency:**
 - **participates in technical workshops involving environmental management at the Ekati mine**
 - **meets and corresponds regularly with with BHPB and regulators about environmental issues at Ekati**
 - **reviews and comments on regulatory approvals sought by BHPB that relate to environmental matters**
 - **reports to aboriginal organisations and the public at large**
 - **maintains a publicly accessible library of all materials regarding environmental management of the Ekati mine**

Independent Environmental Monitoring Agency

- **In order to meet its mandate the Agency:**
 - publishes newsletters, a web site, a brochure and annual reports
 - holds an annual general meeting for members of the Monitoring Agency

Key Findings

- **Environmental Impacts**
 - No major environmental impacts to date
- **Concerns about possible impacts**
 - Land disturbance is considerable
 - Rock piles
 - Roads
 - Wildlife concerns
 - Caribou
 - Wolverine
 - Aquatic effect concerns
 - Toxic chemical concerns minimal

Land Disturbance

- Predicted from the beginning
- A & R Plan
- Disturbed area to date 1400 ha (14 km²)
 - Waste rock, kimberlite and overburden 670 ha
 - Height of 30 m to 50 m
 - Roads 300 ha
 - Infrastructure 275 ha
 - Pits 160 ha
 - Claim block area 344 000 ha

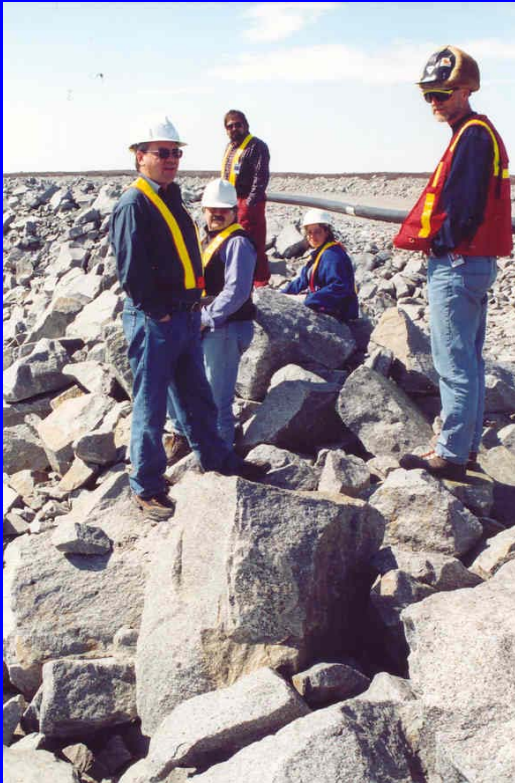
Panda Waste Rock Pile



Caribou Impacts

- Ekati Mine impacts, as measured, are not significant
- Cumulative – require regional monitoring and management
 - Collaboration with other mines, roads etc.
 - Government direction required

Think Like a Caribou

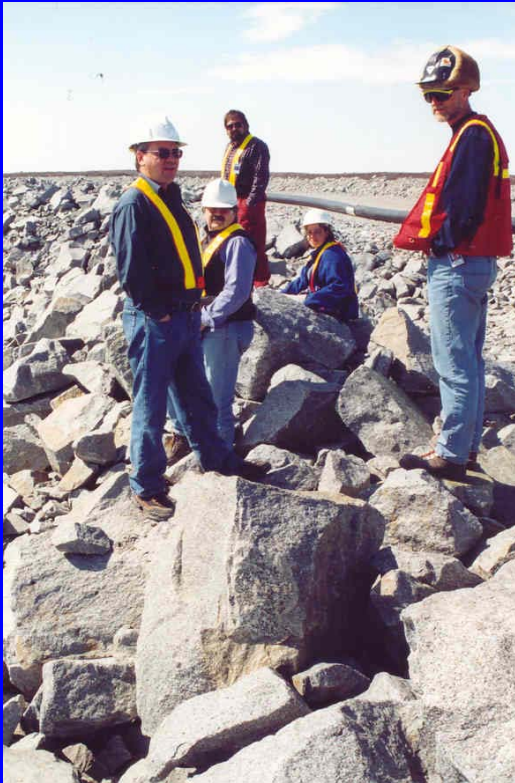


Standard roadside



Caribou friendly roadside

Or Think Like a Wolf



Standard roadside



Caribou friendly roadside

Pigeon Culvert



No effect on stream but barrier to caribou

Aquatic Effects

- Downstream water quality changes
- Effect on aquatic life modest but uncertain
- Change in zooplankton composition downstream from Long Lake
 - Uncertain
 - Monitored

Key Findings

- **Environmental Management Process:**
 - **Adaptive environmental management can work**
 - **Kodiak Lake eutrophication problem managed**
 - **Waste rock pile management**
 - **Need for regional cooperation**
 - **Industry cooperation**
 - **Regional monitoring agency**

Key Findings

Environmental Management Process:

- **Monitoring program is a good one**
 - **Developed collaboratively (workshops + debate)**
- **Watchdog role a success**
 - **I appreciate what you guys (Directors of the Agency) have done over the past few years and I wanted to give you a pat on the back to say good work and I want you to keep it up.” Joe Rabesca (*Grand Chief Dogrib Treaty 11*)**

Key Findings

Environmental Management Process:

- **Effective environmental management at Ekati**
 - “[BHPB’s] environmental management and compliance has, to date, been good and improving. [BHPB], the regulatory authorities, the Aboriginal organisations and the Agency contribute to the ongoing improvement of the environmental management at [Ekati]. Overall [BHPB] has responded well to facing the challenges of being the first operating diamond mine in the North.” (Agency annual report, 2000)