

Mackenzie Valley Land and Water Board
7th Floor - 4910 50th Avenue • P.O. Box 2130
YELLOWKNIFE, NT X1A 2P6
Phone (867) 669-0506 • FAX (867) 873-6610

RECEIVED

MAY 24 2001

BL

REASONS FOR DECISION

Preliminary Screener:	MVLWB
Reference/File Number:	MV2001C0012, MV2001L2-0002
Organization:	De Beers Mining Inc.
Project:	Snap Lake Diamond Project

DECISION From Panel Meeting of

"May 14, 2001"


REASONS FOR DECISION

The development proposal might have a significant adverse impact on the environment and the development proposal might have public concern:

- Significant concern was expressed by reviewers from a wide spectrum of government agencies acting as a "responsible minister" under section 111 in the MVRMA. Many of these agencies stated insufficient information was submitted in the applications. Other agencies specifically requested that the Mackenzie Valley Environmental Review Board perform an Environmental Assessment.
- A First Nation group expressed significant concerns. The Lutsel K'e First Nations cited the projects potential to affect the watershed used traditionally by the Dene in the North and South Slave Regions.
- CARC referred to the current "B" class water license problems regarding discharge into Snap Lake – much of the problems cited also pertain to Permit and License Applications MV2001C0012 & MV2001L2-0002.
- MVLWB consultant identified sections of the scooping and technical documents were lacking important information.

Mackenzie Valley Land and Water Board
Preliminary Screening Organization

May 22/01
Date


Chair

PRELIMINARY SCREENING REPORT FORM

PRELIMINARY SCREENER: MVLWB REFERENCE / FILE NUMBER: MV2001C0012 & MV2001L2-0002 TITLE: Snap Lake Diamond Mine ORGANIZATION: De Beers Canada Ltd.	EIRB REFERENCE NUMBER:
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Type of Development:
(CHECK ALL THAT APPLY)

- ☒
☐
☒
☐

New
 Amend, EIRB Ref. #
 Requires permit, license or authorization
 Does not require permit, license or authorization

Principal Activities (related to scoping)
(CHECK ALL THAT APPLY)

- ☒ Construction
☒ Installation
☒ Maintenance
☐ Expansion
☒ Operation
☐ Repair
☐ Research
☒ Water Intake
☐ Other:

- ☒ Exploration
☒ Industrial
☐ Recreation
☐ Municipal
☒ Quarry
☐ Linear / Corridor

- ☒ Decommission
☒ Abandonment
☐ Aerial
☐ Harvesting
☒ Camp
☐ Scientific/

☒ Sewage

☒ Solid Waste

Principal Development Components (related to scoping)

- ☒ Access Road
☒ construction
☒ abandonment/removal
☒ modification e.g., widening, straightening
☒ Automobile, Aircraft or Vessel Movement
☒ Blasting
☒ Building
☒ Burning
☐ Burying
☐ Channeling
☐ Cut and Fill
☐ Cutting of Trees or Removal of Vegetation
☒ Dams and Impoundments
 ☒ construction
 ☐ abandonment/removal
 ☒ modification
☐ Ditch Construction
☒ Drainage Alteration
☐ Drilling other than Geoscientific
☐ Ecological Surveys
☐ Excavation
☒ Explosive Storage
☒ Fuel Storage
☒ Topsoil, Overburden or Soil
 ☐ fill
 ☐ disposal
 ☒ removal
 ☒ storage

- ☒ Waste Management
☒ disposal of hazardous waste
☒ waste generation
☒ Sewage
☒ disposal of sewage
☐ Geoscientific Sampling
☐ trenching
☒ diamond drill
☐ borehole core sampling
☐ bulk soil sampling
☒ Gravel
☐ Hydrological Testing
☒ Site Restoration
☐ fertilization
☐ grubbing
☐ planting/seeding
☐ reforestation
☐ scarify
☐ spraying
☐ recontouring
☐ Slashing and removal of vegetation
☐ Soil Testing
☐ Stream Crossing/Bridging
☒ Tunneling/Underground
☒ Other (describe):

NTS Topographic Map Sheet Numbers
75M/10 Lac Capot Blanc 1:50 000

Latitude / Longitude and UTM System:
63°35'30" N & 110°52'00" W

Nearest Community and Water Body:
Lutsel K'e & Wekweti/ Snap Lake & Lockhart River System

Land Status (*consultation information*)

☐ Free Hold / Private ☐ Commissioners Land ☒ Federal Crown Land ☐ Municipal Land

Transboundary Implications

☐ British Columbia ☐ Alberta ☐ Saskatchewan ☐ Yukon
☐ Nunavut ☐ Wood Buffalo National Park ☐ Inuvialuit Settlement Region

Type of Transboundary Implication: ☐ Impact / Effect ☐ Development

☒ **Public Concerns:** Canadian Arctic Resources Committee and Lutsel K'e First Nations submitted comments regarding water effluent and drainage contamination

**PHYSICAL - CHEMICAL EFFECTS
IMPACT**

1. Ground Water

- ☐ water table alteration
☒ water quality changes

- ☐ infiltration changes
☒ other

☐ N/A

IMPACT

2. Surface Water

- ☒ flow or level changes

- ☒ water quality changes

- ☐ water quantity changes

- ☐ Drainage pattern changes

- ☐ temperature

- ☐ wetland changes / loss

- ☒ other:

☐ N/A

IMPACT

3. Noise

- ☒ noise in/near water

- ☒ other: noise increase

☐ N/A

MITIGATION

Mine water effluent has potential to exceed CCME guidelines for water quality standards. This would put the project in contravention of section 35 in the fisheries act. Several concerned agencies noted concerns regarding the discharge of mine effluent into Snap Lake.

Impacts to ground water and ground water contamination from underground mine water mixing

MITIGATION

DFO does not recommend the use of smaller lakes or ponds as a source of water as this will affect aquatic systems. DFO recommends water from the clarification pond should be used for dust suppression.

Water quality changes increase with the potential for wind blown dust to enter water sources. Mitigation measures must be devised to deal with this concern. Significant concern regarding the management of waste rock.

The license requests authorization to extract 55 m3 from small lakes affecting water quantity and aquatic habitat.

Potential for ARD and contamination of surface water from Kimberlite, Metavolcanic granite storage.

MITIGATION

Increased noise of Heavy Equipment during movement into full scale mining operation
No mitigation recommended. Use of explosives may affect fish spawning and fish habitat.

Increased presence of supply trucking into campsite. Increased human activity in the area resulting in an increase of noise. No mitigation recommended.

IMPACT**4. Land**

- ☒ geologic structure changes
- ☒ soil contamination
- ☐ buffer zone loss
- ☒ soil compaction & settling
- ☐ Destabilization / erosion
- ☒ permafrost regime alteration
- ☒ other: explosives/scarring
- ☐ N/A

IMPACT**5. Non Renewable Natural Resources**

- ☒ resource depletion
- ☐ other:
- ☐ N/A

IMPACT**6. Air/Climate/ Atmosphere**

- ☒ Other
- ☐ N/A

MITIGATION

Mining of Kimberlite ore resulting in the destabilization in geological formation, potential to harm ground water flows. Potential to affect ground water quality.

Increase in unauthorized spills. Spill contamination area identified is for short term only. Storage of Hazardous materials not identified.

Soil compaction and loss imminent.

The slow regeneration period of the ecosystem referred to in the application will support wind and water erosion.

Mining may result in permafrost melting resulting in the subsidence of the lake bottom.

DFO mitigation to consult with the NEB regarding "explosives near water " regulations.

MITIGATION

Currently no method of measurement of cumulative effect exists regarding the mining of Diamond in the NT. Impacts of resource depletion cannot properly be assessed.

MITIGATION

Dust from blasting and wind erosion not mitigated in application

BIOLOGICAL ENVIRONMENT

IMPACT

1. Vegetation

- ☐ species composition
- ☐ species introduction
- ☐ toxin / heavy accumulation
- ☐ other:
- ☐ N/A

MITIGATION

IMPACT

2. Wildlife & Fish

- ☒ effects on rare, threatened or endangered species
- ☒ fish population changes
- ☐ waterfowl population changes
- ☐ breeding disturbance
- ☒ population reduction
- ☐ species diversity change
- ☒ health changes
(Identify)
- ☒ behavioral changes
(Identify)
- ☒ habitat changes / effects
- ☐ game species effects
- ☒ toxins / heavy metals
- ☐ forestry changes
- ☐ agricultural changes
- ☐ other:
- ☐ N/A

MITIGATION

Wolverine, Grizzly habitat

Impacts from minewater effluent discharge to Snap Lake has potential to effect fish population.

Impacts from minewater effluent discharge to Snap Lake has potential to effect fish population.

Disturbances in overall ecosystem health

Potential impact to seasonal migration to Bathurst Caribou Herd was not identified or mitigated.

Affects to Fish Habitat and Population Health. Scoping document must include mitigations in design to consider fish habitat.

Concern regarding acid rock drainage and impacts to flora and fauna.

INTERACTING ENVIRONMENT

IMPACT

1. Habitat and Communities

☐ predator-prey

☒ wildlife habitat / ecosystem

Composition changes

☒ reduction / removal of keystone or endangered species

☐ removal of wildlife corridor or buffer zone

☐ other:

☐ N/A

IMPACT

2. Social and Economic

☐ planning / zoning changes or conflicts

☐ increase in urban facilities or services use

☐ rental house

☒ airport operations / capacity changes

☒ human health hazard

☒ impair the recreational use of water or aesthetic quality

☒ affect water use for other purposes

☐ affect other land use operations

☒ quality of life changes

☒ public concern

☐ other:

☐ N/A

MITIGATION

Concerns raised by Canadian Arctic Resources Committee regarding Bathurst Caribou Habitat and Barren Ground Grizzly Habitat. Recommendation- EA to be done.

Concern over population health of Grizzly, Wolverine and Caribou. Recommendation that a proper environmental assessment be conducted in the area.

MITIGATION

Increase to local air traffic between Yellowknife and Project site

Public health concerns over deposition of sewage, treatment of water supply and hazardous wastes.

Lockhart river system flows into the East Arm of Great Slave Lake. Effluent may affect seasonal recreation appeal.

Impact to the traditional land uses of effected First Nations.

Quality of life concerns for Northern Residents and traditional and cultural land users.

Significant public concern regarding cultural well being, lack of environmental assessment, net effects on government, sustainable development.

IMPACT

3. Cultural and Heritage

- ☒ effects to historic property
- ☒ increased economic pressure
- ☐ change to or loss of historic resources
- ☒ change to or loss of archaeological resources
- ☐ increased pressure on archaeological sites
- ☒ change to or loss of aesthetically important site
- ☒ affects to aboriginal lifestyle
- ☒ other:
- ☐ N/A

MITIGATION

Nine archeological sites are present in the vicinity. Recommendation from RWED is conscious avoidance and De Beers contract a qualified archeologist to conduct a field investigation.

GWNT concern regarding the well Being of Northern residents. Concerns about social stability and wellness, increased social impacts etc.

Archeological resources identified in vicinity. RWED recommendation for De Beers to retain a qualified Archeologist for summer studies.+

Cumulative impacts on traditional land use area of North and South Slave Dene populations.

Lutsel K'e Dene band was concerned with the socio-economic impact of the mine on their community and community members. Lutsel K'e stated that the community consultations in the scoping documents were not meaningful. The recommendation was to incorporate traditional knowledge in the study

NOTES:

The Following Reviewing Agencies Have requested more information/ recommend a referral to the EIRB and a complete EA be conducted on the Snap Lake Land Use Permit and Water License Applications.

John Clark, P. Eng. Consultant for MVLWB – Requested a need for digitalized topographic data files to check volume calculations to check the capacity of the North Pile to hold the projected amount of Kimberlitic paste.

Craig Nowakowski, Environmental Health Officer, SRHB – Needed more information on the treatment of the camps potable water, mainly the method of water treatment. He also requested more information on the newly proposed sewage treatment facility.

Joseph L. Handley, Minister of Resources Wildlife and Economic Development. – Indicated the potential for significant public concern over the project and requested it be sent to Environmental Assessment.

Steven Harchbicht, Head of Assessment and Monitoring, DOE – Environment Canada specifically requested the project be sent to an EA pursuant to section 126(2)(a) of the MVRMA.

Kevin O'Reilly, Canadian Arctic Resources Committee – Specifically requested the project be sent to an environmental assessment on the general basis that it had the potential to effect wildlife and aquatic environments.

Felix Lockhart, Chief, Lutsel K'e Dene Band – Specifically requested the application be sent to an environmental assessment based on the environmental/ socio-economic/and traditional land use potentially adverse affects the project may have.

David Livingstone, Renewable Resources and Environment, DIAND – Specifically requested that the project be sent to an environmental Assessment pursuant to section 126(2) (a) of the MVRMA.

PRELIMINARY SCREENER / REFERRING BODY INFORMATION
(CHECK ALL THAT APPLY)

	RA or DRA	ADVICE	PERMIT REQUIRED
<u>Federal</u>			
ATOMIC ENERGY CONTROL BOARD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CANADIAN HERITAGE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CANADIAN TRANSPORTATION AGENCY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ENVIRONMENT CANADA	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
FISHERIES & OCEANS	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
INDIAN AFFAIRS & NORTHERN DEVELOPMENT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
INDUSTRY CANADA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NATIONAL DEFENSE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NATIONAL ENERGY BOARD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NATURAL RESOURCES	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PUBLIC WORKS & GOVERNMENT SERVICES	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TRANSPORT CANADA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NOGD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Territorial</u>			
RESOURCES, WILDLIFE AND ECONOMIC DEVELOPMENT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
MUNICIPAL AND COMMUNITY AFFAIRS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TRANSPORTATION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HEALTH BOARD	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<u>Aboriginal / First Nation</u>			
Yellowknives Dene First Nation	<input checked="" type="checkbox"/>		
North Slave Metis Alliance	<input checked="" type="checkbox"/>		
Dog Rib Treaty 11 Council	<input checked="" type="checkbox"/>		
Lutsel K'e First Nation	<input checked="" type="checkbox"/>		
Metis Local # 66	<input checked="" type="checkbox"/>		
<u>Local Government</u>			
	<input type="checkbox"/>		
	<input type="checkbox"/>		
<hr/> (IDENTIFY)			

REASONS FOR DECISION

(LIST ALL REASONS AND SUPPORTING RATIONALES FOR PRELIMINARY SCREENING DECISION)

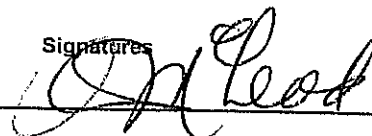
- Significant concern was expressed by reviewers from a wide spectrum of government agencies acting as a "responsible minister" under section 111. in the MVLUR. Many of these agencies stated insufficient information was submitted in the applications. Other agencies specifically requested that the Mackenzie Valley Environmental Impact Review Board perform an Environmental Assessment.
- A First Nation group expressed significant concerns. The Lutsel K'e First Nations cited the projects potential to affect the watershed used traditionally by the Dene in the North And South Slave Regions.
- CARC also referred to the current B' class water license problems regarding discharge into Snap Lake, much of the problems cited also pertain to permit and license applications MV2001C0012 & MV2001L2-0002.
- MVLWB consultant identified sections of the scoping and technical documents that were lacking important information. The application did not provide a sufficient analysis of parts of the technical data submitted as part of the application.

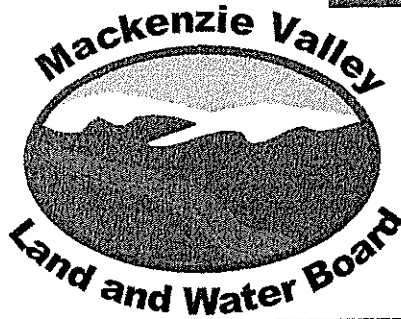
	PRELIMINARY SCREENING DECISION
<input checked="" type="checkbox"/>	Outside Local Government Boundaries
<input checked="" type="checkbox"/>	The development proposal might have a significant adverse impact on the environment, <i>refer it to the EIRB.</i>
<input type="checkbox"/>	<i>Proceed with regulatory process and/or implementation.</i>
<input checked="" type="checkbox"/>	The development proposal might have public concern, <i>refer it to the EIRB.</i>
<input type="checkbox"/>	<i>Proceed with regulatory process and/or implementation.</i>
<input type="checkbox"/>	Wholly within Local Government Boundaries
<input type="checkbox"/>	The development proposal is likely to have a significant adverse impact on air, water or renewable resources, <i>refer it to the EIRB.</i>
<input type="checkbox"/>	<i>Proceed with regulatory process and/or implementation.</i>
<input type="checkbox"/>	The development proposal might have public concern, <i>refer it to the EIRB.</i>
<input type="checkbox"/>	<i>Proceed with regulatory process and/or implementation.</i>

Preliminary Screening Organization

Mackenzie Valley Land and Water Board

Signatures





Mackenzie Valley Land and Water Board
7th Floor - 4910 50th Avenue
P.O. Box 2130
YELLOWKNIFE NT X1A 2P6
Phone (867) 669-0506
FAX (867) 873-6610

March 5, 2001

File:
MV2001C0002
MV2001L2 - 0002

Distribution List

Dear Sir/Madame:

Land Use Permit Application
De Beers Mining Inc. - Land Use Permit MV2001C0012,
Water License MV2001L2 - 0002
Snap Lake Diamond Project

Attached for your review and comments is the aforementioned land use application. Your comments will be used in the evaluation and Preliminary Screening of this application.

Please submit your comments in writing by **April 5, 2001**. Should you find that additional time is required to complete further studies or investigations, contact me prior to this date.

If you have any questions regarding the land use application, contact me at (867) 669-0506 or email mardy@mvlwb.com.

Yours sincerely,

A handwritten signature in cursive script that reads "Mardy Semmler".

Mardy Semmler
Regulatory Officer

Attachment

March , 2001

File: MV2001C0012, MV2001L2 - 0002

Land Use Application MV2001C0012
Water License Application MV2001L2 - 0002

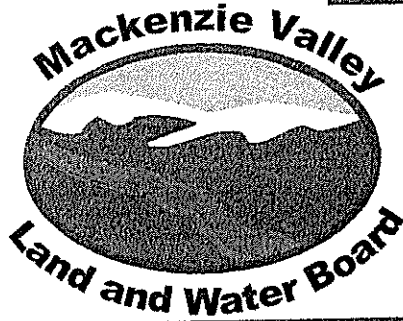
DISTRIBUTION LIST

First Nations

Allison Armstrong, Dene Nation - (F) 920-2254
Bob Turner, North Slave Metis Alliance – (F) 669-7442
Jolene Koyina, Dogrib Treaty 11 Council – (F) 766-7442
Dave Krazitz, YK Dene Land/Env. – (F) 873-5969
Brenda Parlee, Lutselk'e 1st Nation – (F) 370-3010
Tim Heron, South Slave Metis Tribal Council – (F) 872 - 2047

Government

Brad Colpitts, Stanton Regional Health Board - (F) 669-7517
Dan Elliott, South Mackenzie District Office - (F) 669-2720
Brian Collins, Water Resources Division, DIAND (F) 669-2716
Tom Andrews, Prince of Wales Heritage Museum - (F) 873-0205
Mark Davy, MACA - (F) 920-6343
Brett Hudson, GNWT – RWED (F) 873-0114
Paula Pacholek, Environment Canada - (F) 873-8185
Pete Cott, DFO - (F) 669-4940
Roland Semjanovs, MVEIRB – (F) 920-4761



Mackenzie Valley Land and Water Board
7th Floor - 4910 50th Avenue
P.O. Box 2130
YELLOWKNIFE NT X1A 2P6
Phone (867) 669-0506
FAX (867) 873-6610

March 6, 2001

File: MV2001C0012
MV2001L2 - 0002

Mr. Brent Murphy
EBA Engineering Consultants Ltd.
P.O. Box 2244
Suite 201, 4916- 49th Street
Yellowknife NT X1A 2P7

FAX: (867) 873-3324

Dear Mr. Murphy:

Technical Review Request

Attached is a request for a Technical Review of De Beers Mining Inc – Snap Lake Diamond Mine Development land use and water license applications. Specific areas of concern will be:

- the potential for acid rock drainage,
- capacity of the processed kimberlite containment area to hold the processing plant and mine discharge,
- and the sewage treatment facility capabilities.

We also request an analysis and recommendation on the containment area structures and dam design drawings.

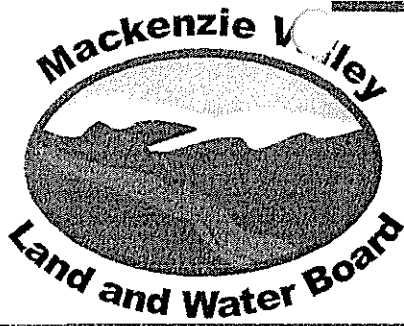
Please provide any comments or concerns by April 5, 2001. This file is being managed by Mardy Semmler and Darren Campbell who can be contacted for any clarification or additional information related to this request.

Yours truly,

A handwritten signature in dark ink, appearing to read "Ken Weagle", is written over the typed name and title.

Ken Weagle
Executive Director

Copy to: Mardy Semmler – Regulatory Officer
Darren Campbell – Regulatory Officer



Mackenzie Valley Land and Water Board
7th Floor - 4910 50th Avenue
P.O. Box 2130
YELLOWKNIFE NT X1A 2P6
Phone (867) 669-0506
FAX (867) 873-6610

March 23, 2001

File: MV2001C0012, MV2001L2 - 0002

Mr. Stephen Harbicht
Environmental Protection Branch
Suite 301, 5204 - 50th Ave
Yellowknife, NT X1A 2P6

Dear Mr. Harbicht:

Extension of Review Period for Preliminary Screening
Snap Lake Diamond Project – MV2001C0012, MV2001L2 - 0002

This acknowledges receipt of your letter dated March 7, 2001 regarding a request for an extension to review the above Land Use Permit and Water License Applications. The Staff of the Mackenzie Valley Land and Water Board (MVLWB) agree with your reasons for extending the review process and is hereby extending the review period until April 30, 2001.

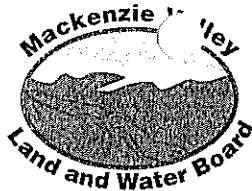
If you have any questions, contact me at 867/669-0506 or email mardy@mvlwb.com.

Yours sincerely,

A handwritten signature in dark ink, appearing to read "Mardy Semmler", is written over a horizontal line.

Mardy Semmler
Regulatory Officer

Copied to: Leslie Green, De Beers Canada Mining Inc.
Distribution List



Mackenzie Valley Land and Water Board
7th Floor - 4910 50th Avenue • P.O. Box 2130
YELLOWKNIFE, NT X1A 2P6
Phone (867) 669-0506 • FAX (867) 873-6610

May 7, 2001

File: MV2001C0012, MV2001L2-0002

John McConnell
De Beers Canada
Suite 300 Scotia Centre
5102-50th Avenue
YELLOWKNIFE, NT X1A 3S8

Dear: Mr. McConnell

De Beers Canada Mining Inc. - MV2001C0012, MV2001L2-0002
Snap Lake Diamond Project – Snap Lake, NT

Pursuant to paragraph 22(2)(b) of the *Mackenzie Valley Land Use Regulations*, the Mackenzie Valley Land and Water Board (MVLWB) hereby requests additional information be provided respecting the proposed lands and water to be used in the Snap Lake Diamond Project land-use operation.

The following comments were received by the MVLWB and are considered expert advice in the preliminary screening review of Land Use Application MV2001C0012 and Water License Application MV2001L2-0002. Section 111 of the *Mackenzie Valley Resource Management Act* designates the following government agencies as a "Responsible Minister:"

- Federal Government of Canada - Department of Fisheries and Oceans
- Federal Government of Canada - Department of Indian and Northern Affairs
- Federal Government of Canada - Department of Environment
- Government of the Northwest Territories - Territorial Health Board
- Government of the Northwest Territories - Resources, Wildlife and Economic Development

At this time the MVLWB is giving De Beers the opportunity to address the concerns submitted in the attachment to the satisfaction of the aforementioned government agencies. Your response to these comments will be circulated to all reviewers. All comments received will be utilized in the Preliminary Screening by the MVLWB. The MVLWB requests the comments to be received no later than May 28, 2001. If De Beers Canada Mining Inc. is unable to supply the additional information requested, please indicate so in writing.

If you have any questions regarding this letter, contact Darren Campbell or Mardy Semmler at (867) 669-0506 or email darren@mvlwb.com or mardy@mvlwb.com

Yours sincerely,

Laura Johnston

fr

Melody McLeod
Chair

Attachments

Copied to: Ed Hornby, South Mackenzie District, DIAND, Yellowknife
Mardy Semmler – MVLWB
Darren Campbell - MVLWB



Lutsel K'e Dene Band

Post Office Box 28
Lutsel K'e, Northwest Territories
X0E 1A0

Telephone: 867 370-3051
Fax: 867 370-3010

facsimile transmittal

To: MARDY SEMMLER Fax: 867-873-6610
From: STEPHEN ELLIS Date: APR 27, 2001
Re: SNAP LAKE PROJECT Pages: 4 (Incl. cover)
CC: _____

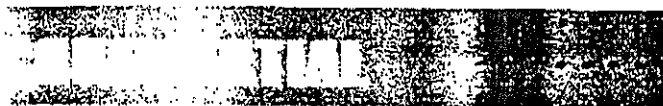
☐ Urgent ☒ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

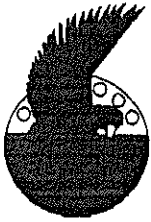
MARDY,

HERE ARE THE COMMENTS AND RECOMMENDATIONS
OF THE LUTSEL K'E DENE FIRST NATION REGARDING THE
De Beers CANADA MINING APPLICATIONS FOR LAND USE
PERMIT MV2001C0012 AND WATER LICENSE MV2001L2-0002
PLEASE ADDRESS THEM IN YOUR EVALUATION AND PRE-SCREENING
OF THESE APPLICATIONS.

STEVE
ELLIS

WLEC COORDINATOR





Lutsel K'e Dene Band

Post Office Box 28
Lutsel K'e, Northwest Territories
X0E 1A0

Telephone: 867 370-3051
Fax: 867 370-3010

Chief Felix Lockhart
Lutsel K'e Dene First Nation
Box 28
Lutsel K'e, NT X0E 1A0

Mackenzie Valley Land
& Water Board

April 25, 2001

File

APR 27 2001

Mardy Semmler - Regulatory Officer
Mackenzie Valley Land and Water Board
7th Floor - 4910 50th Avenue
PO Box 2130
Yellowknife, NT X1A 2P6

Application # MV2001C0012

Copied To MS INC Reg

Dear Mardy Semmler,

The Lutsel K'e Dene First Nation (LKDFN) strongly recommends that the applications for Class A Land Use Permit MV2001C0012 and Class A Water License MV2001L2 - 0002, as advanced by De Beers Canada Mining to proceed with the Snap Lake Project, go through a complete Environmental Assessment process.

The LKDFN does not believe that adequate information and consultation was provided to thoroughly review the aforementioned project. We feel that the following specific issues remain unclear and / or unresolved in the consultations, applications and supporting documents:

GENERAL

- Primarily the residual effects (i.e. after mitigative measures) of long-term and regional impacts are considered and ranked in the scoping and technical support documents. There is little mention of the local, direct and short-term effects (acute) that can be very significant at the local level (i.e. permanent or temporary destruction / alteration of habitat).
- It is often explained *what* measures will be taken to mitigate mine impacts. However, in many cases, it is not explained *how* these measures will operate and succeed in their tasks.
- There is little to no consideration of traditional knowledge in either the baseline information about the study area or the analysis of the potential effects of the mining project. The proper incorporation of traditional knowledge into study area descriptions as well as impact analysis would result in the identification of more issues and potential effects, as well as better design considerations for mitigation.
- Community consultations as described in the scoping and technical documents were not meaningful. Communities were not provided with the required knowledge to make informed comments on issues, effects and significance.
- The classification of effects and their significance rely too much on "expert opinion". This is particularly the case when assessing the potential cumulative impacts of the proposed mine. These assessments should be founded upon *proof*, from both traditional and scientific knowledge perspectives.

- The cumulative impacts of the ice roads, dust emissions, increased vehicular (air and surface) traffic as well as watershed considerations are not satisfactorily described.

AIR

- Wind erosion of the North Pile and the subsequent fouling of the region's air, land and water is a critical issue given the pile's dominance at the proposed mine site. The mitigative measures suggested are unproven and inadequate.
- How dust from the mill, the primary mine entrance and the various vent holes will be controlled is unclear. Particularly, how exhaust from the ventilation boreholes on the north shore of Snap Lake will impact the surrounding landscape is not explained.

WATER

- The proposed project is within the Lockhart River watershed, which eventually flows into the East Arm of Great Slave Lake. There is concern that some metals (i.e. Al, Cu, Se), dust, industrial chemicals and / or nitrates may affect waters beyond the regional study area via the Snap Lake outflow streams and / or groundwater flows.
- The flows of groundwater in the study area are not described adequately. There are concerns that groundwater passing through the mine may arise elsewhere in or around the study region. Groundwater may become contaminated through leaching from the North Pile and / or passage through the mine tunnels. This is particularly of concern as potentially acid generating rock (i.e. metavolcanic and granite) will be used as underground backfill, as well as deposited at the base of the north pile.
- The release of nutrients (i.e. nitrates, phosphates) may alter the trophic status of Snap Lake and surrounding water bodies.
- The long flushing rate (1.7 years) of Snap Lake may result in the eventual concentration of contaminants to above acceptable levels in the water body.
- Acid leaching may occur from the PKC unit (i.e. through the berms into the surface flow, through the groundwater). The scoping and technical support documents explain *what* mitigative measures will be taken to prevent this, but not *how* they will prevent this impact.
- It is unclear how the Mine Water Clarification Pond will "satisfactorily" treat mine water through sedimentation. How this will deal with dissolved ions is not explained.

FISHERIES

- Fish spawning and rearing habitat may be affected by shockwaves from mine blasting activity, especially when blasting is taking place *under* Snap Lake itself.

WILDLIFE

- Given the great importance of caribou to the livelihood of the Lutsel K'e people, community concerns regarding caribou abundance, distribution and movement patterns through and around the study area are presently not adequately addressed. Beyond direct mortality concerns, there are questions concerning the potential disturbance of caribou movement patterns in and just beyond the bounds of the regional study area that remain unanswered.
- Wolverines are relatively abundant in the study area. Mitigative measures to minimize impacts upon this species are not specified.

SOCIO-ECONOMIC

- The shift rotation system seems to encourage certain social problems, particularly the breakdown of family. How the proponent plans to address this is not stated.

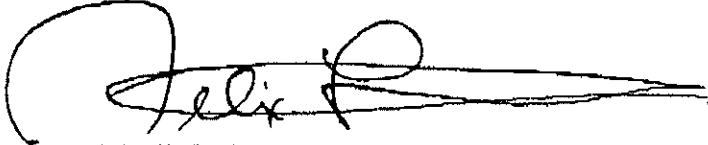
- Wage economics do not insure that money made through employment at the mine site will benefit the community of Lutsel K'e, the families of those employed, even those employed themselves. How the proponent plans to address this is not stated.
- Due to limited training opportunities in the community of Lutsel K'e, it is likely that most employment secured by community members will be in the labor sector, with little opportunity for advancement. Training and education are needed to encourage promotion opportunities, job satisfaction and longevity, and opportunities for employment in mining-related sectors such as environmental and administrative sectors. This issue is not adequately addressed.

Given these various unresolved issues, the Lutsel K'e Dene First Nation is requesting that the following measures be taken:

- That the MVEIRB conduct a thorough Environmental Assessment (EA) of the proposed project.
- That traditional knowledge holders participate in the EA, and that TK informs the results of the EA.
- That independent scientific experts participate in and inform the EA process.
- That technical workshops involving the effected communities take place to resolve the issues presented above (as well as others that may arise).
- That the proposed project be modified based on the recommendations of the EA process.

We ask that the MVLWB seriously consider these requests. If you have any questions, contact me or Stephen Ellis, the Wildlife, Lands and Environment Coordinator, at 867-370-3051.

Sincerely,



Chief Felix Lockhart
Lutsel K'e Dene First Nation

- c. Charlie Catholique - WLEC Chair
Leslie Green - De Beers Canada Mining Inc.



Canadian Arctic Resources Committee

Melody McLeod, Chairperson
Mackenzie Valley Land and Water Board
7th floor – 4910 50th Ave.,
Box 2130
Yellowknife NT
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Mackenzie Valley Land
& Water Board

APR 27 2001
Application # MV2001C0012
Copied To MS EX 100

April 27, 2001

**Re: Application # MV2001C0012 Class A Land Use Permit
Application # MV2001L2-0002 Class A Water License
De Beers Canada Mining Inc. for Snap Lake Diamond Project**

The Canadian Arctic Resources Committee recommends that this project be referred to the Mackenzie Valley Environmental Impact Review Board, for an environmental assessment, pursuant to s. 125(b) of the *Mackenzie Valley Resource Management Act* (MVRMA).

We are concerned with this project as it has the potential to become the third operating diamond mine in the Slave Geological Province and it is well within the range of the Bathurst caribou herd and the habitat of the barren-ground grizzly bear. Other exploration and development continues, together with possible increases in infrastructure. The cumulative effects of all this activity has never been adequately assessed or managed.

To illustrate this point, we need point no further than the terms and conditions attached to the approval of the Diavik Comprehensive Study by the Hon. David Anderson, Minister of Environment in November 1999. A cumulative effects assessment and management framework was supposed to be implemented by April 1, 2001 but is nowhere near completion. In the absence of this framework, it is difficult to see how the potential cumulative effects of the Snap Lake project can be assessed or managed. We also raise the lack of progress on the development and implementation of Part 6 of the MVRMA, the Cumulative Impact Monitoring Program.

We are also concerned about potential changes in water quality as the Snap Lake project is in a new watershed with little previous resource development. The Lockhart system enters the East Arm of Great Slave Lake, which is an important area for fish and other wildlife, as well as subsistence harvest and recreation and tourism.

We are concerned by the apparent lack of internal environmental management systems or contingency planning by De Beers at Snap Lake. We are aware that an emergency amendment to their Class B water licence for their exploration program was recently granted where water will be discharged directly into Snap Lake from the tailings pond without treatment. We are concerned about how minewater will be managed should this project proceed without an assessment, given the problems to date.

For the reasons outlined above, we believe that the Snap Lake project has the potential for adverse environmental effects on wildlife and the aquatic environment, and should be referred to the Mackenzie Valley Environmental Impact Review Board for an environmental assessment.

Although your board does not have jurisdiction over the requested environmental assessment, we wish to raise the need for participant funding to ensure a rigorous review of this proposal. This will allow for proper independent assessment of impacts and the options of how to best manage and mitigate negative impacts.

Please keep us informed of the decision your Board will make on these applications.

Sincerely,



Kevin O'Reilly
Research Director

cc. Hon. Robert Nault, Minister of Indian Affairs and Northern Development
Hon. David Anderson, Minister of Environment
Hon. Ethel Blondin-Andrew, MP Western Arctic
Gordon Lennie, Chair, Mackenzie Valley Environmental Impact Review Board
Chief Felix Lockhart, Lutsel K'e First Nation
Chiefs Rich Edjericon and Peter Liske, Yellowknives Dene First Nation
Clem Paul, President, North Slave Metis Alliance
John McConnell, Vice-President, De Beers Canada Mining



Northwest Territories Minister of Resources, Wildlife and Economic Development

MAY 07 2001

Mackenzie Valley Land
& Water Board

Ms. Melody McLeod
Acting Chairperson
Mackenzie Valley Land and Water Board
7th FLOOR - 4910 50th AVENUE
YELLOWKNIFE NT X1A 2P6

File

MAY 07 2001

Application # MV2001-0002
Copied To MSIDC/LKL/Reg

Dear Ms. McLeod:

Government of the Northwest Territories Comments for the Preliminary Screening of the DeBeers Snap Lake Diamond Mine Proposal

Enclosed, please find comments submitted by the Government of the Northwest Territories (GNWT) relating to the Snap Lake Project for the consideration of the Mackenzie Valley Land and Water Board. You will note that our review of the information supplied by the proponent has led the GNWT to conclude that public concerns may exist with respect to the socio-economic impacts of the project. Therefore, for the reasons elaborated in the attached report, the GNWT requests that the Mackenzie Valley Land and Water Board refer the Snap Lake project to the Mackenzie Valley Environmental Impact Review Board for an environmental assessment.

Should you require any clarification of the materials presented here, do not hesitate to contact the Policy, Legislation, and Communications Division of the Department of Resources, Wildlife, and Economic Development. Thank you for your attention to this matter.

Sincerely,

Joseph L. Handley

Enclosure

**GOVERNMENT OF THE NORTHWEST TERRITORIES COMMENTS ON SNAP LAKE
DIAMONDS PROJECT PRELIMINARY SCREENING SCOPING DOCUMENT
SUBMITTED IN SUPPORT OF APPLICATIONS FOR A LAND USE PERMIT AND
CLASS A WATER LICENSE**

Biophysical

The GNWT has reviewed the scoping document and the technical support documents in order to identify issues associated with the potential for the discharge of contaminants to the environment. The GNWT review has identified some concerns with the proposed water and waste rock management systems at Snap Lake for the consideration of the Land and Water Board during the water licensing process.

DeBeers expects that a large volume of water will flow into the underground mine workings, during mine development. The GNWT review notes that the mine workings will encounter areas with no permafrost under Snap Lake, as well as areas with continuous and discontinuous permafrost under the surrounding shoreline. The proponent has not outlined in the Scoping Document adequate assurances that drilling and blasting in the underground workings will not lead to the subsidence of the lake bottom or melting of the permafrost areas surrounding the lake. Drilling and blasting can easily fracture permafrost areas, weakening the roof of the mine, leading to increased water inflows and possibly collapse of the mine roof. Large volumes of inflow are also expected to be encountered due to the intersection of mine workings with existing boreholes, which are difficult to seal (Technical Memorandum 8, p. 4).

Water inflow to the underground workings is estimated to range between 9,800 m³/day and 26,500m³/day. This water will constitute the greatest part of the volume of water contained in the Mine Water Clarification Pond, which will eventually be discharged into Snap Lake. The proponent states that water will be retained in the MWCP for ten days, after which it should be of acceptable quality to discharge to Snap Lake. The proponent notes that water quality will meet "discharge limits" when it is released into the environment (Scoping Document, pp. 18-22). However, the proponent has not established targets for the quality of water discharged into Snap Lake, such as Canadian Council of Ministers of the Environment (CCME) guidelines or license requirements from other mines in the region. For example, the proponent states that no guideline for phosphorus exists (TSD, p. 4). In fact there is a guideline for phosphorus, in that other mining proponents in the region have had to meet stringent licensing requirements for phosphorus. DIAVIK is required to maintain maximum concentrations at or below 0.4 mg/l, and intends to reduce that level further to 0.1 mg/l.

The GNWT is of the opinion that it would have been useful for DeBeers to set stringent water quality targets for Snap Lake, and then outline in the scoping document the design measures and operating conditions they plan to implement in order to achieve compliance. Similarly, the proponent has not outlined measures to reduce, reuse,

reclaim, or recycle water on site, so as to minimize the quantity of water that must be treated.

From a review of the materials provided, it would appear that the sum total of the water treatment commitments at Snap Lake is to retain water in the MWCP for ten days. This is a concern to the GNWT, since numerous areas in the report indicate that the proponent will be unable to meet CCME guidelines for metal parameters, including aluminium, copper, selenium, nickel, and others (TSD – pviii-9, viii-10, viii-31 and p. 8 Golder Geochemistry Baseline.). Ammonia and nitrates as well Copper in runoff has exceeded CCME guidelines at the current site (TSD X-47-48). Despite acknowledgement of these challenges, and the difficulties being encountered with water management at the site to date, the lack of a water treatment plan to ensure that water quality objectives are met is of concern to the GNWT.

A second issue of concern is the proposed plans for the management of waste rock. The waste rock management plan consists of using a combination of paste backfill and a surface rock pile to store the waste rock produced during the mining operation (Scoping Document, pp. 15-17). Some metavolcanics and granites that will be encountered during the early years of production are predicted to be acid generating. This rock will be stored in the North Pile. The proponent plans on covering waste rock pile with a ten meter thick cap of processed Kimberlite, but acknowledges (TSD p. X-I) that they are uncertain whether this is an appropriate long term plan, due to possibility of nickel concentrations in the leachate. It is also acknowledged that the metavolcanics could leach metals including cobalt, copper, manganese, nickel, and zinc under acid water conditions (at pH of 6)(p. X-50).

We also have concerns with the use of a kimberlite cap as a means of preventing or mitigating Acid Rock Discharge from the metavolcanic waste rock expected to be encountered in the early years of mine development, which is known to have acid generating potential. DeBeers notes that Acid Base Accounting and kinetic testing have shown that the processed kimberlite is non- acid generating and in fact has significant buffering capacity (Scoping Document, p. 17). However, recent experience at BHP suggests that kimberlites may contain sulfates, and may therefore be acid generating rather than buffering. In light of these experiences, the GNWT suggests that a more cautious approach to water management be developed, that includes plans to collect and treat water from the North Pile in the event that acid generation in the North Pile is greater than expected.

The GNWT is confident that the Mackenzie Valley Land and Water Board will be able to address the issues raised above during the water licensing process.

Wildlife

RWED is concerned with the camp design and layout. The site plan provided shows many buildings linked together and one camp complex building with several wings. This type of a camp design has many dead-end corridors and blind spots where wildlife can be surprised by people. A surprise encounter at close range could result in a person being attacked, or wildlife mortality. RWED suggests that the proponent consult with departmental staff to determine options for prevention of wildlife encounters on the site.

The site plan does not show the location of the incinerators and there is no information on the day to day handling procedure for kitchen waste. Kitchen waste needs to be taken as directly as possible from the kitchen area to an incinerator without exposing the garbage to wildlife.

Socio-Economic

The GNWT has mandated responsibility to ensure that resource development projects contribute to the well being of northern residents. In order to fulfil this mandate, the GNWT has reviewed the preliminary screening documents in order to evaluate the potential effects of the project on:

- (1) wage economy
 - (a) indirect and induced economic effects, including a discussion of the effect of competition for labour on the NWT business community
 - (b) mine purchases
 - (c) mine employment;
- (2) cultural well-being, traditional economy, land use and resources;
- (3) social stability and community wellness, including not only a general review, but also an assessment of the effects of rotation cycles, increased income, and migration patterns;
- (4) net effects on government, including an assessment of the effects on revenue, infrastructure and services;
- (5) Sustainable development, including opportunities for secondary industries and impact on future opportunities.

The GNWT commends the Proponent for the level of detail provided in its Preliminary Screening documents. In particular, a commendable effort has been made to document the pathways of effect relating to the traditional economy. However, the Preliminary Screening material contains some omissions or deficiencies, for example, in the areas of: mine purchases; social impacts and mine employment; net effects on government and sustainable development, among others.

Spatial and Temporal Boundaries

The GNWT supports De Beers' commitment to identify those communities whose residents may have traditionally used the area encompassed by the Project (Scoping Document page 48). However, it appears that no discussion of the rationale for selecting primary impact communities and employment catchment area communities was presented in the Scoping Document. The GNWT recommends the Proponent both identify and justify the local and regional spatial and temporal boundaries for predicting impacts for each of the five socio-economic attributes outlined above on page 3.

Justification for choice of spatial boundaries should include an explanation of the basis for excluding communities from those boundaries. Effects on communities will vary with the socio-economic attributes being examined. For example, effects on government are territory wide. However, effects of increased road traffic are specific to communities on the road system. Therefore, spatial boundaries should be specific to the social or economic impact being considered. Similarly, temporal boundaries will vary with the impact under consideration. Direct employment impacts will endure for the life of the mine. Any predicted changes in social conditions in communities, either positive or negative, may endure for generations after the closure of the mine. These differences should be recognized and incorporated into the impact analysis.

Business Development and Economic Diversification Opportunities

The Proponent describes business opportunities as one of the most significant ways communities can benefit from mining opportunities (Scoping Document, page 11a-82). However, the Preliminary Screening documents do not give any idea of the magnitude of mine purchases from northern businesses that might be expected. Neither is a definition of 'northern business' provided.

A well-rounded assessment of Project effects would have also included a discussion of current and emerging De Beers business practices, particularly with regard to strategic alliances and contracting arrangements. For example, does De Beers have pre-existing international purchasing agreements that will effectively limit the available northern business opportunities? The Scoping Document describes the use of pre-fabricated buildings (for example, page 22), but does not discuss the effect of this practice on northern business opportunities. The Proponent states it will "endeavour to ensure all qualified businesses are considered" (Scoping Document, page 72), but does not describe how it will do this. Since the documents indicate much of the work will be through contractors, it is important to understand what steps will be taken. For instance, to what extent will packages be publicly tendered, broken down, and if broken down, to what extent will sub-contracting opportunities be publicly tendered. The GNWT recognizes Impact Benefit Agreements (IBA) may provide for specific contracting procedures, but it is important to understand what contracting and procurement

practices will be followed where an opportunity exceeds the capacity of IBA communities.

Furthermore, NWT socioeconomic monitoring programs to date indicate that few business opportunities are realized outside of Yellowknife. The Proponent proposes a possible solution to this (Scoping Document, page IIa-82), but specific ideas for business opportunities will need careful consideration to ensure their viability and sustainability. These examples lead the GNWT to conclude there is a great deal of uncertainty regarding the effects of mine purchases. There would be less uncertainty if the Proponent were to provide data about its performance to-date at the Snap Lake site.

Economy and Employment

The proponent estimates direct employment impacts at Snap Lake to be approximately 350 people (FTE). Of these, 105 people currently residing in the NWT are predicted to be employed at Snap Lake. An equal number are predicted to migrate into the NWT to take jobs at the mine. Indirect and induced employment impacts will increase the total number of northerners employed as a result of the proposed project, but these estimates are not provided. This is a relatively small employment impact, when compared with the expected value of the resources at the mine, which are estimated to be \$11.5 billion (News North, July 17, 2000). Although DeBeers states its commitment to participate in the development of training and education programs to facilitate the capture of mine jobs by people in the impact communities (Scoping Document, p. 98), the specific measures to be pursued and resource commitments to implement these programs are not identified. Nor is there a discussion of the transportation and recruitment commitments DeBeers and its contractors are prepared to make. This will have a significant impact on employment effects in the primary impact communities, and on the economic impacts of the project in those communities.

Furthermore, although there is some fiscal benefit from in-migration, a sustainable development perspective requires an examination of economic development, capacity-building and sustainable positive effects that will assist future generations in having meaningful opportunities open to them. Examined within a sustainable development framework, defining "local labour" employment as employment of both new and existing NWT residents does not contribute to a meaningful assessment of project impacts.

Several of the comments relating to Mine Purchases apply equally to Mine Employment; in particular, providing data on performance to-date at Snap Lake, and identifying Corporate and Contractor practices to ensure there are meaningful Northern employment benefits. An understanding of how De Beers employment commitments will be ensured through contractors is particularly important, as the site surface facilities construction, pre-production underground mine development, *and initial mining* will all be completed by contractors (Scoping Document, p. 9 — emphasis added). The public

has raised concerns about contractor hiring practices (Scoping Document, page 69). A full discussion of contractor hiring would include, for example:

- what responsibility and steps De Beers will take to ensure contractor commitment to northern hire, and what remedial steps De Beers will take if this does not occur;
- what contractual clauses have been and will be used;
- what steps De Beers and its contractors will take to verify northern content.

These discussions were not found during the review of the preliminary screening materials.

Furthermore, the proponent states that employment will be a positive effect. While this is certainly the case, more attention needs to be given to the various social consequences of increased income and income disparities within communities. With respect to income disparities and social equity, DeBeers acknowledges that increased social inequity within the community is a probable consequence of employment at the mine (p. II A-59). It is suggested that the only available mitigation for this impact is to hope that a general increase in prosperity in the community will minimize any income discrepancies and the social tensions created as a result.

Other deleterious impacts can be expected as a result of mine employment. These include increased substance abuse or other dysfunctional behaviour. DeBeers acknowledges that this issue has been raised during consultations with potentially affected communities (Scoping Document, p. IIA-47). These adverse impacts may in turn lead to an increased demand on social services provided by the GNWT or community based agencies.

Rotational Schedule

Descriptions of the proposed shift rotation are inconsistent. The water licence application identifies only a 3:1 shift rotation (page 5 of 29, Mackenzie Valley Land and Water Board mining industry questionnaire for water licence applications). The Scoping Document (pages IIA-53, IIA-55) states that workers *may* work a 2/2 rotation (emphasis added). The Technical Support Document (page 164) states that the impact analysis assumes there will be a rotation cycle of 3:1 during construction. In describing operations, the Scoping Document states (page IIA-67) that during production "the mine will typically be worked on ... a three-week on and one-week off rotation."

In the discussion, impacts of the rotational schedule are admitted to be mixed. On the one hand, 2 weeks off is assumed to allow aboriginal employees the time required to engage in traditional pursuits and remain rooted in the culture and life of their home communities. On the other hand, a two week absence from the home may contribute to increased family stress as one parent is absent from the home half the time. There may also be a negative impact on the social capital available to the community, as the better-

educated members are more likely to be employed at the mine. Their skills and leadership are then unavailable to the community for much of the time.

It would seem apparent that a 3:1 rotation schedule would exacerbate the negative effects of rotational employment at a remote site and minimize the positive effects, compared with a 2:2 rotation. Employees will have relatively less time to engage in harvesting and other traditional pursuits held to be important to the maintenance of cultural identity. Similarly, they will be absent from the community for longer periods, increasing family stress due to parental absence, and further decreasing amount of time their skills are available for use in the community.

In the absence of a stated operational imperative mandating a 3:1 rotation, the chosen rotation schedule warrants further and more in-depth analysis, to better understand the degree to which, if any, it will produce socioeconomic benefits. We recommend the economic analysis be re-examined, to produce a range of impact scenarios under several residency assumptions.

Cumulative Effects

The proponent has not explicitly considered the impact of the recent growth of the non renewable resource development sector in the NWT in terms of the availability of northern workers to fill positions created by the project. Nor have they considered these impacts on the capacity of northern businesses to fill contracts at the mine. The proponent relies instead on the 1999 Labour force survey to estimate employment impacts and the available labour force. The GNWT recognizes that the 1999 Labour Force Survey is the most recent set of comprehensive labour market data available. Nevertheless, the GNWT wishes to caution the Mackenzie Valley Land and Water Board that since the survey was undertaken, one new mine has entered production and another is completing construction in the North Slave. In the western part of the NWT and especially in the Inuvik region, oil and gas investment has greatly expanded. Furthermore, investment in the Alberta oil sands are now approximately \$50 billion over the next 10 years. A project of this size occurring in Alberta can be expected to affect the availability of labour for NWT businesses.

For these reasons, the labour force situation in the NWT at present likely bears very little relation to that assessed in 1998/99. A well-rounded assessment of the cumulative effects of this Project would have included a consideration of the existing industrial context and its possible effect on the competition for labour faced by NWT businesses. The GNWT therefore suggests that there is considerable uncertainty associated with the proponent's predictions of labour availability, and therefore, northern employment.

Monitoring and Mitigation

In light of the mixed and uncertain socio-economic effects of the project, the GNWT is of the opinion that a careful monitoring and mitigation program is required to ensure that the positive impacts of the project are maximized, and the negative impacts are mitigated. The Scoping Document (page IIa-47) recognizes that "...some of the effects do present problems that need to be addressed by the communities, the various Governments and social service agencies and, to the extent possible, by the employer." Further, DeBeers states that "it is through the cooperation of the company with the communities and government that the negative impacts will be minimized and the positive impacts maximized" (page IIa-56).

In summarizing its community consultation, the Proponent states that its potential mitigation efforts have included committing to the following (Scoping Document, page vi): additional meetings, continued involvement of Elders and youth in monitoring programs, having local representatives accompany scientists in the field, hiring as many Aboriginals and northerners in positions at the mine as possible, and working with communities and governments on training programs.

De Beers states that concerns will be addressed through a series of mitigation measures on site and in the Snap Lake area as well as through a set of commitments by De Beers to work with the communities and government agencies (Scoping Document, page 52). No specific information is provided in the Scoping Document outlining a framework for designing and implementing these measures.

The Proponent recognizes its responsibility to "actively engage" in monitoring and to assist communities and government agencies with support services and programs (page IIa-86). The proponent also states, "there should be a certain degree of consistency among projects regarding the strategies and environmental management policies employed to mitigate environmental effects" (Scoping Document page IV-6). The GNWT agrees with this statement for monitoring of socioeconomic effects. We encourage De Beers to develop a follow-up monitoring program with the GNWT, which is consistent with the existing programs for industrial projects. The Proponent signals its intention to work with the GNWT on training initiatives (Scoping Document, page vi), but the mandated responsibility of the Government of the Northwest Territories extends far beyond training. The GNWT is prepared to lead discussions toward developing a mechanism that will provide for the ongoing collaboration that is required to properly monitor project impacts and plan mitigation strategies.

Heritage Resources

Archaeological surveys were conducted at the development site in 1998 and 1999 by Points West Consulting, and the reports have been received. Jacques Whitford Ltd.

completed a preliminary archaeological survey of a portion of the winter road connector to the Lupin ice road in 2000, though the report for this work has not been received yet.

Points West Consulting located nine archaeological sites in the vicinity of the development and based on development plans at the time, recommended that the impact to the nine sites could be mitigated through avoidance. An unknown number of archaeological sites were also recorded near or adjacent to the winter road connector.

Given the changes in ownership, adjustments to the development plans since the initial archaeological surveys were undertaken, we recommend that De Beers be required to contract an archaeologist to conduct a field investigation during the summer of 2001 to:

- ensure that all known archaeological sites can be avoided according to the current development plan. If not, a mitigation plan will need to be developed and executed before development be permitted to proceed.
- ensure that any areas not previously surveyed for archaeological sites within the development footprint be examined. Should archaeological resources be uncovered in these areas, then a mitigation plan will need to be developed and executed before development be permitted to proceed.
- ensure that all archaeological sites near, or adjacent to the winter access route are properly recorded, and that mitigation plans are developed and executed for each before development be permitted to proceed.

We wish to alert the Mackenzie Valley Land and Water Board that De Beers' archaeological consultant, Points West Heritage Consulting has applied for a NWT Archaeologists Permit for the 2001 field season, and they have identified the points listed above in their research plan. We wish to congratulate De Beers for their forward-looking heritage resource program.

Finally, De Beers should be encouraged to develop a long-term archaeological resource monitoring program which will ensure that ongoing mining activities will not disturb known archaeological sites in the area, that long-term mitigation plans are developed and adhered to, and that any future changes to the development are monitored for potential impact to archaeological sites.

Conclusion

The proponent acknowledges that increased wage incomes and rotational mine employment can have both positive and negative effects on communities in the NWT. While increased incomes can lead to improved individual and community wellness, it may also lead to increased substance abuse, family breakdown, and demand on GNWT social services. These negative impacts are not acknowledged in the summary of impacts provided in Table 6-1 on pages 86-87 of the Scoping Document. In that summary, all impacts are predicted to be positive. The GNWT is of the opinion that this

conclusion is not supported by common public perception nor by the results to date of socioeconomic monitoring programs for other mineral development projects. The assumption that only positive effects will occur — in the areas of employment, education and training, incomes, government revenue, community infrastructure, and community social structures (Scoping Document, pages 86-90, 92-94) — is undemonstrated.

Rather, evidence to-date indicates that, taken on balance and under managed conditions, industrial development can positively contribute to the well-being of residents and communities. This is not to say there will be no negative effects, but rather, that they are manageable within the context of positive effects. However, an ongoing framework for the management of these effects has not been developed for this project.

The Proponent commits to a number of ongoing community initiatives to monitor the impact of the project and design required interventions, in co-operation with government where appropriate. The nature of these monitoring initiatives is not specified, and no specific commitments are made. Corporate policies are alluded to but not described; Corporate programs have been considered but not developed; commitments are, for the most part, neither concrete nor defined.

In light of the existence of both positive and negative socio-economic effects, and in light of the poorly defined commitments by the proponent to manage these effects, the GNWT can only conclude that the socio-economic impact of the proposed project is uncertain. The GNWT therefore recommends that the project be referred to environmental assessment due to the uncertainty evident with respect to the socio-economic impacts of the project and the lack of a concrete program to monitor those impacts, and to implement any mitigative measures that are found to be necessary as a result.



Indian and Northern
Affairs Canada

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Box 1500
Yellowknife NT X1A 3T2

Your file Votre référence

Our file Notre référence

April 30, 2001

Ms. Melody J. McLeod, Chairperson
Mackenzie Valley Land and Water Board
7th Floor, 4910 - 50 Avenue
P.O. Box 2130
Yellowknife NT, X1A 2P6

N7L2-1735

Mackenzie Valley Land
& Water Board

File

APR 30 2001

Application # N7L2-1735

Copied To MS/DC/Reg

Dear Ms. McLeod

Water Licence N7L2-1735 - DeBeers Canada Mining Inc.;
Application for a Class "A" Licence - Snap Lake Diamond Project

We have conducted a preliminary review of the Snap Lake Diamond Project as described in the application, Scoping Document and the Technical support document.

The responsibility for the administration and enforcement of the *Northwest Territories Waters Act* and the *Northwest Territories Waters Regulations* makes the Minister of Indian Affairs and Northern Development a "Responsible Minister" as defined in section 111 of the *Mackenzie Valley Resource Management Act* (MVRMA).

The information provided describes in a general context, a proposed project that appears reasonable. There is an insufficient amount of detailed information with which we can conduct a thorough technical review to make an informed screening decision at this time. DeBeers has identified that many studies are ongoing and that it will provide further detailed information as the studies are completed.

In the absence of sufficient information, we are unable to determine the potential environmental impacts, the significance of such impacts on the receiving environment and the adequacy of any proposed mitigation. To evaluate the potential effects of this project, we require further details including all assumptions, contingency measures, data and modelling in support of the preferred options presented in the application. We have identified that at a minimum, further information is required in the following areas:

.../2

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- 2 -

1. The predicted water quality of all waste streams and containment ponds throughout the project, including minewater, seepage, surface runoff and collection ponds, process plant discharges, the minewater settling pond and the sewage treatment facility throughout operations and upon closure.
2. A detailed description of the ground ice conditions, the effects of the project on permafrost conditions and the effects of permafrost and transition zones on the various components of the project.
3. A detailed characterization on the assessment of geochemical influence on inflowing groundwater from all potential sources, including: mine rock exposed on underground walls, materials temporarily stored underground (muck, ore and /or waste rock); and water released or leached from backfill (kimberlite paste, quarried rock concrete and mine rock concrete).
4. A detailed description of the hydrology of the snap lake watershed including predicted mine inflows and underground hydrogeology, handling procedures, water balance predictions and contingencies for potential higher than expected flows, impacts of discharges on the hydrology of the lake and water balances for waste water containment facilities including contingencies and excess holding capacities.
5. A waste rock management plan outlining disposal areas, disposal methods, runoff containment and predicted quality. This should include the design specifications and management of the north pile.
6. A detailed description of the potential environmental effects on the receiving environment and their significance, the proposed mitigation of those effects including the alternative options considered and the rationale for the selection of the preferred options and an analysis of any residual effects.

The DeBeers Snap Lake project is the first large scale development in the Lockhart River drainage basin. Based on the limited information available we are unable to determine the potential effects of the project at this time. The Department requests that the project be referred to an environmental assessment pursuant to section 126(2) (a) of the MVRMA.

.../3

- 3 -

We would appreciate the opportunity to provide comments and input to the development of guidelines for the environmental assessment.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'D Livingstone', with a stylized flourish at the end.

David Livingstone, Director
Renewable Resources & Environment



Indian and Northern
Affairs Canada

Affaires Indiennes
et du Nord Canada

Box 1500
Yellowknife NT X1A 3T2

May 14, 2001

Mr. Gordon Lennie, Chairperson
Mackenzie Valley Environmental Impact Review Board
200 Scotia Centre, 5202 - 50 Avenue
P.O. Box 938
Yellowknife NT, X1A 2N7

Dear Mr. Lennie

Water Licence N7L2-1735 - DeBeers Canada Mining Inc.;
Application for a Class "A" Licence - Snap Lake Diamond Project

We have conducted a preliminary review of the Snap Lake Diamond Project as presented in the application, Scoping Document and the Technical support document.

The responsibility for the administration and enforcement of the *Northwest Territories Waters Act* and the *Northwest Territories Waters Regulations* makes the Minister of Indian Affairs and Northern Development a "Responsible Minister" as defined in section 111 of the *Mackenzie Valley Resource Management Act* (MVRMA).

The DeBeers Snap Lake project is the first large scale development in the Lockhart River drainage basin. Based on the limited information available we are unable to determine the potential effects of the project at this time. The Department requests that the project be referred to an environmental assessment pursuant to section 126(2) (a) of the MVRMA.

We would appreciate the opportunity to provide comments and input to the development of guidelines for the environmental assessment.

Yours sincerely,

David Livingstone
Director, Renewable Resources and Environment

cc Melody McLeod, Chairperson
Mackenzie Valley Land and Water Board

Canada

Your file Votre référence

Our file Notre référence
N7L2-1735

Mackenzie Valley Land
& Water Board

File

MAY 14 2001

Application # N7L2-1735

Copied To MS/DC/Reg

FACSIMILE TRANSMISSION

DIAND
David Livingstone, Director
Renewable Resources and Environment
P.O. Box 1500, Yellowknife NT X1A 2R3
Internet: livingstoned@lnac.gc.ca
Tel.: (867) 669-2647
Fax.: (867) 669-2707

Date: May 14, 2001

To: Melody McLeod, Chairperson
Mackenzie Valley Land and Water Board

Fax: 873-6610

Pages: 2, including cover

Comments:



Environment Canada
Environnement Canada

Environmental Protection Branch,
#301 5204 50th Ave.,
Yellowknife, NT
X1A 1E2

Fax: (867) 873-8185

April 25, 2001

Our file: 4704-000

Mackenzie Valley Land And Water Board
7th Floor - 4910, 50th Ave.,
PO Box 2130,
Yellowknife, NT
X1A 2P6

Fax: (867) 873 6610

Attn. Ms. Mardy Semmler,

**Re: De Beers Mining Inc. Land Use Permit Application MV2001C0012 and
Water Licence Application MV2001L2-0002**

A team of technical experts from Environment Canada has reviewed the information submitted by De Beers in support of the above applications. The following advice is provided pursuant to Section 22 of the *Mackenzie Valley Resource Management Act*.

Environment Canada's contribution to your request for specialist advice is based primarily on the mandated responsibilities for the enforcement of Section 36(3) of the *Fisheries Act*, the *Canadian Environmental Protection Act* (CEPA) and the *Migratory Birds Convention Act* (MBCA). The responsibility for the enforcement of these acts makes the Minister of the Environment a "responsible minister" (RM) as defined in section 111 of the *Mackenzie Valley Resource Management Act*.

As an RM contributing to the preliminary screening of the Snap Lake applications Environment Canada has determined that the information provided is insufficient to properly assess the project. Specifically, more information is required to adequately assess project impacts on water quality, hydrology, emergency response, spill plans and air quality.

As a result of these deficiencies Environment Canada is unable to determine whether the above noted project "might have significant adverse impacts on the environment". Therefore, Environment Canada requests that the project be referred to an environmental assessment pursuant to section 126(2) (a) of the MVRMA.

Sincerely,

Stephen Harbicht,
Head Assessment and Monitoring,
Environmental Protection Branch, Yellowknife
(867) 669-4733, stephen.harbicht@ec.gc.ca



Environment Canada
Environnement Canada

Environmental Protection Branch
Suite 301, 5204 - 50th Ave
Yellowknife, NT
X1A 1E2
Ph. (867) 669-4700

March 07, 2001

Mackenzie Valley Land and Water Board
7th Floor - 4910 50th Ave,
P.O. Box 2130
Yellowknife, NT
X1A 2P6
Fax 873-6610

Mackenzie Valley Land
& Water Board

File

MAR 07 2001

Application # MV2001C0012

Copied To KLims/Reg/DC

RE: Land use application De Beers Mining Inc NV2001C0012
Water Licence MV2001L2 -0002
Snapp Lake Diamond Project

Att'n Marty Semmler Regulatory Officer

This is to inform you that we received a copy of the information that was provided by De Beer's in support of the above noted applications.

Review comments were requested by April 5, 2001. Due to the amount of information provided and the need for our department to involve other specialists who are not located in our Yellowknife Office, Environment Canada is asking that the deadline for review comments be extend, at least, to the end of April, 2001.

Also to facilitate the proposed time frame we would appreciate receiving another six copies of De Beers submission.

Please advise me if you or the Yellowknife De Beers office has extra copies of the submission.

Thanking you in advance

Sincerely

Stephen Harbicht
Head, assessment and Monitoring Section
EPB, Yellowknife, NT

Mardy Semmler

From: Louie Azzolini [eao1@mveirb.nt.ca]

Sent: April 30, 2001 1:37 PM

To: Alan Gibson (E-mail); Canadian Zinc Corporation (E-mail); Charie Evalik (E-mail); Chris Hanks (E-mail); CPAWS (E-mail); David klippenstein (E-mail); Dean Cluff (E-mail); Deb Simmons (E-mail); Deh Cho First Nations (E-mail); Ecology North (E-mail); Emma Pike (E-mail); Ft. Providece Res. Mgt. Board (E-mail); Greg Cook (E-mail); Greg Smith MVLWB (E-mail); Janpeter Lennie-Misgeld (E-mail); Juanita_Robinson (E-mail); Karen LeGresley Hamre (E-mail); Ken Johnson (E-mail); Marcy Bast (E-mail); Mardy Semmler (E-mail); Marie Adams (E-mail); Mark Davy (E-mail); Paula Pacholek [Yel] (E-mail); Pete Cott (E-mail); Roland Semjanovs (E-mail); SahtuGeo (E-mail); Settlement of Enterprise (E-mail); Shirley F. Maaskant (E-mail); Shirley Pfister (E-mail); Tim Byers (E-mail); William (Bill) Carpenter (E-mail); YDFN Rachel Crapeau (E-mail); Zabey Nevitt (E-mail)

Subject: Notification of Preliminary Screenings Received by the MVEIRB

Receipt of Preliminary Screening Notification

The following Preliminary screening notifications were received to date. Please let me know if there are errors of commission or omission. The most recent notifications are at the bottom of the list . www.mveirb.nt.ca

The Minister of DIAND has responded to the Review Board's BHP Sable, Pigeon and Beartooth Kimberlite Pipe Development *Report of Environmental Assessment*. It is available at our web site at <http://www.mveirb.nt.ca/MVposts.html>

File 01-001, National Energy Board preliminary screening notification for Paramount Resources Ltd. application to alter the condition of a well for Paramount et al Cameron C-19 and C-50 in the Cameron Hills. Received on NEB file WID 1767, 1608.

File 01-002, Mackenzie Valley Land and Water Board (MVLWB) notification of GMD Resources Corp. application for renewal of Land Use Permit N1997C0775 (new file by MVLWB to MV2000C0035), for the purpose of storage of buildings and equipment and materials.

File 01-003, Department of Fisheries and Oceans, notification of preliminary screening of DFO dock repair in Yellowknife. DFO file SC00046.

File 01-004, MVLWB notification of preliminary screening of Robinson Enterprises Ltd. (RTL) quarry at Prosperous Lake. MVLWB file MV20001Q002.

File 01-005, MVLWB notification of preliminary screening of Robinson Enterprises Ltd. (RTL) application to construct and maintain old Discovery Winter Road to Gianque Lake, Ingraham Trail to Gianque Lake. MVLWB file MV2001F0004.

File 01-006, MVLWB notification preliminary screening of Robinson Enterprises Ltd. (RTL) request for amendment of Land Use Permit N2000F0020 to include tow additional campsites, the Lockhart and Lac de Gras camps. MVLWB file N2000F0020.

File 01-007, MVLWB notification of preliminary screening of Robinson Enterprises Ltd. (RTL) application to construct and maintain a Winter Road from the West Bay of Gordon Lake across old Discovery Winter Road through Gianque Lake to Nicholas Lake. MVLWB file MV20001F0005.

File 01-008, MVLWB notification of preliminary screening of Robinson Enterprises Ltd. (RTL) application for a quarry at Drybones Bay. MVLWB file MV2001Q0003.

File 01-009, MVLWB notification of preliminary screening of Diamondex Resources Ltd. mineral exploration - Carat

Project. MVLWB file MV2000C0074.

File 01-010, MVLWB notification of preliminary screening of Diamondex Resources Ltd. mineral exploration - King Project. MVLWB file MV2000C0076.

File 01-011, Gwich'in Land and Water Board (GLWB), notification of preliminary screening - Gwich'in Development Corporation, winter road from Fort McPherson to the NWT/Yukon Boarder.

File 01-012, MVLWB, notification of preliminary screening - GNWT Department of Transportation, Dredging of Fort Resolution Harbour. MVLWB file N2000X002.

File 01-013, MVLWB, notification of preliminary screening - Winter road , Indin Lake to Wekweti, Stan Dean and Sons. MVLWB file MV2001E0008.

File 01-014, GLWB, notification of preliminary screening - Gwich'in Development Corporation, Caribou/Peel River Environmental Project.

File 01-015, MVLWB, notification of preliminary screening - DIAND Contaminated Site Office, Land Use Permit Application, COLOMAC Mine. MVLWB file MV2000X0072 and MV2000L2-0018.

File 01-016, notification of preliminary screening - Don Morin Adventure Tourism at Tom Lake Area Land Use Permit Application. MVLWB file MV2001J0001.

File 01-017, Sahtu Land and Water Board (SLWB) notification of preliminary screening - Paramount Resources Ltd. Colville Lake Area seismic program. SLWB file S00B-008.

File 01-018, SLWB notification of preliminary screening - GNWT DoT, permanent bridge installation, Steep Creek Km 815.8 Mackenzie Valley Winter Road. SLWB file S00L8-003 and S00E-004.

File 01-019, SLWB notification of preliminary screening - GNWT DoT, permanent bridge installation, Saline River Km 832.4 Mackenzie Valley Winter Road. SLWB file S00L8-004 and S00E-005.

File 01-020, SLWB notification of preliminary screening - GNWT DoT, permanent bridge installation, Prohibition Creek Km 995.3 Mackenzie Valley Winter Road. SLWB file S00L8-005 and S00E-006.

File 01-021, SLWB notification of preliminary screening - GNWT DoT, permanent bridge installation, Overflow Creek Km 1108.4 Mackenzie Valley Winter Road. SLWB file S00L8-006 and S00E-007.

File 01-022, MVLWB notification of preliminary screening - Hemisphere Development Corporation Mineral Exploration, Sunrise Lake/Beulieu River Area. MVLWB file MV2000C007.

File 01-023, MVLWB notification of preliminary screening - GGL Diamond Corporation, mineral exploration, Awry Lake. MVLWB file MV2001C0006.

File 01-024, MVLWB notification of preliminary screening- GGL Diamond Corporation mineral exploration, CH Project. MVLWB file MV2001C0007.

File 01-025, MVLWB notification of preliminary screening - Diavik Diamond Mines Inc. mineral exploration, Lac de Gras. MVLWB file N20000C0024.

File 01-026, MVLWB notification of preliminary screening - Nickerson and Rasmusseen, mineral exploration, Baker Lake. MVLWB file MV2000C0064.

File 01-027, MVLWB notification of preliminary screening - NWT Power Corp., LUP application for a winter road from Rae Lakes Jct. To Snare Lakes Hydro Plant, MVLWB MV2000F00058

File 01-028, MVLWB notification of preliminary screening - DeBeers Snap Lake Area Seismic Survey, LUP application for 2-D seismic program on land and ice, MVLWB MV2001B0010

File 01-029, MVLWB notification of preliminary screening - GMD Resources Corp. Mineral Exploration (clean-up)

Giaque Lake Area. MVLWB LUP amendment MV2000C0035

File 01-030, National Energy Board notification of preliminary screening, Paramount Res. Ltd. Well B-08, I074 & I-16 in the Cameron Hills Area. COGOA 5(1)(b) application to renter and test the wells.

File 01-031, MVLWB notification of preliminary screening - Rabesca's Resources Ltd. Construction of office and tourism facility. MVLWB MV2000X0069.

File 01-032, MVLWB notification of preliminary screening - Paramount Res. Ltd. Arrowhead 3-D Seismic, LUP application for 200 Km² of blast and vibrosis seismic. MVLWB MV2001B0009

File 01-033, MVLWB notification of preliminary screening - GNWT DoT, Redredging at Fort Resolution. Water Licence Application MV2000L8-0017.

File 01-034, GNWT, RWED, Notification of completed preliminary screening (no notification provided) - Strong Interpretation. RWED file unknown.

File 01-035, RWED notification of preliminary screening - GNWT Forest Management Application, Constantine M. Savas Timber Cutting Permit FA-001285.

File 01-036, MVLWB notification of preliminary screening - Paramount Resources Ltd. N1998A0942, Oil and Gas Winter Access to I-16 Wellsite, Cameron Hills. MVLWB N1998A0942.

File 01-0137, MVLWB notification of preliminary screening- Land Use Permit Application, City of Yellowknife, Quarry at the River Lake Area, near Madeline Lake. MVLWB MV2000Q0071.

File 01-038, MVLWB notification of preliminary screening - Land Use Permit Application, Stan Dean and Sons, Quarrying, North of Mile 21, Hwy#5. MVLWB MV2000Q0054.

File 01-039, National Energy Board notification of preliminary screening - Application to alter the condition of a well for Paramount Berkley Arrowhead C-02, Fort Liard, NT (also know as an area identified as Fort Liard East) for the purposes of testing the well. NEB file WID 1857.

File 01-040, MVLWB notification of preliminary screening -Water Licence DeBeers Mining Inc. - Snap Lake - Request for Approval to Discharge Water to Snap Lake. MVLWB N1L2-1735.

File 01-041, MVLWB notification of preliminary screening - Land Use Permit Amendment Hamlet of Ft. Providence, Water License for Municipal Purposes. MVLWB N1L4-1412.

File 01-042, National Energy Board notification of preliminary screening - Shiha Energy Transmission Ltd. Application to construct a Tap Facility N-01 Pursuant to Section 58 of the National Energy Board Act. NEB 3400-S056-3. NOTE PRELIMINARY SCREENING COMPLETED.

File Unknown - RWED notification and submission of the completed preliminary screening. Please note you must notify the MVEIRB of starting of Preliminary Screening. Tourism Outfitting license for Archie Buckley.

File 01-044 - Department of Municipal and Community Affairs (MACA) South Slave Region notification of preliminary screening and screening decision - Trout Lake Gravel Haul. No MACA reference number. <http://www.MACA>

File 01-045 - MVLWB notification of preliminary screening - Diamondex Resources Ltd. Mineral Exploration - Aylmer Lake West. MVLWB MV2001C0018.
http://www.infomine.com/index/companies/DIAMONDEX_RESOURCES_LTD.html

File 01-046 - MVLWB notification of preliminary screening - BHP Inclusion of the Fox Pit, Ekati Diamond Mine Site. MVLWB N7L2-1616. <http://www.bhp.com/>

File 01-047 - MVLWB notification of preliminary screening - Navigator Exploration Corporation, Mineral Exploration - Crystal and Gem Properties. MVLWB MV2001C0013. <http://navigatorexploration.com/home.html>

File 01-048 - MVLWB notification of preliminary screening - Almaden Resources Corporation, Mineral Exploration -

MacKay Lake. MVLWB MV2001C0016. <http://www.almadenresources.com/index.html>

File 01-049 - File purposefully left unused.

File 01-050 - MVLWB notification of preliminary screening - Phelps Dodge Corporation of Canada, Mineral Exploration Mazenod Lake. MVLWB MV2001C0011.

File 01-051 - MVLWB notification of preliminary screening - De Beers Mining Inc. Snap Lake Diamond Project. MVLWB Land Use Permit MV2001C0012, Water Licence MV2001L2-0002. <http://www.debeerscanada.com/>

File 01-052 - MVLWB notification of preliminary screening - Type B Water Licence Renewal, Hamlet of Fort Providence, Water Licence for municipal purposes. MVLWB N1L4-1412. <http://www.ssimicro.com/ftpages/visitors.html>

File 01-053 - MVLWB notification of preliminary screening - Land Use Permit Application, South Slave Region, GNWT, Sivilculture Operations - Cameron Hills/Hay River Corridor. MVLWB 2001W0014.

File 01-054 - SLWB notification of preliminary screening - Land Use Permit Application, Colville Lake Lake Area, Sahtu Settlement Area - Colville Lake Gravel Haul. SLWB S01Q-001. www.slwb.com

File 01-055 - MVLWB notification of preliminary screening - Land Use Permit Amendment Canadian Forest Oil Ltd. 2-D Heliportable Seismic Program, Fort Liard Area. MVLWB N1998B0934.

File 01-056 - MVLWB notification of preliminary screening - Land Use Permit Application - Canadian Zinc Corporation - Surface exploration program, underground decline development and exploration and water licence for metallurgic plant operations - Prairie Creek. MVLWB MV2001C0022, MV2001C0023, MV2001L2-0003. <http://www.canadianzinc.com/>

File 01-057 - MVLWB notification of preliminary screening - Land Use Permit Amendment - Intertech Minerals Corporation Mineral Exploration, Thonokied River. MVLWB N1998C0893. http://www.minesite.com/companies/intertech_minerals.htm

File 01-058 - MVLWB notification of preliminary screening - Land Use Permit Amendment - Garth Wallbridge access road, Pontoon Lake. MVLWB MV2000F0008. garth@ssimicro.com

File 01-059 - MVLWB notification of preliminary screening - Land Use Permit Amendment - Canadian Forest oil Ltd. Ltd. 2-D Heliportable Seismic Program, Fort Liard Area. MVLWB N1998B0934. **Note:** this file replaces File 01-055

File 01-060 - MVLWB notification of preliminary screening - Land Use Permit Application - RWED, Forest Management Division - Scarification, West side of Hay River. MVLWB MV2001W0024.

01-061 - National Energy Board - notification of preliminary screening - Paramount Resources Ltd. et al Approval to Construct a Wellsite and Pipeline Facilities in the proposed Paramount et al Southeast Fort Liard (N-01) gas pool. NEB 2520-D-15-7. **Note:** See File 01-042 for Development Plan Preliminary Screening.

01-062 - MVLWB notification of preliminary screening - Land Use Permit Application Rhonda Mining Corporation, Exploration program Courageous Lake. MVLWB MV2000C0024. http://www.sedar.com/dynamic_pages/issuerprofiles_e/i00003691.htm and

<http://www.rhondacorp.com/>

01-063 - GNWT, RWED notification of preliminary screening and completed screening report. Tourism outfitting licence renewal for Barbara Ann Charters. Contact Bob Murphy at 867-920-3473 regarding the preliminary screening.

01-064 - GNWT, RWED notification of preliminary screening and completed screening report. Tourism outfitting licence renewal for True North Safaris -North Arm Adventures. Contact Bob Murphy at 867-920-3473 regarding the preliminary screening.

01-0-65 - GNWT, RWED notification of preliminary screening and completed screening report. Tourism outfitting licence renewal for True North. Contact Bob Murphy at 867-920-3473 regarding the preliminary screening.

01-066 - MVLWB notification of preliminary screening. BHP Diamonds Inc. Mineral Exploration, West of Pelonquin Lake. MVLWB MV2001C0026. <http://www.bhp.com/>

01-067 - MVLWB notification of preliminary screening. GNWT Department of Transportation water licence application - Bridge installation Rae-Edzo. MVLWB MV2001L8-0001.

<http://www.gov.nt.ca/Transportation/index.html> **01-068 - GNWT, RWED notification of preliminary screening and completion of screening. Tourism outfitting license renewal for Yellowknife Outdoor Adventures. Contact Bob Murphy at 867-920-3473 regarding the preliminary screening.**

01-069 - GNWT, RWED notification of preliminary screening and completion of screening. Tourism outfitting license renewal for Rabesca's Resources. Contact Bob Murphy at 867-920-3473 regarding the preliminary screening.

01-070 - GNWT, RWED notification of preliminary screening and completion of screening. Tourism outfitting license renewal for Enodah Wilderness Travel. Contact Bob Murphy at 867-920-3473 regarding the preliminary screening.

01-071 - GNWT, RWED notification of preliminary screening and completion of screening. Tourism outfitting license renewal for Narwhal Northern Adventures. Contact Bob Murphy at 867-920-3473 regarding the preliminary screening.

01-072 - notification and completion of preliminary screening. Section 28(2) Permit Hay River Dene Reserve. Lease of the foreshore of Island A of the Hay River Dene Reserve to NTCL for the anchorage of barges. DIAND Indian and Inuit Services. Please contact Dave Perrin at 867-669-2611.

01-073 - MVLWB notification of preliminary screening. GNWT Land Use Permit Amendment, GNWT DoT Bridge Installation at Vermillion Creek. MVLWB MV2000E0050, MV2000L3-0011. <http://www.gov.nt.ca/Transportation/index.html>

01-074 - MVLWB notification of preliminary screening. Land Use Permit Application, Tyhee Development Corporation, site clean up at Nicholas Lake. MVLWB MV2001X0017. <http://www.tyhee.com/>

01-075 - MVLWB notification of preliminary screening. Land Use Permit Application. Nor-west Rotors Ltd., fuel storage location. MVLWB MV2001H0025.

01-076 - SLWB notification of preliminary screening. Land Use Permit Application. Phelps Dodge Corporation of Canada Ltd., Mineral Exploration Port Radium. SLWB S01C-002.
<http://www.phelpsdodge.com/>

01-077 - MVLWB notification of preliminary screening. Land Use Permit Amendment. Chevron Canada Resources Ltd., oil and gas exploration, Fort Liard area, request for a one year extension and notification of campsite sale to Beaver Enterprises. MVLWB N1999A0035.

01-078 - MVLWB notification of preliminary screening. Land Use Permit Amendment. ADK Holdings Ltd. Fort Liard industrial park. Expansion of the industrial park. MVLWB MV2000X0015. <http://www.liardresources.nt.ca/>

Sincerely,

Luciano Azzolini,
Environmental Assessment Officer,
Mackenzie Valley Environmental Impact Review Board,
Box 938, Yellowknife, NT. X1A 2N7
Phone (867) 873-9189; Fax 920-4761;
mveirb.nt.ca

Mardy Semmler

From: Craig Nowakowski [Craig_Nowakowski@gov.nt.ca]
Sent: April 25, 2001 9:26 AM
To: mvlwbpermit@mvlwb.com
Cc: Erica Myles
Subject: Comments for MV2001C0012, MV2001L2-0002

Hello,

Here are our comments regarding Applications #MV2001C0012, MV2001L2-0002 for the Snap Lake Diamond Project. These are submitted from the Stanton Regional Health Board, Environmental Health Office.

We need to see more detail on the treatment of the camps potable water. Is the water to be chlorinated or UV treated, filtered etc. Please forward this information.

Also, we would also like more information on the permanent camp setup once it becomes available. This would include information on cooking facilities, laundry, sleeping facilities and the newly proposed sewage treatment facility.

If you require further information, please contact me at 669-8979. Thank you.

Craig Nowakowski
Environmental Health Officer
Stanton Regional Health Board

Mardy Semmler

From: John Clark [jclark@eba.ca]
Sent: April 5, 2001 10:49 AM
To: mardy@mvlwb.com
Subject: Snap Lake

Mardy

Derek Cathro, our geotechnical engineer reviewing the Snap Lake scoping document has a few questions, regarding the review and information provided.

I'll give you what he gave me directly, so I don't mess it up.

Thanks Mardy

There are 3 items that I need clarification or more materials:

- the Technical Review Request letter to us states that one of the three specific areas of concern is the capacity of the processed kimberlite containment area to hold the processing plant and mine discharge. The information presented in the Scoping and Technical Support Documents suggests that during production all the processed kimberlite will be converted to paste for deposition either underground or in the North Pile. It does not appear that these deposition locations are to also contain the processing plant and mine discharge; it would seem that those discharges will be directed to the Mine Water Clarification Pond. The clarification needed is whether the issue we are being asked to confirm is the capacity of the North Pile to hold the projected volume of processed kimberlite paste or the capacity of the Mine Water Clarification Pond (MWCP) to hold the projected plant and mine water discharges and overall related water balance sources.

- If the above clarification is for the North Pile capacity, we would need to receive digitized topographic data files to check the volume calculations. If the clarification is for the MWCP, we would need to receive digitized bathymetric and surrounding shore area contour data files, as well as information on amount of materials already deposited.

- The Technical Review Request also asks that we analyze and comment on the containment area structures and dam design drawings. The documents received thus far do not include any design drawings of these structures. These need to be submitted before we can initiate review work on this item.

John Clark, P.Eng.
Senior Engineer
EBA Engineering Consultants Ltd.
PO Box 2244
#201, 4916 - 49th Street
Yellowknife, NT X1A 2P7
867-920-2287 Phone
867-873-3324 Fax

Fisheries
and OceansPêches
et Océans

Fish Habitat Management
Suite 101, 5204-50th Avenue
Yellowknife, Northwest
Territories
X1A 1E2

Your file / Votre référence

Our file / Notre référence

SC00163

April 30, 2001

Mackenzie Valley Land and Water Board
Yellowknife, NT

Attention: Mardy Semmler

RE: DeBeers Snap Lake scoping document

Dear Ms. Semmler:

The Department of Fisheries and Oceans, Fish Habitat Management – Western Arctic Area (DFO) received the Scoping Document and supporting information on the Class A Land Use and Class A Water License applications.

Under Sections 124 and 125 of the *Mackenzie Valley Resource Management Act* (MVRMA), DFO is participating in a preliminary screening by providing specialist information and/or advice. DFO's assessment of the scoping document takes into consideration primarily fish and fish habitat related concerns. The following is DFO's review of the scoping document.

Waste Rock Storage

DFO has concerns with the proposed use of processed kimberlite in the construction of containment berms around the perimeter of the waste rock pile at the Snap Lake Diamond Project site (Project). These concerns are based on monitoring data from BHP's Ekati project where the presence of kimberlite and its interaction with tundra water appears to be resulting in acid rock drainage and elevated sulphate concentrations. The monitoring program at Ekati suggests that kimberlite may cause serious problems with seepage water quality and is not the ideal berm construction material, despite its apparent neutralizing capabilities. BHP also found that seepage with neutral pH also had high sulphate concentration and concluded that the seepage was neutral due to neutralizing capacity of kimberlite. However, in some of BHP's other seepage 'types' identified, this buffering capacity was apparently depleted and the kimberlite-water interaction resulted in acidic water with high sulphate. Given this recent evidence, DFO suggests that the use of kimberlite as capping material or for berm construction be reevaluated.

Canada

Water Use

On p.14 of 29 of the water license application, it is stated that 55 m³/day of water for six months would be extracted from "small lakes". DFO does not recommend using small water bodies as water sources. In order to minimise impacts to natural aquatic systems, DFO recommends that water from the clarification pond be used for dust suppression.

Water Treatment

De Beers suggests that mitigation for poor water quality can be addressed by "minimizing contact of the mine water flow with blasted rock, drilling mud and grout". It is unclear at the present time how DeBeers will carry out this mitigation given that water flows into the mine workings through the blasted rock and collects in sumps within the workings.

On page 15 of 29 of the water license application it is stated that "mine water will be satisfactorily treated by means of sedimentation" prior to discharge into the environment. Yet it is repeatedly stated in the screening document that water quality from the underground mine is not known at this time. It is also stated that the mine water clarification pond will result in "acceptable quality of water discharged". In the same document, however, it is stated that mine water discharge to Snap Lake may increase concentrations of Al, Cu and Se. It is not clear how discharged water can be "acceptable" if mine water quality is not fully known or if discharge leads to an increase in deleterious substances in a natural water body.

Also on p.15 of 29 of the water license application, it is stated that water discharge volumes would be 11,000 m³/day, 4 years after production and 28,000 m³/day at full production, with the volume for full production representing discharge during most of the mine's operating life. Groundwater input into the mine will be 9,800 m³/day at 5 years of production and 26,500 m³/day at full production while mine water usage would be approximately 515 m³/day. Total water input at the mine then is 10,315 m³/day and 27,015 m³/day. The difference between discharge and total input volumes is roughly 600-900 m³/day; a proportionally very small water recycling program.

It is not clear if the 10-day period allotted to the retention pond represents capacity for the pond. As such, it is not clear what contingencies would be available to DeBeers should 'adequate' water quality not be met after the retention period.

With these unknowns related to water quality, the large proportion of non-recycled water, and the lack of sufficient contingency to deal with water unsuitable for discharge, DeBeers must propose a treatment system with the ability to provide a controlled and satisfactory output to the environment. DFO recommends that the Canadian Environmental Quality Guidelines for Water (<http://www.ec.gc.ca/ceqg-rcqe/water.htm>) be used as guides for designing a treatment system. These guidelines are put together by the Canadian Council of

Canada

Ministers of the Environment (CCME) and are generic recommendations on quantities/concentration for water, sediment, tissues, and soil, based on the most current scientific information. DFO considers these guidelines in assessing impacts to fish and fish habitat under sections 35 and 36 of the *Fisheries Act*. The *Fisheries Act* prohibits the deposit of "deleterious" substances (section 36) as well as harmful alteration, disruption, or destruction of fish habitat (section 35). It is also important to note that lethal impacts to trout and daphnia are not the only important tool in determining effluent guidelines and the use of technologies to treat effluent. Scientific evidence, as outlined in the Guidelines above, suggest that concentrations of effluent lower than lethal doses for trout and daphnia, may be deleterious and harmful to fish and fish habitat.

Impacts to Aquatic Habitat

On page iv of the scoping document DeBeers states that two ephemeral streams will be directly affected by mine development. DeBeers also found that fish and fish eggs were not observed or collected in or near the mouth of these streams. DFO does not consider the absence of fish as an indicator of absence of fish habitat. Aquatic invertebrates, nutrients, and/or adequate water quality are all components of fish habitat. As such, all water bodies impacted/affected by development should be identified and methods should be found to avoid or mitigate such impacts. In light of DFO's interpretation fish habitat, DeBeers should review and re-assess statements on page vi of the scoping document which states "No physical alterations of fish habitat will take place." Furthermore, no accounting of aquatic habitat lost is evident in the scoping document (see Table 6.2).

Figures 2.3 and 2.4 do not appear to have small in-land streams included. Review of the document would be improved if these streams were included. Furthermore impacts to small lakes from the waste rock pile and airstrip footprints are not clear. In the pre-development figure (Figure 2.3) small water bodies are present but in Figure 2.4 these water bodies appear to be covered by development. Impacts to these water bodies need to be assessed and accounted in Table 6.2.

DFO could find no mention in the scoping document of the effects of blasting on fish and fish habitat. cursory examination of Figure 2.2 suggests that the underground mine may be less than one hundred meters (approximately 50 meters) from the lake bottom. Blasting with charges of 100 kg in rock could result in overpressure exceeding DFO's *Guidelines for the use of Explosives in or Near Canadian Fisheries Waters* (www.dfo-mpo.gc.ca/habitat/explosguide/english/index_e.htm). DeBeers should assess impacts to fish and fish habitat from underground blasting during operation of the Project.

Detecting Impacts - monitoring

DFO notes an absence of rationale for the delineation of Snap Lake as the zone of impact of mine activities. Given the uncertainty about mine water quality, the potential for impacts downstream of Snap Lake into Lac Capot Blanc needs to be

included. The potential for wind blown dust from the waste rock pile to cause acid runoff or precipitation and consequent water quality issues also needs to be included in a monitoring program. DeBeers should present all of the evidence in support of the delineation of the Snap Lake watershed as the limit for aquatic-related impacts. Only once the zone of impact for aquatic issues is established in a scientifically defensible manner can analysis of water quality data and aquatic biota be relevant.

Detecting Impacts - methods

It is not clear what analyses were done on benthos, why the benthos were sampled, and whether metals were sampled in the tissue. A clear hypothesis of effect must be derived before sampling of organisms occurs. Without this information the adequacy of baseline sampling cannot be evaluated.

DFO concludes that the project as proposed is likely to have significant adverse effects on the aquatic environment surrounding the Snap Lake Diamond Project and recommends that the project be referred to the Mackenzie Valley Environmental Impact Review Board for Environmental Assessment (EA). This referral is being made as per section 126(2)(a) of the Mackenzie Valley Resource Management Act (MVRMA). DFO will participate in the EA as an Expert Advisor. DFO is also considered a responsible minister under section 111 of the MVRMA, having jurisdiction in relation to the development under the *Fisheries Act*.

If you have any questions concerning this letter please contact me at (867) 669-4912, FAX (867) 669-4940, or Julie Dahl at (867) 669-4911.



Marc Lange
Area Habitat Biologist
Fish Habitat Management
Department of Fisheries and Oceans- Western Arctic Area

Copy: Julie Dahl, Area Chief, Habitat – DFO
Leslie Green - DeBeers Mining Inc
Louie Azzolini – Mackenzie Valley Environmental Impact Review Board

Canada



MEMO

Your file - Votre référence

Our file - Notre référence

Date: April 27, 2001

To: Charlene Coe

From: Ken Dahl
RMO III, South Mackenzie District
INAC

Re: Land Use Permit Application MV2001C0012
De Beers Canada Mining Inc., Snap Lake
Mineral Exploration

I have reviewed the Land Use Permit application and have attached the following comments.

The De Beers Canada Mining Inc. site is currently conducting an AEP at Snap Lake under Land Use Permit N1999C0081. The existing program will likely be completed within the life of the current permit. However, the proposed development as indicated in the application currently under review exceeds 20 years and requires extensively more infrastructure. Although reference is made in the application to obtaining a lease from DIAND, I would like to have seen the lease included with the project application as part of a complete package. I would expect that lease considerations should be made in conjunction with the Land Use Permit application and issued concurrently.

I had a concern with the applicant stating that existing camp facilities "will be expanded to provide accommodation for the construction crews." The existing sewage treatment facility used for the AEP has had a chronic history of not meeting discharge requirements under the existing water licence. I am aware that the proponent has put forth to the Mackenzie Valley Land and Water Board a proposal to use a new Sequencing Batch Reactor to treat sewage but to my knowledge has not been approved under the water licence or the land use permit. I am not confident the existing RBC system will satisfactorily treat sewage for a larger camp and have not seen approval for the proposed SBR. Which system will be used during construction and what contingency will be in place for the vastly enlarged construction camp?

The application indicates that the current winter access road from Warburton Bay will be used to support construction of the facility. My previous inspections of the winter route have generally been satisfactory but there has been some concern reported with the grade of the approach to the first portage. The approach has been steep enough in the past that full trucks were being pulled up with a Cat. My concern is that considering the long term ~~the~~ life of the project and with the increase volume of trucks carrying fuel and other supplies into the site, an alternate point of commencement should be considered to reduce the possibility of upset and a possible unauthorized discharge. An alternative may be to modify the existing approach to ensure a better safety margin to both the truck drivers and the environment. Have any other site options been considered?

Considering the scale of the proposed project, there will be unauthorized spill events. Appendix V, Spill Contingency Plans, briefly discuss the cleanup and removal of spills however there is no suitable place or procedure identified in the document to receive spilled material. A lined berm area is mentioned as a possible staging site for later removal but its location or design does not appear to be specifically identified. There are two problems with this concept. Firstly the scale of the project will likely contribute to significant spills at some point and secondly, removal of contaminated materials is likely limited to the short operating season of the winter road. If waste is going to be removed via the limited season of the winter road, a large enough area that will provide adequate secondary containment over the course of the remainder of the year is required. Furthermore, where would larger volumes of waste be removed to?

Temporary storage of spilled contents in drums or otherwise as suggested in Appendix V as well as in section 2.5.3 Solid Waste Management Plan of the scoping document may be an acceptable practice for small scale operations but the level of activity proposed requires much more infrastructure to deal with spills than that submitted in this application. The recovery of a spilled product usually combines the volume of another substrate on which the spill occurs and as a result, the actual volume the contaminant is greatly increased. Once again, this is compounded by the fact that the proposed life of the project exceeds 20 years. Other projects similar in scale to this one have designated dumping areas that allow for on site large scale remediation and I would suggest that a similar system be considered and developed during the initial design phase as part of this project as well.

In addition to the environmental aspect of spills, there is also the safety aspect. As mentioned in Appendix VI, Hazardous Materials, some incompatible chemicals will require separation during storage. The same applies to spilled products. The location, handling mechanism and size of a suitable storage/remediation area requires further consideration at this time.

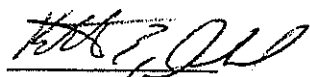
Appendix V, Spill Contingency Plan, must be identified as a dynamic document and requires continual and accurate updating as changes to the project and personnel are made. I am pleased to see that this is recognized in the plan. However, the plan itself is brief as submitted for this scale of project and requires more detail. Items that may also be included are MSDS data sheets for all products to be used on site, contact numbers for various product manufacturers, locations of communication facilities on site and along the winter access road to facilitate immediate reporting

and how the different products spilled are to be handled on different substrates etc. The Spill Contingency Plan must be a stand alone document that is all-inclusive and organized but concise.

Section 2.5.3, Solid Waste Management, of the scoping document makes reference to an identified landfill site within the North Pile on Figure 2.5. The landfill site could not be identified on this figure but appears to be documented on Figure 2.4. Is it safe to assume this the same one? Some detail should be included as to how the landfill site will be developed in regards to the proposed quarry development and deposit of mine rock on the same site to ensure it develops without later conflict.

Thanks for the opportunity to comment on this application and I would appreciate any additional information that can be provided on these items.

Yours truly,

A handwritten signature in black ink, appearing to read 'Kenneth Dahl', written over a horizontal line.

Kenneth Dahl
Resource Management Officer III
South Mackenzie District
INAC

Memo

GT-0001

Xref: MV2001L2-0002
(NIL2-1735)

To: Charlene Coe
From: Greg Cook
Date: March 08, 2001
Subject: LUPA MV2001C0012 - DeBeers Mining Inc. - Snap Lake Diamond project

Char,

Water Resources Division has reviewed the above mentioned land use application for development at the Snap lake site.

A Class A water licence application and related information was filed simultaneously with this permit application, and provided to us for comment. As such, Water Resources Division will be reviewing the project separately from this perspective, and responding back directly to the Mackenzie Valley Land and Water Board regarding any water-related concerns with respect to the Preliminary Screening of this project.

If you have any questions, please feel free to call at 669-2656.

Sincerely,

Greg Cook
Environmental Assessment Coordinator

c.c. Sevn Bohnet, Water Resources

From: Sandra Bradbury
To: Charlene Coe
Date: 3/29/01 4:30PM
Subject: Re: LUPA MV2001C0012 - DeBeers Mining Inc. - Snap Lake

no concerns on the mineral side of things, however, Buddy Williams as added the following comments.

>>> Buddy Williams 03/29/01 03:25PM >>>

I have reviewed the proposed land use activity as described in the noted land use application submitted by DeBeers Mining Inc.

From a Land management perspective, the application describes a long term land use which will extend beyond the duration of a land use permit. The activity will also consist of the construction of site infrastructure and facilities which are permanent in nature and will result in long term land management issues. The location of the activity is on Federal land, and in addition to a land use permit, long term tenure requirements would be required, such as leases and licenses.

The magnitude of the proposed activity would require further assessment of the land management/environmental impacts, beyond whats contained in the supporting documentation provided with this application.

I trust this will be of assistance to you.

Buddy Williams R/W-EC
Land Specialist
Land Administration - DIAND
Ph: (867) 669-2697
Fax: (867) 669-2713
E-mail: williamsb@inac.gc.ca

From: Buddy Williams
To: Sandra Bradbury
Date: 3/29/01 3:25PM
Subject: LUPA MV2001C0012 - DeBeers Mining Inc. - Snap Lake

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From a Land management perspective, the application describes a long term land use which will extent beyond the duration of a land use permit. The activity will also consist of the construction of site infrastructure and facilities which are permanent in nature and will result in long term land management issues. The location of the activity is on Federal land, and in addition to a land use permit, long term tenure requirements would be required, such as leases and licenses.

The magnitude of the proposed activity would require further assessment of the land management/environmental impacts, beyond whats contained in the supporting documentation provided with this application.

I trust this will be of assistance to you.

Buddy Williams RW-EC
Land Specialist
Land Administration - DIAND
Ph: (867) 669-2697
Fax: (867) 669-2713
E-mail: williamsb@inac.gc.ca

CC: Brenda Becker; Charlene Coe

EBA Engineering Consultants Ltd.

03 May 2001

0701-01-14913.002

Mackenzie Valley Land and Water Board
7th Floor – 4910 50th Avenue
PO Box 2130
Yellowknife, NT X1A 2P6

Attention: Ms Wanda Anderson – A/Executive Director

DRAFT

Dear Ms Anderson

Re: Snap Lake Diamond Mine License Application Review – MV2001L2-0002/MV2001C0012

In response to your letter of 06 March 2001, following are EBA Engineering Consultants Ltd.'s comments on the documents reviewed.

Introduction

EBA Engineering Consultants Ltd. (EBA) was requested to review certain technical aspects of documentation supporting the land use and water license applications of De Beers Canada Mining Inc. for its proposed Snap Lake development. EBA was specifically asked to comment on:

- The potential for acid rock drainage;
- Capacity of the processed kimberlite containment area to hold the processing plant and mine discharge;
- The sewage treatment facilities capabilities.

Mr Derek Cathro, P.Eng. of EBA reviewed the document regarding the capacity of the processed kimberlite containment (PKC) area. Ms Shannon Shaw of Robertson GeoConsultants reviewed the potential for acid rock drainage (ARD). Mr John Clark, P.Eng. of EBA reviewed the sewage treatment facilities capabilities.

Mr Cathro's and Ms Shaw's review comments will be dealt with in a separate letter. This letter addresses only Mr Clark's comments on the sewage treatment facilities capabilities.

Information received

The information received from the Board comprised a binder titled: Snap Lake Diamond Project Scoping Document in support of De Beers Canada Mining Inc. Class A Land Use and Class A Water License Applications. Included with the binder was a CD-ROM titled:

De Beers Snap Lake Diamond Project Land Use and Water License Applications - Scoping Document, Technical Support Document.

Summary of Information

Land Use Permit Application

It was noted in the Land Use Permit Application (Section 9.b) that a sewage treatment plant will be located south of the camp complex, and that the treated effluent will meet discharge requirements. It was noted that treated effluent would then be discharged to an adjacent wetland as an added treatment measure. The sludge from the sewage treatment plant will be disposed in a landfill created within the North Pile or incinerated.

Water License Application

It is noted in the Water License Application questionnaire that potable water use from Snap Lake for the camp will be 200 m³ per day, and that the discharge of sewage to the sewage treatment plant will also be 200 m³ per day (Table 1 and Section 3.10).

Scoping Document

Section 2.6.5 of the Scoping Document notes that a sewage treatment plant will be located south of the camp complex, and that treated effluent will meet discharge requirements. The effluent will be piped for disposal to the adjacent wetland as an additional treatment measure. The sewage sludge from the treatment plant will be disposed in the landfill created within the North Pile or incinerated.

QA/QC Plan

Appendix A to Section 11 contains the Quality Assurance/Quality Control (QA/QC) Plan. Section 2.1 of that document gives water sampling locations in the Surveillance Network Program (SNP) under the current Class "B" Water License. Station 1735-10 is the discharge from the sewage disposal facility. Station 1735-11 is sewage effluent after wetlands treatment and prior to entry to Snap Lake.

Table 1 is an overview of water quality sampling stations and sample frequency. It notes that effluent from the sewage treatment plant (1735-10) will be sampled monthly during camp operation and analyzed for total suspended solids (TSS), pH, oil and grease, biological oxygen demand (BOD), and fecal coliforms. Effluent from the wetlands prior to entry to Snap Lake (1735-11) will be sampled monthly during camp operation and analyzed for total suspended solids (TSS), pH, oil and grease, biological oxygen demand (BOD), and fecal coliforms.

Spill Contingency Plan – Advanced Exploration Program (Appendix V)

The Spill Contingency Plan for the Advanced Exploration Program (Section 2.0) notes that the sewage system consists of a pre-packaged series of rotating biological contactor (RBC) units housed in a heated building. Sludge will be disposed in a manner acceptable to the

regulators. It is noted that: "The system is being reviewed and consideration is being (given) to a new system." No information is given regarding a new system.

It is noted in Section 3.1 that: "Failure may occur because of rotor disc system failure; power outage; deviation from load design; worn or broken pipeline; blockage of pipeline; accidental or intentional damage to pipeline; improper maintenance; subsidence of pipeline supporting structure; or freezing of pipeline." It is noted that visual inspections of the sewage system and pipeline will be carried out and the operations manual for the sewage treatment plant will be followed.

Section 4.1 outlines system malfunction response. It is noted that problems with the sewage treatment plant or pipeline should be reported to the On-Scene Coordinator or the Snap Lake Site Manager. In the event of power failure or pump failure, the appropriate standby/backup system should be placed in operation.

Abandonment and Restoration Plan (Appendix VIII)

Section 2.6.3 notes that the sewage treatment plant will be designed to service the total site workforce, and that treated effluent will be piped to a wetland east of the accommodation complex for disposal.

It also notes that the sewage treatment plant will be removed from the site and the area regarded as part of the closure plan.

Discussion

There is not a great deal of detail given regarding the sewage treatment facilities. It is not noted what type of sewage treatment plant will be utilized, other than that an RBC unit is mentioned in the Spill Contingency Plan. It is suspected that this refers to the unit servicing the existing camp, not the proposed facility.

It is noted that the treated effluents will meet regulatory guidelines. It is further noted that the wetlands will provide further treatment. This raises a question as to whether the wetlands are to be considered part of the treatment system. If they are, then information on the capacity of the wetlands to treat sewage over the life of the operation is required. If the wetlands are not considered part of the sewage treatment system, then information regarding the long-term effect of the effluent on the wetlands should be provided.

It is not noted in the documents reviewed what the sewage treatment plant quality will be, other than that it will meet regulatory requirements. There are several types of package sewage treatment plants that are capable of producing good quality effluent that should meet any reasonable current effluent quality requirement.

Selection of the plant should consider the following factors:

- Hydraulic loading, i.e. the quantity of sewage to be processed: Consideration should be given to the maximum hourly flow, maximum daily flow, minimum

flows and average flows. Most types of sewage treatment plants operate best if the flow is reasonably steady. An industrial camp such as this could be expected to have a relatively constant sewage flow from day-to-day, with peaks during the day at shift changes.

- **Biological loading:** Many sewage treatment plants do not operate well with fluctuating biological loading. Biological loading is the demand placed on the receiving environment by the effluent as it decomposes, and is measured by the biological and/or chemical oxygen demand. Since the sewage treatment plant will only treat domestic sewage from the camp and not industrial wastes, chemical oxygen demand is not expected to be a concern. However, discharge of any industrial waste into the sewage treatment system, either accidental or deliberate, could have a severe negative impact on the efficiency of the system. Such discharges should be avoided.
- **Operation and maintenance requirements:** Operating costs for power and consumables and labour requirements for operations and maintenance.

Any sewage treatment plant is subject to 'upset' from time to time. This can happen when rapid changes to the hydraulic or biological loading occur, or there is a significant change in ambient environment. The effect is a reduction in effluent quality until the process can re-establish itself. This can take from a few days to a few weeks.

Recommendations

The following recommendations are presented following the review of the documents noted:

1. It is recommended that the Board request data on the pre-package sewage treatment plant as it becomes available. This data should include the type and capacity of unit treatment processes (primary, secondary and tertiary, if applicable) and design parameters such as hydraulic and biological loading and expected effluent quality.
2. It is recommended that the Board request additional detail on the role of the wetlands in the sewage treatment process, including whether the wetland is considered part of the treatment system or a receiving body.
3. If the wetland is considered part of the treatment system, it is recommended that the Board require information on the capacity of the wetlands to treat sewage. If the wetland is not considered part of the treatment system, it is recommended that the board require information regarding the long-term effect of the effluent on the wetlands.
4. It is recommended that the Board request additional information on the frequency of inspections of the sewage treatment, pumping and pipeline systems.

5. It is recommended that the Board request additional information regarding the abandonment and reclamation of the sewage treatment system.
6. It is recommended that the Board require effluent sampling at Station 1735-10 more frequently than monthly during start-up of the sewage treatment plant until the plant reaches a stable operating condition, as indicated by consistent analytical results. Effluent sampling during this period should be completed at least weekly.
7. It is recommended that the Board require more frequent effluent sampling at any time that effluent quality requirements are not met.

We trust this review will assist the Board in their deliberations. If you have any questions regarding this review, please do not hesitate to contact the undersigned at your convenience.

Yours truly
EBA Engineering Consultants Ltd.

R. Brent Murphy, P.Geol.
Project Director, NWT/Nunavut

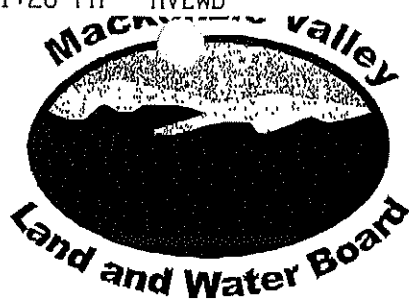
RBM/JAC/0701-01-14913.002

Support Document. I've printed most of what I need from the CD and in fact there is a file labeled Tables A2-A5.pdf, however when I open it only Table A2 is included. If there is a hardcopy lying around or if you have a contact person who could get there hands on a copy of these tables it would help in the review. If not, we will manage with what we have. I understand you are out of the office until later this week so I will try to give you a call maybe on Thursday to see if you have any ideas on this issue.

Thanks,

Shannon

John Clark, P.Eng.
Senior Engineer
EBA Engineering Consultants Ltd.
PO Box 2244
#201, 4916 - 49th Street
Yellowknife, NT X1A 2P7
867-920-2287 Phone
867-873-3324 Fax

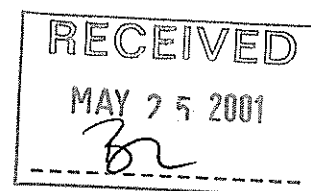


Mackenzie Valley Land and Water Board
7th Floor - 4910 50th Avenue
P.O. Box 2130
YELLOWKNIFE NT X1A 2P6
Phone (867) 669-0506
FAX (867) 873-6610

FILE NUMBER: MV2001C0012/MV2001L2-CDATE: May 25, 2001TO: RolandMWEIRBFAX NUMBER: 873-920-4761FROM: Mandy SemmlerNumber of pages including cover: 8

Review Comments received from
YK Dene after deadline!
For your info!

A handwritten signature, likely of Mandy Semmler, consisting of stylized initials and a surname.



NOTE: The document accompanying this transmission contains confidential information intended for a specific individual and purpose. The information is private, and is legally protected by law. If you are not the intended recipient, you are hereby notified that any disclosure, copying, distribution, or the taking of any action in reference to the contents of this telecopied information is strictly prohibited. If you have received this communication in error, please notify the above person immediately by telephone and return the original to by regular mail to address above.

Mardy Semmler

From: Rayanne C Lee [rayanne@mvlwb.com]
Sent: May 24, 2001 4:54 PM
To: Mardy Semmler
Subject: RE: Snap Lake



SLScopReview.doc

Here ya go!

Rayanne C Lee
Information Technology
Mackenzie Valley Land and Water Board
Box 2130
Yellowknife, NT X1A 2P6
(867) 669-0506
rayanne@mvlwb.com

-----Original Message-----

From: Mardy Semmler [mailto:mardy@mvlwb.com]
Sent: Thursday, May 24, 2001 4:46 PM
To: Rayanne C Lee
Cc: MVLWB Permit
Subject: FW: Snap Lake

Rayanne, I can't open the attached file.
Mardy

-----Original Message-----

From: Tim Byers [mailto:byerses@escape.ca]
Sent: May 24, 2001 4:13 PM
To: mardy@mvlwb.com
Subject: Snap Lake

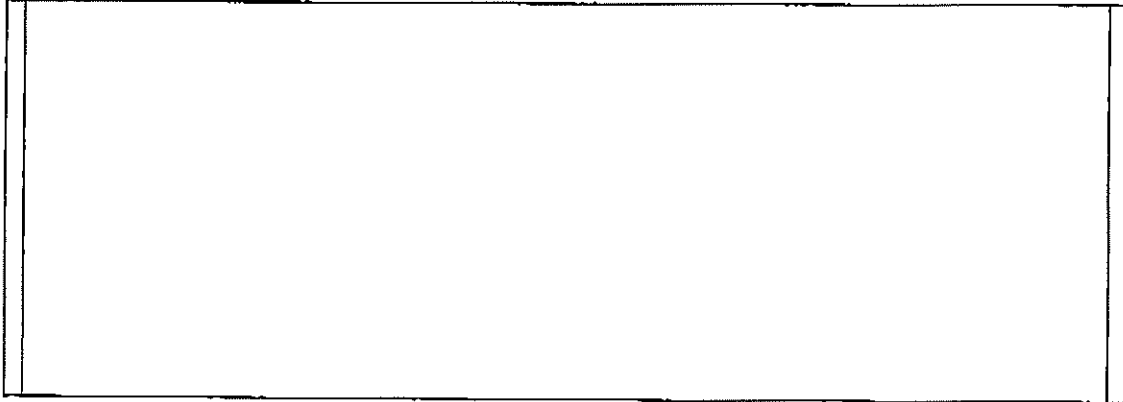
Hi Mardy.

Please accept the attached document as the Yellowknives' review comments on the Snap Lake scoping documents.

I see by the MVL&W Board web-site that the deadline for submissions was April 30. For some reason I believed a rumour that it was going to be extended. Sorry for the late filing.

Regards,

Tim Byers.



May 2001

05/25/2001 FRI 12:34 [TX/RX NO 5738]

kimberlite at EKATI and DIAVIK mines? If so, how do we know this given that: A..no geotechnical testing has been done on the PK..@ (APPNDX VIII p.VIII-35) Also, could De Beers define what Ageochemically stable@ (APPNDX VIII p. VIII-10) is in describing the PK?

2.Will the ferrosilicon used in the kimberlite processing be present in both the coarse and fine PK ? (only coarse PK will be used in construction)

3.The Mine Water Clarification Pond is currently serving as the temporary PKC. (p.19 of Scoping Doc.;Tech Support Doc. APPNDX VIII-25) Does this mean that there will be PK in this facility when it receives mine waters? How will the facility treat mine water given that it will have PK on the bottom?

(B) Airstrip:

Does the blue liquid dye along the center of the airstrip weather/erode/dissolve?..How often is it replaced?
Are there any toxic elements in the dye that could negatively impact terrestrial or water environments?

(C) Hazardous Spills:

1.The Environmental Advisor of the Response Team is located in Vancouver. De Beers= Spill Contingency Plan notes that among his duties are:

- < developing a program to collect and analyze samples to determine the presence and magnitude of contamination, and
- < monitoring the effectiveness of spill clean-up and recommend any additional clean-up work that might be necessary.

Will the Environmental Advisor be directing these tasks from Vancouver or will he do so on-site? We believe this work is too important to have it be directed from somewhere other than the spill site.

2.We are pleased to see that the company is using double-walled pipes to carry fuel from the storage tanks. This is an innovation that improves on the spill mitigation measures of other operating diamond mines in the North. However, we would still encourage the use of impermeable liners under the fuel tank farm to provide an extra layer of security from environmental consequences of accidental spills or severe pipe ruptures.

(D) Reclamation:

1.The Mine Water Clarification Pond will be temporarily drained after mine closes (yr.2025) Where will the water be sent?.

2. ABroken concrete and other materials resulting from the demolition of structural foundations@ will be put in the base of the pond, with a layer of sand or non-PAG rock covering it to prevent sediment erosion. What components of the concrete or of the other materials can affect the quality of the water put back into the pond ?

3. If the impermeable liner from the berm will no longer have a use after mine closure, why isn=t it included with materials returned to Yellowknife rather than being disposed of in the North Country Pile? Will liners beneath fuel tanks and truck fueling areas be disposed of in the same way?

4. One of the disposal options proposed to discard the buildings and equipment is in the North Pile clean materials land-fill site. If De Beers is truly serious about leaving the reclaimed mine site in as pristine a condition as possible, then they should make every effort to minimize the materials that are left on the land. We recommend that De Beers use part of their substantial diamond profits to remove as much of their scrap as is physically possible from the reclaimed land.

5. Could De Beers elaborate on what are the Apotential inorganic shallow impacts associated with the incinerator operation.@? (APPDX VIII-13 of Scoping Document) This is not fully explained in the documents.

(E) Winter Road:

There will be 2,750 truck loads/yr during operation phase. The responsibility for clean-up of spills on the road system to Snap Lake (including the winter road and highways #3 & 4) should be clear in permit submissions and must be enforced. This was acknowledged by Winspear/De Beers in their Snap L meeting with our committee on Oct. 16, 2000.

2. ENVIRONMENTAL CONDITIONS and IMPACTS

(A) Air Quality:

Is the exploration camp abandoned, or are there any present or potential activities there that would pump enough TSP into the air to compromise the site=s status as a monitor of background air quality?

(B) Water Quality:

≤ Heavy Metals:

1. Snap L will receive strontium levels over 3 times higher than occurs naturally in Snap L. But since there are no CCME guidelines for strontium, De Beers will not concern itself with this. Can De Beers tell us what are the likely effects on fish and other aquatic life from such high levels of strontium?

2. Table III.1 of Appndx III compares water quality samples from Snap L. to the CCME guidelines. But the guidelines used in this table are based on hardness of 120 mg/L, even though the hardness values recorded in the samples were all below 10. If the guidelines used in Table III.2 were used instead (these were based on hardness of 5 mg/L) the threshold values for Snap L. would be lower for 4 metals (cadmium, lead, mercury, and nickel). Likewise, Golder=s use of CCME heavy metal guidelines is not consistent in their APreliminary Estimates of Discharge Water Quality@ (APPNDX VIII, subAPPNDX IV). Two different water hardness levels (5 and 120 mg/L) were used as the basis for comparison to CCME guidelines. According to the tables mentioned above, for 4 metals (cadmium, lead, mercury and nickel) guideline levels for protection of aquatic life are different at the 2 hardness levels. But in comparing maximum metal concentrations in Snap L under worst-case mine effluent quality with the CCME guidelines, lead and nickel guidelines are those at hardness of 5, whereas mercury guidelines are those at hardness of 120. This results in the mercury concentrations at the point of discharge and beyond being at levels safe for aquatic life. But if the 5mg/L hardness level were used as the basis for the comparison (baseline for Snap L is 6), then mercury would be well over the guidelines of 0.005 Φ g/L. Also, they use the USEPA guideline (0.52 Φ g/L) for cadmium rather than the much lower CCME guideline (0.003), resulting in the effluent being categorized as safe for aquatic life. It is not explained why USEPA rather than CCME guideline were used for this one metal. If the CCME guideline were used (Snap L baseline concentrations are at this level), consistent with all other heavy metals examined, then the effluent would have been categorized as above recommended safe levels for aquatic life.

Consequently, we would expect De Beers to add cadmium and mercury to the list of effluent metals that may increase Snap Lake=s concentrations above CCME guidelines.

3. How did Golder calculate their Aestimated maximum acceptable project discharges@ that they are using to provide guidance in De Beers= management of waste water?

≤ Nutrients:

1. Treated effluent will meet discharge requirements. We would like De Beers to be more specific as to what the levels of nutrients & coliforms will be.

2. During the period March to September, 2000, samples from the sewage treatment plant discharge (1735-10) contained levels of faecal coliforms, biological oxygen demand, total suspended solids, and oil and grease that exceeded limits specified in the Water License. An unanticipated problem with the start-up of the rotating biological contactor, which treats the sewage, and an inadequate grease-trapping system in the kitchen were determined as the causes of these high levels. What assurances do we have that those problems will not arise again?

(C) Fish:

≤ Explosives: there is no mention in the scoping documents about whether the effects of explosions on the fish in Snap Lake have been examined. Mine activity is on a peninsula with nearshore shallow-water areas that may be attractive as spawning grounds or nursery areas to fish species other than trout. We believe that De Beers should study and report on the percussive effects of explosions related to mine infrastructure construction on adjacent nearshore areas.

3. SOCIO-ECONOMIC IMPACTS

(A) ARCHAEOLOGY: De Beers= consultant states that: @Sites threatened with development were marked with stakes and flagging tape. At the request of [YDFN], artifacts and tools were not collected during the field program. @ (From Appndx Iib of Scoping Doc.)

At the conclusion of the field program, all observed sites were then recorded . 10 sites in esker #1; 3 sites in esker #2 (Technical Support Doc.: AArchaeological Assessment of the Camsell Lake Project Area, NWT@ Point West Heritage Consulting Ltd 1998. P.27). It was recommended not to borrow from this esker, to use #2 instead.

The consultant also recommends further studies of these sites if more of the eskers are borrowed for gravel, or if future roads or explorations are proposed in the area. Yellowknives Dene agree with all these recommendations.

(B) Traditional Knowledge: A..it must be emphasized that any reference to a TK study by a proponent with respect to a new project should be confirmed with the holders of the traditional knowledge. This will insure that the TK applies to the specific attributes of the new project.@ Yellowknives Dene agree with this recommendation from the De Beers consultant.

(C) Traditional Land Use:

1.AThe mine footprint will be 250 ha in an area where wildlife densities appear to be low compared to other regions of the NWT. The significance is low due to the small footprint.@ (From Table 6.2) AStudy plans to obtain further information on traditional land use and ideas for mitigative strategies will be developed in separate consultations with each Aboriginal group.@ (From p. 100 of Scoping Document)

How can De Beers claim that the significance is low if they don't yet have a full picture of the land use patterns and history of the local area?

2.There is an error in reporting Dettah=s use of wild meat (Table 10.68). The number of households that consume wild meat + those that don't is not totalling 100%. Either all households eat wild meat or a few do not. Which is it?

(D) Human Health:

AThe significance [of eating contaminated caribou or fish] is low since caribou have a large habitat range and thus, will not be feeding exclusively on lichen in the area of the mine site. Fish also have a fairly large habitat range.@ (From Table 6.2)
The Board may think this being grammatically picky, but we consider the above statement to be misleading. What is low is the Aprobability@, not the Asignificance@, of being affected by eating contaminated caribou or fish. To oversimplify in order to illustrate our argument, if over the course of the life of the mine, even if there is only one caribou in a million that ingests contaminants at the site (insignificant to caribou population), if that one animal=s heavy metals-laden liver is eaten by a hunter, this is a fairly significant health issue for that one person.

4. Cumulative Effects:

1.ACumulative effects will likely not occur for a wildlife population that exhibits strong site fidelity during critical