



P.O. Box 1500
Yellowknife, NT X1A 2R3

April 6, 1999



Your file Votre référence

Our file Notre référence

N7L2-1736

Mr. Gordon Wray
Chairman
Northwest Territories Water Board
P.O. Box 1500
Yellowknife, NT X1A 2R3

Dear Mr. Wray:

Re: Preliminary Screening - BHP Diamonds Inc.
Development of Beartooth, Pigeon and Sable Kimberlite Pipes

The above referenced project has undergone a Preliminary Screening pursuant to the *Mackenzie Valley Resource Management Act (MVRMA)*, Sections 124 and 125, by DIAND/Water Resources Division with advice from DIAND/Land Administration, the Department of Fisheries and Oceans and the Department of Environment.

The proponent submitted a Water Licence Application to the Northwest Territories Water Board on November 20, 1998. The Water Board considered the applications complete as prescribed in the *Northwest Territories Waters Act and Regulations*, however, DIAND required additional information from the applicant before preliminary screening could begin. The Land Administration Division returned the lease applications to the applicant until a complete application could be submitted. The complete Project Description and large format maps were received by DIAND and the preliminary screening was initiated on February 19, 1999. As the proposed project will also require a Fisheries Authorization, the project description was distributed to DFO for review. BHP Diamonds Inc. has advised DFO that an application for Fisheries Authorization will be forthcoming.

It is the opinion of the Preliminary Screeners that the development might have a significant adverse impact on the environment and/or might be a cause of public concern. It is therefore recommended that the proposed project be referred to the Mackenzie Valley Environmental Review Board (MVEIRB) for Environmental Assessment (EA). This opinion is based on the fact that both the Pigeon and Sable pipes are located in a drainage basin where water-related environmental baseline data has not been done (Pigeon) or done but not reviewed by panel (Beartooth and Sable). Further, cumulative effects have not been considered with respect to the existing BHP mining operations and

the anticipated Diavik development.

Given that Preliminary Screening revealed that the proposed development would be referred for EA, public consultation nor contact with other possible agencies (eg. Natural Resources Canada, GNWT) was not undertaken.

Land Administration has concurrently reviewed the application and similarly, concurs with the referral to the MVEIRB for EA as pursuant to the MVRMA Section 126(2)a. The basis for referral is the change in mining operation from 5 open pits to 8 open pits thereby representing a significant increase in scope which was previously reviewed under a CEEA panel. As noted in the preliminary screening, the proposed project requires full consideration of the cumulative impact of the expansion on the Ekati Mine, the proposed Diavik Mine and any other activities in the area. NOT WITHSTANDIN

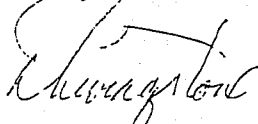
A copy of the completed screening form and covering letter to the Mackenzie Valley Environmental Impact Review Board are enclosed for your signature and transmittal. Also attached for the MVEIRB, please find:

1. the name and address of the proponent;
2. the joint Preliminary Screening Report Form and reasons for decision;
3. the applications for a Water Licence and land leases;
4. the proponent's project description; and
5. the proponent's large format maps of the area of the proposed activity

It is understood that the MVEIRB has the Project Description and the Environmental Baseline Assessments for Beartooth and Sable Lakes.

If you require further information or clarification regarding this referral, please do not hesitate to contact Mr. David Milburn at 669-2650 or Ms. Laura Hawke of the Water Resources Division at 669-2649 or hawkel@inac.gc.ca.

Sincerely,



David Livingstone
Director
Renewable Resources and Environment

- cc. D. Milburn
S. Traynor
J. Dahl
S. Harbicht
M. Adams

PRELIMINARY SCREENING REPORT FORM

<p style="text-align: center;">PRELIMINARY SCREENER REFERENCE / FILE</p> <p>NUMBER: <u>N7L2-1736</u></p> <p style="text-align: center;">Proposed Development of Sable, Pigeon, and TITLE: <u>Beartooth Kimberlite Pipes</u></p> <p>ORGANIZATION: <u>BHP Diamonds Inc.</u></p>	<p style="text-align: center;">EIRB REFERENCE</p> <p>NUMBER: _____</p>
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Type of Development:
(CHECK ALL THAT APPLY)

- New Development
- Amend, EIRB Ref. # _____
- Renew, EIRB Ref.# _____
- Requires permit, license or authorization
- Does not require permit, license or authorization



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

- | | | |
|--|---|---|
| <ul style="list-style-type: none"> <input type="checkbox"/> Construction <input type="checkbox"/> Installation <input type="checkbox"/> Maintenance <input checked="" type="checkbox"/> Expansion <input type="checkbox"/> Operation <input type="checkbox"/> Repair <input type="checkbox"/> Water Intake <input checked="" type="checkbox"/> Other:
<u>dewatering of lakes</u> | <ul style="list-style-type: none"> <input type="checkbox"/> Exploration <input checked="" type="checkbox"/> Industrial <input type="checkbox"/> Recreation <input checked="" type="checkbox"/> Municipal <input checked="" type="checkbox"/> Quarry <input type="checkbox"/> Linear / Corridor <input type="checkbox"/> Sewage | <ul style="list-style-type: none"> <input type="checkbox"/> Decommissioning <input type="checkbox"/> Abandonment <input type="checkbox"/> Aerial <input type="checkbox"/> Harvesting <input type="checkbox"/> Camp <input type="checkbox"/> Scientific / Research <input type="checkbox"/> Solid Waste |
|--|---|---|

Principal Development Components (related to scoping)
(CHECK ALL THAT APPLY)

- | | | | | | |
|--|---|---|-----------------------------------|----------------------------------|--|
| <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Access Road <ul style="list-style-type: none"> <input checked="" type="checkbox"/> construction <input type="checkbox"/> abandonment/removal <input type="checkbox"/> modification e.g., widening, straightening <input checked="" type="checkbox"/> Automobile, Aircraft or Vessel Movement <input checked="" type="checkbox"/> Blasting <input type="checkbox"/> Building <input type="checkbox"/> Burning <input type="checkbox"/> Burying <input type="checkbox"/> Channeling <input type="checkbox"/> Cut and Fill <input checked="" type="checkbox"/> Cutting of Trees or Removal of Vegetation <input checked="" type="checkbox"/> Dams and Impoundments <ul style="list-style-type: none"> <input checked="" type="checkbox"/> construction <input type="checkbox"/> abandonment/removal <input type="checkbox"/> modification <input type="checkbox"/> Ditch Construction <input checked="" type="checkbox"/> Drainage Alteration <input checked="" type="checkbox"/> Drilling other than Geoscientific <input type="checkbox"/> Ecological Surveys <input type="checkbox"/> Excavation <input checked="" type="checkbox"/> Explosive Storage <input checked="" type="checkbox"/> Fuel Storage <input checked="" type="checkbox"/> Topsoil, Overburden or Soil <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> fill</td> <td><input checked="" type="checkbox"/> removal</td> </tr> <tr> <td><input type="checkbox"/> disposal</td> <td><input type="checkbox"/> storage</td> </tr> </table> | <input type="checkbox"/> fill | <input checked="" type="checkbox"/> removal | <input type="checkbox"/> disposal | <input type="checkbox"/> storage | <ul style="list-style-type: none"> <input type="checkbox"/> Waste Management <ul style="list-style-type: none"> <input type="checkbox"/> disposal of hazardous waste <input checked="" type="checkbox"/> waste generation <input type="checkbox"/> Sewage <ul style="list-style-type: none"> <input type="checkbox"/> disposal of sewage <input type="checkbox"/> Geoscientific Sampling <ul style="list-style-type: none"> <input type="checkbox"/> trenching <input type="checkbox"/> diamond drill <input type="checkbox"/> borehole core sampling <input type="checkbox"/> bulk soil sampling <input checked="" type="checkbox"/> Gravel <input type="checkbox"/> Hydrological Testing <input type="checkbox"/> Site Restoration <ul style="list-style-type: none"> <input type="checkbox"/> fertilization <input type="checkbox"/> grubbing <input type="checkbox"/> planting/seeding <input type="checkbox"/> reforestation <input type="checkbox"/> scarify <input type="checkbox"/> spraying <input type="checkbox"/> recontouring <input checked="" type="checkbox"/> Slashing and removal of vegetation <input type="checkbox"/> Soil Testing <input checked="" type="checkbox"/> Stream Crossing/Bridging <input type="checkbox"/> Tunneling/Underground <input checked="" type="checkbox"/> Other (describe): <u>dewatering lakes</u> |
| <input type="checkbox"/> fill | <input checked="" type="checkbox"/> removal | | | | |
| <input type="checkbox"/> disposal | <input type="checkbox"/> storage | | | | |

NTS Topographic Map Sheet Numbers
(LIST ALL THAT APPLY)

NTS Map Sheet #: 76 D

Latitude / Longitude and UTM System: Beartooth (64° 43.9'N, 110° 30.4'W); Pigeon (64° 45.2'N, 110° 39.3'W)
(DEGREES, MINUTES, SECONDS, MAP SHEET)

Sable (64° 51.8'N, 110° 30.0'W)

Nearest Community and Water Body: Beartooth Lake, Pigeon Pond and Sable Lake: Wekweti, NWT

Land Status (*consultation information*)
(CHECK ALL THAT APPLY)

- Free Hold / Private
- Commissioner's Land
- Federal Crown Land
- Municipal Land

Transboundary Implications
(CHECK ALL THAT APPLY - IF KNOWN & APPLICABLE)

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

Type of Transboundary Implication: Impact / Effect Development

Public Concern downstream effects on Coppermine River watershed
(DESCRIBE)

PHYSICAL - CHEMICAL EFFECTS

IMPACT

MITIGATION

1. **Ground Water**

- water table alteration
- water quality changes
- infiltration changes
- other: _____
- N/A

It is assumed that groundwater would be affected by the dewatering of Beartooth Lake, Pigeon Pond and Sable Lake. Dewatering of lakes and re-diverting flow will occur prior to mining and will continue for the life of the operation. The dewatered lakes will be allowed to flood once mining has ceased.

2. **Surface Water**

- flow or level changes

Drawdown of lakes conducted over a maximum 2-month period to minimize impacts; dewatering to occur during months of October/November to take advantage of bank stabilization through freezing and to avoid runoff back into lakes.

- water quality changes
- water quantity changes
- drainage pattern changes
- temperature
- wetland changes / loss
- other: _____
- _____
- _____

Water diversion via a floating pipe in order to minimize erosion and maintain water quality; dewater discharge sampled and analyzed regularly (monitoring plan not provided) and if the water quality requirements of Water License N7L2-1616 are not met, then discharge water will be directed to the Long Lake Containment Area via the processing plant (details not provided) with flocculent/coagulant addition as required. The anticipated impacts of dewatering Beartooth on Panda Lake and the Diversion Channel i.e. increased flows, increased nutrients, alterations in hydrograph are not provided. The capacity of the Panda sumps and disposal areas need to be provided to determine whether it can accommodate the increase from the runoff collection system. If pumping is proposed to be a long-term management activity, its feasibility and associated contingencies need to be provided. It is stated that no significant water diversion around Sable Lake would be required, but no information has been provided on the water diversion that will be required. There is a discrepancy in the text whereby it is first stated that there would be a sedimentation pond for collection and settling of pit sump water which would then be discharged to Two-rock Lake; the next statement, however, states that water within pit sump would be used for roads and drilling with excess going to Long Lake.

Completion of geochemical characterization to define magnitude of acid rock drainage(ARD) and poor quality runoff from waste diabase and schist; placement of waste dumps within Long Lake Containment area drainage catchment; placement of diabase and schist under water if determined to be acid-generating (no water quality details are given i.e. metals, TP and pH). It is proposed that part of Ulu Lake is to be used as a waste rock dump, but no mitigation is provided for the possibility that the rock is acid generating.

Wetland changes assumed for the stream connecting Beartooth and Bearclaw lakes. It is clear this wetland will not be used for water flow until the end of the mining operation at which time Beartooth Lake will be allowed to flood. No mitigative measure was specifically mentioned.

N/A

3. Noise

- noise increase
- noise in/near water
- other: _____
- N/A

4. Land

- geologic structure changes
- soil contamination
- buffer zone loss
- soil compaction & settling
- destabilization / erosion
- permafrost regime alteration
- other:

Depositing of Beartooth waste rock, till and lake bottom sediments in Panda disposal areas will result in a minor increase in footprint, but there is no definition of minor. and whether any other waterways impacted by the increases.

5. Non Renewable Natural Resources

resource depletion

other: _____

N/A

6. Air / Climate / Atmosphere

(DESCRIBE)

N/A

BIOLOGICAL ENVIRONMENT

1. Vegetation

species composition

species introduction

toxin / heavy accumulation

other:

N/A

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)

 behavioural changes (Identify)

habitat changes / effects

A statement is made that no fish passage is possible upstream from Beartooth to Bearclaw lake, but there is no discussion of whether the stream provides nutrients and/or food source to Beartooth Lake and whether there is use of the lower end of stream.

It is proposed that part of Ulu Lake is to be used as a waste rock dump, but the fisheries resources of Ulu lake is not given.

- game species effects
- toxins / heavy metals
- forestry changes
- agricultural changes
- other: _____

- N/A

INTERACTING ENVIRONMENT

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

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

3. Cultural and Heritage

affects to historic property

increased economic pressure
on historic properties

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

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

	RA or DRA	ADVICE	PERMIT REQUIRED
Federal			
ATOMIC ENERGY CONTROL BOARD	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
CANADIAN HERITAGE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
CANADIAN TRANSPORTATION AGENCY	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ENVIRONMENT CANADA	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
FISHERIES & OCEANS	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
INDIAN AFFAIRS & NORTHERN DEVELOPMENT	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
INDUSTRY CANADA	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
NATIONAL DEFENSE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
NATIONAL ENERGY BOARD	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
NATURAL RESOURCES	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PUBLIC WORKS & GOVERNMENT SERVICES	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TRANSPORT CANADA	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Territorial			
MUNICIPAL & COMMUNITY AFFAIRS		<input type="radio"/>	
PUBLIC WORKS & GOVERNMENT SERVICES		<input type="radio"/>	
RESOURCES, WILDLIFE & ECONOMIC DEVELOPMENT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TRANSPORTATION	<input type="radio"/>		
HEALTH BOARD	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Boards			
GWICH'IN LAND & WATER BOARD	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SAHTU LAND & WATER BOARD	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
MACKENZIE VALLEY LAND & WATER BOARD	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
RENEWABLE RESOURCE BOARDS	<input type="radio"/>	<input type="radio"/>	
LOCAL HEALTH BOARD	<input type="radio"/>	<input type="radio"/>	
Aboriginal / First Nation			
_____		<input type="radio"/>	
_____		<input type="radio"/>	
_____		<input type="radio"/>	
_____		<input type="radio"/>	
ADJOINING LAND CLAIM		<input type="radio"/>	
Local Government			
_____		<input type="radio"/>	
(IDENTIFY)			
_____		<input type="radio"/>	
(IDENTIFY)			
_____		<input type="radio"/>	
(IDENTIFY)			
Communities			
_____		<input type="radio"/>	
(IDENTIFY)			
_____		<input type="radio"/>	
(IDENTIFY)			

REASONS FOR DECISION

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

1. Both the Pigeon and Sable pipes are located in the Exeter drainage basin, which has not undergone any baseline studies for water quality, sediment quality, hydrology and fisheries. The panel review, therefore, did not consider this drainage basin with respect to water.
2. Cumulative effects of this proposed development has not been considered with respect to the existing BHP mining operations and the anticipated Diavik development. Although Diavik is currently evaluating the cumulative effects on Lac de Gras, the impacts are still unknown.
3. Public concern will likely require a greater consideration of the proposed project given points 2 and 3. Further, the public may see the proposed development as another upgrade by BHP that was not identified or assessed with the whole project. It follows from the previous BHP panel review for EKATI that the public may likely be concerned about loss of fisheries habitat.
4. There are other issues involved with this Project Description (ie. Fisheries' Authorization for habitat destruction; DIAND/Lands' approval for roads construction) that need a broader review.

It is for these reasons that the Preliminary Screening pursuant to the Mackenzie Valley Resource Management Act

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

Preliminary Screening Organization


DIAND - Water Resources Division

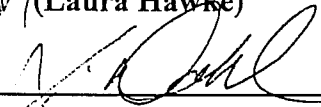
DFO

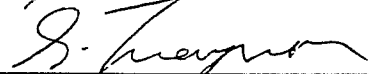
DIAND - Land Administration

DOE

Signatures


 for (Laura Hawke)


 (Julie Dahl)


 (Stephen Traynor)


 (Stephen Harbicht)
