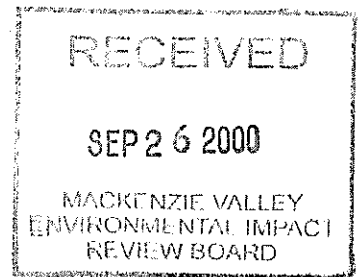


speaking notes

FISHERIES & OCEANS CANADA
SUMMARY of TECHNICAL REVIEW COMMENTS re:
BHP's ENVIRONMENTAL ASSESSMENT REPORT
for

SABLE, PIGEON AND BEARTOOTH KIMBERLITE PIPES (April 2000)



DFO reviewed the Environmental Assessment Report and associated information for BHP's proposed expansion project. I will summarize the main points of our written submission, outlining the concerns and recommendations of DFO.

To preface my comments, I should explain the DEPARTMENTAL MANDATE

The Department of Fisheries and Oceans is responsible for the management and protection of fish and fish habitat. DFO's Habitat Management Policy has as its overall objective, a net gain of productive capacity of fish habitat. We try to achieve this first through conservation of existing natural habitat, and additionally, restoration and enhancement of degraded habitat. The "No Net Loss" policy requires that unavoidable habitat losses be compensated through fish habitat replacement on a project-by-project basis. Based on this objective, the Department must ensure adequate compensation for fish habitat losses associated with any proposed project.

This is **DFO'S MAIN CONCERN:**

There will be a Loss of Fish Habitat and fish populations from this expansion project

This proposed expansion will wipe out fish populations and result in the complete loss of productive fish habitat in 5 small lakes as well as having a negative impact on fish habitat in other lakes, ponds, and streams. This is in addition to the dozen lakes already written off for the original Ekati project, plus another half dozen for Diavik's project. If this expansion project is approved, BHP will request DFO to authorize the destruction of this fish habitat under S.35 of the *Fisheries Act*, and DFO will require habitat compensation to achieve no net loss of fish habitat.

BHP has put forward some compensation concepts for discussion. However, to date, BHP has not yet presented an approach for compensating the loss of lake habitat that is satisfactory to DFO.

BHP's assertion that the mined-out open pits will be restored to "productive fish habitat" is questionable. There are many unanswered issues that need to be resolved before we can conclude that this is a doable objective. While we are certainly interested in the potential results of such an experiment, at this time, DFO is not convinced that reclaimed pits will be adequate to achieve no net loss of fish habitat.

Similarly, DFO is not yet satisfied with stream habitat compensation proposed by BHP.

The bottom line for our department is that we will not proceed to issuing an Authorization until we are confident that no net loss of fish habitat can be achieved.

The significance of losing the entire fish populations inhabiting the lakes that will be destroyed is a concern. BHP suggests that these losses are insignificant in the regional context. The professional judgement used to reach this conclusion differs from that which embraces another DFO policy: the Precautionary Approach, which dictates that, where knowledge is uncertain, it is better to err on the side of conservation.

DFO has several other points of concern, as were outlined in our technical comments. Briefly they are:

1. Backfilling pits with processed kimberlite (PK).

DFO is concerned about water quality from using the uncontrolled, backfilled pits as processed kimberlite storage areas. More study and modelling needs to be done on the toxicity of kimberlite, the prediction that a meromictic lake will become established, the remobilization of contaminants, etc. both in the pit-lake and downstream before the potential of this proposal can be assessed.

2. There is Inadequate Baseline Information on several waterbodies that will be affected by the expansion development. These were outlined in our written submission. DFO recommends that these data gaps must be adequately filled prior to further activities being initiated.

3. Waste Rock Seepage Problems:

In spite of BHP's statements that waste rock will be inert or benign, observations indicate that this is not necessarily so. Although BHP is now conducting more intensive monitoring of the Panda waste rock dump, the origin of the seepage problem will likely not be resolved for a couple of years and it is not known yet what real impacts will occur to nearby lakes. DFO is concerned about the gradual acidification of lakes near the waste rock piles.

BHP proposes mitigation of potential waste rock drainage problems by constructing frozen "rockfill" (waste rock) perimeter berms. If the perimeter berm does not contain all runoff, there is a high probability that it will drain quickly into nearby lakes, which have little capacity to buffer acidic inputs.

DFO recommends that the characterization of acid drainage from the Panda Waste Rock pile, and construction and assessment of the proposed frozen perimeter berms be completed prior to approval of any further waste rock storage areas. Upon approval, DFO recommends synoptic water chemistry monitoring programs during spring melt and mid open water season on all surrounding lakes. DFO also recommends BHP provide contingency plans for collection and treatment of runoff if necessary.

Acid Rock Drainage from roads, pads, etc. built with waste rock is not considered in the EAR. DFO is concerned that there may be potential for further impacts on water quality from such infrastructure, and ***recommends that materials used in construction of roads and other infrastructure be tested for ARD and associated contaminants. Contingency plans should be specified.***

4. Water quality- Phosphorus:

The chemical and physical differences between the Long Lake containment area and Two-Rock Lake (eg. natural lake sediment vs. processed kimberlite substrate; small volume vs. large; residence time), and how these factors may affect phosphorus contained or released from the Sable-Two Rock system, are not analysed. This is not acceptable considering that the prevention of eutrophication of downstream lakes hinges on the assumption that they are phosphorus-limited and release of nitrogen compounds downstream will have no eutrophying effect as long as phosphorus is contained.

Water quality- Nitrogen:

BHP proposes that release of nitrogen compounds need not be controlled, since the aquatic systems are phosphorus-limited, so the control of phosphorus is assumed to be sufficient to prevent impacts on trophic status. This overlooks the potential water quality effect if the nitrogen is in the form of ammonia, which has related toxicity effects to aquatic life.

DFO recommends comprehensive monitoring to detect early signs of water quality changes, and that BHP specify contingency plans.

5. Unsubstantiated conclusions/assumptions about fish habitat.

Fish habitat is defined by BHP as it is defined in the *Fisheries Act*: "spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes". BHP should be applying this definition in their assessment.

However, BHP's conclusions often contradict the evidence. For example, the EA report states that the Bearclaw-Beartooth stream "does not possess fish habitat for any life stage of grayling or lake trout" (EAR p.4-124), although a juvenile lake trout and a juvenile arctic grayling were caught there during baseline surveys (EAR p.3-98). Similarly, several other streams were concluded not to support fish habitat, on the basis that they were ephemeral; a statement that not only was shown to be unfounded (DFO staff walked some of these streams during a site visit in August), but which also ignores the complete definition of fish habitat (ie. That a stream's habitat value may be more than a migration route.) The assessment of impacts is thus skewed by the erroneous conclusions about what is fish habitat.

DFO recommends that BHP re-evaluate the fish habitat in the lakes and streams that will be affected by the development.

6. Assessment of significance of impacts.

BHP considers that the "loss of the small fish populations and associated aquatic habitats from these isolated self-sustaining lakes is ...a negligible effect".

DFO questions the assumption that the affected lakes contain "isolated and self-sustaining fish populations". Site visits confirmed these lakes are connected to other waterbodies with streams that are at least seasonally passable. Therefore, the conclusion that it is probable that these lakes do not contribute to the fish gene pool in the region is unsubstantiated. As mentioned previously, we have little data by which to judge the potential significance of the loss of several small lake fish populations.

Concluding statement:

These are some of our concerns about the proposal at this time. DFO is not yet satisfied with the mitigation and compensation proposed by BHP. However, we will continue to participate in discussions with BHP about these issues.