



INDEPENDENT ENVIRONMENTAL MONITORING AGENCY

P.O. Box 1192, Yellowknife, NT X1A 2N8 ■ Phone (867) 669 9141 ■ Fax (867) 669 9145

Website: www.monitoringagency.net ■ Email: monitor1@yk.com

February 22nd, 2005

Sarah Baines, Regulatory Officer
Mackenzie Valley Land and Water Board
7th Floor – 4910 50th Avenue
Yellowknife, NT X1A 2P6

Dear Sarah,

**Re: Review of the Terms of Reference (TOR) for
the Sable, Pigeon and Beartooth Pit Lake Study**

We appreciate the opportunity to review the terms of reference for the pit lake studies. The Agency would like to complement BHP Billiton and Rescan on the quality of work contained in document. We have two minor points of clarification as well as a list of recommended tasks to assist BHPB in enhancing the utility of the pit lake studies.

Points of clarification

We believe that the potential of pit lakes to support fish and aquatic life should be added to improve the scope of the study. We would also ask that Rescan include its definition of "habitat budget" in the final document.

Tasks to enhance the utility of the terms of reference

Task 1 – Review of State of Knowledge

1. While the listed topics identify ‘fish habitat’, this should be explicitly expanded to include case studies on the ‘success of re-establishing viable aquatic ecosystems’ (which include fish) in pit lakes.
2. Deliverables should include identification of further research required to ensure effective reclamation measures.

Task 2 – Assessment of Data Gaps

3. In the Task 2 report it would be helpful to explain how any further data collection programs recommended will inform the design of pit lakes for refilling and closure.

Task 3 – Stability Modeling

4. The TOR would benefit by posing the question or problem to be solved for each task: For example, what questions will the modeling answer; and how to these inform pit lake construction?



Task 4 – Water Balance Load Model

5. An explanation should be provided of how model results will inform pit lake reconstruction and refilling.

Task 5 – Analysis of Fish Habitat

6. The focus of this study is on the design of fish passage through the pit lakes. A broader focus is needed. Can the lake be reclaimed in such a way that the baseline aquatic ecosystem conditions can be functionally restored, so that the fish species existing in the lakes prior to disturbance can be re-established? If so, what are the design requirements? The key question to be addressed here is, ‘What is the potential of pit lakes to support aquatic life?’ This determination should form part of the purpose and the deliverables for this task.
7. The habitat budgets to be established for source water bodies should identify critical thresholds for downstream water flows as they affect aquatic life. What rate of water can be withdrawn for flooding before downstream ecological impacts are significant?

Task 6 – Contingency Plans

8. Contingency plans should be developed not just for loss of meromixis, but for the event of unacceptable water quality in the pits at the time of reconnection to the downstream environment.

Task 7 – Scenarios for Pit Filling

The final report should identify major uncertainties associated with the closure options identified, along with any further information needs.

We look forward to continuing this dialogue on mine closure with BHP Billiton. For any issues of clarification please contact us through our office.

Sincerely,

-ORIGINAL SIGNED BY-

William A. Ross, Chairperson

Cc: Society Members