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Chris Hamilton, Project Assessment Director

2 August 2011

BC Environmental Assessment Office

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Via email only to [Chris.Hamilton@gov.bc.ca](mailto:Chris.Hamilton@gov.bc.ca)

Dear Chris,

**Re: Morrison Mine Proposal, your file EAO 9939, Comments on Pacific Booker Minerals' Review Response Report**

Further to your email dated July 11<sup>th</sup>, attached please find comments from Skeena Fisheries Commission on the Review Response Report (RRR) prepared by Pacific Booker Minerals and received by us on July 15<sup>th</sup>.

As a preliminary but not insignificant matter, we wish to state that the timelines as laid out in your email for responses from Working Group members are most unreasonable given the summer holiday season and the large size of the RRR (over 800 pages of materials). SFC believes that you should have consulted with Working Group members before unilaterally and arbitrarily lifting the suspension.

As you will see from our comments, we do not share EAO's view that the RRR is an adequate response document. Therefore, we do not think that the suspension should have been lifted at this time.

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We would like to hear from you about how you will proceed if you do not have responses from most of the Working Group members by the requested date of August 3<sup>rd</sup>. While we recognize that you have a statutory timeline to work to, we also know that the Executive Director has the flexibility to adjust that timeline under section 24 of the Environmental Assessment Act. We encourage the EAO to make use of that section in these circumstances.

Before you get into the details of our comments, our general observations on the RRR are as follows:

- (i) The RRR is focused primarily on revisions to water quality predictions associated with the proposed mine site itself.
- (ii) Very little new fisheries field work has been conducted; and what has been done has been performed on Nakinilerak Lake. From a fishery EA perspective this is a real problem because Nakinilerak Lake does not have any anadromous salmonid populations while Morrison Lake does, thus making a fisheries ecological comparison inappropriate.

While we recognize that Lake Babine Nation conducted a spawning survey on Morrison Lake in the fall of 2010, this work is only a starting point for a proper analysis of Morrison Lake fisheries values.

- (iii) Fisheries Habitat analyses are being considered only in terms of physical habitat disruptions e.g. Loss of Lake Bottom surface area caused by an effluent pipeline. No serious consideration of water quality impacts on fish and fish habitat in Morrison Lake have been entertained thus far.

- (iv) The fisheries values of Morrison Lake particularly Sockeye still have not received any attention in the EA process. In the latest RRR there is more discussion of water quality in the areas of Morrison Lake adjacent to the proposed mine site (albeit still on sparse data sets) but still not even a mention of the high salmonid values of Morrison Lake (overall or

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otherwise). No efforts have been made to date to ascertain the salmon values of the area of Morrison Lake where PBM proposes to place their effluent diffuser on the bottom of the lake.

(v) PBM is unable or unwilling to say at this time how and when potential technical problems with the execution of their mine will be dealt with. SFC finds this “deferral approach” very troubling. Rather than provide a technically plausible and implementable answer to a criticism being raised; PBM says they can develop a solution and its associated details after EA approval during the permitting phase.

SFC believes that this approach does not fulfill the Crown’s legal duty of consultation in that our Member Nations cannot fully appreciate the scope of the project and its potential impacts without a complete understanding of all mitigation strategies.

We look forward to your early response to our question on timelines posted above, as well as on the scheduling of the next Working Group meeting.

Yours sincerely,



Davide Latremouille

Fisheries Biologist, Skeena Fisheries Commission

Encl. Skeena Fisheries Commission comments on Review Response Report of June 30<sup>th</sup>, 2011

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**Skeena Fisheries Commission comments on the Morrison EA Review Response Report****(RRR) of June 30<sup>th</sup> 2011:**

- (1) Skeena Fisheries Commission (SFC) received two documents on DVD from Pacific Booker Minerals (PBM) on July 15<sup>th</sup> 2011
  - (a) AIK = Application Information Key – an excel spreadsheet consisting of 130 rows of information.
  - (b) Review Response Report – Revision 2 – an 804 page PDF report prepared by PBM’s consultant Klohn Crippen Berger (KCB).
- (2) Overall the intent of the aforementioned documents was for PBM to address the latest technical criticisms of the Morrison EA technical working group provided to PBM in December 2010 and January 2011. BCEAO decided that the RRR was acceptable to justify lifting the suspension of EA proceedings on July 18<sup>th</sup> 2011. The latest RRR is still under review by technical working group members with comments due back to the BCEAO by August 3<sup>rd</sup>.
- (3) After reviewing the latest RRR SFC has concluded that there have indeed been improvements to the EA on PBM’s part to technical gaps in the EA; however, the vast majority of the improvements are in reference to water quality and the mine site itself. No new information has been gathered with reference to the fisheries data gaps on Morrison Lake and its associated watershed.
- (4) Like the prior EA documents prepared for PBM, the latest RRR remains ambiguous and unclear especially with reference to fisheries issues. For instance on page 10 of the effects assessment:

“The revised effects assessment for the project considers: water quantity, water quality, aquatic habitat and terrestrial (wildlife and wetland) habitat.” →It is unclear to SFC if PBM is lumping fisheries into the “aquatic habitat” category.
- (5) PBM is advocating that a more comprehensive treatment of water quality effects be delayed to the permitting stage. SFC objects strongly to this approach as we cannot advise our member Nations on potential impacts to their Aboriginal rights without a full understanding of all treatment and mitigation strategies.

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- (6) Page 13 RRR → “The water quality effects on Morrison Lake, therefore, are negligible and site specific water quality objectives are not required.” → SFC says that this conclusion is not for PBM to make. Environment Canada should be making an assessment of the water quality effects on Morrison Lake and, from there, decide whether specific water quality objectives are required.
- (7) Page 33 RRR → “The main overburden stockpile has been relocated from Morrison Point to a location that is 700m away from Morrison Lake.” → SFC questions whether this is a realistic safe distance to store toxic compounds away from the lake?
- (8) Page 33 RRR → “The open pit, after placement of waste rock, would be closed as a combination of grassland and shallow pond.” → SFC questions whether this bucolic outcome is possible when using a waste rock dump?
- (9) Page 58 RRR – Anoxic bottom waters of Booker Lake and Ore Pond → SFC repeats its comments from #5 above in relation to this delay by PBM on describing how they will deal with these impacts. The approach is unacceptable to SFC.
- (10) Page 62 RRR – Operational Segregation of mine waste rock – “A waste dump and a low grade stockpile will be located 100m north and east of the open pit.” → SFC considers this to be remarkably close to Morrison Lake despite the extreme risk to a highly productive salmonid fishery.
- (11) Page 70 RRR – Elevation of surface of Pit waters = 730m; Elevation of surface of Morrison Lake = 733m. SFC observes that this small difference in elevation is likely to lead to problems.
- (12) Page 84 RRR → “The slow development of the open pit will allow time for assessment of actual conditions and implementation of adaptive management measures if and as required.” → SFC asks whether adaptive management can compensate for wall collapse between Morrison Lake and the open pit mine?
- (13) Page 95 RRR → “The elevation of the pit lake area is the same as Morrison Lake and Groundwater flow will... (b) move through the PAG (potentially acid generating) waste rock and into Morrison Lake → SFC says that this is a particularly troubling point given the significant lack of quantification.
- (14) Page 96 RRR → “An understanding of the hydraulic connectivity between Morrison Lake and the Open Pit will be developed during operations.” → SFC requires that the hydraulic connectivity be examined and well understood long before operations commence, for the same reason as stated in #5 above.

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- (15) Page 100 RRR → A claim of a “zero” water discharge system → This is an obviously false statement: how can a zero discharge system be achieved when there is groundwater infiltration?
- (16) Page 117 RRR → “The quantity of water that will require treatment and discharge into Morrison Lake is 55 m<sup>3</sup>/hour (55,000 liters/hour) → SFC observes that if the water treatment is to go on in perpetuity as is mentioned in the current iteration of the Morrison EA, the costs of continual water treatment will far outweigh the potential economic gains of the project.
- (17) \$850,000.00/year = cost of lime to treat water in the open pit upon mine closure. SFC observes that water treatment will be required for a minimum of 100 years, and potentially for 500 years or longer.
- (18) PBM acknowledges in this latest RRR that there will be seepage into Morrison Lake from the open pit (some PAG), yet still have not collected the fisheries data for Morrison Lake which would ultimately be affected by said seepage. This approach is unacceptable to SFC.
- (19) Page 97 → Technique that PBM intends to use to intercept contaminated groundwater (and thereby prevent discharge into Morrison Lake) is unclear. SFC requires more detail and clarity on the proposed technique.
- (20) Page 133 → PBM makes assertions as to establishing water quality objectives and determining what can and cannot be discharged and at what levels: “... This discharge concentration would be lower than the site specific water quality objective to be developed for Stream 7 and could, therefore, be discharged.” →SFC again says, as in #6 above, that these statements are for the appropriate regulatory authority to make, not PBM.
- (21) Page 161 → Classification of significance – by PBM’s own admission: “... the rating does not answer the key question: Is the project likely to cause significant adverse residual environmental effects?” In light of this statement, SFC questions BCEAO’s acceptance of the RRR as sufficient answer to questions already raised by itself and other Working Group members.
- (22) Page 163 → Fish Habitat Compensation Plan (FHCP) – has still not been expanded to consider Morrison Lake in the context of Fish Habitat. This is completely unacceptable to SFC.

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- (23) Page 169 → By PBM's own analysis their project will exceed the British Columbia water quality guidelines for the following 6 parameters: (i) Sulphate (ii) Aluminum (iii) Arsenic (iv) Cadmium (v) Cobalt and (vi) Selenium. SFC asks how BCEAO will address these circumstances?
- (24) Page 175 → PBM cites that the Potentially Acid Generating (PAG) porewater seepage will be at a rate of 40,000 liters/hour with significant PAG potential from year 30 to 80 (50 years). → This observation is very troubling to SFC, and demands a mitigation strategy.
- (25) Page 182 → "The potential residual effect on Morrison Lake is negligible to minor, with the main effect being an increase in sulphate concentration, particularly near the diffuser. Nonetheless, the concentrations are well below BCWQGs" → SFC asks how this assertion can be made when the full fisheries dynamics of Morrison Lake are not well understood?
- (26) Page 182 → SFC asks how potential project effects can be considered both minor and long-term?
- (27) Page 189 → Mention of Morrison Lake and fish habitat: "...minor losses in Morrison Lake due to the footprints of the freshwater and treated effluent pipelines." – SFC remains very concerned that there is no mention or discussion of Morrison Lake Salmonids and water quality interactions.
- (28) Page 202 → "The cumulative effects of the water flow and water quality, particularly on Morrison River and Babine Lake, are negligible and not significant." → SFC observes that there is no evidence to support this statement, and notes too that Morrison Lake is not included in the statement.
- (29) Page 207 → Cadmium – SFC asks what is the effect on fish inhabiting the area adjacent to the mine site?
- (30) Page 455 → During field work conducted in January 2011 by KCB only three (3) sites on Morrison Lake were sampled for water quality. SFC says that this is insufficient.
- (31) Page 563 onward → SFC notes that PBM's consultant conducted additional fieldwork from May 31/2011 – June 9/2011. The focus for Morrison Lake was water quality parameters e.g. Depth, temperature, dissolved oxygen, clarity/transparency, etc. SFC further notes that no substantive fish and fish habitat sampling or analysis of Morrison Lake or Morrison River was conducted.

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- (32) Page 573 → Minnow trapping activities were focused in and around the proposed mine site and areas around Nakinilerak Lake. SFC says that this is insufficient, and that further sampling activities are required, particularly in Morrison Lake.
- (33) Page 574 → Gill Netting efforts were focused on Nakinilerak Lake only (7 Rainbow trout were caught) → SFC observes that no fishing activity, Gill Netting or otherwise, was made in Morrison Lake. This is unacceptable to SFC.
- (34) Page 575 → Angling (hook and line) surveys were conducted. SFC notes that, contrary to accepted scientific practice, there is no methodological description of the approach used, and also that no fish were caught and sampled from the angling activities.
- (35) Pages 781 – 804 (end of document) → SFC notes that while there is some consideration (in tabular form) of potential impacts on Morrison Lake water quality by mining activities; there is no quantification of what fish species and fish habitats are in Morrison Lake adjacent to the proposed mining site. This is a glaring oversight and far from acceptable to SFC.
- (36) Overall the additional fisheries work conducted for the latest RRR is superficial at best. Many serious questions about the extent of Morrison Lake fisheries resources that are at risk remain unanswered, as do questions about the extent of the risks the mine would pose to Morrison Lake.