

***Independent Environmental Monitoring Agency
33rd Meeting of the Board of Directors
Yellowknife, Northwest Territories
March 15th and 16th, 2003
Summary of Discussion***

Directors

Red Pedersen	Tim Byers
Peter McCart	Bill Ross
Tony Pearse	François Messier
Bob Turner	

Staff

Carole Mills	Sean Kollee
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The meeting was called to order by chair at 8:45 am, Saturday March 15th, 2003.

The agenda was reviewed and accepted.

Information Updates:

Red – He received stakeholder interview questions regarding Phase 2 of the Regional Monitoring Agency (RMA), as per the working group consultation process. He completed an interview with Joanne Barnaby on a TK needs assessment.

François – He’s been involved in Agency treasury issues and refinement of the wolverine-monitoring program delivered to him from Golder.

Bob – An election will occur on May 3rd for the NSMA. The EMAB environmental agreement contains a transitional clause to allow the incorporation of EMAB into a regional Agency (EMAB has received a letter from Diavik regarding its reluctance to move into a RMA).

Pete – He mentioned his plan to study the Nick Jones’ grayling size research paper on the Panda Diversion Channel (PDC) prior to the Sunday meeting with BHPB. The Tyson submission from the DFO court case has not been received by the Agency and he would appreciate BHPB delivering it.

Tim – He delivered a four-page summary of cumulative for the De Beers’ Snap Lake project; many of which are caribou related. The Snap Lake site drains into the Lockhart system, not the Lac de Gras system and, hence, any aquatic effects from that project will not interact with the effects from the Ekati project. A road is planned from Contwoyto Lake to Carrot Lake bisecting a major caribou movement path. GNWT has been forceful in saying De Beers’ needed to do more baseline work. Apparently it did not use enough satellite telemetry data or aerial surveys in assessing effects. Tim attended Ellen

Bielawski's book release on the subject of Lutsel Ke's Impact Benefit Agreement negotiations with BHPB.

Bill - He attended the TK workshop with other Agency Directors. A week ago he was in Yellowknife to attend a conference of the International Association of Impact Assessment. At that time, he asked David Livingstone about the status of the Regional Monitoring Agency (the follow-up DIAND committed to at the November 2002 workshop). A week ago Diavik wrote to DIAND saying it is satisfied with EMAB and is not interested in a regional monitoring agency. DIAND had no report on what was learned from the fish-out studies.

Carole

- She mentioned the many computer issues and repairs required by the office to improve its network performance. She has been reviewing Agency files and finances in particular.
- BHPB staff was very accommodating on a recent site visit. She met with the environment team for a few hours. A hearty discussion was held on BHPB's performance at the annual environmental workshop. Suggestions were made on how to improve future presentations, as some were very technical. She offered to provide a presentation to BHPB scientists on how to create plain language presentations prior to next year's annual environmental workshops. Her offer was accepted.
- She is involved in an advisory capacity on a TK needs assessment being conducted by Joanne Barnaby on behalf of DIAND.
- A proposal from Kavik-Axys to develop jointly with the Agency a model for integrating TK into environmental monitoring was reviewed. It was determined that the Agency was not an appropriate partner for the proposal but could provide advice.
- She met with Scott Williams to deliver the work plan and budget for 2003-05 and received an updated staff organizational chart for BHPB.
- She mentioned that IEMA would not be allowed to evaluate Fisheries Compensation Fund projects due to Public Works Canada's policy that restricts this.

Sean – He met with Tamarack regarding an improved web tracking system planned for completion by the June Board of Directors' meeting.

Finance:

The Agency bookkeeper (formerly 5D, now named Double-D) is changing its business structure and will continue to provide the Agency with bookkeeping services through home-based business and with visits to the office every two weeks. The monthly fees increased slightly. The new service will require the Agency to purchase inexpensive new software and new cheques.

François mentioned that the Agency needed to pay a payroll tax on certain honoraria. He proposed a means of doing so and the approach towards paying the payroll tax on

honorarium was approved by the accountant and is reflected in the new Directors' Honorarium and Travel Expense Claim. Only honoraria earned within the NWT are subject to payroll tax. Each director will receive a T4A that includes both honoraria and payroll tax. This approach was approved.

Budget:

François reviewed the Agency expenditures up to mid-March 2003. It is expected that the Agency's final fund balance for 2002-2003 will be within the range of \$30-35k. The March 2003 expenditures of the Agency will include one half of the cost of the Traditional Knowledge (TK) workshop, the cost of the Agency's 2002 annual report and other costs as outlined by the Secretary-Treasurer.

The Agency will invest its annual funding in a new GIC instrument through Manulife Services that is expected to generate larger interest revenues than the past year.

Action Item #1 – Carole will contact Scott Williams regarding approval of the Agency budget for 2003/04 and 2004/05.

Red thanked François for the thoroughness of the financial update.

Traditional Knowledge Workshop:

Red was unable to arrive for the first day of the workshop due to transportation problems in Kugluktuk. François composed and delivered the opening remarks of the Agency on behalf of Red.

The Directors who attended the TK workshop reflected on the outcome of the workshop individually and proceeded to develop a consensus on the action to be taken on the recommendations from the aboriginal caucus.

The following is a summary of the discussion items regarding the workshop:

- The aboriginal groups performed a significant task, resulting in a unanimous recommendation for the establishment of a regional TK panel involving all affected aboriginal groups. The principal outcome of the workshop was very strong and worthy of support.
- The workshop was very productive; the consultant and the community representatives did a good job. EMAB and the Agency now have a product to work with.
- Good ideas were discussed about TK initiatives reflecting the needs of the communities. The participants stressed the regional nature rather than project specific nature of TK
- Those who spoke have a high regard for the EMAB model of board makeup and are not willing to question its details (including the industry seat on the board).
- Limited endorsement was observed for the role of IEMA as an equal partner to oversee the activities of the TK panel. Recommendation #8 of the discussion paper is particularly problematic because it does not respect the specific mandate

- of IEMA in facilitating the integration of TK in monitoring activities at the Ekati Diamond Mine. The Directors discussed both EMAB and IEMA working together in the setting up of the TK Panel. This approach would lead to a better harmonization of scientific and traditional knowledge in environmental monitoring given the respective strengths of IEMA and EMAB.
- EMAB has the ability and funding to create the TK panel for the Diavik project and a transition clause to allow it to expand into a regional agency. The TK Panel could be expanded to deal with projects in addition to Diavik.
 - Another option, to form an independent TK Panel, was discussed by the Directors although not discussed during the workshop. A TK Panel Inc. would be independent of EMAB and IEMA and would be in a position to serve as the TK panel for EMAB and could subsequently become the TK panel of the RMA when it is created. IEMA with BHPB support could use the TK panel to gain advice. De Beer's could access the TK panel through its EA.
 - IEMA has the ability to use money in the budget to support TK integration into environmental management of the mine. The Agency has had outside contractors to review scientific knowledge and could therefore fund TK experts to do work specific to use of TK at the Ekati mine.
 - The effective integration of the TK panel work with Agency technical recommendations is important.
 - A question was raised as to why EMAB, which has a mandate and budget for the purpose, not establish its own TK panel now and get this operating prior to a regional TK panel being established at some unforeseeable point in the future. There are no obstacles preventing EMAB from doing this, while some hurdles and uncertainties yet remain to get the regional panel in place.
 - Both BHPB and Diavik expressed reservations to the recommendation of the caucus. Diavik rejected the regional scope. BHPB held that regional monitoring should be addressed through part 6 of the MVRMA and it has no interest in increased funding or scope for monitoring beyond the contents of its Environmental Agreement (EA).
 - The decision to support the idea of a TK panel has to come from a higher authority within the companies that those represented at the workshop, after they have had greater opportunity for consideration of the panel.

What Actions should the Agency take regarding the Recommendations from the TK Workshop?

The Directors agreed it is essential that the intent of the recommendations of the aboriginal caucus be followed up in a way that satisfies the basic principle of integrated regional TK monitoring through a flexible panel made up of community-based TK experts. The Agency will advise BHPB and the other Society Members in a letter that:

- Pursuant to the Agency AGM motion in 2002, the Agency organized a TK workshop jointly with EMAB;
- The Agency supports the concept that a regional TK panel be established;
- The Agency encourages the three signatories, BHPB, GNWT and DIAND to work towards the expeditious implementation of the recommendations; and

- Considering the current provision of the EMAB EA to form a TK panel, the Agency nonetheless offered to be part of a steering committee to oversee the establishment of a Regional TK panel.

Follow-up Discussion of the TK Workshop:

The Directors observed a number of other unrelated topics discussed at the TK workshop:

- Some participants at the TK workshop expressed little awareness of the Phase 1 and Phase 2 TK projects funded by BHPB. The participants suggested the TK panel could review these projects and evaluate their effectiveness in contributing to better environmental management. A registry of all TK studies is necessary so future developers can research and build on the knowledge currently available.
- The EMAB members have found the fish palatability study funded by Diavik last summer to have served multiple functions of value to the communities and to Diavik. These functions include relationship building, skill exchange and the development of a sound study design.

BHPB-DFO Court Case History:

The Directors provided Carole with an update on the history of the BHPB-DFO court case. The charges arose through a discharge of sediment from the Panda diversion channel into Kodiak Lake following construction of the channel. The deposited sediment was resulted in BHPB being charged by DFO for the deposition of a deleterious substance into a fish-bearing water body. The sediments that melted were ancient lacustrine sediments and consisted of fine materials with some organic content. The sediments have since been stabilized.

Research undertaken by BHPB apparently shows there has been no change in the round whitefish population in Kodiak Lake. Round whitefish are used as a surrogate for lake trout because of the lack of lake trout information and because both spawn in the fall in similar locations. It is assumed by BHPB that if no changes are observed in round whitefish then no changes should be observed in lake trout. Peter McCart noted that the fact that round whitefish eggs are smaller than lake trout eggs could affect their appropriateness as a surrogate species. Both low levels of dissolved oxygen in the water over winter and high levels of sedimentation could have a greater impact on trout as the species with larger eggs (and less relative surface area) and a tendency to spawn deeper. Therefore using round whitefish as the surrogate may not have been appropriate.

Action Item #2 – Request BHPB deliver the Tyson submission from the BHPB-DFO court case (regarding an attempt to use round whitefish as a surrogate for lake trout in Kodiak lake)

Action Item #3 - Purchase a copy of the Science Journal article referred to by Pete McCart

Rapid Evolution of Egg Size in Captive Salmon

Daniel D. Heath, John W. Heath, Colleen A. Bryden, Rachel M. Johnson, and Charles W. Fox
Science 299 (5613) Mar 14 2003: 1738-1740

Fish Habitat Compensation Fund:

After five years, the projects funded by the BHPB Fish Habitat Compensation Fund have not yet contributed to new fish habitat. The Agency is not privy to the proposals presently in review for funding and cannot make a projection of the fund's ultimate success. The process for awarding proposals is flawed in that it minimizes technical input and does not have the proper experts reviewing costs, especially as they relate to the North. The Agency prefers that future BHPB compensation activities be conducted in a manner that does not exclude technical comments when approving its proposals, due to the issues encountered so far.

DFO Fisheries Authorization Security Deposit:

The Directors noted that the EA security deposit is reviewed every three years and adjusted for progressive reclamation. Water License and Land Use Permit security deposits are not reviewed to adjust for progressive reclamation. Discussion was held on whether DFO routinely requires security deposits for fisheries' authorizations.

Action Item #4 – Confirm the security deposit requirements for each regulatory instrument.

BHPB Air Quality Monitoring Program (AQMP):

Comments on the 2001 AQMP are due April 25, 2003. The Directors discussed the BHPB AQMP and considered initial recommendations for the next sampling year in 2004.

- An upper limit of 10 km for sampling around the core infrastructure was supported based on the results showing that the limit for particulate distribution is 5 km.
- Better sampling around Misery is recommended due to its proximity to Diavik.
- There are currently two high volume air sampling sites at Ekati, one at camp and one on Grizzly Lake. Moving the large volume sampler on the top of the kitchen was discussed but not endorsed by BHPB at its environmental workshops in February 2003.
- The Directors would like to see how original modeled predictions of air quality impacts compare to actual measured impacts of mine operations.
- Because BHPB does not know if gaseous emissions (SO_x, NO_x and NH₃) are a product of long-range transport or of the mine, it is uncertain about the zone of influence of the mine for these substances. At the environmental workshops BHPB agreed to investigate the zone of influence in the future monitoring program.
- The Directors suggested a model could be used to determine what emissions are due to long-range transport. BHPB could calculate how much sulphur it emits based on the volume of fuel combusted. If the amount of deposition is greater than that the calculated amount then long-range transport is a likely contributor.
- A standardized unit for documenting dust deposition such as microgram per unit of area was debated, although the use of microgram per volume of water is

preferred if trying to determine impacts on water quality. The Directors agreed the BHPB consultant (Dr. Gregor) is in a better position to factor in the effect of varying snow thickness and to make this decision.

- The slow production of the report is an issue although it was ultimately of good quality. Dr. Gregor may have resolved this now that he is directing the future AQMP.
- Directors discussed sampling the initial flush of the freshet for possible low pH and other water quality parameters to determine if the melt water could impact fish habitat due to deposition of contaminants over the winter into the snow pack.

Action Item #4 – Consider a recommendation in the annual report to have BHPB sample the initial flush of the freshet for possible low pH in the first pulse and to select ephemeral and permanent streams to identify what is happening in the snowmelt.

Action Item #5 – Confirm with BHPB that the next sampling year is 2004, and when BHPB will deliver to the Agency for its review its sampling program design for dust and vegetation uptake and how BHPB has implemented our request to add sampling stations/transects along the Sable and Misery roads.

BHPB Environmental Impact 2003 Report:

Carole briefed the Directors on her review of BHPB's Impact 2000 report, the correspondence related to it and the consultation process related to the Impact 2003 Report due April 30th, 2003.

In March 2003, the Agency wrote to BHPB about what the Agency would like to see in the 2003 Impact Report, including things such as trend analysis and a comparison of predictions to actual impacts. Bill and Tim plan to attend the consultation session on Monday March 17th along with the staff and others who can attend from the IACT. Helen Butler of BHPB, who is responsible for producing the 2003 report, appeared willing to accept comments and make changes to the report based on outcomes of the meeting. At the December board meeting, the Agency requested BHPB to consult in a timely fashion (i.e. early in the planning process) as indicated in the EA.

François highlighted the need to encourage BHPB not to skip over the problem of wolverine mortality, and to include the resolution of the problem and evidence of improvement. It is preferable that wolverine mortality be considered as a cumulative effect. Directors also noted the need for BHPB to include exploration as part of the report.

One consistent Agency concern is downstream water quality changes resulting from the Long Lake Containment Facility (LLCF). Such effects include zooplankton species abundance, and the presence of polymer flocculants, ions or other kimberlite components. There is a need for a better understanding of the ecological significance of these impacts. It was noted that BHPB has now adopted an earlier Agency recommendation by including Leslie Lake, the first receiving body downstream of the LLCF, in the AEMP.

BHPB has a tendency to officially recognize effects only if they exceed some pre-existing guideline, such as an exceedence of a CCME guideline or regulated limit. This ignores any change in a parameter beyond normal variability, even if it does not exceed a guideline or have a strong adverse ecological impact. The Agency encourages BHPB to act more conservatively in this regard and report any environmental change or trends which may be mine-related.

The Panda diversion channel may be having a long-term effect on grayling growth rate and survival and further studies may be needed.

Other topics that Directors encouraged BHPB to include in the report were:

- Caribou Fence experiences
- Ammonia nitrate storage
- Air quality monitoring report predictions

Trends – although statistical analysis will only take place after six years (for the AEMP), the Agency is suggesting qualitative trends, not statistical tests be reported in Impact 2003. Knowing what the trends are can lead to avoiding longer-term significant effects.

Agency Office Direction:

There was discussion on the direction of the Agency office related to the areas of increased effort identified in the 2003-2004 work plan, ongoing activities to fulfill the Agency mandate and recommendations from the 2000 Macleod Institute report which evaluated the performance of the Agency.

Reclamation activities - Bill and Pete offered assistance in linking the A&R plan to waste management and reclamation criteria, Bill for overall assistance and Pete for fish habitat reclamation components. Pete described some of his concerns about pit filling and the formation of meromictic lakes. The high-density water at the lake bottom becomes a phosphorous sink. He preferred filling lakes with tailings. He mentioned that lake drainage could also increase phosphorous levels in the recipient lake if phosphorous bound to lakebed sediments are disturbed. BHPB may utilize some of the people from its Island Copper mine team that has already created a meromictic lake.

Increased availability of web based resources - BHPB has committed to provide the link to its up-to-date Operating Environmental Monitoring Program because it has decided that the online version of the OEMP will be the official version.

Participation as an Intervener – The Agency may become involved in a Lynx Lake EA if it is developed by BHPB. Other possible interventions will involve the upcoming Type ‘A’ water licence expiration at the end of 2004 and impacts related to the winter road. A new land use permit has been approved for the Dome Lake camp. DIAND has issued a 30-year licence of occupation for the rest of the winter road. The Agency should review BHPB’s monitoring program and management plan because of the significance of the winter road for cumulative effects.

Dissemination of information to aboriginal peoples and the public on matters pertaining to the Agency's mandate- Carole and Sean are encouraged to visit the communities with Directors when possible. Carole recommended sending letters to society members offering to meet with them or make presentations at their events. She also suggested accompanying BHPB on community visits as a way of determining community needs of information. She recommended that BHPB document what occurs at their community meetings as it currently does not (or the Agency has not been provided the documentation). Carole would like to attend the Dogrib, Akaitcho and Dene assemblies this summer and the Directors agreed this should be possible and encouraged it.

Dialogue with Society Members to Address the Agency's role - At the AGM immediately after the 2000 MacLeod Institute report, the Agency was thanked for its work. At the last AGM the Agency discussed its next two years of work. The Directors noted the aboriginal groups are appreciative of the science side and the need for a good balance of science and TK.

Identification of tools to meet communication needs – The aboriginal groups expect more community visits to explain in plain English what is going on at the mine. There is a need for an invitation to make the visit successful; directors have moved away from inviting themselves. Carole also has the opportunity to represent the Agency in communities. It was noted that there is a difference between presenting to the communities what the Agency is doing and what BHPB is doing. Carole was encouraged by the directors to improve Agency communication with communities at her discretion and within a reasonable budget.

Office Technical/Environmental Analysis – One important staff activity is to review the BHPB AEMP, due to the mass of information collected. Reviewing the water quality data produced by Surveillance Network Program is also important. Staff should do two types of analysis: specific environmental analysis in response to director requests; and routine monitoring and review for reporting back to Directors.

Action Item #6 – Staff update Directors on progress in the 2003-2007 PDC program as well as 5-year synthesis document. A meeting with Pete and DFO prior to commencement of open water monitoring season should be scheduled regarding the future PDC program.

Annual Report Planning:

Carole reviewed the report-writing timeline for the 2002-2003 annual report in order to ensure Directors are aware of when the text will need to be reviewed and finalized.

BHPB committed to delivering its annual report by March 31st, 2003. Last year it was late enough that the Agency did not have an opportunity to comment on it in our annual report. The Directors felt it is not a necessity to comment on the BHPB annual report in the Agency annual report because there are other venues to do this, such as the review conducted by DIAND.

Carole discussed the staff brainstorming session, which included former manager Zabey Nevitt, on annual report topics and main ideas. Directors discussed the importance of focusing on the recommendations the Agency will be making in the report and ensuring the material in the report leads properly to those recommendations. BHPB must respond to the recommendations contained within the Agency annual report or adopt them, according to the terms of the BHPB EA.

Action item #7 – Carole to write a letter outlining how the Agency felt about the effectiveness of the February 2003 environmental workshop.

Action item #8 – Determine from BHPB when the final seepage report is due to arrive.

Action item #9 – ask MVLWB if it continued work on major ion research

Action item #10- Locate the letter where the Agency commented on physical tailings characterization

Action item #11 – Consider having a director attend the next EMAB meeting to discuss follow-up from the TK workshop recommendations.

Action Item #12 - Ask Helen Butler to include air emission isopleths in the Impact 2003 report (link the actual results to the EIS prediction of 1997).

Action Item #13 - Invite Chris Hanks to the next board meeting to discuss the Winter Road OEMP

Next meeting May 31 – June 1 or June 7-8.

Meeting adjourned at 16:30.

Minutes Approved by,

-ORIGINAL SIGNED BY-

François Messier, Treasurer