AGNICO-EAGLE
MEADOWBANK DIVISION

July 29, 2009

Via email and Xpresspost

Mr. Richard Dwyer
Licensing Administrator
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1J0
Phone: (867) 360-6338

Dear Mr. Dwyer,

Re: Meadowbank Type A Water License 2AM-MEA0815 -
Independent Geotechnical Expert Review Panel Report No.3

As per Water License 2AM-MEA0815 Part I, Item 14, for the information of interested parties prior to the annual report, please find enclosed Report No.3 from the Independent Geotechnical Expert Review Panel (Meadowbank Dike Review Board / MDRB). Agnico-Eagle Mines Limited – Meadowbank Division (AEM) has responded to the MDRB's findings in the document entitled, '*Response to Report No.3 Meadowbank Mine Dike Review Board, June 12, 2009'*, which is also enclosed.

Should you have any questions regarding this report, please contact me directly at 819-759-3700 ext. 814 or via email at stephane.robert@agnico-eagle.com.

Regards,

Stéphane Robert
Environment Superintendent

Encl (2)

cc: Kevin Buck, Indian and Northern Affairs Canada
David Abernethy, Indian and Northern Affairs Canada
Stephen Hartman, Kivalliq Inuit Association

June 18, 2009

Mr. Dennis Gourde, P.Eng.
General Manager
Agnico – Eagle Meadowbank Division
Baker Lake Office

Email: denis.gourde@agnico-eagle.com

Dear Mr. Gourde,

Report No 3
Meadowbank Mine Dike Review Board
Meeting June 12, 2009

1. INTRODUCTION

The dike review meeting was convened, as planned, to discuss the status of the design for the Bay Goose dike and the Tailings Storage Facility. In addition, the remedial grouting of the East Dike, required during the initial dewatering of the west arm of Second Portage Lake, merited attention. The As-Built report of the East Dike construction was also available and a presentation of the subject matter, including the lessons learnt, was made during the course of the meeting.

The discussions on the remedial grouting followed on from a telephone conference call held on May 29th. All three Board members participated in the conference call and were present at the June 12th meeting.

Prior to the meeting, information packages were sent out, either in electronic or hard copy format. The packages included the East Dike As-Built report and drawings, the Bay-Goose design drawings and specifications as released for tender, and the latest progress drawings for the Tailings Storage Facility. Additional hand-outs were supplied during the course of the meeting to include the PowerPoint presentations.

2. RESPONSE TO REPORT No 2

The items raised during previous discussions and included in the MDRB report no 2, have been addressed or are being considered in the ongoing design and construction work. The Board is content with the responses given by Agnico Eagle Mines (AEM) and their Engineering Consultants, Golder Associates Limited (GAL).

3. TECHNICAL COMENTARY

3.1 East dike

On May 19th, during the initial dewatering of the west arm of Second Portage Lake, anomalous piezometer readings were noted at stations 60+450 and 60+490. The drawdown rate for continuous pumping at 60,000 m3/day also dramatically reduced, indicating that significant seepage had initiated through or beneath the dike. There were pre-cursor indications of changed conditions by way of temperature changes in the piezometers (May 17th). In addition this event followed the opening of the outlet of Second Portage Lake, previously controlled by ice cover.

AEM and GAL reacted in a timely manner by immediately setting up a task force to address the issue, and take remedial actions that were appropriate, well executed, and effective. This has permitted drawdown to proceed at a rate consistent with schedule requirements, albeit by employing additional pumping capacity. It should be noted that the onset of the freshet had increased the quantity of water which had to be handled to achieve the drawdown.

The remedial actions consisted of grouting the upper part of the bedrock and also the cut-off/bedrock contact between stations 60+448 and 60+520. The grout holes were drilled immediately upstream of the cut-off with a final average spacing of 3.0 m. The grouting work was carried out by the original sub-contractor (TCG) who was able to re-mobilize the equipment and team at short notice, and was directed by GAL personnel.

Type 30 and micro-fine cement, together with superplastifier, thixotropic and anti-washout additives, were employed for the grouting.

As mentioned above, the work was apparently effective as dewatering has continued; however, a number of questions remain. It is noted that a reduction in the piezometric levels was recorded after the start of drilling but before the first grout injection; which implies a movement of material during drilling to block the main conductor and reduce flow. Little reduction of piezometric levels was observed during grouting. Therefore, it cannot be concluded that the grouting blocked or sealed the flow path.

As yet, there is no definitive explanation for the leak which may be the result of either inadequate prior grouting or the erosion of joint filling which was not groutable. Current data suggests that rock grouting is performing as intended but, the contact grouting performance is difficult to evaluate and we await direct seepage measurements following drawdown. The Board recommends implementation of a seepage measurement system at the downstream toe of the dike to locate the source of residual leakage and to enable monitoring of evolution of the flow rates. The Board looks forward to inspecting the downstream area below the East Dike in July.

The potential for further leaks should be recognized and therefore, the Board recommends development of a ‘contingency leak management plan’ to be incorporated in the OMS – Dike Manual (equipment, supplies, procedures, people ….)

The Board was pleased to learn that, at least in the short term, grouting equipment for on-going construction work will remain on site; but there should be an evaluation of long-term needs.

There is a need to understand AEM's capacity for long term seepage management in the search for cost effective solutions for not only the East Dike but in the selection of foundation treatment for the other water retaining structures.

3.2 East dike; As-Built report and drawings

The Board notes that very through documentation of the construction activities has been prepared which will be of value for evaluating the performance of the dike and also for refining the design and construction of the future structures. However, a number of additional details could be added to the final version including, for example, the dynamic compaction grid pattern and number of drops, which are not described.. This information will be of value in the comparison of the techniques to be proposed by the contractor for the next stage of construction.

3.3 Bay – Goose Dike Design

The Board was pleasantly surprised to learn of the large amount of investigation work that was accomplished over the winter period and concludes that adequate information is now available for the final design of the North Side. Additional investigation is proposed for the South side and the Board concurs with this need due to the extra depth to bedrock and the apparent presence of soft deposits. The exploration work, with a preponderance of percussion drilling, has yielded valuable data on rock levels but little information on the overburden characteristics.

Interpretation of the results indicates 5 m of lake bed sediments on axis B-B' in the north sector, which establishes a need for more detailed information before start-up (if practical) and a management plan (stability issues, mud wave issues, turbidity issues). It is planned that the cut-off be taken to bedrock in the north sector so design of the cut-off in this area will not be affected. However, in order to complete the design in the south sector, where a partial cut-off is an option being considered, additional characterisation is required. The Board wishes to emphasise that the adoption of a partial cut-off is a significant departure from the design concepts being adopted elsewhere in the dike designs. In order to justify this proposal it is essential that continuous coring, to the degree practical, be obtained over the interval from the base of the proposed cut-off to the bedrock. The identification of local conductive layers, such as gravel seams is important.

The Board notes that rock hydraulic conductivity appears to be greater than at the East Dike and may make grouting more of a challenge.

For both sectors of the dike, a cement-soil-bentonite slurry cut-off wall is proposed for all sections where the bedrock surface is more than 8 m below the lake level (i.e. below elevation 125 m). The concept is to place the CSB up to elevation 127 m followed by soil-bentonite (SB) to the top of the cut-off wall. The Board seeks clarification of procedures to achieve a clean CSB/SB interface, following discussions between AEM and the contractor.

GAL is aware of the increased depths of fill requiring dynamic compaction as compared to depths at the East Dike, and the Board seeks clarification as to the planned methods of execution and in-situ validation of effective densification to full depth.

In view of the greater depths, and in light of the possibility of leaks developing despite diligent foundation treatment work, the Board recommends consideration of a downstream filter blanket beneath rockfill in deep sections as an additional line of defence against piping.

Furthermore, the Board suggests review of the alignment detail on the north side of Goose Island that currently incorporates an abutment location which would necessitate dealing with frozen ground.

Further discussion on design details is anticipated for the July site visit.

The Board is content with staging of the Bay-Goose construction and the interface with the mine plan

3.4 Bay-Goose Dike; Drawings and Specs

It is understood that negotiations are already underway with the selected Contractor, Fernand Gilbert Ltd (FGL), but it is suggested that a few items in the specifications be reviewed prior to final contract signing as some technical and/or contractual issues may require clarification. These relate to the division of responsibilities between the Owner and the Contractor, and also to the requirements for cut-off backfill materials, grouting and instrumentation. Tony Rattue submitted a marked-up pdf version of the specifications containing a number of observations for consideration.

3.5 TSF Stormwater Dike

As for the Bay-Goose dike, a considerable number of extra soundings were performed over the winter from the ice surface. It is now considered that there is adequate site investigation for final design & construction. Ice rich soils were encountered on the abutments but the maximum thickness should allow removal of the same to produce an acceptable foundation. The Board requests confirmation of this issue at the next meeting.

There have been a few cases of unsatisfactory performance of the Coletanche membrane when installed in winter conditions and with less than ideal choices for bedding material. The Board questions the use of Coletanche in this location, primarily due to its limited extensibility and the consequent risk of rupture under load, and recommends that alternative solutions be evaluated (durability is not a concern; costs of other membranes are similar or even less, and have greater extensibility).

3.6 Saddle Dam No.1

This is a permanent closure structure, situated near the lake, and hence is sensitive for environmental concerns. As for the other structures, the 2009 winter exploration program, using primarily percussion drilling, indicated the presence of frozen till/ice rich soil to depths reaching 10 m. The actual ice content is not known and no evaluation of potential thaw settlement can be made. If this material were not completely excavated, what options are being studied taking into account potential deformations during both operation and closure? The thermal considerations will have potential influence on

seepage and dam deformation. A design memo on this subject is anticipated by the GDRB prior to the July meeting.

3.7 Other Issues

It is understood that AEM will act as contractor for the construction of the Saddle Dam No1, in addition to carrying out the embankment placement for the Bay-Goose dike in 2009. The designer of record will be GAL and AEM needs to be held to the same specifications and QC/QA protocols as is normal for a third party contractor. It will be in the interest of both parties to clearly define applicable roles and responsibilities.

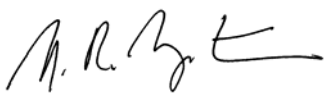
4. NEXT MEETING

A site visit is scheduled for the week of July 20th. Norbert Morgenstern and Andy Robertson will make their own travel arrangements to reach Baker Lake in the afternoon of July 20th. Anthony Rattue will use the charter flight from Montreal to site on July 20th, and it is assumed that AEM will make these arrangements.

5. ACKNOWLEDGEMENTS

The Board wishes to thank the personnel of AEM and GAL for their participation in the conference call and the meeting, and for the excellent documentation and presentations made by GAL which contributed to the efficiency and effectiveness of the proceedings.

Signed:



Norbert R. Morgenstern, P.Eng

D. Anthony Rattue, P.Eng.

Andrew M. Robertson, P. Eng.

ATTACHMENT A

AGENDA FOR BOARD MEETING NO. 3

June 12, 2009

AGNICO-EAGLE MINES - MEADOWBANK DIVISION

MEADOWBANK DIKE REVIEW BOARD

Meeting #4 - June 12th, 2009

5th Floor Main Boardroom, Golder Associates Office
500-4260 Still Creek Drive, Burnaby

AGENDA

8:00 **Welcome** (Continental Breakfast served)

8:15 **East Dike** (Golder and AEM)

Status Update
- Contingency Grouting
- Dewatering

As-Built Conditions
- Construction Activities
- QA/QC Activities
- Design Modifications
- Lessons Learned

10:45 *Coffee Break*

11:00 **Bay-Goose Dike – Part 1** (Golder)

General Concept
Drawings and Specifications

12:00 *Lunch (working)*

12:15 **Bay-Goose Dike – Part 2** (Golder and AEM)

Drawings and Specifications continued
Tendering Update
Construction schedule

13:30 **TSF Stormwater Dike & Saddle Dam 1 - Part 1** (Golder)

General Concept
Design Alternatives

14:30 Coffee Break

14:45 **TSF Stormwater Dike & Saddle Dam 1 – Part 2** (Golder and AEM)

Construction drawings and specifications
Construction Schedule

16:00 **Deliberation by the Board Members**

17:00 **Preliminary report by the Board Members**

17:30 **Closure**

19:00 Supper (TBC based on travel schedules)

AGNICO EAGLE

MEADOWBANK

VANCOUVER MEETING

June 12, 2008
Held in the offices of Golder Associates, Burnaby, B.C.

Attendance		
Gaston Blanchette	AEM	Dike Superintendant
Stephane Robert	AEM	Environment Superintendent
Dan Walker	Golder Associates	Project Manager
Michel Julien	Golder Associates	
Grant Bonin	Golder Associates	Grouting Specialist
Fiona Esford	Golder Associates	
Paul Bedell	Golder Associates	
Norbert Morgenstern	Self	Dike Review Board
Anthony Rattue	SNC Lavalin	Dike Review Board
Andrew Robertson	Robertson Geoconsultants	Dike Review Board