

January 21, 2013

*Via Email and Xpresspost*

Ms. Phyllis Beaulieu  
Licensing Administrator  
Nunavut Water Board  
P.O. Box 119  
Gjoa Haven, NU X0B 1J0  
Phone: (867) 360-6338  
*licensingadmin@nunavutwaterboard.org*

Dear Ms. Beaulieu,

**Re: Meadowbank Water License 2AM-MEA0815 Part I, Item 13 – 2012 Annual Geotechnical Inspection Report**

As required by Water license 2AM-MEA0815, Part I, Item 13, please find enclosed a copy of the document: *Report on 2012 Annual Geotechnical Inspection, Meadowbank Gold Project, Nunavut.*

**Implementation Plan**

Please consider the following information as the implementation plan to address the recommendations in Section 9.0 of the report.

**DEWATERING DIKES**

**Recommendation:** *It is understood that AEM is preparing a final version of an Operation, Maintenance and Surveillance (OMS) Manual and Emergency Preparedness Plan (EPP) to cover the dewatering dikes.*

Action: The OMS manual and the Emergency preparedness plan are both currently in revision. The OMS manual will be finalized for the beginning of the second quarter and the EPP will be finalized in the third quarter of 2013.

**EAST DIKE**

**Recommendation:** *Settlement at the base of the road berm should be monitored due to its proximity with the 2009 sinkhole event but is not considered a concern.;*

Action: After further inspection, AEM and Golder realize that the small depression is not related with the East dike itself but with only some loose/muddy material that have been

push next to a berm. However, visual monitoring of the dike will continue on a regular basis.

**Recommendation: It is recommended to measure the flow of water pumped by the two seepage collection sumps and to periodically visually assess the clarity of the water removed. It is understood that AEM plan to install flow meters and have recently started observing the clarity of the water. Monitoring of the third seepage channel should continue.**

Action: Clarity of the water is observed every day since April 2012. The 2 flowmeters will be installed in the first months of 2013.

**Recommendation: Regular monitoring and assessment of the monitoring data: piezometric, thermal, inclinometer, and seismograph (associated with blasting) data should continue.**

Action: The monitoring of the instrumentation at East Dike is done on a regular basis and will continue.

### **SOUTH CAMP DIKE**

**Recommendation: Instrumentation monitoring at the South Camp dike should continue on a regular basis;**

Action: The monitoring of the instrumentation at South Camp dike is done on a regular basis.

**Recommendation: The presence of water at the downstream toe needs to be monitored to see if this water is associated with runoff or seepage and to detect if any changes occurs.**

Action: Visual monitoring of the dike is conduct on a regular basis. The water at the downstream toe of the dike is associated with run off and not with seepage.

### **BAY-GOOSE DIKE**

**Recommendation: Currently the dike crest surface, near the cut-off wall centreline, is highly irregular which limits visual observation of potential deformations, settlement, and/or cracking. To assist in the quality of the regular visual inspections, it is recommended to smooth the existing surface 3 m (one dozer blade width) on either side of the dike centreline, once the thermal cap is in place.**

Action: The thermal capping will be done in 2013.

**Recommendation: Rebars installed to monitor tension cracks on the centreline at some locations should continue to be monitored.**

Action: The tension cracks were a superficial reaction of the surface of the dike related to the thaw season. No more cracks are visible anymore.

**Recommendation: Regular monitoring and assessment of the monitoring data (piezometric, thermal, inclinometer, seismograph associated with blasting and seepage) occurs and should continue. Displacement monitoring of the dike crest should be conducted.**

Action: The monitoring of the instrumentation at BayGoose Dike is done on a regular basis and will continue.

**Recommendation: It is understood that the final version of the as-built report for the Bay-Goose Dike is in preparation.**

Action: The as-built report will be finalized in the first quarter of 2013 and will be send to the NWB.

#### **TAILING STORAGE FACILITY**

**Recommendation: AEM is preparing the final version of an Operations, Maintenance and Surveillance (OMS) Manual and Emergency Response Plan (EPP) for the TSF.**

Action: The OMS manual and the Emergency preparedness plan are both currently in revision. The OMS manual will be finalized for the beginning of the second quarter and the EPP will be finalized in the third quarter of 2013.

**Recommendation: It is understood that AEM will construct a permanent seepage collection and pump back system on the downstream side of all permanent dikes and dams around the TSF following completion of construction activities at each facility. Saddle Dam 1 is currently storing tailings and supernatant water and a pump back system. Such a system should be installed at Saddle Dam 2.**

Action: For Saddle Dam 1, the permanent seepage collection system was put in place in the fall 2012. For Saddle Dam 2, no water or tailing will be in contact with the dam before 2013. The permanent seepage collection will be installed in 2013.

**Recommendation:** *It is recommended to restrict vehicle access on the pad of uncompacted material near the north abutment of Saddle Dam 1 at around 30 m from the crest as signs of past failure and presence of continuous tension cracks suggest that more failures will occur.*

**Action:** The access will be close.

### **SADDLE DAM 1**

**Recommendation:** *Significant wrinkles were observed in the liner. Wrinkle conditions need to be monitored to ensure no geomembrane pinching will occur.*

**Action:** Regular visual inspection of the liner is done and will continue. No wrinkles have been observed during winter time.

**Recommendation:** *It is recommended that a formal ballast design be completed in function of existing wind speed and direction conditions to avoid such adverse condition repeated again.*

**Action:** A ballast design has been determine and will be implemented during summer 2013.

**Recommendation:** *Displacement monitoring locations should be established and regularly monitored.*

**Action:** AEM is currently evaluating the necessity of those displacements monitoring station. The Meadowbank Dike Review Board did not mention the necessity of these one.

### **SADDLE DAM 2**

**Recommendation:** *Displacement monitoring locations should be established and regularly monitored.*

**Action:** AEM is currently evaluating the necessity of those displacements monitoring station. The Meadowbank Dike Review Board did not mention the necessity of these one.

### **STORMWATER DIKE**

**Recommendation:** *Differential settlement was observed between Sta. 10+700 and Sta. 11+000 on upstream edge and slope. AEM should monitor the differential settlement.*

Action: The depressions are visually monitored in the regular dike inspection.

**Recommendation:** *The three holes identified in the liner about 1 m below the crest should be repaired before the tailings reach this elevation.*

Action: The three holes will be repaired before the tailings reach this elevation.

#### **AWPR**

**Recommendation:** *AEM has been conducting regular and event-based inspections of the fish-bearing water crossing locations along the road and these should continue in order to confirm the hydraulic function of the crossings, adequacy of crossing locations with respect to the watercourses, and minimal impact to fish habitat. Consideration should be given to expanding the AEM inspections to include cursory monitoring of flow and high water marks at all crossings during freshet and peak flow events.*

Action: AEM will expand the monitoring as recommended and increase inspections to 1x/week during the peak flow freshet period (mid June – mid July). We will monitor for any sediment release and mark the high water level.

**Recommendation:** *For some culvert locations, it is recommended that AEM monitor to see if flow is actually occurring, i.e., during the freshet. If insufficient capacity to handle the flows is observed, then it is recommended to clear the obstructions or repair the culverts; particular attention should be paid to R-00A (km 2+550), PC-14 (km 4+260), PC-16 (km 54+950), R-14 (km 67+840) and R-05A (15+745).*

Action: The condition of the obstructions at the culverts will be monitored and we will evaluate if their replacement is needed.

**Recommendation:** *Some water was observed seeping under the northwest abutment of Bridge 9, R19 at about km 83+150. The water quality of this seepage should be monitored for signs of turbidity.*

Action: The water quality of the seepage will be monitored for signs of turbidity.

#### **QUARRY**

**Recommendation:** *It is understood that AEM is developing a plan for progressively closing some of the quarries along the AWPR while maintaining others for storage of materials and to provide a supply of materials for ongoing road maintenance;*

**Action:** For the ongoing road maintenance some quarries will stay open for the duration of the mine life. A plan will be developed in the next two years for progressive closure.

**Recommendation:** *Quarry 4 and Quarry 14 are flooded and it is understood that AEM is evaluating how best to eliminate the ponding of water within these quarries, if possible*

**Action:** The actions necessary to deal with the water and close these quarries will be included in the plan described in the point above.

#### **BULK FUEL STORAGE FACILITIES**

**Recommendation:** *Ongoing removal of fluids that accumulate within the secondary containment facilities should be managed appropriately. At the Baker Lake fuel tank farm, there were signs that water had accumulated to a very high level in the past, submerging the tank foundation fill.;*

**Action:** AEM environment staff will ensure that accumulated water is pumped out in a timely manner (in accordance with Water license requirements) to prevent any submerging of tank foundation fill.

**Recommendation:** *At the Baker Lake fuel tank farm, the geomembrane was folded and exposed in two areas over a 5 m length on the internal slope, north of Tanks 1 and 2. To minimize potential damage to the liner, it is recommended to cut and repair the fold and to re-cover the area with fill material.*

**Action:** The fold will be repaired and the area will be cover with fill material during the summer 2013.

**Recommendation:** *At the Baker Lake fuel tank farm, tension cracks were observed on the upper bench, north of Tanks 3 and 4 and south of the Tanks 5 and 6. These may be a result of the steep side slopes. No mitigation work is required, but regular inspection should be performed to monitor the cracks. Any changes to the cracks (e.g., lengthening, deepening, widening) should be noted and provided to the design engineer. At the time of the inspection, the slope instability observed appeared superficial due to the presence of shallow bedrock and was not considered a threat to the lower tanks.*

Action: Regular inspections will be performed to monitor the cracks.

**Recommendation:** *At the Meadowbank fuel tank farm small signs of erosion were noted on the tank foundation. This is considered not to be significant at this stage but it should be monitored to avoid unstable tank foundation conditions.*

Action: Regular inspections will be performed to monitor the erosion.

#### **Meadowbank Site Roads**

**Recommendation:** *Three culverts were installed on Vault Road. These three culverts were partially collapsed in the middle and showed signs of erosion at the inlet. This is presently not a significant issue but it is recommended to monitor these culverts during the next freshet to ensure that they provide sufficient capacity and that erosion is not occurring.*

Action: Regular inspection will be performed to ensure sufficient capacity and that erosion is not occurring.

**Recommendation:** *Tension cracks were observed on the crest of the berm and on the road near the berm at one location on RF1. It is recommended to restrict vehicle access in the area of these cracks and monitor their evolution. Light vehicles can continue using this road.*

Action: Access will be restricted in the area of these cracks and their evolution will be monitor.

Should you have any questions or require more information, please contact me directly at [stephane.robert@agnico-eagle.com](mailto:stephane.robert@agnico-eagle.com) or by telephone at 819-763-0229.

Regards,  
**Agnico-Eagle Mines Limited – Meadowbank Division**



Stéphane Robert



Environment Superintendent

cc: *David Abernethy, INAC*  
*Luis Manzo, KIA*

---

**Regional Office:**  
10200, route de Preissac  
Rouyn-Noranda, Quebec  
J0Y 1C0  
Tel: 819-759-3700 Fax: 819-759-3663

**Baker Lake Office:**  
P.O. Box 540  
Baker Lake, Nunavut  
X0C 0A0  
Tel: 867-793-4610 Fax: 867-793-4611