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Our File: 4703 001 015

July 8, 2009

Richard Dwyer
Licensing Administrator
Nunavut Water Board
P.O. Box 119
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By email

Re: Agnico-Eagle Mines Ltd. – Meadowbank Gold Project – Aquatic Effects Management Program Review - Water Licence 2AM-MEA0815

On behalf of Environment Canada (EC) I have reviewed the Aquatic Effects Management Program (AEMP) submissions which were available on the public registry. The Aquatic Effects Management Program Version 2, dated May 2009 was used instead of Version 1 (dated March 2009). The scope of the review discussed herein is the program design; the AEMP and other reports for the 2008 monitoring work are reviewed in conjunction with the 2008 Annual Report. The following comments are provided for your consideration.

Comments and recommendations:
The Water Licence requires Agnico-Eagle Mines Ltd. (AEM) to prepare an Aquatic Effects Management Program (AEMP) which meets several objectives as specified in Part I.1 of the licence; Part I.1.e. states the AEMP shall include "Monitoring under Fisheries Authorizations, NWB Licence Compliance Monitoring, Environmental Effects (EEM) monitoring and Groundwater Monitoring". The intent behind this clause, as it was understood from the environmental assessment and regulatory hearings, was that an integrated monitoring framework would be prepared that contained the components of each of the monitoring requirements, and eliminated duplication while ensuring efforts were harmonized between programs.

The AEMP document (V. 2, May 2009) submitted to the NWB takes the approach of an umbrella program which contains separate components. This makes sense from the perspective of being able to allow review and modification of individual plans as required. However, what are missing are the linkages between the plans that will demonstrate how the various program's requirements are harmonized, and that will allow for interpretation and conclusions. The Water Quality and Flow Monitoring Plan provides the compliance monitoring, and this format could be broadened to include the four monitoring streams listed in Part I.1.e.

We note that the plan submitted to the Nunavut Water Board in April 2009 was to be prepared in consultation with the Department of Fisheries and Oceans, EC, and Indian and Northern Affairs Canada, as stated in the licence conditions; however, EC was not involved nor consulted in the development of the AEMP submitted.

Section 1: Aquatic Receiving Environment Monitoring

The AEMP and Metal Mining Effluent Regulations (MMER) EEM documents are the original submissions from 2005, which provided a good starting point in outlining the concept of integrating various requirements. However, four additional years of data should now be available and used to refine the program, and other monitoring requirements are now identified and could be dovetailed. For example, the core monitoring program (see the Mine footprint area, section 7.1 of the 2005 AEMP) contemplates sampling sites which have since been put into the Water Licence monitoring (Schedule I). How will stations be designated between the two programs? How will reporting be harmonized? There have been changes since 2005 to both the core monitoring program and to the Guidance Documents for the EEM which outdate the monitoring program outlined in the 2005 documents.

The requirement to measure changes in productivity is addressed in the document by referring to sections 7.4 (periphyton) and 7.5 (phytoplankton) in the 2005 AEMP document. Recent work has indicated that periphyton is not a useful measure and monitoring will be discontinued. It would be useful for the monitoring program to include source contributions of nutrients (whether end of pipe or estimates of non-point sources such as construction) and track nutrient concentrations in the receiving environment as the first measure of productivity. The approach to tracking productivity changes should be holistic and updated in the AEMP design.

AEM will need to ensure that the Standard Operating Procedures for sampling are appropriate and consistent for/among the various programs (MMER EEM, Fish Habitat Compensation Monitoring, Compliance Monitoring, AEMP).

Section 2C Tier 2 and 3 Habitat Compensation Monitoring Plan

Water quality will be used as a quantitative measure of the suitability of the Habitat Compensation Features (HCFs), with field monitoring results compared to both the CCME Guidelines for the Protection of Freshwater Aquatic Life, and to reference area water chemistry. If the water quality presents potential constraints on use by fish, then Tier 2 studies would be initiated.

The Technical Memorandum doesn't provide details on the use of reference sites. Will the background values be drawn from past data for open water samples, or will similar (pristine) shoal-type habitat be sampled concurrently for comparison?

While perhaps unlikely, the situation should be addressed for how comparisons will be done when there may be higher background values than the CCME guidelines, and also for parameters which have no guidelines.

Some estimate or consideration of confounding factors such as sediment or silt

deposition may be appropriate to include as well.

Section 3D: QA/QC Plan V. 1

Field testing procedures should be covered in this plan, and include collection of data using field meters (calibration, maintenance, and verification of readings).
Sample collection for toxicity testing should be included in Table 2.1.

Other:

The Water Quality and Flow Monitoring Plan also describes "Event Monitoring (EM) Program", which would be done in the case of unexpected incidents such as spills, accidents and malfunctions. Some linkage would be appropriate between EM and the AEMP where effects could potentially involve surface waters. Similarly, any occurrence-related monitoring, such as the dike construction sedimentation effects monitoring, should be tied in with the AEMP framework.

Given the linkage between dustfall and runoff into surface waters, it is recommended that the framework include a cross-reference to dust and snow quality sampling.

Next steps:

For the reasons outlined above, EC does not feel the AEMP V.2 is yet sufficiently developed to demonstrate an integrated, efficient program.

The AEMP V.2 mentions that a new plan is being devised, to be known as the Receiving Environment Monitoring and Management Plan. Will this provide more of an integrated framework? We would be pleased to meet to discuss a draft of this plan, at such time as it is available.

Please do not hesitate to contact me at 867-669-4735 or by email at anne.wilson@ec.gc.ca with any questions or comments regarding the foregoing.

Sincerely,

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