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June 30, 2011

Richard Dwyer
Licensing Administrator
Nunavut Water Board
P O Box 119
Gjoa Haven, NU X0B 1J0

Via E-mail to: licensingadmin@nunavutwaterboard.org

Re: Agnico-Eagle Mines Limited – Meadowbank Project- 2010 Annual Report

Dear Mr. Dwyer:

On behalf of Fisheries and Oceans Canada (DFO) I have reviewed Agnico-Eagle Mines Meadowbank Project's Annual Report submission with consideration to DFO's mandate to protect fish and fish habitat.

DFO provides the following comments specific to the 2010 Annual Report and in particular those Appendices that pertain to DFO's mandate that are itemized below.

2010 Annual Report

Section 7.11 (Blasting Activities) mentions that the peak particle velocity (PPV) exceeded DFO's Guidelines for blasting during the fisheries window 36 out of 300 blasts (12 percent of blasts). This is concerning to DFO because exceeding PPV guidelines was also an issue in 2009. In 2009 PPV values from 13 out of 149 blasting events (8 percent of blasts) exceeded the 13 mm/s guideline which is in place to prevent damage to fish, eggs and larvae during periods of spawning and incubation (August 15 – June 30). Further, the 2010 blast monitoring records in Table 7.13 show that PPV guidelines were exceeded multiple times within specific days. For example 4 blasts exceeded PPV guidelines on March 24, 2010, 5 blasts exceeded PPV values on June 25th, 2010 and 4 blasts exceeded values on October 7th. DFO would like to enquire if these blasting operations where PPV values were exceeded had any common factors. For example, was the same crew responsible for the blasting, where the rock formations or configurations similar or where similar blasting techniques employed in blasting events that exceeded guidelines. It would be helpful to be able to link commonalities between the blasting events that exceeded PPV guidelines in an effort to mitigate this issue.

A higher degree of confidence would be employed if the percentage of blasts that exceeded guidelines in each year was decreasing rather than increasing. For this reason, DFO is recommending that AEM develop and submit a plan to either limit blasting activities near fish habitat during the fisheries window or mitigate PPV concentrations from blasting activities

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between August 15 and June 30th. This plan should be submitted to DFO prior to December 31, 2011 for review and approval.

Appendix F2. Report, Aquatic Effects Monitoring Program, Core Receiving Environment Monitoring Program (CREMP) 2010.

Section 3.6 of this report recommends that the sampling protocol currently in place for the CREMP monitoring program for zooplankton (one sampling event in August) is maintained in 2011 with the exception of increasing the number of replicates from 5 to 10. The increase in the number of replicates taken at each station should act to describe some of the variability that has been seen within and among sampling stations and will increase the statistical power of the analysis. The recommendation is supported by DFO.

Appendix F3: Report AWPAP Fisheries Report

The data represented in Figures 3.1.2.1 to 3.1.2.4 is assumed to be the data for 2010 at each crossing location. It is recommended that in future reports, the year that the data was collected be clearly identified in the figure titles for the sake of clarity.

It is interesting to note that the peak spawning and migrating period for Arctic grayling occurs under ice and at temperatures less than 5 degrees Celsius. Literature suggests spawning occurs at temperatures between 7 - 10 degrees Celsius. This is interesting information to highlight and is valuable information for the management of fish and fish habitat in Arctic environments within Canada.

DFO recommends graphing daily upstream and downstream movement of grayling as a function of daily water velocity to investigate the correlation between upstream movement of arctic grayling and water velocities at the 4 crossing locations along the AWPAP.

Based on the ineffectiveness of the fish egg collection mats to collect fish eggs, DFO is satisfied with the AEM's recommendation to discontinue the use of the fish egg collection mats to monitor Arctic grayling spawning locations.

The physical identification features of the fish in Photo No 8 of this report would suggest that this fish was misidentified as a slimy sculpin and is a species of stickleback.

In the review of the 2008 Annual Report, DFO recommended that creel surveys should include the collection of specific meristic and morphometric characteristics to facilitate determination of fish population characteristics. As this is particularly important for the fish population of Whitehills Lake, DFO again recommends that creel surveys continue.

Appendix F5 Report, Intake Barge Fisheries Study

The study was requested by DFO to determine if the intake barge on Third Portage Lake was impacting fish habitat and fish populations in the vicinity of the freshwater intake barge. The results from the study were compared to the reference data that was gathered during the Bay-Goose fishout program. This report concentrates on fish population densities and fish habitat in the vicinity of the fresh water intake barge within Third Portage Lake. The findings of this study would suggest that fish habitat and fish populations in the vicinity of the fresh water intake are not negatively impacted. However, it is unclear whether the water intake design is adequately protecting fish. Therefore, DFO requests that AEM submit design details for the water intake and screen design as well as the associated intake velocity calculations to DFO for review. DFO further recommends that in the 2011 annual report, AEM is to provide a summary of the effectiveness of the water intake design and screen to prevent the impingement and entrainment of fish.

Appendix C1, Report, All Weather Private Access Road: 2010 Water Quality Management Report

The report did not identify any issues relating to elevated Total Suspended Solids (TSS), turbidity or water quality issues downstream of the authorized crossings (R02, R06, R09 or R15). The report requests a change in the current sampling protocol at the authorized crossings to a one time per year thorough sampling regime to be performed as soon after freshet as possible (early July). This would constitute a change from the current sampling regime that involves performing comprehensive sampling in June, July, August and September. Because no water quality issues have been identified during historical sampling on the authorized crossings, this request to change the sampling protocol is acceptable. If there are any water quality issues caused by erosion at the crossings, these issues would likely occur during freshet and would be identified through daily visual inspections that are performed during the open water season.

If a plume of sediment is identified during the daily visual inspections throughout open water season, water quality analytical sampling should be performed to provide data on the duration and concentration of the sediment release. DFO suggests that the above recommendation of obtaining samples and performing analytical sampling if a sediment plume is identified should be incorporated into the monitoring plan for the AWPAP.

Appendix A3, Aquatic Effect Monitoring Program, Targeted Study, Dike Construction TSS Effects Assessment Study 2009, 2010

The trend of decreased periphyton biomass that was identified in 2009 within Second Portage Lake was again evident in results from 2010 sampling. According to this report, the reduction in periphyton biomass and altered community composition can most likely be attributed to sediment accumulation associated with the construction of the East Dike in 2008.

The reference cited in the report (Izaguirre et al. 2009) suggests that periphyton effects on chlorophyll -a should be temporary. However, monitoring of the periphyton community in a close proximity to the East Dike in Second Portage Lake has shown effects caused by sediment to persist in 2009 and 2010, despite low TSS levels in 2010. DFO recommends that the CREMP sampling that will be performed in 2011 concentrate on monitoring periphyton biomass within

the affected areas of Second Portage Lake to determine if the trend of reduced periphyton biomass is still occurring.

The increased metals that were identified in 2008 and 2009 in Second Portage Lake that were associated with the accumulation of sediment were shown not to be biologically available to benthic invertebrates. This is important to identify because it decreases the likelihood of metals accumulating within organisms higher in the food chain.

There were no significant deviations in benthic invertebrate abundance in Third Portage Lake during 2009 (No EAS data in 2009) or during 2010 for either CREMP or EAS data. A trend of decreased benthic invertebrate abundance was seen in 2009 and 2010 (not statistically significant) within Third Portage Lake. The report suggests that the decreased abundance observed in 2009 can be attributed to natural variability and in 2010 a regional trend of decreased abundance was observed across all regional sampled lakes. DFO recommends that the CREMP data for benthic invertebrates that will be gathered in 2011 should be used to confirm the status of benthic invertebrate abundances within the east basin of Third Portage Lake

A summary of the impacts to benthic invertebrates in Second Portage Lake is more complicated. The historical EAS sampling data that has been gathered for Second Portage Lake shows a decreased abundance in 2008 and a recovery similar to baseline levels in 2009. The 2010 results show a slight increase compared to baseline. Conversely the CREMP data gathered in 2010 displayed a significant decrease in abundance in 2010. The report suggests that the 2010 CREMP data is an anomaly and is attributed to localized temporary decreases in abundance at the sampling station SP within Second Portage Lake. The report suggests that the CREMP 2010 data is independent of the TSS that mobilized during the construction of the East Dike and the inconsistent data can be attributed to spatial differences within Second Portage Lake. DFO recommends that data collected as part of the CREMP sampling regime in 2011 should be directed toward confirming the suggestions of this report. The 2011 CREMP data in Second Portage Lake should be used to verify the CREMP data from Second Portage Lake.

Appendix A4 2010 Causeway and Dike Construction Monitoring Report

DFO is encouraged to see that the challenges of elevated TSS being mobilized through out Second and Third Portage Lake that were encountered in 2008 and 2009 have not reoccurred during the Bay-Goose Dike construction activities in 2010. On May 23, 2010 the short term maximum TSS concentration exceeded TSS guidelines at monitoring station BGC-03. This was the only TSS concentration value that exceeded guidelines in 2010.

In section 2.2, *Turbidity – TSS Relationships*, the document “DFO 2000” is referenced within the text of this report but the specifics of this reference are not included in the references section (section 5) at the end of the report. DFO recommends that all documents that are referred to in future reports should be clearly outlined in the literature cited section to allow for further background information to be obtained if required.

Should you have questions, or require clarification please do not hesitate to contact Bobby Bedingfield at (403) 292-8675 or by email at Robert.Bedingfield@dfo-mpo.gc.ca.

Sincerely,



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