August 5th, 2017

Karen Kharatyan
Manager of Licensing
Nunavut Water Board
P.O Box 119
Gjoa Haven, NU X0B 1J0

Re: Agnico Eagle Mines – Meliadine Division Response to Final Effluent System Final Design and Construction Drawings

Dear Mr. Kharatyan,

As requested, the following information and comments are intended to address the recommendations outlined in the below letter:

- INAC – July 21, 2017*, Indigenous and Northern Affairs Canada's Review of Agnico Eagle Mines Limited's Submission of Final Design and Construction Drawings for Final Effluent System -Water Licence 2AM-MEL1631 Part D, Items 1 & 2 - Meliadine Gold Project*
- ECCC – July 19, 2017, *2AM-MEL1631 – Agnico Eagle Mines Ltd. – Meliadine Mine – Final Design for the Final Effluent System*

Should you have any questions or require further information, please do not hesitate to contact me.

Best regards,

Manon Turmel
manon.turmel@agnicoeagle.com
819-759-3555 x 8136
Environmental Compliance Counselor

1) Indigenous and Northern Affairs Canada

Comment: The documentation provided by the applicant does not indicate what the contingencies are in case of treatment plant malfunction. INAC is aware that this is a design report however INAC believes that a section describing the contingencies in the event of a malfunction is relevant.

Recommendation: INAC recommends that the Licensee provide details on contingency in the event of a malfunction within the treatment plant.

Agnico Eagle Mines response:

As presented in Section 4.3 of the Operation & Maintenance Manual – Final Effluent Treatment Plant *submitted to the NWB on May 26, in the event of plant malfunction, water will be diverted to CP1. The maximum capacity of CP1 is 572,000 m^3. CP1 water balance is completed and updated taking into consideration the available data on site. Adequate freeboard in CP1 will be maintained by ensuring good water management, based on the water balance and water management plan. Based on the water quality model performed for CP1, discharge of CP1 to Meliadine Lake (MEL 14) is expected to occur annually and to provide sufficient capacity within CP1.*

2) Environment and Climate Change Canada

Comment 1:
Modeling of Scenarios
Sections 2.2 and 7.0 describe the three scenarios which were modeled (base case, one or two wet years, base case plus higher discharge volumes).

a) Scenario 2 models both 1 and 2 wet years, and assumes that the concentration of parameters remains the same in the increased volumes of effluent to be discharged. It is unclear why the concentrations would not be lower - intuitively, higher precipitation would dilute the concentration of parameters in the discharge, and higher volumes going into/through the lake would provide greater dilution.

Recommendation 1. ECCC recommends that the Proponent clarify why the concentration of parameters in the discharge are not lower.

Agnico Eagle Mines response:

The reason the concentration parameters are not lower (i.e. diluted) is that Agnico Eagle wanted to present a conservative scenario ("worst case") by keeping the constituent concentrations the same as the base case. Accordingly the wet year was modelled by releasing a larger amount of effluent water with the base case constituent concentrations. Thereby simulations discharged a greater loading of conventional constituents into the lake compared to the base case. If dilution requirements are met for this conservative case, then the system would certainly work for lower loading conditions.

b) The worst case scenario could be low precipitation years, when freshwater inputs are lower, but parameters associated with mining would remain constant. This scenario has not been modeled.
This scenario has not been modeled.

Recommendation 2. ECCC recommends that the Proponent provide rationale for not modeling this worst case scenario, or provide model results for one and two dry years as a fourth scenario.

Agnico Eagle Mines response:

As described in the response to Question a) for a wet year, a conservative case ("worst case") was modelled by keeping the constituent concentrations the same as the base case but with an increased volume of effluent water. For this case the dilution requirements were met. ECCC recommends a dry year simulation using the same base case constituent

concentrations combined with lower effluent discharge volume. However, this proposed dry year combination would result in a much lower discharge loading than the abovementioned and simulated wet year loading. Consequently the wet year simulation provides the "worst case" loading scenario, regardless of precipitation.

c) ECCC notes that 1997 was selected for use in analyzing flow rates, due to availability of data. This was a dry year, with flow rates about 25% lower than other years. The flow rates were adjusted by multiplying the flows in June by 4.

Recommendation 3. ECCC recommends that the Proponent explain how the predicted dilution ratio would change if the June flows are not multiplied and loadings are left constant (i.e. how a dry year would affect dilution).

Agnico Eagle Mines response:

The year 1997 was used to estimate the run-off inputs into the Meliadine Lake sub-basin, because this year was characterized by the greatest density of environmental data. Unfortunately, the month of June for this year showed much lower run-off flow rates. The flow rates for June 1997 were only 25% (one quarter) of a typical June month. Accordingly, in order to adjust the abnormally dry June 1997 month, the values recorded for this month were multiplied by 4. The typical total run-off for June is a volume of water of about 3.4 Mm^3. In comparison, the total volume of water in the Meliadine Lake sub-basin is about 57 Mm^3, meaning that the June run-off corresponds to less than 6% of the lake volume. Since the run-off accounts for a small percentage of the lake water volume, a change from 3.4 Mm^3 discharge in June to 0.85 Mm^3 discharge (when June flows are not multiplied) would have negligible impact on the predicted dilution. The nominal residence time is estimated to be 10 years, which means that the system does not respond significantly to observed changes in the monthly river input.

Comment 2: Lake Volumes

Bathymetry for the sub-basin of Meliadine Lake has been extrapolated and may not be accurate. If the volume has been underestimated or overestimated, predictions of lake concentrations will be affected.

Recommendation 4. ECCC recommends that water quality predictions based on the modeled dilution be validated during operations with ongoing monitoring in the receiving environment, specifically over the model domain area of the lake. ECCC anticipates that the Aquatic Effects

Monitoring Program will pick up changes in chemistry and recommends that any substantial variation from predictions should be flagged.

Agnico Eagle Mines response:

As recommended by ECCC, Agnico Eagle will undertake to validate the modelled dilution during operations as part of the Aquatic Effects Monitoring Program.

Comment 3: Discharge Concentrations

Predicted monthly average concentrations of effluent constituents were used to model the parameters. These values were well below licence criteria for regulated parameters, and if the monthly averages have been under-predicted, the discharge concentrations could be as high as the end-of-pipe discharge criteria. It would have been conservative to also provide predictions based on licence criteria, to identify whether discharge at the licence limits could potentially result in exceedance of the objectives at the edge of the mixing zone or in the lake over time as concentrations accumulate.

Recommendation 5.

ECCC recommends running the model with licence criteria for regulated parameters.

Agnico Eagle Mines response:

The results provided in the design report represent realistic scenarios based on the water quality modelling. While the Type A Water License criteria numbers are greater than the monthly average values used in the modelling, the probability of reaching the License criteria numbers over a long and continuous period of time is low. This means that the modelling, focusing on a multi-year simulation, should not consider the accumulation of constituent based on License criteria concentrations, but rather be based on representative monthly averages determined by the water quality modelling.

To support this statement, over the past two months (June and July 2017), constituent concentrations have been recorded in Collection Pond 1 (CP1) which is from where the final effluent takes its source prior to discharge through the diffusor. Observed CP1 concentrations are less than the Water License A Maximum End-of-Pipe Average Concentrations and are also less than the monthly average values used in the modelling. In general, averaged observed constituent concentrations are less than 5% of the Water License A Maximum End-of-Pipe Average Concentrations.

Furthermore, Agnico Eagle reviewed observed concentrations from the existing Agnico Eagle Meadowbank Mine, a similar and active mine located a few hundred kilometers north of the Meliadine site with data collected over the course of summer 2014 to summer 2017. The dataset from the final discharge point named Vault Attenuation Pond at the Meadowbank Mine, consisting of 45 points over four separate 4-month periods, provides valuable information on the magnitude of effluent concentration during mine operation. In general, the dataset shows that averaged observed constituent concentrations are less than 8% of the water license criteria.

Based on the operational data from the Meadowbank Mine as well as recent water quality data from CP1 at Meliadine, it is highly unlikely that the licensed concentrations will be seen at the end-of-pipe. In other words, representative concentrations supported by historical data have been applied to the Meliadine modelling and show that concentrations will be in compliance with the CCME/Site Specific guidelines at the edge of the mixing area.

Comment 3: Clarification of Monitoring Site Designations

The design report references the March 2017 Water Management Plan, and the requirements that are to be met at end-of-pipe and in the mixing zone. Looking at the Water Management Plan, these sites are designated MEL_14 and MEL_13, respectively. In the Water licence, the sites are named MEL-04 and MEL-03, respectively. While the design document doesn't name the sites that criteria and objectives are to be applied to, the supporting documentation is confusing.

Recommendation 6.

ECCC recommends that the Proponent clarify the names of the end-of-pipe and edge of mixing zone monitoring stations.

Agnico Eagle Mines response:

Please refer to Appendix A for correspondence from the Nunavut Water Board regarding Water license sampling station names. On March 3, 2017, monitoring stations MEL-03 and MEL-04 were changed to MEL-13 and MEL-14 respectively. At the request of the NWB, all management plans referencing these stations were modified as well.

APPENDIX A. Water License sampling station names

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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

March 3, 2017

File No: 2AM-MEL1631

By Email

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Re: Type "A" Water Licence No. 2AM-MEL1631, Meliadine Gold Project - Nunavut Water Board Response to December 21, 2016 Request for Modification by Agnico Eagle Mines Ltd.

Dear Ms. Turmel and Mr. Quesnel:

This letter is a response to the correspondence provided by Agnico Eagle Mines Ltd. (Agnico Eagle or Licensee) to the Nunavut Water Board (NWB or Board) on December 21, 2016 proposing that the Board modify the identifications of Monitoring Stations in Table 2 of the Water Licence 2AM-MEL1631 (Licence).

As noted in that request, the "…*station identification found in Table 2 is repetitive to station identifications currently existing in the NWB License No. 2BB-MEL1424*. To keep organized and separate sample identifications for all past, current, and future sample locations Agnico Eagle proposed that the Board change the Monitoring Stations' identifications or nomenclature in Table 2 of the Licence. The Licensee also advised the Board that a typographical oversight happened in the description of Monitoring Station MEL-14 and provided the right description. Agnico Eagle did not propose within this request any changes to the Phase, Monitoring Parameters, or Frequency of the stations in Table 2.

The NWB information relevant to the proposed modifications is available from the Board's ftp site using the following link:

> ftp://ftp.nwb-oen.ca/registry/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-MEL1631%20Agnico/3%20TECH/6%20MODIFICATIONS%20(G)/

On December 21, 2016, parties were advised through correspondence to review the request and identify any concerns with the requested modification. The deadline for comments to the Board was set at January 21, 2017. Comments were received from Indigenous and Northern Affairs Canada (INAC) and Environment and Climate Change Canada (ECCC) on January 19, 2017 and January 20, 2017, respectively.

In its comments, INAC expressed *no concern with the proposed changes to the nomenclature of monitoring station (sample locations) in Table 2 of the current Water Licence No. 2AM-MEL1631*. However, INAC recommended *updating ALL the relevant management plans, relevant project drawings and allied documents to incorporate the proposed nomenclature for monitoring stations, and erecting updated signs at the Meliadine mine site* to display the revised monitoring station nomenclature following the Board's approval.

ECCC stated that *nomenclature changes to any existing stations that have already been recorded in monitoring databases using the current nomenclature must be managed to ensure the continuity of data for reporting and analysis.* ECCC requested that the Licensee *clarify how it will ensure the continuity of data for reporting and analysis from existing monitoring stations (i.e. sites that have baseline, reference and other existing datasets, including local lakes/drainage collection/containment ponds).*

On February 6, 2017, Agnico Eagle provided its responses to comments, stating that all relevant management plans, project drawings and allied documents will be updated to incorporate the proposed nomenclature for monitoring stations, and that updates will be provided within the 2016 Annual Report. Agnico Eagle also stated that *due to project development status, no samples have been collected yet at those stations. There are thus no references to those stations in monitoring databases.*

To prepare the Board's response as to whether the proposed changes do meet the requirements for a Modification as set out in Part G of the Licence, the NWB has reviewed the information provided with Agnico Eagle's December 21, 2016 request for Modification and the Licence for consistency with the proposed changes. The Board notes that the Table 2 – Monitoring Program is included within the Schedule I of the Licence. The Board's Decision April 15, 2016 Reasons for Decision Including Record of Proceedings for the Licence 2AM-MEL1631 states that:

> "…if the Board subsequently determines that an item in any of the Schedules requires

> revision in order to better reflect the intent and objectives of the Licence, the Board may at its discretion, and upon consulting and providing written notice to the Licensee and intervening parties, revise the Schedule. Unless the Board directs otherwise, such revision may not necessarily be considered as an "Amendment" to the Licence."

The Board's opinion is that proposed modification generally meets the requirements of Part G of the Licence, including having provided at least sixty (60) days' advance notice of the proposed Modifications. On the basis of the Board's review, the Board accepts that the changes as proposed in Agnico Eagle's December 21, 2016 letter do constitute modifications that are consistent with the existing terms and conditions of the Licence and has approved the Modification through the Board Motion No. 2016-A1-015, dated February 27, 2017, as required by Part G, Item 2 of Licence.

NWB does note that due to this modification of nomenclature for Monitoring Stations, relevant documents and plans should be updated. The Board requires that all relevant management plans be updated to reflect updated nomenclature for Monitoring Stations. All updated documents shall be included within the 2016 Annual Report. The Board also concurs with INAC's recommendation that updated signs of Monitoring Stations shall be erected at the Meliadine Mine Site.

The NWB would also like to highlight that any Licence terms and conditions referring to the Monitoring Stations' should be read with taking into account the enclosed modified Table 2.

If you have any questions regarding this matter, please contact the undersigned, Karén Kharatyan, Acting Manager of Licensing, at (867) 360-6338 or by e-mail to licensing@nwb-oen.ca. For inquiries related to technical matters, please contact David Hohnstein, the Board's Director of Technical Services, by email to David.Hohnstein@nwb-oen.ca.

Sincerely,

Karén Kharatyan
Acting Manager of Licensing

cc: Meliadine Distribution

MODIFIED TABLE 2 – MONITORING PROGRAM

Station Names	Description	Phase	Monitoring Parameters	Frequency
MEL-D-1 to TBD / MEL-D-1 to TBD	Dewatering: Water transferred from lakes to Meliadine Lake during dewatering of lakes	Construction	As defined in the Water Management Plan referred to in Part D, Item 12	Prior to discharge and Weekly during discharge
			Volume (m^3)	Daily during periods of discharge
MEL-SR-1 to TBD / MEL-SR-1 to TBD	Surface Runoff – runoff downstream of Construction areas at Meliadine Site and Itivia Site, Seeps in contact with the roads, earthworks and any Runoff and/or discharge from borrow pits and quarries	Construction, and Operations	As defined in the Water Management Plan referred to in Part D, Item 18 and Part I, Item 11	Prior to Construction, Weekly during Construction
			Group 1	Monthly during open water or when water is present upon completion
MEL-11 / MEL-01[(a)] (MEL-04 suggested by AEM in Application)	Water intake from Meliadine Lake	Construction, Operation, and Closure	Full Suite	Monthly during periods of intake
			Volume (m^3)	Daily during periods of intake
MEL-12 / MEL-02	*Water treatment plant (pre-treatment) coming from CP1, off the pipe and not in the pond*	*Construction (prior to release), Operations, and Closure*	*Group 1*	*Monthly during periods of discharge*
MEL-13 / MEL-03	Mixing zone in Meliadine Lake, Station 1; and MMER	Construction (prior to release),	Full Suite, Group 3 (MMER)	Monthly during periods of discharge

Station Names	Description	Phase	Monitoring Parameters	Frequency
(and AEMP Stations)	exposure stations for final discharge point within mixing zone	Operations, and Closure		
MEL-14 / MEL-04[(b)] (MEL-01 suggested by AEM in the Application)	Water treatment plant from CP-1 (post-treatment), end of pipe (before offsite release) in the plant before release.	Construction (upon effluent release), Operations, and Closure	Full Suite, Group 3	Prior to discharge and Weekly during discharge
			Volume (m^3)	Daily during periods of discharge
			Acute Lethality	Once prior to discharge and Monthly thereafter
MEL-15 / MEL-05	*Local Lake E-3*	*Operations, and Closure*	*Group 2*	*Bi-annually during open water*
MEL-16 / MEL-06	*Local Lake G2*	*Construction, Operations, and Closure*	*Group 2*	*Bi-annually during open water*
MEL-17 / MEL-07	*Local Pond H1*	*Construction, Operations, and Closure*	*Group 2*	*Bi-annually during open water*
MEL-18 / MEL-08	*Local Lake B5*	*Construction, Operations, and Closure*	*Group 2*	*Bi-annually during open water*
MEL-19 / MEL-09	*CP-2 Collection of natural catchment drainage from the outer berm slopes of the Landfarm and industrial pad*	*Construction, Operations, and Closure*	*Group 1*	*Monthly during open water or when Water is present*
MEL-20 / MEL-10	*CP-3 Collection of drainage from dry stacked tailings*	*Operations, and Closure*	*Group 1*	*Monthly during open water or when water is present*

Station Names	Description	Phase	Monitoring Parameters	Frequency
MEL-21 / MEL-11	*CP-4 Collection of drainage from WRSF1*	*Operations, and Closure*	*Group 1*	*Monthly during open water or when water is present*
MEL-22 / MEL-12	*CP-5 Collection of drainage from WRSF1 and WRSF2*	*Construction, Operations, and Closure*	*Group 1*	*Monthly during open water or when water is present*
MEL-23 / MEL-13	*CP-6 Collection of drainage from WRSF3*	*Construction, Operations, and Closure*	*Group 1*	*Monthly during open water or when water is present*
MEL-24 / MEL-14	*Seepage from the Landfill between the landfill and Pond H13*	*Construction, Operations, and Closure*	*Group 1*	*Monthly during open water or when water is present*
MEL-25 / MEL-15	Secondary containment area at the Itivia Site Fuel Storage and Containment Facility	Construction, Operation, Closure	Group 4, Volume (m^3)	Prior to discharge or transfer of Effluent
Monitoring Legend: Green - Regulated; Blue - General Aquatic; Red - Verification				
Regulated Monitoring occurs at Monitoring Program Stations in licences or regulations. It includes discharge limits that must be achieved to maintain compliance with water licence or regulation (i.e., Metal Mining Effluent Regulations). Enforcement action may be taken if discharge limits are exceeded.				
General Aquatic Monitoring is subject to compliance assessment to confirm sampling is carried out using established protocols, including quality assurance/quality control provisions, and addresses identified issues. General monitoring is subject to change as directed by an Inspector, or by the Licensee, subject to approval by the NWB.				
Verification Monitoring *Program to be carried out for operational and management purposes by Licensee. Monitoring parameters may vary between locations. Monitoring parameters and locations are internal for Licensee.*				

Notes: as per Metal Mining Effluent Regulations (MMER), samples for Effluent characterization and Receiving Environment must be collected quarterly or at least one month apart while Effluent is being deposited.

(a) MEL-** / MEL-** - Station New Names / Station Previous Names

(b) Sampling may not occur during break-up (June)

CP - Collection Pond; WRSF - Waste Rock Storage Facility.