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PROJECT: **NWB 2AM-MEL1631; NWB 2BB-MEL-1424; NIRB Project Certificate No. 6;**

DATE: **November 19, 2020**

SUBJECT: **Assessment of Agnico Eagle Responses to KIA Review of Meliadine 2019 Annual Report**

1. Introduction

The Kivalliq Inuit Association (KIA) have conducted a review of the 2019 Annual Report for the Meliadine Gold Project. This document was submitted by Agnico Eagle Mines Ltd. (Agnico Eagle) to address requirements within the following authorizations:

- NWB Type A water license 2AM-MEL1631;
- NWB Type B Water License 2BB-MEL1424;
- NIRB Project Certificate No. 6;
- KIA Permit KVCA07Q08;
- KIA Permit KVCA11Q01;
- KIA Production Lease KVPL11D01; and
- The Meliadine IIBA:

KIA has completed this review with the support of the following consultants:

- Hutchinson Environmental Sciences Ltd. (HESL), aquatic environment specialists
- Aurora Wildlife Research (AWR), terrestrial specialists, and
- GeoVector Management Inc. (GeoVector), geoscience specialists.

Our review comments were submitted in the document Review of Meliadine 2019 Annual Report submitted July 6, 2020. Agnico Eagle responded to those review comments on October 21st, 2020, resolving 11 of 32 issues, deferring 5 issues to the Water Licence Amendment application currently before the NWB and leaving 3 issues responded to yet remain unresolved. Agnico Eagle neglected to respond to 13 of the issues.

2. Technical Review

2.1 Aquatic Environment Technical Comments

Reviewer	#	Reference	Recommendation	Agnico Eagle Answer	KIA Response
HESL on behalf of KIA	1.	Meliadine Gold Project 2019 Annual Report Section 3.1.4	Agnico Eagle should elaborate on why they were unable to meet the TDS discharge criterion at MEL-14 resulting in the failure to complete drawdown of CP1 in 2019. We further recommend that Agnico Eagle take steps to address the identified problem to ensure future adherence to the 1,400 mg/L discharge criterion outlined in the water licence while still drawing down CP1 by the fall of each calendar year.	Agnico Eagle is currently evaluating TDS loading mechanisms to CP1 and is updating the water quality model to develop a sustainable water management strategy for CP1. Agnico Eagle refers KIA to the Water Licence Amendment Project currently under review by the Nunavut Water Board for additional details on these points.	Issue on going under the Water Licence Amendment currently under review by the NWB. We consider this issue resolved for the purposes of annual reporting.
HESL on behalf of KIA	2.	Meliadine Gold Project 2019 Annual Report Section 7.8.3 Climate; Appendix G-1 AEMP Report, Section 2.4.2 Numerical Water Quality Predictions in the FEIS, Section 3.2 Appendix I-1 Water Management Plan Sections 4.3 Meliadine Lake	The next iteration of the water quality and water balance models include sensitivity analysis to predict the implications of, at minimum: • Encountering higher concentrations of key parameters including TDS in contact water. • Encountering greater inflows of saline groundwater within the underground. • Wet year scenarios that exceed the 95 percentile as calculated from measurements collected at the ECCC Rankin A weather station. Note that wet year	The Water Quality and Water Balance Model was updated as part of the Water Licence Amendment. Agnico Eagle will include an adaptive management strategy as part of the review Water Quality Management and Optimization Plan to be issued as part of the Water Licence Amendment Process.	Issue not resolved. These issues were brought forth in the technical review of the Water Licence Amendment currently under review by the NWB.

Reviewer	#	Reference	Recommendation	Agnico Eagle Answer	KIA Response
		Diffuser Effluent Flow Rates, 5. Water Balance	scenarios should be calculated based on a period of record that includes measurements collected at the Rankin A weather station after the last iteration of the water balance model. We further recommend Agnico Eagle develop specific adaptive management strategies within the scope of the existing Water Licence and Project Certificate that can be used to mitigate potential impacts to the environment and circumvent the need for future project certificate and water licence amendments.		
HESL on behalf of KIA	3.	7.5.1 Context for Assessing Nutrient Enrichment in Meliadine Lake	Agnico Eagle should provide appropriate mine staff with additional guidance to help minimize nitrogenous blasting residues and subsequent loading to Meliadine Lake. Considerations should additional effort to keep blasting materials dry prior to ignition.	Even though only minor enrichment has occurred in the near field area relative to the rest of Meliadine Lake, Agnico Eagle will continue its efforts in the training of the mine staff regarding blasting practices and emulsion management.	Issue not resolved. The KIA continues to request Agnico Eagle work towards new initiatives with staff to minimize nutrient loadings to Meliadine Lake since current training approaches have still resulted in nutrient enrichment of the nearfield area of Meliadine Lake.
HESL on behalf of KIA	4.	7.5.2 Spatial and Temporal Trends	Agnico Eagle should include soluble reactive phosphorus or orthophosphate in the list of parameters assessed at both MEL-13 and MEL-14, and use those concentrations in addition to TP to evaluate the relationship	Orthophosphate (O-PO4) is included in the list of analytes (parameters) for the AEMP water samples analyzed by ALS and the MDMER/WL samples for MEL-14 and MEL-13 that are analyzed by Maxxam (BV lab).	Issue resolved.

Reviewer	#	Reference	Recommendation	Agnico Eagle Answer	KIA Response
			between nutrient concentrations and phytoplankton biomass.	Based on the evidence of minor enrichment in the near field area and no evidence that nutrient enrichment is increasing year-over-year, Agnico Eagle does not believe a more detailed investigation of TP bioavailability is warranted for the 2020 program. If future monitoring cycles notice a clear increase in phytoplankton biomass, conducting the TP bioavailability study would be reevaluated in the context of the Aquatic Effects Monitoring Program (AEMP).	
HESL on behalf of KIA	5.	Section 4.4.1 TSF Capacity	Please clarify the total volume of tailings and waste rock placed in the TSF in 2019.	The values for each month and the summary values in the text are correct: a total of 507,538 m3 of tailings material and 75,082 m3 of waste rock was placed in the TSF during 2019. A corrected Table 11 was provided.	Issue resolved.
HESL on behalf of KIA	6.	Section 6. Spill Management	Please provide the missing information on (i) how the number of non-reportable spills compares to previous years, (ii) what ultimate action was taken to manage the April 16 fuel spill, and (iii) what hazardous material was spilled on May 19 in Cell 6 TSF. This information should be provided in future Annual Reports.	(i) 25 reportable spills occurred in 2019, 22 reportable spills occurred in 2018 and 14 reportable spills occurred in 2017. 63 non-reportable spills occurred in 2019, 77 non-reportable spills occurred in 2018 and147 non-reportable spills occurred in 2017. The information on how the number of non-reportable spills compares	Issue resolved.

Reviewer	#	Reference	Recommendation	Agnico Eagle Answer	KIA Response
				to previous years will be provided in a table in the 2020 Annual Report. (ii) To manage the April 16th 2020 spill, approximately 20 absorbent diapers were used as well as absorbent sand was used to clean up the spill. (iii) Material spilled on May 19th 2020 was hydraulic oil.	
HESL on behalf of KIA	7.	Appendix F-3 Reportable Spills and Follow-up Reports	Please ensure consistency in reporting for all reportable spills, by providing government spill report forms for all spills, reporting numbers for all spills, and organizing spill reports in chronological order.	Agnico Eagle thanks KIA for comment 7 and will account for it in the 2020 Annual Report.	Issue resolved.
HESL on behalf of KIA	8.	Appendix F-3 Reportable Spills and Follow-up Reports	Please explain how lengthy delays in responding to and reporting spills to water will be avoided in the future. Please also discuss how effective the delayed clean-up efforts were at removing oil from lake B7.	Agnico Eagle conducted a follow-up investigation after this incident and determined more thorough pre-op inspections must be completed in order to identify equipment failures and avoid delays in noticing such spills. A new procedure was developed, and operator or drillers now have to fill in a maintenance form for cutting decantation bash and cutting recovery tub. Once maintenance is completed, this form is provided to the supervisor and then collected by health and safety representative.	Issue not resolved. Were any water samples sent to an accredited lab to ensure clean up measures were successful? If so, please provide the results. If not, please clarify what follow up measures are proposed to confirm the cleanup was successful.

Reviewer	#	Reference	Recommendation	Agnico Eagle Answer	KIA Response
				As per the spill follow-up report : #19-171, absorbent sheets and booms were changed and removed from drill site to finish cleaning of the site and drill 3 was removed once the final inspection was completed and showed no oil or sheen remained within the drill site.	
HESL on behalf of KIA	9.	Appendix F-3 Reportable Spills and Follow-up Reports	Please indicate what steps are being taken to avoid heat from drills melting ice on waterbodies where work is being conducted. Please describe how spill reporting requirements are communicated to contractors to avoid delays in reporting to regulatory authorities, and what follow-up is in place to ensure compliance.	Following the investigation mentioned in answer to KIA-8, various corrective measures were put in place, including reviewing toolbox meetings on importance of immediately cleaning up and reporting all spills, ensuring a more thorough pre-op inspection with a focus on avoiding potential spills; spill reports are available at all of the drills and the inspection protocol for the geology's surface diamond drill inspection was modified to include environmental measures and daily inspections of cutting bash and sludge pump to prevent overflow and spills.	Issue resolved.
HESL on behalf of KIA	10.	Appendix F-3 Reportable Spills and Follow-up Reports	Please provide more details on the in-house analysis conducted to determine that discharge could resume on September 24, including results of the in-house acute lethality tests.	As stated in the follow-up report No 2019-346, Agnico Eagle implemented various mitigation measures following the Exceedance. These measures included increasing the height on the intake pipe so as not to remobilize any settled sediment and adding Volatile Suspended Solids (VSS) to the	Issue not resolved. It is still unclear why tests were not performed by an accredited laboratory.

Reviewer	#	Reference	Recommendation	Agnico Eagle Answer	KIA Response
				effluent characterization to assess if the measured TSS included an organic component, which is approximated by VSS. The effluent characterization showed that the contributing factor to the elevated TSS was likely to be algae (suggested through VSS analysis), in which algaecide was used to mitigate this issue. The excess chlorine noticed in SP3 during the same period as the elevated TSS was, in fact, the result of filter issues in the treatment plant. Chlorine dosing is used in the Saline Effluent Treatment Plant (SETP) to treat underground water for ammonia, after which the residual chlorine is removed by Granular Activated Carbon (GAC) filters. Once elevated chlorine levels were observed, an investigation into the cause showed that these filters were compromised, reducing effectiveness of chlorine removal. After reception of the first failed toxicity test, the SETP was shut-down for the inspection of the carbon filters, as chlorine was a suspected contributor. Daily back-flushing of the carbon filters was implemented to improve effectiveness of chlorine removal.	

Reviewer	#	Reference	Recommendation	Agnico Eagle Answer	KIA Response
				In parallel, increased monitoring and reporting within the SETP and at Saline Pond 3 (SP3) was initiated for chlorine. Following the second failed toxicity test, discharge to sea ceased immediately and the investigation into the cause for toxicity continued. Improved chlorine control measures were implemented and included: emptying of SP3 back into the SETP feed source (i.e. Saline Pond 1 (SP1)), testing new reagents (sodium metabisulphite) for chlorine removal, testing the effect of SP3 residence time on chlorine degradation, and procurement of new filter media. Furthermore, total effluent chlorine concentration limits were set to trigger discharge stoppages. The recirculation of water from SP3 to SP1 resulted in a decreased ammonia concentration of the water feeding the SETP. Based on the previously mentioned mitigation measures, the implementation of more explicit effluent targets, and improved quality of SETP feed water source, a decision was made to bypass the inoperative chlorination process and resume discharge. Total chlorine concentrations were confirmed to be below the	

Reviewer	#	Reference	Recommendation	Agnico Eagle Answer	KIA Response
				aforementioned trigger limits before discharge was resumed on September 24, 2019. No further acute toxicity issues were observed in the subsequent tests of October 1, 2019 and October 7, 2019	
HESL on behalf of KIA	11.	Appendix H-8 Marine Mammal and Seabird Observer (MMSO) Report for the 2019 Shipping Season Sections 2.3 Seabirds and 3.2.2 Environmental Variables and Sighting Conditions Weather	Please discuss whether the assumption that environmental conditions are similar between different survey types (potentially separated by several hours and hundreds of kilometres) is valid. Agnico Eagle should improve the consistency of reporting during MMSO surveys to ensure environmental conditions are reported during each survey. Please explain how environmental variables are used in the analysis of monitoring data.	No response provided.	
HESL on behalf of KIA	12.	Appendix H-8 MMSO Report Section 3.2 Marine Mammals	Please explain how inconsistencies in monitoring are being addressed to avoid missing data, which makes the corresponding surveys unusable for analysis.	No response provided.	
HESL on behalf of KIA	13.	Appendix I-1 Water Management Plan, Appendix B – Freshet Management Plan, Section 3 Freshet Risk Management, 3.5.1 Camp Pads and Surroundings	Please discuss whether TSS measured in pooled water and snowmelt runoff triggers a management response. If so, please explain what level of TSS triggers action, what action is taken, and what mitigation measures are used to prevent recurrence of the problem.	When monitoring the transport of TSS into a water body, Agnico Eagle references the Maximum Average and Maximum Grab sample concentration limits for TSS (50 mg/L and 100 mg/L, respectively) indicated in Part D, Section 18 of the Type A	Issue resolved.

Reviewer	#	Reference	Recommendation	Agnico Eagle Answer	KIA Response
				Water License (2AM-MEL1631) as appropriate triggers for action. Management responses include the installation of silt reduction barriers such as straw and wood chip wattles, and an attempt to manage the source of the water inflow and TSS (e.g. additional snow removal in the affected area). If an area is frequently or heavily affected by the transport of TSS flowing into a water body, a more engineered approach such as the installation of culverts or check dams may be employed.	
HESL on behalf of KIA	14.	Appendix I-2 Groundwater Management Plan Section 3.4.2.1 Saltwater Treatment Plant - Desalination	Please explain why the SWTP did not meet its design capacity for treating groundwater in 2019. Please discuss how its performance will be improved in the future.	An internal audit was conducted in May 2019 to understand the root cause of the SWTP underperformance and showed the following: • The technology isn't as efficient as expected in Arctic climates; • In winter time, safety issues were brought forward due to the heat and generation of vapor; • The field TSS concentration negatively affects the system and increases the downtime period; • The sole filtration system mesh wasn't appropriate to contain salt efficiently; • The crusting phenomena inside the packing of the SWTP	Issue on going under the Water Licence Amendment currently under review by the NWB.

Reviewer	#	Reference	Recommendation	Agnico Eagle Answer	KIA Response
				was higher than expected and led to increased downtime period and intensive cleaning efforts. As short-term solutions, a microfilter was added to the bag filtration system, the packing was changed to Teflon, but the plant still experienced a major derating, which is approximately half than what was expected. Agnico Eagle considers the Waterline being the longer terms solution to manage saline water on site. This strategy is presented in the 2020 Groundwater Management Plan.	
HESL on behalf of KIA	15.	Appendix I-2 Groundwater Management Plan Section 3.4.2.4	Please clarify what is considered a significant difference between predicted and observed groundwater inflow rates. We recommend Agnico Eagle updates the groundwater inflow rates in the forthcoming iteration of the water balance model.	Agnico Eagle has appended the Site Water Balance and Water Quality Model submitted in the context of the Water Licence Amendment and the updated predictions of groundwater inflows to Tiriganiaq underground mine and refers KIA to the Saline Effluent Discharge to the Melvin Bay Project currently under review by NIRB for additional information to this effect.	Issue on going under the Water Licence Amendment currently under review by the NWB.
HESL on behalf of KIA	16.	Appendix I-3 Mine Waste Management Plan, Section 4 Waste Rock and Overburden	Please explain how the development of WRSFs 1 and 2 will comply with the 2019 *Fisheries Act* prohibition against the harmful alteration, disruption or destruction of fish habitat.	Agnico Eagle refers KIA to its Fisheries Screening Assessment and Offsetting Plan submitted to Fisheries and Ocean Canada for further information on this topic.	Issue resolved.

Reviewer	#	Reference	Recommendation	Agnico Eagle Answer	KIA Response
		Management, 4.2 Waste Rock Storage Facility Locations			

2.2 Terrestrial Technical Comments

Reviewer	#	Reference	Recommendation	Agnico Eagle Answer	KIA Response
Meliadine Gold Project 2019 Annual Report (April 2020)					
AWR on behalf of KIA	17.	S 10.3 AWAR	Agnico Eagle should clarify whether and when traffic volumes predicted in the FEIS will be attained, and if they won't be attained, what implications this has for assessment of impacts of the project on wildlife.	No response provided.	
Appendix H-7 2019 Terrestrial Effects Monitoring and Mitigation Program Annual Report					
AWR on behalf of KIA	18.	TEMMP	Agnico Eagle should include in the annual TEMMP systematic and detailed caribou observations and collar data, details of the frequency and type of monitoring and systematic records of the triggers that resulted in increased mitigation (e.g., work stoppages and road closures).	No response provided.	
AWR on behalf of KIA	19.	S 1.1 Background	Agnico Eagles should use descriptive statistics and trend analyses to report on natural variation and potential mine-related changes in wildlife.	No response provided.	
AWR on behalf of KIA	20.	S 2.0 Review of Impact Predictions	Agnico Eagle should conduct an evaluation of caribou movements through the mine site and AWAR to examine displacement/deflection of caribou and responses to	No response provided.	

Reviewer	#	Reference	Recommendation	Agnico Eagle Answer	KIA Response
			operations during migration. Data analysis should be conducted to test impact predictions, monitor impact thresholds and trends over time, and to support implementation of mitigation measures.		
AWR on behalf of KIA	21.	S 6.1 Wildlife Track Surveys	Agnico Eagle should clarify the objectives of the wildlife track surveys and present the results in a manner to enable examination of objectives and of spatial and temporal trends over time.	No response provided.	
AWR on behalf of KIA	22.	S 6.3 Incidents and Mortalities	Agnico Eagle should clearly indicate what waste and infrastructure management protocols are being implemented to reduce site attraction and fox mortality. Data on past rabies testing and current concerns are also warranted.	No response provided.	
AWR on behalf of KIA	23.	8.1 Caribou Behavior Monitoring	Agnico Eagle should provide data on distance from infrastructure, group composition or the proportions of the varying behaviours observed.	No response provided.	
AWR on behalf of KIA	24.	S 8.1.2.2 Collared Caribou Inventory	Agnico Eagle should compare the efficacy of collar data and ground observations as triggers for mitigating potential impacts for caribou movement through the mine site.	No response provided.	
AWR on behalf of KIA	25.	S 8.1.2.2 Collared Caribou Inventory	Agnico Eagle should provide figures of collar movements at broad and fine (individual collar trajectories) scales in Meliadine Annual Reports to aid in interpretation of monitoring and efficacy of mitigation.	No response provided.	

Reviewer	#	Reference	Recommendation	Agnico Eagle Answer	KIA Response
AWR on behalf of KIA	26.	S 8.2 Caribou Advisory	Agnico Eagle should provide detailed and clear reporting of the monitoring that triggered thresholds to intensify (or scale down) mitigation (e.g., collars, incidental observations, site and road surveillance monitoring) and at what distance from infrastructure that monitoring occurred.	No response provided.	
Appendix H-9: Raptor Report/Appendix B: Arctic Raptor Research Program, 2019 (no date)					
AWR on behalf of KIA	27.	Results	Agnico Eagle should: i. Provide a table of raptor nesting metrics; ii. Clarify peregrine falcon nesting sites and territories; and iii. Provide more information on raptor nesting metrics to better inform trends over time.	No response provided.	
Appendix I-9 – Air Quality Monitoring Plan, Version 2, April 2020; Appendix H-6 – 2019 Air Quality Monitoring Report, April 2020					
AWR on behalf of KIA	28.	Air quality reporting	Agnico Eagle should clearly detail dust suppression activities conducted on Meliadine roads. If these activities are not reported in the annual Air Quality Monitoring Report, then Agnico Eagle should clarify where these data are annually presented.	Agnico recognizes the KIA 's request and will include details on dust suppressant application (dates, locations, quantities, types) within subsequent annual Air Quality Monitoring Reports. A summary of available data for 2019 is provided here. In 2019, Agnico applied dust suppressant (water and calcium chloride) to service roads, haul roads, and the all-weather access road based on results of daily visual inspections during the snow-free season, in accordance with the accepted	Issue resolved.

Reviewer	#	Reference	Recommendation	Agnico Eagle Answer	KIA Response
				Dust Management Plan (in 2020, quantitative monitoring thresholds are being added to this management plan). Agnico applied calcium chloride flakes on site and along the AWAR and Bypass Road in July 2019. The rate of application was estimated at 0.31 kg/m2 which is within manufacturers' recommendations. Second applications were conducted in several locations along the AWAR as required, based on visual inspections. In addition to calcium chloride, water was used as a supplemental dust suppressant for area roads, with a total volume of 1,233 m3 applied in June, July and August. Results of dust monitoring along the AWAR in 2019 indicate that dust suppression and other best management practices in place to reduce rates of dust generation are effective, with rates of dustfall declining below regulatory guidelines for recreational areas between 25 m and 100 m from the road.	

2.3 Geophysical Technical Comments

Reviewer	#	Reference	Recommendation		
GeoVector on behalf of KIA	29.	Annual Report; 2020 Mine Work Plan, Section 2.2,	The KIA would appreciate confirmation that the tonnages to be extracted and milled in 2020	Agnico Eagle confirms numbers in tables 4.1, 4.2 and 4.3 of the 2020 Mine Plan (Appendix I-11) are correct.	Issue resolved.

Reviewer	#	Reference	Recommendation		
		page 17. Appendix I-11	are those described in Appendix I-11.	Wording from section 4 doesn't include open pit rock, which Agnico Eagle acknowledges could cause some confusion. In order to clarify matters, the second paragraph of section 4 could be worded as follows: *A total of 2 260 000 tons of rock will be extracted from underground and 4 500 000 tons for open pit over the year. The mine plan consists of hauling 528 000 tons of waste rock, 70 000 tons of marginal and 1 322 000 tons of ore to surface. Furthermore, 445 000 tons of tailings will be returned underground, and 343 000 tons of waste will remain underground as rockfill.*	
GeoVector on behalf of KIA	30.	Geotechnical Monitoring, Section 4.1, page 24. Appendix B-3, Section 3.0 (Dike Repair / Maintenance)	The KIA would appreciate if the complete documentation of all the risk assessments and workshops be made available and included in the 2019 Annual Report for review.	Information related D-CP1 has been reviewed with Parties during the Emergency Amendment Application Process and the Nunavut Water Board (NWB) has granted Agnico Eagle an Emergency Amendment for the 2020 Discharge Season. The Water Licence Amendment Application currently under review by NWB address the long-term management strategies for CP1. Agnico Eagle has included information on	We will address these concerns through the water licence amendment process.

Reviewer	#	Reference	Recommendation		
				different alternatives to avoid emergency situation related to D-CP-1 in the application package.	
GeoVector on behalf of KIA	31.	Geochemical Monitoring, Section 4.2, page 28.	The KIA would appreciate confirmation of the correct values.	Table 1 provides the summary results for waste rock, whereas Table 3 provides the summary for filtered tailings.	Issue resolved.
GeoVector on behalf of KIA	32.	Closure, Section 8.2, page 76.	The KIA would appreciate any information on the possible schedule for these discussions.	Agnico Eagle will liaise with KIA directly on this matter.	Issue resolved.

3. Closing

KIA appreciates the opportunity to respond to Agnico Eagles answers on our original review of the 2019 Annual Report for the Meliadine Gold Project. Please contact Luis Manzo, Director of Lands, should you require more information.

Regards,

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