



NIRB File Nos.: 03MN107 & 16MN056
NWB File Nos.: 2AM-MEA1530 & 2AM-WTP1830

December 3, 2020

Nancy Duquet Harvey
Environment Superintendent
Agnico Eagle Mines Limited
Meadowbank Division, Suite 540
Baker Lake, NU X0C 0A0

Sent via email: nancy.harvey@agnicoeagle.com

Re: The Nunavut Impact Review Board's 2019-2020 Annual Monitoring Report for the Meadowbank Gold Mine and the Whale Tail Pit Projects with Board Recommendations

Dear Nancy Duquet Harvey:

The Nunavut Impact Review Board (NIRB or Board) is hereby releasing its *2019-2020 Annual Monitoring Report for Agnico Eagle Mines Limited's Meadowbank Gold Mine Project (NIRB File No. 03MN107) and the Whale Tail Pit Project (NIRB File No. 16MN056)* (the Monitoring Report) and the NIRB's Assessment of Compliance Status with the Meadowbank Gold Mine and Whale Tail Pit Project Certificates No. 004 and No. 008, respectively (Appendix I and Appendix II). The NIRB is responsible for post-environmental assessment monitoring of projects in accordance with Part 7 of Article 12 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)* and s. 135 of the *Nunavut Planning and Project Assessment Act*, S.C. 2013, c. 14, s. 2 (*NuPPAA*) and the associated Project Certificates.

This report provides findings that resulted from monitoring of the Meadowbank Gold Mine and the Whale Tail Pit Projects from October 2019 to September 2020.

By way of a motion carried during its regular meeting held in October 2020, the Board has issued the following recommendations to assist Agnico Eagle Mines Limited (Agnico Eagle or the Proponent) in achieving compliance with the Meadowbank Gold Mine Project Certificate No. 004, Amendment 003, the Whale Tail Pit Project Certificate No. 008, and Whale Tail Pit Project Certificate No. 008, Amendment 1. These recommendations ensure that the NIRB has all the information necessary to adequately discharge its mandate with respect to provisions within Section 12.7 of the *Nunavut Agreement* and s. 135 of the *NuPPAA* as they pertain to both the Meadowbank Gold Mine and the Whale Tail Pit Projects.

RECOMMENDATIONS FOR THE MEADOWBANK GOLD MINE PROJECT

All materials pertaining to the NIRB's ongoing monitoring program for the Meadowbank Gold Mine Project can be accessed online from the NIRB's online public registry at www.nirb.ca/project/125253.

Suppression of surface dust – Term and Condition 74

Please refer to the discussion under the Whale Tail Pit Project – [Term and Condition 2](#) below, for the NIRB's comments and recommendations on this topic.

Incinerator stack testing and secondary chamber temperatures – Term and Condition 72

Within the *2018 Annual Report*, Agnico Eagle stated that there were eight (8) times during 2018 where the temperatures did not reach 1,000°C in the secondary chamber, noting this represents 2.36 % of total burn out of the 339 days the incinerator was in operation for the 2018 year. The *2019 Annual Report* states that there were 60 times during 2019 where temperatures did not reach 1,000°C in the secondary chamber, noting this represents 19 % of the total burn out of the 319 days the incinerator was in operation for the 2019 year. Agnico Eagle noted that the increase is significant and clearly shows the need to reset operating conditions of the incinerator. The Proponent links the underperformance of the incinerator to repetitive burn malfunctions and implemented a procedure to manage load capacities, as well as completed adjustments on the programming sequence. While the Proponent has also suggested other modifications to improve overall performance, there is no detail provided for the specific actions or plan that would be implemented, for the NIRB to have confidence that the incinerator will be able to consistently maintain the required burn temperature in every sequence.

The NIRB also notes a previous comment from Environment and Climate Change Canada (ECCC) (February 2015) regarding low incineration temperatures, which stated:

“The EC Technical Document for Batch Waste Incineration recommends that temperature in the incinerator secondary chamber remain above 1000°C to ensure complete combustion. From the Proponent's Daily Report Logbook, for nearly one third of the burn cycles the secondary chamber temperature was reported as less than 1000°C. The Proponent should be more vigilant to ensure that sufficient temperatures are maintained to minimize the release of contaminants to the environment.”¹

On September 14, 2020 the NIRB followed up with ECCC with respect to the incinerator stack testing frequency and the secondary chamber temperatures reported by the Proponent.² On

¹ Public Registry ID: 289281

² Public Registry ID: 331660

September 24, 2020 the NIRB received a response from ECCC which provided guidance and advice to the NIRB on these issues.³ With respect to incinerator temperatures, ECCC notes the decreasing ability to maintain appropriate temperatures in the secondary chamber and points to the Canadian Council of Ministers of the Environment *National Guidelines for Hazardous Waste Incineration Facilities* which recommend that temperatures in the secondary chamber remain above 1,000°C to ensure complete combustion of waste and minimize emissions of dioxins and furans.

Considering ECCC's guidance and comments with regards to incinerator temperatures, and the increasing trend of underperformance of the incinerator in 2018 and 2019, the NIRB recommends the following:

Recommendation 1: The Proponent shall provide the Board with a detailed action plan for the modifications to the incinerator that are necessary to improve overall performance and to maintain appropriate temperatures in the secondary chamber.

The action plan shall include specific steps and timelines for implementation and be provided to the Board within 60 days of the issuance of this recommendation.

Within its' February 2015 correspondence, the ECCC noted that the Canada Wide Standards (CWS) for dioxins and furans states that "...where five years' data has been accumulated with all results reported below the Level of Quantification (emission standard), the stack testing frequency may be revised to a biennial schedule" so long as all subsequent test results remain below the emission standards."

On August 19, 2020 The NIRB received correspondence from the Proponent, requesting a reduction to stack testing frequency from annual to biennial, based on five (5) previous years of results for dioxins and furans, and mercury below the emission standards. Although the request was initially made to ECCC, in its response to the Proponent it stated that annual stack testing is a requirement of the Term and Condition 72 of Project Certificate No. 004.⁴ Subsequently, ECCC noted that advice related to the Canada Wide Standards is provided to the NIRB as guidance as ECCC does not regulate air quality emissions at this time.

ECCC provided further clarification on the Canada Wide Standards for dioxin and furans and for mercury in response to the NIRB's September 14, 2020 request. ECCC noted with respect to dioxins and furans, that considering one (1) test out of three (3) in 2016 did not meet the Canada Wide Standards, and noting that the Canada Wide Standards for dioxins and furans leave room for interpretation by the jurisdiction, that if the individual stack tests were used instead of the average of the three (3) tests as reported by the Proponent, that the 2016 results could be treated as the most

³ Public Registry ID: 331661

⁴ Public Registry ID: 330760

recent exceedance. In addition, with regards to the Canada Wide Standards for mercury, ECCC notes the Canada Wide Standards state the following: “*Larger facilities will be subject to annual stack testing to verify compliance with the limit...*”. Considering the Meadowbank facility meets the mercury Canada Wide Standard definition for a larger facility (one that handles greater than 120 tonnes of waste per year), there would be a requirement for annual stack testing for mercury emissions.

Based on the guidance provided by ECCC, the Canada Wide Standards for dioxins and furans, the Canada Wide Standards for mercury, and the requirements of Term and Condition 72, the NIRB does not consider it appropriate at this time for the Proponent to reduce stack testing frequency to a biennial schedule.

Recommendation 2: The Proponent shall continue to conduct annual stack testing of the Meadowbank incinerator, and report the results of stack testing within future annual reports to the NIRB and regulators as per the requirements of Term and Condition 72 of the Project Certificate No. 004, Amendment 003.

RECOMMENDATIONS FOR THE WHALE TAIL PIT PROJECT

All materials pertaining to the NIRB’s ongoing Monitoring program for the Whale Tail Pit Project can be accessed online from the NIRB’s online public registry at www.nirb.ca/project/125418.

Continuous monitoring for nitrogen dioxide – Term and Condition 1

Term and Condition 1 of the Project Certificate No. 008, Amendment 001 requires the Proponent to implement continuous monitoring of nitrogen dioxide (NO₂) downwind of mining activities as part of its’ air quality monitoring program. As stated in the project certificate, the intent of the term and condition is to allow for comparison with the relevant standards, including the Canadian Ambient Air Quality Standards, and should be interpreted in accordance with the Reconsideration Report and Recommendations for the Whale Tail Pit Expansion Project Proposal (October 18, 2019). Although the amended Project Certificate did not come into effect until February 19, 2020, Agnico Eagle had reported within its’ *2019 Annual Report* on the location proposed for the NO₂ continuous monitoring site to be constructed in 2020, and indicated through the 2020 Site Update Report that it intends on installing the monitoring location by the end of 2020.

As noted by ECCC, the proposed location is approximately 30 kilometres from the Whale Tail Pit site and therefore it is unlikely that the project activities will influence the ambient NO₂ measured at this location. Additionally, the presence of a diesel generator 200 metres upwind of the proposed location could influence the measurements. ECCC has recommended that the NO₂ continuous monitoring site be: located at least within 10 kilometres of project activities to allow for effective comparison with FEIS predictions; that the diesel generator required for power of the site be located to avoid influence of emissions; and that the continuous monitoring location be co-located

with a passive NO₂ sampler. While the NIRB acknowledges Agnico Eagle's response, indicating its position that the monitoring location is appropriate and will provide regional NO₂ concentrations not unduly influenced by a single facility, the NIRB notes this perspective differs from the intent of the term and condition, as described by the Board within its Reconsideration Report and Recommendations:

"To ensure that monitoring methods accurately capture potential increases to air emissions that could have effects on workers, wildlife or the terrestrial environment, the Board recommends a revision to the terms and conditions requiring the following (see Section 8.2 for the complete wording of the recommended terms and conditions):

- *Continuous nitrogen dioxide monitoring for the purposes of comparing the results to the FEIS Addendum predictions and relevant standards.*

*As commented on by Intervenor, the Board agrees that for the Expansion Proposal the relevant standards for air quality include the Canadian Ambient Air Quality Standards."*⁵

The NIRB also reminds the Proponent of ECCC's recommendation during the Public Hearing, in part which stated:

*"...to include continuous nitrogen dioxide monitoring for the purposes of comparing the monitoring results with the levels predicted in the impact assessment and relevant guidelines."*⁶

It is clear from discussion at the Public Hearing for the Whale Tail Pit Expansion Project and the Board's decision that the intent of the term and condition was to not only allow for comparison of monitoring results with the Canadian Ambient Air Quality Standards, but also with the FEIS Addendum predictions. The Board considers that it is appropriate to locate the continuous NO₂ monitoring site at an appropriate distance downwind of the Whale Tail mining activities to capture potential increases to air emissions as a result of the Expansion Project activities. The NIRB also notes that discussion at the Public Hearing touched on the co-location of a passive sampler with the continuous NO₂ monitoring site, to assist in validating measurements from passive samplers. Additionally, the revised Term and Condition 1 which added the requirement for continuous NO₂ monitoring, does not negate the other requirements of the term and condition, specifically 1.b, which requires the Proponent to demonstrate through active and passive monitoring that concentrations of NO₂ (among other potential contaminants) remain within predicted levels.

⁵ NIRB Public Registry www.nirb.ca/project/125418; Document ID No.: 327165

⁶ M. Pinto, Environment and Climate Change Canada, NIRB Public Hearing File No. 16MN056 Transcript, August 27, 2019, p. 336-337, lines 25-26 and 1-2.

Proper data collection is essential in order to achieve the term and condition, assist in the determination of predicted emissions, and meet the Canadian Ambient Air Quality Standards.

Recommendation 1: The Board requests the Proponent consult Environment and Climate Change Canada to determine an appropriate location for the continuous NO₂ monitoring and associated passive monitoring downwind of mining activities.

The Proponent shall report to the NIRB on the results of its consultations with Environment and Climate Change Canada and the determined continuous NO₂ monitoring location within its 2020 Annual Report to the NIRB.

Suppression of surface dust – Term and Condition 2

Term and Condition 2 of Project Certificate No. 008 for Whale Tail Pit requires Agnico Eagle to verify commitments to the utilization of dust suppressants along not only the all-weather access road (AWAR), but the Whale Tail haul road (WTHR) and any other roads and trails associated with the Whale Tail Pit Project. Term and Condition 2 also stipulates that the Monitoring Plan (Air Quality and Dustfall Monitoring Plan) shall include a description of the type of suppressant to be utilized and the frequency and timing of application to be made throughout the various seasons of road use. Regarding this issue in previous years, the Board has noted that dust suppressants are not and have not been applied to the entire length of the AWAR as intended by Term and Condition 74 of the Project Certificate No. 004.

The NIRB acknowledges that Agnico Eagle applied dust suppressant once during the summer 2019 on the WTHR at three (3) locations coinciding with the dustfall monitoring transects. The monitoring results from the WTHR in 2019 indicate that the majority of samples exceeded Final Environmental Impact Statement predictions within 100 m of the Road, and occasional exceedances occurred for one (1) location at 300 m from the Road. The Board's 2019 Recommendation #1 required the Proponent to update its Air Quality and Dustfall Monitoring Plan to include dust suppression application on the entire length of all surface/project roads used by Agnico Eagle for the Meadowbank Gold Mine and Whale Tail Pit Projects, and to include timelines and triggers for adaptive management. In response, the Proponent committed to provide the updated plan in the *2019 Annual Report* that would “*clearly include all the recommendations/commitments received from both operation and permitting process*”.

After review of the Air Quality and Dustfall Monitoring Plan, Version 5, 2020, it does not appear that the Proponent has updated the plan as committed. The dust suppressant locations for the AWAR remain consistent with previous years (five (5) sections totalling <10% of the AWAR length). The plan also does not discuss any commitments to apply dust suppressant along the entire length of the WTHR, but rather relies on visual observations of the Agnico Eagle road supervisor. The NIRB is encouraged that Agnico Eagle has included numeric thresholds based on Alberta

Ambient Air Quality Guidelines to determine when mitigation measures need to be initiated based on results of dustfall sampling, however the numeric thresholds are based on 30 day averages.

It is unclear how mitigation measures such as dust suppressant could be applied in a timely manner to prevent impacts occurring given this time period for monitoring results to become available (collected twice per summer). The NIRB highlights that there is no clear commitment to the utilization of dust suppressant along the entire length of all project surface roads within the monitoring plan. During the community information session that the NIRB hosted in Baker Lake community members expressed concern regarding the lack of dust control along the Awarik Road both for travel and how much dust is observed on the snow. One commenter noted that the primary wind direction is from the northwest which means dust from the road may be blowing southeast to areas where community members collect ice and water regularly. Therefore, the Proponent has not fully met the requirements of Term and Condition 2 or 74 of the Whale Tail Pit or Meadowbank Gold Mine Project Certificates, as dust suppression techniques were not applied along the entire length of all project surface roads. The Proponent has not demonstrated that it intends to fulfill the requirements of the terms and conditions, nor of the commitments made through the associated assessment processes.

Recommendation 2: The Proponent shall revise the Air Quality and Dustfall Monitoring Plan, to reflect the requirements of the Term and Condition 2 of Project Certificate No. 008. The Proponent shall also clarify to the Board how the numeric thresholds proposed will be able to trigger an adaptive management response in time to prevent impacts from occurring.

The revised Air Quality and Dustfall Monitoring Plan and requested clarification shall be provided to the NIRB within 60 days of the issuance of this recommendation.

Recommendation 3: Additionally, the Proponent shall provide an action plan to explore the development of a community-based monitoring program, in consultation with the Hamlet of Baker Lake and the Baker Lake Hunters and Trappers Organization. The purpose of the program would be to ensure that community concerns regarding dust produced by Project roads are incorporated directly into the monitoring and implementation of mitigation measures.

The requested action plan shall be provided to the Board within 60 days of the issuance of this recommendation.

Monitoring for methylmercury in fish tissue – Term and Condition 63

Term and Condition 63 requires the Proponent to conduct studies that monitor methylmercury concentrations (including in fish tissue), with an assessment of potential risk to people from consumption of fish.

In the *2019 Annual Report*, the Proponent stated that mercury and methylmercury were analysed as part of its Mercury Monitoring Plan for Whale Tail South Area (Appendix A, CREMP Addendum). 2019 monitoring results indicate a substantial (~40 times) increase to total mercury, and similar increases to levels of methylmercury across all water sampling stations. The Proponent noted that it is working to verify the accuracy of the 2019 results and further sampling in 2020 will assist in determining the cause.

It is also noted that no fish tissue sampling occurred in 2019 and the Proponent noted that risk-based analyses would be implemented should monitoring results exceed model predictions for fish tissue concentrations. It is also noted the current Mercury Monitoring Plan does not include an assessment of risk to human health from the consumption of fish on an ongoing basis.

Similar to Crown-Indigenous Relations and Northern Affairs Canada's Recommendation #9 on the Proponents' *2019 Annual Report*, the NIRB notes that given the spike in mercury and methylmercury concentrations in the Whale Tail Lake south basin area, the absence of fish tissue sampling in 2019, and the lack of risk assessment for human health from the consumption of fish in the Project area, that potential impacts may not be monitored appropriately. Additionally, the Proponents conclusion that the approach is supported by low rates of fishing by local residents in the Project area, is not respectful of the substantial concerns voiced by land users during the NIRB's Review process for the Whale Tail Pit Project.

Recommendation 4: The Board requests that the Proponent report on the accuracy of measured mercury concentrations as soon as the outcome is available. Should the Proponent conclude that the spike in mercury concentrations is accurate and exceeds Final Environmental Impact Statement predictions, the Proponent shall conduct and provide the human health risk assessment within its' 2020 Annual Report.

Recommendation 5: Agnico Eagle shall clarify why small-bodied fish (slimy sculpin and/or ninespine stickleback) tissue sampling did not occur in 2019 in accordance with the Mercury Monitoring Plan (Version 2, March 2019) and why an assessment of risk to human health from the consumption of fish is not included in the Mercury Monitoring Plan.

The Proponent shall provide its response within 60 days of issuance of this recommendation.

Helicopter traffic monitoring and reporting

Commitment #20 from the Public Hearing for the Whale Tail Pit Project states the following:

"The Proponent shall revise the Project's TEMP to include a program to monitoring and report helicopter traffic associated with the Whale Tail project (including existing Meadowbank infrastructure) and all associated exploration activities so

that the spatial scale and intensity of this activity can be documented. This should include the collection and analysis of GPS track logs for all helicopter flights contracted by the Proponent.”

Similar to the Government of Nunavut’s (GN) comment and Recommendation #1 on the Proponent’s 2019 Annual Report, the NIRB did not find information in the Terrestrial Ecosystem Management Plan (TEMP) (2019 Wildlife Monitoring Summary Report) on helicopter traffic as per the commitment. As written in Section 3.4 of the Project Certificate No. 008, the Proponent will fulfill all commitments made during the Final Hearing, as the Board’s decision relied on that commitment to ensure that concerns of parties and the public were addressed, and that potential impacts were appropriately monitored and mitigated. Further, Term and Condition 28 states that the TEMP shall demonstrate consideration for all relevant commitments made by the Proponent throughout the NIRB’s Review of the Whale Tail Pit Project. As further noted by the GN, the Proponent has neglected to fulfill this commitment in 2018 and 2019 through three (3) subsequent revisions of the TEMP. The Board is aware that discussions have been occurring via the Terrestrial Advisory Group, and that Agnico Eagle provided clarification for its lack of monitoring being due to “*infrequent and sporadic use of helicopters*”. The Board is concerned that helicopter traffic is not being monitored as required and that helicopter traffic is going undocumented, leading to parties inability to verify the Proponent’s assertion of infrequent helicopter traffic or determine if any potential impacts to wildlife are occurring.

Recommendation 6: The Board recommends the Proponent work with the Government of Nunavut and the Terrestrial Advisory Group, as per Term and Condition 27 and 28, of the Project Certificate No. 008 to revise its Terrestrial Ecosystem Management Plan to incorporate the requirements of Commitment #20. The Board expects that the revisions will include the program to monitor and report helicopter traffic associated with the Whale Tail Pit Project, and that this information will be reported as part of future Wildlife Monitoring Summary Reports.

The Proponent shall provide the requested updates within the next revision of the Terrestrial Ecosystem Management Plan, as approved by the Terrestrial Advisory Group members, and shall report on the implementation of this recommendation within the 2020 Annual Report.

If you have any questions or require further clarification regarding these recommendations in particular or relating to the NIRB’s monitoring programs for the Meadowbank Gold Mine or Whale Tail Pit Projects, please contact the undersigned directly at ereimer@nirb.ca or Emily Koide, Technical Advisor I, at ekoide@nirb.ca.

Sincerely,



Erin Reimer
Technical Advisor I
Nunavut Impact Review Board

cc: Meadowbank Distribution List
Whale Tail Distribution List

Enclosure (1): The Nunavut Impact Review Board's *2019-2020 Annual Monitoring Report for the Meadowbank Gold Mine Project (NIRB File No. 03MN107) & Whale Tail Pit Project (NIRB File No. 16MN056)*