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ᐅᓐᐱᓐᐅᓐᐅᓐᐅᓐ Rankin Inlet, Nunavut
X0C0G0

To: Leah Klaassen and Emily Koide
Monitoring Officers,
Nunavut Impact Review Board

From: Luis Manzo, Director of Lands, Kivalliq Inuit Association

Date: June 26, 2024

◁⁹Δ▷^c

Arviat

$${}^{\circ}bL\sigma^{\circ}C\Delta^{\circ}b$$

Baker Lake

Δ⁶-3-oxo-Δ⁵

Chesterfield
Inlet

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Coral Harbour

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Rankin Inlet

0954456

Whale Cove

**Re: Review of Agnico Eagle Mines Limited's Meadowbank Complex 2023 Annual Report; NIRB
File No.: 03MN107 & 16MN056**

1. Introduction

The Kivalliq Inuit Association (KivIA) has conducted a review of the Agnico Eagle Mines Ltd. (Agnico Eagle) 2023 Annual Report for the Meadowbank Complex Gold Project, including both the Meadowbank and Whale Tail sites. Agnico Eagle's submission consisted of the Meadowbank Complex 2023 Annual Report supported by 57 appendices. These documents were submitted by to address requirements within the following authorizations:

Meadowbank

- NIRB Project Certificate No. 004;
- KivIA Production Lease KVPL08D280;
- KivIA Quarry Lease KVCA06Q11; and
- KivIA Right of Way KVRW06F04

Whale Tail

- NIRB Project Certificate NO. 008 Amendment 001;
- KivIA Production Lease KVPL17D01;
- KivIA Quarry Lease KVCA15Q01, KVCA15Q02, KVCA18Q01; and
- KivIA Right of Way KVRW15F01.

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

- Anne Gunn, Wildlife Biologist;
- Prairie Scientific Inc. (PSI; Matt McDougall), aquatic environment specialist; and
- GeoVector Management Inc. (GeoVector; Alan Sexton), geoscience specialist.

Full technical review comments and recommendations are provided in Section 2 of this technical memorandum.



(867) 645-5725 1-800-220-6581



 (867) 645-2348



 info@kivalliginuit.ca



www.kivalliqinuit.ca



2. Technical Review

2.1 Terrestrial Technical Comments (reviewer: AWR)

Comment No. KivIA 1: Defining mitigation effectiveness
Reference: Appendix 39 Part 2, S. 8.0
<p>1. Gap/Issue</p> <p>The minimal progress toward measuring mitigation effectiveness is a significant gap.</p> <p>2. Disagreement with the Annual Report conclusion</p> <p>The 2023 monitoring report does not summarize the monitoring data to measure mitigation effectiveness.</p> <p>3. Reasons for disagreement with the Annual Report conclusion</p> <p>T&C 29 requires the Terrestrial Ecosystem Management Plan to include “specific triggers for mitigation and adaptive management intervention.” Specific triggers for adaptive management would include measuring if mitigation was effective or ineffective and whether mitigation has to be increased or decreased. T&C 30’s objective is to verify the effectiveness of the caribou protection measures within the Terrestrial Ecosystem Management Plan. While the currently TEMP vs.7 has monitoring thresholds to trigger mitigation, it has almost no detail on how to measure if mitigation is effective or needs to be changed.</p> <p>Auditing the effectiveness of mitigation is annually required (Appendix 39, Part 1, S.1.8). Testing the efficacy of mitigation is an objective for the Caribou Management Decision Tree (Appendix 39, Part 1, S.2.2).</p> <p>Previously, the KivIA had requested additional data with respect to a definition and study designs for mitigation effectiveness in their review of the 2022 Annual Report. Agnico Eagle’s response was to defer the topics to the TAG but this has not yet happened except for the ‘letting the leaders pass’ pilot project. To support progress toward measuring mitigation effectiveness while being sensitive to demands on the TAG’s time, the KivIA has re-examined its previous requests to be more specific (see KivIA comments 1, 2 and 3).</p> <p>The TAG is currently reviewing draft TEMP 8 (Appendix 39, Part 1, S.1.8). An expanded understanding of how to measure mitigation effectiveness will be useful to TAG for the TEMP review. Mitigation effectiveness should be defined with thresholds and include how much the level of disturbance during mitigation that has to be decreased (such as traffic frequency) and how the caribou responses themselves will be decreased (such as a daily cap of how foraging time is lost to disturbance). Consideration is needed for how the effectiveness will be sensitive to the caribou spring and fall life- cycles.</p>
Conclusion/Request





The KivIA requests that Agnico Eagle provide a table defining mitigation effectiveness and proposing thresholds for each type of caribou mitigation to measure whether mitigation is effective. The table and any supporting rationale would be provided to the TAG for review in 2024.

Comment No. KivIA 2: How have the road closures changed traffic frequency?

Reference: Appendix 39 Part 3, Section 8.0

1. Gap/Issue

The issue is the incomplete information for traffic frequency during road closures and partial closures.

2. Disagreement with the Annual Report conclusion

Agnico Eagles responded to KivIA's 2023 request for daily traffic frequency for days when the roads are open, partially closed and closed, by saying that it was difficult but would be attempted for the 2023 Annual Report.

3. Reasons for disagreement with the Annual Report conclusion

The 2023 Annual Report did not have daily traffic frequencies during the closures or partial closures except for daily convoy frequency: convoy frequency is mostly daily with 118 convoys between 3 April and 7 December involving 644 vehicles (App. 39, Part 1, Table 3.16).

Agnico Eagle reported monthly traffic (Appendix 39, Part 1, Figure 3.5) and a daily average traffic for WTHR which does suggest that Agnico Eagle has daily traffic at least for the WTHR (181 vehicles/day; Annual Report Table 11-5). Traffic frequencies in April and November (peak migration) were reduced by between 50 and 75% compared to the preceding month (based on Appendix 39, Part 1, Tables 3-14 and 3-15). Although the traffic is reduced in April and November, it still averages between 16 and 165 mine vehicles/day and the latter higher rate exceeds the 5 vehicles/h. The rate of 5 vehicles/h was measured as a threshold for caribou responses for the Central Arctic herd¹. Additional to the mine traffic, the AWAR's gatehouse reports monthly non-mine use; annual non-mine use has doubled since 2003 to total 3143 passages in 2023 (Annual Report Table 11.12).

The KivIA's concern about traffic frequency is to understand whether caribou are more likely to cross when there are gaps in traffic and how long the gaps have to be for the caribou to cross. In other words, how effective are partial road and 24h closures for caribou to cross? The first step is to measure how the road closures reduce daily traffic and create hourly and daily gaps in traffic frequency.

¹ Severson, J.P., T.C. Vosburgh, & H.E. Johnson (2023). Effects of vehicle traffic on space use and road crossings of caribou in the Arctic. *Ecological applications* (2023): e2923.





The KivIA requests descriptive statistics and a tabulation of daily traffic during closure, partial closure and open road periods.

Reference: Annual Report S. 8.18.1.8; p. 346. Appendix 39 Part 6, Appendix K

Effectiveness of conveying in relation to caribou disturbance is not proven from the analysis of caribou behavioural monitoring

The statement in the Executive Summary (Appendix 39, Part 6, Appendix K) that “Findings from these analyses suggest that the use of convoys to consolidate multiple essential vehicles into a single disturbance event is an effective mitigation measure for reducing disturbance to caribou.” Is not explicitly supported by the analyses.

The KivIA appreciates that Agnico Eagle undertakes extensive road closures in 2023 (80 days AWAR and 33 WTHR 24 h closures (App. 39, Part 1, S. 3.6.6.)), but the KivIA remains concerned about what we know about caribou behavior during the road closures.

We know that, overall, when most caribou encountered a road, the road was closed but this depended on caribou numbers (Appendix 39, Part 1, Table 3.13). When caribou numbers were lower, from only half to three-quarters of the caribou encountered a closed road (AWAR 90.5% +/-5.6 and WTHR 74 % +/- 10.4 SE from Table 3.13). During the behavior monitoring, about half the bouts included a disturbance and whether the road was closed or not did not statistically affect caribou behavior. Even when the road is closed, there are convoys and other traffic.

The KivIA's concern is that Agnico Eagle did not analyse responses to convoying relative to being effective mitigation. Two issues are that firstly, there are no criteria to establish what constitutes and defines 'effective' mitigation and, secondly, there is no description of the duration of the caribou's exposure to the length of the convoy (number of vehicles and their spacing distance) and the caribou's response.

In raising this issue, the KivIA is at pains to point out that the behavioral monitoring and analyses are informative about how caribou groups respond to disturbances along the roads. The statistical analyses are clearly explained and could be a basis for follow-up analyses for adaptive mitigation and measuring mitigation effectiveness. The analyses acknowledge caution in interpreting the analyses as the high number of variables and individual variability in behavior (Appendix 39, Part 6, Appendix K, p.36). The KivIA recognizes that sample size may be a limitation to further analysis and thus to increase statistical power, grouping bedding and foraging into undisturbed and alert, walking and trotting into disturbed categories may help. Foraging and





<p>Agnico Eagle does not discuss whether the criteria of caribou on both sides of the road as a crossing event is too stringent.</p> <p>The remote camera program was briefly discussed at the November 2022 TAG meeting although without recommendations (TAG meeting no. 11 minutes).</p> <p>T&C 29 requires the Terrestrial Ecosystem Management Plan to include “specific triggers for mitigation and adaptive management intervention.” The KivIA disagrees with Agnico Eagle’s conclusion that that “The remote camera program is unlikely to contribute to adaptive management . . . “. But the KivIA does agree that the remote camera monitoring “could potentially provide insight into time between vehicle traffic and caribou crossing events” and we suggest that information would be a useful contribution to adaptive management to determine the duration of gaps between vehicles to increase the likelihood of caribou crossing.</p> <p>At the November/December 2022 TAG meeting, there was an acknowledgement that using the remote cameras to collect traffic use would be useful but it did not happen in 2023 which in turn, meant that time between caribou crossing events, and previous vehicle time is not presented. The daily convoys and caribou crossings from road surveys and incidental sightings (App. 39, Table 3.16, Table 3.17) are not cross-referenced to the camera data.</p>
<p>Conclusion/Request</p> <p>The KivIA requests further progress toward T&C 29 through use of the remote cameras. This includes that Agnico Eagle assesses why the caribou detection rate was low, provide options on how to detect daily traffic frequencies and describe the timing of caribou presence and road crossings relative to traffic as potential triggers for adaptive mitigation.</p>
<p>Comment No. KivIA 5: Annual herd distribution and seasonal exposure to Meadowbank and Whale Tail</p>
<p>Reference: S. 8.0 Appendix 39, Parts 2 and 3, S. 6; Part 5, Technical Memo</p>
<p>1. Gap/Issue</p> <p>It is uncertain whether different herds will respond the same way to the Meadowbank and Whale tail projects as potential impacts had been projected for the Lorillard and Wager Bay herds.</p> <p>2. Disagreement with the Annual Report conclusion</p> <p>The updated collar analysis does not describe possible differences in potential impacts for the different herds annually encountering the project.</p> <p>3. Reasons for disagreement with the Annual Report conclusion</p> <p>The updated collar information is consistent with T&C 29 and 30 and is provided as the Satellite Collar Program (Appendix 39; Parts 2 and 3, Section 6) and a Technical Memo (Appendix 39, Part 5) for updating the caribou collar information. Both reports have identical objectives and analyse the same data but at different levels of detail. One report maps caribou movement pathways for</p>





The standout feature of the Technical Memo is Table 1 which lists by herd, the year and the herd designation for the collars encountering Meadowbank and Whale Tail projects. Table 1 clarifies that, in most years, individual collared cows from four caribou herds (Ahiak, Beverly, Lorillard, Qamanirjuaq, Wager Bay and North East Mainland) encounter the Meadowbank and Whale Tail projects and not just the Lorillard and Wager Bay herds. For example, at least one Ahiak collared cow encountered the mine site in 13 years between 2002 and 2023. The collared caribou encountering the mine in fall 2022 and spring 2023 (fall 2023 is not included) were only from the Ahiak (and Beverly) and the North East mainland (Appendix 39, Part 5, Table 1).

Agnico Eagle does not discuss implications on the annual variability in which herds encounter the mine site. Annual changes in herd distribution may correlate with annual changes in caribou sighting rates. For example, does the road survey caribou sighting rate (App. 39, Part 1, Tables 3.3 and 3.6) relate to whether it is unusual for the collar distribution of the Ahiak and North East mainland wintering west of AWAR. Unfortunately, the collar maps are a composite 2003-2023 and annual trends in distribution are not presented.

The updated collar information has implications for cumulative impacts as, for example, any delays or deflections from the roads will likely have greater costs for the Ahiak as it calves almost three times the distance from Meadowbank compared to, for example the Lorillard herd. The annual differences in which herds are exposed to the mines activities also raises questions about whether combining data among years such as for the behavior monitoring analyses.

Conclusion/Request

The KivIA requests Agnico Eagle describe the overlap of the collar pathways with the AWAR and WTHR for the different herds at an annual scale; update the TEMP to include the exposure of the different herds and summarize evidence on whether and how potential incremental and cumulative impacts may be herd-specific.

Comment No. KivIA 6: Wolf and Wolverine Mortality

Reference: S. 8.0 Appendix 39; Part 2, Table 4.6 and Section 4.7, Part 4, Appendix C

1. Gap/Issue

The number of wolverine and wolves killed when deterrence failed exceeds the threshold for predatory mammal deaths.

2. Disagreement with the Annual Report conclusion

The 2023 Annual Report does not offer explanation for the record number of deterrence activities and carnivore deaths and does not describe additional mitigation actions.



In 2023, three wolverine and three wolves were killed when they were not deterred from the incinerator, landfill, and other facilities and the number of deterrence actions was at an all time high since 2015 (Appendix 39, Part 4, Table 4.6). Contrary to TEMP 7.0, the 2023 Annual Report did not describe additional mitigations. Section 4.7 refers to ‘continuing’ on-going mitigation rather than enhanced or changed mitigation.

The Wildlife Incident reports are repetitive (Appendix 39, Part 4, Appendix C) with no case specific details on why high levels of deterrent activities were needed leading to several deaths while the only adaptive management taken appeared to be general reminders. Although six carnivores were shot, there was no mention of mitigating circumstances such as the carnivores being in poor health or existing injuries.

Conclusion/Request

The KivIA requests that Agnico Eagle describe additional mitigation to reduce carnivore deaths and to collaborate with GN and the HTO to train staff to collect detailed information on why mitigation failed and whether there were under-lying causes for nuisance wildlife.

Comment No. KivA 7: Annual Report -Appendix 39 organization

Reference: Appendix 39

1. Gap/Issue

The issue is the difficulty of navigating through the Annual Report Appendix 39 (Meadowbank and Whale Tail 2023 Wildlife Monitoring Summary Report)

2. Disagreement with the Annual Report conclusion

The layout (structure) of Appendix 39 is the apparently random splitting into seven separate pdfs (parts) which hinders any reviews.

3. Reasons for disagreement with the Annual Report conclusion

The split into the seven parts are in the middle of sections, or part way through a table – that's one hinderance to reviewing, page numbers are not consecutive between sections and the List of



Contents does not cross-reference how Appendix 39 was divided into seven separate files to mitigate individual file size.

Conclusion/Request

KivIA requests Agnico Eagle improve flow and readability for the 2023 Annual Wildlife Report, and other split reports for future review. Lists of Contents (in Part 1) should have cross-references to the individual parts, and tables (such as Table A.1 – 113 pages) should be grouped together rather than interrupting the flow of the monitoring results.

2.2 Geoscience Technical Comments (reviewer: GeoVector)

Comment No. KivIA 8: Meadowbank Implementation of Commitments

Reference: Appendix 1 – Meadowbank Update on Implementation of Commitments

Commitments # 38, 41, 42, 72 and 101 to 112 all use the company name of “Cumberland.”

Recommendation:

The KivIA would like an explanation on why the company name has not been changed to Agnico Eagle Mines Limited.

Comment No. KivIA 9: Portage Pit B and B Dump

Reference: Appendix 8 – Meadowbank 2023 Annual Open Pit Geomechanical Inspection; Table 2 – 2023 Annual Open Pit Geomechanical Inspection, Summary of Recommendations.

The 2023 recommendation stated “The possibility of the settlement of the B Dump progressing back to the Amaruq Road was discussed in 2022 and concluded to be unlikely as the settlement and tension cracks appear to be limited to within the footprint of the pit. SNC Lavalin was retained by AEM to complete a detailed assessment in order to confirm this conclusion.

Recommendation:

The KivIA would like to request to have the opportunity to review the results of the SNC Lavalin assessment when they become available. In particular, prior to the 2024 Annual report review.

Comment No. KivIA 10: Dust Mitigation on North Tailing Cell

Reference: Appendix 17 – Meadowbank Waste Rock and Tailings Management Plan Version 14; Section 6.5 Monitoring of Tailings Dust, page 22.

Section 6.5 states that “Mitigation measures were implemented by AEM in 2021 and 2022 to prevent further dust generation from wind erosion of the surface of the south and north tailing cells, especially the North cell where less water is retained. In 2023, fresh tailings were deposited in the South Cell for an increased mitigation of dust generation.”






ᑎᑎᕐᑲᕐᓴᓴ P.O. Box 340
ᑲᓱᕐᓴᓴᓴᓴ Rankin Inlet, Nunavut
X0C0G0

The KivIA would like to request what mitigation was completed for the North Cell in 2023, given that this cell retains less water and is more susceptible to dust generation.

The KivlA appreciates the opportunity to provide comments on the 2024 Annual Report for the Meadowbank Complex Project. Please contact Luis Manzo, Director of Lands, (dirlands@kivalliqinuit.ca) should you require more information.


G. Manzo P, Ag.

Luis Manzo P, Ag.
Director of Lands
Kivalliq Inuit Association
Tel: (867) 645-5731
dirlands@kivalliqinuit.ca