



ᐱᐱᓐᓐᓐᓐᓐ P.O. Box 340  
ᐱᓐᓐᓐᓐᓐᓐᓐᓐᓐᓐᓐ Rankin Inlet, Nunavut  
X0C0G0

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

From: Gabriel Karlik, Chief Operating Officer, Kivalliq Inuit Association

Date: June 23, 2023

**Re: Review of Agnico Eagle Mines Limited's Meadowbank Complex 2022 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) 2022 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 2022 Annual Report (April 2022) supported by 56 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.

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

- Aurora Wildlife Research (AWR; Kim Poole and Anne Gunn), terrestrial specialists;
- Prairie Scientific Inc. (PSI; Matt McDougall), aquatic environment specialists; and
- GeoVector Management Inc. (GeoVector; Alan Sexton), geoscience specialist.



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



 (867) 645-2348



 [info@kivalliqinuit.ca](mailto:info@kivalliqinuit.ca)



 [www.kivalliginuit.ca](http://www.kivalliginuit.ca)



The KivIA has also included comments provided by Jamie Kataluk, Water & Marine Environmental Specialist based out of Baker Lake. Full technical review comments and recommendations are provided in Section 2 of this technical memorandum.

## 2. Technical Review

## 2.1 Terrestrial Technical Comments (reviewer: AWR)

<b>Appendix 47: Meadowbank and Whale Tail 2022 Wildlife Monitoring Summary Report (March 2023)</b>	
<b>Comment No. KivIA 1: Terrestrial Advisory Group</b>	
<b>Reference:</b> S 1.7; Terrestrial Advisory Group	
<b>Comment:</b>	
<p>The KivIA appreciates that Agnico Eagle has made efforts to modify the 2022 monitoring in response to the KivIA comments. However, the KivIA has concerns about how the TAG's advice is summarized in the annual reports and how TAG's meetings are archived. Increasingly, Agnico Eagle (and others including KivIA) are relying on the TAG for advice and recommendations. KivIA is also aware of published concerns about the TAG's operation<sup>1</sup>.</p> <p>(1) In its review of the 2021 Annual Monitoring report, KivIA had requested a table summarizing TAG comments and recommendations in the annual wildlife monitoring reports. Agnico Eagle agreed (Appendix 1; pg. 7-11) but then explained the table was not in the 2022 report because TAG has not provided official advice according to the Terms of Reference and the Terrestrial Ecosystem Management Plan (Appendix 1; pg.7-11). KivIA considers it essential that the TAG's recommendations, input, and formal advice are summarized in the annual report. KivIA recommends that Agnico Eagle clarify during the TAG meetings when the TAG advice is 'official'.</p> <p>The 2022 Annual Monitoring report mentions topics discussed during TAG meetings 9 February, and 29 November to 1 December (Appendix 47; S. 1.7; pg 1-6) and that there were several TAG meetings in October and November 2022 on mitigation for the fall caribou migration but without summarizing any details (Appendix 47; S. 1.7; pg 1-6). The KivIA is concerned because the meetings arose from Baker Lake's concerns about traffic impacts and effectiveness of mitigation for the caribou fall migration (see KivIA recommendation 23-02).</p> <p>(2) The annual Mitigation Audit (App. 47; S. 1.8) is a key component of the annual report as its objectives include "which mitigation is perceived or shown to be effective. Evaluating mitigation effectiveness is also one of the purposes of the TAG (App. 47; S. 1.7). KivIA considers the experience of TAG during the year reviewing and commenting on mitigation would also be useful for the Mitigation Audit. Although Agnico Eagle responded to KivIA's recommendation and said</p>	

<sup>1</sup> Warren Bernauer, Glen Hostetler, Ezra Greene, Frank Tester, Rowan Harris & Laura Tanguay (2022): Undermining Assessment: EIA follow-up, stake-holder advisory groups, and extractive industries in Nunavut, Canada, Impact Assessment and Project Appraisal, DOI: 10.1080/14615517.2022.2139469





(3) The Annual Report refers to several topics for TAG's advice and some topics are accompanied by technical reports. Currently, those reports, agendas and minutes are not readily available on the public record.

Agnico Eagle should:

1. Clarify during TAG meetings how the TAG's advice and recommendations are to be included in Agnico Eagle's Annual Monitoring Report and ensure that the TAG's advice and recommendations are summarized in the Annual Monitoring Report.
2. Include TAG input to the annual Mitigation Audit by ensuring that this topic is on the TAG agenda.
3. Agnico Eagle propose how TAG's work will be archived and the role of the Annual Reports in documenting TAG's advice, recommendations, and reports.

**Comment No. KivIA 2: Caribou Management Decision Tree**

**Reference:** S 2.0 Caribou Management Decision Tree

**Comment:**

(1) Section 2 (App. 47; pg. 2-1) on the Caribou Management Decision Tree includes its three objectives (detect if effect thresholds have been exceeded; test the efficacy of mitigation; and understand project-related effects to ungulates specifically to manage sensory disturbance). For roads, Section 3.6.3.1 and Appendix B describe group size as the effect threshold to trigger mitigation and Table 9 (S 3.6.6, pg 3-14) summarizes the number of days by month with speed restrictions or road closures. Agnico Eagle does not comment on differences for the fall GST from the TEMP (115 caribou) relative to an estimated GST of 93 based on 2022 fall data (Table 3.6) and what difference that would have made to the number of road closures.

The KivIA appreciates Agnico Eagle's road closure details (Appendix B). KivIA suggests that Agnico Eagle's graphs showing group size relative to the Group Size Threshold and speed restrictions or road closure presented at TAG#12 meeting (21 February 2023) would have been especially useful to include in the 2022 Annual Report. The figures summarize days with caribou group size in the days preceding the first road closure and following the last closure. However, the 2022 Annual Report did not summarize Baker Lake's concerns raised during the 2022 fall migration about effectiveness of mitigation and group size thresholds. While Section 3.6.3.1 and Appendix B meet the Decision Tree objective to detect how group size as a threshold to trigger mitigation, KivIA remains concerned that community concerns especially about caribou group size thresholds and leadership are unresolved. KivIA also suggests that caribou behavior relative to traffic and the roads may differ between fall and pre-calving migration. The KivIA agrees with Agnico Eagle that further discussion with the TAG is needed on the GST approach and alternatives including mitigation for protection of leaders.





Effectiveness of mitigation is unmeasured: most observed crossings were when the road is closed (effect of partial road closures is uncertain) which is also when the highest number of caribou were reported. Relatively few crossings were reported during speed restrictions.

1. Agnico Eagle should address how to test the efficacy of mitigation as to the objective of the Mitigation Audit (to describe mitigation effectiveness) and the TAG (evaluate the effectiveness of mitigation).
2. For the objective on thresholds to trigger mitigation, Agnico Eagle should undertake further review on the GST approach including the behavioral and camera data as well as road surveys to estimate, annual variations and alternatives including a threshold to support protection of leaders for both fall and pre-calving migration to allay community concerns. The review should be closely coordinated with Baker Lake hunters and Elders and include testing automatic closure at the beginning of migrations to allow the passage of leaders.
3. Agnico Eagle should apply the results of the behavioral monitoring (duration and frequency of responses) to define an impact prediction to determine if the Decision Tree reduces sensory disturbance.

## Reference: 3.6.7

(1) The KivIA appreciates that Agnico Eagle provided a monthly summary of traffic type and annual trends and details of road closure. Traffic volumes are high; on the WTHR in August 2022 a heavy equipment vehicle passed on average every 6.9 minutes. However, understanding impacts on caribou and the effectiveness of mitigation is still incomplete and requires the daily frequency of traffic (or the duration of gaps between traffic) both when group size is below the threshold for closure and for essential traffic during closure. The daily traffic frequency should be integrated with daily caribou counted/road survey to assess the probability of caribou exposed to the road under conditions of closure (>GST), non-closure (<GST), partial closure (<24h) and reduced speed.







(2) The KivIA appreciate the additional details on the 31 convoys (S. 3.6.7; Table 3-14; pg.3-19) which included 2 convoys/day on 9 days (return trips). The additional fuel storage has apparently reduced the need for fuel supply to a single convoy. Table 3-14 is unclear about what ‘escort back to hubs’ refers to; why the number of vehicles for passenger transport is variable and high (couldn’t a single bus be used for transporting people?) and whether the number of vehicles and convoys for dry goods could be reduced. Section 3.6.7. does not explain trade-offs for the convoys: whether to increase the number of days with no essential traffic or reduce the number of vehicles per convoy as well as the number of convoys (to reduce the duration of traffic exposure to the caribou).

3) The KivIA appreciates the increased effort to document caribou behavior responses to convoys (Appendix I; S. 6.3.8; pg. 21) which suggested that responses to convoys were longer than responses to single disturbances but sample size remains a limitation. Data were lacking on the duration of the convoys relative to the number of vehicles and their spacing.

Overall, there is no monitoring to measure how caribou cross roads as no one method is designed to assess probability of crossing relative to number of caribou encountering the roads and traffic or their behavior. The road surveys are designed to measure numbers of caribou encountering the road rather than crossing rates. Uncertainty remains about the camera surveys and the behavioral monitoring has not yet been applied specifically to crossing behavior.

#### Recommendation 23-03:

Agnico Eagle should:

1. Report daily traffic frequency for days when the road is open, days when 24h closure and <24h closure days.
2. Provide information on how to reduce the frequency of convoys and the number of vehicles in the convoys when road closures are in effect.
3. In collaboration with the Terrestrial Advisory Group (TAG), Agnico Eagle design and implement a behavioral study integrated with cameras and road surveys to measure how and when caribou cross the roads to improve mitigation effectiveness.

#### Comment No. KivIA 4: Caribou collar data

**Reference:** S 6.0 Caribou satellite-collaring program

#### Comment:

The KivIA notes that a data sharing agreement for caribou collar data is now signed (March 2023). The KivIA is requesting that the “catch-up” analyses for 2020-2022 not be deferred until the 2023 Annual Monitoring report but be provided earlier. Agnico Eagle (Appendix I) acknowledged that integrating the road surveys, collar data and the behavioral monitoring to assess the timing of caribou encountering the road (and representativeness of the collars) and road mitigation effectiveness could be undertaken. Additionally, as discussed at the November/December 2022 TAG meeting, caribou crossing rates may be better assessed using caribou satellite collar data, and vehicle traffic collected using the remote camera data (S.8.4.3; pg. 8-3).

#### Recommendation 23-04:







 (867) 645-5725 1-800-220-6581
  (867) 645-2348
  [info@kivalliginuit.ca](mailto:info@kivalliginuit.ca)
 [www.kivalliginuit.ca](http://www.kivalliginuit.ca)





KivIA again requests that monitoring results from different methods be integrated and not just summarized (Table 11.1).





ᑎᑎᕐᑲᕐᑲᕐᑲᕐ P.O. Box 340  
ᑲᕐᑎᕐᑲᕐᑲᕐᑲᕐ, ᑲᕐᑲᕐᑲᕐᑲᕐᑲᕐ Rankin Inlet, Nunavut  
X0C0G0

The KivIA did not find the results of the 2022 Annual Mitigation Audit and suggests a table summarizing concordance with the NIRB Project Certificate Terms and Conditions would be useful.

Table 18 (S 3.6.9, pg 3-25) repeats previous errors and inflates the number of road-related caribou mortalities on AWAR between 2007 and 2013.

**Recommendation:**

Agnico Eagle should:

1. Integrate results from different monitoring methods such as the behavioral data and road survey data.
2. Provide the 2022 Annual Mitigation Audit and a table summarizing concordance with the NIRB Project Certificate Terms and Conditions.

## 2.2 Aquatic Environment Technical Comments (reviewer: PSI)

## Comment No. KivIA 9: Pit Lake Conductivity Profiles

Reference: Appendix 12

In the Meadowbank Water Forecasting Update, Agnico Eagle contemplates measuring depth profiles of conductivity in the pits to determine the presence of stratification in the pit lakes. Discussions surrounding the creation of end pit lakes with suitable fish habitat reference the presence of a chemical gradient, with higher concentrations of dissolved solids near the bottom of the end pit lakes. Further information on the presence and stability of stratification in the pits would assist in evaluating the suitability of these lakes for providing fish habitat.

**Recommendation:**

Agnico Eagle should commit to measuring depth profiles of conductivity in the reflooded pits.

**Comment No. KivIA 10: Document Control**

Reference: Appendix 37

A large number of documents are submitted for review annually. Use of the documents control tables to outline changes in subsequent document versions enable reviewers to efficiently focus their efforts.

**Recommendation:**

Agnico Eagle should ensure the pages and sections modified in subsequent document versions is reflected in the document control table.







**Comment No. KivIA 11: November 28, 2022 29,000 litre fuel spill at km 87 on the AWAR**

**Reference:** Meadowbank Complex, 2022 Annual Report, Table -2; Appendix 6 – Agnico Eagle’s Training Management System and Learning Management System Reports; Appendix 28 – Meadowbank 2022 GN Spills Reports.

**Comment:** Did the investigation into this significant fuel spill include a review of the training records and maintenance records of mobile equipment for the Inuit Contractors used for hauling fuel? When will AEM determine if this is an insurable event for the Inuit Contractor involved in the spill?

**Recommendation:** The KivIA would like to see the requested information at AEM's earliest convenience.

**Comment No. KivIA 12: Wildlife Right of Way**

Reference: Appendix 47

**Table 3-16: Observations of Tolerant Caribou in 2022**

Table does not indicate any follow ups nor next day observances

## Section 4.5.4 Wildlife deterrent records

Wildlife were habituated to the areas before the mine was created. When the mine was created, all parties agreed and signed off for the project to carry on which includes protection of wildlife, hence the saying "Wildlife have the right of way"

#### Table 4-4: Details of Deterrence Activities for 2022

Issue:

Dated 2022-06-22 – 2 musk ox that are feeding were deterred from the near the airstrip – disturbing feeding

Dated 2022-07-01 – 4 caribou were deterred when plane was landing

Dated 2022-07-28 – 2 musk ox feeding between AWAR and the airstrip deterred from the area so the plane can land

Dated 2022-08-09 5 caribou deterred from blast area so the blast can move ahead

**Recommendation:**





All occasions listed in *Table 4-4: Details of Deterrence activities for 2022* could have been handled to protect the wildlife, not deter them, as all observances indicate them to be feeding. "Wildlife have Right of way" needs to be practiced where and when preached

**Comment No. KivIA 13: Wildlife Mortality**

**Reference:** Appendix 47

Table 4-8: Summary of Project-Related Wildlife Mortality Records for Caribou and Predatory Mammals (2007 to 2022) indicates there has been no caribou mortalities since the mine became operational.

A Grader working on the AWAR northbound during the winter in a blizzard hit 3 to 5 caribou which all did not survive so they were brought to the mine site. Carcasses had to be thawed out at the Environment office then butchered into quarters to be incinerated. I was the Environmental technician on site when this happened and I took care of the carcasses.

**Recommendation:**

Table 4-8 should be updated to accurately reflect project-related mortality. Further, reporting protocols should be re-examined to ensure mortality incidences are recorded.

**Comment No. KivIA 14: Helicopter Activity**

**Reference:** Appendix 47

**4.5.9 Helicopter Activity**

Pilots are made aware to avoid caribou and muskox by 1,000 m vertically and 1,500 m horizontally, flocks of migratory birds by 1,100 m vertically and 1,500 m horizontally, and to avoid known raptor nests. Locations of these flights in relation to caribou and other wildlife was not assessed in 2022. Point locations of caribou and other wildlife from road surveys, pit and mine site surveys, and viewshed surveys may be too coarse to assess in relation to helicopter flight tracks. Helicopter flight tracks would ideally be assessed in relation to caribou satellite collar data, to assess avoidance of caribou by the required setback distances. However, caribou satellite collar locations would not necessarily represent groups of caribou of 50 individuals or larger.

**Recommendation:**

Findings from ground surveys can be relayed to the helicopter pilots to assist in avoiding caribou and musk ox





### 3. Closing

The KivIA appreciates the opportunity to provide comments on the 2022 Annual Report for the Meadowbank Complex Project. Please contact Luis Manzo, Director of Lands, (dirlands@kivalliqinuit.ca) should you require more information.

Regards,

Gabriel Karlik  
Chief Operating Officer  
Kivalliq Inuit Association  
Tel: (867) 645-5768  
[gkarlik@kivalliqinuit.ca](mailto:gkarlik@kivalliqinuit.ca)