APPENDIX 38 2024 TAG ANNUAL REPORT

AGNICO EAGLE

MELIADINE GOLD MINE

2024 TAG Annual Report

MARCH 2025

EXECUTIVE SUMMARY

Agnico Eagle Mines Limited (Agnico Eagle) is operating the Meliadine Gold Mine (the Mine), located approximately 25 kilometres (km) north from Rankin Inlet, and 80 km southwest from Chesterfield Inlet in the Kivalliq Region of Nunavut. Situated on the western shore of Hudson's Bay, the Mine site is located on a peninsula between the east, south, and west basins of Meliadine Lake (63°1'23.8''N, 92°13'6.42''W), on Inuit owned land.

The Terms of Reference (TORs) were finalized early 2023 ensuring compliance with Terms and Conditions (TC) 132 of the Nunavut Impact Review Board (NIRB) Project Certificate No.006-002 (PC No.006-002) which stipulates:

> *''The Proponent shall, in consultation with the groups listed as Responsible Parties above, and any other parties considered by the Group to be necessary, establish a Terrestrial Advisory Group (TAG). The TAG shall hold its first meeting prior to any construction/installation of the waterlines. The central mandate of the TAG will be to continually review and refine impact management, mitigation, and monitoring details within the Terrestrial Environment Management and Monitoring Plan (TEMMP). The TAG Members will collaborate to share and consider methods, results, and analysis from caribou and terrestrial environment studies and monitoring Inuit Qaujimaningit, Inuit Qaujimajatuqangit, Traditional and Community Knowledge shared by knowledge holders, and other terrestrial environment monitoring data as it becomes available. The Proponent will consider the information shared by the TAG Members for incorporation into the Project's impact management, mitigation, and monitoring measures related to the protection of terrestrial wildlife and wildlife habitat as appropriate. Agnico Eagle shall be responsible for demonstrating how the information shared and considered by the TAG has been incorporated into the Project's impact management, mitigation, and monitoring measures related to the protection of terrestrial wildlife and wildlife habitat as appropriate.''*

The 2024 Terrestrial Advisory Group (TAG) Annual Report documents the work conducted throughout 2024 by the working group, with a focus towards the Terrestrial Environment Management and Monitoring Plan (TEMMP) update.

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ACRONYMS

ADNLC	Athabasca Denesųłiné NéNé Land Corporation
AEM	Agnico Eagle Mines Limited
BLHTO	Baker Lake Hunters and Trappers Organization
C38	Collared Caribou Meliadine All-Weather Access Road Interactions Memo
CIRNAC	Crown-Indigenous Relations and Northern Affairs Canada
GKD	Ghotelnene K'odtineh Dene
GN	Government of Nunavut
KHTO	Kangiqliniq Hunter and Trapper Organization
KivIA	Kivalliq Inuit Association
KWB	Kivalliq Wildlife Board
MB	Manitoba
NDFN	Northlands Denesuline First Nation
NIRB	Nunavut Impact Review Board
NTI	Nunavut Tunngavik Inc.
PC No.006-002	Project Certificate No.006-002
SDFN	Sayisi Dene First Nation
TAG	Terrestrial Advisory Group
TC	Terms and Conditions
TC118	Decision Tree Revision
TEMMP	Terrestrial Environment Management and Monitoring Plan
TORs	Term of References

SECTION 1 • TAG HIGHLIGHT OF 2024

A total of five TAG meetings took place in 2024 in January, March, May (2), and December. Three meetings were held online. Two meetings (January and December) took place in Winnipeg, Manitoba (MB). All meetings were virtually accessible through videoconference using Microsoft Teams.

The focus of 2024 was the revision of the Terrestrial Environment Management and Monitoring Plan (TEMMP). Multiple subjects were discussed with a focus on caribou. The agenda content and the participants for each meeting are listed in Table 1. The minutes detailing the discussions can be found in Appendix A.

There are currently seven TAG Parties: Kivalliq Inuit Association (KivIA), Government of Nunavut (GN), Kangiqliniq Hunters and Trappers Organizations (KHTO), Baker Lake Hunters and Trappers Organization (BLHTO), Sayisi Dene First Nations (SDFN), Northland Denesuline First Nation (NDFN), Agnico Eagle Mines Limited (AEM). Five other organizations have been participating as observers or have indicated their interest to participate as observers: Nunavut Tunngavik Incorporated (NTI), the Kivalliq Wildlife Board (KWB), the Athabasca Denesųłiné NéNé Land Corporation (ADNLC), Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) and the Nunavut Impact Review Board (NIRB).

Table 1 : Description of the 2024 TAG meetings

Date	Location	Main Topics Discussed	Attendees
January 24th & 25th, 2024	Wyndham Lakeview Signature Winnipeg, MB Online – Teams Meeting	**Day 1:** Follow-up: Noise Emission and Wind Direction 2023 Calving Range Noise Monitoring KivIA, KWB, HTO, Sayisi Dene, Northlands Denesuline, Community Elders – Items of Interest TEMMP Revision Roundtable comments **Day 2:** TEMMP Revision 2023 Annual Report Overview Other projects	KivIA BLHTO KWB NDFN SDFN NTI GN CIRNAC Agnico Eagle (AEM)

Date	Location	Main Topics Discussed	Attendees
March 1st, 2024	Online – Teams Meeting	TEMMP Revision: Calving and post-calving Items of Interest	KHTO KivIA KWB BLHTO NDFN SDFN NTI GN CIRNAC AEM
May 3rd, 2024	Online – Teams Meeting	Joint Recommendations Discussion Items of Interest TEMMP Revision	KivIA KWB NDFN SDFN ADNLC CIRNAC GN AEM
May 30th, 2024	Online – Teams Meeting	TEMMP Revision 2024 Caribou Migration Items of Interest	KivIA KWB NDFN SDFN ADNLC CIRNAC

Date	Location	Main Topics Discussed	Attendees
			GN AEM
December 6th, 2024	Best Western Plus Winnipeg Airport Winnipeg, MB Online – Teams Meeting	TEMMP Revision KivIA, HTO, BLHTO, Sayisi Dene, Northlands Denesuline, GN, Community Elders – Items of Interest 2025 Look Ahead	KivIA KHTO BLHTO NDFN SDFN ADNLC NTI GN AEM

SECTION 2 • TAG ACTION ITEMS, RECOMMENDATIONS AND ADVICE

Table 2 summarizes and lists the action items, recommendations and advice from TAG meetings and ensures compliance with the reporting requirements section from TC 132 of the NIRB PC No.006-002 which stipulates:

> *''An overview of information shared during Terrestrial Advisory Group meetings and how information from the TAG was considered and incorporated by Agnico Eagle into the Project's impact management, mitigation, and monitoring measures shall be provided to the NIRB on an annual basis in the Proponents' Annual Report.''*

Table 2 : Summary of TAG Action Items

No.	TAG Meeting Reference	Action Items	Follow-Up	Status
2022-1	May 4th, 2022 TAG Meeting	**Documentation:** Recommendations from the TAG should be documented in the Annual Report.	AEM included comments raised through the TAG and their follow-ups in this annual report table.	Resolved
2022-2	May 4th, 2022 TAG Meeting	**PC No.006-002, TC 118:** As per TC 118, AEM should, in consultation with the TAG develop a decision tree outlining mitigation to be implemented when caribou in specified group sizes are observed within a specified distance of the AWAR and waterlines which will be included in the TEMMP. It is suggested that the TAG reviews the TEMMP, provide comments and follow-up a with conference call to discuss the results.	A session about the TEMMP revision was included in the 2023 Agenda items. 2023 update: The TEMMP revision was an agenda item in every TAG meeting of 2023. The TEMMP v5 Table of Content was presented to the TAG in June and October 2023. The draft TEMMP v5 structure was discussed throughout 2023 and the draft TEMMP v5 accounting for comments received throughout 2023 was shared with the TAG on December 20, 2023. It was reviewed by the TAG on January 24th and 25th, 2024, and again on March 1, 2024. Following agreement by all TAG parties, the final version of TEMMP V5 will be submitted to the NIRB in 2024. *2024 update: In 2024, TAG recommended delaying submission of revised TEMMP v5 to facilitate ongoing discussions of revisions related to calving protection measures. During the year, four rounds of revision of the TEMMP v5 were completed. Many improvements to the draft document were made based on TAG advice. Caribou calving range baseline information was added as well as caribou calving period work suspension protocol (level 4). Should collar caribou be present in the 10 km radius during calving period, which was established by the TAG to be June 1 to 15, Agnico Eagle will:* *-notify KivIA that collared caribou have entered the 10 km radius;* *-increase its monitoring efforts to 4 times daily, results of which will be shared and discussed with KivIA in real time;* *-upon discussion with KivIA, lower the basins as much as possible to minimize the number of pumps operating during level 4 and ensure refueling of essential generators and power supplies to limit the traffic on the site.*	Ongoing

			Also, road closure trigger was changed to 50 or more caribou within 300 m of the road, compared with 100 m in TEMMP v4.	
2022-3	May 4th, 2022 TAG Meeting	**Blasting/caribou study:** KivIA wishes to be at site with their biologist for any blast tests conducted during the caribou migration season. AEM should first collect data outside of caribou migration period.	AEM is building preliminary datasets outside of the caribou migration season period. *2024 update: 2024 TAG meetings focused on the update of the TEMMP v5. Discussions on the blasting study may resume after the submission of the TEMMP v5.*	Postponed
2022-4	May 4th, 2022 TAG Meeting	**Caribou mitigation with AWAR:** The current threshold for the closure of AWAR is 50 caribou or more. This threshold should be evaluated using road survey data to determine the proportion of caribou interacting with the AWAR in groups of 50 or more. The purpose is to set up a group-sized threshold that determines whether a group-sized threshold of 70% or more of caribou is meaningful.	A session about the TEMMP revision was included in the 2023 Agenda items. Update 2023: Several studies such as the behavior data, the heigh of land, and road surveys were presented to the TAG throughout 2023. The draft TEMMP v5 structure was discussed throughout 2023 and the draft TEMMP v5 accounting for comments received throughout 2023 was shared with the TAG on December 20th, 2023. It was reviewed by the TAG on January 24th and 25th, 2024, and again on March 1st, 2024. Following agreement by all TAG parties, the final version of TEMMP V5 will be submitted to the NIRB in 2024. *2024 update: In 2024, TAG recommended delaying submission of revised TEMMP v5 to facilitate ongoing discussions of revisions related to calving protection measures. During the year, four rounds of revision of the TEMMP v5 were completed. Many improvements to the draft document were made based on TAG advice. Caribou calving range baseline information was added as well as caribou calving period work suspension protocol (level 4). Should collar caribou be present in the 10 km radius during calving period, which was established by the TAG to be June 1 to 15, Agnico Eagle will:* *-notify KivIA that collared caribou have entered the 10 km radius;* *-increase its monitoring efforts to 4 times daily, results of which will be shared and discussed with KivIA in real time;* *-upon discussion with KivIA, lower the basins as much as possible to minimize the number of pumps operating during level 4 and ensure refuelling of essential generators and power supplies to limit the traffic on*	Resolved

			the site. *Also, road closure trigger was changed to 50 or more caribou in total within 300 m of the road, compared with 100 m in TEMMP v4.*	
2022-5	May 4th, 2022 TAG Meeting	**Collared caribou data:** It was discussed that there might be a way to give a designated AEM employee direct access to the collar locations via a temporary admin password. This would be under a strict agreement that data cannot be downloaded.	AEM and GN are working on finalizing a Data and Sample Sharing Agreement (DSSA). 2023 update: A DSSA was signed on March 3rd, 2023.	Resolved

2022-6	May 4th, 2022 TAG Meeting	**TEMMP revision:** TAG members should have an opportunity to review the April 2022 version of TEMMP and provide written comments to AEM.	A session about the TEMMP revision was included in the 2023 Agenda items. Update 2023: Several studies such as the behavior data, the heigh of land, and road surveys were presented to the TAG throughout 2023. The draft TEMMP v5 structure was discussed throughout 2023 and the draft TEMMP v5 accounting for comments received throughout 2023 was shared with the TAG on December 20th, 2023. It was reviewed by the TAG on January 24th and 25th, 2024, and again on March 1st, 2024. Following agreement by all TAG parties, the final version of TEMMP V5 will be submitted to the NIRB in 2024. *2024 update: In 2024, TAG recommended delaying submission of revised TEMMP v5 to facilitate ongoing discussions of revisions related to calving protection measures. During the year, four rounds of revision of the TEMMP v5 were completed. Many improvements to the draft document were made based on TAG advice. Caribou calving range baseline information was added as well as caribou calving period work suspension protocol (level 4). Should collar caribou be present in the 10 km radius during calving period, which was established by the TAG to be June 1 to 15, Agnico Eagle will:* *-notify KivIA that collared caribou have entered the 10 km radius;* *-increase its monitoring efforts to 4 times daily, results of which will be shared and discussed with KivIA in real time;* *-upon discussion with KivIA, lower the basins as much as possible to minimize the number of pumps operating during level 4 and ensure refueling of essential generators and power supplies to limit the traffic on the site.* *Also, road closure trigger was changed to 50 or more caribou within 300 m of the road, compared with 100 m in TEMMP v4.*	Ongoing
2022-7	May 4th, 2022 TAG Meeting	**PC No.006-002, various TC:** The TAG should prioritize specific assigned tasks as per PC No.006-002.	Sessions about the various TAG-related TC were included in the 2023 Agenda items. 2023 update: All items selected in the 2022 TAG Annual Report were discussed in 2023 TAG meetings.	Resolved

2022-8	May 4th, 2022 TAG Meeting	**TAG agenda:** AEM should circulate a work plan for the TAG showing the priority items for the next few years**.** Once the TORs are finalized and the caribou crossing memo is reviewed (TC44), the next priority should be the review the TEMMP.	The revision related to TC 44 was discussed as an item on the agenda on December 16th, 2022. Update 2023: The TEMMP was discussed as an agenda item in every TAG meeting of 2023. The draft TEMMP v5 structure was discussed throughout 2023 and the draft TEMMP v5 accounting for comments received throughout 2023 was shared with the TAG on December 20th, 2023. It was reviewed by the TAG on January 24th and 25th, 2024, and again on March 1st, 2024. Following agreement by all TAG parties, the final version of TEMMP v5 will be submitted to the NIRB in 2024.	Resolved
2022-9	December 15th TAG Meeting	**PC No.006-002, TC44 and C38:** A new analysis is required to address the revisions and recommendations made by KivIA, GKD, and GN regarding the TC44 memo. It is necessary to have access to collared data before conducting data analysis rather than analyzing images. It is also possible to define deflection. Two (2) main proposed objectives of new analysis by the TAG are to understand: • Movement of caribou; and • Behavior of caribou interacting with the road and the project, and the zone of influence (including delays in time and distance). TAG would determine study area, approaches and methods based on the discussion on December 15th, 2022.	As per December 15th, 2022, meeting minutes, the consensus was that TC44 could be considered as completed with the commitment to provide an updated memo accounting for Parties' comments once data is available and considering comments from Parties. New study objectives summary: • Looking at ZoI at the time of the year along the road and project. • Considering the proximity of Rankin Inlet and the community. • Step regression is to be determined with movement. • Time and energy. • Caribou behavior, such as walking parallel. • Caribou that interact with road and caribou that do not. • Understand movement in spring vs. post-calving. • Response to mine and road. • The proximity between collared data and road. • Ice on and off. • Landscape and orientation; Herd Meliadine Lake on one side or the other. • Hunting pressure analysis. • Caribou by observing data type and monitoring (HTO). Notation per 6.2 of the TAG TORs: SDFN/NDFN wishes to add the following editorial comment to these minutes, which was not stated during the meeting: "At this time, SDFN/NDFN do not agree that TC44 has been fulfilled/satisfied with respect to the collared caribou memo. It may be satisfied once the new analysis by Agnico Eagle is shared and discussed	Ongoing

			with the TAG, based on updated data and comments discussed between the members of the TAG." AEM was still pursuing in 2022 the caribou satellite collar Data and Sample Sharing Agreement (DSSA). Update 2023: A DSSA was signed on March 3rd, 2023. Analysis using collar data was conducted following the detailed instructions given by the TAG under the topic: Commitment 38 – Update Collared Caribou Analysis Memo. The methodology was presented and discussed on April 13th, 2023. A memo including the results was presented on June 27th, 2023. The revised version of the memo accounting for the TAG's comments was presented at the TAG meeting on October 25th, 2023. No comments on the latest version of the memo were received from TAG parties in 2023. TAG parties were given until March 1st, 2024 to provide comments. *2024 update: TAG parties shared additional comments on the C38 technical memo and addendum.* *The C38 model has been updated to include the new parameters requested by the TAG parties. The result of the analysis remains the same. C38 response will be shared and discussed with TAG during 2025 March TAG meeting.*	
2022-10	December 16th TAG Meeting	**Distances & names consistency:** Ensure consistency when referencing distances and locations.	2023 update: To ensure consistency in referencing distances and locations, AEM provided a map with the kilometer markers during the April 2023 TAG meeting.	Resolved
2022-11	December 16th TAG Meeting	**Spill Response Plan:** GKD suggested that additional spill prevention and containment measures could be installed and used (e.g., extra sheathing at the connection points of the lines).	AEM suggested to further discuss this topic at the TAG should Parties wish to do so as several considerations would need to be accounted for.	Resolved

2022-12	December 16th TAG Meeting	**Documentation during caribou migration:** The annual report should include more information to document the caribou migration, indicating distance and group size, as well as the number of caribou crossing per day and when collared caribou cross. The on-site decision regarding traffic suspension protocol should be further documented based on field conditions.	A session about the TEMMP revision was included in the 2023 Agenda items. Update 2023: AEM presented to the TAG on April 14th, 2023, the memo: Wildlife Survey and Caribou Herd Observations Linked to Road Closure for 2022 which also satisfy Commitment 26.1. The information related to 2023 is presented in the 2023 TEMMP annual report which incorporated TAG's comments collected in April 2023.	Resolved
2022-13	December 16th TAG Meeting	**Caribou mitigation with AWAR:** AEM may consider an experiment for the first few days of this spring, changing the triggers to less than 50 caribou and more than 400-500 meters from the road, to observe how caribou leaders respond.	A session about the TEMMP revision was included in the 2023 Agenda items (Section 3). 2023 update: 2023 caribou monitoring was conducted following applicable requirements as shown in the 2023 Annual Report.	Not implemented
2022-14	December 16th TAG Meeting	**Annual TEMMP report:** Discuss in advance what should be included in the annual TEMMP report in terms of its structure and content. Data from road surveys, behavior data, collared caribou data, and AWAR camera images should be integrated. The effectiveness of mitigation and the shift in the calving season since 2020 should be described.	AEM proposes to provide a high-level overview of the 2022 TEMMP annual report in 2023. As per the 2023 TEMMP annual report content and structure, they will be further discussed throughout TAG meetings in 2023. 2023 update: A 2022 TEMMP Annual Report Overview was presented as an agenda item on April 14th, 2023. Road surveys, behavior data, collared caribou data, and AWAR camera images have been added to the report.	Resolved
2022-15	December 16th TAG Meeting	**Annual TEMMP report:** The annual report should include the Caribou Migration Daily maps.	The Caribou Migration Daily maps are shared in daily emails with Members throughout the migration.	Resolved
2022-16	December 16th TAG Meeting	**Caribou crossing at the Narrows:** It is KivIA hope to install cameras on both sides of the Narrows in order to document the crossing of caribou.	AEM proposed to prioritize the camera locations for 2023 to gather the maximum information along the AWAR and waterline.	Resolved

2022-17	December 16th TAG Meeting	**Camera along AWAR:** AEM is recommended to install back-to-back trail cameras along the AWAR to document the entire radius of detected movement when a caribou crosses the AWAR.	AEM proposed to prioritize the camera locations for 2023 to gather the maximum of information along the AWAR and the waterline. Update 2023: Camera locations in 2023 were disposed to cover Discovery Road and the vicinity of Meliadine site suggested by the TAG on May 24, 2023. As indicated by ERM biologists in April 2023, trail cameras must be installed northward to reduce the glare from the sun and to avoid the sun triggering unnecessarily the cameras.	Resolved
2022-18	December 16th TAG Meeting	**The use of drones for caribou monitoring:** • Image clearer with the drone hovering at 300 m above ground level. • Verify the limit at 300-350 m above ground level for large groups of caribou). • Require high resolution (6k) camera. • Find the balance between drone size and capacity to fly in windy conditions. • Verify with GN and Transport Canada about wildlife harassment. • Establish a pilot project to gather information about distance and noise. • Be aware of female caribou that show alertness behavior.	AEM will account for the information collected and present to the TAG proposed methods to monitor caribou during migration at the next TAG meeting. 2023 update: The use of drone for caribou monitoring was discussed in meetings held in April and October of 2023. *2024 update: The TAG has decided to postpone discussion on drone usage to focus on the TEMMP review.*	Postponed
2023-1	April 13th, 2023 TAG Meeting	**PC No.006-002, C38:** Members to provide written comments on C38 memo.	Analysis using collar data was conducted following the detailed instructions given by the TAG under the topic: Commitment 38 – Update Collared Caribou Analysis Memo. The methodology was presented and discussed on April 13th, 2023. A memo including the results was presented on June 27th, 2023. The revised version of the memo including the TAG's comments was presented at the TAG meeting on October 25th, 2023. No written comment was provided to AEM in 2023. TAG parties were given until March 1st, 2024 to provide comments. *2024 update: TAG parties shared additional comments on the C38 technical memo and addendum in 2024. The C38 model has been updated to include the new parameters requested by the TAG parties. The result of the analysis remains the same. C38 response will be shared and discussed with TAG during 2025 March TAG meeting.*	Resolved

2023-2	April 13th, 2023 TAG Meeting	**PC No.006-002, TC118:** AEM to provide more information on the waterline activities that will take place.	The mitigation measure implemented during the construction of the waterline and in preparation of the caribou migration were described and discussed at the TAG meetings of May and June.	Resolved
2023-3	May 24th, 2023, TAG Meeting	**TEMMP Revision:** AEM to provide detailed Table of Contents for TEMMP revision, for review.	The TEMMP v5's Table of Content was presented to the TAG in June and October 2023. The draft TEMMP v5 structure was discussed throughout 2023 and the draft TEMMP v5 accounting for comments received throughout 2023 was shared with the TAG on December 20th, 2023. It was reviewed by the TAG on January 24th and 25th, 2024, and again on March 1st, 2024. Following agreement by all TAG parties, the final version of TEMMP v5 will be submitted to the NIRB in 2024. *2024 update: In 2024, TAG recommended delaying submission of revised TEMMP v5 to facilitate ongoing discussions of revisions related to calving protection measures. During the year, four rounds of revision of the TEMMP v5 were completed. Many improvements to the draft document were made based on TAG advice. Caribou calving range baseline information was added as well as caribou calving period work suspension protocol (level 4). Should collar caribou be present in the 10 km radius during calving period, which was established by the TAG to be June 1 to 15, Agnico Eagle will:* *-notify KivIA that collared caribou have entered the 10 km radius;* *-increase its monitoring efforts to 4 times daily, results of which will be shared and discussed with KivIA in real time;* *-upon discussion with KivIA, lower the basins as much as possible to minimize the number of pumps operating during level 4 and ensure refueling of essential generators and power supplies to limit the traffic on the site.* *Also, road closure trigger was changed to 50 or more caribou within 300 m of the road, compared with 100 m in TEMMP v4.*	Resolved
2023-4	May 24th, 2023, TAG Meeting	**Caribou mitigation study:** AEM to provide proposed noise, behavior, and camera monitoring locations around site in support of evaluating caribou response to light duty activities during Level 3.	Noise, behavior, and camera trail monitoring locations were presented to the TAG on June 26th, 2023.	Resolved

2023-5	June 26th, 2023, TAG Meeting	**TEMMP Revision:** AEM to send the first draft of TEMMP September after the NIRB hearing.	The TEMMP v5's Table of Content was presented to the TAG in June and October 2023. The draft TEMMP v5 structure was discussed throughout 2023 and the draft TEMMP v5 accounting for comments received throughout 2023 was shared with the TAG on December 20th, 2023. It was reviewed by the TAG on January 24th and 25th, 2024, and again on March 1st, 2024. Following agreement by all TAG parties, the final version of TEMMP v5 will be submitted to the NIRB in 2024. *2024 update: In 2024, TAG recommended delaying submission of revised TEMMP v5 to facilitate ongoing discussions of revisions related to calving protection measures. During the year, four rounds of revision of the TEMMP v5 were completed. Many improvements to the draft document were made based on TAG advice. Caribou calving range baseline information was added as well as caribou calving period work suspension protocol (level 4). Should collar caribou be present in the 10 km radius during calving period, which was established by the TAG to be June 1 to 15, Agnico Eagle will:* *-notify KivIA that collared caribou have entered the 10 km radius;* *-increase its monitoring efforts to 4 times daily, results of which will be shared and discussed with KivIA in real time;* *-upon discussion with KivIA, lower the basins as much as possible to minimize the number of pumps operating during level 4 and ensure refueling of essential generators and power supplies to limit the traffic on the site.* *Also, road closure trigger was changed to 50 or more caribou within 300 m of the road, compared with 100 m in TEMMP v4.*	Resolved
2023-6	June 26th, 2023 TAG Meeting	**Caribou Migration Survey:** Provide short videos showing the height of land surveys and showing the viewpoint.	The video shooting couldn't take place as planned however videos and photos taken from the field in 2023 are available upon request.	Cancelled

2023-7	October 24th & 25th, 2023, TAG Meeting	**TEMMP Revision:** Complete the TEMMP revision by the next caribou migration; Include a section on the calving grounds; Provide a written draft to Parties in advance of the next TAG meeting; Include a revision frequency of TEMMP and monitoring shared in the Annual Report.	The draft TEMMP v5 structure was discussed throughout 2023 and the draft TEMMP v5 accounting for comments received throughout 2023 was shared with the TAG on December 20th, 2023. It was reviewed by the TAG on January 24th and 25th, 2024, and again on March 1st, 2024. Following agreement by all TAG parties, the final version of TEMMP v5 will be submitted to the NIRB in April 2024. The draft TEMMP v5 includes a section a section on the calving grounds and a TEMMP revision frequency. *2024 update: In 2024, TAG recommended delaying submission of revised TEMMP v5 to facilitate ongoing discussions of revisions related to calving protection measures. During the year, four rounds of revision of the TEMMP v5 were completed. Many improvements to the draft document were made based on TAG advice. Caribou calving range baseline information was added as well as caribou calving period work suspension protocol (level 4). Should collar caribou be present in the 10 km radius during calving period, which was established by the TAG to be June 1 to 15, Agnico Eagle will:* *-notify KivIA that collared caribou have entered the 10 km radius;* *-increase its monitoring efforts to 4 times daily, results of which will be shared and discussed with KivIA in real time;* *-upon discussion with KivIA, lower the basins as much as possible to minimize the number of pumps operating during level 4 and ensure refueling of essential generators and power supplies to limit the traffic on the site.* *Also, road closure trigger was changed to 50 or more caribou within 300 m of the road, compared with 100 m in TEMMP v4.*	Ongoing
2023-8	October 24th & 25th, 2023, TAG Meeting	**Noise Monitoring during the Migration:** Provide additional maps and images of the noise monitoring stations and the sea can wall; Provide a graph with wind speed and directions during the study; Consult the TAG for future punctual migration noise monitoring campaign; Provide a comparison of work suspension versus non-work suspension noise.	A session about Noise Monitoring was included in the 2024 Agenda items. *2024 update: During the January 24-25 TAG meeting, an updated Noise monitoring presentation was provided to TAG members including maps and images of the seacan walls, graphics with wind speed and direction and comparison of work suspension versus non-work suspension noise levels.*	Resolved

2023-9	October 24th & 25th, 2023, TAG Meeting	**Annual Report Revision:** Propose a process to discuss annual report comments.	A session about the annual report revision was included in the 2024 Agenda items (Section 3). *2024 update: 2023 Annual Report was discussed during the January 25th, 2024 TAG meeting. The 2023 TAG Annual Report, the Caribou Behaviour report and the Trail Camera report results were shared with TAG members.*	Resolved
2023-10	October 24th & 25th, 2023, TAG Meeting	**C38 Addendum:** TAG members to provide written comments on the C38 memo and addendum.	No written comments on the C38 Addendum were received by AEM following the October 2023 TAG meeting. *2024 update: TAG parties shared additional comments on the C38 technical memo and addendum. The C38 model has been updated to include the new parameters requested by the TAG parties. The result of the analysis remains the same. C38 response will be shared and discussed with TAG during 2025 March TAG meeting.*	Ongoing
2023-11	October 24th & 25th, 2023, TAG Meeting	**Calving Caribou:** Calving grounds map to be updated.	A session about 2023 Calving grounds map was included in the 2024 Agenda items (Section 3). *2024 update: The 2023 Calving ground range was presented during the January 24th, 2024 TAG meeting. Following comments, a plain language summary of the 2023 calving ground report was shared with TAG members during the March 1st TAG meeting.*	Resolved
2023-12	October 24th & 25th, 2023, TAG Meeting	**Use of Drone for Survey:** To be discussed for future migration seasons.	The use of drone survey will be discussed before the next caribou migration. *2024 update: The TAG has decided to postpone discussion on drone usage to focus on the TEMMP review.*	Postponed
2023-13	October 24th & 25th, 2023, TAG Meeting	**Wildlife Survey and Caribou Observation versus Road Closure 2023:** Provide the following tables in the 2023 Annual Report: A table showing the number and timing of AWAR road surveys that were conducted during the year; A table linking all observations of greater than 50 caribou (by date, time, location and distance from Project) to a documented road closure, as required under the TEMMP or mine.	AEM will provide those tables in the 2023 Annual Report. *2024 update: Tables showing the number and timing of AWAR road surveys that were conducted during the year was provided in the 2023 TEMMP Annual Report Appendix H Caribou Observations and Advisory, 2023, and will be provided in future Annual Report.*	Resolved
2023-14	October 24th & 25th, 2023, TAG Meeting	**Baseline Analysis of Calf Abandonment by Cows:** KivIA to provide baseline analysis of calf abandonment by cows	No information was received after the October 2023 TAG meeting. *2024 update: KivIA provided the information by email on January 23, 2024 which was added to the TEMMP v5*	Resolved

2023-15	October 24th & 25th, 2023, TAG Meeting	**2022 Analysis of calving distribution:** GN to provide the 2022 Analysis of calving distribution	No information was received after the October 2023 TAG meeting. *2024 update: The Estimating Abundance of the Qamanirjuaq Mainland Migratory Barren-Ground Caribou Subpopulation - June 2022 was shared by the GN July 11th 2024.*	Resolved
2024-1	January 23th & 24th, 2024 TAG Meeting	**Jan 2024 TAG meeting participants:** Agnico Eagle to circulate the list of January 2024 TAG meeting participants (provided with meeting minutes).	TAG participant list was provided with the January 2024 TAG meeting minutes.	Resolved
2024-2	January 23th & 24th, 2024 TAG Meeting	**TAG virtual meeting:** Agnico Eagle to organize a virtual TAG meeting in February 2024 to revise the caribou related sections of the draft TEMMP v5	To accommodate Partie's schedules and gave time to Parties to provide comments on the caribou related section of the draft TEMMP v5, the meeting was held March 1st.	Resolved
2024-3	January 23th & 24th, 2024 TAG Meeting	**Draft TEMMP:** Parties to provide written comments on the draft TEMMP v5 prior to the February TAG meeting	Comments on TEMMP were received in February 2024 and were discussed at the March 1 TAG meeting. Additional comments were received after the March 1 TAG meeting, which AEM responded to and addressed in the May 3 TAG meeting. Following the May 30 TAG meeting, additional comments were also received and discussed at the December TAG meeting.	Resolved
2024-4	January 23th & 24th, 2024 TAG Meeting	**Noise Monitoring during Level 3:** Agnico Eagle to consider conducting noise emission calculation with comparing level 3 shutdown with and without light duty activities	This analysis was completed and shared with TAG members on March 1st TAG meeting. The conclusion of the study was that switching from Full Operations to Level 3 Operations reduces the spatial extent of areas where caribou may hear noise from Meliadine operations.	Resolved
2024-5	January 23th & 24th, 2024 TAG Meeting	**Calving Range Map:** Agnico Eagle to consider compiling calving range for 2022 as it was conducted for 2023 with additional analysis of caribou collar data, combined with GN's caribou aerial survey data for 2022 (upon reception of GN's caribou aerial survey report expected April 2024).	During the March 1st TAG Meeting, the annual calving ranges from 2017 to 2023 presented the movement of the calving core over the years. This map will be updated every year and provided in the TEMMP Annual Report.	Resolved
2024-6	January 23th & 24th, 2024 TAG Meeting	**GN's Caribou Aerial Survey Report:** GN to provide its caribou aerial survey report in April 2024	The Estimating Abundance of the Qamanirjuaq Mainland Migratory Barren-Ground Caribou Subpopulation - June 2022 was shared by the GN July 11th 2024.	Resolved
2024-7	January 23th & 24th, 2024 TAG Meeting	**Plain Language Summary:** Agnico Eagle to provide plain-language summary of Meghan Beale's presentation.	A plain language summary of the calving range analysis was shared with TAG members on March 26th 2024.	Resolved

2024-8	January 23th & 24th, 2024 TAG Meeting	**Green-up Method:** Agnico Eagle to assess the use of remote sensing methods when determining Green-up dates.	In the 2023 Terrestrial Environment Management et Monitoring Plan Report, the green-up date for the RSA was estimated based on normalized difference vegetation (NDVI) values averaged across the RSA (obtained from MODIS VI satellite).	Resolved
2024-9	January 23th & 24th, 2024 TAG Meeting	**Collar Method:** GN to provide information on how collar methods have changed over time, and how the health of the collared animals is assessed.	During the January 23th & 24th TAG Meeting, the GN proposed to share the information on how they ensure they are only collaring healthy cows, and any follow up information when the collars come off, and how healthy they are then. This item was identified as pending in Appendix A - Pending Action Items of the meeting minutes in following TAG meetings.	Pending
2024-10	January 23th & 24th, 2024 TAG Meeting	**TEMMP Objectives:** KivIA to provide to Agnico written comments on objectives to measure residency time and to measure exposure.	KivIA provided their comments on February 28, 2024.	Resolved
2024-11	January 23th & 24th, 2024 TAG Meeting	**Muskox Harvest Data:** GN to provide information on muskox harvest data, past studies beyond what's already cited in the Meliadine TEMMP, and any planned work.	During the January 23th & 24th TAG Meeting, the GN proposed to look into muskox surveys done since 2014 and share the outcome with the TAG so AEM can update the baseline information related to muskox in the TEMMP V5. This item was identified as pending in Appendix A - Pending Action Items of the meeting minutes in following TAG meetings.	Pending
2024-12	January 23th & 24th, 2024 TAG Meeting	**Road Signage:** Agnico Eagle to assess road signage improvements for non mine-site related traffic with KWB	Agnico Eagle shared the current road signage with KWB by email.	Resolved
2024-13	January 23th & 24th, 2024 TAG Meeting	**Caribou Vs Traffic:** Agnico Eagle to assess different ways to present traffic information when caribou are in level 3 on a daily basis	Due to the difference in caribou migration paths in 2024, the camera did not take as many pictures of caribou as in the previous year. This point will therefore be evaluated as part of the camera's 2025 caribou report.	Postponed
2024-14	January 23th & 24th, 2024 TAG Meeting	**Contribution Caribou Collaring Program:** Agnico to confirm date of last contribution to the GN caribou collaring program.	The date of the last contribution to the GN caribou collaring program was provided via NIRB 2023 Annual Report Comments GN-6.	Resolved
2024-15	March 1st, 2024 TAG Meeting	**Calving Protections Proposal** GN, KivIA, Dene FN, to combine proposed revisions on calving protection measures and provide to Agnico Eagle.	Joint Recommendation from GN, Biologist consultant to KivIA, and Wildlife Biologist Advisor to Sayisi Dene and Northlands Denesuline First Nations were provided to AEM On March 8th, 2024. AEM provided a response during the May 3rd meeting.	Resolved
2024-16	March 1st, 2024 TAG Meeting	**Other TEMMP Comments** KivIA to provide to Agnico Eagle written comments for proposed additional TEMMP revisions.	KivIA provided their additional TEMMP v5 comments on March 5th, 2024	Resolved

2024-17	March 1st, 2024 TAG Meeting	**TEMMP v5 Revisions** Agnico Eagle to provide written TEMMP v5 revisions for review and discussion with the TAG after receipt of combined calving protections proposal and other written comments.	Agnico provided a revised version of the draft TEMMP V5 to TAG members based on comments received during the March 1st meeting. The document was distributed to TAG on April 23rd, 2024 and was discussed during the May 3rd TAG meeting.	Resolved
2024-18	March 1st, 2024 TAG Meeting	**Delayed TEMMP v5 Submission to NIRB** TAG to recommend delaying submission of revised TEMMP v5 (Agnico to draft and circulate for sign-off) to facilitate ongoing discussions of revisions calving protection measures.	The revised TEMMP v5 was not submitted to NIRB as part of the 2023 Meliadine annual report submission.	Resolved
2024-19	May 3rd, 2024 TAG Meeting	**TEMMP V5 Level 4 update** Agnico to make updates to draft TEMMP v5 wording based on comments received during this meeting and provide revised draft to the TAG for review**.**	Agnico Eagle provided a revised version of the draft TEMMP V5 to TAG members based on comments received during the May 3rd meeting, the document was shared on May 16th and presented on the May 30th TAG meeting.	Resolved
2024-20	May 3rd, 2024 TAG Meeting	**Caribou Calving Deffinition** KivIA to provide a definition of caribou calving grounds and wording on rationale for enhanced mitigation measures during calving.	KivIA shared their definition of calving ground of the Qamanirjuaq caribou herd on May 7th, 2024. This information was included in the draft TEMMP V5 in the section 3.1.4 Caribou Calving Range.	Resolved
2024-21	May 3rd, 2024 TAG Meeting	**GN Study Estimating Abundance of the Qamanirjuaq Caribou** GN to provide an update on the 2023 study Estimating Abundance and Trend of the Qamanirjuaq Mainland Migratory Barren-Ground Caribou Subpopulation.	The Estimating Abundance of the Qamanirjuaq Mainland Migratory Barren-Ground Caribou Subpopulation - June 2022 was shared by the GN July 11th 2024.	Resolved
2024-22	May 30th, 2024 TAG Meeting	**TEMMP v5 Comments** All parties to provide additional written comments on most recent draft TEMMP v5.	GN, KivIA, Sayisi Dene and Northlands Denesuline First Nations shared their second round of comment in July 2024. These comments were discussed at the December 2024 TAG meeting.	Resolved
2024-23	May 30th, 2024 TAG Meeting	**Inuktitut translation for TEMMP v5** AEM to verify the feasibility of providing a Inuktitut translation for TEMMP v5 in point form.	Agnico Eagle provided a Inuktitut translated summary of the TEMMP V5 to the KWB on July 11.	Resolved

2024-24	May 30th, 2024 TAG Meeting	**Satellite Imagery for snow accumulation** AEM to confirm with the Water Management department if satellite imagery is used to collect information on the rate of snowmelt and where banks might accumulate.	As part of the water management strategy, drone images are used at the beginning and end of the snow season to understand snow accumulation around the site.	Resolved
2024-25	December 6th, 2024 TAG Meeting	**Daily Rate of Movement** The GN to provide the daily movement rate in the collar's daily map	GN agreed to provide the daily rate of movement in the collar caribou map. The daily movement rate will be used as a trigger for level 4 during calving period.	Resolved
2024-26	December 6th, 2024 TAG Meeting	**TEMMP V5 Comment Table** Agnico Eagle to revise wording of its answers to KivIA-3, GN-1	Agnico Eagle provided a revised answer to comments KivIA-3 and GN-1 which will be shared and discusses discussed 2025 March TAG meeting.	Ongoing
2024-27	December 6th, 2024 TAG Meeting	**Caving Range Map Over Time** Agnico Eagle to add the Calving Range Map overtime.	Agnico Eagle will include the calving range map over time and the annual calving range map in the TEMMP annual report.	Resolved
2024-28	December 6th, 2024 TAG Meeting	**Annual Calving Range Map** Agnico Eagle to provide the annual calving range map to the TAG prior to submission it in the Annual report	Agnico Eagle will include the calving range map over time and the annual calving range map in the TEMMP annual report.	Resolved
2024-29	December 6th, 2024 TAG Meeting	**Muskox Population Assessment** GN to provide information on the most recent assessment of the muskox population.	GN agreed to provide the latest muskox population assessment.	Pending
2024-30	December 6th, 2024 TAG Meeting	**Incidental Observation as Trigger** Agnico Eagle to revise the wording on the use of incidental observation as trigger for caribou work suspension.	Agnico Eagle revised the wording in TEMMP V5 regarding the use of incidental observation as a trigger for mitigation. It has been clarified that incidental observations by the organization and/or the community can be used to trigger the caribou work suspension protocol.	Resolved
2024-31	December 6th, 2024 TAG Meeting	**GN December 6th Recommendation Email** Agnico Eagle to provide answer on proposed recommendations from the GN.	Agnico Eagle provided an answer to the GN December 6th recommendation, which will be shared and discusses discussed 2025 March TAG meeting.	Ongoing
2024-32	December 6th, 2024 TAG Meeting	**TEMMP V5 Word Version update** Agnico Eagle to revise TEMMP v5 draft as discussed during this meeting and distribute for review ahead of next scheduled meeting (Q1 2025)	Agnico Eagle will be providing a revised TEMMP v5 word prior to the 2025 March TAG meeting.	Ongoing

SECTION 3 • AGENDA ITEMS FOR 2025

On December 6th, 2024, a calendar with a list of subjects to be discussed at the TAG was proposed for 2025 (Table 3), consisting of three (3) main meetings. Additional shorter meetings could occur throughout the year as required. The meeting venues, dates and topics are subject to change throughout the year based on logistical considerations, TAG suggestions or other considerations shared by TAG Parties.

Table 3: Proposed Calendar with Agenda

Calendar	Proposed Location	Proposed Agenda
Q1	In Person –Rankin Inlet Online – Teams Meeting	2024 TAG Annual Report Overview TEMMP v5 Revision TOR Review
Q2	In Person –Rankin Inlet Online – Teams Meeting	2024 Annual Report Results 2025 Caribou Migration Readiness
Q4	In Person –Rankin Inlet Online – Teams Meeting	2025 Caribou Migration Highlights

APPENDIX A: 2025 TAG MEETING MINUTES

AGNICO EAGLE

Meeting Minutes

Topic: Meliadine Mine Terrestrial Advisory Group (TAG)

Meeting Date: January 24th and 25th, 2024; 9:00 – 5:00 CT

Location: Winnipeg, Manitoba and Online

Attendees: Kivalliq Inuit Association (KivIA)

- Jeff Tulugak (JT), Executive Assistant
- Jamie Kataluk (JK), Water & Marine Environmental Specialist
- Gabriel Karlik (GK), Chief Operating Officer
- Anne Gunn* (AG), Consultant, Caribou Specialist

Baker Lake Hunters' and Trappers' Organization (BLHTO)

- Harold Putumiraqtuq (HP)
- Eva Elytook (EE)

Kivalliq Wildilfe Board (KWB)

- Tiriaq Maria Kasaluak (MK), Wildlife and Environment Technician

Northlands Denesuline First Nation

- Benji Denechezhe (BD), Chief Negotiator
- Simon Samuel (SS)

Sayisi Dene First Nation

- Geoff Bussidor (GB), Chief Negotiator
- Dan Chranowski (DCh), Wildlife Biologist Matrix Solutions Inc. (Consultant to Northlands Denesuline and Sayisi Dene First Nations)

Nunavut Tunngavik Incorporated (NTI)

- Raymond Mercer (RM), Resource Management Coordinator

Government of Nunavut (GN)

- Jessica Waldinger (JW), Project Manager, Research and Monitoring
- Stephen Atkinson (SA), Biologist Consultant

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC)

- Jeff Hart (JH), Land Use Planning Manager

Agnico Eagle Mines Limited (Agnico Eagle)

- Sara Savoie‡(SSav), Environment Superintendent
- Puujuut Kusugak (PK), Director Nunavut Affairs Community Relations
- David Kritterdlik (DK), Inuit Qaujimajatuqangit and Wildlife Advisor Community Relations.
- Helene Boulanger (HB), Environment Specialist
- Jade Robitaille (JR), Compliance Councelor

Leilan Baxter^ (LB), Minutes Record

Meghan Beale (MB), WSP Wildlife Biologist

Dan Coulton* (DC), WSP Sr. Wildlife Specialist

Victor Young* (VY), WSP Acoustic Scientist

Greg Sharam* (GS), ERM Caribou Specialist

Madison Jerhoff* (MJ), ERM Managing Consultant

Mitch Fennell* (MF), ERM Sr Wildlife Biologist

*Online participant

‡Meeting chair

^Record keeping

ACTION ITEM SUMMARY

Action Item	Summary
Jan 2024 TAG meeting participants	Agnico Eagle to circulate the list of January 2024 TAG meeting participants (*provided with meeting minutes*).
TAG virtual meeting	Agnico Eagle to organize a virtual TAG meeting in February 2024 to revise the caribou related sections of the draft TEMMP version 5
Draft TEMMP	Parties to provide written comments on the draft TEMMP version 5 prior to the February TAG meeting
Noise Monitoring during Level 3	Agnico Eagle to consider conducting noise emission calculation with comparing level 3 shutdown with and without light duty activities
Calving Range Map	Agnico Eagle to consider compiling calving range for 2022 as it was conducted for 2023 with additional analysis of caribou collar data, combined with GN's caribou aerial survey data for 2022 (upon reception of GN's caribou aerial survey report expected April 2024).
GN's Caribou Aerial Survey Report	GN's to provide its caribou aerial survey report in April
Plain Language Summary	Agnico Eagle to provide plain-language summary of Meghan Beale's presentation.
Green-up Method	Agnico Eagle to assess the use of remote sensing methods when determining Green-up dates.
Collar Method	GN to provide information on how collar methods have changed over time, and how the health of the collared animals is assessed.
TEMMP Objectives	KivIA to provide to Agnico written comments on objectives to measure residency time and to measure exposure.

Action Item	Summary
Muskox Harvest Data	GN to provide information on muskox harvest data, past studies beyond what's already cited in the Meliadine TEMMP, and any planned work.
Road Signage	Agnico Eagle to assess iroad signage improvements for non mine-site related traffic.
Caribou Vs Traffic	Agnico Eagle to assess different ways to present traffic information when caribou are in level 3 on a daily basis
Contribution Caribou Collaring Program	Agnico to confirm date of last contribution to the GN caribou collaring program.

MEETING TRANSCRIPT

Note: All supplementary material referred to in the meeting minutes is provided to the TAG Members by email and/or OneDrive for review.

This meeting was recorded for the purposes of transcription, without objection. While most speaker comments are transcribed directly, some are paraphrased or summarized to facilitate note-taking.

Slides were reviewed by the presenter as indicated. Supplementary discussion and comments for each sub-topic are documented here.

1. Day 1 - Greetings

Time: 9:04 am – 9:22 am

Supplemental Material: Agenda

Presenter: Sara Savoie, Agnico Eagle

SSav: (*Welcome, introductions, review of agenda*)

DCh: For tomorrow, what is varia?

SSav: Any topics not discussed yet that people would like to go over, there is a time slot for Items of Interests on the first day and we wanted to ensure there was similar space on the second day.

SSam: We will have to report to our leaders, so can we have a list of names?

SSav: Yes we will circulate one.

2. Follow-Up - Noise Emission and Wind Direction

Time: 9:24 am – 11:13 am

Supplemental Material: presentation titled "Meliadine Gold Mine – Action Items from October 2023 TAG Meeting - Noise"

Presenter: Victor Young, WSP

Slide 1 – Background

Slide 2 – Monitoring Locations and Wind conditions

VY: Monitors were located closer to site than normal stations, for easier access during caribou migration.

Slide 3 – Figure of wind direction throughout noise monitoring – June 15 – July 7, 2023

Slide 4 - Figure of wind speed throughout noise monitoring – June 15 – July 7, 2023

Slide 5 – Monitoring Locations and Wind Conditions

Slide 6 – Correlation between Measured Noise Level and Local Wind Speed/Direction

VY: Primarily, local elevated wind speeds are dominating noise measurements. Background noise is very high, so difficult to measure noise from the mine.

Slide 7 - Correlation between Measured Noise Level and Local Wind Speed/Direction – Site 1

VY: These figures show noise levels strongly correlated to wind speed and not wind direction. Further indicates that measured noise levels are primarily caused by local winds.

Slide 8 - Correlation between Measured Noise Level and Local Wind Speed/Direction – Site 2

VY: The plant is audible in sound recordings, but not driving measured noise levels.

Slide 9 - Correlation between Measured Noise Level and Local Wind Speed/Direction – Site 3

VY: Take away – we provided the graphs showing wind speed and direction throughout monitoring, and shown how wind speed is highly correlated with noise levels but direction is not.

Slide 10 – Noise Emissions During Various Operating Scenarios

VY: The hope of the monitoring was to be able to see an impact of change in operating levels during caribou migration shut down procedures. But it's not clear. There isn't a big change between the different levels because you are primarily measuring wind noise. The best way to look at this is emissions, rather than measured in the environment. So we did this and prepared a memo that will be circulated.

Slide 11 – Table of equipment active during each operating scenario

Slide 12 – Noise Emissions During Various Operating Scenarios

VY: No accepted frequency weighting for caribou, so we present as unweighted.

Slide 13 – Table for Noise Emissions During Various Operating Scenarios

Slide 14 – Figure for Noise Emissions During Various Operating Scenarios (octave bands)

Slide 15 – Figure for Noise Emissions During Various Operating Scenarios (total sound power level, dBA)

Slide 16 - Noise Emissions During Various Operating Scenarios – Summary

VY: All described in more detail in the memo.

Discussion/Questions

AG: Great presentation. As a follow up, in the list of activities for level 3, does that include the light activities that are permitted during the level 3 shut down? If possible to shut down further activities (say underground), would you be able to predict what noise levels would be? Which activities would have a significant impact on caribou. Caribou are particularly sensitive to lower frequencies so the gain from the level 3 shut down might be less impactful for caribou.

VY: I'm not sure what light activities are. These are the sources that we have on this table shown (Slide 13). If you mean pick up trucks, we don't have those included in our modelling, they weren't in the FEIS. Typically traffic from passenger vehicles aren't considered. Heavy trucks are, but not pick ups.

AG: The light activities would be one loader permitted to load the buggy bin to keep the plant going. One power plant, keeping the processing plant going. I'll leave that to AEM though.

HB: I'd assume all activities listed in the table at level 3 are considered part of the light activities. Sara had to leave at this moment so I'll get back to you on this.

AG: Sure, just to clarify if there were further suspensions, like underground, what would be the change in noise levels.

VY: For the third part of your question Anne about caribou, I'm going to look at the memo from Oct. As you pointed out, this study[1] that we sourced shows the most sensitive caribou are most sensitive to noise at lower frequencies. Your interpretation is correct, that reductions at lower frequencies are smaller, and that's where some caribou are most sensitive.

AG: Is there any way of adding the noise levels associated with each type of equipment?

VY: Yes, the informationis in the appendix to the January memo wherea more detailed breakdown is available.

AG: Thanks, no more questions. Very appreciated.

SSam: Where is this mine?

JR: (*Shows photos of the noise monitoring stations, and map of the mine site, with seacan wall and noise stations*)

SSam: Is this mine close by? Nunavut, Arviat, Rankin?

JT: 40 km north west of Rankin.

SSam: How far from Thelon?

JT: 300 km from Thelon

SSam: How many of you are caribou eaters? In 1980s, there was a former chief, his name was Jerome, on the caribou management board. He told me, can you come to a meeting in Saskatchewan? Wollaston Lake. When we came there, I don't know who are they, but there were Inuit people, elders. The meeting is regarding what's coming, the mine is coming to their IOL (Inuit Owned Land). Still NWT at that time. They were talking that the mine was coming close to the calving grounds that's going to be disturbing what animals, the Inuit people. At the meeting I just went to observe. I don't know if there were any minutes, but there was a concern about what was going to happen to the Inuit people. I guess this was one they were talking about. In the future, affecting First Nations and the animals they eat. We have caribou close by black home right now. Once in a while, I talk to a friend in Arviat about the caribou, where are they. Soon, there will be nothing. The caribou are way up in Nunavut but they travel all the way to the south. We are called "caribou eaters", when we lived off caribou, many years ago before Europeans. One day, if there are not caribou coming because of the mining our people will be no longer caribou eaters. How can we stop this? We cannot. They are going to do it anyway. I'm a hunter. If you see a caribou watching,

[1] Perra, M., Brinkman, T., Scheifele, P. & Barcalow, S. (2022). Exploring auditory thresholds for reindeer, Rangifer tarandus. J. Vet. Behav. 52–53, 37–44.

he will be careful. He will hear a noise far away and stop there, make sure before they move on. Not just windmills, but they are very noisy. How can they head back to the south. Very disturbing for the Inuit people and for us too. That's my concern as a caribou eater. Who's going to pay for all those impacts? How are we going to feed our people? As an elder, I have children, grandchildren. That's who's going to be affected with what's happening. Maybe next one is going to be somewhere else. Very disturbing. I don't know what was said at other meetings, but as soon as I heard this, what can we do? Are we wiling to stop this or is it going to go ahead anyway. I'll stop there.

HB: This afternoon we will discuss about the calving ground, so if you have any questions that will be the time. Thank you for sharing your concern. That's why we're doing all these studies, and we have specialists to let us know how to improve it.

- Break (10:20 – 10:45 am) –

VY: As a precision, there is no wind turbines associated with the approved version of the project, in the present analysis, no approval to develop a wind farm right now.

DCh: You mentioned a table that showed the different noise sources and it was from the 2014 FEIS. Has Agnico validated those for the current day?

VY: Yes. We provided Agnico with a list of the emissions sources from the FEIS and then they provided feedback and adjustments. The analysis is consistent with our understanding of current operations, during June and July caribou monitoring.

DCh: It should say is these are currently validated noise emissions, rather than those from 2014. Other thing I recall from October was that we identified many times the signal monitoring that is occurring that caribou may be noticing. The spikes in noise levels and the pattern. I asked you to look at where those spikes occurred, what time during the day. Maybe that wasn't reflected in the minutes, but we were hoping that might clarify what is being heard out there. We feel that if humans notice it probably caribou would too. The discussion today was more an average. We'd identified that signal processing was an issue to look into. Can that be done?

VY: In the October analysis, we pointed out where there were peaks and what they were. There is a general trend with wind speed, but also specific spikes that we flagged. We could make graphs like this for each monitoring site. It would be possible, as opposed to excerpts. But mostly the spikes are caused by ATVs or birds. The signal processing – we talked about that in October and how the level that you measure isn't the entire story. Humans and presumably caribou have evolved signal processing in their brains to extract information, there isn't a means currently of doing that automatically, or quantifying that. We provided audio clips so you could hear that, and you can hear back up beepers. We talk about how those are handled in our analysis. But there isn't a way to play sounds to a computer and have it tell you what a person or caribou would hear. Your point is taken but it's not something we can actually do, quantitatively, other than play the audio for you and allow the members of the TAG to draw conclusions. I don't know how to do a signal processing study. I don't think the technology exists.

DCh: You mentioned the beepers, they are definitely picked up by anybody. They are at certain frequencies. You are saying there isn't a way of measuring that, but I feel like there must be something. I think you need human monitors out there that are picking up these peaks in noise levels and documenting when they are occurring during the day. Because that is something that people hear, and Indigenous people have mentioned they get picked up from great distances. If we can't do it scientifically with a microphone perhaps we need to do that in another way to correlate it with caribou movements. Just saying that we can't measure it, doesn't mean it isn't happening. I'd

like to hear from the group. When you have specific high noise levels that get noticed, maybe it's not causing any problems but maybe it is and we need to know.

VY: I'll just reiterate that Agnico is doing noise compliance monitoring regularly. They did a supplemental study in 2023, but they also do it annually. The supplemental data is available on OneDrive and you can listen to it. As mentioned in the reports, you can hear the site sometimes, including the beepers. During level 3, there are no beepers present on the site and that is backed up by the data from this last summer. We're trying to apply best practices for noise mitigation and monitoring, but there are limits and this is the best that can be done at this point.

MK: From my understanding, the study you are doing is how much wildlife is impacted through noise although their reaction is much more sensitive than humans, my question is has Agnico ever considered the vibration. Inuit knowledge is that they can feel through their hooves. My suggestion is to extend the three monitoring stations a bit further from the mine, as well if possible to start a research study for their hooves, in their neurons. Maybe us humans will have a better understanding of how they react to vibrations. Because the higher it is, the more adrenaline they go through, and then their meat isn't as rich in nutrients.

VY: The map I showed was specific to the monitoring for June/July 2023 migration. Those locations were chosen because they were accessible during this time. The regular monitoring stations annually are farther out, 1.5 – 2 km. For vibration, effects from blasting which is the most vibration intense activity, studies were done as part of the FEIS. They also do blast monitoring on a regular basis. Blasts don't occur when caribou are in the area though. As far as caribou and reactions to blasting, I'll leave that to colleagues in biology but I know Agnico also did some studies at Meadowbank in response to blasting.

SSav: We do have a blast monitoring plan and results are in the annual report (publicly available) and we'd be happy to share that.

JT: On top there is a blast limit of 5 km, so if *tuktu* are in 5 km there is no blasting.

GB: You mentioned in the level 3 that ventilators are kept on for underground. Was there a reason why the noise emissions weren't measured for that?

VY: I'll show the table again. When we did the analysis for level 3, the exhaust and intake raise, and portal, are associated with supplying and exhausting air. They are included in the analysis for level 3.

GB: Thanks.

3. 2023 Qamanirjuaq Calving Range Update

Time: 11:15 – 11:55 am

Supplemental Material: presentation titled "2023 Qamanirjuaq Calving Range"

Presenter: Megan Beale, WSP

Slide 1 – Objectives

Slide 2 – Methods

MB: For the second method, we looked at movement averages which showed that cows with calves don't move at full speed until 6 d after calves are born.

Slide 3 – Map of 2023 calving ranges using method 1, calving site method

Slide 4 – Map of 2023 calving ranges using method 2, post-calving movement method

DCh: That one at the bottom left is that dot a community or what?

MB: That's a calving location. There was one down there and the remaining 15 were up northwest.

DCh: The previous picture wasn't it a dot with a circle?

MB: Yes because of the math that goes into this, it smooths the contour out. On the next map you'll notice the dotted line connects, and the reason the 95% contour connects is we now have a few more sampling locations. The important thing here is the filled in pink area is similar to the last map. Which confirms what we've talked about in these meetings, the cows don't move too far with a young calf.

SA: For reference, the circle around the mine is 28 km?

MB: Yes

Slide 5 - Map of 2023 calving ranges using method 3, date cut-off method

MB: Greater number of collar locations create the range, but it's just certain dates. Not necessarily when calves are born. We know some years they are earlier and some are later. Visually it tells us the range is a very different place than if we just look at where the calves were born.

Slide 6 – Interpretation

DCh: I think you said this research showed caribou in migration are responsive to green up, or do you mean calving?

MB: I think it needs to be considered on a bigger scale: A year long. I think if green up occurs earlier they know to move to calving sooner, so if they are there and conditions are right and food is good, they calve. I'm interested to hear what others think.

PK: They were 3 weeks early this year.

MB: Yes, does that track with what you saw in the field?

EE: Maybe they knew there was going to be a huge forest fire.

MB: That wouldn't surprise me in the sense that when there are fires, there is less moisture, less snow. So, all tied together.

EE: It melts, no more ice. Usually freeze, and then melt. Maybe they knew there was going to be huge forest fires.

AG: Thank you for the maps. Just what we asked for. I thought we'd asked for 2022? Have you done 2022?

MB: I think we heard 2023. We haven't done 2022. We'd apply the same methods, but I don't have it.

AG: Using the 5 km cut off in the daily movement rates to identify calving right?

MB: What we used in this case was the individual based methods by Demars[2] and Cameron[3]. Ultimately, there are parameters set but we're not just looking at when daily movement dropped below 5 km. However, for those 6 d post-calving, I did use that 5 km /d threshold to determine when the cow with a calf at heel gets back up to speed, moving at least 5 km/d. In the Commitment 38 analyses we found that at 6.25 d post-calving, they are back up and moving at that rate.

AG: What would be useful to see would be a histogram with daily movement rates. Thinking of developing thresholds for triggering timing of mitigation, it would be useful to having a good idea of immediately pre-calving movement rates, before they drop rates down. And also useful to see rates after 6 d when the calf is able to keep up. Can you provide those data as a table or a histogram? And how do we integrate your maps which are useful with the work done by GN in 2022? They did a census that would give us densities both within your core calving ground birth sites compared to the other kernels. Work the GN did was to measure density within the core and the peripheral areas. The reason those maps are useful is it helps with interpreting height-of-land (HOL) monitoring and developing thresholds. A year with the data based on collars and aerial surveys (2022) would be best. I know people have asked several times, I think it will be available in April. But when it comes, can you look at your maps compared to the aerial survey data?

MB: We are also waiting to receive the GN's report. When it comes available, that 2022 year would be the one to compare, and do the field validation across different methods.

AG: Knowing Mitch Campbell, there will also be an analysis of trends in calving distribution which we're looking for. But hard to see how we can further develop thresholds in the Terrestrial Environment Management and Monitoring Plan (TEMMP) without having the comparisons between the maps you've created with those of the measures of density and dispersion from the GN. If you can give the daily movement rates that will be helpful. I just think it will be more helpful to have box and whisker plots, histogram. To show individual variability which we need to pay attention to in developing thresholds. Can you show on the maps of the calving the local observations made in 2023 of calving? I know KIA has some observations of calving. And can you also add the HOL location points so we can see which ranges are possible to capture from the HOL sampling points.

MB: I can add the KivIA locations if they send the coordinates. The best method would be to add those into the first method. The HOL – are those always in the same location? (yes mostly) No issue to put those on the map.

AG: So once GN releases their 2022 report you will be able to look at their survey data relative to similar mapping that you've done for 2023, but you'll do it for 2022? And you'll be able to add these sampling points?

MB: I think the goal would be for us to do something with the result of the 2022 report, I'm not sure in what capacity and if there are specific request from the TAG I think we would take those into account, so I think we just have to wait until we get that report and see what the TAG would like us to focus on.

AG: So that's two of the things. But the third one is box and whisker plots for the daily movement rates.

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[2] DeMars CA, Auger-Méthé M, Schlägel UE, Boutin S. 2013. Inferring parturition and neonate survival from movement patterns of female ungulates: a case study using woodland caribou. Ecology and Evolution 3(12):4149-60

[3] Cameron MD, Joly K, Breed GA, Parrett LS, Kielland K. 2018. Movement-based methods to infer parturition events in migratory ungulates. Canadian Journal of Zoology 96(11):1187-95.

MB: I don't see an issue, and if we do the 2022 review and compare to the GN results we can pull in the daily movement rates and box and whisker plots there.

PK: Can we get a plain language version of what these all mean?

MB: Yes good suggestion.

JT: For the GN, does the report coming out in April have the calving areas and different densities, and movement patterns? I know in the last couple of years there are 3 different groups of calving and what would be considered core calving in those areas. The density of calving in those areas anyway.

JW: I don't have the abstract, but I understand this report is in draft which is why we can't share it yet. I spoke to Mitch Campbell and it should be ready in April. I think it should include the boundaries of calving grounds, and relative density of females. There could be more info, but I don't know. If we hold tight until April we'll have it.

JT: Something to keep in mind, for this project we're looking at this calving area, but keep in mind there are others.

DCh: Megan pointed out that GN uses the window of June 9 – 22 for the Qamanirjuaq calving period. Is that specific to that herd, or more general? Second, if it specific, if you can document differences year over year, will that change the range of dates? Is it a running average or what?

SA: Those date ranges are primarily for planning purposes, in the land use plan, for guidance. They were herd specific. I imagine Mitch will update them if timing becomes more variable or shifts. It's clear from this analysis that window was off the mark in 2023.

MB: Some years it does line up, and then 2023 it was an early year.

DK: I wanted to mention some Inuit knowledge about migration, especially Qamanirjuaq herd. This herd is vulnerable to humans 12 months per year. From Kivalliq down to (…) Inlet. Back in 1980 there was a concern about caribou population decline. There was starvation in the late 1950s and close to the end of 1970s our government became concerned about caribou population decline. That's when the territorial government and federal government came together to organize the Qamanirjuaq -Beverly Management Board. 1980. When that started they had meetings with the community and the government, they asked where do they go. Where are the calving grounds. When they started asking those organizations started coming up with maps. 1981. On that map they would show where the caribou Qamanirjuaq herd is calving. Inuit knowledge is that there is no one local calving area for this herd, or any herd. Whenever the community started seeing the map, people started saying that's wrong but the government said no caribou are calving in that area. People started wondering, 1981, they were calving here, 1982 over here, 83 here. When that started happening the maps started showing one area as one calving ground, for Qamanirjuaq herd. Inuit knowledge says there is no one known calving ground. From that we learn that calving areas are not solid. I wanted to bring that up. Because in 1982 when the Board was starting up, I was a member. We asked what's the difference, local knowledge from the reserve and Inuit communities are saying one and government biologists were saying it different. Local knowledge should always be in the organization or guidelines.

DCh: It was mentioned about the Mallory paper[4] and how caribou are responsive to green up. Is either KivIA or GN or Agnico tracking green up? We know that climate change maybe is affecting things.

MB: We do record peak green up in the annual TEMMP report, which goes into NIRB. There are ways with remote sensing, satellite data, you can use normalized difference vegetation index (NDVI), a greenness index. That's now how we determine green up, it's land observations. There's a couple ways that can be done but those line up with satellite.

DCh: Those are observers from KivIA?

MB: Agnico

DCh: How do they measure?

HB: We have a period of time, and it changes between Itivia and the mine site.

MB: We could pull that data this year, it's not hard, but you have to set your area of focus and cross check the date from the land with the remote sensing data.

- Break -

4. KivIA, KWB, BLHTO, Sayisi Dene, Northlands Denesuline, Community Elders – Items of Interest

Time: 1:34 – 2:10 pm

Supplemental Material: None

Presenter: All

KivIA

AG: We have comments on the TEMMP revision, content and the process, and we did appreciate answers to our questions about the noise emissions, and we appreciated seeing the maps, so we don't have at the moment any items not on the agenda.

SSav: We will go through KivIA's comments in the TEMMP Revisions session.

KWB

MK: None at the moment. Just getting familiar with my job since I started last month.

SSav: Happy to have you and provide any updates you need, it's a collaborative group.

Sayisi Dene and Northland Denesuline First Nations

DCh: Just more related to the annual report, we had some feedback from Kelly Olson about specifics in the draft report, but we'll provide that at that point in the agenda.

Ssav: With regards to the TEMMP?

[4] Mallory, CD, Williamson SN, Campbell ME, Boyce MS. 2020. Response of barren-ground caribou to advancing spring phenology. Oecologia 192:837–852.

DCh: No, the TAG annual report. We'll discuss it then. Nothing else.

GB: Regarding noise emissions, one of my buddies is a videographer, so I was asking about cutting wind noise, and he said you can make a wind resistant coat out of fake fur.

SSav: I don't think Victor is on the line but I imagine that's dependent on the type of equipment and I know there is some built in measures in our equipment, but we'll relay that to Victor. Thank you.

DC: Victor can call back in if that helps.

SSav: If he's available I'm sure we'd be happy to get his take on that suggestion. In the meantime move ahead with Benji?

BD: Seeing those calving range monitoring data, my concern is with collaring of the caribou. A few years back, I asked about the collaring and the told us there are changes to the method and the design that was put on the caribou, the collar. I asked if the cows were collared or the bulls or both. I'm asking because I've seen firsthand what that collar does to the caribou. Where they have this monitor on. A big massive collar. Every time it goes, it rubs all the skin. And it was just bones. I saw it. And you have all these data of caribou, tracking where these animals are. How healthy are they? Any evidence? Because they changed those methods. I haven't seen what methods they use. But I know for a fact what it does to the animal. My question is how healthy are those cows with those collars?

JW: So your question is how have collaring methods changed form several years ago? I can talk to Mitch Campbell, and ask him to provide that input. I wouldn't want to provide any inaccurate information.

MB: The other one I wonder to ask Mitch was I heard a question about the health of the animals.

JW: So we don't collar sick or injured caribou? I can relay that information. How we ensure we are only collaring healthy cows, and any follow up information when the collars come off, how healthy they are then. I can pass that on.

VY: I understand there was a question about using wind screens on the microphone? That is done, I think Jade has a photo, and you'll see there is a wind screen. That reduces noise that is created when wind buffets on the microphone. It's sitting out there and the wind is blowing across it, and it creates noise on the microphone. We don't want to measure that. It wouldn't otherwise be present. That's what the wind screen is doing. What it can't do is eliminate noise created when the wind hits the ground, the vegetation.

SSav: Does that address your question?

GB: Yes thanks.

SSam: Those collars from the 80s or 90s are they still the same today?

MB I don't deploy the collars but I can tell from the data they are different.

EE: I can answer that. Mitch told us new collars. They are not big anymore. It just clicks off too. Two locals caught a collar one. We never heard about if they are healthy or not healthy. Last year Mitch Campbell came to Baker to show us new collars that GN is going to use for caribou. They are skinnier than they used to be.

JW: As technology gets better they can shrink down the battery. Less action side to side. Rubbing can still happen but compared to the 80s it's probably a lot less noticeable.

SSam: There was a young man caught a caribou 7 years ago, it was very skinny. Came all the way (…). Not healthy. Some elders 10 years ago, mostly they don't know about technology. But one elder from Saskatchewan asked what makes it for those collars to be ok, he said the caribou are healthy. So that means I disagree with that. Our people never studied caribou. They are independent animals. When the migration happened years ago, we had no names for the herds. When they merged, there were lots of caribou. But when they return to calving grounds they separate. One more question. Those turbines. How loud it is. How much noise it can make. I drove to Regina one time and I stopped at some, and it's very noisy. If they are building that it's going to disturb caribou.

JT: It's taken off the site now.

SSam: But they are going to build that.

SSav: Thanks and an important clarification on the status of the windmills that were removed from the project proposal and that Agnico withdrew its NIRB application.

BLHTO

EE: I really don't have words. To Inuit nowadays government and KivIA are communicating to Inuit. We know what they are going to do. They always let us locals know what they are going to do. But the project (…) what about the extension? Are you trying to get an extension again?

SSav: With regards to our windfarm project and the extension? We withdrew our application.

EE: Are you going to apply something else?

SSav: The permitting strategy is still being elaborated but it will follow the regular NIRB process. But as of now, what's important to note is the application was withdrawn and there is no windfarm project.

DCh: While the extension wasn't approved there are previous approvals, a road. I think you're pursuing the road to Discovery that still has to be planned?

SSav: Right now we are moving ahead with our current Project Certificate and authorization. What Eva was referring to was the extension.

SSav: On items of interest we also wanted to provide the opportunity for elders to share their knowledge and we have David here who is a member of the advisory group and David wanted to share a few items.

DK: *Matna*. I'm speaking for majority of Agnico employees that Agnico supports Traditional Knowledge and they want to use local knowledge in their working procedures. Agnico believes that they need to have close relationships with the community. Back in 2021 we organized the Elders' Group in each of the 5 communities in Kivalliq. To organize that we thought about how do we get the local knowledge into our relationship with the company. Agnico wants to work with local knowledge. That's why we have our own people from NTI, KivIA, KWB to come together to come up with some ideas how we can work more closely. In 2021 we organized elders' group in the 5 communities – Arviat, Chester, Whale Cove, Rankin, Baker. We have 20 members. That group comes together once a year to meet among themselves and talk it over with Agnico staff. Members of departments in Agnico ask some questions about local knowledge. We organized Kivalliq Elders' Advisory Committee (KEAC). We have found out that for many years we have been trying to work separate from each other and that hasn't worked very well. We put the idea together to work together. I've been working with Agnico for over 6 years and that was the good move that I was involved in. Some of the things that we talk about are what happens after the mine. How can we

plan after the mine is closed down. What are the things to worry about. The majority of our elders are more focused on the well being of the younger generation. They are the future of our communities. A lot of meetings are technical, and people don't understand that. Some words that are used and we don't know what they mean. We started finding out about that and try to come up with a solution to make it easier for two groups to meet together and talk. Because in the years past a group would come into a community to get some information, to ask questions, using technical language, which means not the local language. Western knowledge language. A group like that will hold a public meeting and after that the group never said anything so they thought it must be ok. It's not always that. It's that the information that they were given was in technical language that the locals don't understand. Inuit don't want to try to answer what they don't understand. That's one of the things I continually try and encourage Agnico co-workers to try to make words simply so locals can understand. And I think we are getting the measure across, hopefully to other organizations too. This elders' group is not Agnico Eagle group. It's a group that Agnico supports by providing small monthly honoraria for the elders that we have in one community. Let's say 5 elders in Baker Lake. If Agnico has some information they want to give the community, they would call me and I'd call those 5 and tell them that Agnico wants to meet with them. We organize things like that. Not only for elders' group, but also HTO, Hamlet Council and other groups. The elders' group is not Agnico Eagle's group, to support. It's there to be a group of people that we can ask about local knowledge, traditional knowledge, IQ. When we have some questions, we go to those elders for answers, we go to locals. That's where the Elders' Advisory Committee is helpful. Because we started out with going to the HTO in each community, or hamlet council. Because those groups are elected members it's not always the same person. When we came to Baker about the dust control on the road between Meadowbank and Baker, when we asked the same questions, it wasn't coming out the same between the new board members or council members. So that's why we organized the elders group. It has been helpful. It's an open group to anyone, anything they talk about it's not private. There are some confidential things but majority of the time it's public information. This group is open, we don't hide anything. Education, going to school, it happens today. But back when elders were young people, the school was at home, around, seeing, looking, doing. And that still for the majority of Indigenous people is one system where education needs to be learned by the local people. Sometimes we are asked at NIRB public hearings is that elders group a private group? The answer is no, it's an open group of people where we can find local Inuit knowledge. We are asked sometimes do you keep a record? Yes, we do. We have terms of reference to guide the group how we manage. One of our terms is that we don't want to put anyone into a spot. We all want to work together. Let's say someone made a comment about this, even if it doesn't seem right, the elders do not try to put that person on the side. I think that is an elders system. Some other things that we do, for example, the ships go up to Baker Lake nonstop in the summer. Let's say there's a fuel spill. If that happens our supervisor will call me, "David there's been a spill. Call each one of your elders about that". Why? Like I said before they don't want to leave anything under the table. Something like what did the NRIB decide. Once we know if NIRB decided on an issue, they call me. The elders keep working together. So many times, we think that the elders have their own idea but no, their focus is on the younger generation. For them to make a living they need a job. Therefore, elders group have supported a number of things that Agnico has been doing. And we know there are a lot of guidelines that we get from federal government, NTI, KivIA, Hamlet, things like that. Thank you.

EE: This spring, KivIA, NTI, there was a big amount of fuel spilled. Did they let you guys know?

DK: I did call the 5 elders in Baker Lake about the spill, but it didn't have how big it was when I was advised to call.

JW: This might have been before my time.

EE: July 2023.

JW: Is the question: did the GN send out communications?

EE: Did you get a report? From the shipping company?

SA: It would have been reported yes.

EE: KivIA?

JT: Yes, we knew about it, Jamie went. CIRNAC also went and made a report. It was dealt with, there were mitigation plans and a clean up. But that was in the municipality of Baker Lake and CIRNAC was dealing with that.

EE: That's twice. 2022 they just left their pipe on the lake and it freezes. Last year, July 2023, a lot of fuel was spilled in the lake. That's water where we live. And we should start getting reports on how much spill, to HTO.

MK: I used to work with PPT and public hotline on petroleum products division.

EE: We have more elders, HTO.

DCH: You're saying it's published online if it's a certain amount?

MK: Most reports are.

EE: Our elders are not like you guys. They don't even know what it is.

DCh: That was jurisdiction of the hamlet?

JT: They knew but it was CIRNA's responsibility. (*Inuktitut*)

EE: *Matna*.

SSav: Thank you Eva, and all who shared items of interest. I think this all ties in with the purpose of the TAG which in addition is to provide technical oversight, is also a forum for us to share relevant information and experiences. Even though we have an item of interest section, I also want to reiterate that if anything relevant comes up at any time, feel free to share.

GB: Regarding spills, we were working on winter road on a remote lake, big, and the community was connected, with fishermen. One of the heavy equipment sprung a leak and the diesel on the already scraped ice and they were going to drain the fuel but before they could do that it was a big pool of diesel. They didn't know what to do. I just happened to have two big bundles of newspaper, so I helped out and spread out the newspaper all over the area. After they lit a match to it, and there was just a little charcoal left. That was one thing I wanted to share. I don't know if that goes into the lake but I wanted to share that.

SSav: Next we have the heart of our meeting, the TEMMP revision. We have Greg Sharam from ERM on the line and during the last TAG meetings there were some suggestions on us presenting the information relevant to caribou approaching the site in a different way, visually, Greg will present this follow-up.

5. Indicators of Caribou Approaching Site

Time: 2:10 – 3:10 pm

Supplemental Material: file titled "Indicators of Caribou Approaching Site"

Presenter: Greg Sharam, ERM

GS: The discussion in November was about how long of a warning do we have to know caribou are approaching. We have summarized collar data from mid-May to end summer, and also summarized the onsite monitoring data, and compared that to the different types of response to caribou. Level 1, 2, 3.

Slide 2 – Figure of Collar Data – Spring, Calving, Post-Calving

Slide 3 – Same figure, with caribou seasons

DCh: You mentioned you're using 30 collars. Is this just what was available for 2023?

GS: Yes, we used all of the available info.

AG: Can you remind us of the thresholds to trigger level 2 and level 3

GS: Trigger for level 3, shutdown, is 50 caribou within 5 km, and a group of caribou within 100 m of the AWAR.

AG: When you say the distances are measured to the edge of the project site? That's not regional study area, is it the actual footprint?

GS: We used the edge of the Mine site. And I understand the HOL observations are a slightly different point, so there is a difference in the distance between that point and the mine footprint, maybe 500 m.

AG: Trying to relate the number of collars to the HOL monitoring threshold. It seems like level 3 doesn't kick in until post-calving.

GS: As Megan mentioned there are different ways to determine these seasons. One is dates, which may be quite old, the other is movement. What I've done for these red boxes is eyeballed what I thought the calving and post calving looked like from the collar data, we could adjust from Megan's analysis as a next step. Just to go back, level 2 is triggered when collars approach the site.

MB: I have the data, looks like June 11 was the first level 3 trigger. Which coincides with all the calves having been born already. You are right on.

Slide 5 – Collars – Spring Migration

Slide 6 – Collars – Calving West of Meliadine Lake

GS: At this stage, caribou are 20 – 45 km away from the mine during calving in 2023. Level 2 has been triggered.

Slide 7 - Collars – Calving West of Meliadine Lake

GS: The collars data give good advanced warning of caribou approaching with a 2 week period with caribou at or greater than 20 km from site.

Slide 8 – Post-Calving Near Site

GS: During post-calving, caribou are 3 – 50 km away from the mine and the mine is shut down.

Slide 9 – Post-Calving Near the Coast

Slide 10 – Summer Return to Site

GS: When we first see caribou approach in in spring migration, we get good advance warning. And when the re-approach in the summer we also get good warning.

Slide 11 – On-Site Height of Land Surveys (HOL)

DCh: The HOL surveys in level 2, you mentioned some observations are up to 8 km away. Those are estimated distances or how is that determined?

GS: HOL surveyors are aware of what the distance to the shoreline is, in this example, so they are estimating distance from what they can see in the field and using the map.

DCh: Just to follow up, the viewshed from Agnico shows certain areas where caribou can't be seen.

JT: There is communication between conservation officers, our staff, Agnico, even before they get to where the map showed they were, Agnico is aware.

SSav: We want to emphasize that, we are getting information through many different indicators.

SA: Looking at figure on slide 11, from July 12 – 22, there are observations of caribou within 5 km, but no longer in level 3. Why was it not continued?

GS: Good question. We plotted all the observations made, not just those of groups over 50.

SSav: That information would be in the daily emails sent out.

GS: Comparing to the collar data. July 12 – 22. The last collar within 5 km was around July 9 or 10. The closure of site is based on the HOL observations, rather than collar. That's good because we're not seeing many collars within 5 km, but we are getting more HOL observations in that period. Those are all different sizes of group.

JT: On the July 12, email from Agnico indicates there were 2 caribou within 5 km. That was the number shown, below the threshold.

AG: Curious about the dots. If you were to redo the figure, could you show which were above or below 50 caribou?

GS: Yes, that could be done.

AG: I can't remember how many HOL points but any way of incorporating that information to show whether some sites are picking up more caribou than others?

GS: Looking at the data, there are different fields. One describes when surveys were done and locations, separate data for what was seen. We have effort, but the observations don't necessarily link to the HOL locations.

AG: Ah so that might need to be considered, reporting the data per site.

GS: I am happy about these results. I'd be worried if the first observations were these caribou down here and we hadn't seen them gradually getting closer. The easiest way that you can see them at greater distances is along the lake. The best distances are northwest along the lake. So a happy coincidence that's the direction they are typically coming from.

AG: In the HOL surveys do they include if they see a calf?

GS: If they are close enough they do report cows and calves.

AG: Did you look at that separately to see if there is a difference whether cows with or without calves were seen closer to the site?

HB: I had a quick look at the data and the maximum distance we can see cows with calves is less than 2 km.

GS: I don't think it's a focus to write that down though Anne. Really looking for total number. No separate trigger for cows with calves.

AG: I was asking because looking at Mitch's reports (2017)[5], the edge of the calving ground is pretty narrow band with low densities. Mostly non calves. Where they start to show up is in the core calving ground which is more distant. The logical follow up to what you and Meghan are doing is to look at the maps that give density based on aerial surveys, 2017 and 2022, compared to this. Interesting measure of HOL surveys as well as collars.

GS: We do have location of observations. (*Discusses group sizes on screen*)

AG: These group sizes are more indicative of the core calving ground. Oh, post-calving. My mistake.

GS: I can look at the collar data for that day, the 12. When the group sizes were over 1000. The collars are densely packed on the calving ground on the May 29. I'm surprised we're seeing them out here. Might be non breeders or just the edge of the calving ground.

AG: More to this than accumulated sightings I guess. A lot to think about.

GS: Any other questions? Takeaway form this is the collars give us 2 – 3 weeks of reliable information about how far the caribou are, and the HOL surveys give us 2 – 10 days of warning before they arrive within 5 km.

- Break -

6. Meliadine TEMMP Version 5 Revisions

Time: 3:43 – 4:53 pm

Supplemental Material: file titled "Meliadine TEMMP Version 5 Update"

Presenter: Sara Savoie, Agnico Eagle

Slide 2 – Outline

Slide 3 – Overview of the Main Changes: General Reorganization

Slide 4 – Overview of the Main Changes: New Sections

Slide 5 - Overview of the Main Changes: New Infographics

Slide 6 – Draft TEMMP version 5

SSav: The Word copy of the TEMMP was sent out December 20th, we didn't receive any written feedback. We wanted to leave the floor open today though. We can discuss these and have the Word document open and go section by section. Does anybody have comments to share?

SA: Didn't understand we were asked to submit written comments on this version. I've gone through and made comments in the margin but what is the intended process here? I assumed after this meeting there would be another draft where we would provide written comments. From GN perspective providing written comments is a process, needs some time.

[5] Boulanger J, Croft B, Adamczewski J, *et al* (2017) An estimate of breeding females and analyses of demographics for the Bathurst herd of barren-ground caribou: 2015 calving ground photo-graphic survey. GNWT Manuscript Report No. 267

SSav: The intent is a discussion with the TAG, what we had discussed in the 2023 meetings was we want to submit this updated version 5 in the annual report, so at the end of March. We were asked by TAG to provide a written version after discussing the main changes with the TAG in 2023. The intent with us by providing the written version was for comments to be made. We understand it's important for members to provide written feedback so given that and the deadlines that we had discussed I throw part of the question back on you, when is a reasonable time that we could receive written feedback?

SA: I guess a lot depends on the outcome of this meetings and what is recommended for revisions. I assumed after this meeting there would be revisions and then a new document sent out for comment. A comment period would be February basically.

SSav: After hearing everyone's comments, we can discuss the timeline.

SA: The presentation that Greg provided, can we get a copy? (yes)

SSam: And the attendance of the group?

SSav: Yes, we can circulate that list. With regards to the TEMMP document revisions, are there any members that are ready to share comments or have questions?

AG: Yes, we have comments we'd like to provide and questions. In the text there is reference to the TAG supporting various statements in the TEMMP. How will you handle that? Will the TAG sign off on the final version? Or particular comments?

SSav: Per the process, Agnico has a commitment to provide an updated version of the TEMMP within the annual report. The aim of the TAG is to gather feedback and comments and make sure we have a document we are comfortable with. However, if we can't arrive to a final product before the deadline, we need to communicate that to NIRB.

AG: Will there be a formal process in TAG where we go around the table and say yes, we agree with the TEMMP as a whole, or these sections? The Meadowbank (MBK) TAG has a formal process to sign off on things we've agreed on, how does that happen with the Meliadine (MEL) TAG?

SSav: We are not as mature of a group as MBK and our terms of reference give flexibility on that matter. My hope is that we get everyone's agreement through a formal process, so we could explore doing a similar process as MBK. We are also open to other suggestions.

AG: Ok something to think about. We had two excellent presentations today that are helpful in the TEMMP. How will those be incorporated into the TEMMP prior to our last review.

SSav: Both presentations will be made available through the OneDrive. It wasn't the intent to include those presentations with the TEMMP. It was more to provide context for the changes or methods that are proposed. We may be able to add some references to that throughout the document.

AG: I wasn't thinking so much having the presentations in their entirely, but a couple of Greg's figures would be really useful and then Meghan's maps are really useful so people can visualize what the TEMMP is trying to achieve relative to short and long terms shifts in calving. It would be useful to include some of the figures.

SSav: That information could be in baseline appendices or so on. We could ask ERM and WSP to draft a short memo with the key elements that could be added.

AG: That would be fine. We have quite a few other comments, I'm not sure if you want to go through page by page, or how you'd like to do it.

SA: Based on past experience, if lots of parties have comments it makes sense to go through section by section and hit some of the main points people have on each section.

SSav: Yes, we can do that.

DCh: The terms of reference for the TAG. It's defined in the terms of reference that there are TAG recommendations and advice. I wonder if that's an avenue to follow.

SSav: I think that's a good point. Hopefully as a collaborative group we can reach an agreement before we submit it. So that's where we want to discuss before we ask for a formal opinion, whether advice or recommendation. We'll share the document on the screen and go over each section.

HB: Any comment on the introduction? Section 1.1

HB: Section 1.2?

SA: Under 1.2.2 NIRB commitments. It says on page 2, commitment to work with GN to measure traffic on the AWAR. The TEMMP doesn't have any discussion about traffic monitoring at all.

SSav: Within the annual report we do have a discussion on traffic.

SA: Right, but nothing in the TEMMP specifically.

SSav: That might be a section we elaborate on, because we do it and report on it.

SA: Yes, that would be good to see a section on what the monitoring is and what's being reported.

HB: Any questions on Section 1.3? IQ

SSav: The main change over the last year in that section is we discuss the elders' advisory committee.

HB: Section 1.4.2 Purpose, objectives, scope

AG: Concerned about wording for some objectives. (*wording suggestions recorded on screen copy - Anne to provide written suggestions for wording*)

SA: I also had highlighted that line – measurable goals. Because looking for those achievable measurable goals, it's hard to find them in the TEMMP. Be nice to have some part of the TEMMP that comes back to that objective.

HB: We tried to insert measurable goals but maybe it was misunderstood. That refers to the FEIS prediction and the table with the different monitoring, what it will measure, and the mitigation measure applied. I can show that table quickly (*describes Table 12*).

SA: But (Table 11) there's no plan for assessing effectiveness. No plan for data collection, how you'll report it. Something like the recent collar analyses that was done should be an integral part, something regularly scheduled. I find that the annual reports are tables of summarized data as opposed to analyses. Some more interesting analyses looking at mitigation effectiveness aren't in the annual reports. Like the type of analysis that Greg did today. He did one year but might be worthwhile having periodic analyses.

MB: It's important to look further on Table 12 because that's in here, we just need to break apart some of these columns. Table 13. We do have thresholds which are the goals. Where we can make improvement from what I'm hearing is you'd like to see the explanation of how the data will be analyzed to determine if that goal was met and maybe include a reporting frequency too.

SA: I'm looking for something that tells me that in the annual report we'll be seeing analyses of trends for example, a comprehensive review. To look at mitigation effectiveness, shifting trends.

More that just number of cars on the road for example. We should be looking at things like periodic analyses of collar data for disruption of movements, zone of influence analyses. Anyone else have thoughts?

DCh: I can see these tables have thresholds. I believe that these are designed so we can then collectively manage into the future when we find information. But I don't see where it says we are going to act on anything. Other than for example if more than one raptor dies, what adaptive management would Agnico Eagle put in place. Apparently the TEMMP is there to guide onsite management, so there needs to be more detail here. I can see more analysis of some of this needs to be done, and then that might be a trigger. I get the sense we are just collecting information and then that needs to be used actively.

HB: If a threshold is reached, we need to adjust the mitigation measures. For example, we try to avoid impacting habitat. There is a mitigation. If we have reached our limit that means it doesn't work. Every thresholds are associated with mitigation measure sections. The way we will react is through those mitigation measures.

DCh: If more than one raptor is killed, you plan to deter raptors, deter wildlife, manage attractions, adjust employee policies.

HB: Those mitigations measures are in place to ensure none are killed and those are full sections in the TEMMP. If we exceed a threshold, we can adjust those mitigation measures. The adaptive management is through that. We can change some of those mitigation based on what happened, for example through incident reporting we will know why the threshold was exceeded.

DCh: The mitigation measures are in place to avoid more mortality. My question was if you find 3 died, are these the only mitigation measures you'll address or others?

SSav: This is also one of the TAG mandates is to have these discussions. Section 1.3 is on adaptive management. Let's say we do reach one of those thresholds, we can have a group discussion, why did it happen and what should we do about it.

MB: That adaptive management is a cycle.

DCh: What you're saying is if any threshold is exceeded that's when you'll implement adaptive management with feedback from the TAG.

SSav: This is also reported in our annual report. We'll be questioned through that process as well.

AG : The thresholds are part of the consideration, but how effective is the mitigation is another. The problem is some of the thresholds have been around for a while and don't get re-examined so they need to be part of the TEMMP reviews. To see whether we can make them more specific. Like for caribou where the thresholds are not particularly effective. I wanted to make that link between the objectives which are to talk about effectiveness of mitigation and also the thresholds which are one of the measures of effective mitigation.

MB: That's important, these thresholds are in part a measure of mitigation success.

SA: This section on raptors is different form the one on caribou. Where some predictions are indirect habitat loss, etc. it doesn't say how frequently an analysis is conducted to assess those, or how. See what I mean? In that sensory disturbance row under monitoring frequency, what that really is reporting period. It should be indicating every 3 years, 5 years, data sources etc. a summary of that analysis.

AG: I wanted to say it's more complicated than that. Because the timescale for the monitoring vs the review of the monitoring is also driven by considerations of the annual effect size. I think there

is a lot of thinking to go into these time scales, it's going to vary between predictions and thresholds. And also sensory disturbance seems an odd limitation for understanding project impacts on caribou. It's restricted to deflections. It seems we're allowing the monitoring method to drive how we measure impacts. And other methods could be used. In our specific comments we will be adding some of these details.

SSav: Thanks for that Anne. What I hear is you're proposing to send some specific comments on that table but at this time we move back up in the document.

HB: Anything else on Section 1.4.2?

HB: Anything on Section 1.5?

HB: Anything on Section 1.6?

HB: Anything on Section 2? Project Description

SA: For the caribou effect study area. This seems to be the description from the current TEMMP, but I'm not sure why we are still using this. We should be using caribou effect study areas, which would be the seasonal ranges.

DCh: Seems like a carry over from the FEIS when we've now further advanced.

AG: One reason for how it was set up is that it was for cumulative effects assessment.

MB: I would err on the side of keeping the larger study area, it's actually more conservative.

SA: For monitoring, if you're looking at sensory disturbance for example, any loss will look quite small when the denominator is this huge caribou effect study area.

AG: Maybe you need both. An overall area and seasonal ranges.

SA: I can live with that. As long as we're assessing based on seasonal ranges. This study area was defined with collar data from 1998- 2011 so there is more data we can update that with.

DCh: I'd like to see wording this paragraph to refer to the fact that it was established for cumulative effects assessment, not seasonal activity.

HB: Anything on Section 3? Baseline Information

AG: I'm not sure about the need to include all this information. Particularly the rehash of the population trends. More useful to look at the Beverly-Qamaniruaq Management Board (BQMB) assessment of the vulnerability of the herd. The herd size graph is colour coded but the information is potentially still misleading because a mixture of monitoring methods. It would be better to follow GN and use the information they provide for trends. The big thing I think is to take advantage of the analysis that BQMB undertook to come up with an assessment of vulnerability.

SSav: When we were putting the document together, we wondered if this information should go in an appendix.

AG: It should be in the core document, but it should deal with the BQMB assessment, and the section would be shorter with more information.

SA: Particularly important is that it highlights the important changes that have occurred in distribution and movements which the TEMMP is responding to.

DCh: I support that inclusion of BQMB methods.

AG: The other advantage is it represents the knowledge of those communities. I thought I'd also offer a sentence or two for the baseline on rate that calves are abandoned. I sent a summary for the BQ herds. Because these herds have unusually high abandonment rates.

DCh: I support that too.

SSav: Anne can we send that information out to the whole TAG?

AG: Yes

SSav: It's time to wrap up for today, we havemore time tomorrow to discuss TEMMP revisions.

7. Roundtable

Time: 4:30 pm – 5:00 pm

Supplemental Material: Agenda

Presenter: Sara Savoie, Agnico Eagle

- End -

8. Day 2 - Greetings

Time: 9:00 am – 9:03 am

Supplemental Material: Agenda

Presenter: Sara Savoie, Agnico Eagle

SSav: (*Welcome, review of agenda*)

9. Meliadine TEMMP Version 5 Revisions (Continued)

Time: 9:04 am – 11:59 am

Supplemental Material: file titled "Meliadine TEMMP Version 5 Update"

Presenter: Sara Savoie & Helene Boulanger, Agnico Eagle

HB: Any further comments on the Baseline section?

DCh: The raptors baseline – you quote some studies but I'm aware of a number of others related to falcons.

HB: This is a summary from the FEIS.

DCh: Thanks.

HB: Section 4?

AG: We will have few comments on the monitoring protocol because we'd like to see it divided in monitoring for calving and monitoring for post-calving and summer. We also have comments on mitigation for calving. Those will be reflected in the monitoring protocol. Should we discuss now or

the mitigation section? During calving the caribou are stationary, and as we heard from Greg, we can expect 10 d notice based on collars and height-of-land monitoring before the caribou settle as to where they will calve. We'd like changes in the collar monitoring to be more frequent than twice per week. We will suggest level 4 for calving, and specific monitoring 3 – 4 times per week, with timing based on collars and starting earlier in the season.

HB: I'll suggest instead of creating a level 4, we put this in level 1, when they are coming in.

AG: I thought about that, and the reason I mention level 4 is we want to emphasize vulnerability during the 7 d calving. We want separate monitoring protocols for calving vs post-calving. It relates to the thresholds. It's confusing that you have level 1 for monitoring and level 1 for mitigation. But we want an increase in the frequency of monitoring during calving vs post-calving. The presentations yesterday were great because they indicate the amount of time you have to prepare for the arrival of the calves.

HB: We will see the leaders first. The calves will be after.

AG: What you know is from the collared cows, when they are likely to arrive. Two ways. The analysis we are missing is where the calving ground is likely to be the following year. We know calving and greenup dates change too. An analysis of changes in calving grounds locations year over year would help in the analysis. The way cows move as they reach their calving ground is quite different from leaders during migration. They spread out, and some non breeders and younger animals may be ahead, which is why you get a low-density edge to a calving ground. A lot of detail to go through. Especially useful when you have the maps for aerial surveys to help design the monitoring.

HB: Can I suggest for you to send us something in writing? Might be easier to evaluate.

AG: We can do that, but we also have another suggestion. We don't have enough time today to really get into details for this next draft of the TEMMP. We suggest that KivIA is interested in a sidebar discussion with Agnico and other parties, more of a working group to examine some options for the monitoring and mitigation in anticipation that a rapid response may be required if there is calving in the vicinity of the mine. Rather than just us coming up with the text we suggest to have a virtual meeting to work together on options.

HB: Ok for us.

SSav: I would add that we were going to propose a virtual meeting to finalize updates, whatever comments parties can share in writing prior to that meeting will help us to get a revised working draft to share prior to that meeting. I think that would be the optimal process.

AG: Ruling out a sidebar discussion?

SSav: No, if you can send us as many comments in writing prior, we can propose a revised draft.

AG: The difference here is it would be hard put to provide detailed comments because we don't have all the information. Two types we are missing. One is operational requirements, so as how to fine tune level 3 mitigation so it's protective of calving. And we also don't have all the collar information, height-of-land survey data that would allow us to fine tune the monitoring. That's why we suggest to work together directly to have that. I don't know where GN or others would stand but I think the best way would be a working group to go through some of these details.

SSav: Ok that's something that we'll consider Anne. Do other parties have thoughts on that ?

DCh: Thanks Anne. I'd like to be part of that committee to discuss these details. It does seem that we need some more information, and specific to calving and post-calving. I wouldn't be able to provide a lot of detail because we need to set a framework that outlines this type of protocol that

you're proposing. I believe it's going the right direction but I'd like to be part of a sidebar to put together an outline on those specifics.

JW: The GN is also amenable to a follow up virtual meeting that's more focused on monitoring for calving and post-calving.

AG: Ok great we appreciate that and we'd then be in a position to provide as much suggested text changes as would be helpful.

SSav: Ok we will set up a virtual meeting specifically on the calving section.

AG: I wonder about Stephen, GN and Jess, if you have any comments and if it would be possible to collaborate. I'm sure Mitch will have looked at trends in calving grounds, and I wonder if that info could be brought forward.

JW: Stephen is late today but we could do a sidebar and see if that's available, possibly ahead of the follow-up virtual meeting.

AG: Thanks.

SSav: Ok we will move forward and set up a separate call on the calving.

JW: Stephen will probably have comments on the monitoring protocols so maybe we can come back to this if we have time.

HB: Yes. Next Section 4.2 – caribou monitoring program during Level 1, 2, 3.

AG: Can we add specific objectives to measure residency time, and to measure exposure? We can provide the wording in written comments later.

DCh: Also in objectives, through the process we recognize the collar program is used as the primary method to measure the 10% deflection. It should maybe be in here that it the primary use. And should talk about the fix intervals of the collars. Might be better to have more information.

HB: The fix intervals of the collars is in the TEMMP annual report because it changes. We try to have the TEMMP as short as possible.

JT: Since Stephen just got back can we go and inform him of the working group he's going to be on?

SSav: (*summarizes suggestions made so far on working group for calving*)

HB: And if we can have comments ahead of time that will facilitate discussion.

AG: (*summarizes suggestions made so far by KivIA on monitoring and mitigation for calving, and suggestion for sidebar discussion to get into technical details*)

SA: That seems to take a huge chunk out of what we were going to discuss today no?

HB: That would be the purpose. We can still go through to make sure everyone agrees or has comments on the TEMMP, but we'd spend more time in a sidebar on the caribou section.

SA: What about post-calving, the project overlaps with that too. Doesn't it require heightened mitigation?

AG: Completely, we want to have separate mitigation and monitoring specific to calving and post-calving. Separately.

SA: Today we wont talk about calving related monitoring and mitigation, we'll shelve that.

SSav: We will put the focus on the rest of the document and we can touch base on if parties have general comments they want to share in preparation for this subject specific workshop.

MK: Are we going to be able to have a timeline to read carefully and comment as well?

SSav: Yes, we will set that timeline together today.

JT: (*Inuktitut*)

HB: We will move to muskox – Section 4.3, any comment?

DCh: We're skipping all these sections, behaviour, cameras, height-of-land monitoring?

JW: I thought we were just skipping calving.

HB: What we can do right now is just to have a general idea of comments on the caribou section, without lots of details?

SSav: I'd propose that given the feedback and the limited time today to go over the document, we go over the non-caribou sections which didn't have any major changes, gather feedback, and then go back to the caribou section knowing we will have a separate meeting for that.

DCh: I know we want to focus on the calving but under that section there are four subsections. If those are going to be discussed in the sidebar, I'm fine with that. Otherwise, there would be some comments I'd have. Anne, is that right?

AG: Yes, that makes sense that we would cover all the monitoring methods and how they apply to calving. Originally, we were thinking a sidebar just for calving, but it's logical to include post-calving.

HB: Ok, so we will move to muskox. Any comment?

SA: I had one comment, it relates to muskox baseline, section 3.2. The caribou baseline was updated for the TEMMP up to 2023 but the muskox hasn't been updated. I think it would be worth doing that. Even looking through previous report observations there are quite a few observations. 2010 – 2023.

HB: Do you think a graphic?

SA: Just some sort of summary, changes over time if there are any.

HB: The purpose of the baseline was mostly just to take information from the FEIS. We didn't want to focus too much on that. But ok.

AG: Stephen, question. Since the 2014 baseline, I know that GN has done muskox surveys in the Kivalliq. Are you aware of any recent ones since 2014 that would overlap the RSA and any planned?

SA: I'm not aware but we should check into that.

JT: I know conservation officers also collect information where they were harvested. I wonder if you could look at that too.

JW: Look into harvest data, past studies beyond what's already cited, and any planned work? We can do that.

HB: Any comment on Section 4.4?

HB: We will skip section 4.5, but any comment at a high level?

JT: If we have time, we could come back to this this afternoon.

HB: Yes, great idea.

HB: We will skip to Section 5, general wildlife monitoring. This is all year long, unlike the caribou section which is mainly during migration.

DCh: Wildlife sightings log – anybody from environment would fill in that log?

HB: Yes, there is a difference between incidental observations and the sighting log. Section 5.1.1 and 5.1.2 are conducted by environment staff. 5.1.3 could be anyone. The Sighting log is all information collected from those 3. We separate if it's incidental or from a survey.

SSav: In addition, we submit monthly reports to GN with all the wildlife sightings.

DCh: Back in June, the TAG was up there, and we went on a tour to the gate house. A few of us observed a caribou off the road in distress, it fell over. I talked with Craig and a few others. I believe it was mentioned it would be an observation recorded, checked into. Would that occurrence be in here?

HB: It should be, and the GN was aware.

HB: Comments on Section 5.1.5? None.

HB: Comments on Section 5.2? Furbearer monitoring.

EE: Documents? Why don't we just keep it in Nunavut? Locals will be happy. Now our coastal are going inland, really looking for furbearers. I wish it could be in Nunavut. Keep the document in Nunavut.

JT: (*Inuktitut*)

SSav: With regards to the documentation, on the Agnico front, we report to the government as per our obligations. We have a certain number of reports we are required to share and they are publicly available – they are not not confidential.

EE: *Matna*

SA: Could we go back to 5.1.2. During the review of the waterline or extension, GN had asked for road survey data, partly we were looking for caribou sightings based on distance and side of road. We got back a response that they didn't collect side of road. When surveys are done at Whale Tail, they collect that, and it's proven to be an important piece of information. When they undertake a directional movement, as during summer back across the road, at Whale Tail it's been seen there is a great disparity on the up and downstream side and that has been used as evidence for blockage of caribou. I wanted that addressed in the methods.

SSav: Yes, we can address that.

HB: Section 5.2.3, raptor monitoring?

RM: Any place right at camp where there are raptor nests? Or possibility?

HB: We haven't seen anything on buildings, but in the surroundings maybe.

RM: I was wondering about right on camp, on Agnico structures. Just curiosity.

HB: During the wildlife monitoring we have technicians that go to see all wildlife, and if there is anything like that, they would write the information. And also, the incidental observations.

SSav: We just verified and nothing was logged for 2023.

DCh: In the document you mentioned, there are pre-clearing surveys for the pits, has that ever occurred, seems like you'd want to be on top of that in spring, before nesting. Not ever been a recorded nest attempt by a raptor in a pit?

HB: We did in the past and we had a nest-specific mitigation plan for that nest. But the reason why we do the site monitoring is to figure out where they are before they do nests. We do have communication with the GN. But we didn't have any this year it looks like.

MK: What about on the AWAR? Is there monitoring?

HB: For the nests we have a specialist that comes and he knows where the nests are. He has a regional program. Arctic Raptors, Alastair Franke.

SA: There has been a long-term monitoring program in Rankin for almost 50 years. Logging all the nest in that region. Many raptors use the same territories year over year. The locations of the nests have been well documented. GN went through this with Agnico during the FEIS 2014 review, and the need to provide protection for active nests. Under the GN *Wildlife Act* you are not permitted to disturb or destroy a raptor nest. So known nests are monitored. We were concerned about new nests on quarry or pit faces.

MK: I was asking because I know there was one under the second bridge. It's hard to get to because of the water.

HB: This one is a crow nest. We've seen it.

DCh: Crow not raven?

HB: Yes, I'm sorry, raven. Yes, we follow that one to make sure there is no impact. Section 5.2.4, migratory bird monitoring? Any question? (none)

HB: Section 5.2.5, vegetation monitoring, any question?

DCh: The PRISM plot surveys, Agnico has a consultant do those? (yes)

HB: For the PRISM it's Environment Canada who selects where they want the survey to be done.

DCh: Whereas the point surveys, are they directed also by Environment Canada?

HB: No, but done by the same consultant.

AG: I was interested to see that the program for detecting metals in the vegetation, do you have any details on why it's being redesigned and the nature of the redesign?

SSav: The idea is to have some more representative sampling stations with regards to how the site has evolved over the years. Greg can provide some additional details.

GS: Primary reason is that the historic program came from the baseline. There were some sampling pointes immediately adjacent to the mine, and some control sites. That design has a fairly high power to detect if there are more minerals near the mine, but it doesn't necessarily tell you where they come from (natural vs dust). The redesign is to try to understand the geographic scope of the inherent mineralization and any dust effects.

AG: That make sense. Can you remind us of the plant groupings? I see it through the eyes of caribou forage.

GS: Good question, the NIRB PC includes two requirements, one is caribou forage and one is food plants, berry plants. The reasoning so far has been to define the program and anything new is focused on lichens, the caribou forage.

AG: And probably the most susceptible to acquiring dust-born metals.

GS: Lichen monitoring is conducted worldwide and is the gold standard for dust. They uptake very little from the soil and are an excellent indicator of airborne metals. One important thing is you always co-sample the soil under it, because if you do have high mineralization in the soil it can drive up the mineralization through natural processes. The reason to measure a lichen instead of directly measuring dust, is because the actual amount of dust falling is low and the background is high. The standard method of measuring for dust, putting out canisters is … (*pause due to water leak in the conference room*).

- Break (10:15 – 11 am) –

HB: Any further comment from Greg or Anne on the vegetation?

AG: No further question.

JT: For vegetation, berry picking areas affected due to mine activity, there was talk with the permitting group about giving access to other berry picking areas? For like cloud berries and crow berries. Is this the venue to discuss that? I know there was some research done on locations.

GS: I don't know of any initiative yet for any new roads or access. To date, the focus has been on redesigning the dust program for the lichen sampling. We have yet to address the berry sampling component. As a note, the program is supposed to happen every 3 years, so a couple of years away.

JT: Ok.

HB: Section 6 – wildlife mitigation. Section 6.1.1?

DCh: What is the frequency of the training for wildlife mitigation? Is it for new people, or existing?

SSav: We have several components to the training. We have mandatory induction training for anyone coming to site, including contractors. For refreshers we have morning toolbox meetings with all departments and the environment goes to give talks on wildlife topics. They are also adapted if there is a specific issue, area of concern, or according to the season.

DCh: Is that reflected in this?

SSav: The intent of this section isn't to get into that level of detail, but the content provided to the employees and contractors is there.

HB: Any thing else on 6.1.1?

AG: In 2022, 37 foxes were trapped and killed. The threshold is 20 foxes. In a case like that where you are exceeding thresholds, is there a requirement for enhanced training? It's not explained why so many foxes had to be trapped and killed. It was a GN decision. But presumably they were attracted to food, so was there training in response?

SSav: Good question, we can shed some light. There is a general context. In 2022, trapping was requested by the GN due to rabies concerns mainly. Following that situation, we did increase our training on waste management practices. Internal and external audits were done, with consultants. They provided some recommendations, noted some areas of improvement. Those results will be in the annual report.

AG: Ok thanks, maybe in section 6.1.6 there should be a provision for emergency response as a situation emerges that requires mitigation.

SSav: 6.1.6, management of attractants?

AG: If that was the situation with the foxes. A provision for emergency training or having a contingency when a problem is happening.

SSav: Yes, we can work on that.

HB: Question about 6.1.2, road design and maintenance?

MK: I'm wondering if you can have signs for which way to go, around the camp, for hunters?

SSav: Good point Maria, something we can discuss with our team. There is also radio communication when near site. There are a few ways we can look to improve communication. We will have a chat with them and get back to you on that.

JT: For the slopes of the road, put fine material so it's easier for crossings.

HB: Anything about 6.1.3, traffic?

RM: Any ideas of ways to improve traffic, if hunters go out, and near misses, especially during migration?

SSav: With regards to traffic management during migration, we're in constant communication with KivIA, HTO, GN. In the past year for example, the HTO did decide to close the road on certain days, so that's being done. And we collaborate on road monitoring as well.

RM: I'm guessing then there are no issues from Agnico's point of view, the way it's been operating? With hunters going out and using the road?

SSav: With regards to road management, it's something that we put emphasis on during migration. We do monitor and appreciate the support from HTO and KivIA and GN. There are certain things that don't fall under Agnico's scope to enforce, so we appreciate that collaboration.

DCh: I wanted to know about road traffic in general. In summer there is almost 24 h light, but is there any regular traffic in the twilight hours? Vs during daylight hours.

SSav: Unless there are road closures in place there can be traffic 24 h/d. During migration there are road closures, and during summer we have very long daylight hours.

AG: Is Agnico going to be monitoring traffic in more detail so that during caribou migration we could have hourly or daily rates of traffic? Does Agnico have any suggestions for how to look at effectiveness of reducing speed as a mitigation action?

SSav: For traffic monitoring there is no plan to make changes. The traffic is monitored, results are reported in the annual report and available for everyone there.

AG: Will it be reported at a daily frequency?

SSav: We do have that information, we can have a look at the way it's reported and if you have suggestions. Looking at the 2022 annual report, Table 18, the information is reported on a monthly basis rather than daily.

MB: Would be a big table to put in the annual report to have daily.

AG: Could have daily data for when there are caribou in the Regional Study Area.

SSav: We do have that information and we can look at providing that.

AG: I suggest it be mentioned in the road traffic management that you are collecting that. Looking at effectiveness of speed reductions, I thought about it and I'd send the question to Dan and Greg or Dan Coulton or Stephen. Should we be considering how reduction in speed works, because it

reduces likelihood of a collision, but it also extends the duration of disturbance. I don't know whether the camera studies could help but it's something to consider.

SSav: Ok, we can have a think about that. It's important to consider that during migration there are road closures.

DC: We also know that as speed is reduced things like vehicle noise is reduced, dust is reduced, so it depends on what you think the disturbance might be. Is it the visual part? That would be increasing. Other sources like dust and noise, would be reduced with reductions in speed.

AG: I suspect it's the visual disturbance. Possibly elders or the HTO might have ideas how caribou respond to speed. We can think and discuss another day.

DC: The other piece is it reduces risk of collision. Hurting animals is a more severe effect than disturbance. Is that fair?

AG: Yes, but during calving, newborn calves follow the cow, and presumably the road would be closed and not a problem but their reactions to traffic may be unpredictable.

DC: Thanks for sharing that.

HB: Any other comment?

SA: In this section of the TEMMP there is no reference to the Road Management Plan, which is a different document. Specifically though it contains the road management agreement, which was developed by Agnico in consult with others. Going back to the FEIS review, one concern with the AWAR as it would facilitate rapid access for hunting and increase harvest pressure. But also recognized that it followed the route of traditional trails. One concern from GN was the fact that pickups didn't previously have regular access, whereas ATVs did. In building the road, there was concern that the road should be closed to public traffic when large groups of caribou were near the road, with the exception of ATVs. That's in the road management plan. Everyone is aware of what goes on in Rankin during migration. A lot of rapid access for hunting. One suggestion that came up in the FEIS review was that traditional trails didn't include bridges and that enhanced access, so the suggestion was the bridges should be closed because they allow pickups easy access. The road management plan states "Agnico is responsible to order the southern gate shut and prevent use of bridges while caribou remain on or near the AWAR". I realize there was back and forth on this, but that plan needs to be referenced in the TEMMP. And my question is whether that closure is being implemented.

SSav: A few things. It's a good point that section 10.2 should be referenced in the TEMMP and we will do that. The paragraph you referenced that we can shut down the gate, this is being done in collaboration with KivIA, HTO, and GN. Often we don't wait to reach the threshold, we can close the road pre-emptively as well, because as we saw in June there is no interest for us to get stuck on the road either way.

SA: As a means of assessing the effectiveness of this measure, can we have something in the TEMMP that indicates that for periods of level 3 road closure, some reporting on traffic levels will be provided? When we are reviewing reports, we can see what was on the road during caribou migration times.

SSav: The AWAR traffic is broken down according to different categories of vehicles, and as per Anne's recommendation we can evaluate how to break that down further.

SA: During a level 3 shut down the AWAR is closed so it would be nice to have something in the report to see what was going on during that level 3 shut down, like crew changes, ATVs, etc.

AG: Is that section 7? Harvest study, and use of the AWAR. Should we just add that it would also be during level 3. I think it's already in the TEMMP and maybe just needs more detail.

SA: If it's in section 7 that's great. But hard to go looking for things, to cross reference. Would be nice to have a section that reports specifically on activities during level 3. Helicopter flights, aircraft, use of AWAR, activities at the mine site.

AG: I agree, and it would be nice to see caribou cross links between traffic monitoring.

SSav: That's a suggestion we will assess and propose something back on. Also during level 3 we would see that traffic won't be mine related. We have some excerpts from the beginning of level 3 in 2023 and the traffic on the AWAR isn't mine related.

DCh: Regarding road management and noise, any thought for Agnico to start looking at electric vehicles (EVs)? For that short 28 km stretch? Possibly? They are quieter.

SSav: We do have a strategic optimization department assessing different options, there are some technical challenges with getting those vehicles in the north, powering them and having to care for maintenance remotely.

DCh: Recognized yes. But more steady improvement to aim at. Certainly like for buses.

HB: Any other comment on Section 6.1.3?

GB: If you're talking electric vehicles, may as well talk pavement too. Dust is a big issue. What about pavement? Would cut down noise and dust. I think people would enjoy it but they might go faster.

SSav: Thanks for that comment. Due to where we are operating there are some feasibility and logistical constraints. I'd need to get an answer from an engineer on that.

DCh: Just to note that you will look into electric vehicles and pavement and respond?

SSav: Yes we can do that.

HB: Section 6.1.4, air traffic?

MK: For KivIA or Agnico, is there a general line to report some helicopters? I know a few years ago there were some complaints about them flying low.

JT: I know we received complaints and we dealt with that with GN conservation officer for disturbance of wildlife. A couple of times.

MK: For future, who do we contact.

JT: It can be reported to KivIA, or GN conservation officer, or CIRNAC. Depends who the license is with, who will deal with it.

JH: I think everyone knows Agnico but there are lots of other activities that happen. People assume it's Agnico. That's why if it's reported to GN or CIRNAC it's best.

JT: On air traffic, question about drones for monitoring.

SSav: We wanted to talk about it during the next TAG, premigration.

HB: We could discuss it during the caribou monitoring. If it's worth to add a section on it. We wanted to do a demo in June with HTO present. It couldn't happen but eventually we would need to do that. We need to have the go ahead from HTO before though.

SSav: What we could do in this section is add a point that we can consider using drones with the proper approvals or what not.

HB: The air traffic management section here is more about helicopters and planes.

DCh: Are drones allowed for hunting in Nunavut? (no) But if I bring a personal one up to Rankin and I follow MTO regs, but I could take a drone up the AWAR, that would be legal? (yes)

GK: There are certain restrictions on size of the drone, beyond which you'd need a license.

HB: And the height too.

GK: That's a Transport Canada regulation.

SA: These air traffic mitigation measures to reduce disturbance of wildlife, in terms of being able to assess success of these, it would be nice to have something that reports on air traffic. For other mines, Baffinland, Meadowbank, Back River, they collect the flight logs and analyze them looking for flights below the ceiling and look for justification. They generate these compliance measures metrics, and able to present seasonal stats. We look to see if helicopters can maintain these standards and if not, whether there is potential for effects on wildlife. If during summer or late spring there is a lot of flying at low level, that could raise flags. I'm asking if we can have a piece in here where we are seeing GPS logs and reporting of flight altitudes relative to ceilings, similar to Meadowbank.

SSav: We will have a look at that for Meadowbank.

SA: I know we specifically asked for Meadowbank to do it during sensitive seasons for caribou.

SSav: Something to mention is there is no helicopter use during our migration but we'll look at how Meadowbank reports it.

HB: Anything else about air traffic? (none). Next is management of hazardous material. Any comments?

DCh: In regards to spills, I know you plan training for spill response on the water side. I know we requested if you're going to do training for that you should do land spills. I don't see that training.

SSav: We have a few management plans specific to spill management, we try not to duplicate the information too much but we could be more specific in referencing that.

DCh: You're saying it probably is in that spill response plan?

SSav: We could reference more specifically. We also report on the mock spills that we conduct.

HB: Anything else about this section? Next is management of attractants. Any comment? (none) Next section is deterring wildlife, Section 6.1.7.

AG: Trying to move cows with calves might be difficult without panicking them. That's one thing I think has to be added. There was a discussion of putting boulders around the tailings area and I don't think it's been done, but it might require a different contingency to be ready, because those boulders might be difficult to navigate during snowmelt. Having readily visual barriers such as snow fencing to deter and help move caribou away from where you don't want them could be useful. I'd like to see a contingency specifically for cows with newborn cows. And getting advice from the elders, if cow calf separation occurs, what to do. Just leave the calf? I think some of that thinking should be included here.

HB: Lunch break time.

10. Meliadine TEMMP Version 5 Revisions (Continued)

Time: 1:34 – 3:29 pm

Supplemental Material: file titled “Meliadine TEMMP Version 5 Update”

Presenter: Sara Savoie & Helene Boulanger, Agnico Eagle

HB: We will spend one more hour on the TEMMP and then decide if we want to discuss about caribou or the TAG annual report update. Section 6.1.7, deterring wildlife. I think we cut Anne short. Anything else to discuss for that section?

AG: Nothing more about the need for contingency in deterring caribou with calves.

HB: Any other comment on this section?

DCh: The details of the methods used, are they in another management plan?

HB: We did send that information to you, in Jade’s email December 20th, 2023, an appendix of the plan. Wildlife Response Plan. Any other comment? (none) Move to Section 6.1.8, habitat loss mitigation. No comment. Section 6.2, species-specific mitigation. Any comment on section 6.2.2? (none) Any comment on 6.2.3? (none) Section 6.2.4? (none) Section 6.2.5? (none) Section 6.3, FEIS Predictions and Thresholds.

AG: I think we may have more comments after our sidebar discussion. But for now, would be premature.

DCh: In direct habitat loss, you set a threshold of certain amount of hectares. Is that something defined in the permit as the amount that could be disturbed?

SSav: That number stems from the FEIS and I’ll double check the wording on that, but it was defined in the FEIS.

DCh: I can see in Table 15 the impact prediction is 2390 ha, and this threshold is a bit higher, so I guess there is a bit of a discrepancy in that number.

SSav: We’ll have to look into that[6].

HB: Section 7, hunter harvest surveys. Any questions?

JW: During a recent NIRB correspondence, it was indicated that developing a hunter harvest threshold number was a to-do item for the TAG and others. What work has been done to date on that?

SSav: That work was requested after 3 years so in the 2023 annual report we will present a hunter harvest study, the consultant is working on some propositions that we will submit and we’ll be available to discuss with the TAG.

JW: OK thanks.

HB: That will complete the first pass of the TEMMP.

SSav: We had a suggestion from KivIA that even though we will have a specific session for caribou in the coming weeks, that we should discuss now Section 4.5.2.3.

[6] The direct loss of habitat predicted by the FEIS is 2950 ha. Table 15 will be updated accordingly.

SA: What I had assumed from this morning was that we'd have a conversation in general about caribou monitoring, thresholds, and mitigation, is that correct?

SSav: We have some flexibility in our agenda, we can decide what we want to discuss the rest of the afternoon. So is everyone in agreement that we want to discuss caribou sections this afternoon, and we'll pay special attention to Section 4.5.2.3.

DCh: I don't think I'm clear on what you want to do?

SSav: Earlier today we decided to have a virtual meeting on caribou, however before that meeting if TAG members are ready to share some comments related to caribou now we can, with the understanding that we're going to squeeze the rest of the items on the agenda. We've had a request to discuss the Section 4.5.2.3 so we will do that too. Is everyone in agreement? Ok we will proceed like that.

HB: Back to section 4. We can start at Section 4.2.

SA: I noted that you are using collar monitoring twice per week, but you get the reports every day. They should be reviewed daily. The other comment on monitoring is that there is no step up in monitoring from level 1 to level 2. It seems to me that with a heighted awareness level there should be heightened surveillance. Based on the presentation from Greg yesterday, looking at in level 2 the height-of-land surveys detected a few groups of several hundred caribou, and a period with none, and then all of a sudden it went from no detections one day, and then they turned up the next day in the 10'000 range. And then the project moves to level 3. In level 2, you should be out there trying to get more advance notice.

HB: We work in collaboration with the HTO, KivIA, GN, so we do have a good idea of when they are approaching. We don't get surprised. With all the different methods. We do know when they are approaching.

MB: I also think part of the point of Greg's presentation was to show that the current monitoring is working. That's why we have the advance warning. I'm wondering why there is a need to change the monitoring as is if we've shown that it seems to be successful so far.

SA: My concern is you switch to level 3 the day these big numbers of caribou turn up. If you look at the activities occurring during level 3, for example getting people off the land, shutting down drilling, these should have happened before the caribou arrive in the 1000s. specifically for calving and post calving. You want these shut down before they arrival, not when they are within 5 km. For example, looking at level 3 procedures, it talks about "all employees at drill sites in the direction of the caribou migration and within 5 km of the migration will be notified and they will need to shut down operation before caribou are within 5 km" so that is contradictory. If it's triggered within 5 km, but then shut down prior to 5 km. If these caribou were arriving in small dribs and drabs that might be ok, but it's in very big groups and it's only when they are within 5 km that this suspension protocol goes into effect. All these things are still in the process of being shut down when the caribou are within 5 km. You should increase the level 2 monitoring effort and push the level 3 trigger out to 5 – 10 km so by the time they reach 5 km, everything is shut down. Perhaps with more height-of-land surveys during level 2, you might pick up those big groups further out and allow you to close down earlier. I think a 5 km trigger for calving or post-calving doesn't make sense. I'm talking about the distance thresholds for calving and post-calving, they need to be expanded. Other comments too for later.

JT: I'd agree on that one. Especially the drills take a while to shut down.

SSav: To add on that, as we discussed before, we have a caribou readiness plan that we do internally, and there are some logistical and costs that are related to the caribou migration, and

shutting down and reopening over and over has some costs. This year we did decide to send the drillers down for a while. We do manage adaptively, and these decisions were made in collaboration with KivIA, HTO, and GN.

DCh: I'd also support that, more surveys during level 2.

AG: Thinking about what KivIA had asked for back in October, it seems to me that we need to look in more detail at the monitoring relative to the time demands of getting ready for the different levels of mitigation. Some take longer to prepare for than others. I think a table of the time constraints on mitigation has to be used. The other thing is considering what Meghan showed us yesterday, the rate of movements and residency time also should be part of the frequency of monitoring. Without access to the presentations we had yesterday and time to go through all the mitigation, and if we add a level 4 for calving, that's a lot to discuss. That's why I was suggesting a sidebar discussion. There's a lot to unpack here. It seems looking again at the monitoring is going to take time and collaboration.

GS: I did just want to unpack one of the comments from Stephen about how aware the site is of caribou approaching. To go back to the slide I showed yesterday, details of the collar data. There are two weeks where the closest collar is 20 – 30 km away, and the furthest is 100 – 150 km. There is plenty of notice available, and there is also plenty of information to trigger level 2. I just wouldn't want to solely go based on onsite monitoring. As Stephen said there were examples maybe 10 d before with caribou within 5 km and then relatively close to site, 6 km, which is what prepared the site to trigger level 3. The important thing is there is quite a bit of advance notice, so if there are drills or helicopters, there is advance notice for that. I'll hand this back to Sara and Helene to say how long it takes to implement the shut down. I know this isn't discussed in the TEMMP but there is a whole lot of internal planning ahead of time to warn other departments about what's coming.

AG: Before that, they have been explained to TAG before, the toolbox meetings are very thorough and I respect that. Yesterday was the first we'd seen this type of presentation with both the collars and the height-of-land surveys. This is a game changer for fine tuning the monitoring effort and type relative to the mitigations. This will be made available within a day or two. Same with the calving maps from yesterday. Because then we can go through this and look at the monitoring. Having access to this will allow us to fine tune the monitoring and see to what extent and if it needs to be changed.

SSav: We do reiterate that once we are in level 2, every department is aware they might have to shut down quickly, and they do occur very quickly, within an hour or so. We've had external parties present at site during the migration. I don't know if KivIA has experience this year with when level 3 is triggered but it is quite effective, within an hour or two everything is shut.

HB: During level 2, any activities that could impact caribou must be approved by environment, so we know exactly where they are. For example, if you want to open a road, we won't allow that. We manage activities that in level 2 so we can shut down very quick. We plan like this because we don't want to have people stranded. Would KivIA like to discuss about their experience onsite?

JK: It was last summer we had to shut down and one of the drills was out there, and it was open, closed, open closed. And during the closure, I was asked if they could take out the rods and that takes some time as well. That's the only thing I saw during closure[7].

DCh: Does KivIA feel that the closure for level 3 is implemented as reasonable as possible? Any documentation to say "ok, at 12:35 level 3 is in place", and then someone checks when shut down

[7] This event did not occur at the Meliadine mine site.

is complete. That would tell me that the implementation is occurring in a short time. When you talk about not approving things that could delay shut down, that is like a preparatory level, and I'd like to see that more emphasized. As well as additional monitoring because those issues where the viewshed prevents even height-of-land from seeing those groups down in a valley, and they could turn up after the last monitoring at the end of the day. We talked briefly about the idea of drones too, just get a bit higher to see the gaps.

SSav: Thanks for all the comments. From what we're hearing from your comments I think we will re-work the monitoring section and clarify what actions are taking place, like the approvals of activities, we will add details on that.

HB: Carrying on, Section 4.2.2, calving range monitoring. I know there is lots of discussion for this topic.

AG: In order to address the calving range monitoring, we need in the baseline section some information on recent trends in shifts in calving grounds. We could use kernel mapping, centroid of the calving ground, shifting, distances, and we could use that to assess the likelihood of where the calving ground and how rapidly it's shifting. If it keeps going at the rate it is, will it go past the mine site in a year or two or will it settle down. To think about the monitoring approach, we need more baseline information. The maps yesterday were excellent but we need to know about the trend, and define what is meant by (…) area, is it a fixed % of the Regional Study Area, it is within 5 km of the mine site, etc. We need to explore that terminology in order to know how best to change the monitoring, and the timing and frequency.

SSav: We can see here on screen that we were proposing to add maps in the annual report, and also have the Commitment 38 reports that are available and do address some of the issues you pointed out.

AG: I also saw there was space in the TEMMP for maps on calving distributions, but not knowing what those maps will show, it handicaps us when we don't actually see the information.

HB: We did want to go through that. The maps are shown here (shares maps on screen). This one (Figure 6) relates to pg 34. This information was already presented in the hearing I believe.

AG: This was already presented in the TEMMP?

HB: Not in the TEMMP.

GS: This was in a document presented in August that looked at shifts in calving and post calving range. But not part of the TEMMP. Anne were you thinking about including this kind of figure in the TEMMP itself?

AG: Just trying to figure out what this figure is. I haven't seen it. If I missed it in August TAG meeting.

HB: It was not in the TAG

DCh: I don't recall seeing these maps.

AG: So is this a single year?

GS: The ones we worked on as part of the technical comment responses for the expansion in August, looking at movement of calving and post calving for different periods of mine development. I'd have to check on these figures.

AG: I'm not really quite sure what this shows so I'd answer by saying we need maps that show the last 5 years of calving distributions and overlap so we can note the trends. Like the heat maps. They were great.

HB: (shares heat maps onscreen – Figure 7)

DCh: We've seen these maps.

JT: For those calving ranges, if we can go back and find out which groups of calving went east, and which went back south. They might have had different post-calving periods.

DCh: I'd like to add when we looked at those green images (Figure 6), what time frame is that? One year, or series? And that's just collar data I'm assuming.

HB: I'll find that information for you during the break.

SA: Anne I think I know what you're suggesting. A calving range monitoring program, what you're suggesting is annual analysis of the calving range, and that in say the annual report, that distribution for that year plus the previous 4 years be reported and assessed for shifts.

AG: Yes. And the TEMMP makes it clear that we can use that information in developing thresholds for mitigation.

SA: So in that section, annual reporting of current year calving distribution and previous 4 years.

AG: The other thing is shifts in the calving and post calving would be included in the baseline, with references where they could be found, or an appendix. So the information is at hand in the TEMMP.

SA: Does that make sense?

SSav: We can discuss that in more detail in our upcoming sidebar meeting but yes it does make sense. Break time, and then we will do a quick overview of the annual report. Is that ok?

- Break (2:30 – 2:50 pm) –

SSav: We have circulated the draft TAG Annual Report, do we want to switch to that now or keep going with the caribou monitoring discussion?

JW: Re the caribou monitoring program, Section 4.2.1 it says that Agnico contributes to the GN collaring program, when was the last time that a contribution was made actually?

SSav: I'll have to check.

JT: For Section 4.5.2.4, I have a comment on light duty activities, it was an approval process with the KivIA and HTO onsite, that was a stipulation. Change that wording.

SSav: Ok yes that's correct we will make that clear.

HB: Anne any question on Section 4.5.2.4?

AG: I don't have a question, trying to process the information from yesterday. This section is critical to sensory disturbance. Because there are still underground operations, if you reduce those you reduce chances of needing an emergency response team. We will provide a written response.

SA: I agree a lot to think about on this section. Still thinking about heightened mitigation for at least calving caribou if they turn up around the site. Where it's known that the calving distribution and maybe post calving has from year to year overlapped the actual site. Looking at this list of permitted activities I can't help but think if we have a mine surrounded by calving caribou there needs to be a grater degree of shut down than currently under level 3. The bar needs to be raised. And if there is a way that we have a level 4, planned operational shut down for calving and post-calving, whether it's possible to take measures such as reducing or shutting down underground mining to shut down vents and fans, stopping haulage, no longer feeding the buggy bin, having a planned shut down of the processing plant. I know that Meadowbank do planned maintenance on the plants during the

spring migration I think. Right now calving doesn't overlap the project directly but if it does a level 4 will be needed. On this list, I'm wondering whether more could be taken off the list during level 4.

AG: Thank you, Stephen, that is what we're trying to say. We want level 4 that looks to reduce light duty activities. The reason is it's for a 7 d period when the calves are newborn. And we need to cut down the noise. We saw yesterday that although level 3 reduces noise by half from level 1 and 2, the lower frequencies are not that much reduced. And then, how effective is the seawall in a visual barrier if say there is a vehicle moving with a backup beeper. We need a much harder look at the light duty activities to see for a 7 d period, if calving occurs in 5 km of the mine. And we talked about this in October, that we wanted enhanced mitigation for the calving period. And the only mitigation in this TEMMP is consultation with the HTO, KivIA, and an annual report. While useful those are not specific mitigation activities that reduce sensory disturbance. And this is what we're trying to get across.

SSav: Thanks Anne and Stephen. We look forward to further discussing these sections during our next meeting. Something that is important to note with regards to light duties that are occurring during level 3 is that they do take place as shared previously, in areas with a visual barrier, whether by a seacan wall or by the site infrastructure.

GS: The concern I would have is that there have been requests for additional mitigation here but if this is partly a science based exercise for making decisions on mitigation, wouldn't we need to have some indication that the current mitigation isn't working? That they are bothered by these activities. Because if not, why would we shut them down.

AG: Because equally we could argue that has it been shown that they are effective?

GS: I think that we are not seeing caribou avoiding the site, or not crossing the road, we see them near site on cameras, and we are not increasing the amount of behaviour studies. We have good information on behaviour from the road from previous years, and now pushing to add more on the mine site, that might be the information we need to make decisions about whether they are disturbed.

AG: I thought you'd be reporting on behavioural observations at the mine site, and I'd make the point that it's hard to work on the TEMMP without up-to-date info. I don't think we want to get into a debate about Commitment 38. I think at this stage our argument is not so much about post calving it's the risk you're taking with calving. The communities have been so clear about their concerns on calving. We now have an operational mine that may overlap calving grounds. We could be faced with say densities of 50 – 60 cows per sq km with calves within 5 km of the mine site, and the monitoring developed for post-calving, how sure are we that it would be applicable under the situation of high numbers of calving cows and newborn calves. What we're asking is that we need as a precaution to have mitigation that will be more protective. Because we don't know how effective the mitigation is for post calving. I'm not trying to pick an argument. We'd just like to see level 4 as a precaution to reduce the mine's activities if there is calving within 5 km of the mine site.

DC: Anne you're correct from Victor's presentation, there is still some low frequency noise. But the other thing Victor showed is that wind is also producing low frequency noise, and some of the downwind microphones close to the mine site could not pick up anything beyond wind and birds during level 3 shut down.

EE: 4.5.2.4 emergency response – is it only inside the camp? And the road?

SSav: The emergency response team could be deployed let's say if an employee has a medical situation that cannot be addressed by nurses onsite. If they need to go to Rankin or be med-evac'd. When that occurs, we talk with KivIV, HTO, to inform them. So that's an example.

EE: What if *tuktus* are near the camp road and locals went out hunting and got tipped over on the Honda or had a bad accident.

SSav: That could also qualify as an emergency. In the past Agnico has provided assistance when people have had accidents on the road.

EE: Are you allowed search and rescue to use the road?

SSav: Yes

EE: Ok

SA: I wanted to second what Anne had said. Without getting into debates, I'm not convinced that we have demonstrated a lack of adverse effects for a variety of reasons and yet here we are talking about potential overlap with calving grounds which is a different scenario. Even if that means acting in the absence of available evidence, we shouldn't be taking risks. Not being able to demonstrate significant sound from a level 3 shut down is one thing but locals can probably tell us the occasions wind is blowing in the right direction you can hear noises from the mine at distances of 10 km or more. I think the people that live there have a better impression about what can and can't be heard. Caribou don't just listen, they smell and feel. It's a combination. You have all of these things going on and they could deter caribou and cause problems. To me if you are surrounded by calving caribou, everything has to come to a standstill.

DC: A lot of the things you mentioned, beepers, vehicles, those aren't occurring during level 3. Certainly, things like smells, sight of the mine, but I'm not sure any of that can be further mitigated.

AG: But that's not true because the light duties include a vehicle filling the buggy bin, with a beeper. It's not a complete shut down. The light duties will provide sensory disturbance to cows with newborn calves who are very responsive.

DCh: I reinforce what I hear from Stephen and Anne. This group needs to really look forward and if it comes to a situation of calving overlapping at the mine, I recall Luis talking about how we need to put something in place before that starts. Certainly, this area would be considered the next level and we need to get something in place so we are prepared.

EE: Sounds, animals can hear easier than human beings. I sometimes have to use a hearing aid. I have a cabin just above the Agnico tank farm. More to the east. When convoys are getting ready, even though I can't see them, I can hear them from my cabin. Imagine how many times more the animal can hear that. And my hearing is poor. The activities can disturb the animals. So I agree with Anne. Disturbing the animals. The calf when they are born, how many hours until they are using their legs? 2 seconds. This is how much we Inuit live with animals. They are our neighbours. Even though we can't see them, if there are two or three hills before the village. So how many times the animals can hear. I just want you to know about that.

JT: Like Stephen said earlier this morning if the planned maintenance is happening around the calving period, that would be a good suggestion.

HB: Ok so if there are no more comments we will conclude with this part for now. We will briefly present the 2023 TAG Annual Report.

11. Meliadine TAG Annual Report Overview

Time: 3:29 – 4:02 pm

Supplemental Material: file titled “Meliadine TAG Annual Report Overview”

Presenter: Sara Savoie & Helene Boulanger, Agnico Eagle

SSav: This was sent in December 2023 last year.

Slide 1 – TAG Annual Report

Slide 2 – Topics Discussed in 2023

Slide 3 – 2024 TAG Topics

SSav: (Review of 2024 TAG dates and in person vs online) – any thoughts on what people prefer?

RM: How would April work for Meadowbank, during migration there.

SSav: We thought April would be virtual, just to re-iterate for all what will be going on during the upcoming migration for Meliadine. So not a very long meeting.

MK: I like the idea of the virtual meeting for April, because I have a young daughter at home. And my management told me I should be involved in the Meadowbank ones. Personally, I’d rather attend these meetings virtually until my daughter is more independent.

DCh: I’m fine with the meeting as planned. February was suggested virtual, and now April is suggested virtual. Unless there are other concerns, we can be supportive of that. General comments, in the table on acronyms, it references the GKD Dene, but in actuality Sayisi and Northlands are individual members so should be referenced like that and again, later in the document. All members that wanted to be part of the TAG were supposed to sign the agreement, and file it with the NIRB. We haven’t seen that done yet by Agnico, and we want to be clear on who are the members. We’d like to see that done. Section 2, Table 2, it talks about recommendations and advice. From looking at the minutes, I’d suggest that be rephrased to points of discussion. Because TAG recommendations mean unanimous support for action, and advice is a majority of the members for Agnico. Meeting minutes to this point have no reference to that. So far, we’ve just had talks or discussions, but not recommendations or advice. I think the chair should ask “is this a recommendation” to clarify. That’s our comments.

SA: On Table 2, I note that the section on Terms and Conditions 44 and Commitment 38. Number 2022-9 in the table. This follow up is listed as resolved. And if you go to the bottom of this row, it says a revised version of the Commitment 38 memo was presented at the October TAG meeting and it indicates that no comments on that memo were received from TAG parties in 2023. My recollection is there was discussion about TAG members providing written comments on that memo and its revisions but at the time there was only a paper copy given out. I was online and awaiting a digital version. To this day, I haven’t seen the document. I don’t know if other parties are still intending to provide written comments, but I wanted to point that out.

AG: I don’t think Commitment 38 has been revised. I forgot to send our comments. But AEM has provided an addendum to it. As far as I know we don’t have a revised version. We haven’t yet had an opportunity for the same reason as you, we have a paper copy but not electronic.

SSav: All the material related to the October meeting is in a OneDrive folder made available to participants. The document is in that folder. As per the draft TAG Annual Report it should have stated no written comments were received by participants.

JW: As discussed earlier a lot of us had difficulty accessing that OneDrive. Now I can.

SSav: I understand those technical issues were resolved, but good information to know.

JT: We had the same issue.

SSav: If that happens again let us know.

(*All indicate it was stated at the meeting*)

SSav: Everyone has access to this current TAG OneDrive folder?

SA: This one yes but I still can't access the October one.

SSav: Jade will send the link right away.

AG: I do have a question. We have the original TAG Commitment 38 report. On the screen, it says the revised version of the memo accounting for TAG's comments. I'm a little confused about whether we've seen the revised version or not. Is that the addendum?

SSav: The final version of the report is the one shared in October.

AG: That was the addendum.

SSav: Exactly.

AG: Right so it's not revised, it's a new section.

MB: We wrote a draft Commitment 38 report and presented it at June TAG, received feedback from the TAG during the presentation. Not in writing. We took that feedback and integrated that into a final version which I believe was dated August 2023. Then there was an addendum after that which separately provided some analysis, and that addendum was presented in October. The Addendum and the presentation of the Addendum were made available in the October OneDrive.

SA: One point. When we were presented with the results of the analysis in June by PowerPoint, no one received a draft report before submission to NIRB in August. Our only opportunity to provide input was during the meeting, with summary slides. That was why you didn't receive written comments, because we didn't have a document. We didn't even have a copy of the PowerPoint deck from June. I think that's where we got out of sync on this report.

MB: Now sounds like we will make sure everyone has access.

SSav: We will ask everyone to confirm in writing that they were able to access it.

JT: When in April were you thinking for the online meeting?

SSav: Perhaps second part of the month?

DCh: Send out a SurveyMonkey? Be nice to know.

SSav: We will do that. Looking at the time, I'll propose we wrap up the session. We will provide the TAG with a high-level overview of the camera and behaviour study in the OneDrive. We will ask participants to let us know if there are any access issues. With regards to the February meeting, we will also send a survey. I think a 4 h window will be sufficient for a virtual meeting. I want to thank everyone for their time and presence during this meeting. The constructive feedback, the collaborative approach. We still have points to discuss and we will have some back and forth. We thank everyone for participation. We are a large group and it's important that everyone has an opportunity to provide feedback. We will have time now for a round table if anyone has final thoughts.

(Round table)

JH: Thanks for having CIRNAC here. We are open to participate. I felt the in person meetings this week for the two sites were good.

RM: I agree having the MBK and MEL back-to-back is good.

GB: It would have been nice to know at what state the waterline was. Between the meetings we don't really know what has happened.

TMK: Useful meeting. For the February meeting I want to keep in mind that the regional wildlife officers have a meeting middle of February, the second week. Thanks.

SSav: Echo that, safe travels. Thanks for participation & collaboration. See you in February.

- End -

The next meeting of the TAG will be scheduled for February, 2024 (online meeting).

AGNICO EAGLE

Meeting Minutes

Topic: Meliadine Mine Terrestrial Advisory Group (TAG)

Meeting Date: March 1, 2024; 12:00 – 4:00 pm CT

Location: Online (Microsoft Teams)

Attendees: Baker Lake Hunters' and Trappers' Organization (BLHTO)

Harold Putumiraqtuq, Chair (HP)

Kangiqliniq Hunters' and Trappers' Organization (KHTO)

Donna Adams, Acting Manager

Kivalliq Inuit Association (KivIA)

Anne Gunn (AG), Consultant, Caribou Specialist

Kivalliq Wildilfe Board (KWB)

Tiriaq Maria Kasaluak (MK), Wildlife and Environment Technician

Northlands Denesuline and Sayisi Dene First Nations

Dan Chranowski (DCh), Consultant - Wildlife Biologist, Matrix Solutions Inc.

Nunavut Tunngavik Incorporated (NTI)

Raymond Mercer (RM), Resource Management Coordinator

Government of Nunavut (GN)

Jessica Waldinger (JW), Project Manager, Research and Monitoring

Stephen Atkinson (SA), Biologist Consultant

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC)

Jeff Hart (JH), Land Use Planning Manager

Agnico Eagle Mines Limited (Agnico Eagle)

Sara Savoie‡ (SSav), Environment Superintendent

Jade Robitaille (JR), Compliance Counselor

Leilan Baxter^ (LB), Minutes Record

Meghan Beale (MB), WSP Wildlife Biologist

Dan Coulton (DC), WSP Sr. Wildlife Specialist

Victor Young (VY), WSP Acoustic Scientist

Greg Sharam (GS), ERM Caribou Specialist

Mitch Fennell (MF), ERM Sr Wildlife Biologist

‡Meeting chair

^Record keeping

ACTION ITEM SUMMARY

Action Item	Summary
Calving Protections Proposal	GN, KivIA, Dene FN, Denesuline FN to combine proposed revisions on calving protection measures and provide to Agnico Eagle.
Other TEMMP Comments	KivIA to provide to Agnico Eagle written comments for proposed additional TEMMP revisions.
TEMMP v5 Revisions	Agnico Eagle to provide written TEMMP v5 revisions for review and discussion with the TAG after receipt of combined calving protections proposal and other written comments.
Delayed TEMMP v5 Submission to NIRB	TAG to recommend delaying submission of revised TEMMP v5 (Agnico to draft and circulate for sign-off) to facilitate ongoing discussions of revisions calving protection measures.

MEETING TRANSCRIPT

Note: All supplementary material referred to in the meeting minutes is provided to the TAG Members by email and/or OneDrive for review.

While most speaker comments are transcribed directly, some are paraphrased or summarized to facilitate note-taking.

Slides were reviewed by the presenter as indicated. Supplementary discussion and comments for each sub-topic are documented here.

1. Welcome

Time: 12:00 – 12:09 pm

Supplemental Material: Agenda

Presenter: Sara Savoie, Agnico Eagle

SSav: (*Welcome, introductions, review of agenda*)

2. Follow-up Noise Analysis

Time: 12:10 – 1:12 pm

Supplemental Material: presentation titled “Meliadine Gold Mine - Analysis to Determine Where caribou may be able to hear noise from Meliadine Operations”

Presenter: Victor Young, WSP

Slide 1 – Background

Slide 2 – What kind of noise can caribou hear?

Slide 3 – What kind of noise can caribou hear?

- Hearing threshold and wind speed-related noise by frequency

Slide 4 - What kind of noise can caribou hear?

- Hearing threshold plus background noise from wind by frequency

AG: Caribou spend their life in a windy environment. Is it possible there is a threshold that has been measured but their ability to perceive might be different? They may not notice the wind too much but an unusual sound will catch their attention.

VY: Yes and no. Some truth to that in the sense that the background noise has a distinct shape that they would be used to. So if there was a sound connecting all these green dots it wouldn’t be audible in this frequency but it would be here. So it would be detected by the caribou. But if the noise is below background in each frequency band I don’t think it would be possible to perceive it because background is too high. The nature of a sound can cause it to be audible if it peeks up above background at any frequency, but if it’s always below, there is no information that allows the animal’s ear to perceive it.

AG: Ok thanks that helps. Follow up, how much of the time are we in these different wind categories.

VY: We have some graphs with that.

RM: Out of curiosity, on your microphones that record sound with the wind, were they covered with the fake fur or whatever to block the wind?

VY: Yes, we call those wind screens or shields, fuzzy ball. Correct, the microphones were equipped with wind screens. Its purpose is to prevent wind interacting with the microphone and generating its own noise. Two kind of wind noise. One is the wind interacting with the terrain and that's what we want to know about. The second kind is buffeting, blowing on the structure of the microphone. That's what we don't want to have. The wind screen is designed to filter that "fake noise" out. So when we show these wind noise curves, they are the noise that the wind is making in the environment as if the microphone isn't there. The screen prevents that artificial increase in noise level caused by buffeting on the microphone itself.

RM: Ok thanks.

Slide 5 – Noise from Meliadine Operations

- How much noise comes from the mine to the environment. We use a conservative computer noise model.
- Includes light duty activities for level 3.
- Includes back up beepers, with standard penalty (+6dB) for tonal nature.

Slide 6 – (Figure) Full operations, wind speed <8.2 km/h

Slide 7 - (Figure) Level 3 operations, wind speed <8.2 km/h

Slide 8 – (Figure) Full operations, wind speed 8.2 – 21.6 km/h

Slide 9 – (Figure) Level 3 operations, wind speed 8.2 – 21.6 km/h

Slide 10 – (Figure) Full operations, wind speed 22 – 32 km/h

Slide 11 – (Figure) Level 3 operations, wind speed 22 – 32 km.h

Slide 12 – (Figure) Full operations, wind speed >32 km/h

Slide 13 – (Figure) Level 3 operations, wind speed >32 km/h

Slide 14 – (Figure) Full operations, wind speed <8.2 km/h

RM: This one at 32 km/h is probably wind from the east going west. The wind direction in a day or two following, when it's going to shift, the caribou will hear that. Was that wind factor looked at for these tests? Say two days after if you look at the forecast, today says Rankin is 40 gusting 50 from the east ,and tomorrow is different. The caribou will anticipate that. Was that taken into account?

VY: We considered wind in 2 ways. The first was how the wind creates background noise. So pretend the mine doesn't exist, the wind creates background noise. When it's fast the noise is higher. That's the first way we considered noise. We divided the background environment into 4 groups based on wind speed. Then the second is about direction, which affects propagation. If we imagine wind blowing from east to west, locations downwind will seem louder than if the wind was from a different direction. To account for those, the modeling standard assumes wind is always blowing from the mine to the caribou. Every point on this figure assumes it is downwind of the mine, in that moment. Which is conservative, worst-case scenario. It ensures you don't underpredict noise from the mine.

RM: But when it comes to caribou. Let's say it's Friday today, then on Sunday the wind shifts. They will hear the sound before the wind shifts.

VY: Ok so the caribou can anticipate the shift, and even if the wind doesn't shift until tomorrow, some of the effect is occurring even before the wind shifts? So we are accounting for that by assuming the worst case propagation conditions always exist.

RM: Ok yeah that's what I was trying to get at. I don't use modeling, I use my eyes and community knowledge.

VY: Yes for sure. Ok so we've tried to capture that as much as possible by looking at worst case conditions.

Slide 15 – Full operations on AWAR, wind speed <8.2 km/h. this polygon doesn't change as much as the polygon for the mine. Because most of the noise from the mine is low frequency. So it's quite sensitive to background wind speed. In contrast, road noise is mid frequency where wind speed is not driving audibility.

Slide 16 – Full operations on AWAR, wind speed 8.2 –

Slide 17 – Full operations on AWAR, wind speed 22 – 32 km/h

Slide 18 - >32 km/h

Slide 19 – Wind speeds during 2023 caribou migration

- Pink is level 3
- Very limited times when wind is <8.2 km/h
- Mostly 8 – 22 km/h.

Slide 20 – Comments/observations on the present analysis

- Key message: Any operating restrictions put into a future "Level 4" plan need to reduce the size of these audibility polygons to be meaningful.

Discussion/Questions

SA: I thought this was very interesting, nice. Informative. Makes a lot of sense. What I take from it is the position that mitigation should solely be based on ability to reduce noise, I struggle with that. First, it's not just noise that has the potential to disturb caribou, it's movement and smells, vibration. So this only considers one stimulus. Second, these polygons represent the perception of an individual caribou but doesn't consider the response as a social herd-based animal. Their ability to be disturbed is dependent on the state of the animals around them. So one animal could become disturbed and transmit that signal to animals much further away. I do take issue with the idea that Level 4 should only consider measures that reduce these polygons. The other thing, it assumes wind speed is constant, and we know they can be blustery, so tailoring mitigation based on a wind band would be tricky because the wind can drop for 60 seconds in an hour, and that could be more than enough to disturb animals for a long period of time. I think we're taking too many risks with this. Very informative, but using this as the basis for implementing mitigation for calving caribou would be risky. But I love this analysis.

VY: In response, I can't speak to the caribou behaviour, but as far as the sensory stuff goes, noise is only one type and I agree we should not only consider noise effects for a potential future Level 4, but if the recommendation is to turn off x or y source because it could impact noise, we need to evaluate the actual effect in the far field. Not just assume turning things off will improve the noise landscape. For vibration I would take issue with that, vibration is primarily from blasting which doesn't occur during level 3.

SA: Yes, I think we agree, this is just one piece of information we should use.

DC: This also shows that we can't assume that the only thing in the environment caribou are responding to is the mine. That's where this is applicable. There are other thing happening in the environment that could affect caribou. Other smells, cabins, ATVs, other noises. Lots of other things that caribou could be responding to. To assume they are only responding to the mine might lead us down the wrong path.

SA: I'm not making that assumption at all. This is a working group related to the mine. We're not here to talk about cabins and hunters. I understand your point but this is one source of disturbance we're being called upon to mitigate. And it's pretty large in scale. Not a small cabin.

DC: In Level 3 it's not active and there are not a lot of people moving around.

SSav: Something to add is we also are cognizant of reducing visual disturbance to caribou. Jade will share on screen the light duty activities, where they are sheltered from the caribou's vision.

JR: (*shares figure of minesite showing seacan wall location*) This shows the light duty activities locations. Looking from the tundra we can't really see anything (*shows images*). Seacan walls block the TSF entirely. The visual aspect of the mine is really covered. During Level 3, we only have a few equipment moving inside the minesite, so we can't really see anything from outside of the mine.

AG: To go back to why KivIA was anxious to have this meeting, it was to talk about the rationale for enhanced caribou protection. We're quite anxious to get to that. I agree Victor's presentation was good but it seemed to be aiming at why Level 4 wouldn't be effective before we've even told you why we think it's important. Keeping an eye on the time here, I want to make sure we get to that.

SSav: Agnico had committed to providing some follow ups after the last meeting, we are cognizant of time. We have one more follow up to share – Megan – relative to calving ground. We will keep that short. I think that is important information to keep in mine for the subsequent discussion. Your presentation will be next Anne. So if no other questions on the content that Victor shared we will pass the floor to Megan.

3. Caribou Information Requests

Time: 1:12 – 1:21 pm

Supplemental Material: presentation titled "Caribou Information Requests"

Presenter: Megan Beale, WSP

Slide 1 – Summary

Slide 2 - 8 – Annual calving ranges 2017 – 2023 (50% calving ranges only here, caribou with calves and movement for 6 d following birth)

Slide 9 – Annual calving range summaries

Slide 10 – Box and whisker plot, by date (all caribou, with calf or not)

Slide 11 – Box and whisker plot, by days since calving, 2017 – 2023

Slide 12 – Box and whisker plot, by days since calving, 2023

Slide 13 – Animation. All QAM caribou: June 4 – 25, 2023

Slide 14 – Animation. QAM caribou with calves: June 4 – 25, 2023.

SA: Could you go back to the table? One thing I was curious about was in revising the TEMMP, we're talking about reporting on calving range and extent to which it overlaps the project. We've talked about using collar data to do that. We will have to be mindful on the impact of the number of collars on the size of those polygons. When we have few collars it appears to influence the size of the calving ground. We need to consider that. What it tells me is we also need to rely on field observations, like HOL monitoring, if they are seeing calves being born in proximity to the mine. I know of a couple of studies, Boulanger and Jim () looking at how many collars are needed to reasonably delineate post calving range. I recall from that, you're probably looking at 20 – 25 collars. Any comment on that?

MB: I agree if we don't have as many collars available to give us data, the area may be smaller. We should also be depending on field surveys, eyes on the ground when considering mitigation. Using only the collars isn't a wise choice. Field data is just if not more important.

SA: So in revising the TEMMP we should have 2 lines of evidence. Collars and field survey data.

AG: I wish I'd had that 10 days ago when we were starting to put together recommendations. Would have been so useful. I take your point on the caution with the collars. 2 questions. In using rate of movement as a threshold in monitoring, would it be fair to say that rate of movement of cows that calved, because you can show standard error, is probably a reasonable indicator to use? We've suggested that when calves drop to less than 5 km, that is a reliable indicator of when calving started.

MB: Once we detect a movement is low, they have already calved. So I don't know that you can use a reduction in movement to predict it. I'm sure it's possible that the GN could download the data daily, but could be gaps in the data that get filled in over time. So I'm not really sure what the benefit here would be for management, because that same information could be determined from HOL surveys to see if they have calved.

AG: Right definitely confirmative, not predictive. The rate of movement confirms calving is underway, 2 – 3 day peak when 50% are born. So it confirms where peak of calving is happening. HOL gives a reasonable chance of seeing antlered caribou 8 km away. So a limited range. Short answer, it's not one or the other, we need both. To confirm that calving has started and where.

MB: I can understand what you mean here, what this information in terms of daily movements would provide in helping Agnico prepare and be ready on a daily basis. The only thing to consider is the operational functionality of doing this. Some is out of Agnico's control and we'd be depending on GN providing data in a timely fashion. Another constraint to be mentioned. It is possible to do this, but have to recognize that.

AG: We put forward that for Level 4 it would be rate of movement and HOL surveys. We know that GN produces the maps every day, understanding there may be delays with satellite orbit etc. but if they can produce the maps every day, surely it's also possible to produce a daily rate of movement as an indicator.

MB: That would be really useful. It would enable Agnico to act dynamically.

Ag: Great thanks.

SSav: To add to that, we should keep in mind is that we do gather information from the community through the communications we have with KivIA, HTO, GN as well during migration. That's another source of information to keep in mind. If there are no other questions or comments on the presentation just shared, we will leave the floor to Anne for KivIA.

4. KivIA recommendations TEMMP 2024

Time: 1:34 – 3:04 pm

Supplemental Material: None

Presenter: All

Slide 1 -

AG: Presentation to encourage discussion. We've sent around a text version of the monitoring and mitigation we're proposing. We're suggesting a rapid, Level 4 partial shut down based on current-year observed calving activity. Level 5 would be a planned shut down for the following year. Part of our concern for the TEMMP is to indicate clear protection for calving based on what the communities are saying about protection for calving grounds. During the negotiations and consultations for the 2021 draft Nunavut Land Use Plan, there was a lot of support for calving grounds to be protected. Current mines are grandfathered, but there should be a high level of concern. We are not talking about a total shut down, but reduced light activities. We've put some figures in here to collaborate on those.

Slide 2 – Calving – first 10 days of life – risks of disturbance

- Would expect to see these points in the TEMMP

Slide 3 – (Table) – Summary of our thinking on Level 3 – 5 mitigations

- Have to get more detail into these, lots of room for discussion
- Emphasis is on reducing the visibility of ground activities.

Slide 4 – Light activities during level 3 – 5 shut downs

Slide 5 – (Figure) – Mine site locations

Slide 6 – (Figure) – Portal in detail

- The portal acts like a megaphone

Slide 7 – (Figure) – direction of movement from portal

- Can see the seacan walls, and where openings are, where vehicles may be visible.

Slide 8 –

Slide 9 – Definition – overlap? Peak calving 2023

- Is it the mine site or the mine site buffered by 10 km? I noticed that Victor used 5 km.
- Overlap of peak calving, is that the calving sites, the 50% kernel, 85% kernel
- In the TEMMP we need to reach agreement on what do we mean by "overlap"

Slide 10 – Peak calving 2023 and pre-calving pathways

- Information from Megan somewhat answered this.

Slide 11 – Telemetry June 19 – 20

- These are calves 2 weeks old. But between the 4 and the 19, the two maps, did they move closer? I think Megan's information goes part way to answering this.

Slide 12 – (Figure – mine site overview "links with water management")

- Should make sure the TEMMP is coordinated with water management to minimize surface activity

AG: So these are discussion points we thought would be useful to the TAG. We can have a discussion about Level 4, Level 5, definitions. We also put in proposed monitoring, frequency, and also the thresholds. I know the GN and Dene will have input, so three sets of approaches to discuss.

SSav: Thanks Anne. We will check with participants on the line if there are any questions, and we have a few clarifications to bring. Any questions?

SA: If you go back to the table you have for Level 4 a trigger of 10 antlered cows within 2.5 km. so my question is why 2.5 km? That's less than the trigger for post calving.

AG: We talked about HOL surveys being able to detect caribou up to 8 km[1] with a scope. I think at that distance it's hard to tell whether they are caribou. For Level 4 we thought it was really important to tell. 2.5 km is a reasonable distance to see if they cows are antlered. So it's tied to Level 4.

SA: Ok so you thought 2.5 was a reasonable distance to detect a group of 10 antlered cows. I just wondering whether putting that distance limitation, a limitation of the method of observation, is overly limiting. I'm concerned it doesn't allow for those occasions when someone might be lucky enough to see a large group further away with antlered cows.

AG: I agree with that. We could take that out and make it 5 km. I think we should go through all the thresholds like that. We've already talked about less than 5 km today, Megan having some good points there. One thing we're suggesting is that we need combinations of thresholds because all the indicators have advantages and disadvantages so a more conservative approach is to use multiple.

SA: The GN and Dene have put in materials as well. The GN put in a proposal that is quite similar to this, just a different structure. Looking for further reduction in activities that will help to reduce disturbance of calving caribou. Proposed increasing the distance, recognizing some groups can be seen at distances of 8 km or so. Also proposed another trigger being the presence of collars within a certain distance. Overall similar proposal.

SSav: Perhaps before we get into the details of the proposal, there is a point to clarify. Related to the visual impact of the light duties activities, Jade will share some images with details on where the activities are located and how they are visually shielded.

JR: (*shares screen, figures from Anne's presentation*) Yes, we wanted to mention that the feeding of the buggy bin is more at the second crusher. We will not have all this travelling of material. Only transfer to the automation pad. Also all these openings here are covered by the WRSF or the TSF.

AG: Thanks that's helpful. I did think that the WRSF was an effective shield. I wasn't sure about the height of the dry stack tailings and the dike around it. We were concerned about more the west side, around the water storage pond. The images that I used were from the latest Google Earth.

DCh: Wanted to just support what Stephen and Anne said. The different levels really are compatible and the ways we enhance monitoring. Whether differences in the distance of observations, or adding a collar into the factor, we can come up with something applicable for this situation. All towards the idea that we are doing something precautionary for the community.

AG: Thinking about what Jade just said. Differences in Level 3 and Level 4. Level 3 is a big step up. Calves are still relatively young. Even though it might not be a very large step up in the reduction

[1] Agnico will like to rectify that the range of the scope is 3km.

of activities, still important to have a Level 4 that recognizes calving specifically. I wonder, if we go to the table, whether Jade or Sara have more comments on what is practical with an operational mine, and what is less practical. For example road traffic in Level 4 should be emergency only. Use of helicopters and drilling is a fixed date to suspend it. same for blasting and open pit work. I wonder about the options for reducing the processing. From my knowledge there is potential to reduce underground work, the amount brought out, can be reduced for example.

SSav: Thanks for that Anne and to KivIA and all other parties who provided comments. At this point, I think we'd all agree that Agnico and the Meliadine site have very conservative approach to caribou management. We are very cognizant of the importance of operating in a respectful manner relative to caribou. What I'd be curious on is if we spin around the proposal as a question, for example a proposal to reduce the underground work during Level 4. The underground activities was accounted for by WSP in the noise modelling that we shared earlier. So I'm wondering what are the concerns relative to underground work. And perhaps we can get Victor to provide more information on the noise modeled for underground work.

AG: The concern is they keep producing ore and there is no where to put it. So the light activities include bringing the ore out into temporary storage. So the reason we suggested to reduce the activity of the little loader going back and forth bringing ore out was to reduce the visual activity, realizing the rock pile may hide it. But there is the need to bring the ore out. So that's why we suggested reducing the underground work. When we were looking through the mine operation and the light activities, we were much less worried about sound. Caribou cows with young calves are looking for movement. Something that catches their eye. We weren't worried so much about noise. Victor's work showing the reduction from Level 2 to 3 is satisfactory. It's more about reducing the use of vehicles. Southeast side of Meliadine Lake, and other side where it appears that there may have been a reduction in use by caribou. And whether that has anything to do with whether they can see surface activity.

SSav: Thanks we've shared maps and some images of where these activities occur. We have some KivIA personnel that have been onsite during migration and seen the visual barriers in place. What we could do potentially, and I'm not sure if this would help, is to make a visual map of the different infrastructure and their height. Or to film what is visible from those areas?

AG: Yes, line of sight. That would be great. The other thing that would help is I think ERM was going to produce a map showing where the cameras are relative to the mine site, and whether there are options to include extra cameras that would capture the extra activity. That would be very helpful. I'd like to hear from other people. Raymond is online, Donna from HTO. Feedback on KIA's suggestion of these specific protections for calving caribou, that would be great to hear.

SA: Three proposals have been put out. GN, KivIA, Dene. All similar. I think that one task that could be completed in short order would be for those proposals to be put into a single proposal. That could be the focus of discussion. Because they are all so very similar. Then I think we can have a more focused discussion. There are some small differences between them. I also agree with Anne on reducing line of site, and noise and smell. For underground, working there has consequences for work up top as well. Whether driving to the portal, or ore brought to surface.

AG: So Stephen, if you and I committed to sometime next week having a combined position, how would that work?

SA: I think that would work well. We could do that next week.

AG: Make a clear format. You're right, when I read yours sometimes I thought "that's a better idea than I had". Obviously at KivIA we've spent a lot of time on this, knowing that it's an operational

mine, but also making sure the views of the community are incorporated on the importance of calving.

DCh: I support that suggestion from Anne and Stephen that we could meld everybody's thoughts together next week.

AG: Would that be helpful for you Sara?

SSav: Thanks for that idea. Obviously as we'd discussed previously, we were requested to submit an updated TEMMP within the 2023 annual report which is due at the end of the month. However, I think we can all agree that we've been making progress and having constructive discussions on the content that we do want to see within the TEMMP v5 update. What we could propose at this point is a similar to what Meadowbank has done in the past, we could all agree we are making progress, that we still aim to submit a TEMMP before the caribou migration, rather than the end of March. That would give us time to go over the consolidated comments and proposal a final draft alongside a table of how each recommendation was handled. Does this seem like a reasonable proposal to TAG?

AG: Certainly it does to KIA. To recap, we've talked about the practicalities of mitigation, but the idea of calving protection, by having a level of monitoring and mitigation, am I right in thinking there is around the table support for that? And that GN and Dene agree we will combine our proposals.

SA: I was going to do a similar recap. For path forward, I'd agree the three proposals be merged, and sent to Agnico. Have another meeting to go back and forth on that blended proposal. At which point, subsequently, a revised TEMMP is put out that the TAG members would have an opportunity to provide written comments on. I think it's important to have on the record the views of the different TAG members about the revised TEMMP. I can't see NIRB objecting to that type of process. I'd like to suggest is that something we can agree on as a process, those steps? I also wanted to recap a couple of other points. Not sure if minutes are being taken. We talked about determining overlap between the project and calving grounds, using several methods. One would be collar analysis, other is ground based observations to indicate there are calving caribou. We also talked about what overlap means. For me, it doesn't mean overlap with the footprint of the project, it means with a zone of monitoring around the project. Whether 5 km trigger distance or different. Should be a zone around the project. I'll leave it there.

SSav: Thanks Stephen. With regards to the process what we'd like to propose for the sake of time and to speed things up before the next migration, first we will circulate a letter for all to sign to say that we are working on the TEMMP, making progress, aiming to submit before the end of April. Second step, and to recognize that we did receive different comments from different parties, Agnico Eagle can combine those comments and propose a revised draft along with how the parties comments were accounted for. So that will help speed the process up. We will submit that to TAG parties with sufficient time for revision. If needed we can book ourselves a short virtual meeting to go over the document before it's submitted to NIRB.

DCh: I can agree with the process you just mentioned. A bit more though, while we're making progress, it would be to state that we're making progress towards caribou calving protection measures specifically.

JW: I'd say the same thing, the caveat to NIRB is that the basic reason for the delay is that all the TAG members are vying for this particular angle to protect calving and post calving.

SSav: Thanks

AG: We have track changes that we've made on the caribou section in the last version of the TEMMP that might be helpful for you to be working on while we're bringing together the three positions for calving protection. We thought there were sections like the baseline and the movements that needed to be more updated, rather than just general accounts. More specific to the changes. For that reason I hope, a couple of the maps and the table that Megan shared, would be included in the TEMMP. Because they really make the point that they are the baseline for calving. We'd also like to see the TEMMP revise it's objectives to be more specific to deal with the effectiveness of mitigation. In our comments to you we offered an example of how to measure levels of disturbance and caribou response during specific mitigation practices. We realize there is the mine and then other things happening in the world of caribou that constitute disturbance. So in measuring the effectiveness of mitigation we do recognize that. It's been a prevailing theme for NIRB to come to grips with measuring mitigation effectiveness, so we did come up with a couple of suggestions and happy to discuss any feedback on them.

SSav: Just to clarify, that has been sent, or will be sent shortly?

SA: I'll second what Anne mentioned about need to include measures of mitigation effectiveness. So my understanding is step 1 will be a single submission from GN, Dene, KivIA on caribou protections. You'll send a letter to NIRB. And upon receipt of a single proposal from the TAG parties you'll revise the TEMMP and send us a copy for review ahead of submission?

SSav: We will submit a letter to NIRB as you mentioned. I wanted to check Anne you'd mentioned additional comments, when will you send those?

AG: Next week. And to follow up on the question of definitions, I wonder if Agnico could come up with those. I was thinking Megan's maps could be the basis for coming up with defining calving grounds, which is hard.

SSav: Yes ok Anne we will put together some definitions. I also wanted to clarify that Agnico will pull together the proposals from different parties to speed that up.

SA: From my perspective, I think it's best if we submit a single blended proposal.

JW/AG/DCh – *general agreement*.

SSav: Ok we look forward to receiving that combined proposal. So we will account for that combined proposal and not individual comments when we work on the next version of the draft.

DCh: I just supported what was said recently.

DA: Thanks for letting me be a part of this, first TAG meeting. Been with the HTO since mid January. A learning curve. I apologize for not being too sure about who the names are here. Just some comments. I was a bit late joining in, it's lunch hour here when we started. It's always leary for us to completely trust any kind of survey or study because it seems like it's always done with the best conditions. Even with mock wind speed, direction. I don't know how the reindeer were studied, I can't see how that can be done. And it's never 100%. These are assumptions even if it's scientifically based. That's how we look at things. If they weren't disturbed, even with the cases that were brought forward earlier, we'd get a catch ever single time. But many times we don't. No *tuktu*. If they were ideal conditions, we'd come back with a catch every time. From a 2 – 3 h ATV ride. But the mine is here, and I agree it should be 10 km not 5. And the other stimulants that were mentioned, maybe if there were 700 of them. That's about how many people are at the mine on any day. I just didn't want to walk away without saying anything. The mine is here, we have to work together but I always compare it to if I went into your backyard and moved things around and told you it's better for you, that's how personal, how sensitive these topics are for Inuit and harvesters. It's our land,

our diet. You've heard it all before, but sometimes you forget how powerful it is, the relationship we have with our animals, our land and our waters. I look forward to working together more, hearing each other out.

SSav: Thanks very much Donna for sharing those insights. We look forward to continuous collaboration and if we can do anything to facilitate your onboarding in the TAG group we're happy to.

VY: To maybe clarify a couple of other things about the noise study, how the thresholds were determined by a team in Alaska. I understand they hooked electrodes up on the animals and logged neural impulses. The animals was unconscious so they weren't looking at behavioural responses. They would play a sound in the room and look at spikes on the auditory neuron. Not a study of disturbance or reaction in the real world environment. As far as wind direction, acknowledging that a model can't capture everything, the way we deal with that is to look at a near worst case, as far as possible.

AG: A bit like a hearing test that was done for the reindeer. They were reindeer that were trained and used to being handled. So they were kept with that in mind. I wanted to confirm Sara that you and your consultants will show us options for definitions for overlap. Did I get that right? You will do that?

SSav: Yes we will propose some definitions.

AG: If you want any background on defining calving grounds I'll be happy to send some of the material.

SSav: At this point I think we have a clear path forward. Before we end the meeting I'd like to do a round table to see if there is anything additional that participants would like to share. We will go through the list on my screen.

AG: Like to thank everybody and Agnico's openness on the calving protection and other things that should be included in the TEMMP. I appreciate hearing from everyone.

HP: Thanks for having me. Will see you in a couple months.

MB: Thanks, will be good to keep things moving forward.

DC: Echo that.

DCh: My clients from the Dene First Nations weren't able to make it today, but their feeling would probably be that we are showing some read advancements on being precautionary, and understanding mitigation effectiveness, and I believe we should be going this way. I enjoyed all the input. As a biologist to Donna, just because we're a biologist doesn't mean we're better hunters. I think you're probably a better hunter than I am.

DA: My husband's the hunter I'm the fisherman. No other comments. See you next time.

GS: Thanks, great to hear the discussion.

JR: Thanks all, really interesting.

LB: Thanks all for talking slowly.

MF: Thanks all.

RM: Good meeting. Best part for me was hearing people working together, not fighting each other. Just a reminder, use IQ as much as possible, local HTO, KWB. Thanks for having me.

SSav: Thanks for that reminder Raymond.

SA: Good chat.

JW: Not much else to say, we're all in this together to protect the wildlife broadly and the *tuktu* specifically and the way we do that is working together.

VY: thanks to all for the interesting discussion.

SSav: I'd like to pass my thanks to everyone for being here. The OneDrive will be shared shortly. We look forward to receiving the joint comments on the TEMMP v5. Wish everyone a good end of day and good weekend.

- End -

The next meeting of the Meliadine TAG will be scheduled in March or April, 2024 (virtual meeting).

APPENDIX A – PENDING ACTION ITEMS (from previous meetings)

Action Item	Summary	Responsible Party	Update (e.g. Pending/Complete)
Items from January 23 & 24, 2024:			
Jan 2024 TAG meeting participants	Agnico Eagle to circulate the list of January 2024 TAG meeting participants (*provided with meeting minutes*).	Agnico Eagle	Complete
TAG virtual meeting	Agnico Eagle to organize a virtual TAG meeting in February 2024 to revise the caribou related sections of the draft TEMMP version 5	Agnico Eagle	Complete
Draft TEMMP	Parties to provide written comments on the draft TEMMP version 5 prior to the February TAG meeting	All	Complete
Noise Monitoring during Level 3	Agnico Eagle to consider conducting noise emission calculation with comparing level 3 shutdown with and without light duty activities	Agnico Eagle	Complete
Calving Range Map	Agnico Eagle to consider compiling calving range for 2022 as it was conducted for 2023 with additional analysis of caribou collar data, combined with GN's caribou aerial survey data for 2022 (upon reception of GN's caribou aerial survey report expected April 2024).	Agnico Eagle	Complete
GN's Caribou Aerial Survey Report	GN to provide its caribou aerial survey report in April 2024	GN	Pending
Plain Language Summary	Agnico Eagle to provide plain-language summary of Meghan Beale's presentation.	Agnico Eagle	Complete
Green-up Method	Agnico Eagle to assess the use of remote sensing methods when determining Green-up dates.	Agnico Eagle	Complete
Collar Method	GN to provide information on how collar methods have changed over time, and how the health of the collared animals is assessed.	GN	Pending
TEMMP Objectives	KivIA to provide to Agnico written comments on objectives to measure residency time and to measure exposure.	KivIA	Complete
Muskox Harvest Data	GN to provide information on muskox harvest data, past studies beyond what's already cited in the Meliadine TEMMP, and any planned work.	GN	Pending
Road Signage	Agnico Eagle to assess road signage improvements for non mine-site related traffic.	Agnico Eagle	Pending
Caribou Vs Traffic	Agnico Eagle to assess different ways to present traffic information when caribou are in level 3 on a daily basis	Agnico Eagle	Pending

Action Item	Summary	Responsible Party	Update (e.g. Pending/Complete)
Contribution Caribou Collaring Program	Agnico to confirm date of last contribution to the GN caribou collaring program.	Agnico Eagle	Pending

AGNICO EAGLE

Meeting Minutes

Topic: Meliadine Mine Terrestrial Advisory Group (TAG)

Meeting Date: May 3, 2024; 12:00 – 16:00 CT

Location: Online

Attendees:

Kivalliq Inuit Association (KivIA)

Luis Manzo (LM), Director

Anne Gunn (AG), Consultant, Caribou Specialist

Kivalliq Wildilfe Board (KWB)

Tiriaq Maria Kasaluak (TMK), Wildlife and Environment Technician

Sayisi Dene First Nation (SDFN)

Geoff Bussidor (GB), Chief Negotiator

Dan Chranowski (DCh), Wildlife Biologist Matrix Solutions Inc. (Consultant to Northlands Denesuline and Sayisi Dene First Nations)

Athabasca Denesuline First Nation (ADFN)

Katie Rasmussen (KR), Biologist

Government of Nunavut (GN)

Jessica Waldinger (JW), Project Manager, Research and Monitoring

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC)

Jeff Hart (JH), Land Use Planning Manager

Agnico Eagle Mines Limited (Agnico Eagle)

Sara Savoie‡ (SSav), Environment Superintendent

Puujuut Kusugak (PK), Director Nunavut Affairs Community Relations

Jade Robitaille (JR), Compliance Counselor

Leilan Baxter^ (LB), Minutes Record

Dan Coulton (DC), WSP Sr. Wildlife Specialist

Victor Young (VY), WSP Acoustic Scientist

Greg Sharam (GS), ERM Caribou Specialist

‡Meeting chair

^Record keeping

ACTION ITEM SUMMARY

Action Item	Requested By	Summary
TEMMP V5 Level 4 update	Various	Agnico to make updates to draft TEMMP v5 wording based on comments received during this meeting and provide revised draft to the TAG for review (target May 10).
Caribou Calving Deffinition	-	KivIA to provide a definition of caribou calving grounds and wording on rationale for enhanced mitigation measures during calving (target May 8).
GN Study Estimating Abundance of the Qamanirjuaq Caribou	Various	GN to provide un update on the 2023 study Estimating Abundance and Trend of the Qamanirjuaq Mainland Migratory Barren-Ground Caribou Subpopulation.

MEETING TRANSCRIPT

Note: All supplementary material referred to in the meeting minutes is provided to the TAG Members by email and/or OneDrive for review.

Slides were reviewed by the presenter as indicated. Supplementary discussion and comments for each sub-topic are documented here.

This meeting was recorded for the purposes of transcription, without objection. While most speaker comments are transcribed directly, some are paraphrased or summarized to facilitate note-taking.

1. Greetings

Time: 12:00 – 12:10

Supplemental Material: Agenda

Presenter: Sara Savoie, Agnico Eagle

SSav: (*Welcome, introductions, review of agenda*)

2. Discussion – Joint Recommendations Response

Time: 12:10 – 14:27

Supplemental Material: presentation titled “Joint Recommendations Response”

Presenter: Sara Savoie, Agnico Eagle

Slide 1 – Agenda

AG: Is this an update from the text sent out previously?

SSav: This is complementary. In the joint recommendations, there were some suggestions for monitoring at extended distances. Before Agnico could commit to that we wanted to trial if it is feasible in the field. So, we initiated a pilot project that we want to discuss with the TAG and see if we want to extend it through the summer.

AG: What is the real priority today is it whether you've made any changes to the wording for the proposed mitigation, compared to what you sent out previously. Other than the extended distance monitoring.

SSav; We want to go over our response with participants. We've received some feedback and noticed clarifications might be required, so we want to discuss those with all TAG members today.

AG: Ok thanks.

Slide 2 – Extended Distance Monitoring

SSav: Some of the recommendations provided to Agnico were to extend monitoring distances. So we initiated a trial to see if this is possible (see slides).

Slide 3, 4, 5 – Methods

Slide 6 – Results

SSav: At 3 and 5 km helicopters and field personnel could be seen with the naked eye, and items held could be see with the scope with a reasonable level of detail. At 10 and 12 km with the naked eye, only the helicopter could be seen. With the scope the field personnel could be seen, but without any detail.

Slide 7 – 3 km

Slide 8 – 5 km

Slide 9 – 10 km

Slide 10 – 12 km

Slide 11 – Discussion

AG: Did your personnel stand still? Or did they walk? Was it easier to detect movement? Caribou are very sensitive to movement.

SSav: The pictures were taken when they were stationary. But they observers monitored when they arrived and set up.

DCh: At what power level are the pictures taken? 20 – 60 power scope

SSav: I have a report to share shortly. That will be clarified[1].

JW: I understand the premise but for Level 1 in our recommendation, we're saying around 50 caribou, so if there are only 3 objects in the field I'm wondering about the relevance. I see more for the Level 4 consideration. But then again that's still 10 or more individuals.

SSav: Good point. This was an initial pilot. We would discuss what the metrics for ongoing study would be. This trial was more with regards to Level 4 considerations. We were mentioning some of the limits of this first trial – one location, the environmental factors, summer heat haze, specific objects. This was just a pilot to share with the TAG. What we're suggesting is to extend this trial

[1] 20 power was used in the scope during the trial.

through the summer. Several other factors need to be considered like eyesight, scope power, weather, contrast, spacing, elevation.

Slide 12 – Next Step

SSav: Any other comments on this trial?

GB: There was reference to the waste rock storage facility? I didn't quite get that.

SSav: When we do our height-of-land (HOL) survey during migration, we do it from a high point of view, one of which is the Waste Rock Storage Facility (WRFS). So we used that same point of view for the trial.

GB: Thanks.

DCh: There has already been some reference during TAG meetings that it's pretty clear some people can see out 8 km at least. I'm wondering why this is a question, looking at the 3 and 5 km. I wonder where this is going. It's pretty clear that a lot of people think you can see to 8 km.

SSav: The intent if this trial is to see what level of detail can be seen. Some of the joint recommendations were to monitor for some details such as sex, age, etc. and we had concerns about being able to effectively monitor at those distances.

DCh: I guess that could have been stated.

SSav: We will add that clarification.

TMK: You mentioned there was little vision at the 10 and 12 km mark. I'm wondering if in the summer this is being observed? If you will have any markers at the 10 km distance, like flags, to let you know how far that is. And if you can't see with the naked eye, is there a next step to make sure that there are caribou around? Because especially with the young calves it will be almost impossible to see. So I'm just wondering how the mine makes sure that there is life visible.

SSav: Thanks. That's exactly why we're proposing also to extend the trial to summer monitoring. We'll be using a spotting scope and working with elders to determine monitoring locations.

TMK: How does the observer move around, 5, 10, 12 km during the migration?

SSav: We will use the same location as our HOL surveys, which is the top of our WRSF. So the observer doesn't move from there.

TMK: OK that makes sense. It's just the 10 km mark with the recommendation, how do you make sure if there are caribou and calves at 10 km, because in the summer it'll be really hard to see those babies. Is there somebody looking to make sure? Or is it just the observation from the waste rock?

SSav: That's an excellent question and why we wanted to put forward this trial, and why we didn't commit to monitoring that level of detail so far away. Because we have some questions on what level of detail we can see that far away. As you mentioned, even the weather and the haze during the summer, that can change a lot. This is why we will be using known items at known locations so we can see whether they can be observed and what level of detail.

TMK: Thanks.

JW: I thought maybe that person was going to ask when these trials were occurring, presumably in the summer when there is no snow, and whether they would be occurring during migration, because I guess the concern would be not wanting to have helicopters interfering with that. I don't imagine that would happen. Will there be additional effort to have more than 3 items used? To better replicate the question at hand.

SSav: Correct there is no intent to use the helicopter for these trials during migration. And we'd like to hear from the TAG participants on this call, are there any recommendations that you'd have with regards to the items being tested? Did you have something in mind Jessica?

JW: Not with respect to the type of item. I think it might make sense to use something roughly the size of a caribou and a calf. And approximating the number threshold for Level 4. One thing recommended in our memo was multiple lines of evidence, like collar data and daily movement rates. We recognize there is uncertainty and limitations. I would overall though recommend more items and that they be roughly the size of caribou and calves.

SSav: One thing to note is that at 10 and 12 km, we could barely make out the helicopter. So that's already informative to the level of detail. We did bring a caribou pelt, and we can think of other items to use in the subsequent phase. In regards to the recommendations on daily rates of movement and collar data, we did provide some responses on that. We can get back to those in the next part of the meeting.

DCh: I see we're going into a deeper dive on this little part of the overall joint recommendations, which I wish we could get to instead. This trial was recommended as part of the recommendations, so maybe we can talk about these details at that point in the discussion. But for object recommendations, for example, hunters use life size decoys. You could get those a place them out there in the landscape. Or placing trail cameras where caribou are expected. So there's plenty of other ideas too, but I would just recommend that we get back to the actual joint recommendations and start going through those.

SSav: Thanks, we will move to the next part of the presentation.

Slide 13 – Joint Recommendation Response

SSav: We have summarized the key items from Agnico's response here. (*Reviews slide text*). We have also provided detailed rationale behind each item in the table.

AG: Before we get into responding what you've put up on the slide, we just want to reiterate our objective for this call, which is to have the current May TEMMP revised to develop Level 4 with enhanced mitigation to protect calving, especially from visual disturbances. Our rationale is related to special considerations for caribou with calves. And we also want the TAG to recommend a definition for what is meant by calving. I wonder whether the other parties have comments as a general set up for the details we're going to get into.

JW: A lot of what Anne says I'll reiterate. The joint recommendations that were done are best summarized as recombination for calving caribou. Our wish list was for introduction of a Level 4 and Level 5, planned shutdowns. The background for that is the levels were ideally to reduce or in some cases suspend surface activity, movement of people and vehicles, because this will reduce noise, movements, and vibrations. The need for additional mitigation is largely based on strong community concerns for calving grounds. This has come out time and time again. The Meliadine Extension process, the land use planning process. Essentially in Agnico's response, most of our recommendations were not accepted. I understand sometimes there is an argument against a specific one. But I take issue with the one statement in the Joint Response Memo where basically it's like "Additional mitigation should be founded on a clear linkage or effects pathway between mining operations and population-level changes to the Qamanirjuaq herd not solely based on community concern. Otherwise, any additional mitigation may not achieve its intended outcome of protecting caribou." I just feel like that statement isn't in the spirit of the TAG or what the TEMMP is attempting to do. We are collaborating on a path forward for enhancing monitoring and mitigation for calving caribou because it's a very delicate sensitive period of their life cycle. As a starting point

we're hoping we can keep this discussion open and see some ways that enhanced monitoring and mitigation can be incorporated into the TEMMP.

DCh: Overall two things I can discuss, what Jessica just brought up – the statement that there doesn't seem to be a need on the part of AEM to make changes somehow solely based on community concern. That shows a lack of willingness to listen to community concerns. I don't understand the reasoning behind that. Secondly, we do want to work collaboratively with Agnico on ways to enhance caribou protection, and it doesn't appear there is any real interest in that on the part of Agnico. So I'd like to know if Agnico is actually interested in coming together with the TAG and working on an enhanced caribou protection plan. There seems to be quite a bit of resistance. We'll keep on talking here but I believe Agnico needs to come together a bit more and talk about these things. Because especially with caribou calving, it's a plan we want to have ready. It could very well happen. To be resistant to talking about it or doing anything about it, not being ready for it, it's hard to understand.

SSav: Thanks Dan and Jessica. A few clarifications. Firstly, the statements in the joint recommendations response should not be taken out of context. Agnico works collaboratively with the community and intends to keep doing so, for many years, related to caribou migration. Every migration we work jointly with the landowner, the KivIA, with the GN and the local HTO. It is Agnico's intent to continue collaboration with the community. It is a core function of the TAG as well. As per our TAG collaboration it is based on a combination of multiple factors. As stated in the TOR this is a forum for collaboration and discussion that includes many components. So community concerns, IQ, TK, but also western science. That is something that is part of the TAG function, to include all of those components in the discussion. With regards to the TEMMP v5, we did hear TAG parties comments and recommendations and did add a section on calving in the TEMMP v5, and we are happy to discuss it. We've put the document out for review and feedback from the TAG. We did put forward strong scientific evidence for some of our comments with regards to the joint recommendations.

AG: I'd like to acknowledge that we did see in the TEMMP you'd included Level 4 for calving. But the point we're trying to make is that you described Level 4 would be the same as Level 3. That is not enhanced protection for calving. That's where we need to work together, be flexible, in being able to have in the TEMMP a Level 4 that spells out enhanced mitigation for calving. The reason we want the TEMMP to include a definition of calving is because there are differences in defining whether calving is overlapping or not. You have a statement that no calving ranges overlap the mine footprint. But that was a 50% kernel, which is the core calving ground. The conventional definition of calving used by GN and others is 95% kernel. The 95% kernel brushes the mapped mine footprint. So it's these sort of differences why we're so concerned to revise the TEMMP to recognize protection for calving.

SSav: Perhaps this is a good moment to go over some of the proposed mitigation. We did hear some feedback from participants and we have some clarifications to make.

Slide 16 – Joint Recommendation Response (Table 3)

SSav: Generators, circulation pumps. Propose to have a review of these items' use with daily meetings.

AG: Generators are a relatively steady noise. When they are re-fueled, a surface activity, that is a disturbance to caribou. In the TEMMP it would be useful to have wording that provides more detail on how often they have to be fueled up and whether a tank is close to a generator, and time of day for fueling. Behavioural monitoring (cameras) suggests that in most years there is lower density of

sightings at midnight and early afternoon. Is there any way that that information can be factored into the timing of when generators are refueled.

SSav: I would suggest adding some information in the TEMMP that during Level 2 we will make sure all generators are filled. But I think it will be hard to include in the TEMMP the level of detail on the dates and timing of refueling. That's why we are proposing to take advantage of the daily morning meetings with KivIA rep onsite, to map out when the next generators will have to be re-fueled and agree on a transportation plan for that activity. Something else, the transportation to the equipment and fuel pumps will be outside the line of site of caribou.

AG: Ok thanks, I think for the TEMMP we don't want to have too much detail. But it has to set the framework for those toolbox meetings. The objectives and working details.

SSav: I think we can add the details in the TEMMP on the type of equipment as an overview, and put emphasis on the fact that in the event refueling is needed, that will be part of the morning discussion. Next item – compliance activities. It is a requirement to do some compliance monitoring activities. We will add a point about discussing this during daily meetings, it will be added to the internal transportation plans.

AG: I realize some of the monitoring has to be done at certain intervals, but some have flexibility. If more detail could be included in the TEMMP on this and if there are calving caribou some items can be postponed.

SSav: We already postpone what we can, but we can add wording about transportation planning with KivIA daily for the ones that have to be done.

KR: When you're talking about the morning meeting, it doesn't sound like there is a real commitment there. You can check off that you've talked about something but there is no real change. So if you say it's going to be talked about does that mean there will be fewer trips or certain times of day. Is that something that can be spelled out.

SSav: Good clarification. The morning meetings during migration, first thing to mention is that someone from KivIA is present with us onsite during migration. And this representative participates in the daily meetings. So they are an external party present and we would document these items in the daily meetings. I agree we can add wording with regards to the objectives for discussing these items – to minimize the number of transportations that occur.

LM: We'll be implementing this plan, with some general basis, for Level 4, that we need to follow. And if we see changes between the distance for caribou coming for calving or migration, we will meet in the morning with proponents and make decisions at that time. But you will have the basis in Level 4, with the input from the team, and what should be in level 4, by the end of this meeting. But it is necessary to implement more restrictions, we will do it in 5. We do that at Meadowbank and will continue to work like that with Meliadine.

SSav: Some additional background for everyone's benefit is that decisions made are communicated through daily emails during migration. Next item – crew changes. Agnico already uses a bus for crew changes. We included some details in the TEMMP for Level 3 and 4. With regards to road traffic and defining an emergency, we included some information on what is considered an emergency and that has been integrated in the TEMMP v5.

JW: TEMMP v5, the table lists the word essential as opposed to emergency. I wonder where the definition of essential traffic is in that document. For greater certainty of what Agnico considers essential traffic.

AG: About crew changes, we realize AEM is using a bus in convoys. I think in the existing TEMMP it's 2 convoys, 2 crew changes a day. Is there any flexibility in whether it has to be two? What is flexibility in the timing of the crew change?

SSav: We're talking here about crew changes between the mine and Rankin right?

AG: Yes

SSav: Crew changes are also dependent on road closures. If it's closed there is no crew change. Agnico may also choose according to community feedback to cancel a crew change pre-emptively if there is a risk of the road closing while the convoy is out.

AG: How long is a shift?

SSav: When the bus leaves the mine site to go to the plane in Rankin? That depends on the timing of the plane that arrives in Rankin. Usually between 10:30 and 11:30 am.

AG: Not every day? Between June 1 – 15, for Level 4, how many would you anticipate?

SSav: Planes are Monday to Thursday. Usually they leave the mine site earlier during migration.

AG: Suggest it would be helpful to have more detail about crew changes to better understand where flexibility might be. And during June 1 – 15, caribou movements are from northwest to the south and east, so if there are caribou around the mine site that would be useful information as to whether the road is closed.

SSav: The convoys are well documented in the annual report. When the road is closed the convoy is cancelled. The decision to go with the convoy is made in collaboration with KivIA on a daily basis, with GN and HTO inputs.

AG: The linkage between the TEMMP and the annual report isn't always clear. There should be more cross reference to the annual report. And the TEMMP should include restrictions on flexibility, such as that the decision is made daily. That level of information would help us understand how to design enhanced mitigation for Level 4.

SSav: Thanks we will look at clarifying that wording in this section of the TEMMP. Thank you for your comments. The next item on the list is road traffic and the definition of emergency. It is provided in v5.

JW: The response to the memo we put forward provides a definition of emergencies but Table 7 in TEMMP v5 lists essential traffic not emergencies. So I'm wondering the definition of essential traffic. I couldn't find one. It's something Meadowbank has done in their TEMP.

SSav: We can add that in the TEMMP v5. Essential traffic are related to the activities permitted under Level 3. We will add some clarifications. Next item - with regards to helicopters, drilling, and open pit mining, those are suspended in Level 3 and 4.

JW: I think in the memo it says rapid shutdown for Level 3 can happen in 1.5 h, and somewhere else in the TEMMP it says for example if staff aren't able to get a ride back to camp they may have to walk. I'm wondering if personnel having to walk back to whatever location is included in the 1.5 h value. I'm also wondering is there any estimate as to how many staff could be impacted by that. Maybe a large group of people could be considered a disturbance. Just curious about that.

SSav: It would be a minimal amount of staff walking, they would be onsite, not visible because of seacan walls and WRSF, so there wouldn't be any significant noise associated with the activity of walking back. We can have a look at exactly how that is worded and clarify.

PK: Just to clarify the health and safety is priority number 1. So we would know already who is in the field, who would need a ride, so I don't know where this question is coming from. Aren't we talking about caribou mitigation? The staff would be something that we would be looking after. If there is a possibility of a shut down everybody would be on alert.

SSav: In the TEMMP I think it was added just as a contingency and unlikely event.

JW: My question is whether this activity is considered in that 1.5 h rapid shut down time.

SSav: I understand better now. To clarify, if we are working in far areas, more than 1 km from site, they would need a helicopter or vehicle. So walking is only for less than 1 km, and it would take maximum 20 min to get back.

LM: To clarify, Level 2 as you can see, all those activities have been suspended, those are the ones far from site. So in Level 3 locations are more close to site.

SSav: Also to reiterate the importance of the daily morning meetings where we go over all the compliance monitoring that needs to take place. So we will know someone is heading out, and it will be very close to site. Last item – underground work. For Level 4, we propose to have light duty activities permitted under Level 3 and to discuss the transportation plan for the underground during the daily ops meeting.

AG: Not sure I understand the change between Level 3 and 4 for underground.

SSav: For underground the main change we're proposing is to discuss the transportation plan for getting workers to the underground as part of the daily meeting.

AG: Ok what are the options for reducing the amount of underground work, ore produced. Because if you reduce the level of mining, in turn that has a domino effect, reducing surface activity, moving, sorting ore, etc.

SSav: That ties into the next part of the table and some clarifications we wanted to provide to TAG members with regards to the light duty activities. So we'll be providing that in the next slides.

AG: Ok so I'll wait. You've provided us with evidence that the mine related noise and the visibility of light duty activities is mitigated. We understand Victor did a great job demonstrating the level of noise is reduced during Level 3 by 50%, but that is only half the definition of effectiveness because we don't know the caribou sensitivity to the noise. The other thing is Appendix C was photos of the seacan walls and the mine site, but those are not really effective evidence that they block activity. More monitoring is required to demonstrate there is a reduction in the visibility of surface activity. While you've made progress on mitigation effectiveness, the evidence still has a large measure of uncertainty.

SSav: I'll let Victor speak to the noise component in a second. We do have some information related to caribou hearing sensitivity. With regards to visibility, we have slides coming up. I understand many members haven't had the opportunity to come to site. We have a combination of different factors like walls of seacans.Where there are openings, the view is protected by either natural or manmade features, such as the tailings storage facility (TSF). Understanding and recognizing many people haven't had the opportunity to come to site what Agnico would like to propose to reassure everyone as to the effectiveness of the visual barrier is to do a scan at a distance of 5km from site at the height of an adult caribou, of what can be seen when looking at the mine site. I think that will help comfort TAG members. Some external parties did come to site during migration, like KivIA. I know Jeff and Jamie are not on the call, but Luis if there is anything you'd like to add feel free, but if not I'll leave the floor to Victor for the noise portion.

VY: Just wanted to clarify Anne in response to your comment. The 50% reduction was in noise emission. We then did a second study that we presented in March in which we tried to incorporate that contextual information, including the hearing sensitivity of the caribou based on the Perra paper, and the influence of wind and how elevated wind speeds create masking noise. So that study did show that Level 3 shut down is reducing the spatial extent of the area where caribou could hear the mine. It was focused just on hearing, not behavioural response because we aren't aware of any studies on that, so it was more conservative in that sense. So the audibility polygons are probably overestimating the extents to which there would be an effect, but show where caribou might hear the noise.

AG: Thanks, that's clear. I do think it's important, your point that we don't know how caribou respond to even reduced levels of noise and footprints. But it is a reasonable assumption that cows with newborn calves are more sensitive to noise, as they are to visual disturbance.

SSav: To finish the discussion on light duty activities. Processing plant – it is shielded by a seacan wall, so noise and visual disturbance are mitigated and will continue to be during Level 4. We will add a discussion item during morning meetings regarding the transportation plan. With regards to the cement plant, it is off during Level 3 and 4. For other light duty activities, we have a few visuals that we will show quickly, but they are shielded by the seacan wall in the case of the buggy bin, and with regards to haulage to underground and the automation pad, same thing. Construction of work in the mill extension area. This is a non-routine light duty activity not defined in the TEMMP, so as such if similar activities were to occur this would have to be discussed with the TAG prior to occurring. With regards to single haul to the TSF we wanted to specify that we're not hauling tailings to the TSF during Level 3 or 4. We have a few visuals to share.

AG: I have difficulty in understanding with what you just said if there would be any changes in the tonnage of ore processed that would allow any distinction between Level 3 and Level 4. We went over those light duties very quickly and yet they are the key ones for reducing the surface activities. I understand that at least from the west these activities may or may not be visible. But is there going to be any difference measured in level of activity between Level 3 and Level 4.

SSav: What we will do for these activities is discuss our transportation to the working areas in the daily meeting. We did provide evidence that there is no visibility and that mine related noise is mitigated for these activities. At this point there is not intent to reduce these activities during Level 4.

AG: I guess we have a different opinion about the strength of your evidence. So as a precaution until there are more data showing the mitigation is effective, would you consider reducing the amount of ore that is handled, because that is the key to the level of surface activities.

SSav: This is a point that would benefit from clarification, we only haul ore to the automation pad during Level 3. That is the only movement that takes place with regards to ore. Shown in Slide 23 – area is completely shielded by seacans. What we'd require clarification on is what is the concern for this activity. When this one was previously approved by KivIA and we have someone with KivIA present onsite during this activity.

AG: When we looked at finer scale photos of the seacan walls there are openings in them. There is movement at portal 2 to the buggy bin. I don't think all the movements would have been shielded by the seacan walls. Which makes the point that we don't have cameras in place, you don't provide data on how many daily vehicle movements there are on the surface. There were cameras around the minesite but the results weren't sufficiently detailed to know how sightings differed between Level 3 and Level 2. So it is to be said you made a tremendous effort with the seacan walls but the

evidence that there is no surface activity visible is not very strong. And the precautionary principle is there should be enhanced mitigation to distinguish Level 3 from Level 4.

SSav: Agnico sees it that further reductions in the activities for Level 4 should make a difference with regards to caribou audibility and visibility and in this case we've already mitigated that risk. And perhaps the trial that we're proposing with regards to a visual scan of what can be seen will be helpful because these seacans were installed to minimize line of sight for caribou, and were installed with KivIA representatives. So the openings have been specifically located where they are blocked by other infrastructure.

AG: The summary table in the TEMMP, is it going to show a difference between Level 3 and Level 4? We need to see a clear enhancement during calving, between Level 3 and Level 4.

JW: Anne has made some good points here because in reviewing version 5 there doesn't seem to be much difference between Levels 3 and 4. The triggers are effectively the same except Level 4 has the June 1 – 15 caveats. And the additional triggers of daily calls, it sounds like they are already a thing happening during migration. And some trigger to create a summary report. That doesn't feel like mitigation. To Anne's point, the materials that Agnico has presented don't seem to enhance caribou protections during calving. It's just a reiteration of Level 3.

KR: I agree with Anne and Jessica. In the TEMMP version that I have it literally says work suspension Level 4 will trigger the same mitigation as Level 3. We really strongly support the planned shutdown, so not only enhanced mitigation in Level 4, but also a planned shut down in Level 5.

DCh: Level 4 isn't any change, it's the same mitigation as Level 3. Caribou with calves could turn up at any time. On the visuals, you've said there is a lot of protection on the west side from disturbance, but it's the east side that we are bringing up. You've also stated you've effectively mitigated, but what proof are you bringing to the table on that. So we need to be measuring how behaviour of caribou has been changed or not changed. Maybe better monitoring on that east side, through HOLs, and other monitoring to show that behaviour of caribou has been mitigated. On that east side, I'd agree with whatever KIA has recommended, but again how is it that those seawalls are blocking all visual disturbance, it seems like there are gaps, so we need to measure that so we can have some proof your mitigations are working. And whether we think it has to have some sort of Qamanirjuaq-level population changes, I think what precautionary principle tells us is we want to make sure it never gets to that level. So without attempting to put in place a plan for the whole mine to get ready for caribou calving nearby, you're saying it's important but it's not really important because there's no plan. I'm trying to encourage Agnico to see that community concerns for caribou calving protection are important. While you certainly have a lot of good mitigation in place, when it comes to that particular eventuality, that maybe hasn't happened exactly there at the mine, but it's looking like it could occur, we have to get something in place. One example, in the current plan there is this magic number of 50. I'm not sure about that. That group of less than 50 could be cows with calves getting closer to the mine, and you'll still be at Level 2. So I think you have to look a bit more at this mitigation for the potential eventuality of caribou with calves.

JW: Well stated. There may be effective reduction in noise or visual barriers, but whether that results in effective mitigation is the pinch point. TAG members want to see that demonstrated. It would be good for Agnico Eagle to demonstrate that. What was stated about the seacan, visual scan, that's beginning to work towards that. It's troubling that Level 4 is identical to Level 3. What are the triggers for Level 4. How can we have a shared understanding of what calving is. We don't want to be caught off guard, we want to have a plan in place for if this happens. Additional ways we can reduce disturbance at the mine site should calving overlap.

SSav: Really important to clarify that we do see caribou arriving at site, it's not a surprise. So there wouldn't be a case where Level 4 would be a surprise. Caribou with calves are already moving through the Project area during post-calving. From what we hear, without having been to site it's difficult to appreciate the effectiveness of the seacan and the visual barriers, so we will put together a pilot project for this summer to better document this for TAG members. With regards to Level 4, we've discussed several clarifications following everyone's inputs, so these will be added in the TEMMP v5. We will send some minor revisions to the TAG for review. At this point we are 30 min behind so we will break for 10 – 15 min and reconvene to discuss TEMMP v5 modifications.

3. TEMMP Revisions

Time: 14:32 – 15:27

Supplemental Material: presentation titled "TEMMP v5 Caribou Section"

Presenter: Sara Savoie, Agnico Eagle

Slide 1 – Title

Slide 2 – Outline

Slide 3 – Calving Range Monitoring

JW: Confused regarding calving maps. Want to be certain here that there will be maps annually presented to the TAG and in the annual report, and this is not contingent on overlap happening, i.e. it will be regardless of what caribou are doing.

SSav: We will have a look at the wording and provide clarification. Both sections where we discuss sharing the results of the map, it will be to the TAG and in the annual report.

JW: So this will just happen, not only if there is overlap. Or does something need to happen for this to be triggered? Because the document made it sound like there is a prerequisite.

SSav: This will be shared every year.

Slide 4 – Calving Range Mitigation

AG: There is virtually no difference between Level 3 and Level 4 in the wording. Except for underground, a slight difference. The site wide warning emails and radio should specify that it is calving caribou. We need to see written differences between Level 3 and Level 4. For underground, we still haven't resolved if there are any, in practice. So the work suspension protocol doesn't suggest there is any enhancement of protection for the calving caribou. We still need to talk more about this to make it clear that one option that cannot be ruled out is a reduction in the amount of ore handled.

SSav: We did commit earlier to adding some details to the daily transportation plan for each of these activities. With regards to underground activities, something we have to mention is that at the minesite we are working at critical levels. The surface activities related to the underground mining operation are minimal during that time, and have been minimized and mitigated. The daily transportation plan will allow us to have some control on this process as well as documentation.

AG: Can you actually give the difference in the number of vehicles operating on the surface between Level 3 and Level 4, and also the criteria for when Agnico would implement a reduction in the tonnage of ore.

SSav: Once again I think there is an important clarification with regards to ore. It is hauled to the automation pad. I will get information on the numbers of vehicles.

DCh: Depth of mining is immaterial. Has to do with how much ore you are bringing to surface. I have been at the mine. I can say for that brief tour on the east side there are plenty of areas where caribou can see activities. I'm questioning your assurance that everything has been mitigated visually. The fact that you are still not willing to make any changes to Level 4, I'm still questioning why you come back to the same responses. There are opportunities to do other kinds of monitoring to see what caribou are seeing and sensing. Not just noise and visual, but they see the entire environment. Additional monitoring with trail cameras from the east side – you're not opening up to say ok let's try that. I get the sense you're still not willing to move forward.

SSav: I think there is an important clarification here with regards to the location of the light duty activities. They are not taking place on the east side of the mine.

JR: To clarify what we can see, I think it's important to know all the light duty activities happen on the west side. (*Shows figure - Slides 19*)

PK: Just to add with the observations to know how far caribou are say at 6 am, they monitored throughout the day. If there were caribou on the east side and they were close enough to see, activities would be shut down anyway. I highly doubt a caribou is going to see a gap in the seacan from that far away, from across the water, and over the berms that are there.

SSav: Thanks Jade and Pujjuut.

AG: I agree that the gaps are narrow and might be difficult to see. My point is that we don't have all the information that we could have to give us the assurance the mitigation was effective. Part of it is the timing. We can recommend further monitoring, but we won't get those results until 2025. What happens this year if there is calving? We need to think about the possibility that we may be dealing with calving this year. The cameras on the mine site did detect caribou the third week in June. Greg, anything you can add from the camera data from 2023?

SSav: To clarify, we will share the visibility monitoring and HOL monitoring before the annual report next March.

GS: We had 10 cameras, mostly facing the tundra, not back at the mine. So mostly trying to find caribou. We had around 157 detections, at 2 cameras, #20 and 27, at the narrows and the very southern end of the circle of cameras. Camera 20 is at the southwestern end of the esker system that goes south of the mine site, 6 – 7 km away. We see a lot of ATV tracks here, and cabins, and caribou trails. Early calving year in 2023 so not unsurprising we would have seen them post calving June 4. So those may be the tail end of the post calving. It's difficult to make broad statements. These were a request of the TAG in 2023. The program was designed to look at the road to prep for the waterline. In 2023 we heard from the TAG they'd like to see more around the mine site. Too early to make broad statements about them arriving earlier or later, though we know from collar data they did arrive quite a bit earlier last year.

AG: I think you're point is valid that it was the first year, and more to talk about here. Whether 10 are enough. I think the cameras at the mine site are a critical part of the monitoring.

LM: I think the worries of the group that are not part of the field monitoring program, it's because of that reason. I can assure the group that the distance in between the cows are far away from the site. Question for AEM, I know that the rest of the group wants is to see some relevant worry for Level 4 that is able to be applied to the calves. I think that's the missing component. I think that can be done by explaining in Level 4 initially that that is going to be for calving season. Which is different

from Levels 1, 2, 3. And then you will suspend, and you need to explain the reasons why. I want the group to know that the caribou are far away from site at this point in time. I agree we need to be prepared, that's why we have early meetings with the proponent, before we go to do our monitoring. We see how many activities have to happen, how many people are out on the land, what distance are caribou from the site. Then we see the safety aspect for coming back to site. And compared to the distance where caribou are, to know they will be in a hurry if caribou are approaching faster than we thought. That's for level 3. We haven't applied level 4 yet. And I also wanted to assure you that during those morning meetings, we also discuss all the activities that are being shut down, not only those included in Level 3. It's a lot of activities that we have to slowly close down as caribou approach the site. It's being very proactive in this case, giving the benefit of the doubt and to AEM collaborating with us, listens to us in those morning meetings. At the same time we also are proactive and release those activities when caribou move out. If we are not willing to change the ways, whether that's underground, if we need to see the traffic and how many vehicles come into the area, let's explain those in Level 4. And probably then everybody will be on the same page. Because any other way to do it, it'll require years of research. And we have maybe one or two weeks before caribou start showing up. I just want to give the perspective from KIA who will be proactive at the site, and will be looking after caribou, along with the Environment Department of AEM.

SSav: I think the success of the caribou migration monitoring and mitigation that has occurred in the past, and the fact that we've had no mine related mortality in the past year, and the success that we hope to see moving forward is due to the collaboration between multiple parties. We've been closely collaborating with KivIA, GN, local HTO and we appreciate the time that is spent by all of these organizations and the fact that KivIA makes someone available to stay onsite with us. We've been working at getting this TAG in place since 2022, and the number of participants involved in the migration has grown, and we've shown some great success. We are still learning how to work as a group, and I think we shouldn't forget the progress we have made as a result of everyone's input. Agnico is very grateful for everyone taking the time to provide comments and feedback. What I understand from the group today is that first, we need to provide some wording clarification on Level 4, namely with regards to the transportation policy that will take place, and to show effectively the differences between Level 3 and 4. We will work quickly to provide that. We also want to be proactive, so we will continue the trial testing the extended monitoring feasibility, as well as demonstrating the visibility of the site.

Slide 5 – Light Duty Activities

AG: You'll provide a new version of the TEMMP with the word changes you've shown us, right?

SSav: Yes, for turnaround time on this, we will provide a Word document with track changes by end of next week.

AG: Because the wording changes you've shown us do not provide sufficient flexibility to show a clear enhancement of Level 4 mitigation, a reduction in surface activities that could be detected by calving caribou. The wording you've shown is a step in the right direction, but too small of a step. We still need further assurance in writing that Level 4 is an upgrade from Level 3.

SSav: Following the discussion of today we will be adding some extra details that will clarify the difference.

AG: Look forward to seeing that. There will be another TAG meeting to review the revised version? In May?

SSav: Towards the end of the month would be the intent.

AG: Possible to have that earlier, in the second last week, because pre calving migration will be well underway and we will be close to calving during the last week in May.

SSav: I think there are some logistical considerations on our side but we will have a look at the possibilities and send a survey for dates.

AG: Would it be helpful if we provided draft text on defining calving grounds based on our experience?

SSav: If you have that on hand and would like to share it that would be appreciated. We are working with tight turnaround times.

AG: We should get you that by middle of next week. We could also provide a paragraph summarizing the western scientific knowledge which justified enhanced protection for calving, bearing in mind your concluding comments in your response to our joint recommendations. We can provide a paragraph about cows and newborn calves, and their sensitivity. It would be included in the TEMMP to provide a useful background to understand the strength of the concerns about the revised protections.

SSav: I know these are ongoing discussions that can take a lot of time but I think we are making progress and I appreciate all the feedback. We will send a survey with timeslots for the last two weeks of May. In the meantime we could perhaps combine the items of interest and the round table.

DCh: For clarification on the visibility, I recognize that some out there say there are not gaps. Could we go back to that image, looking east? (slide 19) So you're on the west side of the mine, looking east. I don't dispute one bit that you can't see anything going that way. I'm looking at the other map where the automation pad is and the buggy bin, and I wonder about what visual barriers are there. Seems like there is quite a bit of visibility on the east side of Meliadine Lake, looking west towards the mine.

JR: I can provide more detail about that (*describes site plan and how light activity locations are hidden from view*).

AG: During crew changes, can you trace on this image the route they take?

JR: They use the west side road (*shows route*).

AG: So in the TEMMP, you could include this image with the routes between camp and work places, which routes and collection ponds are used for compliance monitoring, and where there are light activities?

SSav: We can have a look at including a similar map in the TEMMP. I would like to clarify that a mine site is a dynamic system so perhaps we could add some wording to the effect that we will choose the roads less visible. Either we'd have to update the TEMMP every time a road is changed, or keep some wording in there. We have also discussed making sure the generators are filled prior to Level 3 and 4, so that traffic will be minimal.

AG: I think it would be useful.

DCh: That little bit of discussion and explanation you did there regarding the mine being active or dynamic,I certainly understand that sort of thing. It does point to though that if under certain circumstances there was calving occurring close by, and while it's a dynamic thing, you may want to try to go through the west side in movements because it's more shielded. It sounds like you sometimes can decide that you'll go on the east side.

SSav: To clarify, these decisions are made daily during the morning meeting so that wouldn't be occurring.

DCh: So then my only point is then again that would be a sentence somewhere in the TEMMP that says exactly what happens especially under circumstances related to caribou and calving.

SSav: We will be careful to reflect that in the update.

4. End Comments

Time: 15:27 – 15:59

Supplemental Material: None

Presenter: All

AG: I realize it is difficult because it is an operational mine, but it is a huge responsibility given that there will be calving in the vicinity of the mine site. Although it might seem that we are being argumentative we have an obligation to speak for calving caribou and protect them. Part of that comes from knowledge of cow calf behaviour. A calf can suckle 30 times per day and they need peace to do that. The other context is during the hearings and reviews for the Nunavut Land Use Plan, the resounding message was community concern for calving caribou. I think there was a very clear message about community concerns, and the science side does a good job documenting the scientific basis for those concerns which is the physiological requirements for those cows and calves. I really wanted to emphasize where we are coming from, that it is a balance of science and community knowledge. And it would send a strong message that during calving, calving grounds should not be disturbed. We're trying to walk a middle pathway between an operational mine and everything we know about calving caribou. Thanks all.

SSav: Thanks Anne, Agnico shares your view about the importance of collaboration between community knowledge and science.

GB: It is an important message Anne brings and thanks to the rest of the team for voicing their concerns about the lack of difference between 3 and 4. The mine has to keep going I guess but the caribou do too and their population is being reduced a lot. I don't know if there will be a recovery the way there used to be. It's really important to make sure that the calves are born and not affected and the mothers provide them with the milk they need and that they grow. And the protocols in place need to be more restrictive. I think we're all on the right track here. I appreciate hearing everybody's comments.

DC: Thanks all.

DCh: We continue to talk and that is great, no question. Lots of ideas and progress, maybe not to the extent we'd like to see it. The reality is we need to make progress with action and I see some things and yet it seems that caribou calving protection plans are not of interest to Agnico Eagle. There has been lots of good clarification though and I think we can look at some different ways of monitoring. The interest people have for the caribou out here is undeniable. With everyone's prodding and asking questions I look forward to continually learning. I think that in many cases we're going to make some progress, it just seems to take some time. In this case, because of what is coming up I want to be sure we're not caught without having some plan. I would also want to commend the KIA and all the observers and people in Rankin Inlet and give our assurance that the

caribou is of utmost importance to all of us. And from this discussion that we're going to have Agnico moving in the direction of caribou calving protection.

SSav: Thanks Dan, as we've mentioned this is a highly collaborative process and we hope that the next version of TEMMP v5 as well as the two pilot projects will highlight that.

GS: Great to hear all the perspectives.

JH: Thanks for lettings us sit in.

JR: Thanks for the good discussion. I think it's important to remember that we have improved a lot since the TAG was formed.

KR: Thanks, being new to the group I'm hearing a lot of people talk about the progress and collaboration, and maybe my perspective will change and I hope it does. But for today I see the response from Agnico incorporating very few of the recommendations from the TAG, and I also see language that is really concerning to me, that is really elevating and prioritizing western science and not taking into account Indigenous knowledge. I'm surprised how many recommendations Agnico is considering and I'd like to see a shift in that. And some of this language around population level effects needing to be seen before more changes are made demonstrates the differences in world views and what's on the line for people around this table. For people who depend on caribou it's not a risk they are willing to take to wait and until those occur. It's troubling to see that kind of language. I think also the definitive language that is being used "Agnico has demonstrated the existing Level 3 mitigation reduces x, y or z", listening for example at the public hearing to the voices around the table, there is not agreement among land users that there has not been an effect. So I'm leaving this meeting hoping we can work better together to and come to some better protections for caribou, specifically around calving. I'd like to see maybe more learning from Agnico Eagle, more taking in of Indigenous knowledge and not this prioritization of science. Another good example is those noise studies. I think that Perra paper specifically talks about the fact that their measurements were limited by their technology, so we don't know that's the limit that caribou can hear. We also don't know what other limitations we have. I always go back to the story about caribou being able to see the corona effect on transmission lines. For years elders and knowledge keepers were saying caribou were reacting to these lines and scientists were saying "no, there's no effect" and then one day a scientific paper came out saying, oh, wait a minute we actually know the caribou can see these things in a way that humans can't, and suddenly everyone believed it. And so we have to keep that at the forefront of our minds that western science is a relatively young knowledge and it's really concerning to me to see this definitive language that Agnico Eagle is using, that you know, with so much certainty that there's not going be an impact to caribou outside of 3.5 kilometers, for example. We don't know that and at least listening to the knowledge keepers in the communities I work with, they don't believe that, that caribou aren't going to be able to hear the mining activities beyond 3.5 kilometers. I'd like to see some ways that we can actually more meaningfully include Indigenous knowledge in these conversations, and into how we're actually considering measuring and understanding impacts. I'm hoping we can see more protection for caribou during calving incorporated in a meaningful way.

SSav: Thank you Katie for sharing your point of view. We are always available and happy to provide supplemental information for new parties that join the TAG. One clarification with regards to the joint recommendations, is that these were not TAG recommendations but rather recommendations from three TAG participants. We are happy to continue the discussion.

LB: Thanks

LM: Appreciate all the input. I assure everyone here that as the landowner, we always believe that caribou are first. They are food security. We work to make sure they are protected, and have an abundance in the Kivalliq region. There are a lot of institutions that are supposed to do research in many of the points where you want data. Usually I don't see those institutions making progress. We are using the tools provided to us, the collars, we have good biologists who have a lot of experience. We also have elders that we consult in the community for any advice we need. We have to have balance and with all of your help we will address that.

PK: Being Inuk, living in Rankin, I've talked to many leaders, HTO members, regional directors. Agnico Eagle continues to collaborate and work with these Inuit organizations and community leaders. During the NIRB process I think it was quite sad that there weren't more Inuit present. It was obvious there were more Dene than Inuit. This was not representative enough. When there were some comments made by Inuit that work for Agnico this was discounted by some Dene members which was not respectful. Because this was knowledge that was passed from our community. One thing that never gets talked about is the effect hunters have on caribou. There are thousands of caribou about 20 km from Rankin right now, and they are skittish because of other hunters from other communities making them skittish. Caribou come around the mining site because they learn that it's a safe area. The other part is there are more access trails for hunters to go further. The further they can get the faster they can get to certain caribou herds nearby. Agnico has an Elders' Advisory Committee. They have their own mandate to make sure traditional knowledge is used by Agnico Eagle. I don't agree with the comment that the population is going down. The GN rep here can probably say a report came out in August, saying the population is stable. When we talk about food security, yes people need to hunt caribou but also they need jobs to have equipment to hunt caribou. My job as an Inuk working for Agnico is to make sure community voices are heard, and to represent Inuit workers at Agnico. Other Indigenous people are similar to Inuit in that respect, you know that one working member can support more than just the immediate family. So when we're talking about caribou and different views, that has to be something that is considered as well.

JW: I requested an update on the final report from the regional biologist last week in anticipation of this meeting, it's not ready but once it is I will distribute it. Working towards better is challenging but it's worth it. It's the right thing to do. The GN looks forward to receiving the updated TEMMP next week and we look forward to seeing how Agnico incorporates updates to management and mitigation for calving caribou.

SSav: Following up on the GN study, at this time is it possible to share the preliminary results of the study with the group?

JW: I can ask.

VY: Thanks all.

SSav: We've all acknowledged this is a lengthy process, we did make some progress. We look forward to sharing the updated TEMMP with participants shortly. Thanks all for your time, presence, participation, collaboration.

The next meeting of the TAG will be scheduled for late May, 2024 (online meeting).

APPENDIX A – PENDING ACTION ITEMS (from previous meetings)

Action Item	Summary	Responsible Party	Update (e.g. Pending/Complete)
Items from January 23 & 24, 2024:			
Jan 2024 TAG meeting participants	Agnico Eagle to circulate the list of January 2024 TAG meeting participants (*provided with meeting minutes*).	Agnico Eagle	Complete
TAG virtual meeting	Agnico Eagle to organize a virtual TAG meeting in February 2024 to revise the caribou related sections of the draft TEMMP version 5	Agnico Eagle	Complete
Draft TEMMP	Parties to provide written comments on the draft TEMMP version 5 prior to the February TAG meeting	All	Complete
Noise Monitoring during Level 3	Agnico Eagle to consider conducting noise emission calculation with comparing level 3 shutdown with and without light duty activities	Agnico Eagle	Complete
Calving Range Map	Agnico Eagle to consider compiling calving range for 2022 as it was conducted for 2023 with additional analysis of caribou collar data, combined with GN's caribou aerial survey data for 2022 (upon reception of GN's caribou aerial survey report expected April 2024).	Agnico Eagle	Complete
GN's Caribou Aerial Survey Report	GN to provide its caribou aerial survey report in April 2024	GN	Pending
Plain Language Summary	Agnico Eagle to provide plain-language summary of Meghan Beale's presentation.	Agnico Eagle	Complete
Green-up Method	Agnico Eagle to assess the use of remote sensing methods when determining Green-up dates.	Agnico Eagle	Complete
Collar Method	GN to provide information on how collar methods have changed over time, and how the health of the collared animals is assessed.	GN	Pending
TEMMP Objectives	KivIA to provide to Agnico written comments on objectives to measure residency time and to measure exposure.	KivIA	Complete
Muskox Harvest Data	GN to provide information on muskox harvest data, past studies beyond what's already cited in the Meliadine TEMMP, and any planned work.	GN	Pending
Road Signage	Agnico Eagle to assess road signage improvements for non mine-site related traffic.	Agnico Eagle	Pending
Caribou Vs Traffic	Agnico Eagle to assess different ways to present traffic information when caribou are in level 3 on a daily basis	Agnico Eagle	Pending

Action Item	Summary	Responsible Party	Update (e.g. Pending/Complete)
Contribution Caribou Collaring Program	Agnico to confirm date of last contribution to the GN caribou collaring program.	Agnico Eagle	Pending
Items from March 1st, 2024:			
Calving Protections Proposal	GN, KivIA, Dene FN, Denesuline FN to combine proposed revisions on calving protection measures and provide to Agnico Eagle.	GN. KivIA, SDFN and NDFN	Completed
Other TEMMP Comments	KivIA to provide to Agnico Eagle written comments for proposed additional TEMMP revisions.	KivIA	Completed
TEMMP v5 Revisions	Agnico Eagle to provide written TEMMP v5 revisions for review and discussion with the TAG after receipt of combined calving protections proposal and other written comments.	Agnico Eagle	Completed
Delayed TEMMP v5 Submission to NIRB	TAG to recommend delaying submission of revised TEMMP v5 (Agnico to draft and circulate for sign-off) to facilitate ongoing discussions of revisions calving protection measures.	All Parties	Completed

AGNICO EAGLE

Meeting Minutes

Topic: Meliadine Mine Terrestrial Advisory Group (TAG)

Meeting Date: May 30, 2024; 12:00 – 16:00 CT

Location: Online

Attendees:

Kivalliq Inuit Association (KivIA)

- Luis Manzo (LM), Director
- Anne Gunn (AG), Consultant, Caribou Specialist

Baker Lake Hunters' and Trappers' Organization (BLHTO)

- Harold Putumiraqtuq (HP), Chair
- Eva Elytook (EE), Elder

Kivalliq Wildilfe Board (KWB)

- Tiriaq Maria Kasaluak (TMK), Wildlife and Environment Technician

Sayisi Dene First Nation (SDFN) and Northlands Denesuliné First Nation (NDFN)

- Dan Chranowski (DCh), Consultant, Wildlife Biologist Matrix Solutions Inc.

Athabasca Denesuline First Nation (ADFN)

- Katie Rasmussen (KR), Biologist

Government of Nunavut (GN)

- Jessica Waldinger (JW), Project Manager, Research and Monitoring
- Stephen Atkinson (SA), Biologist Consultant

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC)

- Jeff Hart (JH), Land Use Planning Manager

Agnico Eagle Mines Limited (Agnico Eagle)

- Sara Savoie‡ (SSav), Environment Superintendent
- Puujuut Kusugak (PK), Director Nunavut Affairs Community Relations
- Jade Robitaille (JR), Compliance Counselor
- Leilan Baxter^ (LB), Minutes Record
- Dan Coulton (DC), WSP Sr. Wildlife Specialist
- Meghan Beale (MB), WSP Wildlife Biologist
- Victor Young (VY), WSP Acoustic Scientist
- Greg Sharam (GS), ERM Caribou Specialist
- Mitch Fennell (MT), ERM Wildlife Biologist

‡Meeting chair

^Record keeping

ACTION ITEM SUMMARY

Action Item	Requested By	Summary
TEMMP v5 Comments	Various	All parties to provide additional written comments on most recent draft TEMMP v5 (provided by email on May 16 and 31, 2024) by July 15, 2024.
Inuktitut translation for TEMMP v5	KWB	AEM to verify the feasibility of providing a Inuktitut translation for TEMMP v5 in point form.
Satellite Imagery for snow accumulation	KivIA	AEM to confirm with the Water Management department if satellite imagery is used to collect information on the rate of snowmelt and where banks might accumulate.

MEETING TRANSCRIPT

Note: All supplementary material referred to in the meeting minutes is provided to the TAG Members by email and/or OneDrive for review.

Slides were reviewed by the presenter as indicated. Supplementary discussion and comments for each sub-topic are documented here.

This meeting was planned to be recorded for the purposes of transcription, without objection, but the recording was accidentally not enabled. While most speaker comments were transcribed directly during the meeting discussion, some were paraphrased or summarized to facilitate note-taking.

1. Greetings

Time: 12:00 – 12:09

Supplemental Material: Agenda

Presenter: Sara Savoie, Agnico Eagle

SSav: (*Welcome, introductions, review of agenda*)

2. TEMMP V5 Revisions

Time: 12:09 – 13:55

Supplemental Material: presentation titled “TEMMP v5 Revisions”

Presenter: Sara Savoie, Agnico Eagle

SSav: Per TAG feedback four items were added.

Slide 2 – Calving Range Monitoring

Slide 3 – Calving Range Mitigation

SSav: Added Level 4 details (see slide)

Slide 4: Next Steps (submission to NIRB mid-June)

SSav: We didn't receive any written feedback so far on the revised TEMMP v5 shared earlier this month, we wanted to open the floor to participants to make sure if you have any comments or questions. We did have a call with one party earlier this week and there was a suggestion to add something related to deterrents if there are calves in the vicinity of the mine site, so we can discuss that, but first we will open the floor.

JW: I think right off the bat, we've seen two updates to TEMMP v5. In the first updates there were some changes, then in the second there were very minor changes. Based on the latest draft that we have the GN isn't supportive of this TEMMP. Earlier in email just before this call I asked if the GN could provide our list of issues with the current TEMMP and append those to the minutes today. But if this is the sort of document that AEM is trying to finalize we'd like the opportunity to provide written comments on this draft. Or if not, hoping that our list of comments can be appended to the final version, to have that on the record.

SSav: To clarify, when would the GN be available to share their written feedback with us? As mentioned we haven't received any written feedback on the document as of now.

JW: After today's meeting, because it wasn't clear if there might be any changes to the TEMMP as a result of today's meeting. We'd look at the other parties to see what their deadlines might be. The due date that Agnico is hoping for is mid June?

SSav: We had circulated the document with the hope that parties would share feedback. I think we've made good progress on that document, and we'd hoped to submit to NIRB prior to the migration as we've discussed previously. This is also why we're having this meeting today. If there is any feedback on the document, this is a good platform for us to discuss them in a collaborative manner. If you do have some feedback that you are ready to share today, we can discuss that.

JW: Sure and regarding written comments, let me confirm internally and I can provide more information by the end of the call.

TMK: I unfortunately have not been able to go over the last meeting minutes after I had to leave but this meeting I will be here for the whole part. We were supposed to have a board meeting yesterday but it was postponed to next week. So for now I will gather some comments from the board and update as we go. Thank you.

DCh: From Sayisi and Northlands point of view we find the changes lacking in areas. Some movement, but very minor. We would not support it unless there are some further changes, to mitigation in particular. Group size and distance thresholds. Specific wording, more in preparation for the eventuality of caribou calving close to the mine. We will have some written comments as well and can send them to be appended to this meeting. Those are the main areas. Related to some of the results that Agnico has provided in their behaviour studies indicating group sizes of less than 25 caribou react to sensory disturbance at 300 m from the road. Why these things have been documented and yet no changes, shows something lacking there. It's research you've collected and it doesn't seem to be being applied. The changes are minimal. We can talk about those ones or let the rest of the attendees mention their issues. But I can provide comments, more specific, that can be appended, as well as written comments on the TEMMP following the meeting. We can provide those within 1 – 2 weeks.

AG: Earlier in the week KivIA met with Sara and Jade and we talked about one of the problems which is communication flow and clarity of terminology. We talked about the fact that KivIA has

everyday land use inspectors who meet with Agnico Eagle and they make day to day decisions on mitigation. But there is a lack of communication of those day-to-day decisions with TAG. And also a lack of information in the TEMMP of what guides those decisions. Each revision is a step forward, and we'd like to thank and acknowledge the TAG and Agnico for taking those steps. At the moment we are at a stalemate, KivIA. Because the only difference between level 3 and 4 is a transportation plan. The traffic management plan has to have more details specified that act as guidelines for the day-to-day decisions. That's one topic that we'd like further information on. We'd also be happy to contribute in writing some thoughts because we know a lot about the day to day decisions within KivIA. The second need is clarification within the TEMMP, ofterminology which is undefined. We recommend a glossary of terminology. Words like "overlap" – calving overlap. What does overlap mean? Can we put more qualification on that? e.g. overlap with the Meliadine property, or footprint, or a buffer? Also helpful to have a definition of calving vs post-calving so there is clarity. So KivIA is offering information to contribute by next week with text on the clarification of the transportation plan, and the terminology.

SA: I just caught Anne's comment. In the annual report for the TAG, in Table 2 it states that following agreement by all TAG parties the final TEMMP will be submitted to the NIRB. So it sounds to me like there isn't agreement on the TEMMP, so I'm curious why there is a change in plan there. Second comment, I heard that comments could be submitted by mid June? I wanted to note that timeline isn't going to be feasible for GN. I don't want to repeat all of what Jessica said on our concerns. I believe she has a summary that we'd like to append to today's minutes.

SSav: On your first point, in the annual report it stated that we are going to be submitting the TEMMP v5 once it's been worked on with the TAG. So at this time Agnico is not considering a unilateral submission to NIRB. We have this working group in place and our intent is to come up with a management plan update that TAG members have had the opportunity to comment on and are comfortable with. That being said, it's been many months that we are discussing the project and something I'd like to remind participants of is that any of our management plans are living documents, and they are revised whenever relevant. Something I want us to be aware of is in the TEMMP v5 we've already made significant improvements and we are hoping we can submit v5 and continue working together and build on that. That is part of the TAG's reason of being.

SA: I would disagree with the statement that significant improvements have been made. One purpose of the revision of the TEMMP was increased provisions for calving caribou and I don't see that. I'm looking to clarify what the process is here because the 2023 TAG Annual Report states that "following agreement of all TAG parties, the final version will be submitted". As far as timing, if the TAG parties are going to be providing comprehensive written comments on TEMMP v5, my point was that it takes a while. That process from my experience isn't feasible in 2 weeks. I think a mid-June submission of the TEMMP doesn't seem to make sense to me. What also doesn't make sense is why there is a plan to submit it when there isn't agreement.

SSav: At this time there is not a plan to submit the TEMMP before TAG members are comfortable. That's not Agnico's wish. However, I'd like to emphasize that until we have a v5 submitted, the v4 is the one that remains in effect. That is something that we as a working group need to be aware of. And with regards to the comments, we can re-discuss the timelines for revision later in this meeting. We did receive a first set of comments from the GN in the joint recommendations and provided answers in writing to those, but we'd be happy to take a look at further comments or we could also use this meeting time to discuss specific points that parties may have in mind.

SA: What's important here is that the revision of the TEMMP, at least the caribou portion, is one of the Terms & Conditions (T&C) of Project Certificate 6-1 (T&C 118). I understand that AEM are keen to see that fulfilled, but what I'm trying to understand is that if we don't have agreement among the TAG on TEMMP v5, I'm not sure whether that T&C is met or in progress. If AEM proceeds to submit the current version of the TEMMP and indicates to NIRB that they have therefore met the T&C 118, I think that will generate some responses from the parties. (…)

SSav: I reiterate and clarify that Agnico's intent in this TAG is for us to work in a collaborative way. We have informed the NIRB that we wouldn't be submitting TEMMP v5 with our 2023 annual report. We'd rather for everyone within the TAG to reach an understanding and be comfortable with the document. The reason we've been having these virtual TAG meetings is to get clarification on what specific elements we need to discuss with regards to your support of TEMMP v5.

AG: You say we've made considerable progress but we haven't yet reached agreement on TEMMP v5. You said if we didn't, we'd be using the previous version (during the 2024 Caribou Migration). That was before we realized the likelihood of calving in the regional study area close to the mine. How will you manage the mitigation for calving if you're relying on version 4? And the second thing, can we have clarification on the transportation plan now? The pre-calving migration reached the mine site and because it was unexpected, what does it mean for the current level of monitoring. I'm wondering about cameras, road surveys, etc. are they ready to go? Has the position of the cameras been changed? We talked about that earlier this week.

SSav: With regards to the management plan, the applicable management plan approved by NIRB is our TEMMP v4. The main difference is levels, level, 1, level 2 and level 3 when 50 or more caribou are within 5 km. Our intent is to get a TEMMP v5 out to NIRB as early as possible to recognize the work that we've been doing within TAG and once again knowing that it's a living document and there is potential for it to be revised yearly. With regards to your other questions, related to placement of the cameras. Our team was going over that in the past few days and they have been installed. We were planning to discuss the migration in the second half of today's meeting.

JW: I mentioned that I sent a brief email to Sara summarizing the main areas that the GN has disagreement on the TEMMP v5. If we're being allowed written comments this will be expanded, but just briefly today, our main areas are the lack of clear calving and post-calving protection measures. Specifically the treatment of collar data. Currently it's not used to trigger various levels of shutdowns. Unlike Meadowbank/Whale Tail (MBK/WT) where it's mainly used to provide advance notice of caribou approaching. In the memo we sent a while back we said the collar data should be used in conjunction with height-of-land (HOL) and road surveys, to trigger mitigation. Another area we disagree with are the distance thresholds currently in use. In short, we're saying that many of them should be expanded, for both the AWAR and the radius around the mine site so they consider daily movement rates of caribou, frequency of monitoring to detect approaching caribou, project specific monitoring results, and the greater sensitivity of caribou to disturbance during calving seasons. One other point we take issue with is the group size threshold (GST). We propose that during the calving period, having a smaller GST, of 10 or more antlered caribou, or calves within 10 km of the project. We'd like that to be implemented. Then, incidental sightings. Currently the TEMMP v5 doesn't use those by members of the public to trigger shutdowns, but we think it would be an important element to include. Lastly, work suspension activities, the crux of the conversation in these meetings. We don't see much difference between level 3 and level 4 with respect to which activities have been restricted. A level to provide protection to calving caribou would reduce visual, auditory disturbance.

SSav: Thanks Jessica. Before we start providing some clarification, you mentioned some of these being sent by email, perhaps we can touch base because I don't recall getting those by email. So we can verify we have the proper email addresses. With regards to the collar data vs HOL, vs community observations, something that is important to mention is how we rely on complimentary and multiple sources of information during the migration. The collar data is monitored by our staff and the observations provided by the community are also essential to our caribou management. We've had presentation on this previously, comparison between collaring vs HOL. Something important to note is that the collar maps that we receive are usually dated 1 or 2 day prior, whereas the HOL gives information in real time. This is why all of this information is used together. If TAG participants want we can pull that presentation back up. We also discussed the distance. That's something that we mentioned in the last meeting, we are working on a pilot project with community elders.

JW: I wanted to clarify, in no way we are saying to only use collar data. We're just saying to include it in triggering shutdowns.

SA: I think what you were saying is why use collar data when HOL is more reliable. But that might not always be the case. Sometimes collar data can detect caribou when HOL surveys don't. Collars within x km of the project should trigger actions. As an alternative in case HOLs fail to detect animals. On the distance thing, I appreciate the pilot, but knowing how far you can see isn't necessary information. The point we're making is we don't want you to ignore caribou x km away and approaching, simply because they are outside the 5 km distance threshold.

AG: I want to reiterate Stephen's point. These thresholds are like "and/or" statements. They have to be considered together. Also, to the GN, when maps are sent, are they aware that during this time of year, day to day decisions are made dependent on these maps? Do they understand the urgency at this time of year? Can you update the TAG on progress on providing not just daily locations but the rate of movement? It's highly informative for mitigation. I know the pilot is under way, but 10 km is it really important because at this time of year the cows are much more sensitive to movement. Even if it's difficult to see cows at 10 km, they can probably sense any activity from the minesite at that distance.

JW: To your first point I understood it as is there any what to speed up the transfer of these maps to the parties that must use them to make decisions? That's something I'll have to put to the party that produces the maps. My understanding is a lot of the processes are automated so it's not necessarily a human reason for delays. But I'll have to follow up. The second part to your question on providing an update on the daily movement rate information. As context when we submitted the joint memo one of the ideas was that perhaps we could use daily movement rate as a potential trigger to illustrate that calving was happening near the project. I've talked to Caslys, some preliminary conversions they say it's definitely feasible. One thing we're considering is representing this information in a table format. I'm waiting on mock ups of what this might look like.

AG: Thanks, really helpful.

SSav: Thanks Anne and Jessica. A point to reiterate is the temporal aspect of these maps and they would be more efficient for use for our teams if there weren't 1 or 2-day delays, and perhaps that is something that Dan you'd like to add a few points on?

DC: Looking for some clarification from GN. I thought Stephen suggested that collar data could be used to identify caribou that are within the 5 km area and missed by the HOL surveys. Would you be suggesting that they would trigger mitigation on those same days?

SA: There may be a day when for example a map comes in and shows one collar has moved into the 5, 10 km zone and that day your HOL survey didn't find caribou. Then we are suggesting that either a collar or a certain number within the zone would lead to mitigation action. The assumption being made is that when there are 1 or 2 collars, there will be most likely more than just a single collared caribou in that zone.

DC: Where I struggle with this is that the collar data are 2 days old. So I'm not sure how they can be applied in the absence of the HOL data that triggers mitigation at that same time.

SA: When the maps are produced some of the locations are a day or less old. Regardless, if you have collar caribou within 5 – 10 km and they weren't seen by HOL surveys, it's feasible that you just didn't see the groups of caribou that day. We're saying that it's another tool. If your argument is that there would never be a scenario where collars would be present but not detected by HOLs, then you have nothing to worry about.

DC: I guess the other issue is that if it's not at the same time, those collared caribou might have moved on already when you're implementing mitigation. I struggle with how they are improving over HOL data that are collected in real time and the mitigation is implemented immediately. When there is this delay.

MB: The issue overall is how can Agnico make changes or decisions based on data that is a few days old. Does the GN have the ability to set a geofence? Where you get an alert the moment a collar enters that desired boundary. That seems like a more efficient way to do this. Second, the scale and resolution of these maps is not equivalent to telemetry data that you can scroll through in GIS. It's very difficult to make inferences about whether caribou are actually in the RSA with the scale of these maps. That's out of Agnico's control.

SA: Geofencing can be done. I think that's best discussed with Mitch Campbell under the form of a contribution agreement. I think in that case you'd be within your right to indicate that you'd like a geofence. But there hasn't been a contribution to the collar program by Agnico since Meliadine began. But I have to disagree with the usefulness of these maps. If you look at the one distributed today, one location was from May 30. Today. Not 2 days old. There are a mixture of ages on those locations. I disagree that you can't use these maps. They are another tool and it's wasteful not to use them, especially during this time of year. I can't understand why you wouldn't use this source of information. HOL surveys have 24 or 48 h between them. In the meantime you could have had 10,000 caribou walk within 5 km but no one was out to see them. You have to use all the available tools.

SSav: Just a clarification on the HOL surveys. During Level 3 we do a minimum of 3 per day. During the caribou migration we start doing the HOL surveys based on the collaring maps. These are complimentary sources of information that we rely on.

DCh: Just to further discuss this mention that HOL surveys are being done on those time periods, this year a number of those days were very foggy. Little information. Whereas collar caribou could have turned up there and you wouldn't be acting on it in the current TEMMP. So it is important to use collar caribou information. So I would suggest that we all vote for Agnico Eagle to approach GN and financially contribute to creating a geofence on these caribou coming around the Project. That would be my recommendation here.

JR: One thing is that when we know that caribou are around and we have weather that doesn't allow us to see, we keep Level 3 activated. There is no activity re-instated when we can't see around.

SSav: And these decisions are made in conjunction with KivIA, GN, on a day-to-day basis. So we have other external parties that could speak to that.

DCh: Of course there are other eyes out there, that's great. I've been in places where it's foggy. Jade mentioned if you're in Level 3, but what if you're in Level 1 or 2, and you don't see a caribou coming in because it's foggy. I reiterate it would be nice to see Agnico financially contribute to a geofence project, and we could see how that works.

AG: Dan you're asking the TAG to vote, is that right?

DCh: I see some opportunity here. We don't see a lot of times where there is a recommendation that shows up in a TAG meeting, so yeah I'm suggesting that.

AG: Before we vote would it be fair to ask GN about the practicality of the geofence collars? Or should we move straight to a vote?

SSav: I'd like to add that I don't believe it's within the scope of the TAG for us to vote on a financing mechanism. I think we can discuss exploring new tech or pilot projects, but I think Anne brought a good point that we need to verify the feasibility.

JW: I think the most diligent approach, and I love the conversation here on pros and cons of telemetry data, I think this entire discussion reinforces the need for complimentary measures. But the underlying message is that telemetry data should be able to be used to trigger mitigation. I can have a conversation with Mitch Campbell regarding this. I understand that all collars deployed currently might not be the same make and model. As such, some collars you can change parameters concerning geofencing, whereas others you may need to do it before it's on the animal. So to determine the feasibility I think I should talk to Mitch first. But the overall idea of geofencing I think is nice and efficient and addresses our concerns.

SA: Good to discuss with Mitch, and he's not opposed to it, and we know it can be done especially if it's planned prior to deployment. His main opposition previously was drain on battery. But if this is a specific objective that Agnico has, it could be set up through a contribution agreement. Technologically it's a none issue, just a question of resources. And to refine this issue of using collars as a trigger, that can be done. Number of collars however far from the project, within a certain previous time limit. But overall I'm really pushing to see these collars utilized as another trigger.

JW: Good point on the time limit.

AG: Reiterate Stephen's point about the seasonal use of the timing of the information. I wanted to mention though that some people are very concerned about the use of the collars. So in order to justify using them, we have to make maximum use of the collar data. In response to what Sara said, I think this should be a pilot project dependent on discussions within GN on the feasibility of using geofencing for this purpose. Question now to Dan – maybe it's premature to vote until we have the information from GN and coming up with a pilot project design. On the other hand, we don't want to delay the use of information.

DCh: I like where things are going and I'll reinforce what Anne has said. I'm not talking about adding more collars, just use the ones we have out. In future collaring work, we should consider geofence-capable collars. I would wait and see from Jessica about further information. I could put this recommendation in abeyance until we get further information. But I would still want to recommend it in the future once we get better information on the feasibility. Because clearly it will help us to answer some questions relating to thresholds relating to triggers. One final comment, if this is important to the group then finances should not be an impediment.

SSav: Nice to hear that we all seem to be on the same page relative to exploring this opportunity.

KR: Good discussion. I think I'm repeating what others have said but I want some clarity. I see a couple of different discussions here. One, back to Stephen's example, as the maps currently are, there is data that could be used potentially to trigger action if it's the case that we see that on the map now and HOLs didn't capture that. My question is does Agnico have any issues with adding that as a trigger mechanism, using what we have available already? And then the other two levels are one – going back to comments that Megan made, is there a discussion that can be had about the data quality and resolution and can that be improved or shared in a different way that could enable a better use of collar data in the future, and then finally, geofencing. Three different options. The first, including collar data as a tool to trigger mitigation, could be implemented right away. I'd just like to hear from Agnico what the concern with implementing that is.

SSav: We actually have today's map available for sharing here. We can perhaps provide some inputs. I want to clarify what we're saying is not that these maps aren't useful, it's that they are complimentary. No one type of information is perfect so that's why we rely on various sources of information. Jade perhaps you can share some of the difficulties if we were to rely solely on this type of information.

KR: I don't think that anyone is suggesting that we use this as the only source of information. I don't think we need to go over that. I think we all agree that this is one tool and it's complimentary. I think the difference is that right now, the collar data doesn't trigger action. And it should be added as such.

MB: I wanted to add something to facilitate the discussion. What can I do when I look at this map. This is static. I can't zoom in or move around. What would you do based on this map? From this I see one blue dot in the regional study area (RSA). I have no idea what date this came from. This dot also represents about 5 km. It's great that we get these maps, but to use them in this way there should be improvements made to the mapping. Because it's very hard to commit to making decisions off of a product like this.

SA: That's fair enough Megan. Your points are valid. I think it's a simple question of tweaking how the maps are presented or providing a table with the precise lat/long.

JW: These maps also include Meadowbank. They use collar information as an additional trigger[1]. If we're stuck on the symbology we can address that.

DC: Can you elaborate which information at MBK is triggered by collar data?

JW: Yes I'll find some figures. I'll let you know when I have them.

LM: Very constructive conversations. I will explain to you what actions happen in the ground. The biologists are far away from the site and don't know it very well. I happened to be there last week, with AEM and KivIA staff. There were minimal amount of caribou on site, and then the site was shut down. The reality in the field is completely different. KivIA as the land owner would like to approach this differently. We'd like AEM to invest in monitoring on the ground, not more collar data. We are using telemetry data which is fine. And we also try to monitor and define what those Level 4 triggers are. We are content with the operations of AEM in the field so far. We have no issues with it. My suggestion is that if you want to change the document, we go back to seeing how effective are these changes going to be. I think AEM is doing what they can. Zero activity

[1] Upon verification with the Meadowbank operation, Agnico Eagle wishes to clarify that collars maps are used as **one** of the indicators for the lead herd project and do not trigger closure on their own.

was happening during the first wave. The money should be invested in the monitoring on the ground.

JW: To close the loop, I have the figures on the specific triggers for Meadowbank. The trigger for Level 1 is 1 caribou within 50 km based on collar data. The point we're making is that other projects incorporate telemetry data. We worked with MBK/WT recently to use collar data as one of the facets in triggering a lead caribou pilot program. Other projects are willing. I think it has relevancy within the TEMMP. (*shares screen of MBK TEMP*)

SSav: Something to clarify at Meliadine we also use collar data to inform when HOL surveys start.

DC: Ok so both triggers related to collar caribou have the same mitigation, which is site-wide notifications. But then it changes the level of monitoring. That's really what the collar data triggers.

SA: A little history here. It was during the time of the WT amendment proposal. GN put forth a number of requests that collar data should be used as a trigger for shutting down the AWAR or Whale Tail Haul Road (WTHR). As Jessica pointed out, the lead caribou pilot project includes a component where collar data is used for decisions on shutting down the road. That's about as far as we need to take it. It's being done at Meadowbank. It's a no brainer that we should be looking at the same things at Meliadine. Notwithstanding some improvements to the mapping and reporting of that data.

AG: This seems like a bit of a rabbit hole. As Stephen said, we don't doubt the use of the collars. Tweaks to the maps and clarification of wording can be added to the TEMMP. I'm wondering if we've resolved your collar question Dan and can we move along?

DC: I think Jessica has showed us how the MBK TEMP includes collar-related thresholds. So I'm satisfied and happy to move forward.

3. 2024 Caribou Migration

Time: 14:05 – 15:51

Supplemental Material: presentation titled "2024 Caribou Migration"

Presenter: Sara Savoie, Agnico Eagle

SSav: Before we jump in to this presentation, I just wanted to thank all for their thoughts earlier. We did hear from several participants that comments were ongoing, so at this point we'd like to propose for us to set a target for receiving the written comments. We had initially thought about mid-June as mentioned earlier, acknowledging that caribou migration is fast approaching. We heard that parties might not have time for that. So we'd like to push that to one month and hear your feedback on that. So we don't lose the momentum we have going.

KR: That will be reasonable for us.

JW: Cautiously I'd like to say July is better than June, but if there is an issue with that I'll get back to you.

SSav: So we can put you as tentative for 1 month and if that's an issue you'll get back to us?

JW: Right

AG: KIA will have comments to you, suggested text, probably through track changes on the existing draft.

JW: Stephen just joined so I wanted to get him up to speed on this (*reiterates proposed comments timeline – mid July instead of mid-June*). We didn't discuss what the home will be for the written comments. Will they be appended to the TEMMP, will Agnico hold on to them?

SSav: Typically we wouldn't append comments in a management plan because over the years it can get very long. But all of the TAG activities are reported in the TAG annual report.

SA: Comes back to what the next steps are. If Agnico considers TEMMP v5 to be the ultimate version, that you're going to submit to NIRB, then I suspect that the GN would want to prepare comprehensive written comments, as typical during NIRB hearings. That type of comment goes through the GN's internal review and editing process and it takes some time and it's a big investment. It would be a large investment if those comments ultimately just sat with Agnico and they weren't included in an annual report or as a supplementary document at the time of the TEMMP submission. So that's what we'd be looking for. If on the other hand you are not planning on submitting TEMMP v5, then we could do what Anne indicated and provide a track changed version of TEMMP v5 perhaps with comments in the margins. That's a rapid review process. So the way GN responds depends on what your plans are for TEMMP v5.

SSav: With regards to that, TEMMP v5 has been in circulation with the TAG for several months, and it is TEMMP v5 that we will submit to NIRB. I want to mention that we do appreciate it's a lengthy process to revise and provide comments. The manner and the process in which parties provide comments and feedback is up to you. The comments will be included as part of the TAG annual report. We are not in the habit of appending comments in the actual management plan, but they will be part of the annual reporting process.

SA: So you're clarifying that the current version of the TEMMP v5 that we have now, you are going to submit it as is, to NIRB.

SSav: What I'm saying is we've been working on TEMMP v5 for several months with several iterations. Following our previous May meeting comments were provided by parties and we wanted to account for them so we provided a new iteration of TEMMP v5. And we heard today that parties have more comments so we want to see if we can include them. The TEMMP v5 refers to the submission to NIRB. So far we've worked on several draft iterations on v5.

SA: The comments from today were not new comments. So this next step where the members of TAG provide more comments, after this set, is it then your intention to submit a version of TEMMP v5?

SSav: I'm not sure I follow Stephen. After you submit your comments we will review them and see how to account for them in the TEMMP, and hopefully we can submit a TEMMP v5 to NIRB.

SA: So after this round of comments if the members still have many of the same concerns after this round of commenting, what's the next step? Are we working towards a TEMMP v5 that all the TAG members support before it is submitted to NIRB, or how many times are we going to comment on this before AEM decides to submit?

SSav: We will receive parties' comments on the latest version from early May, and we discussed a few from GN today, but we want everyone's input. It's a living document, we will make changes and adaptations to it but we are hoping to submit a version to NIRB in the short term.

DCh: We can get comments to Agnico by mid-July. The question is, is the intent of Agnico to obtain full support from the TAG, based on revising the TEMMP after these comments? Or is it similar to last time. You will be getting virtually the same comments as the last iteration a couple

of months ago. So once you get the comments will there be any further discussion, or will you just respond back without changing anything?

SSav: We'll let Tiriaq and Harold speak and circle back on that.

TMK: Comments for end of June or mid July?

JR: The intent is the beginning of July, so a month from now.

TMK: *Mid-July will work better for KWB* (*cuts out*)

SSav: I think that's feasible on our end. We want to provide the opportunity, so if everyone is in agreement with that it's something we can accommodate.

TMK: Yes and also in respect to the spring and summer time there is going to be a lot of family time with the board. Thank you.

SSav: Thanks.

EE: You should have noted this meeting a month ahead, not now. Then everybody is going to start rushing their mind and what they are going to do. For now I know you guys are full of herds. If I was in Rankin I would tell you guys to stop. Because it's a calving ground. I wish all the traffic are stopped except quads, Hondas. People who are going hunting. Don't stop them. Locals, business, Agnico, even KivIA, wildlife officers, everything. If I was living in Rankin I would tell them not to go on the road. I agree with Stephen. I don't know what else to say. Harold was sitting for a while and he had to go. And Tiriaq you were breaking up, I could barely understand you.

SSav: Thanks for that. As for the meeting invite we'll make sure they are communicated as much in advance as possible, and we will confirm emails with everyone coming up next. With regards to the process and the discussions we've had we'd like to propose to receive comments from participants by mid-July. What we'll do is assess those comments, we will look at which ones we can incorporate in the document, and we will reconvene for a TAG meeting and go over the different comments received. If there are some that couldn't be incorporated we'll provide a rationale on why, and then we'll see for a NIRB submission.

Slide 2 – Outline

Slide 3 – 2024 Caribou Migration Update

Slide 4 – Caribou Migration Management Summary

SSav: This is the one currently in effect, TEMMP v4, currently approved by NIRB.

JW: Not on this slide but I just saw in the chat from Tiriaq that they have a bad connection right now, and can they have Inuktitut translation for TEMMP v5 in point form?

SSav: Ok thanks, we will check how long that will take and get back to you on that.

Slide 5 – Protection Zones

Slide 6 - 8 – Communication

SSav: If you see someone missing from the list from your organization, please let us know.

DCh: Spelling error for "Geoff", and we aren't using GKD so you can add myself and Kelly into the Sayisi and Northlands.

KR (via Chat): Our info is the correct contact people and email info- but just a couple typos to correct ... Spelling is Athabasca Denesųłiné and for my name its Katie not Kathie. Thanks.

JR (via chat): Sorry, we will make sure to correct it.

Slide 9 - 11 – Meliadine Site Work Suspension Protocol

SA: Before we go on to this, on the 2024 migration and the observations from the mine, the caribou observed within 5 km and triggering work suspension, what information on the composition of the groups do you have? Females, calves? What sort of caribou are you seeing?

JR: The group that we observed was mostly females and males. We didn't see any calves.

AG: How did you tell the cows from the bulls? Did the cows have hard antlers and the bulls just had velvet buds? At those distances how did you tell the difference? And were all the cows antlered.

JR: From the information I have, some were not antlered. We saw both with and without antlers. The distance to evaluate the gender was mostly within 1 km. We differentiated male and female with the different colour on the fur at the back end.

AG: What's interesting is you had both cows with and without hard antlers i.e. pregnant and not pregnant.

SSav: Ok we might not go over this whole table in detail but rather activities that change between level 3 and 4. (*Reviews table on slide*)

KR: I'm curious to know in your opinion what will change between level 3 and 4 with that daily morning meeting. The action is that you will have the meeting, and I'm wondering what stronger mitigations will come from that. Or how does that meeting change what you're already doing in level 3.

SSav: With regards to the difference between level 3 and 4, it's in the internal transportation. Transportation related to the essential activities will be minimized, as we stated in the TEMMP. It will be discussed with the KivIA in the morning and a transportation plan developed to ensure all activities are covered with a minimum of transportation.

KR: Aren't you already doing that in level 3?

SSav: In level 3 we do have daily meetings but the transportation to the daily activities isn't documented or included in a transportation plan.

KR: My understanding was that at level 3 you're already doing everything possible to minimize traffic. So what can come from level 4.

SSav: The difference is the transportation plan. So for example in level 3 there could be convoys to work areas or essential sampling. The transportation plan make sure that all of the essential activities and light duties are discussed and the transportation needs are assessed and combined together.

KR: So you're not doing that at level 3?

SSav: There is no formal plan that goes over every type of transport that will be needed throughout the day, the approval process with KivIA.

KR: Ok thanks.

SA: The current trigger for closure of the AWAR is 100 m. I struggle with that because it doesn't align with what we know about caribou response to roads and traffic. Even the project's behaviour monitoring study showed they respond adversely to the road at distances of up to 300 m, and it may be more as the data grow. Similarly a nice study by one of Chris Johnson's students for a

winter ice road showed that caribou walking behaviour, time spent walking increased and foraging decreased in proximity to the road. But there is nothing that supports 100 m as a suitable threshold for closure of the road. What justification is there for 100 m?

SSav: With regards to the road closure, first thing to mention is that we are typically very conservative with the road closure. And the reason for that is obviously we don't want people getting stuck on the AWAR. The road closures are always discussed in collaboration with the GN in Rankin, the KivIA and the HTO. So if we have indication that a large group might be in the vicinity of the AWAR we will pre-emptively decide to close the AWAR. Now with regards to the study that you mentioned, I'm not familiar with the details. If one of our consultants is and wants to add to that.

SA: I take your point that you're doing more to close the road than is revealed by this 100 m threshold, but then the TEMMP should surely reflect what you actually are doing. At a minimum, some baseline that says the minimum distance. So if caribou are within 300, 500 m we will close the road. That 100 m threshold just shouldn't be in there. The second issue is that operation of aircraft and drilling rigs outside the mine footprint, the way the TEMMP is written right now indicates those activities will be shut down when caribou are within 5 km to ensure they are shut down when they come within 5 km. So the way it's written is non-sensical. And that's why the GN suggests that the trigger to start shutting down aircraft and drilling should be at a distance greater than 5 km.

SSav: With regards to helicopter usage, I'd need to look at the exact section you're referring to because here it does state that helicopter flights cease before caribou are within 5 km. So I'd need to look at what you're referring to but we do shut down those operations before caribou are within 5 km.

Slide 17, 18 – Overview of Work Areas and Expected Caribou Locations

Slide 19, 20, 21 - Overview of Work Areas and Expected Caribou Locations – Drone Animations

DCh: When you were flying back on the east side, looking west, I got the sense that the drone had moved further from the site and elevated. Is the distance that you flew the drone on the east side looking west greater than when you were on the west side looking east.

JR: It was basically the same distance from the mine.

DCh: And roughly what is the distance?

JR: I think about 10 and 15 m but we can get that for you.

AG: What month were they flown in?

JR: This one here was on last Sunday or Monday, and the first one on the west side was at the end of April.

AG: Is that typical the extent of snow melt?

JR: What we see isn't representative of what's on the ground because of how the software puts the images together.

AG: Do you collect information through satellite imagery on the rate of snowmelt and where banks might accumulate?

JR: We can ask the water management department that.

AG: I think that might be useful to know. So thanks. So now time is moving on, can we talk about the camera locations? Can you show us the image of the site where there are new seacan walls and can we talk about the placement of the cameras? Because the objectives for that program now include monitoring the effectiveness of mitigation. So knowing where the cameras are relative to traffic, because they can be used to measure the difference in traffic between level 3 and level 4. And also they will contribute to measuring the sight-ability of onsite transport relative to seacan walls.

DCh: Just back to the first slide of the previous presentation, it was about the fact that Agnico Eagle was immediately into Level 3 mitigation on May 12. I'm assuming there was no collar data indicating that caribou were coming. It looks like it was a bit of a surprise that all of a sudden caribou were there and you had to go immediately into Level 3. Please explain how that happened.

SSav: First I'll clarify that we were not surprised by the caribou, we were ready to start Level 3. It was started very quickly and effectively. With a collaboration with KivIA throughout the duration. Something else to mention, and this relates to the collar maps, the maps we got in the days leading to that were delayed. We were monitoring the maps though. And we responded very quickly. We are ready for level 3 when it happens.

DCh: So I guess what's missing in this, if you weren't surprised and you were ready to implement level 3, what was it that got you ready? Was there somebody making observations that the caribou were coming close to 10 km?

SSav: The different levels 1, 2, 3, they are not triggered necessarily in sequential order. They are based on number of caribou and distance to site. With regards to the information that we got that allowed us to proceed to a level 3, we work with a variety of sources, and in this case we had some information from the community and some information validated through HOL surveys, and KivIA was on board with us to confirm the Level 3 as we were doing the HOL surveys on a day to day basis.

DCh: I can hear now HOL and other community members, which is great because you're communicating lots of info other than technology. But if you're doing HOLs, what happened on the day before? Were they just not observing caribou and then all of a sudden on May 12 you had *50 or more caribou within 5km*? I understand the levels don't have to be sequential but just looking at it if you were all prepared and ready why wasn't there even a Level 2 the day before.

SSav: That's the beauty of the Levels as well, we are able to mobilize a level 3 very quickly using a combination of different sources of information. Some of the sources we had at that time were not indicative that we'd have so many caribou coming so close to site but used in combination we were able to do it.

DCh: The question still comes, what happened the day before? Were there no information that you had where you could have been in Level 2?

SSav: It's a valid question, and I can confirm that we didn't have the triggers of caribou that would have triggered a level 2 in that time, and the collar data didn't show them as close to site as we observed on the 12 when we triggered level 3.

DCh: I'm still not convinced that you weren't surprised. You did implement very quickly. But I'm just wondering what you were doing the day before that you didn't have any information and they just showed up. We'll just leave it at that for now.

SSav: I'll clarify,the levels are made so they can be triggered and effective very quickly ,and we're doing HOL surveys, we saw caribou that triggered level 3. I think in previous meetings we went over the internal preparation process for migration. It is something that recurs every year, we prepare several months in advance.

DCh: I was actually under the impression that at Level 2 the departments are getting ready to go to level 3. But it's just that it seems there must have been something that happened before you put level 3 into place. Somebody seeing them from great distance, then the action started happening within Agnico to shut down. And that's missing here. I have been to the site and I can tell you I can see from great distances without even a spotting scope. I'm surprised you went to level 3 immediately.

SSav: Again, we use multiple sources of information. We monitor the collar data, we are doing HOL surveys, we are getting the information from the community. Something we can all agree on is caribou have the ability to move quickly, and this is why we need a system with various levels that can adapt quickly. That's what we did on May 12.

LM: That week was a lot of fog and we didn't want to take chances because we couldn't see over 2 km so we applied a precautionary principle. We knew the caribou were coming because the hunters told us. But we had fog that week and we couldn't take chances.

DCh: Yes thanks, that's exactly what I was asking. I commend you for implementing that as quickly as possible. It'd be nice to have that documented and communicated.

AG: We're running low on time. I ask for Agnico to send to the TAG members their plans for the placement of the cameras, realizing the objectives are both effects monitoring, monitoring the degree of surface activities, and that will reveal the difference if level 4 had to be implemented, then recording the surface activities on the remote cameras will show the difference between level 3 and level 4. And I would encourage the reporting of the activities to be on a daily, even hourly basis, to show the role of the two shift systems. It's pulsed because of the shift change. The placement of the cameras also will detect the caribou exposure and the likely effectiveness of the seacan walls. We don't have time now to go through all this but if you would send it out to TAG members and we could comment on this very quickly in time for the cameras to be placed for this coming season.

SSav: We can share that and we also have a video of the wall from inside we can put on the OneDrive. We have a few minutes for a question or two now.

JR: (*shares screen with map of camera locations*)

AG: What way are they facing?

JR: All out. Because they were installed before we had that discussion. But if there are some you would like facing in, we can do that.

AG: Are you limited to these 12 or so, or can you add any more?

JR: For this year I don't think it will be possible to add more.

AG: As a quick response I can't see how this current placement contributes to the two objectives of looking at the effectiveness of seacan walls and measuring surface activity. But I can provide comments in writing if you send this map.

JR: We will send you the map and you can add comments on where you think they could be useful.

LM: The three lower cameras. Those are actually looking at the minesite?

JR: At the moment they are all facing away from the mine.

MF: Yes we've been talking about moving some of them to point back towards the minesite to give us a better metric of what caribou would see.

LM: The reason I ask is that one of these cameras should be looking at the west side of the site, where caribou are approaching.

JR: I think it would be easier if we share the map and you can look where you think the cameras will be more useful. But for this year it's important to know that they were deployed to make sure we don't miss any other caribou around. We can maybe change some.

MF: I think Luis what's you're getting at is those strips of land between the lakes is where caribou will be travelling and where we'll likely see them. So in those cases they are pointed in the most likely direction of caribou travel.

LM: Thanks. Can you measure the distance between the third from the bottom and the next one? (1.6 km)

SSav: Looking at the time I propose we move to a round table. We will send around a survey for the next meeting towards the end of July.

4. End Comments

Time: 15:51 – 16:07

Supplemental Material: None

Presenter: All

AG: Thanks, interesting meeting. Frustrating that progress goes in fits and starts. Today wasn't one of the most productive in sorting out the details between level 3 and 4, and I'm really concerned about the camera program in address it's objectives. But at least we're collaborating and we have an opportunity to provide some comments.

EE: Thanks for everything. The early August is not a good time for us. We have obligations and it's going to be hot too. I have nothing else to say. Thanks.

MB: Thanks all. I think pretty fruitful in terms of what we were able to talk about.

DC: Thanks all for calling in and participating.

DCh: Thanks for the active participation. Helpful to hear different views. Seems to be slow progress and a need to address some issues that we'll have to get down to soon. Thanks to all working in the field on this project, your work is very important.

GS: Great to hear perspectives.

JR: Thanks, interesting conversation.

KR: Thanks, good to have a bigger group. I think I share some of the frustrations in not seeing what I believe to be meaningful changes in the TEMMP, specifically greater protections for calving caribou. Look forward to seeing everyone's comments submitted.

LB: Thanks all.

LM: Thanks for the meaningful input in the TAG. My view is different because I'm in the field. We'll continue implementing precautionary principle. I think at the end of this year you can have confidence we are there and documenting this.

MF: Useful discussion, thanks all.

PK: I think with 2 years in a row where caribou are early Agnico has shown that what we're doing works. We're communicating with HTOs, with community. Working well with KIA. We've shown it's working. We haven't had any caribou harmed around site because things get shut down. We have the different levels that we show are working. I think this needs to be considered. When things are working well that's a good sign. We're still going to keep working with our stakeholders that way. I know there are improvements that people want to see but still at the same time things are going well. For those that live near Rankin, we're not hearing complaints about Agnico. That needs to be heard by everybody else that's not around here. And how well things are working for us.

SA: I echo some concerns that we aren't moving forward with significant revisions to the TEMMP. I see that Agnico has clearly laid out a position about what they feel v5 of the TEMMP should look like and others have laid out their positions as well, and there are some fairly significant gaps between, and we perhaps needs to roll up our sleeves and try to negotiate a solution. We had a good discussion today about collar information as a trigger and dug into some details which I hope alleviated some concerns from Agnico. We do need to dig into some more solutions though. Maybe if we're going to do it on the phone we should do it one issue at a time, not have a goal of getting through the entire TEMMP. Or we get together.

TMK: (*cuts out*) smooth transition between seasons, just because it's a busier time of year. I really like what I heard today. Good discussion as well. Thanks.

JW: Thanks, I appreciate all the work on this project. It takes a lot to minimize disturbance to wildlife. I think there's still a lot of work ahead for this group but I look forward to being a part of it.

VY: Thanks all.

SSav: I'd like to circle back on something that Pujjuut mentioned. We are starting from a good place, and that's important to keep in mind. This is part of our continual improvement process. We're thankful for everyone's involvement. We look forward to receiving your comments by mid July and we will provide all of the documents from today on the OneDrive.

The next meeting of the TAG will be scheduled for late July, 2024, or August, 2024, pending results of the online availability survey (online meeting).

APPENDIX A – PENDING ACTION ITEMS (from previous meetings)

Action Item	Summary	Responsible Party	Update (e.g. Pending/Complete)
Items from January 23 & 24, 2024:			
Jan 2024 TAG meeting participants	Agnico Eagle to circulate the list of January 2024 TAG meeting participants (*provided with meeting minutes*).	Agnico Eagle	Complete
TAG virtual meeting	Agnico Eagle to organize a virtual TAG meeting in February 2024 to revise the caribou related sections of the draft TEMMP version 5	Agnico Eagle	Complete
Draft TEMMP	Parties to provide written comments on the draft TEMMP version 5 prior to the February TAG meeting	All	Complete
Noise Monitoring during Level 3	Agnico Eagle to consider conducting noise emission calculation with comparing level 3 shutdown with and without light duty activities	Agnico Eagle	Complete
Calving Range Map	Agnico Eagle to consider compiling calving range for 2022 as it was conducted for 2023 with additional analysis of caribou collar data, combined with GN's caribou aerial survey data for 2022 (upon reception of GN's caribou aerial survey report expected April 2024).	Agnico Eagle	Complete
GN's Caribou Aerial Survey Report	GN to provide its caribou aerial survey report in April 2024	GN	Pending
Plain Language Summary	Agnico Eagle to provide plain-language summary of Meghan Beale's presentation.	Agnico Eagle	Complete
Green-up Method	Agnico Eagle to assess the use of remote sensing methods when determining Green-up dates.	Agnico Eagle	Complete
Collar Method	GN to provide information on how collar methods have changed over time, and how the health of the collared animals is assessed.	GN	Pending
TEMMP Objectives	KivIA to provide to Agnico written comments on objectives to measure residency time and to measure exposure.	KivIA	Complete
Muskox Harvest Data	GN to provide information on muskox harvest data, past studies beyond what's already cited in the Meliadine TEMMP, and any planned work.	GN	Pending
Road Signage	Agnico Eagle to assess road signage improvements for non mine-site related traffic.	Agnico Eagle	Pending
Caribou Vs Traffic	Agnico Eagle to assess different ways to present traffic information when caribou are in level 3 on a daily basis	Agnico Eagle	Pending

Action Item	Summary	Responsible Party	Update (e.g. Pending/Complete)
Contribution Caribou Collaring Program	Agnico to confirm date of last contribution to the GN caribou collaring program.	Agnico Eagle	Pending
Items from March 1st, 2024:			
Calving Protections Proposal	GN, KivIA, Dene FN, Denesuline FN to combine proposed revisions on calving protection measures and provide to Agnico Eagle.	GN. KivIA, SDFN and NDFN	Completed
Other TEMMP Comments	KivIA to provide to Agnico Eagle written comments for proposed additional TEMMP revisions.	KivIA	Completed
TEMMP v5 Revisions	Agnico Eagle to provide written TEMMP v5 revisions for review and discussion with the TAG after receipt of combined calving protections proposal and other written comments.	Agnico Eagle	Completed
Delayed TEMMP v5 Submission to NIRB	TAG to recommend delaying submission of revised TEMMP v5 (Agnico to draft and circulate for sign-off) to facilitate ongoing discussions of revisions calving protection measures.	All Parties	Completed
Items from May 3rd, 2024:			
TEMMP V5 Level 4 update	Agnico to make updates to draft TEMMP v5 wording based on comments received during this meeting and provide revised draft to the TAG for review (target May 10).	Agnico Eagle	Completed
Caribou Calving Deffinition	KivIA to provide a definition of caribou calving grounds and wording on rationale for enhanced mitigation measures during calving (target May 8).	KivIA	Completed
GN Study Estimating Abundance of the Qamanirjuaq Caribou	GN to provide un update on the 2023 study Estimating Abundance and Trend of the Qamanirjuaq Mainland Migratory Barren-Ground Caribou Subpopulation.	GN	Pending

AGNICO EAGLE

Meeting Minutes

Topic: Meliadine Mine Terrestrial Advisory Group (TAG)

Meeting Date: December 6, 2024 9 am – 5 pm CT

Location: Winnipeg, Manitoba and Online

Attendees:

Baker Lake Hunters' and Trappers' Organization (BLHTO)

Angel Aksawnee (AA), Manager

Uamajasi Kreelak (UK),

Kangiqtiniq Hunters' and Trappers' Organization (KHTO)

Andre Aokaut (AAo), Director Manager

Samuel Alagalak (SAl), Chair

Kivalliq Inuit Association (KivIA)

Anne Gunn* (AG), Consultant, Caribou Specialist

Jakob Voisey (JV), Wildlife Technician

Patrick Tagoona (PT), Vice-President of Kivalliq Inuit Association

Jeff Tulugak (JT), Executive Assistant

Nunavut Tunngavik Inc. (**NTI)**

Raymond Mercer (RM), Resource Management Coordinator

Bert Dean (BD), Assistant Director

Athabasca Denesuliné First Nations (ADFN)

Katie Rasmussen (KR), Biologist

Sayisi Dene First Nation (SDFN)

Geoff Bussidor (GB), Chief Negotiator

Dan Chranowski (DCh), Wildlife Biologist Consultant to Northlands Denesuline and Sayisi Dene First Nations

Government of Nunavut (GN)

Jessica Waldinger* (JW), Project Manager, Impact Assessment

Stephen Atkinson (SA), Biologist Consultant

Agnico Eagle Mines Ltd. (Agnico Eagle)

Sara Savoie‡ (SSav), Environment Superintendent

Jade Robitaille (JR), Compliance Counselor

Puujuut Kusugak (PK), Director Nunavut Affairs Community Relations

Leilan Baxter^ (LB), Minutes Record

Dan Coulton (DC), WSP Sr. Wildlife Specialist

Neil Moss* (NM), WSP Wildlife Biologist

Greg Sharam (GS), ERM Caribou Specialist

Mitch Fennell (MT), ERM Wildlife Biologist

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*Online attendee

ACTION ITEM SUMMARY

Action Item #	Requested By	Summary
Daily of movement	Various	The GN to provide the daily movement rate in the collar's daily map
TEMMP V5 Comment Table	Various	Agnico Eagle to revise wording of its answers to KivIA-3, GN-1
Calving Range Map over time	KivIA	Agnico Eagle to add the Calving Range Map overtime.
Annual Calving Range Map	KivIA	Agnico Eagle to provide the annual calving range map to the TAG prior to submission it in the Annual report
Muskox population assessment	Various	GN to provide information on the most recent assessment of the muskox population.
Incidental Observation as trigger	GN	Agnico Eagle to revise the wording on the use of incidental observation as trigger for caribou work suspension.
GN December 6th Recommendation Email	GN	Agnico Eagle to provide answer on proposed recommendations from the GN.
TEMMP v5 Word version update	Various	Agnico Eagle to revise TEMMP v5 draft as discussed during this meeting and distribute for review ahead of next scheduled meeting (Q1 2025)

MEETING TRANSCRIPT

Note: All supplementary material referred to in the meeting minutes is provided to the TAG Members by email and/or OneDrive for review.

Supplementary material (e.g. slides or tables) were reviewed by the presenter as indicated. Discussion and comments are documented here.

This meeting was recorded for the purposes of transcription, without objection. While most speaker comments were transcribed directly during the meeting, some were paraphrased or summarized to facilitate note-taking.

1. Welcome

Time: 9 am – 9:08 am

Supplemental Material: Agenda

Presenter: Sara Savoie, Agnico Eagle

SSav: (*Welcome, introductions, review of agenda*)

2. TEMMP V5 Revisions – Morning Session

Time: 9:08 am – 12:07 pm

Supplemental Material: Excel file titled “Answers to TEMMP v5 Comments”

Presenter: Sara Savoie, Agnico Eagle

SSav: Here we will review the comments received and proposed responses.

(*See comments and Agnico response in Excel file “Answers to TEMMP v5 Comments” – discussion recorded here*)

KivIA-1

JW: GN agreed to share this information with Agnico Eagle. Some discuss still need to happen, but it will be shared. GN is anticipating this will be shared in table form. It’s in progress.

KivIA-2

SAI: I’d like to see specific steps, the terms are broad. Like 50%, etc.

SSav: Important to note these decisions won’t be made by Agnico alone. A KivIA officer will be onsite. It’s hard to come up with a level or a number because the weather conditions can change. The idea is to reduce the basin level as much as conditions allow. That can change day to day or year to year.

SAI: Thanks. So what this states is when you have collared caribou entering 10 km, to reduce the basin levels, most likely you’ll increase pumping rates, creating more noise. And you’ll mobilize crews to pump stations. So you’ll increase activity and noise when they enter 10 km. Is that correct?

SSav: We will make sure the site is as prepared as possible so we can reduce activities before they get closer.

SAI: In my experience, you need to increase that radius to 15 km, or be specific that once they enter 10 km you will quiet down the camp. This plan will increase noise. It will make it less likely for caribou to continue on their route.

SSav: Important to note here that in previous months we conducted a thorough noise study with WSP and these noises made by generators or pumps are not audible at 10 km. So we want to make sure the site is prepared before they get closer.

DC: At previous TAG meetings we discussed some studies that were conducted to compare noise levels under regular operations and level 3. At full operations, the maximum distance that it was audible to caribou was 9.1 km, and for reduced activities it was 3.5 km. We can share that study again if you’d like to see it.

SAI: Not audible to human ear?

DC: No it was based on audibility to reindeer.

SAI: So would AEM commit that in doing these preparations it won't exceed normal noise levels? Because I imagine once the 10 km protocol is triggered you will want to increase pump speed. So will you commit you wont increase noise levels?

DC: Increasing pumps is part of the work suspension protocol and that would have been reflected in the level 3 output.

SAI: So yes or no?

DC: It would have been factored in. During the work suspension protocol the noise including increased pump speed is only audible at 3.5 km.

SAI: I just know that from my experience, if you're going to increase noise levels and vibrations when they are at 10 km, I'm not buying into that. You need to increase the radius or commit to not increasing noise pollution.

SA: I have 2 questions. I'm in line with SAI in a sense. This 10 km trigger is an addition to the TEMMP. It's triggered by monitoring of collared caribou, which is also a good addition. At the bottom of this box it says that visual height of land (HOL) monitoring isn't reliable for the trigger so won't be used. We know we can't see caribou well at 10 km, but we do know there will be some observations up to about 8 km, so it is possible to see them more than 5 km. So why won't you include HOL surveys as a potential trigger for that 10 km zone along with collars? Why ignore observations beyond 5 km just because they were made visually?

AG: I'd like to clarify a couple of things. To go back to the first comment. The importance of the daily rate of movement is it identifies when calving has started. At the moment level 4 is fixed dates Jun 1 – 15 but we don't know the actual timing of calving and if it's early the daily rates of movement improve identifying if it's early or late outside that time period. There have been various discussions and versions of this table but it wasn't just when a collared caribou, 1 collared caribou, enters the 10 km radius, it's also when 10 caribou are within the 10 km. So the wording should be specific – 1 collar or 10 visually. We also ask that during the HOL surveys, knowing as Steven said it can be difficult to see caribou at 10 km, then visual monitoring will include measuring the distance to the caribou. We'd like to see you clarify those two items.

SSav: Thanks Anne. The wording here will be clarified that it's 1 collar. In regards to Steven's comment on visual monitoring, that's something that Agnico will still monitor and report on. We will have KivIA officers onsite to help us make decisions. Since this was a KivIA comment Jeff, Jakob, or Patrick do you have additional comments.

JT: Just to keep in mind that it's increased monitoring protocol from level 3 to level 4. Better scenario for us.

SA: To clarify or summarize what me, Anne and SAI are talking about, with respect to the 10 km trigger, we're suggesting that the wording should be when one or more collars enter, OR when 10 or more are observed, during calving period, the action level is triggered.

SSav: I want to recognize here we're going above what we originally suggested. We agree to document observations at a distance beyond 5 km. But as per the results of our trial, it's not a reliable source of information. So we cannot guarantee that we'll be able to see at that distance. But whatever we do see we will report on and discuss with KivIA.

SA: But the logic is strange. We know it's hard to see beyond 5 km, but it is possible. We're saying we know it's not effective but ignoring observations in that range doesn't make any sense.

SSav: I want to specify we aren't proposing to ignore those observations, we will document and report. We will include those in our discussions with the KivIA.

SA: But you're not committing to using those observations within 10 km as a trigger. Similar to the 1 collar. I cannot understand why you wouldn't include it. The goal is to protect caribou within 10 km. Whether that's through collars or on the ground surveys, it doesn't matter how they are observed.

DCh: Just to follow that up. At a previous meeting, we discussed implementing level 3 when caribou arrived this year on May 12. So in actual fact you are using this information. It was foggy but the hunters further out called that they were coming. So you did use incidental information. Steven's point is that it should be stated. You have used it, so why not state it as a trigger.

SSav: That's what's being said here, we commit to collecting and reporting that information, and using it per our discussions with our land owner.

DCh: I think those incidental observations were even greater than 10 km. If that were to happen again, that should be reported to Agnico and steps taken to reduce noise before they get close.

SAl: Unfortunate that a lot of times, in order to utilize and appreciate traditional knowledge, it has to be proven by western science. Yes we do have a lot of hunters, ears on the ground, rain or shine. Maybe we could help by communicating to KIA when our hunters spot 10 or more caribou. Inuit have been saying it's not 50 caribou that dictate migration routes. More often than not it's 1 that takes the lead and some follow. We will communicate our concerns directly to KIA. This year we experienced something that in my time was unheard of. Caribou and their calves around Peter Lake, taking their normal migration pattern. I'm sure you see that in the collar data. They got close to the mine, and did a 90 degree turn and haven't been back since. We were getting reports from our hunters that noise levels had increased. Right now there are no collared caribou in the Kivalliq, nothing in Nunavut. We'll do our part and commit to that, and communicate with the other DIO over there, KIA. One way or another we'll mitigate this. We thought this year we'll commit to being a part of the solution, for our hunters to get food on the table. There's a lot to discuss, I appreciate the comments. No argument there. We've seen 10 collared caribou all bunched up, and 20 thousand without collars. We have to be able to blend that knowledge.

SSav: Thanks SAl.

PT: What SAl's saying really flags the importance of caribou to us. It's our staple. This year they came early and then nothing since. People are feeling it. What SAl's saying about the local knowledge and the western science. Being able to access that local knowledge, it's important that's flagged as something like a trigger. That visual. That has to be a part of the puzzle.

SSav: Those are good comments, I think what we're hearing and I wanted to clarify, we talked about this – during the caribou migration we use multiple sources of information and that's what makes our caribou management program so strong. We rely on collars, HOLs, incidental observations by partners. We do use the incidental observations for triggers level 1 and 2. I do hear we may have more crafting to do for this particular comment. I would suggest for the sake of time we move to the next one and maybe during the break Agnico and KIA can convene and propose some edits to bring back to the TAG today.

KivIA-3

UK: Do you think we should change that to further because when they get hunted, they run?

SSav: It was proposed at 300 m based on our behavioural studies.

GS: Since 2020 we've been doing behaviour studies onsite. One main objective was to look at caribou reaction to vehicles. Within 300 m of the road there are fewer caribou, and they behave differently. So it seems like a natural trigger distance. But in practice, often the road is closed well before they reach that distance, more for personnel safety or other reasons.

SAI: So you just got a valuable piece of IQ and you're going to modern science again. A really good example of what we've been saying. We've got a hunter over there telling us one thing and you're telling us your 3 year study is better than knowledge since the beginning of time. If you're closing the road long before 300 m, why don't you put that in writing?

GS: 300 m comes up quite a bit, in some of the traditional knowledge information. Distance of how far they are staying away from predators.

SAI: There's a big difference between a tractor trailer and a wolf. Put it in writing.

SSav: Some additional context – this was a suggestion proposed by KivIA based on several factors. It was also inclusive of traditional knowledge.

SA: I agree with SAI and UK that 300 m is a bare minimum distance. I understand it's based on behavioural studies which is good, evidence based. But equally as SAI says there is knowledge that this may be too short of a distance. And then you mention we typically close the road earlier anyway. I tend to agree that should be put in writing. Especially for calving and post calving. It is true that you'd wait until calving caribou are within 300 m of the road to close it? If not, let's put something else in there. Right now the trigger for work suspension is 5 km of the mine. Can you not put something in there for shutting down the road when calving caribou are within 5 km of the road? Why 300 m for the road and 5 km for the mine? I think there needs to be some movement here.

DCh: Thanks for putting this in place, the 300 m recognizes what you're monitoring has been saying. I'd reiterate what Steven and SAI have said. If you're doing other things as well that trigger shut down, let's put that in writing.

KR: I want to support and appreciate what SAI and UK are saying. And I've heard that from Athabasca Dene as well, who are concerned about seeing calving caribou out near the road. I agree with Steven's comment that the road trigger needs to be much bigger especially during calving and post calving.

SSav: I want to circle back, in the exiting TEMMP and proposed TEMMP is that during migration we have daily meetings with KivIA, HTOs, and GN. They are all involved in the decision to close the road or not.

JT: In the field we don't rely on 300 m. If we see a large herd coming in, we're going to close the road.

SAI: So why don't we put that in writing? And also support KHTO in hiring 2 more monitors so we aren't confined to the road.

SA: I agree. It makes no sense to put a trigger when you are already saying it doesn't apply. Almost everyone except KivIA officers on the ground and Agnico can only rely on the TEMMP. When we're asked to evaluate commitments to caribou protection, we look at the TEMMP.

JT: I think you have to be onsite to evaluate what goes on during the migration. It's a lot to put on paper.

SA: I think there are some simple things. Is 300 m really adequate? Put something better than that.

PT: I wonder if for the sake of time we revisit this number. We don't need to resolve right now.

SSav: We can circle back during break.

SAI: GN maybe it's time to have eyes and ears on the ground as well.

AG: Sound quality is terrible – hard to follow discussion.

JW: What I'm understanding is that several organizations are taking issue with the 300 m distance for the AWAR? In part because for hunting and other things, 300 m isn't that far to sight caribou. I think it's a discussion to have during break. Extending that 300 m distance. Also I think part of the conversation was instead of GN officers or KIA officers, there should be a way that HTO can be part of triggering these things?

SSav: We will take a break and will work on the audio.

(break 10 am – 10:34 am)

SAI: For me it will be important to know who are TAG participants and who are observers, and who are decision makers. I see Agnico has a number of staff and so does KIA. I'd like to clear that formality.

SSav: I'll give a quick summary right now and can discuss more during items of interest. Right now for TAG parties we have BLHTO, GN, Agnico, KivIA, KHTO, Sayisi Dene and Northlands Dene. And we have observers, for now that is Athabasca Dene, NTI, KWB, CIRNAC, and NIRB may want to attend as observers.

SAI: Before the break you stated you'd collaborate with KIA on some of those items. Why not at this table?

SSav: These are comments that were brought up by KIA and we tried to understand them. So now we're going to present what we're proposing based on what we heard this morning, for group discussion. So on KivIA comment 2 and 3 - (*proposed changes shown in purple*). With regards to 10 km triggers, we will add that visual monitoring to inform daily decision making by KivIA and Agnico. Two things to keep in mind. First we're passing from 5 km radius to a 10 km radius, and also further using the collar data and visual monitoring. These are two improvements relative to existing draft.

AG: For comment 2 there is no purple text but we did specify it should be 1 collar caribou and 10 caribou (visually) entering within the 10 km zone.

SSav: This is the wording we discussed with KivIA at break.

PT: This went back to the comment about hunters. Relying totally on collars vs local knowledge of boots on the ground. We'd be discounting that. Again it was about bringing that into this discussion.

JT: And also considering the working group onsite and as KivIA manages the lease that's why we have KIA there. But we'll be hearing from the HTO, GN, and other local members.

SAI: I think it would be important to add that KHTO and BLHTO have agreements with Agnico. We have a full time road monitor. If you could add KHTO to that, more eyes and ears on the ground. And I notice here the 300 m is not being used. A lot of caribou management is based on collar data. One condition the KHTO places on anyone wishing to conduct studies on wildlife is that it will never hinder Inuit rights to access for harvesting. I guess over the last 2 years the scientific data, collaring namely, has been closing in on us. Discussions have been had now whether we support those. Because without that collar data you'd depend on visual. AEM recognizes the

importance of the road monitors. I don't think it would take much to add the HTO, and not just have it between the KIA and AEM.

SSav: I want to acknowledge the agreement and collaboration with the KHTO and the road monitor, it's very important and we appreciate it. In the TEMMP there is wording about the daily meetings that take place between KivIA, HTO wildlife officer and GN conservation officer, but we can perhaps add some wording to reflect that.

SAl: Good compromise.

SSav: Any other question on KIA-2?

JW: What the GN has been advocating throughout this edit process was that we not only use collar data to trigger mitigation, but we also use other monitoring methods. We see the value in using as many tools as possible to minimize impacts of the project to caribou. I feel like the text presented on comment 2 doesn't necessarily characterize that. The part on visual observations is missing.

SSav: We agree with the importance of using different sources of information. The last paragraph we have here does recognize the importance of visual monitoring and how it will be used. Right now we're looking at TEMMP V5 update. The TEMMP will continue to be improved through the years. We need to keep in mind these are significant improvements from the previous version. We have a very large working group. At some point we will need to consider submitting the document to NIRB and continue improving it. I think the additions in purple address the concerns brought forward.

SA: Just personally it's a little disrespectful to have side meetings during breaks. But primarily I wanted to say for item 2, the purple wording, it actually creates more uncertainty. Why can't you use clear language for the trigger? It should say the presence of 1 or more collars or visual observations of 10 or more caribou, keeping in mind it applies to calving. Your objective is to extend your response to the 10 km zone, so it shouldn't matter how you see those caribou. I'm really stuck on this. It's an important point.

PT: The comment about being disrespectful I'm surprised about. It was because these are KIA comments, so we were being asked if we could explain or tweak those comments better.

JT: It was just rewording our comments to include what we hear here.

KR: I agree with SAluel, Steven, Jessica. Before the break you were saying that visual information is important, you close at a greater distance anyway. These changes in purple don't address that actually. I'd like to actually better understand why you're hesitant to put those changes in writing.

SSav: On comment 2, we did put in writing how we're using that information. So we use that for daily decision making in collaboration with our landowner KIA. We put that in writing. For comment 3, AWAR closure triggers, we also recognize that we sometimes close the road more conservatively. We put in wording that explains how that process is done. Based on local observations of caribou movement rates, from hunters, HTO monitors, KIA and GN conservation officer. These road closures are documented in the daily emails sent out. This is a fully transparent process.

SAl: Again I mentioned earlier avoid using words like conservative. What's conservative to you might not be conservative to me. KIA represents us, just at a stronger level. The way note 3 is worded, it doesn't change anything. You just wasted a half hour with KIA out there.

SSav: I think the discussions we're having now and for the past months have been important and we've made a lot of progress. So I want to thank all and confirm there isno intent in wasting time. With regards to conservative, it's conservative versus the trigger that we're proposing.

DCh: How about just that wording then. Can agree to be more conservative than 300 m.

SSav: Yes.

SA: The issue of the road distance was a comment from GN, number 17. GN recommended the shut down distance be increased to 1.5 km. In the interest in moving on, everyone around the table can agree that 300 m is totally inadequate for calving caribou. There's no way you'd wait that long. Can we not put an exception in here and increase that threshold at least for the calving season. What would be reasonable? A km?

SAl: Caribou cows that have calves are more defensive than cows without. We all agree on that. If we're going to keep this so vague let's at least be specific in some areas. Put some strong words in there. Otherwise it's all song and dance depending on AEM's mood, KIA's mood, someone's holiday, market conditions. I think it's very important we be specific. Maybe in 5 years none of us will be around this table but let's leave something that will guide future AEM staff. To draw on policy and tell superiors this is what you agreed to 5 years ago. Let's at least give them some meat, some bone, something healthy.

JW: I just wanted to reiterate Steven's point. At the least this section should be clarified and perhaps a 5 km shut down trigger applied for caribou during calving. It says based on "local observations" – is that by HTO? I'm curious to understand the mechanism for information transfer there.

SSav: Local observations can come from different sources. Typically HTO wildlife monitor, hunters, KivIA, GN conservation officers. As per calving, there is nothing in this table that suggests we would not take more conservative decisions during calving. It says the decision would be in collaboration with KivIA. In the interest of time we want to see if we can see that this is a significant improvement from the previous TEMMP. We're open to making other improvements in the future. This is what we're proposing based on the comments we heard earlier.

AG: Before we move on I think it's important the wording we're showing captures the discussion. For number 2 there was agreement it should be 1 collar and 10 visual caribou. For number 3, it's too vague. It doesn't specify that 300 m for calving isn't conservative enough. And we should specify what we mean by conservative. More like 1 km. So I don't think you can move on leaving such vague wording that doesn't capture the discussion.

SSav: Thanks Anne. Any other questions or comments?

JW: I really don't think these purple additions fully characterize the discussions that have been taking place here.

SSav: At this time I suggest we move forward to the GN comments but we'll leave the last word on this section to KivIA since it was there comment.

JT: From our point of view, the mitigations in version 5 are greater than the last version so we want to find a way to get this version in. This is a living document and we can continue to make improvements.

PT: Right now version 4 is the document being followed right now, and if we agree to this it will be the new one?

SSav: Yes

SA: Sara you mentioned in the interest of time can we agree it's an improvement and move on. And I think you heard it's not. From what I'm hearing the majority of TAG members don't support this. Ultimately it's your document, but you need to state very clearly there was not support. And if it will mention anything in the TEMMP that it was developed with the TAG, that should be clear there wasn't support for this.

SSav: I'll clarify it's not up to Agnico to speak on behalf of TAG members. We have meeting minutes that are shared and distributed and can be reviewed. Ultimately the TEMMP will be submitted to NIRBThe role of the TAG is to provide recommendations and advice on how to improve it.

DCh: I reiterate that I sense that a bit more clarity would be best if we want to finalize this. But it is good to keep moving on. We've already stated what we'd really like to see in the writing here, and I want to be sure those continue to be discussed as we move on. A number of us would like just a couple of different words changed to make it more acceptable.

SAI: I agree. Exactly why I ask who are the board members of TAG. Right now 2 of 7 agree with those words. That's not a good agreement. I want to know why KIA is ok with that? When there are comments from its members that it's not enough.

JT: We put in 300 m because it's more than 100 m and we can improve from there. We know 100 m isn't sufficient. No one else put that it should be higher. We pushed for 300 m plus. We want something stronger than 100 m in the TEMMP that everyone can agree on and we can improve it from there. Before June we want the mitigations to be higher than what they are now.

SAI: Why don't we improve on that now? You heard from one of the guys on the road every day. You heard from HTO, from GN, telling you 300 m doesn't cut it in reality.

JT: We're fine with hearing all the comments and open to discussion on increasing that limit.

PT: Ultimately you go through the process with TAG and then it goes to AEM. What's the process for affirming these recommendations or comments?

SSav: With regards to what's in the TAG TOR, the TAG has a prerogative to provide recommendations and advice to Agnico, recommendations on a unanimous consensus basis. Advice is majority based. Agnico should report back to NIRB on if the advice was accounted for, and if not, why.

PT: Again we have this one, but also from GN for the 1.5. SAI issue from 2 sides. The difference of the 300 vs 1.5 ask. Earlier you were talking about 5 km or 10 km, but you have 1.5 here. How did you come to that?

SA: Literature on effects of roads on movements of caribou. Also at the Meadowbank mine roads are closed when caribou are within 1.5 km. It's an observable distance too. It all fits. There's scientific support, support from hunters. Logical thing. I understand you're keen to have some improvement, but replacing 100 with 300 is not an improvement. If we want to move on and make a significant improvement, everyone here could acknowledge that at least during calving, put 1 – 1.5 km as a recognized minimum. I think that would fit with Inuit knowledge too.

UK: What if there are caribou 800 m from the road and people are trying to get to work, and you sit for 4 hours?

SA: At Meadowbank there are some exceptions for doing convoy traffic and such.

AG: This is the first time we've been trying to design monitoring and mitigation specifically in the event of calving caribou being present. Most information collected is during different seasons. The 100 to 300 m change was during post calving. I think we'd all agree that calving cows are very sensitive and this version of the TEMMP should recognize that. I want to acknowledge the progress we've made and trust we're building by working together. But should recognize we have no prior experience designing mitigation for calving so should be conservative.

PT: Back to GN's suggestion on the 1.5 km during calving is that what you're saying would be an improvement?

SA: That's my suggestion but I'll defer to Jessica.

JW: Can you say that again?

PT: GN recommendation was that "GN recommends the TEMMP be revised so that the AWAR mitigation distance is increased to 1.5 km". Would you add on "during calving season" to that?

JW: I think 1.5 km is better than 300 m. It would make sense if the 5 km distance was applied because it's consistent with other aspects of the TEMMP for calving caribou. But 1.5 km is better than 300m. 1.5 km is the distance threshold used for Meadowbank. Again it's a starting point.

SA: Patrick was asking if you'd consider it a good improvement if the distance threshold was 1.5 km during calving season.

JW: I think it's better, but we'd advocate for something closer to 5 km, but ultimately this is a negotiation between multiple parties.

SSav: At this point Agnico would like to propose something for TAG consideration. Right now we've agreed to 300 km for AWAR closure, acknowledging the local information can also be used to trigger closures beyond that. We can also commit in 2025 to developing a threshold for a distance for AWAR closure during the calving period. So that wording here doesn't impede us from being more conservative. But one objective in 2025 will be to come up with a specific threshold. Would that be advisable?

DCh: You'd put that in writing in this step?

SSav: Yes

SAI: We have all these great ideas. You're getting somewhere. What are the consequences in the event AEM and KIA don't close the road at 300 m?

SSav: The daily decisions during migration are communicated via email. If ever Agnico were to take a decision against the TEMMP we would be in a non-compliance with our Project Certificate and we don't want that to happen. People would have the information in real time to see what decisions are made on site.

SAI: So what are the consequences of not complying with the Project Certificate?

SSav: Multiple, I don't want to speak out of turn since I'm not legal council, but our intent is to be the best corporate citizen we can.

SAI: We all get married with the best of intentions.

JT: I think Jeff Hart from CIRNAC was trying to join in, he could best answer that question.

JW: The question was what's the consequence if Agnico chooses not to close the road at whatever distance threshold is decided on? And Jeff from KIA said CIRNAC will join and we can raise that question?

SSav: Yes. So we'll propose some additional wording for this comment in the next break. We'll move on to KIA comment 4.

KivIA-4

SSav: Any questions or comments?

SAI: I'd like to get a commitment from KIA that they will consult with HTO?

JT: (*Nods*)

SAI: Thank you.

JT: And on top of that SAI we do consult with the road monitor daily. The conservation officer, Agnico, road monitor for HTO, staff for KIA, even the Hamlet.

SAI: *Matna*.

SSav: Moving on to GN comments.

GN-1

SSav: Any comments on this one?

SA: Looking at your answer to this comment, for example the top part of the GN comment, your answer to that simply says where that is included in the TEMMP. But not what your answer is. To this point I haven't seen any evidence to indicate you've increased caribou monitoring across the study area or contributed to regional initiatives since the project was certified. Which is what you're required to do. So what I was looking for in this answer was the answer to that requirement. I'm not trying to set up a debate here, but to reiterate what the comment from GN was getting at. Also under T&C 44 you're required to demonstrate how the levels of monitoring are adequate to test impact predictions. A specific technical requirement. Again I don't know if you've included that type of material in the revised TEMMP but we're looking for specific answers to those requirements. Keeping in mind that those T&C indicate that information should be addressed in the revised TEMMP.

SSav: For clarification, the annual report is the place where this information is reported annually, and allows NIRB and participants to provide comments on our compliance with the T&C. So that's why we refer to the annual report. In there we do have a concordance table where each of those T&C are addressed. That's the intent of this answer here.

DC: A number of different monitoring programs for caribou have been implemented since 2018. Calving range monitoring, behaviour monitoring, noise.

GS: So those will be listed.

SA: But those are all within the local study area.

DC: Calving range isn't.

SA: Yes but that's based on collar data that Agnico hasn't contributed to since 2018 so doesn't demonstrate increased regional monitoring.

JW: One thing we were thinking for demonstrating compliance with T&C 44 and 45, I think there was a contribution agreement to provide support for collar programs. I think a reasonable demonstration of compliance with these T&C in present day would be entering into another contribution agreement on that topic. Especially thinking about the ability to test impact

predictions, presenting power analyses and other things, considering geofencing. I think that's where we were going with that comment.

SSav: Thanks for that clarification. As indicated in our last meeting Agnico is open to discussing an agreement with the GN and once that's done it'll be confirmed to TAG members.

JW: Even just in our conversation here, if we're at the early stages of that, it would be nice to update this table to indicate that's Agnico's intention moving forward to provide clarity to other TAG members.

SSav: We can provide additional wording to that effect.

DCh: Has Agnico ever received feedback from NIRB on whether you are meeting that T&C, on testing impact predictions and monitoring sufficiently?

SSav: Yes NIRB provides yearly recommendations.

DCh: And they have said specifically that T&C has been met?

SSav: I would have to check.

SA: I don't think it's ever been pointed out to them.

DCh: I think there might be a need for the TAG to ask for that clarification from the NIRB.

SSav: For clarity, we're talking about 3 different processes here. The Agnico Annual Report that we submit yearly, it's public, and open for comments. That demonstrates compliance with T&C. Then NIRB produces their monitoring report. And here we're updating the monitoring plan which informs how we're going to collect the information, how it's managed. We're trying to keep the monitoring results out of the monitoring plan. So that's why we're referring to the report here.

DCh: Ok I see that. So maybe it is the annual report where I can focus that question.

SAl: I'm getting lost here with all these abbreviations.

SSav: We'll clarify. So GN, Government of Nunavut. TEMMP – Terrestrial Environment Monitoring and Management Plan. TC – Terms and Conditions form our NIRB Project Certificate.

SAl: GN's asking for financial support. Have you considered asking HTO if they support collars? We've been finding more and more that the caribou collaring, it's very limited numbers. That information has been superseding Inuit knowledge. As advised by HTO, we'll be making a decision in the new year. Our opinion on collaring caribou. Saying it's not what we expected. It's going to have to be re-sold to us. That's for the GN as well.

SSav: Thanks. As you stated the collaring program is managed by the GN. What Agnico has done in the past, we don't collar animals, we have provided funding and we're looking at that again.

JW: Essentially what we're trying to do is revisit the potential for Agnico to financially support those programs. Right now the company uses our data and we bear the cost. One of the benefits of using collar data is we're able to look at interactions of collared individuals with the road and see how they respond to it. It's hard to do that with other research programs. In that sense collar data is valuable in measuring impacts of the project on caribou. I recognize that HTO may be revisiting this topic in the new year. If there are any changes to collar programs that the GN initiates, consultations will still take place. These are just preliminary conversations to say "hey Agnico, you use your data, we have to pay for that, and if you're using it, you can help share the

financial burden of it". Because they are required to evaluate the impact of their project on caribou per these various T&C.

SAI: I appreciate that data has its uses. It's beneficial for some things. When you're relying on 10 or 15 caribou to make decisions on road closures for example, you start to become dependent on that data rather than using local knowledge. We need to revisit who benefits, are they really worth it. It's impacting us at home. I don't know how to stress enough how much this data impacts what goes on. The decision making process of authorities, including GN. You've become so dependent on the collar data of 15 – 20 caribou. I'm not going to say we'll request they all be removed but we should put parameters around the use of that data.

JW: I hear your point. There are 2 ways we're looking at this. When we're making real time decisions about whether we shut down the road, that uses several types of data. Some is informed by a collar location, but a lot of the time it's based on the ground observations. What Agnico, KIA, HTO are doing inform road closures. Collar data is important to that, but also in looking back at the past comparing the movements of caribou to the state of the road, open or closed. That's where it's really valuable. It's one of the main rationales behind asking Agnico to support this. I don't know if that helped but I just wanted to distinguish the data has different purposes. Some in real time but some looking back to see how activities impacted them.

SAI: The cost of that is between you and Agnico really. My point to Agnico is if you're going to support the GN with the collar data, if you want real time information we have a lot of guys that can get that information for you. Why don't you spend a little less on collar data and more on monitors.

SSav: It's good feedback. Also to clarify our intent is to rely on multiple sources. There is value to using all these different types of information. We're not solely reliant on collaring. We have agreements for road monitors and so on.

SAI: I just don't think this is the table for the GN to be asking for money from you. That's all.

SSav: Thanks. Any other comments on this one?

KR: I'm appreciating this conversation. Two things. Would Agnico be willing to write out an answer to this question, about demonstrating the increased caribou monitoring throughout the region? Lay it out for us? Then thinking about SAI's comment, regional studies could look like a regional Indigenous knowledge study, or monitoring by local communities. I think it would be great to continue this discussion but first would be for the group to see what's being contributed to right now. Sara to your comment earlier, this comment isn't about the results, just asking what the monitoring programs are. So I do see this as belonging here.

SSav: Important to mention we do collect incidental observations from outside the LSA. Some from HTO and KIA. With regards to the wording in the answer to this comment, as we stated most of this information is in the annual report. We can perhaps have a look to see if we can be clearer in where exactly it is. We'll take that under advisement.

KR: Just to clarify, what you just mentioned about incidental observations is really important. It goes back to what SAI says about Indigenous knowledge not being valued. Incidental is different from a planned Indigenous knowledge program. And it's also not regional monitoring.

SA: The T&C 44 in its current form specifically says the proponent shall further develop the TEMMP to include increased caribou monitoring across the RSA and details on the scope and design of monitoring programs, and shall demonstrate in the TEMMP … The monitoring shall be adequate to test impact predictions. The other key thing added was the incorporation of IQ and

community knowledge shall be demonstrated in the revised TEMMP. This information needs to be included in the TEMMP. I just don't see this demonstration, additional details, on the adequacy of the monitoring programs in the TEMMP.

SAI: On the caribou data, does the GN share the collar data 365 days a year with AEM? No matter where they are?

SA: Every day a new map is sent out but it only shows the area around the RSA for the project.

JT: Which I think is not sufficient. We don't see if they are moving northward, or if it's time to prepare.

SAI: What I mean is no matter where the caribou are, does AEM have access to that data regularly? Or is it maybe when they are within 50 km of the mine?

JR: The maps we receive daily but it's only a portion around the mine. I can find the distance.

BD: Does the HTO receive that?

SAI: Yes we do but it's not current. 2 weeks or a month old.

AAo: We get the whole map on request only. Daily we get maybe 10 km around the site.

JT: We don't get that regional map. We'd like to get better information.

BD: So does HTO share that map?

AAo: We're not allowed to share that. That's HTO information for meetings like this.

SAI: Going back to Jeff's comment that he wants more information. We're starting to become heavily dependent on the moving of what 20 collars? To manage 300000. The collars are usually the first that come up.

SA: No one's saying we rely only on collars. Just that they are one useful source. Periodic aerial surveys too. There is a lot more to regional caribou management. But they happen to be a useful source of information for activities like the mine.

SSav: Before we finish on GN-1, the question on impact predictions. We will add wording to clarify that. We do have a section in the TEMMP that really details how the monitoring programs are designed and their scope. And in the annual report we have detailed results that are showing the predicted effects and accuracy of impact predictions. Those are also summarized for ease of interpretation. We will add some wording in our proposed answers.

(break – 12:07 pm)

3. Items of Interest

Time: 1:34 – 2:23 pm

Supplemental Material: None

Presenter: All

SSav: Anything from KHTO?

AAo: Is there a process to vote on a chair?

SSav: I don't think that was suggested by TAG members yet, but it' something in the TOR and we can do it.

SAI: Harvesting is a traditional lifestyle; we need to make sure we protect those. I think for this the formality of the TAG could be improved. We're rushing things through. Perhaps TAG meetings should be 2 days long. We can review some things and then have new topics. Once concern we have is blasting. Normally migration occurs right between Rankin Inlet and Meliadine mine, towards end of June. So AEM in all its expertise could plan so they don't need to blast. Because that migration after calving has a year long impact. We focus a lot on caribou and we have voting members of TAG from Manitoba, observers from Saskatchewan, I think Puujuut is the only one that actually lives in Rankin from AEM. For water quality I mentioned before we need a comparison, for trends to other lakes. KIA, they do have data. Our immediate concern is that loud gun. There are other ways to mitigate the risk to AEM to avoid migratory birds from nesting. So we want to formally request for blasting to be prohibited in the time periods I mentioned. I do strongly prefer in person meetings as opposed to technology. That's our main concerns.

SSav: I'd like to extend an invitation now to HTO to come to site before the migration and before a blast so we can go over the process. The blasting process is halted during migration. But it would be good to go over the process.

SAI: We will be proposing to AEM to triple our road monitors this year from May to August and possibly to October. It's needed.

AA: Does the road close just for caribou, or any other wildlife?

SSav: Good question because we've been mostly talking about caribou and it's the terrestrial advisory group. There are distances to respect depending on other wildlife and where they are located. For example there are measures for migratory birds.

KR: For Athabasca Dene, I want to let people know we are in the process to become a party. So in the process of signing the terms of reference. For now we are observers. Something on my mind the last couple of months is I feel like our conversations often come down to western science studies, and I'd like us in the next meeting to have a conversation about how to better respect Indigenous knowledge and IQ. We talk about it but ultimately the decisions come down to western scientific studies. So I think it would be great to have a discussion about how to better respect and incorporate Indigenous knowledge without needing to verify with western science.

SAI: Who sits on TAG. What's the process there? There are other HTOS in the Kivalliq – Arviat, Whale Cove, Chester.

SSav: Right now in our Project Certificate, NIRB has included a number of potential parties for TAG with the expectation that we would reach out to the parties to see if they are interested in becoming TAG parties. Our TOR at the moment don't have a detailed procedure for including people that are not part of that list. With the Athabasca Dene I believe what happened was a request to TAG if they could join and TAG members extended an invitation for Athabasca Dene to join.

SAI: So long answer short, it's up to TAG at the end of the day to define potential voting members.

SSav: Yes it's not a unilateral decision.

BD: Which other HTOs are listed in the PC?

DCh: It was just a while back, I think an invitation was sent to all HTOS. A few declined, probably from lack of funding.

PT: For us at KIA we pay for ourselves to come here, for others how is it? I think what we need to stress here is that the Meliadine project is on IOL, where we are the most significantly impacted by the project. I just don't want that to get lost.

SSav: With regards to HTOs on the original list there was Kangiqliniq Hunters and Trappers Organization, Baker Lake Hunters and Trappers Organization, the Arviat Hunters and Trappers Organization, Issatik Hunters and Trappers Organization and the Aqigiq Hunters and Trappers Organization, who have declined.

BD: SAI, has Kivalliq Wildlife Board discussed this?

SAI: I think it all comes down to resources and commitments to fund the HTO. I appreciate the support other native groups have towards HTOS and Inuit harvesting rights. If you see here, for KHTO it's not just caribou. This impacts our day to day lives. Looking at the comments that are being brought forward, it's caribou. The reason we protect caribou is that calf is potential food on the table for our families. There are also other reasons. Water quality. There are elders from Rankin Inlet who refuse to drink Meliadine water. I mentioned earlier before KIA came in, we'd like to see a comparison of changes in water quality from other lakes. The level of participation and the voice of each of the members should be really well considered. And the level of impact these operations have on our lives. It's all financial.

BD: I ask because we need to do some follow up with you on that.

SAI: To give you an idea, the KWB receives funding from KMB, from CIRNAC. They get paid 150$/day to come to meetings, 75$/d when travelling. They get paid to travel, and we're having to fight to be here.

DCh: I've enjoyed being part of this group. Lots of times where we have good ideas. I've seen progress made in many areas, some slower than I'd like to see. Overall some other things I'd like to get the group thinking about. Biggest one is that we continually hear from Indigenous knowledge, Inuit, that caribou sense their environment in many ways. The emphasis so far has been on visual and auditory. They also taste, smell. We aren't doing anything to look at those areas, in terms of baseline or anything. For Inuit knowledge and Indigenous knowledge, it should be able to stand alone, but also nice to have it come together with western science, to strengthen the overall process. We need to continue to look at ways to validate and put some mitigations in place that stand alone purely because they are from Inuit and Indigenous knowledge. Because they can help in many different ways. I hear stories about how the caribou feel the ground vibrations, they sense smells. We aren't really doing any measurement of this. Something we'll have to consider down the road. Another thing is related to reporting of observations. I'd like to talk more about that. Hopefully we can continue on with the TEMMP and discuss some of the other stuff. A few things are a little out of whack with each other. The main point is we need to start incorporating more mitigations that are directly connected to Indigenous and Inuit knowledge.

GB: Back to what Katie was mentioning about Indigenous knowledge, there is so much out there that hasn't been tapped into. Our knowledge goes back to the last ice age. If you really want to confirm the connection of what we say to reality, it's challenging. According to our stories, caribou were underground during the last ice age. So there must be a huge cavern somewhere up north that no one knows about. It was an old raven women that was keeping the caribou underground. The story is an interpretation from our people. But the communication is the key. We're all trying

to say something about the reality of our situation here. How we got involved was someone from the Keewatin or Kivalliq Wildlife Board contacted my late brother. I was on the caribou board so I looked into it an turned out there was funding. We were actually here long before Europeans. Our months are based on the caribou. The “” is what we call July, the “” is August. The “” is when migrations start moving in small areas, and the “” when larger migrations happen. There are other months named during the running season, when they rub the velvet off. When you get into the whole thing of this, talking SAI about the water quality. I feel for you. One thing that really raised a red flag for me, was somebody wrote about cyanide holes on the lake. That’s a big concern, if there is any truth to it. But scientific knowledge they should have all that information. There’s stuff not being talked about; we should talk about that too. Caribou are important. They are out further west, down in Manitoba. I don’t know how many collared caribou are there. But putting collars on caribou is taboo for us. At one time we lived together with the caribou. It was a hard lesson, but it was learned. A person named “”, a gifted person, could communicate with a little bug that inhabits caribou antlers. Even communicating with a bug like that, it’s significant. The reality of our thinking, it’s not just communicating amongst ourselves. Rocks for example. So many different uses for rocks. You hear about sweat lodges. They call them grandfathers. One of the elders passed on to me. She’s a senator now in Ottawa. She was reluctant to go into a sweat lodge. Why? I just hear negative stories about them. You ever talk to that old lady about the healing properties of the rocks? In the old days when there were no medical facilities, they would put warmed up rocks from around the fire in their sleeping bags, to keep them warm. That was all she needed. The comfort at that time, when you’re sick. So, it has a lot of value, our knowledge.

RM: Happy to see Andre and SAI here. It’s been ongoing for years we’ve been trying to get KHTO to come to these, to take the information back to their community.

BD: At the last hearing we were asked to participate in the TAG, and the reason we’re observing is that’s how we felt comfortable. We’re hoping to see increased funding from the GC for HTOs. Ideally with that they will be able to fill and create positions and provide a decent paycheque to Andre and others. I’m just passing through to ArcticNet this week. I know a lot of HTOs are involved in research in their communities, and it would be nice to have the chance for them to all come together. You might not see more of me, but I’ll try to join virtually down the road, when there is time.

JW: Clarification – looking at the agenda are we going to continue to discuss the TEMMP or are we moving on to these next items.

SSav: Yes we will circle back to the TEMMP update.

JW: I’ve said it before, I think it’s really important to have in person meetings. I think it’s most important to have them onsite. To see how mitigation and monitoring actually occur. However in instances where remote attendance is needed, I think it’s important that Agnico if they are facilitating ensure certain standards for audio quality because it’s been hard to participate. To that point, I think it’s also ideal if we’re having them onsite it’s not just truncated to 2 days. I think it’s important to give sufficient time, 3 days or more at times. Those are my main points on how the meetings occur. Lastly, I think it’s quite challenging for people who haven’t participated in the past to just jump in and try to digest all the information at hand. I think there is something to be said about providing people who are new to the TAG with a crash course or something, to help people effectively participate. Steven, anything?

SA: Nothing.

PT: I mentioned it a while ago, about this project being on IOL. Inuit are very tied into the environment. Having the opportunity to listen to comments and solutions, and what could be done better, it's important for us at KIA, we're participating and also listening to what comments there are. As KIA our mandate is for the 7 Kivalliq communities, and for the 2 projects near Baker Lake and this one, it's created challenges. Mining and our culture, it doesn't always blend well. That's some of the stuff we're hearing. A lot of our comments are already put forward into this (TEMMP revisions). How do we find solutions, the mine is there, our concerns is with caribou and other wildlife. There will always be that challenge. And with IQ, making that part of the process.

JT: Just along with that we want to see the TEMMP revisions updated, and I know there are some things that could be made better, but it's a starting point and it's a living document, and we can move forward from there and make improvements on every version of the TEMMP.

SAl: Thanks to everybody. Our calendar also surrounds caribou migration, thanks for that reminder. There are some things I was hoping to hear around this table that we have experienced. I appreciate the importance on caribou, but there is a lot more than caribou. Like shipping, we've experienced 3 – 4 fold shipping because of the mine. New risk with fuel deliveries, saline discharge, dust control is something we've been advocating for. These are the things we experience at the local level. So perhaps going forward with TAG we could have agenda items. Let's talk about saline discharge. The water quality, dust control, access to hunting grounds. Moving this forward as a group, these are things we need to talk about. Blasting, what impacts does that have on Arctic char. We don't know. I'm hoping we can spend some time on those areas, items of interest or concern.

4. TEMMP V5 Revisions – Afternoon Session

Time: 2:23 – 4:13 pm

Supplemental Material: Excel file titled "*Answers to TEMMP v5 Comments*"

Presenter: Sara Savoie, Agnico Eagle

SSav: Thanks for those comments and suggestions. We do have some time at the end of the meeting for the 2025 look ahead and topics we'd like to discuss as a terrestrial advisory group. I heard other participants mention other terrestrial matters than caribou, we are open to including those here. And on non-terrestrial matters we are open to meeting in town and can discuss, so don't hesitate to reach out to our team on that. Thanks all for the items of interest, many matters brought up and shared. What we'll do now is go back to the TEMMP update. We most likely won't have time to go through all the items today. We'll try to go over as many as we can. We'll have to schedule another meeting in Q1. At this point I propose we keep the agenda item on the 2025 look ahead and in our first meeting in Q1 we go over the annual report. So we had covered GN comment 1, and had alluded to GN-2 through our previous discussions, so on that we will add some wording in the TEMMP on our support for collar programs. We will past to the next comment.

GN-3

SSav: Any comments on that item?

(none)

GN-4

SSav: For this one we touched on T&C44 earlier today, we will add clarity in our answer. Any comments on this item?

DCh: So you'll add more details?

SSav: In our answer we'll make it clearer where the information lives. We'll refer to specific sections.

DCh: You believe it's already there and we just haven't found it? To the point of showing that what you've done has actually shown compliance to the T&C, I was thinking the group was wanting more detail than what's currently in there.

SSav: With regards to that we're asking how the current monitoring programs are addressing that, it's in the annual report and we will clarify that. Anything else? To the next comment.

GN-5

SSav: CESA – Caribou Effects Study Area. FEIS – Final Environmental Impact Statement. Any comments on this one?

(none)

GN-6

AG: Can you clarify that the cumulative calving map showing distribution of calving over the last few years from WSP, will that be included in the draft TEMMP? And will the annual calving map be included in the TEMMP annual report as well as in winter meetings prior to next calving?

JR: The map that shows the calving ground range at different times?

AG: Yes

JR: Yes we can add it to the TEMMP.

AG: And you'll also provide the annual calving map to the TAG during the winter?

DC: Seems possible, depending on when the fall meeting is. Somewhere in Q4.

(break – 2:33 pm)

GN-7

JW: To close the loop on number 7, I'm pretty sure there was a population reassessment of MX-13 which is the management unit that would overlap with the project in 2016. I'll confirm. Additionally I think there is a plan for a survey this July on that management unit. Beyond that comment, we'd like to focus on 8, 14, 19, and 22 if possible.

SSav: We'll go ahead with that.

GN-8

SA: Idea of a level 5 work suspension protocol for calving only. Difference between this and the others is level 5 only applies when calving caribou have overlapped with the project for several sequential years. To the point where there is some likelihood the caribou will be coming next year, and in that situation you plan a shut down. This is a planned operational shut down. It's similar to the measures in place for the Back River or B2Gold project. Whether or not it ends up being used remains to be seen. Advantages are that it's proactive not reactive. By planning well ahead to shut down you lower the amount of disturbance of the project, you may stockpile food, fuel, other

things, and you don't wait until caribou are within 5 km of the project. The other thing it avoids is the situation where you have unknown timing and duration of closures, like there have been, and those all depend on ability to detect caribou. This concept should reduce impact on caribou, and improve operational certainty. One argument might be that this never will happen, in which case it shouldn't be a problem to have planned it. The other argument is what if they shut down but then caribou don't come near the site. In which case the shut down could be lifted.

AG: A planned shut down is only for a short time, maximum June 1 – 15. Also GN has specific wording for the TEMMP that might be useful to be on the screen to summarize the points that Steven has raised.

SA: In the interest of trying to move forward with the TEMMP, we have some suggested language to include as an alternate to inserting a level 5 text. It was sent to Sara this morning, following discussions last week.

JW: For discussion, start with Section 4.5.1.2.

DCh: Sounds to me like a good idea. Talking about that and having it in the plan. It's a thing of the future.

PK: Need to keep in mind that we want to move forward with some new mitigations. If V5 isn't approved, we're back to V4. There will be opportunities for us as a group to make improvements on what's here. It's not about hurrying anyone to accept it and use it. We need to approve it so we can see what is working and what isn't. It's a live document and it's always going to be looked at for improvement.

SA: I can also read the additional text. "Mitigation for long term shift of the core calving ground" – (*reads proposed text*). This will allow us to move on from GN comment 8.

SAI: If I may I think that's a fair request. As opposed to applying this to level 3 or 4. This is specific to a certain time of the year, calving. The other request that GN could have made would be to expand on level 3 and 4 so we're not getting those cycles based on, whether it's AWAR monitors or anyone seeing caribou.

SA: I'll stop you right there because it's an excellent point, you're talking about the start stop start stop that I was mentioning. Since we won't have a level 5 in this version, and if level 4 is activated, activity re-start needs to have a pretty high bar. So under 4.5.2.4 we proposed some language around that. Essentially that once the project is stopped, there must be 24 h with no calving caribou observed around the project before it can restart. As opposed to just one HOL survey.

SAI: I just don't see where that's not a fair request. Why would anybody oppose that.

SA: Also language for re-start in section 4.5.2.4 (*reads proposed Level 4 Caribou Protection text)*. Key things we added is that restart requires 24 h of not seeing caribou, we propose only 3 HOLs per day when calving caribou are around to avoid disturbance, we also have proposed a 10 km, 10 caribou trigger for triggering Level 4. So that 10 km and 10 caribou is different from the 5 km 50 caribou that currently triggers level 4. And the 24 h without caribou sightings is new. Clear as mud?

JT: The resumption of activity will be communicated with KivIA, GN, HTO. Is that conservation officer onsite or?

JW: I think that language was in there previously, so I imagine it's the CO.

SA: So we're trying to meet in the middle on this. We recognize that a level 5 in the current TEMMP might be going too far for this revision, but we're looking to satisfy some concerns about calving caribou.

DCh: So this might be considered TAG advice that this be incorporated.

SSav: Good recommendations, we haven't had time to look at them in detail as they came up this morning. We will need to assess. There are some new elements in there that we'll have to look at.

JW: Someone earlier expressed frustration if someone is on their way commuting to work (at the mine) and they get stuck on the road for hours. That is a benefit of a protocol like this, it would reduce that risk. We understand you just received this and will need some time, we're hoping it's a good way to meet in the middle.

SSav: Thanks we appreciate the proposal.

AG: A point to emphasize is the advantage of putting a level 5 in the TEMMP is it will increase the incentive for us to work together to pool or knowledge to find what we mean by overlap, so overlap of successive calving grounds, overlap with the mine site buffered by 10 km and of course the road. So like I say there is a real advantage in preparing to be able to implement it if necessary. I'd echo what Jess said, it has a huge advantage of giving predictability. From our experience at Meadowbank that has turned out to be really useful.

SSav: We will have a further look at that.

KR: I wanted to also express our support for this as a middle ground. We strongly supported the idea of level 5. I wanted to make a note on the table here in the response to the comment that level 3 and 4 are effective in protecting caribou, I don't think that statement is backed up. I think there is great uncertainty and we need to be making decisions that are very protective. That's another benefit of a planned shut down.

PK: For reference 10 km is from the edge of town to that split from Dianne river.

SAI: From Nippisar Lake?

PK: Even before. From the healing center to that split is about 10 km.

SA: I'd also like to discuss comments 10 and 11.

GN-10

SA: (*reviews recommendation and response*) I take it from this that the recommendation wasn't accepted. Interesting that you've agreed in your draft to accept 1 collar within 10 km for some other stuff, but won't accept this. I also take note of other comments earlier today of incidental observations, and I feel those should be included for a stand alone trigger.

JT: On the shut down protocols Agnico does take the road monitor's observations and that triggers shut downs. They don't have to go check on that.

SA: So let's write it in the TEMMP.

JT: So that's already being done so I don't think it will be an issue. The collar information are a being made day late.

SA: We went through that at the last meeting. You will invariably find one collar from the day the map was created.

JT: I don't think I've ever got the collar information on the day of.

SA: The map I've seen sent out has the collar location and the date. So if you have the 5 km zone around the project and you see today's date.

JT: But I think the resource that the road monitors have onsite will be better equipped to deal with the shutdowns rather than relying on the collars.

SA: We're not saying only use collars. Not doubt it wont always detect caribou but sometimes it will.

SAI: I think you're both arguing for the same point. What Jeff said about the collar data. It's never the same for us. It's never on the same day. We get them on pdfs and it could be at 5 pm.

JT: We get maps from 2 days prior usually.

AA: same for Baker Lake HTO.

JT: I think the maps you get is different from the ones we get.

SA: Well I think Jessica could look into that. Now if you are getting the same maps I am, which have the most up to date locations and they are sent to you for mitigation purposes, there's no reason you couldn't incorporate the collar as a trigger.

SAI: And then on the flip side, whether we get up to the minute data or you are, the hunters, we anticipate that they are coming. If you have 100 hunters were going to have that information long before Musk is able to send it to you. We've had a hunter contact our road monitor directly and say there are 50 caribou, 10000. And to your point, yeah just put it in writing, you're doing it already.

SA: Whether GN has to call you up to say there's a collar within your 5 km zone, or you get the maps directly, it could be put in practice.

JT: I've never gotten a call.

SA: No I'm saying it could be put into practice. We have daily calls now anyway.

PT: So are we going to get the daily maps? Most current?

SA: Up to the GN but the information could be provided one way or another.

DC: So the assumption is that a collared caribou represents at least 50 caribou. (yes) So have you done any kind of assessment on that?

SA: None whatsoever. But all the caribou surveys done across Nunavut rely on calving and post-calving ground delineation, in real time. Reconnaissance surveys. And when we talk to those people who fly to where the collars are, they see the herds. They are very reliable indicator of the general distribution of the herd. Based on pure mathematics, those collars are very likely to be accompanied a significant number of caribou.

DC: But you're talking about something being likely as opposed to -

SA: Statistics is a likelihood analysis, every statistical analysis you've done is not 100%. 95% confidence.

DC: But the point is all that does is just trigger more mitigation. We've already shown that the existing system works, that the HOLs are observing and triggering mitigation well before collared caribou show up and long after they leave.

SA: Well I'm going to argue with you, you haven't shown that.

DC: Yes we did, we showed it at the Meliadine Extension, we showed it at the TAG meeting.

SA: I disagree. And I think others will disagree. Yet to be proven.

DC: We can circulate it again. It was shown twice.

SA: It's another source of information by which you can detect caribou, especially calving caribou, this is where we're focused on. And not using it quite frankly is irresponsible.

JR: I just want to specify that we don't argue with any incidental observations we get. We can work on the wording in the TEMMP.

JW: Just wanted to re-iterate that in no way are we saying only use collar data.

SSav: Ok for the sake of time we will pass to the next GN comment. We will amend the text to make clear the use of incidental observations can be by any credible source.

SA: Could just amend the table rather than text.

SSav: Yes

GN-22

SA: If you're going to close the road to public traffic when caribou are within 1 km, why is 300 m used for Agnico traffic. We should have consistency here. Roads should be closed period at 1 km.

DCh: That does seem to be inconsistent. I'm all for moving forward but if we can identify a better tweak at this point, it'd be nice to address it.

PK: KHTO closes the road right, with help of KIA. Close to where the Bypass road is so people still have access to Dianne River. Isn't that what exists right now?

DCh: So you're saying there wouldn't be traffic?

SSav: Our answer is to align the wording in the TEMMP with the wording in the T&C so I don't think there's an issue here. We agreed to the proposed change.

SA: So AEM has been shutting down the AWAR to public traffic every time 50 or more caribou are seen within 1 km of the road?

PK: It's not Agnico that shuts the road, it's HTO.

SA: Yes it is, it's your PC

SSav: There are jurisdictional matters. That decision has always been made in collaboration with KivIA, HTO, and the GN CO.

SA: It's either being done or it's not, it's a simple question.

JR: (*shows PC T&C referenced*) Most of the traffic on the road during migration is ATVs so we don't need to necessarily close the road, but at some point there will be a discussion with the hamlet.

SA: So you close the road to trucks and cars every time 50 or more caribou are within 1 km?

JR: In consultation with the GN, KivIA and HTO.

SA: Can you point me to where in your annual report that's shown?

JR: I'll have to check.

SA: So if you are doing that, closing the road for public trucks but allowing Agnico trucks to use the road, we're just making the point that's a big inconsistency. Earlier today we were pleading for the small concession to increase that distance to 1 km during calving.

SSav: We've agreed to the recommendation. When we close the road it's a joint decision and it's reported on. We did agree to the recommendation and for the sake of time I propose we move to another one.

SAI: This is very interesting because this morning we were talking about the behaviour of caribou. I'm trying to wrap my head around this. We were talking this morning about behavioural patterns of caribou. Where basically AEM was saying they don't mind it at 300 yards. But here we're shutting down the road. I think what we at HTO need to do is spend some time with the GN and with AEM, get some training done, get the document. I was fully expecting a document in front of me here today. I think the latest one we have at the HTO is the original one. What we're asking for is consistency and some clear wording. We can take that back to our membership and say hey let's do our part. But if we're the only ones constantly giving and giving, where's that line. We've crossed that multiple times over the last few years.

SSav: Thanks and as for the TEMMP document we have an electronic repository for the TAG and we can show you that.

JW: This touches on the item of interest I mentioned earlier where I think there needs to be some kind of crash course or something so that new participants can get a sense of the concepts within these management plans. I think we should have more regular meetings or something so people can participate more fully.

SAI: We don't have anything in front of us here other than the package sent to us a week ago. I don't even know what 6.1.7 in TEMMP stipulates.

SSav: What we can do for the next TAG meeting, we won't be able to print hard copies of the draft for everyone but we could do a few.

JT: One thing to keep in mind during migration and it could be worded in here too, there are convoys lead by KIA and HTO. Whether it happens or not it's up to KIA and HTO. I don't know if it's in here or not but maybe it could be.

SAI: So basically the landlord and the operator decide?

JT: Yes and they lead the convoys.

SSav: And HTO monitors participate in leading the convoys.

JT: HTO makes that decision as well, with KIA.

SAI: And the communication that HTO gets is "we're calling to let you know we're sending a convoy…"

JT: No. That's not what happens.

UK: Do you have one at the front and one at the back of the convoy?

JT: KIA and HTO all the time.

SAI: When you have a situation like this there can be no accountability.

SSav: Relative to accountability there are daily emails sent out, and all the TAG members have access to that information. Any further comments that GN wants to look at?

SA: I also want to acknowledge that as you've currently agreed to draft this TEMMP you have a huge discrepancy between how you treat the public and your own vehicles with regards to the road.

GN-14

SA: This language around 5 km doesn't make sense. If the objective is to close down these activities when caribou reach 5 km they should be started to shut down before the caribou are at 5 km. Right now suspensions of helicopters and drilling are for level 3 or 4, we suggest they should be at level 2. We've had this discussion numerous times.

SSav: I'll clarify that no one is walking back from helicopter sites to the mine.

SA: It does say that.

SSav: Not for remote workers.

JW: I think we raised this question a few meetings ago. The distinction was made that people might not walk back from remote sites but maybe along the AWAR.

JR: Under section 4.5.2.3, item 8. The distinction is made. It was updated at the May 3 meeting, so the May 30 version will have this distinction.

SA: Right so this basically means that you'll still be transporting people off the land when there are caribou within 5 km.

JR: We will wait for the caribou to move.

SA: So you've got a drill crew out on the land and a bunch of calving caribou come around they might be there for days. You're going to leave them there?

JR: One option for example if the caribou are between the mine and the worker, a helicopter or truck from Rankin will bring them back to town.

SA: It's easy to say that but there could be any number of scenarios where a crew has a group of caribou come nearby and they could be there for days.

SSav: There is also some wording related to essential helicopter transport, like an emergency, where the air management plan will come into play to protect the caribou. I think a key thing to remember is the drills haven't been operating in level 3.

SA: By not closing activities down when the caribou are further than 5 km away, you're putting yourselves in a situation where you might have to fly into these herds to collect them.

SSav: We rely on a variety of information to inform us on caribou locations and presence, and one of the items that would be very useful in avoiding that potential situation are the collaring maps. The probability of this occurring is quite minimal given the extensive amount of data we're collecting from collaring maps, from hunters, from KivIA, from HOL surveys.

SA: So now what you're telling me is you are going to use the presence of a collar within 5 km as a means of shutting down the project? Your point is you're going to be shutting down activities when the collars are close. Earlier today we asked you to use the presence of collars as another trigger but now you're saying you already do. I'm so confused.

PT: I think we should move on.

SAI: I think GN made their point very clear. We agree. This whole issue is just as complex as the caribou itself.

SSav: Thanks for those points. To circle back on the point Patrick was making with regards to timing, we will have to schedule another TAG meeting in Q1. We have many parties that have indicated they are busy in January so we'll have to discuss dates but perhaps this would be good timing to transition the discussion to meeting planning for 2025. So to close the loop on the TEMMP update discussion, I think we've made good progress with regards to the TEMMP v4. We will have a decision to make soon if we are comfortable enough with v5 to submit it ahead of the next migration to NIRB. Again I really want to emphasize this is a living document. We'd all love to have a perfect document that is set in stone and meets everyone's expectations but the likelihood of that isn't very high. We will need to think at what point are we comfortable sharing it with NIRB. I do want to thank everyone for the time and effort and constructive discussions.

AG: How quickly can you turn the present version around to include the comments you've had today?

SSav: We'll have to get back to you on that Anne, but before the next meeting.

AG: I ask because you've made considerable progress. KIA has sent comments as track changes so they are easy to insert. GN has done the same. You have a narrative transcript from the TAG meetings so I'd think it would be easy and quick to send the new version. And then depending to what extent you've accepted the track changes it'll probably be fairly close to a version with enough agreement to go to NIRB understanding we can modify it moving forward. I would have thought you'd be in good shape for a quick turnaround.

SSav: That's our hope Anne.

DCh: Just on the comments that Sayisi and Northlands have provided to you, most have been addressed in this meeting except the first one. The issue about the behaviour monitoring ties back to the statement I was making about how caribou sense their environment more than just in visual and auditory areas. It was a suggestion we do a slight revision because already it mentions you sould be monitoring insects and weather as it relates to caribou behaviour. I guess we received a comment back that in the annual report insects monitoring is going to be a part of it as well as weather. So that shows an ability to monitor the other types of sensory disturbances that caribou may be reacting to as far as the overall mine. So I'd like to see some movement in the re-wording there to show we will be looking in the future into other disturbances, but in the interest of moving forward let's do that.

5. 2025 Look Ahead

Time: 4:13 – 4:37 pm

Supplemental Material: None

Presenter: All

SSav: It was proposed to do meetings as much as possible in Rankin Inlet. This would need to be planned well enough in advance to ensure enough lodging etc.

SAI: That would be great, have the meetings in Rankin. Maybe at the end of June or July we could have it at camp and get stuck there.

SSav: For the topics and proposed timing. We will need to meet quite soon in Q1 to finish the TEMMP discussion. But we also wanted to do a TAG Annual Report review. We also have a TOR

review that's planned. I think we're a young working group and noticed a few updates to the TOR that we could do potentially. So those are the three main topics we're proposing for Q1.

SAI: On the meeting, it was planned that TAG would select its own chair. Something that stuck out like a sore thumb today when you mentioned it had progressed quite well and was supported, maybe there needs to be some time within the group to formalize the comments and questions that come from the voting group. Raising some hands for example. Then I think for the organizations involved they will know who they have to work with to get their ideas aligned. That was one thing that stuck out for me. And for KHTO we'd like to spend some time in the new year to understand what the TEMMP is, what the intent of TAG is, and then leading up to the meeting we could spend a day going over some of these things, myself and Andre, having some more time to prepare. We didn't have the document and we speak from experience.

SSav: I think those are excellent proposals and the chairing discussion ties in really well with the TOR discussion. And making sure we document things properly. Right now we are very fortunate to have the help of Leilan in taking the meeting minutes and those will be circulated. We've tried to improve how we keep track of the action items. Sometimes it's commitments from Agnico or other parties. Any advice or recommendations we can have to make that clearer we're open to it. And we'll speak later about meeting in Rankin as well to provide a more thorough overview of the TAG process. For Q1 are there other topics that we'd like to see included?

PT: I'm just wondering with how much time we spent on this today and we're still not done, if we start adding on we're going to compromise somewhere. So for me Q1 meeting we should focus on this TEMMP. I appreciate today having to stickhandle through the challenges and conflicting issue, I commend you for that. but for Q1 meeting we don't want to add too much.

SSav: Good point, a focussed meeting for the TEMMP revision. Some of the items, if there is no issue with availability we could have another meeting near the end of Q1 as well. For Q2, we're looking at reviewing annual report results, and an update on the caribou migration readiness plan. Does that seem about right for Q2? (ok) In Q4 we thought it would be nice to circle back on the caribou migration, with an overview of the season.

KR: This looks good and I think there are some things we discussed today that maybe we'll get back to in the Q1 meeting, like will we develop a level 5, which would then get added in to subsequent meetings. And about developing a regional monitoring program.

DCh: I'd like to see if we could let's get the big one done here and if we have a little list if we still have time. And we need more than one day for future in person meetings.

SSav: It's a good point, for us we have our mandated tasks but we could have a side list as well.

SA: With respect to the proposed 2025 schedule, at this point in time are there any planned submissions to NIRB for this project that it might help to know about.

SSav: Like an annual report or TEMMP submission?

SA: If there's an active review ongoing it may be more cost effective and/or strategic to align meetings.

SSav: What we have for document submissions is the annual report due at the end of March. Something for us to consider as a group at some point we will need to reflect on whether we're comfortable enough to submit the TEMMP v5 before the migration. My personal opinion is it would be too badnot to see the effort we've put in not to be recognized for this upcoming migration.

DCh: I think you've got interest there. Should we talk about dates?

SSav: Yes and the fact that we're so many in the end here today is a testament to the importance people are putting to this working group, so thanks for that. How is February looking?

(*discussion of dates, availability of space in Rankin*)

DCh: Why don't you send a survey.

SSav: same numbers for all groups?

(*All participants indicate about 2 – 3 personnel for groups from outside Rankin*)

SSav: We will contact the hotels and see what dates could work.

JW: I support the digital survey with various dates suggested. I think it would be good for transparency too. I fully recognize that if Rankin isn't an option we consider a southern location, but as much as possible we should be proximal to the site.

SSav: I think that sums up a look ahead for 2025. We're flexible though as needed. We can move ahead with the next part of the meeting which is our round table.

6. End Comments

Time: 4:37 pm - 4:58 pm

Supplemental Material: None

Presenter: All

AAo: Not much to say I'll pass along to the chair here.

SAI: A lot of times we don't always agree on the best method or practice. It's been a big learning curve for myself today, I'm drawing on my life experience. Agnico a lot of times you just throw yourself in the fire and I appreciate that. Puujuut coming around to our office, we appreciate that. So this year we decided to be part of the solution, give these guys the benefit of the doubt. See how much value is placed on our knowledge. Once we've seen the next document that will really determine our stance on the project and the impact it has on our lives. I want to take the chance to thank everyone today.

GS: Great to hear everyone's diverse opinions.

PT: I've already said some of this. Today was a bit tough but the needle moved forward a bit. But I assume that we will discuss more details at the next meeting.

JT: Hopefully we will get a version done before the next migration that will have better mitigations than the current one.

RM: Thanks for having us here as observers. Good to have SAI and Andre here from KHTO and to hear the passion that they have for lobbying for Inuit and harvesting rights and protection of wildlife. And for Steven Atkinson for his passion as well. And glad to see Baker Lake here as well. Thanks for having us.

AA: No comments.

UK: Have a happy holidays.

KR: I really appreciated all the conversation around the table today. Looking forward to continuing discussion at the next meeting. I don't want to say anything not super positive but I do have a feeling leaving these meetings sometimes we don't get enough from Agnico as far as explanations. It seems like there are some ideas you're not willing to consider like the level 5 shut down which has been discussed for a while, and now there is pressure to submit something. I think I'm feeling that tensions and I'm hoping we can have more in depth discussion about some of these topics, like triggers for the road and level 5, and we never get into the meat of it and now we're in this position with pressure to get something through. But thankful for all the voices around the table.

GB: Thanks to Dan here for covering for us when we're not around. Good to see everyone again for one day.

DCh: I'd like to say I'm glad to hear from the KHTO and their passion and interest and their knowledge. I'd also say the Dene people that I represent our sole interest is that what happens up here in Rankin Inlet and the mine is not going to negatively affect the caribou when they come down here. I think we all have that shared interest in protecting the caribou. In the end we can still make lots of progress. It's great to have KHTO and KIA keeping track of and watching the caribou in that area because they have such importance to all of us. I'm hoping we continue to talk about incorporating Indigenous knowledge into mitigations.

SA: I'll use words like tired, frustrated. But I'm glad we're talking. That's the main thing. There has been a lot of discussion with various individuals that we should just move forward with this draft. I'm really not seeing what the urgency is. There's an existing system in place that's been claimed to be highly effective, so I don't understand what the rush is. I think it's better to get some of these things sorted out. With respect to comments on meetings, I was up in Rankin in June of this year on holiday doing photography, deliberately timed with the migration and partly to appreciate how people behave at that time of year. I went to the Meliadine project when it was an exploration shack and again when it was built. I've never been there when caribou were passing the mine. As a TAG it might help to experience that.

PK: Huge thanks to everyone that travelled. It was tough getting everyone to come to the table. To have KHTO here was a huge step for us, and Patrick here as VP at KIA. For KHTO we can totally commit to briefing and updating. There are things you've identified that we can look at to make things more effective in the TOR or how meetings are run. Quite a bit of work to be done. But I'm glad we're still talking. As frustrating as it can be that dialogue still has to continue. Thanks to everyone here that's willing to do that. To SAI's point about being part of the solution, that's the main goal. The local knowledge is vital and we'll keep working towards that from Agnico's side. “”

MF: Really appreciate everyone sharing their knowledge and perspectives.

DC: Thanks for everyone's commitment to be here and contribute in a positive way.

SSav: One of the words I heard a lot through this roundtable was passion, and that's something we should be proud of and keep harnessing and leveraging. We're all passionate about our respective work, environment that surrounds us. That's the biggest positive factor in this working group. We're finishing the year strong with a surprising level of energy. I also want to reiterate my sincere thanks for everyone taking the time to be here in person and virtually. We did hear the comments about the audio, we're going to get that straightened out. I look forward to continuing to collaborate with everyone in the new year. We have a lot of work ahead of us but we also have a lot of passion to do it.

JR: Thanks all for being here, we appreciate it.

NM: I'm relatively new to the project so just really appreciated hearing from everyone.

AG: Great to hear the respect we have for each other, our knowledge and experience. I wish everyone a good holiday and look forward to seeing the next draft of the TEMMP.

JW: At times today conversations were a bit difficult, protracted, and frustrating, but we should neer stop communicating. We should do as much as possible to learn from one another and stay in communication, sharing knowledge and experience.

SSav: Happy holidays all.

The next meeting of the TAG will be scheduled for Q1 2025.

APPENDIX A – PENDING ACTION ITEMS (from previous meetings)

Action Item	Summary	Responsible Party	Update (e.g. Pending/Complete)
Items from January 23 & 24, 2024:			
Jan 2024 TAG meeting participants	Agnico Eagle to circulate the list of January 2024 TAG meeting participants (*provided with meeting minutes*).	Agnico Eagle	Complete
TAG virtual meeting	Agnico Eagle to organize a virtual TAG meeting in February 2024 to revise the caribou related sections of the draft TEMMP version 5	Agnico Eagle	Complete
Draft TEMMP	Parties to provide written comments on the draft TEMMP version 5 prior to the February TAG meeting	All	Complete
Noise Monitoring during Level 3	Agnico Eagle to consider conducting noise emission calculation with comparing level 3 shutdown with and without light duty activities	Agnico Eagle	Complete
Calving Range Map	Agnico Eagle to consider compiling calving range for 2022 as it was conducted for 2023 with additional analysis of caribou collar data, combined with GN's caribou aerial survey data for 2022 (upon reception of GN's caribou aerial survey report expected April 2024).	Agnico Eagle	Complete
GN's Caribou Aerial Survey Report	GN to provide its caribou aerial survey report in April 2024	GN	Pending
Plain Language Summary	Agnico Eagle to provide plain-language summary of Meghan Beale's presentation.	Agnico Eagle	Complete
Green-up Method	Agnico Eagle to assess the use of remote sensing methods when determining Green-up dates.	Agnico Eagle	Complete
Collar Method	GN to provide information on how collar methods have changed over time, and how the health of the collared animals is assessed.	GN	Pending
TEMMP Objectives	KivIA to provide to Agnico written comments on objectives to measure residency time and to measure exposure.	KivIA	Complete
Muskox Harvest Data	GN to provide information on muskox harvest data, past studies beyond what's already cited in the Meliadine TEMMP, and any planned work.	GN	Pending
Road Signage	Agnico Eagle to assess road signage improvements for non mine-site related traffic.	Agnico Eagle	Complete
Caribou Vs Traffic	Agnico Eagle to assess different ways to present traffic information when caribou are in level 3 on a daily basis	Agnico Eagle	Pending

Action Item	Summary	Responsible Party	Update (e.g. Pending/Complete)
Contribution Caribou Collaring Program	Agnico to confirm date of last contribution to the GN caribou collaring program.	Agnico Eagle	Complete
Items from March 1st, 2024:			
Calving Protections Proposal	GN, KivIA, Dene FN, Denesuline FN to combine proposed revisions on calving protection measures and provide to Agnico Eagle.	GN. KivIA, SDFN and NDFN	Completed
Other TEMMP Comments	KivIA to provide to Agnico Eagle written comments for proposed additional TEMMP revisions.	KivIA	Completed
TEMMP v5 Revisions	Agnico Eagle to provide written TEMMP v5 revisions for review and discussion with the TAG after receipt of combined calving protections proposal and other written comments.	Agnico Eagle	Completed
Delayed TEMMP v5 Submission to NIRB	TAG to recommend delaying submission of revised TEMMP v5 (Agnico to draft and circulate for sign-off) to facilitate ongoing discussions of revisions calving protection measures.	All Parties	Completed
Items from May 3rd, 2024:			
TEMMP V5 Level 4 update	Agnico to make updates to draft TEMMP v5 wording based on comments received during this meeting and provide revised draft to the TAG for review (target May 10).	Agnico Eagle	Completed
Caribou Calving Deffinition	KivIA to provide a definition of caribou calving grounds and wording on rationale for enhanced mitigation measures during calving (target May 8).	KivIA	Completed
GN Study Estimating Abundance of the Qamanirjuaq Caribou	GN to provide un update on the 2023 study Estimating Abundance and Trend of the Qamanirjuaq Mainland Migratory Barren-Ground Caribou Subpopulation.	GN	Pending
Items from May 30th, 2024			

Action Item	Summary	Responsible Party	Update (e.g. Pending/Complete)
TEMMP v5 Comments	All parties to provide additional written comments on most recent draft TEMMP v5 (provided by email on May 16 and 31, 2024) by July 15, 2024.	Various	Completed
Inuktitut translation for TEMMP v5	AEM to verify the feasibility of providing a Inuktitut translation for TEMMP v5 in point form.	KWB	Completed
Satellite Imagery for snow accumulation	AEM to confirm with the Water Management department if satellite imagery is used to collect information on the rate of snowmelt and where banks might accumulate.	KivIA	Complete

APPENDIX B: COMMITMENT 38 TECHNICAL MEMORANDUM

TECHNICAL MEMORANDUM

DATE 04 March 2025 **Project No.** CA0017749.9514-MEL2024_035-TM-Rev0

TO Sara Savoie, Jade Robitaille
Agnico Eagle Mines Limited

CC Corey De La Mare

FROM Dan Coulton, Charity Beres **EMAIL daniel.coulton@wsp.com**

PLAIN LANGUAGE SUMMARY OF RESPONSES TO TECHNICAL COMMENTS ON THE COMMITMENT 38 REPORT AND ADDENDUM

1.0 INTRODUCTION

Agnico Eagle Mines Limited (Agnico Eagle) owns and operates the Meliadine Gold Mine, located approximately 25 km north of Rankin Inlet and 80 km southwest of Chesterfield Inlet in Nunavut.

During the regulatory process for the Waterline, a number of commitments were made by Agnico Eagle. Commitment 38 was related to additional analysis and reporting on caribou movement in collaboration with the Mine's Terrestrial Advisory Group (TAG). The following is a short timeline on the progress and status of this commitment.

- July 2023: Commitment 38 Technical Report finalized
- August 2023: Commitment 38 Addendum finalized
- May 2024: Agnico Eagle received written comments on Commitment 38 Technical Report and Addendum by TAG members. Comments were provided by Kivalliq Inuit Association, Sayisi Dene and First Nation, and the Government of Nunavut.
- November 2024: Based on feedback and comments noted above, the methods were updated to both Commitment 38 Report and Addendum to address TAG comments. The updated methods, results and conclusions were outlined in a Technical Memorandum.

The following provides a general summary of results and conclusions based on the updated methods using non-technical language. The full technical description and results are available in WSP (2024).

2.0 UPDATED RESULTS

2.1 General Movement Models

General collared caribou movement mathematical models were used to determine important natural parts of the environment to caribou movements such as weather and food. The best mathematical model for predicting caribou movement from natural influences was the base habitat model applied in the Commitment 38 Technical Report. Similar to the findings presented in the Commitment 38 Technical Report, caribou avoided lakes and selected habitats with growing plants and higher concentrations of heath forb cover. The results indicated that

caribou movement was faster as days with temperatures greater than 0°C increased. The results also showed that caribou make meandering or non-directional movements, which is consistent with results presented in the Commitment 38 Technical Report. The results also showed that all the natural factors evaluated were important at influencing caribou movements.

2.2 Influence of Mine and All-weather Access Road on Movement Behaviours

2.2.1 Integrated Step Selection Analysis

A complex collared caribou movement mathematical model called an integrated step selection analysis was used to test how caribou reacted to the Mine and All-weather Access Road (AWAR). This model compares locations from caribou collars to locations that a collared caribou could have made based on that individual's behaviour but did not. The main results described below focus on crossing, deflection and parallel steps.

Crossing Steps

Crossing steps occur when a collared caribou crosses the Mine or AWAR. Whether a collared caribou cross the Mine or AWAR was related to how far the animal was from the Mine or AWAR. This result is not surprising because crossing steps can only occur when collared caribou locations occur on both sides of the Mine or AWAR footprint.

Deflection Steps

Deflection steps are when a collared caribou makes an abrupt change in direction that is greater or equal to 60 degrees. The chance of a collared caribou making a deflection movement was unrelated to distance to Mine or AWAR. Collared caribou made deflection steps both near and far from the Mine or AWAR.

Parallel Steps

Parallel steps are when a collared caribou moved parallel to the Mine or AWAR. The chance of a collared caribou making a parallel movement is unrelated to distance to Mine or AWAR. Collared caribou made parallel movements both near and far from the Mine or AWAR.

2.2.2 Logistic Regression

A second type of statistical analysis was completed with collared caribou locations where there are only two possible outcomes. When there are only two possible outcomes, such as whether a caribou moved left versus right, this type of model is called logistic regression and measures what influences the chance of either outcome (e.g., a crossing movement vs. no crossing movement). The results described below are from a logistic regression analysis. The main results described below focus on crossing, deflection and parallel steps.

Crossing Steps

The total number of interactions a collared caribou has had with the Mine or AWAR over all years was the most important predictor of collared caribou crossing movements. Caribou that were collared for a longer period of time tended to have more cross more times. This pattern is not consistent with the idea that caribou avoid the Mine or AWAR. If collared caribou were avoiding the Mine or AWAR, then caribou that are collared for longer should not continue to cross the Mine or AWAR in the future. Collared caribou were more likely to cross the Mine or AWAR when there were further away from other collared caribou.

Deflection Steps

Deflection movements were not influenced by how close collared caribou were to the Mine or AWAR. The most important predictor of deflection movements was mosquito harassment. Higher mosquito harassment is more likely to result in a deflection movement. On its own, how close together collared caribou were to one another did not influence a collared caribou making a deflection movement.

A deflection movement was more likely when collared caribou were far from other collared caribou and mosquito harassment was high. This pattern suggests that caribou may be using a change in direction (i.e., making abrupt turns (turns greater than or equal to 60 degrees) to avoid mosquito harassment when far from others. Caribou are known to gather together in larger groups during periods of intense insect harassment (Joly et al. 2020).

Parallel Steps

Collared caribou are less likely to make a parallel movement if they've had more past interactions with the Mine or AWAR. These results support that animals may learn from past experience with the Mine or AWAR or become less disturbed over time. Collared caribou have a lower chance to make a parallel movement if they are further from their nearest collared caribou neighbour. Caribou may make parallel movements to approach or follow nearby individuals. Parallel movements were not influence by how close collared caribou were to the Mine or AWAR.

2.3 Additional Analyses

Three additional mathematical analyses were completed to determine if there was enough information that the results would be reliable (Sections 3.4 to 3.5). These analyses were not included in the Commitment 38 Technical Report and completed based on feedback and comments. These analyses included:

1. A power analysis, which identifies how much information is needed. The power analysis identified that each collared caribou should have from 2 to 9 movements in each year to test deflection and parallel movements. Twenty caribou-years out of 211 did not have minimum number of movements for deflection and parallel movements. Removing caribou-years with insufficient steps did not have a strong influence for both deflection and parallel movement behaviour or conclusions. All 211 collared caribou in the dataset were adequate for the crossing movement examination.
2. A sensitivity analysis was used to see if results and conclusions changed if more or less information was included. The sensitivity analysis indicated that 200 collared caribou is the ideal amount needed to assess what the Commitment 38 Technical Report evaluated. The Commitment 38 Technical Report used 211 collared caribou, so it had enough information.
3. A validation analysis tested whether different groups of collared caribou were influenced by the same or different things and whether they responded to them in the same way. The validation analysis indicated that different groups of collared caribou were influenced by the same things and responded to them in similar ways.

3.0 CONCLUSIONS

Agnico Eagle completed additional analyses to address TAG written comments and questions regarding the Commitment 38 Technical Report and Addendum. The concerns expressed in reviewer comments in of the technical report (WSP 2024). fell into several broad categories including mathematical model complexity, the inclusion of important natural factors (i.e., mosquito harassment, and social measures), amount of information concerns, and model reliability.

The results presented pf updated methods in the Commitment 38 Technical Memo addressed these concerns and identified the strength of many of the natural things that drive caribou movements. For example, as suggested by some reviewers, mosquito harassment and social patterns (i.e., grouping of caribou) predicted deflection movements. This analysis found that when insect harassment levels were high and when caribou were far from other caribou they often deflected, while those that were near others did not deflect. Deflection movements, however, were not related to proximity to the Mine or AWAR and occurred at both near and far distances from the Mine or AWAR. Additionally, the number of individuals that deflected near the AWAR or Mine footprint was only 1%, which is very low. Such analyses supported the findings from the original Commitment 38 Technical Report that natural factors such as habitat/foraging decisions and insect harassment have a strong influence on caribou movement.

Caribou learning or did appear to influence crossing and parallel movements. The updated analyses found that the total number of times caribou interacted with the Mine footprint or AWAR increased the chance of crossing movements and decreased the chance of parallel movements. This suggests that general mechanisms that influence caribou behavior broadly, also influence responses to the Mine and AWAR.

There were a number of written questions related to whether there was enough information and whether results were reliable. The updated analysis addressed these concerns by increasing the information available for analyses and making mathematical models simpler. Additional analyses were completed to examine whether there was enough information used and the reliability of the results. These additional analyses confirmed there was enough information and that results are reliable.

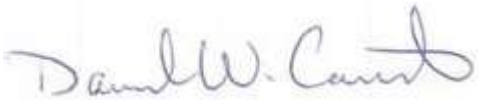
As stated by one commentor, caribou face many decisions that result in choices between foraging and movement. The results presented in the updated Commitment 38 analysis suggested that immediate biological factors such as mosquito harassment and foraging were very important to the choices of caribou. As such, changes in movement patterns appear to be common responses to natural factors. In contrast, more predictable features such as the Mine footprint appear to have a small impact on caribou movement. The results of the Commitment 38 Technical Report, Addendum and in the updated analysis, support that the measured impacts are less than predicted in the 2014 Final Environmental Impact Statement and the 2014 Final Environmental Impact Statement conclusions that the Mine is not likely to decrease resilience and increase the risk to population maintenance and opportunities for traditional and non-traditional use.

4.0 CLOSURE

We trust the above meets your present requirements. If you have any questions or require additional information, please do not hesitate to contact the undersigned.

Your truly,

WSP Canada Inc.



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5.0 LITERATURE CITED

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WSP. 2024. Responses to technical comments on the Commitment 38 report and Addendum. Technical memorandum prepared for Agnico Eagle Mines Limited. 33 pp +.

TECHNICAL MEMORANDUM

DATE 12 February 2025 **Project No.** CA0017749.9514-MEL2024_035-TM-Rev2

TO Sara Savoie, Jade Robitaille
Agnico Eagle Mines Limited

CC Corey De La Mare

FROM Meghan Beale, Dan Coulton **EMAIL meghan.beale@wsp.com**

RESPONSES TO TECHNICAL COMMENTS ON THE COMMITMENT 38 REPORT AND ADDENDUM

1.0 INTRODUCTION

On 24 May 2024, Angico Eagle Mines Limited (Agnico Eagle) received written comments on Agnico Eagle's Commitment 38 (C38) report ('the original C38 report'; WSP 2023a) and addendum (WSP 2023b) from the Kivalliq Inuit Association (KivIA), Sayisi Dene and Northlands Denesuline First Nations (SDNDFN), and the Government of Nunavut (GN). Based on feedback and comments from the KivIA, SDNDFN, and GN, WSP Canada Inc. (WSP) updated the methods applied in both the original C38 report (WSP 2023a) and the addendum (WSP 2023b). The updated methods presented herein were designed to test hypotheses presented in reviewer comments, while also incorporating relevant feedback. Updated results are presented in Section 3.0 and are explicitly referenced in Agnico Eagle's comment responses, which are provided in Section 4.0.

2.0 UPDATED METHODS

Methods from the original C38 report (WSP 2023a) were followed, unless otherwise specified in this technical memorandum. Updated analyses presented herein focused on Qamanirjuaq (QAM) telemetry data collected during the Meliadine Mine (Mine) Construction and Operations phase (i.e., 2018 to 2023), within 15 km of the Mine and/or All-weather Access Road (AWAR), between 21 May and 22 August each year. Because additional telemetry data were available for 2023, these data were integrated into updated analyses. Because only four-hour fix collar data were available between 2018 and 2023, updated analyses were based only on telemetry locations collected at four-hour intervals. Fix success per caribou-year is summarized in Appendix A.

Covariates were defined based on original C38 report definitions (see Tables 1 and 2 from WSP 2023a), with a few exceptions. Deflection steps were defined based on the original C38 definition but were defined within 15 km of the Mine/AWAR (vs. only within 5 km of the Mine/AWAR in the original C38 report; WSP 2023a). Parallel steps were defined based on the addendum definition and were also defined within 15 km of the Mine/AWAR (vs. within 5 km in addendum analyses; WSP 2023b). The addendum definition of parallel steps was adopted because it aligned with what the human eye classifies as parallel when reviewing caribou movement animations (see Appendix B of WSP 2023b for visuals to support this statement). Crossing steps were defined based on the original C38 definition (WSP 2023a) and represented steps (i.e., lines) that intersected with either the Mine or AWAR footprint polygons. Additional covariates developed for updated analyses presented in this memo are

summarized in Appendix B. Descriptive statistics and correlations among covariates are also summarized in Appendix B.

Like both the original C38 analysis (WSP 2023a) and the addendum analysis (WSP 2023b), integrated step selection analyses (iSSA) were used to assess the relationship between caribou movement behaviour and the Mine/AWAR (Avgar et al. 2016). The iSSAs were conducted with mixed effect conditional logistic regression (i.e., mixed effect survival models) using the *survival* package (Therneau and Grambsch 2000, Therneau 2024) in *R* (R Core Team 2024). Population-level models were estimated where data were clustered by caribou-year to account for repeated measures (i.e., several telemetry locations were collected from each caribou and each caribou was usually monitored for several years) and for unequal sample sizes of telemetry locations per caribou. Clustering data is analogous to including a random intercept for caribou-year. Sample sizes of used and available steps for iSSA are presented in Appendix C. Model selection methods followed information-theoretic approaches applied in the original C38 analysis (WSP 2023a).

2.1 General Movement Modelling

An updated candidate set of models was developed to test hypotheses related to the application of a base habitat model in the original C38 analysis (WSP 2023a) and to test the importance of certain covariates (e.g., mosquito index) on caribou movement and habitat selection. The updated candidate set of models is presented in Table 1 and was developed based on models previously tested in original C38 analyses (WSP 2023a) and updated models developed from reviewer feedback (summarized in Section 4.0). Updated candidate models were developed to evaluate the influence of insect harassment, land cover, and proximity to the Mine/AWAR on caribou movement.

Table 1: Candidate models to evaluate influence of insect harassment, land cover, and proximity to the Mine and All-weather Access Road (AWAR) on caribou movement.

Model Name	Model Structure[(a)]	Hypotheses Being Tested
Null	1	Covariates improve model fit.
Model 1	Lake + Greenness + HeathForb + GrowingDays*StepLength + TurnAngle	Base habitat model from original C38 report (WSP 2023a).
Model 2	Lake + Lichen + MosquitoIndex*StepLength + TurnAngle	Alternative, simple model representing importance of caribou avoiding lakes, acquiring forage, and moving faster when mosquito harassment is higher.
Model 3	Greenness + HeathForb + Lichen + StepLength + TurnAngle	Post-calving caribou typically are feeding on greening vegetation; a forage-based model.
Model 4	MosquitoIndex*StepLength + MosquitoIndex*TurnAngle	Mosquito harassment is a strong predictor of caribou movement (i.e., caribou move faster and more directionally when insect harassment is high); an insect harassment model.
Model 5	MosquitoIndex*StepLength + Greenness + DistanceAWARMine + TurnAngle	Caribou rely on complex decisions about selecting habitat to trade-off getting enough to eat relative to minimizing exposure to health risks (i.e., mosquito harassment, disturbance, or predation). Model represents trade-offs between forage, mosquito harassment, and disturbance from Mine/AWAR.
Model 6	MosquitoIndex*Aggregation_Min + MosquitoIndex*StepLength + TurnAngle	Insect harassment and group size interact to predict caribou movement. Distance to nearest collared caribou used as an indicator of social aggregation.
Model 7	MosquitoIndex*Aggregation_Mean + MosquitoIndex*StepLength + TurnAngle	Insect harassment and group size interact to predict caribou movement. Mean distance to all collared caribou used as an indicator of social aggregation.
Model 8	Greenness + GrowingDays*StepLength + MosquitoIndex + TurnAngle	Simple model representing influence of green-up and mosquito harassment on caribou movement.
Model 9	DistanceAWARMine*StepLength + DistanceAWARMine*TurnAngle	Model from original C38 report, excluding the base habitat model. Tests proximity to Mine/AWAR on caribou movement.
Model 10	DistanceAWARMine + Lake + MosquitoIndex*StepLength + TurnAngle	Builds upon Model 9 and includes influence of lake and mosquito harassment on caribou movement.
Model 11	DistanceAWARMine + Greenness + MosquitoIndex*Aggregation_Mean + StepLength + TurnAngle	Builds upon Model 9 and includes influence of greenness, mosquito harassment, and social aggregation on caribou movement.

(a) An asterisk (*) indicates an interaction term between two covariates. All models included a strata to link available steps with each used step and included a cluster for caribou-year.

2.2 Influence of Mine and All-weather Access Road on Movement Behaviours

2.2.1 Integrated Step Selection Analyses

The iSSAs were used to assess the relationship between caribou movement behaviors (i.e., deflection, parallel, and crossing) and proximity to the Mine/AWAR, following the model structure presented in Table 2. Models described in Table 2 are henceforth called ‘movement behaviour models’. MosquitoIndex was included in movement behaviour models due to several reviewers commenting on the importance of mosquito harassment for understanding caribou movement. The decay-transformed distance to Mine/AWAR covariate (i.e., DistanceAWARMine_Decay) was included to test the hypothesis that the effect of the Mine/AWAR is strongest within 1.5 km of the footprint, but is negligible past 1.5 km. For visualization, distance to Mine/AWAR was binned into two categories as a ‘near-far’ variable, where ‘near’ represented distances < 5 km and ‘far’ represented ≥ 5 km.

2.2.2 Logistic Regression

To further explore the relationship between caribou movement behaviours and proximity to the Mine/AWAR, logistic regression models were estimated using crossing, deflection, and parallel steps as response variables. The purpose of estimating logistic regression models was to assess which factors best predicted probability of a crossing, deflection, or parallel step being made; candidate models are presented in Table 3. Logistic regression was completed using generalized linear mixed effect models (GLMMs) with the *lme4* package (Bates et al. 2015) in *R* (R Core Team 2024). All models included a random intercept for caribou-year to account for repeated measures (i.e., several telemetry locations were collected from each caribou and each caribou was usually monitored for several years) and for unequal sample sizes of telemetry locations per caribou.

A binned distance to Mine/AWAR covariate (i.e., DistanceAWARMine_Bin) was applied in logistic regression models for ease of visualizing results. See Appendix B for a description of the DistanceAWARMine_Bin covariate. The effects of mosquito harassment (i.e., MosquitoIndex), social facilitation (i.e., Aggregation_Mean or Aggregation_Min), and learning/memory (i.e., PreviousInteractions) were included in logistic regression models, following the model structures presented in Table 3. A separate deflection model testing the interaction of mosquito harassment and aggregation was included to address how group sizes tend to be larger during mosquito harassment, which may influence caribou movement.

Table 2: General structure of movement behaviour models.

Response Variable	Model Structure[a]
Used vs. available steps	MosquitoIndex + StepLength + TurnAngle + **MovementBehaviour**[b]*DistanceAWARMine_Decay

(a) An asterisk (*) indicates an interaction term between two covariates. All models included a strata to link available steps with each used step and included a cluster for caribou-year.
(b) MovementBehaviour is either crossing step, deflection step, or parallel step. A separate model was estimated for each movement behaviour.

Table 3: Structure of logistic regression models used to assess factors that best predicted deflection, parallel, or crossing steps.

Response Variable	Model Structure[a]
Crossing vs non-crossing steps[b]	MosquitoIndex + Aggregation[c] + PreviousInteractions
Deflection vs non-deflection steps	MosquitoIndex*DistanceAWARMine_Bin + Aggregation[c]*DistanceAWARMine_Bin + PreviousInteractions*DistanceAWARMine_Bin
	MosquitoIndex*Aggregation[c]
Parallel vs non-parallel steps	MosquitoIndex * DistanceAWARMine_Bin + Aggregation[c]*DistanceAWARMine_Bin + PreviousInteractions*DistanceAWARMine_Bin

(a) An asterisk (*) indicates an interaction term between two covariates. All models included a random intercept for caribou-year.
(b) Crossing steps only occur when steps intersect the Mine or AWAR footprints; thus, DistanceMineAWAR_Bin was not included as a covariate in the model.
(c) Information-theoretic approaches (i.e., Akaike Information Criterion) were used to determine a priori whether Aggregation_Min or Aggregation_Mean was a better predictor of each target caribou movement behaviour.

2.3 Power Analyses

Power analyses were completed using the 'powerConLogistic' function from the *survival* package (Therneau and Grambsch 2000, Therneau 2024) in *R* (R Core Team 2024). This function requires the following inputs: effect size, variance, desired statistical power, and alpha (α) value. The function output is the number of used steps needed to detect a significant effect at the desired power. Target iSSA models (Table 2) were estimated for each caribou-year then effect sizes were derived post hoc from model outputs. Odds ratios for model covariates were used as effect sizes. The input variance was the standard deviation (SD) of variables calculated from the raw data. The desired power was set to 0.80 and α was set to 0.05.

Because effect sizes were derived post hoc from model outputs and because a post hoc power analysis simply confirms the results of a model (Lenth 2007; Zhang et al. 2019), a modified leave-out-one approach was adopted to strengthen the results of the power analyses. To assess whether a caribou-year had sufficient steps to detect an effect, the target caribou-year was excluded while the mode number (i.e., most common number) of steps required to detect an effect was calculated across retained caribou-years (i.e., $n - 1$ caribou-years). Ultimately, the leave-out-one approach resulted in a dataset summarizing the mode number of steps required to detect a significant effect 80% of the time, for each model covariate and caribou-year. For each caribou-year, the maximum number of steps required to detect an effect across all model covariates was determined. This was used as the cut-off for determining whether each caribou-year had 'sufficient' steps to detect an effect.

Caribou-years with insufficient steps to detect an effect were then removed from modelling datasets and target movement behaviour models (Table 2) were refit. For each movement behaviour model, one model was fit with the complete dataset and one was model fit with only caribou-years that had sufficient steps to detect an effect. The model concordance value, which is an indicator of model classification success, was used to compare models. A concordance value of 0.5 represents chance prediction whereas a concordance value of 1.0 represents perfect prediction.

2.4 Sensitivity Testing

To assess the sensitivity of iSSA results to number of caribou-years, results of movement behaviour models were compared to models with down-sampled and up-sampled caribou-years. Down-sampling draws a random selection of existing caribou-years to reach a target number of caribou-years less than what is present in the original dataset. Up-sampling randomly selects from existing caribou-years to reach a target number of caribou-years larger than what is present in the original dataset. Caribou-years were randomly selected when down- or up-sampling and could be repeated within down- or up-sampled datasets. Repeat caribou-years were renamed so that they were treated as separate caribou-years by the model. Sensitivity testing was conducted in increments of 25 caribou-years, on sample sizes ranging from 50–800 caribou-years (i.e., approximately one-quarter to four times the available sample size). Down-sampling and up-sampling simulates an increase or decrease in the number of caribou-years available for modelling.

Mixed effect conditional logistic regression models were then fit to each simulated modelling dataset. For each mixed effect model, the *p*-values were extracted per model covariate. Linear regression was used to fit a slope between the sequentially increasing sample size of caribou-years and resulting *p*-values per model covariate. For each model covariate, the variance (i.e., SD) of *p*-values was also calculated. The down-sampling and up-sampling process described above was repeated 10 times, such that average *p*-values were presented in the results.

Results of sensitivity testing were displayed graphically where sample sizes of caribou-years were compared with mean *p*-values per model covariate. When down-sampling or up-sampling had little effect on a covariate, the *p*-values remained relatively constant across sample sizes and the variances were low. A steep negative slope when comparing *p*-values vs. sample size indicates that increasing the sample size could lead to smaller *p*-values for a particular covariate.

2.5 Model Validation

Movement behaviour models (Table 2) were validated using two separate methods: by correlating model predictions and using *k*-fold cross-validation. To correlate model predictions, the dataset was first randomly split into two training datasets, each representing approximately 40% of the data, and one test dataset, representing approximately 20% of the data. Used and available steps were grouped by caribou-year within training and test datasets. Each movement behaviour model was estimated using the two training datasets then tested using predictions of the trained models on the test dataset. Predictions from each training model were then compared using a Pearson's correlation. This process was repeated 100 times and the average Pearson's correlation coefficient was reported per movement behaviour model. Highly correlated model predictions (i.e., $r \geq 0.70$) indicate that models trained on separate portions of the dataset resulted in similar predictions for test data and supports a strong predictive model.

For *k*-fold cross-validation, the dataset of used and available steps was randomly partitioned into five (i.e., $k = 5$) folds, where each fold represented approximately 20% of the data. One fold was removed from the dataset as the test dataset and the remaining four folds were retained as the training dataset (i.e., representing approximately 80% of the data). Each movement behaviour model was estimated using the training dataset then tested using predictions of the trained model on the withheld test dataset. The actual used and available steps from the test dataset were then compared against the predicted probability of use (i.e., the model predictions). Within each set of one used step and the corresponding available steps, the number of times the predicted value for an available step was larger than the predicted value for a used step (i.e., representing a misclassified step) was summed. The proportion of correctly classified steps (i.e., model agreement) was calculated for the entire test dataset.

To validate whether movement behaviour models performed better at classifying steps than a null/random model, a random model agreement value was calculated. This was calculated in the same manner, except each set of steps (i.e., one used step and the corresponding available steps) was shuffled and the 'used' step was randomly selected from within the set of steps. Thus, the 'actual' used steps for the null/random model represented a random caribou movement trajectory. A model with high predictive capability and strong performance will have a significantly higher model agreement than a null/random model.

The *k*-fold cross validation procedure described above was repeated 100 times. For each of the 100 simulations, the observed and random model agreement was calculated. A proportion test was performed to assess whether the observed and random model agreement values differed significantly.

3.0 UPDATED RESULTS

3.1 General Movement Modelling

The top model for predicting caribou movement was Model 1 (Table 4), which was also the base habitat model applied in the original C38 analysis (WSP 2023a). Similar to findings presented in the original C38 report (WSP 2023a), caribou avoided lakes and selected habitats with higher greenness and higher proportion of heath forb cover (Table 5). The beta coefficient for the interaction between growing days > 0°C and log of step length was positive, indicating that step length increased (i.e., movement was faster) as growing days > 0°C increased. The negative beta coefficient for cosine of turning angle indicates that movement was non-directional. These results are consistent with results presented in the original C38 analysis (WSP 2023a). Additionally, all Model 1 beta coefficient 95% confidence intervals (CI) were either completely positive or completely negative, indicating no uncertainty in the predicted effect of each covariate on caribou movement and habitat selection.

Table 4: Model selection table, including model name, number of parameters (*K*), Akaike Information Criterion (AIC), log likelihood (LL), delta Akaike Information Criterion (ΔAIC), and Akaike Information Criterion weight (*w*) are presented. The top model is bolded.

Model Name	*K*	AIC	LL	ΔAIC	*w*
Model 1	**7**	**37882.24**	**-18934.12**	**0.00**	**1.00**
Model 8	6	38439.84	-19213.92	557.61	0.00
Model 10	6	38668.45	-19328.22	786.21	0.00
Model 2	6	38700.02	-19344.01	817.79	0.00
Model 3	5	38882.17	-19436.09	999.94	0.00
Model 11	7	39019.09	-19502.55	1136.86	0.00
Model 5	6	39026.42	-19507.21	1144.18	0.00
Model 9	5	39889.28	-19939.64	2007.05	0.00
Model 7	6	39919.52	-19953.76	2037.28	0.00
Model 4	5	39921.86	-19955.93	2039.63	0.00
Model 6	6	39924.30	-19956.15	2042.06	0.00
Null	0	46211.15	-23105.58	8328.92	0.00

Table 5: Beta coefficient estimates (β), standard error (SE), lower and upper 95% confidence interval limits (CI), and *p*-values for covariates included in Model 1.

Covariate[(a)]	B	SE	Lower 95% CI Limit	Upper 95% CI Limit	*p*-value
Lake	-0.44	0.02	-0.48	-0.41	< 0.001
Greenness	0.20	0.02	0.16	0.24	< 0.001
HeathForb	0.12	0.01	0.09	0.14	< 0.001
GrowingDays	-2.89	0.12	-3.09	-2.70	< 0.001
StepLength	0.26	0.02	0.23	0.28	< 0.001
TurnAngle	-2.14	0.03	-2.19	-2.10	< 0.001
GrowingDays*StepLength	0.38	0.01	0.35	0.40	< 0.001

(a) An asterisk (*) indicates an interaction term between two covariates.

3.2 Influence of Mine and All-weather Access Road on Movement Behaviours

3.2.1 Integrated Step Selection Analyses

Crossing Steps

The interaction between distance to Mine/AWAR and crossing steps is significant ($p < 0.001$), indicating that the probability of caribou taking a crossing step is related to distance to mine/AWAR (Figure 1). Because crossing steps can only occur when a step intersects with the Mine or AWAR footprint, this result is not surprising. Figure 1 shows that the relationship between proportion of used and available crossing steps switches when near and far from the Mine /AWAR. For example, more crossing steps are used steps and fewer crossing steps are available steps at distances ≥ 5 km whereas more crossing steps are available steps and fewer crossing steps are used steps at distances < 5 km from the Mine/AWAR. These results can be explained by the probability of an available step crossing the Mine/AWAR increasing as proximity to Mine/AWAR increases. Similarly, fewer available steps will be crossing steps as the proximity to Mine/AWAR decreases.

Deflection Steps

The interaction between distance to Mine/AWAR and deflection steps is not significant ($p = 0.494$), indicating that probability of caribou taking a deflection step is unrelated to distance to Mine/AWAR (Table 7). Figure 2 further highlights these results and illustrates that the relationship between used and available deflection steps remains constant, regardless of whether steps are near or far from the Mine/AWAR.

There is a positive main effect for DeflectionStep, which indicates that deflection steps are more likely to be used steps than available steps. For review, available steps are chosen at random so that used steps reflect choices per iSSA methods. This relationship is also apparent in Figure 2. Based on the ratio of 1 used step to 10 available steps, it's expected that the blue bars (used deflection steps) would be roughly $1/10^{th}$ the size of the red bars (available deflection steps). Instead, the mean number of used deflection steps are roughly twice what might be expected, when compared to average proportion of available steps (Figure 2). There is a positive main effect for distance to Mine/AWAR, which suggests that used steps are more prevalent at larger distances from the Mine/AWAR.

Parallel Steps

The interaction between distance to Mine/AWAR and parallel steps is not significant ($p = 0.926$), indicating that probability of caribou taking a parallel step is unrelated to distance to Mine/AWAR (Table 8). Figure 3 further highlights these results and illustrates that the relationship between used and available parallel steps remains constant, regardless of whether steps are near or far from the Mine/AWAR.

There is no main effect for ParallelStep, which is apparent in Figure 3; the average proportion of used parallel steps (blue bars) represent approximately 10% of the average proportion of available parallel steps (red bars). There is a positive main effect for distance to Mine/AWAR, which suggests that used steps are more prevalent at larger distances from the Mine/AWAR.

Table 6: Results from integrated step selection analyses (iSSA) designed to test crossing steps as function of distance to the Mine and All-weather Access Road (AWAR), including beta coefficient estimate (β), standard error (SE), odds ratio, and *p*-value for each model covariate.

Response Variable	Model Structure[a]			
Used vs. available steps	MosquitoIndex + StepLength + TurnAngle + CrossingStep*DistanceAWARMine_Decay			
Covariate	**B**	**SE**	**Odds ratio**	***p*-value[b]**
MosquitoIndex	< 0.001	0.02	1.00	0.982
StepLength	0.17	0.02	1.87	**< 0.001**
TurnAngle	-2.30	0.03	0.10	**< 0.001**
CrossingStep	-0.87	0.25	0.42	**< 0.001**
DistanceAWARMine_ Decay	-0.03	0.17	0.97	0.857
CrossingStep* DistanceAWARMine_ Decay	1.17	0.29	3.22	**< 0.001**

(a) An asterisk (*) indicates an interaction term between two covariates. The model included a strata to link available steps with each used step and included a cluster for caribou-year.
(b) Significant *p*-values, where α = 0.05, are bolded.

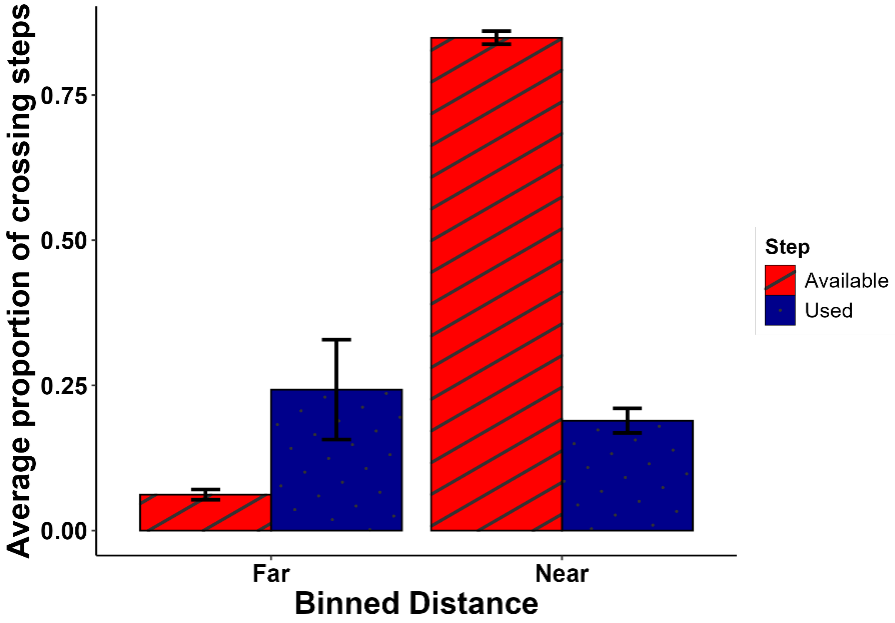


Figure 1: Average proportion of used and available crossing steps as a function of binned distance from the Mine and All-weather Access Road (AWAR). Near represents distances < 5 km and far represents distances ≥ 5 km. Error bars represent standard error.

Table 7: Results from integrated step selection analyses (iSSA) designed to test deflection steps as function of distance to the Mine and All-weather Access Road (AWAR), including beta coefficient estimate (β), standard error (SE), odds ratio, and *p*-value for each model covariate.

Response Variable	Model Structure[a]			
Used vs. available steps	MosquitoIndex + StepLength + TurnAngle + DeflectionStep*DistanceAWARMine_Decay			
Covariate	**B**	**SE**	**Odds ratio**	***p*-value[b]**
MosquitoIndex	-0.006	0.02	0.99	0.292
StepLength	0.16	0.02	1.17	**< 0.001**
TurnAngle	-2.09	0.03	0.12	**< 0.001**
DeflectionStep	0.81	0.29	2.25	**0.003**
DistanceAWARMine_ Decay	0.35	0.15	1.42	**0.004**
DeflectionStep * DistanceAWARMine_ Decay	-0.19	0.30	0.82	0.494

(a) An asterisk (*) indicates an interaction term between two covariates. The model included a strata to link available steps with each used step and included a cluster for caribou-year.
(b) Significant *p*-values, where α = 0.05, are bolded.

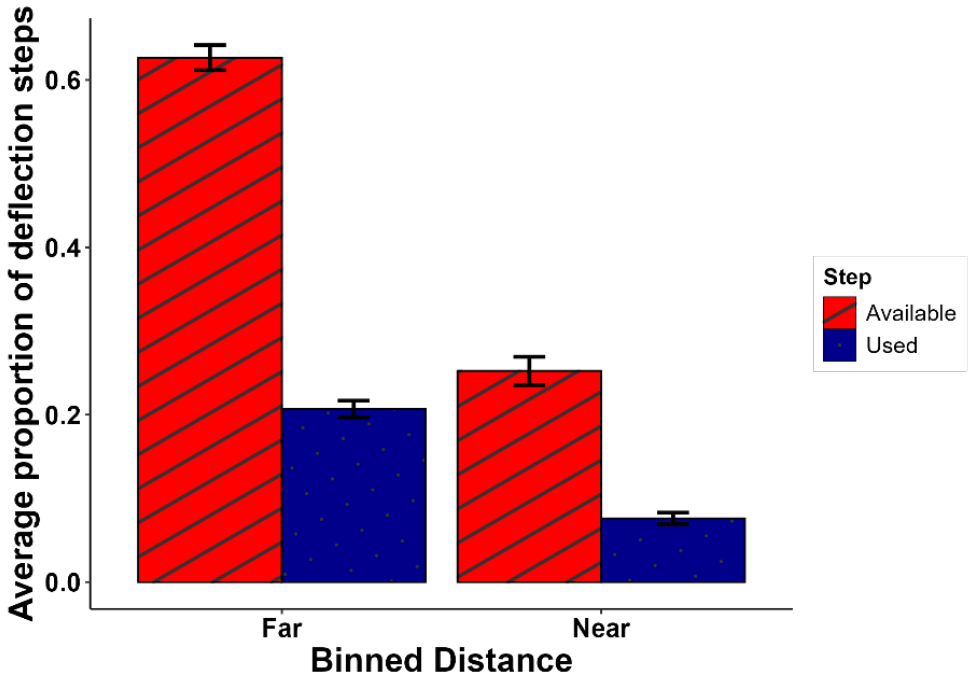


Figure 2: Average proportion of used and available deflection steps as a function of binned distance from the Mine and All-weather Access Road (AWAR). Near represents distances < 5 km and far represents distances ≥ 5 km. Error bars represent standard error.

Table 8: Results from integrated step selection analyses (iSSA) designed to test parallel steps as function of distance to the Mine and All-weather Access Road (AWAR), including beta coefficient estimate (β), standard error (SE), odds ratio, and *p*-value for each model covariate.

Response Variable	Model Structure[a]			
Used vs. available steps	MosquitoIndex + StepLength + TurnAngle + ParallelStep*DistanceAWARMine_Decay			
Covariate	**B**	**SE**	**Odds ratio**	***p*-value[b]**
MosquitoIndex	< -0.001	0.02	0.99	0.990
StepLength	0.18	0.02	1.19	**< 0.001**
TurnAngle	-2.30	0.03	0.10	**< 0.001**
ParallelStep	0.10	0.50	1.11	0.821
DistanceAWARMine_ Decay	0.39	0.13	1.47	**< 0.001**
ParallelStep * DistanceAWARMine_ Decay	-0.04	0.51	0.96	0.926

(a) An asterisk (*) indicates an interaction term between two covariates. The model included a strata to link available steps with each used step and included a cluster for caribou-year.
(b) Significant *p*-values, where α = 0.05, are bolded.

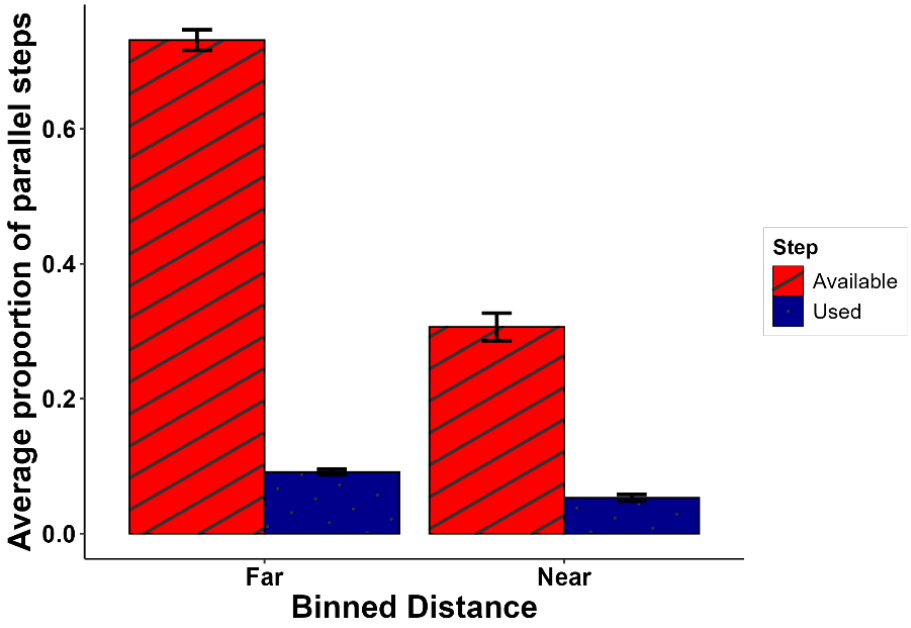


Figure 3: Average proportion of used and available parallel steps as a function from binned distance from the Mine and All-weather Access Road (AWAR). Near represents distances < 5 km and far represents distances ≥ 5 km. Error bars represent standard error.

3.2.2 Logistic Regression

Crossing Steps

The most important predictor of crossing steps was the number of cumulative interactions a caribou has had with the Mine/AWAR over all years (β = 4.19; $p < 0.001$; Table 9). In other words, caribou that were collared for a longer period of time tended to have more crossing steps. This pattern is not consistent with an adverse response to the mine. In the case of an adverse response, caribou that are collared for longer should be less likely to interact with the mine. Mean aggregation was a better fit than minimum aggregation; the significant effect of mean aggregation suggests that caribou are more likely to cross the Mine/AWAR when they are less aggregated with other collared caribou (β = 0.30; $p < 0.001$; Table 9).

Deflection Steps

Deflection steps were unrelated to distance to Mine/AWAR ($p = 0.993$; Table 10). The most important predictor of deflection steps was mosquito harassment; increased mosquito harassment is more likely to result in a deflection step (β = 0.10; $p < 0.001$; Table 10). Minimum aggregation was a better fit than mean aggregation; however, aggregation was not an important predictor of deflection steps ($p = 0.128$; Table 10).

Mean aggregation was a better fit than minimum aggregation for Model 2. Results for Model 2 highlight that the interaction between mosquito harassment and mean aggregation was a significant predictor of caribou deflection (β = 0.08; $p = 0.001$;Table 10). These results are also displayed in Figure 4. A deflection step is more likely when both mean aggregation and mosquito harassment are high. This relationship suggests that caribou may be using erratic movement (i.e., taking hard turns, or turns ≥ 60°, as is implicit in the definition of a deflection step; WSP 2023a) and aggregation with other collared caribou to manage intense mosquito harassment. Caribou are known to aggregate together during periods of intense insect harassment as a defense strategy (Joly et al. 2020).

Parallel Steps

The most important predictor of parallel steps was the number of cumulative interactions a caribou has had with the Mine/AWAR over all years (Table 11); caribou are less likely to take a parallel step if they've had more past interactions with the Mine/AWAR (β = -1.89; $p = 0.001$; Table 11). These results support that learning and habituation may be occurring over time. Minimum aggregation was a better fit than mean aggregation for predicting parallel steps, and minimum aggregation was a significant predictor of parallel steps ($p = 0.019$; Table 11). Caribou are less likely to take a parallel step if they are further from their nearest collared neighbour. Parallel steps were unrelated to distance to Mine/AWAR ($p = 0.883$; Table 11).

Table 9: Results from logistic regression designed to assess predictors of crossing steps, including beta coefficient estimate (β), standard error (SE), odds ratio, and *p*-value for each model covariate.

Response Variable	Model Structure			
Crossing vs. non-crossing steps	MosquitoIndex + Aggregation + PreviousInteractions			
Covariate	**B**	**SE**	**Odds ratio**	***p*-value[(a)]**
MosquitoIndex	0.03	0.06	1.03	0.562
Aggregation_Mean	0.30	0.07	1.35	**< 0.001**
PreviousInteractions	4.19	0.97	65.70	**< 0.001**

(a) Significant *p*-values, where α = 0.05, are bolded.

Table 10: Results from logistic regressions designed to assess predictors of deflection steps, including beta coefficient estimate (β), standard error (SE), odds ratio, and *p*-value for each model covariate.

Response Variable	Model 1 Structure			
Deflection vs. non-deflection steps	MosquitoIndex*DistanceAWARMine_Bin + Aggregation*DistanceAWARMine_Bin + PreviousInteractions*DistanceAWARMine_Bin			
Covariate[(a)]	**β**	**SE**	**Odds ratio**	***p*-value[(b)]**
MosquitoIndex	0.10	0.02	1.10	**< 0.001**
DistanceAWARMine_Bin	-0.01	0.77	0.99	0.993
Aggregation_Min	0.05	0.03	1.05	0.128
PreviousInteractions	0.26	0.40	1.31	0.499
MosquitoIndex* DistanceAWARMine_Bin	0.13	0.07	1.14	0.060
Aggregation_Min* DistanceAWARMine_Bin	0.04	0.07	1.05	0.490
PreviousInteractions*DistanceAWARMine_Bin	0.13	0.7	0.88	0.850
Response Variable	**Model 2 Structure**			
Deflection vs. non-deflection steps	MosquitoIndex*Aggregation			
Covariate[(a)]	**β**	**SE**	**Odds ratio**	***p*-value[(b)]**
MosquitoIndex	-0.03	0.04	0.97	0.433
Aggregation_Mean	-0.003	0.03	1.00	0.920
MosquitoIndex*Aggregation_Mean	0.08	0.03	1.09	**0.001**

(a) An asterisk (*) indicates an interaction term between two covariates.
(b) Significant p-values, where α = 0.05, are bolded.

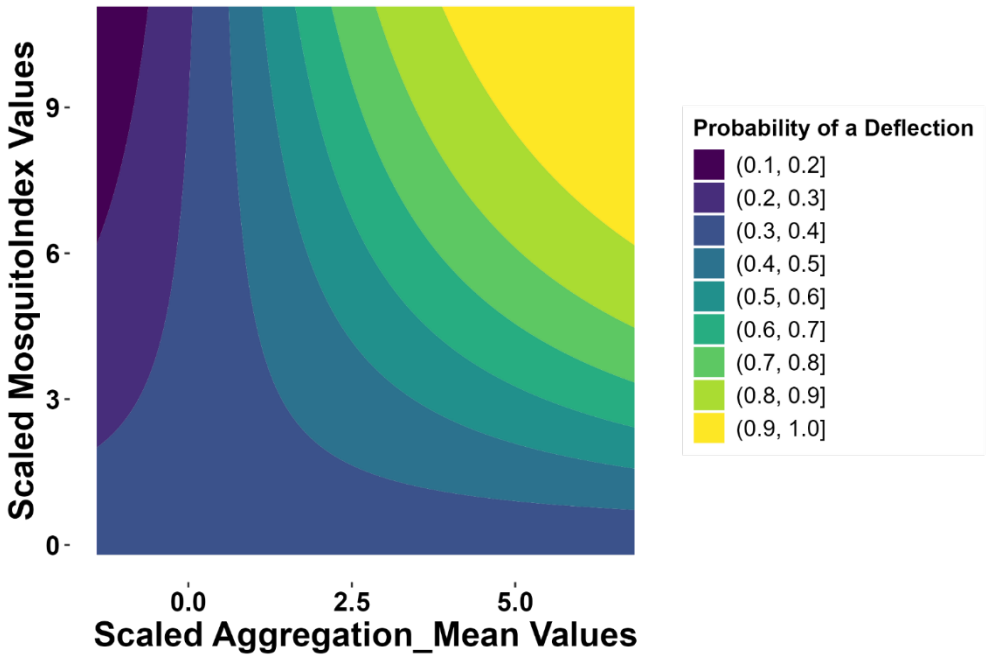


Figure 4: Relationship between average distance to other collared caribou (Aggregation_Mean), mosquito index (MosquitoIndex), and the probability of a deflection step.

Table 11: Results from logistic regression designed to assess predictors of parallel steps, including beta coefficient estimate (β), standard error (SE), odds ratio, and *p*-value for each model covariate.

Response Variable	Model Structure			
Parallel vs. non-parallel steps	MosquitoIndex*DistanceAWARMine_Bin + Aggregation*DistanceAWARMine_Bin + PreviousInteractions*DistanceAWARMine_Bin			
Covariate[a]	**β**	**SE**	**Odds ratio**	***p*-value[b]**
MosquitoIndex	-0.01	0.05	0.99	0.799
DistanceAWARMine_Bin	-0.26	1.22	0.77	0.833
Aggregation_Min	-0.15	0.06	0.86	**0.019**
PreviousInteractions	-1.89	0.58	0.15	**0.001**
MosquitoIndex* DistanceAWARMine_Bin	0.08	0.12	1.08	0.535
Aggregation_Min* DistanceAWARMine_Bin	-0.09	0.13	0.91	0.461
PreviousInteractions*Distance AWARMine_Bin	-0.11	1.09	0.89	0.916

(a) An asterisk (*) indicates an interaction term between two covariates.
(b) Significant *p*-values, where α = 0.05, are bolded.

3.3 Power Analyses

The power analysis indicated the minimum number of steps required was 1.38 for crossing steps, 6.38 for deflection steps and 8.60 for paralleling steps (Table 12). Relative to these thresholds, there were 20 caribou-years with an insufficient number of steps to detect a significant effect of DistanceAWARMine_Decay 80% of the time, for deflection and parallel movement behaviour models (Table 12). All caribou-years in the dataset had sufficient power to detect an effect for the crossing movement behaviour model.

Removing caribou-years with insufficient steps had negligible effects on model concordance for both deflection and parallel movement behaviour models (i.e., Δ model concordance values were approximately 0 for both deflection and parallel movement behaviour models). The near zero difference in model concordance supports that removing caribou-years with insufficient steps did not influence model classification success and, therefore, removing caribou-years with insufficient steps has no influence on model results or outputs. In other words, retaining caribou-years with insufficient steps does not result in less predictive or accurate models, and results and outputs from these models are equally reliable as models where caribou-years with insufficient steps were removed.

Table 12: Results from leave-out-one power analyses.

Movement Behaviour Model[(a)]	Minimum Steps Required	Caribou-years Lacking Sufficient Steps	Mean (SD) Steps[(b)]	Covariate with Insufficient Steps	Δ Model Concordance[(c)]
Crossing	1.38	-	-	-	-
Deflection	6.38	20	3.75 (1.74)	DistanceAWARMine_Decay	0.73 – 0.73 = 0
Parallel	8.60	20	4.55 (2.11)	DistanceAWARMine_Decay	0.714 – 0.713 = 0.001

(a) Model structure for movement behaviour models is summarized in Table 2.
(b) Mean and standard deviation (SD) of steps were calculated across caribou-years that lacked sufficient steps to detect an effect.
(c) Δ = change in.

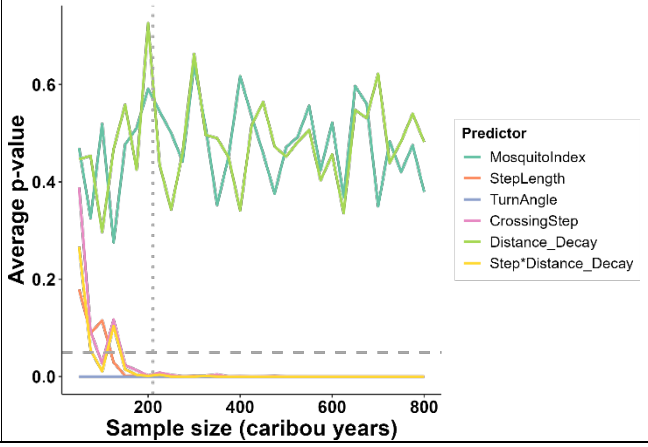
3.4 Sensitivity Testing

Sensitivity testing results indicate that mean slopes were approximately 0 for all movement behaviour models and model covariates (Table 13; Table 14; Table 15). Low mean slopes and low SD support that additional caribou-years would have a negligible impact on resulting mean *p*-values. Further, for several covariates where slopes were steep (e.g., see pink line for CrossingStep between 0 and 200 caribou-years in Table 13), slopes levelled off to nearly 0 at approximately 200 caribou-years, indicating that roughly 200 caribou-years is the threshold sample size required to have low *p*-values.

Table 13: Results from sensitivity testing for the crossing movement behaviour model, including slope and standard deviation (SD) per model covariate (i.e., predictor). Results of sensitivity testing are also displayed graphically, where the dashed horizontal line indicates α = 0.05 and the dotted vertical line indicates the available sample size (*n* = 211 caribou-years)

Crossing[a]

Model Covariate	Slope[b]	SD[c]
MosquitoIndex	< -0.001	0.13
StepLength	< -0.001	0.04
TurnAngle	< -0.001	< 0.001
CrossingStep	< -0.001	0.07
DistanceAWARMine_Decay	< -0.001	0.11
CrossingStep * DistanceAWARMine_Decay	< 0.001	0.05

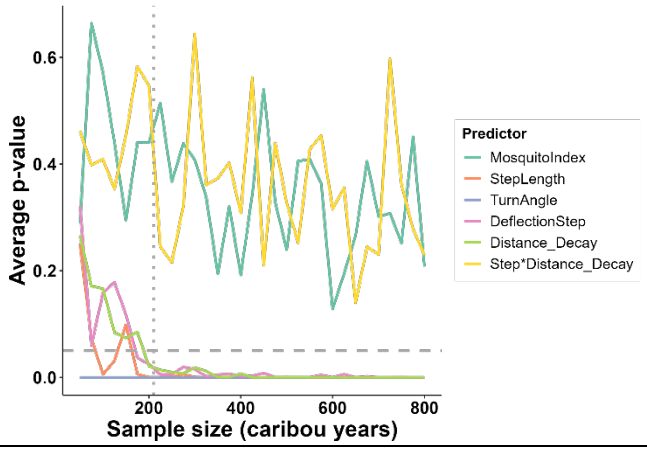


(a) Structure for crossing model is summarized in Table 2.
(b) Slope is the approximate/average slope, per covariate, for the figure shown on the right.
(c) SD is the standard deviation of *p*-values, per covariate.

Table 14: Results from sensitivity testing for the deflection movement behaviour model, including slope and standard deviation (SD) per model covariate (i.e., predictor). Results of sensitivity testing are also displayed graphically, where the dashed horizontal line indicates α = 0.05 and the dotted vertical line indicates the available sample size (*n* = 211 caribou-years).

Deflection[a]

Model Covariate	Slope	SD
MosquitoIndex	< -0.001	0.12
StepLength	< -0.001	0.05
TurnAngle	< -0.001	< 0.001
DeflectionStep	< -0.001	0.07
DistanceAWARMine_Decay	< -0.001	0.06
DeflectionStep * DistanceAWARMine_Decay	< -0.001	0.13

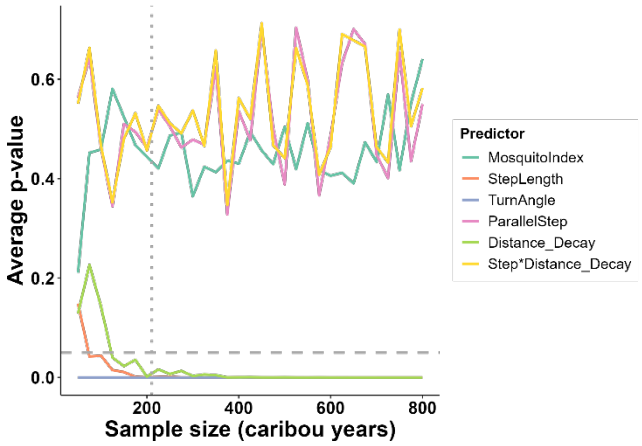


(a) Structure for deflection model is summarized in Table 2.

Table 15: Results from sensitivity testing for the parallel movement behaviour model, including slope and standard deviation (SD) per model covariate (i.e., predictor). Results of sensitivity testing are also displayed graphically, where the dashed horizontal line indicates α = 0.05 and the dotted vertical line indicates the available sample size (*n* = 211 caribou-years).

Parallel[(a)]

Model Covariate	Slope	SD
MosquitoIndex	< 0.001	0.12
StepLength	< -0.001	0.03
TurnAngle	< -0.001	< 0.001
ParallelStep	< 0.001	0.12
DistanceAWARMine_Decay	< -0.001	0.05
ParallelStep * DistanceAWARMine_Decay	< 0.001	0.12



(a) Structure for parallel model is summarized in Table 2.

3.5 Model Validation

Movement behaviour models predicting crossing, deflection, and parallel steps validated well. When comparing the ability of training models to predict against withheld test data, mean Pearson correlations were extremely high (i.e., all $r > 0.99$; Table 16), which supports that the models had consistent predictions, regardless of which data were withheld.

Results from *k*-fold cross-validation indicate that observed model agreement was consistently higher than random (Table 17), which supports that the movement behaviour models were better than a random/null model at classifying used and available steps. Proportion test results support that there is a statistically significant difference (i.e., all *p*-values < 0.001) between observed and random prediction for the movement behaviour models (Table 17), which supports that movement behaviour models are significantly better than a null/random model.

Table 16: Model validation results, including mean Pearson correlation, for three tested movement behaviour models.

Movement Behaviour Model[(a)]	Mean Pearson Correlation
Crossing	0.997
Deflection	0.997
Parallel	0.998

(a) Model structure for movement behaviour models is summarized in Table 2.

Table 17: Model validation results from 5-fold cross-validation, including mean observed model agreement, mean random model agreement, and results from the proportion test.

Movement Behaviour Model[(a)]	Mean Model Agreement		Proportion Test Results[(b)]
	Observed	Random	
Crossing	0.73	0.50	$\chi^2_1 = 36.13$, $p < 0.001$
Deflection	0.74	0.51	$\chi^2_1 = 41.42$, $p < 0.001$
Parallel	0.71	0.50	$\chi^2_1 = 34.45$, $p < 0.001$

(a) Model structure for movement behaviour models is summarized in Table 2.
(b) Results of the proportion test are reported as the chi-square value (χ^2_1), where 1 indicates the degrees of freedom. α is set at 0.05.

4.0 COMMENT RESPONSES

Comments from the KivIA, SDNDFN, and GN are summarized in Table 18, Table 19, Table 20, respectively; responses to each comment are provided in the tables below.

Table 18: C38 report and addendum comments and recommendations, provided by the Kivalliq Inuit Association (KivIA), and Agnico Eagle responses

Comment ID	Comment/Recommendation	Agnico Eagle Response
KivIA-1	The KivIA does not agree with Agnico Eagle's conclusion that the caribou are not responding to the All-Weather Access Road/mine site. The percentage of caribou more likely to deflect (4%) or parallel the AWAR (6%) when they were closer to the road was low. For most collared caribou, their responses were not measurable. Individual variation among the collared cows is high and the sample size (number caribou steps) relative to habitat factors is low which limits the analysis interpretation. It is unclear whether the analysis was not detecting responses because there were none, or if the methods were not powerful enough to measure responses given the individual variability and the low number of collars.	The updated methods presented herein have been modified to address sample size and power concerns. The sample size was increased by adding all collar data from 2023. In addition, mixed-effects survival models were estimated, rather than conditional logistic regression on individual caribou-years. These adjustments substantially increased the amount of raw data available for modelling. Sample sizes of caribou-years and sample sizes of steps within caribou-years were assessed to evaluate whether the available data were sufficient to detect effects. Power analyses (Sections 2.3 and 3.3) were used to determine if any individual caribou-years lacked sufficient data to detect a significant effect, 80% of the time, across model covariates. Any step deficient caribou-years were removed, and models were refit to trimmed datasets. Then, models fit to complete and trimmed datasets were compared. The power analyses determined that removing step-deficient caribou-years had a negligible effect on model results and outputs. Results from power analyses indicate that the number of steps available per caribou-year was not interfering with model performance or inference. Sensitivity tests (Sections 2.4 and 3.4) were used to determine if increasing or decreasing the number of caribou-years available for modelling impacted results. Caribou-years were randomly removed and added to the dataset. Models were then refit to down-sampled and up-sampled datasets. Sensitivity testing determined that the number of caribou-years in the dataset was sufficient, and that increasing the sample size would yield similar results. Effect sizes are less sensitive to sample size (Sullivan and Feinn 2012), so odds ratios are now reported throughout. For iSSA, odds ratios represent the relative odds of selecting a used step over an available step for a given predictor (Fieberg et al. 2021). An odds ratio of 1 implies that the predictor has no effect on the likelihood of a used step compared to an available step (i.e., equal odds). An odds ratio greater than 1 suggests that a used step becomes more likely as a predictor increases, while an odds ratio of less than 1 suggests that a used steps becomes less likely as the predictor increases. For example, if the odds ratio for a mosquito index covariate is 1, it means that for every one unit increase in the mosquito index the likelihood a used step is the same as an available step. In contrast, if the odds ratio was 1.5, it indicates that a used step is 1.5 times more likely than an available step. The results of power analyses and sensitivity testing indicate that the telemetry data available to test the objectives of C38 are adequate. Thus, any results indicating that the Mine/AWAR are not significant predictors of caribou movement are supported by the adequacy of available caribou-years to detect small *p*-values (as determined by sensitivity testing) for model covariates and the adequacy of steps available to detect significant effects (as determined by power analyses). The results presented herein support the original C38 conclusions that caribou are not responding to the Mine/AWAR and are, instead, responding to biotic factors, such as forage and insect harassment.
KivIA-2	The KivIA concerns are also because caribou exposure to the Meliadine Mine is high. Since 2015 during post-calving and summer almost three-quarters of the Qamanirjuaq herd's cows are within 28km (the Regional Study Area) for, on average, 2 weeks. Additionally, exposure within the Regional Study Area has changed since 2019, from late post-calving and summer to calving, a season when caribou are both more sensitive and vulnerable to disturbance.	It is true that caribou are present in the RSA for several weeks during post-calving and summer seasons but the predicted extent of residual (i.e., after mitigation) indirect effects from the Mine/AWAR are 14 km and 5 km, respectively, based on the scientific literature (Boulanger et al. 2012, 2021; Severson et al. 2023; Prichard et al. 2020; Johnson et al. 2020). These effects predictions are much smaller than the RSA, so not all caribou would be exposed to indirect effects if FEIS predictions were accurate. In contrast, the C38 analysis did not detect indirect effects out to 10 km from the Mine/AWAR (i.e., less than predicted in the 2014 FEIS; WSP 2023a). This result renders the indirect effects to caribou habitat to be negligeable and unlikely to have adverse impacts at the population level. Had mitigation not been effective at minimizing indirect effects to habitat and movement, caribou would be avoiding the Mine/AWAR area but in contrast, caribou continue to move through the Mine/AWAR annually.
KivIA-3	Agnico Eagle takes their conclusions a step further to imply that current mitigations (road closures) are conservative and working (for example, transcripts public hearings Vol. 8 2023 Extension Project). C38 could not specifically test whether mitigation (road closure) was effective as the traffic frequency was not available at an appropriate (daily) scale. The risk is that mitigation is assumed to be effective when it is not (statistically a Type II error) and this is an issue of primary concern of the KivIA.	There are multiple lines of evidence to support that the mitigation is conservative and effective. The 2014 FEIS (Golder 2014) predicted that the incremental residual effects (i.e., after mitigation is applied) of the Mine/AWAR on caribou habitat, movement, and behaviour would be of low magnitude with a regional extent. The incremental effects predicted for the Meliadine Project were approved by NIRB. The results of the C38 analysis provided multiple comparisons of effects associated with open roads, including comparison of Treatment Group 3 (i.e., Construction and Operations phase with road closed) with Treatment Group 1 (i.e., Advanced Exploration), Treatment Group 2 (i.e., Construction and Operations phase with road open), and Treatment Group 4 (i.e., control), all which support that the relative difference between treatment groups is negligeable and that caribou continue to move through the Mine/AWAR annually. The GN also concluded that caribou are moving through the Mine area based on their animation presented at the Meliadine Extension Final Hearing. The GN's report on 2022 calving monitoring (Campbell et al. 2023) conclude a stable herd since 2014, which aligns with the temporal scope of the C38 analysis and a stable herd supports that there are no strong adverse effects to caribou. The behaviour study finding that larger caribou groups (≥50 individuals) exhibited few disturbance responses suggests road closure mitigation is working (WSP 2024a see Figures 6.4-1 and 6.4-2 in Appendix F). Road closure is triggered when 50 or more caribou are observed within 100 m, although in practice AWAR closure is triggered earlier. Thus, caribou counts can be considered an index of road closure status (i.e., < 50 = open; ≥ 50 = closed) and reduced disturbances as evidence of successful mitigation. Agnico Eagle also provided noise modeling of Mine-related traffic on the AWAR, which shows that road closure minimizes the extent of Mine-related noise (WSP 2024b,c). If the AWAR is closed to regular Mine-related traffic, the visual disturbance will also be minimized.

Table 18: C38 report and addendum comments and recommendations, provided by the Kivalliq Inuit Association (KivIA), and Agnico Eagle responses

Comment ID	Comment/Recommendation	Agnico Eagle Response
KivIA-4	If the AWAR closure mitigation was effective, traffic frequency and disturbance to caribou should be low. However, for example, three-quarters of the behavioral surveys in 2022 recorded a disturbance when the AWAR was closed to mine traffic. Half the disturbances were ATVs and a third were light trucks that included those for monitoring. The point is that the caribou were still frequently, even if briefly, disturbed from traffic on the road, despite road closure.	Road closures represent minimization in the mitigation hierarchy (BBOP 2015). Meliadine does not manage public use of the AWAR, which mostly includes ATVs. Behaviour monitoring is completed from the AWAR and when caribou are within 1 km of the road. When caribou are approaching the AWAR, road closures for Mine-related traffic are triggered (i.e., more than 50 caribou within 100 m of the AWAR) but are triggered early to prevent staff from being stranded on the AWAR. The KivIA, the HTO and GN are involved in discussions on road closures for Mine-related traffic. The objective of the monitoring is to document caribou responses to disturbances (WSP 2024a; Appendix F) so the monitoring design is focused on disturbance events (i.e., intentionally biased high). Agnico Eagle also provided noise modeling of the AWAR (WSP 2024b,c), which illustrates that road closure minimizes the extent of noise disturbances when the road is closed. To demonstrate that road closures are ineffective would require observations of caribou near the AWAR when the road is open to measure the relative difference, which would mean reducing the number of road closures.
KivIA-5	The KivIA appreciates that Agnico Eagle was open to suggestions from the TAG for the design of the C38 analysis. Also, Agnico Eagle undertook an additional analysis (the Addendum) in response to TAG comments during a June 2023 presentation summarizing results. Agnico Eagle's consultants were at pains to explain the statistics and to provide clear and thoughtful presentations. The reports are carefully written and acknowledge the limitations of the results.	Agnico Eagle appreciates the KivIA's acknowledgement of collaborating with TAG members to design and implement the C38 study. Agnico Eagle provided equal weight to all study design factors identified as important by each organization (WSP 2023a,b,c).
KivIA-6	Overall Recommendation (i): Agnico Eagle responds to KivIA's written comments on C38 and the Addendum in writing.	This technical memorandum represents Agnico Eagle's written responses to KivIA's comments on C38 and the Addendum.
KivIA-7	Overall Recommendation (ii): The TAG members review 14 July 2023 C38 Analyses (and 18 August 2023 Addendum) and use the process outlined in the Terms of Reference to recommend (or not) C38 and the Addendum.	This recommendation is directed to the TAG and not Agnico Eagle explicitly.
KivIA-8	Overall Recommendation (iii): Agnico Eagle continue to work with TAG to address concerns, especially about integrating the collar data with the remote camera, behavioral and road surveys to describe caribou responses and to measure the effectiveness of mitigation.	Agnico Eagle will continue to collaborate with the KivIA and other members of the TAG through routine TAG meetings to address concerns related to caribou collar data, remote camera data, road surveys, and mitigation at Meliadine.
KivIA-9	Overall Recommendation (iv): Agnico Eagle to commit in 5 years to a re-assessment of caribou movements relative to Meliadine Mine to accommodate the changes in the seasonal distribution of caribou, especially exposure during calving.	Agnico Eagle understands that re-assessment of caribou movements relative to Meliadine Mine may be required in the future. Agnico Eagle will continue to collaborate with the KivIA and other members of the TAG to establish a reasonable a re-assessment interval for updating caribou movement analyses, such as those presented herein and in the C38 report (WSP 2023a) and addendum (WSP 2023b).
KivIA-10	The Addendum is a re-analysis of collared caribou movement responses based on comments from GN, ADNSL, and GKD during the 27 June 2023 TAG meeting. The re-analysis was restricted to caribou movements after 24 June, 2018 and within 5km of the AWAR and mine site during summer when caribou move faster and more directionally. The re-analysis was to answer whether caribou were paralleling or were deflecting more on the approach (upstream) than departure (downstream) of the AWAR and mine site. Caribou crossed the road at a significantly higher speed than they approached or departed, however, it was ambiguous as to whether they were more likely to parallel or deflect from the road as they approached relative to when they departed. In this context, it is notable that the behavioral scans in the 2022 Annual Report found that caribou behavior was similar on either side of the road.	Addendum results also indicate that caribou approaching the Mine/AWAR were more likely to deflect as distance to Mine/AWAR decreased but 95% CIs overlapped zero indicating uncertainty in this relationship. Caribou departing the Mine/AWAR were more likely to deflect as distance to Mine/AWAR increased but 95% CIs overlapped zero indicating uncertainty in this relationship. See Section 3.1.1 in WSP (2023b). Addendum results indicate that caribou approaching the Mine/AWAR were more likely to parallel as distance to Mine and/or AWAR decreased, but 95% CIs overlapped zero indicating uncertainty in this relationship. Caribou departing the Mine/AWAR were more likely to parallel as distance to Mine and/or AWAR increased but 95% CIs also overlapped zero indicating uncertainty in this relationship. See Section 3.1.2 in WSP (2023b). Overall, neither parallel nor deflection steps were influenced by distance to Mine/AWAR (WSP 2023b).
KivIA-11	Not surprisingly, caribou responded to habitat (greening vegetation, lakes, heath forbs, growing degree days, step length and turn angle) and this relationship was stronger when parallel step and distance to mine /AWAR site were included (Model 1) or lichens (Model 7). Post-calving caribou typically are feeding on greening vegetation which raises a question about the selection for Model 7.	The hypothesis that post-calving caribou typically are feeding on greening vegetation was used to develop Model 3 (Table 1). Despite including this model, and several other candidate models, in the updated candidate set (Table 1), the top model for predicting caribou movement was the base habitat model from the original C38 analysis (WSP 2023a). Both the updated results presented herein and the original C38 results (WSP 2023a) support that caribou responded to habitat by avoiding lakes, selecting green vegetation, and selecting heath and forb land cover. Caribou moved faster as growing days > 0°C increased and generally moved non-directionally. These results are presented in Section 3.1 (see Table 4 and Table 5).
KivIA-12	Caribou rely on complex decisions about selecting habitat to trade-off getting enough to eat relative to minimizing exposure health risks (mosquito harassment, disturbance or predation). What is surprising is that the models do not mention mosquito harassment. Elsewhere mosquito harassment strongly interacts with caribou responses to roads and traffic to the extent it can mask the caribou responses to traffic and roads. Additionally, group sizes tend to be larger during mosquito harassment and neither C38 or the Addendum address how social behavior (being in the same social group) impacted the effective sample size for detecting responses to the AWAR/mine site.	The hypothesis that caribou rely on complex decisions about selecting habitat to trade-off getting enough to eat relative to minimizing exposure to health risks (i.e., mosquito harassment, disturbance, or predation) was used to develop Model 5 (Table 1). Additionally, Model 4 was developed to test the importance to mosquito harassment on caribou movement and Models 6 and 7 were developed to test how mosquito harassment and aggregation of caribou interact to predict caribou movement (Table 1). A logistic regression model (i.e., Table 3) was developed to test the influence of the interaction between mosquito harassment and aggregation (i.e., a relative index of grouping; see Appendix B) on deflection steps. The top model for predicting caribou movement was the base habitat model from the original C38 analysis (WSP 2023a). Results are presented in Section 3.1 (see Table 4 and Table 5). Results from logistic regression modelling support that caribou are more likely to deflect when both mean aggregation and mosquito harassment are high (Section 3.2.2). This relationship suggests that caribou may be using erratic movement (i.e., taking hard turns, or turns ≥ 60°, as is implicit in the definition of a deflection step; WSP 2023a) and aggregation with other collared caribou to manage intense mosquito harassment. Caribou are known to aggregate together during periods of intense insect harassment as a defense strategy (Joly et al. 2020).
KivIA-13	It is uncertain whether the frequency of collar steps could have detected fine scale habitat selection. The behavioral monitoring indicated caribou were more likely to respond at less than 300m from the AWAR whereas a similar study elsewhere found collared caribou in the Central Arctic herd caribou selected areas ~1–3 km further from roads during the post-calving and mosquito seasons. However, it is by no means certain as to where caribou decide their movements across a landscape as memory plays a role. The caribou may not have to be close to a road to decide whether they will deflect parallel or cross if memory has a role in their decisions.	Results of power analyses and sensitivity testing indicate that the sample size of both caribou-years and steps was sufficient to detect the effects of interest (see response to KivIA-1). Importantly, the effects of biotic factors on caribou movement were detected in multiple models (see response to KivIA-12). As suggested, learning/memory did appear to influence caribou movement in relation to the Mine/AWAR. Results of that crossing movement behaviour model demonstrated that caribou that have had more past interactions with the Mine/AWAR are more likely to cross the Mine/AWAR, which suggests that caribou may habituate to the Mine/AWAR.

Table 18: C38 report and addendum comments and recommendations, provided by the Kivalliq Inuit Association (KivIA), and Agnico Eagle responses

Comment ID	Comment/Recommendation	Agnico Eagle Response
KivIA-14	A consideration for the weak results testing the movement responses is to have tested these responses with a continuous variable rather than partitioning into within 5 km or not. Then, for example, whether caribou were more likely to make a parallel or deflecting step the closer they got to the road could be detected. Under the current framework that was used, a caribou that stayed 4-5 km away from the road would be included in the analysis, but in reality, this caribou may not have been ever close enough to the road to have the road influence its behaviour. A continuous variable would overcome this shortcoming and lessen the relative "arbitrariness" of a 5-km threshold.	Use of a 5 km threshold was recommended by the TAG at the Commitment 38 analysis design stage (WSP 2023c), In the updated analyses presented herein, deflection and parallel steps were assigned within 15 km of the Mine/AWAR (vs. within 5 km of the Mine/AWAR from the original C38 analysis; WSP 2023a). Additionally, the effect of proximity to Mine/AWAR on caribou movement behaviours (i.e., deflection, parallel) was tested using several distance to Mine/AWAR covariates. A continuous decay-transformed covariate (i.e., DistanceAWARMine_Decay), representing stronger influence of the Mine/AWAR within 1.5 km of the footprint, was tested in Section 3.2.1. A categorical binned covariate (i.e., DistanceAWARMine_Bin), representing a binary influence of the Mine/AWAR nearer and further than 5 km from the footprint, was tested in Section 3.2.2. Despite testing several metrics for distance to Mine/AWAR, no effect of distance to Mine/AWAR was found on deflection or parallel steps (see Section 3.2.2). Crossing steps were related to distance to Mine/AWAR, which is unsurprising because crossing can only occur when a step interacts with the Mine/AWAR footprint (see Section 3.2.2 for more interpretation of this result).
KivIA-15	Recommendation on Addendum (i): The habitat models are relatively complex (6 to 8 covariates) and the number of caribou steps was relatively low. An alternative approach that would make it more likely to statistically detect effects should be considered to analyze caribou response to the AWAR and mine site.	Model complexity was decreased in the updated set of candidate models (Table 1). Further, the base habitat model from the original C38 analysis (WSP 2023a) was included as a candidate model instead of being included in all candidate models. The sample size was increased, and both power and sensitivity analyses were used to assess the capability of models to detect effects (see response to comment KivIA-1).
KivIA-16	Recommendation on Addendum (ii): The habitat models did not list mosquitos as a covariate yet the directional and rapid movements (Figure A.1) are suggestive of insect harassment. An additional analysis is needed to examine the role of mosquito harassment as discussed in the October 2023 TAG meeting. The analysis should include how mosquito and group size interact and influences sample size.	Several updated models included mosquito harassment as a covariate (Table 1). Despite the addition of a mosquito index in several of the candidate models, the top model for predicting caribou movement was the base habitat model from the original C38 analysis (WSP 2023a). Results are presented in Section 3.1 (see Table 4 and Table 5).
KivIA-17	Recommendation on Addendum (iii): The analyses should be repeated when location frequency such as geofenced collars is increased to ensure that fine scale movements can be detected.	Agnico Eagle agrees that these data could be valuable for future analyses. Agnico Eagle looks forward to the GN's responses on whether collected geofenced collar data may be possible in the future. It's also important to note that both power analyses and sensitivity testing determined that available data are sufficient for the desired scale of analysis (also, see response to KivIA-1). Increasing location frequency of collars is therefore not required to detect effects for C38 analyses.
KivIA-18	KivIA doubts AEM's conclusion's that "addition of AWAR and/or Mine, harvest, and AWAR traffic covariates in the iSSA did not improve model fit and are therefore not likely to be significant predictors of caribou directionality and speed." (C38; p. 37).	An updated candidate set of models was developed to incorporate feedback from reviewers (Table 1). The top model for predicting caribou movement was the base habitat model from the original C38 analysis (WSP 2023a), which did not include proximity to Mine/AWAR (i.e., DistanceAWARMine covariate). Model selection results (Table 4), including Akaike Information Criterion (AIC) and ΔAIC, indicate that models with DistAWARMine (i.e., Models 9, 10, and 11) were not as well-supported as the base habitat model (i.e., Model 1). These results indicate that the inclusion of the Mine/AWAR covariate in the iSSA did not improve model fit and is therefore unlikely to be significant predictor of caribou movement.
KivIA-19	Habitat will always be a strong predictor of caribou movement. The base habitat model should not have been included in the candidate models to test the specific hypotheses (crossing, paralleling and deflection behaviors). This is because habitat as a co-variate overwhelms the responses to AWAR and mine site. To be clear, there is no need to use a model selection framework that includes the base habitat model as a candidate model when testing the specific hypotheses after accounting for the effect of "base" habitat selection.	For updated analyses the base habitat model was excluded from models testing specific hypotheses (i.e., Table 2 and Table 3). The KivIA hypothesized that habitat covariates would overwhelm the response to the Mine/AWAR; however, updated results indicate that, in the absence of habitat, other ecological factors are more predictive of caribou movement then proximity to the mine/AWAR. For example, deflection steps occur regularly irrespective of distance to the mine (Table 7) and are influenced by the combined effects of insect harassment and distance to conspecifics (Table 10).
KivIA-20	Assessing the adequacy of sample size (collar-years, steps) is essential for understanding the likelihood of detecting caribou responses to AWAR and the mine site. The reporting of sample sizes such as the annual variation in the number of collared individuals and collar-years would have been useful to include especially as there was a trend for increased number of collars until 2020. AEM did test to see if daily caribou observations from collars and ground-based surveys were correlated which suggests the telemetry data were representative of herd movements (Appendix D).	Sample sizes for updated analyses, including annual variation in the number of collar individuals and caribou-years, are presented in Appendix C. Further, power analyses and sensitivity testing were conducted to assess the adequacy of available telemetry locations for detecting significant responses to the Mine/AWAR 80% of the time, which support the C38 results and conclusions. See response to KivIA-1.
KivIA-21	The response behaviors are infrequent and their potential effects are difficult to detect unless sample size (caribou years) is large enough. This requires first assessing whether an individual has sufficient sample size of locations falling within the covariate of interest and only using those individuals with sufficient sample sizes within the full model (while also recognizing any individuals that had no exposure or perfect avoidance of the covariate). Covariates that are interacted with others do not necessarily need to be included as main effects in the model.	The sufficiency of both number of steps per caribou-year and the number of caribou-years has been assessed and supports the C38 results and conclusions (see response to comment KivIA-1 for details).
KivIA-22	AEM does raise the question of whether sample sizes were adequate as the wide 95% CI for bootstrapped population means were likely the result of low sample sizes for caribou-years and or high individual variability (Comm 38; p. 36). However, AEM does not follow-through their comment with an assessment of how sample size and individual variability affects their conclusions. AEM does not address what an adequate sample size would have to be to address intra-population variability and or how the low sample sizes have reduced the likelihood of detecting and assessing responses. Consideration should be given to whether the number of retained covariates in the habitat models could be reconsidered and reduced to increase the power to detect responses to the AWAR and mine site.	Updated methods were developed using mixed effects conditional logistic regression, where data were clustered by caribou-year to account for repeated measures and uneven sample sizes per caribou-year (see Section 2.0 for a detailed description of updated methods). Thus, bootstrapping population-level means were not required for updated analyses. Power analyses and sensitivity testing were conducted to assess the adequacy of available telemetry locations for detecting significant responses to the Mine/AWAR 80% of the time (see response to KivIA-1). Additionally, candidate models were simplified to reduce the overall number of parameters, and one additional year of data (i.e., 2023) were included in analyses.

Table 18: C38 report and addendum comments and recommendations, provided by the Kivalliq Inuit Association (KivIA), and Agnico Eagle responses

Comment ID	Comment/Recommendation	Agnico Eagle Response
KivIA-23	AEM does not discuss any effect on sample size when individuals were moving in the same group (thus movement and habitat selection could be correlated). This was raised at the TAG discussion (1-14 May 2023 TAG minutes p. p.6-7) although Golder decided not to use groups (p.10) as too complex, they have neither explored it or explained consequences of social facilitation on the analysis. At the TAG meeting there was a comment “Yes, that makes sense [the complexity], but I'm not sure how much of a solution it is. The thing to do is to see preliminary analysis and then we'd have a basis for some of these discussions.”	During the April 2023 meeting to collaboratively establish methods for C38, the TAG expressed that as little data should be dropped from analyses as possible. Rather than exclude individual caribou from analyses based on grouping behaviour, an aggregation index was developed as a covariate for updated analyses. An aggregation index was calculated in two ways. Aggregation_Min was calculated for an individual caribou based on the distance (in metres) to the closest other collared caribou, by day. Aggregation_Mean was calculated for an individual caribou based on the mean distance (in metres) to all other collared caribou, by day. See Appendix C for additional information. These aggregation indices are incorporated into the updated analyses presented herein. Aggregation was an important predictor for all step types (results are described in detail in Section 3.2.2). Caribou are more likely to cross the Mine/AWAR when they are less aggregated with other collar caribou. Caribou are also more likely to deflect when aggregated with other collared caribou is high and when mosquito index is high, suggesting that caribou may be using erratic movement (i.e., taking hard turns, or turns ≥ 60°, as is implicit in the definition of a deflection step; WSP 2023a) and aggregation with other collared caribou to manage intense mosquito harassment. Caribou were less likely to parallel when they were further from their nearest collared neighbour.
KivIA-24	The TAG’s suggestion of the likely increased sensitivity of cows with young calves led to AEM identifying which cows had calved. This appeared to reduce the collar year sample size from 630 (2014-2022) to 393 caribou-years, from 2012 to 2022 available for the basic habitat model (S. 3.2). AEM does not comment whether an alternative approach is to strengthen sample size by using the full sample size and use calving as a covariate.	To clarify, there were 630 caribou-years available to predict parturition between 2004 and 2022 (WSP 2023a). These 630 caribou-years provided estimates of parturition dates only, which were used to inform the C38 study area. A total of 393 caribou-years were available for estimating iSSA models between 2012 and 2022 (WSP 2023a); this sample size was reduced from 630 because it excluded data between 2004 and 2011, which fell outside the target temporal window for C38 analyses. Whether a caribou cow had a calf had no bearing on whether the cow was included in C38 analyses. Similarly, in the updated analyses presented herein, all caribou that were collared between 2018 and 2023 and had telemetry fixes within 15 km of the Mine/AWAR between 21 May and 22 August were included in analyses. The only exception to this was 20 caribou-years that were removed from the dataset to test the effects in the power analysis (see section 3.3 and response to KivIA-1 for details).
KivIA-25	The implications of reducing the number of used steps for the traffic/harvest (15 steps); crossing, deflection and paralleling (10 steps) candidate models is not addressed although essential for testing hypotheses with an acceptable precision. Assessing a model for habitat selection or movement with 5+ covariates and only 10 or 15 used steps is imprecise especially as the 4-hour fix rate is at most 2.5 days of monitoring.	See response to KivIA-1.
KivIA-26	The 3 caribou-years is a low sample size to derive a “population-level” estimate and to bootstrap. Also 3 caribou-years could likely be the same caribou monitored over 3 years which is not a population level estimate. Differences in sample sizes among individuals when calculating population-level estimates were not described or accounted for.	Agnico Eagle believes this comment is in reference to sample sizes presented in Table 15 of the original C38 report (WSP 2023a) for crossing steps. Note that the sample size of 3 is associated with Treatment Group 2, which represents an open AWAR. This means that a low number (i.e., 3 of 33, or 9%) of collared caribou-years were exposed to an open AWAR within the constraints of this particular analysis and even lower when considering reference caribou-years from 2018 to 2022. To increase the sample size for exposure to an open AWAR would require the AWAR to be closed less frequently. The low number of caribou-years exposed to an open AWAR supports that the timing of AWAR closure is appropriate and protective of caribou.
KivIA-27	The report does not describe the fix success rate of the collars which can influence inferences from habitat selection analyses (Frair et al. 2010). The inequality of sampling (e.g., different fix rates) is unclear as only 4-hr fix rates were used for iSSA but which is not accounted for in population models.	The mean collar fix success was > 95% for all years from 2018 and 2023 (Appendix A). Individual fix success was reported per caribou-year (Table A-1; Appendix A). Mean annual fix success was also reported (Table A-2; Appendix A). Low fix success is therefore not a concern for the C38 analyses.
KivIA-28	Annual variation is relatively high for the number of collars and is likely high for covariates such as greenness or mosquito index. But there is no description of how annual variation interacted with sample size or whether there were temporal trends which could confound the results.	See response to KivIA-20. Additionally, see Appendix B for model covariate descriptive statistics.
KivIA-29	C38 study area is the 30km buffer plus area used 21 May to 14 July. This is a huge area based on including spread of birth dates shown in Figure 1 but no actual area given in report. Possibly the study area is too large compared to 30km buffer AWAR mine site. TAG had suggested the calving area to accommodate calving area in recognition of increased responsiveness but instead ended up not being really used so why not use calving as a co-variate instead? Table 2 indicates that calf age as a co-variate was dropped but the reason is a mistaken interpretation of KivIA’s comment (see KivIA TRC 04).	In the updated analyses presented herein, all caribou that were collared between 2018 and 2023 and had telemetry fixes within 15 km of the Mine/AWAR between 21 May and 22 August were included in analyses. Thus, the spatial study area for updated analyses was effectively the 15-km buffered area around the Mine/AWAR, which represents a 1,871-km^2 area. The original C38 study area was 179,360 km^2.
KivIA-30	It is unclear why there is no metric of how well their models perform such as cross-validation. The report does not include metrics to demonstrate how well the models predict caribou habitat selection and movement.	Cross-validation has been incorporated into updated analyses. Movement behaviour models validated well. When comparing the ability of models to predict against withheld test data, mean Pearson correlations were extremely high (Table 16), which supports that the models had consistent predictions, regardless of which data were withheld. Results from k-fold cross-validation indicate that observed model agreement was consistently higher than random model agreement concordance (Table 17), which supports that the movement behaviour models were better than a random/null model at classifying used and available steps.
KivIA-31	The approach used the model with the most occurrences as a competing top model across all individual caribou-years for the population model but this does not account unequal sample sizes (e.g., of locations and/or length of monitoring period) among individuals. It is not clear why mixed effects survival models were not used?	Updated methods were developed using mixed effects conditional logistic regression (i.e., survival models), where data were clustered by caribou-year to account for repeated measures and uneven sample sizes per caribou-year (see Section 2.0 for a detailed description of updated methods).
KivIA-32	KivIA appreciates the Tables describing the covariates which were clear. However, it would be useful to have descriptive statistics with values and their sampling distribution, especially the extent of annual variability.	Descriptive statistics for covariates are provided in Appendix B.

Table 18: C38 report and addendum comments and recommendations, provided by the Kivalliq Inuit Association (KivIA), and Agnico Eagle responses

Comment ID	Comment/Recommendation	Agnico Eagle Response
KivIA-33	The Comm 38 report does not explain the differences between the Treatments 1-3 as the frequency of ATVs and vehicles is not provided. The high frequency of disturbances during the behavior monitoring indicates that during Treatment 3 (road closure), there is still traffic. Treatment 4 is in reference to such a large area compared to the Treatment 1-3 areas and has a higher sample size so that it is difficult to see how it serves as a control (Section 2.1 Telemetry Data Review). Sample sizes for each group should have been reported.	The frequency of publicly used ATVs along the AWAR is not directly monitored or managed by Agnico Eagle. Remote cameras have captured some public ATVs from 2020 to 2022, which is represents the temporal period of Treatment Group 3 (temporal period of Mine operation and traffic and public ATV traffic). This was acknowledged by Agnico Eagle during the analysis plan stage (WSP 2023c). Differences between Treatment Group 1 (public ATV traffic) and Treatment Group 3 (Mine traffic and public traffic) do not support an adverse response with the addition of Mine traffic (i.e., Treatment Group 3). Please see response to KivIA-4 regarding behaviour study. Sample sizes for each treatment group were reported in the original C38 report (WSP 2023a). Parturition predictions considered 546 caribou-years (Section 3.1; WSP 2023a). Base habitat model considered 393 caribou-years (Section 3.2; WSP 2023a). Caribou movement considered 408 caribou-years (Figure 4 caption; WSP 2023a). Population estimates with at least 20 used steps (Table 13; WSP 2023a). Harvest and traffic analysis considered 79 caribou-years (Figure 6 caption; WSP 2023a). Crossing step analysis considered 326 caribou-years (Figure 7 caption; WSP 2023a). Population estimates for crossing steps (with at least 10 used steps) considered 65 caribou-years (Table 15; WSP 2023a). Deflection step and parallel analyses both considered 326 caribou-years (Figure 9 caption and Figure 10 caption, respectively; WSP 2023a). The zone of influence analysis considered 408 caribou-years (Figure 11 caption; WSP 2023a). The reference group included 393 caribou-years (Figure 12 caption; Table 17; WSP 2023a). Table 3 (WSP 2023a) provides the temporal and spatial extent of each treatment group included in the original C38 analyses. These extents were recommendations by the TAG to meet the objectives of the analysis (WSP 2023c).
KivIA-34	Generally, habitat selection analyses provide a relative ranking of land cover types. If only one land cover type is used, then it becomes that land cover type compared to everything else). Thus, it is unclear If a land cover category is eliminated, how it becomes part of the reference category (land can't eliminate). It is not explained how the models that are developed do not account for isolating a land cover type, means it is compared to everything else lumped together.	Definitions for land cover covariates were included in Table 2 of the original C38 report (WSP 2023a).
KivIA-35	The interpretation of interaction terms is confusing. For example, given the interaction of *growing days * step length*, the main effect beta coefficient for step length is interpreted as step length when growing days are zero. But it is not really correct to say that "*The population mean for step length was negative, indicating slower movement, regardless of treatment group*".	Clearer interpretations for interaction terms are presented in the updated results.
KivIA-36	In Section 3.5. Table 14, it is unclear what "CrossStep = 1" is the reference category. If that is the case, then the coefficient for DaysVicinity*CrossingStep is when CrossingStep = 0. Covariates that are interacted with others do not necessarily need to be included as main effects in the model.	Clear reference categories are now provided for binary covariates (see Appendix B).
KivIA-37	There seems to be a general lack of results such as sample sizes, and AIC scores as well as descriptive statistics such as movement rates. The magnitude of the beta coefficients (linear regression) representing the strength of the relationship between the predictor variable and the dependent variable is useful information both as a table and also graphed but reveal a high degree of variability.	See response to KivIA-33 for sample sizes provided in the original C38 report (WSP 2023a). Based on this feedback, WSP has included more detailed sample size information in Appendix C. Further, all model selection tables include AIC scores.
KivIA-38	KivIA notes the complexity of the results given the numbers of models and their co-variates which increases difficulty in interpretation partly because of the limitations in sample size (described above). In addition, although a majority of the population does not exhibit the behaviour of interest does not mean we are not interested in the effect of those that do. For example, 70% of caribou-years may not exhibit a particular effect, but the other 30% do. This may not be a " statistically significant" effect at the population level, but it is still relevant to know what the 30% are doing. Demographic effects are untested and unknown but a minority of the population doing one behaviour still could have demographic effects at the population level. An example of the complexity is, for example, caribou within 5 km of the AWAR and/or Mine did not respond to heath-forb land cover or greenness, (beta estimates close to zero and 95% CIs that overlapped zero (Figure 8; Table 14). From (Figure 5), caribou within 5 km of the AWAR and/or Mine moved less directionally. This seems odd that although caribou did not respond to greenness. For Treatment Group 3 (Model 8 was the population model), the positive interaction term between DaysVicinity and CrossingStep indicated that caribou are more likely to cross the AWAR when they have been in the vicinity longer but, it is worth noting that this was only for 35.0% of caribou-years (Table 15). A second example of the limitations to interpreting the responses of the caribou to AWAR and the mine site is that although for paralleling steps, the base habitat model was the population model for the four treatment groups (Figure 10), it was the competing top model for only 30%, 23%, and 25% of caribou- years except for the control (Treatment 4). within Treatment Groups 1, 2, and 3, respectively. Model 1 ('Distance to AWAR and/or Mine' covariate interacted with paralleling steps (Table 9) was a top model for 6.2% of caribou-years (n = 14 caribou-years) among the three treatment groups but Beta coefficient estimates for DistAWARMine*ParallelStep were zero or had 95% CI that overlapped zero for 12 of these caribou-years and were negative for two of these caribou years.	In addition to the proportion of animals, effect magnitude, spatial extent, and duration are key components that may translate to population level changes in demography. For example, animals experiencing a high magnitude effect with a small spatial extent and short duration may not translate into changes in population demography. Even when spatial extent is larger, higher magnitudes at short duration may not be measurable at population levels. In contrast, high magnitude effects with a large spatial extent and long duration are more likely to lead to demographic changes. As discussed in the conclusions of the original C38 report (WSP 2023a), adverse effect magnitudes were not measurable nor were they strong, the spatial extent was not measurable within 10 km, and caribou spent less than 24 hours within 5 km of the Mine and AWAR.

Table 19: C38 report and addendum comments, provided by the Sayisi Dene First Nations (SDFN), and Agnico Eagle responses

Comment ID	Comment	Agnico Eagle Response
SDNDFN-1	One of the original intentions of this caribou movement analysis stems from a November 12, 2020, technical review comment from Sayisi Dene First Nation during the Waterlines Addendum Review requesting a report using the most up-to-date caribou collar data that addressed the AEM's assumption that "caribou can be expected to cross the road-waterline structure in the same manner that they cross the existing AWAR". This analysis could then be used as a baseline of caribou crossings and deflections in relation to the All Weather Access Road (AWAR) prior to waterline installation and could allow for future assessment to determine if caribou crossings and deflections change once waterlines are installed.	Agnico Eagle agrees that the C38 analysis could be used as a baseline of crossing behaviour.
SDNDFN-2	We believe that the statement in the last paragraph on page 37, in Section 4. 0 Discussion, "Several factors made estimating population-level models challenging. Few individuals within the QAM herd interact with the AWAR and/or Mine, which limited sample sizes available for testing effects of the AWAR and/or Mine on caribou movement and likely contributed to imprecise estimates (i.e., wide CIs) in population-level models" highlights the core issue with this baseline analysis; the analysis is preliminary and conclusions regarding caribou crossings, deflections or paralleling are not well-supported.	See response to KivIA-1.
SDNDFN-3	Because of these stated limitations, in our opinion the conclusions reached by AEM in this analysis are not as definitive as stated in Section 5.0 "Conclusions" and therefore, the conclusions should be considered "indeterminate, subject to further analysis refinement and/or additional data"	Agnico Eagle has provided additional lines of evidence based on verbal comments by TAG members on presentation of results (WSP 2023b) and the results in this document; both which support the conclusions of the original C38 report (WSP 2023a).
SDNDFN-4	It is well recognized that habitat is a major driver of caribou behaviour (Johnson et. al. 2021). However, the inclusion of the base habitat model with the other candidate models likely overwhelmed analysis with redundant co-variates and/or confounded the results by having similar co-variates as in candidate models.	All covariates were assessed for multicollinearity (i.e., redundancy) before selecting covariates for inclusion in candidate sets of models (see Section 2.6 Methods; WSP 2023b). No highly correlated (i.e., redundant) covariates were included in model selection approaches. These same approaches to test multicollinearity (i.e., redundancy) were also applied for updated analyses presented herein (see Appendix B for a summary of covariate correlation). Because redundant variables were omitted from analyses, they cannot confound or overwhelm the analysis. Additionally, see response to KivIA-19.
SDNDFN-5	Further analysis should be done that does not include the habitat model with other candidate models or a refinement of the covariates in the habitat model (e.g., remove "TurnAngle").	See response to KivIA -19 regarding analysis without a habitat model. Step length and turning angle are required parameters in an integrated step selection analysis (iSSA; Avgar et al. 2016). These parameters are included as model covariates because they differentiate an iSSA from a step section analysis (SSA) by relaxing the assumption that animal movement and resource selection are independent processes (Avgar et al. 2016). Use of the iSSA is a more scientifically rigorous approach than using a SSA. This was explained in the original C38 study design (Section 3.3 Modelling Approach; WSP 2023a).
SDNDFN-6	There was no assessment of how caribou collars travelling closely together (auto-correlation) may have affected results.	See response to KivIA-23.
SDNDFN-7	There was no reporting of the 4 hour fix interval success rates of collars and their possible impacts to interpretation of results. In situations of less than 15 steps being used to assess caribou crossing, paralleling or deflection, it is unknown if these were consecutive fixes or if there were missing fixes in those sequences. Missing fixes of caribou locations could alter habitat selection interpretation (Frair et. al. 2004).	See response to KivIA-27.
SDNDFN-8	It is likely that the study area was too large and diluted any effects.	The study area was delineated based on recommendations by the TAG, which was directly related to caribou ecology and the temporal scope of interactions with the Mine/AWAR (WSP 2023a). Additionally, see response to KivIA-29. The spatial study area for updated analyses was the 15-km buffered area around the Mine/AWAR, where effects of the Mine/AWAR are expected to be strongest.
SDNDFN-9	No cross-validation of models was reported and should be done in subsequent analyses	See response to KivIA-30.

Table 19: C38 report and addendum comments, provided by the Sayisi Dene First Nations (SDFN), and Agnico Eagle responses

Comment ID	Comment	Agnico Eagle Response
SDNDFN-10	We do not agree with the last sentence in the last paragraph on page 37; “While sample sizes were low or time spent near the AWAR and/or Mine was short, this also means that only a small portion of the QAM herd experience possible effects from the AWAR and/or Mine and over a short duration”. The underlined part of the sentence contradicts the statements in Appendix D, under “Key Takeaways from Assumption Test” indicating that daily collar observations and ground-based surveys are highly correlated and collared caribou are migrating through the AWAR and Mine vicinity at the same time as the Qamanirjuaq herd. Therefore, based on “Caribou Alert” ground observations in June & July 2023, which were distributed to interested parties, there were multiple large herds of caribou (e.g., 18,000 to 150,000) travelling within the vicinity of the mine and AWAR, which indicates it is not a small portion of the Qamanirjuaq caribou herd that experiences effects from the Mine/AWAR but a large portion.	Agnico Eagle disagrees with the SDNDFN’s assertion that a large proportion of the Qamanirjuaq caribou herd interacts with the Mine/AWAR as the SDNDFN did not quantify the proportion that the large caribou groups noted in their comment represent. It is possible to use regression to establish the relationship between the number of collared caribou and group sizes observed at the Mine to make predictions about what the total number of collared caribou predicts based on this relationship (and 95% prediction intervals). If a few collared caribou near the Mine are correlated (i.e., a significant regression coefficient) with large counts of caribou groups, then it is expected that the total number of collared caribou will predict an exceptionally large number of caribou. It is also anticipated that the prediction is likely to exceed the Qamanirjuaq caribou herd size estimate derived by the GN calving ground survey (Campbell et al. 2023) and show that the values the SDNDFN has concluded are a large proportion are in fact similar as the collared caribou data show. Herd sizes estimated by the GN are derived from technical surveys and collar data during calving and fall seasons (Campbell et al. 2023), which are not the same methods or at the same time that the herd interacts with the Mine/AWAR. While it is unknown how the SDNDFN made their conclusions, deriving proportions by comparing Mine caribou counts with the GN’s herd estimate is not scientifically defensible. Correlation between collared caribou and ground-based survey only mean that there is a significant association in the pattern between two independent variables. For example, as the number of collars goes up the value of ground-counts goes up. Correlation does not covey an estimate of ground-counted caribou per collared caribou. It also does not convey the accuracy or representativeness of either variable. The GN deploys collars on caribou to be representative of the herd. Doing so is very important to the GN’s management objectives, such as delineating seasonal ranges, harvesting and estimating survival rates. The total number of collared caribou are known, which allows proportion estimation based on a subset of collars and without error. Collar fixes are uploaded to satellites at specified intervals of time which permit movements across space and time to be quantified. Erroneous collar data was omitted from analyses as the original C38 report identified, so the results in the original C38 report are based on high quality data. Use of high quality data increases confidence in conclusions. Collar data evidence to date supports that less than 30% of the Qamanirjuaq caribou herd interacts with the Mine/AWAR and a typical collared caribou spends a small amount of time (~1 day) in the immediate area surrounding the Mine/AWAR. The Mine monitoring results for caribou reflect relative abundance and do not need to be accurate or precise estimates of actual caribou numbers, particularly when above 50 caribou. For the purpose of applying mitigation, it is only necessary to know if there are more than 50 caribou, which can be accurately determined. For example, when caribou groups are small it is relatively easy to count each individual even when caribou are moving. However, it is not easy to count each individual when caribou are in large groups whether static or moving, which is why large group sizes are often “guesstimated” to the nearest hundred or thousand value (e.g., 200, 1,000). In terms of proportion of the Qamanirjuaq herd, group counts are not generated using the same methods elsewhere during seasonal ranges when caribou interact with the Mine/AWAR so it is not possible to say what proportion the monitoring counts mean relative to other counts.
SDNDFN-10	The results in the deflection and paralleling analysis suffer from the same weakness as the original C38 analysis: small samples sizes likely impacted the magnitude of the effects and the wide range of variation of individual caribou (causing 95% confidence intervals to overlap zero) created uncertainty in any relationships.	See response to KivIA-1.
SDNDFN-11	We agree with the Agnico Eagle response to GN-4 in Table 1 “Analyzing deflection and paralleling steps within 1 km of the Mine and AWAR would only be possible if finer resolution data were available (e.g., at most, 1 hour fix rate collars; ideally, 30-minute fix rate collars”. (a) This statement identifies that finer resolution collar data is needed, as it then could potentially detect and help interpret caribou movements at spatial scales important for caribou mitigation. (b) We recommend that increased fix rate data collection of some existing caribou radio collars be remotely adjusted (which involves no physical handling of caribou) during a fixed period when collared caribou are near the Mine and AWAR, for fine tuned movement analysis.	The GN administers and manages collaring of caribou including the number of collars deployed and fix schedule. Agnico Eagle agrees that finer resolution collar data (i.e., shorter fix intervals) could help to infer caribou movement behaviour at finer spatial and temporal scales. However, increasing the fix rate of caribou collars is not within Agnico Eagle’s control. As well, an analysis targeting a 1-km spatial scale is smaller than the FEIS predictions of 5 km for AWAR indirect effects to caribou habitat (Golder 2014) and the 10-km extent assessed in the original C38 analysis (WSP 2023a).
SDNDFN-12	In our opinion, additional factors should be investigated to interpret and model caribou movements including weather and insect harassment.	Weather alone is not important to caribou, but weather (i.e., temperature and wind speed) is an important driver of caribou movement and habitat selection due to its effect on insect harassment. An updated candidate set of models was developed (Table 1), which included several models that test mosquito harassment. Additionally, see response to KivIA-12.

Table 20: C38 report and addendum comments, provided by the Government of Nunavut (GN), and Agnico Eagle responses

Comment ID	Comment	Recommendation	Agnico Eagle Response
GN-1	As an active participant of the Meliadine Terrestrial Advisory Group (TAG), the Government of Nunavut (GN) respectfully disagrees with statements made in Section 1.0 of the report entitled 'C38 Analyses: Addendum' (here after 'C38 Addendum'). These statements concern the record of events regarding the dissemination of the C38 Addendum and the status of C38. Section 1.0 of the C38 Addendum states: "On June 27, 2023 Agnico Eagle hosted a TAG meeting in Rankin Inlet, NU, where the results of C38 analysis were presented to the KivIA, GKD, GN, and Athabasca Denesuline Nene Land Corporation (ADNLC). The TAG members verbally provided comments at this meeting, which are summarized in Table 1. The GN committed to providing recommendations for the C38 analysis in writing; however, written recommendations from the GN were not received by Agnico Eagle at the time of this report. Many comments did not require additional analyses and were therefore integrated into the final version of the C38 analysis report distributed to TAG members on July 14, 2023 (WSP 2023b). Distribution of the final version of the report (i.e., WSP 2023b) completes the requirements of C38." The GN does not agree with Agnico Eagle's (AEM) above characterization of the record of events concerning C38. At the June 2023 TAG meeting, TAG members did not receive a digital or hard copy of the memo or draft study report. Instead, TAG members were given a PowerPoint presentation of study results only. In August 2023, AEM submitted a C38 Study Report to the NIRB. However, TAG members were not allotted the opportunity to review this report prior to submission. During the October 2023 TAG meeting, the C38 Addendum was presented. However, many TAG members had difficulty accessing materials through AEM's OneDrive due to permission restrictions. TAG members raised this issue during the meeting. Access to the OneDrive was not resolved before the conclusion of the meeting. During the January 2024 TAG meeting, and correspondence immediately after, several members expressed their intent to submit written comments on the C38 Addendum. AEM requested that TAG members submit comments on these materials by March 1, 2024. Finally, the above text in section 1.0 of the C38 Addendum states that C38 has been completed. However, the GN and several other TAG members do not agree that this commitment is completed.	The GN recommends that AEM revise the C38 Addendum, so it accurately reflects the sequence of events concerning C38. Additionally, the GN recommends that AEM revise the text within the C38 Addendum to clearly indicate that it is AEM's position that C38 is complete and that other TAG members do not share this position.	The requirements of Agnico Eagle's Commitment 38 (C38) are as follows: *Agnico Eagle will discuss the proposed recommendations with the Kivalliq Inuit Association, the Government of Nunavut, and the Sayisi Dene First Nation/Northlands Denesuline First Nations and other interested parties, as well as the Terrestrial Advisory Group, and a revision will be provided to the Kivalliq Inuit Association, the Government of Nunavut and the Sayisi Dene First Nation/Northlands Denesuline First Nations, and other interested parties of the Terrestrial Advisory Group, within six months after project approval.* *Revisions will be:* *1) A Local Study Area that reflects recent research regarding the Zone-of-Influence around northern mines and mine roads;* *2) A definition of "deflection" that takes into account the observed behaviour of caribou paralleling the road or adjusting their course away from the road at any angle of movement; and* *3) Agnico Eagle will consult with the interested parties the size of the study area, the definitions of deflection and no crossing potential (using both IQ and technical criteria and incorporating a definition that accounts for caribou paralleling the road), and incorporating other relevant variables (e.g., insect harassment and daily traffic levels).* *These revisions will be made within six months following issuance of the Project Certificate and incorporate the Terrestrial Advisory Group as may be appropriate pursuant to the Terrestrial Advisory Group Terms of Reference.* It should be noted that the revision referenced is the Waterlines Term and Condition #44 report on collared caribou interactions with the AWAR (Golder 2021) was revised (Golder 2022). There are records of TAG meeting minutes, the C38 Analysis Plan (WSP 2023c) and the C38 analysis report (WSP 2023a) that demonstrate that all the commitment elements are complete. By addressing TAG comments in in the C38 Addendum (WSP 2023b) and subsequent analysis in this document, Agnico Eagle has exceeded the requirements of C38. There is no requirement in C38 to report on whether TAG members agree that this commitment is complete.
GN-2	The GN notes that the C38 Addendum does not provide clear rationale as to how the revised definition of deflection, when compared to the original definition of deflection developed by the TAG, better describes caribou movements. In Section 2.0 of the C38 Addendum, the text states: "Deflection steps followed the same definition applied in the C38 analysis except deflection steps were assigned between subsequent four-hour steps for addendum analyses rather than a 28 hour moving window." However, the C38 Addendum does not provide any rationale or analysis to demonstrate how this revised definition of deflection better describes caribou movements relative to the original definition that was developed in conjunction with the TAG and featured in the C38 Report. Instead, Section 2.0 of the C38 Addendum says: "This change was made to better align deflection steps with what a human eye may classify as 'deflection'; when reviewing caribou movement animations (Appendix B)." As discussed during the April 2023 TAG meeting, limiting deflection steps to a comparison of two sequential steps where the turn angle is greater than 60 degrees will capture rapid deflections. However, this approach will not necessarily capture deflections that occur more gradually over a series of steps (i.e., > 2). In this latter scenario, step-to-step turn angles may be less than 60 degrees, but the combined effect of multiple steps would result in a turn greater than 60 degrees from the prevailing direction of recent movements.	The GN recommends that AEM revise the C38 Addendum to demonstrate the improved performance of the new deflection definition through additional analysis. Additionally, the GN recommends that the analyses presented in the C38 Addendum be repeated using the original definition of deflection.	The updated methods presented herein were designed to test hypotheses presented in reviewer comments, while also incorporating relevant feedback. A re-analysis of the addendum was not included as part of the updated analyses presented. However, the original definition of 'deflection' steps (i.e., from WSP 2023a,c) was adopted for the updated analyses presented herein.

Table 20: C38 report and addendum comments, provided by the Government of Nunavut (GN), and Agnico Eagle responses

Comment ID	Comment	Recommendation	Agnico Eagle Response
GN-3	In Section 2.0 of the C38 Addendum, AEM has provided a new definition of a parallel step. In this document, a parallel step occurs where $\Delta d/sl \leq 0.15$. The GN notes it is unclear how the threshold value of 0.15 was selected. Additionally, the GN notes that the C38 Addendum does not indicate if alternative thresholds were examined.	The GN recommends that AEM revise the C38 Addendum in the following ways: ▪ Provide details on how the threshold value of 0.15 was selected, such as what analyses (i.e., any analyses using alternative thresholds) were performed to arrive at this threshold. ▪ Demonstrate the effectiveness of this threshold value in describing caribou movements relative to alternative thresholds.	The true definition of a parallel step would be $\Delta d/sl = 0$ indicating no movement closer or further from the Mine or AWAR infrastructure. Instead, Agnico Eagle used a more conservative $\Delta d/sl \leq 0.15$, which allows some movement closer to or away from the Mine/AWAR infrastructure.
GN-4	In Section 2.0 of the C38 Addendum, the GN notes missing or unclear definitions regarding downstream steps and interactions with the mine and or the all-weather access road (AWAR). Section 2.0 of the C38 Addendum states that: “Downstream steps were assumed to be any steps taken once the caribou interacted with the Mine and/or AWAR until the caribou moved more than 5 km from the Project. Steps that interacted with the Mine and/or AWAR were assigned ‘crossing’ steps, which were mutually exclusive from upstream and downstream steps.” The use of the phrase “interacted with the Mine and/or AWAR” requires additional information (e.g., distance to infrastructure) to understand its meaning. Additionally, the definition provided for downstream steps is unclear. Using this definition, a caribou that approached and subsequently deflected away from the road would be classified as downstream despite the fact the caribou failed to cross and is still upstream (based on its intended direction of movement across the Project).	The GN recommends that AEM revise the C38 Addendum to clarify the meaning of the phrase “interacted with the Mine/and or Meliadine”. Additionally, the GN recommends that AEM revise the C38 Addendum to clarify the definition of downstream steps.	Crossing steps were those movement steps (i.e., movement lines between two consecutive telemetry fixes) that intersected the Mine or AWAR footprint, as determined in a GIS. For clarity, the term ‘intersected’ has been used instead of ‘interacted’ in updated analyses discussed herein. According to WSP (2023b; see Section 2.0 Methods), caribou that approached and subsequently deflected from the road are classified as approaching (i.e., upstream) until the caribou crosses the road (i.e., the linear step intersects the Mine or AWAR). Once a caribou crosses the road, subsequent steps are classified as departing (i.e., downstream) steps.
GN-5	Section 2.0 of the C38 Addendum details that the data available for the analyses presented in this document were more constrained than data used in the C38 analysis. This was primarily due to the stratification of data into approaching (upstream) and departing (downstream) and limitation to the summer period only. As such, this reduced dataset did not permit the estimation of individual models per caribou-year, as was done in the C38 Report. However, the same candidate models from the C38 Report were applied to the C38 analysis. Additionally, the GN notes the following initial concerns in the models presented in Table 2 and 3 of the C38 Addendum: - These models contain between 6-8 covariates. The data may be unable to support models of this complexity. - The Habitat model is used as a submodel in Models 1 to 8. In doing so, models 1 to 8 each contain as many as four habitat covariates and three movement covariates. This may introduce an excessive number of covariates and potential redundancy. For example, the Habitat model includes Turn Angle which is itself a component of Deflection step. It also includes step length which is part of Parallel step. The concern is that these models are too complex given the available data and that any potential effects are diluted. Ultimately, the reduced data pool available for the addendum analysis, might warrant the investigation of simpler models.	The GN recommends that the candidate model structure be discussed further with the TAG. The GN also notes that the Kivalliq Inuit Association (KivIA) commissioned a review of the C38 Report and the C38 Addendum by an independent expert on Integrated Step Selection Analyses (ISSA) and suggests that the results of this review should be considered.	See response to KivIA-15. Additionally, see response to SDNDFN-5.
GN-6	In Section 2.0 of the C38 Addendum, the GN notes concerns regarding the base habitat model with respect to the data used in it and its performance which differs with the original C38 Report. The addendum analyses utilized the same Base Habitat model developed in the C38 Report rather than developing one that was specific to the data used in the addendum. In contrast to the C38 Report, where the Base Habitat model was the top model in all the analyses performed, the Base Habitat model in the C38 Addendum was not the top model in any of the analyses and was not well supported (see Tables 4 and 6). This is an important finding that is not discussed in the C38 Addendum. Lack of support for the Base Habitat model raises a concern about its inclusion as a submodel in all the other candidate models tested (i.e., models 1 to 8). Potentially significant and relevant results may have been confounded by forcing a sub-model into all the analyses that explains little about caribou movements.	The GN recommends that the C38 Addendum analyses be repeated without the Base Habitat Model and/or with a redeveloped Base Habitat Model that is specific to the data used.	See response to KivIA-19.
GN-7	The GN notes that, as written, the C38 Addendum does not account for nonindependence of movements amongst caribou. The GN notes that, as caribou are a herd-based species there is potential for movements of individuals to be dependent on one another. However, the C38 Addendum does not address the issue of non-independence of movements amongst collared caribou such as through random effect inclusion.	The GN recommends that the C38 Addendum be revised to address the issue of non-independence of movements amongst collared caribou.	See response to KivIA-23.

Table 20: C38 report and addendum comments, provided by the Government of Nunavut (GN), and Agnico Eagle responses

Comment ID	Comment	Recommendation	Agnico Eagle Response
GN-8	As written, the GN notes that the C38 Addendum lacks analyses and/or discussion regarding sample size issues and power to detect effects. Section 4.0 of the C38 Addendum concludes that caribou exhibited similar behaviour and movement patterns when approaching and departing the project. However, the C38 Addendum does not present any discussion about sample size issues and power to detect effects. Discussion of these items is particularly important as the data used in this analysis was stratified into approaching (upstream) and departing (downstream) and limitation to the summer period only.	The GN recommends that AEM include analyses and/or discussion of sample size issues and power to detect effects into the C38 Addendum.	See responses to KivIA-1 and KivIA-22.
GN-9	The GN notes that the Addendum C38 discusses and provides analyses for deflection of caribou. However, Addendum C38 does not assess whether caribou deflection has exceeded the action threshold recommended by the TAG. In the currently approved Meliadine Terrestrial Environmental Management and Monitoring Plan (TEMMP V4), section 4.2 Action Thresholds states the following: “The following action thresholds are suggested as a starting point for adaptive management and TEMMP Refinement… A threshold of no more than 10% deflection of caribou groups has been suggested as a possible measure of indirect habitat loss.” The GN notes that the C38 Addendum does not assess whether this threshold has been exceeded.	The GN recommends that the C38 Addendum assess whether this threshold has been exceeded.	Caribou deflection was assessed individually, by caribou-year, and is presented in Appendix D. A total of 1% of collared caribou exhibited an increase in deflection close to the Mine/AWAR. This percentage is well below the action threshold of 10%.

5.0 CONCLUSIONS

Agnico Eagle presents additional analyses to address written comments and questions regarding the C38 analyses (WSP 2023a) and addendum (WSP 2023b). The concerns expressed in reviewer comments (Section 4.0) fell into several broad categories including model complexity, the inclusion of ecologically relevant predictors (i.e., mosquito harassment, and social measures), sample size concerns, and model validation.

The results presented herein address these concerns and elucidate the strength of many of the mechanisms that drive caribou movement behavior. For example, as suggested by some reviewers, mosquito harassment and social interaction patterns (i.e., aggregation) predicted deflection movements. This analysis found that when insect harassment levels were high, caribou that are far from conspecifics were much more likely to deflect, while those that were near others did not deflect. Deflection steps, however, were not related to proximity to the Mine/AWAR and occurred at both distances near and far from the Mine/AWAR. Additionally, the number of individuals that are more likely to deflect near the AWAR/Mine footprint was only 1% (Appendix D). Such analyses support the findings from the original C38 report that ecological and biotic factors (e.g., habitat/foraging decisions [WSP 2023a] and insect harassment [analyses presented herein]) are the primary drivers of caribou movement.

In contrast to deflection steps, learning/habituation does appear to influence crossing and parallel steps. The presented analyses found that cumulative number of interactions with the Mine footprint increased the likelihood of crossing steps and decreased the likelihood of parallel steps (Section 3.2.2). This suggests that general mechanisms that influence caribou behavior broadly, also influence responses to the Mine.

There were a number of written questions related to sample size and validation. The presented analysis addresses these concerns by increasing the raw data available for analyses, decreasing model complexity, performing a power analysis, a sensitivity analysis, and two forms of model validation. All tested models validated well, and the additional analyses confirmed that the sample size was sufficient to detect the effects at question scales.

Although the models presented herein address the majority of the written comments, it was not possible to address all of them. Some suggested predictors of interest continue to be data deficient and/or highly correlated and could not be included in these analyses. To address this gap, more fine scale data collection would be required.

As stated by one commentor, caribou face complex decisions that inevitably result in trade offs between foraging and movement. The results presented herein suggest that immediate biological factors such as mosquito harassment and foraging are the primary drivers of these decisions. As such, changes in movement patterns appear to be common and generally adaptive in response to natural factors. In contrast to immediate challenges such as foraging and insect harassment, more static features such as the Mine footprint appear to have, at most, a negligeable impact on caribou movement. The results of the C38 report, addendum and contained herein, support that the measured effects are less than predicted in the 2014 FEIS (Golder 2014) and the 2014 FEIS conclusions that the Mine is not likely to decrease resilience and increase the risk to population maintenance and opportunities for traditional and non-traditional use.

6.0 CLOSURE

We trust the above meets your present requirements. If you have any questions or require additional information, please do not hesitate to contact the undersigned.

Your truly,

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Attachments: Appendix A - Collar Fix Success
Appendix B - Model Covariates
Appendix C – Sample Sizes
Appendix D - Proportion of Caribou Deflecting Near Mine/AWAR

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APPENDIX A

Collar Fix Success

Table A-1: Telemetry collar fix success for caribou-years included in modelling, between 21 May and 22 August each year. Seven caribou-years (i.e., 3% of caribou-years) had fix success < 90% and are shaded and bolded, below.

Caribou-Year	Fix Success (%)
BL201706-2018	100.00
BL201706-2019	99.47
BL201706-2020	100.00
BL2018001-2018	97.67
BL2018007-2018	96.44
BL2018007-2020	99.52
BL2018032-2018	99.47
BL2018038-2018	99.47
BL2018038-2019	97.87
BL2018038-2020	98.81
BL2018043-2018	100.00
BL2018043-2019	100.00
BL2018043-2021	99.21
BL2018043-2022	90.94
BL2018050-2018	100.00
BL2018050-2019	99.29
QM0010422-2023	97.69
QM0020422-2022	98.80
QM0020422-2023	96.99
QM0030422-2022	99.33
QM0030422-2023	96.45
QM0040422-2022	**88.02**
QM0050422-2022	99.26
QM0060422-2022	100.00
QM0060422-2023	99.11
QM0070422-2023	96.57
QM0080422-2022	100.00
QM0080422-2023	98.22
QM0090422-2022	99.40
QM0100422-2023	97.65
QM0110422-2023	98.58
QM0120422-2022	99.33
QM0130422-2022	100.00
QM0130422-2023	95.91
QM0140422-2023	98.05
QM0150422-2022	100.00
QM0160422-2023	99.64
QM0170422-2022	97.79
QM0170422-2023	96.98
QM0180422-2022	99.30
QM0180422-2023	98.76
QM0190422-2023	99.07
QM0200422-2022	95.87
QM0210422-2022	99.25

Table A-1: Telemetry collar fix success for caribou-years included in modelling, between 21 May and 22 August each year. Seven caribou-years (i.e., 3% of caribou-years) had fix success < 90% and are shaded and bolded, below.

Caribou-Year	Fix Success (%)
QM0210422-2023	**78.86**
QM0240422-2022	96.96
QM0240422-2023	94.67
QM0250422-2022	97.02
QM0250422-2023	96.45
QM0260422-2022	100.00
QM0270422-2022	98.57
QM0270422-2023	98.58
QM1500415-2018	100.00
QM1510415-2018	100.00
QM1510415-2019	100.00
QM1520415-2018	**89.17**
QM1520415-2019	94.39
QM1530415-2019	100.00
QM1540415-2018	97.46
QM1580415-2018	100.00
QM1580415-2019	97.66
QM1600415-2018	100.00
QM1600415-2019	100.00
QM1640415-2018	100.00
QM1640415-2019	99.53
QM1660415-2018	100.00
QM1660415-2019	100.00
QM1690415-2018	99.64
QM1720416-2018	100.00
QM1730416-2018	100.00
QM1740416-2019	100.00
QM1740416-2020	95.79
QM1750416-2018	100.00
QM1750416-2019	99.64
QM1760416-2018	100.00
QM1760416-2019	100.00
QM1760416-2020	**35.05**
QM1780416-2018	99.64
QM1820416-2018	98.58
QM1820416-2019	100.00
QM1860416-2018	100.00
QM1860416-2019	100.00
QM1900416-2018	100.00
QM1900416-2019	100.00
QM1900416-2020	100.00
QM1910417-2018	100.00
QM1910417-2019	99.64
QM1920417-2019	99.47

Table A-1: Telemetry collar fix success for caribou-years included in modelling, between 21 May and 22 August each year. Seven caribou-years (i.e., 3% of caribou-years) had fix success < 90% and are shaded and bolded, below.

Caribou-Year	Fix Success (%)
QM1920417-2020	99.29
QM1930417-2018	100.00
QM1930417-2019	100.00
QM1940417-2018	99.61
QM1940417-2019	100.00
QM1940417-2020	100.00
QM1950417-2018	100.00
QM1950417-2019	99.29
QM1950417-2021	100.00
QM1960417-2018	98.93
QM1970417-2018	100.00
QM1980417-2018	98.95
QM1990417-2018	98.85
QM1990417-2019	99.29
QM1990417-2020	93.25
QM1990417-2021	100.00
QM2000417-2018	100.00
QM2000417-2019	100.00
QM2000417-2020	100.00
QM2000417-2021	100.00
QM2010417-2018	99.47
QM2010417-2019	99.64
QM2020417-2018	98.93
QM2020417-2019	100.00
QM2020417-2021	99.11
QM2030417-2018	99.29
QM2040417-2018	100.00
QM2040417-2019	97.16
QM2040417-2020	99.60
QM2050417-2018	100.00
QM2050417-2019	99.64
QM2070417-2018	100.00
QM2070417-2019	99.64
QM2070417-2020	99.64
QM2070417-2021	100.00
QM2080417-2018	100.00
QM2080417-2019	98.58
QM2080417-2021	99.02
QM2100417-2018	99.64
QM2100417-2019	99.64
QM2110417-2018	99.47
QM2120417-2018	100.00
QM2120417-2019	96.63
QM2120417-2020	**89.70**

Table A-1: Telemetry collar fix success for caribou-years included in modelling, between 21 May and 22 August each year. Seven caribou-years (i.e., 3% of caribou-years) had fix success < 90% and are shaded and bolded, below.

Caribou-Year	Fix Success (%)
QM2180417-2019	99.47
QM2200417-2018	100.00
QM2210417-2018	99.64
QM2210417-2019	100.00
QM2220417-2018	98.74
QM2230417-2018	99.82
QM2240417-2018	99.60
UK2018022-2019	100.00
UK2018023-2019	96.27
UK2018023-2020	99.64
UK2018025-2019	98.40
UK2018026-2019	98.22
UK2018026-2021	98.04
UK2018026-2023	98.94
UK2018028-2019	97.87
UK2018028-2020	100.00
UK2018029-2020	99.64
UK2018030-2019	99.47
UK2018031-2019	99.47
UK2018031-2021	99.64
UK2018031-2023	**82.06**
UK2018033-2019	97.87
UK2018033-2020	96.98
UK2018033-2021	98.58
UK2018033-2023	97.34
UK2018034-2019	99.40
UK2018037-2019	97.87
UK2018039-2019	97.16
UK2018039-2020	98.93
UK2018039-2022	98.40
UK2018040-2019	99.47
UK2018041-2019	97.34
UK2018041-2022	97.17
UK2018041-2023	98.15
UK2018042-2019	96.80
UK2018042-2020	**85.97**
UK2018042-2021	97.87
UK2018042-2022	97.87
UK2018042-2023	98.05
UK2018044-2019	98.05
UK2018045-2020	97.34
UK2018045-2021	96.63
UK2018045-2023	98.22
UK2018046-2019	95.26

Table A-1: Telemetry collar fix success for caribou-years included in modelling, between 21 May and 22 August each year. Seven caribou-years (i.e., 3% of caribou-years) had fix success < 90% and are shaded and bolded, below.

Caribou-Year	Fix Success (%)
UK2018046-2020	99.64
UK2018046-2021	98.17
UK2018046-2023	94.85
UK2018047-2019	98.58
UK2018047-2021	99.64
UK2018049-2019	96.80
UK2018049-2020	99.64
UK2018049-2021	97.45
UK2018049-2022	98.85
UK2018053-2019	97.69
UK2018053-2020	99.64
UK2018053-2021	97.07
UK2018055-2019	98.40
UK2018055-2021	100.00
UK2019001-2019	97.87
UK2019001-2020	98.05
UK2019001-2021	98.93
UK2019001-2022	99.29
UK2019001-2023	97.87
UK2019004-2019	95.34
UK2019007-2019	99.47
UK2019007-2020	99.27
UK2019007-2021	99.29
UK2019007-2023	98.58
UK2019009-2020	98.76
UK2019009-2021	98.06
UK2019010-2019	98.40
UK2019010-2020	99.64
UK2019013-2019	96.27
UK2019017-2019	98.22
UK2019017-2021	98.22
UK2019017-2022	98.22
UK2019017-2023	97.51
UK2019018-2019	99.47
UK2019018-2020	97.34

Table A-2: Mean telemetry collar fix success by year, including *n* (sample size of caribou-years per year) and SD (standard deviation). The mean overall fix success for caribou-years included in the analyses was

Year	Mean Fix Success (%)	*n* Caribou-Years	SD
2018	99.34	48	1.68
2019	98.71	61	1.40
2020	95.76	28	12.34
2021	98.81	21	1.04
2022	97.99	25	2.82
2023	96.42	28	4.69

APPENDIX B

Model Covariates

Table B-1: Covariates developed for updated analyses.

Covariate	Covariate Code	Source	Brief Description and/or Definition	Expected Relationship with Caribou
Aggregation index	Aggregation_Min	■ Telemetry data	■ Aggregation index to represent proximity of one collared caribou to the nearest other collared caribou. ■ For an individual caribou within a day, the distance to the closest other collared caribou (in metres) was calculated.	■ The presence of other caribou may facilitate interaction with the Mine/AWAR. ■ Caribou may aggregate into groups when mosquito harassment is high.
	Aggregation_Mean	■ Telemetry data	■ Aggregation index to represent proximity of one collared caribou to all other collared caribou. ■ For an individual caribou within a day, the mean distance to all other collared caribou (in metres) was calculated.	
Binned distance to AWAR/Mine	DistanceAWARMine_Bin	■ Mine footprint	■ Categorical binned version of the 'DistanceAWARMine' covariate. ■ Distances ≥ 5 km from the Mine/AWAR were considered 'far' (i.e., coded as '1') and distances < 5 km were considered 'near' (i.e., coded as '0'). ■ 5 km cut-off was informed by TAG's previous recommendations that caribou respond to Mine/AWAR within 5 km of footprints (WSP 2023a, 2023c).	■ 5 km may represent distance threshold where caribou response to Mine/AWAR changes, resulting in changes in caribou movement behaviours.
Decay-transformed distance to AWAR/Mine	DistanceAWARMine_Decay	■ Mine footprint	■ Exponential decay-transformed version of the 'DistanceAWARMine' covariate. ■ Decay-transformation allows the influence of the Mine/AWAR to decay exponentially as distance from Mine/AWAR increases to an asymptote at approximately 1.5 km (i.e., the effect of the Mine/AWAR remains equally negligible with increasing distance > 1.5 km). ■ 1.5 km was selected to test alternative hypothesis for where effect of Mine/AWAR is most impactful on caribou movement behaviours. ■ The decay transformation is calculated using $e^{-\alpha d}$ where d was the distance in metres to the Mine/AWAR and where α was set at 0.002 (Nielsen et al. 2009; Prokopenko et al. 2017).	■ The influence of the Mine/AWAR on caribou movement behaviour may decrease as distance from Mine/AWAR increases, up to 1.5 km where the effect of the Mine/AWAR may become negligible.
Previous interactions with Mine/AWAR	PreviousInteractions	■ Telemetry data ■ Mine footprint	■ Represents learning/memory. ■ Calculated as cumulative number of intersections (i.e., interactions) with Mine/AWAR, per caribou.	■ Caribou that have been more exposed to the Mine/AWAR may be more likely to cross the Mine/AWAR and less likely to deflect from or parallel the Mine/AWAR.

(a) AWAR = All-weather Access Road.

Table B-2: Descriptive statistics for model covariates used in updated analyses.

Model Covariate(a)	Descriptive Statistic(b)	Year						Overall(b)
		2018	2019	2020	2021	2022	2023	
Aggregation_Mean	Minimum	30,943.90	28,744.37	60,016.78	31,641.20	34,498.60	9,447.29	9,447.29
	Maximum	230,660.71	183,316.86	126,684.79	164,912.98	173,319.14	144,289.32	230,660.71
	Mean	46,975.03	39,091.70	71,475.96	50,257.55	74,869.84	30,037.01	47,642.73
	Standard Deviation	28,094.66	14,471.46	9,940.58	24,264.28	28,589.21	19,081.28	27,034.56
Aggregation_Min	Minimum	27.62	85.11	33.71	216.63	22.01	81.08	22.01
	Maximum	31,776.63	97,362.58	36,633.69	53,091.39	41,720.83	12,359.35	97,362.58
	Mean	2,669.04	2,922.14	4,517.50	6,335.96	3,385.30	1,939.84	3,113.77
	Standard Deviation	4,958.24	7,904.64	5,585.68	8,694.66	5,392.99	2,110.07	5,932.69
DistanceAWARMine	Minimum	0.00	25.00	90.14	654.31	0.00	0.00	0.00
	Maximum	26,191.66	22,870.75	23,042.58	21,830.73	29,533.30	25,336.86	29,533.30
	Mean	8,872.84	10,281.00	9,421.17	10,296.83	9,984.50	9,576.81	9,676.10
	Standard Deviation	5,089.94	4,215.56	5,875.35	4,407.50	5,143.09	4,526.38	4,835.27
Graminoid	Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Maximum	0.99	0.85	0.94	1.00	0.97	1.00	1.00
	Mean	0.10	0.05	0.12	0.09	0.10	0.10	0.09
	Standard Deviation	0.18	0.11	0.19	0.17	0.17	0.18	0.16
Greenness	Minimum	-0.08	0.02	0.04	0.05	-0.09	0.12	-0.09
	Maximum	0.70	0.74	0.70	0.66	0.74	0.68	0.74
	Mean	0.43	0.45	0.46	0.51	0.44	0.51	0.46
	Standard Deviation	0.08	0.08	0.10	0.07	0.09	0.06	0.09
GrowingDays	Minimum	27.00	23.00	21.00	1.00	19.00	13.00	1.00
	Maximum	55.00	48.00	39.00	52.00	52.00	59.00	59.00
	Mean	35.69	28.22	29.13	28.74	36.48	36.18	33.09
	Standard Deviation	4.89	4.04	4.54	8.54	10.71	9.24	8.16
HeathForb	Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Maximum	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Mean	0.42	0.58	0.43	0.50	0.44	0.48	0.48
	Standard Deviation	0.33	0.30	0.32	0.31	0.33	0.32	0.32
Lake	Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Maximum	0.87	1.00	0.99	0.94	1.00	0.96	1.00
	Mean	0.13	0.14	0.16	0.14	0.13	0.14	0.14
	Standard Deviation	0.18	0.17	0.19	0.17	0.17	0.17	0.18
Lichen	Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Maximum	0.92	0.93	0.81	0.77	0.87	0.95	0.95
	Mean	0.09	0.08	0.08	0.11	0.10	0.10	0.09
	Standard Deviation	0.15	0.14	0.14	0.16	0.17	0.15	0.15

Table B-2: Descriptive statistics for model covariates used in updated analyses.

Model Covariate(a)	Descriptive Statistic(b)	Year						Overall(b)
		2018	2019	2020	2021	2022	2023	
MosquitoIndex	Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Maximum	0.41	0.39	0.56	0.10	0.80	0.17	0.80
	Mean	0.01	0.01	0.02	0.00	0.04	0.01	0.01
	Standard Deviation	0.05	0.04	0.06	0.01	0.15	0.03	0.07
NonVegetated	Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Maximum	0.69	0.58	0.59	0.56	0.61	0.47	0.69
	Mean	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	Standard Deviation	0.05	0.06	0.04	0.05	0.06	0.05	0.05
Shrub	Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Maximum	0.40	0.11	0.08	0.13	0.25	0.25	0.40
	Mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Standard Deviation	0.01	0.00	0.00	0.01	0.01	0.01	0.01
StepLength	Minimum	3.02	2.14	1.87	1.32	2.09	1.09	1.09
	Maximum	10.05	9.78	10.14	9.89	9.98	10.00	10.14
	Mean	7.97	7.39	7.80	7.26	7.74	7.26	7.57
	Standard Deviation	0.86	1.07	0.99	1.23	0.93	1.18	1.08
TurnAngle	Minimum	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00
	Maximum	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Mean	0.55	0.54	0.56	0.58	0.59	0.51	0.55
	Standard Deviation	0.58	0.60	0.55	0.55	0.55	0.62	0.58

(a) Model covariates are measured in the following units: Aggregation_Mean, Aggregation_Min; DistanceAWARMine = metres; Graminoid, HeathForb, Lake, Lichen, NonVegetated, Shrub = unitless proportion; Greenness = unitless index; GrowingDays = days; MosquitoIndex = unitless index; StepLength = unitless (note: this covariate is natural logarithm of step length); TurnAngle = unitless (note: this covariate is cosine of turning angle). Note that DistanceAWARMine_Decay is calculated from DistanceAWARMine and was therefore not included in the table. PreviousInteractions is calculated by caribou (not by year) and was therefore not included in the table.

(b) 'Minimum' is the minimum annual value; 'maximum' is the maximum annual value; 'mean' is the intra-annual average (i.e., within year); 'standard deviation' is calculated intra-annually (i.e., within year). 'Overall' represents the overall minimum, maximum, mean, and standard deviation values, calculated using 2018–2023 data.

Table B-3: Correlation coefficients (*r*) between pairs of spatial covariates considered in integrated step selection analyses (iSSA). Highly correlated covariates ($r \geq 0.70$) are bolded and shaded grey.

Model Covariates	Model Covariates													
	GrowingDays	DistanceAWARMine	Graminoid	HeathForb	Lichen	NonVegetated	Shrub	Lake	Greenness	Aggregation_Min	Aggregation_Mean	DistanceAWARMine_Decay	StepLength	TurnAngle
MosquitoIndex	0.13	-0.02	-0.01	0.00	-0.02	0.00	-0.01	0.00	-0.02	0.00	0.16	-0.02	0.00	0.00
GrowingDays		-0.20	0.12	-0.13	-0.02	-0.06	0.02	-0.08	0.00	0.14	0.55	-0.20	0.03	0.01
DistanceAWARMine			-0.05	0.04	0.09	0.12	0.01	0.02	0.01	0.02	-0.04	**1.00**[(a)]	0.05	0.00
Graminoid				-0.09	0.00	-0.04	0.04	-0.22	0.16	-0.02	0.03	-0.05	0.00	-0.01
HeathForb					-0.16	-0.09	-0.01	-0.41	0.45	0.01	-0.05	0.04	-0.06	-0.05
Lichen						0.15	-0.01	-0.21	0.11	-0.01	-0.01	0.09	0.00	0.00
NonVegetated							-0.01	-0.08	-0.03	-0.01	-0.02	0.12	0.01	0.01
Shrub								-0.02	0.02	-0.01	0.01	0.01	0.00	-0.01
Lake									-0.64	0.03	0.00	0.02	0.06	0.05
Greenness										-0.02	-0.10	0.01	-0.07	-0.05
Aggregation_Min											0.40	0.02	0.00	0.00
Aggregation_Mean												-0.04	0.03	0.01
DistanceAWARMine_Decay													0.05	0.00
StepLength														0.06

(a) DistanceAWARMine and DistanceAWARMine_Decay model covariates were not considered in the same model due to their perfect correlation.

APPENDIX C

Sample Sizes

General Summary

- Telemetry data from 107 caribou were included in updated analyses, resulting in 211 caribou-years between 2018 and 2023.
- The mean number of caribou-years per year was 35 (SD = 14 caribou-years).
- The minimum number of steps for an individual, when combined across years, was 2 steps. The maximum number of steps for an individual, when combined across years, was 189 steps. On average, 61.9 used steps (SD = 40.5 used steps) were acquired per caribou.
- The minimum number of steps for a caribou-year was 2 steps. The maximum number of steps for a caribou-year was 99 steps. On average, each caribou-year had 31.4 used steps (SD = 20.0 used steps).
- A total of 68,617 steps (i.e., 6,618 used and 61,999 available) were included in iSSA (Table C-1).
- A total of 2,284, 677, and 216 deflection, parallel, and crossing steps were identified, respectively, among the 6,618 used steps (Table C-2).

Table C-1: Summary of used and available steps available for updated analyses per caribou and year.

Caribou Identifier	Year	Sample Size of Steps		
		Available	Used	Total
BL201706	2018	427	46	473
BL201706	2019	358	36	394
BL201706	2020	467	49	516
BL2018001	2018	212	24	236
BL2018007	2018	164	18	182
BL2018007	2020	400	41	441
BL2018032	2018	50	6	56
BL2018038	2018	406	44	450
BL2018038	2019	523	54	577
BL2018038	2020	396	43	439
BL2018043	2018	487	54	541
BL2018043	2019	36	5	41
BL2018043	2021	32	4	36
BL2018043	2022	186	21	207
BL2018050	2018	340	39	379
BL2018050	2019	54	7	61
QM0010422	2023	693	72	765
QM0020422	2022	303	33	336
QM0020422	2023	446	48	494
QM0030422	2022	239	26	265
QM0030422	2023	588	61	649
QM0040422	2022	180	19	199
QM0050422	2022	759	83	842

Table C-1: Summary of used and available steps available for updated analyses per caribou and year.

Caribou Identifier	Year	Sample Size of Steps		
		Available	Used	Total
QM0060422	2022	467	50	517
QM0060422	2023	627	65	692
QM0070422	2023	369	40	409
QM0080422	2022	285	31	316
QM0080422	2023	525	55	580
QM0090422	2022	362	39	401
QM0100422	2023	264	28	292
QM0110422	2023	277	29	306
QM0120422	2022	484	51	535
QM0130422	2022	437	45	482
QM0130422	2023	480	50	530
QM0140422	2023	489	50	539
QM0150422	2022	320	34	354
QM0160422	2023	416	44	460
QM0170422	2022	281	30	311
QM0170422	2023	501	55	556
QM0180422	2022	552	60	612
QM0180422	2023	446	46	492
QM0190422	2023	403	43	446
QM0200422	2022	461	49	510
QM0210422	2022	475	50	525
QM0210422	2023	322	34	356
QM0240422	2022	140	18	158
QM0240422	2023	491	52	543
QM0250422	2022	160	19	179
QM0250422	2023	491	52	543
QM0260422	2022	116	16	132
QM0270422	2022	229	24	253
QM0270422	2023	930	99	1029
QM1500415	2018	349	38	387
QM1510415	2018	246	27	273
QM1510415	2019	129	13	142
QM1520415	2018	117	16	133
QM1520415	2019	75	7	82
QM1530415	2019	332	34	366
QM1540415	2018	169	18	187
QM1580415	2018	219	24	243
QM1580415	2019	228	24	252

Table C-1: Summary of used and available steps available for updated analyses per caribou and year.

Caribou Identifier	Year	Sample Size of Steps		
		Available	Used	Total
QM1600415	2018	299	32	331
QM1600415	2019	140	16	156
QM1640415	2018	537	56	593
QM1640415	2019	269	28	297
QM1660415	2018	301	31	332
QM1660415	2019	493	52	545
QM1690415	2018	390	43	433
QM1720416	2018	221	25	246
QM1730416	2018	386	41	427
QM1740416	2019	887	90	977
QM1740416	2020	77	8	85
QM1750416	2018	559	58	617
QM1750416	2019	256	26	282
QM1760416	2018	447	47	494
QM1760416	2019	349	35	384
QM1760416	2020	67	7	74
QM1780416	2018	70	8	78
QM1820416	2018	66	8	74
QM1820416	2019	191	20	211
QM1860416	2018	43	5	48
QM1860416	2019	215	22	237
QM1900416	2018	370	39	409
QM1900416	2019	388	39	427
QM1900416	2020	131	17	148
QM1910417	2018	305	32	337
QM1910417	2019	119	12	131
QM1920417	2019	530	55	585
QM1920417	2020	396	43	439
QM1930417	2018	314	37	351
QM1930417	2019	105	12	117
QM1940417	2018	120	13	133
QM1940417	2019	163	17	180
QM1940417	2020	137	15	152
QM1950417	2018	161	19	180
QM1950417	2019	91	11	102
QM1950417	2021	364	38	402
QM1960417	2018	435	47	482
QM1970417	2018	288	32	320

Table C-1: Summary of used and available steps available for updated analyses per caribou and year.

Caribou Identifier	Year	Sample Size of Steps		
		Available	Used	Total
QM1980417	2018	503	54	557
QM1990417	2018	189	21	210
QM1990417	2019	322	34	356
QM1990417	2020	91	11	102
QM1990417	2021	86	9	95
QM2000417	2018	467	50	517
QM2000417	2019	346	36	382
QM2000417	2020	55	7	62
QM2000417	2021	241	25	266
QM2010417	2018	68	8	76
QM2010417	2019	287	29	316
QM2020417	2018	520	54	574
QM2020417	2019	135	14	149
QM2020417	2021	17	3	20
QM2030417	2018	153	19	172
QM2040417	2018	61	7	68
QM2040417	2019	267	27	294
QM2040417	2020	109	11	120
QM2050417	2018	453	47	500
QM2050417	2019	221	24	245
QM2070417	2018	50	6	56
QM2070417	2019	35	4	39
QM2070417	2020	254	27	281
QM2070417	2021	186	20	206
QM2080417	2018	705	74	779
QM2080417	2019	288	30	318
QM2080417	2021	49	8	57
QM2100417	2018	10	2	12
QM2100417	2019	103	11	114
QM2110417	2018	444	48	492
QM2120417	2018	422	44	466
QM2120417	2019	146	15	161
QM2120417	2020	70	8	78
QM2180417	2019	79	8	87
QM2200417	2018	180	20	200
QM2210417	2018	552	60	612
QM2210417	2019	321	34	355
QM2220417	2018	213	22	235

Table C-1: Summary of used and available steps available for updated analyses per caribou and year.

Caribou Identifier	Year	Sample Size of Steps		
		Available	Used	Total
QM2230417	2018	323	33	356
QM2240417	2018	345	37	382
UK2018022	2019	18	2	20
UK2018023	2019	268	28	296
UK2018023	2020	10	2	12
UK2018025	2019	138	15	153
UK2018026	2019	269	28	297
UK2018026	2021	87	12	99
UK2018026	2023	550	59	609
UK2018028	2019	675	69	744
UK2018028	2020	164	19	183
UK2018029	2020	174	19	193
UK2018030	2019	87	9	96
UK2018031	2019	265	28	293
UK2018031	2021	129	15	144
UK2018031	2023	463	48	511
UK2018033	2019	102	11	113
UK2018033	2020	303	32	335
UK2018033	2021	568	61	629
UK2018033	2023	619	66	685
UK2018034	2019	46	5	51
UK2018037	2019	184	19	203
UK2018039	2019	225	25	250
UK2018039	2020	10	2	12
UK2018039	2022	625	65	690
UK2018040	2019	117	12	129
UK2018041	2019	345	37	382
UK2018041	2022	306	32	338
UK2018041	2023	776	82	858
UK2018042	2019	93	10	103
UK2018042	2020	105	19	124
UK2018042	2021	102	11	113
UK2018042	2022	201	21	222
UK2018042	2023	530	56	586
UK2018044	2019	310	32	342
UK2018045	2020	120	15	135
UK2018045	2021	25	3	28
UK2018045	2023	688	70	758

Table C-1: Summary of used and available steps available for updated analyses per caribou and year.

Caribou Identifier	Year	Sample Size of Steps		
		Available	Used	Total
UK2018046	2019	272	28	300
UK2018046	2020	324	33	357
UK2018046	2021	21	4	25
UK2018046	2023	610	66	676
UK2018047	2019	281	29	310
UK2018047	2021	551	57	608
UK2018049	2019	115	14	129
UK2018049	2020	37	4	41
UK2018049	2021	67	10	77
UK2018049	2022	286	32	318
UK2018053	2019	199	21	220
UK2018053	2020	16	2	18
UK2018053	2021	260	28	288
UK2018055	2019	320	33	353
UK2018055	2021	153	17	170
UK2019001	2019	95	10	105
UK2019001	2020	52	8	60
UK2019001	2021	568	59	627
UK2019001	2022	342	36	378
UK2019001	2023	722	76	798
UK2019004	2019	130	14	144
UK2019007	2019	548	55	603
UK2019007	2020	247	28	275
UK2019007	2021	423	44	467
UK2019007	2023	399	44	443
UK2019009	2020	472	49	521
UK2019009	2021	696	73	769
UK2019010	2019	222	23	245
UK2019010	2020	355	37	392
UK2019013	2019	211	22	233
UK2019017	2019	115	12	127
UK2019017	2021	279	27	306
UK2019017	2022	579	61	640
UK2019017	2023	388	40	428
UK2019018	2019	310	34	344
UK2019018	2020	181	20	201
Total		**61999**	**6618**	**68617**

Table C-2: Number of deflection, parallel, and crossing and proportion of used steps identified as deflection, parallel, and crossing per caribou and year.

Caribou Identifier	Year	Total Used Steps	Number of Steps			Proportion of Used Steps(a)		
			Deflection	Parallel	Crossing	Deflection	Parallel	Crossing
BL201706	2018	46	19	3	1	0.41	0.07	0.02
BL201706	2019	36	16	6	0	0.44	0.17	0.00
BL201706	2020	49	15	7	1	0.31	0.14	0.02
BL2018001	2018	24	10	3	1	0.42	0.13	0.04
BL2018007	2018	18	7	2	3	0.39	0.11	0.17
BL2018007	2020	41	12	5	1	0.29	0.12	0.02
BL2018032	2018	6	0	0	1	0.00	0.00	0.17
BL2018038	2018	44	19	5	1	0.43	0.11	0.02
BL2018038	2019	54	21	7	3	0.39	0.13	0.06
BL2018038	2020	43	17	5	1	0.40	0.12	0.02
BL2018043	2018	54	19	6	2	0.35	0.11	0.04
BL2018043	2019	5	1	0	0	0.20	0.00	0.00
BL2018043	2021	4	1	0	0	0.25	0.00	0.00
BL2018043	2022	21	5	3	0	0.24	0.14	0.00
BL2018050	2018	39	13	2	5	0.33	0.05	0.13
BL2018050	2019	7	2	1	0	0.29	0.14	0.00
QM0010422	2023	72	29	11	2	0.40	0.15	0.03
QM0020422	2022	33	7	8	0	0.21	0.24	0.00
QM0020422	2023	48	19	2	3	0.40	0.04	0.06
QM0030422	2022	26	8	3	1	0.31	0.12	0.04
QM0030422	2023	61	21	4	2	0.34	0.07	0.03
QM0040422	2022	19	8	3	1	0.42	0.16	0.05
QM0050422	2022	83	28	4	5	0.34	0.05	0.06
QM0060422	2022	50	20	6	1	0.40	0.12	0.02
QM0060422	2023	65	24	7	2	0.37	0.11	0.03
QM0070422	2023	40	10	3	2	0.25	0.08	0.05
QM0080422	2022	31	11	2	1	0.35	0.06	0.03
QM0080422	2023	55	23	6	2	0.42	0.11	0.04
QM0090422	2022	39	14	5	1	0.36	0.13	0.03
QM0100422	2023	28	15	2	0	0.54	0.07	0.00
QM0110422	2023	29	10	3	0	0.34	0.10	0.00
QM0120422	2022	51	11	9	1	0.22	0.18	0.02
QM0130422	2022	45	10	3	3	0.22	0.07	0.07
QM0130422	2023	50	18	5	4	0.36	0.10	0.08
QM0140422	2023	50	20	5	1	0.40	0.10	0.02
QM0150422	2022	34	8	4	3	0.24	0.12	0.09
QM0160422	2023	44	18	2	3	0.41	0.05	0.07

Table C-2: Number of deflection, parallel, and crossing and proportion of used steps identified as deflection, parallel, and crossing per caribou and year.

Caribou Identifier	Year	Total Used Steps	Number of Steps			Proportion of Used Steps(a)		
			Deflection	Parallel	Crossing	Deflection	Parallel	Crossing
QM0170422	2022	30	6	2	1	0.20	0.07	0.03
QM0170422	2023	55	15	7	4	0.27	0.13	0.07
QM0180422	2022	60	18	9	3	0.30	0.15	0.05
QM0180422	2023	46	12	12	0	0.26	0.26	0.00
QM0190422	2023	43	14	4	3	0.33	0.09	0.07
QM0200422	2022	49	23	4	1	0.47	0.08	0.02
QM0210422	2022	50	14	6	2	0.28	0.12	0.04
QM0210422	2023	34	4	6	1	0.12	0.18	0.03
QM0240422	2022	18	6	6	0	0.33	0.33	0.00
QM0240422	2023	52	15	7	1	0.29	0.13	0.02
QM0250422	2022	19	8	2	0	0.42	0.11	0.00
QM0250422	2023	52	12	6	3	0.23	0.12	0.06
QM0260422	2022	16	11	2	0	0.69	0.13	0.00
QM0270422	2022	24	10	2	1	0.42	0.08	0.04
QM0270422	2023	99	37	6	3	0.37	0.06	0.03
QM1500415	2018	38	22	1	0	0.58	0.03	0.00
QM1510415	2018	27	3	4	0	0.11	0.15	0.00
QM1510415	2019	13	0	2	0	0.00	0.15	0.00
QM1520415	2018	16	4	1	1	0.25	0.06	0.06
QM1520415	2019	7	1	0	1	0.14	0.00	0.14
QM1530415	2019	34	12	2	0	0.35	0.06	0.00
QM1540415	2018	18	3	0	1	0.17	0.00	0.06
QM1580415	2018	24	9	3	0	0.38	0.13	0.00
QM1580415	2019	24	4	2	0	0.17	0.08	0.00
QM1600415	2018	32	12	5	1	0.38	0.16	0.03
QM1600415	2019	16	3	1	0	0.19	0.06	0.00
QM1640415	2018	56	23	10	5	0.41	0.18	0.09
QM1640415	2019	28	9	1	0	0.32	0.04	0.00
QM1660415	2018	31	15	2	1	0.48	0.06	0.03
QM1660415	2019	52	19	3	1	0.37	0.06	0.02
QM1690415	2018	43	22	2	0	0.51	0.05	0.00
QM1720416	2018	25	9	5	0	0.36	0.20	0.00
QM1730416	2018	41	14	4	9	0.34	0.10	0.22
QM1740416	2019	90	44	7	2	0.49	0.08	0.02
QM1740416	2020	8	1	1	0	0.13	0.13	0.00
QM1750416	2018	58	27	4	4	0.47	0.07	0.07
QM1750416	2019	26	9	0	0	0.35	0.00	0.00

Table C-2: Number of deflection, parallel, and crossing and proportion of used steps identified as deflection, parallel, and crossing per caribou and year.

Caribou Identifier	Year	Total Used Steps	Number of Steps			Proportion of Used Steps(a)		
			Deflection	Parallel	Crossing	Deflection	Parallel	Crossing
QM1760416	2018	47	19	4	1	0.40	0.09	0.02
QM1760416	2019	35	12	5	1	0.34	0.14	0.03
QM1760416	2020	7	0	1	1	0.00	0.14	0.14
QM1780416	2018	8	3	1	1	0.38	0.13	0.13
QM1820416	2018	8	2	1	1	0.25	0.13	0.13
QM1820416	2019	20	5	7	0	0.25	0.35	0.00
QM1860416	2018	5	3	1	0	0.60	0.20	0.00
QM1860416	2019	22	8	3	0	0.36	0.14	0.00
QM1900416	2018	39	22	2	4	0.56	0.05	0.10
QM1900416	2019	39	16	6	1	0.41	0.15	0.03
QM1900416	2020	17	6	2	0	0.35	0.12	0.00
QM1910417	2018	32	18	4	2	0.56	0.13	0.06
QM1910417	2019	12	5	0	1	0.42	0.00	0.08
QM1920417	2019	55	17	4	0	0.31	0.07	0.00
QM1920417	2020	43	10	6	0	0.23	0.14	0.00
QM1930417	2018	37	17	4	1	0.46	0.11	0.03
QM1930417	2019	12	5	1	0	0.42	0.08	0.00
QM1940417	2018	13	5	1	3	0.38	0.08	0.23
QM1940417	2019	17	4	4	0	0.24	0.24	0.00
QM1940417	2020	15	3	0	2	0.20	0.00	0.13
QM1950417	2018	19	5	0	5	0.26	0.00	0.26
QM1950417	2019	11	2	1	1	0.18	0.09	0.09
QM1950417	2021	38	15	2	0	0.39	0.05	0.00
QM1960417	2018	47	29	6	1	0.62	0.13	0.02
QM1970417	2018	32	7	3	1	0.22	0.09	0.03
QM1980417	2018	54	23	4	1	0.43	0.07	0.02
QM1990417	2018	21	5	2	0	0.24	0.10	0.00
QM1990417	2019	34	9	5	0	0.26	0.15	0.00
QM1990417	2020	11	3	3	0	0.27	0.27	0.00
QM1990417	2021	9	4	0	0	0.44	0.00	0.00
QM2000417	2018	50	25	4	1	0.50	0.08	0.02
QM2000417	2019	36	13	1	1	0.36	0.03	0.03
QM2000417	2020	7	4	0	0	0.57	0.00	0.00
QM2000417	2021	25	3	5	0	0.12	0.20	0.00
QM2010417	2018	8	0	0	1	0.00	0.00	0.13
QM2010417	2019	29	11	4	0	0.38	0.14	0.00
QM2020417	2018	54	28	7	1	0.52	0.13	0.02

Table C-2: Number of deflection, parallel, and crossing and proportion of used steps identified as deflection, parallel, and crossing per caribou and year.

Caribou Identifier	Year	Total Used Steps	Number of Steps			Proportion of Used Steps(a)		
			Deflection	Parallel	Crossing	Deflection	Parallel	Crossing
QM2020417	2019	14	2	1	0	0.14	0.07	0.00
QM2020417	2021	3	2	0	0	0.67	0.00	0.00
QM2030417	2018	19	3	4	0	0.16	0.21	0.00
QM2040417	2018	7	0	0	1	0.00	0.00	0.14
QM2040417	2019	27	9	6	0	0.33	0.22	0.00
QM2040417	2020	11	3	1	1	0.27	0.09	0.09
QM2050417	2018	47	22	8	3	0.47	0.17	0.06
QM2050417	2019	24	6	5	0	0.25	0.21	0.00
QM2070417	2018	6	1	0	1	0.17	0.00	0.17
QM2070417	2019	4	0	1	0	0.00	0.25	0.00
QM2070417	2020	27	7	2	0	0.26	0.07	0.00
QM2070417	2021	20	0	2	1	0.00	0.10	0.05
QM2080417	2018	74	33	7	1	0.45	0.09	0.01
QM2080417	2019	30	11	1	1	0.37	0.03	0.03
QM2080417	2021	8	2	1	0	0.25	0.13	0.00
QM2100417	2018	2	1	0	0	0.50	0.00	0.00
QM2100417	2019	11	0	1	0	0.00	0.09	0.00
QM2110417	2018	48	17	1	1	0.35	0.02	0.02
QM2120417	2018	44	19	3	1	0.43	0.07	0.02
QM2120417	2019	15	1	3	0	0.07	0.20	0.00
QM2120417	2020	8	3	0	0	0.38	0.00	0.00
QM2180417	2019	8	1	0	1	0.13	0.00	0.13
QM2200417	2018	20	8	2	1	0.40	0.10	0.05
QM2210417	2018	60	23	5	1	0.38	0.08	0.02
QM2210417	2019	34	8	2	1	0.24	0.06	0.03
QM2220417	2018	22	8	2	1	0.36	0.09	0.05
QM2230417	2018	33	15	3	1	0.45	0.09	0.03
QM2240417	2018	37	17	5	1	0.46	0.14	0.03
UK2018022	2019	2	0	1	0	0.00	0.50	0.00
UK2018023	2019	28	10	5	0	0.36	0.18	0.00
UK2018023	2020	2	NA	0	0	NA	0.00	0.00
UK2018025	2019	15	6	1	0	0.40	0.07	0.00
UK2018026	2019	28	13	1	0	0.46	0.04	0.00
UK2018026	2021	12	8	0	0	0.67	0.00	0.00
UK2018026	2023	59	12	6	1	0.20	0.10	0.02
UK2018028	2019	69	31	9	3	0.45	0.13	0.04
UK2018028	2020	19	6	4	0	0.32	0.21	0.00

Table C-2: Number of deflection, parallel, and crossing and proportion of used steps identified as deflection, parallel, and crossing per caribou and year.

Caribou Identifier	Year	Total Used Steps	Number of Steps			Proportion of Used Steps(a)		
			Deflection	Parallel	Crossing	Deflection	Parallel	Crossing
UK2018029	2020	19	2	1	1	0.11	0.05	0.05
UK2018030	2019	9	3	1	0	0.33	0.11	0.00
UK2018031	2019	28	10	2	0	0.36	0.07	0.00
UK2018031	2021	15	3	1	1	0.20	0.07	0.07
UK2018031	2023	48	17	4	0	0.35	0.08	0.00
UK2018033	2019	11	0	1	0	0.00	0.09	0.00
UK2018033	2020	32	11	2	2	0.34	0.06	0.06
UK2018033	2021	61	25	8	0	0.41	0.13	0.00
UK2018033	2023	66	14	8	2	0.21	0.12	0.03
UK2018034	2019	5	0	1	0	0.00	0.20	0.00
UK2018037	2019	19	4	2	2	0.21	0.11	0.11
UK2018039	2019	25	11	2	0	0.44	0.08	0.00
UK2018039	2020	2	0	0	0	0.00	0.00	0.00
UK2018039	2022	65	25	7	1	0.38	0.11	0.02
UK2018040	2019	12	0	3	0	0.00	0.25	0.00
UK2018041	2019	37	12	5	0	0.32	0.14	0.00
UK2018041	2022	32	13	2	0	0.41	0.06	0.00
UK2018041	2023	82	33	11	0	0.40	0.13	0.00
UK2018042	2019	10	0	1	0	0.00	0.10	0.00
UK2018042	2020	19	8	2	0	0.42	0.11	0.00
UK2018042	2021	11	2	0	0	0.18	0.00	0.00
UK2018042	2022	21	7	2	2	0.33	0.10	0.10
UK2018042	2023	56	23	5	1	0.41	0.09	0.02
UK2018044	2019	32	8	3	0	0.25	0.09	0.00
UK2018045	2020	15	4	4	0	0.27	0.27	0.00
UK2018045	2021	3	3	0	0	1.00	0.00	0.00
UK2018045	2023	70	28	6	2	0.40	0.09	0.03
UK2018046	2019	28	9	3	0	0.32	0.11	0.00
UK2018046	2020	33	14	2	2	0.42	0.06	0.06
UK2018046	2021	4	1	0	0	0.25	0.00	0.00
UK2018046	2023	66	13	8	3	0.20	0.12	0.05
UK2018047	2019	29	11	4	1	0.38	0.14	0.03
UK2018047	2021	57	18	7	1	0.32	0.12	0.02
UK2018049	2019	14	2	0	1	0.14	0.00	0.07
UK2018049	2020	4	2	1	0	0.50	0.25	0.00
UK2018049	2021	10	7	0	0	0.70	0.00	0.00
UK2018049	2022	32	12	2	1	0.38	0.06	0.03

Table C-2: Number of deflection, parallel, and crossing and proportion of used steps identified as deflection, parallel, and crossing per caribou and year.

Caribou Identifier	Year	Total Used Steps	Number of Steps			Proportion of Used Steps(a)		
			Deflection	Parallel	Crossing	Deflection	Parallel	Crossing
UK2018053	2019	21	6	0	1	0.29	0.00	0.05
UK2018053	2020	2	0	1	0	0.00	0.50	0.00
UK2018053	2021	28	5	3	1	0.18	0.11	0.04
UK2018055	2019	33	11	0	1	0.33	0.00	0.03
UK2018055	2021	17	4	3	0	0.24	0.18	0.00
UK2019001	2019	10	0	1	0	0.00	0.10	0.00
UK2019001	2020	8	3	0	1	0.38	0.00	0.13
UK2019001	2021	59	23	6	0	0.39	0.10	0.00
UK2019001	2022	36	9	0	3	0.25	0.00	0.08
UK2019001	2023	76	19	1	7	0.25	0.01	0.09
UK2019004	2019	14	0	5	0	0.00	0.36	0.00
UK2019007	2019	55	25	7	2	0.45	0.13	0.04
UK2019007	2020	28	15	2	2	0.54	0.07	0.07
UK2019007	2021	44	19	9	2	0.43	0.20	0.05
UK2019007	2023	44	14	2	1	0.32	0.05	0.02
UK2019009	2020	49	17	2	1	0.35	0.04	0.02
UK2019009	2021	73	19	7	2	0.26	0.10	0.03
UK2019010	2019	23	0	2	1	0.00	0.09	0.04
UK2019010	2020	37	11	1	3	0.30	0.03	0.08
UK2019013	2019	22	4	3	0	0.18	0.14	0.00
UK2019017	2019	12	7	4	1	0.58	0.33	0.08
UK2019017	2021	27	13	5	0	0.48	0.19	0.00
UK2019017	2022	61	22	6	0	0.36	0.10	0.00
UK2019017	2023	40	13	2	1	0.33	0.05	0.03
UK2019018	2019	34	9	2	0	0.26	0.06	0.00
UK2019018	2020	20	8	2	2	0.40	0.10	0.10
Total		**6618**	**2284**	**677**	**216**	**-**		

(a) Note that crossing, deflection, and parallel steps are mutually exclusive and that not all steps fit into one of these three categories. Thus, proportions do not necessarily add to 1.00.

APPENDIX D

Proportion of Caribou Deflecting Near Mine/AWAR

Methods

Individual conditional logistic regression models were estimated per caribou-year using the *survival* package (Therneau and Grambsch 2000, Therneau 2024) in *R* (R Core Team 2024). The target deflection model (i.e., Table 2) was fit to each caribou-year, with the MosquitoIndex covariate excluded to simplify the model structure and increase the likelihood of model convergence for individual caribou-years.

Outputs were tabulated per individual model and the number of caribou-years with a significant negative interaction between deflection steps and proximity to Mine/AWAR (i.e., *p*-value for DeflectionStep*DistanceAWARMine_Decay < 0.05) was summed. A negative interaction term would indicate that the caribou was more likely to deflect closer to the Mine/AWAR. Caribou-years with insufficient steps to achieve 80% power, based on results of power analyses, were excluded from individual modelling.

Results

A total of 211 caribou-years were available in the dataset, but 20 caribou-years were removed due to low power (i.e., insufficient number of steps). Of the 191 caribou-years with power to detect significant effects, 44 caribou-years were excluded due to model convergence issues. Of the remaining 147 caribou-years where individual models could be fit, 2 caribou-years had a significant negative beta coefficient estimate for the interaction between deflection step and distance to Mine/AWAR. Thus, 1% of caribou-years exhibited an increase in deflection steps closer to the Mine/AWAR.