

Appendix 39

Meadowbank and Whale Tail 2023 Wildlife Monitoring Summary Report



REPORT

Agnico Eagle Mines Limited - Meadowbank Complex
2023 Wildlife Monitoring Summary Report

Submitted to:

Agnico Eagle Mines Limited

Submitted by:

WSP Canada Inc.

16820 107 Avenue, Edmonton, Alberta, T5P 4C5 Canada

+1 780 483 3499

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Distribution List

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Executive Summary

As a requirement of the NIRB Project Certificate, the 2023 Wildlife Monitoring Summary Report (2023 Annual Report) represents the 18th of a series of annual reports for the Agnico Eagle Mines Limited (Agnico Eagle) Meadowbank Complex (the Project). Baseline and monitoring programs were first initiated in 1999 and will continue through the life of the Project. Details of the wildlife monitoring program for the Project are provided in the Terrestrial Ecosystem Management Plan (Version 7, Agnico Eagle 2019). The 2023 Annual Report provides the monitoring objectives, methodology, historical and current year results, and management recommendations for each monitoring program. The 2023 Annual Report builds on data presented in previous reports and incorporates monitoring recommendations from these reports, as well as recommendations and requests from intervenors on past reports made during the NIRB review process. Below is a summary of the results from each component of the 2023 Annual Report.

Caribou Management Decision Tree

- Decision tree process used data from the road, Mine site, viewshed surveys, and satellite collaring to determine the scale of caribou monitoring and management required.

Road Surveys

- In 2023, 215 road surveys were conducted along the All-weather Access Road (AWAR) and 242 were conducted along the Whale Tail Haul Road (WTHR).
- A total of 54,940 caribou were observed along the AWAR during road surveys (255 caribou per survey) and 35,863 caribou were detected along the WTHR during road surveys (148 caribou per survey).
- Road surveys helped facilitate mitigation decisions along the AWAR and WTHR. The AWAR was fully closed (24-hour closure) on 97 days, closed for less than 24 hours on 56 days, and had speed restrictions applied for 16 days. In total the AWAR was closed for 2,975 hours. The WTHR was fully closed (24-hour closure) on 37 days, partially closed (less than 24-hour closure) on 64 days and had speed restrictions applied for 60 days. The WTHR was closed for 1,503 hours during 2023.
- A total of 7,484 caribou were observed crossing the AWAR and 7,085 caribou were observed crossing the WTHR in 2023.
- On one occasion, observed caribou were identified as Project tolerant as defined in TEMP Version 7. Four caribou were identified as Project tolerant at Meadowbank.
- There were five road-related mortalities recorded in 2023, including one Arctic fox, two Arctic hare, one Arctic ground squirrel, and one muskox. There were no road-related caribou, grizzly bear, wolverine or wolf mortalities associated with the AWAR or WTHR in 2023.

Pit and Mine Site Ground Surveys

- In 2023, environmental personnel conducted regular Mine site inspections focusing on waste management, spills, hazardous waste management, and wildlife monitoring. Formal Mine site inspections were carried out at least weekly as part of broader environmental on-site management.

- Wildlife deterrents were used on 58 occasions in 2023, and were used for caribou, muskox, wolf, and wolverine.
- There were six project-related mortalities in 2023 at Meadowbank and Whale Tail sites, including three wolverine and three wolves.

Wildlife Habitat Monitoring

- A 9.5% change (55 ha) in footprint at the Whale Tail site occurred between the assessment in 2021 and 2023. The change in footprint since the previous assessment was less than 25%. Therefore, the next comprehensive analysis is scheduled for 2024.

Caribou Satellite-Collaring Program

- Analysis of caribou migration patterns using collar data from 2003 to 2023 are provided in Appendix F. Agnico Eagle intends to continue collaboration with the Government of Nunavut Department of Environment (GN DoE) caribou satellite-collaring program. Collar data up to Q3 of 2023 were available to complete the comprehensive migration analysis.

Viewshed Surveys

- A total of 1,345 viewshed surveys were conducted over 87 days in 2023. Of the 1,345 viewshed surveys, 109 surveys (8%) had caribou sightings, and a total of 4,442 caribou were reported. Survey efforts were conducted between 5 January and 30 December, with the highest survey effort occurring in the spring.

Remote Camera Program

- Artificial intelligence was used to pre-sort wildlife images from remote cameras on the Whale Tail Haul Road in 2023. Photographs flagged as containing wildlife by artificial intelligence were reviewed by a human observer. Caribou crossing events were detected in all seasons. Crossing events were recorded on nine out of ten cameras.
- More crossing events were observed on days with an open road status (n = 38) compared to days with a road closure (n = 28). Too few crossing events were detected to statistically compare crossing rates between different road heights, backfill materials, and backfill slopes.

Blast Monitoring

- Surveys for caribou behaviour monitoring prior to and during blasting were not performed in 2023. Pre-blast surveys took place and in cases where caribou were observed, a conservative approach was taken, and many blasts were cancelled due to caribou presence in the vicinity.

Hunter Harvest Study

- The Hunter Harvest Study (HHS) included 75 participants in 2023. A total of 646 caribou were reported as being harvested by 63 participants in the Baker Lake HHS.
- The 2023 HHS data indicated that 37% of reported harvest occurred within 5 km of the AWAR, and 71% occurred within the Meadowbank RSA.

- In 2023, one caribou was harvested within 5 km of the WTHR. Given the low numbers of reported harvests close to the WTHR and the prohibition of the public from the WTHR, it is unlikely that the presence of the road has resulted in increased harvest.

Predatory Mammal Den Monitoring

- Monitoring of predatory mammal dens were conducted informally in 2023 through observations recorded during other monitoring programs. Potential effects due to Project-related activities were not identified to trigger monitoring of predatory mammal dens. No predatory mammal dens were observed or monitored in 2023.

Raptor Nest Monitoring

- Two peregrine falcon active nests were documented in Quarries 3 and 8 in 2023, with observations of one egg in Quarry 3 and observations of two chicks in Quarry 8.
- No raptor nesting evidence was observed in quarries along the WTHR in 2023. No other raptor nests were identified during pit checks or incidentally during other surveys in 2023.
- Raptor nest management plans were not developed at the active nest sites, as Mine-related activity was already restricted within the quarries where Falcons were observed.

Waterbird Nest Monitoring

- Trent University, in collaboration with Environment and Climate Change Canada (ECCC) and Agnico Eagle, conducted a research study to investigate mitigation options to minimize flooding-related impacts to birds in the Whale Tail South area. The complete analysis and report on behavioural responses were included in Holmes (2022) Trent University MSc Thesis manuscript. A manuscript on this research was initially submitted for publication in late 2021, comments were received in 2022, and the manuscript was re-submitted in January 2024 to Avian Conservation and Ecology with publication expected in September 2024.

Breeding Bird Monitoring

- Agnico Eagle will continue to survey 48 PRISM plots selected by the ECCC over 10 years (2021 to 2031), and completion of AWAR and WTHR Breeding Bird Survey (BBS) routes opportunistically when qualified individuals are on site. At a minimum, these BBS routes will be conducted every three years during the operations, closure, and post-closure phases of the project. There were 17 PRISM plots surveyed in 2023, and one Breeding Bird Survey was completed along the AWAR and WTHR.

Non-Native Plant Surveys

- No non-native plants, as identified by the CESSC, were recorded along the AWAR, WTHR, Baker Lake tank farm, and Whale Tail sites in 2023. One occurrence of a non-native plant, common pea, was documented in 2023 at the Meadowbank Mine site. These plants were hand pulled and removed at the time of survey. Eighteen surveys were completed in undisturbed tundra to survey the presence/absence of non-native weeds. Recommendations for management of non-native plants are provided.

Special Studies

Snow Study

- A total of 36 snow surveys were completed during the spring migration of 2023, which was the targeted number of surveys. Of the 36 survey locations, 17 were along the WTHR and 19 were along the AWAR.
- Average snow depth was significantly different by plot type. Average snow depth in use plots and snow-managed control plots (i.e., plots within the berm but not used by caribou) were similar, but snow depth was greater in non-managed control plots. Average snow hardness was similar between use plots, snow-managed control plots, and non-managed control plots. Mean track depth was similar between use plots compared to non-managed control plots.

Caribou Behaviour

- Agnico Eagle continued a caribou behaviour study that focussed on measuring different behaviour activities of caribou in relation to mine-related activities (Appendix K).

Road and Viewshed Comparison

- Following discussion with the TAG in November 2022, more viewshed surveys were completed in 2023 to improve sample sizes and allow for comparison between survey types.
- It was expected that viewshed surveys would detect caribou farther from the road on average, as these surveys are intended to identify caribou approaching the road as an 'early warning system'. This trend was observed in all seasons where both surveys were performed consistently, except fall 2021.
- The percentage of surveys with caribou detections was higher for road surveys than for viewshed surveys (except summer 2021).
- Road surveys were conducted more frequently, were more likely to detect caribou, and were more likely to result in road closure mitigation, despite the lower average detection distance compared to viewshed surveys.

Study Limitations

On behalf of Agnico Eagle Mines Limited (Agnico Eagle), WSP Canada Inc. (WSP) has prepared this Wildlife Monitoring Summary Report for the 2023 Monitoring Period at the Meadowbank Complex.

This report was prepared, based in part, on information obtained from Agnico Eagle and other external information sources. In preparing the report, WSP has relied in good faith on the information provided. We accept no responsibility for any deficiency or inaccuracy contained in this report because of our reliance on the aforementioned information.

The findings and conclusions documented in this report have been prepared for the specific application to this Project and have been developed in a manner consistent with that level of care normally exercised by environmental professionals currently practicing under similar conditions in the jurisdiction.

With respect to regulatory compliance issues, regulatory statutes are subject to interpretation. These interpretations may change over time and should be reviewed regularly.

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Wildlife Mortalities

APPENDIX D

Exemption Permits

APPENDIX E

Helicopter Flights

APPENDIX F

Caribou Migration Memo

APPENDIX G

Hunter Harvest Study

APPENDIX H

Arctic Raptors Report

APPENDIX I

Meadowbank Bird Surveys Report

APPENDIX J

Native Plant Poster

APPENDIX K

Caribou Behaviour Monitoring

Acronyms

Acronym	Full Term
AEAR	Amaruq Exploration Access Road
ANOVA	Analysis of Variance
ANZEC	Australian and New Zealand Environment Council
ARGOS	Advanced Research and Global Observation Satellite
AWAR	All-weather Access Road
BBS	Breeding Bird Survey
CESCC	Canadian Endangered Species Conservation Council
CIRNAC	Crown-Indigenous Relations and Northern Affairs Canada
COVID-19	Coronavirus Disease
ECCC	Environment and Climate Change Canada
ELC	Ecological Land Classification
FEIS	Final Environmental Impact Statement
GIS	Geographic Information System
GN	Government of Nunavut
GN DoE	Government of Nunavut Department of Environment
GPS	Global Positioning System
GST	Group Size Threshold
HHS	Hunter Harvest Study
HOL	Height-of-Land
HT	Heath Tundra
HTO	Hunters and Trappers Organization
IIBA	Inuit Impact Benefit Agreement
IQ	Inuit Qaujimatuaqangit
KivIA	Kivalliq Inuit Association
KM	Kilometer Marker
LSA	Local Study Area
NIRB	Nunavut Impact Review Board
NPAG	Non-potentially Acid Generating
NPC	Noise Pollution Control
NWB	Nunavut Water Board
PPL	Peak Pressure Level
PPV	Peak Particle Velocity
PRISM	Program for Regional and International Shorebird Monitoring
QA/QC	Quality Assurance/Quality Control
RSA	Regional Study Area
TAG	Terrestrial Advisory Group
TEMP	Terrestrial Ecosystem Management Plan
UTM	Universal Transverse Mercator
VEC	Valued Ecosystem Component
WTHR	Whale Tail Haul Road

1.0 INTRODUCTION

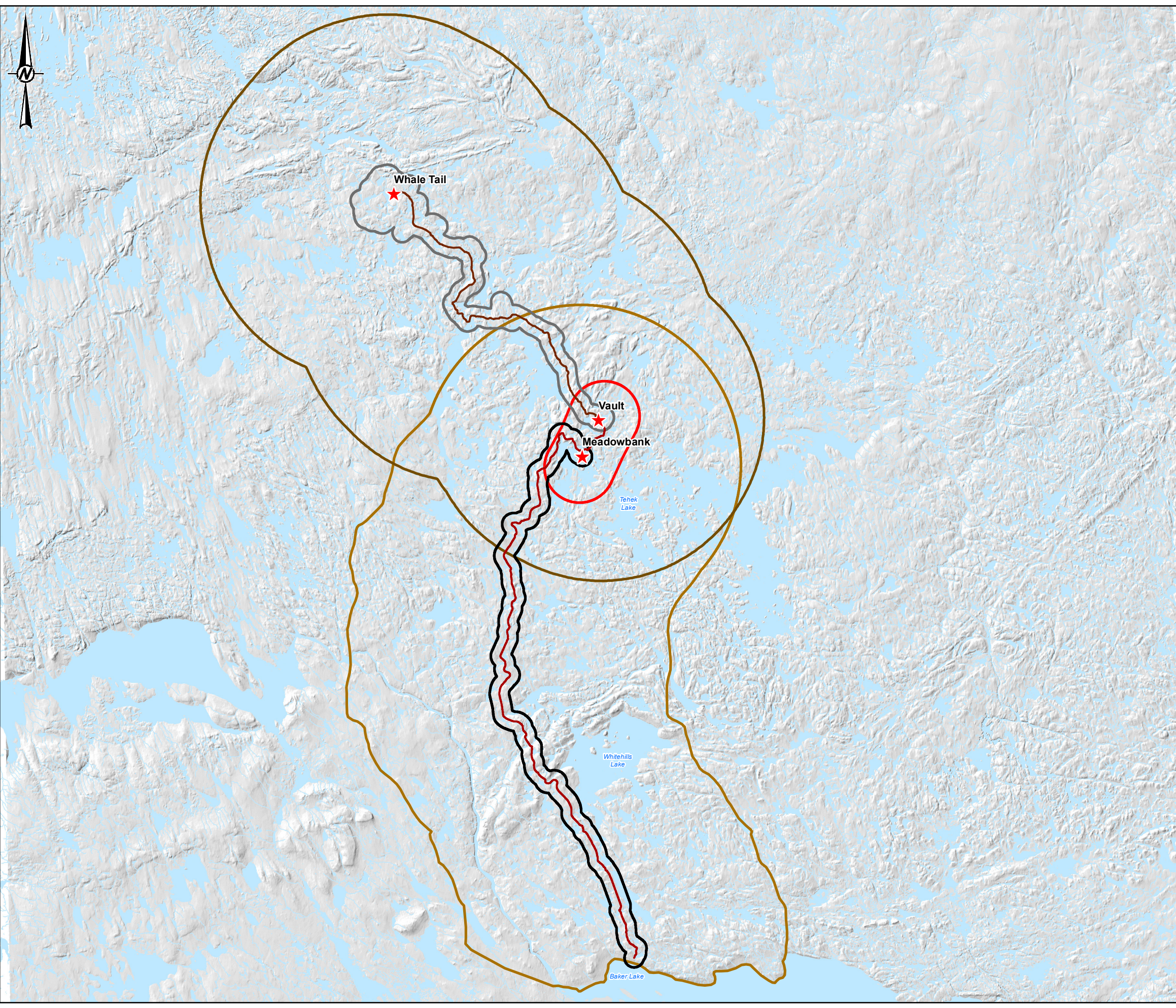
1.1 Background










The Agnico Eagle Mines Limited (Agnico Eagle) Meadowbank Complex (the Project) is located in the Kivalliq Region of Nunavut (Figure 1-1) and received a Project Certificate No. 004 from the Nunavut Impact Review Board (NIRB) in 2006. The subsequent Water Licence, Government of Nunavut (GN) and Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) Land Lease, and Kivalliq Inuit Association (KivIA) Land Use Production Lease, allowed for the construction of a gold mine and ancillary facilities including an All-weather Access Road (AWAR), barge unloading facilities, lay-down area, and a fuel tank farm near the Hamlet of Baker Lake. The Whale Tail Mine, an extension of the Meadowbank Mine, received a Project Certificate No. 008 from NIRB in 2018.

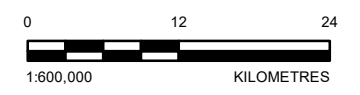
Up to 2017, annual reports were based on the Terrestrial Ecosystem Management Plan (TEMP) developed by Cumberland Resources (Cumberland 2006). The TEMP was a requirement of the Meadowbank Project Certificate No. 004, Condition 54 and Whale Tail Mine Certificate No. 008, Condition 28. Since 2018, the TEMP Version 7 has incorporated the Whale Tail component of the Project and reflects changes in management and monitoring approaches since 2006 (Agnico Eagle 2019). The revised TEMP also benefitted from collaborative input from the GN, the KivIA, and the Hunters and Trappers Organization (HTO) of Baker Lake through annual report reviews, technical reviews, workshops, and discussions within the Terrestrial Advisory Group (TAG). A new version of the TEMP is currently being prepared and reviewed with the TAG, however, due to uncertainties and on-going discussions with TAG over TEMP updates, Version 7 of the TEMP continued as the basis for 2023 monitoring and mitigation. The scope of the TEMP is to report on monitoring of the Mine during construction, operation, maintenance, reclamation, and closure.

This annual report includes data collected in 2023, the 14th year of Mine operation, and is the 18th of a series of annual Wildlife Monitoring Summary Reports for the Project. The purpose of this report is to summarize 2023 data collected from wildlife monitoring programs, and to describe natural variation and potential Mine-related changes in wildlife populations within and adjacent to the Meadowbank Complex. The 2023 Annual Report describes monitoring objectives and methods, historical and current year results, mitigation activities, and management recommendations based on 2023 monitoring results. Furthermore, comments received from various intervenors through the NIRB review of the 2022 annual report were incorporated, where possible, into analyses and reporting in this document.

PATH: Y:\mining\CAD-GIS\client\Agnico_Eagle_Mines_Ltd\White_Vault_Meadowbank_CAD\0006990_5123_4000_01_Meadowbank_Complex_Location_Monitoring_Studies_Boundaries.mxd PRINTED ON: 2024-03-22 AT: 4:14:51 PM



- LEGEND**
-  ALL-WEATHER ACCESS ROAD (AWAR)
 -  WHALE TAIL HAUL ROAD (WTHR)
 -  AWAR LOCAL STUDY AREA (LSA)
 -  WTHR LOCAL STUDY AREA (LSA)
 -  WTHR REGIONAL STUDY AREA (RSA)
 -  MEADOWBANK LOCAL STUDY AREA (LSA)
 -  MEADOWBANK REGIONAL STUDY AREA (RSA)
 -  WATERCOURSE
 -  WATERBODY



REFERENCE(S)


1. INFRASTRUCTURE OBTAINED FROM AGNICO EAGLE MINES LIMITED.
2. WATERCOURSE AND WATERBODY DATA OBTAINED FROM NATURAL RESOURCES CANADA.

COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 14N

CLIENT  **AGNICO EAGLE MINES LIMITED: MEADOWBANK DIVISION**

PROJECT
**MEADOWBANK COMPLEX
2023 WILDLIFE MONITORING SUMMARY REPORT**

TITLE
MEADOWBANK COMPLEX LOCATION AND MONITORING STUDIES BOUNDARIES

CONSULTANT		YYYY-MM-DD	2024-03-22
		DESIGNED	JF
		PREPARED	CDB
		REVIEWED	JF
		APPROVED	CDLM

PROJECT NO.	CONTROL	REV.	FIGURE
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1.2 Project Description

The Meadowbank Gold Mine is located approximately 90 km north of the community of Baker Lake. The Whale Tail Mine, with an expected operating life of seven years (2019 to 2025), is located approximately 180 km north of Baker Lake. The Whale Tail mine is an open-pit mine connected to Meadowbank Mine by a 64 km all season haul road. The local physiography is characterized by numerous lakes and low, rolling hills covered mainly by lichen/rock complexes, and heath tundra.

Environmental baseline studies were conducted prior to Meadowbank and Whale Tail Mine approvals and integrated into Project designs according to the Cumberland (2006) and Agnico Eagle (2019) TEMPs. Wildlife Valued Ecosystem Components (VECs) for the Meadowbank mine were identified in consultation with regulatory agencies and Baker Lake residents, and considered criteria such as conservation status, relative abundance within the Project study area, importance in subsistence lifestyle and economy, importance in predator-prey systems, habitat requirement size and sensitivity, and contribution to local area concerns. Based on these selection criteria, key terrestrial VECs determined for the Meadowbank mine were wildlife habitat, ungulates, predatory mammals, small mammals, raptors, waterbirds, and upland breeding birds. Because of limited evidence that small mammals were affected by the Project, this VEC was not included in the Whale Tail mine or revised TEMP. Further details can be found in the Final Environmental Impact Statements (FEIS) for the Meadowbank Mine (Cumberland 2005) and the Whale Tail Mine (Golder 2016; Golder 2018).

Construction of a 106.8 km AWAR between the community of Baker Lake and the Meadowbank Mine was completed in March 2008 and provides Mine site access and re-supply, while on-site Mine haul and access roads connect open-pit areas to ancillary facilities. Meadowbank Mine site facilities include a mill, power plant, maintenance facilities, tank farm for fuel storage, water treatment plant, sewage treatment plant, airstrip, and accommodations. Mine components include open pits, waste rock storage facilities, and a tailings storage facility.

In 2008, construction of numerous camp infrastructure facilities was completed, while in 2009, the principal Mine site construction commenced. Mine operation commenced in early 2010. Mining at Goose Pit was finished in 2015 while Agnico Eagle continued ongoing mining operations at Portage and Vault pits and investigated expansion of the Vault area into Phaser Lake. In 2018, an expansion was made in pit E (Portage) to extend mining and mill feed to bridge the gap between the end of mining activities in Meadowbank and the start of mining activities at Whale Tail Mine. As a result, 2023 mining activities at the Meadowbank complex included mining ore at the Whale Tail Mine and processing ore at the mill at the Meadowbank site.

To extend Mine operations and milling at Meadowbank Mine, Agnico Eagle developed the Whale Tail Mine and Haul Road Project, approximately 55 km north of the Meadowbank Mine, on a satellite deposit located on the Amaruq property in the Kivalliq Region of Nunavut. The Amaruq Exploration Access Road (AEAR) was built in 2016 and 2017 to access the Amaruq exploration site from the Meadowbank Mine. The AEAR was modified into the WTHR (enlargement) following regulatory approval and was completed in 2018. Construction of the Whale Tail Dike in 2018 allowed for Whale Tail Lake North Basin dewatering starting in Q1, 2019, the pre-stripping of future Whale Tail Mine, and the construction of major infrastructures including the permanent camp, with accommodation and kitchen facilities, sewage treatment plan, tank farm for fuel storage, and freshwater intake. Open-pit mining operation at the Whale Tail deposit began in Q3 (30 September), 2019. Commercial operations at the IVR pit commenced on 31 December 2021. Permitting to expand the Whale Tail operation and extend the Mine life to 2026 was approved in February 2020 (refer to Project Certificate No. 008, Amendment 001). Other project updates include implementation of several measures to increase project capacity and inventory prior to caribou migration. These changes have included increasing the long-haul truck fleet size in 2022 and 2023 to stockpile additional ore at the Meadowbank

complex, ensuring the mill is able to sustain 20 days of road closures, installation of a 3,000,000 L fuel tank at the Meadowbank site, and installation of four permanent 50,000 L fuel tanks in 2022 to increase autonomy of the Whale Tail site.

1.3 Study Area Boundaries

1.3.1 Meadowbank Mine, Vault Pit, and AWAR

The Meadowbank Mine Local Study Area (LSA) includes a 5 km radius area centred on the Mine Site and a 5 km radius around the Vault Site creating an elliptical shape with a total area of 154 km². The AWAR LSA consists of a 3 km wide corridor centred on the AWAR between Baker Lake and the Meadowbank Mine. The Regional Study Area (RSA) encompasses an area that includes a 25 km radius area around the Meadowbank Mine and Vault sites and a 50 km wide corridor along the AWAR for a total area of 5,077 km² (Figure 1-1).

1.3.2 Whale Tail Mine and Haul Road

The Whale Tail LSA is a 3 km corridor centered on the WTHR and borrow site access roads (i.e., 1.5 km on either side of the road and 1.5 km around borrow areas) and includes an approximate 1.5 km buffer around development areas at the Whale Tail Mine area, for a total area of 282 km². The Whale Tail RSA is a 50 km corridor centred on the WTHR alignment (i.e., 25 km on either side of the WTHR and borrow site access roads, and 25 km around borrow areas), with a total area of 5,017 km² (Figure 1-1).

1.4 Monitoring Approach

Wildlife monitoring is an essential tool in protecting and maintaining wildlife occurring near the Project. A comprehensive monitoring strategy, along with quantitative monitoring indicators, has been implemented and as required, is adapted to evaluate the accuracy of impact predictions and to meet the objectives of the management strategy set out in the TEMP (Agnico Eagle 2019). Version 7 of the TEMP (Agnico Eagle 2019) is the current version implemented. Monitoring programs are designed to assess Project-related impact predictions and the effectiveness of mitigation measures. Measures on the effectiveness of mitigation will inform on whether monitoring or mitigation require adaptive management. Adaptive management is an on-going process of learning by doing that evolves throughout the life of the Project. Outcomes of adaptive management include increasing or decreasing, or no change, to mitigation or monitoring. Further study intended to better understand Mine-related effects may also be an outcome based on requests from individual stakeholders or the TAG. Ongoing review of the TEMP and annual Wildlife Monitoring Summary Reports (which provide results of TEMP monitoring programs) by regulatory agencies, technical reviewers, and stakeholders will further support that local and regional concerns have been adequately addressed.

Environmental staff monitor wildlife near Project facilities (i.e., Meadowbank Mine and Whale Tail Mine) and along the AWAR and WTHR on a regular basis (Section 3.6). Where unacceptable risks to wildlife are observed, mitigation measures are implemented to avert animals from site activities and hazards in accordance with the TEMP (Agnico Eagle 2019). The decision trees used as mitigation and monitoring framework for caribou (*Rangifer tarandus groenlandicus*) and muskox (*Ovibos moschatus*) are outlined in Section 2.0. Detailed reporting protocols (e.g., a dangerous animal occurrence, monthly wildlife reports submitted to the GN DoE, road closure notification to GN, KivIA, HTO, etc.) are established and implemented by on-site environmental staff. During these events, Agnico Eagle representatives communicate any issues directly with the GN Department of Environment (DoE) Conservation Officer, KivIA, and the local HTO.

1.5 Report Objectives

The primary objectives of the 2023 Wildlife Monitoring Summary Report are to:

- a) Report the results of the 2023 wildlife monitoring programs.
- b) Summarize the monitoring strategy implemented over the course of the year.
- c) Evaluate the function and validity of implemented monitoring strategies.
- d) Summarize adaptive management strategies.
- e) Provide management recommendations for 2024.
- f) Allow regulators to contribute toward improvements of wildlife mitigation and monitoring.
- g) Include a summary of all caribou-related monitoring, mitigation, and Project management actions in one consolidated section.

1.6 Inuit Involvement

Since 1999, local Inuit from the community of Baker Lake have been involved in all wildlife-related baseline and monitoring surveys. The average number of Inuit involved in surveys varies annually. Programs with previous Inuit involvement include the LSA and RSA aerial survey, breeding bird plots and transects, waterfowl nest surveys, waterbird nest surveys for the Whale Tail mine, raptor nest surveys, road surveys, viewshed surveys, habitat mapping, and phenology plots. Local harvesters participate in the Hunter Harvest Study (Section 10.0).

Four Inuit workers were under the employment of the environmental department and were involved in the monitoring programs during 2023, including one local contractor. Agnico Eagle environmental Inuit workers are involved in wildlife programs including caribou behavior monitoring, road surveys, viewshed surveys, and wildlife deterrence on site when required. In 2023, two Baker Lake Hunters and Trappers Organization (HTO) wildlife monitors completed road surveys regularly throughout the year.

As required by the Inuit Impact Benefit Agreement (IIBA), “Anything done by Agnico in order to implement the TEMP [...] shall incorporate Inuit Qaujimanituqauit”; therefore, Indigenous Traditional Knowledge or IQ has been incorporated in this annual report. See Table 1-1 for a summary of IQ incorporation.

Table 1-1: Incorporation of Indigenous Traditional Knowledge in Annual Report

Indigenous Traditional Knowledge	Agnico Eagle Implemented Measures	Report Integration
IQ says caribou have good hearing abilities, and it was noted that the flags could be disturbing to caribou.	AE implemented measures to reduce noise from road marker flags.	Discussed in Section 1.7. Doesn't impact monitoring but reduces sensory disturbance to wildlife.
IQ says caribou are sensitive to aircraft disturbance, such as from helicopters.	Caribou are surveyed using ground surveys (i.e., Road Surveys and Viewshed Surveys) instead of aerial surveys for ungulate monitoring to prevent disturbance from aircrafts. Additionally flight restrictions are in place to reduce potential disturbance to wildlife and fewer project related flights occur during sensitive seasons.	Information about the current caribou monitoring approaches are discussed in in Sections 3.0 and 7.0. Information about helicopter flights and flight guidelines to minimize disturbance to wildlife are discussed in Section 4.5.9.

Table 1-1: Incorporation of Indigenous Traditional Knowledge in Annual Report

Indigenous Traditional Knowledge	Agnico Eagle Implemented Measures	Report Integration
IQ says that caribou feet are sensitive, and caribou may be able to ground vibrations associated with blasting at further distances than humans.	Implemented blast monitoring study to understand how ground vibration and overpressure propagate over distance.	The blast monitoring study is presented in Section 9.0 of the report.
IQ says that it is important to allow the lead caribou to pass so that other caribou will follow the same migration paths. IQ says to not hunt or disturb lead caribou groups.	Agnico Eagle is working with the TAG to develop a lead caribou mitigation approach, which will involve road closures to allow the lead caribou to pass through the RSA with minimal disturbance.	The lead caribou mitigation approach is currently in development and therefore not integrated in the 2023 report. Once integrated, this approach will change management decision trees (Section 2.0) as well as monitoring during migration (Sections 3.0 and 7.0).

1.7 Terrestrial Advisory Group

As per Project Certificate No.008, Condition 27 of the Whale Tail Pit Final Environmental Impact Statement (FEIS) Addendum (Golder 2016), Agnico Eagle has established a Terrestrial Advisory Group (TAG) consisting of representatives from Agnico Eagle, the Government of Nunavut Department of Environment (GN DoE), the KivIA, and the HTO.

An MOU and Terms of Reference has been developed and signed by all parties in July 2019. Agnico Eagle provided a summary of TAG meeting outcomes to the NIRB since 2019.

The purpose of the TAG is to:

- Measure the relevant environmental effects of the Project on terrestrial wildlife.
- Confirm that the Project and mining activities are carried out within the terms and conditions of the Project Certificates No.004 and No.008 relating to the protection of terrestrial wildlife.
- Assess the accuracy of the predictions contained in the final environmental impact statement filed by Agnico Eagle with NIRB.
- Identify and select appropriate target species, indicators, and linkages for monitoring.
- Evaluate the effectiveness of mitigation measures and to support any required adaptive management of those measures.
- Identify any unforeseen Project-related effects.
- Provide an early warning mechanism to identify any Project-related effects.
- Determine and identify any cause-and-effect interactions between the Project and the environment.

TAG meetings were held on 21 February, 24 August, 28 September, and 12 December during 2023, as well as an in-person workshop held November 7-8, 2023.

The 21 February meeting (Agnico Eagle 2023a) included discussion of the 2022 fall migration and road closures, the flag noise reduction trial, the spring migration fuel action plan, and preparations for the 2023 spring migration.

The 24 August meeting (Agnico Eagle 2023b) included discussions of the 2023 spring migration and road closures, progress on the flag noise reduction trial, fuel storage during migration, and the TEMP update.

The 28 September meeting (Agnico Eagle 2023c) included a presentation and discussions for the TEMP Version 8 draft, including topics such as general mitigation, GST calculation, aircraft mitigation, the definition for essential vehicles, convoys, and special studies. Additionally, preparations for the 2023 fall migration were discussed.

The TAG workshop held on November 7-8, 2023 (Agnico Eagle 2023d), focussed on discussions related to the TEMP update, as well as fall migration updates. Topics presented and discussed in relation to the TEMP updates on Day 1 included a timing of migration analysis, lead caribou analysis, caribou behaviour monitoring in relation to vehicle traffic, and viewshed and blast monitoring results. Day 2 included discussions about local Inuit knowledge, proposed recommendations by the GN and KivIA for a lead caribou mitigation plan, and potential to incorporate convoys into a lead caribou mitigation plan.

The 12 December meeting (Agnico Eagle 2023e) included further discussions for fall migration and the TEMP update, including potential management decision trees. The TAG decided that additional discussion would be required to solidify the new lead caribou mitigation plan for spring 2024 and therefore recommended postponing submission of TEMP Version 8 submission.

1.8 Mitigation Audit

A mitigation audit is an annual requirement outlined in the 2019 TEMP (Agnico Eagle 2019). Mitigation approaches applied at the Project stem from current practices at existing mines or were suggested during the environmental assessment review process. However, an auditing system supports evaluation on the use and effectiveness of the mitigation consistent with the principals of adaptive management and may identify or recommend changes to mitigation or monitoring. As an example, per Project Certificate No.008, Condition 32, Agnico Eagle engages with the Baker Lake HTO and other relevant parties to ensure that safety barriers, berms, and designed crossings associated with Project infrastructure, including the WTHR, are constructed and operated as necessary to allow for the safe passage of caribou and other terrestrial wildlife.

The audit is to be undertaken annually and summarized in the annual report and will focus specifically on mitigation listed in Section 4.1 of the TEMP Version 7 (Agnico Eagle 2019). The audit will evaluate:

- what mitigation was implemented
- which mitigation is perceived or shown to be effective
- whether new mitigation has been implemented in response to new issues; and whether some mitigation is redundant or unnecessary

2.0 CARIBOU MANAGEMENT DECISION TREE

2.1 Overview

The 2019 TEMP Version 7 (Agnico Eagle 2019) describes the use of decision trees or charts that outline adaptive monitoring and mitigation for ungulates for each of five phases: 1) caribou and mining operations; 2) caribou and Whale Tail Haul Road; 3) caribou and the AWAR; 4) caribou and blasting; and 5) muskox and Operations (see Agnico Eagle 2019).

2.2 Objectives

The monitoring objectives are to:

- 1) Detect if effect thresholds have been exceeded.
- 2) Test the efficacy of mitigation.
- 3) Understand Project-related effects to ungulates. For ungulates, the decision trees are also an objective to manage sensory disturbance to caribou approaching the Project. Monitoring to detect caribou intensifies as caribou approach the Project and mitigation intensifies to reduce sources of sensory disturbance.

Monitoring activities for ungulates will be carried out prior to, during, and following construction. The use of decision trees for managing disturbance to ungulates is an ongoing and continuous monitoring strategy for the life of the Project. Monitoring intensity is increased as ungulates approach the Project.

2.3 Duration

Monitoring activities for ungulates were carried out prior to, during, construction and operations. The use of decision trees for managing disturbance to ungulates is an ongoing and continuous monitoring and mitigation strategy for the life of the Project. Monitoring and mitigation intensity is increased and decreased as ungulates approach the Project in accordance with the decision trees.

2.4 Methods

The approach involves monitoring the number of ungulates in close proximity to mining operations through various monitoring tools including caribou collaring data, Viewshed surveys, AWAR and Whale Tail Haul Road surveys, and pit and Mine site ground surveys. Depending on the number of ungulates observed (i.e., caribou GST), proximity to the road, and time of year, different mitigation and monitoring levels are triggered (i.e., Level 1, Level 2, Level 3). For example, triggers may result in pit and Mine site ground surveys and/or haul road surveys increased up to every two days, and caribou satellite data reviewed daily. Example mitigations include daily site-wide notifications, road closures to non-essential vehicles, and speed restrictions.

For the purposes of monitoring, a “group of caribou” is defined as: “An aggregation of caribou that are sufficiently close together that they can see and react to another animal’s behaviour and have the potential of responding should one or more animal in the aggregation become startled.” Updated caribou GSTs by season used for Meadowbank in 2023 were developed based on instructions provided by the GN (Table 2-1; GN 2021). A GST of 13 muskox is used year-round, and mitigation and monitoring related to muskox is performed according to Figure 10 of 2019 TEMP Version 7 (Agnico Eagle 2019). For further details on the reasoning behind caribou GSTs and the decision chart approach, refer to the 2019 TEMP Version 7 (Agnico Eagle 2019). The GST approach and monitoring/management outcomes is reviewed by the TAG on a regular basis to determine whether an acceptable balance has been achieved between mining operations and conserving caribou populations. As

GSTs are the main trigger for mitigation and management, understanding their efficacy for overall herd protection is of high importance. Further information about the timing and implementation of caribou protection measures are found in Section 3.6.6.

Table 2-1: Seasonal Caribou Group Size Thresholds Applied During 2023.

Season	Dates	Group Size Threshold
Spring	1 April to 25 May	33
Summer	26 May to 21 September	25
Fall	22 September to 15 December	93
Winter	16 December to 31 March	25

2.5 Results

The decision trees were used throughout 2023. Data collection methods were implemented in 2023 to link individual observations to mitigations, through use of field tablets linked to a customizable EQuIS Collect database. Paper data forms are carried in case issues arise with field tablets. All wildlife observations, and associated mitigations are provided in Appendix A (Wildlife Observations). Summaries of wildlife survey results are discussed in their respective sections. A summary of AWAR and WTHR closure are discussed in Section 3.6.6. The majority of mitigations were implemented based on road survey observations (Section 3.0; Appendix A). Few mitigations were implemented based on other survey types, including pit and mine site ground surveys (Section 4.0; Appendix A).

2.6 Accuracy of Impact Predictions

An objective of the decision tree approach is to reduce sensory disturbance to caribou approaching the Project. The objective is not linked to an impact prediction as the monitoring is to trigger mitigation rather than to test a prediction.

2.7 Management Recommendations

Wildlife observations should continue to be documented using approaches implemented in 2023 that allow individual observations to be linked to mitigations, providing evidence of use of decision trees.

3.0 ROAD SURVEYS

3.1 Overview

A systematic road survey monitoring program for the AWAR, and WTHR has been designed to evaluate sensory disturbance for wildlife, particularly caribou, muskoxen, and predatory mammals utilizing habitats adjacent to the roads. The program also monitors incidental mortality of species as they are encountered within the Project infrastructure, but in particular near the roads. In 2017 and 2018, the Vault Road has been surveyed and reported on separately from the WTHR, but since 2020 the Vault Road observations are considered part of the WTHR observations and results.

3.2 Objectives

The primary objectives of the road survey monitoring program are to:

- 1) Document wildlife utilization along the AWAR and WTHR corridors.
- 2) Evaluate wildlife trends along the road corridors, including identifying areas where higher densities of wildlife are observed.
- 3) Inform on the need for adaptive mitigation, such as temporary road closures during peak caribou migration periods.
- 4) Inform whether mortality thresholds for wildlife are exceeded.
- 5) Monitor road-related injuries or mortalities of caribou. The Project-wide threshold mortality level for ungulates is two individuals per year (as per TEMP Version 7).
- 6) Monitor road-related injuries or mortalities of predatory mammals. The Project-wide threshold mortality level for predatory mammals is two individuals per year (as per TEMP Version 7).

3.3 Duration

The AWAR and WTHR systematic road surveys are ongoing over the operational phase of the Mine and are scheduled to be conducted a minimum of once per week throughout the year, twice per week during the sensitive season (i.e., contingent on weather and road access), and daily if caribou or muskox GSTs are exceeded (see Figures 7 and 8 in TEMP). Agnico Eagle is committed to conducting a minimum of 75 road surveys per year along the AWAR and WTHR. Monitoring of vehicle collisions and wildlife mortality is continual along all road segments.

3.4 Methods

Agnico Eagle has signed an MOU with the Baker Lake HTO for a wildlife monitor on the road beginning in October 2018. An amended MOU was signed in February 2022, retroactive to 8 November 2021, to hire a second wildlife monitor that will work on the AWAR and WTHR. In 2021, the monitor was primarily on the AWAR due to COVID restrictions. In both 2022 and 2023, two Baker Lake Hunters and Trappers Organization (HTO) wildlife monitors completed road surveys regularly throughout the year.

The survey team typically includes two observers (one is the driver) in a vehicle. The terrain on both sides of the road (to a maximum horizontal distance of approximately 1 km perpendicular from the road edge, or as far as the observer can see pending site conditions) is surveyed as the vehicle progresses at a maximum speed of 30 km per hour. For each sighting, the vehicle is safely parked in a road pullout and UTM coordinates are recorded along with the estimated distance of the animal(s) from the road, nearest road marker, species, number, direction of

travel and a variety of other information (e.g., behavior of animals). All data are recorded electronically in tablet forms. Where animals are sighted close to roads and a risk of collision with vehicles is possible, the environmental monitor/observers report the number of animals, location, and direction of travel to the Mine radio dispatcher who informs all vehicle operators. In addition, all vehicle operators report ungulates and predatory mammals seen along the road to the dispatcher.

Regular data provided to Mine site personnel from the caribou satellite-collaring program are also used to track caribou movement and potential interactions with roads and Project facilities.

3.5 Historical Results

Road surveys commenced shortly following the onset of AWAR construction in 2007. Sampling intensity has been comparable along the entire length of the AWAR since 2009. Surveys along the Vault Haul Road have been irregular since its completion but were included as part of regular AWAR surveys in 2016 and conducted separately beginning in 2017. Since beginning road surveys in 2007, the annual survey frequency completed along the AWAR has ranged from one survey completed every 6.1 days to one survey completed every 1.6 days with an average annual survey frequency of one survey completed every 4.1 days (Table 3-1). Surveys along the WTHR began in 2017 and have been conducted every 1.5 to every 7.7 days with an average annual survey frequency of every 3.4 days (Table 3-1). Survey frequency changes throughout the year based on caribou migration patterns and ungulate observations (see caribou decision trees, AEM 2019), with daily surveys occurring during migration.

3.6 2023 Results

3.6.1 AWAR Surveys

The number of AWAR surveys completed each season in 2023 is provided in Table 3-1. The number of systematic road surveys completed in 2023 (n=215) is lower than the number of surveys completed the previous year (n=235), but considerably higher than the annual goal of 75 surveys. In 2023, surveys were conducted on average every 1.7 days, and were conducted between 07 January and 31 December. The number of surveys completed was highest in the fall (n=69) and lowest in winter (n=47). By month, the highest numbers of surveys were conducted in April, December, and November, with April and November corresponding with higher numbers of caribou observed within the LSA.

Two Baker Lake HTO wildlife monitors completed road surveys regularly throughout the year (Section 1.6). Electronic recording of observations began in October 2019 and written data forms are no longer used.

A total of 54,940 caribou were detected across 215 AWAR road surveys (i.e., approximately 255 caribou per survey), and caribou were recorded in all seasons. Caribou were recorded during road surveys in every month except for January, February, and July. Caribou detections per survey were calculated by season (Table 3-2) and by month (Table 3-3). The highest total caribou counts across all years and seasons were recorded in fall 2022, followed by spring 2023 (Table 3-2). Corrected by survey effort, the highest numbers of caribou observed per survey were recorded in fall 2010 (1154.2 caribou/survey), fall 2014 (808.8 caribou/survey), fall 2015 (771.4 caribou/survey), fall 2022 (648.7 caribou/survey), and spring 2023 (639.1 caribou/survey; Table 3-2).

The highest caribou observed per survey across months in 2023 occurred in April and November (Table 3-3). Record numbers of average caribou per survey occurred in April, were the record average caribou per survey was more than double the previous record high, which occurred in 2021, and anodally much higher than prior years of observations (Table 3-3).

Table 3-1: Details of All-Weather Access Road Wildlife Surveys from 2007 to 2023

Year	Annual range of surveys	Average Frequency ^(a)	Number of AWAR surveys				Annual Total
			Spring ^(b)	Summer ^(b)	Fall ^(b)	Winter ^(b)	
2007	Mar 01 – Dec 31	4.1 days	13	24	8	33	78
2008	Jan 02 – Dec 29	3.9 days	15	7	15	57	94
2009	Jan 09 – Dec 16	6.1 days	15	10	8	25	58
2010	Jan 21 – Dec 17	5.6 days	9	9	12	36	66
2011	Jan 10 – Dec 30	6.0 days	10	9	11	33	63
2012	Jan 04 – Dec 29	4.7 days	14	13	12	38	77
2013	Feb 02 – Dec 27	6.0 days	9	13	10	31	63
2014	Jan 12 – Dec 30	5.5 days	11	7	11	38	67
2015	Jan 03 – Dec 18	4.7 days	17	16	11	32	76
2016	Jan 02 – Dec 27	4.7 days	10	14	16	38	78
2017	Jan 03 – Dec 29	4.3 days	19	16	14	36	85
2018	Jan 03 – Dec 29	5.0 days	9	12	16	35	72
2019	Jan 04 – Dec 27	2.6 days	37	39	39	22	137
2020	Jan 17 – Dec 26	2.6 days	26	54	41	11	132
2021	Jan 01 – Dec 31	2.1 days	43	42	69	23	177
2022	Jan 02 – Dec 29	1.6 days	47	78	72	38	235
2023	Jan 07 – Dec 31	1.7 days	49	50	69	47	215

AWAR = All Weather Access Road.

- a) Frequency refers to the average number of days between surveys over the year.
b) Spring = Apr 1 to May 25, Summer = May 26 to Sep 21, Fall = Sep 22 to Dec 15, Winter = Dec 16 to Mar 31.

Table 3-2: Seasonal Caribou Counts and Detections per Survey on the All-Weather Access Road, 2007 to 2023

Year	Total Caribou Count					Caribou Detections per Survey				
	Spring ^(a)	Summer ^(a)	Fall ^(a)	Winter ^(a)	Annual	Spring ^(a)	Summer ^(a)	Fall ^(a)	Winter ^(a)	Annual
2007	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0
2009	1,224	649	628	1,238	3,739	81.6	64.9	78.5	49.5	64.5
2010	756	283	13,850	114	15,003	84	31.4	1154.2	3.2	227.3
2011	1,586	1,808	2,538	76	6,008	158.6	200.9	230.7	2.3	95.4
2012	655	256	3,545	1,093	5,549	46.8	19.7	295.4	28.8	72.1
2013	230	335	2,509	930	4,004	25.6	25.8	250.9	30	63.6
2014	690	36	8,897	635	10,258	62.7	5.1	808.8	16.7	153.1
2015	1,676	611	8,485	148	10,920	98.6	38.2	771.4	4.6	143.7
2016	580	190	659	134	1,563	58	13.6	41.2	3.5	20
2017	21	90	741	45	897	1.1	5.6	52.9	1.2	10.6
2018	4,688	1,821	1,939	195	8,643	520.9	151.8	121.2	5.6	120
2019	19,706	445	21,078	10	41,239	532.6	11.4	540.5	0.5	301
2020	7,510	18,539	16,334	861	43,244	288.8	343.3	398.4	78.3	327.6
2021	14,661	2,670	16,062	4,432	37,825	341	63.6	232.8	192.7	213.7
2022	803	1,466	46,708	1,116	50,093	17.1	18.8	648.7	29.4	213.2
2023	31,314	1,061	19,048	3,517	54,940	639.1	21.2	276.1	74.8	255.5

AWAR = All Weather Access Road.

- a) Frequency refers to the average number of days between surveys over the year.
b) Spring = Apr 1 to May 25, Summer = May 26 to Sep 21, Fall = Sep 22 to Dec 15, Winter = Dec 16 to Mar 31.

Table 3-3: Monthly Counts of Caribou Observed per Survey Trip Along the All-Weather Access Road from 2007 to 2023

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2007	0	0	11.4	14	15.4	7.1	1.5	1.1	10.8	18.4	72.4	18.4
2008	14.3	11.5	11.4	12.7	12.1	3.5	13.3	5.4	12.5	44.3	90.7	10.3
2009	12	10.7	16.7	11.4	13	8.2	0	3.6	8.5	25.4	13	11
2010	5.3	4.1	6.7	10.8	18	9	1.1	5.6	4.8	197.2	106	7.9
2011	3	1	6	34	25.3	12.5	1	63	10.3	71.6	2.3	7.8
2012	5.1	5.3	6	15.2	14.2	3.1	0	1	1	60	116.5	169.7
2013	0	68.1	39.8	0	11	5.3	0	1	6.5	6	455.2	16.8
2014	3.2	10.5	10.5	27.2	8.4	1.5	0	1	33.1	101.8	48.4	17.6
2015	5.8	7	14.4	22.4	14.1	6.3	2	3	12.3	41.5	148.9	275
2016	3.7	2.3	6	23.8	13.2	6.9	0	2.7	3.3	73	2	15.7
2017	8	0	3.5	4	0	1	0	3.4	5.3	63.3	12.6	5.4
2018	6.4	12.3	14.4	51.4	27.7	12.3	1	23.4	23.7	38.8	40.6	1
2019	0	0	6	77.6	22.8	5.7	1	1.3	1	145.8	79	4
2020	0	0	107.6	263.2	430	52	0	185.2	483.9	485.7	556	2.3
2021	0	3	34.6	414.7	226.6	26.4	0.3	161.3	30.7	64.5	35.6	553.5
2022	44.8	48.8	7.5	23.8	8	8.6	32.6	9.2	32.1	756.9	820.3	0.3
2023	0	0	17.8	850.7	221.6	23.2	0	0.1	0.7	331.9	379.8	150
Average	6.6	10.9	18.8	109.2	63.6	11.3	3.2	27.7	40.0	148.6	175.3	74.5

Note: Data show the average number of caribou observed for a month of the year, including data from all road surveys completed that month. Data are based on the observed number, which might be more inaccurate for larger groups or groups that are further away.

3.6.2 WTHR Surveys

Survey routes were separated into the Vault and Whale Tail segments of the WTHR until 2019 but were analyzed as a single unit (WTHR) starting in 2020. In 2023 there were 242 surveys conducted between 05 January and 30 December with a survey being conducted every 1.5 days on average (Table 3-4). The number of surveys conducted in 2023 was higher than the number conducted in any previous years. Fewer surveys were conducted in winter than other seasons. The most surveys were performed in the spring (Table 3-4).

A total of 35,863 caribou were detected across 242 WTHR surveys (i.e., approximately 148 caribou per survey) in 2023, which was greater than the previous three years (Table 3-4; Figure 3-1). Caribou detections per survey were calculated by season (Table 3-5) and by month (Table 3-6). The highest total caribou counts across all years and seasons were recorded in spring 2019 (53,201 caribou) and spring 2023 (30,789 caribou; Table 3-5).

Corrected by survey effort, the highest numbers of caribou observed per survey were recorded in spring 2019 (858 caribou/survey), followed by spring 2023 (422 caribou/survey), and spring 2021 (215 caribou/survey; Table 3-5).

The majority of caribou sightings along the WTHR were observed in April corresponding with spring migration, with a total of 23,518 caribou observed and an average of 635.6 caribou sightings per survey (Table 3-6). May had the second highest caribou sighting per survey that was observed in 2023 with 181.2 caribou sightings per survey. Caribou were detected along the WTHR during every month in 2023 but July when no caribou were observed (five surveys conducted). Additionally, there were few caribou per survey observed in January,

February, and December (less than or equal to two caribou per survey; Table 3-6). The average number of caribou observed along the WTHR in 2023 was higher than the monthly averages across years for most months, including April-June and August-October (Table 3-6). Caribou observation in April were almost four times greater than the annual average from 2017-2023, and almost three times higher than the previous record high in 2020 (Table 3-6). Months where fewer caribou were observed (January, February, and December) monthly average were lower in 2023 than the monthly average between 2017-2023 but were within the range of average number of caribou observations per survey from previous years (Table 3-6).

Table 3-4: Details of Whale Tail Haul Road Surveys from 2017 to 2023

Year	Annual range of surveys	Average Frequency ^(a)	Number of WTHR surveys				Annual Total
			Spring ^(b)	Summer ^(b)	Fall ^(b)	Winter ^(b)	
2017	Jan 03 – Dec 29	7.7 days	9	7	7	24	47
2018	Jan 30 – Dec 30	5.7 days	4	1	7	47	59
2019	Jan 08 – Dec 23	2.0 days	62	39	45	27	173
2020	Jan 07 – Dec 26	2.2 days	47	50	32	32	161
2021	Jan 10 – Dec 31	2.5 days	49	48	26	21	144
2022	Jan 02 – Dec 28	1.9 days	59	66	44	24	193
2023	Jan 05 – Dec 30	1.5 days	73	64	69	36	242

WTHR = Whale Tail Haul Road.

- a) Frequency refers to the average number of days between surveys over the year.
- b) Spring = Apr 1 to May 25, Summer = May 26 to Sep 21, Fall = Sep 22 to Dec 15, Winter = Dec 16 to Mar 31.

Table 3-5: Seasonal Caribou Counts and Detections per Survey on the Whale Tail Haul Road, 2017 to 2023

Year	Total Caribou Count					Caribou Detections per Survey				
	Spring ^(a)	Summer ^(a)	Fall ^(a)	Winter ^(a)	Annual	Spring ^(a)	Summer ^(a)	Fall ^(a)	Winter ^(a)	Annual
2017	5	5	10	5	25	0.6	0.7	1.4	0.2	0.5
2018	787	193	2,549	7	3,536	196.8	193.0	364.1	0.1	59.9
2019	53,201	7,391	6,819	45	67,456	858.1	189.5	151.5	1.7	389.9
2020	9,153	298	94	560	10,105	194.7	6.0	2.9	17.5	62.8
2021	10,549	1,047	304	28	11,928	215.3	21.8	11.7	1.3	82.8
2022	4,521	1,487	259	88	6,355	76.6	22.5	5.9	3.7	32.9
2023	30,789	3,050	1,923	101	35,863	421.8	47.7	27.9	2.8	148.2

WTHR = Whale Tail Haul Road.

- a) Spring = Apr 1 to May 25, Summer = May 26 to Sep 21, Fall = Sep 22 to Dec 15, Winter = Dec 16 to Mar 31.

Table 3-6: Monthly Counts of Caribou Observed per Survey Trip Along the Whale Tail Haul Road from 2017 to 2023

Year	Location	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2017 ^(a)	Vault	0	5	9	5	0	0	0	0	3	0	6	0
2018	Whale Tail	0	0	0	120.4	0	0	8.4	0	15.2	104.7	18.3	13.5
2018	Vault	0	2	5	46.3	0	0	0	0	77	10	0	0
2019	Whale Tail	4	0	4	80	119.2	7.5	1.5	45	3	75.9	3.7	8.3
2019	Vault	0	0	89.2	27.9	0	0	0	0	0	0	0	0
2020	WTHR	1.3	2.8	64.3	235.1	523.8	5.8	0.3	7.4	6.2	0.3	8.6	2.4
2021	WTHR	0.3	0	0	164.7	304.2	59.5	0.5	49.7	25.1	4.1	6.3	2
2022	WTHR	4.1	7.1	1.3	115.7	14.6	6.7	0.2	36.3	9	6.7	7.1	0.3
2023	WTHR	0.7	0.1	6.4	635.6	181.2	26.5	0	85.3	19	64.8	4.4	2
Average		1.2	1.9	19.9	159.0	127.0	11.8	1.2	24.9	17.5	29.6	6.0	3.2

Note: Data show the average number of caribou observed for a month of the year, including data from all surveys completed that month. Data are based on the observed number, which might be more inaccurate for larger groups or groups that are further away.

a) Values provided for 2017 are raw counts and are not adjusted for survey effort. The number of surveys per month is not available to make this adjustment.

3.6.3 Caribou Counts along AWAR and WTHR

The total number of caribou observed in 2023 along the AWAR were the highest recorded from 2007 to 2023 (Figure 3-1). The total number of caribou observed along the WTHR in 2022 was also higher than the last three years of observations and were the second highest observations from 2017-2023 (highest observations occurred in 2020; Figure 3-1). Note, total counts across years are not corrected for differences in sampling effort (i.e., the number of surveys), meaning that increases in caribou total counts may be a direct result of a higher number of surveys conducted annually.

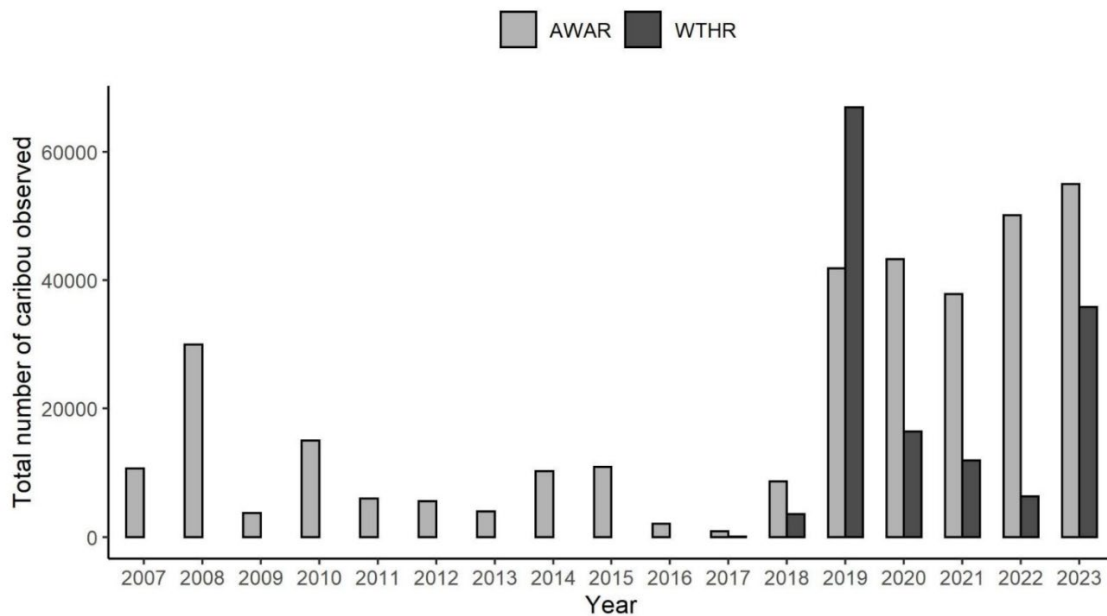


Figure 3-1: Total Number of Caribou Observed Each Year During All-Weather Access Road and Whale Tail Haul Road Surveys.

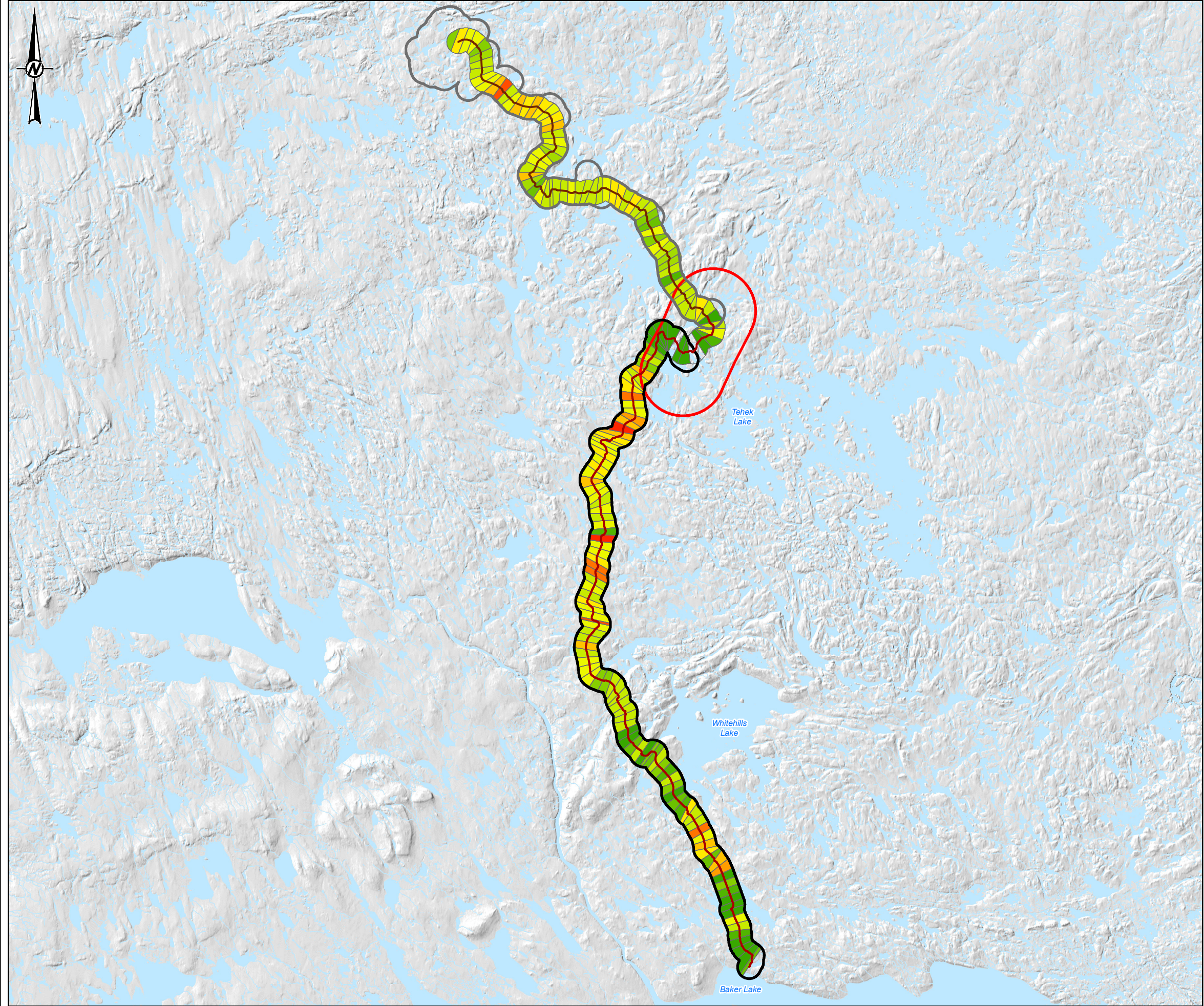
Maps were produced to depict the spatial variation of caribou counts along the AWAR and WTHR, summarized as the total number of caribou for each KM segment of road. Note, survey effort was not equal between the AWAR and WTHR in 2023 (215 AWAR surveys and 242 WTHR surveys), so caution should be taken when making comparisons between the two roads. Additionally, caribou observations determine the location and influence the frequency of road surveys. Caribou counts are shown for each segment of the AWAR and WTHR for 2023 for five different time intervals including year-round counts (Figure 3-2), spring and summer counts (Figure 3-3), and fall and winter counts (Figure 3-4). Considering both the AWAR and WTHR, caribou migration paths appear different across seasons with spring migration occurring primarily on the WTHR and near the Meadowbank complex and fall migration occurring primarily further south on the AWAR.

Year-round caribou counts along the AWAR varied substantially with totals ranging between 1 to 2,250 caribou for each 1-km section of road, though most kilometre sections had caribou counts fewer than 500 caribou (Figure 3-2). Along the AWAR, caribou counts were lowest south of Meadowbank LSA with caribou count annual totals ranging between three and fifteen caribou from KMs 100 to 110. The highest counts were observed between KMs 69 to 87 west of Tehek Lake and northwest of Whitehills Lake where 96 and 2,162 caribou were observed. In the spring there were fewer observations south near Baker Lake, which reflected similar observations to 2022. The most caribou observations occurred between KMs 69 and 89 west of Tehek Lake and northwest of Whitehills Lake. There were between 74 to 2,105 caribou observed in the spring throughout these sections. There were also many caribou observed (1,908 caribou) at KM 168, north near WTHR LSA (Figure 3-3). During the summer months, caribou counts were relatively low along the AWAR, but caribou were still observed in most 1-km segments north of KM 11 (Figure 3-3). During the fall, caribou counts were more numerous in the southern portion of the AWAR, with a high-density pocket between KMs 16 to 21 (Figure 3-4). Low caribou counts persisted near the Meadowbank LSA and west of Whitehills Lake during the fall. Caribou counts were very low along the AWAR during the winter, with scattered observations on the in the central portion of the AWAR between KMs 44 to 71 (Figure 3-4).

Caribou distributions along the AWAR have changed across years. The 2019 analysis caribou counts revealed that from 2008 to 2019 the highest cumulative caribou counts along the AWAR occur in areas closest to the community of Baker Lake and south and north of Whitehills Lake (Agnico Eagle 2020). Road survey results from 2020 found a similar pattern of year-round distribution along the AWAR and identified the stretch of road from KMs 14 to 18 along the AWAR as a high-density congregation area for caribou, particularly in the summer and fall. The 2021 road survey data shows the opposite pattern with the lowest cumulative caribou counts occurring near Baker Lake across all seasons. The 2023 show similar patterns to the cumulative caribou counts prior to 2020, where the highest density of caribou were observed north of Baker Lake, west of Tehek and northwest of Whitehills Lake (Figure 3-2).

Caribou counts ranged between 0 and 344 along the WTHR with caribou detections in almost every 1-km segment of road (Figure 3-2). Caribou counts were generally higher at the northern and southern ends of the WTHR, especially at KM 168. The observation of a high-density pocket near the south end of the WTHR is consistent with a high-density pocket observed during 2020 and 2021 road surveys within the Meadowbank complex. Caribou counts along the WTHR were highest in the spring (Figure 3-3). Summer counts were consistent along WTHR, and while lower than spring, caribou were still detected in almost every 1-km segment of road (Figure 3-3). Conversely, caribou detections were very low in fall and winter along the WTHR and only occurred at a few spots along the road (Figure 3-4).

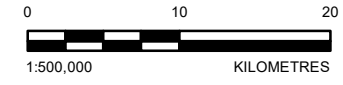
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- LEGEND**
- ALL-WEATHER ACCESS ROAD (AWAR)
 - WHALE TAIL HAUL ROAD (WTHR)
 - AWAR LOCAL STUDY AREA (LSA)
 - WTHR LOCAL STUDY AREA (LSA)
 - MEADOWBANK LOCAL STUDY AREA (LSA)
 - WATERCOURSE
 - WATERBODY

- CARIBOU COUNT**
- 1 - 50
 - 50 - 100
 - 100 - 150
 - 150 - 200
 - 200 - 250
 - 250 - 500
 - 500 - 750
 - 750 - 1000
 - 1000 - 1250
 - 1250 - 1500
 - 1500 - 1750
 - 1750 - 2000
 - 2000 - 2250
 - 2250 - 2500

*EMPTY SECTIONS REFLECT CARIBOU COUNT = 0



REFERENCE(S)

1. INFRASTRUCTURE OBTAINED FROM AGNICO EAGLE MINES LIMITED.
2. WATERCOURSE AND WATERBODY DATA OBTAINED FROM NATURAL RESOURCES CANADA.

COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 14N

CLIENT **AGNICO EAGLE MINES LIMITED:**
MEADOWBANK DIVISION

AGNICO EAGLE

PROJECT
MEADOWBANK COMPLEX
2023 WILDLIFE MONITORING SUMMARY REPORT

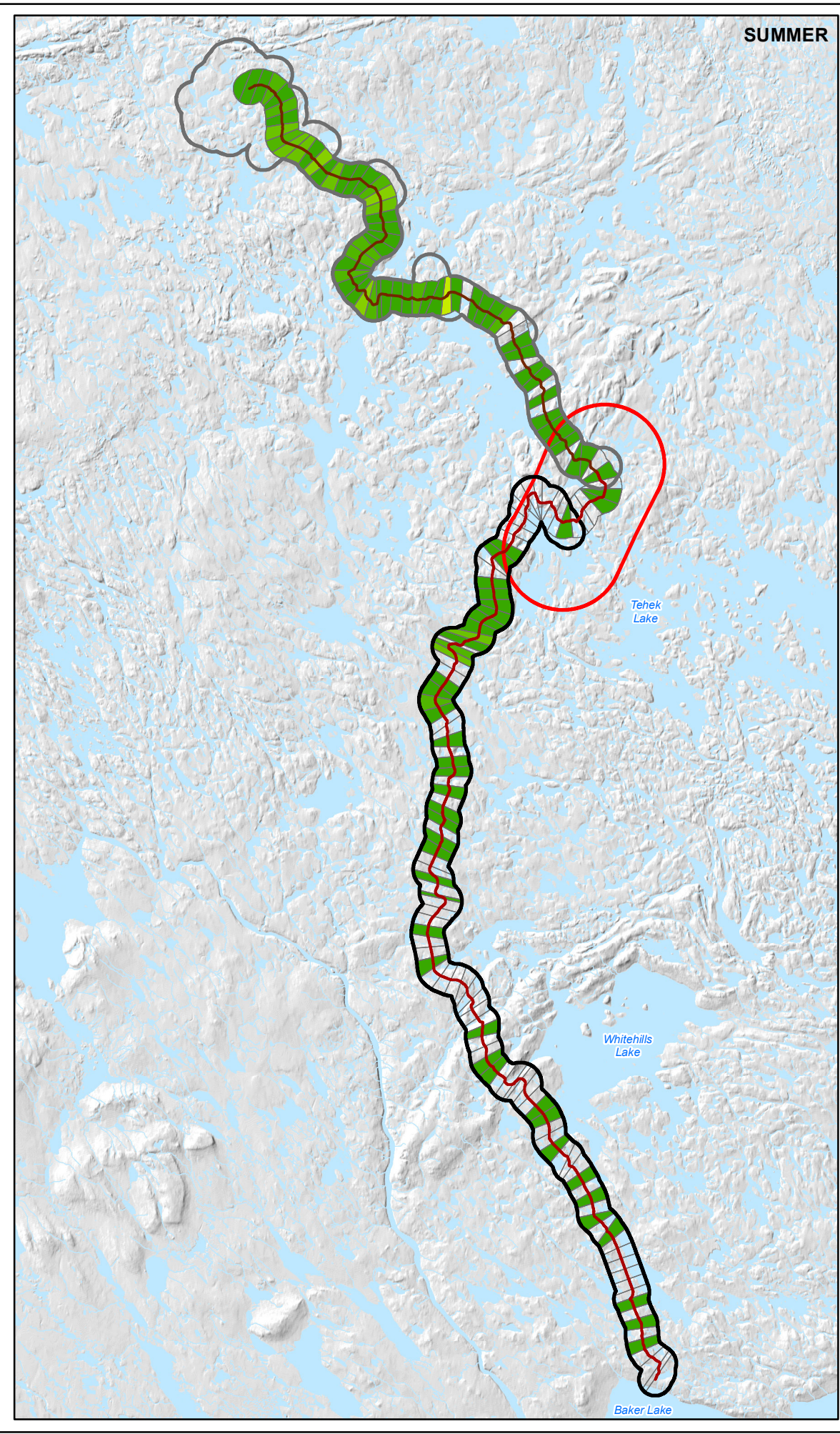
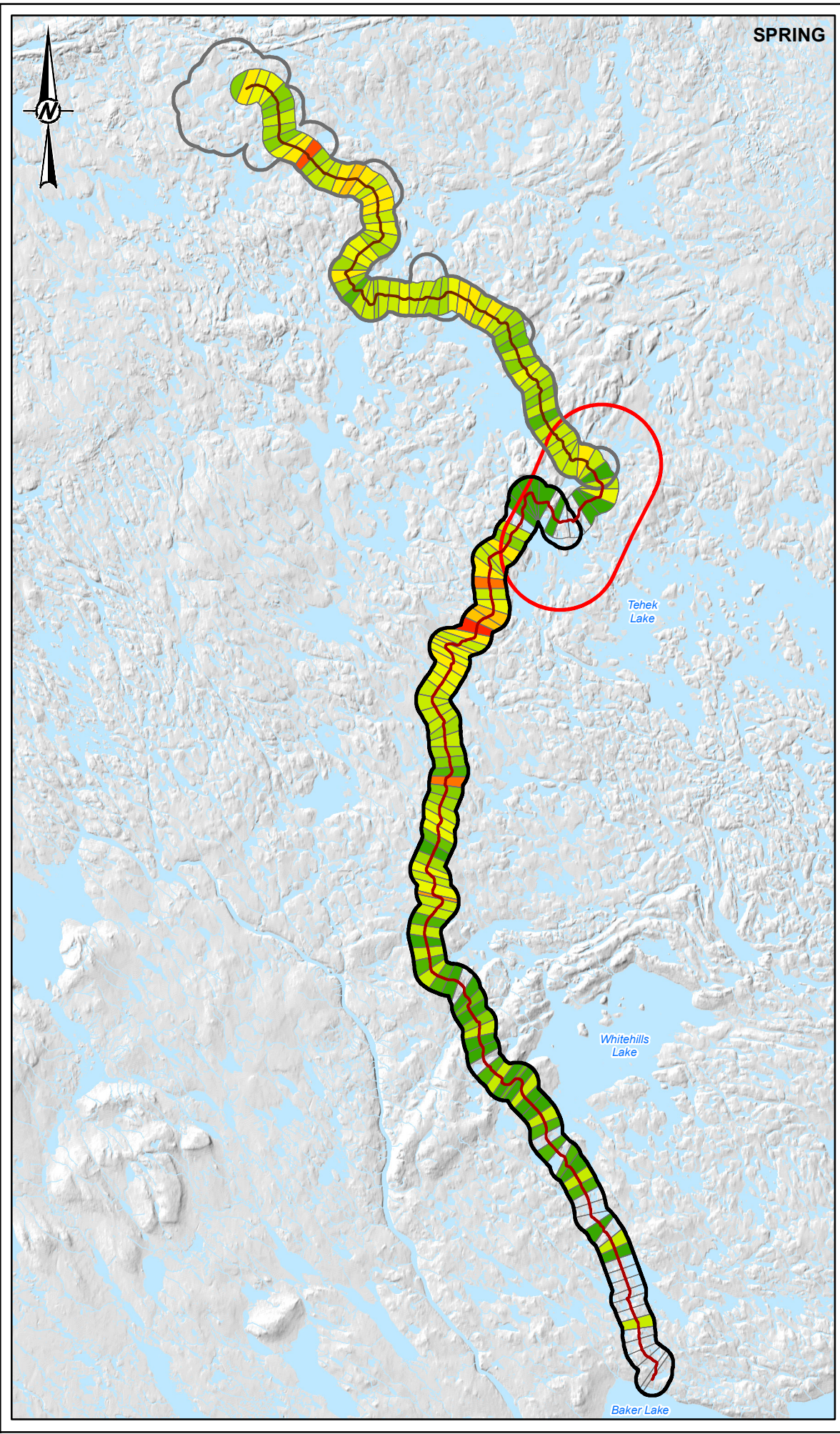
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CARIBOU COUNTS ALONG THE ALL-WEATHER ACCESS ROAD AND WHALE TAIL HAUL ROAD, YEAR-ROUND (2023)

CONSULTANT	YYYY-MM-DD	2024-03-22
	DESIGNED	JF
	PREPARED	CDB
	REVIEWED	JF
	APPROVED	CDLM

PROJECT NO.	CONTROL	REV.	FIGURE
CA0006990.5123	4000/4040	0	3-2

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

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LEGEND

- ALL-WEATHER ACCESS ROAD (AWAR)
- WHALE TAIL HAUL ROAD (WTHR)
- AWAR LOCAL STUDY AREA (LSA)
- WTHR LOCAL STUDY AREA (LSA)
- MEADOWBANK LOCAL STUDY AREA (LSA)
- WATERCOURSE
- WATERBODY

CARIBOU COUNT

- 1 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- 200 - 250
- 250 - 500
- 500 - 750
- 750 - 1000
- 1000 - 1250
- 1250 - 1500
- 1500 - 1750
- 1750 - 2000
- 2000 - 2250
- 2250 - 2500

*EMPTY SECTIONS REFLECT CARIBOU COUNT = 0

0 10 20
1:500,000 KILOMETRES

REFERENCE(S)

1. INFRASTRUCTURE OBTAINED FROM AGNICO EAGLE MINES LIMITED.
2. WATERCOURSE AND WATERBODY DATA OBTAINED FROM NATURAL RESOURCES CANADA.

COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 14N

CLIENT **AGNICO EAGLE MINES LIMITED:**
MEADOWBANK DIVISION

AGNICO EAGLE

PROJECT
MEADOWBANK COMPLEX
2023 WILDLIFE MONITORING SUMMARY REPORT

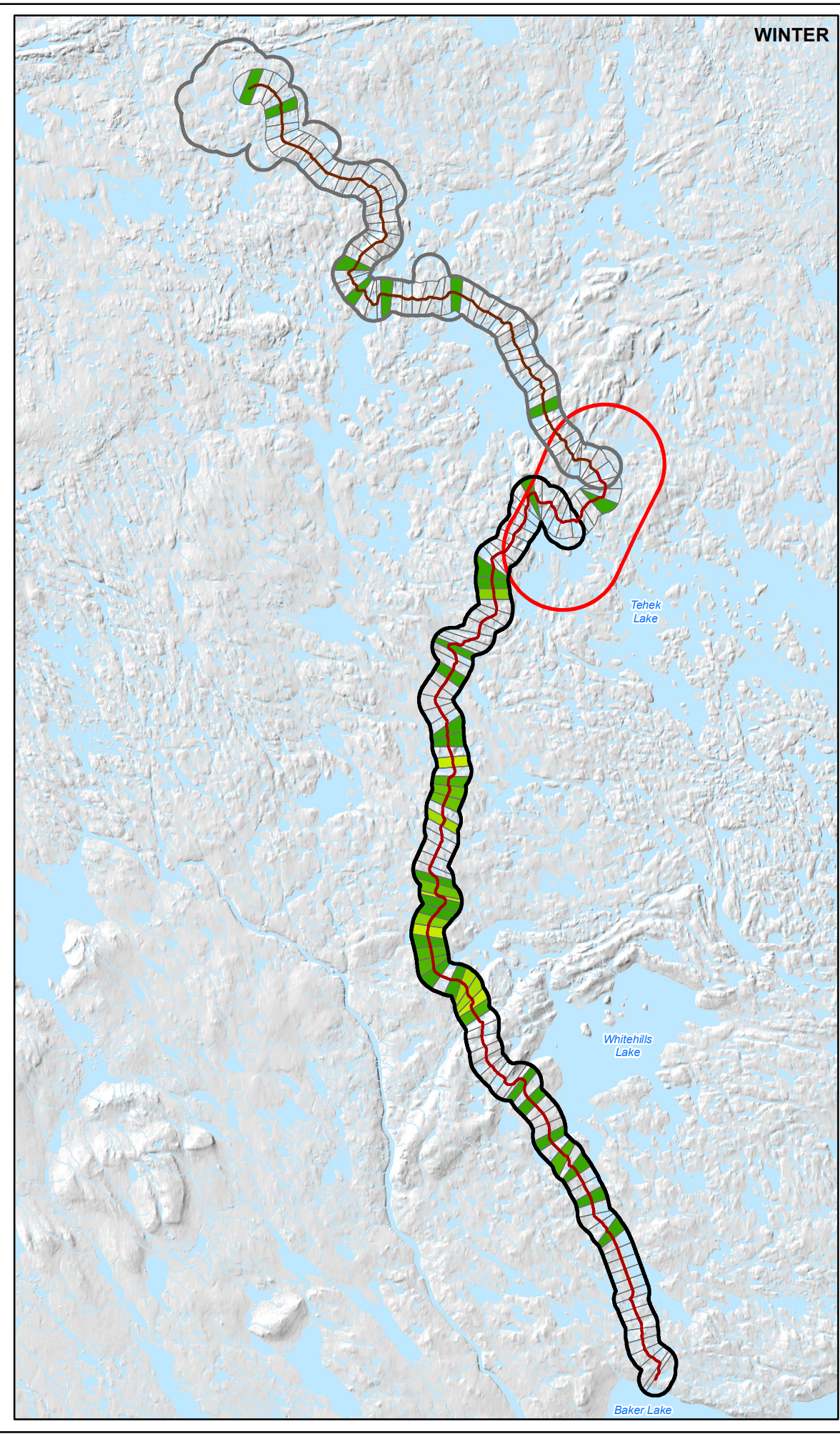
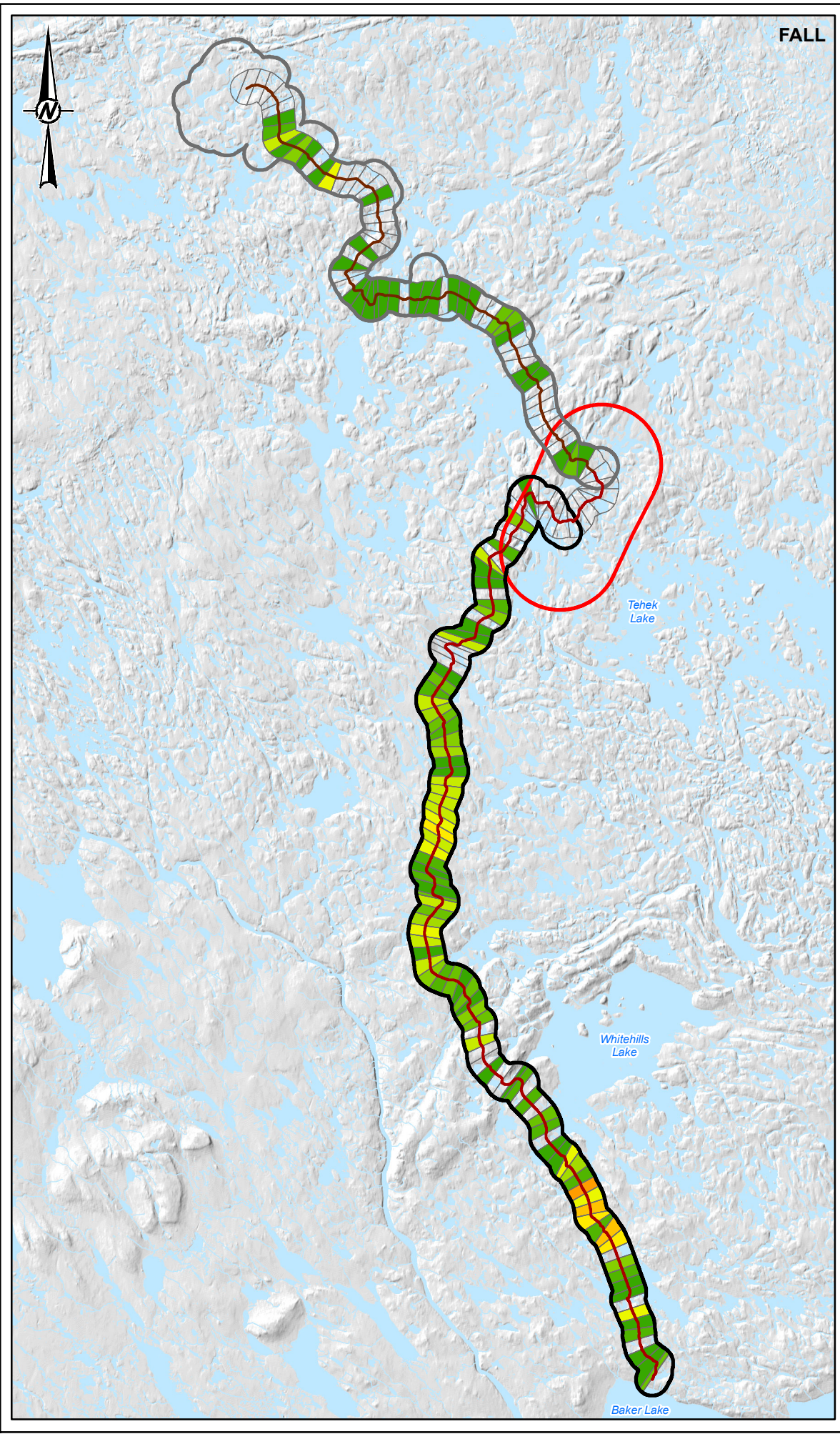
TITLE
CARIBOU COUNTS ALONG THE ALL-WEATHER ACCESS ROAD AND WHALE TAIL HAUL ROAD, SPRING-SUMMER (2023)

CONSULTANT	YYYY-MM-DD	2024-03-22
	DESIGNED	JF
	PREPARED	CDB
	REVIEWED	JF
	APPROVED	CDLM

PROJECT NO.	CONTROL	REV.	FIGURE
CA0006990.5123	4000/4040	0	3-3

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LEGEND

- ALL-WEATHER ACCESS ROAD (AWAR)
- WHALE TAIL HAUL ROAD (WTHR)
- AWAR LOCAL STUDY AREA (LSA)
- WTHR LOCAL STUDY AREA (LSA)
- MEADOWBANK LOCAL STUDY AREA (LSA)
- WATERCOURSE
- WATERBODY

CARIBOU COUNT

- 1 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- 200 - 250
- 250 - 500
- 500 - 750
- 750 - 1000
- 1000 - 1250
- 1250 - 1500
- 1500 - 1750
- 1750 - 2000
- 2000 - 2250
- 2250 - 2500

*EMPTY SECTIONS REFLECT CARIBOU COUNT = 0

REFERENCE(S)

1. INFRASTRUCTURE OBTAINED FROM AGNICO EAGLE MINES LIMITED.
2. WATERCOURSE AND WATERBODY DATA OBTAINED FROM NATURAL RESOURCES CANADA.

COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 14N

CLIENT **AGNICO EAGLE MINES LIMITED:**
MEADOWBANK DIVISION

AGNICO EAGLE

PROJECT
MEADOWBANK COMPLEX
2023 WILDLIFE MONITORING SUMMARY REPORT

TITLE
**CARIBOU COUNTS ALONG THE ALL-WEATHER ACCESS ROAD
AND WHALE TAIL HAUL ROAD, FALL-WINTER (2023)**

CONSULTANT	YYYY-MM-DD	2024-03-22
	DESIGNED	JF
	PREPARED	CDB
	REVIEWED	JF
	APPROVED	CDLM

PROJECT NO. CONTROL

CA0006990.5123 4000/4040

REV.

0

FIGURE

3-4

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

3.6.3.1 Group Size Threshold Calculation

Spring and fall GST for 2023 were calculated using 2023 caribou road survey data as well as historical data (Table 3-8). A GST is defined as the group size at, or above which, 75% of caribou observed interacting with Project infrastructure are expected to occur (Agnico Eagle 2019). Observations of caribou within 250 m of the road or greater than 1,000 m away from the road were excluded, based on methodology provided by GN (GN 2021). Spring and fall 2023 caribou road survey observations were grouped by season and observations were pooled between the AWAR and WTHR. The number of groups (i.e., number of observations), average group size, group size range, and 75th percentiles were summarized per season in Table 3-8. Spring and fall GSTs for 2024 were calculated by averaging GSTs for the corresponding season across all years with at least 100 caribou groups observed for that season. Variation due to low samples sizes may result in biased GSTs, and GST estimates were considered accurate (unbiased) if there were at least 100 groups observed for a season. There were six years of spring data with at least 100 caribou group observations (2008, 2018, 2019, 2020, 2021, 2022, and 2023; Table 3-8), and spring GSTs were averaged across those six years to calculate a spring 2024 GST of 38 caribou (Table 3-8). There were four years of fall data with at least 100 caribou group observations (2008, 2019, 2022, and 2023; Table 3-8), and fall GSTs were averaged across those four years to calculate a fall 2024 GST of 88 caribou (Table 3-8). For the purpose of calculating thresholds, GSTs were rounded down to the nearest whole number.

Table 3-7: Caribou group observation sample sizes for spring and fall road surveys, 2007-2023

Year	Sample Size ^(a)		Location ^(b)	Group Size 75th Percentile Spring	Group Size 75th Percentile Fall
	Spring	Fall			
2007	9	57	AWAR	N/A	N/A
2008	163	143	AWAR	12	100
2009	21	14	AWAR	N/A	N/A
2010	28	34	AWAR	N/A	N/A
2011	38	23	AWAR	N/A	N/A
2012	24	21	AWAR	N/A	N/A
2013	27	9	AWAR	N/A	N/A
2014	33	60	AWAR	N/A	N/A
2015	65	43	AWAR	N/A	N/A
2016	31	10	AWAR	N/A	N/A
2017	4	16	AWAR	N/A	N/A
2018	114	41	AWAR and WTHR	30	N/A
2019	437	127	AWAR and WTHR	60	125
2020	251	55	AWAR and WTHR	34	N/A
2021	373	63	AWAR and WTHR	31	N/A
2022	81	108	AWAR and WTHR	N/A	54
2023	577	156	AWAR and WTHR	55	75

a) Sample size refers to the number of caribou groups observed during road surveys for a given year and season. A minimum of 100 observations is required for the season and year to be included in group size threshold (GST) calculations.

b) AWAR = All Weather Access Road, WTHR = Whale Tail Haul Road.

N/A = not applicable.

Table 3-8: Caribou GST summaries for spring and fall based on 2023 data

Season ^(a)	Number of Observations ^(b)	Average group size	Group size range	Group size 75th percentile	Calculated GSTs for 2024 ^(c)
Spring	577	51.5	1-700	55	38
Fall	156	66.1	1-1,200	75	88

a) 2023 caribou observations were summarized for the two sensitive seasons, spring and fall.

b) GSTs are considered unbiased when calculated using observations of at least 100 caribou groups.

c) GSTs for 2024 were calculated by taking the average of all group size thresholds across years for a given season that meet the minimum sample size requirement (n=100).

GST = group size threshold.

3.6.4 Wildlife Observations Along the AWAR and WTHR

Eight mammalian species and ten avian species (four species could not be identified to an individual species) were detected and identified during road surveys in 2023 (Table 3-9). Seven mammal species were observed at both AWAR and WTHR, including Arctic fox (*Vulpes lagopus*), Arctic ground squirrel (*Urocitellus parryii*), Arctic hare (*Lepus arcticus*), caribou, muskox, wolf (*Canis lupus*), and wolverine (*Gulo gulo*). Red fox (*Vulpes vulpes*) was only observed at WTHR. Caribou and muskox were the most frequently observed mammals. Five avian species were observed at both sites including Canada goose (*Branta canadensis*), peregrine falcon (*Falco peregrinus*), ptarmigan sp. (*Lagopus* sp.), sandhill crane (*Antigone canadensis*), and snow goose (*Chen caerulescens*). Bald eagle (*Haliaeetus leucocephalus*) and duck sp. were only observed at AWAR. Common raven (*Corvus corax*), passerine sp., and an unknown bird sp. were only observed at WTHR. At both AWAR and WTHR Snow geese were the most frequently observed species.

Eight mammalian species and three avian species were detected and identified incidentally on the AWAR and WTHR in 2023 (Table 3-10). Grizzly bears (*Ursus arctos horribilis*), red fox, and Arctic fox were only observed on the WTHR. The remainder of the species observed were recorded on both roads, including Arctic ground squirrel, Arctic hare, caribou, muskox, and wolf. On both roads, caribou and muskox were the most frequently observed species. Peregrine falcon and a falcon sp. were observed at WTHR. Sandhill cranes were only observed at AWAR.

Table 3-9: Species Detected During Road Surveys at All-Weather Access Road and Whale Tail Haul Road in 2023 by Month

Species Group	Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
AWAR														
Mammal	Arctic fox	0	0	0	1	0	8	2	2	2	4	1	0	20
	Arctic ground squirrel	0	0	0	0	0	4	8	4	1	0	0	0	17
	Arctic hare	0	0	0	0	1	0	8	0	0	0	0	0	9
	Caribou	0	0	303	27,221	4,875	278	0	1	8	6,970	10,633	4,651	54,940
	Muskox	22	16	44	64	2	155	108	68	42	217	118	396	1,252
	Wolf	0	0	0	1	1	2	2	0	0	0	6	12	24
	Wolverine	1	0	0	2	0	0	0	0	1	0	0	0	4

Table 3-9: Species Detected During Road Surveys at All-Weather Access Road and Whale Tail Haul Road in 2023 by Month

Species Group	Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Bird	Bald Eagle	0	0	0	0	0	1	5	3	0	0	0	0	9
	Canada goose	0	0	0	0	0	5	0	112	0	0	0	0	117
	Duck	0	0	0	0	0	0	0	0	19	0	0	0	19
	Peregrine falcon	0	0	0	0	0	6	0	0	0	0	0	0	6
	Ptarmigan	0	0	0	0	0	1	10	0	10	0	59	4	84
	Sandhill crane	0	0	0	0	0	3	8	4	4	0	0	0	19
	Snow goose	0	0	0	0	0	0	0	150	452	0	0	0	602
WTHR														
Mammal	Arctic fox	2	0	1	0	1	1	1	0	2	1	1	1	11
	Arctic ground squirrel	0	0	0	0	0	0	1	1	1	0	0	0	3
	Arctic hare	0	0	0	0	1	2	0	1	0	3	0	0	7
	Caribou	4	1	90	23,518	7,428	265	0	2,219	437	1,750	111	40	35,863
	Muskox	47	19	156	143	26	51	45	293	298	350	212	197	1,837
	Red fox	0	0	0	0	0	0	0	2	0	0	0	0	2
	Wolf	0	0	2	6	5	5	0	0	4	5	0	0	27
	Wolverine	0	0	0	0	1	0	0	0	0	0	1	0	2
Bird	Canada goose	0	0	0	0	0	0	0	0	0	3	0	0	3
	Common raven	1	0	1	0	0	0	0	0	0	0	0	0	2
	Passerine sp.	0	0	0	0	0	2	0	0	0	0	0	0	2
	Peregrine falcon	0	0	0	0	0	1	0	0	0	0	0	0	1
	Ptarmigan	0	0	0	0	4	2	0	0	0	68	5	0	79
	Sandhill crane	0	0	0	0	1	0	0	0	0	0	0	0	1
	Snow goose	0	0	0	0	653	0	0	369	101	0	0	0	1,123
	Unidentified Bird	0	0	0	0	0	2	0	0	0	0	0	0	2

AWAR = All Weather Access Road, WTHR = Whale Tail Haul Road.

Table 3-10: Species Detected Incidentally at All-Weather Access Road and Whale Tail Haul Road in 2023 by Month

Species Group	Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
AWAR														
Mammal	Arctic ground squirrel	0	0	0	0	1	0	0	0	0	0	0	0	1
	Arctic hare	0	0	0	0	0	0	1	0	0	0	0	0	1
	Caribou	0	0	359	5,339	487	32	3	0	0	3,012	2,344	639	12,215
	Muskox	0	0	8	19	1	20	14	10	62	7	30	55	226
	Wolf	0	0	0	0	1	0	1	0	0	0	0	0	2
Bird	Sandhill crane	0	0	0	0	0	2	0	0	0	0	0	0	2
WTHR														
Mammal	Arctic fox	0	0	0	0	0	0	0	0	0	1	1	1	3
	Arctic ground squirrel	0	0	0	0	0	1	0	0	0	0	0	0	1
	Arctic hare	0	0	0	0	0	0	0	0	0	0	1	0	1
	Caribou	7	16	343	11,963	925	110	1	1,200	154	825	110	80	15,734
	Grizzly bear	0	0	0	0	0	0	0	0	1	0	0	0	1
	Muskox	69	0	0	3	28	5	0	65	119	202	94	95	680
	Red fox	0	1	0	0	0	0	0	0	0	0	0	0	1
	Wolf	0	0	0	12	1	0	7	0	0	0	0	0	20
Bird	Unidentified falcon	0	0	0	0	1	0	0	0	0	0	0	0	1
	Peregrine falcon	0	0	0	0	1	0	0	0	0	0	0	0	1

AWAR = All Weather Access Road, WTHR = Whale Tail Haul Road.

3.6.5 Road-related Mitigation

Road-related monitoring and mitigation were implemented according to Figures 7 and 8 of the TEMP version 7 (Agnico Eagle 2019). Collar location maps were instrumental in assessing the need for increased road monitoring. Road-related mitigation related to caribou presence in 2023 resulted in road closures and a corresponding reduction in total vehicle movements (Section 3.6.7). Outside of the fall migration period, road closures were implemented, or vehicle movements were restricted (e.g., light vehicles only, speed limit enforced) in response to high caribou numbers. During the fall migration period, road closures were implemented if there were two collared caribou in the regional study area.

Regular wildlife warnings were dispatched based on observation and monitoring data. The road supervisors and operators also ensured protection of wildlife by assisting in surveillance and closing roads as needed. Radio notices reminding operators of the appropriate speed limit were made frequently by dispatchers. During caribou peak migration, notices were sent to all road occupants, regulatory agencies, local groups, and wildlife consultants were notified, and road survey efforts were increased.

3.6.6 AWAR and WTHR Closures

Sightings of caribou that appeared to be travelling a migration route were noted in late summer and the fall migration decision tree for implementing road closures was implemented starting 31 July 2022. Significant movements of caribou and muskox occurred along the AWAR throughout October and November 2023, resulting in multiple closures to Project-related traffic. The AWAR was closed (i.e., 24-hour closure) on 97 days in 2023, with 80 days due to caribou and 17 days due to weather (Table 3-11). The AWAR was had closure days with less than 24 hours of closure on 56 occasions, including 26 closure days due to caribou (Table 3-11). April and November had the highest number of days with closures (24-hour closures) and January and December had the highest number of days with partial closures (less than 24-hour closures). In total, the AWAR was closed for a total of 2,975 hours in 2023, with the highest number of closure hours reported in April, November, and May due to caribou migration (Table 3-12). Speed restrictions were applied on 16 days on the AWAR and were applied in response to caribou or muskox presence (Table 3-11). Mitigation measures such as reduced speeds were instituted due to the presence muskox or caribou herds during March, June, July, and September. In total, there were 124 days in 2023 with road closures and speed restrictions applied on the AWAR in response to caribou or muskox (Table 3-11). Full summaries of AWAR road closures, restrictions, and reason for reopening are available in Appendix B in Table B-1.

Significant movements of caribou occurred along the WTHR in spring during April, resulting in multiple closures to Project-related traffic. The WTHR was fully closed (i.e., 24-hour closure) on 37 days, with 33 closure days due to caribou and 4 closure days due to weather (Table 3-11). On 64 days, the WTHR experience closures occurring for less than 24 hours, with 23 closure days related to caribou and 1 closure day related to muskox (Table 3-11). In total, the WTHR was closed for a total of 1503 hours in 2023, with the highest number of closure hours reported in April and May due to caribou spring migration and November due to fall migration (Table 3-12). Speed restrictions were applied on 60 days on the WTHR and in all cases were applied in response to caribou and/or muskox presence (Table 3-11). Reduced speeds were instituted due to the presence of both muskox and caribou herds throughout the year. Traffic restrictions were not applied on the WTHR. In total, there were 117 days in 2023 with road closures and speed restrictions applied on the WTHR in response to caribou and/or muskox (Table 3-11). Full summaries of WTHR road closures, restrictions, and reasons for reopening are available in Appendix B in Table B-2.

Table 3-11: Number of Road Closures and Restrictions Implemented Due to Ungulate Activity, or Weather Along the All-Weather Access Road and Whale Tail Haul Road, 2023

Closure Status	Cause	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
AWAR														
Closure 24 hours	Caribou	-	-	1	29	19	-	-	-	-	5	22	4	80
	Weather	5	-	1	-	1	-	-	-	-	-	6	4	17
Closure < 24 hours	Caribou	-	-	1	1	9	-	-	-	-	1	2	12	26
	Cyanide Convoy	-	-	-	-	-	-	-	-	5	-	-	-	5
	Weather	11	2	1	-	-	1	-	-	2	4	-	4	25
Speed Restriction	Caribou	-	-	5	-	-	3	-	-	-	-	-	-	8
	Muskox	-	-	-	-	-	3	3	-	2	-	-	-	8
Traffic Restriction ^(a)	Caribou	-	-	-	-	-	-	-	-	-	-	-	2	2
WTHR														
Closure 24 hours	Caribou	-	-	-	18	11	-	-	3	-	1	-	-	33
	Weather	1	-	-	-	-	-	-	-	-	-	2	1	4
Closure < 24 hours	Caribou	-	-	1	6	7	-	-	6	-	2	1	-	23
	Muskox	-	-	-	-	-	-	-	-	1	-	-	-	1
	Emergency	-	-	-	-	1	-	-	-	-	-	-	-	1
	Weather	9	1	1	-	-	1	2	2	2	7	8	6	39
Speed Restriction	Caribou	-	-	3	2	1	3	-	1	1	-	-	1	12
	Muskox	3	-	7	-	-	1	1	5	7	6	9	9	48

AWAR = All Weather Access Road, WTHR = Whale Tail Haul Road.

a) Traffic restricted to light vehicles only.

b) Closure (less than 24 hours) and speed restriction occurred on the same date for separate reasons. Closure was related to maintenance or weather while the speed restriction was related to muskox.

Table 3-12: Number of Road Closure Hours Due to Ungulate Activity, Weather, or Maintenance Along the All-Weather Access Road and Whale Tail Haul Road, 2023.

Closure Status	Cause	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
AWAR														
Closure 24 hours	Caribou	-	-	24	696	456	-	-	-	-	120	528	96	1,920
	Weather	120	-	24	-	24	-	-	-	-	-	144	96	408
Closure < 24 hours	Caribou	-	-	20	14	119	-	-	-	-	13	26	134	325
	Cyanide Convoy	-	-	-	-	-	-	-	-	34	-	-	-	34
	Weather	126	27	20	-	-	4	-	-	15	26	-	71	288
WTHR														
Closure 24 hours	Caribou	-	-	-	432	264	-	-	72	-	24	-	-	792
	Weather	24	-	-	-	-	-	-	-	-	-	48	24	96
Closure < 24 hours	Caribou	-	-	11	90	42	-	-	68	-	30	6	-	246
	Muskox	-	-	-	-	-	-	-	-	0.25	-	-	-	0.25
	Emergency	-	-	-	-	2	-	-	-	-	-	-	-	2
	Weather	114	5	4	-	-	5	19	14	14	38	81	73	367

AWAR = All Weather Access Road, WTHR = Whale Tail Haul Road.

The percentage of caribou that encountered the AWAR when closed was 99% of caribou observed during spring (36,645 of 36,940 caribou observed in spring) and 99% of caribou observed in fall (24,683 of 24,835 caribou observed in fall; Table 3-13). The percentage of caribou that encountered the WTHR when closed was 99% during the spring (43,029 out of 43,655 caribou observed in spring) and 81% during the fall (2,369 of 2,919 caribou observed in fall; Table 3-13). Percentages were calculated based on the sum of caribou counts on each road based on closure status for the day of observation (i.e., open versus closure), with both 24-hour closures and less than 24-hour closures considered together for the purpose of this calculation.

Table 3-13: Percentage of Caribou Encountering Closed Roads

Road	Season	Number of Caribou Encountering Closed Roads	Total Caribou Observations	Percentage of Caribou Encountering Closed Road
AWAR	Spring	36,645	36,940	99.2
	Summer	982	1,296	75.8
	Fall	24,683	24,835	99.4
	Winter	3,574	4,084	87.5
	Annual	65,884	67,155	98.1
WTHR	Spring	43,029	43,655	98.6
	Summer	2,967	4,550	65.2
	Fall	2,369	2,919	81.2
	Winter	244	486	50.2
	Annual	48,609	51,610	94.2

AWAR = All Weather Access Road, WTHR = Whale Tail Haul Road.

3.6.7 Traffic Data

Total one-way traffic along the AWAR in 2023 included 75 heavy equipment, 16,031 medium equipment, and 8,182 light equipment vehicles for a total of 24,288 vehicles (Table 3-14). Total traffic along the WTHR included 58,284 heavy equipment, 5,279 medium equipment, and 2,410 light equipment vehicles, for a total of 65,973 vehicles (Table 3-15). Total traffic along the AWAR was about 9% higher in 2022 (n= 26,428) than the 2023 total of vehicles, and traffic along the WTHR was 7% lower in 2022 (n=61,070) compared to the vehicles in 2023 (WSP 2023). Monthly vehicle traffic for the AWAR and WTHR fluctuated throughout the year (Figure 3-5). Lowest traffic rates on the AWAR occurred in November, and highest traffic rates occurred in August (Table 3-14; Figure 3-5). On the WTHR, lowest traffic rates were recorded in April, and highest traffic rates were recorded in July and March (Table 3-15; Figure 3-5). Caribou counts for the month of April were high along the WTHR and AWAR (Table 3-9), which coincided with spring migration and the lowest traffic rates.

During periods of road closures or Level 3 status, a daily meeting is held with all departments to validate the essential needs requiring access to the roads. From this meeting, departure time, departure location, and the list of vehicles authorized to travel on the road will be determined. Only essential vehicles (vehicles operated for the purpose of maintaining the safety of personnel, Emergency Response Team (ERT), security and wildlife monitoring) are permitted in convoys per the TEMP (Agnico Eagle 2019). Environment personnel will meet the vehicles at agreed upon time and departure location and validate the list of authorized vehicles to escort them along the road. Vehicles in a convoy are instructed to stay a minimum of 1 km behind the pilot vehicle unless otherwise instructed by Environment pilot vehicle. KivIA and HTO representative regularly participate in leading the essential vehicles.

There were 67 convoys between 8 April and 7 December along the AWAR, and 51 convoys between 3 April and 18 August along the WTHR in 2023 (Table 3-16). Note, convoys were included as one-way trips, meaning a round trip on a single day would be considered two separate convoys. Convoys occurred during road closures, but convoys did not occur on all days where roads were closed. Light vehicles were the most common vehicle type (n=331), followed by medium vehicles (n=313; Table 3-16).

Table 3-14: Monthly Traffic Data for the Meadowbank All-Weather Access Road in 2023

Month	Heavy Equipment	Medium Equipment	Light Equipment	Total
January	5	1,147	869	2,021
February	9	1,269	1,079	2,357
March	0	1,289	845	2,134
April	0	269	885	1,154
May	53	1,132	819	2,004
June	2	2,191	741	2,934
July	0	1,686	583	2,269
August	1	2,490	626	3,117
September	2	2,182	607	2,791
October	2	1,426	464	1,892
November	0	203	271	474
December	1	747	393	1141
Total	75	16,031	8,182	24,288

Note: Heavy equipment = haul trucks, long haul trucks; Medium equipment = tankers, graders, snowplows, cement trucks, fuel trucks, and other similar sized vehicles; Light equipment = pick-up trucks, bus, water trucks, cube trucks, and other similar sized vehicles.

Table 3-15: Monthly Traffic Data for the Meadowbank Whale Tail Haul Road in 2023

Month	Heavy Equipment	Medium Equipment	Light Equipment	Total
January	4,580	453	347	5,380
February	4,590	437	252	5,279
March	6,066	541	227	6,834
April	1,710	222	170	2,102
May	4,014	449	280	4,743
June	6,060	447	131	6,638
July	6,326	519	152	6,997
August	4,694	493	166	5,353
September	5,236	517	127	5,880
October	5,400	656	212	6,268
November	4,608	240	107	4,955
December	5,000	305	239	5,544
Total	58,284	5,279	2,410	65,973

Note: Heavy equipment = haul trucks, long haul trucks; Medium equipment = tankers, graders, snowplows, cement trucks, fuel trucks, and other similar sized vehicles; Light equipment = pick-up trucks, bus, water trucks, cube trucks, and other similar sized vehicles.

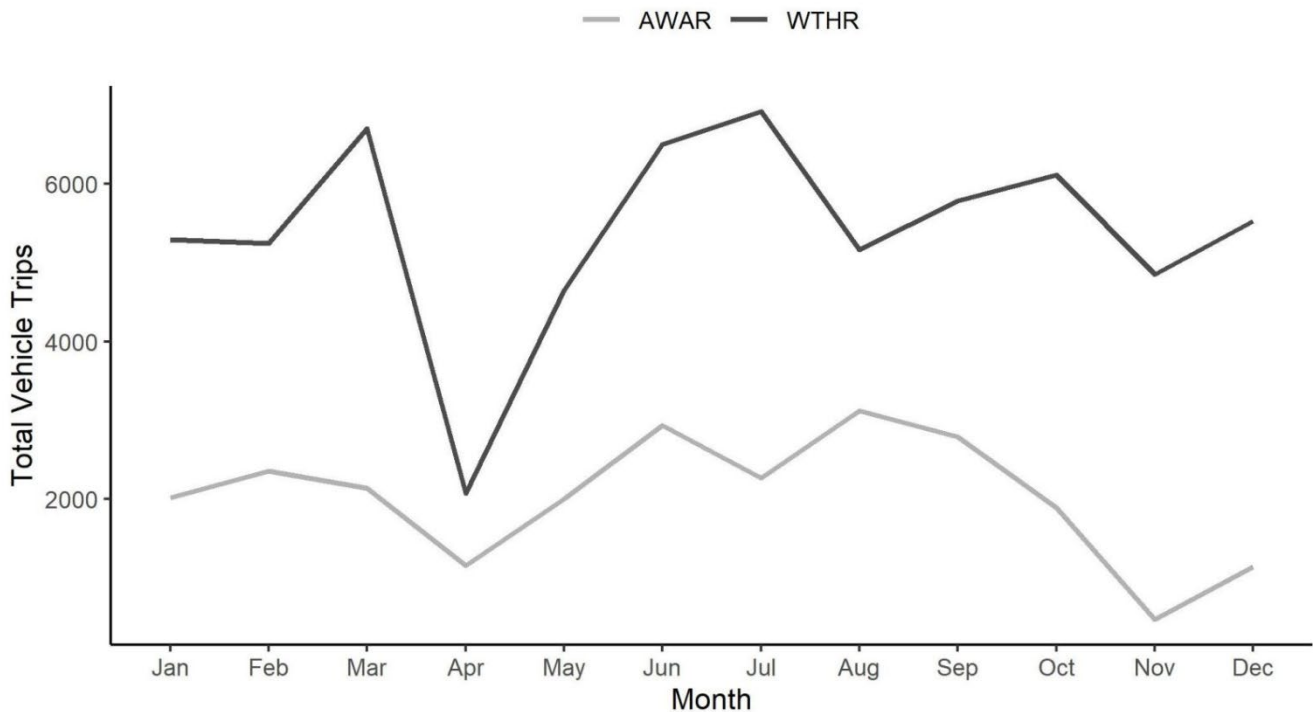


Figure 3-5: Total Vehicle Traffic (One-way Trips) Along All-Weather Access Road and Whale Tail Haul Road per Month in 2023

Table 3-16: Convoy Tracker for the AWAR and WTHR in 2023

Date	Direction of Travel	Convoy Type	Light	Medium	Heavy	Total ^(a)
AWAR						
2023-04-08	South	Tractor trailers were transporting essential part for the temporary bridge at km 8. The three pick-ups were sent for emergency maintenance on a genset at BL. Discussion with HTO monitor prior to proceed.	4	2	0	6
2023-04-08	North	Tractor trailers were transporting essential part for the temporary bridge at km 8. The three pick-ups were sent for emergency maintenance on a genset at BL. Discussion with HTO monitor prior to proceed.	3	2	0	5
2023-04-11	North	Passenger escort, Lead by HTO	3	0	0	3
2023-04-11	South	Passenger escort, Lead by HTO	4	0	0	4
2023-04-13	North	Essential needs, passenger escort. KIA escort the convoy with env.	3	0	0	3
2023-04-13	South	Essential needs, passenger escort. KIA escort the convoy with env.	3	0	0	3
2023-04-18	North	Passenger escort, KIA, HTO and AEM environment escorted a convoy	2	0	0	2
2023-04-18	South	Passenger escort, two Jet-A tankers escorted by HTO and Jet-A from exploration to BL.	2	2	0	4
2023-04-20	North	Passenger escort, 2 tankers escorted by HTO and KIA	3	2	0	5
2023-04-20	South	Passenger escorted by HTO and KIA	3	0	0	3
2023-04-26	North	Passenger escorted by KIA and HTO	3	0	0	3
2023-04-26	South	Passenger escorted by KIA and HTO	3	0	0	3
2023-04-27	North	Passenger escorted by HTO	2	0	0	2
2023-04-27	South	Passenger escorted by HTO	3	0	0	3
2023-05-03	North	Essential needs, passenger escorted by HTO	3	6	0	9
2023-05-05	North	HTO escorted the 6 fuel tankers	1	6	0	7
2023-05-05	South	Essential needs, passenger escort - HTO escorted 1 tanker back	2	1	0	3
2023-05-05	North	HTO escorted the convoy 4 fuel tankers and 1 gas tanker	2	5	0	7
2023-05-05	South	HTO escorted the convoy of 9 fuel tanker and 1 gas tanker	1	10	0	11
2023-05-06	North	HTO escorted the tankers	1	9	0	10
2023-05-06	South	HTO escorted the tankers	1	9	0	10

Table 3-16: Convoy Tracker for the AWAR and WTHR in 2023

Date	Direction of Travel	Convoy Type	Light	Medium	Heavy	Total ^(a)
2023-05-07	North	HTO escorted the tankers	1	9	0	10
2023-05-07	South	HTO escorted the tankers	1	5	0	6
2023-05-08	North	HTO escorted the tankers	1	6	0	7
2023-05-08	South	HTO escorted the tankers	1	6	0	7
2023-05-09	North	HTO escorted the tankers	2	6	0	8
2023-05-09	South	HTO escorted the tankers	2	6	0	8
2023-05-10	North	HTO escorted the tankers	1	6	0	7
2023-05-10	South	HTO escorted the tankers	1	6	0	7
2023-05-11	North	Essential needs, passenger escorted by HTO	4	6	0	10
2023-05-11	South	Essential needs, passenger escorted by HTO	2	6	0	8
2023-05-12	North	HTO escorted the tankers	1	6	0	7
2023-05-12	South	HTO escorted the tankers	1	6	0	7
2023-05-13	North	AEM escorted the tankers	1	6	0	7
2023-05-13	South	AEM escorted the tankers	1	6	0	7
2023-05-14	North	AEM escorted the tankers	1	4	0	5
2023-05-14	South	AEM escorted the tankers	1	4	0	5
2023-05-15	North	HTO escorted the tankers	1	5	0	6
2023-05-15	South	HTO escorted the tankers	1	5	0	6
2023-05-16	North	HTO escorted the tankers	1	6	0	7
2023-05-16	South	HTO escorted the tankers	1	6	0	7
2023-05-17	North	HTO escorted the tankers	1	5	0	6
2023-05-17	South	HTO escorted the tankers	1	5	0	6
2023-05-18	North	HTO escorted the tankers	1	6	0	7
2023-05-18	South	HTO escorted the tankers	1	6	0	7
2023-05-23	North	Essential needs, passenger escorted by HTO	2	7	0	9
2023-05-23	South	AEM Environment escorted the bus back to baker lake, HTO escorted the 7 tankers back to baker lake	2	7	0	9
2023-11-02	North	Essential needs, passenger escorted by HTO	2	0	0	2

Table 3-16: Convoy Tracker for the AWAR and WTHR in 2023

Date	Direction of Travel	Convoy Type	Light	Medium	Heavy	Total ^(a)
2023-11-02	South	Essential needs, passenger escorted by HTO	2	0	0	2
2023-11-09	North	Essential needs, passenger escorted by HTO	3	0	0	3
2023-11-09	South	Essential needs, passenger escorted by HTO	3	0	0	3
2023-11-14	North	Passenger escorted by HTO	4	0	0	4
2023-11-14	South	Passenger escorted by HTO	4	0	0	4
2023-11-16	North	Essential needs, passenger escorted by HTO	2	0	0	2
2023-11-16	North	Essential needs, passenger escorted by HTO	2	0	0	2
2023-11-25	North	Passenger escorted by HTO	2	0	0	2
2023-11-25	South	Passenger escorted by HTO	2	0	0	2
2023-11-28	North	HTO escorted the tankers and passenger	2	7	0	9
2023-11-28	South	HTO escorted the tankers and passenger	2	5	0	7
2023-12-01	North	HTO escorted the tankers	2	6	0	8
2023-12-01	South	HTO escorted the tankers	2	6	0	8
2023-12-02	North	HTO escorted the tankers	1	7	0	8
2023-12-02	South	HTO escorted the tankers	1	7	0	8
2023-12-04	North	HTO escorted the tankers	1	5	0	6
2023-12-04	South	HTO escorted the tankers	1	5	0	6
2023-12-07	North	HTO escorted the passengers	2	0	0	2
2023-12-07	South	HTO escorted the passengers	2	0	0	2
WTHR						
2023-04-03	North	Passenger escort, essential need, returning vehicles to home base.	5	1	0	6
2023-04-11	South	Essential needs, passenger escort	6	0	0	6
2023-04-11	North	Passenger escort	2	0	0	2
2023-04-12	South	Essential needs, passenger escort	5	0	0	5
2023-04-12	North	Essential needs, passenger escort	6	0	0	6
2023-04-13	North	Passenger escort	2	0	0	2
2023-04-13	South	Passenger escort	2	0	0	2

Table 3-16: Convoy Tracker for the AWAR and WTHR in 2023

Date	Direction of Travel	Convoy Type	Light	Medium	Heavy	Total ^(a)
2023-04-14	South	Essential needs, passenger escort	5	0	0	5
2023-04-14	North	Essential needs, passenger escort	4	3	0	7
2023-04-17	South	Essential needs, passenger escort	5	4	0	9
2023-04-17	North	Essential needs, passenger escort	5	0	0	5
2023-04-18	South	Essential needs, passenger escort	5	0	0	5
2023-04-18	South	Essential needs, passenger escort	5	0	0	5
2023-04-24	South	Essential needs, passenger escort	3	0	0	3
2023-04-24	North	Essential needs, passenger escort	3	0	0	3
2023-04-25	South	Essential needs, passenger escort	4	0	0	4
2023-04-25	North	Essential needs, passenger escort	4	0	0	4
2023-04-26	South	Essential needs, passenger escort	4	0	0	4
2023-04-26	North	Essential needs, passenger escort	4	0	0	4
2023-04-27	South	Essential needs, passenger escort	5	0	0	5
2023-04-27	North	Essential needs, passenger escort	5	0	0	5
2023-04-28	South	Essential needs, passenger escort	5	0	0	5
2023-04-28	North	Essential needs, passenger escort	4	0	0	4
2023-05-02	South	Passenger escort	2	0	0	2
2023-05-02	North	Passenger escort	2	0	0	2
2023-05-03	South	Essential needs, passenger escort	6	0	0	6
2023-05-03	North	Essential needs, passenger escort	5	0	0	5
2023-05-04	South	Passenger escort	2	0	0	2
2023-05-04	North	Passenger escort	2	0	0	2
2023-05-05	South	Essential needs, passenger escort	5	0	0	5
2023-05-05	North	HTO escorted the four fuel tankers northbound from MBK after TAG meeting approval	1	4	0	5
2023-05-05	South	HTO escorted the four fuel tankers southbound from WTM to MBK after TAG meeting approval	1	4	0	5
2023-05-06	North	Passenger escort & HTO escorted the tankers	3	4	0	7

Table 3-16: Convoy Tracker for the AWAR and WTHR in 2023

Date	Direction of Travel	Convoy Type	Light	Medium	Heavy	Total ^(a)
2023-05-06	South	Passenger escort & HTO escorted the tankers	3	4	0	7
2023-05-07	North	Essential needs	1	4	0	5
2023-05-10	South	Essential needs, passenger escort	5	4	0	9
2023-05-10	North	Essential needs, passenger escort	5	4	0	9
2023-05-11	South	Essential needs, passenger escort	5	4	0	9
2023-05-11	North	Essential needs, passenger escort	5	4	0	9
2023-05-12	South	Essential needs, passenger escort	5	4	0	9
2023-05-12	North	Essential needs, passenger escort	5	4	0	9
2023-05-13	South	Essential needs	3	3	0	6
2023-05-13	North	Essential needs	3	3	0	6
2023-08-15	South	Essential needs, passenger escort	6	0	0	6
2023-08-15	North	Essential needs, passenger escort	4	0	0	4
2023-08-16	South	Essential needs, passenger escort	6	1	0	7
2023-08-16	North	Essential needs, passenger escort	5	0	0	5
2023-08-17	South	Essential needs, passenger escort	3	0	0	3
2023-08-17	North	Essential needs, passenger escort	4	0	0	4
2023-08-18	South	Essential needs, passenger escort	4	0	0	4
2023-08-18	North	Essential needs, passenger escort	4	0	0	4
Total^(b)			331	313	0	644

Note: Heavy equipment = haul trucks, float; Medium equipment = emulsion, fuel tanker, tractor trailer, roll off, vacuum, lube truck, and other similar sized vehicles; Light equipment = wildlife monitors, pick-up trucks, bus, cube truck, and other similar sized vehicles.

AWAR = All Weather Access Road, WTHR = Whale Tail Haul Road

- a) Total number of vehicles per convoy.
b) Total number of vehicles by vehicle type summed across all AWAR and WTHR convoys.

3.6.8 Caribou Responses to Mitigation

Caribou Crossings

The frequency of road surveys in 2023 demonstrate Agnico Eagle's commitment to preventing impacts to caribou from the AWAR, WTHR (including Vault Haul Road). Mitigation measures such as reduced speeds, convoys, and multiple road closures function to minimize road-related effects including mortality and injury, and to increase caribou passage. Incidental sightings in 2023 recorded in the Wildlife Log (Appendix A) and road surveys showed that caribou crossed roads throughout the year, with especially high numbers during fall and spring migration (Table 3-17).

A total of 7,484 caribou were observed crossing the AWAR and 7,085 caribou were observed crossing the WTHR in 2023. For the AWAR, most caribou crossing observations occurred during fall and spring migration with 95% (7,095 of 7,484 caribou) of observed AWAR caribou crossings occurring during these seasons. The months with the greatest number of caribou observed crossing the AWAR included October (over 4,000 observed crossings), and April (over 2,000 observations; Figure 3-6). During spring migration, 98% (2,832 of 2,892) of observed caribou crossings on the AWAR occurred on dates with a 24-hour AWAR closure, and during fall migration, nearly 100% (4,191 of 4,203) of observed caribou crossings on the AWAR occurred on dates with a 24-hour AWAR closure (Table 3-17). For annual caribou crossing observations on the AWAR, 97% (7,466 of 7,486 caribou) of observed crossing events occurred on dates with an AWAR closure.

For the WTHR, most caribou crossing observations occurred during the spring migration with 84% (5,927 of 7,085) of observed WTHR caribou crossing occurring during this season. The month with the greatest number of caribou crossing the WTHR was April with 5,015 caribou crossings observed. There were no observed caribou crossings on the WTHR in January, June, July, November, and December, and there were no observed caribou crossings on the AWAR during January, February, June July, August, and September (Figure 3-6). During spring migration, 98% (5,847 of 5,958 caribou) of observed caribou crossings on the WTHR occurred on dates with a 24-hour WTHR closure (Table 3-17). During fall migration, 100% (661 of 661 caribou) of observed caribou crossings on the WTHR occurred on dates with a partial closure (<24-hour; Table 3-17). For annual caribou crossing observations on the WTHR, 83% (7,004 of 7,085 caribou) of observed crossing events occurred on dates with a WTHR 24-hour closure or partial closure, and 8% (30 of 7,085 caribou) occurred on a day with a speed restriction in place. Caribou movement patterns continue to require close monitoring and analysis in 2023.

Table 3-17: Observations of Caribou Crossing AWAR and WTHR in 2023

Season	Date	Closure Status	Crossing KM Marker	Number of Caribou Crossing
AWAR				
Winter	2023-03-30	Partial Closure	91	146
	2023-12-20	Partial Closure	71	200
	2023-12-31	Partial Closure	57	33
Spring	2023-04-06	Closed	84	800
	2023-04-07	Closed	87	900
	2023-04-07	Closed	69	8
	2023-04-12	Closed	74	9
	2023-04-12	Closed	56	144
	2023-04-14	Closed	42	62
	2023-04-16	Closed	94	84
	2023-04-17	Closed	87	41
	2023-04-17	Closed	81	161
	2023-04-18	Closed	61	202
	2023-04-21	Closed	71	6
	2023-04-23	Closed	79	157
	2023-04-24	Closed	60	162
	2023-05-01	Closed	87	37
	2023-05-03	Closed	59	4
	2023-05-15	Closed	21	55
	2023-05-19	Partial Closure	22	38
	2023-05-21	Open	32	18
	2023-05-24	Partial Closure	61	4
	2023-04-06	Closed	84	800
	2023-04-07	Closed	87	900
	2023-04-07	Closed	69	8
	2023-04-12	Closed	74	9
2023-04-12	Closed	56	144	
2023-04-14	Closed	42	62	
2023-04-16	Closed	94	84	
2023-04-17	Closed	87	41	
Summer	2023-05-28	Partial Closure	85	10

Table 3-17: Observations of Caribou Crossing AWAR and WTHR in 2023

Season	Date	Closure Status	Crossing KM Marker	Number of Caribou Crossing
Fall	2023-10-28	Closed	15	500
	2023-10-29	Closed	22	2
	2023-10-29	Closed	22	8
	2023-10-29	Closed	21	1000
	2023-10-30	Closed	16	500
	2023-10-30	Closed	15	900
	2023-10-30	Closed	12	7
	2023-11-05	Closed	38	6
	2023-11-05	Closed	58	100
	2023-11-07	Partial Closure	57	12
	2023-11-10	Closed	62	62
	2023-11-12	Closed	64	280
	2023-11-16	Closed	93	9
	2023-11-25	Closed	64	280
	2023-11-25	Closed	62	500
2023-12-01	Closed	57	37	
Total				7,484
WTHR				
Winter	2023-02-10	Open	172	1
	2023-03-06	Speed Restriction	174	3
	2023-03-06	Speed Restriction	158	1
	2023-03-11	Speed Restriction	152	2
Spring	2023-04-02	Closed	113	187
	2023-04-07	Partial Closure	112	20
	2023-04-13	Closed	177	133
	2023-04-14	Closed	113	532
	2023-04-15	Closed	128	28
	2023-04-15	Closed	153	3
	2023-04-15	Closed	126	121
	2023-04-15	Closed	113	13
	2023-04-16	Closed	164	350
	2023-04-16	Closed	166	28
	2023-04-16	Closed	160	29
	2023-04-16	Closed	124	45
	2023-04-16	Closed	113	77
	2023-04-17	Closed	134	98
	2023-04-18	Partial Closure	157	9
2023-04-22	Partial Closure	157	8	
2023-04-23	Closed	112	73	

Table 3-17: Observations of Caribou Crossing AWAR and WTHR in 2023

Season	Date	Closure Status	Crossing KM Marker	Number of Caribou Crossing
Spring	2023-04-24	Closed	162	330
	2023-04-24	Closed	164	67
	2023-04-24	Closed	168	880
	2023-04-24	Closed	170	275
	2023-04-25	Closed	142	255
	2023-04-25	Closed	149	44
	2023-04-25	Closed	156	100
	2023-04-25	Closed	164	28
	2023-04-27	Closed	112	110
	2023-04-27	Closed	178	310
	2023-04-29	Closed	116	180
	2023-04-29	Closed	120	30
	2023-04-29	Closed	141	136
	2023-04-29	Closed	143	30
	2023-04-29	Closed	152	40
	2023-04-29	Closed	156	27
	2023-04-29	Closed	150	73
	2023-04-29	Closed	147	145
	2023-04-29	Closed	146	150
	2023-04-30	Closed	163	8
	2023-04-30	Closed	164	43
	2023-05-01	Closed	132	127
	2023-05-01	Closed	135	112
	2023-05-01	Closed	137	370
	2023-05-01	Closed	165	120
	2023-05-03	Closed	159	15
	2023-05-05	Closed	146	13
	2023-05-10	Closed	116	39
	2023-05-10	Closed	125	57
	2023-05-13	Closed	176	16
2023-05-15	Partial Closure	138	13	
2023-05-15	Partial Closure	112	54	
2023-05-16	Open	113	1	
2023-05-22	Partial Closure	171	6	

Table 3-17: Observations of Caribou Crossing AWAR and WTHR in 2023

Season	Date	Closure Status	Crossing KM Marker	Number of Caribou Crossing
Summer	2023-08-13	Partial Closure	167	120
	2023-08-13	Partial Closure	144	1
	2023-08-13	Partial Closure	166	6
	2023-08-15	Closed	161	1
	2023-08-15	Closed	169	12
	2023-08-17	Partial Closure	172	1
	2023-08-17	Partial Closure	174	2
	2023-08-18	Partial Closure	139	200
	2023-08-19	Partial Closure	158	5
	2023-08-20	Speed Restriction	170	9
	2023-08-21	Partial Closure	111	3
	2023-08-22	Partial Closure	160	20
	2023-08-25	Partial Closure	167	1
	2023-08-26	Partial Closure	169	14
	2023-08-27	Open	169	8
	2023-08-28	Speed Restriction	160	11
	2023-09-01	Speed Restriction	162	4
	2023-09-02	Open	143	4
	2023-09-03	Open	171	24
	2023-09-05	Open	172	3
2023-09-11	Open	167	4	
2023-09-11	Open	149	1	
2023-09-14	Open	125	5	
Fall	2023-10-28	Partial Closure	171	261
	2023-10-28	Partial Closure	165	400
Total				7,085

AWAR = All Weather Access Road, WTHR = Whale Tail Haul Road.

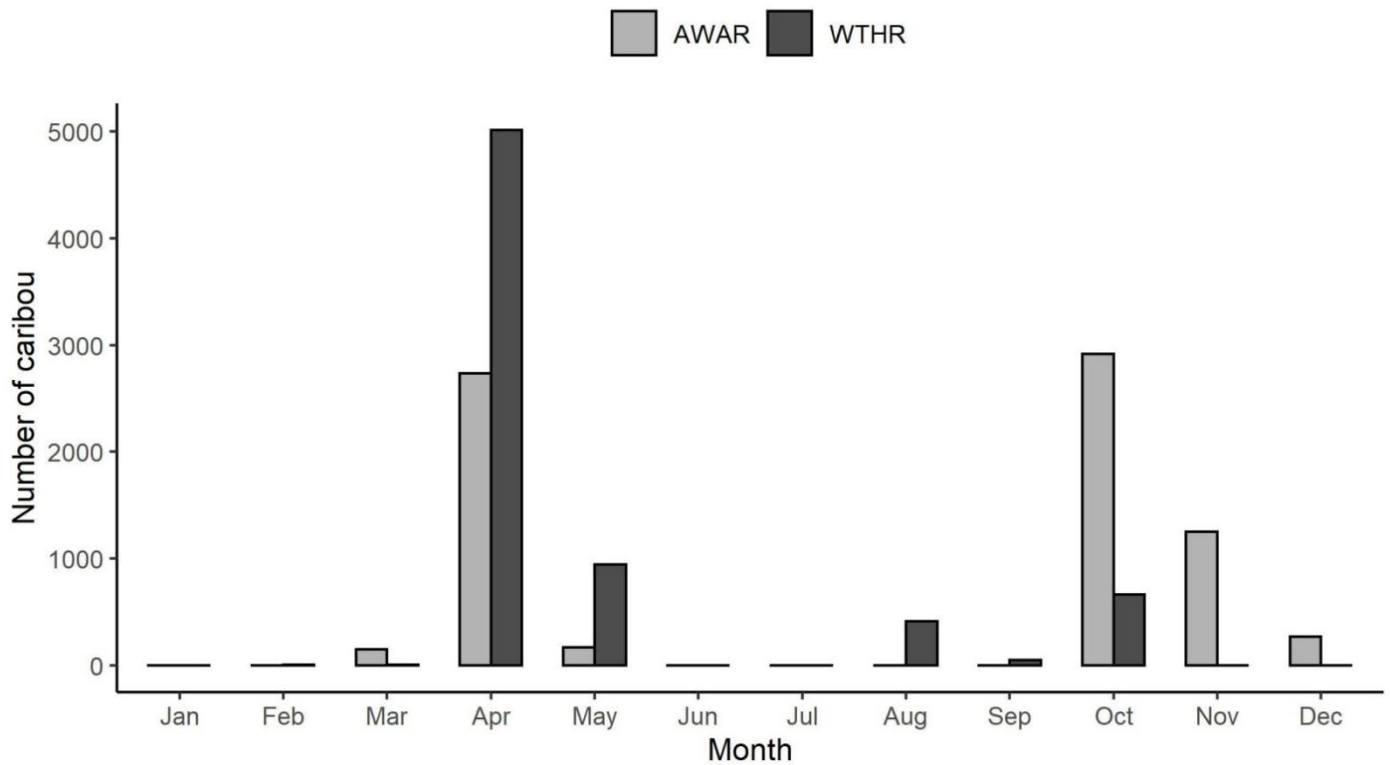


Figure 3-6: Number of Caribou Crossing Observations per Month on the All-Weather Access Road (AWAR) and Whale Tail Haul Road (WTHR) during 2023

Tolerant Caribou Observations

Observations of tolerant caribou along the AWAR and WTHR contribute to assessing risk and the success of mitigation measures. The TEMP Version 7 defines Project tolerant caribou as:

“An animal or group of animals (i) observed within a mitigation distance buffer for greater than 72 hours during the winter or 48 hours during other season; and (ii) not visibility disturbed by the Project”

On one occasion, four observed caribou were identified as Project tolerant as defined in TEMP Version 7 (Agnico Eagle 2019) (Table 3-18). The group of four caribou were observed for over a week and were identified as Project tolerant at Meadowbank on 19 June 2024 (Table 3-18). Note, identification of project tolerant caribou did not impact the decision tree process or relax mitigation measures in place.

Table 3-18: Observations of Tolerant Caribou in 2023

Location	Date	Survey Type	KM Marker	Distance	Number of Caribou	Tolerance
Meadowbank	2023-06-19	Incidental	NA	NA	4	Yes – Same caribou that has been on site for a over one week.

AWAR = All Weather Access Road, WTHR = Whale Tail Haul Road, NA = not applicable.

3.6.9 Road-related Wildlife Mortality

Wildlife mortalities associated with the AWAR and WTHR during 2023 are recorded in Table 3-19, and reports are included in Appendix C. There were no road-related caribou, grizzly bear, wolverine, or wolf mortalities associated with the AWAR or WTHR in 2023. There was one muskox mortality that took place on the WTHR on 06 November 2023 (Table 3-19). Road-related mortalities from 2007 to 2023 are presented in Table 3-20. Mine site related mortalities are described in Section 4.5.8. There were fewer road-related mortalities reported in 2023 than 2021 and 2022 (Golder 2022; WSP 2023).

Upon discovery of any roadkill remains that had not been reported to Environment staff, employees were reminded of road rules and the need to enforce these rules by Environment staff and/or road supervisors. All employees are regularly reminded at toolbox meetings that all Project-related incidents are to be reported and that wildlife have the right-of-way at all times. Mine staff are required to stop vehicles and wait for wildlife to crossroads. No feeding wildlife and waste management practices are also regularly reviewed with employees.

Table 3-19: Wildlife Mortalities Related to the All-Weather Access Road and Whale Tail Haul Road in 2023

Date	Species	Count	Project Related	Location	Comments
AWAR					
2023-05-12	Arctic ground squirrel	1	Yes	KM 98	Struck by a vehicle on the road.
2023-07-28	Arctic hare	1	Yes	KM 73	Struck by a vehicle on the road.
WTHR					
2023-11-05	Arctic hare	1	Yes	KM 153	Struck by a vehicle on the road.
2023-11-05	Arctic fox	1	Yes	KM 153	Struck by a vehicle on the road.
2023-11-06	Muskox	1	Yes	KM 158	Struck by a vehicle on the road.

AWAR = All Weather Access Road, WTHR = Whale Tail Haul Road, KM = Kilometer Marker.

Table 3-20: Summary of Road-related Wildlife Mortality Records (2007 to 2023)

Year	Caribou	Grizzly Bear	Muskox	Wolverine	Wolf	Fox	Small Mammals	Small Birds	Unidentified Small Animal
AWAR									
2007	3	0	0	0	0	0	3	3	0
2008	10	0	0	0	2	13	7	17	0
2009	1	0	0	0	0	1	6	2	0
2010	1	0	0	0	0	2	6	2	0
2011	2	0	0	0	1	0	5	4	0
2012	2	0	0	1	0	0	3	1	0
2013	5	0	0	0	0	1	1	1	0
2014	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	1	4	2	1
2016	0	0	0	0	0	2	0	1	0
2017	0	0	0	0	0	5	3	3	0
2018	0	0	0	0	0	0	2	0	0
2019	0	0	0	0	0	0	3	0	0
2020	1	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	5	9	1	0
2022	0	0	0	1	0	0	3	1	0
2023	0	0	0	0	0	0	2	0	0
WTHR									
2018	0	0	0	0	0	0	2	0	0
2019	0	0	0	0	0	1	1	1	0
2020	0	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	2	11	0	0
2022	0	0	0	0	0	0	5	0	0
2023	0	0	1	0	0	1	1	0	0

AWAR = All Weather Access Road, WTHR = Whale Tail Haul Road.

3.7 Accuracy of Impact Predictions

The summary of the impact predictions identified in the TEMP Version 7 (Agnico Eagle 2019) are listed in [Table 3-21](#). The 2023 AWAR and WTHR survey data were compared to the impact prediction thresholds to evaluate adherence to the impact predictions and the provision of adaptive management, as either a necessary or proactive measure. None of the thresholds were exceeded in 2023.

Table 3-21: Accuracy of Impact Predictions – Sensory Disturbance and Mortality along the All-Weather Access Road and Whale Tail Haul Road in 2023

Potential Effect	Threshold	Threshold Exceeded (2023)	Adaptive Management Implemented	Monitoring Methods
Sensory Disturbance	No threshold but Decisions Trees followed when caribou are seen near mine facilities	Not Applicable	YES Multiple road closures and notices, good engagement of Wildlife Log by site staff. Use of Decision Tree for Management and Monitoring.	AWAR and WTHR Surveys, Wildlife Log, Mortality Reporting Satellite-collaring data
Project-related Mortality (ungulates)	Threshold level of mortality is two individuals per year.	NO One muskox mortality on WTHR	YES Incident of muskox road mortality reviewed with all LHT crews. Road users reminded to be alert and cautious of wildlife along the roadways, especially during night shift and low visibility conditions.	AWAR and WTHR surveys Satellite-collaring data surveys Incidental wildlife reporting
Project-related Mortality (predatory mammals)	Predatory mammals (i.e., grizzly bear, wolverine, wolf) will not be killed or injured by vehicle collisions. Threshold level of mortality is two individuals per year.	NO	NO	AWAR and WTHR surveys Incidental wildlife reporting
Project-related Mortality	Raptors or waterbirds will not be killed along Project roads. Threshold is one individual due to vehicle collision per year.	NO	NO	AWAR and WTHR surveys Incidental wildlife reporting

AWAR = All Weather Access Road, WTHR = Whale Tail Haul Road.

3.8 Management Recommendations

The AWAR and WTHR survey data are important for documenting sensitive periods when the area near the road is utilized by various wildlife species and for evaluating the need, if any, to adaptively manage mitigation (e.g., temporary road closures and radio announcements). Mitigation actions linked to individual wildlife observations (Appendix A) should continue to be recorded. No other management mitigations are recommended at this time.

4.0 PITS AND MINE SITE GROUND SURVEYS

4.1 Overview

The Mine site ground survey monitoring program (i.e., for Meadowbank/Vault, and Whale Tail) has been designed to verify that impacts to wildlife in and around the Project LSA are not occurring. The program has a strong emphasis on monitoring mortality and disturbance of various wildlife groups utilizing habitats near the Project. In addition, the Mine site ground survey monitoring program is an integral component of the monitoring strategy for evaluating sensory disturbance indicators for caribou.

4.2 Objectives

The primary objectives of the Mine site ground surveys are to:

- 1) Use Decision Trees when caribou are seen near Project facilities to determine the level of adaptive management (e.g., suspending activities) required.
- 2) Confirm that caribou will not be killed through other Project-related mortality such as falling in pits, tailings sludge, or other means. The cumulative Project threshold level of mortality is two individuals per year.
- 3) Verify that measures are in place such that grizzly bears, wolverines, or wolves will not need to be destroyed at the Project site. The threshold level of mortality for predatory mammals is two individuals per year.
- 4) Verify that disturbance to high value habitats (e.g., sedge meadows) and nesting migratory birds is avoided, and all activities within 100 m of a migratory bird nest site be monitored, if deemed necessary.

4.3 Duration

The Mine site ground surveys are to be conducted regularly by Agnico Eagle Environment personnel over the operation and closure phases of the Project to verify that changes to habitats around the Project do not cause effects to wildlife and their use of habitat.

4.4 Methods

In 2023, Environment personnel conducted regular Mine site inspections focusing on waste management, spills, hazardous waste management, and wildlife monitoring. Formal Mine site inspections were carried out at least weekly as part of broader environmental on-site management. During these inspections, if non-conformities were identified they are rapidly addressed by the responsible department.

Weekly inspections included:

- Regular monitoring of all wildlife species near the facilities. Large mammal presence within the Project is documented during daily and weekly (formal) inspections. Any issues related to safety or proximity effects are identified and the appropriate mitigation is implemented. If risks to animal health are perceived, efforts are made to avoid the wildlife and provide them the right-of-way. In 2023, Mine-site ground survey inspections were conducted at minimum once per week.
- Regular monitoring of all large mammals in the Project LSA.
- Regular monitoring of breeding birds (especially in the spring), raptors, and nests located in the Project LSA.
- Inspections of waste management areas, bins, and hazardous material storage.

Environment Department inspections and wildlife ground surveys focus on migratory birds, ungulates, Arctic fox, wolf, grizzly bear, and wolverine. Through these observations and those of other Agnico Eagle employees (i.e., incidental observations), and incidence reports provided to the Environment Department. Technicians follow up as needed to ensure the protection of wildlife near the Project. Monthly summary reports and wildlife observation data are submitted to the GN and KivIA, and quarterly reports are submitted to the KivIA.

4.4.1 Incidental Mine Site Wildlife Observations

All Mine site personnel, including construction and support staff, are required to document and report wildlife observed within the LSA of the Project as well as ancillary areas (e.g., AWAR and WTHR). The protocol involves notifying staff in the Environment Department, which is intended to ensure that potential problem animals are identified. Pertinent data, and daily and weekly Mine site inspection reports are consolidated and entered into an electronic database (EQuIS). Monthly summary reports and wildlife observation data are submitted to the GN and KivIA. Quarterly reports are submitted to the KivIA.

4.5 2023 Results

4.5.1 Pit and Mine Site Ground Surveys

The number of surveys completed at Meadowbank Mine and Whale Tail mine sites each in 2023 is provided in Table 4-1. Mine and Pit surveys were distinguished from incidentals starting in October 2021 and were recorded separately from incidentals for all of 2022 and 2023. Weekly mine inspections at Meadowbank and Whale Tail include a wildlife observation component and are also included in this count.

In 2023, Meadowbank had a total of 55 formal Mine and Pit surveys conducted between 3 January and 30 December. The average frequency of surveys was approximately one survey every 6.5 days during this period, with the largest number of surveys occurring in February and March. Whale Tail had a total of 56 formal Mine and Pit surveys conducted between 7 January and 31 December. The average frequency of surveys was approximately one survey every 6.5 days during this period, with the largest number of surveys occurring in January.

Table 4-1: Number of Formal Pit and Mine Site Ground Surveys by Month, 2023

Location	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Meadowbank	4	7	7	4	4	4	4	4	4	5	5	3	55
Whale Tail	7	6	5	4	4	4	4	4	4	4	5	5	56

4.5.2 Wildlife Observations from Pit and Mine Surveys

Wildlife observations from formal Pit and Mine surveys conducted between January and December of 2023 are shown in Table 4-2 and wildlife observations from incidental surveys at the Meadowbank and Whale Tail sites are provided in Appendix A. Observations were used by Environment personnel to monitor wildlife activity within the Project and to identify potential problematic or sensitive animals requiring deterrence.

Seven mammal species were reported during formal Pit and Mine surveys at Meadowbank in 2023, including Arctic fox, Arctic hare, caribou, muskox, red fox, wolf, and wolverine (Table 4-2). Caribou sightings were highest from May to July, peaking in observations during May and June, and muskox sightings were highest in August. Wolverines were only reported twice in January and once in February. Three species of birds were reported

during formal Pit and Mine surveys at Meadowbank, including Canada goose, crow, and snow goose. The Canada goose was the most frequently observed bird species and was reported mostly in September.

Five mammal species were reported during formal Pit and Mine surveys Whale Tail Mine in 2023, including Arctic fox, Arctic hare, caribou, muskox, and red fox (Table 4-2). The highest caribou sightings took place in April, followed by September, then August. Muskox sightings were only observed in August and September. Two species of birds were observed during formal surveys at Whale Tail in 2023 (Table 4-2). Species observed include Canada goose, and common raven.

Table 4-2: Wildlife Observations from Formal Pit and Mine Site Ground Surveys by Month 2023

Species Group	Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Meadowbank														
Mammal	Arctic fox	1	4	1	3	2	1	0	0	1	3	0	1	17
	Arctic hare	0	0	0	0	0	0	0	0	1	0	0	0	1
	Caribou	0	0	2	0	5	5	4	1	0	0	0	0	17
	Muskox	0	0	0	0	0	8	7	28	6	0	0	0	49
	Red fox	0	0	1	0	0	0	0	0	0	0	0	0	1
	Wolf	0	5	1	0	0	0	0	0	0	0	0	0	6
	Wolverine	2	1	0	0	0	0	0	0	0	0	0	0	3
Bird	Canada goose	0	0	0	0	0	0	0	35	130	0	0	0	165
	Crow	0	0	0	0	0	0	0	0	0	0	0	6	6
	Snow goose	0	0	0	0	0	0	0	0	60	0	0	0	60
Whale Tail														
Mammal	Arctic fox	0	0	0	0	0	0	2	0	0	0	1	4	7
	Arctic hare	0	0	0	3	1	0	0	2	1	1	0	0	8
	Caribou	0	0	0	69	4	0	1	12	13	0	0	0	99
	Muskox	0	0	0	0	0	0	0	7	7	0	0	0	14
	Red fox	0	0	1	0	0	0	0	0	0	0	0	0	1
Bird	Canada goose	0	0	0	0	0	2	0	0	0	0	0	0	2
	Common raven	0	4	0	0	0	0	0	0	0	0	0	0	4

Five mammal species were reported as incidental sightings at Meadowbank in 2023 including Arctic fox, caribou, muskox, wolf, and wolverine (Table 4-3). Incidental caribou sightings were highest in June and April, and muskox sightings were highest in July and October. Wolf and wolverine sightings were highest in winter, and sightings of both species were highest in January. Arctic fox was only sighted once in March at Meadowbank in 2023. There were no bird species recorded incidentally at Meadowbank in 2023 (Table 4-3). There were no incidental species recorded at Meadowbank during May, September, November, or December in 2023.

Seven mammal species were reported as incidental sightings at Whale Tail in 2023 including Arctic fox, caribou, grizzly bear, muskox, red fox, wolf, and wolverine (Table 4-3). The highest caribou sightings took place in July and August, though multiple caribou were also observed in January. One grizzly bear was observed in August, one muskox was observed in July, and one wolf was observed in September. Red fox were observed in January and February, and wolverine observations were highest in January. An unidentified falcon was the only bird species

reported as an incidental sighting at Whale Tail in 2023 and was observed in May (Table 4-3). There were no incidental species recorded at Whale Tail during March, April, June, October, or November in 2023.

Table 4-3: Incidental Wildlife Observations in 2023 by Month

Species Group	Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Meadowbank														
Mammal	Arctic fox	0	0	1	0	0	0	0	0	0	0	0	0	1
	Caribou	0	2	0	16	0	23	10	3	0	0	0	0	54
	Muskox	0	0	0	0	0	7	21	0	0	16	0	0	44
	Wolf	31	7	3	0	0	0	0	0	0	0	0	0	41
	Wolverine	28	3	4	0	0	0	0	0	0	0	1	0	36
Whale Tail														
Mammal	Arctic fox	4	0	0	0	3	0	0	0	0	0	0	1	8
	Caribou	12	0	0	0	0	0	20	35	1	0	0	0	68
	Grizzly bear	0	0	0	0	0	0	0	1	0	0	0	0	1
	Muskox	0	0	0	0	0	0	1	0	0	0	0	0	1
	Red fox	8	8	0	0	0	0	0	0	0	0	0	0	16
	Wolf	0	0	0	0	0	0	0	0	1	0	0	0	1
	Wolverine	4	1	0	0	0	0	0	0	0	0	0	0	5
Bird	Unidentified falcon	0	0	0	0	1	0	0	0	0	0	0	0	1

4.5.3 Bird Nests

An exemption permit was obtained on 24 August 2023 from the GN for removal of one common raven nest that posed risk to proper maintenance of the fuel tank and could possibly result in fire hazard. The exemption permit is provided in Appendix D.

Results of raptor nest monitoring and waterbird nest monitoring are provided in Sections 13.0 and 14.0, respectively.

4.5.4 Wildlife Deterrent Records

Wildlife deterrents are implemented when habituated or problematic wildlife pose a threat to the wildlife or Mine personnel through human-wildlife conflict. Necessary deterrent strategies are determined and implemented by the Environment Department based on the severity of risk and the nature of the interaction. Each deterrence event is reported using the EQUIS database.

Wildlife deterrents were used and reported throughout 2023 at the Project. A total of 62 deterrence activities were reported from interactions with four species of mammals: caribou, muskox, wolf, and wolverine (Table 4-4, Table 4-5).

The total number of deterrence actions was higher in 2023 compared to 2022 (42 deterrence events recorded), and higher than in previous years (37 deterrence activities in 2021, 43 in 2020, 31 in 2019, 32 in 2018, and 21 in 2017). Deterrence actions in the winter months were primarily related to wolverine and wolves, whereas in the spring and summer deterrence actions were related mostly to caribou and muskox.

Most deterrence actions were taken at Meadowbank and only three actions were taken at Whale Tail. Caribou and wolverine deterrence actions were taken at both Meadowbank and Whale Tail Mine. MuskoX and wolf deterrence actions were taken only at Meadowbank. Of the 62 deterrence actions taken, 51 were classified as successful deterrence and 11 were classified as unsuccessful deterrence. Six instances of unsuccessful deterrence at Meadowbank led to the animal being dispatched. The first instance involved two wolverine near the incinerator and landfill. A destruction permit was issued by the GN on 16 January 2023 as a result of unsuccessful deterrence, and then one animal was dispatched on 19 January 2023 and the second animal was dispatched on 06 February 2023. The second instance involved three wolves observed repeatedly at the Meadowbank site near the incinerator, landfill, and other facilities. A destruction permit was issued by the GN as a result of unsuccessful deterrence on 22 January 2023. One wolf was dispatched on 25 January 2023, one was dispatched on 04 February 2023, and one was dispatched on 07 March 2023 (Table 4-4, Table 4-5). A third instance involved one habituated wolverine observed by the landfarm and airstrip. A destruction permit was issued to HTO on 24 February 2023, and HTO dispatched the animal of 10 March 2023. Additional details on the mortalities are provided in Section 4.5.7 and Appendix C. The destruction permits issued on 16 January and 22 January to Agnico Eagle are provided in Appendix D.

Table 4-4: Details of Deterrence Activities for 2023

Date	Species	Number	Behaviour	Deterrence Reason/Context	Deterrence Method	Deterrence Action	Deterrence Reaction	Deterrence Outcome	Additional Comments
Meadowbank Mine									
2023-01-03	Wolverine	1	Walking	Wolverine was spotted 2 days in a row at the incinerator. Technician used 1 banger to scare him away	Banger	A banger was used to deter the wolverine	Wolverine ran away	Successful deterrence	Tundra beside incinerator
2023-01-03	Wolverine	1	Walking	Incinerator operator called as was close to his working area	Banger	Shot banger	Ran away	Successful deterrence	Wolverine
2023-01-05	Wolverine	2	Walking	2 wolverine walking near the incinerator. Several time spotted this week	Banger	1 banger was used to scare them away	Run away both came back later	Successful deterrence	Beside incinerator (tundra).
2023-01-06	Wolverine	1	Foraging	Getting calls and close to the worker.	Banger	Banger was used	First shot he just stood there so shot couple more and he ran towards the FWB	Successful deterrence	Waste sea cans
2023-01-06	Wolverine	1	Foraging	Getting called for it	Banger	Banger was used	Ran away	Successful deterrence	sea cans
2023-01-07	Wolverine	1	Walking	Reported from site personnel	Banger	Banger was used	Running away from site	Successful deterrence	West side of the strip going towards the FWB
2023-01-08	Wolverine	1	Walking	Reported from site personnel	Banger	Banger was used	Nothing at first, used a third banger and finally ran away	Successful deterrence	Near fuel farm and transit area
2023-01-11	Wolverine	1	Walking	Calls and too close to humans	Banger	Banger was used	Went hiding and keeps coming back	Successful deterrence	Sea cans
2023-01-11	Wolf	1	Walking	Called for the wolf	Banger, rubber bullets	Banger and rubber bullets were used	Running and went into hiding	Successful deterrence	All around the winter parking.
2023-01-11	Wolverine	1	Walking	Reported from site personnel	Banger, rubber bullets	Banger and rubber bullets were used	Running and went into hiding	Successful deterrence	Tank farm and transit area

Table 4-4: Details of Deterrence Activities for 2023

Date	Species	Number	Behaviour	Deterrence Reason/Context	Deterrence Method	Deterrence Action	Deterrence Reaction	Deterrence Outcome	Additional Comments
2023-01-11	Wolverine	1	Walking	Predator doesn't belong in the incinerator for it's own safety and employee safety	Banger. Two bangers were shot to scare the wolf away.	Banger was used	Deterred	Successful deterrence	In front of the man door
2023-01-12	Wolverine	1	Walking	Reported from site personnel	Banger	Banger was used	Running and went to hide where we can't drive	Successful deterrence	Sea cans and tank farm
2023-01-12	Wolf	1	Walking	Calls	Banger, rubber bullets	Banger and rubber bullets were used	Running away but kept coming back	Successful deterrence	All around the parking
2023-01-14	Wolverine	1	Walking	Reported from site personnel	Bangers rubber bullets	Banger and rubber bullets were used	Running	Successful deterrence	Sea cans
2023-01-14	Wolverine	1	Walking	Calls	Banger rubber bullets	Banger and rubber bullets were used	Running and hiding	Successful deterrence	Sea cans
2023-01-14	Wolf	2	Foraging	Shot bangers	Bangers	Banger was used	Running away from the site	Successful deterrence	In the landfill where they dump stuff
2023-01-14	Wolverine	1	Walking	Calls	Banger and rubber bullets	Banger and rubber bullets were used	Running	Successful deterrence	Sea cans
2023-01-15	Wolf	1	Foraging	Shot bangers and rubber bullets	Banger, rubber bullets	Banger and rubber bullets were used	Running	Successful deterrence	In the landfill
2023-01-15	Wolverine	2	Foraging	Shot bangers and rubber bullets	Banger, rubber bullets	Banger and rubber bullets were used	Run	Successful deterrence	Landfill trash
2023-01-15	Wolf	1	Walking	Calls for it	Banger	Banger was used	Running, walking	Successful deterrence	Around the shop, both sides
2023-01-15	Wolf	1	Walking	Calls	Banger	Banger was used	Running for a short distance and walked towards the main camp	Successful deterrence	Sea can area

Table 4-4: Details of Deterrence Activities for 2023

Date	Species	Number	Behaviour	Deterrence Reason/Context	Deterrence Method	Deterrence Action	Deterrence Reaction	Deterrence Outcome	Additional Comments
2023-01-19	Wolverine	1	Dispatched	On January 19, 2023 - environment started performing a wildlife survey around the site at 6h00. At 6h25, fresh tracks were observed near the incinerator. Environment patrolled the area on foot and observed the wolverine at the northwest corner	Two 12 g slugs were used to dispatch the wolverine.	In previous days, the wolverine was observed numerous times near the camp. Attempts to deter the wolverine away from the site were unsuccessful as the wolverine had become habituated to the site. Frequent reports between Jan 01 and Jan 19.	Not applicable	Deterrents did not succeed	In front of the garage door. The wolverine carcass was picked up and brought to the GN officer in Baker Lake on 2023-01-19 by HTO
2023-01-21	Wolf	1	Walking	One banger was shot, but the wolf kept walking away slowly	Banger	Banger was used	Walk slowly away	Successful deterrence	Hill behind the landfill
2023-01-21	Wolf	2	Foraging	1 rubber bullet was shot on one of the wolf	Rubber bullet	Rubber bullets used	They slowly went away in the hill behind the landfill.	Successful deterrence	On the landfill
2023-01-22	Wolf	1	Walking	Safety of humans	Rubber slug	Deterred the animal away from site	Ran away	Successful deterrence	Inside the landfill. Wolf spotted while doing wildlife patrol
2023-01-24	Wolverine	1	Foraging	Rubber bullet was shot, but missed the target	Rubber bullet	Rubber bullet was shot but missed the target.	Ran away.	Deterrents did not succeed	Front of garage door.
2023-01-24	Wolverine	1	Foraging	Shot one rubber bullet, but missed the target	Rubber bullet	Shot one rubber bullet but missed the target.	The wolverine ran away.	Successful deterrence	Top of the sea can on the west side of the incinerator
2023-01-24	Wolverine	1	Walking	Safety of employees	Honking	Used horn to deter wolverine	Ran to tundra	Successful deterrence	At the incinerator

Table 4-4: Details of Deterrence Activities for 2023

Date	Species	Number	Behaviour	Deterrence Reason/Context	Deterrence Method	Deterrence Action	Deterrence Reaction	Deterrence Outcome	Additional Comments
2023-01-25	Wolf	1	Dispatched	On January 25, 2023 - Environment started performing a wildlife survey around the site at 5h00. At 5h45, a wolf was observed near the incinerator	One .223 bullet was used to dispatch the Wolf at the incinerator	On January 22, environment department provided GN-DOE the wildlife reports regarding our monitoring and deterring efforts related to the wolf observations	Not applicable	Deterrents did not succeed	N 65 00'56.4 96 04'02.8. Previously rubber slugs were used as a deterrent but has been proven to be unsuccessful. One .223 bullet was used to dispatch the wolf. The wolf carcass will be picked up and brought to the GN office in Baker Lake on January 25 by HTO
2023-01-30	Wolf	1	Walking	Employees working outside by sea cans	Banger	Used 1 banger to deter the wolf	Ran out to the tundra	Successful deterrence	Right beside incinerator by the hazmat sea cans.
2023-01-30	Wolf	1	Walking	Safety of employees on site	Banger	Used 2 bangers	Did not react to the bangers just kept on walking	Deterrents did not succeed	Spotted the wolf at landfarm and then walked over to landfill. Shot 2 bangers and the wolf did not react just looked and kept on walking
2023-01-31	Wolf	1	Walking	Safety of employees working outside	Banger	Used banger, whistler, and air cracker	Ran onto third portage lake running southwest	Successful deterrence	Road to goose dyke
2023-02-04	Wolf	1	Dispatched	Safety of employees working outside	12g slugs, .223 bullet	On January 22, 2023, GN DOE issued a wildlife destruction authorization to ensure the safety of personnel on site.	Not applicable	Deterrents did not succeed	-

Table 4-4: Details of Deterrence Activities for 2023

Date	Species	Number	Behaviour	Deterrence Reason/Context	Deterrence Method	Deterrence Action	Deterrence Reaction	Deterrence Outcome	Additional Comments
2023-02-06	Wolverine	1	Dispatched	Safety of employees working outside	.223 bullet	On January 16, 2023, GN DOE issued a wildlife destruction authorization to ensure the safety of personnel on site.	Not applicable	Deterrents did not succeed	-
2023-02-24	Wolf	1	Walking	Near the camp	Banger	Shot a banger	Walked faster	Deterrents did not succeed	Got a call that he was near nova camp then spotted him at the landfill
2023-02-25	Wolf	1	Alert	Not scared of trucks	Banger	Shot 2 bangers	Just moved area walking	Deterrents did not succeed	Incinerator parking. Same as first observation
2023-02-26	Wolverine	1	Walking	Want to scare him off site	Rubber bullet/ shotgun	Shot him with a rubber bullet to try and scare him for the site	Ran away form the camp	Successful deterrence	Was walking at the land farm
2023-02-26	Wolf	1	Walking	Workers outside	Banger	Shot in direction of wolf	Galloped away	Successful deterrence	To the right of the incinerator.
2023-02-27	Wolf	1	Walking	Getting calls everyday	Pistol banger	2 bangers were shot	Ran away	Successful deterrence	Between pit E and goose
2023-02-28	Wolf	1	Walking	He was near outdoor workers in hunting mode	Bangers	Shot 3 bangers in direction of wolf	He ran away	Successful deterrence	He was near the back. He had a fox in his mouth
2023-03-02	Wolf	1	Walking	Near outdoor workers	Banger	Banger used 4	Ran away	Successful deterrence	On the lake
2023-03-02	Wolverine	1	Walking	Near outdoor workers	Shotgun banger	Shot the banger over wolf's head	Ran away in the distance	Successful deterrence	On the lake
2023-03-03	Wolf	1	Walking	Same wolf as the past week	Pistol banger	2 bangers were used to deter the wolf	Not really effective, the wolf just walked away towards the winter parking	Deterrents did not succeed	Was located on teardrop lake

Table 4-4: Details of Deterrence Activities for 2023

Date	Species	Number	Behaviour	Deterrence Reason/Context	Deterrence Method	Deterrence Action	Deterrence Reaction	Deterrence Outcome	Additional Comments
2023-03-07	Wolf	1	Dispatched	Safety of employees working outside	Two .223 bullets	On January 22, 2023, GN DOE issued a wildlife destruction authorization to ensure the safety of personnel on site.	Not applicable	Deterrents did not succeed	-
2023-03-10	Wolverine	1	Dispatched	Safety of employees working outside	-	On February 24, 2023, GN DOE issued a wildlife destruction authorization to HTO to ensure the safety of personnel on site .	Not applicable	Deterrents did not succeed	-
2023-06-08	Caribou	7	Foraging	Caribou near airstrip with plane on final approach. Wanted to protect caribou	Walking and clapping	The caribou walked south over the airstrip and south of the AWAR road Controller asked that we stay on side of airstrip, so they do not cross over while plane is coming	Walked south slowly, did not seem agitated	Successful deterrence	The group was on airstrip
2023-06-15	Muskox	2	Foraging	Muskox near airstrip with plane on final approach. Wanted to protect muskox	Clapping and bangers	Walked toward keeping a safe distance and assessed wildlife reaction	Walked slowly away from airstrip 1 walked south of AWAR 1 walked and stayed at quarry 23 far enough for plane to land	Successful deterrence	The muskox were both on north side

Table 4-4: Details of Deterrence Activities for 2023

Date	Species	Number	Behaviour	Deterrence Reason/Context	Deterrence Method	Deterrence Action	Deterrence Reaction	Deterrence Outcome	Additional Comments
2023-06-25	Muskox	3	Feeding	Muskox near airstrip with plane on final approach. Wanted to protect muskox	Banger	Bangers and megaphone was used to deter the muskox away	Walked away from airstrip	Successful deterrence	Between baker road and air strip
2023-06-28	Muskox	4	Foraging	Muskox near airstrip with plane on final approach. Wanted to protect muskox.	Siren and bangers	No	Ran away from the strip	Successful deterrence	Strip and close to the strip on both sides
2023-06-30	Muskox	2	Foraging	Muskox near airstrip with plane on final approach. Wanted to protect muskox.	Siren, bangers	No	Ran off strip and road	Successful deterrence	Strip and tarmac
2023-06-30	Caribou	1	Walking	Calls all morning and didn't want him near the tank farm for his safety	Horn	No	Speed walking off site road towards goose pit	Successful deterrence	S.S coverall and incinerator road
2023-07-01	Muskox	4	Resting	Muskox near airstrip with plane on final approach. Wanted to protect muskox	Bangers	No	Ran off the strip	Successful deterrence	Strip and walking trail
2023-07-07	Muskox	2	Foraging	Muskox near airstrip with plane on final approach. Wanted to protect muskox	12 Ga. Bangers	2 muskoxen were close to the airstrip. Had to deter them for the plane to arrive. Shot 3 bangers	2 muskoxen were close to the airstrip. Had to deter them for the plane to arrive. Shot 3 bangers	Successful deterrence	One muskox was by the quarry 23 and the other was by TPL.
2023-07-12	Muskox	1	Foraging	Muskox near airstrip with plane on final approach. Wanted to protect muskox	Clapping and talking	Clapped and walked to move away from airstrip	Walked north	Successful deterrence	Just north of the airstrip toward quarry 23 , and was moved just north to allow for safe plane landing

Table 4-4: Details of Deterrence Activities for 2023

Date	Species	Number	Behaviour	Deterrence Reason/Context	Deterrence Method	Deterrence Action	Deterrence Reaction	Deterrence Outcome	Additional Comments
2023-07-14	Muskox	2	Feeding	Muskox near airstrip with plane on final approach. Wanted to protect muskox	Bangers, siren and pick up horn	Used one banger to make the muskox at the end of the airstrip go further south and one banger to make the muskox go behind the rocks further east so he was protected from the airplane	They each turn around and walk further along their position	Successful deterrence	One muskox on the end of the airstrip on the other side of the road The other one was on the North side of the airstrip 20 meters from the runaway
2023-07-14	Muskox	3	Feeding	Muskox near airstrip with plane on final approach. Wanted to protect muskox	Horn and sirens	Used the horn of the pick-up and a siren. The 2 muskox crossed the road, so they were safe from the plane. The other one muskox went up the hill and went to the other side, so it was far away from the airstrip and safe	The two muskox crossed the road then started eating again. The one muskox went up the hill and down to the other side and continued eating.	Successful deterrence	One muskox on the north side of the airstrip between runaway one and two Two muskoxen on the south side at the end of the airstrip.
2023-07-15	Muskox	2	Foraging	Muskox near airstrip with plane on final approach. Wanted to protect muskox	Clapping and megaphone	Used megaphone and clapping to help muskox to south of AWAR and safety for plane	Walked south	Successful deterrence	2 muskoxen
2023-07-15	Caribou	2	Foraging	Caribou near airstrip with plane on final approach. Wanted to protect muskox.	Clapping, megaphone, banger	Used noise and banger to move away from airstrip	Walked north away from airstrip	Successful deterrence	Plane on approach
2023-10-19	Wolverine	1	Foraging	Close to site and where people work at times	Banger	Banger was used	Running up hill	Successful deterrence	In landfill, running up waste dump

Table 4-4: Details of Deterrence Activities for 2023

Date	Species	Number	Behaviour	Deterrence Reason/Context	Deterrence Method	Deterrence Action	Deterrence Reaction	Deterrence Outcome	Additional Comments
Whale Tail									
2023-01-15	Wolverine	1	Trotting/ running	2 whistlers were used to scare the wolverine away from site, the wolverine ran in north towards the waste dump after that it was no longer seen.	6mm pistol	Fired 2 flares near the wolverine	Wolverine ran away after flares were shot	Successful deterrence	On the 10 km/hr zone
2023-07-25	Caribou	1	Standing	The caribou was standing in the IVR marginal ore stockpile access ramp at the bottom of the IVR, WRSF, putting the caribou safety at risk. I successfully used 6 mm whistlers to guide him towards the tundra and away from the risk of injury	Acoustic device	Called dispatch to make sure nobody used surrounding roads 35 during. The caribou successfully went in the tundra and kept walking away going east	Not much. Caribou Stared at the whistler without moving but then starting walking/trotting towards road 35.	Successful deterrence	IVR marginal ore ramp, adjacent to the IVR WRSF. Caribou was standing in the center lane of the hauling ramp. Pickup was parked across the roadway to entice the caribou to return to the tundra rather than staying on the busy haul road
2023-07-28	Caribou	1	Standing	In order to reduce risk of caribou injury from a haul truck in this busy area, we gently eased our vehicle diagonally across the road in this proximity to entice the caribou into the tundra and off of the haul road away from the risk of injury.	Mobile device	Deflection	Caribou moved to the adjacent tundra away from the path of heavy equipment traffic	Successful deterrence	IVR marginal ore stockpile area

Table 4-5: Summary of Deterrence Events in 2023

Location	Species	Number of Deterrence Events		
		Successful	Unsuccessful	Total
Meadowbank	Caribou	3	0	3
	Muskox	10	0	10
	Wolf	15	7	22
	Wolverine	20	4	24
Whale Tail	Caribou	2	0	2
	Wolverine	1	0	1
Total		51	11	62

4.5.5 Waterbird Monitoring

Waterbird monitoring is completed to minimize accidental waterbird confinement around the Meadowbank and Whale Tail sites, entrapment in the tailings, and mortality. No waterbird nest monitoring was completed in 2023, though regular inspections were completed throughout the migratory period and during weekly or daily inspections, as deemed necessary by Environment personnel.

Previous research to investigate mitigation options to minimize flooding-related impacts to birds in the Whale Tail South area was completed in collaboration with Trent University, and a manuscript was re-submitted in January 2024 to Avian Conservation and Ecology with publication expected in September 2024.

Further discussion of 2023 waterbird monitoring is provided in Section 14.0.

4.5.6 Raptor Monitoring

Raptor monitoring was conducted as part of routine Mine site inspections of the pit and other areas to ensure adequate bird protection and management. Adult peregrine falcons were observed on 37 occasions at 11 quarry monitoring locations, and eggs or chicks were observed at two quarry monitoring locations. In addition to observations as part of the raptor nest monitoring (Section 13), there were nine bald eagle detections (June, July, August) and eight peregrine falcon detections (May, June) along the AWAR and WTHR (Table 3-9, Table 3-10). Additionally, one unidentified falcon was observed along the WTHR (Table 3-10).

4.5.7 Predatory Mammal Deterrence and Protection

Improved practices for waste segregation and incineration, the use of enclosed food waste facilities, and skirting around buildings have improved Arctic fox protection and decreased fox-human interactions (Table 4-6).

Table 4-6: Summary of Deterred Predatory Mammals at the Meadowbank Mine and Whale Tail Sites from 2015 to 2023

Species	2015	2016	2017	2018	2019	2020	2021	2022	2023
Arctic fox	6	6	2	0	4	1	0	5	0
Red fox	1	0	0	0	0	0	0	1	0
Wolf	1	4	9	14	9	5	2	7	22
Wolverine	5	3	10	17	16	17	6	18	25
Total	23	37	21	31	31	43	8	30	47

Deterrence actions for wolverine, which followed the Wildlife Protection and Response Plan (Appendix C in 2019 TEMP), were required on 24 occasions at the Meadowbank site and 1 occasion at the Whale Tail site (Table 4-5). For the wolverine deterrence actions at Meadowbank Mine, 20 were successful and 4 were unsuccessful. Three of the four unsuccessful deterrence events resulted in two destruction permits to be issued by the wildlife officer, one to Agnico Eagle on 16 January 2023 (Appendix D) and one to HTO on 24 February 2023. The single deterrence action for wolverine at Whale Tail Mine was successful. The number of wolverine deterrence efforts were higher in 2023 compared to previous years (Table 4-6).

Wolves were also regularly observed around the Meadowbank site primarily in the winter months (Table 4-4). Deterrence actions were required on 22 occasions at Meadowbank (Table 4-4). For the wolf deterrence actions at Meadowbank Mine, 15 were successful and 7 were unsuccessful. Three unsuccessful deterrence events resulted one destruction permit for three animals to be issued by the wildlife officer on 22 January 2023 (Appendix D). No deterrence actions for wolves were required at Whale Tail in 2023 (Table 4-5). The number of wolf deterrence efforts were higher in 2023 compared to previous years (Table 4-6).

Notices are sent to Meadowbank employees regarding the presence of wildlife, waste management procedures, and requesting all sea cans and doorways be closed when a non-conformity occurs.

4.5.8 Wildlife Mortality – Meadowbank and Whale Tail Sites

Six wildlife project-related mortality were observed at Meadowbank in 2023 (Table 4-7). These mortalities were related to unsuccessful deterrence (Section 4.5.4). At the Whale Tail Mine, there were no project related mortalities (Table 4-7). Road-related mortalities are tabulated and discussed in Section 3.6.9. Mortality reports are included in Appendix C.

Table 4-7: Wildlife Mortalities at Meadowbank Mine and Whale Tail in 2023

Date	Species	Count	Project Related	Location	Comments
Meadowbank					
2023-01-19	Wolverine	1	Yes	Incinerator	A wolverine was frequently observed and was unaltered by deterrents. On January 16, 2023, GN DoE issued a wildlife destruction authorization to ensure the safety of personnel on site.
2023-01-25	Wolf	1	Yes	Incinerator	A wolf was frequently observed and was unaltered by deterrents. On January 22, 2023, GN DoE issued a wildlife destruction authorization to ensure the safety of personnel on site.
2023-02-04	Wolf	1	Yes	Landfill	A wolf was frequently observed and was unaltered by deterrents. On January 22, 2023, GN DoE issued a wildlife destruction authorization to ensure the safety of personnel on site.
2023-02-06	Wolverine	1	Yes	Landfill	A wolverine was frequently observed and was unaltered by deterrents. On January 16, 2023, GN DoE issued a wildlife destruction authorization to ensure the safety of personnel on site.
2023-03-07	Wolf	1	Yes	Landfill	A wolf was frequently observed and was unaltered by deterrents. On January 22, 2023, GN DoE issued a wildlife destruction authorization to ensure the safety of personnel on site.
2023-03-10	Wolverine	1	Yes	Landfarm	A wolverine was frequently observed and was unaltered by deterrents. On February 24, 2023, GN DoE issued a wildlife destruction authorization to HTO to ensure the safety of personnel on site.

GN-DoE=Government of Nunavut Department of Environment.

Table 4-8: Summary of Project-Related Wildlife Mortality Records for Caribou and Predatory Mammals (2007 to 2023)

Year	Caribou	Grizzly Bear	Wolverine	Wolf
2007	0	0	0	0
2008	0	0	0	2
2009	0	0	0	4
2010	0	0	0	1
2011	0	0	1	4
2012	0	0	0	1
2013	0	0	1	0
2014	0	0	0	1
2015	0	0	0	1 ^(a)
2016	0	0	0	0
2017	0	0	1	2
2018	0	0	1	2 ^(b)
2019	0	0	1	0
2020	0	0	2	0
2021	0	0	1	0
2022	0	0	1	0
2023	0	0	3	3

- a) Naturally injured wolf that needed to be euthanized.
- b) Wolf died at Mine site of head injuries; did not need to be dispatched.

4.5.8.1 Caribou

No caribou mortalities related to Project activities occurred in 2023.

4.5.8.2 Predatory Mammals

All incident reports, observations, deterrence activities, and Environment team responses to predatory mammal sightings are included in Appendix C.

Three wolverine and three wolf mortalities associated with the Mine site were reported in 2023.

On 19 January 2023 fresh wolverine tracks were observed near the incinerator at 06:25 during a wildlife survey. A wolverine was observed numerous times near the incinerator, assay lab, core shacks and at the landfill. The wolverine had become habituated to the site and attempts to deter the wolverine away from the site were unsuccessful. Frequent reports/observations of the wolverine continued between 01 January and 18 January 2023. Environment Department provided GN-DoE the wildlife reports regarding our monitoring and deterring efforts related to the Wolverine observations. On 16 January 2023 GN DoE issued a wildlife destruction authorization to ensure the safety of personnel on site. The wolverine was dispatched on 19 January 2023.

On 25 January 2023 a wildlife survey around the site was performed. A wolf was observed at 5:45 near the incinerator. In previous weeks, the wolf was observed numerous times near the incinerator, winter parking, fountain tire shop, cat dome, maintenance shop and at the landfill. Attempts to deter the wolf away from the site were unsuccessful as the wolf had become habituated to the site and several close encounters with employees were reported. Previously rubber slugs were used as a deterrent but has been proven to be unsuccessful. On

24 January 2023, the Environment Department provided GN DoE the wildlife reports regarding our monitoring and deterring efforts related to the wolf observations. On 22 January 2023 GN DoE issued a wildlife destruction authorization to ensure the safety of personnel on site. On 25 Jan, the wolf was dispatched at the incinerator.

On 03 February 2023 at 18:15 Environment responded to a report of a wolf observation near the front desk at Meadowbank. Environment patrolled the area without observation. On 04 February 2023 at 06:30, Environment responded to a report of a wolf observation near the incinerator; however, the wolf was not observed. At 07:10 the wolf was observed by Environment at the landfill. Previous attempts to deter the wolf away from the site were unsuccessful as the wolf had become habituated to the site. Several close encounters with employees were reported. A GN Conservation officer provided a wildlife destruction permit for the problematic wolves on 22 January 2023. The wolf was dispatched on 04 February 2023 at the landfill.

On 06 February 2023 at 13:00 during a routine inspection, Environment observed a wolverine at the Meadowbank landfill. Environment had responded to a report of a wolverine near the incinerator earlier in the day, but the animal was not observed. Previous attempts to deter the wolverine away from the site were unsuccessful as the animal had become habituated to the site and several close encounters with employees were reported. Environment staff parked near the entrance to the Meadowbank landfill. A GN Conservation officer provided a wildlife destruction permit for the problematic wolverine on 16 January 2023. The wolverine was dispatched on 06 February 2023 at the landfill.

On 07 March 2023, at 14:30 a wolf was reported between the South Cell tailings area and the Meadowbank landfill. Environment responded to the call and observed the wolf lie down on top of a berm at the edge of the road. Environment workers attempted to deter the wolf away with the horn of the pick-up. The wolf did not respond at first but slowly moved towards the east side of the landfill and laid down. Previous attempts to deter the wolf away from the site were unsuccessful as the wolf had become habituated to the site and several close encounters with employees were reported. GN Conservation officer provided a wildlife destruction permit for the problematic wolves on 22 January 2023. Environment staff approached the landfill via pick-up truck and the wolf was dispatched on 07 March 2023 at the landfill.

On 10 March 2023 at 13:30 while performing wildlife monitoring, a wolverine was observed by HTO and Environment at the bottom of the South Cell tailings ramp near the Meadowbank landfarm. Environment had responded to a report of a wolverine on the airstrip earlier in the day. Previous attempts to deter the wolverine away from the site were unsuccessful as the animal had become habituated to the site and several encounters with employees were reported. HTO and Environment approached the bottom of the ramp via pick-up truck. The wolverine was standing at the bottom of the ramp observing the vehicle. A GN Conservation officer provided a wildlife destruction authorization to HTO for problematic wildlife February 24, 2023. The wolf was dispatched on 10 March 2023.

4.5.8.3 Other Wildlife

No other mortalities related to Project activities were reported at the Project in 2023.

4.5.9 Helicopter Activity

Helicopters are utilized at the Project for various reasons including mobilization of equipment, transport, exploration, surveying, monitoring, and reconnaissance. Pilots are required to review an air traffic management procedure that includes the following project specific flight restrictions:

- Long-range flights are a minimum of 650 m above ground level, except for take-off and landings.
- Short-range flights are a minimum of 300 m above ground level, except for take-off and landings.
- Notification of caribou, muskox or other wildlife sightings within 1 km of the helicopter pad.
- Caribou groups of 50 or more animals, and muskoxen of 10 or more animals must be avoided by a minimum of 1,000 m vertically and 1,500 m horizontally. Flocks of migratory birds must be avoided by 1,100 m vertically and 1,500 m horizontally. Flying over known raptor nests will be avoided.
- Harassing wildlife (flying below 300 m) is expressly forbidden unless animals pose an immediate danger to humans.

However, certain activities are required to be completed at lower altitudes than specified in the air traffic management plan. External load operations (equipment/material slinging), site inspections, reconnaissance and environmental surveys often require lower flight. Flights with these purposes have been considered permissible for low flight. Similarly, flights lower than 300 m have been considered permissible when flying low due to low visibility (poor weather conditions) or for emergency medevac services.

Track logs and altitudes are recorded using the Honeywell Skyconnect Tracker II, which runs on the Iridium satellite network. This product provides two-way satellite voice communication, ground to asset texting, and asset to ground location tracking service. Spatial location, altitude, and speed of helicopters are collected throughout flights. Up to five months of previous tracking data are stored online by Honeywell.

While the spatial location, altitude, speed, and detailed flight time of helicopters are tracked and available as detailed GPS points (e.g., a new GPS point provided every minute), flight reports including the purpose for the trip (e.g., passenger, ferry, equipment/material slinging operations, etc.) and the site that the trip was associated with (e.g., Meadowbank Complex), among other details, are recorded by pilots manually using approximate flight times. The connection between the two sets of flight data is complex and not automated. As aircrafts are used intermittently throughout the year for flights at other sites (e.g., Meliadine), it has not yet been possible to accurately separate GPS data only for billed Meadowbank flights. To facilitate this, the following methods were developed to connect manual flight report and GPS data together to allow for more detailed analysis of the flight restrictions outlined above.

Flight track GPS logs for each aircraft operating in the area were combined in ArcGIS Pro (ArcGIS, Redlands, CA). As project flight restrictions specify height above the ground in meters (versus altitude in meters above sea level), the elevation of the ground was determined for each GPS point using the Canadian Digital Elevation Model (CDEM) and the flying height above the ground was calculated. All GPS points were then converted to flight paths specific to each aircraft connecting sequential GPS points during each flight day. Hundreds of flight paths may make up a flight leg (e.g., one flight consisting of GPS points taken each minute flown). For each flight path, details relating to its change in time, speed, altitude and height above the ground were calculated. To facilitate in the connection of GPS data to manual flight reports, start and end times of each path were rounded to the nearest 10 minutes.

Flight reports were provided for each aircraft and flight day, in pdf format, as well as in a spreadsheet containing information from all pdf reports. Pilots were instructed to record comments related to reasons for flying lower than the normally required altitude, such as due to poor visibility due to weather, starting 28 July 2023 following review of 2022 annual report comments. Each report provides details on the flights operated during that day for each aircraft and are separated by flight leg, depending on the purpose of flight. Flight reports include an approximated time, which was rounded to the nearest 10 minutes to facilitate in the connection with detailed GPS flight paths.

An iterative process was run on the thousands of flight paths, assigning a flight report number and flight leg number to each path based on the aircraft name, date of flight and rounded time of flight. Connections between the GPS flight legs, and flight reports were successful for 83% of flights provided (656 of 790 flights; 352.9 flight hours of 411.6 flight hours). GPS data was missing for nine flight days in May (May 12 – 20) for the FGAV aircraft (9% of flights; 69 flights totalling approximately 49.5 hours), which was confirmed by the helicopter operator. The remaining mis-joined flights made up 8% of all flights and corresponded to approximately 9.2 flight hours. This mis-joined data may not have been captured due to inaccuracies in recorded data such as: errors in recorded details of the flight by the pilot, a mismatch of time zones of the flight report and detailed GPS data or similar inaccuracies. Data from the two flight datasets were joined together using an identifier field that was created using the aircraft, date, flight report number and flight leg number. The following discussion reports metrics based only on the flights legs that were successfully connected to flight reports.

For an accurate assessment of flying height above ground, take-off and landing should not be considered. Flight paths were classified as take-off/landing using the following definition. If a flight path had a change in speed of ± 15 knots and was within 500 ft/152 m above the ground or if the flight path was less than 20 m from the ground regardless of speed, it was classified as take-off/landing and was removed from the flying height calculations. Two examples are shown in Figure 4-1, which display flight paths and their corresponding change in height above the ground (m), indicating the flight segments classified as take-off/landing in grey. Additionally, flights were classified as short- or long-range by calculating the maximum distance spanned during an individual flight leg. This was done by identifying GPS points for individual flights that were the furthest away from each other. If this distance was < 25 km, the flight was classified as short-range. Flights with longer flight spans were classified as long range. While total flight length was considered to classify flight range, many flight legs consist of multiple trips between two locations (e.g., slinging material back and forth or a return flight to drop off passengers) and many flights that intuitively appear to be short-range would be misclassified. Short- and long-range flights are shown in Figure 4-2. Short- and long-range flights during each season (i.e., spring, summer, and fall) are shown in Figure 4-3 to Figure 4-8.

Flight length in distance (km) and hours, average cruising altitude (m) and average cruising height above the ground (m) were determined for each flight leg using the ID field described above. For each season, the number of flying dates, number of flights and number of flying hours were summarized (Table 4-9). The average flight distance and total distance flown within the Meadowbank and Whale Tail RSAs are also shown. A more detailed breakdown of flight hours is shown for short-range (Table 4-10) and long-range flights (Table 4-11). By season, total flight hours are summarized based on time spent above or below the minimum flying height described by the project specific flight restrictions (300 m for short-range flights; 650 m for long-range flights), excluding time classified as takeoff/landing or for a permissible reason of low flight. The average cruising height above the ground was determined for each season using the average cruising height above the ground (m) calculated for each flight leg, excluding takeoff/landing and any permissible low flights. A full catalog of flight details for all flights, including pilot comments are shown in Appendix E.

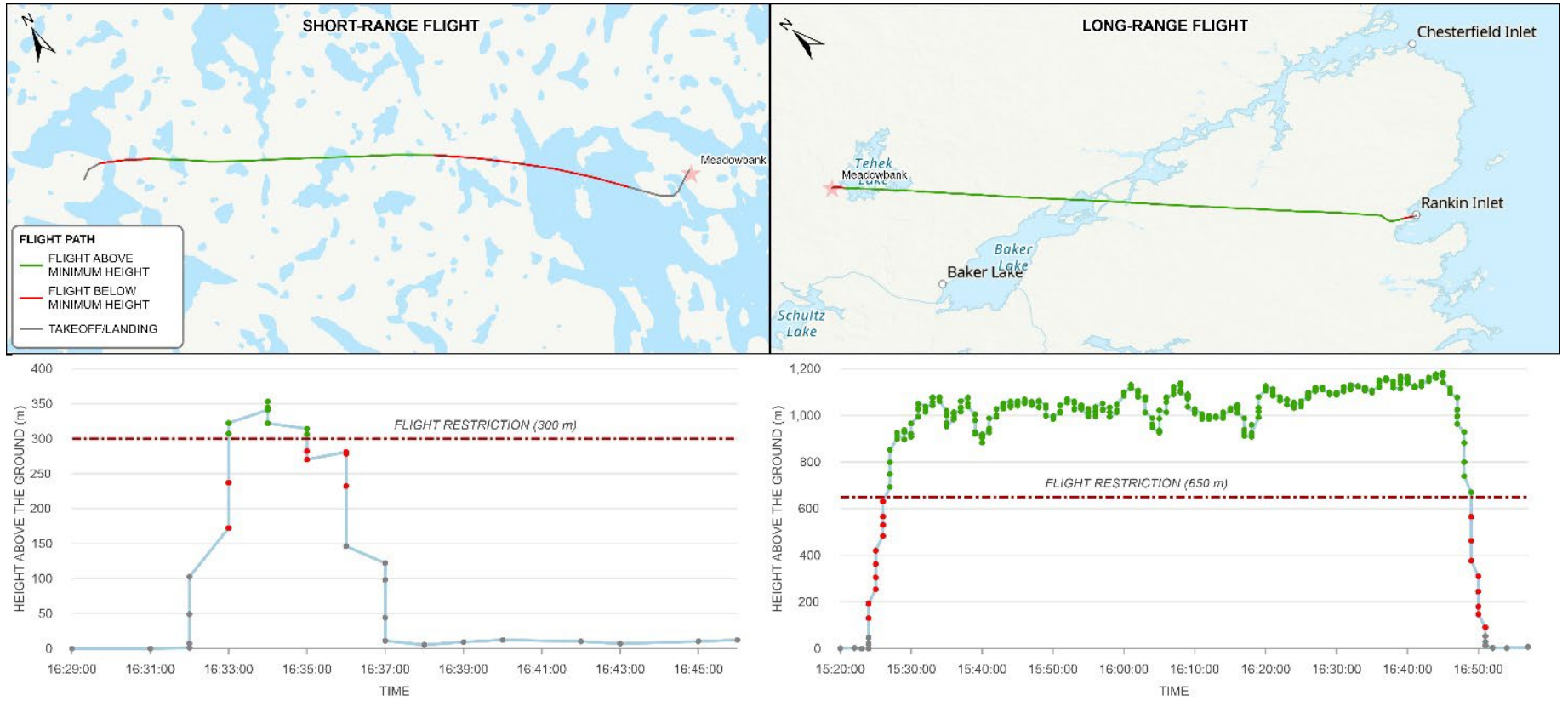
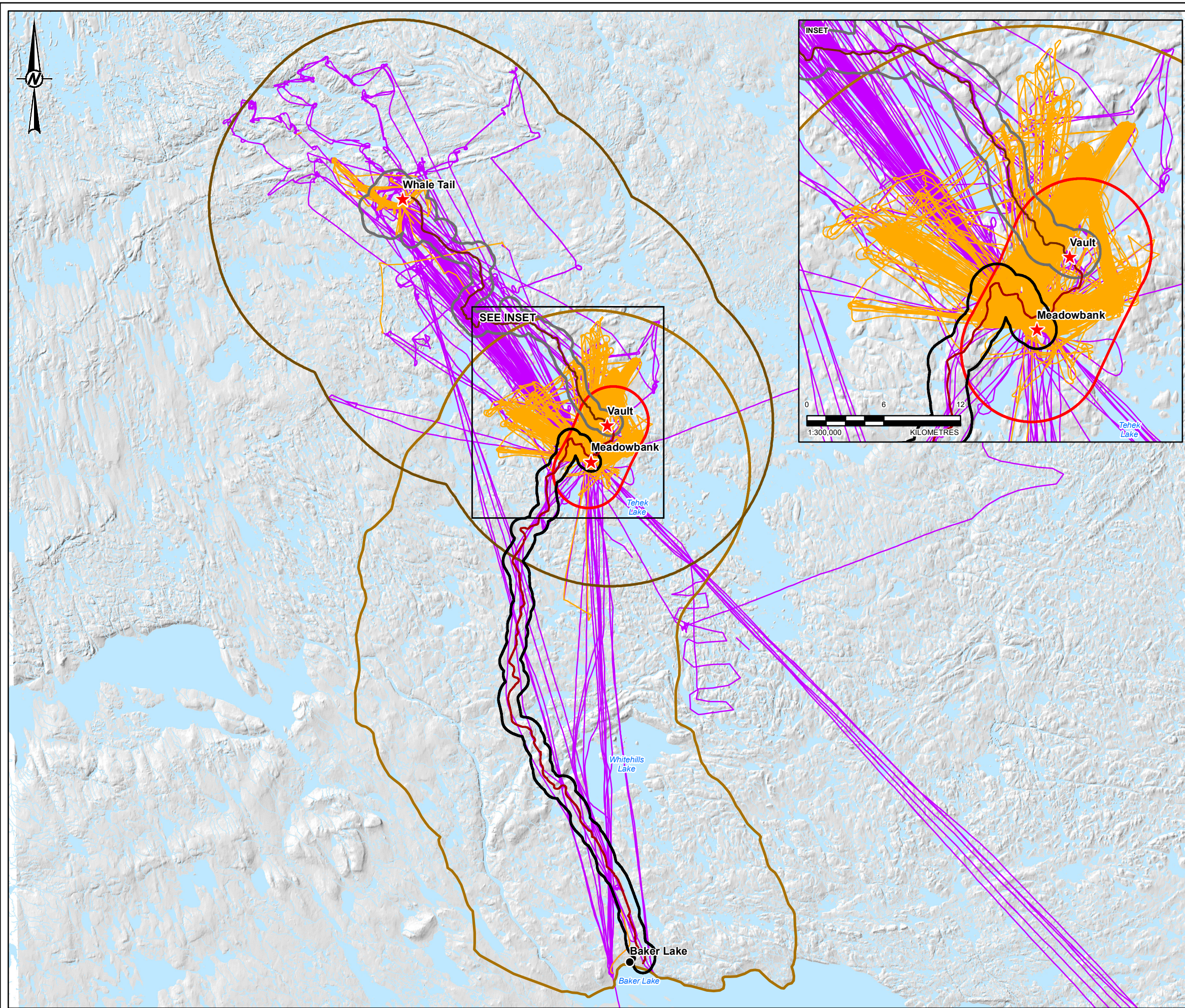


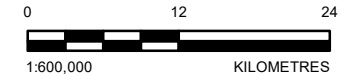
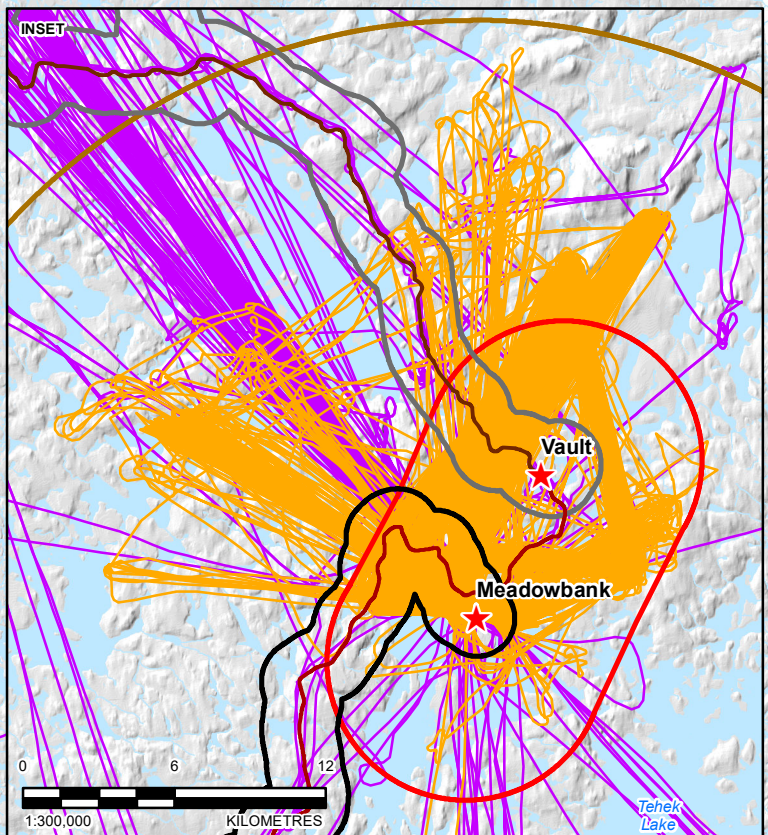
Figure 4-1: Examples of Short-Range and Long-Range Flights with Flight Segments Classified as Take-off/Landing (grey), and Remaining Flight Segments Classified as Above or Below the Minimum Required Height Above the Ground.

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LEGEND

- ALL-WEATHER ACCESS ROAD (AWAR)
- WHALE TAIL HAUL ROAD (WTHR)
- FLIGHT PATH**
- SHORT-RANGE
- LONG-RANGE
- AWAR LOCAL STUDY AREA (LSA)
- WTHR LOCAL STUDY AREA (LSA)
- WTHR REGIONAL STUDY AREA (RSA)
- MEADOWBANK LOCAL STUDY AREA (LSA)
- MEADOWBANK REGIONAL STUDY AREA (RSA)
- WATERCOURSE
- WATERBODY



REFERENCE(S)
 1. INFRASTRUCTURE OBTAINED FROM AGNICO EAGLE MINES LIMITED.
 2. WATERCOURSE AND WATERBODY DATA OBTAINED FROM NATURAL RESOURCES CANADA.
 COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 14N

CLIENT **AGNICO EAGLE MINES LIMITED: MEADOWBANK DIVISION**

PROJECT
MEADOWBANK COMPLEX
 2023 WILDLIFE MONITORING SUMMARY REPORT

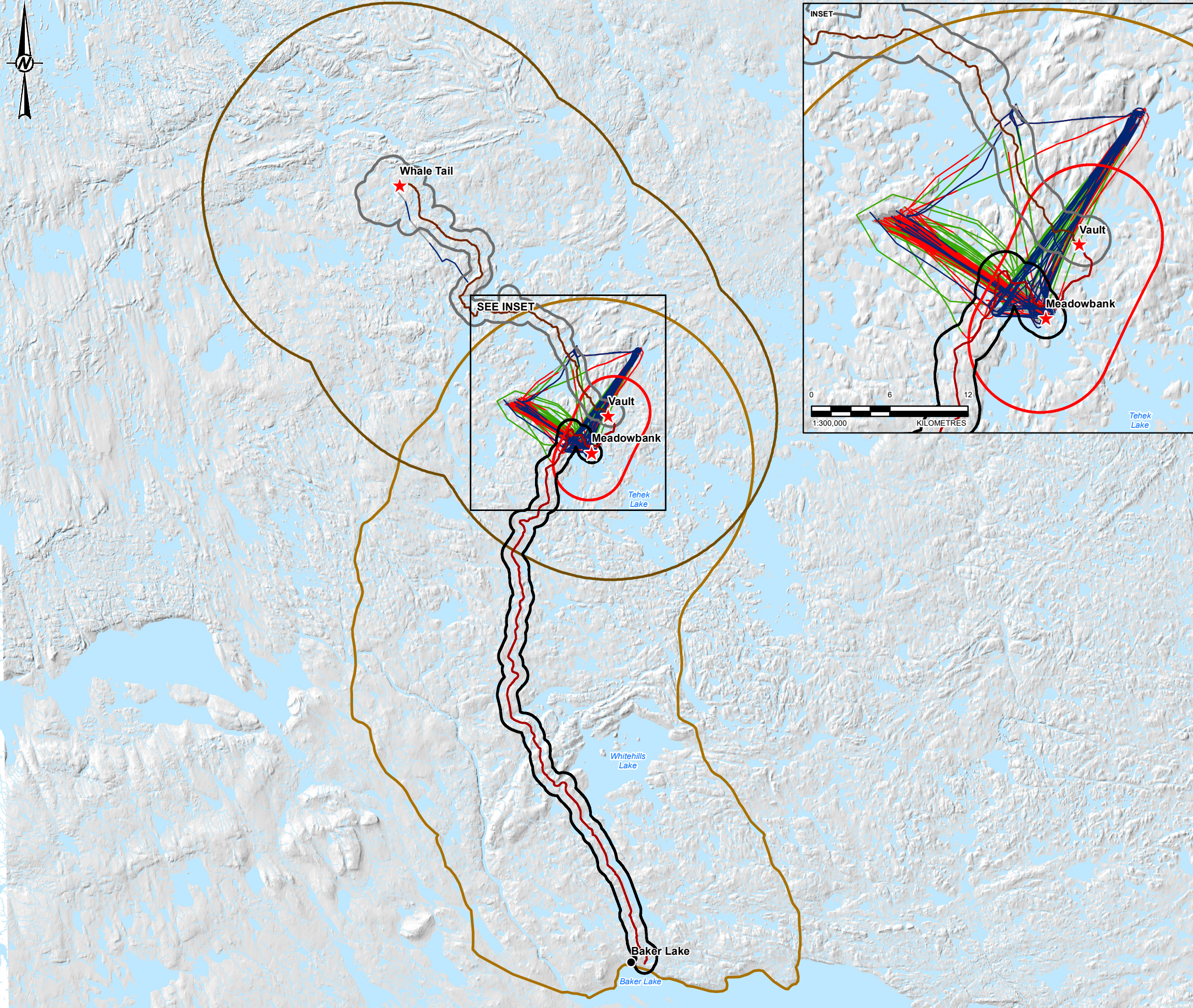
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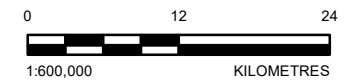
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LEGEND

- ALL-WEATHER ACCESS ROAD (AWAR)
- WHALE TAIL HAUL ROAD (WTHR)
- SHORT-RANGE FLIGHT PATH**
- FLIGHT ABOVE MINIMUM ALTITUDE (300 m ABOVE GROUND)
- FLIGHT BELOW MINIMUM ALTITUDE (300 m ABOVE GROUND)
- PERMISSIBLE LOW FLIGHT
- TAKEOFF/LANDING
- AWAR LOCAL STUDY AREA (LSA)
- WTHR LOCAL STUDY AREA (LSA)
- WTHR REGIONAL STUDY AREA (RSA)
- MEADOWBANK LOCAL STUDY AREA (LSA)
- MEADOWBANK REGIONAL STUDY AREA (RSA)
- WATERCOURSE
- WATERBODY



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 COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 14N

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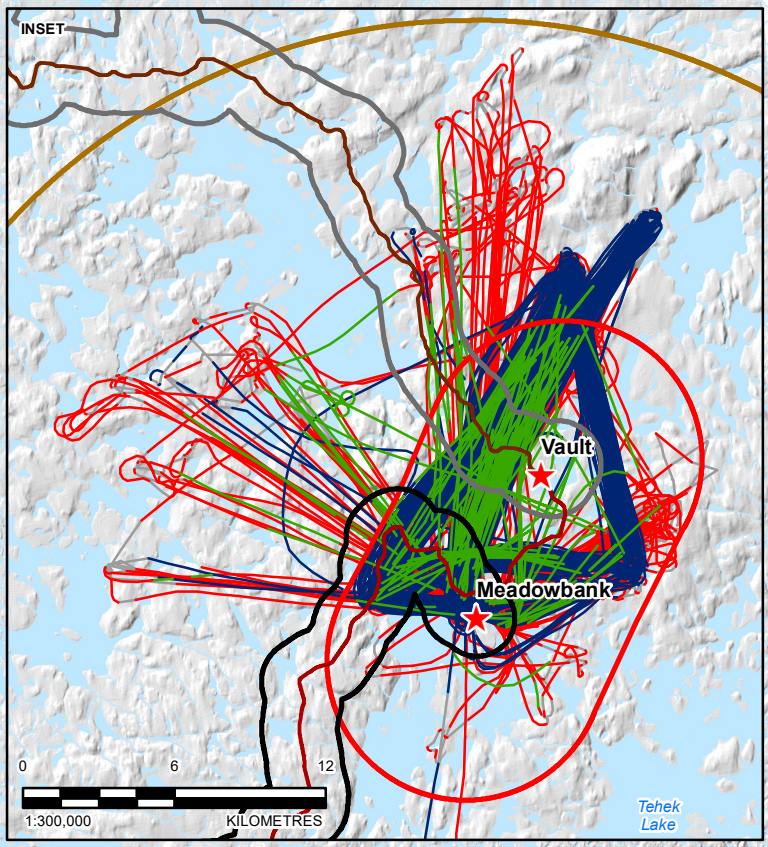
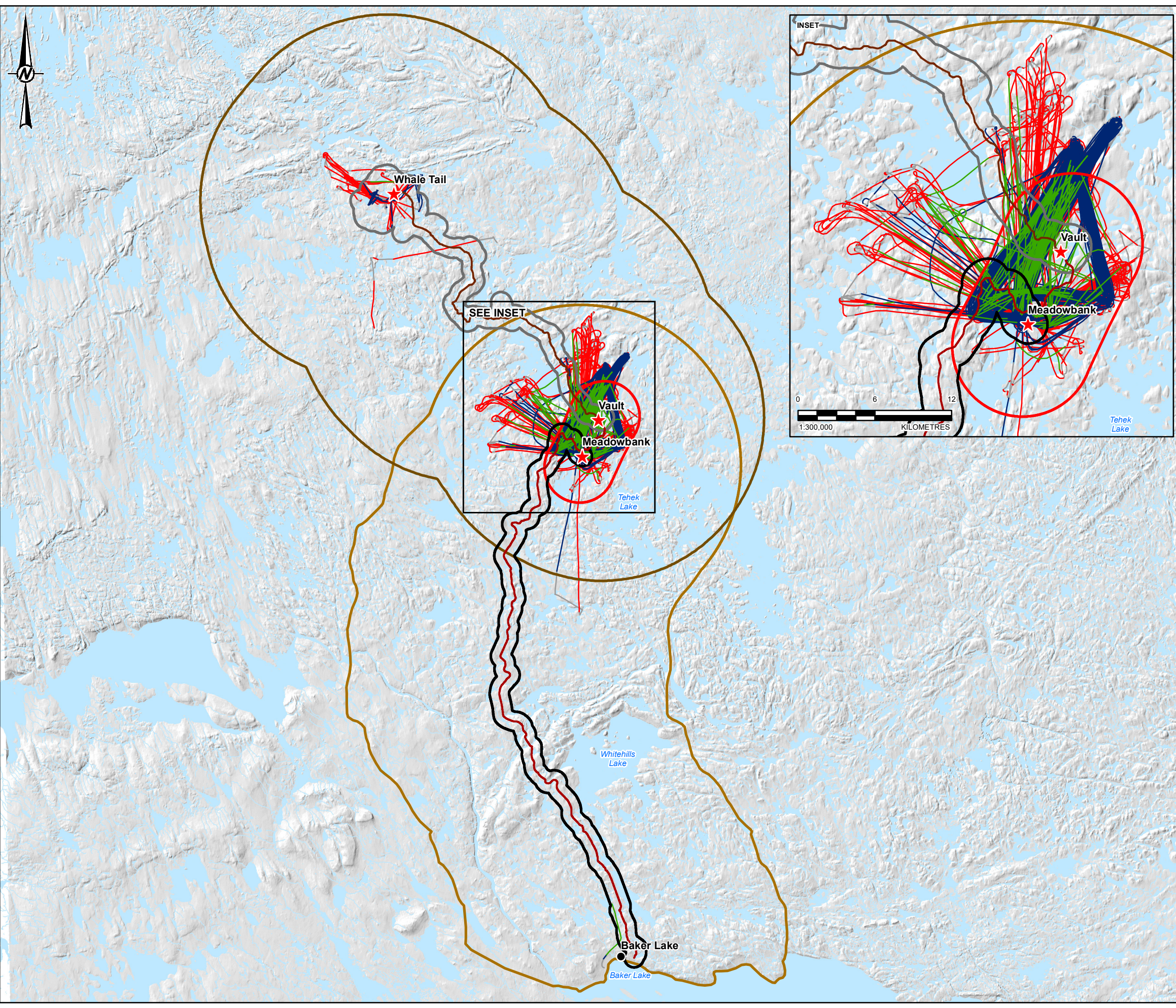
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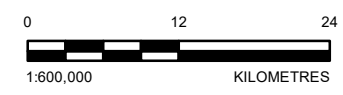
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LEGEND

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- WHALE TAIL HAUL ROAD (WTHR)
- SHORT-RANGE FLIGHT PATH**
- FLIGHT ABOVE MINIMUM ALTITUDE (300 m ABOVE GROUND)
- FLIGHT BELOW MINIMUM ALTITUDE (300 m ABOVE GROUND)
- PERMISSIBLE LOW FLIGHT
- TAKEOFF/LANDING
- AWAR LOCAL STUDY AREA (LSA)
- WTHR LOCAL STUDY AREA (LSA)
- WTHR REGIONAL STUDY AREA (RSA)
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- MEADOWBANK REGIONAL STUDY AREA (RSA)
- WATERCOURSE
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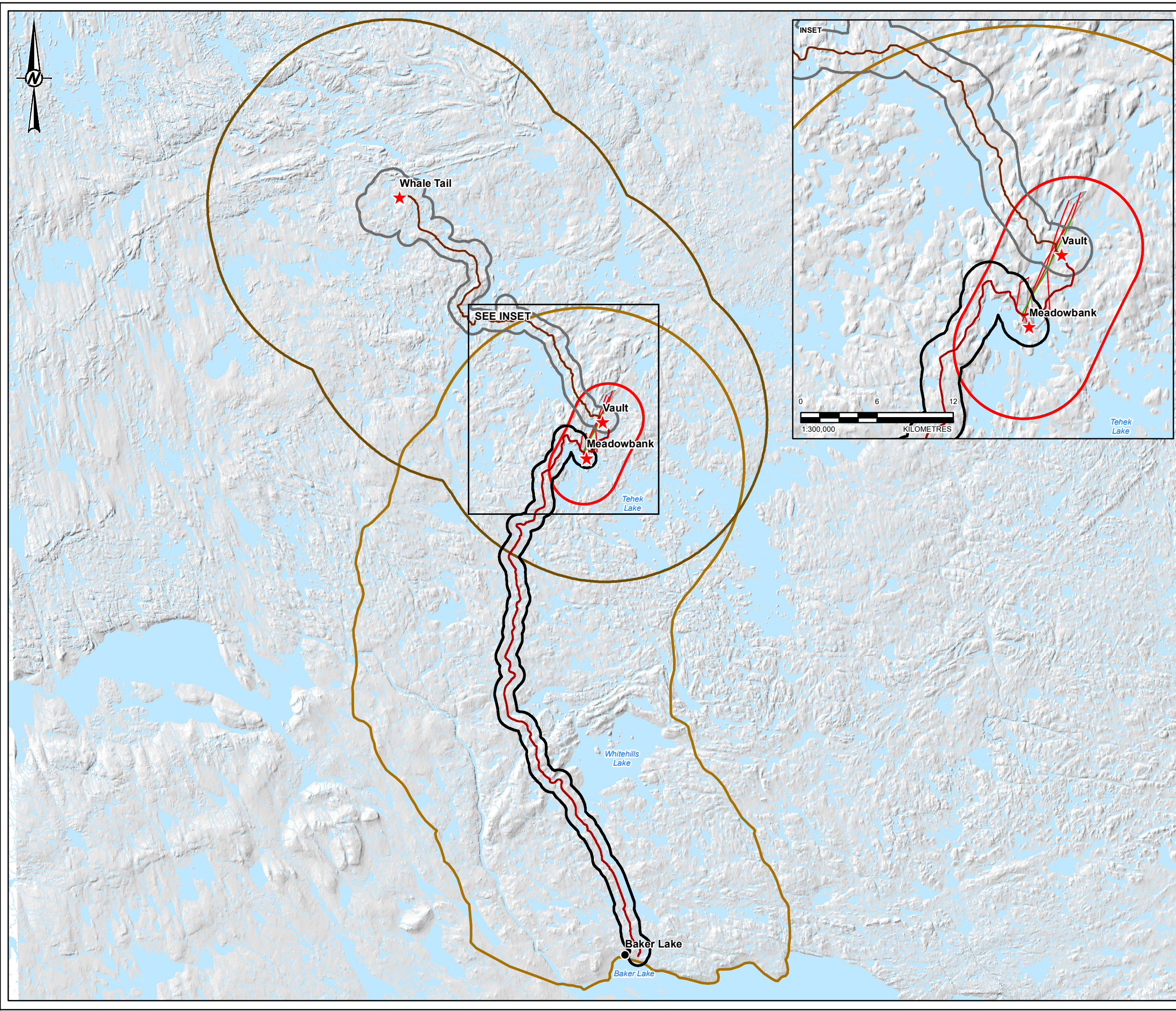
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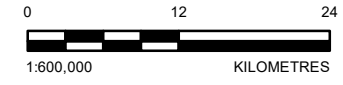
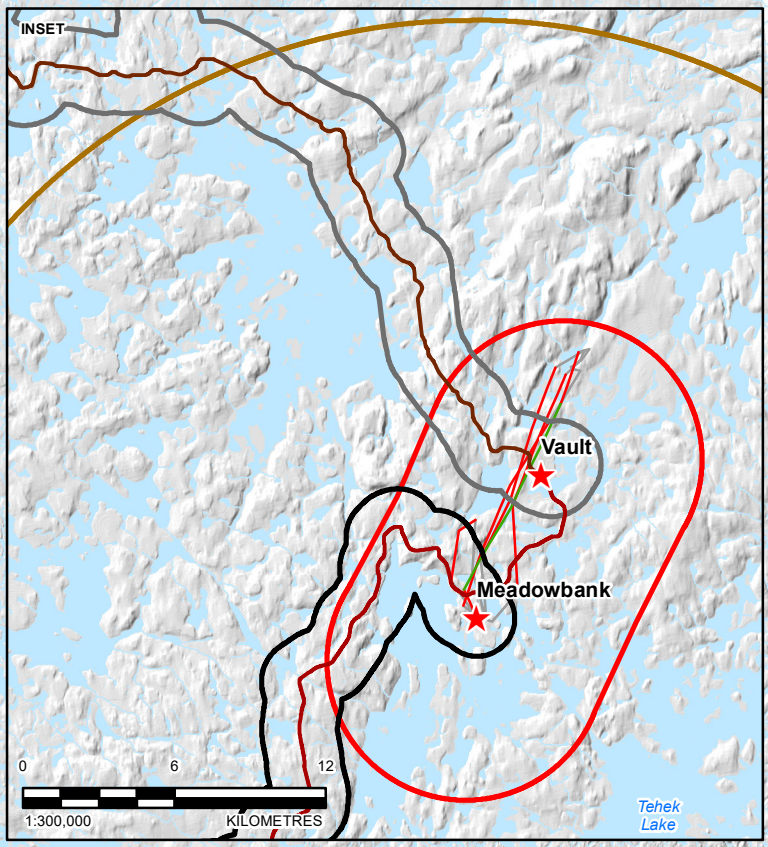
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- LEGEND**
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 - WHALE TAIL HAUL ROAD (WTHR)
 - SHORT-RANGE FLIGHT PATH**
 - FLIGHT ABOVE MINIMUM ALTITUDE (300 m ABOVE GROUND)
 - FLIGHT BELOW MINIMUM ALTITUDE (300 m ABOVE GROUND)
 - PERMISSIBLE LOW FLIGHT
 - TAKEOFF/LANDING
 - AWAR LOCAL STUDY AREA (LSA)
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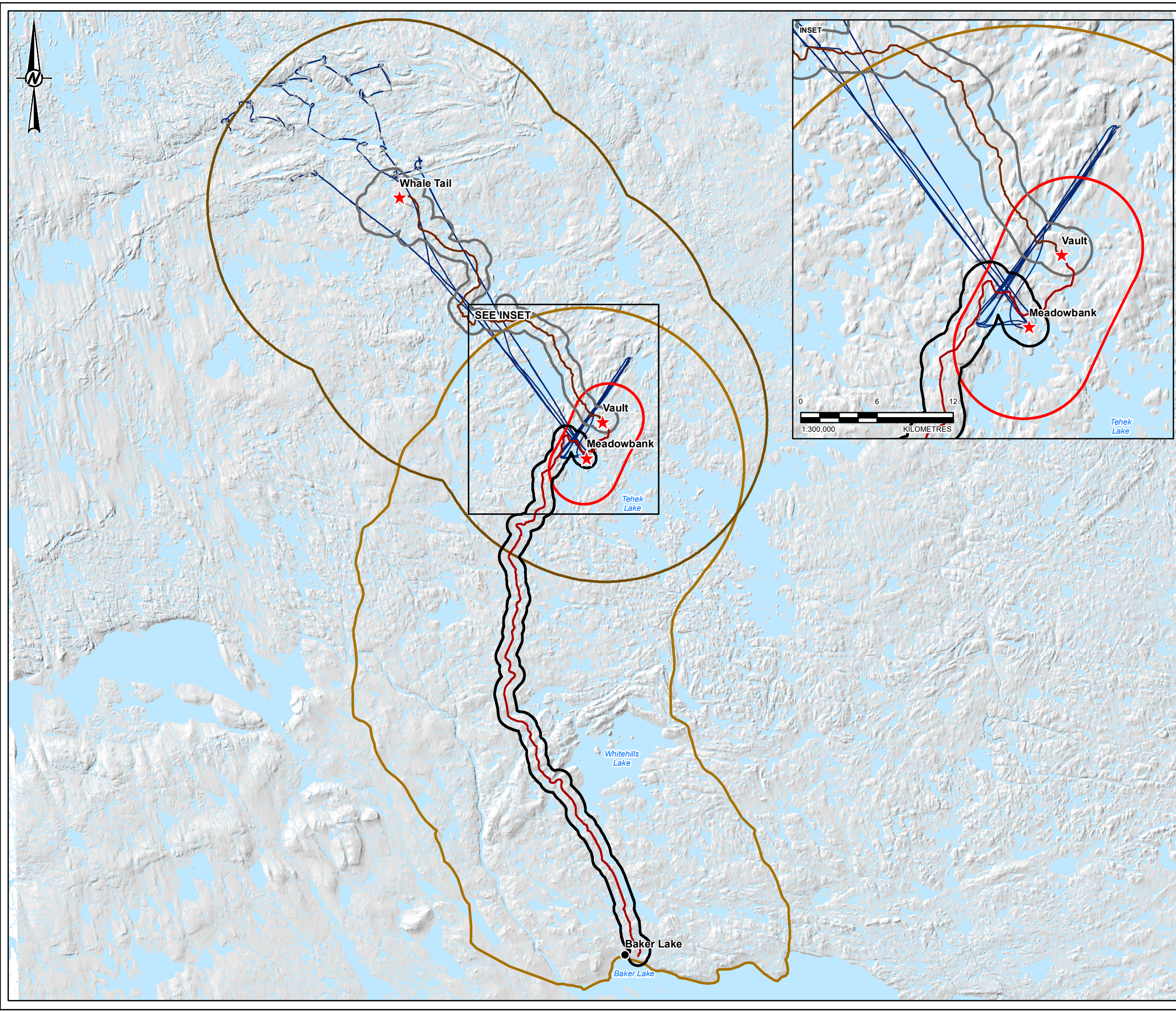
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	APPROVED	DC	

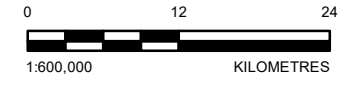
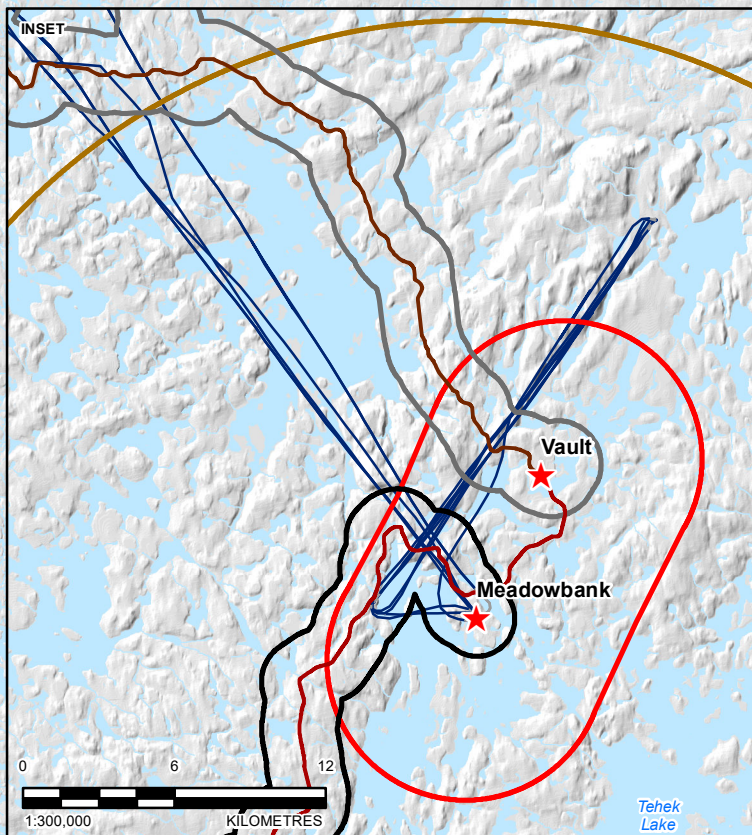
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		FIGURE 4-5

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- LEGEND**
- ALL-WEATHER ACCESS ROAD (AWAR)
 - WHALE TAIL HAUL ROAD (WTHR)
 - LONG-RANGE FLIGHT PATH**
 - FLIGHT ABOVE MINIMUM ALTITUDE (650 m ABOVE GROUND)
 - FLIGHT BELOW MINIMUM ALTITUDE (650 m ABOVE GROUND)
 - PERMISSIBLE LOW FLIGHT
 - TAKEOFF/LANDING
 - AWAR LOCAL STUDY AREA (LSA)
 - WTHR LOCAL STUDY AREA (LSA)
 - WTHR REGIONAL STUDY AREA (RSA)
 - MEADOWBANK LOCAL STUDY AREA (LSA)
 - MEADOWBANK REGIONAL STUDY AREA (RSA)
 - WATERCOURSE
 - WATERBODY



REFERENCE(S)

1. INFRASTRUCTURE OBTAINED FROM AGNICO EAGLE MINES LIMITED.
2. WATERCOURSE AND WATERBODY DATA OBTAINED FROM NATURAL RESOURCES CANADA.

COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 14N

CLIENT **AGNICO EAGLE MINES LIMITED:**
MEADOWBANK DIVISION

PROJECT
MEADOWBANK COMPLEX
2023 WILDLIFE MONITORING SUMMARY REPORT

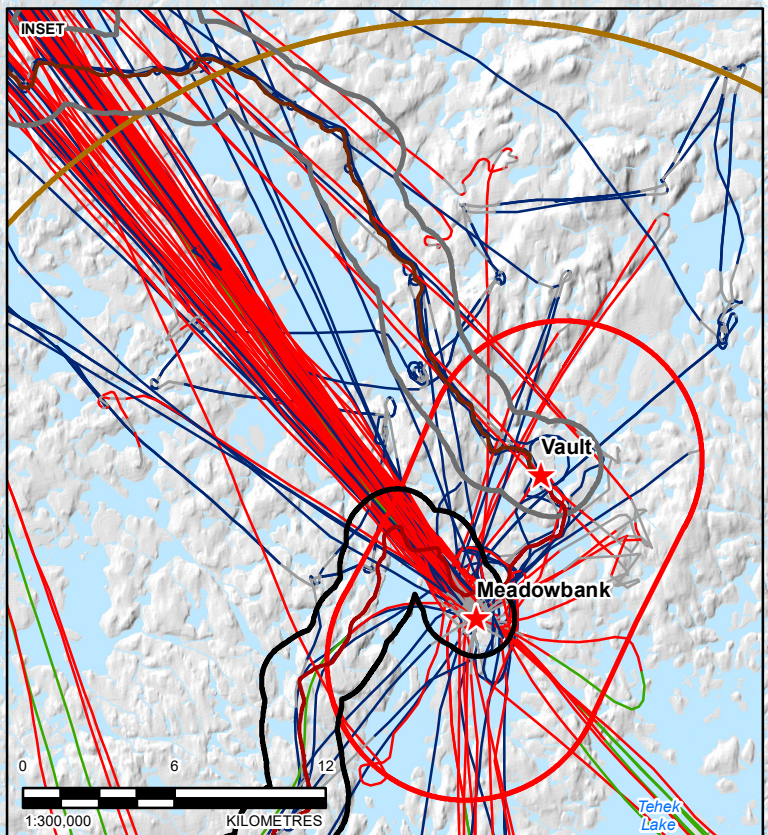
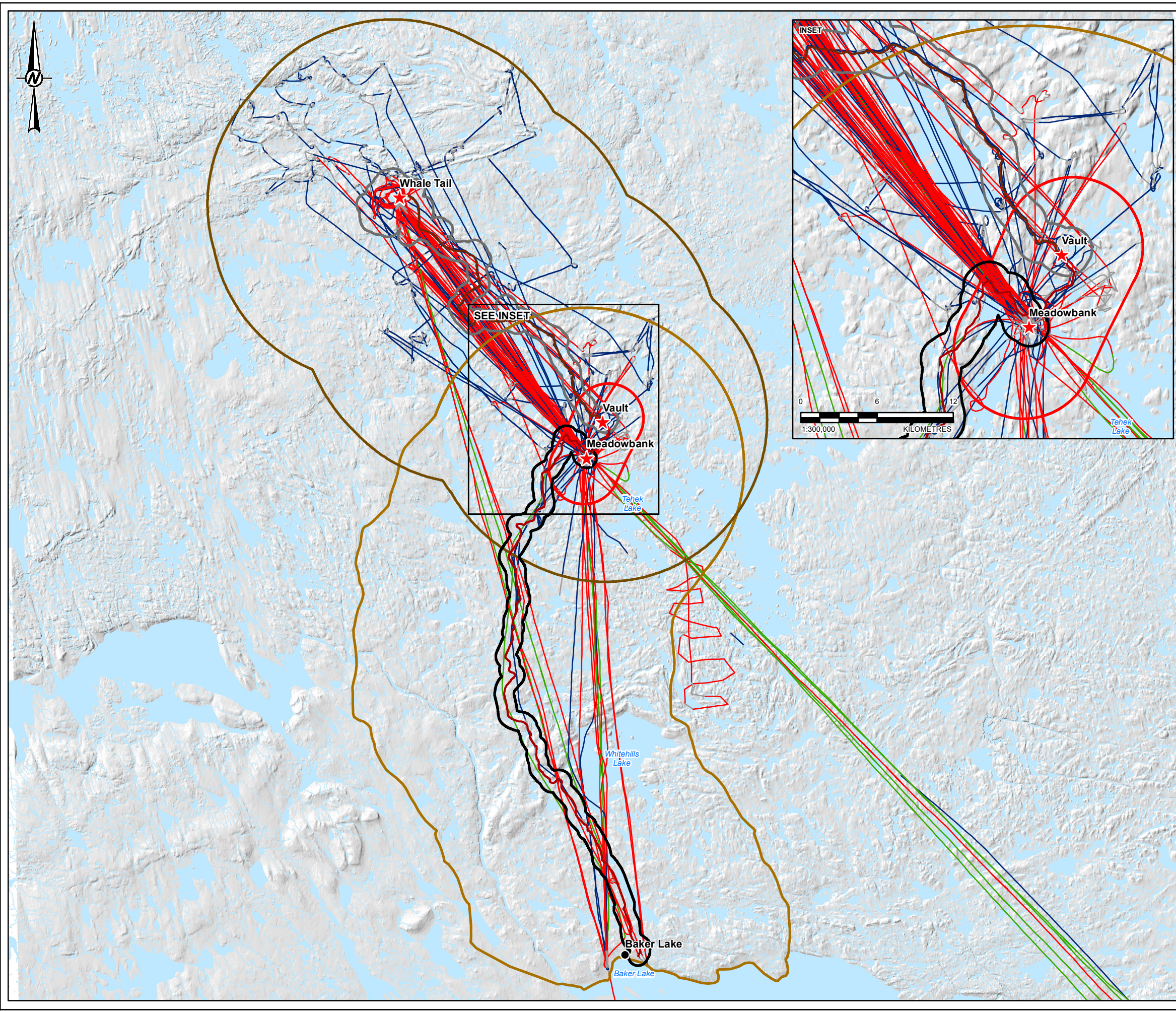
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	CONSULTANT	YYYY-MM-DD	2024-03-28
	DESIGNED	DM	
	PREPARED	CDB	
	REVIEWED	JF	
	APPROVED	DC	

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		FIGURE 4-6

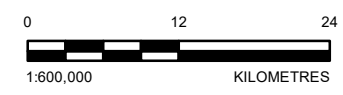
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LEGEND

- ALL-WEATHER ACCESS ROAD (AWAR)
- WHALE TAIL HAUL ROAD (WTHR)
- LONG-RANGE FLIGHT PATH**
- FLIGHT ABOVE MINIMUM ALTITUDE (650 m ABOVE GROUND)
- FLIGHT BELOW MINIMUM ALTITUDE (650 m ABOVE GROUND)
- PERMISSIBLE LOW FLIGHT
- TAKEOFF/LANDING
- AWAR LOCAL STUDY AREA (LSA)
- WTHR LOCAL STUDY AREA (LSA)
- WTHR REGIONAL STUDY AREA (RSA)
- MEADOWBANK LOCAL STUDY AREA (LSA)
- MEADOWBANK REGIONAL STUDY AREA (RSA)
- WATERCOURSE
- WATERBODY



REFERENCE(S)

1. INFRASTRUCTURE OBTAINED FROM AGNICO EAGLE MINES LIMITED.
2. WATERCOURSE AND WATERBODY DATA OBTAINED FROM NATURAL RESOURCES CANADA.

COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 14N

CLIENT **AGNICO EAGLE MINES LIMITED:**
MEADOWBANK DIVISION

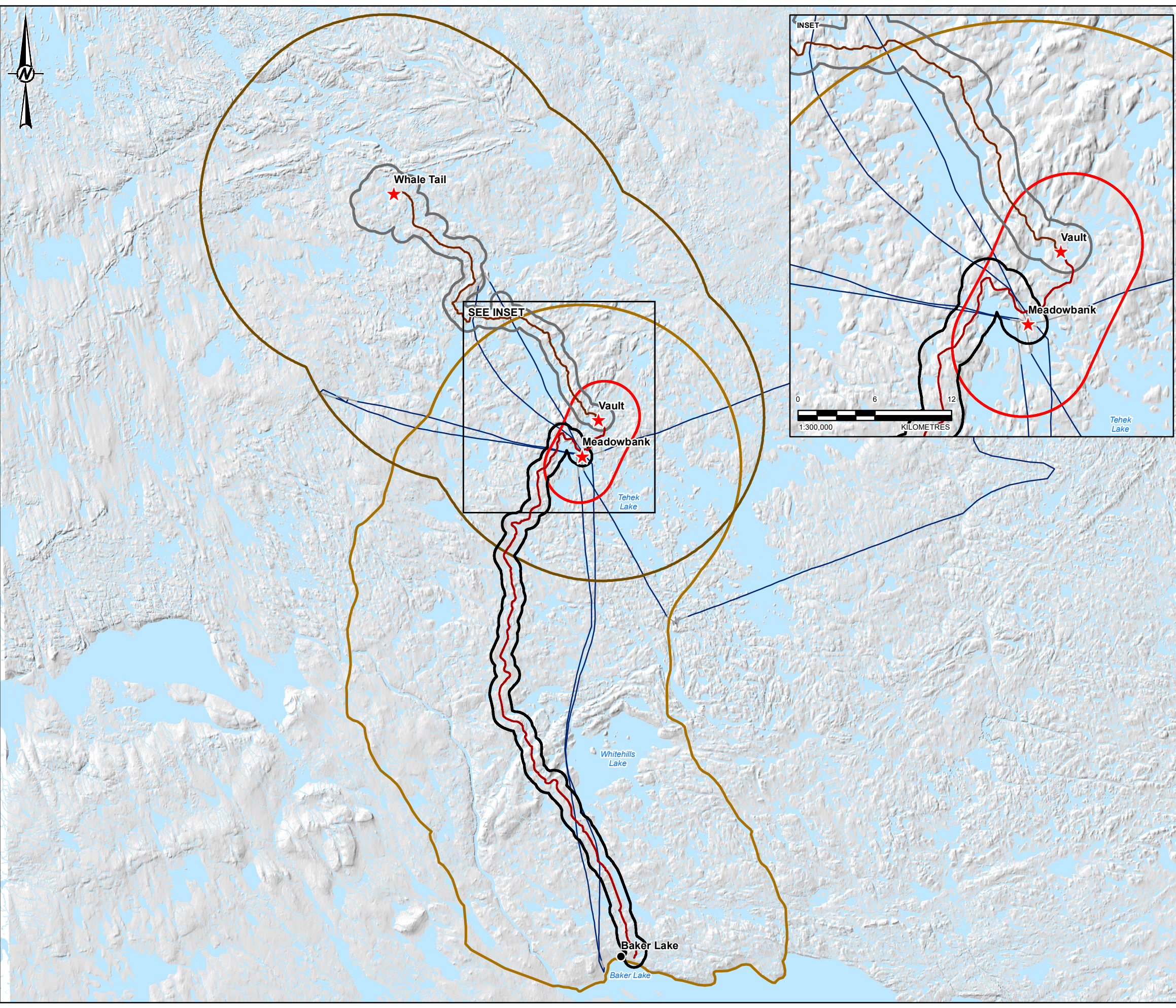
PROJECT
MEADOWBANK COMPLEX
2023 WILDLIFE MONITORING SUMMARY REPORT

TITLE
MINE-RELATED LONG-RANGE FLIGHTS OPERATED BELOW THE MINIMUM FLIGHT ALTITUDE DURING SUMMER (2023)

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		REVIEWED	JF
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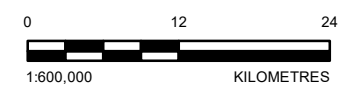
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LEGEND

- ALL-WEATHER ACCESS ROAD (AWAR)
- WHALE TAIL HAUL ROAD (WTHR)
- LONG-RANGE FLIGHT PATH**
- FLIGHT ABOVE MINIMUM ALTITUDE (300 m ABOVE GROUND)
- FLIGHT BELOW MINIMUM ALTITUDE (300 m ABOVE GROUND)
- PERMISSIBLE LOW FLIGHT
- TAKEOFF/LANDING
- AWAR LOCAL STUDY AREA (LSA)
- WTHR LOCAL STUDY AREA (LSA)
- WTHR REGIONAL STUDY AREA (RSA)
- MEADOWBANK LOCAL STUDY AREA (LSA)
- MEADOWBANK REGIONAL STUDY AREA (RSA)
- WATERCOURSE
- WATERBODY



REFERENCE(S)

1. INFRASTRUCTURE OBTAINED FROM AGNICO EAGLE MINES LIMITED.
2. WATERCOURSE AND WATERBODY DATA OBTAINED FROM NATURAL RESOURCES CANADA.

COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 14N

CLIENT **AGNICO EAGLE MINES LIMITED:**
MEADOWBANK DIVISION

PROJECT
MEADOWBANK COMPLEX
2023 WILDLIFE MONITORING SUMMARY REPORT

TITLE
**MINE-RELATED LONG-RANGE FLIGHTS OPERATED BELOW
THE MINIMUM FLIGHT ALTITUDE DURING FALL (2023)**

CONSULTANT	YYYY-MM-DD	2024-03-28
	DESIGNED	DM
	PREPARED	CDB
	REVIEWED	JF
	APPROVED	DC

PROJECT NO. CA0006990.5123	CONTROL 4000/4040	REV. 0
		FIGURE 4-8

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Table 4-9: Summary of Helicopter Flights in 2023

Season ^(a)	Flight Days	Number of Flights	Total Distance Flown within the RSA (km) ^(b)	Average Flight Leg Distance (km) ^(c) (mean ± SD)	Total Duration (hours)
Spring	36	107	9,673.4	102.9 ± 102.9	64.3
Summer	82	534	53,520.4	114.1 ± 144.8	283.9
Fall	6	15	1,046.3	92.7 ± 106.6	4.7

- a) Table includes data only for flights where both a flight report and helicopter GPS data are available.
b) Represents total length of flight paths intersecting with the combined RSA (Whale Tail RSA and Meadowbank RSA).
c) Represents average flight leg distance, including all flights whether or not they occurred within the RSAs.
d) Spring = Apr 1 to May 25, Summer = May 26 to Sep 21, Fall = Sep 22 to Dec 15.
km = kilometres; SD = standard deviation.

Eleven percent of all short-range flights in 2023 (27.8 hours) were identified below the minimum requirement (300 m), without documentation of the purpose of low flight. Short-range flights below 300 m occurred most frequently during summer (20.8 hours), when the number of flights and flight hours were also highest. The average flying height was highest for short-range flights during spring (365.2 ± 156.3 m), which is also visible in Figure 4-9, while average flying height during summer and fall is lower and consistent across the two seasons (~155-160 m).

Similar to short-range flights, the majority of long-range flights took place during summer. Additionally, flights conducted below the project flight restriction (650 m above ground) were only found to occur during this season. 32.0% of long-range flights in 2023 (28.9 hours) were identified below the minimum height requirement, without documentation of the purpose of low flight. The average flying height of all flight legs during summer was 338.3 ± 218.6 m. As all long-range flights that occurred during spring and fall were flagged as permissible low flights due to their reason for flight (e.g., environmental surveys) or from pilot comments (e.g., due to weather and smoke), this metric is not available for long-range flights during these seasons. Figure 4-10 displays the distribution of average flying heights for all long-range flight legs conducted during the summer. Overall, 16% of all flight hours in 2023 (56.7 hours) were identified as operating below the project specific flight restrictions, without documentation for the purpose of low flight.

Helicopter use varies across years and seasons and is based on operations, including establishment of remote camps and the amount of exploration. However, Figure 4-9 and Figure 4-10 indicate that flying height identified within seasons and flight-ranges is varied. This may be due to reasons such as, but not limited to:

- differences in flying height between flight-types (e.g., passenger flights [flight codes: PaxLoc, CrewChg, etc.] are often conducted at lower heights than ferry flights [flight code: Ferry])
- differences between aircraft and/or pilots (e.g., one or more aircrafts flying lower than others)
- inaccuracies or generalizations of the recorded reason for flight (e.g., only recording one reason for flight even if the flight had multiple purposes)
- inaccurate or missing comments (e.g., not recording a reason if low flight was required. Note: Pilots were instructed to begin adding comments to record reason for low flight on 28 July 2023)

Inaccuracies in the calculated flight height may also be responsible for some flights being flagged for low flight. While the project flight restrictions reference flying height about the ground (m), data provided from the aircraft

tracking system provides the flying altitude (meters above sea level). To obtain flying height about the ground, the ground height above sea level must be accounted for. This was completed using the Canadian Digital Elevation Model, which provides the ground elevation for low resolution pixels (75 m x 75 m area on the ground). This pixel size may generalize topography and cause inaccuracies in the flying height calculation. Obtaining the height above the ground directly from the aircraft tracking systems (if available) or obtaining a higher resolution digital elevation model (e.g., 10 m x 10 m resolution or better) may improve flying height calculations. Additionally, as differences between flying height has been observed between aircrafts, calibration of equipment may improve flying height data.

As a part of the project flight restrictions, pilots are also made aware to avoid caribou and muskox by 1,000 m vertically and 1,500 m horizontally, flocks of migratory birds by 1,100 m vertically and 1,500 m horizontally, and to avoid known raptor nests. Locations of these flights in relation to caribou and other wildlife was not assessed in 2023. Point locations of caribou and other wildlife from road surveys, pit and mine site surveys, and viewshed surveys may be too coarse to assess in relation to helicopter flight tracks. Helicopter flight tracks would ideally be assessed in relation to caribou satellite collar data, to assess avoidance of caribou by the required setback distances. However, caribou satellite collar locations would not necessarily represent groups of caribou of 50 individuals or larger as the number of caribou traveling with collared caribou is unknown. Collared caribou presence near the Mine typically occurs during spring and fall seasons when lower numbers of helicopter flights occur (Table 4-9, Table 4-10) but collared caribou do not come near the Mine in all years. Most helicopter flights occur during summer (81%; Table 4-9), which is not a sensitive season for caribou.

Table 4-10: Summary of Short-Range Helicopter Flights in 2023

Season ^(a)	Number of Flights	Duration (hours)					Average Height (m) Low Flights ^(c) (mean ± SD)	Percentage of Flights Below Minimum Height ^(d)
		Take-off/Landing	Permissible Low Flights ^(b)	Above Minimum Height ^(c)	Below Minimum Height ^(c)	Total		
Spring	103	27.8	11.2	9.2	6.8	55.0	365.2 ± 156.3	12.3%
Summer	534	100.0	68.2	4.7	20.8	193.7	160.7 ± 65.7	10.3%
Fall	7	0.6	0.0	0.1	0.2	0.8	155.3 ± 70.6	26.0%
Total	523	128.3	79.4	14.0	27.8	249.5	202.1 ± 131.0	11.0%

- a) Table includes data only for flights where both a flight report and helicopter GPS data are available.
 - b) Represents flights where flight activities with expected low altitudes were performed (e.g., slinging), or an adequate reason for low flight was provided (e.g., weather, emergency, etc.).
 - c) Values exclude takeoff/landing and low permissible flights; minimum height for short-range flights is 300 m; values shown in metres above the ground.
 - d) Percentage of flight duration below the minimum height for short-range flights using a threshold of 300 m, excluding permissible low flights.
 - e) Spring = Apr 1 to May 25, Summer = May 26 to Sep 21, Fall = Sep 22 to Dec 15.
- m = metres; SD = standard deviation.

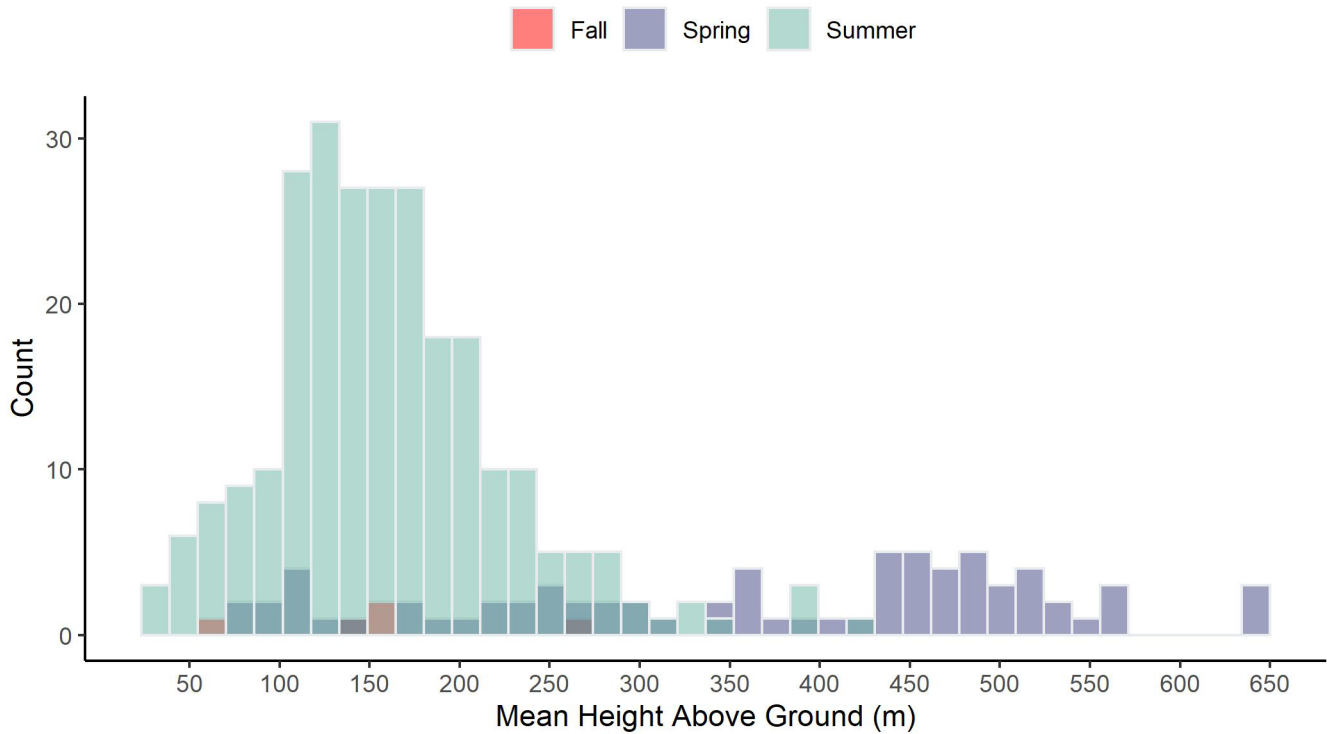


Figure 4-9: Distribution of the Average Cruising Height (m) of Short-Range Flights

Table 4-11: Summary of Long-Range Helicopter Flights in 2023

Season ^(a)	Number of Flights	Duration (hours)				Average Height (m) ^(c) (mean ± SD)	Percentage of Flights Below Minimum Height ^(d)	
		Take-off/Landing	Permissible Low Flights ^(b)	Above Minimum Height ^(c)	Below Minimum Height ^(c)			
Spring	4	3.9	5.4	0.0	0.0	9.3	N/A	0.0%
Summer	121	32.4	20.0	8.9	28.9	90.2	338.3 ± 218.6	32.0%
Fall	8	0.7	3.3	0.0	0.0	3.9	N/A	0.0%
Total	133	37.0	28.6	8.9	28.9	103.5	338.3 ± 218.6	28.0%

- a) Table includes data only for flights where both a flight report and helicopter GPS data are available.
 - b) Represents flights where flight activities with expected low altitudes were performed (e.g., slinging), or an adequate reason for low flight was provided (e.g., weather, emergency, etc.).
 - c) Values exclude takeoff/landing and low permissible flights; minimum height for short-range flights is 300 m; values shown in metres above the ground.
 - d) Percentage of flight duration below the minimum height for short-range flights using a threshold of 300 m, excluding permissible low flights.
 - e) Spring = Apr 1 to May 25, Summer = May 26 to Sep 21, Fall = Sep 22 to Dec 15.
- m = metres; SD = standard deviation.

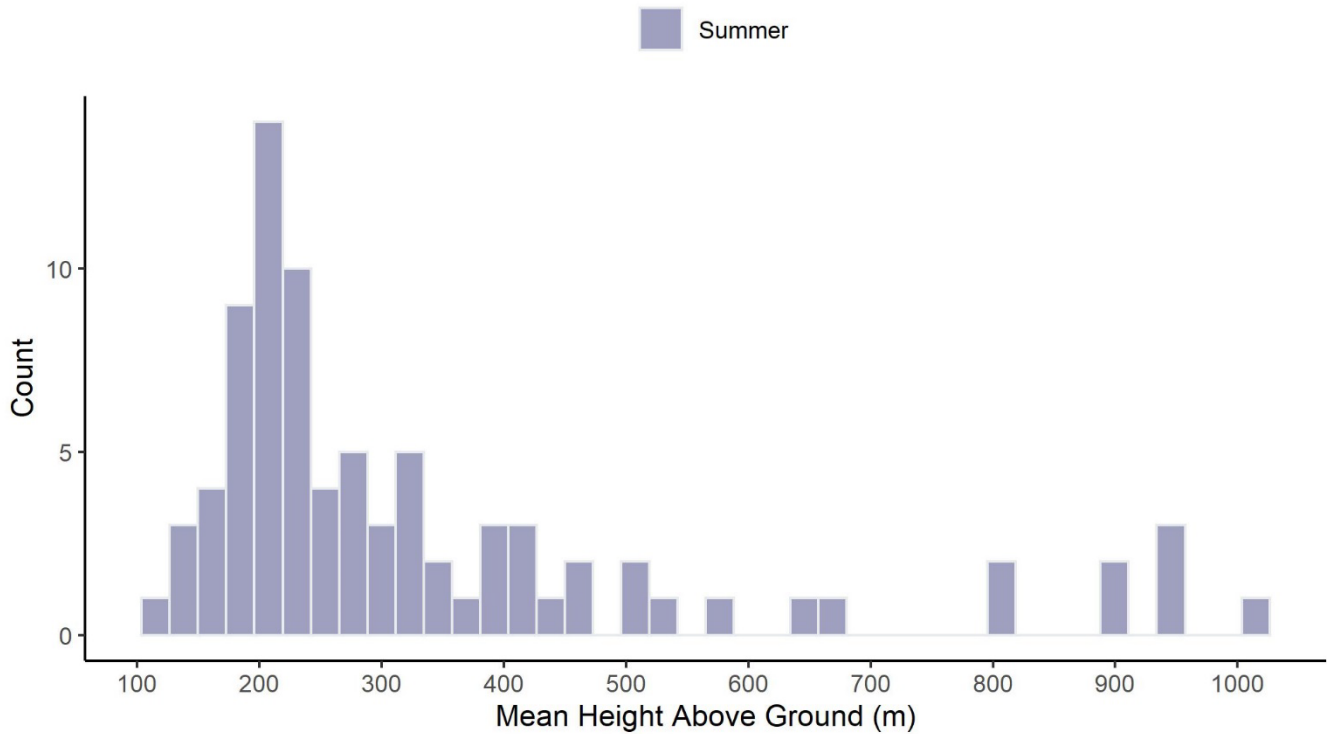


Figure 4-10: Distribution of the Average Cruising Height (m) of Long-Range Flights

4.6 Accuracy of Impact Predictions

A summary of the impact predictions identified in the TEMP Version 7 (Agnico Eagle 2019) that are evaluated, in part, by the Mine site ground surveys is presented in Table 4-9. Specifically, the 2023 Mine site ground survey monitoring data were compared to the impact prediction thresholds and the provision of adaptive management, as either a necessary or proactive measure. The project-related mortality threshold for predatory mammals was exceeded in 2023. No other thresholds were exceeded.

Table 4-12: Accuracy of Impact Predictions – Mine Site Wildlife Disturbances

Potential Effect	Threshold	Threshold Exceeded? (2023)	Adaptive Management Implemented	Monitoring Methods
Sensory Disturbance	No threshold but Decisions Trees followed when caribou are seen near mine facilities	Not Applicable	YES Use of Decision Tree for Management and Monitoring.	Satellite-collaring data Road surveys Daily and weekly pit and Mine-site ground surveys Incidental wildlife reporting
Disturbance to Nesting Raptors	Raptor nest failures will not be caused by Project-related activities.	NO	YES Mine-related activity restricted within quarries with nesting activity.	Daily and weekly pit and Mine-site ground surveys Incidental wildlife reporting

Potential Effect	Threshold	Threshold Exceeded? (2023)	Adaptive Management Implemented	Monitoring Methods
	Threshold is one nest failure per year			Dedicated raptor nest surveys Road surveys
Disturbance of Nesting, Roosting or Moulting Waterfowl	Mine facilities and activities will not affect the breeding success of waterbirds occurring in the area or disturb large concentrations of roosting or moulting waterbirds. Threshold level is one nest failure per year	NO	NO	Daily and weekly pit and Mine-site ground surveys Incidental wildlife reporting
Project-related Mortality	Destruction of two problem grizzly bear, wolverine, or wolf per year	YES – three wolverines and three wolf mortalities	YES All crews were reminded on wildlife procedures, right-of-way, reporting requirements, proper waste segregation, and closing sea can doors to avoid attracting wildlife on site. Recompacted Meadowbank landfill.	Daily and weekly pit and Mine-site ground surveys Wildlife deterrents and mortality reporting
Project-related Mortality	Two caribou or muskoxen mortality per year because of Project-related activities (e.g., falling into pits, tailing, sludge or other means)	NO	YES Incident of muskox road mortality reviewed with all LHT crews. Road users reminded to be alert and cautious of wildlife along the roadways, especially during night shift and low visibility conditions.	Daily and weekly pit and Mine-site ground surveys Incidental wildlife reporting Wildlife mortality reporting
Project-related Mortality	Raptors and waterbirds will not be killed at the Mine site. Threshold is one individual per year	NO	NO	Daily and weekly pit and Mine-site ground surveys

4.7 Management Recommendations

The 2023 Mine site ground surveys were an effective source of monitoring to address the impact predictions for managing ungulates, predatory mammals, nesting raptors, and Project-related mortalities. The following are specific management recommendations for the Mine site ground survey monitoring program:

- Complete wildlife incident reports, according to the TEMP Version 7, including deterrence events (Agnico Eagle 2019). All wildlife deterrence events are currently submitted to the EQUIS database.
- Continue to conduct formal weekly pit and Mine surveys to document wildlife activity and to verify that effects to wildlife are not occurring from Project-related activities.

-
- Continue raptor nest monitoring within the Meadowbank and Whale Tail LSAs, and along the AWAR and WTHR.
 - Continue to document the use of deterrents to prevent habituation of wildlife near the Project or to relocate problematic wildlife.
 - Continue to apply the Wildlife Protection and Response Plan (Appendix C, 2019 TEMP Version 7), which includes waste provisions, training, incident reporting, and protocols for problem wildlife. Efforts should be taken to ensure all perishable garbage is directed to the composter and other proper waste disposal facilities.
 - Continue training and education to ensure that incidental wildlife reporting is completed by all Mine site personnel so that Environment personnel can remain informed of pertinent wildlife-related activity near the Mine site.
 - Monitor tailings ponds daily during the waterbird migration period, beginning in mid-May. Increase the frequency of deterrent use if required.
 - Continue to gather detailed information (e.g., sex, age, photos) on deceased animals and include in incident reports, when possible.
 - Review of methods with the TAG and helicopter contractor to discuss decisions made for take-off/landing and short versus long-range flights.
 - Improve comments for reasons for low flights, even if flying low for only a portion of the flight.
 - Consider error for flight altitude measurements as well as error for Latitude and Longitude provided from aircraft monitoring.

5.0 WILDLIFE HABITAT MONITORING

5.1 Overview

The wildlife habitat mapping monitoring program was developed to describe the overall area of different Ecological Land Classification (ELC) units lost due to Mine-related activities (i.e., during construction, operation, decommissioning, and post-closure phases) at three primary locations: Meadowbank Main and Vault sites (which together encompass the Mine site), the AWAR, and the Whale Tail Mine and WTHR.

The initial strategy in the impact assessments for Meadowbank and Whale Tail was to compare predicted habitat losses due to Mine development to actual losses (i.e., from the environmental assessments); however, regular infrastructure extensions and expansions, changes to the Project, and subsequent regulatory approvals, made this approach difficult to implement. The current approach is to compare habitat losses from development to permitted areas, which encompass all proposed development. Habitat mapping monitoring is completed every three years post-construction, or if changes are greater than 25% of the overall Mine site footprint from the previous evaluation. The last comprehensive analysis was completed in 2021, therefore the next comprehensive analysis is scheduled for the 2024 reporting year, unless interim changes to footprint exceed 25% (Agnico Eagle 2019).

5.2 Objective

The primary initial objective of the habitat mapping monitoring program was to confirm that habitat losses identified in the TEMP (Agnico Eagle 2019) and the Whale Tail Pit FEIS Addendum (Golder 2018) for the Mine sites, haul roads, and AWAR, plus any subsequent approved extensions, have not exceeded threshold limits. Beginning in 2018, habitat losses are compared to permitted areas, which encompass Mine development areas. A summary of each monitoring parameter, predicted losses, permitted areas, and thresholds for the Meadowbank Mine and Whale Tail Mine components is included in Table 5-1 and Table 5-2, respectively. Habitat suitability ratings for VECs are provided in Dougan & Associates (2015).

Table 5-1: Habitat Mapping Monitoring Parameters, Predicted Footprint Losses, Permitted Areas, and Thresholds for the Meadowbank Mine, All-Weather Access Road

Monitoring Parameter	Mine Site Predicted Loss	Mine Site Permitted Area	AWAR Predicted Loss	Threshold
Wildlife Habitat	1,130 ha	1,532 ha	180 ha ^(a)	>5% Predicted
Ungulate – High Suitability Habitat	372 ha (growing) 280 ha (winter)	531 ha (growing) 407 ha (winter)	4 ha (growing) 30 ha (winter)	>10% Predicted
Small Mammals – High Suitability Habitat	Given the minimal effects associated with the Meadowbank Project, habitat loss effects on Small Mammals were screened out during the FEIS (Golder 2016)			
Waterbirds – High Suitability Habitat	274 ha	417 ha	3 ha	>10% Predicted
Breeding Birds – High Suitability Habitat	590 ha	736 ha	29 ha	>10% Predicted

a) FEIS = Final Environmental Impact Statement. Permitted area along the AWAR is 455 ha.

Table 5-2: Habitat Mapping Monitoring Parameters, Predicted Footprint Losses, Permitted Areas, and Thresholds for the Whale Tail Mine and Haul Road

Monitoring Parameter	Whale Tail Predicted Loss	Whale Tail Permitted Area	Threshold
Wildlife Habitat	775 ha	1,505 ha	>5% Predicted
Ungulate – High Suitability Habitat	21 ha (growing) 561 ha (winter)	56 ha (growing) 1,057 ha (winter)	>10% Predicted
Small Mammals – High Suitability Habitat	Given the minimal effects associated with the Meadowbank Project, habitat loss effects on small mammals were screened out during the FEIS (Golder 2016)		
Waterbirds – High Suitability Habitat	Given the minimal effects associated with the Meadowbank Project, habitat loss effects on waterbirds were screened out during the FEIS (Golder 2016)		
Breeding Birds – High Suitability Habitat	Given the minimal effects associated with the Meadowbank Project, habitat loss effects on breeding birds were screened out during the FEIS (Golder 2016)		

FEIS = Final Environmental Impact Statement.

5.3 Duration

The total area of habitat disturbance associated with Mine site and ancillary facility construction was mapped following significant construction completion (2010) and was to be mapped annually during the operation phase as detailed in the TEMP (Agnico Eagle 2019). At the end of 2010, a detailed ELC habitat loss analysis found that habitat losses to date were substantially lower than predicted and that no habitat loss thresholds for VECs were exceeded. Given this outcome, another detailed ELC habitat loss analysis was not provided until the 2012 report, which had similar conclusions as those in 2010. The 2014 habitat analysis determined that habitat losses were still below predicted losses but that some of the thresholds were being reached. A partial analysis was conducted in 2017 while a full and through analysis using a revised approach was completed in 2018 and 2021.

The current habitat mapping monitoring program is intended to be completed every three years post-construction or if changes are greater than 25% of the overall Mine site footprint from the previous year evaluation. This frequency may be reduced during the operation phase if the amount of new disturbance and reclamation areas is relatively unchanged. Following decommissioning, vegetation mapping will be conducted in the first two years post-closure and every three years thereafter until Year 11 post-closure to verify that thresholds have been met.

5.4 Methods

Monitoring of habitat loss will occur at three primary locations: Meadowbank Mine (includes Vault Pit and Haul Road), AWAR (including quarry sites), and Whale Tail Mine and Haul Road (includes borrow/quarries sites and access roads). The footprints were updated based on 2023 survey data. Calculated losses were then subtracted from the permitted lease areas to ensure actual disturbances are within the lease area boundaries. For the Meadowbank Mine and AWAR locations, thresholds are disturbances of 5% above permitted areas of 1,532 and 455 ha, respectively. For the Whale Tail and Haul Road location, threshold is disturbance of 5% above a permitted area of 1,505 ha.

Changes to footprint occurred at the Whale Tail Mine in 2023. Current spatial files were overlaid on the 2021 footprint, to determine the percentage change in footprint area.

5.5 Historical Results

5.5.1 Meadowbank Mine Site

In 2014, construction of the Main site construction was almost complete, including most of the infrastructure for the Vault Pit area, although much of the pit and waste rock storage area had not yet been disturbed. ELC results for the Mine site footprint, based on as-built drawings from 2014, were compared to predicted ELC unit losses from the 2005 FEIS, plus approved extensions. Measured habitat loss for the Mine site in 2014 was calculated to be 775.7 ha, which was 91.1 ha (10.5%) less than the predicted total habitat loss of 866.8 ha for the Mine site. Differences between predicted and actual habitat losses were greatest in heath tundra, birch and riparian shrub, and lichen ELC units, all of which are high suitability habitat for ungulates during the winter season. Although no thresholds (>5% to 10% above predicted losses) for the loss of high suitability habitat were exceeded for any VECs, threshold levels for the Mine site were almost reached in 2014. Consequently, commitments were made to remove the material stored in the NPAG extension area (which was approved by Nunavut Water Board [NWB]) and use it for capping of the North Cell Tailings Storage Facility during the closure/reclamation phase of the Mine.

In 2017, the Mine development footprint had changed substantially since the 2014 analysis. The Vault Pit was fully operational and had expanded into the Phaser Lake area. Although the Phaser Lake extension was completed with approval from the NIRB and the NWB, the size of the extension area was not available for habitat calculations in the 2017 report. Measured habitat loss for the Mine site in 2017 was calculated to be 1,021 ha, which was 154 ha (17.8%) more than the predicted total habitat loss of 867 ha for the Mine site. The difference between predicted and actual habitat losses was primarily attributable to the final extent of the Vault waste dump, the Phaser Lake extension of the Vault Pit area (i.e., these were not included in the 867-ha calculation), and the as-built layout of the Non-potentially Acid Generating (NPAG) expansion of the Portage Waste Rock Facility. Differences between predicted and actual habitat losses were greatest for the sedge, and birch and riparian shrub ELC units, both of which are high suitability habitat for ungulates during the winter season. Greater than 10% differences between predicted and actual habitat losses were also observed in heath tundra, lichen, lichen-rock, and rock and boulder ELC units. Additionally, losses of high suitability habitat exceeded established thresholds for ungulates (growing and winter season), small mammals, and other breeding birds.

For the 2018 habitat analysis, the approach was revised to compare habitat losses to total area within Agnico Eagle's permitted areas, which also encompasses future approved work. For all ELC units combined, overall measured habitat losses (i.e., 1,129 ha) were 26% less than the habitat available within permitted areas (i.e., 1,532 ha) of the Meadowlark Mine site; therefore, thresholds were not surpassed. High suitability habitat losses for ungulates, small mammals, waterbirds, and other breeding birds were all below available high suitability habitats within permitted areas, also not surpassing any thresholds.

The most recent comprehensive assessment was completed in 2021. Overall measured habitat losses (i.e., 1,130 ha) were 26% less than the habitat available within permitted areas (i.e., 1,532 ha) of the Meadowlark Mine site; therefore, thresholds were not surpassed. High suitability habitat losses for ungulates, small mammals, waterbirds, and other breeding birds were all below available high suitability habitats within permitted areas, also not surpassing any thresholds. A full assessment was not triggered in 2022.

5.5.2 AWAR

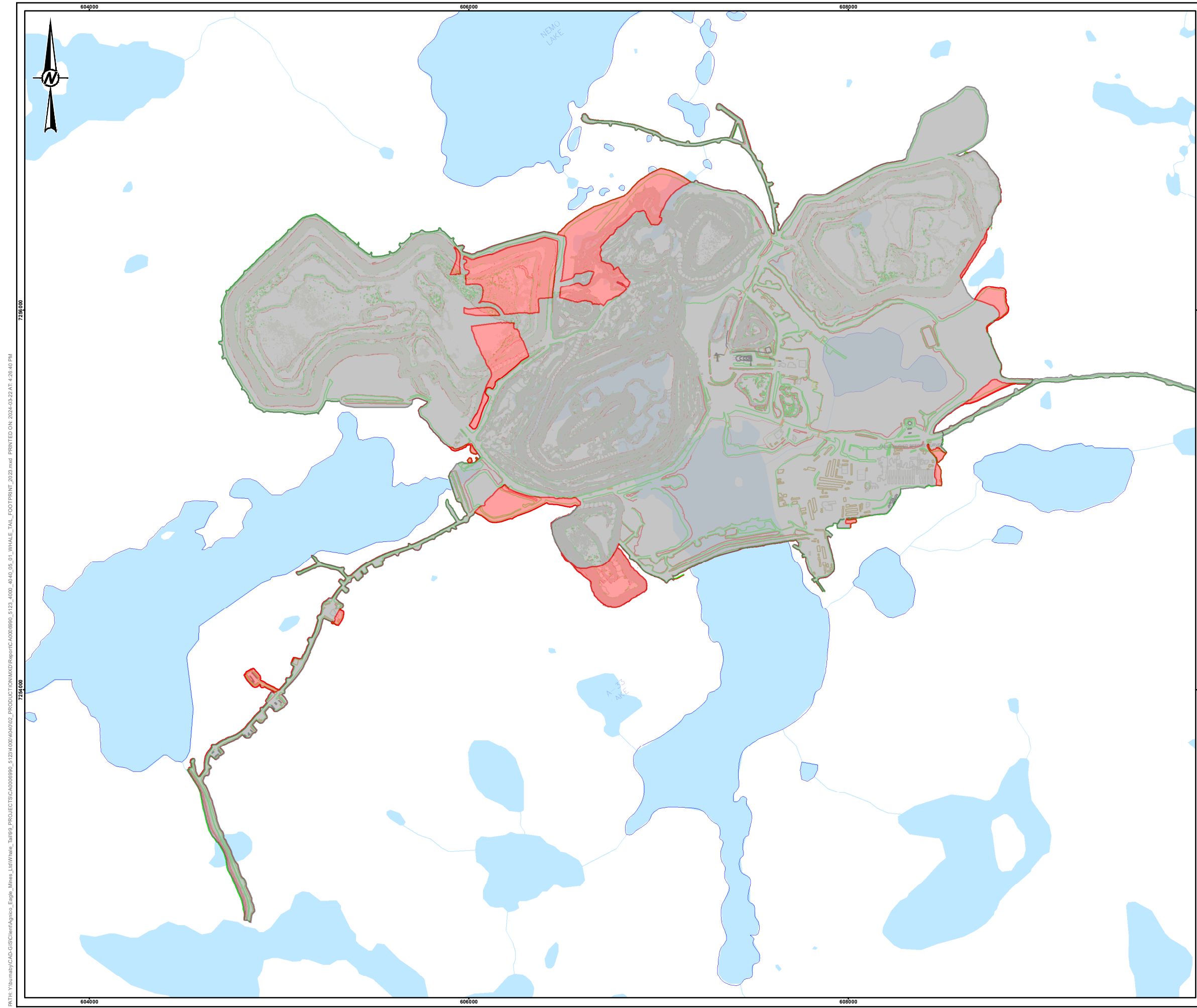
The ELC results for the AWAR had not changed since the 2010 analysis, and habitat loss analyses were not required. The 2010 ELC results for the AWAR were compared to ELC unit losses predicted in the 2005 EIS report. Construction of the AWAR required 38.4% less area (173 ha) than predicted in the 2005 FEIS (281 ha) and for each ELC unit, actual habitat losses were less than predicted. ELC habitat loss values for the AWAR in 2010 were compared to predicted high suitability habitat losses for ungulates (growing and winter season), waterbirds, other breeding birds, and small mammals. In all cases, the measured high suitability habitat losses were significantly less than predicted losses and no thresholds (i.e., >5 to 10% above predicted losses) were exceeded.

5.5.3 Whale Tail Mine and Haul Road

The Whale Tail Mine was assessed in 2020 (Golder 2021). The area of the proposed footprint from 2018 was assessed as 5.04 km², and the area of the 2020 footprint of the Whale Tail Mine was assessed as 5.20 km². The Whale Tail Lake, borrow areas, and WTHR present in the proposed 2018 footprint were excluded from comparison with the 2020 footprint. Change in footprint for the Whale Tail Mine (3.2%) in 2020 was assessed as less than 25% since 2018. In 2021, overall measured habitat losses (i.e., 775 ha) were 48% less than the habitat available within permitted areas (i.e., 1,504 ha) of the Whale Tail Mine and Haul Road; therefore, thresholds were not surpassed.

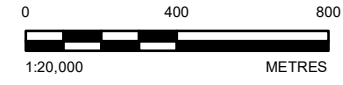
5.6 Results

New development in 2023 only occurred at the Whale Tail site and at Quarry 2 along the AWAR. A 9.5% change (55 ha) in footprint at the Whale Tail site occurred between the assessment in 2021 and 2023 (Figure 5-1). The change in footprint since the previous assessment was less than 25%. Therefore, a comprehensive habitat loss assessment is not required. The next comprehensive analysis is scheduled for 2024.



LEGEND

- FOOTPRINT (2023)
- FOOTPRINT (2021)
- WATERCOURSE
- WATERBODY



REFERENCE(S)

1. INFRASTRUCTURE OBTAINED FROM AGNICO EAGLE MINES LIMITED (AMQ STATUS MAP - 20230110.DXF)
2. WATERCOURSE AND WATERBODY DATA OBTAINED FROM NATURAL RESOURCES CANADA. COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 14N

CLIENT **AGNICO EAGLE MINES LIMITED:
MEADOWBANK DIVISION**

PROJECT
**MEADOWBANK COMPLEX
2023 WILDLIFE MONITORING SUMMARY REPORT**

TITLE
WHALE TAIL PIT AND HAUL ROAD FOOTPRINT (2023)

	CONSULTANT	YYYY-MM-DD	2024-03-22
		DESIGNED	JF
		PREPARED	CDB
		REVIEWED	JF
		APPROVED	CDLM

PROJECT NO. CONTROL REV. FIGURE
CA0006990.5123 4000/4040 0 5-1

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5.7 Accuracy of Impact Predictions

The 2023 habitat loss data were compared to permitted areas (i.e., rather than EIA predicted areas and extensions) to evaluate adherence to the impact predictions and the provision of adaptive management, as either a necessary or proactive measure. Actual habitat loss as result of mine site, AWAR, and WTHR construction and to date is less than habitat available within permitted areas (Table 5-3).

Table 5-3: Accuracy of Impact Predictions – Habitat Loss

Measurable Parameter	Threshold (Compared to Permitted Areas)	Threshold Exceeded (2023)	Adaptive Management Implemented	Status
Habitat Loss	Terrestrial Habitat Meadowbank = 1,532 ha AWAR = 455 ha Whale Tail = 1,505 ha Threshold is >5% habitat loss of permitted area	Not Assessed	None required	Ground Surveys Mapping and GIS analyses – ELC habitat mapping
	Ungulates Meadowbank Growing = 33 ha Winter = 650 ha Whale Tail Growing = 56 ha Winter = 1,057 ha	Not Assessed	None Required	
	Small Mammals Waterbirds Breeding Birds	Given the minimal effects associated with the Meadowbank project, habitat loss effects were screened out during the EA (Golder 2016)		
	Following mine closure and reclamation activities (except for tailings, waste rock facilities and exposed pit slopes) will see revegetation rates of >20% (year 2 post-closure), >40% (year 5), >60% (year 8) and >80% (year 11)	Not yet applicable		

AWAR = All Weather Access Road, EA = Environmental Assessment, ELC = Ecological Land Classification, GIS = Geographic Information System.

5.8 Management Recommendations

Measured change in footprint for the Meadowbank Mine and Vault sites, the AWAR, the Whale Tail Mine and WTHR was assessed as less than 25% of predicted values in 2022 and 2023. Therefore, the next comprehensive habitat analysis will be completed in 2024 as it is the third year since the last comprehensive habitat analysis completed in 2021.

6.0 CARIBOU SATELLITE-COLLARING PROGRAM

6.1 Overview

Agnico Eagle intends to continue collaboration with the GN DoE caribou satellite-collaring program that includes data collected within the Meadowbank Complex RSA. The GN biologists discuss collar deployments with hunters and Elders and get approval prior to proceeding. Daily collar location maps are provided by GN DoE during the sensitive seasons to inform locations of caribou in relation to the Meadowbank Complex.

6.2 Objectives

The satellite-collaring program was developed to provide information on the distribution of caribou occurring within the Meadowbank RSA and contribute data to ongoing satellite-collaring programs for the Ahiak, Beverly, Lorillard, Qamanirjuaq, and Wager Bay herds, as well as individuals not yet assigned to a herd and marked as Northeast Mainland (NEM) in the data. The satellite-collaring program, along with GN DoE regional data, is an important monitoring and management tool that provides a regional perspective on caribou activity near Mine operations. Another key objective of the program is to provide timely information for the caribou management and monitoring strategy at the Meadowbank and Whale Tail sites (i.e., Decision Tree approach; see 2019 TEMP [Agnico Eagle 2019]). The data sharing agreement between the GN and Agnico Eagle Mines Limited provides for quarterly updates of collar data from the GN.

To better understand caribou movement trajectories across the WTHR and AWAR, Agnico Eagle requested an update of the analysis using the most recent telemetry data provided from the GN, current to 28 March 2023. The updated analysis includes individuals that interacted with spring and fall migration reference lines. The first objective of this analysis was to determine whether timing of migration through the Mine area is predictable during spring and fall based on telemetry data. The second objective was to explore relationships between collared caribou distribution and patterns in observed abundances of caribou-based group sizes from ground counts. If migration through the Mine area is predictable, the predicted timing of migration could be used to inform the timing of road closures during periods most beneficial to caribou, rather than using the current GST approach. The analysis undertaken was of exploratory nature.

In addition to the updated migration analysis, migration maps were produced to reflect movement of collared caribou across seasons during 2020-2023.

6.3 Duration

The satellite-collaring program was initially designed to continue for five consecutive years in accordance with the original TEMP (Cumberland 2006), but collar deployments have continued beyond this period as part of a long-term caribou monitoring strategy for the region by the GN. Caribou in the Baker Lake area were first collared in May 2008, and the program has continued for more than a decade.

Caribou collaring methods and deployment are administered by the GN. Caribou are carefully netted by the contracted satellite-collaring crew via helicopter and fitted with either an Advanced Research and Global Observation Satellite (ARGOS) GPS Type IV or Iridium satellite-collar.

Deployed collar data were included in a population distribution analysis completed for the GN (Nagy et al. 2011). The clustering and movements of each collared caribou are examined and assigned to the sub-population (i.e., Ahiak, Beverly, Lorillard, Qamanirjuaq, and Wager Bay herds) that best fits the animal's movement characteristics. Full methodology of the collar analysis is included in Appendix F.

6.4 Historical Results

Collaring was originally scheduled to commence in 2007 but was postponed for one year due to logistical constraints. Seven deployments, with a total of 115 collars, have been completed in the area around Baker Lake since Agnico Eagle became involved in the collaring program. Historical collar data have all been assigned to one of the five major sub-populations (Nagy et al. 2011). The following numbers of collars were successfully deployed since 2008:

- Nine collars (Agnico Eagle) in May 2008
- Twenty-one collars (shared by Agnico Eagle and AREVA) in November 2009
- Thirteen collars (Agnico Eagle) in April 2011
- Fifteen collars (shared by Agnico Eagle and AREVA) in April 2013
- Ten collars (Agnico Eagle) in April 2015
- Thirteen collars (Agnico Eagle) in May 2016 and
- Thirty-four collars (Agnico Eagle) in April 2018
- Twenty-five collars (GN) in April 2022.
- Caribou collaring occurred in 2023. The exact number of collars have not been made available in time for annual submission.

6.4.1 Caribou Migration Patterns

Interaction with a north-south reference line on the west and east side of the road was used to identify spring and fall migration. Based on analysis of collar data from 2005 to 2019, the estimated average date of spring migration pooled across all years was Julian day 121, or 1 May, and 96% of all spring migrations occurred between 11 April and 20 May. Spring migration timing distribution differed significantly across all years. However, pairwise comparisons between years found that 83% of years were statistically similar, and only 17% of years differed significantly. When years with low sample sizes were removed, large changes to migration timing, duration, and pooled absolute differences were not observed. However, the number of year-to-year comparisons of distributions that were statistically similar was reduced.

In 2018, the date at which approximately 50% of caribou were estimated to have migrated across the spring reference line, based on ground observations, was Julian day 108 (18 April), which was 13 days earlier than the date estimated by telemetry data (i.e., Julian day 120 or 1 May). The estimated date of spring migration was later in 2019 (i.e., Julian day 114 or 24 April vs. Julian day 108 or 18 April) based on ground observations. Telemetry data for 2019 indicated that the estimated date of spring migration was also 24 April.

Because fall migration appeared to be multimodal (i.e., caribou interacted with the fall reference line in multiple waves), the fall season was split into an early and late period, and inter-annual variation in fall migration was considered for each period separately. Based on 14 caribou, the mean early fall migration date for 2018 was Julian day 256 (13 September), and 96% of early fall migrations, occurred between 30 August and 27 September in 2018. The mean late fall migration date was Julian day 312 (8 November), and 96% of late fall migrations, occurred between 11 October and 7 December. Late fall migration distributions differed significantly across years.

Pairwise comparison of years indicated that 33% of years were statistically similar and 67% of years were statistically different.

In 2018, the estimated date at which approximately 50% of total caribou were recorded from ground observations was Julian day 286 (13 October), which was 22 days later than the date estimated by 50% of telemetry data (i.e., Julian day 264 or 21 September) and inclusive of both early and late fall periods. Comparisons between ground and telemetry observations could not be made for 2019, due to collar data being unavailable at the time of analysis.

Spring migration distributions did not vary pre- and post-WTHR construction, nor did late fall migration distributions. Early fall pre- and post-WTHR construction distributions were not compared because the within year trend for 1999, 2000 and 2001 are characterized by a single collared animal and would limit the temporal comparison to a single pre-construction (2016) and post-construction 2018 year.

Full results of the 2005 to 2019 collar data analysis are provided in Appendix F of Golder (2022).

6.5 2023 Results

The analysis included data from 2003 to 2023, and individuals from five caribou herds (Ahiak, Beverly, Lorillard, Qamanirjuaq, and Wager Bay herds), as well as individuals not assigned to a herd (designated as NEM). The mean spring migration date was May 1, with 96% of spring migrations occurring during 64 days between March 29 and June 2 when pooled across all years. Spring migration distributions differed significantly among years, and patterns of spring migration distributions did not differ pre- and post-WTHR construction. The mean overall fall migration date was 19 October, with 96% of fall migrations occurring during 117 days between 21 August and December 16. Early fall migrations (with $n \geq 4$ caribou) were observed in seven years, and late fall migrations (with $n \geq 4$ caribou) were observed in nine years. The mean early fall migration date was 18 September, with 96% of early fall migrations occurring between 25 August and 12 October. The mean late fall migration date was 10 November, with 96% of early fall migrations occurring between 15 October and 6 December.

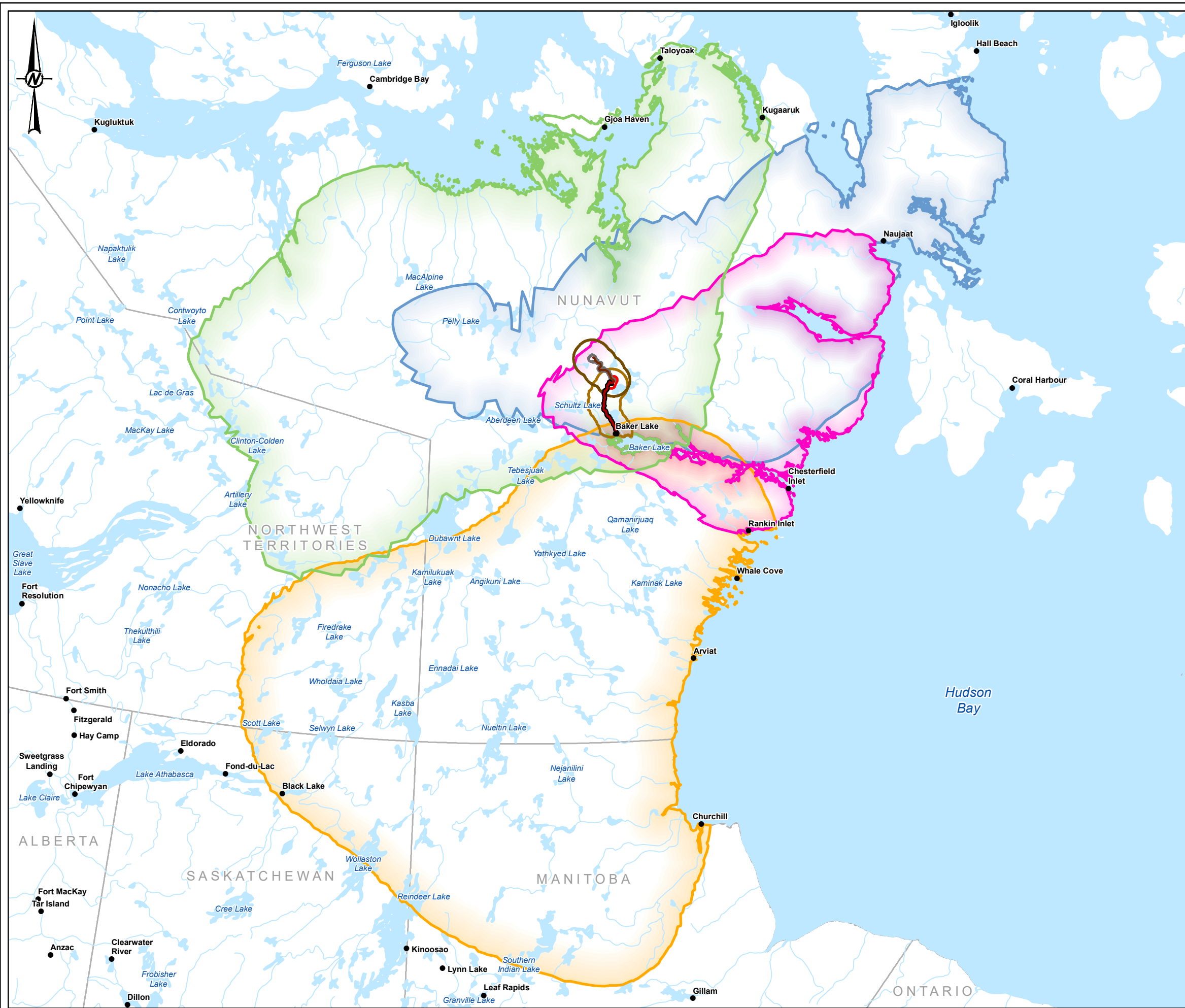
Similarity between migration dates between telemetry and ground observations varied across years, but overall were more similar in the spring than in the fall. The date at which approximately 50% of caribou counted during each year's ground observations had been recorded during the spring, ranged from 19 April to 29 April. The average spring migration date based on telemetry data ranged from 18 April to 16 May. In the fall, migration dates based on ground observations ranged from day 12 October to 9 December, and the average migration date based on telemetry data ranged from 22 September to 5 November. Larger differences in estimated migration from ground and telemetry are expected in the fall, as fall migration extends over a longer period (117 days) than spring migration (64 days), and data were not summarized into early and late fall periods for this comparison.

Full results of the 2005 to 2019 collar data analysis are provided in Appendix F of WSP (2023b).

In addition to the updated migration analysis, migration pattern maps were produced for the Ahiak, Lorillard, Qamanirjuaq, and Wager Bay caribou ranges (Figure 6-1). Caribou ranges provided on maps were included for reference, but the Ahiak range in this case is used to represent areas used by both Ahiak and Beverly herds. Collared caribou paths depicted on figures could be from caribou from any one of these herds and may also include caribou marked as Northeast Mainland (NEM) or unclassified individuals.

During spring migration 2020-2023, overall caribou migration patterns show northeastern movements (Figure 6-2). Caribou interacting with the Project generally started their migrations within the Ahiak and Lorillard herd ranges and ended spring migration within the Ahiak, Lorillard, or Wager Bay ranges. During summer 2020-2023, caribou directional movements followed less of a consistent pattern (Figure 6-3). Caribou were more dispersed and used large areas during summer, including coastal areas, which is consistent with expected patterns during the insect avoidance seasons. Caribou within the Qamanirjuaq range were most likely to interact with Baker Lake and the AWAR during summer and occurred further south in other seasons (Figure 6-2, Figure 6-3, Figure 6-4, and Figure 6-5). During fall migration 2020-2023, caribou directional movements were less clear compared to spring, but generally followed a pattern of dispersed southwest movements (Figure 6-4). Caribou winter movements 2020-2023 were more condensed compared to other seasons, and caribou were least likely to interact with the Project during winter (Figure 6-5). Caribou near the Project during winter occurred mainly within the Lorillard range with concentrated movements occurring east of the Meadowbank complex and AWAR, which has also been observed during baseline (Golder 2020a).

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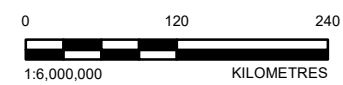


LEGEND

- POPULATED PLACE
- ALL-WEATHER ACCESS ROAD (AWAR)
- WHALE TAIL HAUL ROAD (WTHR)
- ▭ AWAR LOCAL STUDY AREA (LSA) AWAR LOCAL STUDY AREA (LSA)
- ▭ WTHR LOCAL STUDY AREA (LSA)
- ▭ WTHR REGIONAL STUDY AREA (RSA)
- ▭ MEADOWBANK LOCAL STUDY AREA (LSA)
- ▭ MEADOWBANK REGIONAL STUDY AREA (RSA)
- WATERCOURSE
- WATERBODY
- PROVINCIAL/TERRITORIAL BOUNDARY

ANNUAL RANGE

- AHIAK
- LORILLARD
- QAMANIRJUAQ
- WAGER BAY



REFERENCE(S)

1. INFRASTRUCTURE OBTAINED FROM AGNICO EAGLE MINES LIMITED.
2. BASE DATA OBTAINED FROM GEOGRATIS, © DEPARTMENT OF NATURAL RESOURCES, CANADA. ALL RIGHTS RESERVED.
3. CARIBOU DATA OBTAINED FROM DEPARTMENT OF ENVIRONMENT (GOVERNMENT OF NUNAVUT), GOVERNMENT OF NORTHWEST TERRITORIES.

COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 14N

CLIENT

**AGNICO EAGLE MINES LIMITED:
MEADOWBANK DIVISION**

PROJECT
**MEADOWBANK COMPLEX
 2023 WILDLIFE MONITORING SUMMARY REPORT**

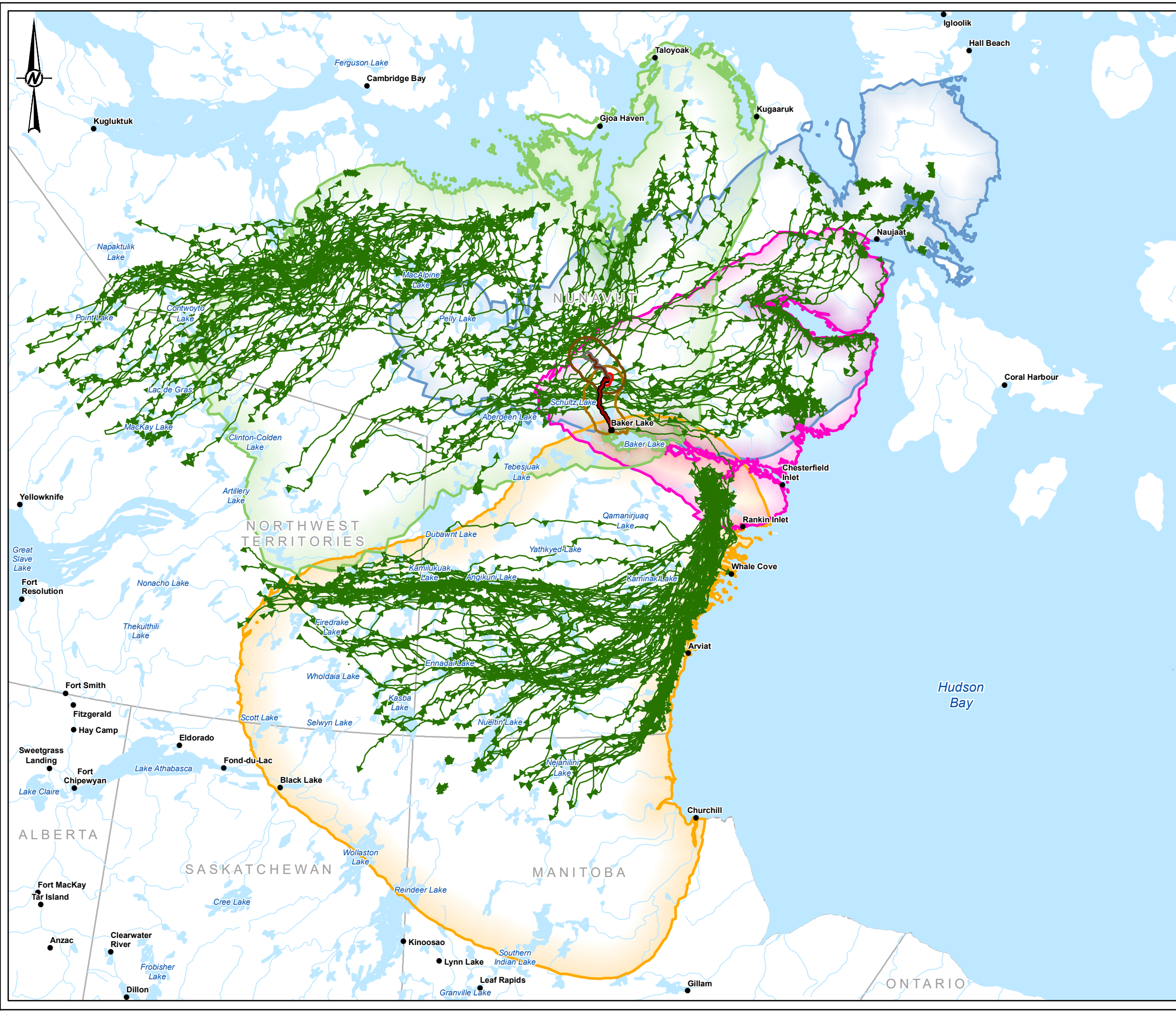
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CONSULTANT	YYYY-MM-DD	2024-03-28
	DESIGNED	JF
	PREPARED	CDB
	REVIEWED	JF
	APPROVED	DC

PROJECT NO. CA0006990.5123 PHASE 4000/4040 REV. 0 FIGURE 6-1

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LEGEND

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- ▭ MEADOWBANK LOCAL STUDY AREA (LSA)
- ▭ MEADOWBANK REGIONAL STUDY AREA (RSA)
- WATERCOURSE
- WATERBODY
- ▭ PROVINCIAL/TERRITORIAL BOUNDARY
- 2020-2023 SATELLITE-COLLARED CARIBOU BY SEASON
- SPRING
- ANNUAL RANGE**
- ▭ AHIAK
- ▭ LORILLARD
- ▭ QAMANIRJUAQ
- ▭ WAGER BAY



REFERENCE(S)

1. INFRASTRUCTURE OBTAINED FROM AGNICO EAGLE MINES LIMITED.
2. BASE DATA OBTAINED FROM GEOGRATIS, © DEPARTMENT OF NATURAL RESOURCES, CANADA. ALL RIGHTS RESERVED.
3. CARIBOU DATA OBTAINED FROM DEPARTMENT OF ENVIRONMENT (GOVERNMENT OF NUNAVUT), GOVERNMENT OF NORTHWEST TERRITORIES.

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**AGNICO EAGLE MINES LIMITED:
MEADOWBANK DIVISION**

PROJECT
**MEADOWBANK COMPLEX
 2023 WILDLIFE MONITORING SUMMARY REPORT**

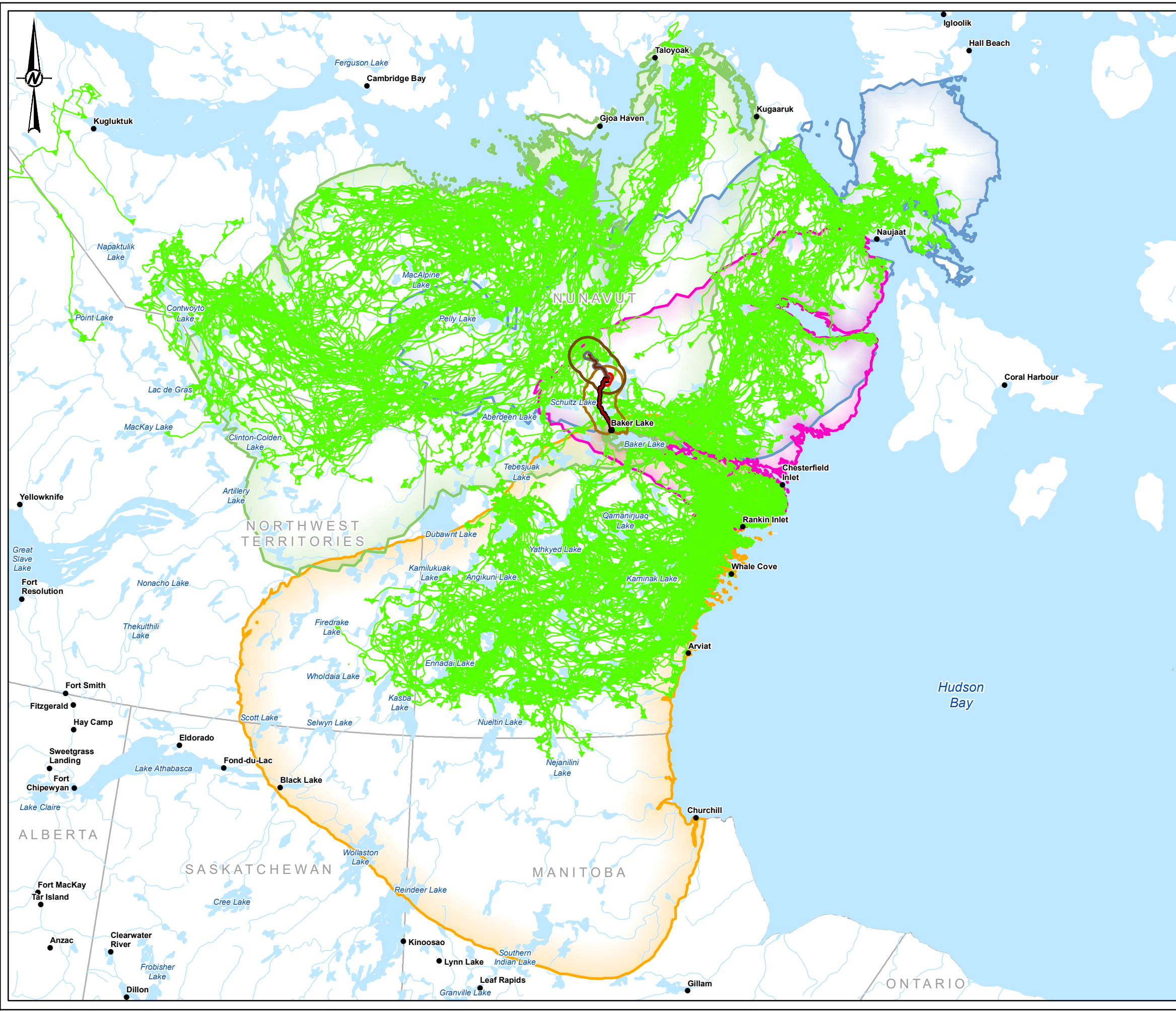
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CONSULTANT	YYYY-MM-DD	2024-03-28
	DESIGNED	JF
	PREPARED	CDB
	REVIEWED	JF
	APPROVED	DC

PROJECT NO. CA0006990.5123	PHASE 4000/4040	REV. 0
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LEGEND

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- WHALE TAIL HAUL ROAD (WTHR)
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- ▭ WTHR LOCAL STUDY AREA (LSA)
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- ▭ MEADOWBANK LOCAL STUDY AREA (LSA)
- ▭ MEADOWBANK REGIONAL STUDY AREA (RSA)
- WATERCOURSE
- WATERBODY
- ▭ PROVINCIAL/TERRITORIAL BOUNDARY
- 2020-2023 SATELLITE-COLLARED CARIBOU BY SEASON
- SUMMER
- ANNUAL RANGE**
- ▭ AHIAK
- ▭ LORILLARD
- ▭ QAMANIRJUAQ
- ▭ WAGER BAY



REFERENCE(S)

1. INFRASTRUCTURE OBTAINED FROM AGNICO EAGLE MINES LIMITED.
2. BASE DATA OBTAINED FROM GEOGRATIS, © DEPARTMENT OF NATURAL RESOURCES, CANADA. ALL RIGHTS RESERVED.
3. CARIBOU DATA OBTAINED FROM DEPARTMENT OF ENVIRONMENT (GOVERNMENT OF NUNAVUT), GOVERNMENT OF NORTHWEST TERRITORIES.

COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 14N

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 2023 WILDLIFE MONITORING SUMMARY REPORT**

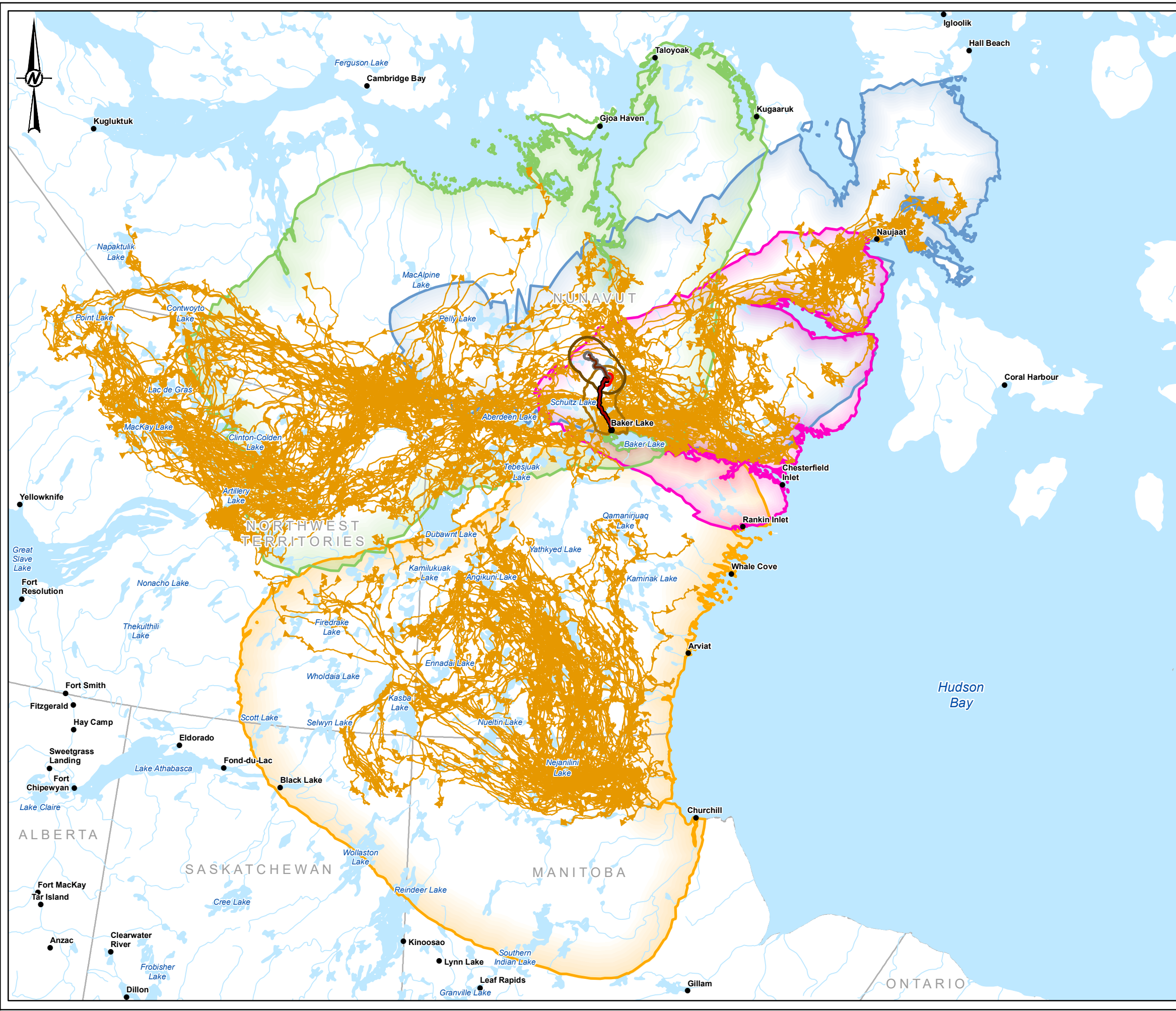
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 TO SEPTEMBER 21), 2020-2023**

CONSULTANT	YYYY-MM-DD	2024-03-28
	DESIGNED	JF
	PREPARED	CDB
	REVIEWED	JF
	APPROVED	DC

PROJECT NO. CA0006990.5123	PHASE 4000/4040	REV. 0	FIGURE 6-3
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LEGEND

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- WHALE TAIL HAUL ROAD (WTHR)
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- ▭ MEADOWBANK REGIONAL STUDY AREA (RSA)
- WATERCOURSE
- WATERBODY
- ▭ PROVINCIAL/TERRITORIAL BOUNDARY
- 2020-2023 SATELLITE-COLLARED CARIBOU BY SEASON
- FALL
- ANNUAL RANGE
- ▭ AHIAK
- ▭ LORILLARD
- ▭ QAMANIRJUAQ
- ▭ WAGER BAY

REFERENCE(S)

1. INFRASTRUCTURE OBTAINED FROM AGNICO EAGLE MINES LIMITED.
2. BASE DATA OBTAINED FROM GEOGRATIS, © DEPARTMENT OF NATURAL RESOURCES, CANADA. ALL RIGHTS RESERVED.
3. CARIBOU DATA OBTAINED FROM DEPARTMENT OF ENVIRONMENT (GOVERNMENT OF NUNAVUT), GOVERNMENT OF NORTHWEST TERRITORIES.

COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 14N

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**MEADOWBANK COMPLEX
 2023 WILDLIFE MONITORING SUMMARY REPORT**

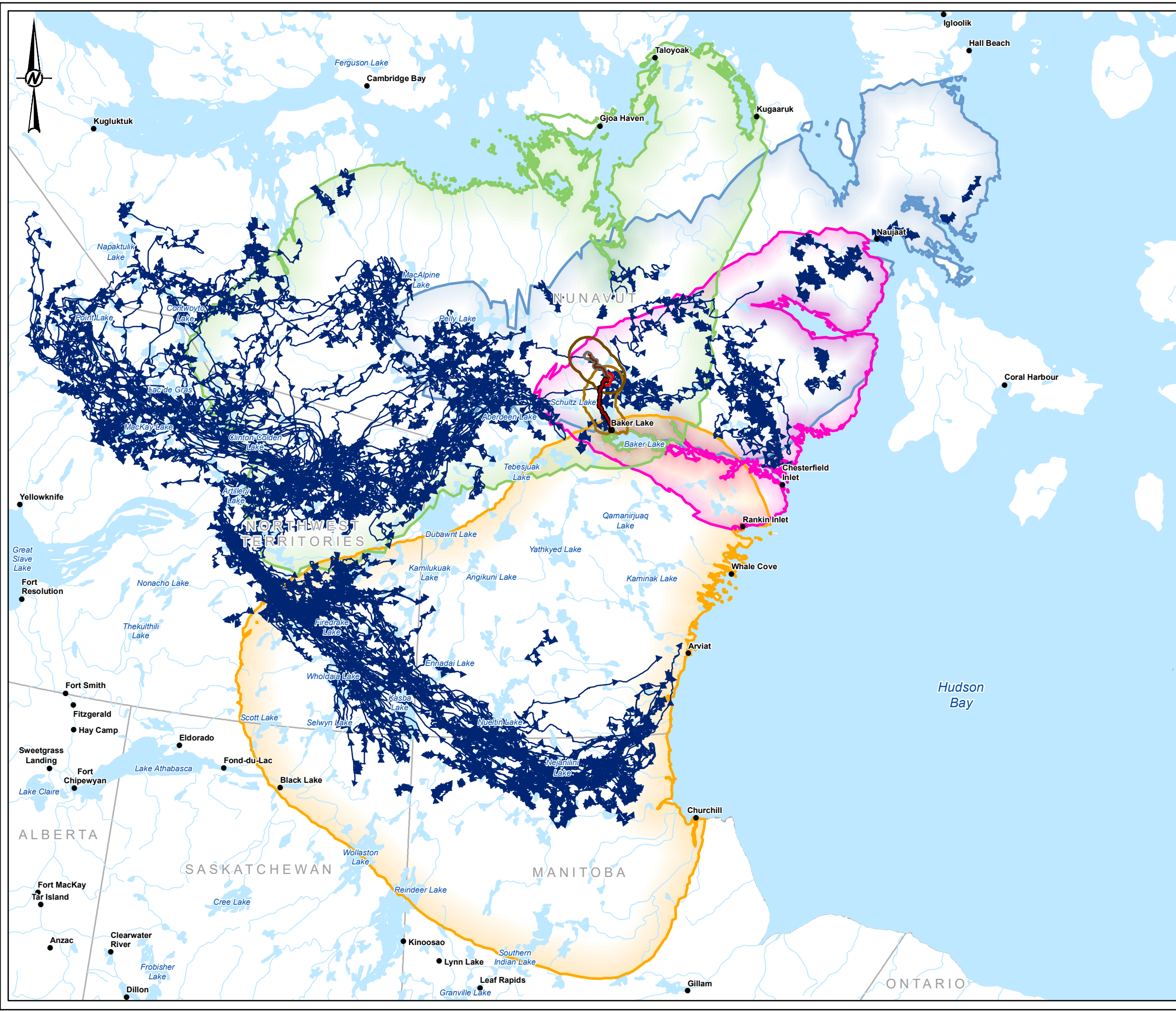
TITLE
**COLLARED CARIBOU MOVEMENTS DURING FALL
 (SEPTEMBER 22 TO DECEMBER 15), 2020-2023**

CONSULTANT	YYYY-MM-DD	2024-03-28
DESIGNED	JF	
PREPARED	CDB	
REVIEWED	JF	
APPROVED	DC	

PROJECT NO. CA0006990.5123 PHASE 4000/4040 REV. 0 FIGURE 6-4

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LEGEND

- POPULATED PLACE
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- WHALE TAIL HAUL ROAD (WTHR)
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- ▭ MEADOWBANK LOCAL STUDY AREA (LSA)
- ▭ MEADOWBANK REGIONAL STUDY AREA (RSA)
- WATERCOURSE
- WATERBODY
- ▭ PROVINCIAL/TERRITORIAL BOUNDARY
- 2020-2023 SATELLITE-COLLARED CARIBOU BY SEASON
- WINTER
- ANNUAL RANGE**
- ▭ AHIAK
- ▭ LORILLARD
- ▭ QAMANIRJUAQ
- ▭ WAGER BAY



REFERENCE(S)

1. INFRASTRUCTURE OBTAINED FROM AGNICO EAGLE MINES LIMITED.
2. BASE DATA OBTAINED FROM GEOGRATIS, © DEPARTMENT OF NATURAL RESOURCES, CANADA. ALL RIGHTS RESERVED.
3. CARIBOU DATA OBTAINED FROM DEPARTMENT OF ENVIRONMENT (GOVERNMENT OF NUNAVUT), GOVERNMENT OF NORTHWEST TERRITORIES.

COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 14N

CLIENT

**AGNICO EAGLE MINES LIMITED:
MEADOWBANK DIVISION**

PROJECT
**MEADOWBANK COMPLEX
 2023 WILDLIFE MONITORING SUMMARY REPORT**

TITLE
**COLLARED CARIBOU MOVEMENTS DURING WINTER
 (DECEMBER 16 TO MARCH 31), 2020-2023**

CONSULTANT	YYYY-MM-DD	2024-03-28
	DESIGNED	JF
	PREPARED	CDB
	REVIEWED	JF
	APPROVED	DC

PROJECT NO. CA0006990.5123 PHASE 4000/4040 REV. 0 FIGURE 6-5

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

6.6 Accuracy of Impact Predictions

There are no specific impact predictions for migration timing and the analysis was exploratory to determine if mitigation could be applied with consistent timing annually. There was larger variation in date ranges in the WSP (2023) analysis than seen in the previous analysis (Golder 2021). The increase in variation may be related to inclusion of individuals from all herds, whereas the previous analysis focused on the Lorillard herd because this is the herd that interacts with the Mine most frequently. A wider range of dates means that previously suggested mitigations, such as cap and pulse (e.g., convoys), may require a different trigger than date. It also means that pulse mitigation may be applied for a longer duration in some years. Other approaches, such as road closure during the approach of 'lead caribou' towards the Mine area should be investigated. The lead caribou approach would implement road closures to allow caribou leading herds to migrate through the Mine area, promoting movement of remaining caribou in the herd according to IQ.

6.7 Management Recommendations

Further exploratory analyses could aim to determine spring and fall migration timing differences between herds, where sample size allows. Influence of other variables on migration timing, such as snow conditions (Mallory et al. 2020) or weather (Gurarie et al. 2019) could be investigated. The results of these analyses were reviewed with the TAG to establish desired caribou protection outcomes (e.g., protection of lead caribou, protection of maximum number of caribou, or both) and how to best apply mitigation to reach the desired outcomes. Further exploratory analyses are in progress to assess the efficacy of a lead caribou mitigation approach. Results will be presented to the TAG.

7.0 VIEWSHED SURVEYS

7.1 Overview

Viewshed surveys were implemented in 2020 to survey standardized and readily accessible locations along the WTHR that would maximize detection of approaching caribou because topography around the WTHR is variable. The viewshed surveys serve as an early warning system for caribou approaching the WTHR to support mitigation measures during migration. The existing height-of-land (HOL) surveys were completed from 2017 through to February 2020 and then replaced by the viewshed surveys for the remainder of 2020. In 2019, Agnico Eagle advanced the idea of using viewshed survey points instead of HOL locations because of safety and logistical concerns. A viewshed survey analysis (a viewshed analysis) and report were prepared by Golder (2020b) to establish 12 viewshed survey locations along the WTHR that maximized the total habitat around the WTHR that could be surveyed. Agnico Eagle began using the viewshed survey locations in February 2020. In 2021, viewshed survey locations were adjusted based on areas with high caribou use and points of high elevation within areas with high caribou use, and an additional survey location was added. Thirteen viewshed locations were surveyed on 88 occasions in 2023.

7.2 Objectives

The viewshed surveys provide an 'early warning' system of the presence of caribou in proximity to the WTHR. The viewshed surveys provide a series of standardized locations to repeatedly and safely survey throughout the year to produce estimates of caribou moving through the Project.

7.3 Methods

From 2017 to 2019, five height-of-land (HOL) locations were surveyed along the WTHR. The locations were within 500 m of the WTHR and provided an unobstructed view of the surrounding terrain. In 2020, the HOL surveys were replaced by viewshed surveys and twelve viewshed survey locations were established along the WTHR in a desktop review to maximize the area around the WTHR that could be surveyed (Golder 2020b). Survey locations were established to cover the length of the WTHR. In 2023, 13 viewshed locations were surveyed as shown in Figure 7-1. While conducting the viewshed surveys, observers spent 10 minutes surveying for wildlife using a combination of naked eye, binoculars, and spotting scopes to maximize sighting distance. If a caribou group is observed, the observer estimates the number of individuals, direction from observer, distance from road, behaviour, direction of travel, and habitat. These results are then used to determine if a Group Size Threshold has been reached and if mitigation action is required.

7.4 Historical Results

A total of 12 species were observed during HOL surveys in 2019; six species were only observed during the summer caribou season (Table 7-1). The highest number of caribou was observed during the spring caribou season, followed by the fall and then summer seasons (Table 7-1). No caribou were observed during the winter caribou season.

In 2020, 163 viewshed surveys were completed across 19 dates: five in spring, eight in summer, one in fall, and five in winter. Three mammal species were observed during viewshed surveys, including 252 caribou, one Arctic hare, and eight muskox (Table 7-2). Two bird species were observed including one common raven and one sandhill crane. Only ten out of 163 surveys (6%) had caribou sightings. Of the ten sightings, eight occurred during the spring and two during the summer. Caribou were typically sighted to the north or west, and the average sighting distance was 630 m from the road. In all cases where caribou were observed, the recorded visibility was up to 1 km, indicating these surveys are most effective in good visibility conditions.

In 2021, 310 viewshed surveys were completed across 27 dates: nine in summer, 14 in fall, and four in winter. Five mammal species were observed during the viewshed surveys, including caribou, muskox, Arctic hare, Arctic fox, and Arctic ground squirrel (Table 7-3). Five species of birds were observed including Canada goose, common raven, ptarmigan (willow ptarmigan or rock ptarmigan), sandhill crane, and snow goose. Only 37 surveys (12%) had caribou sightings with 27 positive surveys occurring in the summer and ten in the fall, and a total of 190 caribou reported. Only two survey locations, Viewshed 1 and Viewshed 11, had no surveys with caribou detections. Group sizes ranged from 1-24 individuals and, caribou were sighted more frequently to the east at an average sighting distance of 1,049 m from the road. In all cases where caribou were observed and visibility was recorded, the visibility was at least 1 km, indicating these surveys are most effective in good visibility conditions.

In 2022, 58 viewshed surveys were conducted across 58 dates: 14 in spring, 16 in summer, 12 in fall, and 16 in winter. A total of 739 surveys were conducted between 5 January and 28 December. Of the 739 viewshed surveys completed in 2022, only 41 surveys (6%) had caribou sightings, and a total of 461 caribou were reported (Table 7-4). All survey locations had surveys with caribou detections, except for Viewshed 5. Viewshed 12 had the most surveys with caribou sightings. The highest caribou counts were recorded for spring 2022 (Table 7-4). Group sizes ranged from 1-100 individuals, and caribou were sighted more frequently to the west and the average sighting distance was 685.5 m from the road. In all cases where caribou were observed and visibility was recorded, the visibility was at least 1 km, indicating these surveys are most effective in good visibility conditions.

Table 7-1: Total Number of Wildlife Observed during Height of Land Surveys along the Whale Tail Haul Road in 2019

Species	Caribou Seasons			
	Spring 01 Apr to 25 May	Summer 26 May to 21 Sep	Fall 22 Sep to 15 Dec	Winter 16 Dec to 31 Mar
Mammals				
Arctic hare	2	3	3	0
Caribou	842	177	529	0
Muskox	17	16	0	32
Wolf	0	0	1	0
Wolverine	0	0	1	1
Birds				
Canada goose	0	6	0	0
Unidentified Goose	0	167	0	0
Unidentified Gull	0	2	0	0
Unidentified Owl	0	2	0	0
Ptarmigan	0	19	15	0
Snow bunting	0	10	0	0
Snow goose	0	346	0	0

Table 7-2: Total Number of Wildlife Observed during Viewshed Surveys along the Whale Tail Haul Road in 2020

Species	Caribou Seasons			
	Spring 01 Apr to 25 May	Summer 26 May to 21 Sep	Fall 22 Sep to 15 Dec	Winter 16 Dec to 31 Mar
Mammals				
Arctic hare	1	0	0	0
Caribou	247	5	0	0
Muskox	1	7	0	0
Birds				
Common raven	0	1	0	0
Sandhill crane	0	1	0	0

Table 7-3: Total Number of Wildlife Observed during Viewshed Surveys along the Whale Tail Haul Road in 2021

Species	Caribou Seasons			
	Spring (01 Apr to 25 May)	Summer (26 May to 21 Sep)	Fall (22 Sep to 15 Dec)	Winter (16 Dec to 31 Mar)
Mammals				
Arctic fox	-	1	2	0
Arctic ground squirrel	-	1	0	0
Arctic hare	-	2	0	0
Caribou	-	149	41	0
Muskox	-	20	35	2
Birds				
Canada goose	-	13	0	0
Common raven	-	0	1	1
Ptarmigan	-	0	5	0
Sandhill crane	-	2	0	0
Snow goose	-	38	0	0

Table 7-4: Total Number of Wildlife Observed during Viewshed Surveys along the Whale Tail Haul Road in 2022

Species	Caribou Seasons			
	Spring (01 Apr to 25 May)	Summer (26 May to 21 Sep)	Fall (22 Sep to 15 Dec)	Winter (16 Dec to 31 Mar)
Mammals				
Arctic fox	0	2	0	0
Arctic hare	0	1	0	0
Caribou	345	70	29	17
Muskox	73	62	110	12
Wolf	0	1	0	0
Birds				
American crow	0	1	3	2
Canada goose	32	7	0	0
Common raven	3	0	0	0
Greater white-fronted goose	36	0	0	0
Ptarmigan	1	1	0	0
Rough-legged hawk	2	0	0	0
Snow goose	0	233	0	0

7.5 2023 Results

Viewshed surveys were conducted on 87 dates in 2023, though not all locations were surveyed each day (Figure 7-1). A total of 1,345 surveys were conducted between 5 January and 30 December, with the highest survey effort occurring in the spring (43%, Table 7-5).

Table 7-5: Viewshed Survey Effort by Season, 2023

Season	Survey Days	Surveys Completed (% of total effort)
Spring	15	574 (42.67%)
Summer	16	297 (22.08%)
Fall	40	261 (19.41%)
Winter	16	213 (15.84%)
Total	87	1,345 (100%)

Of the 1,345 viewshed surveys completed in 2023, 109 surveys (8%) had caribou sightings, and a total of 4,442 caribou were recorded (Table 7-6). All survey locations had surveys with caribou detections (Table 7-6). One survey location had 14 caribou sightings (Viewshed 12), one survey location has 11 caribou sightings (Viewshed 13), two survey locations had 10 caribou sightings (Viewsheds 6 and 9), and one survey location had nine caribou sightings (Viewshed 5). Four survey locations had eight caribou sightings (Viewsheds 4, 8, 10, and 11), one survey location had seven caribou sightings (Viewshed 7), two survey locations had six caribou sightings (Viewsheds 1 and 3), and one survey location had four caribou sightings (Viewshed 2).

Of the 109 surveys with caribou sightings, 75 occurred during the spring, 22 occurred during the summer, 11 occurred during the fall, and one occurred during winter (Table 7-6).

Group sizes ranged from 1-650 individuals (Table 7-7). Caribou were sighted more frequently to the west and the average sighting distance was 883 m from the road. In all cases where caribou were observed and visibility was recorded, the visibility was at least 1 km, indicating these surveys are most effective in good visibility conditions.

Other mammals recorded during viewshed surveys include Arctic fox, muskox, and wolf. Bird species recorded include American crow, Canada goose, common raven, gyrfalcon, rough-legged hawk, snow goose, an unidentified duck (Table 7-8).

Table 7-6: Viewshed Surveys Completed and Number of Caribou Observed per Season in 2023

Date	Viewshed Survey Location												
	1	2	3	4	5	6	7	8	9	10	11	12	13
Spring Caribou Season (01 Apr – 25 May)													
2023-04-05	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-04-07	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-04-10	20	150	0	50	0	250	20	0	0	0	0	15	150
2023-04-12	0	0	0	56	55	210	0	0	80	80	0	60	15
2023-04-17	0	0	4	29	37	12	0	23	20	0	19	11	49
2023-04-19	0	0	0	0	0	0	0	7	0	0	0	0	0
2023-04-21	0	0	14	15	0	0	0	0	0	0	0	0	0
2023-04-23	42	0	10	0	8	40	0	12	650	125	25	91	0
2023-04-27	54	0	0	0	0	10	0	0	3	3	47	1	8
2023-04-29	160	2	111	28	32	135	29	309	27	23	200	142	46
2023-05-12	0	17	0	0	0	0	0	3	0	6	0	0	15
2023-05-15	5	0	0	0	0	8	0	0	1	0	7	0	0
2023-05-18	13	8	19	4	12	23	8	0	0	0	0	0	0
2023-05-22	0	0	0	17	0	0	7	0	2	0	0	3	0
2023-05-25	0	0	0	25	0	0	0	0	0	0	0	0	0
Summer Caribou Season (26 May – 21 Sep)													
2023-05-31	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-06-03	0	0	3	0	12	0	0	0	0	0	0	0	0
2023-06-22	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-06-27	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-07-04	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-07-11	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-07-21	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-07-25	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-08-03	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-08-10	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-08-19	0	0	0	0	0	2	10	3	5	0	4	2	3
2023-08-24	0	0	0	0	0	0	0	6	3	3	0	4	0
2023-08-31	0	0	0	0	0	8	1	1	0	5	0	2	5
2023-09-07	0	0	0	0	0	0	0	0	0	8	0	0	4
2023-09-14	0	0	0	0	0	0	0	0	0	0	0	1	0
2023-09-20	0	0	0	0	0	0	0	0	0	0	0	0	0
Fall Caribou Season (22 Sep – 15 Dec)													
2023-09-26	0	-	0	0	0	0	0	0	0	0	0	0	0
2023-09-30	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-10-02	0	0	0	0	0	0	0	0	0	0	0	7	0
2023-10-05	0	0	0	0	0	0	0	0	0	0	-	0	0
2023-10-07	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 7-6: Viewshed Surveys Completed and Number of Caribou Observed per Season in 2023

Date	Viewshed Survey Location												
	1	2	3	4	5	6	7	8	9	10	11	12	13
2023-10-09	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-10-11	0	0	0	0	0	0	0	0	0	0	0	0	6
2023-10-13	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-10-14	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-10-16	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-10-18	-	-	-	-	-	0	7	0	0	0	0	0	0
2023-10-20	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-10-22	0	0	0	0	2	0	0	0	0	0	0	0	0
2023-10-24	0	0	0	0	0	0	0	0	0	0	1	0	0
2023-10-26	0	0	0	0	6	0	0	0	0	0	167	0	0
2023-10-28	0	0	0	0	0	0	0	0	5	0	0	26	0
2023-10-30	0	0	0	0	81	0	0	0	0	0	0	0	0
2023-11-01	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-11-03	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-11-04	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-11-05	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-11-06	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-11-07	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-11-08	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-11-09	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-11-10	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-11-11	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-11-13	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-11-16	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-11-18	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-11-20	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-11-20	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-11-25	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-11-27	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-12-01	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-12-02	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-12-04	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-12-06	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-12-08	0	0	0	0	0	0	0	0	0	0	0	5	0
2023-12-10	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-12-12	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Caribou Season (16 Dec – 31 Mar)													
2023-01-05	0	0	0	0	-	-	-	-	-	-	-	-	-
2023-01-22	0	0	0	0	-	-	-	-	-	-	-	-	-
2023-01-26	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-02-01	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-02-08	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-02-13	0	0	0	0	0	0	0	0	0	0	0	0	6
2023-02-22	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-03-01	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-03-08	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-03-15	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-03-21	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-12-17	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-12-19	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 7-6: Viewshed Surveys Completed and Number of Caribou Observed per Season in 2023

Date	Viewshed Survey Location												
	1	2	3	4	5	6	7	8	9	10	11	12	13
2023-12-25	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-12-28	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-12-30	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 7-7: Survey Condition Details for Viewshed Surveys with Caribou Sightings, 2023

Survey Location	Date	Temperature (°C)	Wind Speed (km/hr)	Visibility*	Cardinal Direction	Number	Habitat	Behaviour	Distance from road (m)
Spring Caribou Season (01 Apr - 25 May)									
Viewshed 1	2023-04-10	-11	30	> 1 km	West	20	Heath Tundra,Ice	Walking	3000
Viewshed 2	2023-04-10	-11	30	> 1 km	West	150	Ice	Walking	1500
Viewshed 4	2023-04-10	-11	30	> 1 km	East	50	Heath Tundra	Feeding	3000
Viewshed 6	2023-04-10	-11	30	> 1 km	West	150	Heath Tundra	Standing	1500
Viewshed 6	2023-04-10	-11	30	> 1 km	West	100	Heath Tundra	Walking	1500
Viewshed 7	2023-04-10	-11	30	> 1 km	West	20	Heath Tundra	Walking	1000
Viewshed 12	2023-04-10	-11	30	> 1 km	West	15	Heath Tundra	Standing	1500
Viewshed 13	2023-04-10	-11	30	> 1 km	West	150	Heath Tundra	Feeding	500
Viewshed 4	2023-04-12	-16	20	> 1 km	West	56	Heath Tundra	Walking	600
Viewshed 5	2023-04-12	-16	20	> 1 km	East	55	Heath Tundra	Foraging	2000
Viewshed 6	2023-04-12	-16	20	> 1 km	East	210	Hilltop,Ice	Walking	3000
Viewshed 9	2023-04-12	-16	20	> 1 km	East	80	Heath Tundra	Walking	500
Viewshed 10	2023-04-12	-16	20	> 1 km	West	80	Heath Tundra,Ice	Walking	500
Viewshed 12	2023-04-12	-16	20	> 1 km	East	40	Heath Tundra	Foraging	800
Viewshed 12	2023-04-12	-16	20	> 1 km	East	20	Heath Tundra	Foraging	1000
Viewshed 13	2023-04-12	-16	20	> 1 km	East	15	Heath Tundra	Foraging	1
Viewshed 3	2023-04-17	-10	0	> 1 km	West	4	Ice	Walking	2500
Viewshed 4	2023-04-17	-10	0	> 1 km	West	29	Heath Tundra	Walking	3000
Viewshed 5	2023-04-17	-10	0	> 1 km	West	37	Heath Tundra	Walking	2000
Viewshed 6	2023-04-17	-10	0	> 1 km	West	13	Ice	Walking	1500
Viewshed 8	2023-04-17	-10	0	> 1 km	West	20	Heath Tundra	Foraging	1500
Viewshed 8	2023-04-17	-10	0	> 1 km	West	3	Heath Tundra	Foraging	1000
Viewshed 9	2023-04-17	-10	0	> 1 km	West	20	Heath Tundra	Foraging	2500
Viewshed 11	2023-04-17	-10	0	> 1 km	West	19	Heath Tundra	Walking	150
Viewshed 12	2023-04-17	-10	0	> 1 km	West	11	Heath Tundra	Walking	1500
Viewshed 13	2023-04-17	-10	0	> 1 km	West	49	Heath Tundra	Foraging	1000
Viewshed 8	2023-04-19	-14	30	> 1 km	West	7	Heath Tundra,Hilltop	Walking	1900
Viewshed 3	2023-04-21	-7	15	> 1 km	West	14	Heath Tundra,Ice	Walking	3000
Viewshed 4	2023-04-21	-7	15	> 1 km	West	15	Heath Tundra,Hilltop,Ice	Walking	2000
Viewshed 1	2023-04-23	-16	30	> 1 km	West	42	Heath Tundra,Hilltop	Running	800
Viewshed 3	2023-04-23	-16	30	> 1 km	East	6	Heath Tundra,Hilltop	Walking	20
Viewshed 3	2023-04-23	-16	30	> 1 km	East	2	Heath Tundra,Hilltop	Walking	5
Viewshed 3	2023-04-23	-16	30	> 1 km	West	2	Heath Tundra,Hilltop	Walking	5
Viewshed 5	2023-04-23	-16	30	> 1 km	West	8	Heath Tundra,Hilltop	Standing	10
Viewshed 6	2023-04-23	-16	30	> 1 km	West	40	Heath Tundra,Ice	Standing	1400
Viewshed 8	2023-04-23	-16	30	> 1 km	West	12	Heath Tundra,Hilltop	Foraging	400
Viewshed 9	2023-04-23	-16	30	> 1 km	West	650	Heath Tundra,Hilltop	Lying Down	20
Viewshed 10	2023-04-23	-16	30	> 1 km	East	25	Heath Tundra,Hilltop	Foraging	10
Viewshed 10	2023-04-23	-16	30	> 1 km	West	100	Heath Tundra,Hilltop	Foraging	50
Viewshed 11	2023-04-23	-16	30	> 1 km	West	25	Heath Tundra,Hilltop,Ice	Standing	500

Table 7-7: Survey Condition Details for Viewshed Surveys with Caribou Sightings, 2023

Survey Location	Date	Temperature (°C)	Wind Speed (km/hr)	Visibility*	Cardinal Direction	Number	Habitat	Behaviour	Distance from road (m)
Viewshed 12	2023-04-23	-16	30	> 1 km	West	91	Heath Tundra,Hilltop	Standing	300
Viewshed 1	2023-04-27	-8	5	> 1 km	West	54	Heath Tundra	Walking	800
Viewshed 6	2023-04-27	-8	5	> 1 km	West	10	Heath Tundra	Standing	100
Viewshed 9	2023-04-27	-8	5	> 1 km	West	3	Ice	Walking	2500
Viewshed 10	2023-04-27	-8	5	> 1 km	West	3	Heath Tundra	Walking	2000
Viewshed 11	2023-04-27	-8	5	> 1 km	West	33	Heath Tundra	Walking	400
Viewshed 11	2023-04-27	-8	5	> 1 km	West	14	Hilltop	Resting	30
Viewshed 12	2023-04-27	-8	5	> 1 km	West	1	Heath Tundra	Running	900
Viewshed 13	2023-04-27	-8	5	> 1 km	West	8	Heath Tundra	Walking	1000
Viewshed 1	2023-04-29	-15	10	1 km	East	90	Heath Tundra,Hilltop,Ice,Lichen-Rock,Road,Rock & Boulder	Walking	0
Viewshed 1	2023-04-29	-15	10	1 km	West	70	Heath Tundra,Hilltop,Ice,Lichen,Lichen-Rock,Road,Rock & Boulder	Walking	0
Viewshed 2	2023-04-29	-15	10	1 km	East	2	Heath Tundra,Hilltop,Lichen-Rock,Rock & Boulder	Walking	250
Viewshed 3	2023-04-29	-15	10	1 km	West	111	Ice	Walking	800
Viewshed 4	2023-04-29	-15	10	1 km	West	28	Heath Tundra,Hilltop,Ice,Rock & Boulder	Walking	80
Viewshed 5	2023-04-29	-15	10	1 km	East	6	Heath Tundra,Hilltop,Lichen-Rock,Rock & Boulder	Foraging	133
Viewshed 5	2023-04-29	-15	10	1 km	West	26	Heath Tundra,Hilltop,Lichen-Rock,Rock & Boulder	Foraging	590
Viewshed 6	2023-04-29	-15	10	1 km	East	10	Heath Tundra,Hilltop,Lichen-Rock,Rock & Boulder	Foraging	100
Viewshed 6	2023-04-29	-15	10	1 km	West	125	Heath Tundra,Hilltop,Ice,Lichen-Rock,Ridge creat/Esker/Avens,Rock & Boulder	Foraging	100
Viewshed 7	2023-04-29	-15	10	1 km	East	9	Ice	Walking	990
Viewshed 7	2023-04-29	-15	10	1 km	West	20	Heath Tundra,Lichen-Rock, Rock & Boulder	Walking	890
Viewshed 8	2023-04-29	-15	10	1 km	East	13	Heath Tundra,Hilltop,Lichen-Rock,Rock & Boulder	Foraging	400
Viewshed 8	2023-04-29	-15	10	1 km	West	296	Heath Tundra,Hilltop,Ice,Lichen-Rock,Rock & Boulder	Foraging	790
Viewshed 9	2023-04-29	-15	10	1 km	East	12	Heath Tundra,Hilltop,Lichen-Rock,Rock & Boulder	Foraging	5
Viewshed 9	2023-04-29	-15	10	1 km	West	15	Heath Tundra,Hilltop,Lichen-Rock,Rock & Boulder	Foraging	5
Viewshed 10	2023-04-29	-15	10	1 km	East	20	Heath Tundra,Hilltop,Lichen-Rock,Rock & Boulder	Foraging	110

Table 7-7: Survey Condition Details for Viewshed Surveys with Caribou Sightings, 2023

Survey Location	Date	Temperature (°C)	Wind Speed (km/hr)	Visibility*	Cardinal Direction	Number	Habitat	Behaviour	Distance from road (m)
Viewshed 10	2023-04-29	-15	10	1 km	West	3	Heath Tundra,Hilltop,Lichen-Rock,Rock & Boulder	Resting	161
Viewshed 11	2023-04-29	-15	10	1 km	West	200	Heath Tundra,Hilltop,Ice,Lichen-Rock,Rock & Boulder	Walking	400
Viewshed 12	2023-04-29	-15	10	1 km	West	142	Heath Tundra,Hilltop,Ice,Lichen-Rock,Rock & Boulder	Walking	300
Viewshed 13	2023-04-29	-15	10	1 km	East	6	Heath Tundra,Hilltop,Lichen-Rock,Rock & Boulder	Foraging	500
Viewshed 13	2023-04-29	-15	10	1 km	West	40	Heath Tundra,Hilltop,Ice,Lichen-Rock,Rock & Boulder	Foraging	900
Viewshed 2	2023-05-12	2	20	> 1 km	West	17	Heath Tundra	Walking	750
Viewshed 8	2023-05-12	2	20	> 1 km	West	3	Ice	Walking	850
Viewshed 10	2023-05-12	2	20	> 1 km	West	6	Heath Tundra,Lichen	Foraging	650
Viewshed 13	2023-05-12	2	20	> 1 km	West	12	Heath Tundra,Lichen	Foraging	1500
Viewshed 13	2023-05-12	2	20	> 1 km	West	3	Heath Tundra,Lichen	Foraging	2000
Viewshed 1	2023-05-15	-1	10	> 1 km	West	5	Heath Tundra	Walking	1500
Viewshed 6	2023-05-15	-1	10	> 1 km	East	8	Heath Tundra	Foraging	500
Viewshed 9	2023-05-15	-1	10	> 1 km	West	1	Heath Tundra	Foraging	1500
Viewshed 11	2023-05-15	-1	10	> 1 km	West	7	Heath Tundra	Walking	2000
Viewshed 1	2023-05-18	-2	13	> 1 km	West	13	Heath Tundra	Foraging	1000
Viewshed 2	2023-05-18	-2	13	> 1 km	West	8	Heath Tundra	Foraging	500
Viewshed 3	2023-05-18	-2	13	> 1 km	West	19	Ice	Walking	1500
Viewshed 4	2023-05-18	-2	13	> 1 km	West	4	Heath Tundra	Alert	400
Viewshed 5	2023-05-18	-2	13	> 1 km	West	12	Ice	Walking	1000
Viewshed 6	2023-05-18	-2	13	> 1 km	West	9	Ice	Walking	1000
Viewshed 6	2023-05-18	-2	13	> 1 km	West	14	Heath Tundra	Feeding	800
Viewshed 7	2023-05-18	-2	13	> 1 km	West	8	Ice	Walking	500
Viewshed 4	2023-05-22	0	30	1 km	West	17	Heath Tundra	Walking	400
Viewshed 7	2023-05-22	0	30	1 km	West	5	Ice	Walking	1500
Viewshed 7	2023-05-22	0	30	1 km	West	2	Heath Tundra	Foraging	500
Viewshed 9	2023-05-22	0	30	1 km	West	2	Heath Tundra	Walking	700
Viewshed 12	2023-05-22	0	30	1 km	West	3	Heath Tundra	Walking	700
Viewshed 4	2023-05-25	5	60	> 1 km	West	25	Heath Tundra	Resting	1000
Summer Caribou Season (26 May - 21 Sep)									
Viewshed 3	2023-06-03	12	25	> 1 km	West	3	Heath Tundra	Feeding	20
Viewshed 5	2023-06-03	12	25	> 1 km	East	6	Heath Tundra	Feeding	1000
Viewshed 5	2023-06-03	12	25	> 1 km	West	6	Heath Tundra	Feeding	1200
Viewshed 6	2023-08-19	14	20	> 1 km	East	2	Heath Tundra	Foraging	300
Viewshed 7	2023-08-19	14	20	> 1 km	East	10	Birch & Riparian Shrub,Heath Tundra,Hilltop,Lichen,Lichen-Rock,Rock & Boulder,Sedge,Water	Foraging	30
Viewshed 8	2023-08-19	14	20	> 1 km	West	3	Heath Tundra,Hilltop	Foraging	1500
Viewshed 9	2023-08-19	14	20	> 1 km	West	5	Heath Tundra	Foraging	300
Viewshed 11	2023-08-19	14	20	> 1 km	East	4	Heath Tundra	Foraging	90
Viewshed 12	2023-08-19	14	20	> 1 km	West	2	Heath Tundra	Foraging	50

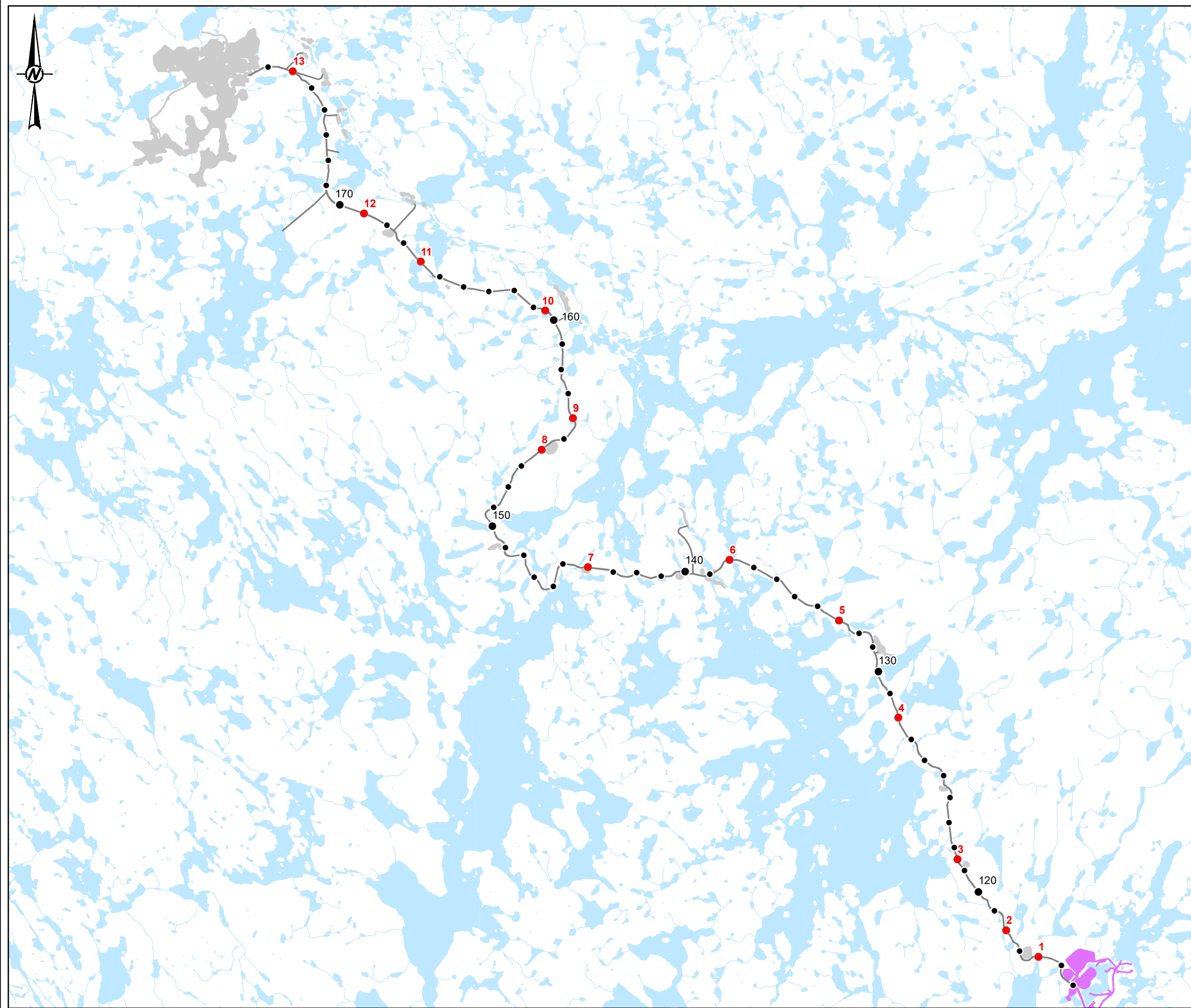
Table 7-7: Survey Condition Details for Viewshed Surveys with Caribou Sightings, 2023

Survey Location	Date	Temperature (°C)	Wind Speed (km/hr)	Visibility*	Cardinal Direction	Number	Habitat	Behaviour	Distance from road (m)
Viewshed 13	2023-08-19	14	20	> 1 km	West	3	Heath Tundra	Foraging	500
Viewshed 8	2023-08-24	4	30	> 1 km	East	6	Heath Tundra	Feeding	400
Viewshed 9	2023-08-24	4	30	> 1 km	East	3	Heath Tundra	Feeding	300
Viewshed 10	2023-08-24	4	30	> 1 km	West	3	Heath Tundra	Feeding	200
Viewshed 12	2023-08-24	4	30	> 1 km	West	4	Heath Tundra	Feeding	900
Viewshed 6	2023-08-31	11	20	> 1 km	East	8	Heath Tundra	Foraging	300
Viewshed 7	2023-08-31	11	20	> 1 km	East	1	Heath Tundra	Foraging	200
Viewshed 8	2023-08-31	11	20	> 1 km	West	1	Heath Tundra	Foraging	1000
Viewshed 10	2023-08-31	11	20	> 1 km	East	1	Heath Tundra	Walking	150
Viewshed 10	2023-08-31	11	20	> 1 km	West	4	Heath Tundra	Foraging	100
Viewshed 12	2023-08-31	11	20	> 1 km	West	2	Heath Tundra	Foraging	400
Viewshed 13	2023-08-31	11	20	> 1 km	East	4	Heath Tundra	Foraging	50
Viewshed 13	2023-08-31	11	20	> 1 km	West	1	Heath Tundra	Foraging	1000
Viewshed 10	2023-09-07	5	20	> 1 km	East	3	Heath Tundra	Walking	0
Viewshed 10	2023-09-07	5	20	> 1 km	West	5	Heath Tundra	Foraging	0
Viewshed 13	2023-09-07	5	20	> 1 km	West	4	Heath Tundra	Foraging	50
Viewshed 12	2023-09-14	0	20	> 1 km	East	1	Heath Tundra	Foraging	1750
Fall Caribou Season (22 Sept – 15 Dec)									
Viewshed 12	2023-10-02	3	15	>1 km	East	7	Heath Tundra	Feeding	250
Viewshed 13	2023-10-11	2	20	>1 km	West	6	Heath Tundra	Feeding	800
Viewshed 7	2023-10-18	0	20	>1 km	East	7	Heath Tundra	Foraging	75
Viewshed 5	2023-10-22	-5	40	>1 km	East	2	Heath Tundra	Lying Down	2000
Viewshed 11	2023-10-24	-6	30	>1 km	East	1	Heath Tundra	Walking	1500
Viewshed 5	2023-10-26	-7	30	>1 km	East	6	Heath Tundra	Foraging	2000
Viewshed 11	2023-10-26	-7	30	>1 km	East	17	Heath Tundra	Foraging	3000
Viewshed 11	2023-10-26	-7	30	>1 km	East	150	Heath Tundra	Foraging	500
Viewshed 9	2023-10-28	-8	5	>1 km	West	5	Heath Tundra	Foraging	2000
Viewshed 12	2023-10-28	-8	5	>1 km	West	1	Road	Walking	0
Viewshed 12	2023-10-28	-8	5	>1 km	West	25	Heath Tundra	Walking	1500
Viewshed 5	2023-10-30	-8	14	>1 km	East	81	Heath Tundra	Walking	3000
Viewshed 12	2023-12-08	-22	15	>1 km	East	5	Heath Tundra	Foraging	1000
Winter Caribou Season (16 Dec - 31 Mar)									
Viewshed 13	2023-02-13	-31	20	>1 km	West	6	Heath Tundra	Feeding	1000

Table 7-8: Total Number of Wildlife Observed during Viewshed Surveys along the Whale Tail Haul Road in 2023

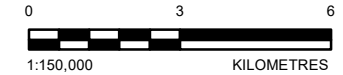
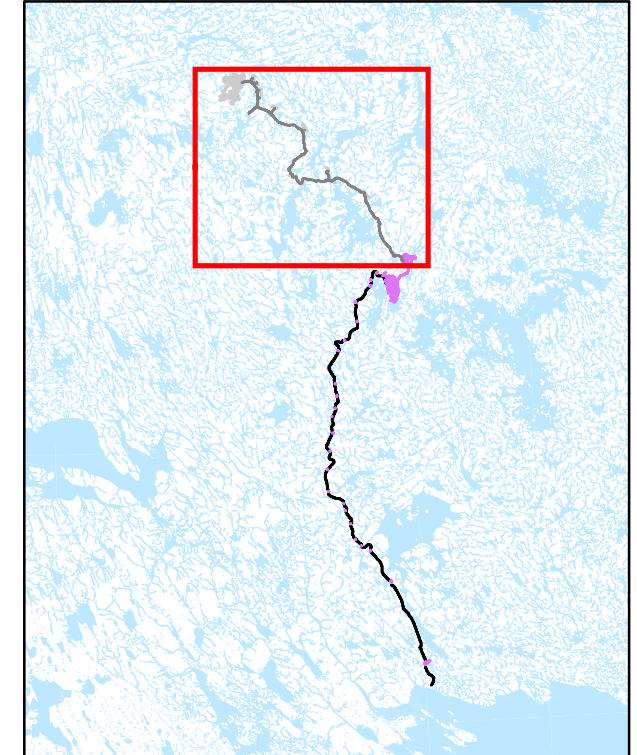
Species	Caribou Seasons			
	Spring (01 Apr to 25 May)	Summer (26 May to 21 Sep)	Fall (22 Sep to 15 Dec)	Winter (16 Dec to 31 Mar)
Mammals				
Arctic fox	0	1	2	2
Caribou	4,028	95	313	6
Muskox	26	62	294	80
Wolf	1	1	0	0
Birds				
American crow	0	1	0	0
Canada goose	0	19	13	0
Common raven	0	0	0	1
Unidentified Duck	0	1	0	0
Gyrfalcon	0	0	1	0
Rough-legged hawk	0	1	0	0
Snow goose	0	54	0	0

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LEGEND

- VIEWSHED SURVEY LOCATION
- KILOMETRE MARKER
- WHALE TAIL MINE SITE
- HAUL ROAD
- MEADOWBANK MINE SITE
- WATERBODY
- WATERCOURSE



REFERENCE(S)
 1. INFRASTRUCTURE OBTAINED FROM AGNICO EAGLE MINES LIMITED.
 2. ROAD, WATERCOURSE AND WATERBODY DATA OBTAINED FROM NATURAL RESOURCES CANADA.
 COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 14N

CLIENT **AGNICO EAGLE MINES LIMITED: MEADOWBANK DIVISION**

PROJECT
**MEADOWBANK COMPLEX
 2023 WILDLIFE MONITORING SUMMARY REPORT**

TITLE
LOCATION OF VIEWSHED SURVEYS ALONG WHALE TAIL HAUL ROAD, 2023

CONSULTANT	YYYY-MM-DD	2024-03-22
	DESIGNED	JF
	PREPARED	CDB
	REVIEWED	JF
	APPROVED	CDLM

PROJECT NO. CONTROL REV. FIGURE
 CA0006990.5123 4000/4040 0 7-1

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7.6 Management Recommendations

The viewshed surveys were implemented to improve logistics and health and safety conditions for observers, as well as long-distance monitoring of caribou. Eighty-seven days of viewshed surveys were conducted in 2023, while the majority of monitoring along the WTHR was conducted using the standard road surveys (Section 3.0). Comparison of the effectiveness of viewshed surveys and road surveys at detecting caribou approaching the WTHR is presented in Section 17.0.

8.0 REMOTE CAMERA PROGRAM

8.1 Overview

The initial remote camera study design (October 2018 to November 2019) was intended to collect general trends on caribou crossing events and traffic or road activities on the WTHR, to inform fine scale traffic mitigation. An updated study design was implemented in November 2019, to examine the permeability of the WTHR to caribou movement as those interactions relate to the physical parameters of the road. The 2019 to 2021 remote camera data were previously analyzed for the 2020, 2021, and 2022 Wildlife Monitoring Summary Reports (Golder 2021, 2022, WSP 2023). Results from the 2023 remote camera program are summarized below.

8.2 Objectives

The primary objective of the remote camera program is to monitor caribou behavioural interactions with the WTHR, and adapt management practices (i.e., traffic mitigation) as required. The current remote camera program allows for comparisons to determine if caribou crossing locations along the WTHR are related to the physical parameters of the road (i.e., backfill height, slope, and material grain size) and traffic rates.

8.3 Duration

The use of remote cameras will continue throughout the year, but camera results will be analyzed and discussed at TAG meetings to ensure that the monitoring objectives are being achieved.

8.4 Methods

8.4.1 Camera Deployment and Settings

Locations of remote cameras have varied across program years (Golder 2021, 2022, WSP 2023). The same locations were used in 2023 as in 2021 and 2022. The locations of the paired remote cameras along the WTHR were selected based on high-frequency caribou crossing locations, and stratified across road height categories (i.e., <1.5 m, 1.5 to 3 m, and >3 m; Table 8-1). Road heights were determined in the field. Backfill material and slope at camera locations were determined from construction surveys (WSP 2019). Backfill slope along the WTHR is typically 2:1. In areas where backfill height exceeds 3 m, slope was recontoured to 4:1 for safety (WSP 2019).

The program uses Reconyx HyperFire 2 Professional Covert IR Camera OD Green cameras. In the pilot program, at each location, the first camera in the pair was typically placed facing the WTHR, and the second camera was placed facing away from the WTHR. In November 2019, camera locations were updated so that at each location, the first camera in the pair was placed facing parallel to the WTHR (i.e., recording observations of caribou crossing the road) in one direction (e.g., north). The second camera in the pair was placed facing parallel to the road in the opposite direction of the first camera (e.g., south). Cameras were placed in close proximity to the road (within 5 m, approximately 1 m above ground level), to provide a field of view that would capture road traffic and caribou interactions with the road. The majority of camera positions were adjusted for 2021 to encompass both sides of the road to better document caribou crossing events and vehicle traffic. Camera timing was set to the continuous motion-triggered setting, with additional timed interval photographs occurring in thirty minute or one-hour intervals. Maintenance checks were performed weekly throughout the year to remove dust, snow, or ice accumulated on cameras, and back up photographs as required.

Table 8-1: Remote Camera Locations along the Whale Tail Haul Road, 2023

Camera Pair	Camera Label	KM Location Reference	Road Height (m)	Backfill Material	Backfill Slope (Horizontal:Vertical)
1	AECC01/AECC02	118	>3	Rock	4:1
2	AECC03/AECC04	132	>3	Esker	4:1
3	AECC05/AECC06	136	1.5 to 3	Rock	2:1
4	AECC07/AECC08	172	1.5 to 3	Rock	2:1
5	AECC09/AECC10	157	1.5 to 3	Esker	2:1
6	AECC11/AECC12	152	<1.5	Mix	2:1
7	AECC13/AECC14	138	>3	Rock	2:1
8	AECC15/AECC16	161	<1.5	Esker	2:1
9	AECC17/AECC18	170	<1.5	Rock	2:1
10	AECC19/AECC20	146	>3	Rock	4:1

> = greater than; < = less than; km = kilometre; m = metre; UTM = Universal Transverse Mercator.

8.4.2 Photograph Review

Previous years of the remote camera program focused on manual review of time lapse photographs, rather than motion-triggered photographs (Golder 2022). Due to the open nature of the habitat along the WTHR, caribou infrequently walk directly in front of cameras, and so, infrequently activate motion-triggered photographs. Photographs in 2023 were pre-sorted using artificial intelligence (Section 8.4.3). The artificial intelligence was run over both motion and time-lapse photographs from the entire year.

Photographs identified as wildlife by the artificial intelligence were manually reviewed by a human observer and identified to species. Individuals of wildlife species were not considered separate detections during manual review, until either an hour had passed or until there was a distinguishable difference between separate individuals triggering the camera. All animals present within the field of view within each photo were counted. During analysis, for each independent event, the highest animal count of all photos within the independent event was used as the animal count. Instances of caribou crossing the road were recorded where applicable.

8.4.3 Artificial Intelligence Classification

An automated approach was used to classify the 3,337,967 photos collected in 2023. MegaDetector was used for general processing. It is a model trained with a large amount of data and is able to detect wildlife regardless of the position of the object in the scene (near or far). Images were divided into two groups: images with a detection threshold greater than or equal to 0.7, and images with a detection threshold between 0.3 and 0.7. Bounding boxes with probability, coordinates, and class (animal, truck, or human) were applied to images. False detections of static objects (i.e., stones) were removed by comparing coordinates of objects between sequential images and allowed 5% deviation in the coordinates. False detections from bad weather or flags in front of camera were removed by checking for large (60-80% of FOV) bounding box size on images. Additional false detections from trucks, flags, far away, or the sun were removed through use of a custom Yolo model and comparison of bounding boxes. Any remaining images in the object list also classed as an animal are placed in the results folder for human review and labelling.

8.4.4 Data Analysis

Sampling effort or number of days each camera was considered active was determined at each camera pair based on unique days with photographs. An overall caribou detection rate was calculated, based on the number of individuals observed, divided by the camera station sampling effort in days by season. A caribou crossing rate was also calculated, based on the number of individuals observed crossing the road, divided by the camera station sampling effort in days by season. To prevent double counting caribou at camera pairs, the maximum caribou and caribou crossing rate at each camera pair is presented by season.

Only events where caribou were photographed on the road, or individuals of a group were observed on either side of the road were considered crossing events. Caribou counts may be subject to error due to distance of caribou groups from cameras. Caribou groups had to be detected on both sides of the road to count as crossing events, and some crossing events beyond the range of the camera are likely missed due to the interval between time-lapse photographs or the short distance of the motion sensor (~30 m limit).

Following discussion at the November/December 2022 TAG meeting, assessment of caribou crossing rates in relation to previous vehicle may be better assessed using caribou satellite collar data, and vehicle traffic collected using remote camera data. Therefore, time between caribou crossing events, and previous vehicle time is not presented.

8.5 Results

A total of 2,636 photographs were selected by the automated approach and reviewed by a human observer. There were 402 total observations, 329 observations were “near wildlife” detections and 73 “far wildlife” detections. Fifteen species were detected in 2023: Arctic fox, Arctic hare, Canada goose, caribou, common raven, gray wolf, greater white-fronted goose, Lapland’s longspur, muskox, red fox, rock ptarmigan, sandhill crane, snow goose, wolverine, and unidentified bird species. All were detected on “near wildlife” detections. “Far wildlife” detections included grey wolf, caribou, common raven, muskox, and additional unidentified bird species.

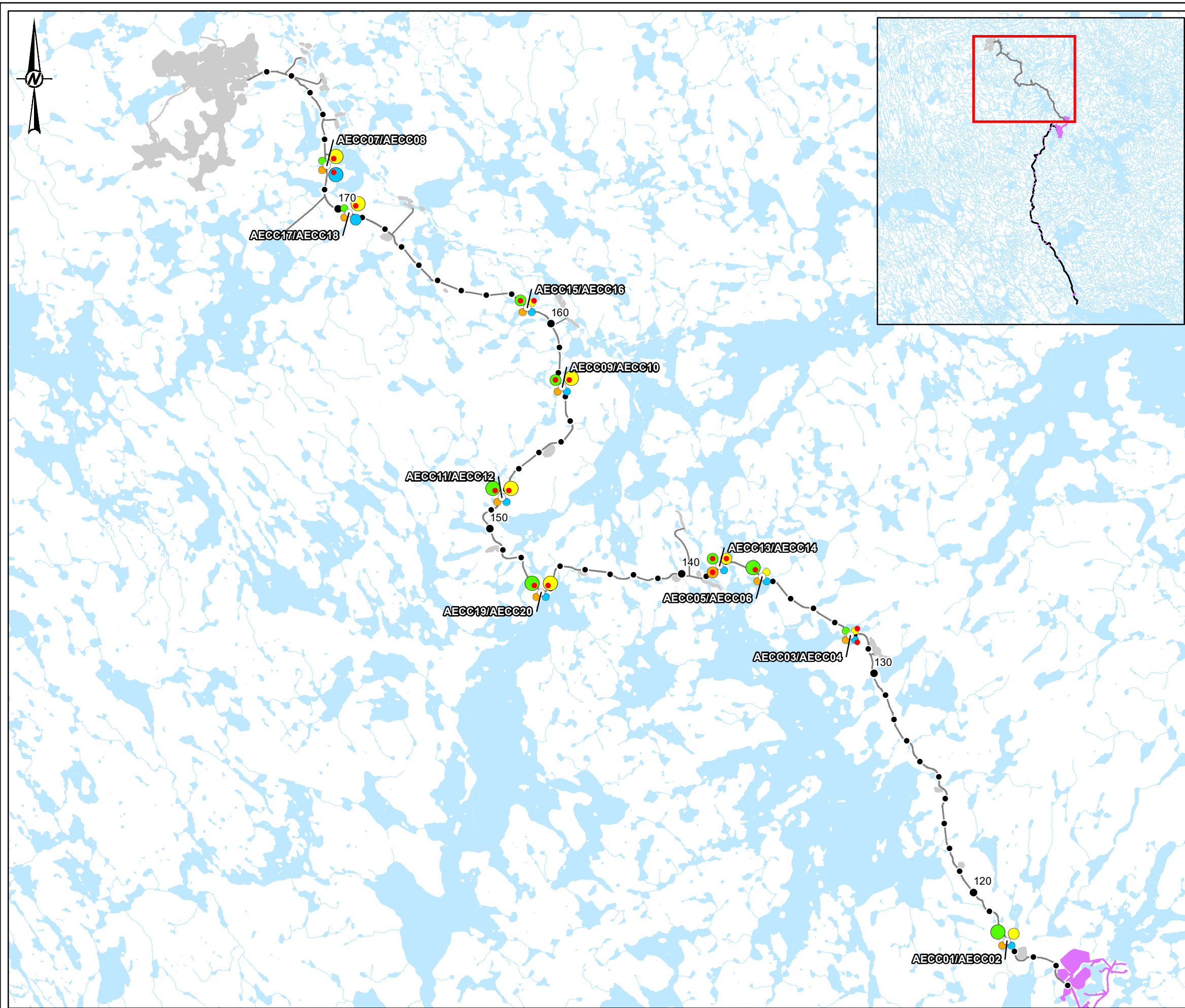
Caribou were detected between 15 February 2023 and 28 October 2023. Caribou were detected on all ten camera monitoring locations, and caribou crossing events were recorded on nine of ten camera monitoring locations (Table 8-2). Caribou crossing events were detected in all seasons.

The highest detection rate occurred at camera pair 1 (KM 118) in the spring, and 4 (KM 172) in the summer, and the highest crossing rate was observed at camera pair 6 (KM 152) in the spring (Figure 8-1; Table 8-2). Detection rates between years are variable as only individuals within the field of view at the same time are counted, with the highest count out of all photos of an event being used. Camera pair 1 has one camera directed at a foraging area where caribou were present in large numbers closer to the camera, allowing for a high number of caribou to be counted at one time compared to other camera pairs. This contributed to the high detection rate for camera pair 1. There were 66 crossing events in 2023 (Table 8-3). More crossing events were observed on days with an open road status (n=38) compared to days with a road closure (n=28; Table 8-3). This is likely due to the fact that the majority of recorded crossing events occurred during summer. All caribou crossing events recorded during spring migration in April and May occurred during road closures (Table 8-3).

Table 8-2: Caribou Detection Rates from Remote Cameras, 2023

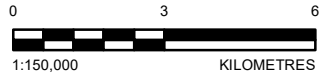
Camera Pair	Spring		Summer		Fall		Winter	
	(Caribou/Active Days)		(Caribou/Active Days)		(Caribou/Active Days)		(Caribou/Active Days)	
	Caribou Rate	Crossing Rate	Caribou Rate	Crossing Rate	Caribou Rate	Crossing Rate	Caribou Rate	Crossing Rate
1	0.87	0.00	0.06	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.02	0.02	0.00	0.00	0.01	0.01
3	0.37	0.22	0.00	0.00	0.00	0.00	0.00	0.00
4	0.02	0.00	0.51	0.20	0.01	0.00	0.12	0.02
5	0.07	0.04	0.23	0.20	0.00	0.00	0.01	0.00
6	0.37	0.28	0.17	0.12	0.00	0.00	0.00	0.00
7	0.04	0.04	0.07	0.06	0.04	0.03	0.00	0.00
8	0.07	0.04	0.01	0.01	0.00	0.00	0.01	0.00
9	0.02	0.00	0.18	0.09	0.00	0.00	0.02	0.00
10	0.31	0.30	0.12	0.10	0.00	0.00	0.00	0.00

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LEGEND

- REMOTE CAMERA LOCATION
- CARIBOU CROSSING
- CARIBOU RATE SPRING (CARIBOU/ACTIVE CAMERA DAYS)**
- 0.00 - 0.02
- 0.02 - 0.10
- 0.10 - 1.00
- CARIBOU RATE SUMMER (CARIBOU/ACTIVE CAMERA DAYS)**
- 0.00 - 0.02
- 0.02 - 0.10
- 0.10 - 1.00
- CARIBOU RATE FALL (CARIBOU/ACTIVE CAMERA DAYS)**
- 0.00 - 0.02
- 0.02 - 0.10
- 0.10 - 1.00
- CARIBOU RATE WINTER (CARIBOU/ACTIVE CAMERA DAYS)**
- 0.00 - 0.02
- 0.02 - 0.10
- 0.10 - 1.00
- KILOMETRE MARKER
- WHALE TAIL MINE SITE
- HAUL ROAD
- MEADOWBANK MINE SITE
- WATERBODY
- WATERCOURSE



REFERENCE(S)

1. INFRASTRUCTURE OBTAINED FROM AGNICO EAGLE MINES LIMITED.
2. ROAD, WATERCOURSE AND WATERBODY DATA OBTAINED FROM NATURAL RESOURCES CANADA.

COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 14N

CLIENT **AGNICO EAGLE MINES LIMITED: MEADOWBANK DIVISION**

PROJECT
MEADOWBANK COMPLEX
 2023 WILDLIFE MONITORING SUMMARY REPORT

TITLE
CARIBOU DETECTION AND CROSSING RATES FROM REMOTE CAMERA DATA (2023)

CONSULTANT	YYYY-MM-DD	2024-03-28
	DESIGNED	JF
	PREPARED	CDB
	REVIEWED	JF
	APPROVED	DC

PROJECT NO.	CONTROL	REV.	FIGURE
CA0006990.5123	4000/4040	0	8-1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

Table 8-3: Caribou Crossing Events on Remote Cameras, 2023

Camera Pair	Crossing Time	Number of Individuals	Road Closure Status
CP04	2023-02-08 10:17:15	1	Open
CP04	2023-02-08 17:17:20	1	Open
CP02	2023-03-18 07:05:01	1	Open
CP06	2023-04-26 22:00:00	2	Closed
CP10	2023-04-29 04:39:01	11	Closed
CP05	2023-04-29 19:08:04	2	Closed
CP06	2023-04-29 21:24:34	11	Closed
CP08	2023-04-29 23:07:48	2	Closed
CP07	2023-05-01 06:47:36	2	Closed
CP03	2023-05-01 09:00:00	12	Closed
CP05	2023-06-03 12:33:11	1	Closed (< 24 hour), Weather
CP04	2023-06-14 13:58:34	4	Open
CP09	2023-06-16 19:43:50	1	Open
CP04	2023-07-09 21:47:03	2	Open
CP06	2023-07-15 03:15:37	1	Open
CP10	2023-07-20 01:47:41	1	Open
CP05	2023-07-20 17:22:32	1	Open
CP06	2023-07-22 12:02:24	1	Open
CP10	2023-07-25 11:43:23	1	Open
CP05	2023-07-26 13:56:29	1	Open
CP10	2023-07-29 15:50:14	1	Open
CP05	2023-07-29 18:47:18	1	Open
CP10	2023-07-30 02:58:46	1	Open
CP10	2023-07-30 13:11:39	1	Open
CP10	2023-07-30 14:44:23	1	Open
CP06	2023-07-31 22:56:46	1	Open
CP10	2023-08-03 16:31:23	1	Open
CP10	2023-08-03 20:09:12	1	Open
CP10	2023-08-07 15:30:12	1	Open
CP06	2023-08-07 20:41:21	1	Open
CP06	2023-08-12 22:50:58	1	Open
CP09	2023-08-14 19:44:10	1	Closed, Caribou
CP05	2023-08-15 15:05:23	1	Closed, Caribou
CP04	2023-08-16 06:27:11	1	Closed, Caribou
CP06	2023-08-17 01:04:05	2	Closed (< 24 hour), Caribou
CP06	2023-08-17 04:28:06	1	Closed (< 24 hour), Caribou

Table 8-3: Caribou Crossing Events on Remote Cameras, 2023

Camera Pair	Crossing Time	Number of Individuals	Road Closure Status
CP05	2023-08-17 12:05:30	1	Closed (< 24 hour), Caribou
CP10	2023-08-18 06:12:13	1	Closed (< 24 hour), Caribou
CP09	2023-08-18 09:19:24	1	Closed (< 24 hour), Caribou
CP06	2023-08-18 11:23:17	1	Closed (< 24 hour), Caribou
CP10	2023-08-18 11:37:59	1	Closed (< 24 hour), Caribou
CP02	2023-08-18 21:04:02	1	Closed (< 24 hour), Caribou
CP04	2023-08-19 01:47:39	1	Closed (< 24 hour), Caribou
CP05	2023-08-19 17:42:13	2	Closed (< 24 hour), Caribou
CP07	2023-08-19 20:00:00	2	Closed (< 24 hour), Caribou
CP07	2023-08-21 08:00:11	1	Closed (< 24 hour), Caribou
CP08	2023-08-21 08:57:31	1	Closed (< 24 hour), Caribou
CP05	2023-08-21 16:34:38	1	Closed (< 24 hour), Caribou
CP04	2023-08-21 22:34:11	2	Closed (< 24 hour), Caribou
CP02	2023-08-22 12:01:40	1	Closed (< 24 hour), Caribou
CP05	2023-08-25 20:35:28	2	Closed (< 24 hour), Weather
CP04	2023-08-30 07:00:00	1	Speed Restriction, Muskox
CP04	2023-08-31 08:26:08	2	Speed Restriction, Muskox
CP09	2023-09-03 01:44:54	5	Open
CP05	2023-09-03 06:02:07	1	Open
CP05	2023-09-05 10:32:31	2	Open
CP04	2023-09-06 13:30:00	3	Speed Restriction, Muskox
CP05	2023-09-06 16:44:05	2	Speed Restriction, Muskox
CP05	2023-09-07 13:49:46	1	Speed Restriction, Muskox
CP05	2023-09-07 16:43:57	7	Speed Restriction, Muskox
CP04	2023-09-12 17:59:30	3	Open
CP07	2023-09-13 12:54:16	1	Speed Restriction, Muskox
CP07	2023-09-13 20:30:00	2	Speed Restriction, Muskox
CP04	2023-09-14 08:00:42	1	Open
CP07	2023-09-30 09:32:28	1	Open
CP07	2023-10-04 10:11:51	1	Open

8.6 Management Recommendations

The use of artificial intelligence expedited processing of remote camera photographs and was able to process a large number of photographs (3,337,967), which would not be feasible by manual processing. Although some wildlife detections are expected to be missed through this approach, more wildlife may be detected overall through analysis of a greater number of photographs. It is assumed that some photographs with far-away wildlife were not detected by the automated approach.

Results from 2023 are comparable to 2022 data, but not comparable to previous program years due to differences in the analysis approach used. Overall, relatively few crossing events were detected on remote cameras, and conclusions on how road characteristics influence caribou crossing behaviour cannot be drawn at this time. As discussed at the November/December 2022 TAG meeting, assessment of caribou crossing rates in relation to previous vehicle may be better assessed using caribou satellite collar data and vehicle traffic collected using remote camera data. Ground observations of caribou, including crossing events, could also be used. The automated approach may be useful for determining traffic rates from remote cameras, especially if cameras are repositioned to focus on capture of vehicle traffic.

The path forward for the remote camera program should be discussed with the TAG. The remote camera program is unlikely to contribute to adaptive management but could potentially provide insight into time between vehicle traffic and caribou crossing events. Deploying more cameras across the WTHR, and potentially the AWAR could increase the number of caribou crossing event detections. However, this would require significantly more effort to deploy and maintain cameras and to review camera photos. Any changes to program objectives and key questions, as well as any changes in sampling effort, would require a change in study design.

9.0 BLAST MONITORING

9.1 Overview

The purpose of the blast monitoring program is to measure vibration and overpressure from explosive blasts at the Whale Tail Mine and to understand how blasting vibration relates to caribou behaviour. The program aims to establish site-specific relationships between vibration and overpressure levels and blasting parameters (e.g., charge mass, charge depth), environmental conditions (e.g., seasonal variation), and propagation distances. The program includes monitoring of caribou sensory disturbance related to blasting.

Blasting is delayed when caribou or other wildlife are observed within the blast danger zone (typically 600 m from the blast centre). According to the TEMP, blasting is also delayed when caribou GST is observed within 4 km during the sensitive season, or within 5 km during the calving period, or when muskox GST is observed within 1 km (Agnico Eagle 2019). Following discussion with the TAG, the distance was relaxed to 3 km for caribou during the sensitive season, and 5 km during the calving period, to better understand effects to caribou from blasting. The Environment Department performs monitoring prior to each blast to ensure no caribou groups exceeding GST are present within these setback distances.

9.2 Objectives

The purpose of the blast monitoring program is to determine if blasts conducted at the Whale Tail Mine exceed vibration annoyance or damage thresholds, understand blasting vibration and overpressure attenuation and to characterize the behavioural response of caribou to blasting.

9.3 Duration

Blast measurement data collected in 2020 and 2021 were used to determine site-specific relationships between overpressure and vibration and blasting parameters. Caribou behaviour monitoring will continue until a sufficient sample size of caribou behaviour at different distances from blasting is collected and assessed in relation to blasting parameters.

9.4 Methods

9.4.1 Vibration and Overpressure Model

The blast monitoring program focuses on the following parameters to estimate impacts of blasting on caribou:

- Peak Particle Velocity (PPV), which characterizes ground vibration (i.e., physical shaking of the ground as a result of an explosive blast). PPV values were measured in millimetres per second (mm/s).
- Peak Pressure Level (PPL), which characterizes airblast overpressure (i.e., movement of air as a result of an explosive blast). PPL values were measured in linear decibels (dBL).

There are few if any guidelines intended to address sensory disturbance to wildlife from explosive blasting. In the absence of wildlife-specific threshold or limits, guidelines for damage and human annoyance due to blasting were used as a starting point for assessment of potential impacts to caribou. The caribou hearing threshold for low frequency noise is higher than humans, meaning that humans may be able to detect blasting related PPL at greater distances than caribou (Agnico Eagle 2019). According to IQ, caribou may be able to detect blasting vibrations at greater distances than humans.

Most guideline limits on PPV and PPL from blasting are intended to protect against minor cosmetic damage to buildings and other structures. For example, the Environment and Climate Change Canada (ECCC) *Environmental Code of Practice for Metal Mines* (Environment Canada 2009) recommends that PPV be limited to 12.5 mm/s and PPL be limited to 128 dBL at nearby receptors. Another document commonly referenced in blasting assessments is the Australian and New Zealand Environment Council (ANZEC) *Technical Basis for Guidelines to Minimise Annoyance Due to Blasting Overpressure and Ground Vibration* (ANZEC 1990). To protect against human annoyance, the ANZEC document recommends that PPV be limited to 5 mm/s and PPL be limited to 115 dBL at nearby receptors.

Models to describe the site-specific relationship between vibration and overpressure from explosive blasting were developed using blast monitoring data collected in 2020 and 2021. Explanation on calculation of the site-specific relationships between overpressure and vibration and blasting parameters are presented in Golder 2022. These models can be used to estimate propagation distance of PPL and PPV based on blast charge and depth (i.e., shallow vs. deep) by season. Blast charge mass and depth from blasts in 2021 and 2022 were input into the models to estimate PPV and PPL experienced by caribou groups which have behaviour monitoring data.

9.4.2 Caribou Behaviour Monitoring

The same general approach to caribou behaviour monitoring for blast monitoring was used as for other caribou behaviour monitoring for Meadowbank (Section 17.2). Surveys were opportunistic in nature and required groups of caribou to be present during blast events. The overall method for blasting monitoring was to identify caribou groups in proximity to blasting locations prior to blast events and recording behaviours of individuals every three minutes for 30 minutes before blasting, and a 30-minute period beginning at the blast. The behaviour categories were feeding, lying down, standing, alert, walking, and trotting or running. In the case that a different form of disturbance event occurred during the survey, such as a vehicle driving on the road, the time and type of disturbance was recorded. Videos were recorded during blast events to document changes in caribou behaviour.

Due to challenges locating caribou groups that could be monitored near blasts for long enough periods, not all surveys had data collected before, during, and after blasts. Behaviour surveys were time corrected to align before, during, and after blasts with blast timing. For example, if a blast was performed three minutes into a 30-minute survey, the three-minute interval would be corrected to zero minutes (i.e., during blast), and subsequent minutes would be reclassified as after the blast. Therefore, full thirty-minute monitoring periods were not available on all survey days where behaviour monitoring was performed. Proportions of the caribou groups performing different behaviours were summarized by the three-minute periods before, during, and after blasts. Three-minute intervals alone may not represent the entire caribou response to blasting; however, this interval was chosen to increase sample size of comparisons and standardize comparisons across days.

For days where blasting events could be tied to caribou behaviour monitoring surveys, the average proportion of caribou performing response behaviours (defined as alert, walking and trotting or running) following blasts were correlated with modelled PPL and PPV levels. Due to challenges with aligning behaviour surveys with blasts, average proportion of response behaviours in an interval of six minutes following blasts were used in Spearman correlations with PPL and PPV. If two blasts were performed on the same day, the combined blast charge of both blasts and minimum distance from caribou group monitored was used in calculation of modelled PPL and PPV.

9.5 Results

9.5.1 Historical Results

9.5.1.1 Blast Monitoring

Blasting measurements were collected using four InstanTel Minimate units in August, September, and December 2019 (Golder 2020c). Only two of the four Minimate units were outfitted with linear microphones per available equipment, therefore PPL could only be measured at two locations (R1 and R2). All measured PPV values were below the 12.5 mm/s damage threshold (Environment Canada 2009) and well-below the 5 mm/s annoyance threshold (ANZEC 1990). All but one of the measured PPL values were below the 128 dBL damage threshold (Environment Canada 2009). Seven of the 12 blasts measured during the first year of the program resulted in PPL values above the 115 dBL annoyance threshold (ANZEC 1990) at the measurement location approximately 500 m from the edge of the Whale Tail Mine. This suggests that airblast overpressure may result in annoyance impacts at receptors in close proximity to the blast site. Recommendations from the 2019 program included procurement of linear microphones to allow collection of PPL at all four locations, use of external power sources that would allow for deployments to log data from multiple blasts, and enclosing units in rugged outdoor cases that would protect them from the elements. Future PPL measurements at more distant locations were recommended to characterize the maximum distance to which PPL-related annoyance impacts may extend.

The 2020 blast monitoring program was limited due to COVID-19 (Golder 2021). Eleven blast events were monitored at two locations by Agnico Eagle in December 2020. Caribou were observed sporadically during pre-blast monitoring in spring and fall 2020. There was one instance where blasting was canceled (4 April 2020) due to observation of 25 caribou approximately 2 km from the Whale Tail Mine.

Two blasts in 2020 exceeded the PPV annoyance threshold of 5 mm/s (ANZEC 1990), and one blast exceeded the 12.5 mm/s damage threshold (Environment Canada 2009) at the measurement location closest to the Whale Tail Mine. This suggests that ground vibration from blasting may result in annoyance impacts at receptors close to the blast site. Results from 2020 contrast results from 2019, where no blasts exceeded annoyance or damage thresholds.

All blasts measured resulted in PPL values below the 128 dBL damage threshold (Environment Canada 2009). However, the 115 dBL annoyance threshold (ANZEC 1990) was exceeded for five of the 11 blasts at the measurement location 193 m from the Whale Tail Mine, and two of the 11 blasts for the measurement location 569 m from the Whale Tail Mine. This suggests that airblast overpressure from blasting may result in annoyance impacts at receptors in close proximity to the blast site as the monitoring locations (193 m and 569 m from pit edge) are closer to the blast site than the 4 km caribou distance threshold. Results from 2020 are similar to 2019 results, with the exception of a single blast exceeding damage thresholds in 2019 (Golder 2020c).

Vibration measurements were collected for 139 blasts between 20 December 2020 and 6 August 2021 within the scope of the blast monitoring program, resulting in a total of 247 individual PPV measurements and 174 individual PPL measurements suitable for analysis. Note the number of individual measurements is less than the 556 data points that might be expected given four monitoring units measuring vibration from 139 blasts (i.e., $4 \times 139 = 556$). This primarily is because the monitoring units were configured to collect measurements when PPV or PPL exceeded a trigger level, and the trigger level had to be set high enough to avoid a large number of “false positives” (i.e., measurements collected in response non-blasting events/activities). Consequently, the more-distant monitors (i.e., BM3 and BM4) did not log measurements in response to some blasts because the PPV or PPL at these locations was too low to trigger the monitoring unit.

9.5.1.2 *Caribou Behaviour Monitoring 2021-2022*

Pre-blast surveys for caribou were performed on 165 days between 3 January to 16 December 2021. Of the 165 surveys, 132 surveys yielded no species. Caribou were observed on 36 surveys, and Muskox were observed during one survey. No blasts had to be cancelled due to caribou GST exceedance in proximity to the Meadowbank Complex. One blast was cancelled, on 11 September 2021, due to six caribou present within 600 m of the blast.

Caribou behaviour monitoring occurred during 14 blast days between 6 May 2021 and 22 October 2021. Three monitoring sessions were performed in spring, nine in summer, and two in fall. Precise locations of caribou could be linked to blast locations on six days. Recorded locations of the remaining monitoring events were too imprecise for analysis. All modelled values were below the annoyance thresholds of PPV of 5 mm/s. All modelled values for PPL were below the annoyance threshold of 115 dBL, however the upper 95% confidence interval overlapped the annoyance threshold for all blasts.

Between 2021 and 2022 there were 13 behaviour monitoring sessions where behaviour before, during, and after the blast was monitored in three-minute intervals. There were 18 surveys where behaviour monitoring was conducted for at least six minutes following blasting, and location of caribou could be linked with blasting data to determine modelled PPL and PPV.

On 6 May 2021, when two blasts were performed at the same time, walking and alert behaviours increased following blasts. However, several vehicle disturbances were also recorded that appeared to elicit changes in caribou behaviour on this day. On 19 August 2021, alert behaviours were observed in the three-minute period immediately following the blast. An increase in alert and walking behaviours were observed following the blasts on 11 April, 15 April, 16 April, 24 April, and 30 April 2022 (Figure 9-1). On 15 April 2022, caribou walked towards to Mine following blasting. Walking behaviours also increased following the blast on 26 August 2022, however the increase was more delayed and mixed with an increase in lying behaviour. Caribou behaviour following the other blasts remained similar to their behaviour in the time prior to the blast, consisting primarily of lying, feeding and standing behaviours (Figure 9-1). Other forms of disturbance (e.g., vehicle traffic) occurred on five days where behaviour monitoring occurred (Figure 9-1). Vehicle traffic was recorded during behaviour monitoring on 11 April, 15 April, 7 May, and 26 August 2022. Helicopter flights were recorded on 14 June and 26 June 2022.

All modelled values were below the annoyance thresholds of PPV of 5 mm/s. All modelled values for PPL were below the annoyance threshold of 115 dBL except for 05 May 2022, however the upper 95% confidence interval overlapped the annoyance threshold for all blasts. Two blasts were conducted on five days used in the analysis (Figure 9-1). Response behaviours were observed on half of days following blasting. However, the average proportion of the caribou group performing response behaviours in six minutes following each blast based on 18 behaviour monitoring sessions, and modelled PPV (Spearman's $\rho = -0.06$, p -value = 0.82) and PPL (Spearman's $\rho = -0.15$, p -value = 0.56) did not appear to be correlated (Figure 9-1).

Caribou behaviour in the three minutes before, the three minutes during, and the three minutes following a blast is shown in Figure 9-2. On average, feeding and lying behaviours were the primary behaviours observed in each interval. An increase in alert behaviour was observed in the three-minute interval during a blast, which may correspond to the decrease in feeding behaviours during a blast. Walking behaviours showed an increasing trend following a blast, while lying and standing behaviours did not differ much between intervals.

Table 9-1: Caribou Behaviour Monitoring and Blast Data, 2021 and 2022

Blast Date	Blast Number	Quantity Explosive (kg)	Distance Between Caribou Group and Blast (m)	Proportion of Caribou Performing Response Behaviours	Predicted PPV (m/s) and 95% Confidence Interval	Predicted PPL (dBL) and 95% Confidence Interval
2021-05-06	5067SUK01, 5074MSK12	55887	2873	0.31	0.940 (0.51– 1.72)	111.3 (97.9– 124.7)
2021-05-28	5095MSL75	57553	1404	0.00	1.87 (1.12– 3.12)	114.6 (102.3– 126.8)
2021-06-04	5074MSK24	69245	1647	0.00	1.79 (1.07– 3.01)	114.3 (101.9– 126.6)
2021-08-19	5046PSK71	1164.6	1895	0.33	0.22 (0.10– 0.49)	107.3 (92.5– 122.2)
2021-08-22	5046PSK21, 5046PSK13	2336	832	0.00	0.68 (0.36– 1.30)	112.2 (99.1– 125.3)
2021-09-28	5046PSK31, 5060MSK22	4137	1579	0.00	0.21 (0.09– 0.47)	106.1 (90.7– 121.4)
2022-01-29	5144MSM92, 5130PSM40	41092	1769	0.00	1.31 (0.75– 2.30)	113.2 (100.4– 125.9)
2022-04-10	5130MSM16	90093	3750	0.00	0.91 (0.49– 1.67)	110.7 (97.1– 124.4)
2022-04-11	5137MSR07	37295	2500	0.64	0.86 (0.47– 1.60)	111.2 (97.7– 124.7)
2022-04-15	5081MSL67	74194	1466	0.33	2.11 (1.28– 3.47)	115 (102.9– 127.1)
2022-04-16	5130PSR27, 5151MSV15	11420	2014	0.76	0.60 (0.31– 1.17)	110.4 (96.6– 124.2)
2022-04-24	5144RAV02	19454	1745	0.52	0.92 (0.50– 1.68)	112.0 (98.8– 125.2)
2022-04-30	5130MSM11	178570	1503	0.08	3.02 (1.92– 4.74)	116.0 (104.3– 127.8)
2022-05-03	5151PPR99, 5144RAR04	12769	1993	0.01	0.67 (0.35– 1.28)	110.8 (97.2– 124.4)
2022-05-05	5046MSK05	42189	1107	0.00	2.03 (1.23– 3.35)	115.2 (103.2– 127.2)
2022-06-14	5039MSK25	17187	1762	0.00	0.86 (0.47– 1.60)	111.8 (98.5– 125)
2022-08-26	5130RAV02	28148	1688	0.11	1.16 (0.65– 2.07)	112.8 (100.0– 125.7)
2022-09-26	5053SUI01	4100	1559	0.00	0.49 (0.24– 0.97)	110.1 (96.3– 124)

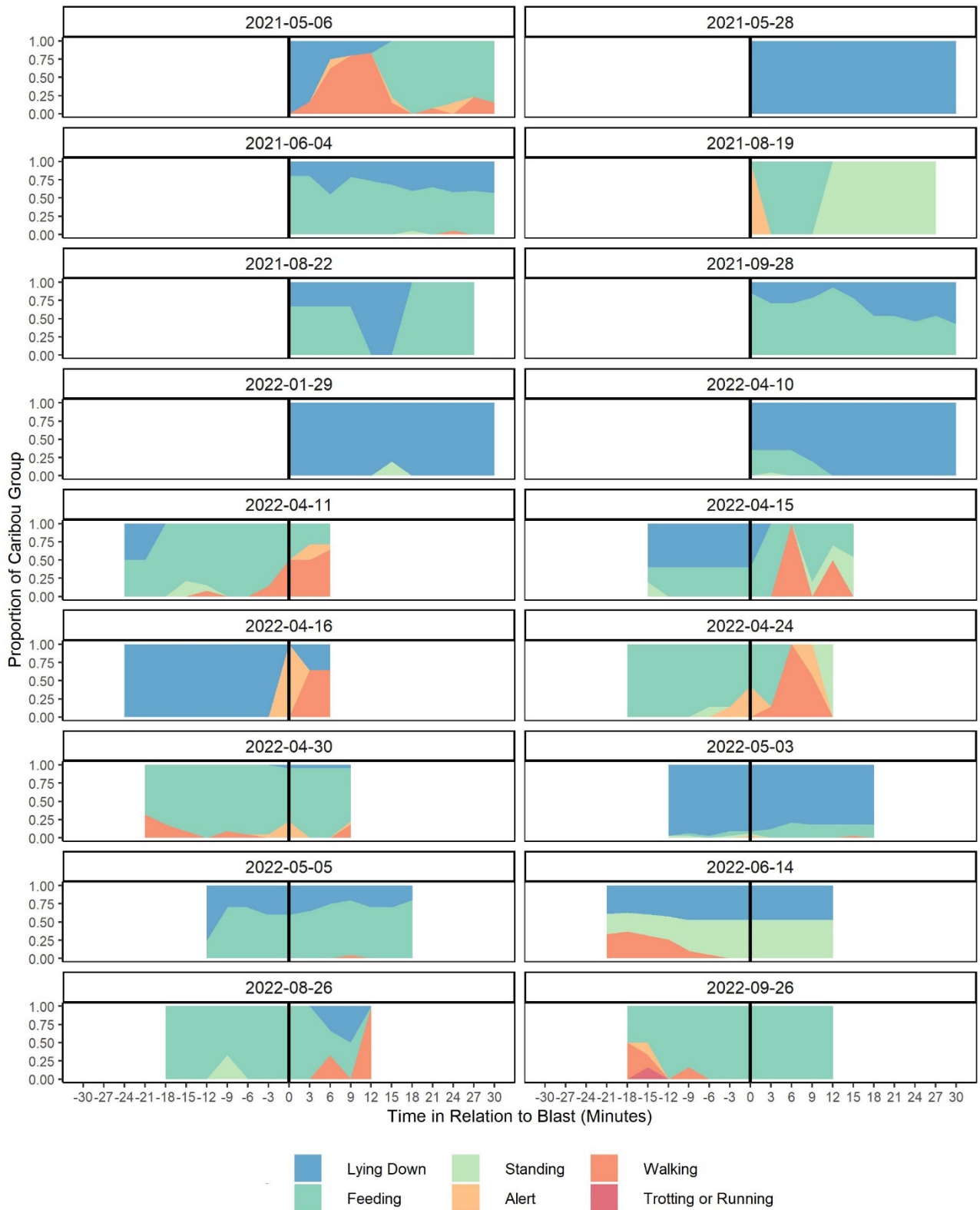


Figure 9-1: Caribou Behavioural Response Following Blasting Events

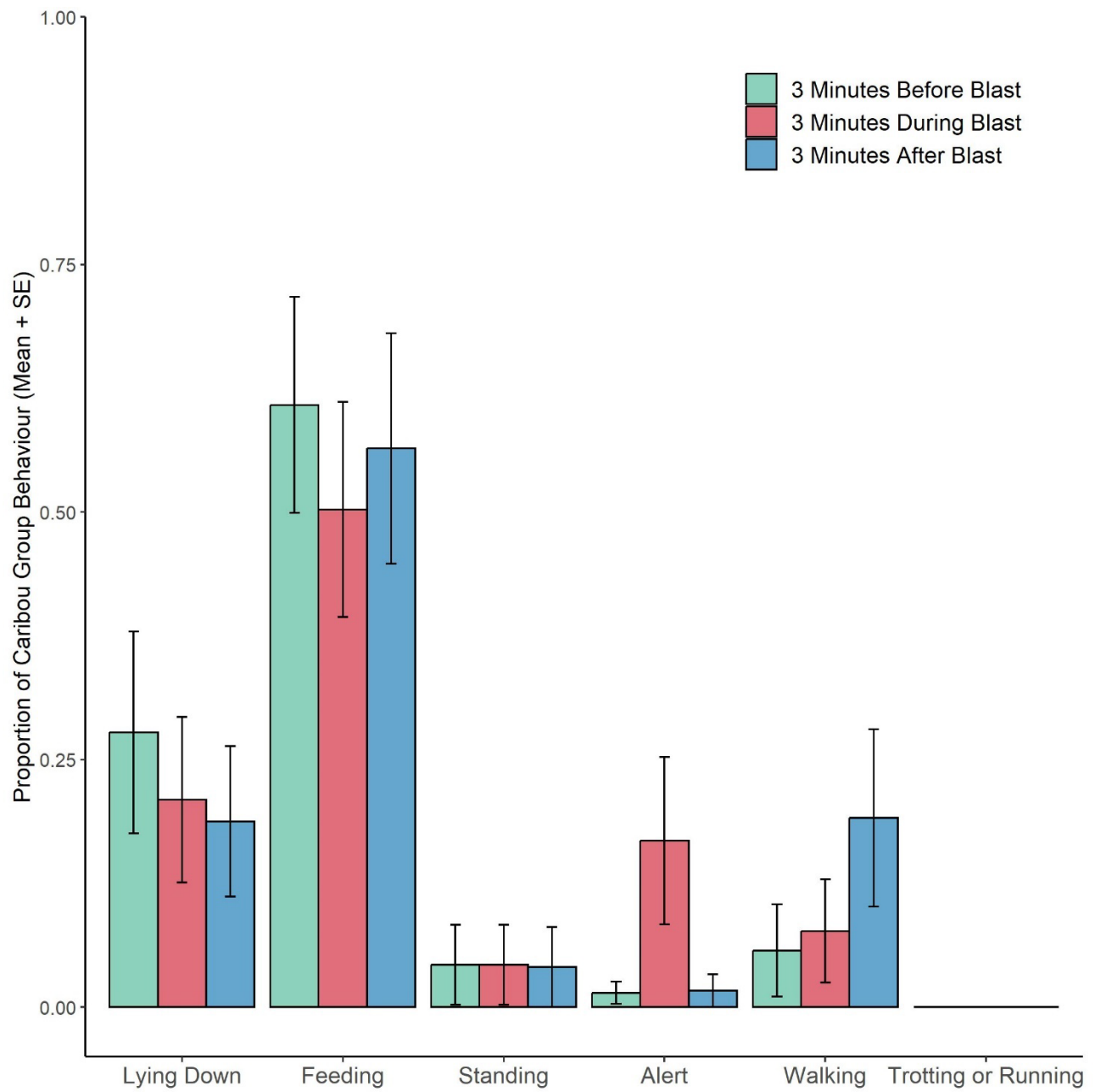


Figure 9-2: Caribou Behaviour Before, During, and After Blasting.

9.5.1.3 Vibration and Overpressure Model

The model for PPV using the largest blast charge measured in 2021 found that PPV curve fell below the ECCC threshold approximately 350 m from the blast site and fell below the ANZECC threshold approximately 900 m from the blast site. This suggests that human receptors located more than 900 m from the Whale Tail Mine are unlikely to be annoyed by ground vibration from even the largest blasts. The model for PPL using the largest blast charge measured in 2021 found that the PPL curve fell below the ECCC threshold approximately 125 m from the blast site and fell below the ANZECC threshold approximately 1,900 m from the blast site. This suggests that human receptors located more than 1,900 m from the Whale Tail Mine are unlikely to be annoyed by airblast overpressure from even the largest blasts.

9.5.2 Caribou Behaviour Monitoring 2023

Pre-blast surveys for caribou and other wildlife were performed on 244 occasions on 210 days between 2 January to 31 December 2023 (Table 9-2, Appendix A). Caribou were observed during 33 surveys, Muskox during 5 surveys, Arctic fox were observed during 4 surveys, and red fox were observed during 1 survey. In most cases, wildlife were observed 1.5-2 hours prior to blasts. Blasts were cancelled on nine occasions during seven days in 2023 due to the presence of caribou identified during pre-blast surveys. Eight of the nine cancelled blasts were during spring migration (April 18, 26, 27, 28, 29, and May 15), and in each case the blast was cancelled because caribou observations exceeded GST (Appendix A). One cancelled blast was during summer (11 August) due to the presence of 10 caribou within 600 m of the blast. On one occasion on 12 August, a single caribou was observed within 400 m of the blast location and was monitored by the environment crew. On this occasion, blasting was postponed until the animal moved out of the blast radius and further from the mine site.

Caribou behaviour monitoring sessions in relation to blasting activities were not conducted during 2023 due to lack of caribou groups available for behaviour monitoring during the appropriate timeframe. Caribou observed during pre-blast surveys were mostly detected 1.5-2 hours prior to blasting and were not in the area during the caribou behaviour monitoring timeframe, which is 30 min before and after a blast. In cases when caribou were in close proximity during the timeframe for a scheduled blast, blasts were cancelled (eight occasions) or postponed (one occasion).

Table 9-2: Number of Pre-Blast Surveys per Month, 2023

Month	Number of Pre-Blast Surveys
January	20
February	19
March	23
April	33
May	16
June	20
July	19
August	25
September	30
October	20
November	11
December	8
Total	244

9.6 Management Recommendations

Caribou behaviour responses to blasting were recorded in 2021 and 2022. For the previously completed analysis, the metric used to quantify caribou response to blasting (i.e., average response behaviours six minutes following blasting) was determined based on data availability. Preliminary analysis found that this metric was not correlated with modelled PPV and PPL values, however the sample size was relatively small. Behaviour monitoring could aim to monitor caribou for a longer period of time following blasting to determine the time taken for response behaviours to return to pre-blast levels. Future analyses using more behaviour monitoring sessions could account for other factors such as caribou group size and presence of other disturbances (e.g., vehicle traffic).

During 2023, pre-blast surveys were performed on 244 occasions on 210 days. Surveys for caribou behavioural responses to blasting were not conducted during 2023 due to lack of caribou groups available for behaviour monitoring during the appropriate timeframe, but monitoring will continue during 2024 based on caribou observation opportunities.

10.0 HUNTER HARVEST STUDY

10.1 Overview

As outlined in the original TEMP (Cumberland 2006) and the June 2019 version (Agnico Eagle 2019), and as a requirement of NIRB Project Certificate No. 004 Terms and Conditions 51 and 54, the Baker Lake Hunter Harvest Study (HHS) was initiated in March 2007 by Agnico Eagle. The HHS was conducted in association with the HTO to monitor and document the spatial distribution, seasonal patterns, and harvest rates of hunter kills and angler catches within the RSA.

After low participation during the first year of the study, methods were strategically adapted, participation increased steadily, and valuable information on harvest patterns in the Baker Lake area was collected. The HHS, through regular visits, contributed to developing a strong relationship with local harvesters, the HTO, and the GN.

The HHS was suspended for three years (2016 to 2018) to develop new approaches and direction. Following consultation with the HTO, KivIA, GN, and other agencies in November 2016 (Winnipeg) and June 2017 (Ottawa), Agnico Eagle reinitiated the HHS in March 2019, which for the first time also encompassed the Whale Tail RSA as part of the Meadowbank Complex. The study approach was similar to previous years, but suggestions and guidance received during the consultation period were incorporated into the study. The study was conducted from 2020 to 2022 and continues into 2023.

The full 2023 HHS report is provided in Appendix G (Agnico Eagle 2023a).

10.2 Objectives

The primary objectives of the HHS are to monitor potential project-related effects on harvesting of wildlife by residents of Baker Lake. This objective is achieved by estimating the following key metrics:

- 1) The distribution of caribou, muskox, and wolverine harvest by residents of Baker Lake.
- 2) The total level (or an index of) caribou, muskox, and wolverine harvest by residents of Baker Lake.

Other objectives of the HHS, established in consultation with the TAG, or other participants include:

- 1) Supporting creel surveys by gathering information on Arctic char (*Salvelinus alpinus*), lake trout (*Salvelinus namaycush*), lake whitefish (*Coregonus clupeaformis*), and Arctic grayling (*Thymallus arcticus*) catch rates and Inuit-use patterns in the Baker Lake area.
- 2) Understanding regional distribution of hunting and fishing activity.
- 3) Investigating seasonal timing of hunting and fishing activity.
- 4) Determining whether increased harvest and catch rates are associated with the AWAR and WTHR.

As discussed during consultation with stakeholders, the HHS will further seek to: a) increase and maintain the hunter participant rate in the future of the program; b) improve resource protection; c) improve hunter awareness and education; d) increase the integration of IQ and Traditional Knowledge; e) increase availability of data to support a collective approach to understanding wildlife harvest; and f) assist Agnico Eagle in mitigative actions and the GN in management decisions.

10.3 Methods

The wildlife species that are the focus of the HHS are caribou, muskox and wolverine; however, harvest data on other species, such as wolf, Arctic fox, geese, and other birds are also collected. The few species in the study were deliberately chosen to make data entry and collection as simple as possible. To support creel surveys, data on fish harvest (i.e., Arctic char, lake trout, lake whitefish, and Arctic grayling) are also collected.

Inuit and non-Inuit residents, at least 16 years of age, are eligible to participate in the harvest survey. Harvest calendars are provided on a household basis, rather than an individual basis, to simplify data entry and collection, and reflect household hunting patterns. The harvest calendar is attractive and consists of local photographs of wildlife and Baker Lake residents. See 2023 calendar in Appendix A of the HHS (Appendix G). Space is provided for each calendar day where harvest details can be documented. A map is provided at the end of the calendar that delineates a 4 km² UTM grid within the Baker Lake and Meadowbank Complex areas. Each grid has a unique code to facilitate recording of information. When calendars are issued, participants or participating households are encouraged to write harvest details (e.g., number of animals, sex, age, and location [i.e., grid code]) for the appropriate date on the calendar.

Participants were interviewed in person three times during the year (i.e., June 2023, October 2023, and February 2024) by the harvest study coordinator. During the January 2024 interviews, remaining data from 2023 were collected. The purpose of the interviews is to ensure all harvest data are recorded on the calendars and to collect incidental information to compliment calendar data, including notable Caribou movements, aggregations, and unique observations. Between interview periods, participants were often contacted by phone or social media to encourage recording of harvest data.

Features of the 2023 HHS included: 1) building long-term relationships between participants and researchers; 2) increasing engagement with participants on social media platforms such as Facebook and Instagram; and 3) increasing incentives for participating in the study (e.g., gas vouchers and prizes).

10.4 Results

Results of the 2023 HHS are summarized below. Additional information such as distribution maps and data comparisons across all years of the HHS are presented in Appendix G.

Hunter Harvest Study Results

- The HHS included 75 participants by the end of 2023, which is higher than the participants in 2020, 2021, and 2022 (64, 55, 59 respectively).
- Given the historical and current number of hunters in Baker Lake, an estimate of 300 to 350 active hunters was used in the 2023 analysis.
- Of the 75 HHS participants in 2023, caribou harvest data was collected from 63 participants, which represents approximately 18% to 21% of total hunters in the community.
- The distribution of hunting is highly concentrated in the vicinity of the Hamlet of Baker Lake and along the AWAR to approximately KM 85.
- The 2023 HHS data indicated that 37% of reported harvest occurred within 5 km of the AWAR, and 71% occurred within the Meadowbank RSA. Threshold levels of 20% set for monitoring the effects of the Meadowbank mine development on the distribution of caribou harvest within the RSA were not exceeded.

- In 2023, one caribou was harvested within 5 km of the WTHR. Overall harvest numbers were too low to determine whether harvests have increased following construction of the WTHR.
- Within the Whale Tail RSA (note – overlaps with the Meadowbank RSA), a total of 74 harvests were reported in 2023. Given the low numbers of reported harvests close to the WTHR and the prohibition of the public from the WTHR, it is unlikely that the presence of the road has resulted in increased harvest.
- In 2023, a total of 646 caribou were reported as being harvested by 63 participants in the Baker Lake HHS, which includes harvests in the Meadowbank and Whale Tail study areas.
- Given that the 63 hunters represent an estimated 18% to 21% of the Baker Lake hunting community, the total estimated number of caribou harvested in 2023 in the Baker Lake community ranged from 3,076 to 3,589 animals.
- Based on the NWMB (2004) and inclusive Baker Lake HHS results (2007 to 2015; 2019 to 2023), highest caribou harvests have occurred August and December, followed by a smaller peak between March and May.
- The similar pattern between the studies indicates that seasonal hunting preferences have not changed markedly in the last decade.
- Other harvested mammals included 7 muskox, 18 wolverine, 47 wolves, and 3 red fox. One grizzly bear was reported as harvested in 2023, but outside of HHS boundaries. No Arctic fox were reported as harvested in 2023. Several bird species were harvested in 2023 with the most common species being Canada goose.
- For the second year in the HHS, beluga (*Huso huso*) and an unidentified species of seal were reported as being harvested by Baker Lake hunters, but all were harvested well beyond the RSA.

Creel Survey Results

- The number of fishermen reporting successful fishing trips in 2023 was 30, which is higher than the average of 23 fisherman from 2007 to 2015 and 2019 to 2021 (12 years). The highest numbers of fisherman reporting success in 2023 were in May and June period, which was also the fishing period with the most active fisherman.
- Fishing trips, regardless of success rate, did not generally occur beyond the immediate areas of Baker Lake, Whitehills Lake, and along the lower AWAR. The average number of fish harvested per fisherman in each month was highest in November with lower averages in the summer months.
- Lake trout and Arctic char were the most common species caught by fisherman and were reported at lower numbers than in 2022.

10.5 Accuracy of Impact Predictions

A summary of the impact predictions identified in the TEMP Version 7 (Agnico Eagle 2019) that are evaluated by the HHS is presented in Table 10-1.

Table 10-1: Accuracy of Impact Predictions-- Baker Lake Hunter Harvest Study

Potential Effect	Threshold	Threshold Exceeded (2023)	Adaptive Management Implemented	Status
AWAR				
Hunting by Baker Lake Residents	The AWAR will not result in significant changes in the spatial distribution, seasonal pattern, or harvest levels of caribou by Baker Lake hunters. Changes will not exceed 20% of historical harvest activities within the RSA	NO (71% of harvest in RSA in 2023 compared to 67% baseline; average of 75% of harvest within RSA since 2007)	Future discussion with HTO and GN representatives required to identify management options	Hunter Harvest Study (including the Creel Survey)
WTHR				
Hunting by Baker Lake Residents	No change in harvest	NO (Only one harvest recorded within 5 km of the WTHR; harvests within the WTHR RSA were higher than most other years [except 2011 and 2019], including pre-construction)	None required. Access by hunters is restricted in the growing season and very limited hunting occurs in the winter.	Hunter Harvest Study Satellite-Collaring Program

AWAR = All Weather Access Road, WTHR = Whale Tail Haul Road, RSA = Regional Study Area, HTO = Hunters and Trappers Organization, GN = Government of Nunavut.

10.6 Management Recommendations

The Baker Lake HHS and Creel Survey should be continued on an annual basis to monitor the hunting and fishing patterns of Baker Lake residents, and the potential effects of the Meadowbank Mine Complex. Meetings with participants every four months (three times/year) in 2024 are particularly important in maintaining contact, building relationships, expanding the study, and collecting good harvest data. Participation rates can be maintained by continuing to use social media platforms such as Facebook and Instagram, expanding connections on these platforms, ensuring that all participants are visited during the three scheduled field visits, and continuing with distribution of the well-received year-end prizes while in the community. In addition, an effort should be made to continue recruiting new, and particularly young, hunters for the HHS.

11.0 INTEGRATED CARIBOU MONITORING RESULTS

Various caribou monitoring programs have been developed (Section 2.0 to Section 10.0) to understand and manage Mine-related effects on caribou. This section summarizes caribou monitoring data collected in 2023 and lists potential Mine-related effects.

11.1 Integrated Results

Table 11-1 summarizes results from each of the nine programs that monitored caribou activity and responses to Mine-related activity in 2023, while Table 11-2 summarizes potential Mine-related effects on caribou in 2023.

Table 11-1: Summary of Caribou Monitoring Activities and Management Responses in 2023

Monitoring Program	Summary of 2023 Monitoring Results	Summary of 2023 Management Responses
Caribou Management Decision Tree (Section 2.0)	Decision tree used when caribou were close to Project facilities as outlined in the TEMP Version 7.	Decision tree process uses data from the road, Mine site, viewshed surveys, and satellite collaring to determine the scale of caribou monitoring and management required.
Road Surveys (Section 1.0)	A total of 215 surveys completed on the AWAR, and 242 on the WTHR. High caribou numbers were observed along the AWAR in April, October, and November. High numbers of caribou were observed along the WTHR in April.	The AWAR was fully closed (24-hour closure) on 97 days, closed for less than 24 hours on 56 days, and had speed restrictions applied for 16 days. In total the AWAR was closed for 2,975 hours. The WTHR was fully closed (24-hour closure) on 37 days, partially closed (less than 24-hour closure) on 64 days and had speed restrictions applied for 60 days. The WTHR was closed for 1,503 hours during 2023 (Appendix B).
Pits and Mine Site Ground Surveys (Section 4.0)	Mine site surveys conducted on a weekly basis at minimum, and incidental observations recorded. Caribou sightings at Meadowbank were highest from May to July, and muskox sightings were highest in August. At the Whale Tail site, caribou observations were highest in April and muskox sightings were highest in August and September.	Deterrent actions were implemented to keep wildlife, including caribou safe from site hazards. Road crossing data thoroughly collected throughout the year to support mitigation decisions. There were no observations from Mine and Pit surveys that resulted in mitigation (Appendix A).
Wildlife Habitat Monitoring (Section 5.0)	A 55 ha, or 9.5% change in footprint at the Whale Tail site occurred between the assessment in 2021 and 2023. The change in footprint since the previous assessment less than 25%. Therefore, the next comprehensive analysis is scheduled for 2024.	Not Applicable.
Caribou Satellite-Collaring Program (Section 6.0)	Agnico Eagle intends to continue collaboration with the GN DoE caribou satellite-collaring program. The collar data analysis completed in 2023 included data from 2003 to 2023, and individuals from five caribou herds	Daily satellite collar maps still received during sensitive seasons and used to assess need for increased monitoring. Further exploratory analysis could aim to determine spring and fall migration timing differences between herds, where sample size allows.

Table 11-1: Summary of Caribou Monitoring Activities and Management Responses in 2023

Monitoring Program	Summary of 2023 Monitoring Results	Summary of 2023 Management Responses
Viewshed Surveys (Section 7.0)	A total of 1,345 viewshed surveys were conducted over 87 days in 2023. Of the 1,345 viewshed surveys, 109 surveys (8%) had caribou sightings, and a total of 4,442 caribou were reported. Survey efforts were conducted between 5 January and 30 December, with the highest survey effort occurring in the spring.	Viewshed surveys informed road closure by acting as an early warning system for caribou approaching the WTHR. Viewshed surveys on days with road closures coincided with days road surveys occurred, meaning that additional mitigations did result from solely viewshed surveys.
Remote Camera (Section 8.0)	Remote cameras were deployed at ten locations along the WTHR. Caribou were detected at all ten locations, and road crossings were identified at nine out of ten locations.	No management response based on remote camera program in 2023.
Blast Monitoring (Section 9.0)	Caribou monitoring conducted prior to blasts throughout 2023. Caribou behavioural monitoring in response to blasting did not occur in 2023 due to lack of caribou groups available for behaviour monitoring during the appropriate timeframe.	Nine blasts were postponed due to presence of caribou in the vicinity of the Whale Tail Mine.
Hunter Harvest Study (Section 10.0)	A total of 646 caribou were reported as being harvested by 63 participants in the Baker Lake HHS. The data indicated that 37% of reported harvest occurred within 5 km of the AWAR, and 71% occurred within the Meadowbank RSA. In 2023, one caribou was harvested within 5 km of the WTHR.	The Hunter Harvest Study results support that harvest was less than threshold. Management actions are not required.

AWAR = All Weather Access Road, GN DoE = Government of Nunavut Department of Environment, GST = Group Size Threshold, HHS = Hunter Harvest Study, RSA = Regional Study Area, WTHR = Whale Tail Haul Road.

Table 11-2: Summary of Mine-related Effects on Caribou in 2023

Monitoring Program	Potential Effect	Threshold	Threshold Exceeded (2023)	Adaptive Management Implemented
Caribou Management Decision Tree (Section 2.0)	Sensory Disturbance	No threshold but Decisions Trees followed when caribou are seen near Mine facilities	Not Applicable	YES. Multiple road closures and notices. Use of Decision Tree for Management and Monitoring.
Road Surveys (Section 3.0)	Sensory Disturbance	No threshold. Decisions Trees followed when caribou are seen near Mine facilities.	Not Applicable	YES. Multiple road closures and notices, good engagement of Wildlife Log by site staff. Use of Decision Trees for Management and Monitoring.
	Project-related Mortality	Caribou or muskoxen will not be killed or injured by vehicle collisions. Threshold level of mortality is two individuals per year.	NO	There was one muskox mortality that took place on the WTHR on 06 November 2023.
Pits and Mine Site Ground Surveys (Section 4.0)	Sensory Disturbance	No threshold. Decisions Trees followed when caribou are seen near Mine facilities.	Not Applicable	YES. Deterrent actions were used to keep wildlife, including caribou safe from site hazards. Use of Decision Tree for Management and Monitoring.
Wildlife Habitat Monitoring (Section 5.0)	Habitat Loss	10% above total loss of high suitability habitat.	Not Applicable	Not Applicable.
Caribou Satellite-Collaring Program (Section 6.0)	Sensory Disturbance	No threshold. Decisions Trees followed when caribou are seen near Mine facilities.	Not Applicable	YES. Multiple road closures and notices. Use of Decision Tree for management and monitoring.
Viewshed Surveys (Section 7.0)	Sensory Disturbance	No threshold. Decisions Trees followed when caribou are seen near Mine facilities.	Not Applicable	YES. Multiple road closures and notices. Use of Decision Tree for Management and Monitoring.
Remote Camera (Section 8.0)	Sensory Disturbance	No threshold.	Not Applicable	Not Applicable.
Blast Monitoring (Section 9.0)	Sensory Disturbance	NPC-119 criteria. Monitoring is continuous, but with increasing intensity as caribou approach the blasting site.	NO	YES. Blasting postponed on nine occasions due to caribou presence. Use of Decision Tree for management and monitoring.
Hunter Harvest Study (Section 10.0)	Hunting by Baker Lake Residents	The AWAR will not result in significant changes in the spatial distribution, seasonal pattern, or harvest levels of caribou kills by Baker Lake hunters. Changes will not exceed 20% of historical harvest activities within the RSA.	NO	NO. Future discussion with HTO and GN representatives required to identify management options.
		No change in harvest along the WTHR.	NO	

AWAR = All Weather Access Road, GN = Government of Nunavut, NPC = Noise Pollution Control, RSA = Regional Study Area, WTHR = Whale Tail Haul Road.

12.0 PREDATORY MAMMAL DEN MONITORING

Predatory mammals, representing a valued ecosystem component (VEC), occur and are known to den in the vicinity of the Meadowbank and Whale Tail Mine facilities. Sensory disturbances near active dens such as blasting, vehicles and, most significantly, ground personnel, may negatively impact denning success by inducing stress responses in the adult mammals, which can result in den abandonment.

Predatory mammal den monitoring is applicable to four species: wolf (natal dens), grizzly bear (natal/overwintering dens), Arctic fox (natal dens), and wolverine (natal dens).

12.1 Objectives

The purpose of the predatory mammal den monitoring program is to identify and monitor active dens in close proximity to mining operations in order to protect any detected dens from disturbance.

12.2 Methods

Data will be collected on predatory mammal abundance and behaviour during ground surveys, vehicle surveys, and Viewshed surveys. Active den sites identified during baseline studies will also be monitored. If a wildlife technician suspects or confirms that an active den is present within the active footprint and vicinity of Project mines facilities or roads, a den management plan will be prepared. The plan will include consultation with the GN with respect to obligations under *The Wildlife Act*, SNU 2003, c. 26. Ground personnel and vehicle access will be restricted in the vicinity of the den as needed to minimize disturbances at the den. The den management plan outlines a monitoring schedule (dependent on seasonal timing) and will inform further mitigation strategies as required. See Figure 13 and Appendix G of the 2019 TEMP Version 7 (Agnico Eagle 2019) for den management and protection plan components.

12.3 Results

Monitoring of predatory mammal dens was conducted informally in 2023 through observations recorded during other monitoring programs. Potential effects due to Project-related activities were not identified to trigger monitoring of predatory mammal dens. No predatory mammal dens were observed or monitored in 2023.

12.4 Accuracy of Impact Predictions

A summary of the impact predictions identified in the TEMP Version 7 (Agnico Eagle 2019) is provided in Table 12-1; however, no impacts to denning predators were observed in 2023.

Table 12-1: Accuracy of Impact Predictions-- Disturbance to Denning Predatory Mammals for the Meadowbank and Whale Tail Sites

Potential Effect	Threshold	Threshold Exceeded	Adaptive Management Implemented	Monitoring Methods
Disturbance to Denning Predators	Predatory mammal den failures will not be caused by Mine-related activities. Threshold is one den failure per year.	NO	NO	Road Surveys, daily and weekly systematic pit and Mine site ground surveys, viewshed, incidentals and vehicle encounter.

12.5 Management Recommendations

When an active den site is identified in close proximity to Project facilities, a den management plan should be developed that outlines a monitoring schedule and appropriate mitigation strategies.

13.0 RAPTOR NEST MONITORING

13.1 Overview

The raptor nest monitoring program is designed to determine Project-related effects, and the success of mitigation strategies to prevent disturbance to nesting raptors. Within the Meadowbank LSA and AWAR LSA, peregrine falcons have previously nested in quarries along the AWAR, the Portage Pit, and Goose Pit. Monitoring of peregrine falcon nests in quarries along the AWAR has been conducted since 2009. The Portage, Goose, Vault, Whale Tail, and IVR Pits are inspected for peregrine falcon activity daily prior to and during the nesting season and managed under the Peregrine falcon Management and Protection Plan (Appendix E, Agnico Eagle 2019).

Monitoring in 2023 included surveys for nests associated with pits and quarries along the AWAR and WTHR. Raptor activity and potential nest locations were also noted on other surveys including road surveys, viewshed surveys, freshet monitoring, and on-site environmental monitoring. In addition, a research program was conducted by Arctic Raptors in 2023, to determine the relationship between nest success and Mine activity (Appendix H).

13.2 Objectives

The objectives of the raptor nest survey monitoring program are to monitor disturbance to nesting raptors, and Project-related mortality to raptors. Nest management plans are developed for nests in proximity to the Project. One mortality, and one nest failure are thresholds for the Project.

13.3 Duration

Raptor nest monitoring will continue throughout operation and closure stages of the Mine to evaluate if mitigation measures to prevent disturbance to nesting raptors are successful.

13.4 Methods

13.4.1 Nest Monitoring

Raptor nests within 1.5 km of the active footprint and Project facilities require monitoring from 1 May to 15 September. Daily monitoring is required for nests within the active footprint, or within 500 m of Project facilities (i.e., the area of concern; Agnico Eagle 2019), and weekly monitoring is required for nests outside the area of concern. Nest management plans are developed as required, in consultation with subject matter experts and the GN, which include establishment of no-disturbance buffers in accordance with BC Guidelines for Raptor Conservation or TAG recommendations. If raptor nesting activity is detected in the Portage, Goose, Whale Tail, and IVR Pits, or other site infrastructure, the Environment Department is notified, and these pits are then inspected daily for nesting activity from 25 May to 1 July. Management and mitigation approaches for peregrine falcon nests in proximity to pits and facilities are outlined in the 'Peregrine falcon Management and Protection Plan on the Meadowbank Gold Project Site (Appendix E, Agnico Eagle 2019). Raptor activity is also noted on other surveys including pit and Mine site inspections, road surveys, and viewshed surveys.

Raptor nest monitoring in 2023 included monitoring of raptor nests in quarries along the AWAR and WTHR. Peregrine falcons have nested in quarries along the AWAR since 2009, and surveys of these quarries have been performed since 2010. Quarries along the WTHR were checked regularly for raptor nesting evidence between 5 May and 28 September in 2023 (Table 13-1). Quarries along the AWAR (Table 13-1) were visited on an approximately weekly basis between 16 May and 17 August in 2023. Raptor activity and potential nest locations were also noted on other surveys including road surveys, viewshed surveys, freshet monitoring, and on-site environmental monitoring. Surveys in pits or other areas were conducted when raptors were observed during

Mine site inspections or incidental observations. In addition to monitoring completed by Agnico Eagle technicians, Arctic Raptors completed ground-based surveys, and two helicopter surveys for nesting raptors from 23 to 28 May and 09 to 12 August 2023. Surveys were focused on nesting habitat along the AWAR and WTHR (Appendix H).

Nest sites are monitored using non-disruptive techniques, which include monitoring from vehicles within the quarry or from the road, to ensure that active nests are not approached by Mine personnel. Presence of aggressive adults, eggs, and chicks are used to identify active nests. To minimize direct disturbance to nesting birds and as per recommendations, intensive monitoring by approaching nests by foot, is not conducted. Deterrents were applied to two known sites to harbour raptors in 2023 to discourage raptor nesting.

13.4.2 Nest Occupancy Analysis

Arctic Raptors analyzed data from raptor nest surveys performed in years 2015 – 2017, 2019, and 2021 – 2023 at 144 locations considered to be raptor nesting habitat. Occupancy modelling was used to determine nest occupancy across years for peregrine falcons (77 nest sites), rough-legged hawks (33 nest sites), and gyrfalcon (*Falco rusticolus*; 13 nest sites). Annual occupancy probabilities were used to determine average rate of change in occupancy (λ) for peregrine falcons and rough-legged hawks. A λ value greater than one indicates population increase, and a λ value less than one indicates population decrease. The number of young that hatched at each nest were used to estimate reproductive success. Full methods for the analysis are included in Appendix H (Arctic Raptors 2023).

13.5 Results

13.5.1 Nest Monitoring

Four peregrine falcon nests were documented in Quarries 3 and 8 in 2023 (Table 13-1; Figure 13-1). Nests have previously been identified in both these quarries (Table 13-1). A peregrine falcon was observed at Quarry 19 being protective of a nest, however no breeding activity was observed prior or during subsequent visits. No raptor nesting evidence was observed in quarries along the WTHR in 2023 (Quarries 10.5, 26, 30, 35, 50, and 52; Table 13-1). No other raptor nests were identified during pit checks or incidentally during other surveys in 2023.

A summary of observations made at the peregrine falcon nests along the AWAR in 2023 is detailed in Table 13-2. Raptor nest management plans were not developed at the active nest sites, as Mine-related activity was already restricted within the quarries, with the only disturbance being traffic on the nearby AWAR. Intensive monitoring, which would include approaching nests by foot, was not conducted. Nest locations are not publicized to prevent inadvertent disturbance by curious Mine employees.

Table 13-1: Record of Peregrine falcon Nesting from 2009 and 2023

Location	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Comments (2023)
Quarry 1	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No falcons observed
Quarry 2	No	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes	No	Yes	Yes	Yes	No	Two falcons observed flying
Quarry 3	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Two falcons observed with one egg in the nest.
Quarry 4	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No falcons observed
Quarry 5	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	No	One falcon observed sitting.
Quarry 6	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No falcons observed
Quarry 7	No	No	No	No	No	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Two falcons observed alert and flying
Quarry 8	No	No	No	No	No	No	No	No	Yes	No	No	No	No	Yes	Yes	Three falcons observed with two fledglings.
Quarry 9	No	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	No	No	Two falcons observed alert and flying
Quarry 10	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No falcons observed
Quarry 11	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Two falcons observed flying
Quarry 12	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No falcons observed
Quarry 13	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No falcons observed
Quarry 14	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No falcons observed
Quarry 15	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No falcons observed
Quarry 16	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Two falcons observed flying
Quarry 17	No	No	No	No	No	No	No	No	Yes	No	No	No	No	No	No	No falcons observed
Quarry 18	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	No	One falcon observed alert or standing on a rock
Quarry 19	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	No	One falcon near a nest, no other breeding behaviour confirmed
Quarry 20	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No falcons observed
Quarry 21	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Two falcons observed flying
Quarry 22	No	No	No	No	No	No	No	No	Yes	Yes	Yes	No	Yes	Yes	No	No falcons observed
Quarry 10.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	No	No falcons observed
Quarry 26	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	No	No falcons observed
Quarry 30	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	No	No falcons observed
Quarry 35	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	No	No falcons observed
Quarry 50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	No	No falcons observed
Quarry 52	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	No	No falcons observed
Portage Pit	No	No	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No falcons observed
Vault Pit	N/A	N/A	N/A	N/A	No	No	No	No	No	No	No	No	No	No	No	No falcons observed
Goose Pit	N/A	N/A	No	No	No	No	No	Yes	No	No	No	No	No	No	No	No falcons observed
Whale Tail Pit	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	No	No	No falcons observed
IVR Pit	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No	No falcons observed

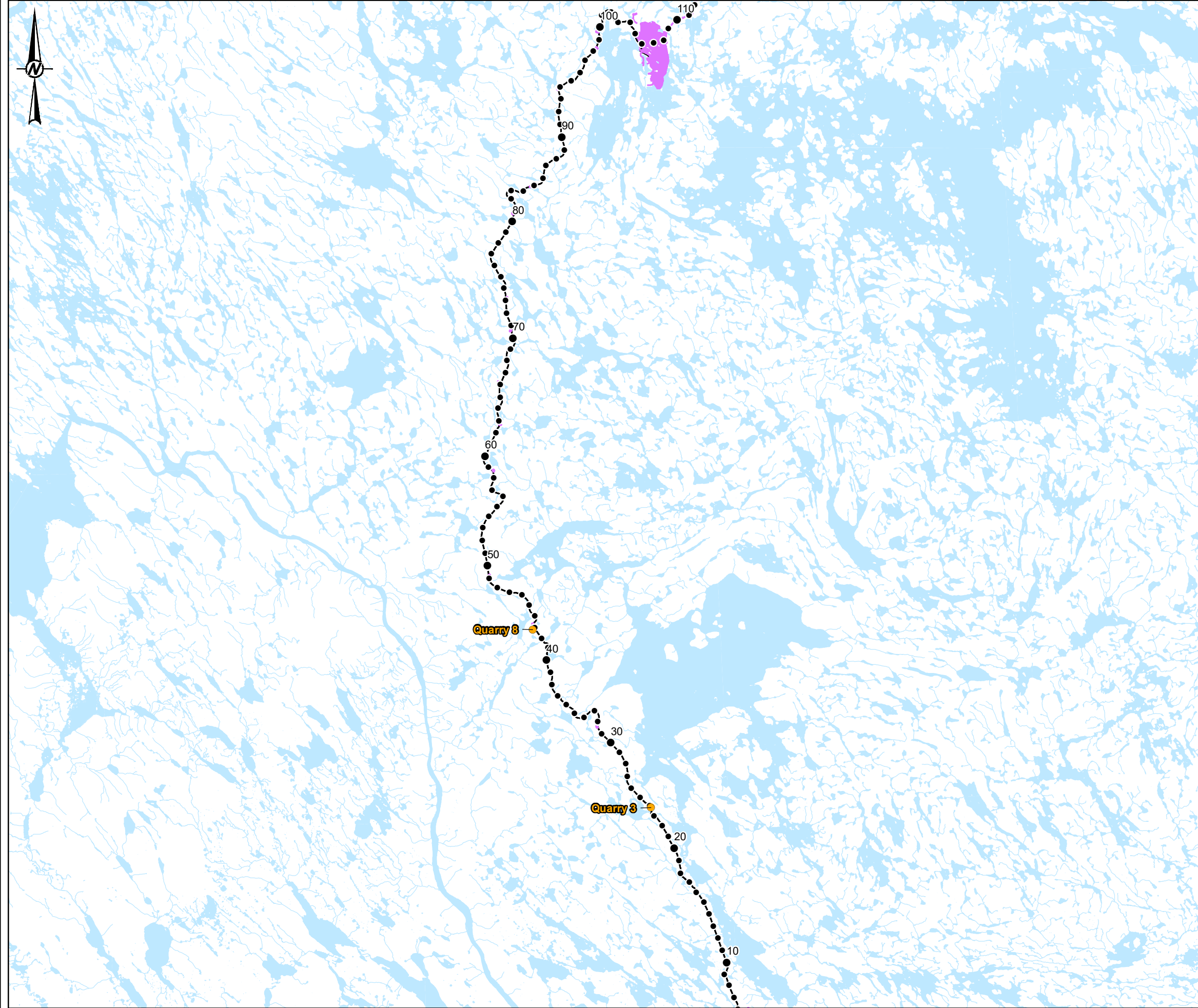
N/A = Not Applicable.

Table 13-2: Peregrine Falcon Nest Monitoring Data, 2023

Date	Quarry 3 (-96.125, 64.503)	Quarry 8 (-96.303, 464.63)
16-May-23	No activity observed	No activity observed
18-May-23	Two falcons observed standing on the rocks	No activity observed
24-May-23	Pair of Falcons with one egg in the nest displaying breeding behaviour	No activity observed
30-May-23	-	One falcon observed
05-Jun-23	Pair of Falcons with one egg in the nest	One falcon observed flying
11-Jun-23	No activity observed	Two adult falcons observed flying
20-Jun-23	One falcon flying	One adult observed on alert
14-Jul-23	-	Two adult falcons observed being vocal and flying
04-Aug-23	No activity observed	One adult observed displaying breeding behaviour
12-Aug-23	-	Two chicks and three adult falcons
17-Aug-23	One falcon observed	One adult and two fledglings observed

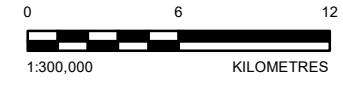
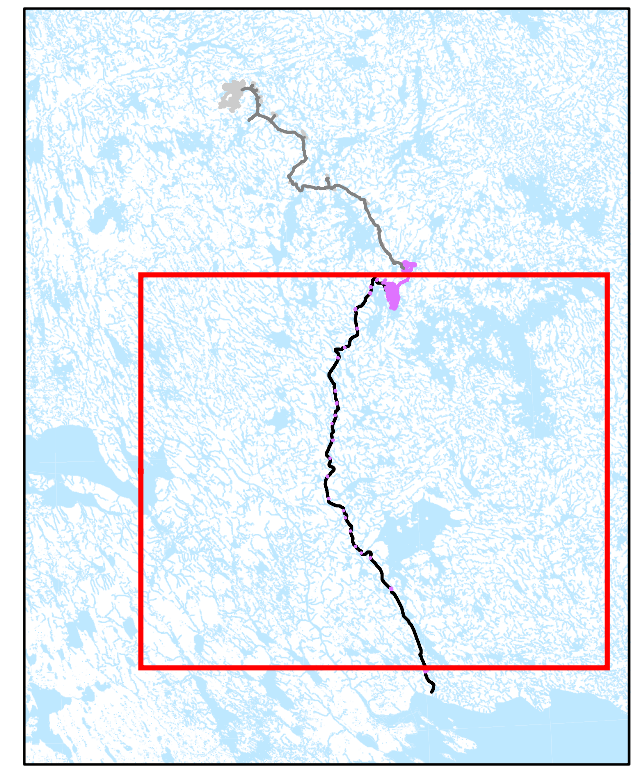
"-" indicates no monitoring event on given day.

PATH: Y:\urimby\CAD-GIS\client\Agnico_Eagle_Mines_Ltd\White_Tail\09_PROJECTS\CA0006990_5123_4000_4040_13_01_PEREGRINE_FALCON_NEST_LOCATIONS_2023.mxd PRINTED ON: 2024-03-22 AT: 4:08:03 PM



LEGEND

- OBSERVED PEREGRINE FALCON NEST
- KILOMETRE MARKER
- WHALE TAIL MINE SITE
- HAUL ROAD
- MEADOWBANK MINE SITE
- ALL WEATHER ACCESS ROAD
- WATERBODY
- WATERCOURSE



REFERENCE(S)
 1. INFRASTRUCTURE OBTAINED FROM AGNICO EAGLE MINES LIMITED.
 2. ROAD, WATERCOURSE AND WATERBODY DATA OBTAINED FROM NATURAL RESOURCES CANADA.
 COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 14N

CLIENT **AGNICO EAGLE MINES LIMITED: MEADOWBANK DIVISION**

PROJECT
**MEADOWBANK COMPLEX
 2023 WILDLIFE MONITORING SUMMARY REPORT**

TITLE
PEREGRINE FALCON NEST LOCATIONS (2023)

CONSULTANT	YYYY-MM-DD	2024-03-22
	DESIGNED	JF
	PREPARED	CDB
	REVIEWED	JF
	APPROVED	CDLM

PROJECT NO. CONTROL REV. FIGURE
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13.5.2 Nest Occupancy Analysis

Results of the analysis did not indicate project-related effects on rough-legged hawk occupancy and the population may be increasing marginally ($\lambda = 1.01 \pm 0.11$ [mean \pm standard error]). Similarly, there were no indicated project effects on gyrfalcon occupancy ($\lambda = 1.13 \pm 0.22$) and the population may be increasing. Marginal decrease in peregrine falcon occupancy was observed ($\lambda = 0.99 \pm 0.04$) and distance to disturbance was suggested to be an important variable. There was a negative relation between distance to disturbance and the probability that an unoccupied site would become occupied. However, these results may be biased by the quantity of nests observed in the quarry, and better representation of nesting sites parallel to the AWAR or further from the AWAR may provide more insight on project affects. Full results of the nest occupancy analysis are included in Appendix H (Arctic Raptors 2023).

13.6 Accuracy of Impact Predictions

A summary of the impact predictions identified in the TEMP Version 7 (Agnico Eagle 2019) is provided in Table 13-3. Results of the nest occupancy analysis indicate that there has been a marginal decrease in peregrine falcon nest occupancy, but this cannot be strongly correlated to effects from the Project. Results may be related to inconsistent monitoring and lack of statistical power to determine project-related effects (Appendix H).

Table 13-3: Accuracy of Impact Predictions to Nesting Raptors and Raptor Mortality

Potential Effect	Threshold	Threshold Exceeded (2023)	Adaptive Management Implemented	Monitoring Methods
Disturbance to Nesting Raptors	Raptor nest failures will not be caused by Mine-related activities. Threshold is one nest failure per year.	NO	NO	Active raptor nest monitoring Daily and weekly systematic pit and Mine site ground surveys
Raptor Mortality	One individual	NO	NO	AWAR and WTHR surveys Daily and weekly systematic pit and Mine site ground surveys Incident and vehicle encounter reports

AWAR = All Weather Access Road, WTHR = Whale Tail Haul Road.

13.7 Management Recommendations

Agnico Eagle will continue to monitor raptor nests in accordance with the TEMP Version 7 (Agnico Eagle 2019). This includes annual raptor nest surveys of quarries along the AWAR, WTHR, pits, and waste rock piles; development of nest management plans; and implementation of the Peregrine Falcon Management and Protection Plan, when required. Active nests will be monitored throughout the season to determine nest success or failure. Agnico Eagle will continue to document raptor observations during other programs (e.g., road surveys, viewshed surveys).

Starting in 2021, multiple surveys have been completed each year by a third-party expert (Arctic Raptors), to allow estimation of nest detection error. Mitigations for raptors that were implemented in 2023 include applying deterrents in the pre-season to two quarries known to harbour raptors and project-related activity was expected and regular monitoring of viewshed quarries (Appendix H; Arctic Raptors 2024).

14.0 WATERBIRD NEST MONITORING

14.1 Overview

The Whale Tail expansion required the construction of two dykes within Whale Tail Lake to divert water from the proposed pit to surrounding lakes and tributaries, resulting in flooding that with potential impacts to migratory birds and their nests. Through collaboration with Trent University and ECCC, research studies were initiated in 2018 to determine the effectiveness of planned mitigation measures for migratory birds during flooding of the Whale Tail South area. This study was conducted over three field seasons (2018, 2019, 2021) - before, during and after flooding to investigate mitigation options to minimize flooding-related impacts to birds in the Whale Tail South area. The objectives of the study were to:

- 1) Determine the effectiveness of audio and visual deterrents for prevention of flood-zone nesting.
- 2) Estimate the number of nests and species composition lost due to flooding.
- 3) Examine the behavioural response of birds to:
 - a) deterrents (e.g., impacts to duration on the nest) and
 - b) flooding (determine whether birds re-nested nearby after the flooding events).

Complete methods and results for Objectives 1, 2, and 3a are published and available online in the Trent University MSc Thesis “*Assessing and Mitigating the Impacts of Mining-Induced Flooding on Arctic-Nesting Birds*” (Holmes 2022) and are not revisited further here. Refer to previous Wildlife Monitoring Summary Report for more details. A manuscript focussing on the investigation into the effectiveness of deterrents (Objective 3a) was also initially submitted for publication in late 2021. Comments were received in 2022, and the manuscript was re-submitted in January 2024 to *Avian Conservation and Ecology*.

Visual and audio deterrents tested in the 2018 and 2019 programs were not recommended as effective mitigation measures for preventing bird nest loss. Nest densities observed from 2018 and 2019 were used to estimate nest displacement during 2018 to 2020. Nest displacement to date was estimated to be lower than FEIS Addendum predictions. The 2020 field program intended to determine behavioural response to flooding (i.e., nest density and recolonization time in the area post-flooding) but was not completed due to COVID-19.

Methods and results related to Objective 3b have been previously provided in Appendix A of the 2021 Migratory Bird Protection Report. Follow-up studies in 2021 indicated that while the average number of nests and bird density increased from 2019 to 2021 in upland control plots and nest density declined in flood zone plots, these differences were not statistically significant (Holmes 2022). Further analysis in 2022 of individual re-sightings support the hypothesis that birds will re-nest nearby post-flood, at least anecdotally. Six re-sighted Lapland longspur (*Calcarius lapponicus*) moved their nests an average of 180 m and uphill by 4 masl (metres above sea level), while six semipalmated sandpipers (*Calidris pusilla*) moved their nests an average of 151 m and downhill by 0.18 masl. The complete analysis and report on behavioural responses will be included in a second Trent University MSc Thesis manuscript, expected to be submitted prior to September 2024.

References for any publications produced in 2024 will be provided in the 2024 Annual Report, but otherwise reporting under the Migratory Bird Protection Plan is considered complete at this time.

15.0 BREEDING BIRD MONITORING

15.1 Overview

The breeding bird PRISM (Program for Regional and International Shorebird Monitoring) plot and breeding bird transect monitoring programs were designed to evaluate potential Project-related changes in breeding bird species abundance, richness, and diversity over time. The program is one component of the larger monitoring strategy to evaluate the success of mitigation measures implemented to minimize the amount of vegetation (i.e., bird habitat) removed or degraded (e.g., dustfall) by the Project, and whether certain Mine activities such as the Mine site or AWAR have resulted in reduced or compromised habitat function or effectiveness (i.e., zone of influence) for breeding birds.

For the breeding bird transects, data analysis in 2011 and 2015 indicated that no road-related effects had occurred to date, and thresholds had not been exceeded; therefore, annual transect surveys were permanently suspended after 2015. In 2022, Agnico Eagle reached an agreement with the ECCC to contribute to regional bird monitoring programs by conducting 48 PRISM plots from 2021 to 2031, and to complete Breeding Bird Surveys (BBS) along the AWAR and WTHR when possible and at a minimum of every three years.

15.1.1 Breeding Bird Surveys

Two BBS routes, consisting of 50 stations set every 800 m each, were established by qualified personnel along AWAR and the WTHR in 2022 and were surveyed in 2023. A total of 24 bird species were recorded on AWAR and 19 bird species were recorded on WTHR in 2023. Lapland longspur, horned lark (*Eremophila alpestris*), Canada goose, and Savannah Sparrow (*Passerculus sandwichensis*) were the most common species observed in both AWAR and WTHR. Detailed descriptions of the routes and station locations are provided in the Meadowbank Complex 2023 Breeding Bird Surveys and PRISM Plots Summary Report (Appendix I).

15.1.2 PRISM Plots

Seventeen PRISM plots were surveyed during six field days in June 2023. In total, 23 bird species were observed in the PRISM plots. There were four mammal species and nine bird species observed incidentally while travelling between plots. Horned lark and Lapland longspur were the most common species observed during the survey. Full results of the 2023 surveys, as well as sampling methods and locations are available in Appendix I.

15.2 Management Recommendations

Agnico Eagle will continue to survey 48 PRISM plots selected by ECCC over 10 years (2021 to 2031), and completion of AWAR and WTHR Breeding Bird Survey (BBS) routes opportunistically when qualified individuals are on site. At a minimum, these BBS routes will be conducted every three years during the operations, closure and post-closure phases of the project.

It is recommended that PRISM plots and BBS routes be surveyed in June 2024. The remaining 27 PRISM plots should be completed prior to the mine closure and BBS routes surveyed within the committed three-year cycle.

16.0 NON-NATIVE PLANT SURVEYS

16.1 Overview

This section includes the methods, results, and mitigation measures to minimize the spread of non-native invasive plant species resulting from mine activities. The Government of Nunavut (GN) and Environment and Climate Change Canada (ECCC) define a non-native species as ‘an organism that is not normally found in a region’ (CESCC 2010). Additionally, according to Section 91 of *The Wildlife Act*, S.NU. 2003, c 26, invasive species shall not be released into a habitat in which that species does not belong or never naturally occurred. Any introductions of non-native plant species must be promptly reported to the GN Department of Environment. In 2019, Agnico Eagle initiated a non-native plant monitoring study to assess and monitor the potential introduction of non-native plant species, including weeds or invasive species (Golder 2020d). Subsequent monitoring events occurred in the month of July in each of 2020-2023. Surveys will continue to be completed annually as per the TEMP Version 7 (Agnico Eagle 2019).

16.2 Methods

The Canadian Endangered Species Conservation Council (CESCC) lists 17 species not normally found in Nunavut with a potential for becoming established, 14 of which are vascular (non-native) plants to the region (CESCC 2010; Appendix J). These species were included as targets for the non-native plant surveys. Additionally, any species known to be non-native to Nunavut were also included as targets for non-native plant surveys, to meet requirements of Section 91 of *The Wildlife Act*, S.NU. 2003, c 26.

Surveys at the Meadowbank Complex were conducted by a WSP vegetation ecologist between 11 to 23 July 2023. The Meadowbank Complex area includes the AWAR, WTHR, Baker Lake tank farm, Whale Tail Mine site, and Meadowbank Mine site areas.

Species were documented as they were encountered. Non-native plant surveys consisted of targeted surveys focused within high-priority or high-potential areas within the Project footprint. The high-potential areas were identified as the Project area perimeter, highly trafficked areas (e.g., fuel station), areas surrounding buildings, shipping containers, along existing roads/trails or areas of disturbance within the Project area, as well as adjacent to the AWAR and WTHR road. High potential areas also included survey locations from where non-native plants were observed in previous monitoring years. In areas where non-native species were observed, meander surveys were conducted outside of the disturbance footprint to determine if these species had established in the native tundra. Given the length of the AWAR and WTHR, the roads were travelled via vehicle at slow speeds, while observers looked for obvious signs of weed infestations along road margins. Periodic stops were undertaken to complete meanders in areas with high potential for weed occurrences (e.g., pull-outs, work areas, road-side quarries, and other areas with disturbed substrates). A GPS was used to collect a track file of the meander route and point locations of surveys conducted.

When non-native or invasive plant species were encountered, the following information was recorded: site ID; surveyor name; GPS coordinates; photos of the occurrence / infestation; species name; estimated area of infestation; estimated number of plants (e.g., <10, 10 to 100, 100 to 1,000, >1,000) of each species; estimated cover of bare ground; growth stage (i.e., seedling, in bud, seed set, expired); recommended action for each species; and record of any hand pulling completed.

16.3 2023 Results

No non-native plants, as identified by the CESSC, were recorded along the AWAR, WTHR, Baker Lake tank farm, and Whale Tail sites. A total of 198 individual locations were surveyed for non-native plants in 2023 (Table 16-1). Eighteen surveys were completed in undisturbed tundra around the Meadowbank Mine site, WTHR, and AWAR to survey the presence/absence of non-native species. No non-native plants were found in the undisturbed areas surveyed.

One non-native plant species, common pea (*Pisum sativum*) was observed within the Meadowbank Mine site within a snow dump area. Approximately 150 common pea plants found within a 245 m² area were hand-pulled, bagged, and disposed of at the time of the survey. Common peas are an annual plant native to Ethiopia, the Mediterranean, and central Asia and have a growing season of 60 to 150 days (Pavek 2012). Given the climate at the Meadowbank Complex and short growing season, there is a low likelihood that this species could complete its life cycle and become an established population in this area; however, monitoring this location is recommended in 2024 to confirm there are no new common pea plants observations.

A summary of the locations where non-native plant surveys were completed is presented in Table 16-1 and Figure 16-1.

Table 16-1: Summary of 2023 Non-Native Plant Survey Effort

Location of survey	Total number of survey locations
AWAR	14
AWAR quarry	21
Baker Lake tank farm	2
Meadowbank Mine site	88
Undisturbed tundra	18
Whale Tail Mine site	31
WTHR	10
WTHR Esker/Quarry	14
Total	198

16.3.1 Historical Results

From 2019 to 2022, many observations of what was then identified as flixweed (*Descurainia sophia*) were reported (Agnico Eagle 2019, 2022a) (Table 16-2); however these observations were confirmed in 2022 to be a native species, northern tansy mustard (*Descurainia sophioides*) (WSP 2023). This species is a biennial herb that colonizes gravel bars, roadsides, waste sites and disturbed soils which are abundant at the Meadowbank site. For more details on the identification of northern tansy mustard, see WSP 2023.

Similarly, previous annual TEMP reports have reported the non-native species, scentless chamomile (*Tripleurospermum inodorum*) (Table 16-2); however these observations were confirmed in 2022 to be a native species sea mayweed (*Tripleurospermum maritima*). For more details on the identification of sea mayweed, see Agnico Eagle (2023).

Two non-native species, lamb's quarters (*Chenopodium album*) and alsike clover (*Trifolium hybridum*) were observed in 2020; however there have been no observations of these species since 2020.

Table 16-2: Historical Non-Native Plant Survey Results

Year	Number of Survey Locations	Non-Native Plants Species Recorded ^(a)
2019	107	flixweed, scentless chamomile
2020	175	flixweed, scentless chamomile, lamb's quarters, alsike clover
2021	202	flixweed, scentless chamomile
2022	193	none

a) Both flixweed and scentless chamomile observed in previous years have been confirmed in 2022 to be native species, northern tansy mustard and sea mayweed respectively (Agnico Eagle 2023).

16.4 Management Recommendations

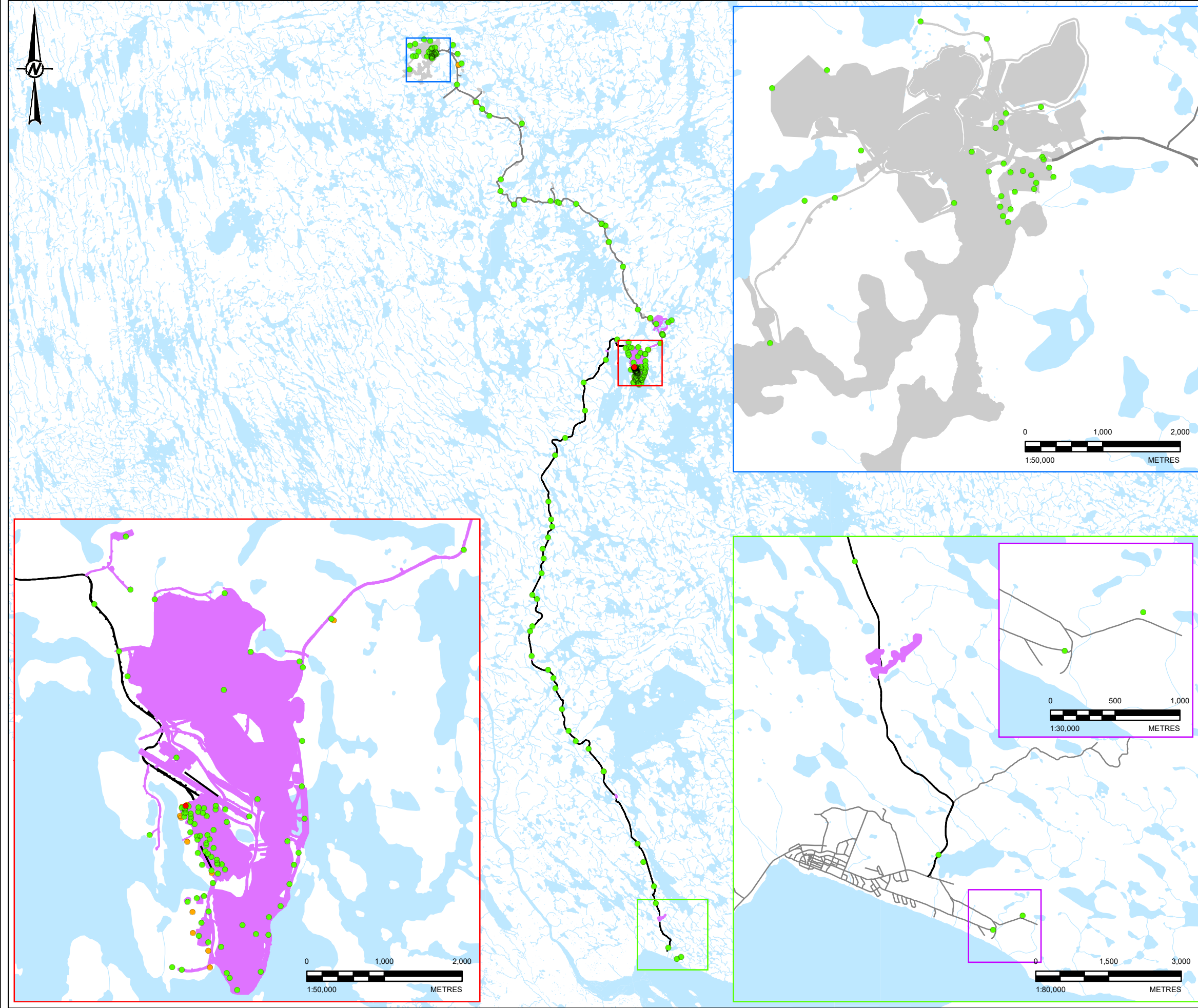
The 2023 survey was the fifth consecutive year of non-native species monitoring at the Meadowbank Complex. One element occurrence of a non-native plant, common pea, was documented in 2023. These plants were hand pulled and removed at the time of survey. Surveys in 2024 should return to this location to monitor for new common pea plants.

Efforts for non-native plant management, including identified non-endemic species, should continue and added diligence should be undertaken with regards to areas of high traffic from equipment. Continued and thorough cleaning of equipment and materials prior to entering the site, per the TEMP Version 7, will prevent seed of non-native species from being introduced. Surveys for the 14 non-native plant species identified by CESSC as well as other species not native to Nunavut should continue to be completed annually. Mechanical control such as mowing or hand pulling, as appropriate for the site setting, is recommended for any identified non-native plant species. Chemical herbicide treatments are not recommended to be used at this point as the tundra is a very sensitive ecosystem.

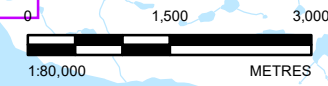
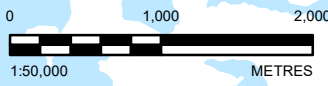
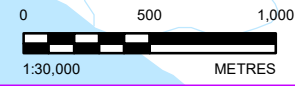
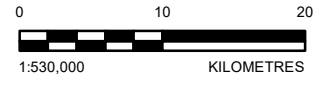
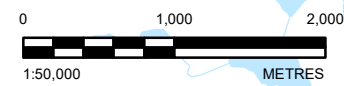
As a further measure of prevention, the CESSC (2010) has developed posters that show non-native species in Nunavut. We recommend that these be displayed at the Meadowbank Complex to raise staff awareness and be incorporated into staff on-boarding materials, which could be used to supplement non-native plant information and posters used on-site. These materials can also be displayed at the Agnico Eagle office/crew house in Baker Lake and potentially in other areas within the community.

A management plan for non-native plant species employing adaptive management may be implemented if non-native plant species are observed within the Meadowbank Complex area. A non-native plant management plan would describe the methods for the eradication, control and/or minimization of the encroachment of non-native plant species into new areas and outline additional measures such as on-boarding and training in the identification of non-native plant species for the area.

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- LEGEND**
- PROJECT DATA**
- SURVEY LOCATION - NON-NATIVE SPECIES OBSERVATION
 - SURVEY LOCATION - NO NON-NATIVE SPECIES OBSERVED
 - SURVEY LOCATION - UNDISTURBED TUNDRA
 - TRANSECT
 - WHALE TAIL MINE SITE
 - HAUL ROAD
 - MEADOWBANK MINE SITE
 - ALL WEATHER ACCESS ROAD
- BASE DATA**
- WATERCOURSE
 - WATERBODY



REFERENCE(S)

1. INFRASTRUCTURE OBTAINED FROM AGNICO EAGLE MINES LIMITED.
2. ROAD, WATERCOURSE AND WATERBODY DATA OBTAINED FROM NATURAL RESOURCES CANADA.

COORDINATE SYSTEM: CANADA ALBERS EQUAL AREA CONIC

CLIENT **AGNICO EAGLE MINES LIMITED: MEADOWBANK DIVISION**

PROJECT **MEADOWBANK COMPLEX 2023 WILDLIFE MONITORING SUMMARY REPORT**

TITLE **2023 NON-NATIVE PLANT SURVEY RESULTS**

CONSULTANT	YYYY-MM-DD	2024-03-22
	DESIGNED	HH
	PREPARED	CDB
	REVIEWED	JF
	APPROVED	CDLM

PROJECT NO. CA0006990.5123 CONTROL 4000/4040 REV. 0 FIGURE 16-1

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17.0 SPECIAL STUDIES

17.1 Snow Study

17.1.1 Overview

Collared caribou from the Lorillard herd have historically interacted with the AWAR and WTHR during their spring and fall migrations. The following sections focus exclusively on characterizing snow conditions and caribou interaction along the WTHR during spring (see Section 3.6 for information on caribou interaction with the AWAR).

The direction of travel for these animals crossing the WTHR has always been from the west to the east in the spring. Snow is removed periodically from the WTHR (and AWAR) to promote safe driving conditions for the transport of Meadowbank Mine staff and supplies, and mined ore between Whale Tail and the Meadowbank Mine sites. Snow is removed or redistributed from the road surface to areas adjacent to the roads. The snow is redistributed in a way to minimize the size of any snow berms formed on the side of the roads (i.e., snow is pushed to the eastern, downwind side of the road). Doing so also reduces the amount of snow management activity required due to snow drifting back onto the WTHR.

Per Whale Tail Expansion Project commitment 9 from the TAG Meeting held in Baker Lake, 11-13 June 2019, Agnico Eagle committed to complete a three-year snow monitoring program as part of the TEMP that measures snow conditions adjacent to the WTHR. Snow hardness and sinking depth are important for caribou energy expenditure of locomotion, where the combination of softer and deeper snow may inhibit caribou movements (Fancy and White 1987). The goal of the snow monitoring is to determine whether changes to snow resulting from snow removal along the WTHR result in conditions that potentially inhibit caribou movements. The primary questions to be answered by the snow study monitoring were:

- How do snow conditions within the managed snow area where caribou are crossing the WTHR differ from the snow conditions in adjacent portions of the berm where crossing did not occur?
- How do snow conditions and caribou track characteristics differ between areas within the snow berm and areas beyond the berm where snow conditions have not been altered by snow removal activity?

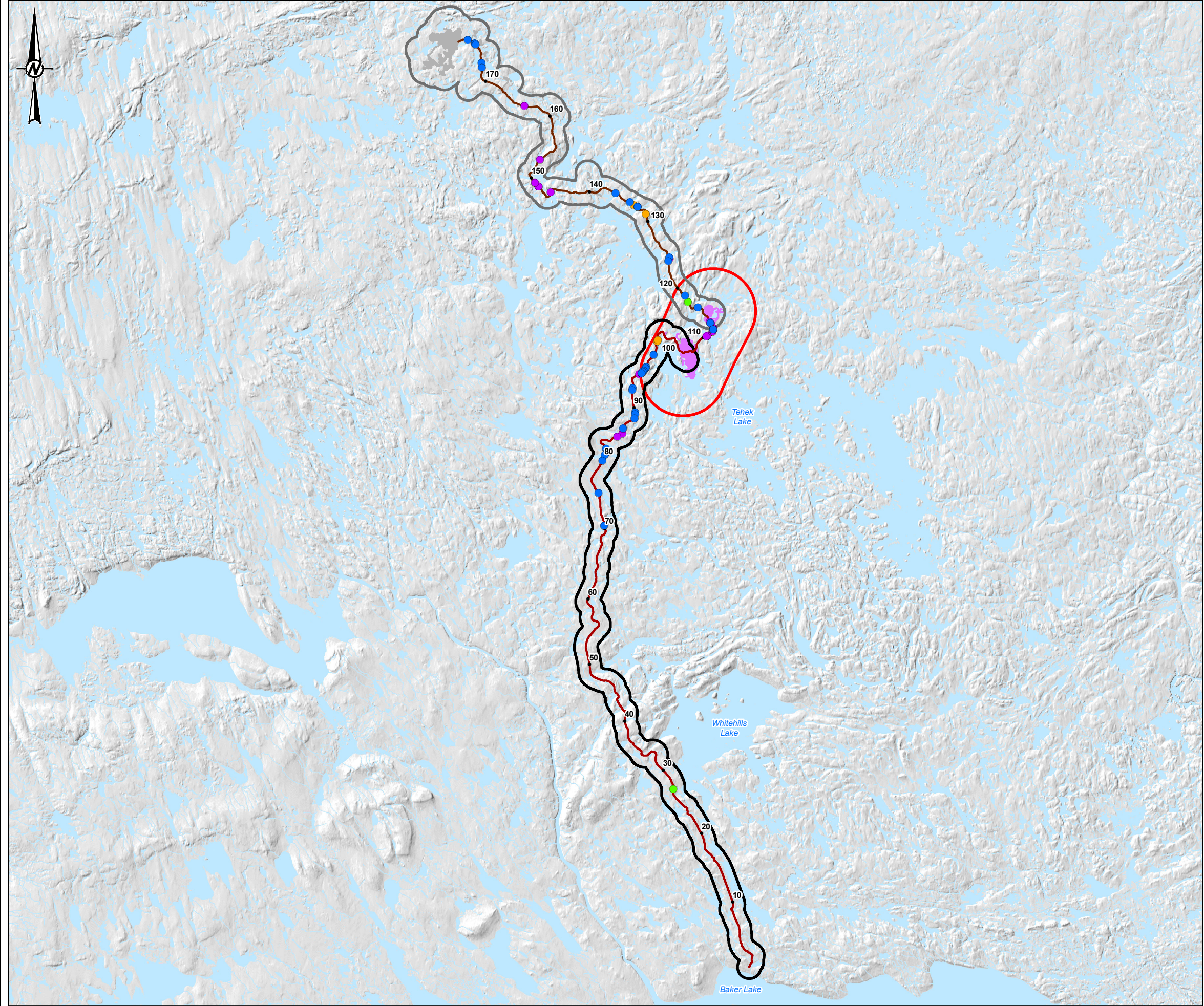
An annual sample goal of 36 survey locations was originally proposed over three years. Since 2020, a number of challenges have limited the program from achieving this goal including locating fresh caribou tracks. In 2022 a power analysis was conducted using data from 2020-2022 to determine the total number of sampling locations required to detect very small, small and moderate effect sizes for snow hardness. A recommendation was made to collect the full suite of snow data for a minimum of 65 sampling locations in order to detect a moderate effect size (e.g., 25%). Snow condition monitoring data collected from 2020-2023 are presented below. These data represent preliminary results of snow condition monitoring since the total number of sampling locations to date with the full suite of snow data is less than 65.

17.1.2 Methods

Sixty-four survey locations have been sampled along the AWAR and WTHR between 2020 and 2023, including five survey locations in May 2020, three locations in April 2021, twenty locations in April and May of 2022, and thirty-six locations in April of 2023 (Figure 17-1). Of these 64 locations, 36 include the full suite of snow data. Survey locations were chosen opportunistically based on the availability of fresh caribou tracks crossing the road, and while the majority of plots sampled were located along the WTHR, sampling locations along the AWAR were included opportunistically as well. Snow management practices are consistent between the WTHR and AWAR, and any patterns identified for potential effects of snow characteristics on caribou crossing are not expected to differ between the two roads. Surveyors established six plots at each survey location and collected data on the snow depth, snow hardness, caribou track depth, as well as the height, width, and slope of the snow-managed berm that occurred adjacent to the WTHR (Golder 2020e). Snow and caribou track depth were measured using a metre stick while snow hardness was measured using a mechanical dynamometer (i.e., push-pull gauge; Lundmark and Ball 2008). Three plots were established on the upwind side of the WTHR (i.e., the side of the road that the prevailing wind blows from - the west) and three plots were established on the downwind side of the WTHR (i.e., the east side of the road).

The three survey plots on each side of the road included a “use” plot, a “snow-management control” plot and a “non-managed control” plot (Figure 17-2). The use plot occurred within the snow-managed berm in an area where caribou had left tracks while crossing the WTHR. The snow-managed control plot occurred approximately 5 m from the use plot, within the snow-managed berm but in a portion of it that did not contain caribou tracks. Monitoring at caribou use areas and the finer spatial scale of the snow-managed control and use plots was a recommendation by the TAG (KivIA 2019). The non-managed control plot occurred beyond the snow-managed berm and in an area where caribou tracks were present (Figure 17-2).

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LEGEND

SNOW SURVEY LOCATION (SURVEY YEAR)

- 2020
- 2021
- 2022
- 2023
- KILOMETRE MARKER

ROADS

- ALL-WEATHER ACCESS ROAD (AWAR)
- WHALE TAIL HAUL ROAD (WTHR)

LOCAL STUDY AREAS (LSA)

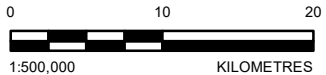
- AWAR LOCAL STUDY AREA (LSA)
- WTHR LOCAL STUDY AREA (LSA)
- MEADOWBANK LOCAL STUDY AREA (LSA)

MINE SITES

- WHALE TAIL MINE SITE
- MEADOWBANK MINE SITE

WATER FEATURES

- WATERCOURSE
- WATERBODY



REFERENCE(S)

1. INFRASTRUCTURE OBTAINED FROM AGNICO EAGLE MINES LIMITED.
2. WATERCOURSE AND WATERBODY DATA OBTAINED FROM NATURAL RESOURCES CANADA.

COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 14N

CLIENT **AGNICO EAGLE MINES LIMITED: MEADOWBANK DIVISION**

PROJECT
**MEADOWBANK COMPLEX
2023 WILDLIFE MONITORING SUMMARY REPORT**

TITLE
SNOW SURVEY LOCATIONS ALONG THE ALL-WEATHER ACCESS ROAD AND WHALE TAIL HAUL ROAD (2020-2023)

CONSULTANT	YYYY-MM-DD	2024-03-22
	DESIGNED	JF
	PREPARED	CDB
	REVIEWED	JF
	APPROVED	CDLM

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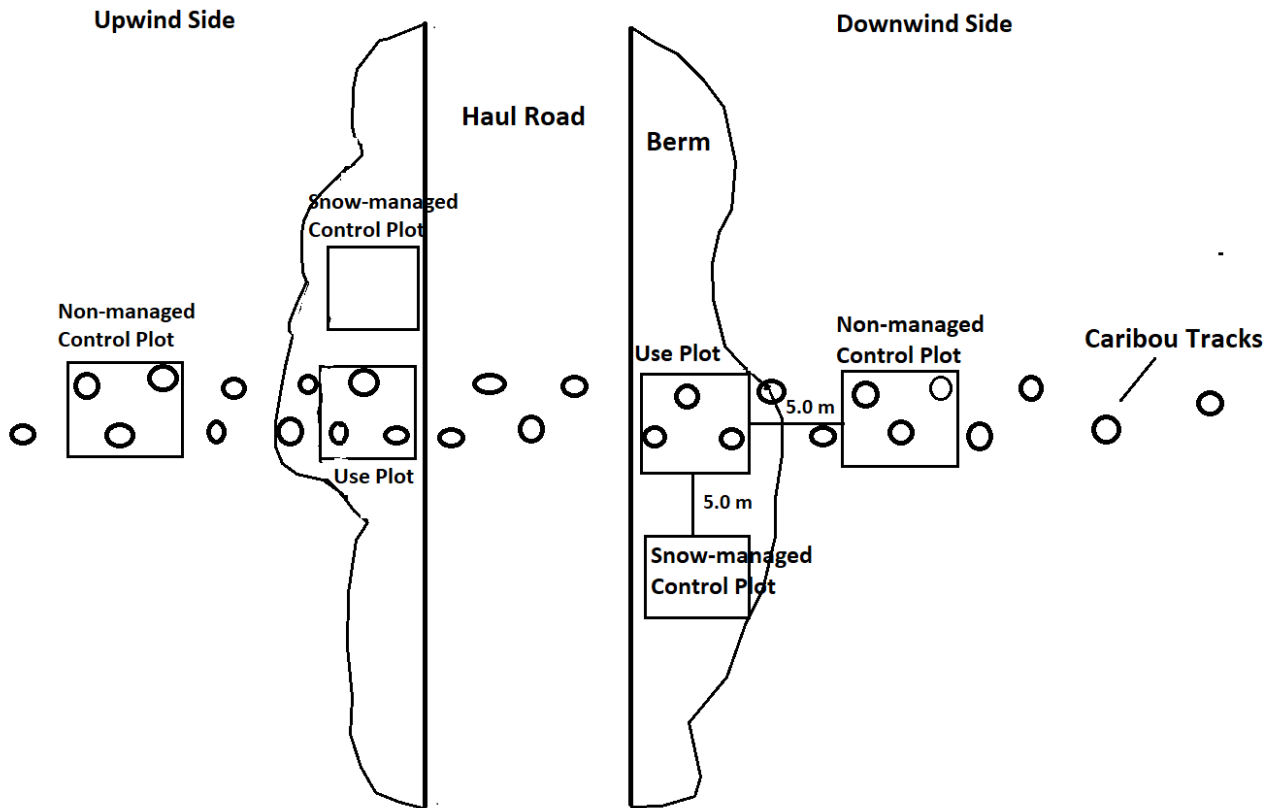


Figure 17-2: Survey Plot Configuration Used During Snow Survey Monitoring Along the Whale Tail Haul Road

Using data from all years, averages and 95% confidence intervals were calculated for each snow metric and plot type. Intervals shown in brackets are 95% confidence intervals unless stated otherwise. T-tests were used to evaluate significant differences in snow metrics on the upwind vs downwind side of the haul road. Analysis of variance tests (ANOVA) were used to evaluate significant differences in snow depth and snow hardness among plot type (Use plot, snow-managed control plot, and non-managed control plot). When significant differences were detected based on the ANOVA ($p < 0.05$), a post-hoc Tukey's test was applied to determine, which plot types were significantly from each other.

17.1.3 Results

A total of 36 surveys were completed during the spring migration of 2023, which was the targeted number of plots. Of the 36 survey locations, 17 were along the WTHR and 19 were along the AWAR. Workers were patrolling on a daily basis along the AWAR and the WTHR during the migration season (between 1 April and late May) for signs of caribou crossing tracks adequate for snow sampling measurements. Surveys during 2023 took place over 14 days. Prior to 2023, a full suite of snow data were collected at use plots and snow-managed control plots but not at non-managed control plots, and caribou track data were collected at use plots but not non-managed control plots. Data sheet improvements implemented in 2023 allowed for additional data fields to be collected in 2023.

Locations surveyed in 2023 included the full suite of snow data for each applicable plot type and caribou track data were collected at both use plots and non-managed control plots. Some snow measurements collected prior to 2023 were excluded from 2023 snow summaries due to inconsistencies with reporting units or missing data fields.

Table 17-1 provides a summary of snow metrics recorded at upwind and downwind use plots, snow-managed control plots, and non-managed control plots during 2020, 2021, 2022, and 2023 survey periods. Considering all plot types sampled, average berm width were significantly greater (t-test, $p < 0.001$) on the downwind (east) than the upwind (west) sides of the haul road with average berm height nearly significantly different (t-test, $p = 0.05$) and similar values of slope between sides (t-test, $p = 0.13$) (Table 17-1; Figure 17-3). Specifically, berm height was on average 2.6-times greater on the downwind (0.34 m [95% CI: 0.15-0.53]) than the upwind side (0.13 m [0.07-0.19]), and berm width was 3.8-times greater on the downwind (1.63 m [1.06-2.20]) than the upwind side (6.25 m [4.52-7.98]).

Mean snow depth across all plot types was not significantly different (t-test, $p = 0.61$) on the upwind side of the haul road (0.42 m [0.38-0.46]) compared to the downwind side of the road (0.43 m [0.38-0.48]) (Table 17-1; Figure 17-3). Average snow depth on both sides of the haul road were significantly different by plot type (ANOVA, $p < 0.001$) (Table 17-2). Specifically, average snow depth in use plots and snow-managed control plots (i.e., plots within the berm but not used by caribou) were similar (Tukey, $p = 0.95$), but snow depth was greater in non-managed control plots compared to both plot types in the berm area (Tukey, $p < 0.001$; Figure 17-4). This could potentially be due to the difference in elevation on and off the berm so that when berm snow is spread out the snow may be shallower on the raised road shoulder. Note, the comparison between berm plots (used plots and snow managed control plots) could only be compared with non-managed control plots using 2023 data because snow depth was not collected in non-managed control plots prior to 2023.

Snow hardness, as measured using the push-pull gauge, was similar between plots on the upwind side (14 Newtons (N) [12-15]) and the downwind side (14 N [13-16]) of the haul road (t-test, $p = 0.64$) (Table 17-1; Figure 17-3). Considering plots on both the upwind and downwind sides of the haul road, average snow hardness was similar between use plots, snow-managed control plots, and non-managed control plots (ANOVA, $p = 0.25$) (Table 17-2; Figure 17-5).

Caribou track depth measurements were only collected in use plots during 2020, 2021, and 2022, and in use and non-managed control plots in 2023. Mean track depth across plot types was not significantly different (t-test, $p = 0.65$) on the upwind side (4.1 cm [3.4-4.8]) compared to the downwind side of the haul road (4.3 m [3.5-5.1]) (Table 17-1; Figure 17-3). Mean track depth was similar between use plots compared to non-managed control plots, and track depth was marginally not significant (t-test, $p = 0.07$; Table 17-2; Figure 17-6).

Table 17-1: Summary of Snow Metrics Collected at Survey Plots on the Upwind and Downwind Side of the Whale Tail Haul Road across 2020-2023

Snow Metric	Plot Type	Upwind	Downwind
Snow Berm Height (m) (Average [95% CI])	Use Plot	0.13 [0.04-0.22]	0.26 [0.11-0.41]
	Snow-management Control	0.13 [0.04-0.22]	0.42 [0.06-0.78]
	Non-managed Control	NA	NA
Average Snow Berm Height - All Plots		0.13 [0.07-0.19]	0.34 [0.15-0.53]
Snow Berm Width (m) (Average [95% CI])	Use Plot	1.64 [0.84-2.44]	6.51 [3.94-9.08]
	Snow-management Control	1.63 [0.82-2.44]	6.00 [3.65-8.35]
	Non-managed Control	NA	NA
Average Snow Berm Width – All Plots		1.63 [1.06-2.20]	6.25 [4.52-7.98]
Slope (°) (Average [95% CI])	Use Plot	5.40 [3.37-7.43]	5.53 [2.23-8.23]
	Snow-management Control	5.12 [3.19-7.05]	6.02 [3.20-8.84]
	Non-managed Control	3.60 [1.50-5.70]	4.97 [1.44-8.50]
Average Slope - All Plots		4.86 [3.68-6.04]	5.58 [3.88-7.28]
Snow Depth (m) (Average [95%CI])	Use Plot	0.37 [0.31-0.43]	0.35 [0.28-0.42]
	Snow-management Control	0.38 [0.31-0.45]	0.37 [0.30-0.44]
	Non-managed Control	0.56 [0.46-0.66]	0.66 [0.57-0.75]
Average Snow Depth - All Plots		0.42 [0.38-0.46]	0.43 [0.38-0.48]
Snow Hardness (N) (Average [95%CI])	Use Plot	12 [10-14]	14 [11-17]
	Snow-management Control	15 [12-18]	15 [12-17]
	Non-managed Control	14 [12-16]	13 [11-16]
Average Snow Hardness - All Plots		14 [12-15]	14 [13-16]
Track Depth (cm) (Average [95%CI])	Use Plot	4.6 [3.6-5.5]	4.5 [3.6-5.4]
	Snow-management Control	NA	NA
	Non-managed Control	3.2 [2.4-4.1]	4.0 [2.5-5.4]
Average Track Depth - All Plots		4.1 [3.4-4.8]	4.3 [3.5-5.1]

Note: 95%CI = 95% confidence interval; m = metre; cm = centromere; N = Newtons of force; NA = not applicable; "-" = data were not collected for this plot type.

Table 17-2: Summary of Statistical Tests on Snow Depth, Snow Hardness, and Track Depth Data Collected at Survey Plots along the Whale Tail Haul Road across 2020-2023

Snow Metric	Plot Type	Sample size	Test-stat	p-value
Snow Depth (m)	Use Plot	129	24.43	<0.001
	Snow-management Control	128		
	Non-managed Control	72		
Snow Hardness (N)	Use Plot	129	1.39	0.25
	Snow-management Control	128		
	Non-managed Control	128		
Track Depth (cm)	Use Plot	129	1.85	0.07
	Non-managed Control	72		

Note: m = metre; cm = centromere; N = Newtons of force; a = ANOVA test statistic; b = t-test test statistic.

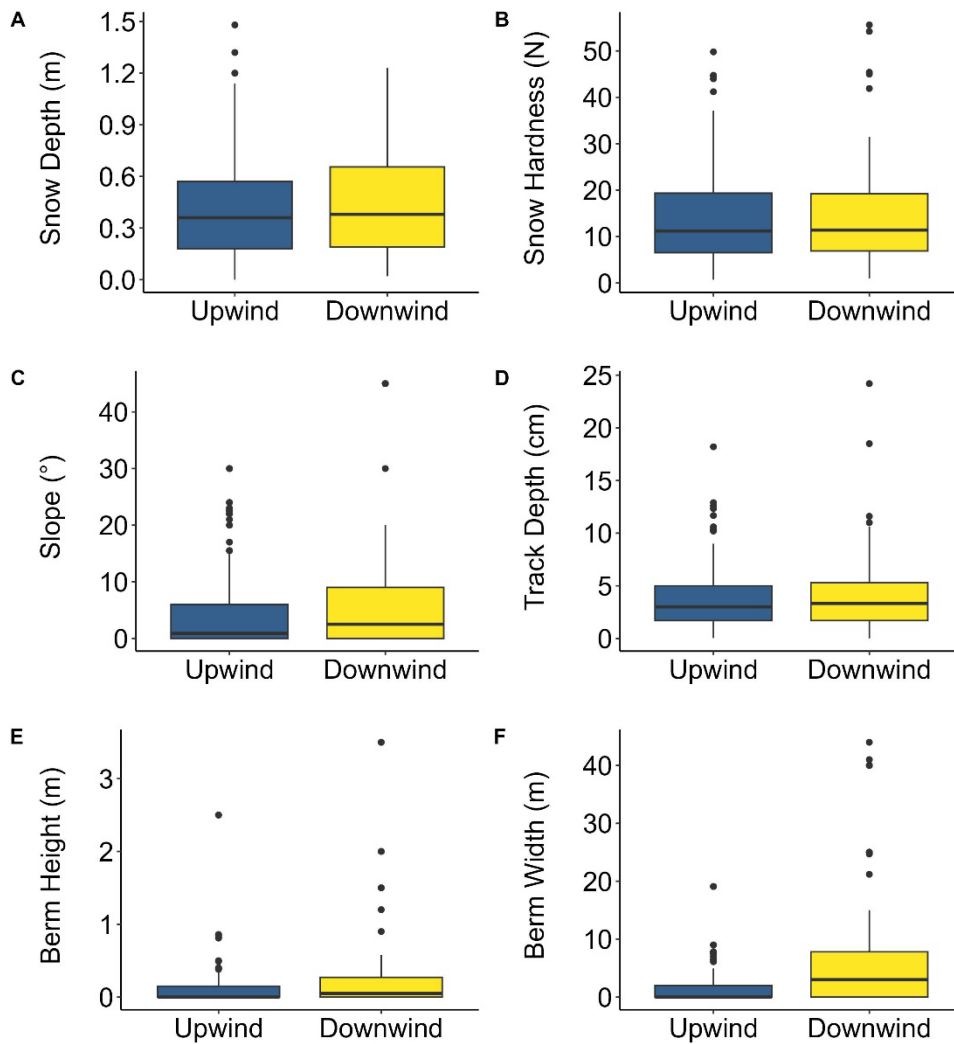


Figure 17-3: A) Snow Depth (m), B) Snow Hardness (N), C) Slope (°), D) Track Depth (cm), E) Berm Height (m), and F) Berm Width (m) at Survey Plots on the Upwind and Downwind Side of the Whale Tail Haul Road.

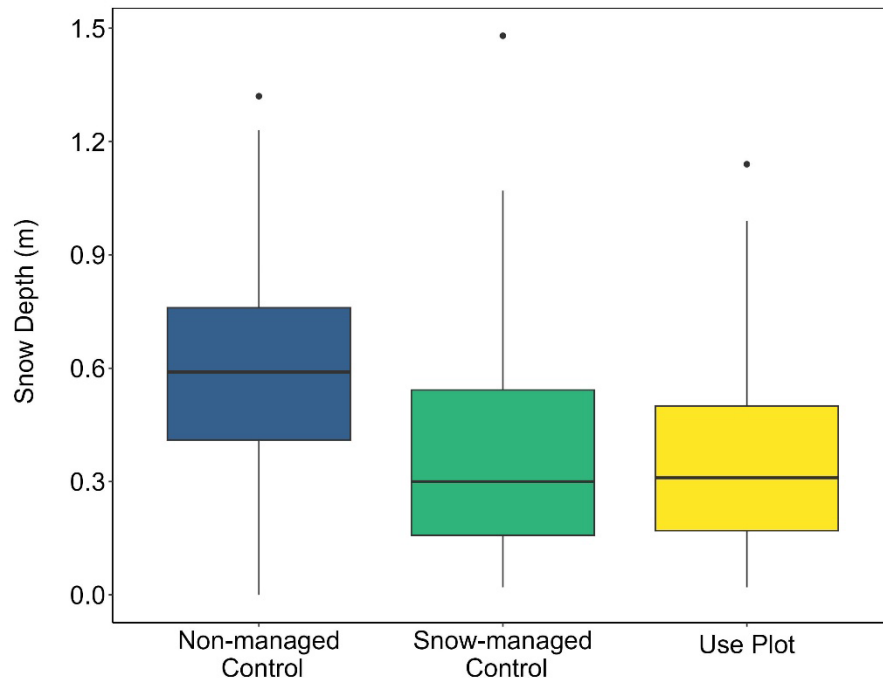


Figure 17-4: Snow Depth (m) at Survey Plots on the Upwind and Downwind Side of the Whale Tail Haul Road.

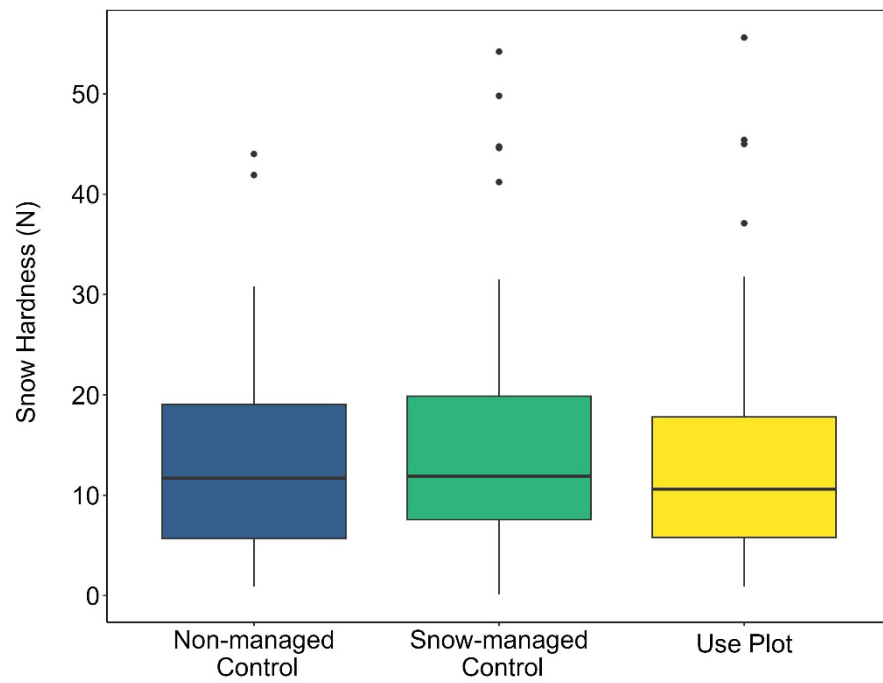


Figure 17-5: Snow Hardness (N) at Survey Plots on the Upwind and Downwind Side of the Whale Tail Haul Road.

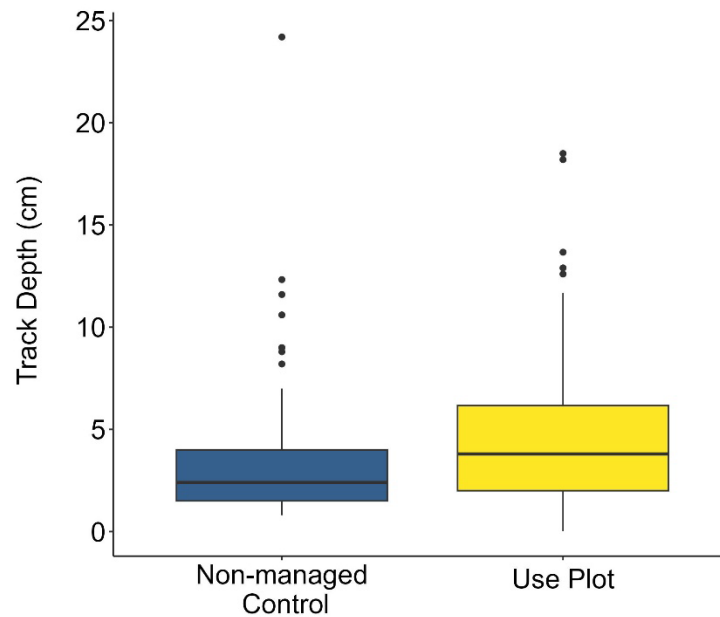


Figure 17-6: Track depth (cm) of caribou at Survey Plots on the Upwind and Downwind Side of the Whale Tail Haul Road.

17.1.4 Management Recommendations

Between 2020 to 2023, 64 locations were surveyed for the snow study, 36 of which were completed in 2023. Improvements for data collection implemented in 2023 allowed for a full suite of snow data (snow depth, snow hardness, slope) and caribou track data (in used plots and non-managed control plots) to be collected for 36 survey locations. Considering snow survey locations across all years, snow berms were wider on the downwind (east) than the upwind (west) sides of the road. Average snow berm height was nearly significantly different (t-test, $p = 0.05$), and was higher on the downwind side of the road. On both sides of the road, average snow berm height was less than 0.5 m. Slope was similar on upwind and downwind sides of the road. Snow depth was not different between upwind and downwind sides of the road, but snow depth differed between plot types (Table 17-2). Snow depth was similar between use plots and snow-managed control plots, but snow was deeper in non-managed control plots compared to both plot types in the berm area (Figure 17-4). Snow hardness was similar between plots on the upwind and downwind sides of the road (Table 17-1; Figure 17-3), and was also similar across plot types (Table 17-2; Figure 17-5). Caribou track depth measurements between use plots and non-managed control plots could only be compared for data collected in 2023. Mean track depth was not significantly different upwind vs downwind (Table 17-1). Average track depths were deeper in use plots compared non-managed control plots (Figure 17-6), however this difference was not significant (t-test, $p = 0.07$; Table 17-2; Figure 17-6). Results from the 2022 the power analysis (WSP 2023) indicated that sample sizes are already sufficient to evaluate at moderate differences in snow hardness between plots (i.e., effect sizes of 50% or greater), however, collecting the full suite of snow data for 65 plots was recommended in order to be able to assess differences in snow hardness for smaller effect sizes (e.g., 25%) for both study questions. A minimum of 29 survey locations should be surveyed in 2024 to collect the remaining data required for the snow study. Final analysis of snow study data is anticipated to occur in 2024 if target sample sizes are achieved, and final results will be presented in the 2024 TEMP report.

17.2 Caribou Behaviour

The following is a summary of the Meadowbank Gold Mine Caribou Behaviour Study, 2023, completed by ERM Consultants Canada Ltd. (ERM 2024; Appendix K).

17.2.1 Overview

As part of the Nunavut Impact Review Board (NIRB) Project Certificates #004 and #008, Agnico Eagle is required to study and report on the effects of the Project on caribou. The TEMP (Agnico Eagle 2019) includes behaviour monitoring for caribou in response to various disturbances.

During 2020, Agnico Eagle retained ERM to update the field protocols used for behaviour monitoring. ERM adapted standard methods for caribou behaviour monitoring developed by the Government of Northwest Territories Department of Environment and Natural Resources (GNWT ENR). Following the first two years of data collection (2020 and 2021) and comments from the TAG, GN, and KivIA, the protocols were updated for the 2022 season to improve the quality of the data collected. Surveys were continued in 2023 following the updated protocols.

Based on guidance from the TEMP (Agnico Eagle 2019), the overall objective of the caribou behaviour monitoring program is to determine if caribou activity budgets change with distance from the mine, and to document caribou response to stressors.

The detailed objectives of the 2023 study were:

- 1) To conduct a study using the Government of Northwest Territories Department of Environment and Natural Resources (GNWT ENR 2017) behaviour survey methodology at the Project site to estimate how the roads and other site infrastructure contribute to the effects of the Project on caribou.
- 2) To use information from the surveys to determine what factors predict caribou behaviour, specifically comparing:
 - near vs. far
 - large groups of caribou vs. small groups
 - surveys with and without disturbances
 - road open vs. closed and
 - upstream vs. downstream side of the road (east or west side, as determined by dominant direction of travel in each season)

17.2.2 Methods

17.2.2.1 Field Surveys

Field surveys were conducted during spring and fall migration, as well as in the summer in all years (2020-2023) by the Agnico Eagle environmental technicians. These technicians were trained and were dedicated to conducting behaviour surveys. Each survey lasted 30 minutes, with scan samples conducted every three minutes. In the case that a disturbance event occurred during the survey the time and type of disturbance was recorded. A disturbance is defined as any human-caused loud noise, low-flying aircraft, or vehicle travelling on the road. Blast disturbances were monitored under the Blast Monitoring Program. In the analysis all disturbances are treated equally.

Alert behaviour and trotting or running were considered disturbance “response behaviours” and were grouped together in the subsequent data analysis. In this report, alert and running behaviours are referred to collectively as response behaviours, but it is important to note that this is irrespective of whether or not there were disturbances recorded. Caribou may exhibit these behaviours without a disturbance occurring. Walking was also assessed as a response behaviour in some analyses, which are specifically noted in the results.

Following recommendations from the TAG in 2021, an additional set of longer surveys was completed to specifically look at the behavioural response to convoys of vehicles. These surveys were 90 minutes each, consisting of a “before convoy”, “during convoy” and “after convoy” survey. Observers sought out caribou that were likely to remain within view for 90 minutes, such as caribou that were feeding or laying down. Nine surveys were completed in both 2021 and 2022 using this extended methodology. Multiple 90-minute surveys were conducted in 2023, though caribou frequently walked out of sight prior to completion of the 90-minute survey period.

17.2.2.2 Data Analysis

The objective of the data analysis was to quantify trends in the survey data and determine whether factors such as distance to Project infrastructure (road), group size, or the disturbances could be used to explain caribou behavior. The primary hypothesis was that caribou closer to the road would demonstrate a stronger response to disturbances.

A regression analysis was conducted to test whether data from the surveys could be analyzed statistically. To increase the power to detect changes in caribou behaviour, the behaviour categories were grouped into response behaviour and non-response behaviour.

Following the 2020 analysis, there was a suggestion from the TAG to explore whether the proportion of walking caribou changed as a response to disturbance. This was done to see if walking would be better categorized as a response behaviour or a non-response behaviour. To test this, a model that included walking, running, and alert behaviours was run in addition to the original model with just running and alert behaviours.

Generalized linear mixed-effects models (GLMM) were used to assess the differences in the proportion of response behaviours in surveyed animals as a function of various controlling variables, including the occurrence of disturbances. This regression framework provides a means to control for habitat, environmental variables, repeated measurements, and spatial correlation.

Statistical analyses were conducted using the data from each three-minute time interval in each survey. Two dependent variables were tested:

- 1) Proportion of response behaviours in each time interval.
- 2) Proportion of walking and response behaviour in each time interval.

The two dependent variables were modelled against a suite of potentially important variables to determine if there was any statistical relationship with response behaviour. The variables included in this analysis were group size, distance to road, temperature, wind speed, season and side of the road (upstream/downstream), the roads status (closed or open), and whether or not a disturbance occurred in the survey. Season and side of the road were included as an interaction term because direction of travel is seasonally dependent.

Full methods used for the caribou behaviour monitoring program are presented in Appendix K.

17.2.3 Results

The behaviour monitoring data from 2023 were combined with data from 2020, 2021, and 2022, and all results outlined in this report use all years, unless otherwise stated. The program and combined data resulted in several key findings:

- The standard monitoring protocols adapted from the GNWT ENR worked well at the Project site.
- 70 surveys were conducted in 2023, compared to 104 surveys in 2022, 134 surveys in 2021, and 116 in 2020; 38 surveys occurred during spring migration from March to May, 1 occurred during calving and summer from June to August, and 31 occurred during fall migration from September to December.
- Observations were well distributed across a range of caribou group sizes from 1 to 2 individuals to >100.
- In total, 59% of disturbances were from heavy vehicles, 30% were from light vehicles, 1% were from blasts, and less than 1% were from ATVs or helicopters. Note, surveys that detected a response to blasting were not specifically the survey format to monitor caribou behavioural responses to blasting (i.e., surveying caribou behaviour for 30 min prior to and after a blast; Section 9.0).
- In 2023, 26 (37%) of the surveys were within 300 m of the road.
- Most caribou behaviour was foraging and moving slowly (non-response). The exception is smaller groups moved more than larger groups. Usually smaller groups (less than 25 individuals) crossed the road. However, plotting data did not show a clear relationship between caribou size and road crossings.
- Caribou mostly exhibited the non-response behaviours of standing, laying, feeding, and walking.
- Larger groups of caribou tended to be recorded further from the road. Seven groups larger than 100 individuals were recorded within 100 m of the road at the start of the survey, including two in 2021, three in 2022, and two in 2023.
- Approximately 50% of the surveys included a disturbance event; typically, haul traffic and light trucks from the mine, and occasionally all-terrain vehicles (ATVs) from Baker Lake on the AWAR for travel and harvesting.
- Following a disturbance event, the proportion of response behaviours in a group of caribou was significantly higher, but generally returned to baseline behaviours within two sampling intervals (i.e., six minutes).

- Cox's proportional hazards modelling suggests that following a single disturbance, 94% of groups will return to normal behaviour after approximately six minutes, and 100% of groups will return to baseline behaviour after approximately 15 minutes.
- In response to comments from the KivIA, the behaviour of "walking" was investigated for whether it may be an "alert" behaviour instead of a non-response behaviour. Disturbances did statistically affect the proportion of caribou walking.
- During periods when large groups of caribou are present, the AWAR and WTHR are closed following a decision tree in the Meadowbank Mine TEMP, reducing the potential to record interactions between vehicles and caribou. Road closure status did not affect behaviour in the statistical analysis, though the road being open was significantly positively correlated with walking behaviour.
- Groups of caribou were observed on both the east and west sides of the road in all seasons but were more commonly observed on the west side during spring migration (a.k.a. upstream of the dominant direction of travel). Statistical analysis found that side of road and season did not affect response behaviour (alert/running), but that caribou were significantly more likely to be walking on the upstream side of the road. The dominant behaviour on the downstream side was feeding or laying down.

Full results of the caribou behaviour monitoring program are presented in Appendix K.

17.2.4 Management Recommendations

The updates applied to the survey protocol from the previous years of data and analysis and were helpful in improving the overall quality and accuracy of the data. Even with the changes to the protocol, the trends in the results were highly consistent between the four years of data. This increases the confidence that trends are repeatable year to year. Overall, the results of the statistical analysis provided support for the key hypothesis that caribou tend to respond to disturbances, particularly when they are close to the road.

17.3 Road and Viewshed Survey Comparison

17.3.1 Overview

Following submission of the 2021 Wildlife Monitoring Summary Report, KivIA requested comparison of the distance and direction of caribou observations from road and viewshed surveys (comment 4.7, Agnico Eagle 2022b). A comparison is presented in this section, focusing on the maximum distance caribou were detected from the road and associated direction (i.e., side of road), and group size from road and viewshed surveys. It is assumed that viewshed surveys allow observers to detect caribou at further distances than road surveys.

17.3.2 Methods

The number of surveys by month, where road and viewshed surveys completed on the WTHR are shown in [Table 17-3](#). The intention of the comparison was to determine if viewshed surveys were acting as an early warning system for caribou approaching site, or if road surveys were adequately capturing caribou far away from roads and implementing adequate mitigation measures. The mean and 95th percentile of the distance caribou were observed from the road and the group size of the observation were calculated for each survey type by season. Figures were produced to allow qualitative comparison of caribou observations from road and viewshed surveys.

Table 17-3: Number of Road and Viewshed Surveys Completed by Month.

Year	Month	Number of Road Surveys	Number of Road Surveys with Caribou Detections	Percent of Road Surveys with Caribou Detections (%)	Number of Viewshed Surveys	Number of Viewshed Surveys with Caribou Detections	Percent of Viewshed Surveys with Caribou Detections (%)
2021	January	3	1	33.33	0	0	N/A
	February	3	0	0	1	0	0
	March	7	0	0	0	0	N/A
	April	21	17	80.95	0	0	N/A
	May	17	17	100.00	0	0	N/A
	June	6	6	100.00	0	0	N/A
	July	6	2	33.33	1	1	100.00
	August	6	6	100.00	5	5	100.00
	September	13	11	84.62	4	4	100.00
	October	13	6	46.15	6	2	33.33
	November	21	5	23.81	4	2	50.00
	December	16	4	25.00	6	0	0
2022	January	7	4	57.14	4	0	0
	February	7	4	57.14	4	3	75.00
	March	7	3	42.86	5	1	20.00
	April	30	24	80.00	7	4	57.14
	May	25	22	88.00	7	3	42.86
	June	12	5	41.67	3	1	33.33
	July	9	2	22.22	5	1	20.00
	August	31	28	90.32	5	5	100.00
	September	11	7	63.64	6	4	66.67
	October	17	5	29.41	5	1	20.00
	November	19	10	52.63	3	0	0
	December	7	2	28.57	4	0	0
2023	January	6	1	16.67	3	0	0
	February	8	1	12.50	4	1	25.00
	March	14	7	50.00	4	0	0
	April	30	26	86.67	11	8	72.73
	May	30	30	100.00	6	5	83.33
	June	9	9	100.00	3	1	33.33
	July	5	0	0	4	0	0
	August	21	19	90.48	5	3	60.00
	September	22	19	86.36	5	2	40.00
	October	21	15	71.43	15	8	53.33
	November	24	2	8.33	16	0	0
	December	20	6	30.00	13	1	7.69
Total		524	326	53.70 ^a	174	66	38.50 ^a

a) Average percentage of surveys with caribou detections.

17.3.3 Results

Increased survey effort in 2023 improved sample sizes for comparison between survey types. There were 148 days where both survey types were completed on the same day across all seasons in 2021, 2022, and 2023, and on 29 of these 148 days, caribou were detected during road and viewshed surveys. On the 29 days with both survey types conducted on the same day, the observation distance was farther for viewshed surveys in 15 out of 29 occasions (52%) and the observation distance was farther for road surveys in 9 out of 29 occasions (31%). In five of 29 occasions, the recorded distances were the same between survey types.

The percentage of road surveys with caribou detections was higher than the percentage of viewshed surveys with caribou detections in each season, except summer 2021 (Table 17-4). The 95th percentile of distance of caribou groups from the road was higher from viewshed surveys than road surveys, except in fall 2021 (Table 17-4). There was large variation in the distance that caribou were observed from the road, and the group size observed from both survey types, indicated by large standard deviation (Table 17-4). If viewshed surveys were detecting caribou approaching the road, more observations would be expected on the east side of the road in the fall, and on the west side of the road in the spring. This was true in fall and spring of 2022 and 2023, however more observations on the west side of the road were observed in fall 2021.

There were relatively few observations from both survey types in winter (Table 17-4), none of which exceeded the GST in 2021 or 2022, but two observations from road surveys exceeded GST in 2023 (Figure 17-7). The percentage of viewshed surveys that detected caribou was higher in the summer and spring than in other seasons (Table 17-4). No viewshed observations exceeded GST in summer, but some observations exceeded GST during spring and one observation exceeded GST in fall (Figure 17-7). Smaller average caribou group sizes from maximum distance observations were observed from viewshed surveys in the summer, fall, and winter, and larger group sizes were observed in the spring (Table 17-4). Some of the observations far from the road (i.e., greater than 1.5 km) were larger caribou group sizes (Figure 17-7). The majority of GST exceedances were from road surveys.

It was expected that viewshed surveys would detect caribou farther from the road on average, as these surveys are intended to identify caribou approaching the road as an 'early warning system'. For all seasons with both road surveys and viewshed surveys conducted, viewshed surveys had a farther average detection distance, except for fall 2021 (Table 17-4). Both survey types were capable of detecting caribou at long distances, with a maximum recorded distance of 4 km for road surveys and maximum recorded distance of 3 km for viewshed surveys.

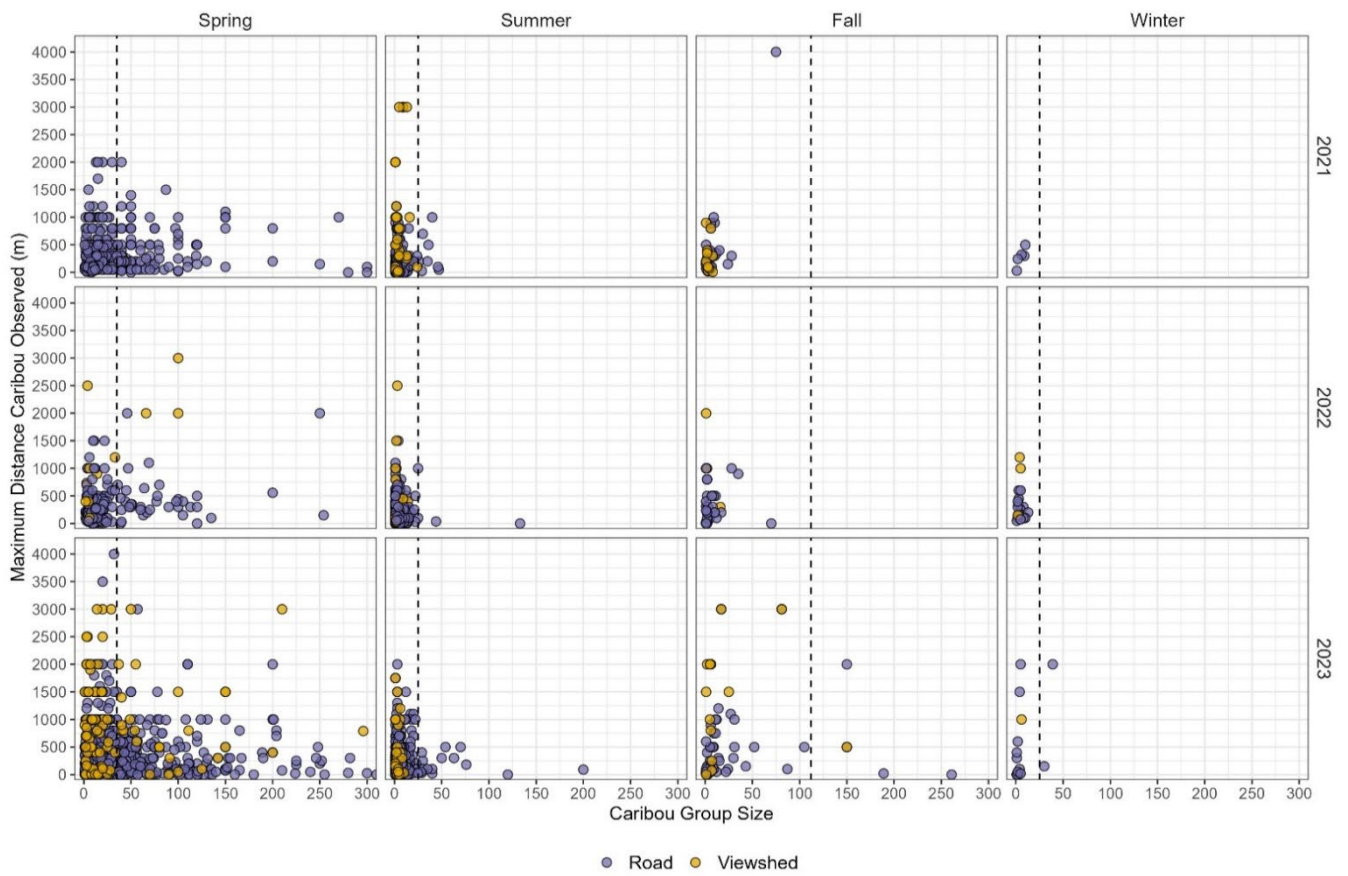


Figure 17-7: Group Size and Distance of all Caribou Observation from the Road by Survey Type and Season. Dashed Line Indicates Group Size Threshold for each Season.

Table 17-4: Summary Statistics for Caribou Observations from Road and Viewshed Surveys along the Whale Tail Haul Road.

Year	Season	Survey Type	Number of Surveys	Number of Surveys with Caribou Observations	Number of Caribou Observations	Percentage of Surveys Caribou Observed (%)	Number of Observations East Side of Road ^(a)	Number of Observations West Side of Road ^(a)	Average Distance of Caribou Observations from Road (Mean \pm Standard Deviation)	95th Percentile of Distance of Caribou Observations from Road	Average Caribou Group Size (Mean \pm Standard Deviation)	95th Percentile of Caribou Group Size
2021	Spring	Road	37	33	297	89.19	38	242	399.18 \pm 390.21	1020	35.52 \pm 47.32	120
		Viewshed	0	N/A ^(b)	N/A ^(b)	N/A ^(b)	N/A ^(b)	N/A ^(b)	N/A ^(b)	N/A ^(b)	N/A ^(b)	N/A ^(b)
	Summer	Road	26	20	171	76.92	82	75	218.05 \pm 310.99	800	6.12 \pm 8.03	22
		Viewshed	9	9	29	100.00	25	4	820.00 \pm 922.87	3000	5.14 \pm 5.57	15
	Fall	Road	48	18	38	37.50	15	22	388.16 \pm 660.20	915	8.00 \pm 12.61	25
		Viewshed	14	4	10	28.57	6	4	316.50 \pm 312.23	855	3.80 \pm 2.66	8
Winter	Road	21	4	5	19.05	3	2	278.80 \pm 169.07	464	5.60 \pm 4.04	10	
	Viewshed	4	0	0	N/A ^(b)	N/A ^(b)	N/A ^(b)	N/A ^(b)	N/A ^(b)	N/A ^(b)	N/A ^(b)	
2022	Spring	Road	53	44	149	83.02	36	107	378.97 \pm 366.79	1000	30.34 \pm 41.89	110
		Viewshed	14	7	12	50.00	3	9	1194.42 \pm 965.67	2725	28.75 \pm 38.00	100
	Summer	Road	61	43	337	70.49	126	157	194.05 \pm 214.53	600	4.41 \pm 8.38	13
		Viewshed	16	9	25	56.25	10	15	422.60 \pm 546.01	1400	2.80 \pm 3.03	8
	Fall	Road	44	18	31	40.91	22	8	325.29 \pm 299.51	950	8.35 \pm 13.92	32
		Viewshed	12	3	6	25.00	1	5	803.33 \pm 702.61	1750	4.83 \pm 5.91	14
Winter	Road	24	11	18	45.83	14	4	245.33 \pm 174.87	600	4.89 \pm 3.14	10	
	Viewshed	16	4	4	25.00	1	3	625.00 \pm 554.53	1170	17.25 \pm 1.71	6	
2023	Spring	Road	55	51	633	92.73	52	513	407.97 \pm 466.36	1380	48.02 \pm 76.10	184
		Viewshed	16	13	94	81.25	21	73	930.37 \pm 819.05	2675	43.70 \pm 82.03	150
	Summer	Road	57	49	407	85.96	185	172	263.79 \pm 300.74	1000	7.28 \pm 14.20	21
		Viewshed	16	6	26	37.5	12	14	453.46 \pm 501.02	1425	3.65 \pm 2.24	8
	Fall	Road	62	24	54	38.71	45	7	481.39 \pm 674.74	2000	35.61 \pm 72.28	164
		Viewshed	40	9	13	22.5	9	4	1355.77 \pm 1023.18	3000	24.08 \pm 43.46	109
Winter	Road	36	11	15	30.56	3	9	474.80 \pm 732.60	2000	6.73 \pm 11.49	33	
	Viewshed	17	1	1	5.88	0	1	1000.00	1000	6.00	6	

a) Does not include observations where caribou groups were observed on both sides of road.

b) N/A = not applicable. No caribou detections in a given season, therefore summary statistics cannot be calculated.

17.3.4 Management Recommendations

Following discussion with the TAG in November 2022, more viewshed surveys were completed in 2023 to improve sample sizes and allow for comparison between survey types. For all seasons with both road surveys and viewshed surveys conducted, viewshed surveys had farther average detection distances compared to road surveys (except for fall 2021) and the percentage of surveys with caribou detections was higher for road surveys than for viewshed surveys (except summer 2021). Viewshed observations exceeded GST values only during spring 2022, spring 2023, and fall 2023.

Overall, road surveys were conducted more frequently, were more likely to detect caribou, and were more likely to result in road closure mitigation, despite the lower average detection distance compared to viewshed surveys. It's possible that even if viewshed surveys have a further average detection distance that this does not necessarily mean that viewshed surveys have a higher probability of detection compared to road surveys. Road surveys have greater spatial coverage and had a higher percentage of surveys with caribou detections compared to viewshed surveys.

Continuation of viewshed surveys should be discussed with the TAG to revisit survey objectives and determine whether effort should be spent on road surveys solely versus viewshed surveys followed by road surveys in succession. Management decision trees are currently under review for the lead caribou mitigation approach, and monitoring approaches to trigger caribou mitigation will need to be adjusted accordingly to align.

18.0 SUMMARY

The 2023 Annual Report describes the data collected to date from the various monitoring programs associated with the TEMP Version 7 (Agnico Eagle 2019). The 2023 Annual Report describes natural and Project-related effects on wildlife populations and plant communities occurring near the Project.

In 2023, monitoring efforts focused on areas immediately around the Meadowbank Mine and Whale Tail Mine sites, along the AWAR and the WTHR. Surveying and monitoring efforts focused on evaluating current habitat losses, monitoring nesting success of raptors, and monitoring and managing wildlife presence, particularly caribou, near the Project facilities and infrastructure. A summary of potential Project effects, threshold levels, and the 2023 monitoring results is provided in **Table 18-1**.

18.1 Accuracy of Impact Predictions

Table 18-1: Potential Project Effects, Thresholds, and Results of Monitoring in 2023

Potential Effect	Thresholds	Monitoring Methods	Frequency	Completed in 2023	Threshold Exceeded (2023)
Vegetation (Wildlife Habitat)					
Habitat Loss (Compared to Permitted Areas)	Meadowbank = 1,532 ha AWAR = 455 ha Whale Tail = 1,505 ha Threshold is >5% habitat loss of permitted area	Ground Surveys; Mapping and GIS analyses – ELC habitat mapping	Every three years	NO	N/A
Habitat Reclamation following Mine Closure	N/A	Ground Surveys; Mapping and GIS analyses – ELC habitat mapping	Every three years to 11 years post-closure	NO	N/A
Ungulates					
Habitat Loss and Degradation (Compared to Permitted Areas)	Meadowbank: Growing = 33 ha Winter = 650 ha Whale Tail: Growing = 56 ha Winter = 1,057 ha	Ground Surveys; Mapping and GIS analyses – ELC habitat mapping	Every three years	NO	N/A
Sensory Disturbance	No threshold but Decisions Trees followed when caribou are seen near mine facilities	AWAR, Vault Haul Road, and WTHR surveys; Satellite-collaring data; Viewshed surveys; Daily and weekly pit and Mine-site ground surveys; Incidental wildlife reporting	Daily / weekly	YES; Multiple road closures and notices, good engagement of Wildlife Log by site staff. Use of Decision Tree for Management and Monitoring.	N/A
Project-related Mortality - Vehicle Collisions	Two individuals (cumulative across Project)	AWAR and WTHR surveys; daily and weekly pit and Mine-site ground surveys; collision reporting system	Mine site – daily AWAR and WTHR – up to every two days at peak migration	YES	NO; There was one muskox mortality that took place on the WTHR on 06 November 2023.
Hunting by Baker Lake Residents	20% Change in Harvest Patterns in RSA from Historic	Hunter Harvest Study	Yearly	YES	NO

Table 18-1: Potential Project Effects, Thresholds, and Results of Monitoring in 2023

Potential Effect	Thresholds	Monitoring Methods	Frequency	Completed in 2023	Threshold Exceeded (2023)
Other Project-related Mortality	Two individuals (cumulative across Project).	Daily and weekly pit and Mine-site ground surveys; collision reporting system	Daily	YES	NO
Predatory Mammals					
Disturbance to denning predators	One den failure.	Den site surveys	As required	NO	N/A
Project-related Mortality	Two individuals (cumulative across Project).	AWAR and WTHR surveys; daily and weekly pit and Mine-site ground surveys; collision reporting system	Mine site – daily AWAR and WTHR – up to every two days at peak migration	YES	YES; three wolverines and three wolf mortalities
Raptors					
Disturbance of Nesting Raptors	One nest failure.	Daily and weekly pit and Mine-site ground surveys; Incidental wildlife reporting; Dedicated raptor nest surveys; AWAR, Vault Haul Road, and WTHR surveys	Nests within 200 m - daily Nests from 200 to 1000 m - weekly	YES	NO
Project-related Mortality	One individual (cumulative across Project).	AWAR, Vault Haul Road, and WTHR surveys; Daily and weekly pit and Mine-site ground surveys; Collision reporting system	Mine site – daily AWAR and haul roads – up to every two days at peak migration	YES	NO
Waterbirds					
Disturbance of Nesting Waterfowl	One nest failure.	Daily and weekly pit and Mine-site ground surveys; Waterbird nest surveys	Yearly - for active nests within 200 m	YES	NO
Project-related Mortality	One individual (cumulative across Project),	AWAR, Vault Haul Road, and WTHR surveys; Collision reporting system	Mine site – daily AWAR and WTHR – up to every two days at peak migration	YES	NO
Other Breeding Birds					
Changes in Breeding Bird Populations	20% Change from Natural,	PRISM Plots and Breeding Bird Surveys	PRISM – 48 PRISM sites over ten years (2021 to 2031) Breeding Bird Surveys – at minimum every three years	YES.	N/A. Population trend not assessed in 2023.

AWAR = All Weather Access Road, ELC = Ecological Land Classification, GIS = geographic information systems, ha = hectares, N/A = not applicable, RSA = Regional Study Area, WTHR = Whale Tail Haul Road.

19.0 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.

WSP Canada Inc.

ORIGINAL SIGNED BY

Jennifer Foca
Wildlife Biologist

JF/DC/jm/jr

ORIGINAL SIGNED BY

Dan Coulton, R.P.Bio.
Principal, Wildlife Biologist

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Acts/Regulations

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APPENDIX A

Wildlife Database

Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-01-07 11:56 AM	Yes	Muskox	11	Foraging	N/A	990	96	East	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-01-13 9:09 AM	Yes	Wolverine	1	Walking	NW	0	79	Both	Yes	-96.3149	64.9095			No	Not Exceeded	
Road	2023-01-17 11:00 AM	Yes	Muskox	9	Resting	N/A	990	96	East	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-01-23 11:55 AM	Yes	Muskox	2	Feeding	Not Recorded	100	98	East	No	-96.1576	65.0325			No	Not Exceeded	
Road	2023-01-27 9:11 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-02-05 2:34 PM	Yes	Muskox	8	Walking	W	300	95	West	No	-96.1952	65.0129			Yes - They were all together	Not Exceeded	
Road	2023-02-07 10:13 AM	Yes	Muskox	8	Resting	N/A	1200	94	East	No	-96.2127	65.0075			No	Not Exceeded	
Road	2023-02-10 1:23 PM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-02-17 9:35 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-02-21 7:36 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-02-24 7:37 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-02-25 11:07 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-02-28 9:55 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-03-03 9:57 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-03-05 12:56 PM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-03-06 6:57 AM	Yes	Muskox	35	Resting	N/A	2000	52	West	No	-96.3774	64.7009			No	Exceeded	Group is more than 1.5 KM away
Road	2023-03-10 12:55 PM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-03-17 9:30 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-03-18 8:34 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-03-20 9:50 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-03-20 1:00 PM	Yes	Caribou	9	Feeding	N	500	58	West	No	-96.3579	64.7416			No	Not Exceeded	
Road	2023-03-20 1:00 PM	Yes	Caribou	2	Walking	S	400	67	West	No	-96.3262	64.8123			No	Not Exceeded	
Road	2023-03-21 10:04 AM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023-03-21 4:05 PM	Yes	Caribou	5	Feeding	Not Recorded	80	101	East	No	-96.1403	65.0567			No	Not Exceeded	
Road	2023-03-22 10:00 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-03-23 8:28 AM	Yes	Caribou	5	Standing	E	1500	102	East	No	-96.1278	65.0517			No	Not Exceeded	
Incidental	2023-03-23 4:44 PM	Yes	Caribou	45	Lying Down	N/A	250	92	West	No	-96.2219	64.9943			No	Exceeded	Speed restrictions put in place
Road	2023-03-24 8:00 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-03-25 8:08 AM	Yes	Caribou	2	Walking	N	500	98	West	No	-96.1576	65.0325			No	Not Exceeded	
Road	2023-03-25 8:08 AM	Yes	Caribou	45	Standing	N/A	700	69	West	No	-96.3143	64.8277			No	Exceeded	Speed restriction put in place km 68 to 71
Road	2023-03-26 8:04 AM	Yes	Caribou	1	Walking	E	150	58	West	No	-96.3579	64.7416			No	Not Exceeded	
Road	2023-03-26 8:04 AM	Yes	Caribou	26	Walking	S	200	57	West	No	-96.3601	64.7314			No	Exceeded	Speed restriction in place
Road	2023-03-26 8:04 AM	Yes	Caribou	1	Walking	S	150	33	East	No	-96.2163	64.5715			No	Not Exceeded	
Incidental	2023-03-26 1:04 PM	Yes	Caribou	12	Walking	S	50	31	West	No	-96.1957	64.5543			No	Not Exceeded	
Road	2023-03-27 6:43 AM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023-03-27 11:42 AM	Yes	Caribou	24	Walking	SW	300	76	West	No	-96.3457	64.8879			No	Not Exceeded	
Incidental	2023-03-27 11:42 AM	Yes	Muskox	8	Feeding	N/A	400	98	East	No	-96.1576	65.0325			No	Not Exceeded	
Incidental	2023-03-28 6:33 PM	Yes	Caribou	50	Not recorded	N/A	500	80	West	N/A	-96.3062	64.9171			No	Exceeded	Road closed
Road	2023-03-30 7:00 AM	Yes	Caribou	146	Walking	NW	2	91	Both	Yes	-96.2249	64.9847			No	Exceeded	Road closed
Incidental	2023-03-30 9:53 AM	Yes	Caribou	10	Walking	SE	1000	89	West	No	-96.2196	64.9674			No	Not Exceeded	
Incidental	2023-03-30 9:53 AM	Yes	Caribou	2	Walking	E	150	97	West	No	-96.1711	65.0259			No	Not Exceeded	
Incidental	2023-03-30 12:06 PM	Yes	Caribou	120	Walking	SE	1000	76	West	No	-96.3457	64.8879			No	Exceeded	Road closed
Incidental	2023-03-30 12:06 PM	Yes	Caribou	17	Walking	SE	1000	76	West	No	-96.3457	64.8879			No	Not Exceeded	
Incidental	2023-03-30 12:06 PM	Yes	Caribou	13	Walking	E	2000	83	West	No	-96.3011	64.9350			No	Not Exceeded	
Road	2023-03-31 7:03 AM	Yes	Muskox	9	Lying Down	N/A	800	96	West	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-03-31 7:03 AM	Yes	Caribou	1	Walking	SE	2000	87	East	No	-96.2410	64.9542			No	Not Exceeded	
Road	2023-03-31 7:03 AM	Yes	Caribou	65	Lying Down	N/A	1000	57	West	No	-96.3601	64.7314			No	Exceeded	Road was closed yesterday

Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2023-03-31 12:01 PM	Yes	Caribou	56	Lying Down	N/A	8000	57	West	No	-96.3601	64.7314			No	Exceeded	Road was closed yesterday
Incidental	2023-03-31 12:01 PM	Yes	Caribou	5	Walking	S	2000	61	West	No	-96.3547	64.7633			No	Not Exceeded	
Road	2023-04-01 7:13 AM	Yes	Muskox	2	Feeding	W	400	94	West	No	-96.2127	65.0075			No	Not Exceeded	
Incidental	2023-04-01 11:53 AM	Yes	Caribou	170	Walking	SE	1000	91	West	No	-96.2249	64.9847			No	Exceeded	Road closed
Road	2023-04-02 8:10 AM	Yes	Caribou	290	Foraging	NW	80	77	West	No	-96.3391	64.8951			No	Exceeded	Road is closed since the 1st
Road	2023-04-02 8:10 AM	Yes	Caribou	19	Foraging	N	1000	94	West	No	-96.2127	65.0075			No	Not Exceeded	
Road	2023-04-03 10:40 AM	Yes	Caribou	300	Foraging	N/A	600	80	West	No	-96.3062	64.9171			No	Exceeded	Road closed
Road	2023-04-03 10:40 AM	Yes	Caribou	22	Walking	W	900	17	West	No	-96.0771	64.4533			No	Not Exceeded	
Road	2023-04-03 10:40 AM	Yes	Caribou	9	Walking	S	700	57	West	No	-96.3601	64.7314			No	Not Exceeded	
Road	2023-04-03 10:40 AM	Yes	Caribou	12	Lying Down	N/A	890	87	West	No	-96.2410	64.9542			No	Not Exceeded	
Incidental	2023-04-03 5:10 PM	Yes	Caribou	100	Lying Down	N/A	800	97	West	No	-96.1711	65.0259			No	Exceeded	Road closed
Road	2023-04-04 8:11 AM	Yes	Caribou	650	Foraging	N	450	88	West	No	-96.2206	64.9581			No	Exceeded	Road closed
Road	2023-04-04 11:10 AM	Yes	Caribou	19	Running	S	900	92	West	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-04-04 11:10 AM	Yes	Caribou	75	Walking	S	800	89	West	No	-96.2196	64.9674			No	Exceeded	Road closed
Road	2023-04-04 11:10 AM	Yes	Caribou	400	Walking	SE	700	87	West	No	-96.2410	64.9542			No	Exceeded	Road closed
Road	2023-04-04 8:04 PM	Yes	Arctic fox	1	Trotting/running	N	25	31	East	No	-96.1957	64.5543			No	Not Exceeded	
Road	2023-04-04 8:04 PM	Yes	Caribou	600	Foraging	N/A	150	86	West	No	-96.2528	64.9468			No	Exceeded	Road closed
Road	2023-04-04 8:04 PM	Yes	Caribou	40	Foraging	N/A	200	88	West	No	-96.2206	64.9581			No	Exceeded	Road closed
Road	2023-04-05 7:41 AM	Yes	Caribou	5	Walking	N	1000	96	West	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-04-05 7:41 AM	Yes	Caribou	132	Foraging	N/A	9	92	West	No	-96.2219	64.9943			No	Exceeded	Road closed
Road	2023-04-05 7:41 AM	Yes	Caribou	700	Foraging	W	500	81	West	No	-96.3021	64.9252			No	Exceeded	Road closed
Road	2023-04-05 7:41 AM	Yes	Caribou	189	Walking	NE	1500	78	West	No	-96.3244	64.9032			No	Exceeded	Road closed
Road	2023-04-05 7:41 AM	Yes	Caribou	133	Resting	N/A	150	96	West	No	-96.1809	65.0181			No	Exceeded	Road closed
Road	2023-04-05 7:41 AM	Yes	Caribou	96	Lying Down	N/A	990	98	West	No	-96.1576	65.0325			No	Exceeded	Road closed
Road	2023-04-06 8:20 AM	Yes	Caribou	19	Walking	NE	500	76	West	No	-96.3457	64.8879			No	Not Exceeded	
Road	2023-04-06 8:20 AM	Yes	Caribou	370	Foraging	NW	800	82	West	No	-96.3120	64.9306			No	Exceeded	Road closed
Road	2023-04-06 8:20 AM	Yes	Caribou	800	Walking	SE	0	84	West	Yes	-96.2828	64.9366			No	Exceeded	Road closed
Road	2023-04-06 8:20 AM	Yes	Caribou	300	Walking	NE	200	83	West	No	-96.3011	64.9350			No	Exceeded	Road closed
Road	2023-04-07 5:11 AM	Yes	Caribou	390	Foraging	N/A	200	96	West	No	-96.1809	65.0181			No	Exceeded	Road closed
Road	2023-04-07 5:11 AM	Yes	Caribou	900	Foraging	S	0	87	Both	Yes	-96.2410	64.9542			No	Exceeded	Road closed
Road	2023-04-07 5:11 AM	Yes	Caribou	8	Walking	N	200	69	Both	Yes	-96.3143	64.8277			No	Not Exceeded	
Road	2023-04-08 6:15 AM	Yes	Caribou	1100	Walking	N	1	92	Both	No	-96.2219	64.9943			No	Exceeded	Road closed
Road	2023-04-08 6:15 AM	Yes	Caribou	80	Walking	S	900	79	West	No	-96.3149	64.9095			No	Exceeded	Road closed
Road	2023-04-08 6:15 AM	Yes	Caribou	180	Foraging	NE	800	75	West	No	-96.3361	64.8795			No	Exceeded	Road closed
Road	2023-04-08 6:15 AM	Yes	Caribou	400	Walking	SW	800	69	West	No	-96.3143	64.8277			No	Exceeded	Road closed
Road	2023-04-08 6:15 AM	Yes	Caribou	290	Foraging	SE	90	66	West	No	-96.3350	64.8045			No	Exceeded	Road closed
Road	2023-04-08 6:15 AM	Yes	Caribou	380	Foraging	N/A	30	64	West	No	-96.3400	64.7867			No	Exceeded	Road closed
Road	2023-04-08 6:15 AM	Yes	Caribou	400	Resting	S	120	60	West	No	-96.3636	64.7555			No	Exceeded	Road closed
Road	2023-04-08 6:15 AM	Yes	Caribou	250	Foraging	S	900	49	West	No	-96.3707	64.6688			No	Exceeded	Road closed
Road	2023-04-09 4:40 PM	Yes	Caribou	390	Walking	NE	900	93	West	No	-96.2220	65.0008			No	Exceeded	Road closed
Road	2023-04-09 4:40 PM	Yes	Caribou	400	Walking	NE	700	90	West	No	-96.2221	64.9750			No	Exceeded	Road closed
Road	2023-04-09 4:40 PM	Yes	Caribou	50	Walking	NE	300	86	West	No	-96.2528	64.9468			No	Exceeded	Road closed
Road	2023-04-09 4:40 PM	Yes	Caribou	200	Walking	E	300	79	East	No	-96.3149	64.9095			No	Exceeded	Road closed
Road	2023-04-09 4:40 PM	Yes	Caribou	90	Walking	NE	1000	75	West	No	-96.3361	64.8795			No	Exceeded	Road closed
Road	2023-04-09 4:40 PM	Yes	Caribou	400	Feeding	N/A	100	65	Both	No	-96.3406	64.7948			No	Exceeded	Road closed
Road	2023-04-09 4:40 PM	Yes	Caribou	350	Foraging	NE	10	57	West	No	-96.3601	64.7314			No	Exceeded	Road closed
Road	2023-04-09 4:40 PM	Yes	Caribou	125	Walking	NE	800	44	West	No	-96.3035	64.6417			No	Exceeded	Road closed
Road	2023-04-09 4:40 PM	Yes	Caribou	300	Walking	NE	1000	29	West	No	-96.1813	64.5473			No	Exceeded	Road closed
Road	2023-04-10 8:48 AM	Yes	Caribou	22	Foraging	N/A	200	69	West	No	-96.3143	64.8277			No	Not Exceeded	
Road	2023-04-10 8:48 AM	Yes	Caribou	200	Foraging	S	560	67	West	No	-96.3262	64.8123			No	Exceeded	Closed just graders cleaning road for daily ride for the 11th
Road	2023-04-10 8:48 AM	Yes	Caribou	16	Walking	S	890	60	West	No	-96.3636	64.7555			No	Not Exceeded	
Road	2023-04-10 8:48 AM	Yes	Caribou	300	Foraging	N/A	350	58	West	No	-96.3579	64.7416			No	Exceeded	Road closed



Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-04-10 8:48 AM	Yes	Caribou	80	Walking	S	1000	36	West	No	-96.2619	64.5804			No	Exceeded	Road closed
Road	2023-04-10 8:48 AM	Yes	Caribou	380	Foraging	SE	390	15	West	No	-96.0525	64.4398			No	Exceeded	Road closed
Road	2023-04-11 5:01 AM	Yes	Caribou	157	Resting	N/A	200	74	West	No	-96.3303	64.8752			No	Exceeded	Road closed
Road	2023-04-11 5:01 AM	Yes	Caribou	18	Walking	N	120	66	West	No	-96.3350	64.8045			No	Not Exceeded	
Road	2023-04-11 5:01 AM	Yes	Caribou	280	Feeding	Not Recorded	250	57	West	No	-96.3601	64.7314			No	Exceeded	Road closed
Road	2023-04-11 5:01 AM	Yes	Caribou	83	Walking	S	180	28	West	No	-96.1701	64.5413			No	Exceeded	Roads closed
Road	2023-04-11 5:01 AM	Yes	Wolverine	1	Trotting/running	Not Recorded	100	52	West	No	-96.3774	64.7009			No	Not Exceeded	
Road	2023-04-12 7:02 AM	Yes	Muskox	11	Feeding	Not Recorded	160	95	West	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-04-12 7:02 AM	Yes	Caribou	3	Standing	Not Recorded	560	94	West	No	-96.2127	65.0075			No	Not Exceeded	
Road	2023-04-12 7:02 AM	Yes	Caribou	28	Walking	N	180	92	West	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-04-12 7:02 AM	Yes	Caribou	178	Feeding	Not Recorded	300	87	West	No	-96.2410	64.9542			No	Exceeded	Road still closed
Road	2023-04-12 7:02 AM	Yes	Caribou	9	Walking	E	0	74	East	Yes	-96.3303	64.8752			No	Not Exceeded	
Road	2023-04-12 7:02 AM	Yes	Caribou	3	Walking	S	200	60	West	No	-96.3636	64.7555			No	Not Exceeded	
Road	2023-04-12 7:02 AM	Yes	Caribou	144	Walking	E	80	56	West	Yes	-96.3514	64.7259			No	Exceeded	Road closed
Road	2023-04-12 7:02 AM	Yes	Wolverine	1	Running	Not Recorded	200	56	Both	No	-96.3514	64.7259			No	Not Exceeded	
Road	2023-04-12 7:02 AM	Yes	Caribou	433	Feeding	Not Recorded	80	51	West	No	-96.3791	64.6932			No	Exceeded	Road closed
Road	2023-04-12 7:02 AM	Yes	Caribou	97	Walking	S	2000	34	West	No	-96.2405	64.5687			No	Exceeded	Roads closed
Road	2023-04-14 5:28 AM	Yes	Caribou	10	Lying Down	N/A	500	97	East	N/A	-96.1711	65.0259			No	Not Exceeded	
Road	2023-04-14 5:28 AM	Yes	Caribou	93	Walking	E	500	93	West	No	-96.2220	65.0008			No	Exceeded	Road closed
Road	2023-04-14 8:01 AM	Yes	Caribou	66	Foraging	Not Recorded	240	96	West	No	-96.1809	65.0181			No	Exceeded	Roads still closed
Road	2023-04-14 8:01 AM	Yes	Caribou	19	Feeding	Not Recorded	400	94	West	No	-96.2127	65.0075			No	Not Exceeded	
Road	2023-04-14 8:01 AM	Yes	Caribou	125	Feeding	Not Recorded	280	92	West	No	-96.2219	64.9943			No	Exceeded	Roads still closed
Road	2023-04-14 8:01 AM	Yes	Caribou	11	Feeding	Not Recorded	300	85	West	No	-96.2614	64.9389			No	Not Exceeded	
Road	2023-04-14 8:01 AM	Yes	Caribou	15	Walking	N	500	83	West	No	-96.3011	64.9350			No	Not Exceeded	
Road	2023-04-14 8:01 AM	Yes	Caribou	11	Walking	NW	350	69	West	No	-96.3143	64.8277			No	Not Exceeded	
Road	2023-04-14 8:01 AM	Yes	Caribou	62	Walking	SE	270	42	West	Yes	-96.2949	64.6276			No	Exceeded	Roads still closed
Incidental	2023-04-14 1:21 PM	Yes	Caribou	27	Walking	S	500	27	East	No	-96.1612	64.5322			No	Not Exceeded	
Incidental	2023-04-14 1:21 PM	Yes	Caribou	10	Standing	N/A	800	94	West	No	-96.2127	65.0075			No	Not Exceeded	
Incidental	2023-04-14 1:21 PM	Yes	Caribou	10	Walking	E	1500	93	East	No	-96.2220	65.0008			No	Not Exceeded	
Incidental	2023-04-14 1:21 PM	Yes	Caribou	18	Feeding	N/A	500	71	East	No	-96.3197	64.8447			No	Not Exceeded	
Incidental	2023-04-14 1:21 PM	Yes	Caribou	19	Walking	S	500	82	East	No	-96.3120	64.9306			No	Not Exceeded	
Incidental	2023-04-14 1:26 PM	Yes	Caribou	11	Walking	S	270	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Incidental	2023-04-14 1:26 PM	Yes	Caribou	8	Walking	S	440	61	West	No	-96.3547	64.7633			No	Not Exceeded	
Incidental	2023-04-14 1:26 PM	Yes	Caribou	30	Walking	S	220	69	West	No	-96.3143	64.8277			No	Not Exceeded	
Incidental	2023-04-14 1:26 PM	Yes	Caribou	47	Walking	E	1000	96	West	No	-96.1809	65.0181			No	Exceeded	Roads closed
Incidental	2023-04-14 1:26 PM	Yes	Caribou	9	Walking	E	400	101	West	No	-96.1403	65.0567			No	Not Exceeded	
Incidental	2023-04-14 1:26 PM	Yes	Caribou	302	Walking	SE	120	103	East	N/A	-96.1108	65.0489			No	Exceeded	Road closed
Road	2023-04-15 6:09 AM	Yes	Caribou	57	Standing	N/A	80	96	West	No	-96.1809	65.0181			No	Exceeded	Road closed
Road	2023-04-15 6:09 AM	Yes	Caribou	3	Standing	N/A	1000	82	West	No	-96.3120	64.9306			No	Not Exceeded	
Road	2023-04-15 6:09 AM	Yes	Caribou	10	Walking	S	1000	21	West	No	-96.1045	64.4869			No	Not Exceeded	
Incidental	2023-04-15 3:15 PM	Yes	Caribou	120	Standing	N/A	200	91	West	No	-192.2270	N/A			No	Exceeded	Road closed
Road	2023-04-16 5:05 AM	Yes	Caribou	12	Standing	Not Recorded	400	95	West	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-04-16 5:05 AM	Yes	Caribou	26	Standing	Not Recorded	600	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-04-16 5:05 AM	Yes	Caribou	102	Walking	S	300	88	West	N/A	-96.2206	64.9581			No	Exceeded	Roads still closed
Road	2023-04-16 5:05 AM	Yes	Caribou	26	Walking	N	700	80	West	N/A	-96.3062	64.9171			No	Not Exceeded	
Road	2023-04-16 5:05 AM	Yes	Caribou	69	Walking	S	800	77	West	No	-96.3391	64.8951			No	Exceeded	Roads still closed
Road	2023-04-16 5:05 AM	Yes	Caribou	36	Walking	S	500	75	West	No	-96.3361	64.8795			No	Exceeded	Roads still closed
Road	2023-04-16 5:05 AM	Yes	Caribou	55	Walking	SE	200	55	West	N/A	-96.3460	64.7185			No	Exceeded	Roads still closed
Road	2023-04-16 5:05 AM	Yes	Caribou	5	Standing	Not Recorded	150	51	West	No	-96.3791	64.6932			No	Not Exceeded	
Incidental	2023-04-16 9:16 AM	Yes	Caribou	34	Walking	SW	600	31	West	No	-96.1957	64.5543			No	Exceeded	Roads still closed



Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2023-04-16 9:16 AM	Yes	Caribou	37	Walking	SW	500	37	West	No	-96.2690	64.5842			No	Exceeded	Roads still closed
Incidental	2023-04-16 9:16 AM	Yes	Caribou	204	Walking	E	1100	79	East	No	-96.3149	64.9095			No	Exceeded	Roads still closed
Incidental	2023-04-16 9:16 AM	Yes	Caribou	29	Walking	E	200	86	West	No	-96.2528	64.9468			No	Not Exceeded	
Incidental	2023-04-16 9:16 AM	Yes	Caribou	46	Walking	SW	300	87	West	No	-96.2410	64.9542			No	Exceeded	Roads still closed
Incidental	2023-04-16 9:16 AM	Yes	Caribou	134	Standing	Not Recorded	100	96	West	No	-96.1809	65.0181			No	Exceeded	Roads still closed
Incidental	2023-04-16 1:56 PM	Yes	Caribou	24	Foraging	N/A	200	95	East	N/A	-96.1952	65.0129			No	Not Exceeded	
Incidental	2023-04-16 1:56 PM	Yes	Caribou	84	Walking	W	300	94	West	Yes	-96.2127	65.0075			No	Exceeded	Road closed
Incidental	2023-04-16 1:56 PM	Yes	Caribou	54	Walking	S	2000	93	West	No	-96.2220	65.0008			No	Exceeded	Road closed
Incidental	2023-04-16 1:56 PM	Yes	Caribou	46	Feeding	N/A	800	88	West	N/A	-96.2206	64.9581			No	Exceeded	Road closed
Incidental	2023-04-16 1:56 PM	Yes	Caribou	122	Foraging	N/A	400	85	West	N/A	-96.2614	64.9389			No	Exceeded	Road closed
Incidental	2023-04-16 1:56 PM	Yes	Caribou	148	Walking	S	800	101	West	No	-96.1403	65.0567			No	Exceeded	Road closed
Road	2023-04-17 5:34 AM	Yes	Caribou	12	Feeding	Not Recorded	900	96	West	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-04-17 5:34 AM	Yes	Caribou	126	Feeding	Not Recorded	200	95	West	No	-96.1952	65.0129			No	Exceeded	Roads still closed
Road	2023-04-17 5:34 AM	Yes	Caribou	38	Walking	SW	700	93	West	No	-96.2220	65.0008			No	Exceeded	Roads still closed
Road	2023-04-17 5:34 AM	Yes	Caribou	62	Standing	Not Recorded	300	91	West	No	-96.2249	64.9847			No	Exceeded	Road closed
Road	2023-04-17 5:34 AM	Yes	Caribou	116	Standing	Not Recorded	800	89	West	No	-96.2196	64.9674			No	Exceeded	Road closed
Road	2023-04-17 5:34 AM	Yes	Caribou	41	Walking	Not Recorded	1	87	Both	Yes	-96.2410	64.9542			No	Exceeded	Road closed
Road	2023-04-17 5:34 AM	Yes	Caribou	5	Walking	NE	400	86	West	No	-96.2528	64.9468			No	Not Exceeded	
Road	2023-04-17 5:34 AM	Yes	Caribou	161	Walking	E	0	81	Both	Yes	-96.3021	64.9252			No	Exceeded	Road closed
Road	2023-04-17 5:34 AM	Yes	Caribou	11	Walking	NE	200	80	West	No	-96.3062	64.9171			No	Not Exceeded	
Road	2023-04-17 5:34 AM	Yes	Muskox	27	Resting	Not Recorded	1600	53	West	No	-96.3731	64.7061			No	Exceeded	Road still closed
Road	2023-04-17 5:34 AM	Yes	Caribou	166	Feeding	Not Recorded	2	36	West	N/A	-96.2619	64.5804			No	Exceeded	Road closed
Incidental	2023-04-17 11:24 AM	Yes	Caribou	200	Walking	SW	300	66	West	No	-96.3350	64.8045			No	Exceeded	Road closed
Incidental	2023-04-17 11:24 AM	Yes	Caribou	178	Walking	SW	700	71	West	No	-96.3197	64.8447			No	Exceeded	Road closed
Road	2023-04-18 4:54 AM	Yes	Caribou	31	Lying Down	Not Recorded	500	94	West	No	-96.2127	65.0075			No	Not Exceeded	
Road	2023-04-18 4:54 AM	Yes	Caribou	36	Walking	S	700	91	West	No	-96.2249	64.9847			No	Exceeded	Road closed
Road	2023-04-18 4:54 AM	Yes	Caribou	22	Standing	Not Recorded	900	89	West	No	-96.2196	64.9674			No	Not Exceeded	
Road	2023-04-18 4:54 AM	Yes	Caribou	17	Feeding	Not Recorded	150	87	West	No	-96.2410	64.9542			No	Not Exceeded	
Road	2023-04-18 4:54 AM	Yes	Caribou	10	Feeding	S	300	84	East	No	-96.2828	64.9366			No	Not Exceeded	
Road	2023-04-18 4:54 AM	Yes	Caribou	56	Standing	Not Recorded	900	83	West	No	-96.3011	64.9350			No	Exceeded	Road still closed
Road	2023-04-18 4:54 AM	Yes	Caribou	84	Standing	S	800	80	West	No	-96.3062	64.9171			No	Exceeded	Road still closed
Road	2023-04-18 4:54 AM	Yes	Caribou	31	Walking	S	900	61	West	No	-96.3547	64.7633			No	Not Exceeded	
Road	2023-04-18 4:54 AM	Yes	Caribou	37	Running	S	1000	60	West	No	-96.3636	64.7555			No	Exceeded	Road still closed
Road	2023-04-18 4:54 AM	Yes	Caribou	108	Walking	SW	800	58	West	No	-96.3579	64.7416			No	Exceeded	Road still closed
Road	2023-04-18 4:54 AM	Yes	Caribou	92	Walking	S	600	53	West	No	-96.3731	64.7061			No	Exceeded	Road still closed
Road	2023-04-18 4:54 AM	Yes	Caribou	62	Walking	S	600	48	West	No	-96.3688	64.6642			No	Exceeded	Road still closed
Incidental	2023-04-18 9:33 AM	Yes	Caribou	202	Walking	E	0	61	West,East	Yes	-96.3547	64.7633			No	Exceeded	Road still closed
Road	2023-04-19 8:15 AM	Yes	Caribou	3	Foraging	W	500	89	West	No	-96.2196	64.9674			No	Not Exceeded	
Road	2023-04-19 8:15 AM	Yes	Caribou	13	Foraging	N	500	84	West	No	-96.2828	64.9366			No	Not Exceeded	
Road	2023-04-19 8:15 AM	Yes	Caribou	8	Walking	E	375	72	East	No	-96.3238	64.8539			No	Not Exceeded	
Road	2023-04-19 8:15 AM	Yes	Caribou	49	Foraging	N/A	400	70	West	No	-96.3165	64.8365			No	Exceeded	Road closed
Road	2023-04-19 8:15 AM	Yes	Caribou	5	Foraging	N/A	600	68	West	No	-96.3268	64.8203			No	Not Exceeded	
Road	2023-04-19 8:15 AM	Yes	Caribou	36	Foraging	N/A	750	64	West	No	-96.3400	64.7867			No	Exceeded	Road closed
Road	2023-04-19 8:15 AM	Yes	Caribou	12	Foraging	S	500	62	West	No	-96.3444	64.7737			No	Not Exceeded	
Road	2023-04-19 8:15 AM	Yes	Caribou	340	Foraging	N	650	59	West	No	-96.3706	64.7495			No	Exceeded	Road closed
Road	2023-04-20 7:10 AM	Yes	Caribou	4	Feeding	Not Recorded	900	96	West	No	-96.1809	65.0181			No	Not Exceeded	



Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-04-20 7:10 AM	Yes	Caribou	34	Feeding	Not Recorded	500	87	West	No	-96.2410	64.9542			No	Exceeded	Road still closed
Road	2023-04-20 7:10 AM	Yes	Caribou	5	Walking	SE	1300	73	East	No	-96.3242	64.8621			No	Not Exceeded	
Road	2023-04-20 7:10 AM	Yes	Caribou	3	Foraging	E	700	67	East	No	-96.3262	64.8123			No	Not Exceeded	
Road	2023-04-20 7:10 AM	Yes	Caribou	7	Feeding	Not Recorded	1500	65	West	No	-96.3406	64.7948			No	Not Exceeded	
Road	2023-04-20 7:10 AM	Yes	Caribou	39	Standing	Not Recorded	1000	50	West	No	-96.3731	64.6794			No	Exceeded	Road closed
Road	2023-04-20 7:10 AM	Yes	Caribou	82	Feeding	Not Recorded	800	49	West	No	-96.3707	64.6688			No	Exceeded	Road closed
Road	2023-04-20 7:10 AM	Yes	Caribou	27	Walking	SE	600	22	West	No	-96.1126	64.4935			No	Not Exceeded	
Incidental	2023-04-20 12:07 PM	Yes	Caribou	50	Walking	SW	400	63	West	No	-96.3444	64.7793			No	Exceeded	Road closed
Road	2023-04-21 5:12 AM	Yes	Muskox	12	Resting	Not Recorded	200	95	East	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-04-21 5:12 AM	Yes	Caribou	3	Standing	NE	400	91	West	No	-96.2249	64.9847			No	Not Exceeded	
Road	2023-04-21 5:12 AM	Yes	Caribou	11	Walking	SW	450	86	West	No	-96.2528	64.9468			No	Not Exceeded	
Road	2023-04-21 5:12 AM	Yes	Caribou	166	Standing	Not Recorded	300	57	West	No	-96.3601	64.7314			No	Exceeded	Road closed
Incidental	2023-04-21 10:12 AM	Yes	Caribou	43	Walking	SW	120	22	West	No	-96.1126	64.4935			No	Exceeded	Road closed
Incidental	2023-04-21 10:12 AM	Yes	Caribou	6	Walking	SE	180	44	West	No	-96.3035	64.6417			No	Not Exceeded	
Incidental	2023-04-21 10:12 AM	Yes	Caribou	6	Walking	E	10	71	East	Yes	-96.3197	64.8447			No	Not Exceeded	
Incidental	2023-04-21 10:12 AM	Yes	Caribou	41	Walking	S	200	72	West	No	-96.3238	64.8539			No	Exceeded	Road still closed
Incidental	2023-04-21 10:12 AM	Yes	Caribou	125	Walking	SW	200	74	West	No	-96.3303	64.8752			No	Exceeded	Road still closed
Incidental	2023-04-21 10:12 AM	Yes	Caribou	82	Standing	Not Recorded	540	79	West	No	-96.3149	64.9095			No	Exceeded	Road still closed
Incidental	2023-04-21 10:12 AM	Yes	Caribou	56	Standing	Not Recorded	500	87	West	No	-96.2410	64.9542			No	Exceeded	Road closed
Incidental	2023-04-21 10:12 AM	Yes	Caribou	32	Walking	NW	600	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Incidental	2023-04-21 5:39 PM	Yes	Caribou	70	Feeding	N/A	20	85	West	No	-96.2614	64.9389			No	Exceeded	Road closed
Road	2023-04-22 6:44 AM	Yes	Caribou	107	Standing	Not Recorded	300	98	West	No	-96.1576	65.0325			No	Exceeded	Road closed
Road	2023-04-22 6:44 AM	Yes	Caribou	14	Standing	Not Recorded	400	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-04-22 6:44 AM	Yes	Caribou	71	Walking	NW	400	92	West	No	-96.2219	64.9943			No	Exceeded	Road closed
Road	2023-04-22 6:44 AM	Yes	Caribou	7	Walking	SE	400	88	East	No	-96.2206	64.9581			No	Not Exceeded	
Road	2023-04-22 6:44 AM	Yes	Caribou	47	Standing	Not Recorded	350	87	West	No	-96.2410	64.9542			No	Exceeded	Road closed
Road	2023-04-22 6:44 AM	Yes	Caribou	41	Feeding	N/A	500	80	West	No	-96.3062	64.9171			No	Exceeded	Road closed
Road	2023-04-22 6:44 AM	Yes	Caribou	64	Walking	SW	700	78	West	No	-96.3244	64.9032			No	Exceeded	Road closed
Road	2023-04-22 6:44 AM	Yes	Caribou	20	Walking	SW	500	36	West	No	-96.2619	64.5804			No	Not Exceeded	
Road	2023-04-22 6:44 AM	Yes	Caribou	11	Walking	W	500	26	West	No	-96.1615	64.5235			No	Not Exceeded	
Road	2023-04-22 6:44 AM	Yes	Caribou	67	Resting	Not Recorded	600	54	West	No	-96.3584	64.7132			No	Exceeded	Road closed
Incidental	2023-04-22 8:44 AM	Yes	Muskox	19	Foraging	N/A	200	98	East	No	-96.1576	65.0325			No	Exceeded	Road was already closed
Incidental	2023-04-22 8:44 AM	Yes	Caribou	89	Alert	NW	200	104	West	No	-96.0972	65.0446			No	Exceeded	Road closed
Incidental	2023-04-22 12:10 PM	Yes	Caribou	57	Walking	S	600	65	West	No	-96.3406	64.7948			No	Exceeded	Road closed
Incidental	2023-04-22 12:10 PM	Yes	Caribou	50	Standing	NE	740	82	West	No	-96.3120	64.9306			No	Exceeded	Road closed
Road	2023-04-23 6:58 AM	Yes	Caribou	6	Standing	NE	200	101	West	No	-96.1403	65.0567			No	Not Exceeded	
Road	2023-04-23 6:58 AM	Yes	Caribou	33	Feeding	Not Recorded	350	95	West	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-04-23 6:58 AM	Yes	Caribou	4	Foraging	Not Recorded	500	94	West	No	-96.2127	65.0075			No	Not Exceeded	
Road	2023-04-23 6:58 AM	Yes	Caribou	117	Feeding	Not Recorded	150	93	Both	No	-96.2220	65.0008			No	Exceeded	Road closed
Road	2023-04-23 6:58 AM	Yes	Caribou	97	Walking	Not Recorded	100	89	Both	No	-96.2196	64.9674			No	Exceeded	Road closed
Road	2023-04-23 6:58 AM	Yes	Caribou	284	Feeding	Not Recorded	50	85	Both	No	-96.2614	64.9389			No	Exceeded	Road closed
Road	2023-04-23 6:58 AM	Yes	Caribou	3	Walking	NW	300	83	West	No	-96.3011	64.9350			No	Not Exceeded	
Road	2023-04-23 6:58 AM	Yes	Caribou	41	Walking	E	200	81	West	No	-96.3021	64.9252			No	Exceeded	Road closed
Road	2023-04-23 6:58 AM	Yes	Caribou	157	Walking	E	0	79	Both	Yes	-96.3149	64.9095			No	Exceeded	Road closed
Road	2023-04-23 6:58 AM	Yes	Caribou	29	Walking	Not Recorded	500	64	West	No	-96.3400	64.7867			No	Not Exceeded	
Road	2023-04-23 6:58 AM	Yes	Caribou	6	Walking	E	200	60	East	No	-96.3636	64.7555			No	Not Exceeded	
Road	2023-04-23 6:58 AM	Yes	Caribou	38	Walking	SE	200	42	West	No	-96.2949	64.6276			No	Exceeded	Road closed
Road	2023-04-24 7:29 AM	Yes	Caribou	11	Feeding	Not Recorded	50	106	East	No	-96.0829	65.0271			No	Not Exceeded	
Road	2023-04-24 7:29 AM	Yes	Caribou	60	Walking	NE	1100	98	West	No	-96.1576	65.0325			No	Exceeded	Road closed
Road	2023-04-24 7:29 AM	Yes	Caribou	110	Walking	NE	1400	94	West	No	-96.2127	65.0075			No	Exceeded	Road closed
Road	2023-04-24 7:29 AM	Yes	Caribou	57	Walking	NE	700	93	West	No	-96.2220	65.0008			No	Exceeded	Road closed
Road	2023-04-24 7:29 AM	Yes	Caribou	75	Resting	Not Recorded	400	92	West	No	-96.2219	64.9943			No	Exceeded	Road closed
Road	2023-04-24 7:29 AM	Yes	Caribou	69	Walking	Not Recorded	200	91	Both	No	-96.2249	64.9847			No	Exceeded	Road closed
Road	2023-04-24 7:29 AM	Yes	Caribou	195	Walking	NE	800	89	West	No	-96.2196	64.9674			No	Exceeded	Road closed
Road	2023-04-24 7:29 AM	Yes	Caribou	33	Walking	SW	700	82	West	No	-96.3120	64.9306			No	Not Exceeded	



Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-04-24 7:29 AM	Yes	Caribou	136	Feeding	Not Recorded	500	80	West	No	-96.3062	64.9171			No	Exceeded	Road closed
Road	2023-04-24 7:29 AM	Yes	Caribou	158	Walking	S	540	71	West	No	-96.3197	64.8447			No	Exceeded	Road closed
Road	2023-04-24 7:29 AM	Yes	Caribou	493	Standing	Not Recorded	100	69	West	N/A	-96.3143	64.8277			No	Exceeded	Road closed
Road	2023-04-24 7:29 AM	Yes	Caribou	17	Standing	Not Recorded	634	66	West	No	-96.3350	64.8045			No	Not Exceeded	
Road	2023-04-24 7:29 AM	Yes	Caribou	56	Walking	S	700	61	West	No	-96.3547	64.7633			No	Exceeded	Road closed
Road	2023-04-24 7:29 AM	Yes	Caribou	43	Standing	Not Recorded	840	57	West	No	-96.3601	64.7314			No	Exceeded	Road closed
Incidental	2023-04-24 5:14 PM	Yes	Caribou	70	Walking	SW	740	57	West	No	-96.3601	64.7314			No	Exceeded	Road closed
Incidental	2023-04-24 5:14 PM	Yes	Caribou	162	Walking	E	0	60	West,East	Yes	-96.3636	64.7555			No	Exceeded	Road closed
Incidental	2023-04-24 5:14 PM	Yes	Caribou	24	Walking	S	600	82	West	No	-96.3120	64.9306			No	Not Exceeded	
Incidental	2023-04-24 5:14 PM	Yes	Caribou	9	Feeding	Not Recorded	100	86	East	No	-96.2528	64.9468			No	Not Exceeded	
Incidental	2023-04-24 5:14 PM	Yes	Caribou	67	Walking	NW	500	89	West	No	-96.2196	64.9674			No	Exceeded	Road closed
Incidental	2023-04-24 5:14 PM	Yes	Caribou	112	Walking	NE	600	93	West	No	-96.2220	65.0008			No	Exceeded	Road closed
Incidental	2023-04-24 5:14 PM	Yes	Caribou	43	Walking	NE	700	94	West	No	-96.2127	65.0075			No	Exceeded	Road closed
Road	2023-04-25 6:53 AM	Yes	Caribou	102	Walking	NE	300	97	West	No	-96.1711	65.0259			No	Exceeded	Road closed
Road	2023-04-25 6:53 AM	Yes	Caribou	111	Lying Down	Not Recorded	200	95	West	No	-96.1952	65.0129			No	Exceeded	Road closed
Road	2023-04-25 6:53 AM	Yes	Caribou	78	Standing	Not Recorded	400	93	West	No	-96.2220	65.0008			No	Exceeded	Road closed
Road	2023-04-25 6:53 AM	Yes	Caribou	85	Walking	SE	340	91	Both	No	-96.2249	64.9847			No	Exceeded	Road closed
Road	2023-04-25 6:53 AM	Yes	Caribou	44	Feeding	Not Recorded	800	89	West	No	-96.2196	64.9674			No	Exceeded	Road closed
Road	2023-04-25 6:53 AM	Yes	Caribou	5	Feeding	Not Recorded	300	86	East	No	-96.2528	64.9468			No	Not Exceeded	
Road	2023-04-25 6:53 AM	Yes	Caribou	23	Walking	S	600	81	West	No	-96.3021	64.9252			No	Not Exceeded	
Road	2023-04-25 6:53 AM	Yes	Caribou	143	Walking	E	900	78	West	No	-96.3244	64.9032			No	Exceeded	Road closed
Road	2023-04-25 6:53 AM	Yes	Caribou	41	Walking	S	700	74	West	No	-96.3303	64.8752			No	Exceeded	Road closed
Road	2023-04-25 6:53 AM	Yes	Caribou	16	Walking	E	500	68	East	No	-96.3268	64.8203			No	Not Exceeded	
Road	2023-04-25 6:53 AM	Yes	Caribou	65	Walking	S	600	61	West	No	-96.3547	64.7633			No	Exceeded	Road closed
Road	2023-04-25 6:53 AM	Yes	Caribou	43	Walking	SW	500	56	West	No	-96.3514	64.7259			No	Exceeded	Road closed
Road	2023-04-25 6:53 AM	Yes	Caribou	38	Walking	SW	840	47	West	No	-96.3466	64.6580			No	Exceeded	Road closed
Road	2023-04-26 6:59 AM	Yes	Caribou	31	Walking	S	200	22	West	No	-96.1126	64.4935			No	Not Exceeded	
Road	2023-04-26 6:59 AM	Yes	Caribou	47	Standing	S	200	56	West	No	-96.3514	64.7259			No	Exceeded	Road closed
Road	2023-04-26 6:59 AM	Yes	Caribou	171	Walking	S	150	60	West	No	-96.3636	64.7555			No	Exceeded	Road closed
Road	2023-04-26 6:59 AM	Yes	Caribou	42	Walking	S	200	63	West	No	-96.3444	64.7793			No	Exceeded	Road closed
Road	2023-04-26 6:59 AM	Yes	Caribou	71	Walking	S	200	64	West	No	-96.3400	64.7867			No	Exceeded	Road closed
Road	2023-04-26 6:59 AM	Yes	Caribou	15	Walking	S	200	65	West	No	-96.3406	64.7948			No	Not Exceeded	
Road	2023-04-26 6:59 AM	Yes	Caribou	83	Walking	SW	200	69	West	No	-96.3143	64.8277			No	Exceeded	Road closed
Road	2023-04-26 6:59 AM	Yes	Caribou	14	Walking	S	200	70	West	No	-96.3165	64.8365			No	Not Exceeded	
Road	2023-04-26 6:59 AM	Yes	Caribou	36	Walking	S	600	72	West	No	-96.3238	64.8539			No	Exceeded	Road closed
Road	2023-04-26 6:59 AM	Yes	Caribou	101	Lying Down	Not Recorded	800	73	West	No	-96.3242	64.8621			No	Exceeded	Road closed
Road	2023-04-26 6:59 AM	Yes	Caribou	41	Walking	E	700	83	West	No	-96.3011	64.9350			No	Exceeded	Road closed
Road	2023-04-26 6:59 AM	Yes	Caribou	151	Feeding	Not Recorded	50	86	Both	N/A	-96.2528	64.9468			No	Exceeded	Road closed
Road	2023-04-26 6:59 AM	Yes	Caribou	91	Feeding	Not Recorded	300	87	Both	No	-96.2410	64.9542			No	Exceeded	Road closed
Road	2023-04-26 6:59 AM	Yes	Caribou	132	Standing	Not Recorded	200	96	West	No	-96.1809	65.0181			No	Exceeded	Road closed
Road	2023-04-27 6:25 AM	Yes	Caribou	3	Standing	N/A	150	100	East	No	-96.1465	65.0488			No	Not Exceeded	
Road	2023-04-27 6:25 AM	Yes	Caribou	96	Standing	N/A	200	96	West	No	-96.1809	65.0181			No	Exceeded	Road closed
Road	2023-04-27 6:25 AM	Yes	Caribou	5	Standing	N/A	300	95	West	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-04-27 6:25 AM	Yes	Caribou	12	Standing	N/A	150	94	West	No	-96.2127	65.0075			No	Not Exceeded	
Road	2023-04-27 6:25 AM	Yes	Muskox	12	Running	N	20	95	East	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-04-27 6:25 AM	Yes	Caribou	12	Standing	N/A	300	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-04-27 6:25 AM	Yes	Caribou	25	Standing	N/A	200	92	Both	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-04-27 6:25 AM	Yes	Caribou	13	Walking	N	100	90	West	No	-96.2221	64.9750			No	Not Exceeded	
Road	2023-04-27 6:25 AM	Yes	Caribou	120	Foraging	N/A	500	89	West	No	-96.2196	64.9674			No	Exceeded	Road closed
Road	2023-04-27 6:25 AM	Yes	Caribou	334	Lying Down	N/A	500	88	West	No	-96.2206	64.9581			No	Exceeded	Road closed
Road	2023-04-27 6:25 AM	Yes	Caribou	34	Standing	N/A	200	87	Both	No	-96.2410	64.9542			No	Exceeded	Road closed
Road	2023-04-27 6:25 AM	Yes	Caribou	29	Standing	N/A	400	86	West	No	-96.2528	64.9468			No	Not Exceeded	
Road	2023-04-27 6:25 AM	Yes	Caribou	63	Foraging	N/A	600	95	West	No	-96.1952	65.0129			No	Exceeded	Road closed
Road	2023-04-27 6:25 AM	Yes	Caribou	4	Standing	N/A	600	79	West	No	-96.3149	64.9095			No	Not Exceeded	
Road	2023-04-27 6:25 AM	Yes	Caribou	26	Running	S	400	76	West	No	-96.3457	64.8879			No	Not Exceeded	
Road	2023-04-27 6:25 AM	Yes	Caribou	32	Walking	S	700	72	West	No	-96.3238	64.8539			No	Not Exceeded	
Road	2023-04-27 6:25 AM	Yes	Caribou	132	Foraging	N/A	100	69	West	No	-96.3143	64.8277			No	Exceeded	Road closed
Road	2023-04-27 6:25 AM	Yes	Caribou	149	Walking	S	200	66	West	No	-96.3350	64.8045			No	Exceeded	Road closed
Road	2023-04-27 6:25 AM	Yes	Caribou	161	Foraging	N/A	800	65	East	No	-96.3406	64.7948			No	Exceeded	Road closed
Road	2023-04-27 6:25 AM	Yes	Caribou	148	Walking	S	150	64	West	No	-96.3400	64.7867			No	Exceeded	Road closed



Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-04-27 6:25 AM	Yes	Caribou	21	Walking	S	150	63	West	No	-96.3444	64.7793			No	Not Exceeded	
Road	2023-04-27 6:25 AM	Yes	Caribou	7	Foraging	N/A	900	58	West	No	-96.3579	64.7416			No	Not Exceeded	
Road	2023-04-27 6:25 AM	Yes	Caribou	282	Standing	N/A	150	57	West	No	-96.3601	64.7314			No	Exceeded	Road closed
Road	2023-04-27 6:25 AM	Yes	Caribou	154	Walking	S	400	53	West	No	-96.3731	64.7061			No	Exceeded	Road closed
Road	2023-04-27 6:25 AM	Yes	Caribou	50	Running	S	300	42	West	No	-96.2949	64.6276			No	Exceeded	Road closed
Road	2023-04-27 6:25 AM	Yes	Caribou	256	Walking	S	250	41	West	No	-96.2811	64.6203			No	Exceeded	Road closed
Road	2023-04-27 6:25 AM	Yes	Caribou	105	Walking	S	300	22	West	No	-96.1126	64.4935			No	Exceeded	Road closed
Incidental	2023-04-27 12:02 PM	Yes	Caribou	48	Foraging	N/A	600	114	West	No	-96.0042	65.0668			No	Exceeded	Road closed
Incidental	2023-04-27 12:02 PM	Yes	Caribou	184	Walking	S	400	28	West	No	-96.1701	64.5413			No	Exceeded	Road closed
Incidental	2023-04-27 12:02 PM	Yes	Caribou	25	Walking	SW	300	34	West	No	-96.2405	64.5687			No	Not Exceeded	
Incidental	2023-04-27 12:02 PM	Yes	Caribou	64	Standing	N/A	400	36	West	No	-96.2619	64.5804			No	Exceeded	Road closed
Incidental	2023-04-27 12:02 PM	Yes	Caribou	83	Walking	S	300	38	West	No	-96.2758	64.5907			No	Exceeded	Road closed
Incidental	2023-04-27 12:02 PM	Yes	Caribou	37	Foraging	N/A	500	48	West	No	-96.3688	64.6642			No	Exceeded	Road closed
Incidental	2023-04-27 12:02 PM	Yes	Caribou	246	Foraging	N/A	100	54	West	No	-96.3584	64.7132			No	Exceeded	Road closed
Incidental	2023-04-27 12:02 PM	Yes	Caribou	57	Walking	W	1000	57	West	No	-96.3601	64.7314			No	Exceeded	Road closed
Incidental	2023-04-27 12:02 PM	Yes	Caribou	379	Walking	S	300	58	West	No	-96.3579	64.7416			No	Exceeded	Road closed
Incidental	2023-04-27 12:02 PM	Yes	Caribou	42	Foraging	N/A	300	62	West	No	-96.3444	64.7737			No	Exceeded	Road closed
Incidental	2023-04-27 12:02 PM	Yes	Caribou	35	Foraging	N/A	300	63	West	No	-96.3444	64.7793			No	Exceeded	Road closed
Incidental	2023-04-27 12:02 PM	Yes	Caribou	28	Standing	N/A	1000	65	West	No	-96.3406	64.7948			No	Not Exceeded	
Incidental	2023-04-27 12:02 PM	Yes	Caribou	12	Foraging	N/A	600	66	West	No	-96.3350	64.8045			No	Not Exceeded	
Incidental	2023-04-27 12:02 PM	Yes	Caribou	4	Standing	N/A	500	70	West	No	-96.3165	64.8365			No	Not Exceeded	
Incidental	2023-04-27 12:02 PM	Yes	Caribou	26	Foraging	N/A	1000	72	West	No	-96.3238	64.8539			No	Not Exceeded	
Incidental	2023-04-27 12:02 PM	Yes	Caribou	25	Foraging	N/A	1000	82	West	No	-96.3120	64.9306			No	Not Exceeded	
Incidental	2023-04-27 12:02 PM	Yes	Caribou	9	Foraging	N/A	700	86	West	No	-96.2528	64.9468			No	Not Exceeded	
Incidental	2023-04-27 12:02 PM	Yes	Caribou	84	Foraging	N/A	500	87	West	No	-96.2410	64.9542			No	Exceeded	Road closed
Incidental	2023-04-27 12:02 PM	Yes	Caribou	20	Foraging	N/A	700	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Incidental	2023-04-27 12:02 PM	Yes	Caribou	11	Standing	N/A	300	96	West	No	-96.1809	65.0181			No	Not Exceeded	
Incidental	2023-04-27 12:02 PM	Yes	Caribou	3	Foraging	N/A	150	102	East	No	-96.1278	65.0517			No	Not Exceeded	
Road	2023-04-28 6:44 AM	Yes	Caribou	150	Resting	S	300	87	West	No	-96.2410	64.9542			No	Exceeded	Road closed
Road	2023-04-28 6:44 AM	Yes	Caribou	180	Walking	N	350	76	West	No	-96.3457	64.8879			No	Exceeded	Road closed
Road	2023-04-28 6:44 AM	Yes	Caribou	200	Foraging	N/A	2	73	West	No	-96.3242	64.8621			No	Exceeded	Road closed
Road	2023-04-28 6:44 AM	Yes	Caribou	44	Walking	N	800	56	West	No	-96.3514	64.7259			No	Exceeded	Road closed
Road	2023-04-28 6:44 AM	Yes	Caribou	70	Walking	SE	450	57	West	No	-96.3601	64.7314			No	Exceeded	Road closed
Road	2023-04-28 6:44 AM	Yes	Caribou	82	Walking	NE	400	37	West	No	-96.2690	64.5842			No	Exceeded	Road closed
Road	2023-04-28 6:44 AM	Yes	Caribou	270	Foraging	NE	500	32	West	No	-96.2045	64.5647			No	Exceeded	Road closed
Road	2023-04-28 6:44 AM	Yes	Caribou	85	Foraging	NE	700	24	West	No	-96.1365	64.5079			No	Exceeded	Road closed
Road	2023-04-28 6:44 AM	Yes	Caribou	96	Foraging	SE	50	22	West	No	-96.1126	64.4935			No	Exceeded	Road closed
Road	2023-04-28 6:44 AM	Yes	Caribou	450	Walking	NW	800	7	West	No	-96.0092	64.3726			No	Exceeded	Road closed
Road	2023-04-28 6:44 AM	Yes	Caribou	200	Foraging	SE	5	57	Both	No	-96.3601	64.7314			No	Exceeded	Road closed
Road	2023-04-29 8:06 AM	Yes	Caribou	6	Walking	N	100	100	West	No	-96.1465	65.0488			No	Not Exceeded	
Road	2023-04-29 8:06 AM	Yes	Caribou	210	Walking	S	0	89	Both	No	-96.2196	64.9674			No	Exceeded	Road closed
Road	2023-04-29 8:06 AM	Yes	Caribou	23	Walking	S	500	88	West	No	-96.2206	64.9581			No	Not Exceeded	
Road	2023-04-29 8:06 AM	Yes	Caribou	11	Feeding	N/A	300	87	West	No	-96.2410	64.9542			No	Not Exceeded	
Road	2023-04-29 8:06 AM	Yes	Caribou	73	Walking	NE	600	77	West	No	-96.3391	64.8951			No	Exceeded	Road closed
Road	2023-04-29 8:06 AM	Yes	Caribou	50	Resting	N/A	600	75	West	No	-96.3361	64.8795			No	Exceeded	Road closed
Road	2023-04-29 8:06 AM	Yes	Caribou	525	Resting	N/A	0	69	Both	No	-96.3143	64.8277			No	Exceeded	Road closed
Road	2023-04-29 8:06 AM	Yes	Caribou	10	Walking	S	200	67	West	No	-96.3262	64.8123			No	Not Exceeded	
Road	2023-04-29 8:06 AM	Yes	Caribou	39	Walking	S	700	65	West	No	-96.3406	64.7948			No	Exceeded	Road closed
Road	2023-04-29 8:06 AM	Yes	Caribou	12	Walking	SE	200	59	West	No	-96.3706	64.7495			No	Not Exceeded	
Road	2023-04-29 8:06 AM	Yes	Caribou	9	Standing	N/A	500	59	West	No	-96.3706	64.7495			No	Not Exceeded	
Road	2023-04-29 8:06 AM	Yes	Caribou	5	Walking	S	1200	35	West	No	-96.2443	64.5739			No	Not Exceeded	
Road	2023-04-30 7:00 AM	Yes	Caribou	4	Foraging	N/A	5	98	West	No	-96.1576	65.0325			No	Not Exceeded	
Road	2023-04-30 7:00 AM	Yes	Caribou	6	Foraging	N/A	300	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-04-30 7:00 AM	Yes	Caribou	50	Lying Down	N/A	330	91	West	No	-96.2249	64.9847			No	Exceeded	Road closed
Road	2023-04-30 7:00 AM	Yes	Caribou	45	Lying Down	N/A	230	89	East	No	-96.2196	64.9674			No	Exceeded	Road closed
Road	2023-04-30 7:00 AM	Yes	Caribou	60	Foraging	N/A	200	86	West	No	-96.2528	64.9468			No	Exceeded	Road closed
Road	2023-04-30 7:00 AM	Yes	Caribou	49	Foraging	SE	990	83	West	No	-96.3011	64.9350			No	Exceeded	Road closed
Road	2023-04-30 7:00 AM	Yes	Caribou	17	Foraging	SE	200	74	West	No	-96.3303	64.8752			No	Not Exceeded	
Road	2023-04-30 7:00 AM	Yes	Caribou	2	Foraging	W	150	68	West	No	-96.3268	64.8203			No	Not Exceeded	
Road	2023-04-30 7:00 AM	Yes	Caribou	4	Foraging	E	150	67	East	No	-96.3262	64.8123			No	Not Exceeded	

Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-04-30 7:00 AM	Yes	Wolf	1	Trotting/running	S	580	65	West	No	-96.3406	64.7948			No	Not Exceeded	
Road	2023-04-30 7:00 AM	Yes	Caribou	11	Foraging	NE	900	61	West	No	-96.3547	64.7633			No	Not Exceeded	
Road	2023-04-30 7:00 AM	Yes	Caribou	25	Foraging	N/A	600	44	West	No	-96.3035	64.6417			No	Not Exceeded	
Incidental	2023-04-30 2:02 PM	Yes	Caribou	300	Not recorded	N/A	700	56	West	N/A	-192.3536	N/A			No	Exceeded	Road closed
Road	2023-05-01 3:43 AM	Yes	Caribou	111	Feeding	N/A	75	94	West	No	-96.2127	65.0075			No	Exceeded	Road closed
Road	2023-05-01 3:43 AM	Yes	Caribou	124	Walking	N	250	91	West	No	-96.2249	64.9847			No	Exceeded	Road closed
Road	2023-05-01 3:43 AM	Yes	Caribou	74	Standing	N/A	100	89	West	No	-96.2196	64.9674			No	Exceeded	Road closed
Road	2023-05-01 3:43 AM	Yes	Caribou	37	Standing	N/A	0	87	Both	Yes	-96.2410	64.9542			No	Exceeded	Road closed
Road	2023-05-01 3:43 AM	Yes	Caribou	7	Running	E	1000	80	East	No	-96.3062	64.9171			No	Not Exceeded	
Road	2023-05-01 3:43 AM	Yes	Caribou	83	Walking	N	800	76	West	No	-96.3457	64.8879			No	Exceeded	Road closed
Road	2023-05-01 3:43 AM	Yes	Caribou	28	Walking	SW	700	22	West	No	-96.1126	64.4935			No	Not Exceeded	
Road	2023-05-01 3:43 AM	Yes	Wolf	1	Walking	E	50	20	East	No	-96.0960	64.4787			No	Not Exceeded	
Road	2023-05-01 3:43 AM	Yes	Caribou	38	Walking	SE	150	14	East	No	-96.0430	64.4312			No	Exceeded	Road closed
Incidental	2023-05-01 1:01 PM	Yes	Caribou	31	Resting	N/A	150	57	West	No	-96.3601	64.7314			No	Not Exceeded	
Road	2023-05-02 4:17 AM	Yes	Caribou	38	Feeding	N/A	500	97	West	No	-96.1711	65.0259			No	Exceeded	Road closed
Road	2023-05-02 4:17 AM	Yes	Caribou	52	Walking	E	800	96	West	No	-96.1809	65.0181			No	Exceeded	Road closed
Road	2023-05-02 4:17 AM	Yes	Caribou	50	Walking	N	300	87	West	No	-96.2410	64.9542			No	Exceeded	Road closed
Road	2023-05-02 4:17 AM	Yes	Caribou	58	Walking	N	300	87	West	No	-96.2410	64.9542			No	Exceeded	Road closed
Road	2023-05-02 4:17 AM	Yes	Caribou	28	Standing	N/A	800	79	West	No	-96.3149	64.9095			No	Not Exceeded	
Road	2023-05-02 4:17 AM	Yes	Caribou	18	Walking	SE	500	71	West	No	-96.3197	64.8447			No	Not Exceeded	
Road	2023-05-02 4:17 AM	Yes	Caribou	3	Feeding	N/A	400	66	West	No	-96.3350	64.8045			No	Not Exceeded	
Road	2023-05-03 4:10 AM	Yes	Caribou	180	Foraging	N/A	400	89	West	No	-96.2196	64.9674			No	Exceeded	Road closed
Road	2023-05-03 4:10 AM	Yes	Caribou	130	Foraging	N	800	72	West	No	-96.3238	64.8539			No	Exceeded	Road closed
Road	2023-05-03 4:10 AM	Yes	Caribou	34	Foraging	S	300	68	West	No	-96.3268	64.8203			No	Exceeded	Road closed
Road	2023-05-03 4:10 AM	Yes	Caribou	4	Walking	SE	0	59	West	Yes	-96.3706	64.7495			No	Not Exceeded	
Road	2023-05-03 4:10 AM	Yes	Caribou	16	Walking	S	500	48	West	No	-96.3688	64.6642			No	Not Exceeded	
Road	2023-05-05 4:59 AM	Yes	Caribou	6	Foraging	S	400	89	West	No	-96.2196	64.9674			No	Not Exceeded	
Road	2023-05-05 4:59 AM	Yes	Caribou	50	Walking	W	600	85	West	No	-96.2614	64.9389			No	Exceeded	Road closed
Road	2023-05-05 4:59 AM	Yes	Caribou	10	Foraging	N	300	79	West	No	-96.3149	64.9095			No	Not Exceeded	
Road	2023-05-05 4:59 AM	Yes	Caribou	45	Foraging	N/A	400	50	West	No	-96.3731	64.6794			No	Exceeded	Road closed
Road	2023-05-06 7:00 AM	Yes	Caribou	17	Walking	N/A	1000	92	East	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-05-06 7:00 AM	Yes	Caribou	23	Foraging	N/A	500	90	West	No	-96.2221	64.9750			No	Not Exceeded	
Road	2023-05-06 7:00 AM	Yes	Caribou	160	Foraging	N/A	300	90	East	No	-96.2221	64.9750			No	Exceeded	Road is closed due to caribou presence
Incidental	2023-05-12 8:55 AM	Yes	Siksik	1	Dead	N/A	0	98	East	Yes	-96.1576	65.0325		Project related	No	Not Exceeded	
Road	2023-05-13 8:25 AM	Yes	Caribou	45	Foraging	SW	200	42	West	No	-96.2949	64.6276			No	Exceeded	Road closed
Road	2023-05-13 8:25 AM	Yes	Caribou	210	Foraging	SE	600	55	West	No	-96.3460	64.7185			No	Exceeded	Road closed
Road	2023-05-13 8:25 AM	Yes	Caribou	25	Foraging	N/A	100	59	West	No	-96.3706	64.7495			No	Not Exceeded	
Road	2023-05-13 8:25 AM	Yes	Caribou	98	Walking	NE	120	68	West	No	-96.3268	64.8203			No	Exceeded	Road closed
Road	2023-05-14 7:00 AM	Yes	Caribou	4	Foraging	N/A	50	101	East	No	-96.1403	65.0567			No	Not Exceeded	
Road	2023-05-14 7:00 AM	Yes	Caribou	2	Foraging	N/A	300	84	East	No	-96.2828	64.9366			No	Not Exceeded	
Road	2023-05-14 7:00 AM	Yes	Caribou	18	Foraging	N/A	150	83	West	No	-96.3011	64.9350			No	Not Exceeded	
Road	2023-05-14 7:00 AM	Yes	Caribou	40	Foraging	N/A	1300	82	West	No	-96.3120	64.9306			No	Exceeded	Road closed due to caribou
Road	2023-05-14 7:00 AM	Yes	Caribou	120	Foraging	N/A	150	79	West	No	-96.3149	64.9095			No	Exceeded	Road closed due to caribou
Road	2023-05-14 7:00 AM	Yes	Caribou	21	Foraging	N/A	150	77	West	No	-96.3391	64.8951			No	Not Exceeded	
Road	2023-05-14 7:00 AM	Yes	Caribou	22	Foraging	N/A	500	72	West	No	-96.3238	64.8539			No	Not Exceeded	
Road	2023-05-14 7:00 AM	Yes	Caribou	15	Foraging	N/A	50	69	West	No	-96.3143	64.8277			No	Not Exceeded	
Road	2023-05-14 7:00 AM	Yes	Caribou	20	Foraging	N/A	75	68	West	No	-96.3268	64.8203			No	Not Exceeded	
Road	2023-05-14 7:00 AM	Yes	Caribou	20	Foraging	N/A	75	64	West	No	-96.3400	64.7867			No	Not Exceeded	
Road	2023-05-14 7:00 AM	Yes	Caribou	83	Walking	Not Recorded	10	63	Both	No	-96.3444	64.7793			No	Exceeded	Road closed due to caribou
Road	2023-05-14 7:00 AM	Yes	Caribou	2	Foraging	N/A	50	50	West	No	-96.3731	64.6794			No	Not Exceeded	
Road	2023-05-14 7:00 AM	Yes	Caribou	8	Foraging	N/A	75	37	West	No	-96.2690	64.5842			No	Not Exceeded	
Road	2023-05-15 6:09 AM	Yes	Caribou	55	Walking	E	0	21	West	Yes	-96.1045	64.4869			No	Exceeded	Road closed
Road	2023-05-15 6:09 AM	Yes	Caribou	40	Foraging	N	130	43	West	No	-96.3007	64.6348			No	Exceeded	Road closed



Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-05-15 6:09 AM	Yes	Caribou	45	Foraging	E	130	49	West	No	-96.3707	64.6688			No	Exceeded	Road closed
Road	2023-05-15 6:09 AM	Yes	Caribou	16	Walking	N	900	52	West	No	-96.3774	64.7009			No	Not Exceeded	
Road	2023-05-15 6:09 AM	Yes	Caribou	117	Walking	SE	290	58	West	No	-96.3579	64.7416			No	Exceeded	Road closed
Road	2023-05-15 6:09 AM	Yes	Caribou	52	Foraging	E	600	64	West	No	-96.3400	64.7867			No	Exceeded	Road closed
Road	2023-05-15 6:09 AM	Yes	Caribou	72	Foraging	N/A	310	73	West	No	-96.3242	64.8621			No	Exceeded	Road closed
Road	2023-05-15 6:09 AM	Yes	Caribou	22	Foraging	NW	200	78	West	No	-96.3244	64.9032			No	Not Exceeded	
Road	2023-05-15 6:09 AM	Yes	Caribou	55	Walking	NW	500	79	West	No	-96.3149	64.9095			No	Exceeded	Road closed
Road	2023-05-15 6:09 AM	Yes	Caribou	9	Resting	N/A	1000	81	West	No	-96.3021	64.9252			No	Not Exceeded	
Road	2023-05-15 6:09 AM	Yes	Caribou	45	Foraging	S	100	82	West	No	-96.3120	64.9306			No	Exceeded	Road closed
Road	2023-05-15 6:09 AM	Yes	Caribou	57	Walking	NW	500	83	West	No	-96.3011	64.9350			No	Exceeded	Road closed
Road	2023-05-15 6:09 AM	Yes	Caribou	25	Walking	S	250	87	West	No	-96.2410	64.9542			No	Not Exceeded	
Road	2023-05-15 6:09 AM	Yes	Caribou	11	Foraging	N/A	800	88	West	No	-96.2206	64.9581			No	Not Exceeded	
Road	2023-05-15 6:09 AM	Yes	Arctic hare	1	Foraging	N/A	5	92	West	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-05-15 6:09 AM	Yes	Caribou	3	Foraging	N	450	95	West	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-05-15 6:09 AM	Yes	Caribou	4	Foraging	S	10	102	East	No	-96.1278	65.0517			No	Not Exceeded	
Road	2023-05-15 6:09 AM	Yes	Caribou	5	Foraging	N/A	75	103	West	No	-96.1108	65.0489			No	Not Exceeded	
Road	2023-05-18 6:45 AM	Yes	Caribou	6	Walking	E	10	104	East	No	-96.0972	65.0446			No	Not Exceeded	
Road	2023-05-18 6:45 AM	Yes	Caribou	3	Walking	S	800	83	West	No	-96.3011	64.9350			No	Not Exceeded	
Road	2023-05-18 6:45 AM	Yes	Caribou	19	Feeding	N/A	150	82	West	No	-96.3120	64.9306			No	Not Exceeded	
Road	2023-05-18 6:45 AM	Yes	Caribou	8	Walking	E	1000	78	West	No	-96.3244	64.9032			No	Not Exceeded	
Road	2023-05-18 6:45 AM	Yes	Caribou	8	Walking	N	800	77	West	No	-96.3391	64.8951			No	Not Exceeded	
Road	2023-05-18 6:45 AM	Yes	Caribou	60	Walking	S	800	76	West	No	-96.3457	64.8879			No	Exceeded	Road closed
Road	2023-05-18 6:45 AM	Yes	Caribou	55	Feeding	S	500	55	West	No	-96.3460	64.7185			No	Exceeded	Road closed
Road	2023-05-18 6:45 AM	Yes	Caribou	31	Feeding	N/A	1200	34	West	No	-96.2405	64.5687			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Caribou	7	Walking	E	250	103	West	No	-96.1108	65.0489			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Caribou	16	Foraging	N	150	102	Both	No	-96.1278	65.0517			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Caribou	7	Walking	S	450	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Muskox	2	Foraging	N/A	100	92	West	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Caribou	1	Foraging	S	200	82	West	No	-96.3120	64.9306			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Caribou	7	Foraging	N/A	500	86	West	No	-96.2528	64.9468			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Caribou	5	Foraging	N	600	85	West	No	-96.2614	64.9389			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Caribou	12	Foraging	N	800	79	West	No	-96.3149	64.9095			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Caribou	3	Foraging	N	500	78	West	No	-96.3244	64.9032			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Caribou	9	Resting	N/A	900	77	West	No	-96.3391	64.8951			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Caribou	31	Foraging	S	200	76	West	No	-96.3457	64.8879			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Caribou	3	Walking	S	600	65	West	No	-96.3406	64.7948			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Caribou	7	Walking	W	750	61	West	No	-96.3547	64.7633			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Caribou	6	Foraging	N/A	650	61	West	No	-96.3547	64.7633			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Caribou	4	Walking	S	650	50	West	No	-96.3731	64.6794			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Caribou	8	Walking	S	700	45	West	No	-96.3134	64.6524			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Caribou	42	Walking	S	500	26	West	No	-96.1615	64.5235			No	Exceeded	Road closed
Road	2023-05-19 6:49 AM	Yes	Caribou	10	Walking	S	400	23	West	No	-96.1244	64.5006			No	Not Exceeded	
Road	2023-05-19 6:49 AM	Yes	Caribou	38	Walking	E	100	22	East	Yes	-96.1126	64.4935			No	Exceeded	Road closed
Road	2023-05-20 10:57 AM	Yes	Caribou	25	Walking	W	200	85	West	No	-96.2614	64.9389			No	Not Exceeded	
Incidental	2023-05-20 2:23 PM	Yes	Caribou	32	Walking	S	1000	51	West	No	-96.3791	64.6932			No	Not Exceeded	
Road	2023-05-21 8:40 AM	Yes	Caribou	6	Resting	N/A	250	95	West	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-05-21 8:40 AM	Yes	Caribou	16	Foraging	N/A	1000	94	West	No	-96.2127	65.0075			No	Not Exceeded	
Road	2023-05-21 8:40 AM	Yes	Caribou	8	Walking	S	250	91	West	No	-96.2249	64.9847			No	Not Exceeded	
Road	2023-05-21 8:40 AM	Yes	Caribou	18	Foraging	N/A	900	88	West	No	-96.2206	64.9581			No	Not Exceeded	
Road	2023-05-21 8:40 AM	Yes	Caribou	9	Foraging	N/A	950	83	West	No	-96.3011	64.9350			No	Not Exceeded	
Road	2023-05-21 8:40 AM	Yes	Caribou	3	Walking	N	350	81	West	No	-96.3021	64.9252			No	Not Exceeded	
Road	2023-05-21 8:40 AM	Yes	Caribou	7	Foraging	N/A	1000	79	West	No	-96.3149	64.9095			No	Not Exceeded	
Road	2023-05-21 8:40 AM	Yes	Caribou	2	Foraging	S	250	75	East	No	-96.3361	64.8795			No	Not Exceeded	
Road	2023-05-21 8:40 AM	Yes	Caribou	12	Foraging	S	400	67	West	No	-96.3262	64.8123			No	Not Exceeded	
Road	2023-05-21 8:40 AM	Yes	Caribou	19	Walking	S	350	65	West	No	-96.3406	64.7948			No	Not Exceeded	
Road	2023-05-21 8:40 AM	Yes	Caribou	8	Foraging	N/A	200	60	West	No	-96.3636	64.7555			No	Not Exceeded	
Road	2023-05-21 8:40 AM	Yes	Caribou	28	Walking	S	200	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-05-21 8:40 AM	Yes	Caribou	25	Walking	S	150	40	West	No	-96.2814	64.6043			No	Not Exceeded	
Incidental	2023-05-21 1:22 PM	Yes	Caribou	18	Walking	E	0	32	West,East	Yes	-96.2045	64.5647			No	Not Exceeded	
Incidental	2023-05-21 1:22 PM	Yes	Caribou	31	Feeding	Not Recorded	450	65	West	No	-96.3406	64.7948			No	Not Exceeded	



Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2023-05-21 1:22 PM	Yes	Caribou	28	Walking	SW	500	86	West	No	-96.2528	64.9468			No	Not Exceeded	
Road	2023-05-22 6:36 AM	Yes	Caribou	1	Foraging	N/A	10	97	West	No	-96.1711	65.0259			No	Not Exceeded	
Road	2023-05-22 6:36 AM	Yes	Caribou	10	Walking	W	350	87	West	No	-96.2389	64.9548			No	Not Exceeded	
Road	2023-05-22 6:36 AM	Yes	Caribou	36	Resting	N/A	500	85	West	No	-96.2614	64.9389			No	Exceeded	Road closed
Road	2023-05-22 6:36 AM	Yes	Caribou	21	Foraging	N/A	850	82	West	No	-96.3120	64.9306			No	Not Exceeded	
Road	2023-05-22 6:36 AM	Yes	Caribou	4	Foraging	N/A	150	79	West	No	-96.3149	64.9095			No	Not Exceeded	
Road	2023-05-22 6:36 AM	Yes	Caribou	4	Walking	S	500	77	West	No	-96.3391	64.8951			No	Not Exceeded	
Road	2023-05-22 6:36 AM	Yes	Caribou	2	Foraging	N/A	200	76	East	No	-96.3457	64.8879			No	Not Exceeded	
Road	2023-05-22 6:36 AM	Yes	Caribou	5	Foraging	N/A	350	75	West	No	-96.3361	64.8795			No	Not Exceeded	
Road	2023-05-22 6:36 AM	Yes	Caribou	7	Walking	S	800	73	West	No	-96.3242	64.8621			No	Not Exceeded	
Road	2023-05-22 6:36 AM	Yes	Caribou	16	Walking	W	200	69	West	No	-96.3143	64.8277			No	Not Exceeded	
Road	2023-05-22 6:36 AM	Yes	Caribou	8	Foraging	N/A	400	61	West	No	-96.3547	64.7633			No	Not Exceeded	
Road	2023-05-22 6:36 AM	Yes	Caribou	25	Walking	W	250	60	West	No	-96.3636	64.7555			No	Not Exceeded	
Road	2023-05-22 6:36 AM	Yes	Caribou	3	Foraging	N	450	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-05-22 6:36 AM	Yes	Caribou	1	Walking	S	300	52	West	No	-96.3774	64.7009			No	Not Exceeded	
Road	2023-05-22 6:36 AM	Yes	Caribou	10	Walking	S	850	34	West	No	-96.2405	64.5687			No	Not Exceeded	
Road	2023-05-22 6:36 AM	Yes	Caribou	13	Walking	N	50	33	West	No	-96.2163	64.5715			No	Not Exceeded	
Road	2023-05-22 6:36 AM	Yes	Caribou	38	Foraging	N/A	1000	31	West	No	-96.1957	64.5543			No	Exceeded	Road closed
Road	2023-05-22 6:36 AM	Yes	Caribou	10	Foraging	N/A	1300	30	West	No	-96.1958	64.5543			No	Not Exceeded	
Road	2023-05-22 6:36 AM	Yes	Caribou	3	Walking	S	250	7	West	No	-96.0092	64.3726			No	Not Exceeded	
Incidental	2023-05-22 12:36 PM	Yes	Caribou	18	Walking	S	400	49	West	No	-96.3707	64.6688			No	Not Exceeded	
Road	2023-05-23 7:58 AM	Yes	Caribou	9	Foraging	NW	800	86	West	No	-96.2528	64.9468			No	Not Exceeded	
Road	2023-05-23 7:58 AM	Yes	Caribou	9	Walking	S	500	89	West	No	-96.2196	64.9674			No	Not Exceeded	
Road	2023-05-23 7:58 AM	Yes	Caribou	10	Walking	S	150	85	West	No	-96.2614	64.9389			No	Not Exceeded	
Road	2023-05-23 7:58 AM	Yes	Caribou	4	Foraging	N/A	700	83	West	No	-96.3011	64.9350			No	Not Exceeded	
Road	2023-05-23 7:58 AM	Yes	Caribou	8	Foraging	S	750	82	West	No	-96.3120	64.9306			No	Not Exceeded	
Road	2023-05-23 7:58 AM	Yes	Caribou	8	Foraging	S	500	81	West	No	-96.3021	64.9252			No	Not Exceeded	
Road	2023-05-23 7:58 AM	Yes	Caribou	4	Foraging	S	400	79	West	No	-96.3149	64.9095			No	Not Exceeded	
Road	2023-05-23 7:58 AM	Yes	Caribou	4	Foraging	S	350	78	West	No	-96.3244	64.9032			No	Not Exceeded	
Road	2023-05-23 7:58 AM	Yes	Caribou	11	Walking	S	250	70	West	No	-96.3165	64.8365			No	Not Exceeded	
Road	2023-05-23 7:58 AM	Yes	Caribou	20	Foraging	N/A	1200	69	West	No	-96.3143	64.8277			No	Not Exceeded	
Road	2023-05-23 7:58 AM	Yes	Caribou	2	Resting	N/A	400	68	West	No	-96.3268	64.8203			No	Not Exceeded	
Road	2023-05-23 7:58 AM	Yes	Caribou	17	Walking	S	700	67	West	No	-96.3262	64.8123			No	Not Exceeded	
Road	2023-05-23 7:58 AM	Yes	Caribou	5	Walking	S	800	65	West	No	-96.3406	64.7948			No	Not Exceeded	
Road	2023-05-23 7:58 AM	Yes	Caribou	22	Walking	S	200	61	West	No	-96.3547	64.7633			No	Not Exceeded	
Road	2023-05-23 7:58 AM	Yes	Caribou	46	Walking	W	800	60	West	No	-96.3636	64.7555			No	Exceeded	Road closed
Road	2023-05-23 3:47 PM	Yes	Caribou	38	Walking	SW	600	39	West	No	-96.2751	64.5959			No	Exceeded	Road closed
Road	2023-05-23 3:47 PM	Yes	Caribou	28	Feeding	Not Recorded	750	56	West	No	-96.3514	64.7259			No	Not Exceeded	
Road	2023-05-23 3:47 PM	Yes	Caribou	4	Walking	S	1300	69	West	No	-96.3143	64.8277			No	Not Exceeded	
Road	2023-05-23 3:47 PM	Yes	Caribou	22	Feeding	Not Recorded	400	78	West	No	-96.3244	64.9032			No	Not Exceeded	
Road	2023-05-23 3:47 PM	Yes	Caribou	42	Walking	NW	500	82	West	No	-96.3120	64.9306			No	Exceeded	Road closed
Road	2023-05-24 6:12 AM	Yes	Caribou	2	Lying Down	Not Recorded	600	103	East	No	-96.1108	65.0489			No	Not Exceeded	
Road	2023-05-24 6:12 AM	Yes	Caribou	8	Feeding	Not Recorded	800	96	West	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-05-24 6:12 AM	Yes	Caribou	9	Walking	SW	800	88	West	No	-96.2206	64.9581			No	Not Exceeded	
Road	2023-05-24 6:12 AM	Yes	Caribou	10	Feeding	Not Recorded	600	87	West	No	-96.2410	64.9542			No	Not Exceeded	
Road	2023-05-24 6:12 AM	Yes	Caribou	8	Foraging	Not Recorded	700	83	West	No	-96.3011	64.9350			No	Not Exceeded	
Road	2023-05-24 6:12 AM	Yes	Caribou	6	Lying Down	Not Recorded	1100	80	West	No	-96.3062	64.9171			No	Not Exceeded	
Road	2023-05-24 6:12 AM	Yes	Caribou	12	Feeding	N/A	400	77	Both	No	-96.3391	64.8951			No	Not Exceeded	
Road	2023-05-24 6:12 AM	Yes	Caribou	4	Walking	S	500	72	West	No	-96.3238	64.8539			No	Not Exceeded	
Road	2023-05-24 6:12 AM	Yes	Caribou	6	Walking	N	800	62	West	No	-96.3444	64.7737			No	Not Exceeded	
Road	2023-05-24 6:12 AM	Yes	Caribou	4	Standing	Not Recorded	0	61	Both	Yes	-96.3547	64.7633			No	Not Exceeded	
Road	2023-05-24 6:12 AM	Yes	Caribou	12	Walking	S	300	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-05-24 6:12 AM	Yes	Caribou	6	Walking	S	150	50	West	No	-96.3731	64.6794			No	Not Exceeded	
Road	2023-05-24 6:12 AM	Yes	Caribou	6	Feeding	Not Recorded	1200	49	West	No	-96.3707	64.6688			No	Not Exceeded	
Road	2023-05-24 6:12 AM	Yes	Caribou	2	Walking	S	400	39	West	No	-96.2751	64.5959			No	Not Exceeded	
Incidental	2023-05-24 3:48 PM	Yes	Caribou	41	Walking	NW	30	82	West	No	-96.3120	64.9306			No	Exceeded	Road closed
Incidental	2023-05-25 8:32 AM	Yes	Caribou	13	Walking	SW	600	83	West	No	-96.3011	64.9350			No	Not Exceeded	
Incidental	2023-05-25 8:32 AM	Yes	Caribou	12	Walking	S	600	80	West	No	-96.3062	64.9171			No	Not Exceeded	
Incidental	2023-05-25 8:32 AM	Yes	Caribou	6	Foraging	N/A	150	76	West	No	-96.3457	64.8879			No	Not Exceeded	
Incidental	2023-05-25 8:32 AM	Yes	Caribou	7	Walking	N	350	67	West	No	-96.3262	64.8123			No	Not Exceeded	

Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2023-05-25 8:32 AM	Yes	Caribou	47	Walking	S	800	65	West	No	-96.3406	64.7948			No	Exceeded	Road closed
Incidental	2023-05-25 8:32 AM	Yes	Muskox	1	Feeding	S	10	99	East	No	-96.1532	65.0420			No	Not Exceeded	
Incidental	2023-05-25 8:32 AM	Yes	Caribou	3	Walking	N	50	101	West	No	-96.1403	65.0567			No	Not Exceeded	
Road	2023-05-25 11:04 AM	Yes	Caribou	8	Walking	N	500	29	West	No	-96.1813	64.5473			No	Not Exceeded	
Road	2023-05-25 11:04 AM	Yes	Caribou	6	Walking	N	500	29	West	No	-96.1813	64.5473			No	Not Exceeded	
Road	2023-05-25 11:04 AM	Yes	Caribou	1	Feeding	N	500	42	East	No	-96.2949	64.6276			No	Not Exceeded	
Road	2023-05-25 11:04 AM	Yes	Caribou	33	Walking	W	2000	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-05-25 11:04 AM	Yes	Caribou	9	Walking	N/A	800	54	West	No	-96.3584	64.7132			No	Not Exceeded	
Road	2023-05-25 11:04 AM	Yes	Caribou	3	Feeding	N/A	500	75	East	No	-96.3361	64.8795			No	Not Exceeded	
Road	2023-05-25 11:04 AM	Yes	Caribou	1	Feeding	N/A	150	99	West	No	-96.1532	65.0420			No	Not Exceeded	
Road	2023-05-25 11:04 AM	Yes	Caribou	5	Resting	N/A	500	101	West	No	-96.1403	65.0567			No	Not Exceeded	
Road	2023-05-26 12:32 PM	Yes	Caribou	9	Foraging	S	500	20	West	No	-96.0960	64.4787			No	Not Exceeded	
Road	2023-05-26 12:32 PM	Yes	Caribou	44	Foraging	N/A	800	30	West	No	-96.1958	64.5543			No	Exceeded	Road closed
Road	2023-05-26 12:32 PM	Yes	Caribou	10	Foraging	S	900	65	West	No	-96.3406	64.7948			No	Not Exceeded	
Road	2023-05-26 12:32 PM	Yes	Caribou	11	Lying Down	N/A	600	82	West	No	-96.3120	64.9306			No	Not Exceeded	
Road	2023-05-26 12:32 PM	Yes	Caribou	36	Foraging	NW	600	85	West	No	-96.2614	64.9389			No	Exceeded	Road closed
Road	2023-05-26 12:32 PM	Yes	Caribou	113	Walking	SW	100	86	West	No	-96.2528	64.9468			No	Exceeded	Road closed
Road	2023-05-27 2:00 PM	Yes	Caribou	23	Walking	S	100	26	West	No	-96.1615	64.5235			No	Not Exceeded	
Road	2023-05-27 2:00 PM	Yes	Caribou	4	Foraging	S	300	70	West	No	-96.3165	64.8365			No	Not Exceeded	
Road	2023-05-27 2:00 PM	Yes	Caribou	63	Foraging	SW	230	77	West	No	-96.3391	64.8951			No	Exceeded	Road closed
Road	2023-05-27 2:00 PM	Yes	Caribou	52	Foraging	S	350	82	West	No	-96.3120	64.9306			No	Exceeded	Road closed
Road	2023-05-27 2:00 PM	Yes	Caribou	13	Foraging	NW	90	83	Both	No	-96.3011	64.9350			No	Not Exceeded	
Road	2023-05-28 7:22 AM	Yes	Caribou	43	Foraging	SW	120	87	West	No	-96.2410	64.9542			No	Exceeded	Road closed
Road	2023-05-28 7:22 AM	Yes	Caribou	33	Foraging	SW	100	83	Both	No	-96.3011	64.9350			No	Exceeded	Road closed
Road	2023-05-28 7:22 AM	Yes	Caribou	38	Foraging	SW	100	59	West	No	-96.3706	64.7495			No	Exceeded	Road closed
Road	2023-05-28 7:22 AM	Yes	Caribou	42	Walking	S	90	57	West	No	-96.3601	64.7314			No	Exceeded	Road closed
Incidental	2023-05-28 10:46 AM	Yes	Caribou	38	Running	N/A	200	88	West	No	-96.2206	64.9581			No	Exceeded	Road closed
Incidental	2023-05-28 10:46 AM	Yes	Wolf	1	Hunting	N/A	0	88	West	Yes	-96.2206	64.9581			No	Not Exceeded	
Incidental	2023-05-28 10:46 AM	Yes	Caribou	18	Feeding	N/A	250	82	West	No	-96.3120	64.9306			No	Not Exceeded	
Incidental	2023-05-28 10:46 AM	Yes	Caribou	7	Walking	N	600	76	West	No	-96.3457	64.8879			No	Not Exceeded	
Incidental	2023-05-28 10:46 AM	Yes	Caribou	7	Walking	N	600	74	West	No	-96.3303	64.8752			No	Not Exceeded	
Incidental	2023-05-28 12:35 PM	Yes	Caribou	4	Foraging	S	1200	8	West	No	-96.0155	64.3813			No	Not Exceeded	
Incidental	2023-05-28 12:35 PM	Yes	Caribou	15	Foraging	S	180	18	West	No	-96.0824	64.4610			No	Not Exceeded	
Incidental	2023-05-28 12:35 PM	Yes	Caribou	11	Walking	NW	250	29	West	No	-96.1813	64.5473			No	Not Exceeded	
Incidental	2023-05-28 12:35 PM	Yes	Caribou	30	Foraging	N/A	800	61	West	No	-96.3547	64.7633			No	Exceeded	Road closed
Incidental	2023-05-28 12:35 PM	Yes	Caribou	10	Walking	S	90	66	West	No	-96.3350	64.8045			No	Not Exceeded	
Incidental	2023-05-28 12:35 PM	Yes	Caribou	23	Lying Down	N/A	20	78	West	No	-96.3244	64.9032			No	Not Exceeded	
Incidental	2023-05-28 12:35 PM	Yes	Caribou	9	Foraging	N/A	90	82	West	No	-96.3120	64.9306			No	Not Exceeded	
Incidental	2023-05-28 12:35 PM	Yes	Caribou	10	Walking	SE	1	85	West	Yes	-96.2614	64.9389			No	Not Exceeded	
Road	2023-05-29 7:39 AM	Yes	Caribou	4	Lying Down	N/A	400	96	West	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-05-29 7:39 AM	Yes	Caribou	16	Foraging	SW	490	95	West	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-05-29 7:39 AM	Yes	Caribou	28	Lying Down	N/A	110	92	West	No	-96.2219	64.9943			No	Exceeded	Road closed
Road	2023-05-29 7:39 AM	Yes	Caribou	10	Foraging	N	120	91	West	No	-96.2249	64.9847			No	Not Exceeded	
Road	2023-05-29 7:39 AM	Yes	Caribou	10	Foraging	N/A	200	78	West	No	-96.3244	64.9032			No	Not Exceeded	
Road	2023-05-29 7:39 AM	Yes	Caribou	8	Foraging	S	90	76	West	No	-96.3457	64.8879			No	Not Exceeded	
Road	2023-05-29 7:39 AM	Yes	Caribou	29	Walking	S	60	66	West	No	-96.3350	64.8045			No	Exceeded	Road closed
Road	2023-05-29 7:39 AM	Yes	Caribou	20	Foraging	N/A	340	29	West	No	-96.1813	64.5473			No	Not Exceeded	
Road	2023-05-29 7:39 AM	Yes	Caribou	21	Foraging	SE	240	22	West	No	-96.1126	64.4935			No	Not Exceeded	
Road	2023-05-29 7:39 AM	Yes	Caribou	6	Foraging	W	80	16	West	No	-96.0624	64.4463			No	Not Exceeded	
Road	2023-05-30 12:49 PM	Yes	Caribou	12	Foraging	N	800	37	West	No	-96.2690	64.5842			No	Not Exceeded	
Road	2023-05-30 12:49 PM	Yes	Caribou	15	Foraging	NE	50	62	West	No	-96.3444	64.7737			No	Not Exceeded	
Road	2023-05-30 12:49 PM	Yes	Caribou	11	Foraging	N/A	180	66	West	No	-96.3350	64.8045			No	Not Exceeded	
Road	2023-05-30 12:49 PM	Yes	Caribou	6	Foraging	N	90	76	West	No	-96.3457	64.8879			No	Not Exceeded	
Road	2023-05-30 12:49 PM	Yes	Caribou	52	Lying Down	N/A	300	82	Both	No	-96.3120	64.9306			No	Exceeded	Road closed
Incidental	2023-05-31 8:00 AM	Yes	Caribou	18	Foraging	N/A	200	83	West	No	-96.3011	64.9350			No	Not Exceeded	
Road	2023-06-01 12:49 PM	Yes	Caribou	26	Foraging	S	250	38	West	No	-96.2758	64.5907			No	Exceeded	Restriction
Road	2023-06-01 12:49 PM	Yes	Caribou	2	Walking	N	230	50	East	No	-96.3731	64.6794			No	Not Exceeded	
Road	2023-06-01 12:49 PM	Yes	Caribou	2	Walking	S	100	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-06-01 12:49 PM	Yes	Caribou	3	Walking	N	45	76	East	No	-96.3457	64.8879			No	Not Exceeded	
Road	2023-06-01 12:49 PM	Yes	Caribou	7	Feeding	SE	450	78	West	No	-96.3244	64.9032			No	Not Exceeded	

Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-06-01 12:49 PM	Yes	Caribou	3	Feeding	NW	250	82	West	No	-96.3120	64.9306			No	Not Exceeded	
Road	2023-06-01 12:49 PM	Yes	Caribou	6	Standing	S	1000	95	West	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-06-01 12:49 PM	Yes	Caribou	10	Feeding	S	250	96	West	No	-96.1809	65.0181			No	Not Exceeded	
Incidental	2023-06-02 10:00 AM	Yes	Caribou	18	Foraging	N/A	250	85	West	No	-96.2614	64.9389			No	Not Exceeded	
Road	2023-06-04 8:45 AM	Yes	Muskox	1	Foraging	N/A	50	103	West	No	-96.1108	65.0489			No	Not Exceeded	
Road	2023-06-04 8:45 AM	Yes	Caribou	10	Foraging	N/A	300	96	West	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-06-04 8:45 AM	Yes	Peregrine falcon	1	Standing	N/A	25	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-06-04 8:45 AM	Yes	Caribou	3	Trotting/running	S	400	90	West	No	-96.2221	64.9750			No	Not Exceeded	
Road	2023-06-04 8:45 AM	Yes	Caribou	4	Resting	N/A	350	89	West	No	-96.2196	64.9674			No	Not Exceeded	
Road	2023-06-04 8:45 AM	Yes	Muskox	2	Resting	N/A	50	87	West	No	-96.2410	64.9542			No	Not Exceeded	
Road	2023-06-04 8:45 AM	Yes	Caribou	1	Walking	N/A	30	84	West	No	-96.2828	64.9366			No	Not Exceeded	
Road	2023-06-04 8:45 AM	Yes	Peregrine falcon	1	Alert	N/A	100	81	West	No	-96.3021	64.9252			No	Not Exceeded	
Road	2023-06-04 8:45 AM	Yes	Caribou	1	Walking	N	300	71	West	No	-96.3197	64.8447			No	Not Exceeded	
Road	2023-06-04 8:45 AM	Yes	Caribou	15	Walking	N	800	68	West	No	-96.3268	64.8203			No	Not Exceeded	
Road	2023-06-04 8:45 AM	Yes	Peregrine falcon	2	Standing	N/A	150	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-06-04 8:45 AM	Yes	Muskox	14	Foraging	N/A	1500	49	East	No	-96.3707	64.6688			No	Exceeded	1500 meters away from the road. So did not put a speed restriction
Road	2023-06-04 8:45 AM	Yes	Peregrine falcon	2	Standing	N/A	50	42	West	No	-96.2949	64.6276			No	Not Exceeded	
Road	2023-06-05 8:48 AM	Yes	Caribou	7	Foraging	N	1000	7	West	No	-96.0092	64.3726			No	Not Exceeded	
Road	2023-06-05 8:48 AM	Yes	Caribou	1	Lying Down	N/A	300	79	West	No	-96.3149	64.9095			No	Not Exceeded	
Road	2023-06-05 8:48 AM	Yes	Caribou	1	Feeding	N/A	800	72	West	No	-96.3238	64.8539			No	Not Exceeded	
Road	2023-06-05 8:48 AM	Yes	Caribou	8	Feeding	N/A	2000	71	West	No	-96.3197	64.8447			No	Not Exceeded	
Road	2023-06-05 8:48 AM	Yes	Caribou	2	Feeding	N/A	13	69	West	No	-96.3143	64.8277			No	Not Exceeded	
Road	2023-06-05 8:48 AM	Yes	Caribou	3	Walking	S	850	62	West	No	-96.3444	64.7737			No	Not Exceeded	
Road	2023-06-05 8:48 AM	Yes	Caribou	3	Running	S	40	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-06-05 8:48 AM	Yes	Caribou	10	Feeding	N/A	1000	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-06-05 8:48 AM	Yes	Caribou	1	Feeding	N/A	5	37	East	No	-96.2690	64.5842			No	Not Exceeded	
Road	2023-06-05 8:48 AM	Yes	Caribou	30	Walking	N	250	18	West	No	-96.0824	64.4610			No	Exceeded	Restriction
Road	2023-06-05 8:48 AM	Yes	Caribou	1	Running	S	900	7	West	No	-96.0092	64.3726			No	Not Exceeded	
Road	2023-06-05 8:48 AM	Yes	Caribou	7	Walking	S	200	5	East	No	-96.0000	64.3566			No	Not Exceeded	
Road	2023-06-05 8:48 AM	Yes	Caribou	5	Running	W	100	41	West	No	-96.2811	64.6203			No	Not Exceeded	
Road	2023-06-05 8:48 AM	Yes	Caribou	1	Walking	SW	100	44	East	No	-96.3035	64.6417			No	Not Exceeded	
Road	2023-06-05 8:48 AM	Yes	Caribou	13	Lying Down	N/A	850	92	East	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-06-06 8:02 AM	Yes	Muskox	1	Lying Down	N/A	50	89	West	No	-96.2196	64.9674			No	Not Exceeded	
Road	2023-06-06 8:02 AM	Yes	Caribou	3	Lying Down	N/A	600	83	East	No	-96.3011	64.9350			No	Not Exceeded	
Road	2023-06-06 8:02 AM	Yes	Caribou	3	Feeding	N/A	1000	63	West	No	-96.3444	64.7793			No	Not Exceeded	
Road	2023-06-06 8:02 AM	Yes	Caribou	14	Feeding	N/A	800	9	West	No	-96.0143	64.3890			No	Not Exceeded	
Incidental	2023-06-06 3:58 PM	Yes	Caribou	7	Walking	S	400	34	West,East	No	-96.2405	64.5687			No	Not Exceeded	
Incidental	2023-06-07 7:51 AM	Yes	Caribou	3	Walking	S	100	102	East	No	-96.1278	65.0517			No	Not Exceeded	
Incidental	2023-06-07 7:51 AM	Yes	Caribou	4	Feeding	N/A	200	81	East	No	-96.3021	64.9252			No	Not Exceeded	
Incidental	2023-06-07 7:51 AM	Yes	Muskox	20	Lying Down	N/A	700	42	West	No	-96.2949	64.6276			No	Exceeded	Speed Restriction
Road	2023-06-09 11:21 AM	Yes	Caribou	3	Walking	Not Recorded	10	107	West	No	-96.0719	65.0234			No	Not Exceeded	
Road	2023-06-09 11:21 AM	Yes	Caribou	14	Feeding	Not Recorded	400	88	West	No	-96.2206	64.9581			No	Not Exceeded	
Road	2023-06-09 11:21 AM	Yes	Caribou	5	Walking	NE	500	83	West	No	-96.3011	64.9350			No	Not Exceeded	
Road	2023-06-09 11:21 AM	Yes	Caribou	37	Feeding	N	600	79	West	No	-96.3149	64.9095			No	Exceeded	Speed restriction
Road	2023-06-09 11:21 AM	Yes	Muskox	16	Feeding	Not Recorded	1000	70	East	No	-96.3165	64.8365			No	Exceeded	Speed restriction
Road	2023-06-09 11:21 AM	Yes	Caribou	2	Foraging	Not Recorded	900	65	West	No	-96.3406	64.7948			No	Not Exceeded	
Road	2023-06-09 11:21 AM	Yes	Caribou	2	Walking	NE	800	59	West	No	-96.3706	64.7495			No	Not Exceeded	

Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-06-14 7:56 AM	Yes	Muskox	1	Trotting/running	E	5	104	West	No	-96.0972	65.0446			No	Not Exceeded	
Road	2023-06-14 7:56 AM	Yes	Caribou	1	Foraging	N/A	75	75	East	No	-96.3361	64.8795			No	Not Exceeded	
Road	2023-06-14 7:56 AM	Yes	Caribou	7	Foraging	N/A	50	73	West	No	-96.3242	64.8621			No	Not Exceeded	
Road	2023-06-14 7:56 AM	Yes	Muskox	1	Resting	W	200	41	West	N/A	-96.2811	64.6203			No	Not Exceeded	
Road	2023-06-14 7:56 AM	Yes	Muskox	1	Feeding	N/A	75	38	East	No	-96.2758	64.5907			No	Not Exceeded	
Road	2023-06-16 9:00 PM	Yes	Muskox	1	Walking	S	75	47	West	No	-96.3466	64.6580			No	Not Exceeded	
Road	2023-06-16 9:00 PM	Yes	Arctic fox	1	Running	S	25	49	East	No	-96.3707	64.6688			No	Not Exceeded	
Road	2023-06-16 9:00 PM	Yes	Wolf	1	Running	E	0	51	West	Yes	-96.3791	64.6932			No	Not Exceeded	
Road	2023-06-20 7:41 AM	Yes	Siksik	1	Running	W	0	105	Both	No	-96.0877	65.0341			No	Not Exceeded	
Road	2023-06-20 7:41 AM	Yes	Ptarmigan	1	Standing	N/A	50	87	West	No	-96.2410	64.9542			No	Not Exceeded	
Road	2023-06-20 7:41 AM	Yes	Siksik	1	Running	S	50	78	West	No	-96.3244	64.9032			No	Not Exceeded	
Road	2023-06-20 7:41 AM	Yes	Muskox	1	Foraging	N	100	62	West	No	-96.3444	64.7737			No	Not Exceeded	
Road	2023-06-20 7:41 AM	Yes	Muskox	32	Foraging	N/A	1000	59	West	No	-96.3706	64.7495			No	Exceeded	>1000m from the road
Road	2023-06-20 7:41 AM	Yes	Muskox	2	Foraging	N/A	100	55	East	No	-96.3460	64.7185			No	Not Exceeded	
Road	2023-06-20 7:41 AM	Yes	Arctic fox	5	Walking	N/A	25	47	East	No	-96.3466	64.6580			No	Not Exceeded	
Road	2023-06-20 7:41 AM	Yes	Arctic fox	2	Foraging	N/A	50	33	East	No	-96.2163	64.5715			No	Not Exceeded	
Road	2023-06-20 7:41 AM	Yes	Canada goose	5	Foraging	N/A	500	24	West	No	-96.1365	64.5079			No	Not Exceeded	
Road	2023-06-20 7:41 AM	Yes	Muskox	2	Foraging	N/A	750	23	East	No	-96.1244	64.5006			No	Not Exceeded	
Road	2023-06-20 7:41 AM	Yes	Muskox	8	Lying Down	N/A	500	16	West	No	-96.0624	64.4463			No	Not Exceeded	
Road	2023-06-20 7:41 AM	Yes	Bald Eagle	1	Flying	S	500	16	East	No	-96.0624	64.4463			No	Not Exceeded	
Incidental	2023-06-20 3:09 PM	Yes	Sandhill crane	2	Walking	S	50	46	West	No	-96.3296	64.6562			No	Not Exceeded	
Road	2023-06-23 9:49 AM	Yes	Muskox	1	Feeding	N/A	200	97	West	No	-96.1711	65.0259			No	Not Exceeded	
Road	2023-06-23 9:49 AM	Yes	Siksik	1	Walking	S	0	72	Both	N/A	-96.3238	64.8539			No	Not Exceeded	
Road	2023-06-23 9:49 AM	Yes	Siksik	1	Standing	N/A	0	48	West	No	-96.3688	64.6642			No	Not Exceeded	
Road	2023-06-23 9:49 AM	Yes	Sandhill crane	1	Walking	E	5	35	East	No	-96.2443	64.5739			No	Not Exceeded	
Road	2023-06-23 9:49 AM	Yes	Muskox	2	Standing	N/A	2000	34	East	No	-96.2405	64.5687			No	Not Exceeded	
Road	2023-06-23 9:49 AM	Yes	Muskox	3	Lying Down	N/A	150	20	West	No	-96.0960	64.4787			No	Not Exceeded	
Road	2023-06-25 6:01 AM	Yes	Muskox	1	Foraging	E	50	102	East	No	-96.1278	65.0517			No	Not Exceeded	
Road	2023-06-25 6:01 AM	Yes	Wolf	1	Walking	NE	60	98	West	No	-96.1576	65.0325			No	Not Exceeded	
Road	2023-06-25 6:01 AM	Yes	Muskox	5	Walking	W	80	37	West	No	-96.2690	64.5842			No	Not Exceeded	
Road	2023-06-25 6:01 AM	Yes	Muskox	20	Feeding	N/A	110	27	East	No	-96.1612	64.5322			No	Exceeded	Speed reduction
Road	2023-06-26 4:28 PM	Yes	Muskox	20	Foraging	N/A	1500	25	West	No	-96.1495	64.5142			No	Exceeded	> 1.5Km from the road
Road	2023-06-26 4:28 PM	Yes	Muskox	1	Foraging	N/A	190	48	East	No	-96.3688	64.6642			No	Not Exceeded	
Road	2023-06-26 4:28 PM	Yes	Muskox	1	Standing	N/A	120	60	West	No	-96.3636	64.7555			No	Not Exceeded	
Road	2023-06-30 9:39 AM	Yes	Muskox	1	Foraging	N/A	50	99	West	No	-96.1532	65.0420			No	Not Exceeded	
Road	2023-06-30 9:39 AM	Yes	Muskox	1	Foraging	N/A	150	97	West	No	-96.1711	65.0259			No	Not Exceeded	
Road	2023-06-30 9:39 AM	Yes	Muskox	11	Foraging	N/A	600	68	East	No	-96.3268	64.8203			No	Not Exceeded	
Road	2023-06-30 9:39 AM	Yes	Caribou	1	Foraging	N	50	60	West	No	-96.3636	64.7555			No	Not Exceeded	
Road	2023-06-30 9:39 AM	Yes	Muskox	1	Foraging	N/A	700	55	West	No	-96.3460	64.7185			No	Not Exceeded	
Road	2023-06-30 9:39 AM	Yes	Muskox	4	Foraging	N/A	300	29	West	No	-96.1813	64.5473			No	Not Exceeded	
Road	2023-06-30 9:39 AM	Yes	Sandhill crane	2	Standing	N/A	100	25	West	No	-96.1495	64.5142			No	Not Exceeded	
Road	2023-07-02 8:03 AM	Yes	Muskox	4	Foraging	N/A	0	106	Both	Yes	-96.0829	65.0271			Yes - Seen them the other	Not Exceeded	
Road	2023-07-02 8:03 AM	Yes	Muskox	2	Resting	N/A	10	103	East	No	-96.1108	65.0489			No	Not Exceeded	
Road	2023-07-02 8:03 AM	Yes	Bald Eagle	1	Flying	N/A	290	102	West	No	-96.1278	65.0517			No	Not Exceeded	
Road	2023-07-02 8:03 AM	Yes	Muskox	5	Foraging	N/A	900	55	East	No	-96.3460	64.7185			No	Not Exceeded	
Road	2023-07-02 8:03 AM	Yes	Muskox	2	Foraging	N/A	900	52	West	No	-96.3774	64.7009			No	Not Exceeded	
Road	2023-07-02 8:03 AM	Yes	Sandhill crane	2	Walking	N/A	100	48	West	No	-96.3688	64.6642			No	Not Exceeded	
Road	2023-07-02 8:03 AM	Yes	Muskox	1	Foraging	N/A	100	45	West	No	-96.3134	64.6524			No	Not Exceeded	
Road	2023-07-02 8:03 AM	Yes	Arctic hare	1	Foraging	N/A	1	39	West	No	-96.2751	64.5959			No	Not Exceeded	

Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-07-02 8:03 AM	Yes	Muskox	2	Foraging	S	0	34	Both	Yes	-96.2405	64.5687			No	Not Exceeded	
Road	2023-07-02 8:03 AM	Yes	Muskox	2	Foraging	N/A	80	21	West	No	-96.1045	64.4869			No	Not Exceeded	
Road	2023-07-04 7:01 AM	Yes	Muskox	2	Feeding	N/A	30	104	East	No	-96.0972	65.0446			No	Not Exceeded	
Road	2023-07-04 7:01 AM	Yes	Arctic hare	1	Running	W	5	70	West	No	-96.3165	64.8365			No	Not Exceeded	
Road	2023-07-04 7:01 AM	Yes	Muskox	1	Feeding	N/A	150	62	East	No	-96.3444	64.7737			No	Not Exceeded	
Road	2023-07-04 7:01 AM	Yes	Arctic fox	1	Running	W	0	56	Both	Yes	-96.3514	64.7259			No	Not Exceeded	
Road	2023-07-04 7:01 AM	Yes	Sandhill crane	2	Walking	N	30	29	East	No	-96.1813	64.5473			No	Not Exceeded	
Road	2023-07-04 7:01 AM	Yes	Bald Eagle	1	Standing	N/A	100	17	East	No	-96.0771	64.4533			No	Not Exceeded	
Road	2023-07-07 7:55 AM	Yes	Muskox	2	Foraging	N/A	20	105	East	No	-96.0877	65.0341			No	Not Exceeded	
Road	2023-07-07 7:55 AM	Yes	Muskox	1	Foraging	N/A	300	102	East	No	-96.1278	65.0517			No	Not Exceeded	
Road	2023-07-07 7:55 AM	Yes	Muskox	1	Foraging	N/A	300	101	West	No	-96.1403	65.0567			No	Not Exceeded	
Road	2023-07-07 7:55 AM	Yes	Muskox	1	Resting	W	100	98	West	No	-96.1576	65.0325			No	Not Exceeded	
Road	2023-07-07 7:55 AM	Yes	Muskox	1	Foraging	N/A	40	62	East	No	-96.3444	64.7737			No	Not Exceeded	
Road	2023-07-07 7:55 AM	Yes	Arctic hare	2	Standing	E	0	57	East	Yes	-96.3601	64.7314			No	Not Exceeded	
Road	2023-07-07 7:55 AM	Yes	Arctic fox	1	Walking	W	0	51	Both	Yes	-96.3791	64.6932			No	Not Exceeded	
Road	2023-07-07 7:55 AM	Yes	Sandhill crane	2	Walking	W	0	48	West	Yes	-96.3688	64.6642			No	Not Exceeded	
Road	2023-07-07 7:55 AM	Yes	Muskox	1	Standing	E	20	43	East	No	-96.3007	64.6348			No	Not Exceeded	
Road	2023-07-07 7:55 AM	Yes	Muskox	3	Foraging	E	50	21	East	No	-96.1045	64.4869			No	Not Exceeded	
Road	2023-07-07 7:55 AM	Yes	Bald Eagle	2	Standing	N/A	40	14	East	No	-96.0430	64.4312			No	Not Exceeded	
Incidental	2023-07-07 4:50 PM	Yes	Muskox	14	Resting	E	150	54	West	No	-96.3584	64.7132			No	Exceeded	Speed restriction as been called to the dispatch (30km/h for 2 hours at km54)
Incidental	2023-07-07 5:38 PM	Yes	Caribou	1	Alert	N/A	10	89	East	No	-96.2196	64.9674			No	Not Exceeded	
Road	2023-07-11 7:25 AM	Yes	Muskox	2	Foraging	N/A	5	101	West	No	-96.1403	65.0567			No	Not Exceeded	
Road	2023-07-11 7:25 AM	Yes	Wolf	1	Walking	S	20	96	West	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-07-11 7:25 AM	Yes	Arctic hare	1	Alert	W	10	79	West	No	-96.3149	64.9095			No	Not Exceeded	
Road	2023-07-11 7:25 AM	Yes	Siksik	1	Alert	E	1	71	East	Yes	-96.3197	64.8447			No	Not Exceeded	
Road	2023-07-11 7:25 AM	Yes	Muskox	1	Foraging	N/A	2	43	West	No	-96.3007	64.6348			No	Not Exceeded	
Road	2023-07-11 7:25 AM	Yes	Arctic hare	1	Alert	E	5	34	East	No	-96.2405	64.5687			No	Not Exceeded	
Road	2023-07-11 7:25 AM	Yes	Muskox	1	Foraging	E	20	23	East	No	-96.1244	64.5006			No	Not Exceeded	
Road	2023-07-11 7:25 AM	Yes	Siksik	3	Walking	W	3	19	West	Yes	-96.0866	64.4702			No	Not Exceeded	
Road	2023-07-11 7:25 AM	Yes	Bald Eagle	1	Standing	E	3	17	East	No	-96.0771	64.4533			No	Not Exceeded	
Road	2023-07-11 7:25 AM	Yes	Wolf	1	Walking	W	50	17	West	No	-96.0771	64.4533			No	Not Exceeded	
Road	2023-07-11 7:25 AM	Yes	Siksik	1	Alert	E	1	2	East	Yes	-95.9743	64.3326			No	Not Exceeded	
Road	2023-07-14 7:16 AM	Yes	Muskox	3	Feeding	N/A	30	105	Both	No	-96.0877	65.0341			No	Not Exceeded	
Road	2023-07-14 7:16 AM	Yes	Ptarmigan	6	Walking	W	0	95	West	Yes	-96.1952	65.0129			No	Not Exceeded	
Road	2023-07-14 7:16 AM	Yes	Ptarmigan	4	Walking	S	0	82	Both	Yes	-96.3120	64.9306			No	Not Exceeded	
Road	2023-07-14 7:16 AM	Yes	Siksik	1	Standing	N/A	0	53	Both	Yes	-96.3731	64.7061			No	Not Exceeded	
Road	2023-07-14 7:16 AM	Yes	Arctic hare	1	Walking	W	5	54	West	No	-96.3584	64.7132			No	Not Exceeded	
Road	2023-07-14 7:16 AM	Yes	Muskox	1	Feeding	N/A	10	44	West	No	-96.3035	64.6417			No	Not Exceeded	
Road	2023-07-14 7:16 AM	Yes	Muskox	17	Feeding	N/A	75	41	East	No	-96.2811	64.6203			No	Exceeded	Speed restriction put in place
Road	2023-07-14 7:16 AM	Yes	Sandhill crane	2	Walking	W	15	35	West	No	-96.2443	64.5739			No	Not Exceeded	
Road	2023-07-14 7:16 AM	Yes	Siksik	1	Running	S	0	25	Both	Yes	-96.1495	64.5142			No	Not Exceeded	
Road	2023-07-16 8:10 AM	Yes	Muskox	4	Foraging	N/A	750	67	East	No	-96.3262	64.8123			No	Not Exceeded	
Road	2023-07-16 8:10 AM	Yes	Muskox	2	Foraging	N/A	125	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-07-16 8:10 AM	Yes	Siksik	1	Walking	W	15	40	West	No	-96.2814	64.6043			No	Not Exceeded	
Road	2023-07-16 8:10 AM	Yes	Muskox	1	Lying Down	N/A	25	38	East	No	-96.2758	64.5907			No	Not Exceeded	
Road	2023-07-16 8:10 AM	Yes	Muskox	1	Foraging	N/A	25	7	West	No	-96.0092	64.3726			No	Not Exceeded	
Road	2023-07-18 8:45 AM	Yes	Muskox	4	Feeding	N	200	46	West	No	-96.3296	64.6562			No	Not Exceeded	
Road	2023-07-18 8:45 AM	Yes	Arctic hare	1	Trotting/running	E	0	37	East	Yes	-96.2690	64.5842			No	Not Exceeded	
Road	2023-07-18 8:45 AM	Yes	Muskox	1	Feeding	N/A	70	11	West	No	-96.0239	64.4054			No	Not Exceeded	

Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-07-18 8:45 AM	Yes	Muskox	1	Feeding	N/A	2	5	West	No	-96.0000	64.3566			No	Not Exceeded	
Road	2023-07-18 12:29 PM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-07-21 1:23 PM	Yes	Muskox	2	Lying Down	N/A	300	19	West	No	-96.0866	64.4702			No	Not Exceeded	
Road	2023-07-21 1:23 PM	Yes	Muskox	10	Foraging	N	2500	20	East	No	-96.0960	64.4787			No	Not Exceeded	
Road	2023-07-21 1:23 PM	Yes	Muskox	1	Walking	NE	150	30	West	No	-96.1958	64.5543			No	Not Exceeded	
Road	2023-07-21 1:23 PM	Yes	Muskox	2	Lying Down	N/A	100	51	West	No	-96.3791	64.6932			No	Not Exceeded	
Road	2023-07-21 1:23 PM	Yes	Muskox	15	Foraging	N	350	65	East	No	-96.3406	64.7948			No	Exceeded	Speed Restriction
Road	2023-07-21 1:23 PM	Yes	Muskox	1	Lying Down	N/A	150	104	East	No	-96.0972	65.0446			No	Not Exceeded	
Road	2023-07-26 11:42 AM	Yes	Muskox	1	Walking	N	200	11	East	No	-96.0239	64.4054			No	Not Exceeded	
Road	2023-07-26 11:42 AM	Yes	Muskox	1	Walking	N	300	14	East	No	-96.0430	64.4312			No	Not Exceeded	
Road	2023-07-26 11:42 AM	Yes	Muskox	1	Foraging	N/A	100	35	West	No	-96.2443	64.5739			No	Not Exceeded	
Road	2023-07-26 11:42 AM	Yes	Muskox	1	Foraging	N/A	690	52	East	No	-96.3774	64.7009			No	Not Exceeded	
Road	2023-07-26 11:42 AM	Yes	Muskox	3	Foraging	N/A	280	95	East	No	-96.1952	65.0129			No	Not Exceeded	
Incidental	2023-07-28 7:33 AM	Yes	Arctic hare	1	Dead	N/A	0	73	South,North,West,East	Yes	-96.3242	64.8621		Project related	No	Not Exceeded	
Incidental	2023-07-29 6:30 AM	Yes	Caribou	2	Walking	SE	300	103	East	No	-96.1108	65.0489			No	Not Exceeded	
Incidental	2023-07-30 6:24 AM	Yes	Wolf	1	Walking	E	50	5	East	N/A	-96.0000	64.3566			No	Not Exceeded	
Road	2023-08-01 1:33 PM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-08-04 9:59 AM	Yes	Siksik	1	Walking	SE	115	30	West	No	-96.1958	64.5543			No	Not Exceeded	
Road	2023-08-04 9:59 AM	Yes	Siksik	1	Walking	W	0	58	West	Yes	-96.3579	64.7416			No	Not Exceeded	
Road	2023-08-06 7:49 AM	Yes	Siksik	1	Running	S	0	40	West	Yes	-96.2814	64.6043			No	Not Exceeded	
Road	2023-08-06 7:49 AM	Yes	Muskox	9	Foraging	S	800	38	West	No	-96.2758	64.5907			No	Not Exceeded	
Road	2023-08-06 7:49 AM	Yes	Arctic fox	1	Foraging	W	15	33	West	No	-96.2163	64.5715			No	Not Exceeded	
Incidental	2023-08-06 1:34 PM	Yes	Muskox	9	Foraging	S	800	65	West	No	-96.3406	64.7948			No	Not Exceeded	
Incidental	2023-08-06 1:34 PM	Yes	Muskox	1	Foraging	NE	350	67	East	No	-96.3262	64.8123			No	Not Exceeded	
Road	2023-08-08 12:38 PM	Yes	Muskox	11	Foraging	NW	100	13	West	No	-96.0368	64.4234			No	Not Exceeded	
Road	2023-08-08 12:38 PM	Yes	Muskox	1	Foraging	N	300	4	West	No	-95.9985	64.3461			No	Not Exceeded	
Road	2023-08-12 7:19 AM	Yes	Muskox	1	Resting	N/A	15	95	West	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-08-12 7:19 AM	Yes	Arctic fox	1	Foraging	SW	15	67	West	No	-96.3262	64.8123			No	Not Exceeded	
Road	2023-08-14 7:05 AM	Yes	Muskox	1	Foraging	SE	100	32	East	No	-96.2045	64.5647			No	Not Exceeded	
Road	2023-08-14 7:05 AM	Yes	Muskox	1	Foraging	NE	100	11	East	No	-96.0239	64.4054			No	Not Exceeded	
Road	2023-08-16 7:22 AM	Yes	Muskox	1	Foraging	N	350	55	East	No	-96.3460	64.7185			No	Not Exceeded	
Road	2023-08-17 7:46 AM	Yes	Muskox	1	Foraging	N	1000	71	East	No	-96.3197	64.8447			No	Not Exceeded	
Road	2023-08-17 7:46 AM	Yes	Muskox	1	Foraging	N	800	61	East	No	-96.3547	64.7633			No	Not Exceeded	
Road	2023-08-19 8:26 AM	Yes	Canada goose	38	Walking	N	30	94	West	No	-96.2127	65.0075			No	Not Exceeded	
Road	2023-08-19 8:26 AM	Yes	Caribou	1	Walking	S	100	50	East	No	-96.3731	64.6794			No	Not Exceeded	
Road	2023-08-19 8:26 AM	Yes	Sandhill crane	2	Walking	W	30	37	West	No	-96.2690	64.5842			No	Not Exceeded	
Road	2023-08-19 8:26 AM	Yes	Canada goose	27	Walking	E	50	24	East	No	-96.1365	64.5079			No	Not Exceeded	
Road	2023-08-20 12:10 PM	Yes	Muskox	33	Foraging	N/A	1900	67	East	No	-96.3262	64.8123			No	Exceeded	> 1.5Km from the road
Road	2023-08-23 3:06 PM	Yes	Canada goose	22	Feeding	NW	20	104	West	No	-96.0972	65.0446			No	Not Exceeded	
Road	2023-08-23 3:06 PM	Yes	Canada goose	7	Feeding	SW	40	99	West	No	-96.1532	65.0420			No	Not Exceeded	
Road	2023-08-23 3:06 PM	Yes	Muskox	1	Foraging	S	150	91	West	No	-96.2249	64.9847			No	Not Exceeded	
Road	2023-08-23 3:06 PM	Yes	Muskox	1	Lying Down	N/A	100	56	East	No	-96.3514	64.7259			No	Not Exceeded	
Road	2023-08-23 3:06 PM	Yes	Bald Eagle	2	Flying	E	0	29	East	No	-96.1813	64.5473			No	Not Exceeded	
Road	2023-08-24 2:09 PM	Yes	Sandhill crane	2	Feeding	N/A	300	83	West	N/A	-96.3011	64.9350			No	Not Exceeded	
Road	2023-08-25 8:00 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-08-25 12:51 PM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-08-27 9:06 AM	Yes	Siksik	1	Running	E	0	101	East	No	-96.1403	65.0567			No	Not Exceeded	
Road	2023-08-27 9:06 AM	Yes	Canada goose	18	Flying	SE	30	94	East	No	-96.2127	65.0075			No	Not Exceeded	
Road	2023-08-27 9:06 AM	Yes	Snow goose	150	Standing	N/A	30	81	East	No	-96.3021	64.9252			No	Not Exceeded	

Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-08-28 10:26 AM	Yes	Muskox	6	Foraging	N/A	1700	7	East	No	-96.0092	64.3726			No	Not Exceeded	
Road	2023-08-29 9:04 AM	Yes	Bald Eagle	1	Flying	E	300	59	East	No	-96.3706	64.7495			No	Not Exceeded	
Road	2023-09-05 7:44 AM	Yes	Ptarmigan	10	Foraging	S	20	103	Both	No	-96.1108	65.0489			No	Not Exceeded	
Incidental	2023-09-05 3:26 PM	Yes	Muskox	21	Foraging	N/A	1000	102	West	No	-96.1278	65.0517			No	Exceeded	Speed restriction at km 101 to km 102 for 2 hours
Road	2023-09-08 6:54 AM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023-09-08 1:45 PM	Yes	Muskox	18	Walking	W	500	26	West	No	-96.1615	64.5235			No	Exceeded	Speed restriction until end of shift as they were walking away from road
Incidental	2023-09-08 1:45 PM	Yes	Muskox	20	Foraging	N/A	500	94	West	No	-96.2127	65.0075			No	Exceeded	Speed restriction placed for 2 hours at km 94
Road	2023-09-13 12:07 PM	Yes	Muskox	6	Foraging	N/A	100	99	West	No	-96.1532	65.0420			No	Not Exceeded	
Road	2023-09-13 12:07 PM	Yes	Snow goose	76	Lying Down	N/A	200	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-09-13 12:07 PM	Yes	Snow goose	5	Feeding	N/A	25	92	West	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-09-13 12:07 PM	Yes	Snow goose	103	Flying	W	100	87	East	Yes	-96.2410	64.9542			No	Not Exceeded	
Road	2023-09-13 12:07 PM	Yes	Snow goose	68	Feeding	N/A	215	86	East	No	-96.2528	64.9468			No	Not Exceeded	
Road	2023-09-13 12:07 PM	Yes	Snow goose	33	Feeding	N/A	22	84	Both	No	-96.2828	64.9366			No	Not Exceeded	
Road	2023-09-13 12:07 PM	Yes	Snow goose	11	Flying	NW	90	63	East	No	-96.3444	64.7793			No	Not Exceeded	
Road	2023-09-13 12:07 PM	Yes	Siksik	1	Standing	E	5	44	East	No	-96.3035	64.6417			No	Not Exceeded	
Road	2023-09-13 12:07 PM	Yes	Snow goose	7	Resting	N/A	60	37	West	No	-96.2690	64.5842			No	Not Exceeded	
Road	2023-09-13 12:07 PM	Yes	Sandhill crane	4	Resting	N/A	50	27	East	No	-96.1612	64.5322			No	Not Exceeded	
Road	2023-09-13 12:07 PM	Yes	Duck	19	Flying	S	200	24	East	No	-96.1365	64.5079			No	Not Exceeded	
Road	2023-09-13 12:07 PM	Yes	Snow goose	42	Resting	N/A	100	5	East	No	-96.0000	64.3566			No	Not Exceeded	
Road	2023-09-15 6:36 AM	Yes	Snow goose	6	Standing	N/A	100	95	West	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-09-15 6:36 AM	Yes	Wolverine	1	Trotting/running	E	200	53	East	No	-96.3731	64.7061			No	Not Exceeded	
Incidental	2023-09-15 3:37 PM	Yes	Muskox	1	Foraging	N/A	200	11	East	No	-96.0239	64.4054			No	Not Exceeded	
Road	2023-09-20 8:58 AM	Yes	Muskox	5	Foraging	SW	200	98	West	No	-96.1576	65.0325			No	Not Exceeded	
Road	2023-09-20 8:58 AM	Yes	Muskox	2	Foraging	E	20	98	East	No	-96.1576	65.0325			No	Not Exceeded	
Road	2023-09-21 1:50 PM	Yes	Muskox	5	Foraging	NE	50	101	East	No	-96.1403	65.0567			No	Not Exceeded	
Road	2023-09-21 1:50 PM	Yes	Muskox	1	Foraging	W	5	92	West	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-09-23 7:21 AM	Yes	Muskox	1	Feeding	N/A	50	92	West	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-09-23 7:21 AM	Yes	Snow goose	16	Resting	N/A	100	86	West	No	-96.2528	64.9468			No	Not Exceeded	
Road	2023-09-23 7:21 AM	Yes	Snow goose	85	Feeding	N/A	75	85	East	No	-96.2614	64.9389			No	Not Exceeded	
Incidental	2023-09-23 1:34 PM	Yes	Muskox	1	Feeding	N/A	800	7	West	No	-96.0092	64.3726			No	Not Exceeded	
Road	2023-09-25 7:15 AM	Yes	Muskox	2	Foraging	N/A	10	99	West	No	-96.1532	65.0420			No	Not Exceeded	
Road	2023-09-26 7:03 AM	Yes	Caribou	1	Walking	N	50	2	East	No	-95.9743	64.3326			No	Not Exceeded	
Road	2023-09-26 7:03 AM	Yes	Muskox	7	Foraging	S	150	71	West	No	-96.3197	64.8447			No	Not Exceeded	
Incidental	2023-09-26 3:17 PM	Yes	Muskox	1	Lying Down	N/A	100	92	East	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-09-27 10:27 AM	Yes	Muskox	1	Foraging	N/A	20	14	East	No	-96.0430	64.4312			No	Not Exceeded	



Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-09-28 8:51 AM	Yes	Muskox	1	Feeding	N	15	97	West	No	-96.1711	65.0259			No	Not Exceeded	
Road	2023-09-28 8:51 AM	Yes	Caribou	3	Walking	N	250	44	East	No	-96.3035	64.6417			No	Not Exceeded	
Road	2023-09-28 8:51 AM	Yes	Muskox	10	Resting	N/A	1000	26	East	No	-96.1615	64.5235			No	Not Exceeded	
Road	2023-09-29 6:58 AM	Yes	Arctic fox	1	Walking	N/A	5	105	Both	Yes	-96.0877	65.0341			No	Not Exceeded	
Road	2023-09-29 6:58 AM	Yes	Muskox	1	Foraging	N/A	10	93	East	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-09-29 6:58 AM	Yes	Caribou	4	Walking	NW	200	55	West	No	-96.3460	64.7185			No	Not Exceeded	
Road	2023-09-29 6:58 AM	Yes	Arctic fox	1	Walking	W	150	21	West	No	-96.1045	64.4869			No	Not Exceeded	
Road	2023-10-01 7:39 AM	Yes	Muskox	1	Feeding	W	10	98	West	No	-96.1576	65.0325			No	Not Exceeded	
Road	2023-10-01 7:39 AM	Yes	Muskox	1	Feeding	E	15	92	East	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-10-01 7:39 AM	Yes	Arctic fox	1	Walking	NW	200	47	West	No	-96.3466	64.6580			No	Not Exceeded	
Road	2023-10-01 7:39 AM	Yes	Caribou	1	Walking	S	250	19	West	No	-96.0866	64.4702			No	Not Exceeded	
Incidental	2023-10-02 6:39 PM	Yes	Muskox	1	Standing	N/A	150	89	East	No	-96.2196	64.9674			No	Not Exceeded	
Road	2023-10-04 9:13 AM	Yes	Muskox	1	Feeding	N/A	30	97	East	No	-96.1711	65.0259			No	Not Exceeded	
Road	2023-10-06 8:00 AM	Yes	Arctic fox	1	Walking	N	200	101	West	N/A	-96.1403	65.0567			No	Not Exceeded	
Road	2023-10-06 8:00 AM	Yes	Muskox	2	Feeding	N/A	25	96	East	N/A	-96.1809	65.0181			No	Not Exceeded	
Road	2023-10-07 9:02 AM	Yes	Arctic fox	1	Walking	W	100	38	West	No	-96.2758	64.5907			No	Not Exceeded	
Road	2023-10-09 8:16 AM	Yes	Muskox	3	Feeding	W	12	91	West	N/A	-96.2249	64.9847			No	Not Exceeded	
Road	2023-10-11 11:18 AM	Yes	Muskox	1	Feeding	N/A	10	97	West	N/A	-96.1711	65.0259			No	Not Exceeded	
Road	2023-10-13 8:30 AM	Yes	Muskox	22	Foraging	N/A	2500	18	West	No	-96.0824	64.4610			No	Exceeded	Observed 2500m from the road
Road	2023-10-13 8:30 AM	Yes	Arctic fox	1	Running	SW	20	35	West	No	-96.2443	64.5739			No	Not Exceeded	
Road	2023-10-13 8:30 AM	Yes	Caribou	7	Foraging	E	300	66	East	No	-96.3350	64.8045			No	Not Exceeded	
Road	2023-10-13 8:30 AM	Yes	Muskox	1	Lying Down	N/A	200	92	East	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-10-13 8:30 AM	Yes	Muskox	3	Lying Down	N/A	150	98	West	No	-96.1576	65.0325			No	Not Exceeded	
Road	2023-10-14 12:17 PM	Yes	Caribou	29	Foraging	S	2900	69	East	No	-96.3143	64.8277			No	Not Exceeded	
Incidental	2023-10-17 8:48 AM	Yes	Muskox	1	Foraging	W	20	97	West	No	-96.1711	65.0259			No	Not Exceeded	
Road	2023-10-18 1:01 PM	Yes	Muskox	40	Foraging	N/A	2300	23	West	No	-96.1244	64.5006			No	Exceeded	> 1.5Km from the road
Incidental	2023-10-20 11:03 AM	Yes	Muskox	5	Resting	Not Recorded	100	1	West	No	-95.9717	64.3253			No	Not Exceeded	
Road	2023-10-20 1:01 PM	Yes	Muskox	10	Foraging	N/A	1900	75	West	No	-96.3361	64.8795			No	Not Exceeded	
Road	2023-10-21 8:46 AM	Yes	Muskox	2	Foraging	N/A	10	92	West	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-10-22 3:00 PM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-10-23 6:01 PM	Yes	Muskox	2	Foraging	W	10	92	West	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-10-23 6:01 PM	Yes	Muskox	1	Foraging	W	10	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-10-24 2:00 PM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-10-25 8:49 AM	Yes	Muskox	2	Foraging	N	100	90	West	No	-96.2221	64.9750			No	Not Exceeded	
Road	2023-10-26 10:36 AM	Yes	Caribou	37	Foraging	N/A	2000	4	East	No	-95.9985	64.3461			No	Not Exceeded	
Road	2023-10-26 10:36 AM	Yes	Caribou	18	Foraging	N/A	500	17	East	No	-96.0771	64.4533			No	Not Exceeded	
Road	2023-10-26 10:36 AM	Yes	Caribou	40	Foraging	N/A	1900	23	East	No	-96.1244	64.5006			No	Not Exceeded	
Road	2023-10-26 10:36 AM	Yes	Caribou	102	Foraging	N/A	2000	23	East	No	-96.1244	64.5006			No	Exceeded	Caribou are 2000m from road HTO closed road from km 15 to 23 and did convoy to bring trucks home
Road	2023-10-26 10:36 AM	Yes	Caribou	65	Foraging	N/A	2000	18	East	No	-96.0824	64.4610			No	Not Exceeded	
Road	2023-10-27 11:47 AM	Yes	Caribou	107	Foraging	N/A	350	2	East	No	-95.9743	64.3326			No	Exceeded	Road was closed the day before
Road	2023-10-27 11:47 AM	Yes	Caribou	96	Foraging	N/A	250	8	East	No	-96.0155	64.3813			No	Exceeded	Road was closed oct 26
Road	2023-10-27 11:47 AM	Yes	Caribou	382	Lying Down	N/A	1250	18	East	No	-96.0824	64.4610			No	Exceeded	Road was closed on oct 26
Road	2023-10-27 11:47 AM	Yes	Muskox	2	Foraging	N/A	25	89	East	No	-96.2196	64.9674			No	Not Exceeded	
Road	2023-10-27 11:47 AM	Yes	Muskox	2	Foraging	N/A	50	93	West	No	-96.2220	65.0008			No	Not Exceeded	

Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-10-27 11:47 AM	Yes	Muskox	1	Lying Down	N/A	25	95	West	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-10-28 11:06 AM	Yes	Muskox	3	Resting	N/A	5	97	East	No	-96.1711	65.0259			No	Not Exceeded	
Road	2023-10-28 11:06 AM	Yes	Muskox	2	Foraging	E	10	90	East	No	-96.2221	64.9750			No	Not Exceeded	
Road	2023-10-28 11:06 AM	Yes	Caribou	20	Walking	N	100	12	East	No	-96.0299	64.4139			No	Not Exceeded	
Road	2023-10-28 11:06 AM	Yes	Caribou	2	Walking	N	100	11	East	No	-96.0239	64.4054			No	Not Exceeded	
Road	2023-10-28 11:06 AM	Yes	Caribou	39	Foraging	S	1000	7	East	No	-96.0092	64.3726			No	Not Exceeded	
Road	2023-10-28 11:06 AM	Yes	Caribou	3	Walking	E	100	3	East	No	-95.9900	64.3377			No	Not Exceeded	
Incidental	2023-10-28 4:49 PM	Yes	Caribou	500	Walking	W	5	15	East	Yes	-96.0525	64.4398			No	Exceeded	Road closed
Road	2023-10-29 8:26 AM	Yes	Muskox	4	Foraging	E	100	91	East	No	-96.2249	64.9847			No	Not Exceeded	
Road	2023-10-29 8:26 AM	Yes	Muskox	11	Walking	E	1000	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-10-29 8:26 AM	Yes	Muskox	8	Foraging	NE	1500	38	West	No	-96.2758	64.5907			No	Not Exceeded	
Road	2023-10-29 8:26 AM	Yes	Muskox	70	Foraging	W	1500	27	West	No	-96.1612	64.5322			No	Exceeded	Road closed
Road	2023-10-29 8:26 AM	Yes	Caribou	450	Walking	W	3000	24	West	No	-96.1365	64.5079			No	Exceeded	Road closed
Road	2023-10-29 8:26 AM	Yes	Caribou	7	Walking	W	250	23	West	No	-96.1244	64.5006			No	Not Exceeded	
Road	2023-10-29 8:26 AM	Yes	Caribou	2	Walking	SE	75	22	East	Yes	-96.1126	64.4935			No	Not Exceeded	
Road	2023-10-29 8:26 AM	Yes	Caribou	8	Walking	NW	100	22	East	Yes	-96.1126	64.4935			No	Not Exceeded	
Road	2023-10-29 8:26 AM	Yes	Caribou	1000	Trotting/running	NW	100	21	West	Yes	-96.1045	64.4869			No	Exceeded	Road closed Hunters on the road
Road	2023-10-29 8:26 AM	Yes	Caribou	500	Walking	S	1000	20	East	No	-96.0960	64.4787			No	Exceeded	Road closed
Road	2023-10-29 8:26 AM	Yes	Caribou	1200	Foraging	NW	1000	19	East	No	-96.0866	64.4702			No	Exceeded	Road closed
Incidental	2023-10-29 4:38 PM	Yes	Caribou	12	Walking	W	300	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-10-30 9:08 AM	Yes	Muskox	2	Foraging	SW	300	89	West	No	-96.2196	64.9674			No	Not Exceeded	
Road	2023-10-30 9:08 AM	Yes	Caribou	13	Foraging	S	100	87	West	No	-96.2410	64.9542			No	Not Exceeded	
Road	2023-10-30 9:08 AM	Yes	Muskox	13	Foraging	E	1000	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-10-30 9:08 AM	Yes	Caribou	200	Walking	N	700	24	East	No	-96.1365	64.5079			No	Exceeded	Road closed
Road	2023-10-30 9:08 AM	Yes	Caribou	24	Walking	N	500	23	East	No	-96.1244	64.5006			No	Not Exceeded	
Road	2023-10-30 9:08 AM	Yes	Caribou	11	Walking	N	400	23	East	No	-96.1244	64.5006			No	Not Exceeded	
Road	2023-10-30 9:08 AM	Yes	Caribou	25	Walking	N	500	22	East	No	-96.1126	64.4935			No	Not Exceeded	
Road	2023-10-30 9:08 AM	Yes	Caribou	450	Walking	NW	800	21	East	No	-96.1045	64.4869			No	Exceeded	Road closed
Road	2023-10-30 9:08 AM	Yes	Caribou	130	Walking	S	200	18	East	No	-96.0824	64.4610			No	Exceeded	Road closed Hunters deflect
Road	2023-10-30 9:08 AM	Yes	Caribou	500	Walking	W	100	16	West	Yes	-96.0624	64.4463			No	Exceeded	Road closed
Road	2023-10-30 9:08 AM	Yes	Caribou	300	Walking	N	200	16	East	No	-96.0624	64.4463			No	Exceeded	Road closed
Road	2023-10-30 9:08 AM	Yes	Caribou	900	Walking	W	10	15	Both	Yes	-96.0525	64.4398			No	Exceeded	Road closed
Road	2023-10-30 9:08 AM	Yes	Caribou	7	Walking	SW	100	12	East	Yes	-96.0299	64.4139			No	Not Exceeded	
Road	2023-10-30 9:08 AM	Yes	Caribou	60	Walking	NE	150	6	East	No	-96.0008	64.3643			No	Not Exceeded	
Incidental	2023-10-30 3:43 PM	Yes	Caribou	2500	Walking	W	75	15	East	No	-96.0525	64.4398			No	Exceeded	Road closed
Road	2023-10-31 10:36 AM	Yes	Muskox	3	Foraging	N	10	97	East	No	-96.1711	65.0259			No	Not Exceeded	
Road	2023-10-31 10:36 AM	Yes	Muskox	4	Foraging	S	500	90	West	No	-96.2221	64.9750			Yes - Same group counted day before	Not Exceeded	
Road	2023-10-31 10:36 AM	Yes	Caribou	17	Walking	N	100	68	East	No	-96.3268	64.8203			No	Not Exceeded	
Road	2023-10-31 10:36 AM	Yes	Caribou	5	Walking	N	50	67	East	No	-96.3262	64.8123			No	Not Exceeded	
Road	2023-10-31 10:36 AM	Yes	Caribou	10	Walking	N	100	63	East	No	-96.3444	64.7793			No	Not Exceeded	
Road	2023-10-31 10:36 AM	Yes	Caribou	3	Walking	N	200	57	East	No	-96.3601	64.7314			No	Not Exceeded	
Road	2023-10-31 10:36 AM	Yes	Caribou	100	Walking	S	75	52	East	No	-96.3774	64.7009			No	Exceeded	Road closed
Road	2023-10-31 10:36 AM	Yes	Caribou	100	Walking	S	300	40	East	No	-96.2814	64.6043			No	Exceeded	Road closed
Road	2023-11-01 10:15 AM	Yes	Muskox	1	Foraging	N	100	98	West	No	-96.1576	65.0325			No	Not Exceeded	
Road	2023-11-01 10:15 AM	Yes	Muskox	3	Foraging	N	50	97	West	No	-96.1711	65.0259			No	Not Exceeded	
Road	2023-11-01 10:15 AM	Yes	Muskox	3	Foraging	S	500	90	West	No	-96.2221	64.9750			No	Not Exceeded	
Road	2023-11-01 10:15 AM	Yes	Caribou	20	Walking	N	200	75	East	No	-96.3361	64.8795			No	Not Exceeded	
Road	2023-11-01 10:15 AM	Yes	Caribou	15	Foraging	N	450	65	East	No	-96.3406	64.7948			No	Not Exceeded	
Road	2023-11-01 10:15 AM	Yes	Caribou	250	Foraging	S	500	63	East	No	-96.3444	64.7793			No	Exceeded	Road closed
Road	2023-11-02 9:23 AM	Yes	Muskox	11	Foraging	S	800	94	West	No	-96.2127	65.0075			No	Not Exceeded	
Road	2023-11-02 9:23 AM	Yes	Muskox	4	Foraging	S	10	91	West	No	-96.2249	64.9847			No	Not Exceeded	
Road	2023-11-02 9:23 AM	Yes	Caribou	46	Walking	N	150	75	East	No	-96.3361	64.8795			No	Not Exceeded	
Road	2023-11-02 9:23 AM	Yes	Ptarmigan	5	Flying	S	1	73	East	No	-96.3242	64.8621			No	Not Exceeded	



Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-11-02 9:23 AM	Yes	Caribou	8	Walking	E	300	72	East	No	-96.3238	64.8539			No	Not Exceeded	
Road	2023-11-02 9:23 AM	Yes	Caribou	230	Walking	S	100	50	East	No	-96.3731	64.6794			No	Exceeded	Road closed
Road	2023-11-02 9:23 AM	Yes	Caribou	100	Resting	N/A	50	47	East	No	-96.3466	64.6580			No	Exceeded	Road closed
Road	2023-11-03 8:35 AM	Yes	Muskox	3	Resting	N/A	50	95	East	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-11-03 8:35 AM	Yes	Muskox	4	Resting	N/A	80	90	East	No	-96.2221	64.9750			No	Not Exceeded	
Road	2023-11-03 8:35 AM	Yes	Caribou	45	Walking	S	250	74	East	No	-96.3303	64.8752			No	Not Exceeded	
Road	2023-11-03 8:35 AM	Yes	Caribou	54	Resting	N/A	200	73	East	No	-96.3242	64.8621			No	Not Exceeded	
Road	2023-11-03 8:35 AM	Yes	Ptarmigan	20	Flying	E	5	56	East	No	-96.3514	64.7259			No	Not Exceeded	
Road	2023-11-03 8:35 AM	Yes	Caribou	28	Resting	N/A	150	50	West	No	-96.3731	64.6794			No	Not Exceeded	
Road	2023-11-03 8:35 AM	Yes	Caribou	2	Resting	N/A	200	47	East	No	-96.3466	64.6580			No	Not Exceeded	
Road	2023-11-03 8:35 AM	Yes	Caribou	130	Resting	N/A	100	45	East	No	-96.3134	64.6524			No	Exceeded	Road closed
Incidental	2023-11-03 4:11 PM	Yes	Caribou	120	Walking	S	200	44	East	No	-96.3035	64.6417			No	Exceeded	Road closed
Incidental	2023-11-03 4:11 PM	Yes	Caribou	6	Foraging	W	700	46	West	No	-96.3296	64.6562			No	Not Exceeded	
Incidental	2023-11-03 4:11 PM	Yes	Caribou	16	Foraging	S	500	50	West	No	-96.3731	64.6794			No	Not Exceeded	
Incidental	2023-11-03 4:11 PM	Yes	Muskox	10	Walking	S	500	95	West	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-11-04 9:11 AM	Yes	Muskox	1	Foraging	N	15	97	East	No	-96.1711	65.0259			No	Not Exceeded	
Road	2023-11-04 9:11 AM	Yes	Muskox	1	Foraging	N	10	96	East	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-11-04 9:11 AM	Yes	Muskox	3	Foraging	N	75	94	East	No	-96.2127	65.0075			No	Not Exceeded	
Road	2023-11-04 9:11 AM	Yes	Muskox	4	Foraging	E	5	90	Both	No	-96.2221	64.9750			No	Not Exceeded	
Road	2023-11-04 9:11 AM	Yes	Caribou	2	Foraging	N	100	79	East	No	-96.3149	64.9095			No	Not Exceeded	
Road	2023-11-04 9:11 AM	Yes	Caribou	90	Foraging	N	100	77	East	No	-96.3391	64.8951			No	Not Exceeded	
Road	2023-11-04 9:11 AM	Yes	Caribou	18	Foraging	N	150	70	East	No	-96.3165	64.8365			No	Not Exceeded	
Road	2023-11-04 9:11 AM	Yes	Caribou	17	Foraging	S	300	54	East	No	-96.3584	64.7132			No	Not Exceeded	
Road	2023-11-04 9:11 AM	Yes	Caribou	20	Foraging	S	150	53	East	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-11-04 9:11 AM	Yes	Caribou	280	Foraging	W	200	53	West	No	-96.3731	64.7061			No	Exceeded	Road closed
Road	2023-11-04 9:11 AM	Yes	Caribou	174	Foraging	N	300	50	East	No	-96.3731	64.6794			No	Exceeded	Road closed
Road	2023-11-04 9:11 AM	Yes	Caribou	22	Walking	S	400	49	West	No	-96.3707	64.6688			No	Not Exceeded	
Road	2023-11-05 8:39 AM	Yes	Muskox	3	Foraging	N	50	96	East	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-11-05 8:39 AM	Yes	Caribou	45	Foraging	S	200	75	East	No	-96.3361	64.8795			No	Not Exceeded	
Road	2023-11-05 8:39 AM	Yes	Caribou	18	Walking	S	200	72	East	No	-96.3238	64.8539			No	Not Exceeded	
Road	2023-11-05 8:39 AM	Yes	Caribou	8	Foraging	W	300	61	West	No	-96.3547	64.7633			No	Not Exceeded	
Road	2023-11-05 8:39 AM	Yes	Caribou	5	Foraging	W	200	60	West	No	-96.3636	64.7555			No	Not Exceeded	
Road	2023-11-05 8:39 AM	Yes	Caribou	25	Foraging	W	50	56	Both	No	-96.3514	64.7259			No	Not Exceeded	
Road	2023-11-05 8:39 AM	Yes	Caribou	2	Foraging	N	350	54	West	No	-96.3584	64.7132			No	Not Exceeded	
Road	2023-11-05 8:39 AM	Yes	Caribou	15	Foraging	NW	75	49	West	No	-96.3707	64.6688			No	Not Exceeded	
Incidental	2023-11-05 2:49 PM	Yes	Caribou	5	Foraging	N	400	23	East	No	-96.1244	64.5006			No	Not Exceeded	
Incidental	2023-11-05 2:49 PM	Yes	Caribou	8	Walking	NW	300	32	East	No	-96.2045	64.5647			No	Not Exceeded	
Incidental	2023-11-05 2:49 PM	Yes	Caribou	6	Walking	NW	150	38	East	Yes	-96.2758	64.5907			No	Not Exceeded	
Incidental	2023-11-05 2:49 PM	Yes	Caribou	200	Walking	NW	350	53	West	No	-96.3731	64.7061			No	Exceeded	Road closed
Incidental	2023-11-05 2:49 PM	Yes	Caribou	100	Walking	W	250	58	East	Yes	-96.3579	64.7416			No	Exceeded	Road closed
Road	2023-11-06 8:21 AM	Yes	Muskox	1	Standing	N/A	5	97	East	No	-96.1711	65.0259			No	Not Exceeded	
Road	2023-11-06 8:21 AM	Yes	Muskox	3	Resting	N/A	100	96	East	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-11-06 8:21 AM	Yes	Ptarmigan	12	Running	S	1	92	East	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-11-06 8:21 AM	Yes	Caribou	3	Foraging	SW	100	62	East	No	-96.3444	64.7737			No	Not Exceeded	
Road	2023-11-06 8:21 AM	Yes	Caribou	10	Walking	NE	300	61	East	No	-96.3547	64.7633			No	Not Exceeded	
Road	2023-11-06 8:21 AM	Yes	Ptarmigan	15	Resting	N/A	50	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-11-06 8:21 AM	Yes	Ptarmigan	7	Flying	SE	20	52	East	No	-96.3774	64.7009			No	Not Exceeded	
Road	2023-11-06 8:21 AM	Yes	Caribou	8	Walking	NE	500	26	East	No	-96.1615	64.5235			No	Not Exceeded	
Incidental	2023-11-06 1:36 PM	Yes	Caribou	227	Walking	SW	1850	38	West	No	-96.2758	64.5907			No	Exceeded	Group was outside 1.5 km and moving away from road
Road	2023-11-07 8:23 AM	Yes	Muskox	1	Standing	N/A	50	96	East	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-11-07 8:23 AM	Yes	Caribou	4	Foraging	N/A	100	77	East	No	-96.3391	64.8951			No	Not Exceeded	
Road	2023-11-07 8:23 AM	Yes	Arctic fox	1	Running	NE	100	71	East	No	-96.3197	64.8447			No	Not Exceeded	
Road	2023-11-07 8:23 AM	Yes	Caribou	296	Foraging	S	300	77	West	No	-96.3391	64.8951			No	Exceeded	Road closed
Road	2023-11-07 8:23 AM	Yes	Caribou	12	Walking	E	0	57	West	Yes	-96.3601	64.7314			No	Not Exceeded	
Road	2023-11-07 8:23 AM	Yes	Caribou	88	Foraging	N/A	900	56	West	No	-96.3514	64.7259			No	Not Exceeded	
Road	2023-11-08 6:45 AM	Yes	Muskox	4	Foraging	S	50	92	East	No	-96.2219	64.9943			No	Not Exceeded	

Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-11-08 6:45 AM	Yes	Caribou	4	Foraging	S	100	78	East	No	-96.3244	64.9032			No	Not Exceeded	
Road	2023-11-08 6:45 AM	Yes	Caribou	14	Foraging	N	150	77	West	No	-96.3391	64.8951			No	Not Exceeded	
Road	2023-11-08 6:45 AM	Yes	Caribou	2	Walking	NW	250	69	East	No	-96.3143	64.8277			No	Not Exceeded	
Road	2023-11-08 6:45 AM	Yes	Caribou	350	Foraging	W	100	64	Both	No	-96.3400	64.7867			No	Exceeded	Road closed
Road	2023-11-08 6:45 AM	Yes	Caribou	15	Foraging	N	125	58	East	No	-96.3579	64.7416			No	Not Exceeded	
Road	2023-11-08 6:45 AM	Yes	Caribou	45	Foraging	NW	500	57	East	No	-96.3601	64.7314			No	Not Exceeded	
Road	2023-11-08 6:45 AM	Yes	Caribou	20	Foraging	N	500	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-11-08 6:45 AM	Yes	Caribou	75	Foraging	W	750	42	West	No	-96.2949	64.6276			No	Not Exceeded	
Road	2023-11-08 6:45 AM	Yes	Caribou	100	Foraging	W	800	33	East	No	-96.2163	64.5715			No	Exceeded	Road closed
Road	2023-11-08 6:45 AM	Yes	Caribou	130	Foraging	N	250	29	East	No	-96.1813	64.5473			No	Exceeded	Road closed
Road	2023-11-08 6:45 AM	Yes	Caribou	5	Foraging	NW	200	10	East	No	-96.0179	64.3971			No	Not Exceeded	
Road	2023-11-09 8:09 AM	Yes	Muskox	4	Foraging	N/A	100	97	East	No	-96.1711	65.0259			No	Not Exceeded	
Road	2023-11-09 8:09 AM	Yes	Caribou	60	Foraging	SE	500	72	East	No	-96.3238	64.8539			No	Not Exceeded	
Road	2023-11-09 8:09 AM	Yes	Caribou	65	Foraging	S	500	68	West	No	-96.3268	64.8203			No	Not Exceeded	
Road	2023-11-09 8:09 AM	Yes	Caribou	13	Foraging	S	400	66	West	No	-96.3350	64.8045			No	Not Exceeded	
Road	2023-11-09 8:09 AM	Yes	Caribou	18	Foraging	S	1000	64	West	No	-96.3400	64.7867			No	Not Exceeded	
Road	2023-11-09 8:09 AM	Yes	Caribou	35	Foraging	NE	150	61	East	No	-96.3547	64.7633			No	Not Exceeded	
Road	2023-11-09 8:09 AM	Yes	Caribou	21	Foraging	N/A	500	56	East	No	-96.3514	64.7259			No	Not Exceeded	
Road	2023-11-09 8:09 AM	Yes	Caribou	5	Foraging	N	500	54	West	No	-96.3584	64.7132			No	Not Exceeded	
Incidental	2023-11-09 1:44 PM	Yes	Caribou	255	Foraging	N/A	500	40	East	No	-96.2814	64.6043			No	Exceeded	Road closed
Road	2023-11-10 12:06 PM	Yes	Muskox	4	Foraging	N/A	1000	92	East	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-11-10 12:06 PM	Yes	Caribou	3	Foraging	N	500	72	West	No	-96.3238	64.8539			No	Not Exceeded	
Road	2023-11-10 12:06 PM	Yes	Caribou	62	Walking	NW	10	62	West	Yes	-96.3444	64.7737			No	Not Exceeded	
Road	2023-11-10 12:06 PM	Yes	Wolf	6	Trotting/running	NW	300	61	West	No	-96.3547	64.7633			No	Not Exceeded	
Road	2023-11-10 12:06 PM	Yes	Caribou	92	Foraging	N/A	1000	55	East	No	-96.3460	64.7185			No	Not Exceeded	
Road	2023-11-10 12:06 PM	Yes	Caribou	13	Walking	N	500	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-11-10 12:06 PM	Yes	Caribou	43	Foraging	N	300	51	East	No	-96.3791	64.6932			No	Not Exceeded	
Road	2023-11-10 12:06 PM	Yes	Caribou	10	Foraging	E	50	50	East	No	-96.3731	64.6794			No	Not Exceeded	
Road	2023-11-10 12:06 PM	Yes	Caribou	78	Foraging	N	900	28	East	No	-96.1701	64.5413			No	Not Exceeded	
Road	2023-11-10 12:06 PM	Yes	Caribou	53	Foraging	S	1000	23	East	No	-96.1244	64.5006			No	Not Exceeded	
Road	2023-11-10 12:06 PM	Yes	Caribou	34	Walking	NW	250	15	West	No	-96.0525	64.4398			No	Not Exceeded	
Road	2023-11-10 12:06 PM	Yes	Caribou	50	Walking	NW	400	12	West	No	-96.0299	64.4139			No	Not Exceeded	
Road	2023-11-10 12:06 PM	Yes	Caribou	600	Foraging	N/A	1000	8	West	No	-96.0155	64.3813			No	Exceeded	Road closed
Road	2023-11-11 9:18 AM	Yes	Caribou	3	Foraging	N/A	500	8	East	No	-96.0155	64.3813			No	Not Exceeded	
Road	2023-11-11 11:59 AM	Yes	Caribou	120	Walking	NE	300	54	Both	No	-96.3584	64.7132			No	Exceeded	Road is already closed due to caribou
Road	2023-11-11 11:59 AM	Yes	Caribou	13	Walking	W	800	59	West	No	-96.3706	64.7495			No	Not Exceeded	
Road	2023-11-11 11:59 AM	Yes	Caribou	15	Foraging	NE	300	60	West	No	-96.3636	64.7555			No	Not Exceeded	
Road	2023-11-11 11:59 AM	Yes	Caribou	27	Lying Down	N/A	300	60	West	No	-96.3636	64.7555			No	Not Exceeded	
Road	2023-11-11 12:50 PM	Yes	Caribou	60	Foraging	N/A	800	65	West	No	-96.3406	64.7948			No	Not Exceeded	
Road	2023-11-11 1:00 PM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-11-11 1:46 PM	Yes	Caribou	5	Foraging	N/A	200	76	West	No	-96.3457	64.8879			No	Not Exceeded	
Road	2023-11-12 8:09 AM	Yes	Caribou	28	Foraging	N/A	400	73	West	No	-96.3242	64.8621			No	Not Exceeded	
Road	2023-11-12 8:09 AM	Yes	Caribou	120	Walking	NW	310	69	West	No	-96.3143	64.8277			No	Exceeded	Road closed
Road	2023-11-12 8:09 AM	Yes	Caribou	31	Foraging	N/A	230	68	West	No	-96.3268	64.8203			No	Not Exceeded	
Road	2023-11-12 8:09 AM	Yes	Caribou	240	Walking	S	200	65	West	No	-96.3406	64.7948			No	Exceeded	Road closed
Road	2023-11-12 8:09 AM	Yes	Caribou	280	Foraging	NW	0	64	Both	Yes	-96.3400	64.7867			No	Exceeded	Road closed
Road	2023-11-12 8:09 AM	Yes	Caribou	58	Walking	N	600	52	East	No	-96.3774	64.7009			No	Not Exceeded	
Road	2023-11-12 8:09 AM	Yes	Caribou	32	Foraging	NW	300	37	West	No	-96.2690	64.5842			No	Not Exceeded	
Road	2023-11-12 8:09 AM	Yes	Caribou	15	Walking	W	600	31	East	No	-96.1957	64.5543			No	Not Exceeded	
Road	2023-11-12 8:09 AM	Yes	Caribou	25	Foraging	N/A	1500	22	West	No	-96.1126	64.4935			No	Not Exceeded	
Incidental	2023-11-12 3:18 PM	Yes	Caribou	285	Foraging	N	300	16	West	No	-96.0624	64.4463			No	Exceeded	Road closed
Incidental	2023-11-12 3:18 PM	Yes	Caribou	89	Walking	S	250	35	West	No	-96.2443	64.5739			No	Not Exceeded	
Incidental	2023-11-12 3:18 PM	Yes	Caribou	49	Walking	S	900	40	East	No	-96.2814	64.6043			No	Not Exceeded	
Road	2023-11-13 8:55 AM	Yes	Caribou	120	Foraging	N/A	100	72	West	No	-96.3238	64.8539			No	Exceeded	Road closed
Road	2023-11-13 8:55 AM	Yes	Caribou	70	Foraging	N/A	280	67	West	No	-96.3262	64.8123			No	Not Exceeded	
Road	2023-11-13 8:55 AM	Yes	Caribou	250	Foraging	N/A	320	65	West	No	-96.3406	64.7948			No	Exceeded	Road closed
Road	2023-11-13 8:55 AM	Yes	Caribou	64	Walking	W	150	31	West	No	-96.1957	64.5543			No	Not Exceeded	

Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-11-14 8:14 AM	Yes	Caribou	50	Foraging	N/A	1000	68	East	No	-96.3268	64.8203			No	Not Exceeded	
Road	2023-11-14 8:14 AM	Yes	Caribou	109	Foraging	N	300	65	East	No	-96.3406	64.7948			No	Exceeded	Road closed
Road	2023-11-14 8:14 AM	Yes	Caribou	40	Foraging	N/A	320	62	East	No	-96.3444	64.7737			No	Not Exceeded	
Road	2023-11-14 8:14 AM	Yes	Caribou	120	Foraging	N/A	1000	53	West	No	-96.3731	64.7061			No	Exceeded	Road closed
Road	2023-11-14 8:14 AM	Yes	Caribou	200	Foraging	N	1000	40	East	No	-96.2814	64.6043			No	Exceeded	Road closed
Road	2023-11-14 8:14 AM	Yes	Caribou	290	Foraging	N	10	16	East	No	-96.0624	64.4463			No	Exceeded	Road closed
Road	2023-11-15 10:23 AM	Yes	Caribou	9	Foraging	N/A	400	78	West	No	-96.3244	64.9032			No	Not Exceeded	
Road	2023-11-15 10:23 AM	Yes	Caribou	9	Foraging	NW	250	67	West	No	-96.3262	64.8123			No	Not Exceeded	
Road	2023-11-15 10:23 AM	Yes	Caribou	7	Foraging	N/A	180	37	East	No	-96.2690	64.5842			No	Not Exceeded	
Road	2023-11-15 10:23 AM	Yes	Caribou	15	Foraging	N	250	34	East	No	-96.2405	64.5687			No	Not Exceeded	
Road	2023-11-16 7:34 AM	Yes	Caribou	180	Foraging	N/A	30	99	East	No	-96.1532	65.0420			No	Exceeded	Road closed
Road	2023-11-16 7:34 AM	Yes	Caribou	9	Walking	N	0	93	Both	Yes	-96.2220	65.0008			No	Not Exceeded	
Road	2023-11-16 7:34 AM	Yes	Caribou	9	Foraging	N/A	1000	79	West	No	-96.3149	64.9095			No	Not Exceeded	
Road	2023-11-16 7:34 AM	Yes	Caribou	10	Foraging	N/A	400	75	West	No	-96.3361	64.8795			No	Not Exceeded	
Road	2023-11-17 7:53 AM	Yes	Caribou	260	Foraging	SW	400	94	East	No	-96.2127	65.0075			No	Exceeded	Road closed
Road	2023-11-17 7:53 AM	Yes	Caribou	56	Foraging	N	290	90	East	No	-96.2221	64.9750			No	Not Exceeded	
Road	2023-11-17 7:53 AM	Yes	Caribou	70	Foraging	N/A	40	89	East	No	-96.2196	64.9674			No	Not Exceeded	
Road	2023-11-18 8:55 AM	Yes	Muskox	36	Foraging	N/A	1900	93	West	No	-96.2220	65.0008			No	Exceeded	Road closed
Road	2023-11-18 8:55 AM	Yes	Caribou	15	Foraging	N/A	140	92	East	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-11-18 8:55 AM	Yes	Caribou	290	Foraging	SW	290	85	East	No	-96.2614	64.9389			No	Exceeded	Road closed
Road	2023-11-18 8:55 AM	Yes	Caribou	76	Foraging	N/A	300	78	East	No	-96.3244	64.9032			No	Not Exceeded	
Road	2023-11-18 8:55 AM	Yes	Caribou	23	Foraging	SW	190	77	West	No	-96.3391	64.8951			No	Not Exceeded	
Road	2023-11-18 8:55 AM	Yes	Caribou	23	Lying Down	N/A	320	74	East	No	-96.3303	64.8752			No	Not Exceeded	
Road	2023-11-18 8:55 AM	Yes	Caribou	24	Foraging	N	1800	68	East	No	-96.3268	64.8203			No	Not Exceeded	
Road	2023-11-18 8:55 AM	Yes	Caribou	25	Lying Down	N/A	290	66	East	No	-96.3350	64.8045			No	Not Exceeded	
Road	2023-11-18 8:55 AM	Yes	Caribou	15	Foraging	N/A	200	64	East	No	-96.3400	64.7867			No	Not Exceeded	
Road	2023-11-18 8:55 AM	Yes	Caribou	52	Foraging	SW	310	54	East	No	-96.3584	64.7132			No	Not Exceeded	
Road	2023-11-18 8:55 AM	Yes	Caribou	130	Foraging	N/A	280	52	East	No	-96.3774	64.7009			No	Exceeded	Road closed
Road	2023-11-18 8:55 AM	Yes	Caribou	19	Walking	S	400	42	West	No	-96.2949	64.6276			No	Not Exceeded	
Road	2023-11-19 9:56 AM	Yes	Caribou	4	Foraging	N/A	400	89	East	No	-96.2196	64.9674			No	Not Exceeded	
Road	2023-11-19 9:56 AM	Yes	Caribou	24	Foraging	N/A	900	80	East	No	-96.3062	64.9171			No	Not Exceeded	
Road	2023-11-19 9:56 AM	Yes	Caribou	105	Lying Down	N/A	330	76	Both	No	-96.3457	64.8879			No	Exceeded	Road closed
Road	2023-11-20 8:23 AM	Yes	Caribou	37	Foraging	SW	290	77	West	No	-96.3391	64.8951			No	Not Exceeded	
Road	2023-11-20 8:23 AM	Yes	Caribou	120	Foraging	N/A	190	76	West	No	-96.3457	64.8879			No	Exceeded	Road closed
Incidental	2023-11-24 8:17 AM	Yes	Caribou	18	Foraging	S	300	55	East	No	-96.3460	64.7185			No	Not Exceeded	
Incidental	2023-11-24 8:17 AM	Yes	Caribou	85	Foraging	N/A	300	46	East	No	-96.3296	64.6562			No	Not Exceeded	
Incidental	2023-11-24 8:17 AM	Yes	Caribou	220	Foraging	N/A	130	46	East	No	-96.3296	64.6562			No	Exceeded	Road closed
Incidental	2023-11-24 8:17 AM	Yes	Caribou	80	Foraging	N	1500	43	East	No	-96.3007	64.6348			No	Not Exceeded	
Road	2023-11-24 12:00 PM	Yes	Muskox	3	Foraging	N/A	100	3	West	No	-95.9900	64.3377			No	Not Exceeded	
Road	2023-11-24 12:00 PM	Yes	Caribou	2	Walking	N	1500	48	East	No	-96.3688	64.6642			No	Not Exceeded	
Road	2023-11-24 12:00 PM	Yes	Caribou	20	Foraging	N/A	1700	50	East	No	-96.3731	64.6794			No	Not Exceeded	
Road	2023-11-24 12:00 PM	Yes	Caribou	40	Foraging	N/A	2000	55	East	No	-96.3460	64.7185			No	Not Exceeded	
Road	2023-11-24 12:00 PM	Yes	Caribou	27	Resting	N/A	500	59	West	No	-96.3706	64.7495			No	Not Exceeded	
Road	2023-11-24 12:00 PM	Yes	Caribou	155	Foraging	N/A	600	66	West	No	-96.3350	64.8045			No	Exceeded	Road closed
Road	2023-11-24 12:00 PM	Yes	Caribou	35	Walking	S	150	66	East	No	-96.3350	64.8045			No	Not Exceeded	
Road	2023-11-24 12:00 PM	Yes	Caribou	13	Foraging	N/A	400	68	East	No	-96.3268	64.8203			No	Not Exceeded	
Road	2023-11-24 12:00 PM	Yes	Caribou	10	Walking	S	800	68	West	No	-96.3268	64.8203			No	Not Exceeded	
Road	2023-11-24 12:00 PM	Yes	Caribou	41	Walking	S	200	68	West	No	-96.3268	64.8203			No	Not Exceeded	
Road	2023-11-24 12:00 PM	Yes	Caribou	50	Foraging	N/A	1700	69	East	No	-96.3143	64.8277			No	Not Exceeded	
Road	2023-11-25 2:07 PM	Yes	Caribou	47	Walking	S	200	48	West	No	-96.3688	64.6642			No	Not Exceeded	
Road	2023-11-25 2:07 PM	Yes	Caribou	3	Walking	NE	400	49	East	No	-96.3707	64.6688			No	Not Exceeded	
Road	2023-11-25 2:07 PM	Yes	Caribou	113	Walking	N	200	56	Both	No	-96.3514	64.7259			No	Exceeded	Road was already closed due to caribou
Road	2023-11-25 2:07 PM	Yes	Muskox	2	Resting	N/A	100	96	West	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-11-25 2:07 PM	Yes	Muskox	2	Foraging	N/A	150	95	East	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-11-25 2:07 PM	Yes	Muskox	4	Foraging	N/A	250	91	East	No	-96.2249	64.9847			No	Not Exceeded	
Road	2023-11-25 2:07 PM	Yes	Caribou	105	Walking	N	350	69	East	No	-96.3143	64.8277			No	Exceeded	Road closed
Road	2023-11-25 2:07 PM	Yes	Caribou	42	Foraging	S	200	67	West	No	-96.3262	64.8123			No	Not Exceeded	
Road	2023-11-25 2:07 PM	Yes	Caribou	140	Walking	S	200	67	West	No	-96.3262	64.8123			No	Exceeded	Road closed



Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-11-25 2:07 PM	Yes	Caribou	280	Walking	S	5	64	Both	Yes	-96.3400	64.7867			No	Exceeded	Road closed. Waited for the caribou to go distant from the road to proceed south
Road	2023-11-25 2:07 PM	Yes	Caribou	500	Walking	W	10	62	East	Yes	-96.3444	64.7737			No	Exceeded	Road closed
Road	2023-11-25 2:07 PM	Yes	Caribou	12	Foraging	W	650	59	West	No	-96.3706	64.7495			No	Not Exceeded	
Road	2023-11-25 2:07 PM	Yes	Caribou	20	Walking	N	150	57	East	No	-96.3601	64.7314			No	Not Exceeded	
Road	2023-11-27 8:02 AM	Yes	Caribou	19	Walking	S	100	86	East	No	-96.2528	64.9468			No	Not Exceeded	
Road	2023-11-27 8:02 AM	Yes	Caribou	100	Walking	S	1000	79	East	No	-96.3149	64.9095			No	Exceeded	Road closed
Road	2023-11-27 8:02 AM	Yes	Caribou	90	Walking	S	400	73	East	No	-96.3242	64.8621			No	Not Exceeded	
Road	2023-11-27 8:02 AM	Yes	Caribou	70	Walking	S	500	66	East	No	-96.3350	64.8045			No	Not Exceeded	
Road	2023-11-27 8:02 AM	Yes	Caribou	2	Walking	E	200	64	East	No	-96.3400	64.7867			No	Not Exceeded	
Road	2023-11-27 8:02 AM	Yes	Caribou	13	Foraging	N/A	500	61	East	No	-96.3547	64.7633			No	Not Exceeded	
Road	2023-11-27 8:02 AM	Yes	Caribou	70	Walking	S	300	52	West	No	-96.3774	64.7009			No	Not Exceeded	
Road	2023-11-27 8:02 AM	Yes	Caribou	7	Walking	S	300	51	East	No	-96.3791	64.6932			No	Not Exceeded	
Road	2023-11-27 8:02 AM	Yes	Caribou	2	Walking	S	200	50	West	No	-96.3731	64.6794			No	Not Exceeded	
Road	2023-11-27 8:02 AM	Yes	Caribou	9	Walking	S	1000	23	West	No	-96.1244	64.5006			No	Not Exceeded	
Incidental	2023-11-27 1:53 PM	Yes	Caribou	125	Resting	N/A	500	38	West	No	-96.2758	64.5907			No	Exceeded	Road closed
Incidental	2023-11-27 1:53 PM	Yes	Muskox	20	Foraging	SE	1000	38	West	No	-96.2758	64.5907			No	Exceeded	Road closed
Incidental	2023-11-27 1:53 PM	Yes	Caribou	450	Walking	SE	500	46	West	No	-96.3296	64.6562			No	Exceeded	Road closed
Road	2023-11-28 9:06 AM	Yes	Muskox	13	Foraging	E	1000	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-11-28 9:06 AM	Yes	Caribou	4	Walking	E	150	54	East	No	-96.3584	64.7132			No	Not Exceeded	
Road	2023-11-28 9:06 AM	Yes	Caribou	85	Walking	N	2000	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-11-28 9:06 AM	Yes	Caribou	40	Walking	SE	400	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-11-28 9:06 AM	Yes	Caribou	150	Walking	N	250	49	West	No	-96.3707	64.6688			No	Exceeded	Road closed - HTO fuel/passenger convoy
Road	2023-11-28 9:06 AM	Yes	Caribou	170	Walking	S	250	43	West	No	-96.3007	64.6348			No	Exceeded	Road closed
Road	2023-11-28 9:06 AM	Yes	Caribou	28	Walking	NE	500	42	East	No	-96.2949	64.6276			No	Not Exceeded	
Road	2023-11-28 9:06 AM	Yes	Caribou	13	Walking	NW	400	28	West	No	-96.1701	64.5413			No	Not Exceeded	
Road	2023-12-01 7:03 AM	Yes	Caribou	60	Resting	NW	500	96	West	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-12-01 7:03 AM	Yes	Muskox	12	Foraging	W	50	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-12-01 7:03 AM	Yes	Muskox	2	Foraging	NW	75	90	East	No	-96.2221	64.9750			No	Not Exceeded	
Road	2023-12-01 7:03 AM	Yes	Caribou	1	Walking	N	50	77	East	No	-96.3391	64.8951			No	Not Exceeded	
Road	2023-12-01 7:03 AM	Yes	Caribou	6	Foraging	E	200	71	East	No	-96.3197	64.8447			No	Not Exceeded	
Road	2023-12-01 7:03 AM	Yes	Caribou	11	Walking	SE	100	58	West	No	-96.3579	64.7416			No	Not Exceeded	
Road	2023-12-01 7:03 AM	Yes	Caribou	37	Foraging	W	1	57	Both	Yes	-96.3601	64.7314			No	Not Exceeded	
Road	2023-12-01 7:03 AM	Yes	Caribou	2	Standing	W	50	50	West	No	-96.3731	64.6794			No	Not Exceeded	
Road	2023-12-01 7:03 AM	Yes	Caribou	31	Foraging	S	75	48	West	No	-96.3688	64.6642			No	Not Exceeded	
Incidental	2023-12-01 3:07 PM	Yes	Caribou	36	Foraging	W	1000	37	West	No	-96.2690	64.5842			No	Not Exceeded	
Incidental	2023-12-01 3:07 PM	Yes	Muskox	21	Foraging	N/A	1500	38	West	No	-96.2758	64.5907			No	Exceeded	Road closed
Incidental	2023-12-01 3:07 PM	Yes	Caribou	190	Walking	S	2000	43	West	No	-96.3007	64.6348			No	Exceeded	Road closed
Incidental	2023-12-01 3:07 PM	Yes	Caribou	41	Walking	S	450	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Incidental	2023-12-01 3:07 PM	Yes	Caribou	106	Walking	S	250	60	West	No	-96.3636	64.7555			No	Exceeded	Road closed
Road	2023-12-02 8:57 AM	Yes	Caribou	7	Foraging	N	200	102	West	No	-96.1278	65.0517			No	Not Exceeded	
Road	2023-12-02 8:57 AM	Yes	Muskox	5	Foraging	N/A	50	96	East	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-12-02 8:57 AM	Yes	Caribou	80	Foraging	N	400	89	East	No	-96.2196	64.9674			No	Not Exceeded	
Road	2023-12-02 8:57 AM	Yes	Muskox	3	Foraging	N/A	300	89	East	No	-96.2196	64.9674			No	Not Exceeded	
Road	2023-12-02 8:57 AM	Yes	Caribou	12	Foraging	N	750	85	West	No	-96.2614	64.9389			No	Not Exceeded	
Road	2023-12-02 8:57 AM	Yes	Caribou	16	Foraging	N/A	1000	80	West	No	-96.3062	64.9171			No	Not Exceeded	
Road	2023-12-02 8:57 AM	Yes	Caribou	1	Foraging	N	300	77	East	No	-96.3391	64.8951			No	Not Exceeded	
Road	2023-12-02 8:57 AM	Yes	Caribou	39	Foraging	S	1000	59	West	No	-96.3706	64.7495			No	Not Exceeded	
Road	2023-12-02 8:57 AM	Yes	Caribou	5	Foraging	N	300	55	West	No	-96.3460	64.7185			No	Not Exceeded	
Road	2023-12-02 8:57 AM	Yes	Caribou	7	Foraging	N	1000	54	East	No	-96.3584	64.7132			No	Not Exceeded	
Road	2023-12-02 8:57 AM	Yes	Caribou	8	Running	S	1000	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-12-02 8:57 AM	Yes	Wolf	2	Walking	W	2000	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-12-02 8:57 AM	Yes	Caribou	14	Foraging	S	1000	40	East	No	-96.2814	64.6043			No	Not Exceeded	

Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2023-12-02 3:22 PM	Yes	Muskox	20	Foraging	N/A	1000	38	West	No	-96.2758	64.5907			No	Exceeded	Road closed
Incidental	2023-12-02 3:22 PM	Yes	Caribou	16	Walking	S	200	66	West	No	-96.3350	64.8045			No	Not Exceeded	
Road	2023-12-03 7:24 AM	Yes	Muskox	2	Foraging	E	100	96	East	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-12-04 8:18 AM	Yes	Muskox	6	Foraging	N/A	10	96	West	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-12-04 8:18 AM	Yes	Muskox	11	Foraging	N/A	1500	91	West	No	-96.2249	64.9847			No	Not Exceeded	
Road	2023-12-04 8:18 AM	Yes	Muskox	34	Foraging	N	1000	90	West	No	-96.2221	64.9750			No	Exceeded	Road closed
Road	2023-12-04 8:18 AM	Yes	Caribou	1	Foraging	N	500	79	East	No	-96.3149	64.9095			No	Not Exceeded	
Road	2023-12-04 8:18 AM	Yes	Caribou	27	Foraging	W	1000	26	West	No	-96.1615	64.5235			No	Not Exceeded	
Road	2023-12-05 9:10 AM	Yes	Muskox	10	Foraging	N	800	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-12-05 9:10 AM	Yes	Caribou	9	Walking	S	2000	54	East	No	-96.3584	64.7132			No	Not Exceeded	
Road	2023-12-05 9:10 AM	Yes	Caribou	8	Foraging	W	1000	47	West	No	-96.3466	64.6580			No	Not Exceeded	
Road	2023-12-05 9:10 AM	Yes	Caribou	9	Walking	NE	1000	10	East	No	-96.0179	64.3971			No	Not Exceeded	
Incidental	2023-12-05 2:02 PM	Yes	Muskox	14	Foraging	N/A	2000	38	East	No	-96.2758	64.5907			No	Exceeded	Over a kilometer away
Incidental	2023-12-05 2:02 PM	Yes	Caribou	19	Foraging	S	2000	36	West	No	-96.2619	64.5804			No	Not Exceeded	
Road	2023-12-06 9:27 AM	Yes	Muskox	4	Resting	N/A	150	96	East	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-12-06 9:27 AM	Yes	Muskox	12	Resting	N/A	800	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-12-06 9:27 AM	Yes	Caribou	15	Walking	N	2000	52	West	No	-96.3774	64.7009			No	Not Exceeded	
Road	2023-12-06 9:27 AM	Yes	Caribou	5	Foraging	N	500	49	West	No	-96.3707	64.6688			No	Not Exceeded	
Road	2023-12-06 9:27 AM	Yes	Caribou	5	Foraging	N	350	46	West	No	-96.3296	64.6562			No	Not Exceeded	
Road	2023-12-06 9:27 AM	Yes	Caribou	27	Walking	NW	800	25	West	No	-96.1495	64.5142			No	Not Exceeded	
Road	2023-12-06 9:27 AM	Yes	Caribou	165	Foraging	N	300	20	West	No	-96.0960	64.4787			No	Exceeded	Road closed
Road	2023-12-06 9:27 AM	Yes	Caribou	12	Foraging	NW	1000	18	West	No	-96.0824	64.4610			No	Not Exceeded	
Road	2023-12-06 9:27 AM	Yes	Caribou	75	Foraging	W	1000	17	West	No	-96.0771	64.4533			No	Not Exceeded	
Road	2023-12-06 9:27 AM	Yes	Caribou	200	Foraging	W	200	13	West	No	-96.0368	64.4234			No	Exceeded	Road closed
Road	2023-12-06 9:27 AM	Yes	Caribou	4	Foraging	N	200	11	West	No	-96.0239	64.4054			No	Not Exceeded	
Road	2023-12-07 8:36 AM	Yes	Muskox	6	Lying Down	N	200	95	East	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-12-07 8:36 AM	Yes	Muskox	13	Lying Down	N	1000	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-12-07 8:36 AM	Yes	Muskox	5	Lying Down	N	800	91	East	No	-96.2249	64.9847			No	Not Exceeded	
Road	2023-12-07 8:36 AM	Yes	Caribou	15	Foraging	W	300	46	West	No	-96.3296	64.6562			No	Not Exceeded	
Road	2023-12-07 8:36 AM	Yes	Caribou	37	Walking	NE	1000	22	East	No	-96.1126	64.4935			No	Not Exceeded	
Road	2023-12-07 8:36 AM	Yes	Caribou	250	Foraging	N	1000	18	West	No	-96.0824	64.4610			No	Exceeded	Road closed
Road	2023-12-08 7:55 AM	Yes	Muskox	12	Lying Down	N/A	1000	90	West	No	-96.2221	64.9750			No	Not Exceeded	
Road	2023-12-08 7:55 AM	Yes	Caribou	7	Foraging	NE	100	63	East	No	-96.3444	64.7793			No	Not Exceeded	
Road	2023-12-08 7:55 AM	Yes	Caribou	11	Foraging	N	100	57	East	No	-96.3601	64.7314			No	Not Exceeded	
Road	2023-12-08 7:55 AM	Yes	Wolf	10	Walking	E	3000	47	East	No	-96.3466	64.6580			No	Not Exceeded	
Road	2023-12-08 7:55 AM	Yes	Caribou	10	Foraging	W	250	45	West	No	-96.3134	64.6524			No	Not Exceeded	
Road	2023-12-08 7:55 AM	Yes	Caribou	6	Standing	S	150	37	West	No	-96.2690	64.5842			No	Not Exceeded	
Road	2023-12-08 7:55 AM	Yes	Caribou	2	Walking	N	250	27	West	No	-96.1612	64.5322			No	Not Exceeded	
Road	2023-12-08 7:55 AM	Yes	Caribou	37	Walking	NW	800	15	West	No	-96.0525	64.4398			No	Not Exceeded	
Incidental	2023-12-08 2:01 PM	Yes	Caribou	23	Walking	E	23	14	East	No	-96.0430	64.4312			No	Not Exceeded	
Road	2023-12-09 8:45 AM	Yes	Muskox	6	Lying Down	N	200	95	East	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-12-09 8:45 AM	Yes	Muskox	13	Foraging	N	1500	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-12-09 8:45 AM	Yes	Caribou	15	Walking	S	1000	75	East	No	-96.3361	64.8795			No	Not Exceeded	
Road	2023-12-09 8:45 AM	Yes	Caribou	38	Foraging	S	2000	69	East	No	-96.3143	64.8277			No	Not Exceeded	
Road	2023-12-09 8:45 AM	Yes	Caribou	2	Foraging	N	500	54	East	No	-96.3584	64.7132			No	Not Exceeded	
Road	2023-12-09 8:45 AM	Yes	Caribou	11	Walking	W	200	46	West	No	-96.3296	64.6562			No	Not Exceeded	
Road	2023-12-09 8:45 AM	Yes	Muskox	14	Foraging	N/A	2000	44	West	No	-96.3035	64.6417			No	Exceeded	Road restricted
Road	2023-12-09 8:45 AM	Yes	Caribou	24	Foraging	N/A	4000	24	West	No	-96.1365	64.5079			No	Not Exceeded	
Road	2023-12-10 7:35 AM	Yes	Muskox	6	Foraging	N	30	95	East	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-12-10 7:35 AM	Yes	Muskox	5	Foraging	N	1000	94	East	No	-96.2127	65.0075			No	Not Exceeded	
Road	2023-12-10 7:35 AM	Yes	Muskox	11	Foraging	N	30	92	West	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-12-10 7:35 AM	Yes	Caribou	27	Foraging	N	900	67	East	No	-96.3262	64.8123			No	Not Exceeded	
Road	2023-12-11 9:15 AM	Yes	Muskox	6	Foraging	N	200	95	West	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-12-11 9:15 AM	Yes	Muskox	8	Foraging	N	150	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-12-12 9:17 AM	Yes	Muskox	7	Lying Down	N/A	50	95	West	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-12-12 9:17 AM	Yes	Muskox	13	Foraging	N	50	92	West	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-12-12 9:17 AM	Yes	Caribou	2	Foraging	N	800	67	West	No	-96.3262	64.8123			No	Not Exceeded	
Road	2023-12-12 9:17 AM	Yes	Caribou	8	Foraging	N	800	57	East	No	-96.3601	64.7314			No	Not Exceeded	
Road	2023-12-12 9:17 AM	Yes	Caribou	24	Foraging	N	200	56	East	No	-96.3514	64.7259			No	Not Exceeded	



Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-12-12 9:17 AM	Yes	Muskox	16	Foraging	N/A	2000	40	West	No	-96.2814	64.6043			No	Exceeded	Over a kilometer away
Road	2023-12-13 8:54 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023-12-15 2:15 PM	Yes	Caribou	12	Walking	N	2000	76	East	No	-96.3457	64.8879			No	Not Exceeded	
Road	2023-12-16 10:11 AM	Yes	Caribou	1	Standing	NW	700	73	East	No	-96.3242	64.8621			No	Not Exceeded	
Road	2023-12-16 11:18 AM	Yes	Caribou	1	Foraging	SE	60	46	West	No	-96.3296	64.6562			No	Not Exceeded	
Incidental	2023-12-16 2:43 PM	Yes	Caribou	21	Foraging	NW	2000	18	West	No	-96.0824	64.4610			No	Not Exceeded	
Incidental	2023-12-16 2:43 PM	Yes	Caribou	2	Foraging	E	700	53	East	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-12-17 10:08 AM	Yes	Caribou	9	Foraging	S	700	93	East	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-12-17 10:08 AM	Yes	Muskox	26	Foraging	SW	200	93	West	No	-96.2220	65.0008			No	Exceeded	Speed restriction km 92-94
Road	2023-12-17 10:08 AM	Yes	Caribou	18	Foraging	SW	400	80	East	No	-96.3062	64.9171			No	Not Exceeded	
Road	2023-12-17 10:08 AM	Yes	Caribou	11	Walking	N	1000	73	East	No	-96.3242	64.8621			No	Not Exceeded	
Road	2023-12-17 10:08 AM	Yes	Caribou	13	Walking	N	700	71	East	No	-96.3197	64.8447			No	Not Exceeded	
Road	2023-12-17 10:08 AM	Yes	Caribou	43	Foraging	N/A	1000	67	East	No	-96.3262	64.8123			No	Exceeded	Restricted access
Road	2023-12-17 10:08 AM	Yes	Caribou	6	Walking	SW	500	67	West	No	-96.3262	64.8123			No	Not Exceeded	
Road	2023-12-17 12:24 PM	Yes	Caribou	2	Foraging	N/A	800	53	West	No	-96.3731	64.7061			No	Not Exceeded	
Road	2023-12-17 12:24 PM	Yes	Caribou	4	Foraging	N/A	500	46	West	No	-96.3296	64.6562			No	Not Exceeded	
Road	2023-12-17 12:24 PM	Yes	Caribou	10	Walking	NE	400	45	East	No	-96.3134	64.6524			No	Not Exceeded	
Road	2023-12-18 9:43 AM	Yes	Muskox	13	Foraging	W	100	93	West	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-12-18 9:43 AM	Yes	Caribou	8	Foraging	NE	300	93	East	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-12-18 9:43 AM	Yes	Caribou	25	Foraging	NE	1000	92	East	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-12-18 9:43 AM	Yes	Caribou	7	Foraging	NW	1500	92	West	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-12-18 9:43 AM	Yes	Caribou	2	Walking	E	2000	73	East	No	-96.3242	64.8621			No	Not Exceeded	
Road	2023-12-18 9:43 AM	Yes	Caribou	21	Foraging	NE	1500	68	East	No	-96.3268	64.8203			No	Not Exceeded	
Road	2023-12-18 9:43 AM	Yes	Caribou	187	Foraging	NE	800	65	East	No	-96.3406	64.7948			No	Exceeded	30km/h km 64-66 Road closed
Road	2023-12-18 12:31 PM	Yes	Caribou	4	Foraging	N	500	46	West	No	-96.3296	64.6562			No	Not Exceeded	
Road	2023-12-18 12:31 PM	Yes	Caribou	63	Walking	W	1000	25	West	No	-96.1495	64.5142			No	Exceeded	Road closed
Incidental	2023-12-18 1:56 PM	Yes	Caribou	18	Walking	NE	1000	55	East	No	-96.3460	64.7185			No	Not Exceeded	
Incidental	2023-12-19 11:06 AM	Yes	Caribou	14	Foraging	S	100	63	East	No	-96.3444	64.7793			No	Not Exceeded	
Incidental	2023-12-19 11:06 AM	Yes	Caribou	34	Foraging	S	800	68	East	No	-96.3268	64.8203			No	Exceeded	Road closed
Road	2023-12-19 2:50 PM	Yes	Caribou	31	Walking	E	500	20	West	No	-96.0960	64.4787			No	Exceeded	Restricted access Dispatch notified
Road	2023-12-19 2:50 PM	Yes	Caribou	22	Walking	S	1000	23	West	No	-96.1244	64.5006			No	Not Exceeded	
Road	2023-12-19 2:50 PM	Yes	Caribou	4	Foraging	N/A	500	46	West	No	-96.3296	64.6562			No	Not Exceeded	
Road	2023-12-20 10:52 AM	Yes	Muskox	3	Foraging	N/A	5	93	East	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-12-20 10:52 AM	Yes	Muskox	13	Foraging	NW	N/A	93			-96.2220	65.0008			No	Not Exceeded	
Road	2023-12-20 10:52 AM	Yes	Caribou	3	Lying Down	N/A	900	93	East	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-12-20 10:52 AM	Yes	Caribou	4	Foraging	N/A	900	91	East	No	-96.2249	64.9847			No	Not Exceeded	
Road	2023-12-20 10:52 AM	Yes	Caribou	139	Foraging	E	300	71	West	No	-96.3197	64.8447			No	Exceeded	Speed restriction 30km/h Dispatch notified
Road	2023-12-20 12:39 PM	Yes	Caribou	200	Walking	SW	200	71	West	Yes	-96.3197	64.8447			No	Exceeded	Road closed km 66-72 Dispatch notified
Road	2023-12-20 12:39 PM	Yes	Caribou	22	Foraging	E	1000	67	East	No	-96.3262	64.8123			No	Not Exceeded	
Road	2023-12-20 12:39 PM	Yes	Caribou	7	Foraging	N/A	900	57	East	No	-96.3601	64.7314			No	Not Exceeded	
Road	2023-12-20 12:39 PM	Yes	Caribou	40	Foraging	S	1000	47	West	No	-96.3466	64.6580			No	Exceeded	Speed restriction 30km/h
Road	2023-12-20 12:39 PM	Yes	Caribou	9	Foraging	SW	1000	16	West	No	-96.0624	64.4463			No	Not Exceeded	
Road	2023-12-22 8:27 AM	Yes	Muskox	7	Lying Down	N/A	300	95	West	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-12-22 8:27 AM	Yes	Muskox	18	Lying Down	N/A	350	93	West	No	-96.2220	65.0008			No	Exceeded	Speed restriction
Road	2023-12-22 8:27 AM	Yes	Muskox	9	Lying Down	N/A	400	92	East	No	-96.2219	64.9943			No	Not Exceeded	

Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-12-22 8:27 AM	Yes	Caribou	8	Walking	SE	300	91	East	No	-96.2249	64.9847			No	Not Exceeded	
Road	2023-12-22 8:27 AM	Yes	Caribou	28	Foraging	N/A	750	67	East	No	-96.3262	64.8123			No	Exceeded	Road Restricted
Road	2023-12-22 8:27 AM	Yes	Caribou	78	Foraging	N	750	58	East	No	-96.3579	64.7416			No	Exceeded	Road Restricted
Road	2023-12-22 8:27 AM	Yes	Caribou	28	Foraging	S	300	58	East	No	-96.3579	64.7416			No	Exceeded	Road Restricted
Road	2023-12-22 8:27 AM	Yes	Caribou	31	Foraging	S	200	57	East	No	-96.3601	64.7314			No	Exceeded	Road Restricted
Road	2023-12-22 8:27 AM	Yes	Ptarmigan	4	Walking	W	5	18	West	Yes	-96.0824	64.4610			No	Not Exceeded	
Incidental	2023-12-22 2:56 PM	Yes	Caribou	19	Foraging	N/A	300	67	East	No	-96.3262	64.8123			No	Not Exceeded	
Road	2023-12-23 9:17 AM	Yes	Muskox	6	Foraging	N/A	50	95	East	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-12-23 9:17 AM	Yes	Muskox	2	Foraging	N/A	1000	94	East	No	-96.2127	65.0075			No	Not Exceeded	
Road	2023-12-23 9:17 AM	Yes	Muskox	18	Foraging	N/A	100	93	West	No	-96.2220	65.0008			No	Exceeded	Speed restriction 30km/h put in place between km93 and 94
Road	2023-12-23 9:17 AM	Yes	Caribou	2	Foraging	N/A	300	90	West	No	-96.2221	64.9750			No	Not Exceeded	
Road	2023-12-23 9:17 AM	Yes	Caribou	34	Foraging	E	300	73	East	No	-96.3242	64.8621			No	Exceeded	Road Restricted
Road	2023-12-23 9:17 AM	Yes	Caribou	40	Foraging	N/A	500	68	East	No	-96.3268	64.8203			No	Exceeded	Road Restricted
Road	2023-12-23 9:17 AM	Yes	Caribou	200	Foraging	N/A	500	57	East	No	-96.3601	64.7314			No	Exceeded	Road closed
Road	2023-12-23 9:17 AM	Yes	Caribou	30	Walking	S	500	55	East	No	-96.3460	64.7185			No	Exceeded	Road closed
Road	2023-12-23 9:17 AM	Yes	Caribou	110	Foraging	E	600	54	East	No	-96.3584	64.7132			No	Exceeded	Road closed
Road	2023-12-23 9:17 AM	Yes	Caribou	31	Alert	E	400	53	East	No	-96.3731	64.7061			No	Exceeded	Road closed
Road	2023-12-23 9:17 AM	Yes	Caribou	43	Foraging	SE	400	52	East	No	-96.3774	64.7009			No	Exceeded	Road closed
Road	2023-12-23 9:17 AM	Yes	Caribou	78	Foraging	N/A	800	51	East	No	-96.3791	64.6932			No	Exceeded	Road closed
Road	2023-12-23 9:17 AM	Yes	Caribou	17	Foraging	N/A	900	50	East	No	-96.3731	64.6794			No	Not Exceeded	
Road	2023-12-23 9:17 AM	Yes	Caribou	3	Walking	W	300	46	West	No	-96.3296	64.6562			No	Not Exceeded	
Road	2023-12-23 9:17 AM	Yes	Caribou	25	Resting	N/A	700	31	East	No	-96.1957	64.5543			No	Not Exceeded	
Road	2023-12-23 9:17 AM	Yes	Caribou	23	Foraging	N/A	600	31	West	No	-96.1957	64.5543			No	Not Exceeded	
Road	2023-12-25 1:01 PM	Yes	Muskox	7	Foraging	N/A	100	95	West	No	-96.1952	65.0129			No	Not Exceeded	
Road	2023-12-25 1:01 PM	Yes	Muskox	22	Foraging	N/A	1500	93	West	No	-96.2220	65.0008			No	Exceeded	Road closed
Road	2023-12-25 1:01 PM	Yes	Caribou	2	Foraging	N/A	500	76	West	No	-96.3457	64.8879			No	Not Exceeded	
Road	2023-12-25 1:01 PM	Yes	Caribou	16	Lying Down	N/A	750	68	East	No	-96.3268	64.8203			No	Not Exceeded	
Road	2023-12-25 1:01 PM	Yes	Caribou	7	Foraging	W	500	57	East	No	-96.3590	64.7277			No	Not Exceeded	
Road	2023-12-25 1:01 PM	Yes	Caribou	250	Foraging	N/A	1250	53	West	No	-96.3731	64.7061			No	Exceeded	Road closed
Road	2023-12-25 1:01 PM	Yes	Caribou	41	Lying Down	N/A	1000	54	East	No	-96.3584	64.7132			No	Exceeded	Road closed
Road	2023-12-26 9:00 AM	Yes	Caribou	8	Walking	W	0	45	West	No	-96.3134	64.6524			No	Not Exceeded	
Road	2023-12-26 9:00 AM	Yes	Caribou	8	Foraging	N/A	300	45	West	No	-96.3134	64.6524			No	Not Exceeded	
Road	2023-12-26 9:00 AM	Yes	Caribou	1	Foraging	N/A	200	49	East	No	-96.3707	64.6688			No	Not Exceeded	
Road	2023-12-26 9:00 AM	Yes	Caribou	52	Walking	N/A	800	50	West	No	-96.3731	64.6794			No	Exceeded	Road closed
Road	2023-12-26 9:00 AM	Yes	Caribou	11	Walking	E	300	54	East	No	-96.3584	64.7132			No	Not Exceeded	
Road	2023-12-26 9:00 AM	Yes	Caribou	3	Walking	N	1000	54	East	No	-96.3584	64.7132			No	Not Exceeded	
Road	2023-12-26 9:00 AM	Yes	Caribou	11	Foraging	N/A	100	56	West	No	-96.3514	64.7259			No	Not Exceeded	
Road	2023-12-26 9:00 AM	Yes	Caribou	3	Walking	E	150	57	East	No	-96.3601	64.7314			No	Not Exceeded	
Road	2023-12-28 10:21 AM	Yes	Muskox	1	Foraging	N	350	93	East	No	-96.2220	65.0008			No	Not Exceeded	
Road	2023-12-28 10:21 AM	Yes	Caribou	2	Foraging	E	300	92	East	No	-96.2219	64.9943			No	Not Exceeded	
Road	2023-12-28 10:21 AM	Yes	Caribou	8	Walking	W	300	91	West	No	-96.2249	64.9847			No	Not Exceeded	
Road	2023-12-28 10:21 AM	Yes	Caribou	3	Foraging	N/A	500	74	East	No	-96.3303	64.8752			No	Not Exceeded	
Road	2023-12-28 10:21 AM	Yes	Caribou	6	Foraging	N/A	1000	69	East	No	-96.3143	64.8277			No	Not Exceeded	
Road	2023-12-28 10:21 AM	Yes	Caribou	6	Foraging	W	1000	59	West	No	-96.3706	64.7495			No	Not Exceeded	
Road	2023-12-28 10:21 AM	Yes	Caribou	6	Foraging	N/A	650	56	East	No	-96.3514	64.7259			No	Not Exceeded	
Road	2023-12-28 10:21 AM	Yes	Caribou	8	Foraging	N/A	300	54	West	No	-96.3584	64.7132			No	Not Exceeded	
Road	2023-12-28 10:21 AM	Yes	Caribou	4	Walking	S	500	49	West	No	-96.3707	64.6688			No	Not Exceeded	
Road	2023-12-28 10:21 AM	Yes	Caribou	16	Foraging	E	300	46	East	No	-96.3296	64.6562			No	Not Exceeded	
Road	2023-12-28 10:21 AM	Yes	Caribou	6	Lying Down	N/A	350	45	East	No	-96.3134	64.6524			No	Not Exceeded	
Road	2023-12-28 10:21 AM	Yes	Caribou	88	Foraging	N/A	750	44	East	No	-96.3035	64.6417			No	Exceeded	Road closed

Table A-1: Wildlife Observations along the All Weather Access Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023-12-28 10:21 AM	Yes	Caribou	65	Foraging	N/A	1250	43	East	No	-96.3007	64.6348			No	Exceeded	Road closed
Road	2023-12-28 10:21 AM	Yes	Caribou	17	Lying Down	N/A	300	27	East	No	-96.1612	64.5322			No	Not Exceeded	
Road	2023-12-29 7:31 AM	Yes	Caribou	6	Walking	W	50	56	West	No	-96.3514	64.7259			No	Not Exceeded	
Road	2023-12-29 7:31 AM	Yes	Caribou	3	Foraging	W	500	50	West	No	-96.3731	64.6794			No	Not Exceeded	
Road	2023-12-29 7:31 AM	Yes	Caribou	154	Foraging	N/A	200	46	Both	No	-96.3296	64.6562			No	Exceeded	Road restricted
Road	2023-12-29 7:31 AM	Yes	Caribou	200	Foraging	N/A	1000	45	East	No	-96.3134	64.6524			No	Exceeded	Road closed
Incidental	2023-12-29 3:08 PM	Yes	Caribou	3	Foraging	N/A	500	17	West	No	-96.0771	64.4533			No	Not Exceeded	
Incidental	2023-12-29 3:08 PM	Yes	Caribou	3	Foraging	N/A	300	29	East	No	-96.1813	64.5473			No	Not Exceeded	
Incidental	2023-12-29 3:08 PM	Yes	Caribou	80	Foraging	N/A	20	46	West,East	No	-96.3296	64.6562			No	Exceeded	Road restricted
Incidental	2023-12-29 3:08 PM	Yes	Caribou	10	Foraging	N/A	500	52	West	No	-96.3774	64.7009			No	Not Exceeded	
Road	2023-12-30 9:21 AM	Yes	Muskox	9	Foraging	N/A	300	96	West	No	-96.1809	65.0181			No	Not Exceeded	
Road	2023-12-30 9:21 AM	Yes	Caribou	17	Foraging	N/A	350	69	East	No	-96.3143	64.8277			No	Not Exceeded	
Road	2023-12-30 9:21 AM	Yes	Caribou	44	Foraging	N/A	600	68	East	No	-96.3268	64.8203			No	Exceeded	Road restricted
Road	2023-12-30 9:21 AM	Yes	Caribou	17	Foraging	N/A	100	57	East	No	-96.3601	64.7314			No	Not Exceeded	
Road	2023-12-30 9:21 AM	Yes	Caribou	16	Foraging	N/A	1000	49	East	No	-96.3707	64.6688			No	Not Exceeded	
Road	2023-12-30 9:21 AM	Yes	Caribou	200	Foraging	N/A	750	44	East	No	-96.3035	64.6417			No	Exceeded	Road closed
Road	2023-12-30 9:21 AM	Yes	Caribou	5	Foraging	W	50	33	West	No	-96.2163	64.5715			No	Not Exceeded	
Incidental	2023-12-30 1:54 PM	Yes	Caribou	2	Foraging	N/A	50	47	East	No	-96.3466	64.6580			No	Not Exceeded	
Road	2023-12-31 9:05 AM	Yes	Caribou	5	Foraging	N/A	20	91	West	No	-96.2249	64.9847			No	Not Exceeded	
Road	2023-12-31 9:05 AM	Yes	Caribou	15	Walking	N	500	83	West	No	-96.3011	64.9350			No	Not Exceeded	
Road	2023-12-31 9:05 AM	Yes	Caribou	35	Foraging	N/A	200	65	East	No	-96.3406	64.7948			No	Exceeded	Road closed
Road	2023-12-31 9:05 AM	Yes	Caribou	33	Foraging	W	0	57	Both	Yes	-96.3601	64.7314			No	Exceeded	Road closed
Road	2023-12-31 9:05 AM	Yes	Caribou	41	Foraging	N/A	500	46	Both	No	-96.3296	64.6562			No	Exceeded	Road closed
Road	2023-12-31 9:05 AM	Yes	Caribou	50	Lying Down	N/A	2000	44	East	No	-96.3035	64.6417			No	Exceeded	Road closed

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2023:01:01 8:57 AM	Yes	Muskox	7	Feeding	N/A	50	141	West	No	-96.3181	65.2237			No	Not Exceeded	
Incidental	2023:01:01 9:00 AM	Yes	Muskox	25	Feeding	N/A	25	149	West	No	-96.4426	65.2233			No	Exceeded	Speed restriction in place
Road	2023:01:05 8:34 AM	Yes	Muskox	21	Foraging	N/A	150	149	West	No	-96.4426	65.2233			No	Exceeded	Speed restriction
Road	2023:01:05 8:34 AM	Yes	Arctic fox	1	Walking	N	0	129	West	No	-96.1459	65.1690			No	Not Exceeded	
Road	2023:01:09 11:01 AM	Yes	Caribou	4	Resting	N/A	100	149	East	No	-96.4426	65.2233			No	Not Exceeded	
Road	2023:01:09 11:01 AM	Yes	Muskox	4	Feeding	N/A	100	113	East	No	-95.9933	65.0588			No	Not Exceeded	
Road	2023:01:11 10:15 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023:01:14 8:34 AM	Yes	Muskox	12	Feeding	N/A	300	152	West	N/A	-96.4762	65.2418			No	Not Exceeded	
Road	2023:01:14 8:34 AM	Yes	Common raven	1	Flying	S	25	153	East	N/A	-96.4763	65.2482			No	Not Exceeded	
Incidental	2023:01:17 12:00 PM	Yes	Caribou	7	Not recorded	Not Recorded	500	148		N/A	-96.4274	65.2205			No	Not Exceeded	
Road	2023:01:22 9:29 AM	Yes	Muskox	9	Foraging	N/A	300	160	West	No	-96.4136	65.2943			No	Not Exceeded	
Road	2023:01:22 9:29 AM	Yes	Arctic fox	1	Trotting/running	S	0	153	Both	Yes	-96.4763	65.2482			No	Not Exceeded	
Road	2023:01:22 9:29 AM	Yes	Muskox	1	Walking	N	250	138	West	No	-96.2602	65.2238			No	Not Exceeded	
Incidental	2023:01:22 3:07 PM	Yes	Muskox	37	Foraging	N/A	150	151	West	No	-96.4662	65.2345			No	Exceeded	Speed restriction; advised users of the road
Road	2023:01:26 8:00 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023:02:01 10:18 AM	Yes	Muskox	9	Feeding	Not Recorded	29	157	West	No	-96.4158	65.2712			No	Not Exceeded	
Road	2023:02:06 12:50 PM	Yes	Muskox	5	Lying Down	N/A	1000	154	West	No	-96.4630	65.2546			No	Not Exceeded	
Road	2023:02:08 1:09 PM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023:02:08 4:33 PM	Yes	Caribou	15	Feeding	N/A	1500	149	East	No	-96.4426	65.2233			No	Not Exceeded	
Incidental	2023:02:10 12:14 PM	Yes	Caribou	1	Trotting/running	W	10	172	West	Yes	-96.5867	65.3550			No	Not Exceeded	
Road	2023:02:15 9:11 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023:02:19 9:45 AM	Yes	Muskox	5	Feeding	N/A	800	141	East	No	-96.3181	65.2237			No	Not Exceeded	
Road	2023:02:19 9:45 AM	Yes	Caribou	1	Feeding	N/A	1	177	West	No	-96.6085	65.3943			No	Not Exceeded	
Road	2023:02:22 6:35 AM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023:02:26 11:00 AM	Yes	Red fox	1	Walking	N/A	400	170	East	No	-96.5498	65.3466			No	Not Exceeded	
Road	2023:02:26 2:15 PM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023:02:27 6:47 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023:03:01 8:00 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023:03:02 8:17 AM	Yes	Muskox	7	Feeding	N/A	1500	162	West	No	-96.4168	65.3115			No	Not Exceeded	
Road	2023:03:02 8:17 AM	Yes	Muskox	28	Foraging	N/A	2000	159	West	N/A	-96.4089	65.2860			No	Exceeded	Speed restriction in place
Road	2023:03:02 8:17 AM	Yes	Caribou	2	Feeding	N/A	600	153	West	No	-96.4763	65.2482			No	Not Exceeded	
Road	2023:03:06 1:07 PM	Yes	Caribou	3	Walking	E	0	174	Both	Yes	-96.6013	65.3683			No	Not Exceeded	
Road	2023:03:06 1:07 PM	Yes	Muskox	22	Resting	N/A	80	166	West	No	-96.4882	65.3253			No	Exceeded	Speed restriction
Road	2023:03:06 1:07 PM	Yes	Caribou	1	Walking	N	0	158	Both	Yes	-96.4047	65.2778			No	Not Exceeded	
Road	2023:03:09 1:38 PM	Yes	Muskox	3	Standing	N/A	600	154	West	No	-96.4630	65.2546			No	Not Exceeded	
Road	2023:03:09 1:38 PM	Yes	Muskox	20	Lying Down	N/A	50	152	West	No	-96.4762	65.2418			No	Exceeded	Speed restriction
Road	2023:03:11 8:35 AM	Yes	Muskox	21	Lying Down	N/A	800	157	East	No	-96.4158	65.2712			No	Exceeded	Speed restriction
Road	2023:03:11 8:35 AM	Yes	Muskox	3	Lying Down	N/A	750	153	West	N/A	-96.4763	65.2482			No	Not Exceeded	
Road	2023:03:11 8:35 AM	Yes	Caribou	2	Standing	S	0	152	Both	Yes	-96.4762	65.2418			No	Not Exceeded	
Road	2023:03:14 7:48 AM	Yes	Muskox	21	Lying Down	N/A	60	157	West	N/A	-96.4158	65.2712			No	Exceeded	Speed restriction
Road	2023:03:14 7:48 AM	Yes	Muskox	3	Standing	N/A	1000	153	West	N/A	-96.4763	65.2482			No	Not Exceeded	
Road	2023:03:14 7:48 AM	Yes	Caribou	1	Feeding	N/A	1	143	West	No	-96.3580	65.2237			No	Not Exceeded	
Road	2023:03:15 1:10 PM	Yes	Muskox	3	Foraging	N/A	750	152	West	No	-96.4762	65.2418			No	Not Exceeded	
Road	2023:03:15 1:10 PM	Yes	Muskox	25	Foraging	N/A	25	156	West	No	-96.4521	65.2622			No	Exceeded	Called dispatched and put speed restriction (30km/h)
Road	2023:03:15 1:10 PM	Yes	Arctic fox	1	Foraging	W	0	169	East	Yes	-96.5370	65.3400			No	Not Exceeded	
Road	2023:03:23 11:10 AM	No		N/A			N/A	N/A			N/A	N/A					

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023:03:25 7:20 AM	Yes	Common raven	1	Flying	E	50	148	East	N/A	-96.4274	65.2205			No	Not Exceeded	
Road	2023:03:27 12:32 PM	Yes	Caribou	30	Walking	S	150	111	West	No	-96.0240	65.0481			No	Exceeded	Speed restriction
Road	2023:03:27 12:32 PM	Yes	Caribou	4	Lying Down	N/A	1500	145	East	No	-96.3769	65.2242			No	Not Exceeded	
Incidental	2023:03:27 4:00 PM	Yes	Caribou	6	Foraging	N/A	1500	144	East	No	-96.0022	65.0511			No	Not Exceeded	
Road	2023:03:28 11:02 AM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023:03:28 1:51 PM	Yes	Caribou	2	Feeding	N/A	50	173	West	No	-96.6030	65.3597			No	Not Exceeded	
Incidental	2023:03:28 1:51 PM	Yes	Caribou	92	Walking	NE	3000	134	West	No	-96.1929	65.2048			No	Exceeded	Group is more than 1.5 KM away
Incidental	2023:03:28 1:51 PM	Yes	Caribou	43	Walking	SE	2000	123	West	No	-96.1044	65.1222			No	Exceeded	Group is more than 1.5 KM away
Road	2023:03:29 7:11 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023:03:30 7:46 AM	Yes	Caribou	2	Feeding	N/A	50	169	West	No	-96.5370	65.3400			No	Not Exceeded	
Road	2023:03:30 7:46 AM	Yes	Wolf	2	Feeding	N/A	300	152	West	No	-96.4762	65.2418			No	Not Exceeded	
Road	2023:03:30 7:46 AM	Yes	Caribou	1	Dead	N/A	300	152	West	No	-96.4762	65.2418		Project non-related	No	Not Exceeded	
Road	2023:03:31 8:25 AM	Yes	Caribou	5	Walking	N	2000	138	West	No	-96.2602	65.2238			No	Not Exceeded	
Road	2023:03:31 8:25 AM	Yes	Caribou	39	Walking	S	2000	123	West	No	-96.1044	65.1222			No	Exceeded	> 1.5Km from the road
Incidental	2023:03:31 1:31 PM	Yes	Caribou	200	Walking	SE	600	113	West	No	-95.9933	65.0588			No	Exceeded	Road closure was triggered
Road	2023:04:01 7:00 AM	Yes	Caribou	2	Foraging	N/A	30	175	West	No	-96.6024	65.3773			No	Not Exceeded	
Road	2023:04:01 7:00 AM	Yes	Caribou	6	Feeding	Not Recorded	50	158	East	No	-96.4047	65.2778			No	Not Exceeded	
Road	2023:04:01 7:00 AM	Yes	Muskox	18	Resting	N/A	100	153	West	No	-96.4763	65.2482			No	Exceeded	Road is closed already
Road	2023:04:01 7:00 AM	Yes	Caribou	78	Walking	W	500	143	West	No	-96.3580	65.2237			No	Exceeded	Road closed
Road	2023:04:01 7:00 AM	Yes	Caribou	240	Foraging	N/A	50	134	West	No	-96.1929	65.2048			No	Exceeded	Road closed
Road	2023:04:01 7:00 AM	Yes	Caribou	35	Walking	S	800	136	West	No	-96.2274	65.2131			No	Exceeded	Road closed
Road	2023:04:01 7:00 AM	Yes	Caribou	24	Standing	N/A	1000	123	West	No	-96.1044	65.1222			No	Not Exceeded	
Road	2023:04:01 7:00 AM	Yes	Caribou	51	Walking	S	300	122	West	No	-96.0971	65.1148			No	Exceeded	Road closed
Road	2023:04:01 7:00 AM	Yes	Caribou	225	Feeding	SE	180	120	West	No	-96.0728	65.1002			No	Exceeded	Road closed
Road	2023:04:01 7:00 AM	Yes	Caribou	23	Walking	SW	450	119	West	No	-96.0648	65.0932			No	Not Exceeded	
Incidental	2023:04:01 4:44 PM	Yes	Caribou	400	Feeding	S	150	115	West	No	-96.0090	65.0711			No	Exceeded	Road closed
Road	2023:04:02 6:40 AM	Yes	Muskox	18	Resting	N/A	100	152	West	No	-96.4762	65.2418			No	Exceeded	Road closed
Road	2023:04:02 6:40 AM	Yes	Caribou	2	Trotting/running	S	20	137	West	No	-96.2415	65.2194			No	Not Exceeded	
Road	2023:04:02 6:40 AM	Yes	Caribou	30	Walking	N	100	134	West	No	-96.1929	65.2048			No	Not Exceeded	
Incidental	2023:04:02 7:04 AM	Yes	Caribou	116	Walking	SE	700	114	West	No	-96.0042	65.0668			No	Exceeded	Road closed yesterday
Incidental	2023:04:02 7:04 AM	Yes	Wolf	1	Hunting	SE	500	114	West	No	-96.0042	65.0668			No	Not Exceeded	
Incidental	2023:04:02 7:04 AM	Yes	Wolf	1	Running	SW	500	115	West	No	-96.0090	65.0711			No	Not Exceeded	
Incidental	2023:04:02 7:04 AM	Yes	Caribou	38	Running	NW	700	119	West	No	-96.0648	65.0932			No	Exceeded	Road closed yesterday
Road	2023:04:02 3:17 PM	Yes	Caribou	165	Foraging	SE	800	143	West	No	-96.3580	65.2237			No	Exceeded	Road closed
Incidental	2023:04:02 3:37 PM	Yes	Caribou	74	Walking	SW	800	122	West	No	-96.0971	65.1148			No	Exceeded	Road closed
Incidental	2023:04:02 4:39 PM	Yes	Caribou	165	Foraging	SE	800	144	West	No	-96.0022	65.0511			No	Exceeded	Road closed
Incidental	2023:04:02 4:39 PM	Yes	Caribou	87	Walking	NW	900	146	West	No	-96.3980	65.2263			No	Exceeded	Road closed
Incidental	2023:04:02 4:39 PM	Yes	Caribou	25	Walking	N/A	990	148	West	No	-96.4274	65.2205			No	Not Exceeded	
Incidental	2023:04:02 6:39 PM	Yes	Caribou	187	Walking	NE	0	113	West	Yes	-95.9933	65.0588			No	Exceeded	Road closed
Incidental	2023:04:02 6:39 PM	Yes	Wolf	9	Walking	NE	1000	122	East	Yes	-96.0971	65.1148			No	Not Exceeded	
Incidental	2023:04:02 8:00 PM	Yes	Caribou	1	Dead	N/A	900	122	West	N/A	-96.0971	65.1148		Project non-related	No	Not Exceeded	
Road	2023:04:03 6:20 AM	Yes	Muskox	24	Feeding	N/A	900	151	West	No	-96.4662	65.2345			No	Exceeded	Road closed. Speed rest. For buses 152-150
Road	2023:04:03 6:20 AM	Yes	Caribou	500	Walking	S	500	116	West	No	-96.0206	65.0803			No	Exceeded	Road is closed. 2 techs monitoring the crossing
Road	2023:04:04 8:46 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023:04:05 7:28 AM	Yes	Caribou	2	Alert	N/A	600	149	East	No	-96.4426	65.2233			No	Not Exceeded	



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023:04:06 7:30 AM	Yes	Muskox	10	Standing	N/A	2000	161	West	No	-96.4121	65.3032			No	Not Exceeded	
Road	2023:04:07 7:18 AM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023:04:07 4:08 PM	Yes	Caribou	160	Walking	W	200	112	West	No	-96.0022	65.0511			No	Exceeded	Road closedConvoy
Incidental	2023:04:07 4:08 PM	Yes	Caribou	90	Feeding	N/A	900	118	West	No	-96.0551	65.0865			No	Exceeded	Road closedConvoy
Incidental	2023:04:07 4:08 PM	Yes	Caribou	8	Standing	N/A	1000	121	West	No	-96.0864	65.1071			No	Not Exceeded	
Incidental	2023:04:07 5:48 PM	Yes	Caribou	20	Trotting/running	E	100	112	West	Yes	-96.0022	65.0511			No	Not Exceeded	
Incidental	2023:04:07 5:48 PM	Yes	Caribou	150	Walking	N	1600	126	West	No	-96.1108	65.1482			No	Exceeded	Road closed
Incidental	2023:04:07 5:48 PM	Yes	Caribou	50	Walking	SE	2000	129	West	No	-96.1459	65.1690			No	Exceeded	Road closed
Incidental	2023:04:08 6:27 AM	Yes	Caribou	300	Feeding	N/A	3000	138	West	No	-96.2602	65.2238			No	Exceeded	> 1.5Km from the road
Incidental	2023:04:08 6:27 AM	Yes	Caribou	75	Foraging	N/A	3000	134	West	No	-96.1929	65.2048			No	Exceeded	> 1.5Km from the road
Road	2023:04:08 5:44 PM	Yes	Caribou	120	Walking	N	200	117	West	No	-96.0394	65.0837			No	Exceeded	Road closed
Road	2023:04:08 5:44 PM	Yes	Caribou	75	Walking	N	800	127	West	No	-96.1255	65.1538			No	Exceeded	Road closed
Road	2023:04:08 5:44 PM	Yes	Caribou	27	Walking	S	700	134	West	No	-96.1929	65.2048			No	Not Exceeded	
Road	2023:04:09 6:28 AM	Yes	Caribou	130	Standing	N/A	200	112	West	No	-96.0022	65.0511			No	Exceeded	Road closed
Road	2023:04:09 6:28 AM	Yes	Caribou	30	Standing	N/A	2000	145	West	No	-96.3769	65.2242			No	Not Exceeded	
Road	2023:04:09 6:28 AM	Yes	Muskox	10	Feeding	N/A	1000	159	West	No	-96.4089	65.2860			No	Not Exceeded	
Road	2023:04:10 5:13 AM	Yes	Caribou	63	Standing	N/A	150	123	West	No	-96.1044	65.1222			No	Exceeded	Road closed
Road	2023:04:10 5:13 AM	Yes	Caribou	15	Standing	N/A	400	130	West	No	-96.1528	65.1782			No	Not Exceeded	
Road	2023:04:10 5:13 AM	Yes	Caribou	150	Standing	N/A	80	136	West	No	-96.2274	65.2131			No	Exceeded	Road closed
Road	2023:04:10 5:13 AM	Yes	Caribou	200	Standing	N/A	1000	137	West	No	-96.2415	65.2194			No	Exceeded	Road closed
Road	2023:04:10 5:13 AM	Yes	Caribou	150	Standing	N/A	100	139	West	No	-96.2800	65.2269			No	Exceeded	Road closed
Road	2023:04:10 5:13 AM	Yes	Caribou	20	Standing	N/A	400	140	West	No	-96.2985	65.2220			No	Not Exceeded	
Road	2023:04:10 5:13 AM	Yes	Caribou	100	Standing	N/A	600	143	West	No	-96.3580	65.2237			No	Exceeded	Road closed
Road	2023:04:10 5:13 AM	Yes	Caribou	50	Running	NW	500	144	West	No	-96.3737	65.2233			No	Exceeded	Road closed
Road	2023:04:10 5:13 AM	Yes	Caribou	250	Standing	N/A	200	170	West	No	-96.5498	65.3466			No	Exceeded	Road closed
Road	2023:04:10 5:13 AM	Yes	Caribou	150	Standing	N/A	500	176	West	No	-96.6038	65.3862			No	Exceeded	Road closed
Road	2023:04:11 5:18 AM	Yes	Caribou	53	Standing	N/A	600	133	West	No	-96.1754	65.1992			No	Exceeded	Road closed
Road	2023:04:11 5:18 AM	Yes	Caribou	89	Feeding	N/A	100	144	West	No	-96.3777	65.2244			No	Exceeded	Road closed
Road	2023:04:11 5:18 AM	Yes	Caribou	5	Standing	N/A	300	158	West	No	-96.4047	65.2778			No	Not Exceeded	
Road	2023:04:11 5:18 AM	Yes	Caribou	7	Standing	N/A	700	165	West	No	-96.4678	65.3239			No	Not Exceeded	
Road	2023:04:11 5:18 AM	Yes	Caribou	46	Walking	S	500	166	West	No	-96.4882	65.3253			No	Exceeded	Road closed
Road	2023:04:11 5:18 AM	Yes	Caribou	16	Standing	N/A	100	169	West	No	-96.5370	65.3400			No	Not Exceeded	
Road	2023:04:11 5:18 AM	Yes	Caribou	103	Standing	N/A	100	176	West	No	-96.6038	65.3862			No	Exceeded	Road closed
Incidental	2023:04:11 6:15 PM	Yes	Caribou	340	Walking	NW	500	168	West	No	-96.5240	65.3335			No	Exceeded	Road closed
Incidental	2023:04:12 2:30 AM	Yes	Caribou	307	Walking	S	2500	134	West	No	-96.1929	65.2048			No	Exceeded	Road Closed
Incidental	2023:04:12 4:27 AM	Yes	Caribou	250	Walking	S	2000	118	West	No	-96.0551	65.0865			No	Exceeded	Road Closed
Incidental	2023:04:12 4:49 AM	Yes	Caribou	250	Standing	N/A	600	112	West	No	-96.0022	65.0511			No	Exceeded	Road Closed
Road	2023:04:12 5:26 AM	Yes	Caribou	201	Resting	N/A	1000	112	West	No	-96.0022	65.0511			No	Exceeded	Road closed
Road	2023:04:12 5:26 AM	Yes	Caribou	204	Standing	N/A	800	136	West	No	-96.2274	65.2131			No	Exceeded	Road closed
Road	2023:04:12 5:26 AM	Yes	Muskox	8	Standing	N/A	500	141	West	No	-96.3181	65.2237			No	Not Exceeded	
Road	2023:04:12 5:26 AM	Yes	Caribou	189	Standing	N/A	400	141	West	No	-96.3181	65.2237			No	Exceeded	Road closed
Road	2023:04:12 5:26 AM	Yes	Caribou	69	Standing	N/A	10	143	West	No	-96.3580	65.2237			No	Exceeded	Road closed
Road	2023:04:12 5:26 AM	Yes	Caribou	120	Standing	N/A	30	144	West	No	-96.3747	65.2237			No	Exceeded	Road closed
Road	2023:04:12 5:26 AM	Yes	Caribou	11	Standing	N/A	50	148	West	No	-96.4274	65.2205			No	Not Exceeded	
Road	2023:04:12 5:26 AM	Yes	Caribou	2	Standing	N/A	40	149	West	No	-96.4426	65.2233			No	Not Exceeded	
Road	2023:04:12 5:26 AM	Yes	Muskox	5	Feeding	N/A	30	161	Both	No	-96.4121	65.3032			No	Not Exceeded	
Road	2023:04:12 5:26 AM	Yes	Caribou	34	Standing	N/A	200	162	West	No	-96.4168	65.3115			No	Exceeded	Road closed
Road	2023:04:12 5:26 AM	Yes	Caribou	42	Standing	N/A	500	165	West	No	-96.4678	65.3239			No	Exceeded	Road closed
Road	2023:04:12 5:26 AM	Yes	Caribou	500	Standing	N/A	50	168	West	No	-96.5240	65.3335			No	Exceeded	Road closed
Road	2023:04:12 5:26 AM	Yes	Caribou	5	Standing	N/A	60	172	West	No	-96.5867	65.3550			No	Not Exceeded	
Road	2023:04:12 5:26 AM	Yes	Caribou	8	Standing	N/A	200	173	West	No	-96.6030	65.3597			No	Not Exceeded	
Road	2023:04:12 5:26 AM	Yes	Caribou	18	Standing	N/A	100	176	West	No	-96.6038	65.3862			No	Not Exceeded	
Road	2023:04:13 5:15 AM	Yes	Caribou	204	Walking	SW	700	123	West	No	-96.1044	65.1222			No	Exceeded	Road closed
Road	2023:04:13 5:15 AM	Yes	Caribou	9	Walking	S	500	126	West	No	-96.1108	65.1482			No	Not Exceeded	
Road	2023:04:13 5:15 AM	Yes	Caribou	5	Walking	E	50	138	East	No	-96.2602	65.2238			No	Not Exceeded	
Road	2023:04:13 5:15 AM	Yes	Caribou	56	Walking	NW	400	147	West	No	-96.4184	65.2279			No	Exceeded	Road closed
Road	2023:04:13 5:15 AM	Yes	Caribou	22	Feeding	Not Recorded	243	152	West	No	-96.4762	65.2418			No	Not Exceeded	



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023:04:13 5:15 AM	Yes	Caribou	190	Standing	Not Recorded	300	159	West	No	-96.4089	65.2860			No	Exceeded	Road closed
Road	2023:04:13 5:15 AM	Yes	Caribou	44	Walking	SW	500	166	West	No	-96.4882	65.3253			No	Exceeded	Road closed
Road	2023:04:13 5:15 AM	Yes	Caribou	97	Walking	N	226	169	West	No	-96.5370	65.3400			No	Exceeded	Road closed
Road	2023:04:13 5:15 AM	Yes	Caribou	56	Feeding	Not Recorded	200	172	West	No	-96.5867	65.3550			No	Exceeded	Road closed
Road	2023:04:13 5:15 AM	Yes	Caribou	43	Walking	NW	200	175	West	No	-96.6024	65.3773			No	Exceeded	Road closed
Road	2023:04:13 5:15 AM	Yes	Caribou	133	Standing	E	10	177	West	Yes	-96.6085	65.3943			No	Exceeded	Road closed
Road	2023:04:13 10:33 AM	Yes	Caribou	28	Foraging	N	1000	174	West	No	-96.6013	65.3683			No	Not Exceeded	
Road	2023:04:13 10:33 AM	Yes	Caribou	83	Trotting/running	N	750	162	West	No	-96.4168	65.3115			No	Exceeded	Road is closed to non essential traffic. Convoy is done otherwiseClosing strobe lights and reducing speed to 30km/h
Road	2023:04:13 10:33 AM	Yes	Caribou	87	Walking	W	500	158	West	No	-96.4047	65.2778			No	Exceeded	Road is closed to non essential traffic.
Road	2023:04:13 10:33 AM	Yes	Caribou	70	Lying Down	N/A	1000	154	West	No	-96.4630	65.2546			No	Exceeded	Road is closed to non essential traffic
Road	2023:04:13 10:33 AM	Yes	Caribou	67	Foraging	N/A	900	138	West	No	-96.2602	65.2238			No	Exceeded	Road is closed to non essential traffic
Road	2023:04:13 10:33 AM	Yes	Caribou	28	Walking	S	500	131	West	No	-96.1607	65.1855			No	Not Exceeded	
Road	2023:04:13 10:33 AM	Yes	Caribou	33	Walking	S	600	126	West	No	-96.1108	65.1482			No	Not Exceeded	
Road	2023:04:13 10:33 AM	Yes	Caribou	35	Foraging	N/A	1000	124	West	No	-96.1081	65.1315			No	Exceeded	Road is closed to non essential traffic
Incidental	2023:04:13 1:06 PM	Yes	Caribou	53	Walking	SW	840	126	West	No	-96.1108	65.1482			No	Exceeded	Road closed
Incidental	2023:04:13 1:06 PM	Yes	Caribou	83	Walking	SW	600	127	West	No	-96.1255	65.1538			No	Exceeded	Road closed
Incidental	2023:04:13 1:06 PM	Yes	Caribou	50	Walking	SW	456	128	West	No	-96.1358	65.1614			No	Exceeded	Road closed
Incidental	2023:04:13 1:06 PM	Yes	Caribou	127	Walking	SW	350	136	West	No	-96.2274	65.2131			No	Exceeded	Road closed
Road	2023:04:14 5:08 AM	Yes	Caribou	57	Walking	S	3000	119	West	No	-96.0648	65.0932			No	Exceeded	Road closed
Road	2023:04:14 5:08 AM	Yes	Caribou	20	Walking	S	3500	127	West	No	-96.1255	65.1538			No	Not Exceeded	
Road	2023:04:14 5:08 AM	Yes	Caribou	38	Standing	N/A	400	129	West	No	-96.1459	65.1690			No	Exceeded	Road closed
Road	2023:04:14 5:08 AM	Yes	Caribou	4	Standing	N/A	300	131	West	No	-96.1607	65.1855			No	Not Exceeded	
Road	2023:04:14 5:08 AM	Yes	Caribou	15	Standing	N/A	1500	135	West	No	-96.2080	65.2089			No	Not Exceeded	
Road	2023:04:14 5:08 AM	Yes	Caribou	2	Standing	N/A	1000	140	West	No	-96.2985	65.2220			No	Not Exceeded	
Road	2023:04:14 5:08 AM	Yes	Caribou	48	Standing	N/A	100	146	West	No	-96.3980	65.2263			No	Exceeded	Road closed
Road	2023:04:14 5:08 AM	Yes	Caribou	46	Standing	N/A	50	162	West	No	-96.4168	65.3115			No	Exceeded	Road closed
Road	2023:04:14 5:08 AM	Yes	Caribou	53	Walking	W	100	163	East	No	-96.4304	65.3174			No	Exceeded	Road closed
Road	2023:04:14 5:08 AM	Yes	Caribou	80	Walking	SE	400	165	West	No	-96.4678	65.3239			No	Exceeded	Road closed
Road	2023:04:14 5:08 AM	Yes	Caribou	64	Standing	N/A	100	166	West	No	-96.4882	65.3253			No	Exceeded	Road closed
Road	2023:04:14 5:08 AM	Yes	Caribou	52	Standing	N/A	200	168	West	No	-96.5240	65.3335			No	Exceeded	Road closed
Road	2023:04:14 5:08 AM	Yes	Caribou	150	Standing	N/A	100	169	West	No	-96.5370	65.3400			No	Exceeded	Road closed
Road	2023:04:14 5:08 AM	Yes	Caribou	23	Standing	N/A	1000	173	West	No	-96.6030	65.3597			No	Not Exceeded	
Road	2023:04:14 5:08 AM	Yes	Caribou	32	Standing	N/A	60	176	West	No	-96.6038	65.3862			No	Not Exceeded	
Incidental	2023:04:14 10:58 AM	Yes	Caribou	3	Walking	N	800	112	West	No	-96.0022	65.0511			No	Not Exceeded	
Incidental	2023:04:14 10:58 AM	Yes	Caribou	45	Feeding	N/A	800	113	East	N/A	-95.9933	65.0588			No	Exceeded	Road closed
Incidental	2023:04:14 10:58 AM	Yes	Caribou	11	Walking	S	1000	114	West	No	-96.0042	65.0668			No	Not Exceeded	
Incidental	2023:04:14 10:58 AM	Yes	Caribou	220	Walking	S	1000	117	East	No	-96.0394	65.0837			No	Exceeded	Road closed
Incidental	2023:04:14 10:58 AM	Yes	Caribou	100	Walking	S	800	118	East	No	-96.0551	65.0865			No	Exceeded	Road closed
Incidental	2023:04:14 10:58 AM	Yes	Caribou	42	Walking	N	800	124	West	No	-96.1081	65.1315			No	Exceeded	Road closed
Incidental	2023:04:14 10:58 AM	Yes	Caribou	44	Trotting/running	S	800	127	North	No	-96.1255	65.1538			No	Exceeded	Road closed
Incidental	2023:04:14 10:58 AM	Yes	Caribou	15	Walking	S	1000	132	West	No	-96.1646	65.1940			No	Not Exceeded	
Incidental	2023:04:14 10:58 AM	Yes	Caribou	4	Standing	N/A	400	150	East	N/A	-96.4501	65.2302			No	Not Exceeded	
Incidental	2023:04:14 10:58 AM	Yes	Caribou	38	Trotting/running	S	1000	162	East	N/A	-96.4168	65.3115			No	Exceeded	Road closed
Incidental	2023:04:14 10:58 AM	Yes	Caribou	13	Walking	S	1000	174	South	No	-96.6013	65.3683			No	Not Exceeded	
Incidental	2023:04:14 10:58 AM	Yes	Caribou	54	Foraging	N/A	200	178	East	N/A	-96.6219	65.4009			No	Exceeded	Road closed
Incidental	2023:04:14 2:48 PM	Yes	Caribou	64	Walking	N	100	168	East	No	-96.5240	65.3335			No	Exceeded	Road closed
Incidental	2023:04:14 2:48 PM	Yes	Caribou	124	Feeding	N/A	600	160	West	No	-96.4136	65.2943			No	Exceeded	Road closed
Incidental	2023:04:14 2:48 PM	Yes	Caribou	45	Walking	N/A	200	133	West	No	-96.1754	65.1992			No	Exceeded	Road closed



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2023:04:14 2:48 PM	Yes	Caribou	44	Walking	W	1000	127	East	No	-96.1255	65.1538			No	Exceeded	Road closed
Incidental	2023:04:14 2:48 PM	Yes	Caribou	150	Feeding	N/A	500	112	East	N/A	-96.0022	65.0511			No	Exceeded	Road closed
Incidental	2023:04:14 2:53 PM	Yes	Caribou	532	Walking	E	0	113	West,East	Yes	-95.9933	65.0588			No	Exceeded	Road closed
Road	2023:04:15 5:30 AM	Yes	Caribou	40	Resting	N/A	500	112	West	No	-96.0022	65.0511			No	Exceeded	Road closed
Road	2023:04:15 5:30 AM	Yes	Caribou	4	Walking	SE	250	118	West	No	-96.0551	65.0865			No	Not Exceeded	
Road	2023:04:15 5:30 AM	Yes	Caribou	2	Walking	E	300	120	West	No	-96.0728	65.1002			No	Not Exceeded	
Road	2023:04:15 5:30 AM	Yes	Caribou	35	Walking	E	1000	123	West	No	-96.1044	65.1222			No	Exceeded	Road closed
Road	2023:04:15 5:30 AM	Yes	Caribou	28	Walking	E	500	128	East	Yes	-96.1358	65.1614			No	Not Exceeded	
Road	2023:04:15 5:30 AM	Yes	Caribou	131	Walking	S	1000	129	West	No	-96.1459	65.1690			No	Exceeded	Road closed
Road	2023:04:15 5:30 AM	Yes	Caribou	53	Walking	S	1000	129	West	No	-96.1459	65.1690			No	Exceeded	Road closed
Road	2023:04:15 5:30 AM	Yes	Caribou	78	Walking	SE	1000	137	West	No	-96.2415	65.2194			No	Exceeded	Road closed
Road	2023:04:15 5:30 AM	Yes	Caribou	150	Walking	NW	1000	148	West	No	-96.4274	65.2205			No	Exceeded	Road closed
Road	2023:04:15 5:30 AM	Yes	Caribou	11	Walking	S	250	149	West	No	-96.4426	65.2233			No	Not Exceeded	
Road	2023:04:15 5:30 AM	Yes	Caribou	8	Walking	S	1000	149	West	No	-96.4426	65.2233			No	Not Exceeded	
Road	2023:04:15 5:30 AM	Yes	Caribou	3	Walking	SW	250	153	East	Yes	-96.4763	65.2482			No	Not Exceeded	
Road	2023:04:15 5:30 AM	Yes	Caribou	252	Standing	N/A	250	157	West	No	-96.4158	65.2712			No	Exceeded	Road closed
Road	2023:04:15 5:30 AM	Yes	Caribou	282	Resting	N/A	300	163	West	No	-96.4304	65.3174			No	Exceeded	Road closed
Road	2023:04:15 5:30 AM	Yes	Caribou	248	Feeding	N/A	500	168	West	No	-96.5240	65.3335			No	Exceeded	Road closed
Road	2023:04:15 5:30 AM	Yes	Caribou	35	Walking	N	1500	173	West	No	-96.6030	65.3597			No	Exceeded	Road closed
Road	2023:04:15 8:00 AM	Yes	Caribou	29	Walking	S	500	174	West	No	-96.6013	65.3683			No	Not Exceeded	
Road	2023:04:15 8:00 AM	Yes	Caribou	36	Walking	N	200	173	West	No	-96.6030	65.3597			No	Exceeded	Road is closed to non essential traffic
Road	2023:04:15 8:00 AM	Yes	Caribou	6	Alert	N/A	300	170	West	No	-96.5498	65.3466			No	Not Exceeded	
Road	2023:04:15 8:00 AM	Yes	Caribou	59	Feeding	N/A	300	169	West	No	-96.5370	65.3400			No	Exceeded	Road is closed to non essential traffic
Road	2023:04:15 8:00 AM	Yes	Caribou	37	Foraging	N/A	300	167	West	No	-96.5061	65.3284			No	Exceeded	Road is closed to non essential traffic
Road	2023:04:15 8:00 AM	Yes	Caribou	52	Walking	S	700	164	West	No	-96.4472	65.3226			No	Exceeded	Road is closed to non essential traffic
Road	2023:04:15 8:00 AM	Yes	Caribou	14	Alert	N/A	600	162	West	No	-96.4168	65.3115			No	Not Exceeded	
Road	2023:04:15 8:00 AM	Yes	Caribou	127	Foraging	N/A	400	160	West	No	-96.4136	65.2943			No	Exceeded	Road is closed to non essential traffic
Road	2023:04:15 8:00 AM	Yes	Caribou	93	Foraging	SW	200	158	West	No	-96.4047	65.2778			No	Exceeded	Road is closed to non essential traffic
Road	2023:04:15 8:00 AM	Yes	Caribou	9	Alert	N/A	200	149	West	No	-96.4426	65.2233			No	Not Exceeded	
Road	2023:04:15 8:00 AM	Yes	Caribou	32	Standing	N/A	350	146	West	No	-96.3980	65.2263			No	Not Exceeded	
Road	2023:04:15 8:00 AM	Yes	Caribou	59	Walking	N	1000	134	West	No	-96.1929	65.2048			No	Exceeded	Road closed
Road	2023:04:15 8:00 AM	Yes	Caribou	25	Walking	S	650	131	West	No	-96.1607	65.1855			No	Not Exceeded	
Road	2023:04:15 8:00 AM	Yes	Caribou	121	Walking	E	0	126	Both	Yes	-96.1108	65.1482			No	Exceeded	Road closed
Road	2023:04:15 8:00 AM	Yes	Caribou	13	Trotting/running	W	0	113	Both	Yes	-95.9933	65.0588			No	Not Exceeded	
Road	2023:04:15 1:01 PM	Yes	Caribou	45	Standing	N/A	300	113	West	No	-95.9933	65.0588			No	Exceeded	Road is closed to non essential traffic
Road	2023:04:15 1:01 PM	Yes	Caribou	30	Walking	E	700	117	West	No	-96.0394	65.0837			No	Not Exceeded	
Road	2023:04:15 1:01 PM	Yes	Caribou	60	Foraging	N/A	750	124	West	No	-96.1081	65.1315			No	Exceeded	Road is closed to non essential traffic
Road	2023:04:15 1:01 PM	Yes	Caribou	28	Walking	S	1000	133	West	No	-96.1754	65.1992			No	Not Exceeded	
Road	2023:04:15 1:01 PM	Yes	Caribou	19	Walking	N	1000	137	West	No	-96.2415	65.2194			No	Not Exceeded	
Road	2023:04:15 1:01 PM	Yes	Caribou	19	Foraging	N/A	1250	148	West	No	-96.4274	65.2205			No	Not Exceeded	
Road	2023:04:15 1:01 PM	Yes	Caribou	63	Walking	N	150	151	West	No	-96.4662	65.2345			No	Exceeded	Road is closed to the non essential traffic
Road	2023:04:15 1:01 PM	Yes	Caribou	11	Standing	N/A	300	154	West	No	-96.4630	65.2546			No	Not Exceeded	
Road	2023:04:15 1:01 PM	Yes	Caribou	10	Standing	N/A	250	155	West	No	-96.4342	65.2676			No	Not Exceeded	
Road	2023:04:15 1:01 PM	Yes	Caribou	450	Walking	N	0	163	West	No	-96.4304	65.3174			No	Exceeded	Road is closed to non essential traffic
Road	2023:04:15 1:01 PM	Yes	Caribou	21	Foraging	N	200	166	West	No	-96.4882	65.3253			No	Not Exceeded	
Road	2023:04:15 1:01 PM	Yes	Caribou	40	Foraging	N/A	300	167	West	No	-96.5061	65.3284			No	Exceeded	Road is closed to non essential traffic
Road	2023:04:15 1:01 PM	Yes	Caribou	23	Walking	N	500	169	West	No	-96.5370	65.3400			No	Not Exceeded	
Road	2023:04:15 1:01 PM	Yes	Caribou	13	Foraging	N/A	500	173	West	No	-96.6030	65.3597			No	Not Exceeded	
Road	2023:04:16 5:26 AM	Yes	Caribou	108	Walking	S	500	119	West	No	-96.0648	65.0932			No	Exceeded	Road closed



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023:04:16 5:26 AM	Yes	Caribou	14	Foraging	N/A	2	123	West	No	-96.1044	65.1222			No	Not Exceeded	
Road	2023:04:16 5:26 AM	Yes	Caribou	12	Walking	S	1500	127	West	No	-96.1255	65.1538			No	Not Exceeded	
Road	2023:04:16 5:26 AM	Yes	Caribou	108	Walking	S	1000	129	West	No	-96.1459	65.1690			No	Exceeded	Road closed
Road	2023:04:16 5:26 AM	Yes	Caribou	13	Foraging	SW	250	131	West	No	-96.1607	65.1855			No	Not Exceeded	
Road	2023:04:16 5:26 AM	Yes	Caribou	11	Foraging	N/A	750	151	West	No	-96.4662	65.2345			No	Not Exceeded	
Road	2023:04:16 5:26 AM	Yes	Caribou	365	Foraging	N/A	100	160	West	No	-96.4136	65.2943			No	Exceeded	Road closed
Road	2023:04:16 5:26 AM	Yes	Caribou	350	Foraging	E	50	164	Both	Yes	-96.4472	65.3226			No	Exceeded	Road closed
Road	2023:04:16 5:26 AM	Yes	Caribou	27	Walking	S	200	166	West	No	-96.4882	65.3253			No	Not Exceeded	
Road	2023:04:16 5:26 AM	Yes	Caribou	15	Walking	S	150	167	West	No	-96.5061	65.3284			No	Not Exceeded	
Road	2023:04:16 5:26 AM	Yes	Caribou	113	Foraging	N/A	100	169	Both	No	-96.5370	65.3400			No	Exceeded	Road closed
Road	2023:04:16 8:15 AM	Yes	Caribou	14	Standing	N/A	250	175	West	No	-96.6024	65.3773			No	Not Exceeded	
Road	2023:04:16 8:15 AM	Yes	Caribou	42	Foraging	N/A	750	175	East	No	-96.6024	65.3773			No	Exceeded	Road is closed to non essential traffic
Road	2023:04:16 8:15 AM	Yes	Caribou	12	Walking	S	400	170	West	No	-96.5498	65.3466			No	Not Exceeded	
Road	2023:04:16 8:15 AM	Yes	Caribou	10	Foraging	N/A	500	170	West	No	-96.5498	65.3466			No	Not Exceeded	
Road	2023:04:16 8:15 AM	Yes	Caribou	56	Foraging	N/A	500	169	West	No	-96.5370	65.3400			No	Exceeded	Road is closed to non essential traffic
Road	2023:04:16 8:15 AM	Yes	Caribou	28	Foraging	W	0	166	Both	Yes	-96.4882	65.3253			No	Not Exceeded	
Road	2023:04:16 8:15 AM	Yes	Caribou	83	Lying Down	N/A	750	161	West	No	-96.4121	65.3032			No	Exceeded	Road is closed to non essential traffic
Road	2023:04:16 8:15 AM	Yes	Caribou	29	Foraging	E	0	160	Both	Yes	-96.4136	65.2943			No	Not Exceeded	
Road	2023:04:16 8:15 AM	Yes	Caribou	300	Foraging	N/A	25	159	Both	No	-96.4089	65.2860			No	Exceeded	Road is closed to non essential traffic
Road	2023:04:16 8:15 AM	Yes	Caribou	3	Alert	S	250	136	West	No	-96.2274	65.2131			No	Not Exceeded	
Road	2023:04:16 8:15 AM	Yes	Caribou	58	Foraging	N/A	250	135	East	No	-96.2080	65.2089			No	Exceeded	Road is closed to non essential traffic
Road	2023:04:16 8:15 AM	Yes	Caribou	4	Standing	N/A	200	131	West	No	-96.1607	65.1855			No	Not Exceeded	
Road	2023:04:16 8:15 AM	Yes	Caribou	47	Walking	S	300	129	West	No	-96.1459	65.1690			No	Exceeded	Road is closed to non essential traffic
Road	2023:04:16 8:15 AM	Yes	Caribou	45	Walking	E	0	124	Both	Yes	-96.1081	65.1315			No	Exceeded	Road is closed to non essential traffic
Road	2023:04:16 8:15 AM	Yes	Caribou	77	Walking	SE	0	113	Both	Yes	-95.9933	65.0588			No	Exceeded	Road is closed to non essential traffic
Road	2023:04:16 2:24 PM	Yes	Caribou	15	Standing	N/A	300	112	West	No	-96.0022	65.0511			No	Not Exceeded	
Road	2023:04:16 2:24 PM	Yes	Caribou	74	Walking	S	500	118	West	No	-96.0551	65.0865			No	Exceeded	Road is closed to non essential traffic
Road	2023:04:16 2:24 PM	Yes	Caribou	5	Foraging	N/A	350	134	East	No	-96.1929	65.2048			No	Not Exceeded	
Road	2023:04:16 2:24 PM	Yes	Caribou	4	Foraging	N/A	1000	151	West	No	-96.4662	65.2345			No	Not Exceeded	
Road	2023:04:16 2:24 PM	Yes	Caribou	23	Walking	SW	250	153	West	No	-96.4763	65.2482			No	Not Exceeded	
Road	2023:04:16 2:24 PM	Yes	Caribou	23	Foraging	N/A	450	154	West	No	-96.4630	65.2546			No	Not Exceeded	
Road	2023:04:16 2:24 PM	Yes	Caribou	21	Walking	S	500	155	West	No	-96.4342	65.2676			No	Not Exceeded	
Road	2023:04:16 2:24 PM	Yes	Caribou	54	Walking	S	350	156	West	No	-96.4521	65.2622			No	Exceeded	Road is closed to non essential traffic
Road	2023:04:16 2:24 PM	Yes	Caribou	57	Foraging	N/A	600	158	West	No	-96.4047	65.2778			No	Exceeded	Road is closed to non essential traffic
Road	2023:04:16 2:24 PM	Yes	Caribou	11	Standing	N/A	100	160	East	No	-96.4136	65.2943			No	Not Exceeded	
Road	2023:04:16 2:24 PM	Yes	Caribou	14	Walking	S	300	162	West	No	-96.4168	65.3115			No	Not Exceeded	
Road	2023:04:16 2:24 PM	Yes	Caribou	56	Foraging	N/A	100	163	West	No	-96.4304	65.3174			No	Exceeded	Road is closed to non essential traffic
Road	2023:04:16 2:24 PM	Yes	Caribou	12	Foraging	N/A	75	170	West	No	-96.5498	65.3466			No	Not Exceeded	
Road	2023:04:16 2:24 PM	Yes	Caribou	6	Standing	N/A	100	172	West	No	-96.5867	65.3550			No	Not Exceeded	
Road	2023:04:16 2:24 PM	Yes	Caribou	27	Foraging	N/A	200	176	West	No	-96.6038	65.3862			No	Not Exceeded	
Road	2023:04:17 5:15 AM	Yes	Caribou	19	Foraging	N/A	2000	113	East	No	-95.9933	65.0588			No	Not Exceeded	
Road	2023:04:17 5:15 AM	Yes	Caribou	22	Walking	S	100	115	West	No	-96.0090	65.0711			No	Not Exceeded	
Road	2023:04:17 5:15 AM	Yes	Caribou	15	Walking	S	2000	117	West	No	-96.0394	65.0837			No	Not Exceeded	
Road	2023:04:17 5:15 AM	Yes	Muskox	2	Foraging	N/A	500	119	West	N/A	-96.0648	65.0932			No	Not Exceeded	
Road	2023:04:17 5:15 AM	Yes	Caribou	50	Walking	SE	500	127	West	No	-96.1255	65.1538			No	Exceeded	Road closed
Road	2023:04:17 5:15 AM	Yes	Caribou	14	Foraging	N/A	1000	131	West	No	-96.1607	65.1855			No	Not Exceeded	
Road	2023:04:17 5:15 AM	Yes	Caribou	98	Walking	E	100	134	Both	Yes	-96.1929	65.2048			No	Exceeded	Road closed
Road	2023:04:17 5:15 AM	Yes	Caribou	14	Walking	N	500	146	West	No	-96.3980	65.2263			No	Not Exceeded	
Road	2023:04:17 5:15 AM	Yes	Caribou	15	Walking	SW	500	152	West	No	-96.4762	65.2418			No	Not Exceeded	
Road	2023:04:17 5:15 AM	Yes	Caribou	45	Foraging	N/A	100	154	Both	No	-96.4630	65.2546			No	Exceeded	Road closed

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023:04:17 5:15 AM	Yes	Caribou	117	Foraging	N/A	50	161	Both	No	-96.4121	65.3032			No	Exceeded	Road closed
Road	2023:04:17 5:15 AM	Yes	Caribou	67	Walking	N/A	500	162	Both	No	-96.4168	65.3115			No	Exceeded	Road closed
Road	2023:04:17 5:15 AM	Yes	Muskox	7	Foraging	N/A	500	163	East	No	-96.4304	65.3174			No	Not Exceeded	
Road	2023:04:17 5:15 AM	Yes	Caribou	9	Walking	N	500	167	West	No	-96.5061	65.3284			No	Not Exceeded	
Road	2023:04:17 5:15 AM	Yes	Caribou	49	Walking	N	600	176	West	No	-96.6038	65.3862			No	Exceeded	Road closed
Incidental	2023:04:17 9:47 AM	Yes	Caribou	15	Walking	S	1500	176	East	No	-96.6038	65.3862			No	Not Exceeded	
Incidental	2023:04:17 9:47 AM	Yes	Caribou	14	Walking	W	1500	167	West	No	-96.5061	65.3284			No	Not Exceeded	
Incidental	2023:04:17 9:47 AM	Yes	Caribou	19	Walking	W	100	166	West	No	-96.4882	65.3253			No	Not Exceeded	
Incidental	2023:04:17 9:47 AM	Yes	Wolf	1	Walking	W	2500	161	West	No	-96.4121	65.3032			No	Not Exceeded	
Incidental	2023:04:17 9:47 AM	Yes	Caribou	13	Walking	S	1500	138	West	No	-96.2602	65.2238			No	Not Exceeded	
Incidental	2023:04:17 9:47 AM	Yes	Caribou	45	Walking	N	2000	138	West	No	-96.2602	65.2238			No	Exceeded	Road closed
Incidental	2023:04:17 9:47 AM	Yes	Caribou	16	Walking	E	650	121	West	No	-96.0864	65.1071			No	Not Exceeded	
Road	2023:04:18 5:14 AM	Yes	Caribou	14	Running	E	1500	116	West	No	-96.0206	65.0803			No	Not Exceeded	
Road	2023:04:18 5:14 AM	Yes	Muskox	2	Feeding	N/A	200	116	West	No	-96.0206	65.0803			No	Not Exceeded	
Road	2023:04:18 5:14 AM	Yes	Caribou	8	Walking	NE	500	126	West	No	-96.1108	65.1482			No	Not Exceeded	
Road	2023:04:18 5:14 AM	Yes	Caribou	6	Feeding	N/A	300	129	East	No	-96.1459	65.1690			No	Not Exceeded	
Road	2023:04:18 5:14 AM	Yes	Caribou	7	Alert	N/A	200	133	East	No	-96.1754	65.1992			No	Not Exceeded	
Road	2023:04:18 5:14 AM	Yes	Caribou	21	Foraging	N/A	20	147	East	No	-96.4184	65.2279			No	Not Exceeded	
Road	2023:04:18 5:14 AM	Yes	Caribou	14	Standing	N/A	75	154	West	No	-96.4630	65.2546			No	Not Exceeded	
Road	2023:04:18 5:14 AM	Yes	Caribou	9	Walking	W	0	157	Both	Yes	-96.4158	65.2712			No	Not Exceeded	
Road	2023:04:18 5:14 AM	Yes	Caribou	15	Foraging	N/A	700	161	West	No	-96.4121	65.3032			No	Not Exceeded	
Road	2023:04:18 5:14 AM	Yes	Muskox	8	Foraging	N/A	1000	162	East	No	-96.4168	65.3115			No	Not Exceeded	
Road	2023:04:18 5:14 AM	Yes	Caribou	15	Lying Down	N/A	2000	173	West	No	-96.6030	65.3597			No	Not Exceeded	
Road	2023:04:18 5:14 AM	Yes	Caribou	102	Walking	NE	500	177	West	No	-96.6085	65.3943			No	Exceeded	Road closed
Incidental	2023:04:18 11:37 AM	Yes	Caribou	24	Walking	SE	1500	178	West	No	-96.6219	65.4009			No	Not Exceeded	
Incidental	2023:04:18 11:37 AM	Yes	Caribou	15	Walking	NW	1800	177	West	No	-96.6085	65.3943			No	Not Exceeded	
Incidental	2023:04:18 11:37 AM	Yes	Caribou	28	Foraging	N/A	2000	174	East	No	-96.6013	65.3683			No	Not Exceeded	
Incidental	2023:04:18 11:37 AM	Yes	Caribou	13	Walking	NE	200	163	West	No	-96.4304	65.3174			No	Not Exceeded	
Incidental	2023:04:18 11:37 AM	Yes	Caribou	13	Walking	N/A	100	161	West	No	-96.4121	65.3032			No	Not Exceeded	
Incidental	2023:04:18 11:37 AM	Yes	Caribou	5	Standing	N/A	300	150	West	No	-96.4501	65.2302			No	Not Exceeded	
Incidental	2023:04:18 11:37 AM	Yes	Caribou	13	Walking	SE	698	148	West	No	-96.4274	65.2205			No	Not Exceeded	
Incidental	2023:04:18 11:37 AM	Yes	Caribou	28	Walking	NW	600	138	West	No	-96.2602	65.2238			No	Not Exceeded	
Incidental	2023:04:18 11:37 AM	Yes	Caribou	5	Walking	SE	500	125	West	No	-96.1079	65.1391			No	Not Exceeded	
Incidental	2023:04:18 11:37 AM	Yes	Caribou	21	Walking	E	600	122	West	No	-96.0971	65.1148			No	Not Exceeded	
Incidental	2023:04:18 11:37 AM	Yes	Muskox	3	Foraging	N/A	400	119	East	No	-96.0648	65.0932			No	Not Exceeded	
Incidental	2023:04:18 11:37 AM	Yes	Caribou	14	Walking	SW	800	115	West	No	-96.0090	65.0711			No	Not Exceeded	
Incidental	2023:04:18 8:21 PM	Yes	Caribou	14	Foraging	N/A	500	164	West	No	-96.4472	65.3226			No	Not Exceeded	
Incidental	2023:04:18 8:21 PM	Yes	Caribou	3	Walking	N	250	166	West	No	-96.4882	65.3253			No	Not Exceeded	
Road	2023:04:19 6:41 AM	Yes	Caribou	2	Alert	N/A	400	111	West	No	-96.0240	65.0481			No	Not Exceeded	
Road	2023:04:19 6:41 AM	Yes	Caribou	15	Foraging	N/A	650	118	West	No	-96.0551	65.0865			No	Not Exceeded	
Road	2023:04:19 6:41 AM	Yes	Caribou	4	Walking	SW	200	130	West	No	-96.1528	65.1782			No	Not Exceeded	
Road	2023:04:19 6:41 AM	Yes	Caribou	2	Running	N	400	158	West	No	-96.4047	65.2778			No	Not Exceeded	
Road	2023:04:19 6:41 AM	Yes	Caribou	32	Walking	NE	4000	171	West	No	-96.5686	65.3520			No	Not Exceeded	
Road	2023:04:19 6:41 AM	Yes	Caribou	4	Foraging	N/A	1300	175	East	No	-96.6024	65.3773			No	Not Exceeded	
Incidental	2023:04:19 9:49 AM	Yes	Caribou	7	Walking	W	1900	154	West	No	-96.4630	65.2546			No	Not Exceeded	
Incidental	2023:04:19 9:49 AM	Yes	Caribou	7	Walking	SE	500	120	West	No	-96.0728	65.1002			No	Not Exceeded	
Incidental	2023:04:19 3:10 PM	Yes	Caribou	30	Walking	E	2000	124	West	No	-96.1081	65.1315			No	Not Exceeded	
Incidental	2023:04:19 3:10 PM	Yes	Caribou	12	Walking	S	1000	112	West	No	-96.0022	65.0511			No	Not Exceeded	
Incidental	2023:04:19 3:10 PM	Yes	Caribou	20	Walking	N	500	111	West	No	-96.0240	65.0481			No	Not Exceeded	
Road	2023:04:20 7:17 AM	Yes	Caribou	5	Walking	SE	400	119	West	No	-96.0648	65.0932			No	Not Exceeded	
Road	2023:04:21 9:15 AM	No		N/A		N/A	N/A	N/A			N/A	N/A					
Incidental	2023:04:21 1:44 PM	Yes	Caribou	6	Walking	SW	512	153	West	No	-96.4763	65.2482			No	Not Exceeded	
Incidental	2023:04:21 1:44 PM	Yes	Caribou	14	Walking	W	500	137	West	No	-96.2415	65.2194			No	Not Exceeded	
Road	2023:04:22 10:08 AM	Yes	Caribou	7	Walking	SE	400	115	West	No	-96.0090	65.0711			No	Not Exceeded	
Road	2023:04:22 10:08 AM	Yes	Caribou	15	Walking	SE	1300	115	West	No	-96.0090	65.0711			No	Not Exceeded	
Road	2023:04:22 10:08 AM	Yes	Caribou	22	Foraging	N/A	500	136	West	No	-96.2274	65.2131			No	Not Exceeded	
Road	2023:04:22 10:08 AM	Yes	Caribou	5	Walking	S	1500	151	West	No	-96.4662	65.2345			No	Not Exceeded	
Road	2023:04:22 10:08 AM	Yes	Caribou	167	Walking	E	300	157	West	No	-96.4158	65.2712			No	Exceeded	Road closed
Road	2023:04:22 10:08 AM	Yes	Caribou	8	Walking	E	50	157	East	Yes	-96.4158	65.2712			No	Not Exceeded	
Road	2023:04:22 10:08 AM	Yes	Caribou	10	Standing	N/A	500	163	West	No	-96.4304	65.3174			No	Not Exceeded	
Road	2023:04:22 10:08 AM	Yes	Caribou	75	Walking	NE	500	170	West	No	-96.5498	65.3466			No	Exceeded	Road closed
Road	2023:04:22 10:08 AM	Yes	Caribou	17	Walking	SW	800	172	West	No	-96.5867	65.3550			No	Not Exceeded	



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2023:04:22 3:51 PM	Yes	Caribou	57	Walking	SE	25	172	West	No	-96.5867	65.3550			No	Exceeded	Road closed
Incidental	2023:04:22 3:51 PM	Yes	Caribou	26	Standing	N/A	200	170	West	No	-96.5498	65.3466			No	Not Exceeded	
Incidental	2023:04:22 3:51 PM	Yes	Caribou	10	Standing	N/A	300	169	North,West	No	-96.5370	65.3400			No	Not Exceeded	
Incidental	2023:04:22 3:51 PM	Yes	Caribou	34	Standing	N/A	400	132	West	No	-96.1646	65.1940			No	Exceeded	Road closed
Incidental	2023:04:22 3:51 PM	Yes	Caribou	25	Standing	N/A	200	163	West	No	-96.4304	65.3174			No	Not Exceeded	
Incidental	2023:04:22 3:51 PM	Yes	Caribou	38	Standing	N/A	100	162	West	No	-96.4168	65.3115			No	Exceeded	Road closed
Incidental	2023:04:22 3:51 PM	Yes	Caribou	44	Standing	N/A	200	161	West	No	-96.4121	65.3032			No	Exceeded	Road closed
Incidental	2023:04:22 3:51 PM	Yes	Caribou	72	Standing	N/A	100	160	West	No	-96.4136	65.2943			No	Exceeded	Road closed
Incidental	2023:04:22 3:51 PM	Yes	Caribou	2	Walking	N/A	100	152	West	No	-96.4762	65.2418			No	Not Exceeded	
Incidental	2023:04:22 3:51 PM	Yes	Caribou	36	Standing	N/A	200	135	West	No	-96.2080	65.2089			No	Exceeded	Road closed
Incidental	2023:04:22 3:51 PM	Yes	Caribou	10	Walking	S	200	129	West	No	-96.1459	65.1690			No	Not Exceeded	
Incidental	2023:04:22 3:51 PM	Yes	Caribou	2	Walking	SE	300	128	West	No	-96.1358	65.1614			No	Not Exceeded	
Incidental	2023:04:22 3:51 PM	Yes	Caribou	2	Standing	N/A	200	120	West	No	-96.0728	65.1002			No	Not Exceeded	
Incidental	2023:04:22 3:51 PM	Yes	Caribou	12	Walking	SE	400	114	West	No	-96.0042	65.0668			No	Not Exceeded	
Incidental	2023:04:22 3:51 PM	Yes	Caribou	71	Walking	E	300	113	West	No	-95.9933	65.0588			No	Exceeded	Road closed
Road	2023:04:23 4:46 AM	Yes	Caribou	80	Foraging	E	1000	115	West	No	-96.0090	65.0711			No	Exceeded	Road closed
Road	2023:04:23 4:46 AM	Yes	Caribou	7	Walking	E	600	124	West	No	-96.1081	65.1315			No	Not Exceeded	
Road	2023:04:23 4:46 AM	Yes	Caribou	14	Alert	E	400	129	West	No	-96.1459	65.1690			No	Not Exceeded	
Road	2023:04:23 4:46 AM	Yes	Caribou	150	Walking	W	100	150	West	No	-96.4501	65.2302			No	Exceeded	Road closed
Road	2023:04:23 4:46 AM	Yes	Caribou	153	Foraging	N/A	300	153	West	No	-96.4763	65.2482			No	Exceeded	Road closed
Road	2023:04:23 4:46 AM	Yes	Caribou	52	Walking	N	300	156	West	No	-96.4521	65.2622			No	Exceeded	Road closed
Road	2023:04:23 4:46 AM	Yes	Caribou	225	Foraging	N	250	159	West	No	-96.4089	65.2860			No	Exceeded	Road closed
Road	2023:04:23 4:46 AM	Yes	Caribou	155	Foraging	NE	300	160	West	No	-96.4136	65.2943			No	Exceeded	Road closed
Road	2023:04:23 4:46 AM	Yes	Caribou	63	Foraging	N/A	300	161	Both	No	-96.4121	65.3032			No	Exceeded	Road closed
Road	2023:04:23 4:46 AM	Yes	Caribou	110	Foraging	E	300	162	Both	No	-96.4168	65.3115			No	Exceeded	Road closed
Road	2023:04:23 4:46 AM	Yes	Caribou	5	Foraging	N/A	300	172	West	No	-96.5867	65.3550			No	Not Exceeded	
Road	2023:04:23 7:54 AM	Yes	Caribou	28	Walking	E	1300	113	East	No	-95.9933	65.0588			No	Not Exceeded	
Road	2023:04:23 7:54 AM	Yes	Caribou	17	Foraging	N/A	25	115	West	No	-96.0090	65.0711			No	Not Exceeded	
Road	2023:04:23 7:54 AM	Yes	Caribou	36	Walking	SE	400	117	West	No	-96.0394	65.0837			No	Exceeded	Road closed
Road	2023:04:23 7:54 AM	Yes	Caribou	4	Walking	SE	700	118	West	No	-96.0551	65.0865			No	Not Exceeded	
Road	2023:04:23 7:54 AM	Yes	Caribou	73	Walking	E	0	112	Both	Yes	-96.0022	65.0511			No	Exceeded	Road closed
Road	2023:04:23 7:54 AM	Yes	Caribou	48	Walking	E	600	117	West	No	-96.0394	65.0837			No	Exceeded	Road closed
Road	2023:04:23 7:54 AM	Yes	Caribou	58	Foraging	N/A	75	119	West	No	-96.0648	65.0932			No	Exceeded	Road closed
Road	2023:04:23 7:54 AM	Yes	Caribou	32	Lying Down	N/A	1500	121	West	No	-96.0864	65.1071			No	Not Exceeded	
Road	2023:04:23 7:54 AM	Yes	Caribou	11	Walking	SE	300	124	West	No	-96.1081	65.1315			No	Not Exceeded	
Road	2023:04:23 7:54 AM	Yes	Caribou	59	Walking	NW	25	125	West	No	-96.1079	65.1391			No	Exceeded	Road closed
Road	2023:04:23 7:54 AM	Yes	Caribou	6	Walking	SE	1000	130	West	No	-96.1528	65.1782			No	Not Exceeded	
Road	2023:04:23 7:54 AM	Yes	Caribou	20	Walking	S	2000	134	West	No	-96.1929	65.2048			No	Not Exceeded	
Road	2023:04:23 7:54 AM	Yes	Caribou	9	Walking	SE	100	134	East	No	-96.1929	65.2048			No	Not Exceeded	
Road	2023:04:23 7:54 AM	Yes	Caribou	30	Walking	N	150	135	West	No	-96.2080	65.2089			No	Not Exceeded	
Road	2023:04:23 7:54 AM	Yes	Caribou	4	Walking	N	2000	136	West	No	-96.2274	65.2131			No	Not Exceeded	
Road	2023:04:23 7:54 AM	Yes	Caribou	24	Standing	N/A	1800	145	West	No	-96.3769	65.2242			No	Not Exceeded	
Road	2023:04:23 7:54 AM	Yes	Caribou	56	Walking	SE	600	147	West	No	-96.4184	65.2279			No	Exceeded	Road closed
Road	2023:04:23 7:54 AM	Yes	Caribou	18	Foraging	N/A	600	148	West	No	-96.4274	65.2205			No	Not Exceeded	
Road	2023:04:23 7:54 AM	Yes	Caribou	17	Foraging	N/A	400	151	West	No	-96.4662	65.2345			No	Not Exceeded	
Road	2023:04:23 7:54 AM	Yes	Caribou	54	Walking	NE	300	153	West	No	-96.4763	65.2482			No	Exceeded	Road closed
Road	2023:04:23 7:54 AM	Yes	Caribou	224	Walking	NE	20	163	West	No	-96.4304	65.3174			No	Exceeded	Road closed
Road	2023:04:23 7:54 AM	Yes	Muskox	8	Foraging	N/A	500	162	East	No	-96.4168	65.3115			No	Not Exceeded	
Road	2023:04:23 7:54 AM	Yes	Caribou	280	Walking	NE	30	164	West	No	-96.4472	65.3226			No	Exceeded	Road closed
Road	2023:04:23 7:54 AM	Yes	Caribou	7	Standing	N/A	400	173	West	No	-96.6030	65.3597			No	Not Exceeded	
Road	2023:04:23 7:54 AM	Yes	Caribou	41	Standing	N/A	600	174	West	No	-96.6013	65.3683			No	Exceeded	Road closed
Road	2023:04:23 7:54 AM	Yes	Caribou	27	Foraging	N/A	1000	177	West	No	-96.6085	65.3943			No	Not Exceeded	
Incidental	2023:04:23 4:07 PM	Yes	Caribou	37	Standing	N/A	400	139	West	No	-96.2800	65.2269			No	Exceeded	Road closed
Incidental	2023:04:23 4:07 PM	Yes	Caribou	56	Lying Down	N/A	200	139	West	No	-96.2800	65.2269			No	Exceeded	Road closed
Incidental	2023:04:23 4:07 PM	Yes	Caribou	8	Standing	N/A	100	138	East	No	-96.2602	65.2238			No	Not Exceeded	
Incidental	2023:04:23 4:07 PM	Yes	Caribou	100	Walking	SE	400	135	West	No	-96.2080	65.2089			No	Exceeded	Road closed
Incidental	2023:04:23 4:07 PM	Yes	Caribou	12	Walking	S	500	134	West	No	-96.1929	65.2048			No	Not Exceeded	
Incidental	2023:04:23 4:07 PM	Yes	Caribou	37	Foraging	N/A	30	133	West	No	-96.1754	65.1992			No	Exceeded	Road closed
Incidental	2023:04:23 4:07 PM	Yes	Caribou	3	Standing	N/A	100	132	East	No	-96.1646	65.1940			No	Not Exceeded	
Incidental	2023:04:23 4:07 PM	Yes	Caribou	31	Lying Down	N/A	300	132	West	No	-96.1646	65.1940			No	Not Exceeded	



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2023:04:23 4:07 PM	Yes	Caribou	73	Foraging	N/A	57	130	West	No	-96.1528	65.1782			No	Exceeded	Road closed
Incidental	2023:04:23 4:07 PM	Yes	Caribou	136	Running	SE	500	127	West	No	-96.1255	65.1538			No	Exceeded	Road closed
Incidental	2023:04:23 4:07 PM	Yes	Caribou	34	Foraging	N/A	400	126	West	No	-96.1108	65.1482			No	Exceeded	Road closed
Incidental	2023:04:23 4:07 PM	Yes	Caribou	17	Walking	SE	2300	124	West	No	-96.1081	65.1315			No	Not Exceeded	
Incidental	2023:04:23 4:07 PM	Yes	Caribou	177	Walking	SE	50	121	West	No	-96.0864	65.1071			No	Exceeded	Road closed
Incidental	2023:04:23 4:07 PM	Yes	Caribou	47	Walking	SE	500	120	West	No	-96.0728	65.1002			No	Exceeded	Road closed
Incidental	2023:04:23 4:07 PM	Yes	Caribou	67	Walking	SE	50	117	West	No	-96.0394	65.0837			No	Exceeded	Road closed
Incidental	2023:04:23 4:07 PM	Yes	Caribou	17	Walking	SE	800	115	West	No	-96.0090	65.0711			No	Not Exceeded	
Incidental	2023:04:23 4:07 PM	Yes	Caribou	13	Walking	E	500	114	West	No	-96.0042	65.0668			No	Not Exceeded	
Incidental	2023:04:23 4:07 PM	Yes	Caribou	6	Walking	E	100	116	West	No	-96.0206	65.0803			No	Not Exceeded	
Incidental	2023:04:23 4:07 PM	Yes	Caribou	129	Foraging	N/A	100	113	East	No	-95.9933	65.0588			No	Exceeded	Road closed
Incidental	2023:04:23 4:07 PM	Yes	Caribou	19	Walking	SE	100	113	West	No	-95.9933	65.0588			No	Not Exceeded	
Road	2023:04:24 4:27 AM	Yes	Caribou	31	Feeding	N/A	800	111	West	No	-96.0240	65.0481			No	Not Exceeded	
Road	2023:04:24 4:27 AM	Yes	Caribou	44	Feeding	N/A	200	113	West	No	-95.9933	65.0588			No	Exceeded	Road closed
Road	2023:04:24 4:27 AM	Yes	Wolf	4	Running	E	0	121	Both	No	-96.0864	65.1071			No	Not Exceeded	
Road	2023:04:24 4:27 AM	Yes	Caribou	12	Walking	S	100	123	Both	No	-96.1044	65.1222			No	Not Exceeded	
Road	2023:04:24 4:27 AM	Yes	Caribou	17	Walking	SE	100	125	West	No	-96.1079	65.1391			No	Not Exceeded	
Road	2023:04:24 4:27 AM	Yes	Caribou	112	Walking	SE	200	126	West	No	-96.1108	65.1482			No	Exceeded	Road closed
Road	2023:04:24 4:27 AM	Yes	Caribou	26	Walking	SE	400	128	West	No	-96.1358	65.1614			No	Not Exceeded	
Road	2023:04:24 4:27 AM	Yes	Caribou	18	Walking	SE	500	129	West	No	-96.1459	65.1690			No	Not Exceeded	
Road	2023:04:24 4:27 AM	Yes	Caribou	52	Feeding	SE	10	131	West	No	-96.1607	65.1855			No	Exceeded	Road closed
Road	2023:04:24 4:27 AM	Yes	Caribou	39	Feeding	SE	75	137	West	No	-96.2415	65.2194			No	Exceeded	Road closed
Road	2023:04:24 4:27 AM	Yes	Muskox	6	Feeding	N/A	50	142	East	No	-96.3371	65.2222			No	Not Exceeded	
Road	2023:04:24 4:27 AM	Yes	Caribou	72	Walking	SE	150	148	West	No	-96.4274	65.2205			No	Exceeded	Road closed
Road	2023:04:24 4:27 AM	Yes	Caribou	550	Feeding	N/A	20	151	West	No	-96.4662	65.2345			No	Exceeded	Road closed
Road	2023:04:24 4:27 AM	Yes	Caribou	18	Lying Down	N/A	200	156	West	No	-96.4521	65.2622			No	Not Exceeded	
Road	2023:04:24 4:27 AM	Yes	Caribou	10	Feeding	N/A	500	158	West	No	-96.4047	65.2778			No	Not Exceeded	
Road	2023:04:24 4:27 AM	Yes	Caribou	40	Feeding	N/A	100	159	Both	No	-96.4089	65.2860			No	Exceeded	Road closed
Road	2023:04:24 4:27 AM	Yes	Muskox	6	Feeding	N/A	150	160	East	No	-96.4136	65.2943			No	Not Exceeded	
Road	2023:04:24 4:27 AM	Yes	Caribou	330	Feeding	N/A	0	162	Both	Yes	-96.4168	65.3115			No	Exceeded	Road closed
Road	2023:04:24 4:27 AM	Yes	Caribou	67	Standing	N/A	0	164	Both	Yes	-96.4472	65.3226			No	Exceeded	Road closed
Road	2023:04:24 4:27 AM	Yes	Caribou	880	Walking	NE	0	168	Both	Yes	-96.5240	65.3335			No	Exceeded	Road closed
Incidental	2023:04:24 8:52 AM	Yes	Caribou	350	Foraging	N	20	167	West	No	-96.5061	65.3284			No	Exceeded	Road is closed to non essential traffic. Convoy is done for the bus and cube truck (kitchen)
Incidental	2023:04:24 8:52 AM	Yes	Caribou	275	Foraging	E	0	170	West,East	Yes	-96.5498	65.3466			No	Exceeded	Road is closed to non essential traffic. Convoy is done for the bus and cube truck (kitchen)
Incidental	2023:04:24 8:52 AM	Yes	Caribou	200	Walking	N	800	172	West	No	-96.5867	65.3550			No	Exceeded	Road is closed to non essential traffic. Convoy is done for the bus and cube truck (kitchen)
Incidental	2023:04:24 8:52 AM	Yes	Caribou	57	Foraging	N/A	800	174	West	No	-96.6013	65.3683			No	Exceeded	Road is closed to non essential traffic. Convoy is done for the bus and cube truck (kitchen)

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2023:04:24 8:52 AM	Yes	Caribou	168	Walking	N	750	175	West	No	-96.6024	65.3773			No	Exceeded	Road is closed to non essential traffic. Convoy is done for the bus and cube truck (kitchen)
Incidental	2023:04:24 8:52 AM	Yes	Caribou	100	Foraging	N/A	1000	178	West	No	-96.6219	65.4009			No	Exceeded	Road is closed to non essential traffic. Convoy is done for the bus and cube truck (kitchen)
Incidental	2023:04:24 8:52 AM	Yes	Caribou	45	Foraging	N/A	400	172	West	No	-96.5867	65.3550			No	Exceeded	Road is closed to non essential traffic. Convoy is done for the bus and cube truck (kitchen)
Incidental	2023:04:24 8:52 AM	Yes	Caribou	150	Resting	N/A	100	165	West	No	-96.4678	65.3239			No	Exceeded	Road is closed to non essential traffic. Convoy is done for the bus and cube truck (kitchen)
Incidental	2023:04:24 8:52 AM	Yes	Caribou	130	Foraging	N/A	400	163	West	No	-96.4304	65.3174			No	Exceeded	Road is closed to non essential traffic. Convoy is done for the bus and cube truck (kitchen)
Incidental	2023:04:24 8:52 AM	Yes	Caribou	100	Foraging	N/A	100	162	East	No	-96.4168	65.3115			No	Exceeded	Road is closed to non essential traffic. Convoy is done for the bus and cube truck (kitchen)
Incidental	2023:04:24 8:52 AM	Yes	Caribou	100	Foraging	N/A	100	161	West	No	-96.4121	65.3032			No	Exceeded	Road is closed to non essential traffic. Convoy is done for the bus and cube truck (kitchen)
Incidental	2023:04:24 8:52 AM	Yes	Caribou	150	Foraging	N/A	500	160	West	No	-96.4136	65.2943			No	Exceeded	Road is closed to non essential traffic. Convoy is done for the bus and cube truck (kitchen)
Incidental	2023:04:24 8:52 AM	Yes	Caribou	35	Resting	N/A	400	153	West	No	-96.4763	65.2482			No	Exceeded	Road is closed to non essential traffic. Convoy is done for the bus and cube truck (kitchen)
Incidental	2023:04:24 8:52 AM	Yes	Caribou	30	Foraging	N/A	600	152	West	No	-96.4762	65.2418			No	Not Exceeded	
Incidental	2023:04:24 8:52 AM	Yes	Caribou	100	Resting	N/A	350	151	West	No	-96.4662	65.2345			No	Exceeded	Road is closed to non essential traffic. Convoy is done for the bus and cube truck (kitchen)
Incidental	2023:04:24 8:52 AM	Yes	Caribou	7	Foraging	N/A	25	161	East	No	-96.4121	65.3032			No	Not Exceeded	



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023:04:25 3:57 AM	Yes	Caribou	24	Walking	S	500	123	West	No	-96.1044	65.1222			No	Not Exceeded	
Road	2023:04:25 3:57 AM	Yes	Caribou	24	Walking	S	1500	121	West	No	-96.0864	65.1071			No	Not Exceeded	
Road	2023:04:25 3:57 AM	Yes	Caribou	42	Walking	SE	100	125	Both	No	-96.1079	65.1391			No	Exceeded	Road closed
Road	2023:04:25 3:57 AM	Yes	Caribou	39	Walking	SE	50	127	West	No	-96.1255	65.1538			No	Exceeded	Road closed
Road	2023:04:25 3:57 AM	Yes	Caribou	11	Standing	N/A	50	134	West	No	-96.1929	65.2048			No	Not Exceeded	
Road	2023:04:25 3:57 AM	Yes	Caribou	102	Feeding	N/A	75	135	West	No	-96.2080	65.2089			No	Exceeded	Road closed
Road	2023:04:25 3:57 AM	Yes	Caribou	150	Feeding	NE	75	137	West	No	-96.2415	65.2194			No	Exceeded	Road closed
Road	2023:04:25 3:57 AM	Yes	Caribou	58	Walking	S	100	140	West	No	-96.2985	65.2220			No	Exceeded	Road closed
Road	2023:04:25 3:57 AM	Yes	Caribou	255	Walking	NE	0	142	Both	Yes	-96.3371	65.2222			No	Exceeded	Road closed
Road	2023:04:25 3:57 AM	Yes	Caribou	44	Standing	N/A	0	149	Both	Yes	-96.4426	65.2233			No	Exceeded	Road closed
Road	2023:04:25 3:57 AM	Yes	Caribou	27	Walking	NE	200	151	West	No	-96.4662	65.2345			No	Not Exceeded	
Road	2023:04:25 3:57 AM	Yes	Caribou	52	Feeding	N/A	80	155	Both	No	-96.4342	65.2676			No	Exceeded	Road closed
Road	2023:04:25 3:57 AM	Yes	Caribou	100	Resting	N/A	0	156	Both	Yes	-96.4521	65.2622			No	Exceeded	Road closed
Road	2023:04:25 3:57 AM	Yes	Caribou	26	Walking	NE	300	158	West	No	-96.4047	65.2778			No	Not Exceeded	
Road	2023:04:25 3:57 AM	Yes	Caribou	74	Standing	W	5	164	Both	No	-96.4472	65.3226			No	Exceeded	Road closed
Incidental	2023:04:25 8:44 AM	Yes	Caribou	28	Walking	E	0	164	West,East	Yes	-96.4472	65.3226			No	Not Exceeded	
Incidental	2023:04:25 8:44 AM	Yes	Caribou	65	Walking	N	65	164	West	No	-96.4472	65.3226			No	Exceeded	Road is closed to non essential traffic. Convoy is done for daily ride and cube truck(kitchen)
Incidental	2023:04:25 8:44 AM	Yes	Caribou	37	Walking	N	37	169	West	No	-96.5370	65.3400			No	Exceeded	Road is closed to non essential traffic. Convoy is done for daily ride and cube truck(kitchen)
Incidental	2023:04:25 8:44 AM	Yes	Caribou	49	Resting	N/A	300	170	West,East	No	-96.5498	65.3466			No	Exceeded	Road is closed to non essential traffic. Convoy is done for daily ride and cube truck(kitchen)
Incidental	2023:04:25 8:44 AM	Yes	Caribou	35	Foraging	N/A	300	171	West	No	-96.5686	65.3520			No	Exceeded	Road is closed to non essential traffic. Convoy is done for daily ride and cube truck(kitchen)
Incidental	2023:04:25 8:44 AM	Yes	Caribou	55	Foraging	N/A	100	175	West	No	-96.6024	65.3773			No	Exceeded	Road is closed to non essential traffic. Convoy is done for daily ride and cube truck(kitchen)
Incidental	2023:04:25 8:44 AM	Yes	Caribou	12	Foraging	N/A	20	176	West	No	-96.6038	65.3862			No	Not Exceeded	
Incidental	2023:04:25 10:12 AM	Yes	Caribou	500	Standing	SE	20	136	East	No	-96.2274	65.2131			No	Exceeded	Road closed
Incidental	2023:04:25 1:29 PM	Yes	Caribou	5	Walking	N	300	176	West	No	-96.6038	65.3862			No	Not Exceeded	
Incidental	2023:04:25 1:29 PM	Yes	Caribou	26	Resting	N/A	600	174	West	No	-96.6013	65.3683			No	Not Exceeded	
Incidental	2023:04:25 1:29 PM	Yes	Caribou	56	Foraging	N/A	200	170	West	No	-96.5498	65.3466			No	Exceeded	The road is closed to non essential traffic.
Incidental	2023:04:25 1:29 PM	Yes	Caribou	12	Foraging	N/A	75	169	West	No	-96.5370	65.3400			No	Not Exceeded	
Incidental	2023:04:25 1:29 PM	Yes	Caribou	59	Walking	N	650	166	West	No	-96.4882	65.3253			No	Exceeded	The road is closed to non essential traffic.
Incidental	2023:04:25 1:29 PM	Yes	Caribou	100	Walking	N	500	165	West	No	-96.4678	65.3239			No	Exceeded	The road is closed to non essential traffic.

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2023:04:25 1:29 PM	Yes	Caribou	66	Foraging	N/A	400	163	West	No	-96.4304	65.3174			No	Exceeded	The road is closed to non essential traffic.
Incidental	2023:04:25 1:29 PM	Yes	Caribou	138	Foraging	N/A	150	161	West	No	-96.4121	65.3032			No	Exceeded	The road is closed to non essential traffic.
Incidental	2023:04:25 3:28 PM	Yes	Caribou	35	Foraging	N/A	1500	135	West	No	-96.2080	65.2089			No	Exceeded	Road closed
Incidental	2023:04:25 3:28 PM	Yes	Caribou	45	Walking	E	600	134	East	No	-96.1929	65.2048			No	Exceeded	Road closed
Incidental	2023:04:25 3:28 PM	Yes	Caribou	148	Feeding	N/A	100	133	West	No	-96.1754	65.1992			No	Exceeded	Road closed
Incidental	2023:04:25 3:28 PM	Yes	Caribou	132	Walking	E	350	127	West,East	No	-96.1255	65.1538			No	Exceeded	Road closed
Incidental	2023:04:25 3:28 PM	Yes	Caribou	114	Walking	E	500	124	West	No	-96.1081	65.1315			No	Exceeded	Road closed
Incidental	2023:04:25 3:28 PM	Yes	Caribou	73	Foraging	N/A	450	117	West	No	-96.0394	65.0837			No	Exceeded	Road closed
Incidental	2023:04:25 3:28 PM	Yes	Caribou	185	Walking	E	750	113	East	No	-96.0022	65.0511			No	Exceeded	Road closed
Road	2023:04:26 3:55 AM	Yes	Caribou	8	Walking	S	150	119	West	No	-96.0648	65.0932			No	Not Exceeded	
Road	2023:04:26 3:55 AM	Yes	Caribou	47	Feeding	SE	100	120	West	No	-96.0728	65.1002			No	Exceeded	Road closed
Road	2023:04:26 3:55 AM	Yes	Caribou	39	Standing	N/A	150	121	West	No	-96.0864	65.1071			No	Exceeded	Road closed
Road	2023:04:26 3:55 AM	Yes	Caribou	8	Feeding	N/A	200	123	West	No	-96.1044	65.1222			No	Not Exceeded	
Road	2023:04:26 3:55 AM	Yes	Caribou	6	Feeding	N/A	125	128	West	No	-96.1358	65.1614			No	Not Exceeded	
Road	2023:04:26 3:55 AM	Yes	Caribou	72	Feeding	N/A	25	132	Both	No	-96.1646	65.1940			No	Exceeded	Road closed
Road	2023:04:26 3:55 AM	Yes	Caribou	12	Walking	SE	100	134	West	No	-96.1929	65.2048			No	Not Exceeded	
Road	2023:04:26 3:55 AM	Yes	Caribou	17	Lying Down	N/A	50	136	West	No	-96.2274	65.2131			No	Not Exceeded	
Road	2023:04:26 3:55 AM	Yes	Caribou	84	Standing	N/A	20	152	West	No	-96.4762	65.2418			No	Exceeded	Road closed
Road	2023:04:26 3:55 AM	Yes	Caribou	134	Lying Down	N/A	100	153	West	No	-96.4763	65.2482			No	Exceeded	Road closed
Road	2023:04:26 3:55 AM	Yes	Caribou	77	Standing	N/A	40	154	West	No	-96.4630	65.2546			No	Exceeded	Road closed
Road	2023:04:26 3:55 AM	Yes	Caribou	5	Feeding	N/A	30	155	East	No	-96.4342	65.2676			No	Not Exceeded	
Road	2023:04:26 3:55 AM	Yes	Caribou	8	Resting	N/A	50	156	East	No	-96.4521	65.2622			No	Not Exceeded	
Road	2023:04:26 3:55 AM	Yes	Muskox	6	Standing	N/A	75	157	East	No	-96.4158	65.2712			No	Not Exceeded	
Road	2023:04:26 3:55 AM	Yes	Caribou	10	Alert	N/A	50	159	West	No	-96.4089	65.2860			No	Not Exceeded	
Road	2023:04:26 3:55 AM	Yes	Caribou	89	Walking	NE	200	160	West	No	-96.4136	65.2943			No	Exceeded	Road closed
Road	2023:04:26 3:55 AM	Yes	Caribou	24	Walking	NE	300	163	West	No	-96.4304	65.3174			No	Not Exceeded	
Road	2023:04:26 3:55 AM	Yes	Caribou	17	Feeding	N/A	150	165	West	No	-96.4678	65.3239			No	Not Exceeded	
Road	2023:04:26 3:55 AM	Yes	Caribou	9	Walking	NE	400	167	West	No	-96.5061	65.3284			No	Not Exceeded	
Road	2023:04:26 3:55 AM	Yes	Caribou	90	Walking	NE	20	168	Both	No	-96.5240	65.3335			No	Exceeded	Road closed
Road	2023:04:26 3:55 AM	Yes	Caribou	66	Resting	N/A	25	172	Both	No	-96.5867	65.3550			No	Exceeded	Road closed
Road	2023:04:26 3:55 AM	Yes	Caribou	10	Feeding	N/A	40	173	East	No	-96.6030	65.3597			No	Not Exceeded	
Road	2023:04:26 3:55 AM	Yes	Caribou	165	Standing	N/A	80	178	West	No	-96.6219	65.4009			No	Exceeded	Road closed
Road	2023:04:27 3:56 AM	Yes	Caribou	110	Walking	E	0	112	Both	Yes	-96.0022	65.0511			No	Exceeded	Road closed
Road	2023:04:27 3:56 AM	Yes	Caribou	9	Walking	SE	1000	114	West	No	-96.0042	65.0668			No	Not Exceeded	
Road	2023:04:27 3:56 AM	Yes	Caribou	11	Walking	S	400	127	West	No	-96.1255	65.1538			No	Not Exceeded	
Road	2023:04:27 3:56 AM	Yes	Caribou	18	Walking	S	40	134	West	No	-96.1929	65.2048			No	Not Exceeded	
Road	2023:04:27 3:56 AM	Yes	Caribou	19	Walking	NE	250	136	West	No	-96.2274	65.2131			No	Not Exceeded	
Road	2023:04:27 3:56 AM	Yes	Caribou	21	Feeding	N/A	20	137	West	No	-96.2415	65.2194			No	Not Exceeded	
Road	2023:04:27 3:56 AM	Yes	Caribou	18	Standing	S	1500	142	West	No	-96.3371	65.2222			No	Not Exceeded	
Road	2023:04:27 3:56 AM	Yes	Caribou	210	Running	W	75	151	West	No	-96.4662	65.2345			No	Exceeded	Road closed
Road	2023:04:27 3:56 AM	Yes	Wolf	2	Walking	SW	20	152	West	No	-96.4762	65.2418			No	Not Exceeded	
Road	2023:04:27 3:56 AM	Yes	Caribou	38	Walking	S	150	153	West	No	-96.4763	65.2482			No	Exceeded	Road closed
Road	2023:04:27 3:56 AM	Yes	Caribou	27	Standing	N/A	1700	154	West	No	-96.4630	65.2546			No	Not Exceeded	
Road	2023:04:27 3:56 AM	Yes	Caribou	78	Walking	NE	1500	155	West	No	-96.4342	65.2676			No	Exceeded	Road closed
Road	2023:04:27 3:56 AM	Yes	Caribou	92	Resting	N/A	15	159	Both	No	-96.4089	65.2860			No	Exceeded	Road closed
Road	2023:04:27 3:56 AM	Yes	Caribou	17	Walking	NE	1600	162	West	No	-96.4168	65.3115			No	Not Exceeded	
Road	2023:04:27 3:56 AM	Yes	Caribou	14	Walking	NE	100	171	West	No	-96.5686	65.3520			No	Not Exceeded	
Road	2023:04:27 3:56 AM	Yes	Caribou	310	Feeding	E	0	178	Both	Yes	-96.6219	65.4009			No	Exceeded	Road closed
Road	2023:04:28 3:58 AM	Yes	Caribou	3	Feeding	N/A	50	116	West	No	-96.0206	65.0803			No	Not Exceeded	
Road	2023:04:28 3:58 AM	Yes	Caribou	7	Walking	S	200	119	West	No	-96.0648	65.0932			No	Not Exceeded	
Road	2023:04:28 3:58 AM	Yes	Caribou	246	Walking	NE	300	136	West	No	-96.2274	65.2131			No	Exceeded	Road closed
Road	2023:04:28 3:58 AM	Yes	Caribou	39	Standing	N/A	75	138	West	No	-96.2602	65.2238			No	Exceeded	Road closed
Road	2023:04:28 3:58 AM	Yes	Caribou	24	Walking	NE	80	152	West	No	-96.4762	65.2418			No	Not Exceeded	
Road	2023:04:28 3:58 AM	Yes	Caribou	11	Feeding	N/A	100	154	West	No	-96.4630	65.2546			No	Not Exceeded	
Road	2023:04:28 3:58 AM	Yes	Caribou	3	Resting	E	150	157	East	No	-96.4158	65.2712			No	Not Exceeded	
Road	2023:04:28 3:58 AM	Yes	Caribou	5	Lying Down	N/A	10	169	East	No	-96.5370	65.3400			No	Not Exceeded	



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023:04:28 3:58 AM	Yes	Caribou	43	Walking	N	50	170	West	No	-96.5498	65.3466			No	Exceeded	Road closed
Road	2023:04:28 3:58 AM	Yes	Caribou	23	Running	NE	100	173	Both	No	-96.6030	65.3597			No	Not Exceeded	
Road	2023:04:28 3:58 AM	Yes	Caribou	16	Walking	NE	125	176	West	No	-96.6038	65.3862			No	Not Exceeded	
Road	2023:04:28 3:58 AM	Yes	Caribou	27	Feeding	N/A	100	177	West	No	-96.6085	65.3943			No	Not Exceeded	
Road	2023:04:28 3:58 AM	Yes	Caribou	110	Standing	E	75	178	Both	No	-96.6219	65.4009			No	Exceeded	Road closed
Road	2023:04:29 7:23 AM	Yes	Caribou	124	Lying Down	N/A	1000	113	East	No	-95.9933	65.0588			No	Exceeded	Road closed
Road	2023:04:29 7:23 AM	Yes	Caribou	180	Foraging	NE	0	116	Both	Yes	-96.0206	65.0803			No	Exceeded	Road closed
Road	2023:04:29 7:23 AM	Yes	Caribou	30	Foraging	NE	1	120	Both	Yes	-96.0728	65.1002			No	Not Exceeded	
Road	2023:04:29 7:23 AM	Yes	Caribou	28	Foraging	NW	80	128	West	No	-96.1358	65.1614			No	Not Exceeded	
Road	2023:04:29 7:23 AM	Yes	Caribou	32	Foraging	E	500	134	Both	No	-96.1929	65.2048			No	Not Exceeded	
Road	2023:04:29 7:23 AM	Yes	Caribou	135	Foraging	NE	100	138	Both	No	-96.2602	65.2238			No	Exceeded	Road closed
Road	2023:04:29 7:23 AM	Yes	Caribou	70	Foraging	E	290	140	West	No	-96.2985	65.2220			No	Exceeded	Road closed
Road	2023:04:29 7:23 AM	Yes	Caribou	136	Foraging	E	0	141	Both	Yes	-96.3181	65.2237			No	Exceeded	Road closed
Road	2023:04:29 7:23 AM	Yes	Caribou	30	Walking	NE	1	143	West	Yes	-96.3580	65.2237			No	Not Exceeded	
Road	2023:04:29 7:23 AM	Yes	Caribou	18	Resting	N/A	600	147	West	No	-96.4184	65.2279			No	Not Exceeded	
Road	2023:04:29 7:23 AM	Yes	Caribou	12	Resting	N/A	400	148	West	No	-96.4274	65.2205			No	Not Exceeded	
Road	2023:04:29 7:23 AM	Yes	Caribou	51	Resting	N/A	290	150	West	No	-96.4501	65.2302			No	Exceeded	Road closed
Road	2023:04:29 7:23 AM	Yes	Caribou	10	Walking	E	310	152	West	No	-96.4762	65.2418			No	Not Exceeded	
Road	2023:04:29 7:23 AM	Yes	Caribou	40	Walking	E	0	152	Both	Yes	-96.4762	65.2418			No	Exceeded	Road closed
Road	2023:04:29 7:23 AM	Yes	Caribou	317	Foraging	NE	400	154	Both	No	-96.4630	65.2546			No	Exceeded	Road closed
Road	2023:04:29 7:23 AM	Yes	Caribou	27	Foraging	E	1	156	Both	Yes	-96.4521	65.2622			No	Not Exceeded	
Road	2023:04:29 7:23 AM	Yes	Caribou	39	Foraging	N/A	5	158	Both	No	-96.4047	65.2778			No	Exceeded	Road closed
Road	2023:04:29 7:23 AM	Yes	Caribou	54	Resting	N/A	120	161	Both	No	-96.4121	65.3032			No	Exceeded	Road closed
Road	2023:04:29 7:23 AM	Yes	Caribou	200	Walking	SE	400	166	West	No	-96.4882	65.3253			No	Exceeded	Road closed
Road	2023:04:29 7:23 AM	Yes	Caribou	142	Walking	SE	300	169	West	No	-96.5370	65.3400			No	Exceeded	Road closed
Road	2023:04:29 7:23 AM	Yes	Caribou	46	Foraging	N/A	900	175	Both	No	-96.6024	65.3773			No	Exceeded	Road closed
Road	2023:04:29 7:23 AM	Yes	Caribou	140	Foraging	N/A	50	177	Both	No	-96.6085	65.3943			No	Exceeded	Road closed
Incidental	2023:04:29 6:40 PM	Yes	Caribou	73	Walking	E	0	150	West	Yes	-96.4501	65.2302			No	Exceeded	Road closed
Incidental	2023:04:29 6:40 PM	Yes	Caribou	145	Foraging	NE	0	147	West	Yes	-96.4184	65.2279			No	Exceeded	Road closed
Incidental	2023:04:29 6:40 PM	Yes	Caribou	150	Foraging	N	0	146	West	Yes	-96.3980	65.2263			No	Exceeded	Road closed
Incidental	2023:04:29 6:40 PM	Yes	Caribou	250	Lying Down	N/A	300	144	West	No	-96.0022	65.0511			No	Exceeded	Road closed
Incidental	2023:04:29 6:40 PM	Yes	Caribou	300	Resting	N/A	230	142	West	No	-96.3371	65.2222			No	Exceeded	Road closed
Incidental	2023:04:29 6:40 PM	Yes	Caribou	245	Resting	N/A	600	138	West	No	-96.2602	65.2238			No	Exceeded	Road closed
Road	2023:04:30 4:02 AM	Yes	Caribou	10	Feeding	N/A	75	110	West	No	-96.0407	65.0414			No	Not Exceeded	
Road	2023:04:30 4:02 AM	Yes	Caribou	10	Walking	S	150	126	West	No	-96.1108	65.1482			No	Not Exceeded	
Road	2023:04:30 4:02 AM	Yes	Caribou	9	Walking	NE	200	128	West	No	-96.1358	65.1614			No	Not Exceeded	
Road	2023:04:30 4:02 AM	Yes	Caribou	6	Running	N	75	135	West	No	-96.2080	65.2089			No	Not Exceeded	
Road	2023:04:30 4:02 AM	Yes	Caribou	22	Feeding	N/A	100	136	West	No	-96.2274	65.2131			No	Not Exceeded	
Road	2023:04:30 4:02 AM	Yes	Caribou	74	Trotting/running	S	300	145	West	No	-96.3769	65.2242			No	Exceeded	Road closed
Road	2023:04:30 4:02 AM	Yes	Caribou	7	Walking	W	0	147	Both	No	-96.4184	65.2279			No	Not Exceeded	
Road	2023:04:30 4:02 AM	Yes	Caribou	11	Standing	N/A	50	149	East	No	-96.4426	65.2233			No	Not Exceeded	
Road	2023:04:30 4:02 AM	Yes	Caribou	18	Standing	E	60	151	East	No	-96.4662	65.2345			No	Not Exceeded	
Road	2023:04:30 4:02 AM	Yes	Caribou	12	Walking	NE	250	152	West	No	-96.4762	65.2418			No	Not Exceeded	
Road	2023:04:30 4:02 AM	Yes	Caribou	18	Walking	E	250	152	East	No	-96.4762	65.2418			No	Not Exceeded	
Road	2023:04:30 4:02 AM	Yes	Caribou	42	Walking	E	300	155	East	No	-96.4342	65.2676			No	Exceeded	Road closed
Road	2023:04:30 4:02 AM	Yes	Muskox	5	Lying Down	N/A	30	156	East	No	-96.4521	65.2622			No	Not Exceeded	
Road	2023:04:30 4:02 AM	Yes	Caribou	27	Feeding	E	0	157	Both	No	-96.4158	65.2712			No	Not Exceeded	
Road	2023:04:30 4:02 AM	Yes	Caribou	21	Feeding	N/A	75	158	Both	No	-96.4047	65.2778			No	Not Exceeded	
Road	2023:04:30 4:02 AM	Yes	Caribou	18	Feeding	N	50	162	West	No	-96.4168	65.3115			No	Not Exceeded	
Road	2023:04:30 4:02 AM	Yes	Caribou	14	Walking	NE	300	163	West	No	-96.4304	65.3174			No	Not Exceeded	
Road	2023:04:30 4:02 AM	Yes	Caribou	8	Walking	E	0	163	Both	Yes	-96.4304	65.3174			No	Not Exceeded	
Road	2023:04:30 4:02 AM	Yes	Caribou	43	Feeding	E	0	164	Both	Yes	-96.4472	65.3226			No	Exceeded	Road closed
Road	2023:04:30 4:02 AM	Yes	Caribou	38	Standing	N/A	100	167	West	No	-96.5061	65.3284			No	Exceeded	Road closed
Road	2023:04:30 4:02 AM	Yes	Caribou	24	Resting	N/A	250	170	West	No	-96.5498	65.3466			No	Not Exceeded	
Road	2023:04:30 4:02 AM	Yes	Caribou	102	Standing	E	0	176	Both	No	-96.6038	65.3862			No	Exceeded	Road closed
Road	2023:04:30 4:02 AM	Yes	Caribou	40	Feeding	N/A	150	177	West	No	-96.6085	65.3943			No	Exceeded	Road closed
Road	2023:05:01 12:35 PM	Yes	Caribou	111	Foraging	N/A	200	121	West	No	-96.0864	65.1071			No	Exceeded	Road closed
Road	2023:05:01 12:35 PM	Yes	Caribou	200	Resting	N	2000	127	West	No	-96.1255	65.1538			No	Exceeded	Road closed
Road	2023:05:01 12:35 PM	Yes	Caribou	127	Foraging	E	0	132	Both	Yes	-96.1646	65.1940			No	Exceeded	Road closed



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023:05:01 12:35 PM	Yes	Caribou	54	Foraging	E	450	133	West	No	-96.1754	65.1992			No	Exceeded	Road closed
Road	2023:05:01 12:35 PM	Yes	Caribou	112	Walking	E	0	135	Both	Yes	-96.2080	65.2089			No	Exceeded	Road closed
Road	2023:05:01 12:35 PM	Yes	Caribou	55	Foraging	N/A	310	136	West	No	-96.2274	65.2131			No	Exceeded	Road closed
Road	2023:05:01 12:35 PM	Yes	Caribou	370	Foraging	N/A	1	137	West	Yes	-96.2415	65.2194			No	Exceeded	Road closed
Road	2023:05:01 12:35 PM	Yes	Caribou	160	Foraging	SE	1	145	West	No	-96.3769	65.2242			No	Exceeded	Road closed
Road	2023:05:01 12:35 PM	Yes	Caribou	87	Walking	SE	990	147	West	No	-96.4184	65.2279			No	Exceeded	Road closed
Road	2023:05:01 12:35 PM	Yes	Caribou	27	Foraging	N/A	60	148	West	No	-96.4274	65.2205			No	Not Exceeded	
Road	2023:05:01 12:35 PM	Yes	Caribou	23	Lying Down	N/A	26	157	East	No	-96.4158	65.2712			No	Not Exceeded	
Road	2023:05:01 12:35 PM	Yes	Caribou	49	Foraging	E	28	161	Both	No	-96.4121	65.3032			No	Exceeded	Road closed
Road	2023:05:01 12:35 PM	Yes	Caribou	120	Foraging	NE	0	165	Both	Yes	-96.4678	65.3239			No	Exceeded	Road closed
Road	2023:05:01 12:35 PM	Yes	Caribou	41	Foraging	SE	40	167	West	No	-96.5061	65.3284			No	Exceeded	Road closed
Road	2023:05:01 12:35 PM	Yes	Caribou	121	Foraging	SE	60	168	West	No	-96.5240	65.3335			No	Exceeded	Road closed
Road	2023:05:01 12:35 PM	Yes	Caribou	29	Foraging	S	50	172	West	No	-96.5867	65.3550			No	Not Exceeded	
Road	2023:05:01 12:35 PM	Yes	Caribou	44	Foraging	N/A	300	176	West	No	-96.6038	65.3862			No	Exceeded	Road closed
Road	2023:05:02 7:12 AM	Yes	Caribou	10	Foraging	NE	120	129	West	No	-96.1459	65.1690			No	Not Exceeded	
Road	2023:05:02 7:12 AM	Yes	Caribou	25	Foraging	N/A	50	157	East	No	-96.4158	65.2712			No	Not Exceeded	
Road	2023:05:02 7:12 AM	Yes	Caribou	75	Walking	S	600	162	West	No	-96.4168	65.3115			No	Exceeded	Road closed
Road	2023:05:02 7:12 AM	Yes	Caribou	30	Feeding	N/A	100	166	West	No	-96.4882	65.3253			No	Not Exceeded	
Road	2023:05:02 7:12 AM	Yes	Caribou	9	Foraging	N/A	200	167	West	No	-96.5061	65.3284			No	Not Exceeded	
Road	2023:05:03 6:48 AM	Yes	Caribou	2	Foraging	N/A	200	119	East	No	-96.0648	65.0932			No	Not Exceeded	
Road	2023:05:03 6:48 AM	Yes	Caribou	3	Foraging	N/A	200	120	West	No	-96.0728	65.1002			No	Not Exceeded	
Road	2023:05:03 6:48 AM	Yes	Caribou	5	Walking	N	300	130	West	No	-96.1528	65.1782			No	Not Exceeded	
Road	2023:05:03 6:48 AM	Yes	Caribou	8	Walking	N/A	100	132	East	No	-96.1646	65.1940			No	Not Exceeded	
Road	2023:05:03 6:48 AM	Yes	Caribou	120	Resting	N/A	600	179	West	No	-96.0735	65.0212			No	Exceeded	The road is already closed due to caribou.
Road	2023:05:03 6:48 AM	Yes	Caribou	70	Foraging	N/A	100	134	West	No	-96.1929	65.2048			No	Exceeded	The road was already closed due to caribou
Road	2023:05:03 6:48 AM	Yes	Caribou	26	Walking	S	1200	134	West	No	-96.1929	65.2048			No	Not Exceeded	
Road	2023:05:03 6:48 AM	Yes	Caribou	5	Foraging	W	100	135	West	No	-96.2080	65.2089			No	Not Exceeded	
Road	2023:05:03 6:48 AM	Yes	Caribou	18	Resting	N/A	200	139	East	No	-96.2800	65.2269			No	Not Exceeded	
Road	2023:05:03 6:48 AM	Yes	Caribou	9	Standing	N/A	400	143	East	No	-96.3580	65.2237			No	Not Exceeded	
Road	2023:05:03 6:48 AM	Yes	Caribou	50	Walking	N	300	177	West	No	-96.6085	65.3943			No	Exceeded	The road is already closed due to caribou presence
Road	2023:05:03 6:48 AM	Yes	Caribou	5	Foraging	N/A	50	174	West	No	-96.6013	65.3683			No	Not Exceeded	
Road	2023:05:03 6:48 AM	Yes	Caribou	15	Walking	E	0	159	Both	Yes	-96.4089	65.2860			No	Not Exceeded	
Road	2023:05:04 12:35 PM	Yes	Caribou	5	Resting	W	1000	110	East	N/A	-96.0407	65.0414			No	Not Exceeded	
Road	2023:05:04 12:35 PM	Yes	Caribou	45	Walking	W	100	133	East	No	-96.1754	65.1992			No	Exceeded	Road closed
Road	2023:05:04 12:35 PM	Yes	Caribou	110	Walking	SW	2000	134	West	No	-96.1929	65.2048			No	Exceeded	Road closed
Road	2023:05:04 12:35 PM	Yes	Caribou	10	Trotting/running	SE	200	139	East	No	-96.2800	65.2269			No	Not Exceeded	
Road	2023:05:04 12:35 PM	Yes	Muskox	5	Feeding	N/A	300	140	East	No	-96.2985	65.2220			No	Not Exceeded	
Road	2023:05:04 12:35 PM	Yes	Caribou	50	Feeding	N/A	50	153	Both	No	-96.4763	65.2482			No	Exceeded	Road closed
Road	2023:05:04 12:35 PM	Yes	Caribou	14	Walking	S	20	155	Both	No	-96.4342	65.2676			No	Not Exceeded	
Road	2023:05:05 5:45 AM	Yes	Caribou	17	Standing	Not Recorded	75	177	West	No	-96.6085	65.3943			No	Not Exceeded	
Road	2023:05:05 5:45 AM	Yes	Caribou	46	Alert	N	350	170	West	No	-96.5498	65.3466			No	Exceeded	Road closed
Road	2023:05:05 5:45 AM	Yes	Caribou	14	Alert	W	300	168	West	No	-96.5240	65.3335			No	Not Exceeded	
Road	2023:05:05 5:45 AM	Yes	Caribou	41	Standing	N/A	100	163	West	No	-96.4304	65.3174			No	Exceeded	Road closed
Road	2023:05:05 5:45 AM	Yes	Caribou	19	Standing	S	500	161	West	No	-96.4121	65.3032			No	Not Exceeded	
Road	2023:05:05 5:45 AM	Yes	Caribou	7	Alert	S	50	159	East	No	-96.4089	65.2860			No	Not Exceeded	
Road	2023:05:05 5:45 AM	Yes	Caribou	37	Standing	S	50	157	Both	No	-96.4158	65.2712			No	Exceeded	Road closed
Road	2023:05:05 5:45 AM	Yes	Caribou	16	Lying Down	Not Recorded	100	156	East	No	-96.4521	65.2622			No	Not Exceeded	
Road	2023:05:05 5:45 AM	Yes	Caribou	3	Standing	E	50	151	East	No	-96.4662	65.2345			No	Not Exceeded	
Road	2023:05:05 6:00 AM	Yes	Caribou	3	Trotting/running	E	150	119	East	No	-96.0648	65.0932			No	Not Exceeded	
Road	2023:05:05 6:00 AM	Yes	Caribou	8	Foraging	N/A	300	122	West	No	-96.0971	65.1148			No	Not Exceeded	
Road	2023:05:05 6:00 AM	Yes	Caribou	17	Alert	SE	100	132	East	No	-96.1646	65.1940			No	Not Exceeded	



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023:05:05 6:00 AM	Yes	Caribou	10	Walking	S	200	135	West	No	-96.2080	65.2089			No	Not Exceeded	
Road	2023:05:05 6:00 AM	Yes	Muskox	4	Resting	N/A	75	141	East	No	-96.3181	65.2237			No	Not Exceeded	
Road	2023:05:05 6:00 AM	Yes	Caribou	9	Foraging	N/A	250	143	West	No	-96.3580	65.2237			No	Not Exceeded	
Road	2023:05:05 6:00 AM	Yes	Caribou	17	Foraging	SW	300	143	West	No	-96.3580	65.2237			No	Not Exceeded	
Road	2023:05:05 6:00 AM	Yes	Caribou	16	Resting	N/A	450	143	West	No	-96.3580	65.2237			No	Not Exceeded	
Road	2023:05:05 6:00 AM	Yes	Caribou	13	Alert	SE	50	146	West	Yes	-96.3980	65.2263			No	Not Exceeded	
Road	2023:05:05 6:00 AM	Yes	Wolf	1	Walking	S	400	147	West	No	-96.4184	65.2279			No	Not Exceeded	
Road	2023:05:05 6:00 AM	Yes	Caribou	31	Foraging	N/A	200	148	West	No	-96.4274	65.2205			No	Not Exceeded	
Road	2023:05:06 6:36 AM	Yes	Caribou	4	Foraging	N/A	400	113	West	No	-95.9933	65.0588			No	Not Exceeded	
Road	2023:05:06 6:36 AM	Yes	Caribou	28	Foraging	N/A	160	121	West	No	-96.0864	65.1071			No	Not Exceeded	
Road	2023:05:06 6:36 AM	Yes	Caribou	43	Foraging	S	300	123	West	No	-96.1044	65.1222			No	Exceeded	Road closed
Road	2023:05:06 6:36 AM	Yes	Caribou	14	Foraging	N/A	300	130	West	No	-96.1528	65.1782			No	Not Exceeded	
Road	2023:05:06 6:36 AM	Yes	Caribou	10	Foraging	N/A	500	143	West	No	-96.3580	65.2237			No	Not Exceeded	
Road	2023:05:06 6:36 AM	Yes	Caribou	6	Alert	N/A	240	148	West	No	-96.4274	65.2205			No	Not Exceeded	
Road	2023:05:06 6:36 AM	Yes	Caribou	24	Foraging	NE	300	151	West	No	-96.4662	65.2345			No	Not Exceeded	
Road	2023:05:06 6:36 AM	Yes	Caribou	96	Lying Down	N/A	450	173	West	No	-96.6030	65.3597			No	Exceeded	Road closed
Incidental	2023:05:06 12:05 PM	Yes	Caribou	110	Foraging	S	300	138	West	No	-96.2602	65.2238			No	Exceeded	Road closed
Incidental	2023:05:06 12:05 PM	Yes	Caribou	51	Foraging	N/A	270	130	West	No	-96.1528	65.1782			No	Exceeded	Road closed
Incidental	2023:05:06 12:05 PM	Yes	Caribou	57	Foraging	SW	300	125	West	No	-96.1079	65.1391			No	Exceeded	Road closed
Incidental	2023:05:06 12:05 PM	Yes	Caribou	99	Resting	N/A	2400	123	West,East	No	-96.1044	65.1222			No	Exceeded	Road closed
Incidental	2023:05:06 12:05 PM	Yes	Caribou	120	Foraging	N	350	113	West	No	-95.9933	65.0588			No	Exceeded	Road closed
Road	2023:05:07 6:43 AM	Yes	Caribou	131	Foraging	N/A	290	113	West	No	-95.9933	65.0588			No	Exceeded	Road closed
Road	2023:05:07 6:43 AM	Yes	Caribou	5	Walking	E	300	114	West	No	-96.0042	65.0668			No	Not Exceeded	
Road	2023:05:07 6:43 AM	Yes	Caribou	48	Foraging	N/A	290	115	West	No	-96.0090	65.0711			No	Exceeded	Road closed
Road	2023:05:07 6:43 AM	Yes	Caribou	60	Foraging	S	230	118	West	No	-96.0551	65.0865			No	Exceeded	Road closed
Road	2023:05:07 6:43 AM	Yes	Caribou	120	Running	W	700	120	West	No	-96.0728	65.1002			No	Exceeded	Road closed
Road	2023:05:07 6:43 AM	Yes	Wolf	2	Running	W	600	120	West	No	-96.0728	65.1002			No	Not Exceeded	
Road	2023:05:07 6:43 AM	Yes	Caribou	29	Lying Down	N/A	280	127	West	No	-96.1255	65.1538			No	Not Exceeded	
Road	2023:05:07 6:43 AM	Yes	Caribou	23	Foraging	N/A	250	135	West	No	-96.2080	65.2089			No	Not Exceeded	
Road	2023:05:07 6:43 AM	Yes	Caribou	25	Foraging	SE	230	138	West	No	-96.2602	65.2238			No	Not Exceeded	
Road	2023:05:07 6:43 AM	Yes	Wolverine	1	Walking	W	400	139	West	No	-96.2800	65.2269			No	Not Exceeded	
Road	2023:05:07 7:37 AM	Yes	Caribou	25	Foraging	N/A	2000	178	West	No	-96.6219	65.4009			No	Not Exceeded	
Road	2023:05:07 7:37 AM	Yes	Caribou	70	Walking	S	200	178	West	No	-96.6219	65.4009			No	Exceeded	Road closed
Road	2023:05:07 7:37 AM	Yes	Caribou	28	Foraging	N/A	800	176	West	No	-96.6038	65.3862			No	Not Exceeded	
Road	2023:05:07 7:37 AM	Yes	Caribou	3	Running	S	400	173	West	No	-96.6030	65.3597			No	Not Exceeded	
Road	2023:05:07 7:37 AM	Yes	Caribou	5	Foraging	N/A	300	170	West	No	-96.5498	65.3466			No	Not Exceeded	
Road	2023:05:07 7:37 AM	Yes	Caribou	17	Foraging	N/A	150	169	West	No	-96.5370	65.3400			No	Not Exceeded	
Road	2023:05:07 7:37 AM	Yes	Caribou	20	Foraging	N/A	200	160	West	No	-96.4136	65.2943			No	Not Exceeded	
Road	2023:05:07 7:37 AM	Yes	Caribou	80	Foraging	N/A	50	157	West	No	-96.4158	65.2712			No	Exceeded	Road closed
Road	2023:05:07 7:37 AM	Yes	Caribou	75	Lying Down	N/A	75	153	West	No	-96.4763	65.2482			No	Exceeded	Road closed
Road	2023:05:07 7:37 AM	Yes	Caribou	70	Walking	SW	1500	147	West	No	-96.4184	65.2279			No	Exceeded	Road closed
Road	2023:05:08 4:52 AM	Yes	Caribou	9	Foraging	N/A	300	115	West	No	-96.0090	65.0711			No	Not Exceeded	
Road	2023:05:08 4:52 AM	Yes	Caribou	8	Foraging	E	400	116	West	No	-96.0206	65.0803			No	Not Exceeded	
Road	2023:05:08 4:52 AM	Yes	Caribou	21	Foraging	S	700	118	West	No	-96.0551	65.0865			No	Not Exceeded	
Road	2023:05:08 4:52 AM	Yes	Caribou	25	Walking	N	50	124	West	No	-96.1081	65.1315			No	Not Exceeded	
Road	2023:05:08 4:52 AM	Yes	Caribou	47	Foraging	N/A	400	127	West	No	-96.1255	65.1538			No	Exceeded	Road already closed due to caribou
Road	2023:05:08 4:52 AM	Yes	Caribou	45	Foraging	N/A	250	128	West	No	-96.1358	65.1614			No	Exceeded	Road already closed due to caribou
Road	2023:05:08 4:52 AM	Yes	Caribou	12	Foraging	N/A	150	132	West	No	-96.1646	65.1940			No	Not Exceeded	
Road	2023:05:08 4:52 AM	Yes	Caribou	19	Resting	N/A	400	133	West	No	-96.1754	65.1992			No	Not Exceeded	
Road	2023:05:08 4:52 AM	Yes	Caribou	1	Alert	N	200	138	East	No	-96.2602	65.2238			No	Not Exceeded	
Road	2023:05:08 4:52 AM	Yes	Caribou	23	Foraging	N	200	121	West	No	-96.0864	65.1071			No	Not Exceeded	
Road	2023:05:08 6:05 AM	Yes	Caribou	5	Resting	N/A	200	177	West	No	-96.6085	65.3943			No	Not Exceeded	
Road	2023:05:08 6:05 AM	Yes	Caribou	16	Walking	SW	100	171	West	No	-96.5686	65.3520			No	Not Exceeded	
Road	2023:05:08 6:05 AM	Yes	Caribou	20	Foraging	N/A	100	164	West	No	-96.4472	65.3226			No	Not Exceeded	
Road	2023:05:08 6:05 AM	Yes	Caribou	50	Resting	N/A	1500	146	West	No	-96.3980	65.2263			No	Exceeded	Road closed



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023:05:08 1:30 PM	Yes	Caribou	6	Standing	Not Recorded	250	116	West	No	-96.0206	65.0803			No	Not Exceeded	
Road	2023:05:08 1:30 PM	Yes	Caribou	2	Standing	Not Recorded	500	119	West	No	-96.0648	65.0932			No	Not Exceeded	
Road	2023:05:08 1:30 PM	Yes	Caribou	12	Foraging	Not Recorded	750	123	West	No	-96.1044	65.1222			No	Not Exceeded	
Road	2023:05:08 1:30 PM	Yes	Caribou	6	Resting	Not Recorded	1000	130	West	No	-96.1528	65.1782			No	Not Exceeded	
Road	2023:05:08 1:30 PM	Yes	Caribou	20	Standing	Not Recorded	1000	131	West	No	-96.1607	65.1855			No	Not Exceeded	
Road	2023:05:08 1:30 PM	Yes	Caribou	17	Running	N	500	134	West	No	-96.1929	65.2048			No	Not Exceeded	
Road	2023:05:08 1:30 PM	Yes	Caribou	22	Standing	Not Recorded	1000	137	West	No	-96.2415	65.2194			No	Not Exceeded	
Road	2023:05:08 1:30 PM	Yes	Caribou	25	Feeding	Not Recorded	1000	161	West	No	-96.4121	65.3032			No	Not Exceeded	
Road	2023:05:08 1:30 PM	Yes	Caribou	5	Trotting/running	W	500	166	West	No	-96.4882	65.3253			No	Not Exceeded	
Road	2023:05:08 1:30 PM	Yes	Caribou	23	Alert	Not Recorded	200	170	West	No	-96.5498	65.3466			No	Not Exceeded	
Incidental	2023:05:08 4:12 PM	Yes	Falcon	1	Flying	N	0	175	East	No	-96.6024	65.3773			No	Not Exceeded	
Road	2023:05:08 6:13 PM	Yes	Caribou	5	Resting	Not Recorded	200	177	West	No	-96.6314	65.4038			No	Not Exceeded	
Road	2023:05:08 6:13 PM	Yes	Caribou	16	Walking	S	200	171	West	No	-96.5686	65.3520			No	Not Exceeded	
Road	2023:05:08 6:13 PM	Yes	Caribou	20	Foraging	Not Recorded	100	164	West	No	-96.4472	65.3226			No	Not Exceeded	
Road	2023:05:08 6:13 PM	Yes	Caribou	50	Resting	Not Recorded	1500	146	West	No	-96.3980	65.2263			No	Exceeded	Road closed
Road	2023:05:09 7:25 AM	Yes	Caribou	16	Resting	Not Recorded	750	159	West	No	-96.4089	65.2860			No	Not Exceeded	
Road	2023:05:09 8:20 AM	Yes	Caribou	29	Foraging	N/A	150	139	West	No	-96.2800	65.2269			No	Not Exceeded	
Road	2023:05:09 8:20 AM	Yes	Caribou	110	Walking	N	2000	134	West	No	-96.1929	65.2048			No	Exceeded	Road closed
Road	2023:05:09 8:20 AM	Yes	Caribou	29	Foraging	SE	270	127	West	No	-96.1255	65.1538			No	Not Exceeded	
Road	2023:05:09 3:59 PM	Yes	Caribou	13	Walking	S	350	172	West	No	-96.5867	65.3550			No	Not Exceeded	
Road	2023:05:09 3:59 PM	Yes	Caribou	6	Foraging	SE	600	169	West	No	-96.5370	65.3400			No	Not Exceeded	
Road	2023:05:09 3:59 PM	Yes	Caribou	36	Foraging	S	400	162	West	No	-96.4168	65.3115			No	Exceeded	Road closed
Road	2023:05:09 3:59 PM	Yes	Caribou	30	Foraging	S	200	148	West	No	-96.4274	65.2205			No	Not Exceeded	
Road	2023:05:09 3:59 PM	Yes	Caribou	5	Foraging	E	140	145	West	No	-96.3769	65.2242			No	Not Exceeded	
Road	2023:05:09 3:59 PM	Yes	Caribou	5	Lying Down	N/A	310	143	West	No	-96.3580	65.2237			No	Not Exceeded	
Road	2023:05:09 3:59 PM	Yes	Caribou	152	Foraging	NE	130	138	West	No	-96.2602	65.2238			No	Exceeded	Road closed
Road	2023:05:09 3:59 PM	Yes	Caribou	51	Lying Down	N/A	780	133	West	No	-96.1754	65.1992			No	Exceeded	Road closed
Road	2023:05:09 3:59 PM	Yes	Caribou	3	Foraging	N/A	70	130	West	No	-96.1528	65.1782			No	Not Exceeded	
Road	2023:05:09 3:59 PM	Yes	Caribou	43	Walking	S	200	119	West	No	-96.0648	65.0932			No	Exceeded	Road closed
Road	2023:05:10 5:04 AM	Yes	Caribou	39	Foraging	NW	0	116	West	Yes	-96.0206	65.0803			No	Exceeded	Road closed
Road	2023:05:10 5:04 AM	Yes	Caribou	2	Foraging	S	200	123	West	No	-96.1044	65.1222			No	Not Exceeded	
Road	2023:05:10 5:04 AM	Yes	Caribou	57	Foraging	E	0	125	Both	Yes	-96.1079	65.1391			No	Exceeded	Road closed
Road	2023:05:10 5:04 AM	Yes	Caribou	46	Foraging	N/A	150	126	West	No	-96.1108	65.1482			No	Exceeded	Road closed
Road	2023:05:10 5:04 AM	Yes	Caribou	15	Foraging	N	450	135	West	No	-96.2080	65.2089			No	Not Exceeded	
Road	2023:05:10 5:04 AM	Yes	Caribou	25	Foraging	N	500	136	East	No	-96.2274	65.2131			No	Not Exceeded	
Road	2023:05:10 5:04 AM	Yes	Caribou	42	Lying Down	N/A	580	138	West	No	-96.2602	65.2238			No	Exceeded	Road closed
Road	2023:05:10 5:04 AM	Yes	Caribou	35	Lying Down	N/A	400	142	West	No	-96.3371	65.2222			No	Exceeded	Road closed
Road	2023:05:10 5:04 AM	Yes	Caribou	19	Foraging	N/A	230	151	West	No	-96.4662	65.2345			No	Not Exceeded	
Road	2023:05:10 5:04 AM	Yes	Caribou	5	Foraging	N/A	220	153	West	No	-96.4763	65.2482			No	Not Exceeded	
Road	2023:05:10 5:04 AM	Yes	Caribou	39	Foraging	S	600	170	West	No	-96.5498	65.3466			No	Exceeded	Road closed
Road	2023:05:10 7:28 AM	Yes	Caribou	3	Foraging	N/A	100	176	West	No	-96.6038	65.3862			No	Not Exceeded	
Road	2023:05:10 7:28 AM	Yes	Caribou	7	Foraging	N/A	150	174	West	No	-96.6013	65.3683			No	Not Exceeded	
Road	2023:05:10 7:28 AM	Yes	Caribou	24	Standing	Not Recorded	1000	171	West	No	-96.5686	65.3520			No	Not Exceeded	
Road	2023:05:10 3:49 PM	Yes	Caribou	25	Foraging	N/A	800	177	West	No	-96.6085	65.3943			No	Not Exceeded	

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023:05:10 3:49 PM	Yes	Caribou	30	Foraging	SE	300	174	West	No	-96.6013	65.3683			No	Not Exceeded	
Road	2023:05:10 3:49 PM	Yes	Caribou	34	Walking	S	800	167	West	No	-96.5061	65.3284			No	Exceeded	Road closed
Road	2023:05:10 3:49 PM	Yes	Caribou	50	Foraging	SE	400	164	West	No	-96.4472	65.3226			No	Exceeded	Road closed
Road	2023:05:10 3:49 PM	Yes	Caribou	41	Walking	S	240	162	West	No	-96.4168	65.3115			No	Exceeded	Road closed
Road	2023:05:10 3:49 PM	Yes	Caribou	27	Foraging	S	800	151	West	No	-96.4662	65.2345			No	Not Exceeded	
Road	2023:05:10 3:49 PM	Yes	Caribou	10	Foraging	SE	300	148	West	No	-96.4274	65.2205			No	Not Exceeded	
Road	2023:05:10 3:49 PM	Yes	Caribou	19	Foraging	NE	120	146	West	No	-96.3980	65.2263			No	Not Exceeded	
Road	2023:05:10 3:49 PM	Yes	Caribou	54	Foraging	E	190	138	West	No	-96.2602	65.2238			No	Exceeded	Road closed
Road	2023:05:10 3:49 PM	Yes	Caribou	2	Foraging	SE	30	131	West	No	-96.1607	65.1855			No	Not Exceeded	
Road	2023:05:10 3:49 PM	Yes	Caribou	71	Foraging	N/A	560	118	West	No	-96.0551	65.0865			No	Exceeded	Road closed
Road	2023:05:11 7:34 AM	Yes	Caribou	27	Walking	NE	190	112	West	No	-96.0022	65.0511			No	Not Exceeded	
Road	2023:05:11 7:34 AM	Yes	Caribou	33	Foraging	S	600	126	West	No	-96.1108	65.1482			No	Not Exceeded	
Road	2023:05:11 7:35 AM	Yes	Caribou	4	Alert	N/A	500	177	West	No	-96.6085	65.3943			No	Not Exceeded	
Road	2023:05:11 7:35 AM	Yes	Caribou	15	Alert	N/A	100	171	West	No	-96.5686	65.3520			No	Not Exceeded	
Road	2023:05:11 7:35 AM	Yes	Caribou	107	Standing	E	100	169	Both	No	-96.5370	65.3400			No	Exceeded	Road closed
Road	2023:05:11 7:35 AM	Yes	Caribou	14	Running	W	40	150	West	No	-96.4501	65.2302			No	Not Exceeded	
Road	2023:05:11 7:35 AM	Yes	Caribou	15	Walking	S	1000	148	West	No	-96.4274	65.2205			No	Not Exceeded	
Road	2023:05:11 7:35 AM	Yes	Caribou	60	Running	S	150	140	West	No	-96.2985	65.2220			No	Exceeded	Road closed
Road	2023:05:12 7:28 AM	Yes	Caribou	25	Foraging	N/A	500	116	West	No	-96.0206	65.0803			No	Not Exceeded	
Road	2023:05:12 7:28 AM	Yes	Caribou	73	Foraging	N/A	300	127	West	No	-96.1255	65.1538			No	Exceeded	Road closed
Road	2023:05:12 7:28 AM	Yes	Caribou	43	Foraging	N/A	400	129	West	No	-96.1459	65.1690			No	Exceeded	Road closed
Road	2023:05:12 7:28 AM	Yes	Caribou	5	Foraging	N/A	500	131	West	No	-96.1607	65.1855			No	Not Exceeded	
Road	2023:05:12 7:28 AM	Yes	Caribou	17	Foraging	N/A	250	136	West	No	-96.2274	65.2131			No	Not Exceeded	
Road	2023:05:12 7:28 AM	Yes	Caribou	5	Walking	S	750	147	West	No	-96.4184	65.2279			No	Not Exceeded	
Road	2023:05:12 7:28 AM	Yes	Caribou	16	Walking	W	850	148	West	No	-96.4274	65.2205			No	Not Exceeded	
Road	2023:05:12 7:28 AM	Yes	Caribou	23	Foraging	N/A	800	176	West	No	-96.6038	65.3862			No	Not Exceeded	
Road	2023:05:12 7:28 AM	Yes	Caribou	75	Foraging	N/A	500	178	West	No	-96.6219	65.4009			No	Exceeded	Road closed
Road	2023:05:12 7:38 AM	Yes	Caribou	30	Alert	S	200	179	West	No	-96.6449	65.4052			No	Not Exceeded	
Road	2023:05:12 7:38 AM	Yes	Caribou	20	Alert	N/A	600	171	West	No	-96.5686	65.3520			No	Not Exceeded	
Road	2023:05:12 7:38 AM	Yes	Caribou	6	Running	W	150	169	West	No	-96.5370	65.3400			No	Not Exceeded	
Road	2023:05:12 7:38 AM	Yes	Caribou	8	Trotting/running	E	20	157	East	No	-96.4158	65.2712			No	Not Exceeded	
Road	2023:05:12 7:38 AM	Yes	Caribou	12	Running	W	2000	147	West	No	-96.4184	65.2279			No	Not Exceeded	
Road	2023:05:12 7:38 AM	Yes	Caribou	7	Running	S	2000	138	West	No	-96.2602	65.2238			No	Not Exceeded	
Road	2023:05:12 7:38 AM	Yes	Caribou	7	Walking	S	2000	136	West	No	-96.2274	65.2131			No	Not Exceeded	
Road	2023:05:12 7:38 AM	Yes	Caribou	51	Running	S	500	130	West	No	-96.1528	65.1782			No	Exceeded	Road closed
Road	2023:05:12 7:38 AM	Yes	Caribou	24	Alert	N/A	500	126	West	No	-96.1108	65.1482			No	Not Exceeded	
Road	2023:05:12 7:38 AM	Yes	Caribou	21	Resting	N/A	300	116	West	No	-96.0206	65.0803			No	Not Exceeded	
Incidental	2023:05:12 11:28 AM	Yes	Caribou	4	Foraging	N/A	1000	165	West	No	-96.4678	65.3239			No	Not Exceeded	
Incidental	2023:05:12 11:28 AM	Yes	Caribou	16	Foraging	N/A	350	136	West	No	-96.2274	65.2131			No	Not Exceeded	
Incidental	2023:05:12 11:28 AM	Yes	Caribou	3	Foraging	N/A	300	125	West	No	-96.1079	65.1391			No	Not Exceeded	
Incidental	2023:05:12 11:28 AM	Yes	Caribou	23	Walking	E	300	123	West	No	-96.1044	65.1222			No	Not Exceeded	
Incidental	2023:05:12 11:28 AM	Yes	Caribou	24	Walking	E	350	121	West	No	-96.0864	65.1071			No	Not Exceeded	
Incidental	2023:05:12 11:28 AM	Yes	Caribou	7	Walking	E	750	119	West	No	-96.0648	65.0932			No	Not Exceeded	
Incidental	2023:05:12 11:47 AM	Yes	Caribou	6	Foraging	N/A	650	161	West	No	-96.4121	65.3032			No	Not Exceeded	
Incidental	2023:05:12 12:13 PM	Yes	Caribou	3	Walking	S	500	153	West	No	-96.4763	65.2482			No	Not Exceeded	
Road	2023:05:13 8:00 AM	Yes	Caribou	14	Alert	N/A	400	178	West	No	-96.6219	65.4009			No	Not Exceeded	
Road	2023:05:13 8:00 AM	Yes	Caribou	16	Walking	E	0	176	Both	Yes	-96.6038	65.3862			No	Not Exceeded	
Road	2023:05:13 8:00 AM	Yes	Caribou	20	Foraging	E	50	174	West	No	-96.6013	65.3683			No	Not Exceeded	
Road	2023:05:13 8:00 AM	Yes	Caribou	12	Alert	W	200	171	West	No	-96.5686	65.3520			No	Not Exceeded	
Road	2023:05:13 8:00 AM	Yes	Caribou	2	Foraging	N/A	1500	158	East	No	-96.4047	65.2778			No	Not Exceeded	
Road	2023:05:13 8:00 AM	Yes	Caribou	9	Running	S	1000	156	West	No	-96.4521	65.2622			No	Not Exceeded	
Road	2023:05:13 8:00 AM	Yes	Caribou	6	Running	W	500	148	West	No	-96.4274	65.2205			No	Not Exceeded	
Road	2023:05:13 8:00 AM	Yes	Caribou	5	Alert	N/A	1000	130	West	No	-96.1528	65.1782			No	Not Exceeded	
Road	2023:05:13 8:00 AM	Yes	Caribou	10	Resting	N/A	700	129	West	No	-96.1459	65.1690			No	Not Exceeded	
Road	2023:05:13 8:00 AM	Yes	Caribou	1	Feeding	N/A	50	123	West	No	-96.1044	65.1222			No	Not Exceeded	
Road	2023:05:13 8:00 AM	Yes	Caribou	55	Resting	N/A	500	116	West	No	-96.0206	65.0803			No	Exceeded	Road closed
Road	2023:05:14 4:16 AM	Yes	Caribou	9	Walking	S	500	179	West	No	-96.6626	65.4029			No	Not Exceeded	
Road	2023:05:14 4:16 AM	Yes	Caribou	6	Foraging	N/A	100	178	West	No	-96.6219	65.4009			No	Not Exceeded	
Road	2023:05:14 4:16 AM	Yes	Caribou	8	Resting	N/A	250	172	West	No	-96.5867	65.3550			No	Not Exceeded	
Road	2023:05:14 4:16 AM	Yes	Caribou	18	Resting	N/A	100	171	West	No	-96.5686	65.3520			No	Not Exceeded	
Road	2023:05:14 4:16 AM	Yes	Caribou	3	Foraging	N/A	350	164	West	No	-96.4472	65.3226			No	Not Exceeded	
Road	2023:05:14 4:16 AM	Yes	Caribou	13	Resting	N/A	600	161	West	No	-96.4121	65.3032			No	Not Exceeded	



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023:05:14 4:16 AM	Yes	Caribou	11	Foraging	N/A	150	159	West	No	-96.4089	65.2860			No	Not Exceeded	
Road	2023:05:14 4:16 AM	Yes	Caribou	8	Walking	S	200	154	West	No	-96.4630	65.2546			No	Not Exceeded	
Road	2023:05:14 4:16 AM	Yes	Caribou	2	Foraging	N/A	100	151	West	No	-96.4662	65.2345			No	Not Exceeded	
Road	2023:05:14 4:16 AM	Yes	Caribou	4	Walking	E	800	148	West	No	-96.4274	65.2205			No	Not Exceeded	
Road	2023:05:14 4:16 AM	Yes	Caribou	1	Foraging	E	500	137	East	No	-96.2415	65.2194			No	Not Exceeded	
Road	2023:05:14 4:16 AM	Yes	Caribou	4	Alert	N/A	300	136	West	No	-96.2274	65.2131			No	Not Exceeded	
Road	2023:05:14 4:16 AM	Yes	Caribou	5	Foraging	N/A	25	132	West	No	-96.1646	65.1940			No	Not Exceeded	
Road	2023:05:14 4:16 AM	Yes	Caribou	6	Resting	N/A	150	124	West	No	-96.1081	65.1315			No	Not Exceeded	
Road	2023:05:14 4:16 AM	Yes	Caribou	3	Walking	S	200	123	West	No	-96.1044	65.1222			No	Not Exceeded	
Road	2023:05:14 4:16 AM	Yes	Caribou	12	Foraging	N/A	500	122	West	No	-96.0971	65.1148			No	Not Exceeded	
Road	2023:05:14 4:16 AM	Yes	Caribou	18	Resting	N/A	500	118	West	No	-96.0551	65.0865			No	Not Exceeded	
Road	2023:05:14 4:16 AM	Yes	Caribou	32	Foraging	N/A	400	116	West	No	-96.0206	65.0803			No	Not Exceeded	
Incidental	2023:05:14 12:48 PM	Yes	Caribou	3	Alert	N/A	500	125	West	No	-96.1079	65.1391			No	Not Exceeded	
Incidental	2023:05:14 12:48 PM	Yes	Caribou	2	Walking	N	200	164	West	No	-96.4472	65.3226			No	Not Exceeded	
Road	2023:05:15 5:57 AM	Yes	Caribou	19	Foraging	N/A	1000	178	West	No	-96.6219	65.4009			No	Not Exceeded	
Road	2023:05:15 5:57 AM	Yes	Caribou	25	Resting	N/A	1000	177	West	No	-96.6085	65.3943			No	Not Exceeded	
Road	2023:05:15 5:57 AM	Yes	Caribou	13	Walking	SE	0	138	Both	Yes	-96.2602	65.2238			No	Not Exceeded	
Road	2023:05:15 5:57 AM	Yes	Caribou	29	Foraging	N/A	450	112	West	No	-96.0022	65.0511			No	Not Exceeded	
Incidental	2023:05:15 10:29 AM	Yes	Caribou	52	Walking	NE	500	113	West	No	-95.9933	65.0588			No	Exceeded	Road closed until caribou left the zone
Incidental	2023:05:15 10:29 AM	Yes	Caribou	10	Foraging	N/A	200	119	West	No	-96.0648	65.0932			No	Not Exceeded	
Incidental	2023:05:15 10:29 AM	Yes	Caribou	54	Walking	E	0	112	West,East	Yes	-96.0022	65.0511			No	Exceeded	The Vault Road was closed to allow them to cross. Monitoring was done on the group until the vast majority crossed
Incidental	2023:05:15 10:29 AM	Yes	Caribou	3	Resting	N/A	300	123	East	No	-96.1044	65.1222			No	Not Exceeded	
Incidental	2023:05:15 10:29 AM	Yes	Muskox	6	Foraging	N/A	150	136	West,East	No	-96.2274	65.2131			No	Not Exceeded	
Road	2023:05:16 4:12 AM	Yes	Wolf	1	Trotting/running	E	0	134	Both	Yes	-96.1929	65.2048			No	Not Exceeded	
Road	2023:05:16 4:12 AM	Yes	Caribou	29	Foraging	N/A	450	121	West	No	-96.0864	65.1071			No	Not Exceeded	
Road	2023:05:16 4:12 AM	Yes	Caribou	7	Lying Down	N/A	600	117	West	No	-96.0394	65.0837			No	Not Exceeded	
Road	2023:05:16 4:12 AM	Yes	Caribou	27	Walking	NW	750	112	West	No	-96.0022	65.0511			No	Not Exceeded	
Road	2023:05:16 4:12 AM	Yes	Caribou	1	Walking	E	0	113	Both	Yes	-95.9933	65.0588			No	Not Exceeded	
Incidental	2023:05:16 7:18 AM	Yes	Caribou	9	Walking	S	700	118	West	No	-96.0551	65.0865			No	Not Exceeded	
Incidental	2023:05:16 7:18 AM	Yes	Caribou	7	Foraging	N/A	300	143	West	No	-96.3580	65.2237			No	Not Exceeded	
Road	2023:05:17 4:16 AM	Yes	Caribou	14	Walking	S	200	178	West	No	-96.6219	65.4009			No	Not Exceeded	
Road	2023:05:17 4:16 AM	Yes	Caribou	3	Walking	NW	500	177	West	No	-96.6085	65.3943			No	Not Exceeded	
Road	2023:05:17 4:16 AM	Yes	Caribou	5	Foraging	N/A	500	159	East	No	-96.4089	65.2860			No	Not Exceeded	
Road	2023:05:17 4:16 AM	Yes	Caribou	2	Foraging	N/A	300	143	West	No	-96.3580	65.2237			No	Not Exceeded	
Road	2023:05:17 4:16 AM	Yes	Caribou	8	Foraging	N/A	500	137	West	No	-96.2415	65.2194			No	Not Exceeded	
Road	2023:05:17 4:16 AM	Yes	Caribou	2	Foraging	N/A	400	130	West	No	-96.1528	65.1782			No	Not Exceeded	
Road	2023:05:17 4:16 AM	Yes	Caribou	4	Walking	S	300	121	West	No	-96.0864	65.1071			No	Not Exceeded	
Road	2023:05:17 4:16 AM	Yes	Caribou	14	Walking	SE	450	119	West	No	-96.0648	65.0932			No	Not Exceeded	
Road	2023:05:17 4:16 AM	Yes	Caribou	22	Walking	E	200	115	West	No	-96.0090	65.0711			No	Not Exceeded	
Incidental	2023:05:17 7:02 AM	Yes	Caribou	11	Foraging	N/A	400	117	West	No	-96.0394	65.0837			No	Not Exceeded	
Incidental	2023:05:17 7:02 AM	Yes	Muskox	4	Foraging	N/A	550	119	West	No	-96.0648	65.0932			No	Not Exceeded	
Incidental	2023:05:17 7:02 AM	Yes	Caribou	11	Walking	S	300	126	West	No	-96.1108	65.1482			No	Not Exceeded	
Incidental	2023:05:17 7:02 AM	Yes	Caribou	14	Foraging	N/A	150	133	West	No	-96.1754	65.1992			No	Not Exceeded	

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2023:05:17 7:02 AM	Yes	Caribou	59	Foraging	N/A	200	177	West	No	-96.6085	65.3943			No	Exceeded	The road was closed to all traffic between AMQ and KM 170 to allow the caribou to cross. They got closed to the road before turning around and walking west. Monitoring was done on the group until they were 1500m away from the project. The road was reopened once the caribou were far away enough (1500+m)
Road	2023:05:18 7:42 AM	Yes	Caribou	2	Walking	S	250	152	West	No	-96.4762	65.2418			No	Not Exceeded	
Road	2023:05:18 7:42 AM	Yes	Caribou	20	Foraging	N/A	100	142	West	No	-96.3371	65.2222			No	Not Exceeded	
Road	2023:05:18 7:42 AM	Yes	Caribou	7	Foraging	S	300	129	West	No	-96.1459	65.1690			No	Not Exceeded	
Road	2023:05:18 7:42 AM	Yes	Caribou	17	Foraging	N/A	100	128	West	No	-96.1358	65.1614			No	Not Exceeded	
Road	2023:05:18 7:42 AM	Yes	Caribou	2	Foraging	N/A	200	127	West	No	-96.1255	65.1538			No	Not Exceeded	
Road	2023:05:18 7:42 AM	Yes	Caribou	20	Walking	SE	1000	118	West	No	-96.0551	65.0865			No	Not Exceeded	
Road	2023:05:18 7:42 AM	Yes	Caribou	3	Foraging	N/A	500	115	West	No	-96.0090	65.0711			No	Not Exceeded	
Road	2023:05:18 7:42 AM	Yes	Caribou	9	Foraging	N/A	600	112	West	No	-96.0022	65.0511			No	Not Exceeded	
Road	2023:05:19 8:28 AM	Yes	Caribou	2	Foraging	N/A	250	141	East	No	-96.3181	65.2237			No	Not Exceeded	
Road	2023:05:19 8:28 AM	Yes	Caribou	3	Walking	S	400	126	West	No	-96.1108	65.1482			No	Not Exceeded	
Road	2023:05:19 8:28 AM	Yes	Caribou	5	Walking	S	500	123	West	No	-96.1044	65.1222			No	Not Exceeded	
Road	2023:05:19 8:28 AM	Yes	Caribou	29	Foraging	N/A	300	115	West	No	-96.0090	65.0711			No	Not Exceeded	
Incidental	2023:05:19 2:48 PM	Yes	Caribou	38	Foraging	SW	500	130	West	No	-96.1528	65.1782			No	Exceeded	Road closed until caribou left the zone
Road	2023:05:20 9:26 AM	Yes	Caribou	1	Alert	N/A	500	151	West	No	-96.4662	65.2345			No	Not Exceeded	
Road	2023:05:20 9:26 AM	Yes	Muskox	1	Foraging	N/A	20	132	East	No	-96.1646	65.1940			No	Not Exceeded	
Incidental	2023:05:20 12:41 PM	Yes	Peregrine falcon	1	Flying	N/A	100	124	East	No	-96.1081	65.1315			No	Not Exceeded	
Incidental	2023:05:20 12:41 PM	Yes	Muskox	2	Lying Down	N/A	25	133	East	No	-96.1754	65.1992			No	Not Exceeded	
Incidental	2023:05:20 12:41 PM	Yes	Caribou	4	Lying Down	N/A	300	137	East	No	-96.2415	65.2194			No	Not Exceeded	
Incidental	2023:05:20 12:41 PM	Yes	Muskox	2	Standing	N/A	100	153	East	No	-96.4763	65.2482			No	Not Exceeded	
Road	2023:05:21 1:24 PM	Yes	Caribou	5	Foraging	S	100	172	West	No	-96.5867	65.3550			No	Not Exceeded	
Road	2023:05:21 1:24 PM	Yes	Caribou	4	Walking	W	70	160	West	No	-96.4136	65.2943			No	Not Exceeded	
Road	2023:05:21 1:24 PM	Yes	Caribou	4	Standing	N/A	300	127	West	No	-96.1255	65.1538			No	Not Exceeded	
Road	2023:05:21 1:24 PM	Yes	Caribou	4	Foraging	N/A	500	123	West	No	-96.1044	65.1222			No	Not Exceeded	
Road	2023:05:21 1:24 PM	Yes	Caribou	4	Walking	SE	200	121	West	No	-96.0864	65.1071			No	Not Exceeded	
Road	2023:05:21 1:24 PM	Yes	Caribou	3	Walking	N	1500	117	West	No	-96.0394	65.0837			No	Not Exceeded	
Road	2023:05:21 1:24 PM	Yes	Caribou	10	Foraging	W	250	117	West	No	-96.0394	65.0837			No	Not Exceeded	
Road	2023:05:21 1:24 PM	Yes	Caribou	8	Foraging	N/A	200	113	West	No	-95.9933	65.0588			No	Not Exceeded	
Incidental	2023:05:21 4:01 PM	Yes	Caribou	6	Lying Down	N/A	200	112	West	No	-96.0022	65.0511			No	Not Exceeded	
Incidental	2023:05:21 4:01 PM	Yes	Muskox	2	Foraging	N/A	300	119	East	No	-96.0648	65.0932			No	Not Exceeded	
Incidental	2023:05:21 4:01 PM	Yes	Caribou	4	Foraging	N/A	200	124	West	No	-96.1081	65.1315			No	Not Exceeded	
Incidental	2023:05:21 4:01 PM	Yes	Caribou	3	Foraging	N/A	200	126	West	No	-96.1108	65.1482			No	Not Exceeded	
Incidental	2023:05:21 4:01 PM	Yes	Caribou	1	Walking	S	300	127	West	No	-96.1255	65.1538			No	Not Exceeded	
Incidental	2023:05:21 4:01 PM	Yes	Muskox	6	Foraging	N/A	75	153	East	No	-96.4763	65.2482			No	Not Exceeded	
Incidental	2023:05:21 4:01 PM	Yes	Caribou	3	Foraging	N/A	175	157	West	No	-96.4158	65.2712			No	Not Exceeded	
Road	2023:05:22 8:41 AM	Yes	Caribou	6	Walking	E	0	171	Both	Yes	-96.5686	65.3520			No	Not Exceeded	
Road	2023:05:22 8:41 AM	Yes	Caribou	7	Lying Down	N/A	500	163	West	No	-96.4304	65.3174			No	Not Exceeded	
Road	2023:05:22 8:41 AM	Yes	Caribou	4	Foraging	N/A	500	159	East	No	-96.4089	65.2860			No	Not Exceeded	

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023:05:22 8:41 AM	Yes	Caribou	1	Standing	N/A	350	152	West	No	-96.4762	65.2418			No	Not Exceeded	
Road	2023:05:22 8:41 AM	Yes	Muskox	1	Foraging	N/A	10	119	West	No	-96.0648	65.0932			No	Not Exceeded	
Road	2023:05:22 8:41 AM	Yes	Caribou	14	Walking	E	800	117	West	No	-96.0394	65.0837			No	Not Exceeded	
Incidental	2023:05:22 3:16 PM	Yes	Caribou	1	Foraging	N/A	50	121	East	No	-96.0864	65.1071			No	Not Exceeded	
Incidental	2023:05:22 3:16 PM	Yes	Caribou	17	Walking	N	150	126	West	No	-96.1108	65.1482			No	Not Exceeded	
Incidental	2023:05:22 3:16 PM	Yes	Caribou	2	Foraging	N/A	50	159	East	No	-96.4089	65.2860			No	Not Exceeded	
Incidental	2023:05:22 3:16 PM	Yes	Caribou	9	Foraging	N/A	100	172	West	No	-96.5867	65.3550			No	Not Exceeded	
Incidental	2023:05:22 3:16 PM	Yes	Caribou	3	Foraging	N/A	100	171	East	No	-96.5686	65.3520			No	Not Exceeded	
Road	2023:05:23 6:48 AM	Yes	Caribou	4	Foraging	N/A	300	170	West	No	-96.5498	65.3466			No	Not Exceeded	
Road	2023:05:23 6:48 AM	Yes	Caribou	2	Foraging	N/A	50	160	West	No	-96.4136	65.2943			No	Not Exceeded	
Road	2023:05:23 6:48 AM	Yes	Caribou	2	Walking	S	1000	147	West	No	-96.4184	65.2279			No	Not Exceeded	
Road	2023:05:23 6:48 AM	Yes	Wolf	1	Feeding	N/A	50	124	West	No	-96.1081	65.1315			No	Not Exceeded	
Road	2023:05:23 6:48 AM	Yes	Caribou	1	Foraging	N/A	25	122	East	No	-96.0971	65.1148			No	Not Exceeded	
Road	2023:05:23 6:48 AM	Yes	Caribou	30	Resting	N/A	700	115	West	No	-96.0090	65.0711			No	Not Exceeded	
Incidental	2023:05:23 10:13 AM	Yes	Caribou	30	Lying Down	N/A	400	115	West	No	-96.0090	65.0711			No	Not Exceeded	
Incidental	2023:05:23 10:13 AM	Yes	Wolf	1	Walking	S	200	123	West	No	-96.1044	65.1222			No	Not Exceeded	
Incidental	2023:05:23 10:13 AM	Yes	Muskox	5	Foraging	N/A	250	137	East	No	-96.2415	65.2194			No	Not Exceeded	
Incidental	2023:05:23 10:13 AM	Yes	Caribou	3	Foraging	N/A	75	159	West	No	-96.4089	65.2860			No	Not Exceeded	
Incidental	2023:05:23 10:13 AM	Yes	Caribou	6	Walking	S	200	160	West	No	-96.4136	65.2943			No	Not Exceeded	
Incidental	2023:05:23 10:13 AM	Yes	Caribou	15	Lying Down	N/A	200	177	West	No	-96.6085	65.3943			No	Not Exceeded	
Incidental	2023:05:23 10:13 AM	Yes	Muskox	1	Foraging	N/A	300	177	West	No	-96.6085	65.3943			No	Not Exceeded	
Road	2023:05:24 6:39 AM	Yes	Caribou	4	Foraging	N/A	300	178	West	No	-96.6219	65.4009			No	Not Exceeded	
Road	2023:05:24 6:39 AM	Yes	Ptarmigan	3	Walking	N/A	50	171	West	No	-96.5686	65.3520			No	Not Exceeded	
Road	2023:05:24 6:39 AM	Yes	Caribou	3	Standing	N/A	250	168	West	No	-96.5240	65.3335			No	Not Exceeded	
Road	2023:05:24 6:39 AM	Yes	Caribou	5	Foraging	Not Recorded	250	165	West	No	-96.4678	65.3239			No	Not Exceeded	
Road	2023:05:24 6:39 AM	Yes	Caribou	7	Lying Down	N/A	400	160	West	No	-96.4136	65.2943			No	Not Exceeded	
Road	2023:05:24 6:39 AM	Yes	Ptarmigan	1	Standing	N/A	30	153	East	No	-96.4763	65.2482			No	Not Exceeded	
Road	2023:05:24 6:39 AM	Yes	Arctic hare	1	Foraging	N/A	30	150	West	No	-96.4501	65.2302			No	Not Exceeded	
Road	2023:05:24 6:39 AM	Yes	Caribou	2	Resting	N/A	250	144	East	No	-96.3801	65.2250			No	Not Exceeded	
Road	2023:05:24 6:39 AM	Yes	Muskox	2	Feeding	N/A	75	135	East	No	-96.2080	65.2089			No	Not Exceeded	
Road	2023:05:24 6:39 AM	Yes	Caribou	1	Walking	S	100	131	West	No	-96.1607	65.1855			No	Not Exceeded	
Road	2023:05:24 6:39 AM	Yes	Caribou	4	Foraging	N/A	50	128	West	No	-96.1358	65.1614			No	Not Exceeded	
Road	2023:05:24 6:39 AM	Yes	Caribou	7	Walking	N	900	126	West	No	-96.1108	65.1482			No	Not Exceeded	
Road	2023:05:24 6:39 AM	Yes	Caribou	23	Resting	N/A	900	125	West	No	-96.1079	65.1391			No	Not Exceeded	
Road	2023:05:24 6:39 AM	Yes	Caribou	3	Walking	N	1200	124	West	No	-96.1081	65.1315			No	Not Exceeded	
Road	2023:05:24 6:39 AM	Yes	Muskox	2	Foraging	N/A	5	122	East	No	-96.0971	65.1148			No	Not Exceeded	
Road	2023:05:24 6:39 AM	Yes	Caribou	11	Walking	S	1800	118	West	No	-96.0551	65.0865			No	Not Exceeded	
Road	2023:05:25 7:00 AM	Yes	Muskox	1	Foraging	N/A	50	178	West	No	-96.6219	65.4009			No	Not Exceeded	
Road	2023:05:25 7:00 AM	Yes	Caribou	18	Lying Down	N/A	300	178	West	No	-96.6219	65.4009			No	Not Exceeded	
Road	2023:05:25 7:00 AM	Yes	Caribou	24	Foraging	N/A	100	133	West	No	-96.1754	65.1992			No	Not Exceeded	
Road	2023:05:25 7:00 AM	Yes	Caribou	3	Resting	N/A	500	131	West	No	-96.1607	65.1855			No	Not Exceeded	
Road	2023:05:25 7:00 AM	Yes	Caribou	26	Walking	N	200	130	West	No	-96.1528	65.1782			No	Not Exceeded	
Road	2023:05:25 7:00 AM	Yes	Caribou	3	Foraging	N/A	150	125	West	No	-96.1079	65.1391			No	Not Exceeded	
Road	2023:05:25 7:00 AM	Yes	Caribou	3	Standing	N/A	150	116	West	No	-96.0206	65.0803			No	Not Exceeded	
Road	2023:05:26 1:02 PM	Yes	Caribou	3	Foraging	N/A	100	165	East	No	-96.4678	65.3239			No	Not Exceeded	
Road	2023:05:26 1:02 PM	Yes	Caribou	2	Walking	S	150	163	West	No	-96.4304	65.3174			No	Not Exceeded	
Road	2023:05:26 1:02 PM	Yes	Caribou	2	Resting	N/A	800	159	East	No	-96.4089	65.2860			No	Not Exceeded	
Road	2023:05:26 1:02 PM	Yes	Muskox	1	Feeding	N/A	1200	137	East	No	-96.2415	65.2194			No	Not Exceeded	
Road	2023:05:26 1:02 PM	Yes	Caribou	15	Feeding	N/A	400	133	West	No	-96.1754	65.1992			No	Not Exceeded	
Road	2023:05:26 1:02 PM	Yes	Caribou	3	Feeding	N/A	700	129	West	No	-96.1459	65.1690			No	Not Exceeded	
Road	2023:05:26 1:02 PM	Yes	Caribou	19	Running	S	350	124	West	No	-96.1081	65.1315			No	Not Exceeded	
Road	2023:05:26 1:02 PM	Yes	Caribou	18	Lying Down	N/A	800	120	West	No	-96.0728	65.1002			No	Not Exceeded	
Road	2023:05:26 1:02 PM	Yes	Caribou	14	Trotting/running	N	200	116	West	No	-96.0206	65.0803			No	Not Exceeded	
Road	2023:05:27 6:49 AM	Yes	Caribou	11	Feeding	N/A	275	111	West	No	-96.0240	65.0481			No	Not Exceeded	
Road	2023:05:27 6:49 AM	Yes	Snow goose	53	Standing	N/A	700	125	West	No	-96.1079	65.1391			No	Not Exceeded	

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023:05:27 6:49 AM	Yes	Snow goose	110	Standing	N/A	600	129	Both	No	-96.1459	65.1690			No	Not Exceeded	
Road	2023:05:27 6:49 AM	Yes	Caribou	15	Feeding	NE	75	129	West	No	-96.1459	65.1690			No	Not Exceeded	
Road	2023:05:27 6:49 AM	Yes	Snow goose	150	Standing	N/A	20	137	East	N/A	-96.2415	65.2194			No	Not Exceeded	
Road	2023:05:27 6:49 AM	Yes	Snow goose	90	Standing	N/A	100	139	East	N/A	-96.2800	65.2269			No	Not Exceeded	
Road	2023:05:27 6:49 AM	Yes	Snow goose	40	Standing	N/A	1000	141	East	N/A	-96.3181	65.2237			No	Not Exceeded	
Road	2023:05:27 6:49 AM	Yes	Caribou	3	Feeding	N/A	600	145	East	N/A	-96.3769	65.2242			No	Not Exceeded	
Road	2023:05:27 6:49 AM	Yes	Snow goose	120	Standing	N/A	200	159	East	No	-96.4089	65.2860			No	Not Exceeded	
Road	2023:05:27 6:49 AM	Yes	Muskox	4	Standing	N/A	100	160	East	No	-96.4136	65.2943			No	Not Exceeded	
Road	2023:05:27 6:49 AM	Yes	Snow goose	90	Standing	N/A	50	161	East	No	-96.4121	65.3032			No	Not Exceeded	
Road	2023:05:27 6:49 AM	Yes	Arctic fox	1	Running	S	0	164	West	No	-96.4472	65.3226			No	Not Exceeded	
Incidental	2023:05:27 9:54 AM	Yes	Caribou	10	Resting	N/A	400	177	West	No	-96.6085	65.3943			No	Not Exceeded	
Incidental	2023:05:27 9:54 AM	Yes	Caribou	10	Feeding	N/A	1000	133	West	No	-96.1754	65.1992			No	Not Exceeded	
Incidental	2023:05:27 9:54 AM	Yes	Caribou	2	Trotting/running	SE	35	119	West	No	-96.0648	65.0932			No	Not Exceeded	
Road	2023:05:28 8:04 AM	Yes	Muskox	2	Foraging	N/A	250	142	East	No	-96.3371	65.2222			No	Not Exceeded	
Road	2023:05:28 8:04 AM	Yes	Muskox	3	Foraging	NW	1000	133	West	No	-96.1754	65.1992			No	Not Exceeded	
Road	2023:05:28 8:04 AM	Yes	Caribou	12	Walking	N	500	127	West	No	-96.1255	65.1538			No	Not Exceeded	
Road	2023:05:28 8:04 AM	Yes	Caribou	4	Resting	N/A	500	124	West	No	-96.1081	65.1315			No	Not Exceeded	
Road	2023:05:30 12:55 PM	Yes	Caribou	3	Walking	W	500	121	West	No	-96.0864	65.1071			No	Not Exceeded	
Road	2023:05:30 12:55 PM	Yes	Caribou	7	Walking	N	800	122	West	No	-96.0971	65.1148			No	Not Exceeded	
Road	2023:05:30 12:55 PM	Yes	Caribou	3	Walking	N	750	124	West	No	-96.1081	65.1315			No	Not Exceeded	
Road	2023:05:31 7:07 AM	Yes	Caribou	1	Feeding	N/A	300	166	West	No	-96.4882	65.3253			No	Not Exceeded	
Road	2023:05:31 7:07 AM	Yes	Caribou	7	Walking	N/A	400	160	West	N/A	-96.4136	65.2943			No	Not Exceeded	
Road	2023:05:31 7:07 AM	Yes	Caribou	5	Feeding	N/A	600	129	West	N/A	-96.1459	65.1690			No	Not Exceeded	
Road	2023:05:31 7:07 AM	Yes	Sandhill crane	1	Standing	N/A	10	126	West	No	-96.1108	65.1482			No	Not Exceeded	
Road	2023:05:31 7:07 AM	Yes	Caribou	10	Standing	N/A	500	112	West	N/A	-96.0022	65.0511			No	Not Exceeded	
Road	2023:06:02 10:16 AM	Yes	Caribou	30	Lying Down	N/A	250	117	West	No	-96.0394	65.0837			No	Exceeded	Speed Restriction
Road	2023:06:02 10:16 AM	Yes	Caribou	4	Feeding	N/A	200	120	West	No	-96.0728	65.1002			No	Not Exceeded	
Road	2023:06:02 10:16 AM	Yes	Caribou	3	Feeding	N/A	50	127	East	No	-96.1255	65.1538			No	Not Exceeded	
Road	2023:06:02 10:16 AM	Yes	Muskox	4	Trotting/running	N/A	500	128	West	No	-96.1358	65.1614			No	Not Exceeded	
Road	2023:06:02 10:16 AM	Yes	Caribou	17	Feeding	N/A	1100	133	West	No	-96.1754	65.1992			No	Not Exceeded	
Road	2023:06:02 10:16 AM	Yes	Caribou	5	Lying Down	N/A	500	139	West	No	-96.2800	65.2269			No	Not Exceeded	
Incidental	2023:06:02 2:21 PM	Yes	Caribou	12	Feeding	N/A	250	161	West	No	-96.4121	65.3032			No	Not Exceeded	
Incidental	2023:06:02 2:21 PM	Yes	Caribou	11	Foraging	N/A	1	140	West	No	-96.2985	65.2220			No	Not Exceeded	
Incidental	2023:06:02 2:21 PM	Yes	Caribou	12	Walking	SE	700	135	West	No	-96.2080	65.2089			No	Not Exceeded	
Incidental	2023:06:02 2:21 PM	Yes	Caribou	17	Walking	NE	300	127	West	No	-96.1255	65.1538			No	Not Exceeded	
Road	2023:06:03 12:58 PM	Yes	Caribou	20	Lying Down	N/A	1100	119	West	No	-96.0648	65.0932			No	Not Exceeded	
Road	2023:06:03 12:58 PM	Yes	Muskox	1	Feeding	N/A	10	121	West	No	-96.0864	65.1071			No	Not Exceeded	
Road	2023:06:03 12:58 PM	Yes	Caribou	6	Walking	N	250	126	West	No	-96.1108	65.1482			No	Not Exceeded	
Road	2023:06:03 12:58 PM	Yes	Muskox	2	Feeding	SW	15	130	West	No	-96.1528	65.1782			No	Not Exceeded	
Road	2023:06:03 12:58 PM	Yes	Muskox	3	Feeding	N/A	200	141	East	No	-96.3181	65.2237			No	Not Exceeded	
Road	2023:06:03 12:58 PM	Yes	Peregrine falcon	1	Flying	W	15	153	East	Yes	-96.4763	65.2482			No	Not Exceeded	
Road	2023:06:03 12:58 PM	Yes	Muskox	1	Feeding	Not Recorded	160	160	West	No	-96.4136	65.2943			No	Not Exceeded	
Incidental	2023:06:03 5:08 PM	Yes	Caribou	16	Walking	NE	1100	125	West	No	-96.1079	65.1391			No	Not Exceeded	
Incidental	2023:06:03 5:08 PM	Yes	Caribou	3	Foraging	N/A	90	122	West	No	-96.0971	65.1148			No	Not Exceeded	
Incidental	2023:06:04 11:20 AM	Yes	Caribou	3	Feeding	N/A	300	123	West	No	-96.1044	65.1222			No	Not Exceeded	
Road	2023:06:06 9:28 AM	Yes	Muskox	1	Feeding	N/A	10	111	East	No	-96.0240	65.0481			No	Not Exceeded	
Road	2023:06:06 9:28 AM	Yes	Arctic fox	1	Running	N	1	120	East	Yes	-96.0728	65.1002			No	Not Exceeded	
Road	2023:06:06 9:28 AM	Yes	Caribou	1	Walking	W	700	125	West	No	-96.1079	65.1391			No	Not Exceeded	



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023:06:06 9:28 AM	Yes	Caribou	3	Feeding	N/A	10	126	West	No	-96.1108	65.1482			No	Not Exceeded	
Road	2023:06:06 9:28 AM	Yes	Caribou	16	Feeding	N	100	133	West	No	-96.1754	65.1992			No	Not Exceeded	
Road	2023:06:06 9:28 AM	Yes	Caribou	4	Feeding	N/A	200	142	West	No	-96.3371	65.2222			No	Not Exceeded	
Road	2023:06:06 9:28 AM	Yes	Ptarmigan	1	Nesting	N/A	100	151	West	No	-96.4662	65.2345			No	Not Exceeded	
Road	2023:06:06 9:28 AM	Yes	Muskox	1	Feeding	N/A	1500	169	East	No	-96.5370	65.3400			No	Not Exceeded	
Incidental	2023:06:07 9:22 AM	Yes	Caribou	2	Standing	Not Recorded	750	172	West	No	-96.5867	65.3550			No	Not Exceeded	
Incidental	2023:06:07 9:22 AM	Yes	Caribou	6	Standing	N/A	1000	169	West	No	-96.5370	65.3400			No	Not Exceeded	
Incidental	2023:06:07 9:22 AM	Yes	Caribou	12	Resting	N/A	500	178	East	No	-96.6219	65.4009			No	Not Exceeded	
Incidental	2023:06:07 9:22 AM	Yes	Caribou	16	Standing	N/A	1000	116	West	No	-96.0206	65.0803			No	Not Exceeded	
Mine & Pit	2023:06:08 4:52 PM	Yes	Muskox	1	Foraging	Not Recorded	50	110	East	No	-96.0445	65.0418			No	Not Exceeded	
Mine & Pit	2023:06:10 7:54 AM	Yes	Caribou	13	Feeding	S	50	113	East	No	-95.9933	65.0588			No	Not Exceeded	
Road	2023:06:10 9:14 AM	Yes	Caribou	6	Resting	N/A	700	179	West	No	-96.6663	65.4016			No	Not Exceeded	
Road	2023:06:10 9:14 AM	Yes	Caribou	12	Standing	E	500	176	West	No	-96.6038	65.3862			No	Not Exceeded	
Road	2023:06:10 9:14 AM	Yes	Muskox	1	Foraging	N/A	20	164	East	No	-96.4472	65.3226			No	Not Exceeded	
Road	2023:06:10 9:14 AM	Yes	Caribou	2	Foraging	N/A	500	160	West	No	-96.4136	65.2943			No	Not Exceeded	
Road	2023:06:10 9:14 AM	Yes	Caribou	1	Foraging	N/A	100	154	West	No	-96.4630	65.2546			No	Not Exceeded	
Road	2023:06:10 9:14 AM	Yes	Caribou	1	Standing	E	300	146	West	No	-96.3980	65.2263			No	Not Exceeded	
Road	2023:06:10 9:14 AM	Yes	Muskox	1	Foraging	N	20	135	East	No	-96.2080	65.2089			No	Not Exceeded	
Road	2023:06:10 9:14 AM	Yes	Caribou	6	Walking	N	1000	134	West	No	-96.1929	65.2048			No	Not Exceeded	
Road	2023:06:10 9:14 AM	Yes	Wolf	1	Foraging	N/A	800	129	West	No	-96.1459	65.1690			No	Not Exceeded	
Road	2023:06:10 9:14 AM	Yes	Caribou	3	Foraging	E	500	114	West	No	-96.0042	65.0668			No	Not Exceeded	
Road	2023:06:13 5:00 PM	Yes	Muskox	1	Foraging	N/A	20	143	East	No	-96.3580	65.2237			No	Not Exceeded	
Road	2023:06:13 5:00 PM	Yes	Caribou	4	Foraging	N/A	200	142	East	No	-96.3371	65.2222			No	Not Exceeded	
Road	2023:06:13 5:00 PM	Yes	Muskox	3	Foraging	N/A	50	139	East	No	-96.2800	65.2269			No	Not Exceeded	
Road	2023:06:13 5:00 PM	Yes	Caribou	4	Foraging	E	30	136	Both	No	-96.2274	65.2131			No	Not Exceeded	
Road	2023:06:13 5:00 PM	Yes	Caribou	18	Resting	N/A	75	135	West	No	-96.2080	65.2089			No	Not Exceeded	
Road	2023:06:13 5:00 PM	Yes	Muskox	1	Foraging	N/A	30	133	East	No	-96.1754	65.1992			No	Not Exceeded	
Road	2023:06:13 5:00 PM	Yes	Caribou	17	Walking	E	10	126	West	No	-96.1108	65.1482			No	Not Exceeded	
Road	2023:06:13 5:00 PM	Yes	Muskox	2	Foraging	N/A	20	113	East	No	-95.9933	65.0588			No	Not Exceeded	
Road	2023:06:14 9:27 AM	Yes	Caribou	18	Foraging	N/A	200	133	West	No	-96.1754	65.1992			No	Not Exceeded	
Road	2023:06:14 9:27 AM	Yes	Muskox	1	Foraging	N/A	100	150	East	No	-96.4501	65.2302			No	Not Exceeded	
Road	2023:06:14 9:27 AM	Yes	Muskox	1	Foraging	N/A	200	167	East	No	-96.5061	65.3284			No	Not Exceeded	
Road	2023:06:19 7:33 AM	Yes	Muskox	1	Foraging	N	5	111	East	No	-96.0240	65.0481			No	Not Exceeded	
Road	2023:06:19 7:33 AM	Yes	Muskox	2	Foraging	N/A	20	113	West	No	-95.9933	65.0588			No	Not Exceeded	
Road	2023:06:19 7:33 AM	Yes	Muskox	2	Foraging	N/A	10	115	West	No	-96.0090	65.0711			No	Not Exceeded	
Road	2023:06:19 7:33 AM	Yes	Muskox	1	Resting	N/A	10	130	West	No	-96.1528	65.1782			No	Not Exceeded	
Road	2023:06:19 7:33 AM	Yes	Caribou	7	Walking	S	700	130	West	No	-96.1528	65.1782			No	Not Exceeded	
Road	2023:06:19 7:33 AM	Yes	Caribou	2	Resting	N/A	500	163	West	No	-96.4304	65.3174			No	Not Exceeded	
Road	2023:06:19 7:33 AM	Yes	Caribou	1	Walking	E	15	171	East	No	-96.5686	65.3520			No	Not Exceeded	
Road	2023:06:19 7:33 AM	Yes	Muskox	1	Feeding	N/A	200	173	West	No	-96.6030	65.3597			No	Not Exceeded	
Road	2023:06:21 6:37 AM	Yes	Ptarmigan	1	Walking	Not Recorded	0	138	East	Yes	-96.2602	65.2238			No	Not Exceeded	
Road	2023:06:21 6:37 AM	Yes	Arctic hare	2	Standing	N/A	15	140	East	No	-96.2985	65.2220			No	Not Exceeded	
Road	2023:06:21 6:37 AM	Yes	Muskox	1	Feeding	N/A	300	142	East	No	-96.3371	65.2222			No	Not Exceeded	
Road	2023:06:21 6:37 AM	Yes	Unkown Bird	1	Flying	NE	800	146	East	No	-96.3980	65.2263			No	Not Exceeded	
Road	2023:06:21 6:37 AM	Yes	Caribou	23	Lying Down	N/A	200	161	West	No	-96.4121	65.3032			No	Not Exceeded	
Road	2023:06:21 6:37 AM	Yes	Passerine sp.	2	Flying	S	10	168	West	No	-96.5240	65.3335			No	Not Exceeded	
Road	2023:06:21 6:37 AM	Yes	Unkown Bird	1	Flying	W	20	176	West	No	-96.6038	65.3862			No	Not Exceeded	
Incidental	2023:06:21 6:20 PM	Yes	Muskox	3	Feeding	N/A	200	140	East	No	-96.2985	65.2220			No	Not Exceeded	
Incidental	2023:06:21 6:20 PM	Yes	Siksik	1	Standing	N/A	0	129	West	N/A	-96.1459	65.1690			No	Not Exceeded	
Incidental	2023:06:21 6:20 PM	Yes	Muskox	1	Walking	S	200	119	West	No	-96.0648	65.0932			No	Not Exceeded	
Incidental	2023:06:21 6:20 PM	Yes	Muskox	1	Feeding	N/A	25	113	West	No	-95.9933	65.0588			No	Not Exceeded	
Road	2023:06:22 9:18 AM	Yes	Muskox	1	Feeding	N/A	75	114	West	No	-96.0042	65.0668			No	Not Exceeded	
Road	2023:06:22 9:18 AM	Yes	Caribou	5	Standing	N/A	700	116	West	No	-96.0206	65.0803			No	Not Exceeded	
Road	2023:06:22 9:18 AM	Yes	Muskox	1	Feeding	N/A	10	131	East	No	-96.1607	65.1855			No	Not Exceeded	
Road	2023:06:22 9:18 AM	Yes	Caribou	23	Walking	S	100	162	West	No	-96.4168	65.3115			No	Not Exceeded	
Road	2023:06:22 9:18 AM	Yes	Muskox	1	Resting	N/A	90	169	West	No	-96.5370	65.3400			No	Not Exceeded	



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023:06:27 9:08 AM	Yes	Muskox	2	Foraging	N/A	300	129	East	No	-96.1459	65.1690			No	Not Exceeded	
Road	2023:06:27 9:08 AM	Yes	Caribou	2	Foraging	N/A	300	132	West	No	-96.1646	65.1940			No	Not Exceeded	
Road	2023:06:27 9:08 AM	Yes	Muskox	1	Foraging	N/A	200	132	West	No	-96.1646	65.1940			No	Not Exceeded	
Road	2023:06:27 9:08 AM	Yes	Muskox	2	Resting	N/A	400	133	West	No	-96.1754	65.1992			No	Not Exceeded	
Road	2023:06:27 9:08 AM	Yes	Muskox	2	Foraging	N/A	150	150	East	No	-96.4501	65.2302			No	Not Exceeded	
Road	2023:06:27 9:08 AM	Yes	Wolf	2	Walking	N/A	300	152	West	No	-96.4762	65.2418			No	Not Exceeded	
Road	2023:06:27 9:08 AM	Yes	Caribou	1	Foraging	N/A	200	158	West	No	-96.4047	65.2778			No	Not Exceeded	
Road	2023:06:27 9:08 AM	Yes	Muskox	9	Foraging	N/A	0	160	West	No	-96.4136	65.2943			No	Not Exceeded	
Road	2023:06:27 9:08 AM	Yes	Wolf	2	Walking	N/A	700	178	West	No	-96.6219	65.4009			No	Not Exceeded	
Road	2023:07:04 9:06 AM	Yes	Muskox	1	Feeding	N/A	50	111	West	No	-96.0240	65.0481			No	Not Exceeded	
Road	2023:07:06 8:13 AM	Yes	Muskox	2	Foraging	N/A	50	111	West	No	-96.0240	65.0481			No	Not Exceeded	
Road	2023:07:06 8:13 AM	Yes	Muskox	16	Foraging	S	500	140	West	No	-96.2985	65.2220			No	Exceeded	Speed restriction from 139 bridge to 140 (30km/h)
Road	2023:07:11 7:49 AM	Yes	Muskox	7	Walking	E	2000	156	West	No	-96.4521	65.2622			No	Not Exceeded	
Road	2023:07:11 7:49 AM	Yes	Arctic fox	1	Feeding	E	0	142	Both	Yes	-96.3371	65.2222			No	Not Exceeded	
Road	2023:07:11 7:49 AM	Yes	Muskox	14	Walking	S	2000	138	West	No	-96.2602	65.2238			No	Exceeded	No because the heard is at 2km distance from the road traveling parallel to it and is seperated by a lake.
Road	2023:07:11 7:49 AM	Yes	Muskox	1	Foraging	N/A	0	120	East	No	-96.0728	65.1002			No	Not Exceeded	
Road	2023:07:11 7:49 AM	Yes	Muskox	2	Walking	W	250	113	West	No	-95.9933	65.0588			No	Not Exceeded	
Incidental	2023:07:13 10:26 AM	Yes	Wolf	1	Trotting/running	S	0	136	South	No	-96.2274	65.2131			No	Not Exceeded	
Incidental	2023:07:13 10:26 AM	Yes	Wolf	1	Trotting/running	S	0	132	South	No	-96.1646	65.1940			No	Not Exceeded	
Road	2023:07:18 7:09 AM	Yes	Muskox	1	Resting	N/A	25	116	East	No	-96.0206	65.0803			No	Not Exceeded	
Road	2023:07:18 7:09 AM	Yes	Muskox	1	Foraging	N	35	124	West	No	-96.1081	65.1315			No	Not Exceeded	
Road	2023:07:18 7:09 AM	Yes	Siksik	1	Alert	N/A	1	124	West	No	-96.1081	65.1315			No	Not Exceeded	
Incidental	2023:07:21 10:22 AM	Yes	Wolf	2	Trotting/running	N	100	139	North	No	-96.2800	65.2269			No	Not Exceeded	
Incidental	2023:07:23 8:44 PM	Yes	Wolf	1	Walking	E	100	146	East	No	-96.3980	65.2263			No	Not Exceeded	
Incidental	2023:07:25 8:54 AM	Yes	Wolf	1	Trotting/running	S	0	136	East	No	-96.2274	65.2131			No	Not Exceeded	
Incidental	2023:07:25 10:30 AM	Yes	Wolf	1	Running	E	0	133	West	Yes	-96.1754	65.1992			No	Not Exceeded	
Road	2023:07:25 12:30 PM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023:07:27 11:03 AM	Yes	Caribou	1	Feeding	Not Recorded	50	118	East	No	-96.0551	65.0865			No	Not Exceeded	
Incidental	2023:08:05 8:00 AM	Yes		N/A			N/A	N/A			N/A	N/A					
Incidental	2023:08:05 11:30 AM	Yes	Muskox	23	Feeding	E	2000	123	East	No	-96.1044	65.1222			No	Exceeded	> 1.5Km from the road
Road	2023:08:05 1:57 PM	Yes	Muskox	1	Feeding	E	600	171	East	No	-96.5686	65.3520			No	Not Exceeded	
Road	2023:08:05 1:57 PM	Yes	Muskox	9	Lying Down	E	300	168	East	No	-96.5240	65.3335			No	Not Exceeded	
Road	2023:08:05 1:57 PM	Yes	Muskox	9	Feeding	W	400	150	East	No	-96.4501	65.2302			No	Not Exceeded	
Road	2023:08:07 7:54 AM	Yes	Muskox	5	Foraging	E	20	143	East	No	-96.3580	65.2237			No	Not Exceeded	
Road	2023:08:07 7:54 AM	Yes	Siksik	1	Running	E	0	131	Both	Yes	-96.1607	65.1855			No	Not Exceeded	
Road	2023:08:07 7:54 AM	Yes	Muskox	9	Walking	W	500	128	West	No	-96.1358	65.1614			No	Not Exceeded	
Road	2023:08:07 7:54 AM	Yes	Muskox	1	Lying Down	N/A	20	111	West	No	-96.0240	65.0481			No	Not Exceeded	
Road	2023:08:12 8:21 AM	Yes	Caribou	3	Walking	E	2000	170	East	No	-96.5498	65.3466			No	Not Exceeded	
Incidental	2023:08:13 8:36 AM	Yes	Caribou	57	Trotting/running	N	100	170	East	No	-96.5498	65.3466			No	Exceeded	Road closed
Road	2023:08:13 11:38 AM	Yes	Muskox	6	Foraging	N/A	500	172	West	No	-96.5867	65.3550			No	Not Exceeded	
Road	2023:08:13 11:38 AM	Yes	Caribou	7	Resting	N/A	250	169	East	No	-96.5370	65.3400			No	Not Exceeded	
Road	2023:08:13 11:38 AM	Yes	Caribou	120	Foraging	W	0	167	Both	Yes	-96.5061	65.3284			No	Exceeded	Road closed
Road	2023:08:13 11:38 AM	Yes	Caribou	10	Foraging	NE	100	170	East	No	-96.5498	65.3466			No	Not Exceeded	
Road	2023:08:13 11:38 AM	Yes	Caribou	12	Foraging	NE	50	171	East	No	-96.5686	65.3520			No	Not Exceeded	
Road	2023:08:13 11:38 AM	Yes	Caribou	2	Foraging	N/A	100	173	Both	No	-96.6030	65.3597			No	Not Exceeded	



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023:08:13 11:38 AM	Yes	Caribou	1	Foraging	N/A	200	175	East	No	-96.6024	65.3773			No	Not Exceeded	
Road	2023:08:13 11:38 AM	Yes	Caribou	2	Foraging	W	50	179	West	No	-96.6554	65.4044			No	Not Exceeded	
Road	2023:08:13 3:36 PM	Yes	Caribou	1	Walking	W	0	144	East	Yes	-96.4006	65.2264			No	Not Exceeded	
Road	2023:08:13 3:36 PM	Yes	Muskox	1	Lying Down	N/A	50	154	East	No	-96.4630	65.2546			No	Not Exceeded	
Road	2023:08:13 3:36 PM	Yes	Muskox	10	Lying Down	W	1000	169	West	No	-96.5370	65.3400			No	Not Exceeded	
Road	2023:08:13 3:36 PM	Yes	Caribou	1	Feeding	E	50	165	East	No	-96.4678	65.3239			No	Not Exceeded	
Incidental	2023:08:13 7:56 PM	Yes	Caribou	25	Foraging	N/A	500	172	East	No	-96.5867	65.3550			No	Not Exceeded	
Incidental	2023:08:13 7:56 PM	Yes	Caribou	3	Foraging	S	500	171	East	No	-96.5686	65.3520			No	Not Exceeded	
Incidental	2023:08:13 7:56 PM	Yes	Caribou	5	Foraging	N/A	300	169	East	No	-96.5370	65.3400			No	Not Exceeded	
Incidental	2023:08:13 7:56 PM	Yes	Caribou	6	Walking	W	0	166	East	Yes	-96.4882	65.3253			No	Not Exceeded	
Incidental	2023:08:13 7:56 PM	Yes	Caribou	10	Foraging	N/A	1000	166	East	No	-96.4882	65.3253			No	Not Exceeded	
Incidental	2023:08:13 7:56 PM	Yes	Caribou	10	Walking	NW	1500	167	West	No	-96.5061	65.3284			No	Not Exceeded	
Incidental	2023:08:13 7:56 PM	Yes	Caribou	21	Foraging	N/A	2000	165	East	No	-96.4678	65.3239			No	Not Exceeded	
Incidental	2023:08:13 7:56 PM	Yes	Caribou	25	Foraging	S	2000	165	East	No	-96.4678	65.3239			No	Not Exceeded	
Incidental	2023:08:13 7:56 PM	Yes	Caribou	7	Foraging	S	400	170	East	No	-96.5498	65.3466			No	Not Exceeded	
Incidental	2023:08:13 7:56 PM	Yes	Caribou	36	Foraging	SW	20	171	East	No	-96.5686	65.3520			No	Exceeded	Road closed
Road	2023:08:14 8:07 AM	Yes	Muskox	6	Foraging	S	1000	178	West	No	-96.6219	65.4009			No	Not Exceeded	
Road	2023:08:14 8:07 AM	Yes	Caribou	17	Foraging	N	10	174	East	No	-96.6013	65.3683			No	Not Exceeded	
Road	2023:08:14 8:07 AM	Yes	Caribou	63	Foraging	S	300	172	East	No	-96.5867	65.3550			No	Exceeded	Road closed
Road	2023:08:14 8:07 AM	Yes	Caribou	6	Trotting/running	S	500	167	East	No	-96.5061	65.3284			No	Not Exceeded	
Road	2023:08:14 8:07 AM	Yes	Caribou	18	Walking	S	1000	165	East	No	-96.4678	65.3239			No	Not Exceeded	
Road	2023:08:14 8:07 AM	Yes	Caribou	6	Alert	N	400	163	East	No	-96.4304	65.3174			No	Not Exceeded	
Road	2023:08:14 8:07 AM	Yes	Muskox	3	Resting	N/A	50	142	West	No	-96.3371	65.2222			No	Not Exceeded	
Incidental	2023:08:14 12:04 PM	Yes	Muskox	3	Resting	N/A	30	142	West	No	-96.3371	65.2222			No	Not Exceeded	
Incidental	2023:08:14 12:04 PM	Yes	Caribou	36	Walking	S	400	162	East	No	-96.4168	65.3115			No	Exceeded	Road closed
Incidental	2023:08:14 12:04 PM	Yes	Caribou	1	Walking	S	600	163	East	No	-96.4304	65.3174			No	Not Exceeded	
Incidental	2023:08:14 12:04 PM	Yes	Caribou	9	Alert	S	100	164	West,East	No	-96.4472	65.3226			No	Not Exceeded	
Incidental	2023:08:14 12:04 PM	Yes	Caribou	52	Walking	W	0	169	West,East	No	-96.5370	65.3400			No	Exceeded	Road closed
Incidental	2023:08:14 12:04 PM	Yes	Caribou	12	Walking	N	30	169	East	No	-96.5370	65.3400			No	Not Exceeded	
Incidental	2023:08:14 12:04 PM	Yes	Caribou	27	Resting	N/A	10	170	East	No	-96.5498	65.3466			No	Exceeded	Road closed
Incidental	2023:08:14 12:04 PM	Yes	Caribou	10	Foraging	W	20	171	East	No	-96.5686	65.3520			No	Not Exceeded	
Incidental	2023:08:14 12:04 PM	Yes	Caribou	20	Foraging	SW	100	171	East	No	-96.5686	65.3520			No	Not Exceeded	
Incidental	2023:08:14 12:04 PM	Yes	Caribou	14	Foraging	E	500	172	East	No	-96.5867	65.3550			No	Not Exceeded	
Incidental	2023:08:14 12:04 PM	Yes	Caribou	12	Alert	SE	150	174	East	No	-96.6013	65.3683			No	Not Exceeded	
Incidental	2023:08:14 12:04 PM	Yes	Caribou	1	Resting	N/A	200	175	West	No	-96.6024	65.3773			No	Not Exceeded	
Incidental	2023:08:14 12:04 PM	Yes	Muskox	1	Resting	N/A	300	176	West	No	-96.6038	65.3862			No	Not Exceeded	
Incidental	2023:08:14 12:04 PM	Yes	Muskox	4	Foraging	E	1500	177	West	No	-96.6085	65.3943			No	Not Exceeded	
Incidental	2023:08:15 7:27 AM	Yes	Caribou	2	Foraging	N/A	200	176	East	No	-96.6038	65.3862			No	Not Exceeded	
Incidental	2023:08:15 7:27 AM	Yes	Caribou	90	Foraging	N/A	400	169	East	No	-96.5370	65.3400			No	Exceeded	The road is closed to all traffic.
Incidental	2023:08:15 7:27 AM	Yes	Caribou	41	Foraging	N/A	0	170	East	No	-96.5498	65.3466			No	Exceeded	Road closed
Incidental	2023:08:15 7:27 AM	Yes	Caribou	16	Walking	S	100	168	East	No	-96.5240	65.3335			No	Not Exceeded	
Incidental	2023:08:15 7:27 AM	Yes	Caribou	78	Foraging	N/A	50	171	East	N/A	-96.5686	65.3520			No	Exceeded	The road is closed to all traffic
Incidental	2023:08:15 7:27 AM	Yes	Caribou	12	Foraging	N/A	50	165	East	No	-96.4678	65.3239			No	Not Exceeded	
Incidental	2023:08:15 7:27 AM	Yes	Caribou	39	Walking	S	800	161	East	No	-96.4121	65.3032			No	Exceeded	Road closed
Incidental	2023:08:15 7:27 AM	Yes	Caribou	29	Walking	W	200	170	West	No	-96.5498	65.3466			No	Exceeded	The road is closed to all traffic
Incidental	2023:08:15 7:27 AM	Yes	Caribou	6	Trotting/running	E	450	177	East	No	-96.6085	65.3943			No	Not Exceeded	
Incidental	2023:08:15 7:27 AM	Yes	Caribou	3	Walking	S	50	174	East	No	-96.6013	65.3683			No	Not Exceeded	
Incidental	2023:08:15 7:27 AM	Yes	Caribou	1	Foraging	N/A	200	174	East	No	-96.6013	65.3683			No	Not Exceeded	
Incidental	2023:08:15 7:27 AM	Yes	Caribou	31	Walking	S	250	172	East	No	-96.5867	65.3550			No	Exceeded	The road is closed to all traffic.
Incidental	2023:08:15 7:27 AM	Yes	Caribou	20	Foraging	S	50	170	East	No	-96.5498	65.3466			No	Not Exceeded	
Incidental	2023:08:15 7:27 AM	Yes	Caribou	22	Foraging	S	100	169	East	No	-96.5370	65.3400			No	Not Exceeded	
Incidental	2023:08:15 7:27 AM	Yes	Caribou	2	Foraging	S	50	168	East	No	-96.5240	65.3335			No	Not Exceeded	
Incidental	2023:08:15 7:27 AM	Yes	Caribou	2	Standing	N/A	500	168	West	No	-96.5240	65.3335			No	Not Exceeded	
Incidental	2023:08:15 7:27 AM	Yes	Caribou	6	Walking	SE	300	165	East	No	-96.4678	65.3239			No	Not Exceeded	



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2023:08:15 7:27 AM	Yes	Caribou	46	Trotting/running	S	200	164	East	No	-96.4472	65.3226			No	Exceeded	The road is closed to all traffic
Incidental	2023:08:15 7:27 AM	Yes	Caribou	5	Walking	S	100	163	East	No	-96.4304	65.3174			No	Not Exceeded	
Incidental	2023:08:15 7:27 AM	Yes	Caribou	8	Walking	S	200	162	East	No	-96.4168	65.3115			No	Not Exceeded	
Incidental	2023:08:15 7:27 AM	Yes	Caribou	5	Foraging	N/A	50	176	East	N/A	-96.6038	65.3862			No	Not Exceeded	
Incidental	2023:08:15 7:27 AM	Yes	Caribou	1	Foraging	N/A	25	175	West	No	-96.6024	65.3773			No	Not Exceeded	
Incidental	2023:08:15 7:27 AM	Yes	Caribou	12	Foraging	N/A	250	175	East	No	-96.6024	65.3773			No	Not Exceeded	
Incidental	2023:08:15 7:27 AM	Yes	Caribou	4	Resting	N/A	150	174	East	No	-96.6013	65.3683			No	Not Exceeded	
Road	2023:08:15 8:22 AM	Yes	Red fox	1	Running	E	0	133	West	Yes	-96.1754	65.1992			No	Not Exceeded	
Road	2023:08:15 8:22 AM	Yes	Red fox	1	Running	S	0	148	East	No	-96.4274	65.2205			No	Not Exceeded	
Road	2023:08:15 8:22 AM	Yes	Muskox	1	Feeding	N	200	161	East	No	-96.4121	65.3032			No	Not Exceeded	
Road	2023:08:15 8:22 AM	Yes	Muskox	1	Walking	E	0	169	West	Yes	-96.5370	65.3400			No	Not Exceeded	
Road	2023:08:15 8:22 AM	Yes	Caribou	6	Feeding	E	40	158	East	No	-96.4047	65.2778			No	Not Exceeded	
Road	2023:08:15 8:22 AM	Yes	Caribou	10	Feeding	S	60	159	East	No	-96.4089	65.2860			No	Not Exceeded	
Road	2023:08:15 8:22 AM	Yes	Caribou	22	Walking	S	1000	159	East	No	-96.4089	65.2860			No	Not Exceeded	
Road	2023:08:15 8:22 AM	Yes	Caribou	3	Walking	S	60	161	East	No	-96.4121	65.3032			No	Not Exceeded	
Road	2023:08:15 8:22 AM	Yes	Muskox	1	Standing	N/A	200	161	East	No	-96.4121	65.3032			No	Not Exceeded	
Road	2023:08:15 8:22 AM	Yes	Caribou	1	Walking	W	0	161	West	Yes	-96.4121	65.3032			No	Not Exceeded	
Road	2023:08:15 8:22 AM	Yes	Caribou	10	Walking	E	100	162	East	No	-96.4168	65.3115			No	Not Exceeded	
Road	2023:08:15 8:22 AM	Yes	Caribou	15	Walking	S	200	166	East	No	-96.4882	65.3253			No	Not Exceeded	
Road	2023:08:15 8:22 AM	Yes	Caribou	6	Walking	S	400	167	East	No	-96.5061	65.3284			No	Not Exceeded	
Road	2023:08:15 8:22 AM	Yes	Caribou	1	Lying Down	N/A	100	168	East	No	-96.5240	65.3335			No	Not Exceeded	
Road	2023:08:15 8:22 AM	Yes	Caribou	2	Walking	E	200	168	East	No	-96.5240	65.3335			No	Not Exceeded	
Road	2023:08:15 8:22 AM	Yes	Caribou	12	Walking	E	0	169	West	Yes	-96.5370	65.3400			No	Not Exceeded	
Road	2023:08:15 8:22 AM	Yes	Caribou	1	Walking	N	75	169	West	No	-96.5370	65.3400			No	Not Exceeded	
Road	2023:08:15 8:22 AM	Yes	Caribou	17	Feeding	SE	500	170	West	No	-96.5498	65.3466			No	Not Exceeded	
Road	2023:08:15 8:22 AM	Yes	Caribou	40	Walking	N	20	170	East	No	-96.5498	65.3466			No	Exceeded	Road closed
Road	2023:08:15 8:22 AM	Yes	Caribou	2	Feeding	SW	100	171	West	No	-96.5686	65.3520			No	Not Exceeded	
Road	2023:08:15 8:22 AM	Yes	Caribou	2	Feeding	W	100	171	West	No	-96.5686	65.3520			No	Not Exceeded	
Road	2023:08:15 8:22 AM	Yes	Caribou	17	Feeding	SE	75	172	East	No	-96.5867	65.3550			No	Not Exceeded	
Road	2023:08:15 8:22 AM	Yes	Caribou	7	Feeding	S	40	176	East	No	-96.6038	65.3862			No	Not Exceeded	
Road	2023:08:15 8:22 AM	Yes	Caribou	1	Feeding	S	5	179	East	No	-96.0735	65.0212			No	Not Exceeded	
Road	2023:08:15 8:22 AM	Yes	Caribou	4	Alert	S	40	178	East	No	-96.6219	65.4009			No	Not Exceeded	
Road	2023:08:15 8:22 AM	Yes	Caribou	10	Feeding	S	50	176	East	No	-96.6038	65.3862			No	Not Exceeded	
Road	2023:08:15 8:22 AM	Yes	Caribou	17	Feeding	S	75	174	East	No	-96.6013	65.3683			No	Not Exceeded	
Road	2023:08:15 8:22 AM	Yes	Muskox	1	Standing	S	1000	172	East	No	-96.5867	65.3550			No	Not Exceeded	
Road	2023:08:15 8:22 AM	Yes	Caribou	10	Lying Down	N/A	100	172	East	No	-96.5867	65.3550			No	Not Exceeded	
Road	2023:08:16 5:52 AM	Yes	Arctic hare	1	Running	S	0	121	East	No	-96.0864	65.1071			No	Not Exceeded	
Road	2023:08:16 5:52 AM	Yes	Muskox	12	Feeding	N/A	20	165	West	No	-96.4678	65.3239			No	Not Exceeded	
Road	2023:08:16 5:52 AM	Yes	Caribou	25	Feeding	N/A	40	143	East	No	-96.3580	65.2237			No	Not Exceeded	
Road	2023:08:16 5:52 AM	Yes	Caribou	23	Alert	S	100	148	East	No	-96.4274	65.2205			No	Not Exceeded	
Road	2023:08:16 5:52 AM	Yes	Caribou	15	Walking	N	200	149	East	No	-96.4426	65.2233			No	Not Exceeded	
Road	2023:08:16 5:52 AM	Yes	Caribou	20	Walking	N	700	151	East	No	-96.4662	65.2345			No	Not Exceeded	
Road	2023:08:16 5:52 AM	Yes	Caribou	54	Walking	N	500	153	East	No	-96.4763	65.2482			No	Exceeded	Road is close. Convoy for essential needs and daily ride.
Road	2023:08:16 5:52 AM	Yes	Caribou	15	Foraging	N/A	100	154	East	No	-96.4630	65.2546			No	Not Exceeded	
Road	2023:08:16 5:52 AM	Yes	Muskox	12	Feeding	N/A	20	165	West	No	-96.4678	65.3239			No	Not Exceeded	
Road	2023:08:16 5:52 AM	Yes	Muskox	1	Standing	N/A	2000	166	East	No	-96.4882	65.3253			No	Not Exceeded	
Road	2023:08:16 5:52 AM	Yes	Caribou	1	Walking	S	30	166	West	No	-96.4882	65.3253			No	Not Exceeded	
Road	2023:08:16 5:52 AM	Yes	Caribou	3	Foraging	S	75	170	West	No	-96.5498	65.3466			No	Not Exceeded	
Road	2023:08:16 5:52 AM	Yes	Caribou	12	Walking	S	1000	171	East	No	-96.5686	65.3520			No	Not Exceeded	
Road	2023:08:16 5:52 AM	Yes	Muskox	8	Feeding	N/A	50	172	East	No	-96.5867	65.3550			No	Not Exceeded	
Road	2023:08:16 5:52 AM	Yes	Caribou	6	Feeding	S	1000	173	West	No	-96.6030	65.3597			No	Not Exceeded	
Road	2023:08:16 5:52 AM	Yes	Caribou	12	Standing	S	1500	174	East	No	-96.6013	65.3683			No	Not Exceeded	
Road	2023:08:16 5:52 AM	Yes	Caribou	40	Feeding	N	100	160	East	No	-96.4136	65.2943			No	Exceeded	Road is close. Convoy for daily ride and essential needs



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023:08:16 5:52 AM	Yes	Caribou	30	Walking	S	100	154	East	No	-96.4630	65.2546			No	Exceeded	Road is close. Convoy for daily ride and essential needs
Road	2023:08:16 5:52 AM	Yes	Caribou	35	Walking	S	100	148	East	No	-96.4274	65.2205			No	Exceeded	Road is close. Convoy for daily ride and essential needs
Road	2023:08:16 5:52 AM	Yes	Caribou	70	Walking	SW	500	147	East	No	-96.4184	65.2279			No	Exceeded	Road is close. Convoy for daily ride and essential needs
Road	2023:08:16 5:52 AM	Yes	Caribou	50	Foraging	S	300	142	East	No	-96.3371	65.2222			No	Exceeded	Road is close. Convoy for daily ride and essential needs
Road	2023:08:17 7:14 AM	Yes	Caribou	16	Feeding	E	200	141	East	No	-96.3181	65.2237			No	Not Exceeded	
Road	2023:08:17 7:14 AM	Yes	Caribou	7	Feeding	N/A	300	143	East	No	-96.3580	65.2237			No	Not Exceeded	
Road	2023:08:17 7:14 AM	Yes	Caribou	2	Feeding	N/A	400	145	East	N/A	-96.3769	65.2242			No	Not Exceeded	
Road	2023:08:17 7:14 AM	Yes	Caribou	9	Feeding	E	50	151	East	No	-96.4662	65.2345			No	Not Exceeded	
Road	2023:08:17 7:14 AM	Yes	Caribou	4	Feeding	E	100	156	East	No	-96.4521	65.2622			No	Not Exceeded	
Road	2023:08:17 7:14 AM	Yes	Caribou	4	Walking	E	50	159	East	No	-96.4089	65.2860			No	Not Exceeded	
Road	2023:08:17 7:14 AM	Yes	Caribou	8	Walking	W	50	160	West	No	-96.4136	65.2943			No	Not Exceeded	
Road	2023:08:17 7:14 AM	Yes	Caribou	16	Feeding	N/A	300	161	Both	No	-96.4121	65.3032			No	Not Exceeded	
Road	2023:08:17 7:14 AM	Yes	Caribou	2	Feeding	N/A	200	162	Both	No	-96.4168	65.3115			No	Not Exceeded	
Road	2023:08:17 7:14 AM	Yes	Caribou	6	Feeding	N/A	150	166	East	No	-96.4882	65.3253			No	Not Exceeded	
Road	2023:08:17 7:14 AM	Yes	Caribou	6	Resting	N/A	200	171	West	No	-96.5686	65.3520			No	Not Exceeded	
Road	2023:08:17 7:14 AM	Yes	Caribou	1	Walking	W	0	172	Both	Yes	-96.5867	65.3550			No	Not Exceeded	
Road	2023:08:17 7:14 AM	Yes	Caribou	2	Walking	N/A	0	174	Both	Yes	-96.6013	65.3683			No	Not Exceeded	
Road	2023:08:17 7:14 AM	Yes	Caribou	5	Feeding	N/A	50	177	Both	No	-96.6085	65.3943			No	Not Exceeded	
Road	2023:08:18 6:56 AM	Yes	Caribou	2	Foraging	N	100	111	West	No	-96.0240	65.0481			No	Not Exceeded	
Road	2023:08:18 6:56 AM	Yes	Caribou	200	Walking	NE	90	139	Both	Yes	-96.2800	65.2269			No	Exceeded	Road closed
Road	2023:08:18 6:56 AM	Yes	Caribou	76	Resting	N/A	180	148	West	No	-96.4274	65.2205			No	Exceeded	Road closed
Road	2023:08:18 6:56 AM	Yes	Caribou	15	Foraging	N/A	130	158	West	No	-96.4047	65.2778			No	Not Exceeded	
Road	2023:08:18 7:37 AM	Yes	Caribou	4	Foraging	N/A	20	179	East	No	-96.6505	65.4051			No	Not Exceeded	
Road	2023:08:18 7:37 AM	Yes	Caribou	3	Foraging	N/A	50	175	West	No	-96.6024	65.3773			No	Not Exceeded	
Road	2023:08:18 7:37 AM	Yes	Caribou	13	Foraging	N/A	50	172	Both	No	-96.5867	65.3550			No	Not Exceeded	
Road	2023:08:18 7:37 AM	Yes	Caribou	5	Foraging	N/A	50	168	West	No	-96.5240	65.3335			No	Not Exceeded	
Road	2023:08:18 7:37 AM	Yes	Caribou	12	Resting	N/A	100	159	West	No	-96.4089	65.2860			No	Not Exceeded	
Road	2023:08:19 7:09 AM	Yes	Caribou	2	Foraging	N/A	300	137	East	No	-96.2415	65.2194			No	Not Exceeded	
Road	2023:08:19 7:09 AM	Yes	Caribou	2	Foraging	N/A	290	139	West	No	-96.2800	65.2269			No	Not Exceeded	
Road	2023:08:19 7:09 AM	Yes	Caribou	10	Foraging	N	140	140	West	No	-96.2985	65.2220			No	Not Exceeded	
Road	2023:08:19 7:09 AM	Yes	Caribou	10	Foraging	N/A	30	141	West	No	-96.3181	65.2237			No	Not Exceeded	
Road	2023:08:19 7:09 AM	Yes	Caribou	29	Foraging	N/A	30	151	West	No	-96.4662	65.2345			No	Exceeded	Road closed
Road	2023:08:19 7:09 AM	Yes	Caribou	3	Foraging	S	350	152	West	No	-96.4762	65.2418			No	Not Exceeded	
Road	2023:08:19 7:09 AM	Yes	Caribou	3	Foraging	NW	1500	153	West	No	-96.4763	65.2482			No	Not Exceeded	
Road	2023:08:19 7:09 AM	Yes	Caribou	5	Foraging	NW	1	158	Both	Yes	-96.4047	65.2778			No	Not Exceeded	
Road	2023:08:19 7:09 AM	Yes	Caribou	17	Foraging	N/A	30	165	Both	No	-96.4678	65.3239			No	Not Exceeded	
Road	2023:08:19 7:09 AM	Yes	Caribou	4	Foraging	NW	90	166	East	No	-96.4882	65.3253			No	Not Exceeded	
Road	2023:08:19 7:09 AM	Yes	Caribou	3	Foraging	N/A	80	167	West	No	-96.5061	65.3284			No	Not Exceeded	
Road	2023:08:19 7:09 AM	Yes	Caribou	2	Foraging	S	50	169	West	No	-96.5370	65.3400			No	Not Exceeded	
Road	2023:08:19 7:09 AM	Yes	Caribou	20	Foraging	N/A	30	171	Both	No	-96.5686	65.3520			No	Not Exceeded	
Road	2023:08:19 7:09 AM	Yes	Caribou	3	Foraging	N/A	500	176	West	No	-96.6038	65.3862			No	Not Exceeded	
Road	2023:08:19 7:09 AM	Yes	Caribou	6	Foraging	N/A	900	178	West	No	-96.6219	65.4009			No	Not Exceeded	
Incidental	2023:08:19 12:54 PM	Yes	Caribou	2	Foraging	N/A	120	179	West	No	-96.0022	65.0511			No	Not Exceeded	
Incidental	2023:08:19 12:54 PM	Yes	Caribou	2	Foraging	N/A	200	178	West	No	-96.6219	65.4009			No	Not Exceeded	
Incidental	2023:08:19 12:54 PM	Yes	Caribou	2	Foraging	N/A	130	175	West	No	-96.6024	65.3773			No	Not Exceeded	
Incidental	2023:08:19 12:54 PM	Yes	Caribou	6	Foraging	N/A	100	171	West,East	No	-96.5686	65.3520			No	Not Exceeded	
Incidental	2023:08:19 12:54 PM	Yes	Caribou	2	Foraging	N/A	140	168	West	No	-96.5240	65.3335			No	Not Exceeded	
Incidental	2023:08:19 12:54 PM	Yes	Caribou	4	Foraging	N/A	100	163	West	No	-96.4304	65.3174			No	Not Exceeded	
Incidental	2023:08:19 12:54 PM	Yes	Caribou	9	Foraging	S	90	155	West	No	-96.4342	65.2676			No	Not Exceeded	
Incidental	2023:08:19 12:54 PM	Yes	Caribou	10	Foraging	N/A	100	152	West	No	-96.4762	65.2418			No	Not Exceeded	
Incidental	2023:08:19 12:54 PM	Yes	Caribou	19	Foraging	E	90	149	East	No	-96.4426	65.2233			No	Not Exceeded	



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2023:08:19 12:54 PM	Yes	Caribou	7	Foraging	E	100	144	West	No	-96.0022	65.0511			No	Not Exceeded	
Incidental	2023:08:19 12:54 PM	Yes	Caribou	2	Foraging	E	200	140	West	No	-96.2985	65.2220			No	Not Exceeded	
Road	2023:08:20 8:15 AM	Yes	Caribou	6	Walking	N	100	141	East	No	-96.3181	65.2237			No	Not Exceeded	
Road	2023:08:20 8:15 AM	Yes	Caribou	5	Feeding	N/A	1000	152	East	No	-96.4762	65.2418			No	Not Exceeded	
Road	2023:08:20 8:15 AM	Yes	Caribou	11	Feeding	S	200	154	West	No	-96.4630	65.2546			No	Not Exceeded	
Road	2023:08:20 8:15 AM	Yes	Caribou	5	Feeding	N	400	161	West	No	-96.4121	65.3032			No	Not Exceeded	
Road	2023:08:20 8:15 AM	Yes	Caribou	2	Resting	N/A	30	169	West	No	-96.5370	65.3400			No	Not Exceeded	
Road	2023:08:20 8:15 AM	Yes	Caribou	9	Feeding	N/A	100	170	Both	Yes	-96.5498	65.3466			No	Not Exceeded	
Road	2023:08:20 8:15 AM	Yes	Caribou	2	Feeding	N/A	300	175	West	No	-96.6024	65.3773			No	Not Exceeded	
Road	2023:08:20 8:15 AM	Yes	Muskox	7	Feeding	N/A	100	178	East	No	-96.6219	65.4009			No	Not Exceeded	
Road	2023:08:20 8:15 AM	Yes	Caribou	3	Feeding	N/A	600	178	West	No	-96.6219	65.4009			No	Not Exceeded	
Incidental	2023:08:20 11:41 AM	Yes	Muskox	14	Feeding	N/A	50	151	West	No	-96.4662	65.2345			No	Exceeded	Called dispatch for speed restriction.
Road	2023:08:21 7:33 AM	Yes	Caribou	3	Walking	SE	1	111	West	Yes	-96.0240	65.0481			No	Not Exceeded	
Road	2023:08:21 7:33 AM	Yes	Caribou	2	Foraging	N/A	100	139	West	No	-96.2800	65.2269			No	Not Exceeded	
Road	2023:08:21 7:33 AM	Yes	Muskox	15	Foraging	N/A	2400	140	West	No	-96.2985	65.2220			No	Exceeded	>1.5Km from the road
Road	2023:08:21 7:33 AM	Yes	Caribou	3	Foraging	NE	1300	142	East	No	-96.3371	65.2222			No	Not Exceeded	
Road	2023:08:21 7:33 AM	Yes	Caribou	2	Foraging	N/A	200	147	Both	No	-96.4184	65.2279			No	Not Exceeded	
Road	2023:08:21 7:33 AM	Yes	Caribou	1	Foraging	N/A	40	147	East	No	-96.4184	65.2279			No	Not Exceeded	
Road	2023:08:21 7:33 AM	Yes	Muskox	10	Foraging	N/A	400	148	West	No	-96.4274	65.2205			No	Not Exceeded	
Road	2023:08:21 7:33 AM	Yes	Caribou	15	Foraging	N/A	400	151	Both	No	-96.4662	65.2345			No	Not Exceeded	
Road	2023:08:21 7:33 AM	Yes	Caribou	5	Walking	SE	300	154	West	No	-96.4630	65.2546			No	Not Exceeded	
Road	2023:08:21 7:33 AM	Yes	Caribou	10	Lying Down	N/A	300	160	West	No	-96.4136	65.2943			No	Not Exceeded	
Road	2023:08:21 7:33 AM	Yes	Caribou	2	Foraging	NW	350	162	Both	No	-96.4168	65.3115			No	Not Exceeded	
Road	2023:08:21 7:33 AM	Yes	Caribou	29	Foraging	N/A	400	165	Both	No	-96.4678	65.3239			No	Exceeded	Road closed
Road	2023:08:21 7:33 AM	Yes	Caribou	8	Foraging	W	400	172	West	No	-96.5867	65.3550			No	Not Exceeded	
Road	2023:08:21 10:39 AM	Yes	Muskox	7	Foraging	N/A	400	179	East	No	-96.6266	65.4030			No	Not Exceeded	
Road	2023:08:21 10:39 AM	Yes	Caribou	2	Foraging	E	500	172	East	No	-96.5867	65.3550			No	Not Exceeded	
Road	2023:08:21 10:39 AM	Yes	Caribou	1	Foraging	N/A	900	168	East	No	-96.5240	65.3335			No	Not Exceeded	
Road	2023:08:21 10:39 AM	Yes	Caribou	1	Foraging	W	1000	167	West	No	-96.5061	65.3284			No	Not Exceeded	
Road	2023:08:21 10:39 AM	Yes	Caribou	17	Foraging	NW	600	165	West	No	-96.4678	65.3239			No	Not Exceeded	
Road	2023:08:22 7:36 AM	Yes	Caribou	3	Standing	N/A	100	141	West	No	-96.3181	65.2237			No	Not Exceeded	
Road	2023:08:22 7:36 AM	Yes	Caribou	4	Feeding	N/A	1000	142	East	No	-96.3371	65.2222			No	Not Exceeded	
Road	2023:08:22 7:36 AM	Yes	Caribou	6	Feeding	N/A	20	143	Both	No	-96.3580	65.2237			No	Not Exceeded	
Road	2023:08:22 7:36 AM	Yes	Muskox	13	Lying Down	N/A	1200	149	East	No	-96.4426	65.2233			No	Not Exceeded	
Road	2023:08:22 7:36 AM	Yes	Caribou	6	Feeding	N/A	20	150	West	No	-96.4501	65.2302			No	Not Exceeded	
Road	2023:08:22 7:36 AM	Yes	Caribou	5	Lying Down	N/A	1000	165	West	No	-96.4678	65.3239			No	Not Exceeded	
Road	2023:08:22 7:36 AM	Yes	Caribou	5	Foraging	N/A	50	167	West	No	-96.5061	65.3284			No	Not Exceeded	
Road	2023:08:22 7:36 AM	Yes	Caribou	3	Feeding	N/A	1000	169	West	No	-96.5370	65.3400			No	Not Exceeded	
Road	2023:08:22 7:36 AM	Yes	Caribou	10	Walking	N	400	170	Both	No	-96.5498	65.3466			No	Not Exceeded	
Road	2023:08:22 7:36 AM	Yes	Caribou	1	Feeding	N/A	500	173	West	No	-96.6030	65.3597			No	Not Exceeded	
Incidental	2023:08:22 10:21 AM	Yes	Caribou	6	Feeding	N/A	250	175	West	No	-96.6024	65.3773			No	Not Exceeded	
Incidental	2023:08:22 10:21 AM	Yes	Caribou	2	Feeding	N/A	20	172	West	No	-96.5867	65.3550			No	Not Exceeded	
Incidental	2023:08:22 10:21 AM	Yes	Caribou	4	Feeding	N/A	100	171	West,East	No	-96.5686	65.3520			No	Not Exceeded	
Incidental	2023:08:22 10:21 AM	Yes	Caribou	2	Feeding	N/A	150	162	West,East	No	-96.4168	65.3115			No	Not Exceeded	
Incidental	2023:08:22 10:21 AM	Yes	Caribou	20	Feeding	E	100	160	West,East	Yes	-96.4136	65.2943			No	Not Exceeded	
Incidental	2023:08:22 10:21 AM	Yes	Caribou	20	Feeding	W	10	158	East	No	-96.4047	65.2778			No	Not Exceeded	
Road	2023:08:22 3:06 PM	Yes	Caribou	2	Resting	N/A	100	179	West	No	-96.6295	65.4035			No	Not Exceeded	
Road	2023:08:22 3:06 PM	Yes	Caribou	3	Foraging	N/A	20	176	West	No	-96.6038	65.3862			No	Not Exceeded	
Road	2023:08:22 3:06 PM	Yes	Caribou	3	Walking	E	200	175	East	No	-96.6024	65.3773			No	Not Exceeded	
Road	2023:08:22 3:06 PM	Yes	Caribou	2	Foraging	W	50	171	West	No	-96.5686	65.3520			No	Not Exceeded	
Road	2023:08:22 3:06 PM	Yes	Caribou	1	Foraging	N/A	50	161	West	No	-96.4121	65.3032			No	Not Exceeded	
Road	2023:08:22 3:06 PM	Yes	Caribou	2	Foraging	N/A	200	153	East	No	-96.4763	65.2482			No	Not Exceeded	
Road	2023:08:23 8:45 AM	Yes	Caribou	2	Feeding	N/A	600	139	East	No	-96.2800	65.2269			No	Not Exceeded	
Road	2023:08:23 8:45 AM	Yes	Caribou	6	Feeding	N/A	250	141	East	No	-96.3181	65.2237			No	Not Exceeded	
Road	2023:08:23 8:45 AM	Yes	Caribou	1	Feeding	N/A	300	146	West	No	-96.3980	65.2263			No	Not Exceeded	
Road	2023:08:23 8:45 AM	Yes	Caribou	7	Foraging	N	300	148	East	No	-96.4274	65.2205			No	Not Exceeded	
Road	2023:08:23 8:45 AM	Yes	Caribou	1	Foraging	N	300	151	East	No	-96.4662	65.2345			No	Not Exceeded	
Road	2023:08:23 8:45 AM	Yes	Caribou	8	Walking	N	300	159	West	No	-96.4089	65.2860			No	Not Exceeded	



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023:08:23 8:45 AM	Yes	Caribou	17	Feeding	N/A	500	160	Both	No	-96.4136	65.2943			No	Not Exceeded	
Road	2023:08:23 8:45 AM	Yes	Caribou	2	Feeding	N	50	162	West	No	-96.4168	65.3115			No	Not Exceeded	
Road	2023:08:23 8:45 AM	Yes	Caribou	7	Feeding	N/A	350	164	Both	No	-96.4472	65.3226			No	Not Exceeded	
Road	2023:08:23 8:45 AM	Yes	Caribou	8	Feeding	N/A	100	166	Both	No	-96.4882	65.3253			No	Not Exceeded	
Road	2023:08:23 8:45 AM	Yes	Caribou	2	Feeding	N/A	600	167	East	No	-96.5061	65.3284			No	Not Exceeded	
Road	2023:08:23 8:45 AM	Yes	Caribou	7	Feeding	N/A	500	169	West	No	-96.5370	65.3400			No	Not Exceeded	
Road	2023:08:23 8:45 AM	Yes	Muskox	13	Feeding	N/A	3000	169	West	No	-96.5370	65.3400			No	Not Exceeded	
Road	2023:08:23 8:45 AM	Yes	Caribou	4	Feeding	N/A	100	171	Both	No	-96.5686	65.3520			No	Not Exceeded	
Road	2023:08:23 8:45 AM	Yes	Caribou	5	Feeding	N/A	20	172	West	No	-96.5867	65.3550			No	Not Exceeded	
Road	2023:08:23 8:45 AM	Yes	Caribou	6	Feeding	N/A	100	177	West	N/A	-96.6085	65.3943			No	Not Exceeded	
Road	2023:08:23 8:45 AM	Yes	Caribou	2	Feeding	N/A	120	178	West	N/A	-96.6219	65.4009			No	Not Exceeded	
Road	2023:08:24 7:34 AM	Yes	Muskox	1	Feeding	N/A	600	123	East	No	-96.1044	65.1222			No	Not Exceeded	
Road	2023:08:24 7:34 AM	Yes	Caribou	6	Feeding	N/A	400	153	East	No	-96.4763	65.2482			No	Not Exceeded	
Road	2023:08:24 7:34 AM	Yes	Caribou	3	Feeding	N/A	300	159	East	No	-96.4089	65.2860			No	Not Exceeded	
Road	2023:08:24 7:34 AM	Yes	Caribou	3	Feeding	N/A	200	160	West	No	-96.4136	65.2943			No	Not Exceeded	
Road	2023:08:24 7:34 AM	Yes	Caribou	6	Feeding	N/A	350	167	East	No	-96.5061	65.3284			No	Not Exceeded	
Road	2023:08:24 7:34 AM	Yes	Caribou	4	Feeding	N/A	900	169	West	No	-96.5370	65.3400			No	Not Exceeded	
Road	2023:08:24 7:34 AM	Yes	Caribou	7	Feeding	N/A	300	170	Both	No	-96.5498	65.3466			No	Not Exceeded	
Road	2023:08:24 7:34 AM	Yes	Caribou	1	Feeding	N/A	50	171	West	No	-96.5686	65.3520			No	Not Exceeded	
Road	2023:08:24 7:34 AM	Yes	Caribou	1	Feeding	N/A	100	173	West	No	-96.6030	65.3597			No	Not Exceeded	
Incidental	2023:08:24 10:18 AM	Yes	Caribou	8	Feeding	N/A	300	176	West,East	No	-96.6038	65.3862			No	Not Exceeded	
Incidental	2023:08:24 10:18 AM	Yes	Caribou	15	Feeding	N/A	200	15	West	No	-96.0525	64.4398			No	Not Exceeded	
Incidental	2023:08:24 10:18 AM	Yes	Caribou	8	Feeding	N/A	400	150	West	No	-96.4501	65.2302			No	Not Exceeded	
Incidental	2023:08:24 10:18 AM	Yes	Caribou	5	Feeding	N/A	500	143	West	No	-96.3580	65.2237			No	Not Exceeded	
Incidental	2023:08:24 10:18 AM	Yes	Caribou	8	Lying Down	N/A	290	140	West	No	-96.2985	65.2220			No	Not Exceeded	
Incidental	2023:08:24 10:18 AM	Yes	Caribou	1	Feeding	N/A	2000	130	East	No	-96.1528	65.1782			No	Not Exceeded	
Road	2023:08:25 6:53 AM	Yes	Snow goose	39	Feeding	N/A	100	140	West	No	-96.2985	65.2220			No	Not Exceeded	
Road	2023:08:25 6:53 AM	Yes	Caribou	1	Feeding	N/A	50	148	East	No	-96.4274	65.2205			No	Not Exceeded	
Road	2023:08:25 6:53 AM	Yes	Caribou	5	Feeding	N/A	500	152	East	No	-96.4762	65.2418			No	Not Exceeded	
Road	2023:08:25 6:53 AM	Yes	Caribou	5	Feeding	N/A	1000	154	East	No	-96.4630	65.2546			No	Not Exceeded	
Road	2023:08:25 6:53 AM	Yes	Caribou	3	Feeding	S	100	159	East	No	-96.4089	65.2860			No	Not Exceeded	
Road	2023:08:25 6:53 AM	Yes	Caribou	1	Walking	NW	0	167	West	Yes	-96.5061	65.3284			No	Not Exceeded	
Road	2023:08:25 6:53 AM	Yes	Snow goose	35	Lying Down	N/A	300	171	East	No	-96.5686	65.3520			No	Not Exceeded	
Road	2023:08:25 6:53 AM	Yes	Caribou	12	Feeding	W	50	171	West	No	-96.5686	65.3520			No	Not Exceeded	
Road	2023:08:25 6:53 AM	Yes	Muskox	1	Feeding	N/A	600	171	West	No	-96.5686	65.3520			No	Not Exceeded	
Road	2023:08:25 6:53 AM	Yes	Caribou	7	Walking	N	250	175	East	No	-96.6024	65.3773			No	Not Exceeded	
Road	2023:08:25 6:53 AM	Yes	Caribou	4	Feeding	N/A	50	176	West	No	-96.6038	65.3862			No	Not Exceeded	
Road	2023:08:25 6:53 AM	Yes	Caribou	5	Walking	S	300	176	East	No	-96.6038	65.3862			No	Not Exceeded	
Incidental	2023:08:25 9:35 AM	Yes	Caribou	2	Feeding	S	100	176	West	No	-96.6038	65.3862			No	Not Exceeded	
Incidental	2023:08:25 9:35 AM	Yes	Caribou	2	Feeding	N	100	172	East	No	-96.5867	65.3550			No	Not Exceeded	
Incidental	2023:08:25 9:35 AM	Yes	Caribou	14	Feeding	N/A	50	171	East	No	-96.5686	65.3520			No	Not Exceeded	
Incidental	2023:08:25 9:35 AM	Yes	Caribou	2	Feeding	N	200	167	West	No	-96.5061	65.3284			No	Not Exceeded	
Incidental	2023:08:25 9:35 AM	Yes	Caribou	1	Feeding	N/A	100	166	West	No	-96.4882	65.3253			No	Not Exceeded	
Incidental	2023:08:25 9:35 AM	Yes	Caribou	11	Feeding	W	11	164	West	No	-96.4472	65.3226			No	Not Exceeded	
Incidental	2023:08:25 9:35 AM	Yes	Caribou	6	Feeding	N/A	50	159	East	No	-96.4089	65.2860			No	Not Exceeded	
Incidental	2023:08:25 9:35 AM	Yes	Caribou	2	Walking	S	500	156	West	No	-96.4521	65.2622			No	Not Exceeded	
Incidental	2023:08:25 9:35 AM	Yes	Caribou	8	Feeding	N/A	200	152	West	No	-96.4762	65.2418			No	Not Exceeded	
Incidental	2023:08:25 9:35 AM	Yes	Caribou	1	Feeding	N/A	20	148	East	No	-96.4274	65.2205			No	Not Exceeded	
Road	2023:08:26 9:57 AM	Yes	Caribou	28	Feeding	N/A	50	140	East	No	-96.2985	65.2220			No	Exceeded	Speed resitriction: km 139-142; 30km/h
Road	2023:08:26 9:57 AM	Yes	Snow goose	30	Lying Down	N/A	300	139	East	No	-96.2800	65.2269			No	Not Exceeded	
Road	2023:08:26 9:57 AM	Yes	Caribou	7	Feeding	N/A	80	142	East	No	-96.3371	65.2222			No	Not Exceeded	
Road	2023:08:26 9:57 AM	Yes	Caribou	10	Walking	W	500	146	East	No	-96.3980	65.2263			No	Not Exceeded	
Road	2023:08:26 9:57 AM	Yes	Caribou	13	Feeding	N/A	200	148	East	No	-96.4274	65.2205			No	Not Exceeded	
Road	2023:08:26 9:57 AM	Yes	Caribou	5	Feeding	N/A	90	150	West	No	-96.4501	65.2302			No	Not Exceeded	
Road	2023:08:26 9:57 AM	Yes	Caribou	4	Feeding	N/A	20	151	West	No	-96.4662	65.2345			No	Not Exceeded	
Road	2023:08:26 9:57 AM	Yes	Caribou	5	Feeding	N/A	100	153	West	No	-96.4763	65.2482			No	Not Exceeded	



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023:08:26 9:57 AM	Yes	Muskox	21	Feeding	N/A	1500	154	West	No	-96.4630	65.2546			No	Exceeded	They are over 1000m from the road.
Road	2023:08:26 9:57 AM	Yes	Caribou	4	Feeding	N/A	70	158	Both	No	-96.4047	65.2778			No	Not Exceeded	
Road	2023:08:26 9:57 AM	Yes	Caribou	3	Feeding	N/A	900	160	West	No	-96.4136	65.2943			No	Not Exceeded	
Road	2023:08:26 9:57 AM	Yes	Caribou	4	Feeding	N/A	600	161	East	No	-96.4121	65.3032			No	Not Exceeded	
Road	2023:08:26 9:57 AM	Yes	Caribou	7	Feeding	N/A	50	163	West	No	-96.4304	65.3174			No	Not Exceeded	
Road	2023:08:26 9:57 AM	Yes	Caribou	1	Feeding	N/A	100	166	East	No	-96.4882	65.3253			No	Not Exceeded	
Road	2023:08:26 9:57 AM	Yes	Caribou	2	Feeding	N/A	5	167	Both	No	-96.5061	65.3284			No	Not Exceeded	
Road	2023:08:26 9:57 AM	Yes	Snow goose	30	Lying Down	N/A	500	169	East	No	-96.5370	65.3400			No	Not Exceeded	
Road	2023:08:26 9:57 AM	Yes	Caribou	14	Feeding	N/A	0	169	Both	Yes	-96.5370	65.3400			No	Not Exceeded	
Road	2023:08:26 9:57 AM	Yes	Caribou	15	Foraging	N/A	100	172	Both	No	-96.5867	65.3550			No	Not Exceeded	
Incidental	2023:08:26 12:39 PM	Yes	Caribou	7	Feeding	N	20	171	West	No	-96.5686	65.3520			No	Not Exceeded	
Incidental	2023:08:26 12:39 PM	Yes	Caribou	1	Feeding	N/A	20	167	West	No	-96.5061	65.3284			No	Not Exceeded	
Incidental	2023:08:26 12:39 PM	Yes	Caribou	9	Feeding	N/A	5	162	East	No	-96.4168	65.3115			No	Not Exceeded	
Incidental	2023:08:26 12:39 PM	Yes	Muskox	9	Feeding	N/A	1000	162	East	No	-96.4168	65.3115			No	Not Exceeded	
Incidental	2023:08:26 12:39 PM	Yes	Caribou	3	Walking	W	2000	158	East	No	-96.4047	65.2778			No	Not Exceeded	
Incidental	2023:08:26 12:39 PM	Yes	Caribou	5	Feeding	N/A	100	160	West	No	-96.4136	65.2943			No	Not Exceeded	
Incidental	2023:08:26 12:39 PM	Yes	Caribou	1	Feeding	N/A	120	157	East	No	-96.4158	65.2712			No	Not Exceeded	
Road	2023:08:27 8:28 AM	Yes	Muskox	1	Feeding	N/A	800	135	West	No	-96.2080	65.2089			No	Not Exceeded	
Road	2023:08:27 8:28 AM	Yes	Caribou	8	Feeding	N/A	250	136	East	No	-96.2274	65.2131			No	Not Exceeded	
Road	2023:08:27 8:28 AM	Yes	Snow goose	30	Lying Down	N/A	800	139	East	No	-96.2800	65.2269			No	Not Exceeded	
Road	2023:08:27 8:28 AM	Yes	Snow goose	100	Lying Down	N/A	400	143	East	No	-96.3580	65.2237			No	Not Exceeded	
Road	2023:08:27 8:28 AM	Yes	Caribou	7	Foraging	N/A	300	148	East	No	-96.4274	65.2205			No	Not Exceeded	
Road	2023:08:27 8:28 AM	Yes	Caribou	2	Feeding	N/A	400	150	Both	No	-96.4501	65.2302			No	Not Exceeded	
Road	2023:08:27 8:28 AM	Yes	Muskox	12	Lying Down	N/A	500	157	West	No	-96.4158	65.2712			No	Not Exceeded	
Road	2023:08:27 8:28 AM	Yes	Muskox	9	Feeding	N/A	300	158	East	No	-96.4047	65.2778			No	Not Exceeded	
Road	2023:08:27 8:28 AM	Yes	Caribou	5	Feeding	N/A	350	159	East	No	-96.4089	65.2860			No	Not Exceeded	
Road	2023:08:27 8:28 AM	Yes	Caribou	4	Feeding	N/A	100	160	West	No	-96.4136	65.2943			No	Not Exceeded	
Road	2023:08:27 8:28 AM	Yes	Caribou	4	Feeding	N/A	150	164	West	No	-96.4472	65.3226			No	Not Exceeded	
Road	2023:08:27 8:28 AM	Yes	Caribou	15	Foraging	N/A	120	169	West	No	-96.5370	65.3400			No	Not Exceeded	
Road	2023:08:27 8:28 AM	Yes	Caribou	3	Foraging	N/A	150	175	East	No	-96.6024	65.3773			No	Not Exceeded	
Road	2023:08:27 8:28 AM	Yes	Caribou	3	Feeding	N/A	500	177	West	No	-96.6085	65.3943			No	Not Exceeded	
Incidental	2023:08:27 6:21 PM	Yes	Caribou	3	Feeding	N/A	250	178	West	No	-96.6219	65.4009			No	Not Exceeded	
Incidental	2023:08:27 6:21 PM	Yes	Caribou	8	Feeding	N	15	169	East	Yes	-96.5370	65.3400			No	Not Exceeded	
Incidental	2023:08:27 6:21 PM	Yes	Caribou	3	Feeding	N/A	100	168	West	No	-96.5240	65.3335			No	Not Exceeded	
Incidental	2023:08:27 6:21 PM	Yes	Caribou	1	Feeding	N/A	100	162	West	No	-96.4168	65.3115			No	Not Exceeded	
Incidental	2023:08:27 6:21 PM	Yes	Caribou	2	Feeding	N/A	150	150	West,East	No	-96.4501	65.2302			No	Not Exceeded	
Incidental	2023:08:27 6:21 PM	Yes	Caribou	15	Feeding	N/A	100	136	East	No	-96.2274	65.2131			No	Not Exceeded	
Road	2023:08:28 8:45 AM	Yes	Snow goose	30	Lying Down	N/A	700	131	East	No	-96.1607	65.1855			No	Not Exceeded	
Road	2023:08:28 8:45 AM	Yes	Caribou	8	Feeding	N/A	500	135	East	No	-96.2080	65.2089			No	Not Exceeded	
Road	2023:08:28 8:45 AM	Yes	Caribou	11	Lying Down	N/A	1000	136	East	No	-96.2274	65.2131			No	Not Exceeded	
Road	2023:08:28 8:45 AM	Yes	Caribou	1	Feeding	N/A	1000	139	East	No	-96.2800	65.2269			No	Not Exceeded	
Road	2023:08:28 8:45 AM	Yes	Caribou	2	Alert	S	50	139	East	No	-96.2800	65.2269			No	Not Exceeded	
Road	2023:08:28 8:45 AM	Yes	Caribou	4	Feeding	W	300	144	Both	No	-96.3714	65.2229			No	Not Exceeded	
Road	2023:08:28 8:45 AM	Yes	Caribou	2	Foraging	N/A	15	148	East	No	-96.4274	65.2205			No	Not Exceeded	
Road	2023:08:28 8:45 AM	Yes	Caribou	8	Feeding	N/A	150	150	East	No	-96.4501	65.2302			No	Not Exceeded	
Road	2023:08:28 8:45 AM	Yes	Muskox	8	Feeding	N/A	500	157	East	No	-96.4158	65.2712			No	Not Exceeded	
Road	2023:08:28 8:45 AM	Yes	Muskox	16	Feeding	N/A	500	158	West	No	-96.4047	65.2778			No	Exceeded	Speed restriction: km 158-157; 30 km/h
Road	2023:08:28 8:45 AM	Yes	Caribou	16	Feeding	W	75	160	Both	N/A	-96.4136	65.2943			No	Not Exceeded	
Road	2023:08:28 8:45 AM	Yes	Caribou	3	Lying Down	N/A	500	161	East	No	-96.4121	65.3032			No	Not Exceeded	
Road	2023:08:28 8:45 AM	Yes	Caribou	2	Feeding	N/A	700	163	West	No	-96.4304	65.3174			No	Not Exceeded	
Road	2023:08:28 8:45 AM	Yes	Caribou	2	Foraging	N/A	10	167	East	No	-96.5061	65.3284			No	Not Exceeded	

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023:08:28 8:45 AM	Yes	Caribou	9	Feeding	N/A	300	169	East	No	-96.5370	65.3400			No	Not Exceeded	
Road	2023:08:28 8:45 AM	Yes	Caribou	3	Feeding	N/A	400	170	West	No	-96.5498	65.3466			No	Not Exceeded	
Road	2023:08:28 8:45 AM	Yes	Caribou	4	Walking	W	700	172	West	No	-96.5867	65.3550			No	Not Exceeded	
Road	2023:08:28 8:45 AM	Yes	Caribou	1	Feeding	N/A	25	173	West	No	-96.6030	65.3597			No	Not Exceeded	
Road	2023:08:28 8:45 AM	Yes	Caribou	4	Lying Down	N/A	25	176	East	No	-96.6038	65.3862			No	Not Exceeded	
Road	2023:08:28 8:45 AM	Yes	Caribou	9	Feeding	N/A	400	178	Both	No	-96.6219	65.4009			No	Not Exceeded	
Incidental	2023:08:28 12:25 PM	Yes	Caribou	1	Feeding	N/A	100	176	West	No	-96.6038	65.3862			No	Not Exceeded	
Incidental	2023:08:28 12:25 PM	Yes	Caribou	1	Feeding	N/A	100	169	West	No	-96.5370	65.3400			No	Not Exceeded	
Incidental	2023:08:28 12:25 PM	Yes	Caribou	10	Feeding	N/A	25	166	West	No	-96.4882	65.3253			No	Not Exceeded	
Incidental	2023:08:28 12:25 PM	Yes	Caribou	5	Feeding	N/A	25	162	West,East	No	-96.4168	65.3115			No	Not Exceeded	
Incidental	2023:08:28 12:25 PM	Yes	Caribou	11	Walking	W	0	160	West,East	Yes	-96.4136	65.2943			No	Not Exceeded	
Incidental	2023:08:28 12:25 PM	Yes	Caribou	2	Walking	N/A	1000	159	East	No	-96.4089	65.2860			No	Not Exceeded	
Incidental	2023:08:28 12:25 PM	Yes	Muskox	11	Lying Down	N/A	500	159	East	No	-96.4089	65.2860			No	Not Exceeded	
Incidental	2023:08:28 12:25 PM	Yes	Caribou	3	Walking	E	25	150	East	No	-96.4501	65.2302			No	Not Exceeded	
Incidental	2023:08:28 12:25 PM	Yes	Caribou	3	Feeding	N/A	10	148	East	No	-96.4274	65.2205			No	Not Exceeded	
Incidental	2023:08:28 12:25 PM	Yes	Caribou	2	Walking	S	100	147	East	No	-96.4184	65.2279			No	Not Exceeded	
Incidental	2023:08:28 12:25 PM	Yes	Caribou	9	Feeding	N/A	50	146	East	No	-96.3980	65.2263			No	Not Exceeded	
Incidental	2023:08:28 12:25 PM	Yes	Caribou	2	Feeding	N/A	50	139	East	No	-96.2800	65.2269			No	Not Exceeded	
Road	2023:08:29 7:14 AM	Yes	Caribou	3	Feeding	N/A	10	176	West	No	-96.6038	65.3862			No	Not Exceeded	
Road	2023:08:29 7:14 AM	Yes	Caribou	1	Feeding	N/A	600	174	East	No	-96.6013	65.3683			No	Not Exceeded	
Road	2023:08:29 7:14 AM	Yes	Caribou	3	Feeding	N/A	200	173	East	No	-96.6030	65.3597			No	Not Exceeded	
Road	2023:08:29 7:14 AM	Yes	Caribou	8	Feeding	N/A	100	169	Both	No	-96.5370	65.3400			No	Not Exceeded	
Road	2023:08:29 7:14 AM	Yes	Caribou	6	Walking	W	200	167	West	No	-96.5061	65.3284			No	Not Exceeded	
Road	2023:08:29 7:14 AM	Yes	Caribou	1	Feeding	N/A	100	164	West	No	-96.4472	65.3226			No	Not Exceeded	
Road	2023:08:29 7:14 AM	Yes	Caribou	5	Feeding	N/A	300	162	West	No	-96.4168	65.3115			No	Not Exceeded	
Road	2023:08:29 7:14 AM	Yes	Caribou	6	Feeding	N/A	50	160	West	No	-96.4136	65.2943			No	Not Exceeded	
Road	2023:08:29 7:14 AM	Yes	Caribou	8	Feeding	N/A	200	159	Both	No	-96.4089	65.2860			No	Not Exceeded	
Road	2023:08:29 7:14 AM	Yes	Muskox	16	Resting	N/A	300	158	West	No	-96.4047	65.2778			No	Exceeded	Speed restriction
Road	2023:08:29 7:14 AM	Yes	Caribou	3	Feeding	N/A	500	139	East	No	-96.2800	65.2269			No	Not Exceeded	
Road	2023:08:29 7:14 AM	Yes	Caribou	6	Feeding	N/A	100	133	East	No	-96.1754	65.1992			No	Not Exceeded	
Road	2023:08:30 3:45 PM	Yes	Caribou	3	Feeding	N/A	150	178	Both	No	-96.6219	65.4009			No	Not Exceeded	
Road	2023:08:30 3:45 PM	Yes	Caribou	2	Feeding	N/A	100	177	East	No	-96.6085	65.3943			No	Not Exceeded	
Road	2023:08:30 3:45 PM	Yes	Caribou	8	Lying Down	N/A	200	175	Both	No	-96.6024	65.3773			No	Not Exceeded	
Road	2023:08:30 3:45 PM	Yes	Caribou	3	Foraging	N/A	300	174	East	No	-96.6013	65.3683			No	Not Exceeded	
Road	2023:08:30 3:45 PM	Yes	Caribou	8	Feeding	N/A	10	174	Both	No	-96.6013	65.3683			No	Not Exceeded	
Road	2023:08:30 3:45 PM	Yes	Caribou	1	Walking	E	150	165	East	No	-96.4678	65.3239			No	Not Exceeded	
Road	2023:08:30 3:45 PM	Yes	Muskox	1	Feeding	N/A	200	165	East	No	-96.4678	65.3239			No	Not Exceeded	
Road	2023:08:30 3:45 PM	Yes	Caribou	4	Feeding	N/A	15	161	East	No	-96.4121	65.3032			No	Not Exceeded	
Road	2023:08:30 3:45 PM	Yes	Muskox	18	Lying Down	N/A	100	159	West	No	-96.4089	65.2860			No	Exceeded	Speed restriction: km 158-159; 30km/h
Road	2023:08:30 3:45 PM	Yes	Caribou	10	Feeding	N/A	100	152	Both	No	-96.4762	65.2418			No	Not Exceeded	
Road	2023:08:30 3:45 PM	Yes	Caribou	2	Feeding	N/A	400	150	East	No	-96.4501	65.2302			No	Not Exceeded	
Road	2023:08:30 3:45 PM	Yes	Caribou	2	Feeding	N/A	75	148	West	No	-96.4274	65.2205			No	Not Exceeded	
Road	2023:08:30 3:45 PM	Yes	Caribou	1	Feeding	N/A	300	139	West	No	-96.2800	65.2269			No	Not Exceeded	
Road	2023:08:30 3:45 PM	Yes	Caribou	1	Feeding	N/A	250	136	East	No	-96.2274	65.2131			No	Not Exceeded	
Road	2023:08:30 3:45 PM	Yes	Snow goose	25	Lying Down	N/A	100	110	West	No	-96.0407	65.0414			No	Not Exceeded	
Road	2023:08:31 1:14 PM	Yes	Snow goose	50	Standing	N/A	250	113	East	No	-95.9933	65.0588			No	Not Exceeded	
Road	2023:08:31 1:14 PM	Yes	Muskox	13	Foraging	N/A	1000	118	West	No	-96.0551	65.0865			No	Not Exceeded	
Road	2023:08:31 1:14 PM	Yes	Muskox	1	Trotting/running	N	2000	133	West	No	-96.1754	65.1992			No	Not Exceeded	
Road	2023:08:31 1:14 PM	Yes	Caribou	8	Foraging	N/A	200	138	East	No	-96.2602	65.2238			No	Not Exceeded	
Road	2023:08:31 1:14 PM	Yes	Caribou	1	Standing	N/A	300	142	East	No	-96.3371	65.2222			No	Not Exceeded	
Road	2023:08:31 1:14 PM	Yes	Caribou	1	Foraging	N/A	300	143	East	No	-96.3580	65.2237			No	Not Exceeded	
Road	2023:08:31 1:14 PM	Yes	Caribou	1	Foraging	N/A	200	144	East	No	-96.4167	65.2277			No	Not Exceeded	
Road	2023:08:31 1:14 PM	Yes	Caribou	1	Foraging	N/A	5	145	West	No	-96.3769	65.2242			No	Not Exceeded	
Road	2023:08:31 1:14 PM	Yes	Caribou	8	Foraging	N/A	5	148	East	No	-96.4274	65.2205			No	Not Exceeded	
Road	2023:08:31 1:14 PM	Yes	Caribou	1	Foraging	N/A	30	148	West	No	-96.4274	65.2205			No	Not Exceeded	
Road	2023:08:31 1:14 PM	Yes	Caribou	2	Foraging	N/A	20	153	West	No	-96.4763	65.2482			No	Not Exceeded	



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023:08:31 1:14 PM	Yes	Caribou	1	Foraging	N/A	1000	154	West	No	-96.4630	65.2546			No	Not Exceeded	
Road	2023:08:31 1:14 PM	Yes	Muskox	11	Resting	N/A	5	156	West	No	-96.4521	65.2622			No	Not Exceeded	
Road	2023:08:31 1:14 PM	Yes	Muskox	2	Resting	N/A	250	156	West	No	-96.4521	65.2622			No	Not Exceeded	
Road	2023:08:31 1:14 PM	Yes	Caribou	3	Foraging	N/A	100	159	West	No	-96.4089	65.2860			No	Not Exceeded	
Road	2023:08:31 1:14 PM	Yes	Caribou	5	Foraging	N/A	100	161	Both	No	-96.4121	65.3032			No	Not Exceeded	
Road	2023:08:31 1:14 PM	Yes	Caribou	3	Foraging	N/A	150	165	East	No	-96.4678	65.3239			No	Not Exceeded	
Road	2023:08:31 1:14 PM	Yes	Caribou	1	Foraging	N/A	100	166	East	No	-96.4882	65.3253			No	Not Exceeded	
Road	2023:08:31 1:14 PM	Yes	Caribou	1	Resting	N/A	200	167	West	No	-96.5061	65.3284			No	Not Exceeded	
Road	2023:08:31 1:14 PM	Yes	Caribou	2	Foraging	N/A	400	169	West	No	-96.5370	65.3400			No	Not Exceeded	
Road	2023:08:31 1:14 PM	Yes	Caribou	3	Foraging	N/A	500	170	East	No	-96.5498	65.3466			No	Not Exceeded	
Road	2023:08:31 1:14 PM	Yes	Caribou	1	Foraging	N/A	200	172	East	No	-96.5867	65.3550			No	Not Exceeded	
Road	2023:08:31 1:14 PM	Yes	Caribou	5	Foraging	N/A	100	174	Both	No	-96.6013	65.3683			No	Not Exceeded	
Road	2023:08:31 1:14 PM	Yes	Caribou	3	Foraging	N/A	50	175	West	No	-96.6024	65.3773			No	Not Exceeded	
Road	2023:08:31 1:14 PM	Yes	Caribou	2	Foraging	N	50	176	West	No	-96.6038	65.3862			No	Not Exceeded	
Road	2023:08:31 1:14 PM	Yes	Caribou	4	Foraging	N/A	50	176	East	No	-96.6038	65.3862			No	Not Exceeded	
Road	2023:08:31 1:14 PM	Yes	Caribou	1	Foraging	N/A	1000	176	West	No	-96.6038	65.3862			No	Not Exceeded	
Road	2023:08:31 1:14 PM	Yes	Caribou	6	Foraging	N/A	10	177	West	No	-96.6085	65.3943			No	Not Exceeded	
Road	2023:08:31 1:14 PM	Yes	Caribou	1	Foraging	N/A	100	178	East	No	-96.6219	65.4009			No	Not Exceeded	
Road	2023:08:31 1:14 PM	Yes	Caribou	2	Foraging	N/A	75	178	West	No	-96.6219	65.4009			No	Not Exceeded	
Road	2023:08:31 1:14 PM	Yes	Caribou	3	Foraging	N/A	15	179	West	No	-96.6600	65.4036			No	Not Exceeded	
Road	2023:09:01 10:08 AM	Yes	Caribou	1	Foraging	N/A	300	177	West	No	-96.6085	65.3943			No	Not Exceeded	
Road	2023:09:01 10:08 AM	Yes	Caribou	8	Foraging	N/A	5	173	Both	No	-96.6030	65.3597			No	Not Exceeded	
Road	2023:09:01 10:08 AM	Yes	Caribou	5	Foraging	N/A	350	171	Both	No	-96.5686	65.3520			No	Not Exceeded	
Road	2023:09:01 10:08 AM	Yes	Caribou	1	Standing	N/A	250	169	West	No	-96.5370	65.3400			No	Not Exceeded	
Road	2023:09:01 10:08 AM	Yes	Caribou	2	Foraging	N/A	400	168	East	No	-96.5240	65.3335			No	Not Exceeded	
Road	2023:09:01 10:08 AM	Yes	Caribou	2	Foraging	N/A	300	167	East	No	-96.5061	65.3284			No	Not Exceeded	
Road	2023:09:01 10:08 AM	Yes	Caribou	3	Foraging	N/A	100	164	West	No	-96.4472	65.3226			No	Not Exceeded	
Road	2023:09:01 10:08 AM	Yes	Caribou	1	Foraging	N/A	300	163	West	No	-96.4304	65.3174			No	Not Exceeded	
Road	2023:09:01 10:08 AM	Yes	Caribou	4	Trotting/running	W	0	162	Both	Yes	-96.4168	65.3115			No	Not Exceeded	
Road	2023:09:01 10:08 AM	Yes	Caribou	2	Foraging	N/A	400	161	East	No	-96.4121	65.3032			No	Not Exceeded	
Road	2023:09:01 10:08 AM	Yes	Caribou	7	Foraging	N/A	25	160	Both	No	-96.4136	65.2943			No	Not Exceeded	
Road	2023:09:01 10:08 AM	Yes	Caribou	3	Foraging	N/A	100	159	West	No	-96.4089	65.2860			No	Not Exceeded	
Road	2023:09:01 10:08 AM	Yes	Caribou	2	Foraging	N/A	100	157	West	No	-96.4158	65.2712			No	Not Exceeded	
Road	2023:09:01 10:08 AM	Yes	Muskox	19	Foraging	N/A	0	154	Both	Yes	-96.4630	65.2546			No	Exceeded	Speed restriction was put in place (speed of 30km/h, no beacon lights) at 11:30
Road	2023:09:01 10:08 AM	Yes	Caribou	3	Foraging	N/A	50	152	West	No	-96.4762	65.2418			No	Not Exceeded	
Road	2023:09:01 10:08 AM	Yes	Caribou	2	Foraging	N/A	100	150	East	No	-96.4501	65.2302			No	Not Exceeded	
Road	2023:09:01 10:08 AM	Yes	Caribou	1	Foraging	N/A	350	149	West	No	-96.4426	65.2233			No	Not Exceeded	
Road	2023:09:01 10:08 AM	Yes	Caribou	5	Foraging	N/A	250	148	Both	No	-96.4274	65.2205			No	Not Exceeded	
Road	2023:09:02 10:07 AM	Yes	Caribou	4	Foraging	N/A	5	175	East	No	-96.6024	65.3773			No	Not Exceeded	
Road	2023:09:02 10:07 AM	Yes	Caribou	1	Foraging	N/A	5	173	East	No	-96.6030	65.3597			No	Not Exceeded	
Road	2023:09:02 10:07 AM	Yes	Caribou	2	Foraging	E	50	171	East	No	-96.5686	65.3520			No	Not Exceeded	
Road	2023:09:02 10:07 AM	Yes	Caribou	2	Foraging	N/A	200	170	West	No	-96.5498	65.3466			No	Not Exceeded	
Road	2023:09:02 10:07 AM	Yes	Caribou	6	Foraging	N/A	150	167	West	No	-96.5061	65.3284			No	Not Exceeded	
Road	2023:09:02 10:07 AM	Yes	Caribou	2	Foraging	N/A	30	159	West	No	-96.4089	65.2860			No	Not Exceeded	
Road	2023:09:02 10:07 AM	Yes	Muskox	1	Foraging	N/A	50	156	East	No	-96.4521	65.2622			No	Not Exceeded	
Road	2023:09:02 10:07 AM	Yes	Muskox	2	Resting	N/A	300	154	East	No	-96.4630	65.2546			No	Not Exceeded	
Road	2023:09:02 10:07 AM	Yes	Caribou	4	Foraging	N/A	50	144	East	No	-96.0022	65.0511			No	Not Exceeded	
Road	2023:09:02 10:07 AM	Yes	Caribou	4	Standing	W	0	143	West	Yes	-96.3580	65.2237			No	Not Exceeded	
Road	2023:09:02 10:07 AM	Yes	Caribou	2	Standing	N/A	200	128	East	No	-96.1358	65.1614			No	Not Exceeded	
Incidental	2023:09:02 3:44 PM	Yes	Caribou	5	Trotting/running	N	50	139	East	No	-96.2800	65.2269			No	Not Exceeded	
Incidental	2023:09:02 3:44 PM	Yes	Caribou	3	Foraging	N/A	50	148	West	No	-96.4274	65.2205			No	Not Exceeded	
Incidental	2023:09:02 3:44 PM	Yes	Muskox	1	Foraging	N/A	200	159	East	No	-96.4089	65.2860			No	Not Exceeded	
Incidental	2023:09:02 3:44 PM	Yes	Caribou	2	Foraging	N/A	100	160	East	No	-96.4136	65.2943			No	Not Exceeded	
Incidental	2023:09:02 3:44 PM	Yes	Caribou	1	Foraging	N/A	100	161	East	No	-96.4121	65.3032			No	Not Exceeded	
Incidental	2023:09:02 3:44 PM	Yes	Caribou	3	Walking	E	25	161	East	No	-96.4121	65.3032			No	Not Exceeded	
Incidental	2023:09:02 3:44 PM	Yes	Caribou	5	Trotting/running	W	5	169	West	No	-96.5370	65.3400			No	Not Exceeded	



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2023:09:02 3:44 PM	Yes	Caribou	4	Foraging	N/A	25	173	East	No	-96.6030	65.3597			No	Not Exceeded	
Incidental	2023:09:02 3:44 PM	Yes	Caribou	3	Foraging	N/A	25	174	East	No	-96.6013	65.3683			No	Not Exceeded	
Road	2023:09:03 9:32 AM	Yes	Caribou	3	Foraging	N/A	10	167	East	No	-96.5061	65.3284			No	Not Exceeded	
Road	2023:09:03 9:32 AM	Yes	Caribou	2	Foraging	N/A	100	162	East	No	-96.4168	65.3115			No	Not Exceeded	
Road	2023:09:03 9:32 AM	Yes	Caribou	3	Foraging	N/A	100	160	East	No	-96.4136	65.2943			No	Not Exceeded	
Road	2023:09:03 9:32 AM	Yes	Caribou	3	Foraging	E	5	159	East	No	-96.4089	65.2860			No	Not Exceeded	
Road	2023:09:03 9:32 AM	Yes	Caribou	8	Foraging	N/A	200	139	East	No	-96.2800	65.2269			No	Not Exceeded	
Road	2023:09:03 9:32 AM	Yes	Arctic fox	1	Walking	E	0	135	East	Yes	-96.2080	65.2089			No	Not Exceeded	
Road	2023:09:03 9:32 AM	Yes	Caribou	12	Foraging	N/A	150	134	East	No	-96.1929	65.2048			No	Not Exceeded	
Incidental	2023:09:03 11:29 AM	Yes	Caribou	2	Walking	S	0	111	East	No	-96.0240	65.0481			No	Not Exceeded	
Incidental	2023:09:03 11:29 AM	Yes	Caribou	6	Foraging	N/A	100	140	West	No	-96.2985	65.2220			No	Not Exceeded	
Incidental	2023:09:03 11:29 AM	Yes	Muskox	3	Foraging	N/A	50	158	East	No	-96.4047	65.2778			No	Not Exceeded	
Incidental	2023:09:03 11:29 AM	Yes	Muskox	2	Foraging	N/A	25	160	East	No	-96.4136	65.2943			No	Not Exceeded	
Incidental	2023:09:03 11:29 AM	Yes	Caribou	5	Foraging	N/A	5	160	West	No	-96.4136	65.2943			No	Not Exceeded	
Incidental	2023:09:03 11:29 AM	Yes	Muskox	1	Foraging	N/A	200	161	East	No	-96.4121	65.3032			No	Not Exceeded	
Incidental	2023:09:03 11:29 AM	Yes	Caribou	24	Walking	N	0	171	West,East	Yes	-96.5686	65.3520			No	Not Exceeded	
Incidental	2023:09:03 11:29 AM	Yes	Caribou	1	Foraging	N/A	100	172	West	No	-96.5867	65.3550			No	Not Exceeded	
Incidental	2023:09:03 11:29 AM	Yes	Caribou	4	Foraging	N/A	100	173	East	No	-96.6030	65.3597			No	Not Exceeded	
Incidental	2023:09:03 11:29 AM	Yes	Caribou	1	Foraging	N/A	100	177	West	No	-96.6085	65.3943			No	Not Exceeded	
Road	2023:09:04 10:18 AM	Yes	Snow goose	25	Resting	N/A	150	121	East	No	-96.0864	65.1071			No	Not Exceeded	
Road	2023:09:04 10:18 AM	Yes	Wolf	1	Walking	N	100	140	West	No	-96.2985	65.2220			No	Not Exceeded	
Road	2023:09:04 10:18 AM	Yes	Caribou	9	Foraging	SE	200	147	East	No	-96.4184	65.2279			No	Not Exceeded	
Road	2023:09:04 10:18 AM	Yes	Caribou	2	Foraging	S	100	149	East	No	-96.4426	65.2233			No	Not Exceeded	
Road	2023:09:04 10:18 AM	Yes	Muskox	2	Foraging	SE	150	149	East	No	-96.4426	65.2233			No	Not Exceeded	
Road	2023:09:04 10:18 AM	Yes	Muskox	4	Foraging	N/A	300	154	East	No	-96.4630	65.2546			No	Not Exceeded	
Road	2023:09:04 10:18 AM	Yes	Muskox	12	Foraging	S	5	159	East	No	-96.4089	65.2860			No	Not Exceeded	
Road	2023:09:04 10:18 AM	Yes	Muskox	1	Resting	N/A	50	163	East	No	-96.4304	65.3174			No	Not Exceeded	
Road	2023:09:04 10:18 AM	Yes	Caribou	4	Walking	SW	50	165	West	No	-96.4678	65.3239			No	Not Exceeded	
Road	2023:09:04 10:18 AM	Yes	Caribou	5	Feeding	SW	50	169	West	No	-96.5370	65.3400			No	Not Exceeded	
Road	2023:09:04 10:18 AM	Yes	Caribou	2	Feeding	S	100	176	Both	No	-96.6038	65.3862			No	Not Exceeded	
Road	2023:09:04 10:18 AM	Yes	Caribou	2	Feeding	S	50	177	West	No	-96.6085	65.3943			No	Not Exceeded	
Road	2023:09:04 10:18 AM	Yes	Caribou	1	Feeding	S	75	179	West	No	-96.6644	65.4026			No	Not Exceeded	
Incidental	2023:09:04 2:16 PM	Yes	Muskox	10	Feeding	NW	150	118	West	No	-96.0551	65.0865			No	Not Exceeded	
Road	2023:09:05 7:42 AM	Yes	Caribou	2	Foraging	N/A	100	175	East	N/A	-96.6024	65.3773			No	Not Exceeded	
Road	2023:09:05 7:42 AM	Yes	Caribou	3	Walking	W	10	172	West	Yes	-96.5867	65.3550			No	Not Exceeded	
Road	2023:09:05 7:42 AM	Yes	Caribou	3	Foraging	N/A	100	167	East	N/A	-96.5061	65.3284			No	Not Exceeded	
Road	2023:09:05 7:42 AM	Yes	Caribou	5	Foraging	N/A	200	159	East	N/A	-96.4089	65.2860			No	Not Exceeded	
Road	2023:09:05 7:42 AM	Yes	Muskox	16	Resting	N/A	600	151	West	N/A	-96.4662	65.2345			No	Exceeded	N/A. Observed over 500m from the road.
Road	2023:09:05 7:42 AM	Yes	Caribou	3	Foraging	N/A	150	147	East	N/A	-96.4184	65.2279			No	Not Exceeded	
Road	2023:09:06 1:16 PM	Yes	Caribou	5	Foraging	N/A	10	173	East	No	-96.6030	65.3597			No	Not Exceeded	
Road	2023:09:06 1:16 PM	Yes	Caribou	2	Foraging	E	30	169	East	No	-96.5370	65.3400			No	Not Exceeded	
Road	2023:09:06 1:16 PM	Yes	Caribou	2	Foraging	E	30	168	East	No	-96.5240	65.3335			No	Not Exceeded	
Road	2023:09:06 1:16 PM	Yes	Caribou	2	Foraging	N/A	100	165	East	No	-96.4678	65.3239			No	Not Exceeded	
Road	2023:09:06 1:16 PM	Yes	Caribou	2	Foraging	E	100	165	West	No	-96.4678	65.3239			No	Not Exceeded	
Road	2023:09:06 1:16 PM	Yes	Caribou	2	Foraging	E	80	163	West	No	-96.4304	65.3174			No	Not Exceeded	
Road	2023:09:06 1:16 PM	Yes	Caribou	2	Foraging	N/A	50	160	West	No	-96.4136	65.2943			No	Not Exceeded	
Road	2023:09:06 1:16 PM	Yes	Caribou	6	Foraging	N/A	50	159	East	No	-96.4089	65.2860			No	Not Exceeded	
Road	2023:09:06 1:16 PM	Yes	Caribou	1	Foraging	E	50	157	East	No	-96.4158	65.2712			No	Not Exceeded	
Road	2023:09:06 1:16 PM	Yes	Caribou	1	Foraging	E	80	156	East	No	-96.4521	65.2622			No	Not Exceeded	
Road	2023:09:06 1:16 PM	Yes	Caribou	1	Foraging	E	100	152	East	No	-96.4762	65.2418			No	Not Exceeded	
Road	2023:09:06 1:16 PM	Yes	Caribou	1	Foraging	E	100	149	East	No	-96.4426	65.2233			No	Not Exceeded	
Road	2023:09:06 1:16 PM	Yes	Muskox	14	Foraging	N/A	10	148	West	No	-96.4274	65.2205			No	Exceeded	Speed Restriction on 147 to 149 road marking
Road	2023:09:06 1:16 PM	Yes	Caribou	2	Walking	S	100	144	East	No	-96.3571	65.2236			No	Not Exceeded	
Road	2023:09:06 1:16 PM	Yes	Caribou	2	Foraging	E	120	135	East	No	-96.2080	65.2089			No	Not Exceeded	
Road	2023:09:07 1:46 PM	Yes	Caribou	1	Alert	N/A	500	173	West	No	-96.6030	65.3597			No	Not Exceeded	
Road	2023:09:07 1:46 PM	Yes	Muskox	1	Foraging	W	300	174	West	No	-96.6013	65.3683			No	Not Exceeded	
Road	2023:09:07 1:46 PM	Yes	Caribou	7	Foraging	E	10	160	Both	No	-96.4136	65.2943			No	Not Exceeded	
Road	2023:09:07 1:46 PM	Yes	Caribou	7	Foraging	N/A	500	159	East	No	-96.4089	65.2860			No	Not Exceeded	



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023:09:07 1:46 PM	Yes	Muskox	1	Foraging	W	150	157	East	No	-96.4158	65.2712			No	Not Exceeded	
Road	2023:09:07 1:46 PM	Yes	Wolf	3	Walking	E	0	156	Both	Yes	-96.4521	65.2622			No	Not Exceeded	
Road	2023:09:07 1:46 PM	Yes	Caribou	2	Alert	W	500	156	West	No	-96.4521	65.2622			No	Not Exceeded	
Road	2023:09:07 1:46 PM	Yes	Caribou	3	Foraging	E	300	154	West	No	-96.4630	65.2546			No	Not Exceeded	
Road	2023:09:07 1:46 PM	Yes	Siksik	1	Running	E	0	154	Both	Yes	-96.4630	65.2546			No	Not Exceeded	
Road	2023:09:07 1:46 PM	Yes	Muskox	1	Foraging	N/A	200	154	East	No	-96.4630	65.2546			No	Not Exceeded	
Road	2023:09:07 1:46 PM	Yes	Caribou	4	Foraging	W	600	151	West	No	-96.4662	65.2345			No	Not Exceeded	
Road	2023:09:07 1:46 PM	Yes	Muskox	21	Foraging	E	2	151	Both	No	-96.4662	65.2345			No	Exceeded	Speed restriction 30 km/h
Road	2023:09:07 1:46 PM	Yes	Caribou	2	Foraging	E	200	149	East	No	-96.4426	65.2233			No	Not Exceeded	
Road	2023:09:08 9:41 AM	Yes	Snow goose	6	Flying	W	20	112	Both	No	-96.0022	65.0511			No	Not Exceeded	
Road	2023:09:08 9:41 AM	Yes	Muskox	1	Standing	N/A	300	121	West	No	-96.0864	65.1071			No	Not Exceeded	
Road	2023:09:08 9:41 AM	Yes	Caribou	25	Foraging	W	25	139	East	No	-96.2800	65.2269			No	Not Exceeded	
Road	2023:09:08 9:41 AM	Yes	Caribou	7	Alert	W	100	149	Both	No	-96.4426	65.2233			No	Not Exceeded	
Road	2023:09:08 9:41 AM	Yes	Caribou	1	Resting	E	300	161	East	No	-96.4121	65.3032			No	Not Exceeded	
Road	2023:09:08 9:41 AM	Yes	Caribou	1	Walking	N	0	167	East	No	-96.5061	65.3284			No	Not Exceeded	
Road	2023:09:08 9:41 AM	Yes	Caribou	6	Foraging	N/A	500	169	East	No	-96.5370	65.3400			No	Not Exceeded	
Road	2023:09:08 9:41 AM	Yes	Caribou	3	Foraging	N/A	200	171	East	No	-96.5686	65.3520			No	Not Exceeded	
Road	2023:09:08 9:41 AM	Yes	Caribou	1	Walking	W	400	172	East	No	-96.5867	65.3550			No	Not Exceeded	
Road	2023:09:08 9:41 AM	Yes	Caribou	4	Foraging	N/A	200	174	West	No	-96.6013	65.3683			No	Not Exceeded	
Incidental	2023:09:08 1:45 PM	Yes	Muskox	8	Foraging	W	750	113	West	No	-95.9933	65.0588			No	Not Exceeded	
Incidental	2023:09:08 2:04 PM	Yes	Caribou	6	Foraging	N/A	500	176	West	No	-96.6038	65.3862			No	Not Exceeded	
Incidental	2023:09:08 2:04 PM	Yes	Caribou	1	Foraging	N/A	500	173	East	No	-96.6030	65.3597			No	Not Exceeded	
Incidental	2023:09:08 2:04 PM	Yes	Caribou	2	Foraging	N/A	500	171	East	No	-96.5686	65.3520			No	Not Exceeded	
Incidental	2023:09:08 2:04 PM	Yes	Caribou	1	Foraging	N/A	200	170	West	No	-96.5498	65.3466			No	Not Exceeded	
Incidental	2023:09:08 2:04 PM	Yes	Caribou	4	Foraging	N/A	500	166	East	No	-96.4882	65.3253			No	Not Exceeded	
Incidental	2023:09:08 2:04 PM	Yes	Caribou	1	Foraging	N/A	800	162	East	No	-96.4168	65.3115			No	Not Exceeded	
Incidental	2023:09:08 2:04 PM	Yes	Muskox	1	Foraging	N/A	100	160	East	No	-96.4136	65.2943			No	Not Exceeded	
Incidental	2023:09:08 2:04 PM	Yes	Caribou	10	Foraging	N/A	250	160	East	No	-96.4136	65.2943			No	Not Exceeded	
Incidental	2023:09:08 2:04 PM	Yes	Caribou	4	Foraging	N/A	20	152	West	No	-96.4762	65.2418			No	Not Exceeded	
Incidental	2023:09:08 2:04 PM	Yes	Muskox	1	Foraging	N/A	50	152	East	No	-96.4762	65.2418			No	Not Exceeded	
Road	2023:09:09 7:42 AM	Yes	Caribou	2	Foraging	SE	400	136	East	No	-96.2274	65.2131			No	Not Exceeded	
Road	2023:09:09 7:42 AM	Yes	Caribou	8	Feeding	SE	300	146	East	No	-96.3980	65.2263			No	Not Exceeded	
Road	2023:09:09 7:42 AM	Yes	Caribou	2	Feeding	NW	100	147	West	No	-96.4184	65.2279			No	Not Exceeded	
Road	2023:09:09 7:42 AM	Yes	Caribou	6	Feeding	SE	200	153	East	No	-96.4763	65.2482			No	Not Exceeded	
Road	2023:09:09 7:42 AM	Yes	Muskox	1	Resting	N/A	45	153	East	No	-96.4763	65.2482			No	Not Exceeded	
Road	2023:09:09 7:42 AM	Yes	Caribou	12	Walking	S	350	155	East	No	-96.4342	65.2676			No	Not Exceeded	
Road	2023:09:09 7:42 AM	Yes	Caribou	8	Resting	SE	400	160	East	No	-96.4136	65.2943			No	Not Exceeded	
Road	2023:09:09 7:42 AM	Yes	Caribou	1	Feeding	N/A	10	167	East	No	-96.5061	65.3284			No	Not Exceeded	
Road	2023:09:09 7:42 AM	Yes	Caribou	5	Feeding	S	150	172	East	No	-96.5867	65.3550			No	Not Exceeded	
Road	2023:09:09 7:42 AM	Yes	Caribou	2	Feeding	S	25	175	East	No	-96.6024	65.3773			No	Not Exceeded	
Incidental	2023:09:09 11:42 AM	Yes	Muskox	22	Walking	W	5	152	West	Yes	-96.4762	65.2418			No	Exceeded	Speed restriction 30km/h between 148 and 153. Env truck escorted LHTs through the sensitive zone.
Incidental	2023:09:09 11:42 AM	Yes	Caribou	35	Walking	SE	400	151	East	No	-96.4662	65.2345			No	Exceeded	Speed restriction 30 kms
Incidental	2023:09:09 11:42 AM	Yes	Caribou	10	Walking	SE	100	150	East	No	-96.4501	65.2302			No	Not Exceeded	
Incidental	2023:09:09 11:42 AM	Yes	Muskox	23	Foraging	NW	50	122	West	No	-96.0971	65.1148			No	Exceeded	Speed restriction 30 kms 121-122
Road	2023:09:10 7:20 AM	Yes	Muskox	1	Walking	SE	200	123	West	No	-96.1044	65.1222			No	Not Exceeded	
Road	2023:09:10 7:20 AM	Yes	Caribou	2	Feeding	N	50	138	East	No	-96.2602	65.2238			No	Not Exceeded	
Road	2023:09:10 7:20 AM	Yes	Caribou	1	Walking	NW	50	152	West	No	-96.4762	65.2418			No	Not Exceeded	
Road	2023:09:10 7:20 AM	Yes	Muskox	1	Foraging	N/A	500	154	East	No	-96.4630	65.2546			No	Not Exceeded	
Road	2023:09:10 7:20 AM	Yes	Muskox	17	Walking	E	10	158	Both	Yes	-96.4047	65.2778			No	Exceeded	Speed restriction 30 kms
Road	2023:09:10 7:20 AM	Yes	Caribou	2	Feeding	N/A	50	167	East	No	-96.5061	65.3284			No	Not Exceeded	
Road	2023:09:10 7:20 AM	Yes	Caribou	2	Feeding	N/A	15	168	East	No	-96.5240	65.3335			No	Not Exceeded	
Road	2023:09:10 7:20 AM	Yes	Caribou	9	Feeding	SE	150	171	East	No	-96.5686	65.3520			No	Not Exceeded	
Road	2023:09:10 7:20 AM	Yes	Caribou	1	Feeding	S	350	174	East	No	-96.6013	65.3683			No	Not Exceeded	



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2023:09:10 12:35 PM	Yes	Muskox	17	Walking	N	1500	121	West	No	-96.0864	65.1071			No	Exceeded	Over a km away
Road	2023:09:11 7:00 AM	Yes	Caribou	6	Foraging	N/A	700	169	East	No	-96.5370	65.3400			No	Not Exceeded	
Road	2023:09:11 7:00 AM	Yes	Caribou	4	Foraging	W	1	167	Both	Yes	-96.5061	65.3284			No	Not Exceeded	
Road	2023:09:11 7:00 AM	Yes	Caribou	3	Foraging	N	1200	164	East	No	-96.4472	65.3226			No	Not Exceeded	
Road	2023:09:11 7:00 AM	Yes	Muskox	23	Foraging	N/A	2500	162	West	N/A	-96.4168	65.3115			No	Exceeded	Distance is 2.5 km from the road
Road	2023:09:11 7:00 AM	Yes	Muskox	3	Walking	N	200	161	Both	No	-96.4121	65.3032			No	Not Exceeded	
Road	2023:09:11 7:00 AM	Yes	Caribou	7	Foraging	N/A	15	160	Both	No	-96.4136	65.2943			No	Not Exceeded	
Road	2023:09:11 7:00 AM	Yes	Caribou	2	Foraging	N/A	1100	159	East	No	-96.4089	65.2860			No	Not Exceeded	
Road	2023:09:11 7:00 AM	Yes	Muskox	1	Standing	N/A	1000	156	West	No	-96.4521	65.2622			No	Not Exceeded	
Road	2023:09:11 7:00 AM	Yes	Caribou	2	Foraging	N/A	800	152	West	No	-96.4762	65.2418			No	Not Exceeded	
Road	2023:09:11 7:00 AM	Yes	Caribou	1	Running	W	10	149	Both	Yes	-96.4426	65.2233			No	Not Exceeded	
Road	2023:09:11 7:00 AM	Yes	Caribou	4	Foraging	W	150	141	West	No	-96.3181	65.2237			No	Not Exceeded	
Road	2023:09:11 7:00 AM	Yes	Muskox	1	Standing	N/A	150	135	West	No	-96.2080	65.2089			No	Not Exceeded	
Road	2023:09:12 7:06 AM	Yes	Caribou	8	Foraging	N/A	200	178	East	N/A	-96.6219	65.4009			No	Not Exceeded	
Road	2023:09:12 7:06 AM	Yes	Caribou	5	Foraging	N/A	300	169	East	N/A	-96.5370	65.3400			No	Not Exceeded	
Road	2023:09:12 7:06 AM	Yes	Muskox	9	Foraging	N/A	25	165	West	N/A	-96.4678	65.3239			No	Not Exceeded	
Road	2023:09:12 7:06 AM	Yes	Caribou	7	Foraging	N/A	200	159	East	N/A	-96.4089	65.2860			No	Not Exceeded	
Road	2023:09:13 6:40 AM	Yes	Muskox	1	Walking	S	300	136	West	No	-96.2274	65.2131			No	Not Exceeded	
Road	2023:09:13 6:40 AM	Yes	Caribou	2	Foraging	W	400	139	East	No	-96.2800	65.2269			No	Not Exceeded	
Road	2023:09:13 6:40 AM	Yes	Caribou	1	Foraging	N/A	200	141	East	No	-96.3181	65.2237			No	Not Exceeded	
Road	2023:09:13 6:40 AM	Yes	Caribou	3	Foraging	N/A	200	160	West	No	-96.4136	65.2943			No	Not Exceeded	
Road	2023:09:13 6:40 AM	Yes	Caribou	1	Foraging	N/A	200	161	West	No	-96.4121	65.3032			No	Not Exceeded	
Road	2023:09:13 6:40 AM	Yes	Muskox	20	Foraging	N	300	164	West	No	-96.4472	65.3226			No	Exceeded	Speed restriction of 30kmh between km164 and km165
Road	2023:09:13 6:40 AM	Yes	Caribou	1	Foraging	N	200	166	West	No	-96.4882	65.3253			No	Not Exceeded	
Road	2023:09:13 6:40 AM	Yes	Caribou	1	Foraging	W	200	167	East	No	-96.5061	65.3284			No	Not Exceeded	
Road	2023:09:13 6:40 AM	Yes	Caribou	4	Foraging	N/A	250	175	West	No	-96.6024	65.3773			No	Not Exceeded	
Incidental	2023:09:13 11:40 AM	Yes	Caribou	3	Foraging	S	250	167	East	No	-96.5061	65.3284			No	Not Exceeded	
Incidental	2023:09:13 11:40 AM	Yes	Muskox	10	Resting	N/A	300	147	West	No	-96.4184	65.2279			No	Not Exceeded	
Incidental	2023:09:13 4:01 PM	Yes	Muskox	17	Foraging	N/A	25	165	West	N/A	-96.4678	65.3239			No	Exceeded	Speed Restriction
Road	2023:09:14 8:49 AM	Yes	Caribou	1	Foraging	S	300	143	West	No	-96.3580	65.2237			No	Not Exceeded	
Road	2023:09:14 8:49 AM	Yes	Muskox	10	Foraging	N/A	200	147	East	No	-96.4184	65.2279			No	Not Exceeded	
Road	2023:09:14 8:49 AM	Yes	Caribou	8	Lying Down	N/A	200	152	West	No	-96.4762	65.2418			No	Not Exceeded	
Road	2023:09:14 8:49 AM	Yes	Caribou	1	Foraging	N/A	1750	169	East	No	-96.5370	65.3400			No	Not Exceeded	
Road	2023:09:14 8:49 AM	Yes	Caribou	5	Foraging	N/A	700	179	West	No	-96.6667	65.4014			No	Not Exceeded	
Incidental	2023:09:14 10:55 AM	Yes	Caribou	2	Foraging	N/A	200	175	West	No	-96.6024	65.3773			No	Not Exceeded	
Incidental	2023:09:14 10:55 AM	Yes	Caribou	1	Foraging	N/A	200	167	West	No	-96.5061	65.3284			No	Not Exceeded	
Incidental	2023:09:14 10:55 AM	Yes	Caribou	5	Foraging	W	100	125	East	Yes	-96.1079	65.1391			No	Not Exceeded	
Road	2023:09:17 6:38 AM	Yes	Muskox	14	Foraging	N/A	200	115	West	No	-96.0090	65.0711			No	Exceeded	Call dispatch, speed restriction of 30 km between km 113-114
Road	2023:09:17 6:38 AM	Yes	Caribou	1	Alert	N	75	140	East	No	-96.2985	65.2220			No	Not Exceeded	
Road	2023:09:17 6:38 AM	Yes	Caribou	3	Lying Down	N/A	75	160	East	No	-96.4136	65.2943			No	Not Exceeded	
Road	2023:09:17 6:38 AM	Yes	Caribou	2	Foraging	N/A	75	168	East	No	-96.5240	65.3335			No	Not Exceeded	
Road	2023:09:17 6:38 AM	Yes	Caribou	4	Foraging	N/A	50	170	West	No	-96.5498	65.3466			No	Not Exceeded	
Road	2023:09:17 11:18 AM	Yes	Muskox	1	Walking	S	75	176	West	No	-96.6038	65.3862			No	Not Exceeded	
Road	2023:09:17 11:18 AM	Yes	Muskox	6	Foraging	N	30	173	East	No	-96.6030	65.3597			No	Not Exceeded	
Road	2023:09:19 2:00 PM	Yes	Snow goose	6	Feeding	N/A	100	173	East	No	-96.6030	65.3597			No	Not Exceeded	
Road	2023:09:19 2:00 PM	Yes	Muskox	23	Feeding	N/A	300	169	West	No	-96.5370	65.3400			No	Exceeded	Speed restriction
Road	2023:09:19 2:00 PM	Yes	Snow goose	14	Foraging	N/A	100	165	West	No	-96.4678	65.3239			No	Not Exceeded	
Road	2023:09:19 2:00 PM	Yes	Snow goose	5	Feeding	N/A	100	164	West	No	-96.4472	65.3226			No	Not Exceeded	
Road	2023:09:19 2:00 PM	Yes	Snow goose	3	Foraging	N/A	200	155	West	No	-96.4342	65.2676			No	Not Exceeded	
Road	2023:09:19 2:00 PM	Yes	Muskox	19	Feeding	N/A	50	153	East	No	-96.4763	65.2482			No	Exceeded	Speed restriction



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023:09:19 2:00 PM	Yes	Arctic fox	1	Running	S	150	123	West	No	-96.1044	65.1222			No	Not Exceeded	
Road	2023:09:20 3:02 PM	Yes	Snow goose	6	Standing	N/A	200	176	West	No	-96.6038	65.3862			No	Not Exceeded	
Road	2023:09:20 3:02 PM	Yes	Caribou	3	Foraging	N/A	50	168	West	No	-96.5240	65.3335			No	Not Exceeded	
Road	2023:09:20 3:02 PM	Yes	Snow goose	20	Standing	N/A	100	142	Both	No	-96.3371	65.2222			No	Not Exceeded	
Road	2023:09:20 3:02 PM	Yes	Muskox	2	Foraging	N/A	136	135	Both	No	-96.2080	65.2089			No	Not Exceeded	
Road	2023:09:20 3:02 PM	Yes	Snow goose	10	Standing	N/A	10	134	Both	No	-96.1929	65.2048			No	Not Exceeded	
Road	2023:09:20 3:02 PM	Yes	Snow goose	6	Standing	N/A	20	126	East	No	-96.1108	65.1482			No	Not Exceeded	
Road	2023:09:22 7:38 AM	Yes	Muskox	1	Foraging	N/A	50	135	East	No	-96.2080	65.2089			No	Not Exceeded	
Road	2023:09:22 7:38 AM	Yes	Caribou	12	Foraging	N/A	50	137	East	No	-96.2415	65.2194			No	Not Exceeded	
Road	2023:09:22 7:38 AM	Yes	Muskox	2	Lying Down	N/A	40	138	West	No	-96.2602	65.2238			No	Not Exceeded	
Road	2023:09:22 7:38 AM	Yes	Caribou	2	Foraging	NW	90	139	West	No	-96.2800	65.2269			No	Not Exceeded	
Road	2023:09:22 7:38 AM	Yes	Caribou	5	Walking	NE	100	152	East	No	-96.4762	65.2418			No	Not Exceeded	
Road	2023:09:22 7:38 AM	Yes	Muskox	1	Foraging	N/A	200	155	West	No	-96.4342	65.2676			No	Not Exceeded	
Road	2023:09:22 7:38 AM	Yes	Caribou	4	Running	N	60	166	West	No	-96.4882	65.3253			No	Not Exceeded	
Road	2023:09:23 9:29 AM	Yes	Caribou	2	Foraging	NE	10	160	East	No	-96.4136	65.2943			No	Not Exceeded	
Road	2023:09:23 9:29 AM	Yes	Muskox	16	Foraging	E	40	161	East	No	-96.4121	65.3032			No	Exceeded	Speed restriction 30km/hr km 160-162 Dispatched notified
Road	2023:09:23 9:29 AM	Yes	Muskox	1	Foraging	N	400	172	West	No	-96.5867	65.3550			No	Not Exceeded	
Incidental	2023:09:23 2:05 PM	Yes	Muskox	3	Lying Down	N/A	50	135	East	No	-96.2080	65.2089			No	Not Exceeded	
Mine & Pit	2023:09:23 2:06 PM	Yes	Muskox	14	Foraging	N/A	900	110	East	No	-96.0445	65.0418			No	Exceeded	Speed restriction was implemented from km 111 to MBK.
Incidental	2023:09:24 4:05 PM	Yes	Grizzly bear	1	Walking	W	0	177	West,East	Yes	-96.6085	65.3943			No	Not Exceeded	
Road	2023:09:26 9:23 AM	Yes	Muskox	3	Resting	N/A	75	135	East	No	-96.2080	65.2089			No	Not Exceeded	
Road	2023:09:26 9:23 AM	Yes	Muskox	10	Walking	SW	750	110	East	No	-96.0407	65.0414			No	Not Exceeded	
Road	2023:09:29 1:41 PM	Yes	Muskox	8	Foraging	N/A	100	176	West	N/A	-96.6038	65.3862			No	Not Exceeded	
Road	2023:09:30 11:12 AM	Yes	Caribou	3	Walking	NW	10	170	West	No	-96.5498	65.3466			No	Not Exceeded	
Road	2023:09:30 11:12 AM	Yes	Muskox	7	Feeding	NW	10	140	West	No	-96.2985	65.2220			No	Not Exceeded	
Incidental	2023:10:01 8:23 AM	Yes	Muskox	19	Foraging	N/A	5	111	East	No	-96.0240	65.0481			No	Exceeded	Speed restriction put in place 30 km/h at km111
Road	2023:10:01 8:50 AM	Yes	Caribou	3	Foraging	N/A	100	169	West	N/A	-96.5370	65.3400			No	Not Exceeded	
Road	2023:10:01 8:50 AM	Yes	Muskox	14	Foraging	N/A	150	111	East	N/A	-96.0240	65.0481			No	Exceeded	Speed restriction 30km/h put in place km111
Incidental	2023:10:01 1:38 PM	Yes	Muskox	2	Foraging	N/A	200	120	West	N/A	-96.0728	65.1002			No	Not Exceeded	
Road	2023:10:03 8:15 AM	Yes	Muskox	2	Resting	N/A	300	119	West	No	-96.0648	65.0932			No	Not Exceeded	
Road	2023:10:03 8:15 AM	Yes	Muskox	3	Feeding	N/A	15	132	East	N/A	-96.1646	65.1940			No	Not Exceeded	
Road	2023:10:03 8:15 AM	Yes	Muskox	16	Feeding	E	250	148	East	No	-96.4274	65.2205			No	Exceeded	Road open - speed restriction put in place 30 km/h
Road	2023:10:03 8:15 AM	Yes	Caribou	5	Feeding	SE	250	170	East	No	-96.5498	65.3466			No	Not Exceeded	
Road	2023:10:05 7:55 AM	Yes	Muskox	3	Feeding	E	150	120	East	No	-96.0728	65.1002			No	Not Exceeded	
Road	2023:10:05 7:55 AM	Yes	Arctic hare	3	Feeding	N/A	200	135	West	No	-96.2080	65.2089			No	Not Exceeded	
Road	2023:10:05 7:55 AM	Yes	Muskox	3	Feeding	E	250	135	East	N/A	-96.2080	65.2089			No	Not Exceeded	
Road	2023:10:05 7:55 AM	Yes	Wolf	5	Walking	S	300	166	East	Yes	-96.4882	65.3253			No	Not Exceeded	
Road	2023:10:05 7:55 AM	Yes	Caribou	2	Feeding	N/A	400	166	East	N/A	-96.4882	65.3253			No	Not Exceeded	

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023:10:07 7:55 AM	Yes	Muskox	16	Foraging	E	0	111	East	No	-96.0240	65.0481			No	Exceeded	Speed restriction starting at 9:53 am from 110km to 111km .Speed restriction lifted at 10:40am
Road	2023:10:07 7:55 AM	Yes	Muskox	1	Foraging	N/A	5	116	West	No	-96.0206	65.0803			No	Not Exceeded	
Road	2023:10:07 7:55 AM	Yes	Muskox	24	Foraging	E	5	159	East	No	-96.4089	65.2860			No	Exceeded	Speed restriction km158 -km160
Incidental	2023:10:07 10:33 AM	Yes	Muskox	1	Foraging	N/A	5	116	West	No	-96.0206	65.0803			No	Not Exceeded	
Incidental	2023:10:07 10:33 AM	Yes	Muskox	24	Foraging	N/A	5	159	East	No	-96.4089	65.2860			No	Exceeded	Speed restriction (30km/h) was put in place bewtween 160 and 158 to the road users for the remaning of the shift.
Road	2023:10:09 8:11 AM	Yes	Canada goose	3	Standing	N/A	100	162	West	No	-96.4168	65.3115			No	Not Exceeded	
Road	2023:10:09 8:11 AM	Yes	Muskox	17	Lying Down	N/A	1600	160	East	No	-96.4136	65.2943			No	Exceeded	> 1.5Km from the road
Road	2023:10:09 8:11 AM	Yes	Ptarmigan	4	Standing	N/A	5	156	East	No	-96.4521	65.2622			No	Not Exceeded	
Road	2023:10:09 8:11 AM	Yes	Muskox	8	Feeding	N/A	800	149	West	No	-96.4426	65.2233			No	Not Exceeded	
Road	2023:10:09 8:11 AM	Yes	Ptarmigan	28	Standing	N/A	30	160	East	No	-96.4136	65.2943			No	Not Exceeded	
Road	2023:10:09 8:11 AM	Yes	Caribou	27	Feeding	S	1100	145	East	No	-96.3769	65.2242			No	Not Exceeded	
Road	2023:10:09 8:11 AM	Yes	Caribou	31	Walking	S	500	142	East	No	-96.3371	65.2222			No	Not Exceeded	
Road	2023:10:09 8:11 AM	Yes	Muskox	3	Walking	N/A	800	138	East	No	-96.2602	65.2238			No	Not Exceeded	
Road	2023:10:09 8:11 AM	Yes	Ptarmigan	36	Flying	W	0	120	Both	Yes	-96.0728	65.1002			No	Not Exceeded	
Road	2023:10:11 6:45 PM	Yes	Muskox	3	Lying Down	N/A	300	160	West	No	-96.4136	65.2943			No	Not Exceeded	
Incidental	2023:10:13 2:27 PM	Yes	Muskox	23	Resting	N/A	20	151	East	No	-96.4662	65.2345			No	Exceeded	Speed restriction from 150 to 152
Incidental	2023:10:14 9:50 AM	Yes	Caribou	1	Foraging	E	400	146	East	No	-96.3980	65.2263			No	Not Exceeded	
Road	2023:10:14 12:32 PM	Yes	Muskox	2	Foraging	N/A	20	171	West	No	-96.5686	65.3520			No	Not Exceeded	
Road	2023:10:14 12:32 PM	Yes	Muskox	2	Resting	N/A	20	118	East	No	-96.0551	65.0865			No	Not Exceeded	
Road	2023:10:14 1:20 PM	Yes	Arctic fox	1	Walking	N	1	150	East	No	-96.4501	65.2302			No	Not Exceeded	
Road	2023:10:14 1:23 PM	Yes	Muskox	7	Lying Down	N/A	50	148	East	No	-96.4274	65.2205			No	Not Exceeded	
Road	2023:10:14 1:33 PM	Yes	Caribou	9	Foraging	N/A	100	146	East	No	-96.3980	65.2263			No	Not Exceeded	
Road	2023:10:14 2:16 PM	Yes	Caribou	1	Running	N	20	125	East	No	-96.1079	65.1391			No	Not Exceeded	
Road	2023:10:14 2:38 PM	Yes	Muskox	16	Foraging	N/A	5	109	East	No	-96.0421	65.0405			No	Exceeded	Speed restriction 20km/hrDispatch called
Incidental	2023:10:15 8:51 AM	Yes	Caribou	5	Foraging	N/A	75	147	East	No	-96.4184	65.2279			No	Not Exceeded	
Incidental	2023:10:15 8:51 AM	Yes	Muskox	2	Walking	N	5	119	West	N/A	-96.0648	65.0932			No	Not Exceeded	
Incidental	2023:10:15 8:51 AM	Yes	Muskox	1	Foraging	N/A	10	118	East	No	-96.0551	65.0865			No	Not Exceeded	
Road	2023:10:16 9:00 AM	Yes	Muskox	2	Foraging	N/A	10	138	Both	No	-96.2602	65.2238			No	Not Exceeded	
Road	2023:10:18 8:06 AM	Yes	Caribou	14	Foraging	N/A	1200	149	East	No	-96.4426	65.2233			No	Not Exceeded	
Road	2023:10:18 8:06 AM	Yes	Caribou	7	Feeding	N/A	75	144	East	No	-96.3921	65.2258			No	Not Exceeded	
Road	2023:10:18 8:06 AM	Yes	Muskox	1	Foraging	N/A	800	138	West	No	-96.2602	65.2238			No	Not Exceeded	
Road	2023:10:18 8:06 AM	Yes	Muskox	3	Foraging	N/A	5	119	East	No	-96.0648	65.0932			No	Not Exceeded	
Road	2023:10:20 12:54 PM	Yes	Muskox	5	Feeding	N/A	50	123	West	No	-96.1044	65.1222			No	Not Exceeded	
Road	2023:10:20 12:54 PM	Yes	Muskox	7	Feeding	N/A	30	146	West	No	-96.3980	65.2263			No	Not Exceeded	
Road	2023:10:20 12:54 PM	Yes	Caribou	6	Feeding	N/A	900	147	West	No	-96.4184	65.2279			No	Not Exceeded	
Incidental	2023:10:21 11:01 AM	Yes	Muskox	6	Feeding	Not Recorded	50	119	West	No	-96.0648	65.0932			No	Not Exceeded	
Road	2023:10:21 11:04 AM	Yes	Muskox	5	Feeding	Not Recorded	500	120	East	No	-96.0728	65.1002			No	Not Exceeded	
Road	2023:10:21 11:04 AM	Yes	Caribou	9	Resting	Not Recorded	750	147	East	No	-96.4184	65.2279			No	Not Exceeded	
Incidental	2023:10:22 9:17 AM	Yes	Muskox	1	Standing	Not Recorded	100	157	East	No	-96.4158	65.2712			No	Not Exceeded	

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2023:10:22 9:17 AM	Yes	Muskox	7	Feeding	N/A	200	146	East	No	-96.3980	65.2263			No	Not Exceeded	
Incidental	2023:10:22 9:17 AM	Yes	Muskox	2	Feeding	N/A	100	136	West	No	-96.2274	65.2131			No	Not Exceeded	
Road	2023:10:22 12:46 PM	Yes	Caribou	8	Feeding	Not Recorded	150	116	East	No	-96.0206	65.0803			No	Not Exceeded	
Incidental	2023:10:23 8:54 AM	Yes	Muskox	9	Feeding	Not Recorded	100	112	West	No	-96.0022	65.0511			No	Not Exceeded	
Road	2023:10:23 12:05 PM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023:10:24 8:59 AM	Yes	Caribou	15	Feeding	Not Recorded	100	172	East	No	-96.5867	65.3550			No	Not Exceeded	
Incidental	2023:10:24 8:59 AM	Yes	Muskox	7	Feeding	Not Recorded	750	149	East	No	-96.4426	65.2233			No	Not Exceeded	
Road	2023:10:24 12:42 PM	Yes	Caribou	2	Foraging	N/A	150	133	East	No	-96.1754	65.1992			No	Not Exceeded	
Road	2023:10:24 12:42 PM	Yes	Muskox	7	Lying Down	N/A	1500	148	East	No	-96.4274	65.2205			No	Not Exceeded	
Road	2023:10:24 12:42 PM	Yes	Muskox	6	Foraging	N/A	2000	154	West	No	-96.4630	65.2546			No	Not Exceeded	
Road	2023:10:24 12:42 PM	Yes	Muskox	11	Resting	N/A	2000	162	East	No	-96.4168	65.3115			No	Not Exceeded	
Road	2023:10:25 8:05 AM	Yes	Muskox	3	Feeding	N/A	100	135	East	No	-96.2080	65.2089			No	Not Exceeded	
Road	2023:10:26 8:30 AM	Yes	Muskox	3	Foraging	N/A	3000	169	West	No	-96.5370	65.3400			No	Not Exceeded	
Road	2023:10:26 8:30 AM	Yes	Caribou	17	Foraging	N/A	3000	166	East	No	-96.4882	65.3253			No	Not Exceeded	
Road	2023:10:26 8:30 AM	Yes	Caribou	150	Foraging	N/A	500	169	East	No	-96.5370	65.3400			No	Exceeded	Road closed
Road	2023:10:26 8:30 AM	Yes	Muskox	22	Foraging	N/A	50	159	East	No	-96.4089	65.2860			No	Exceeded	Road closed
Road	2023:10:26 8:30 AM	Yes	Muskox	8	Foraging	N/A	100	156	West	No	-96.4521	65.2622			No	Not Exceeded	
Road	2023:10:26 8:30 AM	Yes	Caribou	6	Foraging	N/A	500	147	East	No	-96.4184	65.2279			No	Not Exceeded	
Road	2023:10:26 8:30 AM	Yes	Muskox	3	Foraging	N/A	150	136	East	No	-96.2274	65.2131			No	Not Exceeded	
Road	2023:10:26 8:30 AM	Yes	Caribou	6	Foraging	N/A	2000	133	East	No	-96.1754	65.1992			No	Not Exceeded	
Road	2023:10:26 8:30 AM	Yes	Muskox	3	Foraging	N/A	100	120	Both	No	-96.0728	65.1002			No	Not Exceeded	
Incidental	2023:10:26 12:23 PM	Yes	Arctic fox	1	Running	W	0	126	West,East	Yes	-96.1108	65.1482			No	Not Exceeded	
Incidental	2023:10:26 12:23 PM	Yes	Caribou	14	Alert	N/A	100	143	East	No	-96.3580	65.2237			No	Not Exceeded	
Incidental	2023:10:26 12:23 PM	Yes	Caribou	8	Foraging	N/A	75	144	East	No	-96.0022	65.0511			No	Not Exceeded	
Incidental	2023:10:26 12:23 PM	Yes	Muskox	7	Foraging	N/A	300	148	East	No	-96.4274	65.2205			No	Not Exceeded	
Incidental	2023:10:26 12:23 PM	Yes	Muskox	10	Foraging	N/A	500	163	East	No	-96.4304	65.3174			No	Not Exceeded	
Incidental	2023:10:26 12:23 PM	Yes	Caribou	200	Foraging	S	100	166	East	No	-96.0022	65.0511			No	Exceeded	Road closed
Road	2023:10:27 7:45 AM	Yes	Caribou	14	Foraging	N/A	300	137	East	No	-96.2415	65.2194			No	Not Exceeded	
Road	2023:10:27 7:45 AM	Yes	Muskox	8	Foraging	N/A	1200	149	East	No	-96.4426	65.2233			No	Not Exceeded	
Road	2023:10:27 7:45 AM	Yes	Muskox	2	Foraging	N/A	1700	154	West	No	-96.4630	65.2546			No	Not Exceeded	
Road	2023:10:27 7:45 AM	Yes	Muskox	7	Foraging	N/A	250	156	West	No	-96.4521	65.2622			No	Not Exceeded	
Road	2023:10:27 7:45 AM	Yes	Muskox	10	Foraging	N/A	20	158	East	No	-96.4047	65.2778			No	Not Exceeded	
Road	2023:10:27 7:45 AM	Yes	Caribou	43	Alert	N/A	150	141	East	No	-96.3181	65.2237			No	Not Exceeded	
Road	2023:10:27 7:56 AM	Yes	Caribou	87	Feeding	N	100	172	East	No	-96.5867	65.3550			No	Not Exceeded	
Road	2023:10:27 7:56 AM	Yes	Caribou	52	Standing	Not Recorded	500	165	East	No	-96.4678	65.3239			No	Not Exceeded	
Road	2023:10:27 7:56 AM	Yes	Caribou	189	Feeding	N	20	165	East	No	-96.4678	65.3239			No	Exceeded	Road closed. Survey only done to KM 159 as the MBK team completed the other segment simultaneously.
Incidental	2023:10:27 9:42 AM	Yes	Caribou	7	Foraging	NW	300	140	East	No	-96.2985	65.2220			No	Not Exceeded	
Incidental	2023:10:27 9:42 AM	Yes	Muskox	6	Walking	N	200	138	East	No	-96.2602	65.2238			No	Not Exceeded	
Incidental	2023:10:27 9:42 AM	Yes	Caribou	1	Walking	W	350	133	East	No	-96.1754	65.1992			No	Not Exceeded	
Incidental	2023:10:27 1:45 PM	Yes	Caribou	10	Resting	N/A	500	140	East	No	-96.2985	65.2220			No	Not Exceeded	
Incidental	2023:10:27 1:45 PM	Yes	Caribou	6	Feeding	NW	500	147	East	No	-96.4184	65.2279			No	Not Exceeded	
Incidental	2023:10:27 1:45 PM	Yes	Caribou	19	Feeding	N/A	1000	149	East	No	-96.4426	65.2233			No	Not Exceeded	
Incidental	2023:10:27 1:45 PM	Yes	Muskox	26	Feeding	N/A	50	159	East	No	-96.4089	65.2860			No	Exceeded	Road closed
Incidental	2023:10:27 1:45 PM	Yes	Caribou	200	Standing	N/A	50	165	East	N/A	-96.4678	65.3239			No	Exceeded	Road closed
Incidental	2023:10:27 2:15 PM	Yes	Caribou	200	Foraging	Not Recorded	20	171	East	No	-96.5686	65.3520			No	Exceeded	Road closed. Behaviour monitoring completed.

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023:10:28 8:26 AM	Yes	Caribou	261	Feeding	W	0	171	Both	Yes	-96.5686	65.3520			No	Exceeded	The road is closed to traffic. Waiting for the group to cross before going by slowly
Road	2023:10:28 8:26 AM	Yes	Caribou	5	Standing	N/A	150	168	East	No	-96.5240	65.3335			No	Not Exceeded	
Road	2023:10:28 8:26 AM	Yes	Caribou	3	Walking	W	100	166	West	No	-96.4882	65.3253			No	Not Exceeded	
Road	2023:10:28 8:26 AM	Yes	Caribou	400	Walking	N	150	165	Both	Yes	-96.4678	65.3239			No	Exceeded	The road is closed to traffic. Waited for the caribou to cross before moving forwards
Road	2023:10:28 8:26 AM	Yes	Caribou	24	Walking	N	100	160	East	No	-96.4136	65.2943			No	Not Exceeded	
Road	2023:10:28 8:26 AM	Yes	Muskox	28	Foraging	N/A	250	159	East	No	-96.4089	65.2860			No	Exceeded	Road closed
Road	2023:10:28 8:26 AM	Yes	Muskox	7	Foraging	N/A	10	157	Both	No	-96.4158	65.2712			No	Not Exceeded	
Road	2023:10:28 8:26 AM	Yes	Caribou	31	Foraging	N/A	1000	148	East	No	-96.4274	65.2205			No	Not Exceeded	
Road	2023:10:28 8:26 AM	Yes	Muskox	8	Foraging	N/A	1000	148	East	No	-96.4274	65.2205			No	Not Exceeded	
Road	2023:10:28 8:26 AM	Yes	Caribou	1	Alert	N/A	50	147	East	No	-96.4184	65.2279			No	Not Exceeded	
Road	2023:10:28 8:26 AM	Yes	Caribou	30	Foraging	N/A	300	140	East	No	-96.2985	65.2220			No	Not Exceeded	
Road	2023:10:28 8:26 AM	Yes	Caribou	6	Alert	S	100	138	East	No	-96.2602	65.2238			No	Not Exceeded	
Road	2023:10:28 8:26 AM	Yes	Caribou	5	Trotting/running	E	100	136	East	No	-96.2274	65.2131			No	Not Exceeded	
Road	2023:10:28 8:26 AM	Yes	Caribou	9	Foraging	N/A	500	131	East	No	-96.1607	65.1855			No	Not Exceeded	
Road	2023:10:28 8:26 AM	Yes	Caribou	3	Trotting/running	E	10	127	East	No	-96.1255	65.1538			No	Not Exceeded	
Road	2023:10:28 8:26 AM	Yes	Muskox	1	Foraging	N/A	200	120	West	No	-96.0728	65.1002			No	Not Exceeded	
Road	2023:10:28 8:26 AM	Yes	Caribou	22	Walking	N	50	118	East	No	-96.0551	65.0865			No	Not Exceeded	
Incidental	2023:10:28 2:23 PM	Yes	Caribou	44	Lying Down	N/A	300	144	East	No	-96.0022	65.0511			No	Not Exceeded	
Incidental	2023:10:28 2:23 PM	Yes	Caribou	39	Walking	N/A	0	137	West,East	No	-96.2415	65.2194			No	Not Exceeded	
Incidental	2023:10:28 2:23 PM	Yes	Caribou	10	Walking	S	10	137	East	No	-96.2415	65.2194			No	Not Exceeded	
Incidental	2023:10:28 2:23 PM	Yes	Caribou	4	Walking	N/A	250	151	West	No	-96.4662	65.2345			No	Not Exceeded	
Incidental	2023:10:28 2:23 PM	Yes	Caribou	41	Foraging	N/A	350	152	East	No	-96.4762	65.2418			No	Not Exceeded	
Road	2023:10:29 8:23 AM	Yes	Caribou	11	Walking	W	750	170	East	No	-96.5498	65.3466			No	Not Exceeded	
Road	2023:10:29 8:23 AM	Yes	Muskox	10	Foraging	N/A	100	159	East	No	-96.4089	65.2860			No	Not Exceeded	
Road	2023:10:29 8:23 AM	Yes	Caribou	8	Walking	S	500	154	East	No	-96.4630	65.2546			No	Not Exceeded	
Road	2023:10:29 8:23 AM	Yes	Muskox	5	Foraging	N/A	10	137	West	No	-96.2415	65.2194			No	Not Exceeded	
Road	2023:10:29 8:23 AM	Yes	Caribou	12	Feeding	S	1000	133	East	No	-96.1754	65.1992			No	Not Exceeded	
Road	2023:10:29 8:23 AM	Yes	Caribou	150	Foraging	SE	2000	132	East	No	-96.1646	65.1940			No	Exceeded	> than 1.5Km
Incidental	2023:10:29 2:51 PM	Yes	Muskox	5	Standing	Not Recorded	500	147	East	No	-96.4184	65.2279			No	Not Exceeded	
Incidental	2023:10:29 2:51 PM	Yes	Muskox	23	Foraging	Not Recorded	500	157	East	No	-96.4158	65.2712			No	Exceeded	Speed restriction applied
Incidental	2023:10:29 2:51 PM	Yes	Muskox	16	Foraging	NE	500	161	East	No	-96.4121	65.3032			No	Exceeded	Speed restriction applied
Road	2023:10:30 7:25 AM	Yes	Muskox	2	Foraging	N/A	350	164	West	No	-96.4472	65.3226			No	Not Exceeded	
Road	2023:10:30 7:25 AM	Yes	Muskox	26	Resting	N/A	100	156	West	No	-96.4521	65.2622			No	Exceeded	Speed restriction (30km/h) was put in place between km 156 and 157. Road users were made aware of it
Road	2023:10:30 7:25 AM	Yes	Muskox	7	Foraging	S	25	146	East	No	-96.3980	65.2263			No	Not Exceeded	
Road	2023:10:30 7:25 AM	Yes	Caribou	81	Walking	S	3000	133	East	No	-96.1754	65.1992			No	Not Exceeded	
Incidental	2023:10:30 1:43 PM	Yes	Muskox	5	Foraging	N/A	25	138	East	No	-96.2602	65.2238			No	Not Exceeded	
Incidental	2023:10:30 1:43 PM	Yes	Caribou	1	Foraging	N/A	300	149	East	No	-96.4426	65.2233			No	Not Exceeded	
Road	2023:10:31 10:16 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023:11:01 9:07 AM	Yes	Muskox	7	Foraging	N/A	100	143	East	No	-96.3580	65.2237			No	Not Exceeded	
Road	2023:11:01 9:07 AM	Yes	Caribou	105	Foraging	N/A	500	117	East	No	-96.0394	65.0837			No	Exceeded	Road closed
Incidental	2023:11:01 2:36 PM	Yes	Caribou	78	Walking	S	500	144	East	No	-96.0022	65.0511			No	Not Exceeded	
Incidental	2023:11:01 2:36 PM	Yes	Caribou	1	Foraging	N/A	400	151	East	No	-96.4662	65.2345			No	Not Exceeded	
Road	2023:11:02 8:49 AM	Yes	Muskox	7	Foraging	N/A	100	146	East	No	-96.3980	65.2263			No	Not Exceeded	

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023:11:03 9:38 AM	Yes	Muskox	2	Foraging	N/A	150	168	West	No	-96.5240	65.3335			No	Not Exceeded	
Road	2023:11:03 9:38 AM	Yes	Muskox	2	Foraging	N/A	250	162	West	No	-96.4168	65.3115			No	Not Exceeded	
Road	2023:11:03 9:38 AM	Yes	Muskox	18	Foraging	N/A	50	161	East	No	-96.4121	65.3032			No	Exceeded	Speed restricton 160 - 162
Incidental	2023:11:03 1:35 PM	Yes	Muskox	3	Foraging	N/A	10	137	West	No	-96.2415	65.2194			No	Not Exceeded	
Incidental	2023:11:03 1:35 PM	Yes	Caribou	1	Running	E	130	148	West	N/A	-96.4274	65.2205			No	Not Exceeded	
Incidental	2023:11:04 10:01 AM	Yes	Muskox	7	Foraging	N/A	50	153	East	No	-96.4763	65.2482			No	Not Exceeded	
Incidental	2023:11:04 10:01 AM	Yes	Muskox	3	Foraging	N/A	150	139	East	No	-96.2800	65.2269			No	Not Exceeded	
Road	2023:11:04 4:39 PM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023:11:05 8:37 AM	Yes	Arctic fox	1	Dead	N/A	0	153	West	N/A	-96.4763	65.2482		Project related	No	Not Exceeded	
Incidental	2023:11:05 8:37 AM	Yes	Arctic hare	1	Dead	N/A	0	153	West	No	-96.4763	65.2482		Project related	No	Not Exceeded	
Road	2023:11:05 8:38 AM	Yes	Arctic fox	1	Running	E	10	169	East	Yes	-96.5370	65.3400			No	Not Exceeded	
Road	2023:11:05 8:38 AM	Yes	Muskox	10	Lying Down	N/A	156	161	East	No	-96.4121	65.3032			No	Not Exceeded	
Incidental	2023:11:06 1:40 AM	Yes	Muskox	1	Dead	N/A	0	158	North	Yes	-96.4047	65.2778		Project related	No	Not Exceeded	
Road	2023:11:06 7:38 AM	Yes	Muskox	19	Resting	N/A	150	162	East	No	-96.4168	65.3115			No	Exceeded	Speed restriction 161 to 163
Road	2023:11:06 7:38 AM	Yes	Muskox	21	Foraging	N/A	500	157	East	N/A	-96.4158	65.2712			No	Exceeded	Speed restriction
Road	2023:11:06 7:38 AM	Yes	Muskox	7	Foraging	N/A	200	145	East	No	-96.3769	65.2242			No	Not Exceeded	
Road	2023:11:07 9:51 AM	Yes	Muskox	7	Foraging	N/A	200	145	East	No	-96.3769	65.2242			No	Not Exceeded	
Road	2023:11:07 9:51 AM	Yes	Ptarmigan	5	Flying	W	0	111	West	Yes	-96.0240	65.0481			No	Not Exceeded	
Incidental	2023:11:07 1:43 PM	Yes	Muskox	7	Foraging	N/A	1300	162	East	No	-96.4168	65.3115			No	Not Exceeded	
Road	2023:11:08 10:20 AM	Yes	Muskox	1	Foraging	SE	500	133	West	No	-96.1754	65.1992			No	Not Exceeded	
Road	2023:11:08 10:20 AM	Yes	Muskox	7	Foraging	N/A	500	144	East	No	-96.3923	65.2259			No	Not Exceeded	
Road	2023:11:08 10:20 AM	Yes	Muskox	1	Foraging	N/A	50	156	East	No	-96.4521	65.2622			No	Not Exceeded	
Road	2023:11:08 10:20 AM	Yes	Muskox	5	Foraging	N/A	200	120	East	No	-96.0728	65.1002			No	Not Exceeded	
Road	2023:11:09 7:43 AM	Yes	Muskox	7	Foraging	N/A	2000	154	East	N/A	-96.4630	65.2546			No	Not Exceeded	
Road	2023:11:10 8:22 AM	Yes	Muskox	6	Foraging	N/A	500	120	West	No	-96.0728	65.1002			No	Not Exceeded	
Road	2023:11:10 8:22 AM	Yes	Muskox	6	Foraging	N/A	600	153	East	No	-96.4763	65.2482			No	Not Exceeded	
Road	2023:11:10 8:22 AM	Yes	Muskox	4	Foraging	N/A	1500	158	West	No	-96.4047	65.2778			No	Not Exceeded	
Road	2023:11:10 8:22 AM	Yes	Muskox	2	Foraging	N/A	600	167	East	No	-96.5061	65.3284			No	Not Exceeded	
Road	2023:11:11 9:26 AM	Yes	Muskox	3	Foraging	N/A	500	139	West	No	-96.2800	65.2269			No	Not Exceeded	
Road	2023:11:11 9:26 AM	Yes	Muskox	7	Foraging	N/A	200	154	West	No	-96.4630	65.2546			No	Not Exceeded	
Road	2023:11:12 7:30 AM	Yes	Muskox	2	Foraging	N/A	150	168	East	No	-96.5240	65.3335			No	Not Exceeded	
Road	2023:11:12 7:30 AM	Yes	Muskox	7	Foraging	E	20	154	East	No	-96.4630	65.2546			No	Not Exceeded	
Road	2023:11:13 9:11 AM	Yes	Muskox	19	Lying Down	N/A	1000	153	East	No	-96.4763	65.2482			No	Exceeded	>500m from the road
Road	2023:11:13 9:11 AM	Yes	Muskox	3	Lying Down	N/A	50	119	West	No	-96.0648	65.0932			No	Not Exceeded	
Road	2023:11:14 8:43 AM	Yes	Caribou	6	Foraging	N/A	50	173	East	No	-96.6030	65.3597			No	Not Exceeded	
Road	2023:11:14 8:43 AM	Yes	Muskox	3	Foraging	N/A	75	154	East	No	-96.4630	65.2546			No	Not Exceeded	
Incidental	2023:11:14 3:55 PM	Yes	Caribou	30	Foraging	N/A	50	153	East	No	-96.4763	65.2482			No	Not Exceeded	
Road	2023:11:15 10:25 AM	Yes	Muskox	2	Standing	N/A	800	177	West	No	-96.6085	65.3943			No	Not Exceeded	
Road	2023:11:16 12:49 PM	Yes	Muskox	3	Feeding	N/A	150	155	East	No	-96.4342	65.2676			No	Not Exceeded	
Road	2023:11:17 9:14 AM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023:11:18 9:42 AM	Yes	Muskox	5	Foraging	N/A	100	153	East	No	-96.4763	65.2482			No	Not Exceeded	
Incidental	2023:11:18 9:42 AM	Yes	Muskox	3	Lying Down	NW	30	118	West	No	-96.0551	65.0865			No	Not Exceeded	
Road	2023:11:18 12:38 PM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023:11:19 9:20 AM	Yes	Muskox	4	Lying Down	Not Recorded	30	137	West	No	-96.2415	65.2194			No	Not Exceeded	
Road	2023:11:19 10:19 AM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023:11:20 9:15 AM	Yes	Muskox	4	Lying Down	Not Recorded	100	138	East	No	-96.2602	65.2238			No	Not Exceeded	
Road	2023:11:20 9:57 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023:11:23 7:54 AM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023:11:23 10:56 AM	Yes	Muskox	14	Milling	E	100	161	East	No	-96.4121	65.3032			No	Exceeded	Speed restriction applied from km 160-162

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023:11:24 8:46 AM	Yes	Muskox	18	Standing	N/A	150	162	East	No	-96.4168	65.3115			No	Exceeded	Speed restriction was put in place (30km/h, no beacon)
Road	2023:11:24 8:46 AM	Yes	Muskox	2	Standing	N/A	500	150	East	No	-96.4501	65.2302			No	Not Exceeded	
Road	2023:11:24 8:46 AM	Yes	Wolverine	1	Running	E	100	117	East	No	-96.0394	65.0837			No	Not Exceeded	
Incidental	2023:11:24 1:35 PM	Yes	Muskox	22	Resting	N/A	700	156	East	No	-96.4521	65.2622			No	Exceeded	More than 500m from the road.
Road	2023:11:25 12:30 PM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023:11:26 9:40 AM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023:11:26 1:38 PM	Yes	Muskox	2	Foraging	N/A	150	149	East	No	-96.4426	65.2233			No	Not Exceeded	
Incidental	2023:11:26 1:38 PM	Yes	Muskox	19	Foraging	N/A	25	161	East	No	-96.4121	65.3032			No	Exceeded	Speed restriction was put in place between km 160 and 162 (30km/h)
Road	2023:11:28 8:22 AM	Yes	Muskox	4	Walking	W	1500	157	West	No	-96.4158	65.2712			No	Not Exceeded	
Road	2023:12:01 11:43 AM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023:12:02 9:19 AM	Yes	Caribou	15	Foraging	N/A	200	143	East	No	-96.3580	65.2237			No	Not Exceeded	
Road	2023:12:02 10:35 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023:12:04 11:16 AM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023:12:05 10:11 AM	Yes	Muskox	29	Foraging	N/A	70	159	East	N/A	-96.4089	65.2860			No	Exceeded	Speed restriction
Incidental	2023:12:05 2:31 PM	Yes	Caribou	4	Foraging	N/A	500	145	East	No	-96.3769	65.2242			No	Not Exceeded	
Road	2023:12:06 8:50 AM	Yes	Muskox	4	Walking	W	3	157	West	No	-96.4158	65.2712			No	Not Exceeded	
Road	2023:12:06 8:50 AM	Yes	Caribou	1	Feeding	N/A	100	142	East	No	-96.3371	65.2222			No	Not Exceeded	
Incidental	2023:12:07 10:01 AM	Yes	Muskox	5	Foraging	N/A	1000	158	West	No	-96.4047	65.2778			No	Not Exceeded	
Incidental	2023:12:07 10:01 AM	Yes	Muskox	25	Foraging	N/A	20	156	West	No	-96.4521	65.2622			No	Exceeded	Speed restriction 155 to 157
Incidental	2023:12:07 10:01 AM	Yes	Muskox	3	Foraging	N/A	140	148	West	No	-96.4274	65.2205			No	Not Exceeded	
Road	2023:12:08 9:02 AM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023:12:08 12:16 PM	Yes	Caribou	12	Foraging	N/A	200	126	East	N/A	-96.1108	65.1482			No	Not Exceeded	
Incidental	2023:12:09 9:14 AM	Yes	Caribou	15	Foraging	N/A	100	145	West	No	-96.3769	65.2242			No	Not Exceeded	
Incidental	2023:12:09 9:14 AM	Yes	Muskox	28	Lying Down	N/A	20	155	West	No	-96.4342	65.2676			No	Exceeded	Speed restriction already in place
Road	2023:12:09 9:20 AM	Yes	Muskox	30	Foraging	N/A	100	156	West	No	-96.4521	65.2622			No	Exceeded	Speed restriction, 155 to 157
Road	2023:12:09 9:20 AM	Yes	Caribou	1	Foraging	N/A	50	142	West	N/A	-96.3371	65.2222			No	Not Exceeded	
Road	2023:12:09 9:20 AM	Yes	Caribou	11	Foraging	N/A	1000	126	East	No	-96.1108	65.1482			No	Not Exceeded	
Road	2023:12:10 9:35 AM	Yes	Muskox	28	Foraging	N/A	20	155	West	N/A	-96.4342	65.2676			No	Exceeded	Speed restriction already in place
Road	2023:12:10 9:35 AM	Yes	Caribou	5	Foraging	N/A	500	145	East	N/A	-96.3769	65.2242			No	Not Exceeded	
Road	2023:12:10 9:35 AM	Yes	Caribou	15	Foraging	N/A	250	126	East	N/A	-96.1108	65.1482			No	Not Exceeded	
Incidental	2023:12:10 1:22 PM	Yes	Caribou	15	Foraging	N/A	300	126	East	N/A	-96.1108	65.1482			No	Not Exceeded	
Road	2023:12:11 7:49 AM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023:12:12 10:01 AM	Yes	Muskox	17	Feeding	N/A	20	164	East	No	-96.4472	65.3226			No	Exceeded	Speed restriction put in place
Road	2023:12:12 1:00 PM	No		N/A			N/A	N/A			N/A	N/A					
Road	2023:12:13 8:53 AM	Yes	Muskox	17	Standing	N/A	100	164	East	No	-96.4472	65.3226			No	Exceeded	Speed restriction already in place 163-165
Road	2023:12:15 8:59 AM	Yes	Muskox	17	Foraging	N/A	150	164	East	N/A	-96.4472	65.3226			No	Exceeded	Speed restriction 30kmh 163-165
Road	2023:12:15 8:59 AM	Yes	Muskox	23	Foraging	N/A	200	159	West	No	-96.4089	65.2860			No	Exceeded	Speed restriction km158-160
Road	2023:12:15 8:59 AM	Yes	Caribou	1	Standing	N/A	600	135	East	No	-96.2080	65.2089			No	Not Exceeded	
Road	2023:12:17 9:30 AM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023:12:18 8:55 AM	Yes	Muskox	17	Feeding	N/A	50	164	East	No	-96.4472	65.3226			No	Exceeded	Speed restriction 163-165
Incidental	2023:12:18 8:55 AM	Yes	Caribou	6	Standing	N/A	50	178	East	No	-96.6219	65.4009			No	Not Exceeded	
Incidental	2023:12:18 8:55 AM	Yes	Caribou	13	Foraging	N/A	300	177	East	No	-96.6085	65.3943			No	Not Exceeded	
Road	2023:12:18 10:37 AM	Yes	Muskox	17	Feeding	NW	100	164	East	No	-96.4472	65.3226			No	Exceeded	Speed restriction already in place 163 to 165

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2023:12:19 9:33 AM	Yes	Caribou	5	Feeding	N/A	20	178	East	No	-96.6219	65.4009			No	Not Exceeded	
Road	2023:12:19 9:33 AM	Yes	Muskox	17	Foraging	NW	100	164	East	No	-96.4472	65.3226			No	Exceeded	Speed restriction already in place 165-163
Road	2023:12:20 12:09 PM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023:12:20 3:04 PM	Yes	Arctic fox	1	Running	W	20	172	West	Yes	-96.5867	65.3550			No	Not Exceeded	
Road	2023:12:22 10:00 AM	Yes	Caribou	1	Foraging	N/A	400	178	West	No	-96.6219	65.4009			No	Not Exceeded	
Road	2023:12:22 10:00 AM	Yes	Arctic fox	1	Trotting/running	N	2	169	West	No	-96.5370	65.3400			No	Not Exceeded	
Road	2023:12:25 10:03 AM	Yes	Muskox	7	Foraging	N/A	150	140	East	No	-96.2985	65.2220			No	Not Exceeded	
Road	2023:12:28 9:20 AM	Yes	Muskox	3	Resting	N/A	300	161	East	N/A	-96.4121	65.3032			No	Not Exceeded	
Road	2023:12:28 9:20 AM	Yes	Muskox	5	Foraging	N/A	250	141	East	N/A	-96.3181	65.2237			No	Not Exceeded	
Road	2023:12:30 11:30 AM	No		N/A			N/A	N/A			N/A	N/A					
Viewshed	2023:11:01 1:39 AM		-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:01 1:39 AM		-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:01 1:39 AM		-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	176			-96.6038	65.3862					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:01 1:39 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:03 12:36 PM	Yes	Muskox	7	Standing	N/A	3000	144	East		-96.3580	65.2237				Not Exceeded	
Viewshed	2023:11:03 12:36 PM	Yes	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:03 12:36 PM	Yes	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:03 12:36 PM	Yes	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:03 12:36 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:04 12:40 PM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:04 12:40 PM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:04 12:40 PM	Yes	Muskox	3	Foraging	N/A	1500	156	West		-96.4521	65.2622				Not Exceeded	
Viewshed	2023:11:04 12:40 PM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:04 12:40 PM	Yes	Muskox	1	Foraging	N/A	1000	160-161	East		-96.4136	65.2943				Not Exceeded	
Viewshed	2023:11:04 12:40 PM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:04 12:40 PM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:04 12:40 PM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:04 12:40 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:05 8:12 AM		-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:05 8:12 AM		-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:05 8:12 AM		-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:05 8:12 AM		-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	133			-96.1754	65.1992					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:05 8:12 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	154			-96.4630	65.2546					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:06 12:29 PM	Yes	Muskox	18	Foraging	N/A	100	156	East		-96.4521	65.2622				Exceeded	Speed Restriction
Viewshed	2023:11:06 12:29 PM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:06 12:29 PM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:06 12:29 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	166			-96.4882	65.3253					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:07 8:30 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:08 8:43 AM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:08 8:43 AM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:08 8:43 AM	Yes	Muskox	1	Walking	NE	500	133	West		-96.1754	65.1992				Not Exceeded	
Viewshed	2023:11:08 8:43 AM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:08 8:43 AM	Yes	Muskox	7	Foraging	N/A	500	144	East		-96.3580	65.2237				Not Exceeded	
Viewshed	2023:11:08 8:43 AM	Yes	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:08 8:43 AM	Yes	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:08 8:43 AM	Yes	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:08 8:43 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	116			-96.0206	65.0803					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:09 7:41 AM	Yes	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:09 7:41 AM	Yes	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:09 7:41 AM	Yes	Muskox	2	Standing	N/A	1800	121-122	West		-96.0864	65.1071				Not Exceeded	
Viewshed	2023:11:09 7:41 AM	Yes	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:09 7:41 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:10 8:20 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	138			-96.2602	65.2238					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:11 8:47 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:11 8:47 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:11 8:47 AM	Yes	Muskox	7	Foraging	N/A	200	154	West		-96.4630	65.2546				Not Exceeded	
Viewshed	2023:11:11 8:47 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:11 8:47 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	156			-96.4521	65.2622					

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:13 9:18 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	169			-96.5370	65.3400					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:16 8:12 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:18 8:35 AM	Yes	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:18 8:35 AM	Yes	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:18 8:35 AM	Yes	Muskox	3	Lying Down	Not Recorded	30	118	West		-96.0551	65.0865				Not Exceeded	
Viewshed	2023:11:18 8:35 AM	Yes	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:18 8:35 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:20 9:59 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:20 9:59 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:20 9:59 AM	No	-	N/A			N/A	116			-96.0206	65.0803					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:11:20 9:59 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:20 9:59 AM		-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	128			-96.1358	65.1614					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:25 8:52 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:27 8:59 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:27 8:59 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:27 8:59 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:11:27 8:59 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:27 8:59 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:27 8:59 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:27 8:59 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:11:27 8:59 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:27 8:59 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:27 8:59 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:11:27 8:59 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:27 8:59 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:27 8:59 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:11:27 8:59 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:27 8:59 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:27 8:59 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:11:27 8:59 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:27 8:59 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:27 8:59 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:11:27 8:59 AM	No	-	N/A			N/A	138			-96.2602	65.2238					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:11:27 8:59 AM	Yes	Muskox	11	Foraging	Not Recorded	5000	144	East		-96.3580	65.2237				Not Exceeded	
Viewshed	2023:11:27 8:59 AM	Yes	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:27 8:59 AM	Yes	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:11:27 8:59 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:27 8:59 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:27 8:59 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:11:27 8:59 AM	Yes	Muskox	19	Foraging	N/A	200	156	East		-96.4521	65.2622				Exceeded	Speed Restriction
Viewshed	2023:11:27 8:59 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:27 8:59 AM	Yes	Muskox	2	Foraging	N/A	5000	156	West		-96.4521	65.2622				Not Exceeded	
Viewshed	2023:11:27 8:59 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:11:27 8:59 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:27 8:59 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:27 8:59 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:11:27 8:59 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:27 8:59 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:27 8:59 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:11:27 8:59 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:27 8:59 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:27 8:59 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:11:27 8:59 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:27 8:59 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:11:27 8:59 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	156			-96.4521	65.2622					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:01 1:04 AM		-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:02 10:36 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:02 10:36 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:02 10:36 AM	Yes	Muskox	5	Foraging	N/A	1500	156	West		-96.4521	65.2622				Not Exceeded	
Viewshed	2023:12:02 10:36 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:02 10:36 AM	Yes	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:02 10:36 AM	Yes	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:02 10:36 AM	Yes	Muskox	9	Resting	N/A	2000	166	West		-96.4882	65.3253				Not Exceeded	
Viewshed	2023:12:02 10:36 AM	Yes	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	169			-96.5370	65.3400					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:02 10:36 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:04 9:34 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	116			-96.0206	65.0803					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:06 9:00 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:06 9:00 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:06 9:00 AM	Yes	Muskox	20	Foraging	N	50	156	West		-96.4521	65.2622				Exceeded	Speed Restriction
Viewshed	2023:12:06 9:00 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:06 9:00 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	128			-96.1358	65.1614					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:08 11:37 AM	Yes	Crow	1	Flying	SE	20	138	East		-96.2602	65.2238				Not Exceeded	
Viewshed	2023:12:08 11:37 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:08 11:37 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:08 11:37 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:08 11:37 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:08 11:37 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:08 11:37 AM	Yes	Muskox	30	Foraging	N/A	2000	156	West		-96.4521	65.2622				Exceeded	More than 500m from the road
Viewshed	2023:12:08 11:37 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:08 11:37 AM	Yes	Caribou	5	Foraging	N/A	1000	169	East		-96.5370	65.3400				Not Exceeded	
Viewshed	2023:12:08 11:37 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:08 11:37 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:08 11:37 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:08 11:37 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:09 9:12 AM			N/A			N/A				N/A	N/A					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	138			-96.2602	65.2238					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:10 12:37 PM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:10 12:37 PM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:10 12:37 PM	Yes	Muskox	28	Lying Down	N/A	20	154	West		-96.4630	65.2546				Exceeded	Speed Restriction
Viewshed	2023:12:10 12:37 PM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:10 12:37 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:12 9:14 AM	Yes	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:12 9:14 AM	Yes	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:12 9:14 AM	Yes	Crow	2	Flying	N	5	121-122	West		-96.0864	65.1071				Not Exceeded	
Viewshed	2023:12:12 9:14 AM	Yes	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:12 9:14 AM	Yes	Muskox	8	Standing	Not Recorded	1200	138	East		-96.2602	65.2238				Not Exceeded	
Viewshed	2023:12:12 9:14 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:12 9:14 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:12 9:14 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	156			-96.4521	65.2622					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:12 9:14 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	166			-96.4882	65.3253					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:17 12:55 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:17 12:55 PM		-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:17 12:55 PM		-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:17 12:55 PM		-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:19 9:31 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	116			-96.0206	65.0803					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:25 12:50 PM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:25 12:50 PM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:25 12:50 PM	Yes	Muskox	18	Foraging	N/A	2500	156	West		-96.4521	65.2622				Exceeded	More than 500m from the road
Viewshed	2023:12:25 12:50 PM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:25 12:50 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	128			-96.1358	65.1614					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:28 12:27 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	138			-96.2602	65.2238					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:12:30 8:02 AM	Yes	Arctic fox	1	Walking	N	0	154	East		-96.4630	65.2546				Not Exceeded	
Viewshed	2023:12:30 8:02 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:30 8:02 AM	Yes	Muskox	5	Standing	N/A	500	154	West		-96.4630	65.2546				Not Exceeded	
Viewshed	2023:12:30 8:02 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:12:30 8:02 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:01:05 1:12 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:01:05 1:12 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:01:05 1:12 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:01:05 1:12 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:01:05 1:12 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:01:05 1:12 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:01:05 1:12 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:01:05 1:12 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:01:05 1:12 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:01:05 1:12 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:01:05 1:12 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:01:05 1:12 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:01:05 1:12 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:01:05 1:12 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:01:05 1:12 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:01:22 2:06 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:01:22 2:06 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:01:22 2:06 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:01:22 2:06 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:01:22 2:06 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:01:22 2:06 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:01:22 2:06 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:01:22 2:06 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:01:22 2:06 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:01:22 2:06 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:01:22 2:06 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:01:22 2:06 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:01:22 2:06 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:01:22 2:06 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	116			-96.0206	65.0803					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:01:26 12:24 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	128			-96.1358	65.1614					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:02:01 10:19 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:02:01 10:19 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:02:01 10:19 AM	Yes	Muskox	9	Feeding	Not Recorded	20	156	West		-96.4521	65.2622				Not Exceeded	
Viewshed	2023:02:01 10:19 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:02:01 10:19 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	138			-96.2602	65.2238					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:02:01 4:07 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:02:01 4:07 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:02:01 4:07 AM	Yes	Muskox	9	Feeding	Not Recorded	20	156	West		-96.4521	65.2622				Not Exceeded	
Viewshed	2023:02:01 4:07 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:02:01 4:07 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	156			-96.4521	65.2622					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:02:08 1:10 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	169			-96.5370	65.3400					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:02:13 9:38 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:02:13 9:38 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:02:13 9:38 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:02:13 9:38 AM	Yes	Caribou	6	Feeding	N/A	1000	176	West		-96.6038	65.3862				Not Exceeded	
Viewshed	2023:02:13 9:38 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:02:22 6:37 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	116			-96.0206	65.0803					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:03:01 8:02 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	128			-96.1358	65.1614					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:03:08 9:41 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:03:08 9:41 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:03:08 9:41 AM	Yes	Muskox	14	Foraging	N/A	100	156	West		-96.4521	65.2622				Exceeded	Speed Restriction
Viewshed	2023:03:08 9:41 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:03:08 9:41 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:03:15 1:12 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:03:15 1:12 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:03:15 1:12 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:03:15 1:12 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:03:15 1:12 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:03:15 1:12 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:03:15 1:12 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:03:15 1:12 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:03:15 1:12 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:03:15 1:12 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:03:15 1:12 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:03:15 1:12 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:03:15 1:12 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:03:15 1:12 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:03:15 1:12 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:03:15 1:12 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:03:15 1:12 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:03:15 1:12 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:03:15 1:12 AM	Yes	Common raven	1	Flying	O	0	138	West		-96.2602	65.2238				Not Exceeded	
Viewshed	2023:03:15 1:12 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:03:15 1:12 AM	No	-	N/A			N/A	144			-96.3580	65.2237					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:03:15 1:12 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:03:15 1:12 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:03:15 1:12 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:03:15 1:12 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:03:15 1:12 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:03:15 1:12 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:03:15 1:12 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:03:15 1:12 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:03:15 1:12 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:03:15 1:12 AM	Yes	Muskox	25	Foraging	Not Recorded	25	156	West		-96.4521	65.2622				Exceeded	Speed Restriction
Viewshed	2023:03:15 1:12 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:03:15 1:12 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:03:15 1:12 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:03:15 1:12 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:03:15 1:12 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:03:15 1:12 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:03:15 1:12 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:03:15 1:12 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:03:15 1:12 AM	Yes	Arctic fox	1	Foraging	O	0	169	East		-96.5370	65.3400				Not Exceeded	
Viewshed	2023:03:15 1:12 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:03:15 1:12 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:03:15 1:12 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:03:15 1:12 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:03:15 1:12 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:03:15 1:12 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:03:15 1:12 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	156			-96.4521	65.2622					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:03:21 8:07 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	169			-96.5370	65.3400					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:04:05 9:38 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:04:07 8:35 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:04:10 5:12 AM	Yes	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:04:10 5:12 AM	Yes	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:04:10 5:12 AM	Yes	Caribou	20	Walking	E	3000	116	West		-96.0206	65.0803				Not Exceeded	
Viewshed	2023:04:10 5:12 AM	Yes	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:04:10 5:12 AM	Yes	-	N/A			N/A	118			-96.0551	65.0865					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:04:10 5:12 AM	Yes	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:04:10 5:12 AM	Yes	Caribou	150	Walking	E	1500	118	West		-96.0551	65.0865				Exceeded	Road closed
Viewshed	2023:04:10 5:12 AM	Yes	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:04:10 5:12 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:04:10 5:12 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:04:10 5:12 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:04:10 5:12 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:04:10 5:12 AM	Yes	Caribou	50	Feeding	N/A	3000	128	East		-96.1358	65.1614				Exceeded	Road closed
Viewshed	2023:04:10 5:12 AM	Yes	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:04:10 5:12 AM	Yes	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:04:10 5:12 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:04:10 5:12 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:04:10 5:12 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:04:10 5:12 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:04:10 5:12 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:04:10 5:12 AM	Yes	Caribou	150	Standing	N/A	1500	138	West		-96.2602	65.2238				Exceeded	Road closed
Viewshed	2023:04:10 5:12 AM	Yes	Caribou	100	Walking	S	1500	138	West		-96.2602	65.2238				Exceeded	Road closed
Viewshed	2023:04:10 5:12 AM	Yes	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:10 5:12 AM	Yes	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:10 5:12 AM	Yes	Caribou	20	Walking	N	1000	144	West		-96.3580	65.2237				Not Exceeded	
Viewshed	2023:04:10 5:12 AM	Yes	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:10 5:12 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:04:10 5:12 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:04:10 5:12 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:04:10 5:12 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:04:10 5:12 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:04:10 5:12 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:04:10 5:12 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:04:10 5:12 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:04:10 5:12 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:04:10 5:12 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:04:10 5:12 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:04:10 5:12 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:04:10 5:12 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:04:10 5:12 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:04:10 5:12 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:04:10 5:12 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:04:10 5:12 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:04:10 5:12 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:04:10 5:12 AM	Yes	Caribou	15	Standing	N/A	1500	169	West		-96.5370	65.3400				Not Exceeded	
Viewshed	2023:04:10 5:12 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:04:10 5:12 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:04:10 5:12 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:04:10 5:12 AM	Yes	Caribou	150	Feeding	N/A	500	176	West		-96.6038	65.3862				Exceeded	Road closed
Viewshed	2023:04:10 5:12 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:04:12 9:37 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:04:12 9:37 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:04:12 9:37 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:04:12 9:37 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:04:12 9:37 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:04:12 9:37 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:04:12 9:37 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:04:12 9:37 AM	Yes	Muskox	8	Lying Down	N/A	1500	121-122	East		-96.0864	65.1071				Not Exceeded	
Viewshed	2023:04:12 9:37 AM	Yes	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:04:12 9:37 AM	Yes	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:04:12 9:37 AM	Yes	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:04:12 9:37 AM	Yes	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:04:12 9:37 AM	Yes	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:04:12 9:37 AM	Yes	Caribou	56	Walking	S	600	128	West		-96.1358	65.1614				Exceeded	Road Closed



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:04:12 9:37 AM	Yes	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:04:12 9:37 AM	Yes	Caribou	55	Foraging	O	2000	133	East		-96.1754	65.1992				Exceeded	Road Closed
Viewshed	2023:04:12 9:37 AM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:04:12 9:37 AM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:04:12 9:37 AM	Yes	Caribou	210	Walking	S	3000	138	East		-96.2602	65.2238				Exceeded	Road Closed
Viewshed	2023:04:12 9:37 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:04:12 9:37 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:04:12 9:37 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:04:12 9:37 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:12 9:37 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:12 9:37 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:12 9:37 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:12 9:37 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:04:12 9:37 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:04:12 9:37 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:04:12 9:37 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:04:12 9:37 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:04:12 9:37 AM	Yes	Caribou	80	Walking	S	500	156	East		-96.4521	65.2622				Exceeded	Road Closed
Viewshed	2023:04:12 9:37 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:04:12 9:37 AM	Yes	Caribou	80	Walking	S	500	156	East		-96.4521	65.2622				Exceeded	Road Closed
Viewshed	2023:04:12 9:37 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:04:12 9:37 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:04:12 9:37 AM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:04:12 9:37 AM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:04:12 9:37 AM	Yes	Caribou	80	Walking	S	500	160-161	West		-96.4136	65.2943				Exceeded	Road Closed
Viewshed	2023:04:12 9:37 AM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:04:12 9:37 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:04:12 9:37 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:04:12 9:37 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:04:12 9:37 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:04:12 9:37 AM	Yes	Caribou	40	Foraging	O	800	169	East		-96.5370	65.3400				Exceeded	Road Closed
Viewshed	2023:04:12 9:37 AM	Yes	Caribou	20	Foraging	NE	1000	169	East		-96.5370	65.3400				Not Exceeded	
Viewshed	2023:04:12 9:37 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:04:12 9:37 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:04:12 9:37 AM	Yes	Caribou	15	Foraging	O	1	176	East		-96.6038	65.3862				Not Exceeded	
Viewshed	2023:04:12 9:37 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:04:12 9:37 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:04:12 9:37 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:04:17 12:40 PM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:04:17 12:40 PM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:04:17 12:40 PM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:04:17 12:40 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:04:17 12:40 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:04:17 12:40 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:04:17 12:40 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:04:17 12:40 PM	Yes	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:04:17 12:40 PM	Yes	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:04:17 12:40 PM	Yes	Caribou	4	Walking	N	2500	121-122	West		-96.0864	65.1071				Not Exceeded	
Viewshed	2023:04:17 12:40 PM	Yes	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:04:17 12:40 PM	Yes	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:04:17 12:40 PM	Yes	Caribou	29	Walking	S	3000	128	West		-96.1358	65.1614				Not Exceeded	
Viewshed	2023:04:17 12:40 PM	Yes	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:04:17 12:40 PM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:04:17 12:40 PM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:04:17 12:40 PM	Yes	Caribou	37	Walking	SE	2000	133	West		-96.1754	65.1992				Exceeded	Road Closed
Viewshed	2023:04:17 12:40 PM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:04:17 12:40 PM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:04:17 12:40 PM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:04:17 12:40 PM	Yes	Caribou	13	Walking	SE	1500	138	West		-96.2602	65.2238				Not Exceeded	
Viewshed	2023:04:17 12:40 PM	Yes	-	N/A			N/A	138			-96.2602	65.2238					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:04:17 12:40 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:17 12:40 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:17 12:40 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:17 12:40 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:17 12:40 PM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:04:17 12:40 PM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:04:17 12:40 PM	Yes	Caribou	20	Foraging	N/A	1500	154	West		-96.4630	65.2546				Not Exceeded	
Viewshed	2023:04:17 12:40 PM	Yes	Caribou	3	Foraging	N/A	1000	154	West		-96.4630	65.2546				Not Exceeded	
Viewshed	2023:04:17 12:40 PM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:04:17 12:40 PM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:04:17 12:40 PM	Yes	Caribou	20	Foraging	N/A	2500	156	West		-96.4521	65.2622				Not Exceeded	
Viewshed	2023:04:17 12:40 PM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:04:17 12:40 PM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:04:17 12:40 PM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:04:17 12:40 PM	Yes	Wolf	1	Walking	E	2000	160-161	West		-96.4136	65.2943				Not Exceeded	
Viewshed	2023:04:17 12:40 PM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:04:17 12:40 PM	Yes	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:04:17 12:40 PM	Yes	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:04:17 12:40 PM	Yes	Caribou	19	Walking	O	150	166	West		-96.4882	65.3253				Not Exceeded	
Viewshed	2023:04:17 12:40 PM	Yes	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:04:17 12:40 PM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:04:17 12:40 PM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:04:17 12:40 PM	Yes	Caribou	11	Walking	E	1500	169	West		-96.5370	65.3400				Not Exceeded	
Viewshed	2023:04:17 12:40 PM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:04:17 12:40 PM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:04:17 12:40 PM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:04:17 12:40 PM	Yes	Caribou	49	Foraging	N/A	1000	176	West		-96.6038	65.3862				Exceeded	Road Closed
Viewshed	2023:04:17 12:40 PM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:19 8:49 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:04:19 8:49 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:04:19 8:49 AM	Yes	Caribou	7	Walking	O	1900	154	West		-96.4630	65.2546				Not Exceeded	
Viewshed	2023:04:19 8:49 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	156			-96.4521	65.2622					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:04:19 8:49 AM	Yes	Muskox	8	Foraging	N/A	2200	169	East		-96.5370	65.3400				Not Exceeded	
Viewshed	2023:04:19 8:49 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:04:19 8:49 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:04:19 8:49 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:04:19 8:49 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:04:21 1:02 AM	Yes	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:04:21 1:02 AM	Yes	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:04:21 1:02 AM	Yes	Caribou	14	Walking	S	3000	121-122	West		-96.0864	65.1071				Not Exceeded	
Viewshed	2023:04:21 1:02 AM	Yes	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:04:21 1:02 AM	Yes	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:04:21 1:02 AM	Yes	Caribou	15	Walking	S	2000	128	West		-96.1358	65.1614				Not Exceeded	
Viewshed	2023:04:21 1:02 AM	Yes	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	169			-96.5370	65.3400					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:04:21 1:02 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:04:23 8:59 AM	Yes	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:04:23 8:59 AM	Yes	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:04:23 8:59 AM	Yes	Caribou	42	Running	E	800	116	West		-96.0206	65.0803				Exceeded	Road closed
Viewshed	2023:04:23 8:59 AM	Yes	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:04:23 8:59 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:04:23 8:59 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:04:23 8:59 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:04:23 8:59 AM	Yes	Caribou	6	Walking	E	20	121-122	East		-96.0864	65.1071				Not Exceeded	
Viewshed	2023:04:23 8:59 AM	Yes	Caribou	2	Walking	E	5	121-122	East		-96.0864	65.1071				Not Exceeded	
Viewshed	2023:04:23 8:59 AM	Yes	Caribou	2	Walking	E	5	121-122	West		-96.0864	65.1071				Not Exceeded	
Viewshed	2023:04:23 8:59 AM	Yes	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:04:23 8:59 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:04:23 8:59 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:04:23 8:59 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:04:23 8:59 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:04:23 8:59 AM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:04:23 8:59 AM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:04:23 8:59 AM	Yes	Caribou	8	Standing	N/A	10	133	West		-96.1754	65.1992				Not Exceeded	
Viewshed	2023:04:23 8:59 AM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:04:23 8:59 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:04:23 8:59 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:04:23 8:59 AM	Yes	Caribou	40	Standing	N/A	1400	138	West		-96.2602	65.2238				Exceeded	Road closed
Viewshed	2023:04:23 8:59 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:04:23 8:59 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:23 8:59 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:23 8:59 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:23 8:59 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:23 8:59 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:04:23 8:59 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:04:23 8:59 AM	Yes	Caribou	12	Foraging	N/A	400	154	West		-96.4630	65.2546				Not Exceeded	
Viewshed	2023:04:23 8:59 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:04:23 8:59 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:04:23 8:59 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:04:23 8:59 AM	Yes	Caribou	650	Lying Down	N/A	20	156	West		-96.4521	65.2622				Exceeded	Road closed
Viewshed	2023:04:23 8:59 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:04:23 8:59 AM	Yes	Caribou	25	Foraging	N/A	10	160-161	East		-96.4136	65.2943				Not Exceeded	
Viewshed	2023:04:23 8:59 AM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:04:23 8:59 AM	Yes	Caribou	100	Foraging	N/A	50	160-161	West		-96.4136	65.2943				Exceeded	Road closed
Viewshed	2023:04:23 8:59 AM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:04:23 8:59 AM	Yes	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:04:23 8:59 AM	Yes	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:04:23 8:59 AM	Yes	Caribou	25	Standing	N/A	500	166	West		-96.4882	65.3253				Not Exceeded	
Viewshed	2023:04:23 8:59 AM	Yes	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:04:23 8:59 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:04:23 8:59 AM	Yes	Caribou	91	Standing	N/A	300	169	West		-96.5370	65.3400				Exceeded	Road closed
Viewshed	2023:04:23 8:59 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:04:23 8:59 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:04:23 8:59 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:04:23 8:59 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:04:23 8:59 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:04:27 8:07 AM	Yes	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:04:27 8:07 AM	Yes	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:04:27 8:07 AM	Yes	Caribou	54	Walking	SE	800	116	West		-96.0206	65.0803				Exceeded	Road closed
Viewshed	2023:04:27 8:07 AM	Yes	-	N/A			N/A	116			-96.0206	65.0803					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:04:27 8:07 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:04:27 8:07 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:04:27 8:07 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:04:27 8:07 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:04:27 8:07 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:04:27 8:07 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:04:27 8:07 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:04:27 8:07 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:04:27 8:07 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:04:27 8:07 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:04:27 8:07 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:04:27 8:07 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:04:27 8:07 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:04:27 8:07 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:04:27 8:07 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:04:27 8:07 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:04:27 8:07 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:04:27 8:07 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:04:27 8:07 AM	Yes	Caribou	10	Standing	N/A	100	138	West		-96.2602	65.2238				Not Exceeded	
Viewshed	2023:04:27 8:07 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:04:27 8:07 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:27 8:07 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:27 8:07 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:27 8:07 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:27 8:07 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:04:27 8:07 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:04:27 8:07 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:04:27 8:07 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:04:27 8:07 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:04:27 8:07 AM	Yes	Caribou	3	Walking	NE	2500	156	West		-96.4521	65.2622				Not Exceeded	
Viewshed	2023:04:27 8:07 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:04:27 8:07 AM	Yes	Muskox	3	Feeding	N/A	80	160-161	East		-96.4136	65.2943				Not Exceeded	
Viewshed	2023:04:27 8:07 AM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:04:27 8:07 AM	Yes	Caribou	3	Walking	NE	2000	160-161	West		-96.4136	65.2943				Not Exceeded	
Viewshed	2023:04:27 8:07 AM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:04:27 8:07 AM	Yes	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:04:27 8:07 AM	Yes	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:04:27 8:07 AM	Yes	Caribou	33	Walking	N	400	166	West		-96.4882	65.3253				Not Exceeded	
Viewshed	2023:04:27 8:07 AM	Yes	Caribou	14	Resting	N/A	30	166	West		-96.4882	65.3253				Not Exceeded	
Viewshed	2023:04:27 8:07 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:04:27 8:07 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:04:27 8:07 AM	Yes	Caribou	1	Running	SE	900	169	West		-96.5370	65.3400				Not Exceeded	
Viewshed	2023:04:27 8:07 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:04:27 8:07 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:04:27 8:07 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:04:27 8:07 AM	Yes	Caribou	8	Walking	NE	1000	176	West		-96.6038	65.3862				Not Exceeded	
Viewshed	2023:04:27 8:07 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:04:29 7:22 AM	Yes	Caribou	90	Walking	NE	0	116	East		-96.0206	65.0803				Exceeded	Road closed
Viewshed	2023:04:29 7:22 AM	Yes	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:04:29 7:22 AM	Yes	Caribou	70	Walking	NE	0	116	West		-96.0206	65.0803				Exceeded	Road closed
Viewshed	2023:04:29 7:22 AM	Yes	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:04:29 7:22 AM	Yes	Caribou	2	Walking	NE	250	118	East		-96.0551	65.0865				Not Exceeded	
Viewshed	2023:04:29 7:22 AM	Yes	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:04:29 7:22 AM	Yes	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:04:29 7:22 AM	Yes	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:04:29 7:22 AM	Yes	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:04:29 7:22 AM	Yes	Caribou	111	Walking	NE	800	121-122	West		-96.0864	65.1071				Exceeded	Road closed
Viewshed	2023:04:29 7:22 AM	Yes	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:04:29 7:22 AM	Yes	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:04:29 7:22 AM	Yes	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:04:29 7:22 AM	Yes	Caribou	28	Walking	N	80	128	West		-96.1358	65.1614				Not Exceeded	



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:04:29 7:22 AM	Yes	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:04:29 7:22 AM	Yes	Caribou	6	Foraging	E	133	133	East		-96.1754	65.1992				Not Exceeded	
Viewshed	2023:04:29 7:22 AM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:04:29 7:22 AM	Yes	Caribou	26	Foraging	E	590	133	West		-96.1754	65.1992				Not Exceeded	
Viewshed	2023:04:29 7:22 AM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:04:29 7:22 AM	Yes	Caribou	10	Foraging	N/A	100	138	East		-96.2602	65.2238				Not Exceeded	
Viewshed	2023:04:29 7:22 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:04:29 7:22 AM	Yes	Caribou	125	Foraging	NE	100	138	West		-96.2602	65.2238				Exceeded	Road closed
Viewshed	2023:04:29 7:22 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:04:29 7:22 AM	Yes	Caribou	9	Walking	E	990	144	East		-96.3580	65.2237				Not Exceeded	
Viewshed	2023:04:29 7:22 AM	Yes	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:29 7:22 AM	Yes	Caribou	20	Walking	N	890	144	West		-96.3580	65.2237				Not Exceeded	
Viewshed	2023:04:29 7:22 AM	Yes	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:04:29 7:22 AM	Yes	Caribou	13	Foraging	N/A	400	154	East		-96.4630	65.2546				Not Exceeded	
Viewshed	2023:04:29 7:22 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:04:29 7:22 AM	Yes	Caribou	296	Foraging	NE	790	154	West		-96.4630	65.2546				Exceeded	Road closed
Viewshed	2023:04:29 7:22 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:04:29 7:22 AM	Yes	Caribou	12	Foraging	N/A	5	156	East		-96.4521	65.2622				Not Exceeded	
Viewshed	2023:04:29 7:22 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:04:29 7:22 AM	Yes	Caribou	15	Foraging	N/A	5	156	West		-96.4521	65.2622				Not Exceeded	
Viewshed	2023:04:29 7:22 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:04:29 7:22 AM	Yes	Caribou	20	Foraging	N/A	110	160-161	East		-96.4136	65.2943				Not Exceeded	
Viewshed	2023:04:29 7:22 AM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:04:29 7:22 AM	Yes	Caribou	3	Resting	N/A	161	160-161	West		-96.4136	65.2943				Not Exceeded	
Viewshed	2023:04:29 7:22 AM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:04:29 7:22 AM	Yes	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:04:29 7:22 AM	Yes	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:04:29 7:22 AM	Yes	Caribou	200	Walking	SE	400	166	West		-96.4882	65.3253				Exceeded	Road closed
Viewshed	2023:04:29 7:22 AM	Yes	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:04:29 7:22 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:04:29 7:22 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:04:29 7:22 AM	Yes	Caribou	142	Walking	SE	300	169	West		-96.5370	65.3400				Exceeded	Road closed
Viewshed	2023:04:29 7:22 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:04:29 7:22 AM	Yes	Caribou	6	Foraging	N/A	500	176	East		-96.6038	65.3862				Not Exceeded	
Viewshed	2023:04:29 7:22 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:04:29 7:22 AM	Yes	Caribou	40	Foraging	E	900	176	West		-96.6038	65.3862				Exceeded	Road closed
Viewshed	2023:04:29 7:22 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:05:12 10:08 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:05:12 10:08 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:05:12 10:08 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:05:12 10:08 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:05:12 10:08 AM	Yes	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:05:12 10:08 AM	Yes	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:05:12 10:08 AM	Yes	Caribou	17	Walking	E	750	118	West		-96.0551	65.0865				Not Exceeded	
Viewshed	2023:05:12 10:08 AM	Yes	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:05:12 10:08 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:05:12 10:08 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:05:12 10:08 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:05:12 10:08 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:05:12 10:08 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:05:12 10:08 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:05:12 10:08 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:05:12 10:08 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:05:12 10:08 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:05:12 10:08 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:05:12 10:08 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:05:12 10:08 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:05:12 10:08 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:05:12 10:08 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:05:12 10:08 AM	No	-	N/A			N/A	144			-96.3580	65.2237					

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:05:12 10:08 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:05:12 10:08 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:05:12 10:08 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:05:12 10:08 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:05:12 10:08 AM	Yes	Caribou	3	Walking	S	850	154	West		-96.4630	65.2546				Not Exceeded	
Viewshed	2023:05:12 10:08 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:05:12 10:08 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:05:12 10:08 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:05:12 10:08 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:05:12 10:08 AM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:05:12 10:08 AM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:05:12 10:08 AM	Yes	Caribou	6	Foraging	N/A	650	160-161	West		-96.4136	65.2943				Not Exceeded	
Viewshed	2023:05:12 10:08 AM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:05:12 10:08 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:05:12 10:08 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:05:12 10:08 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:05:12 10:08 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:05:12 10:08 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:05:12 10:08 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:05:12 10:08 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:05:12 10:08 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:05:12 10:08 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:05:12 10:08 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:05:12 10:08 AM	Yes	Caribou	12	Foraging	N/A	1500	176	West		-96.6038	65.3862				Not Exceeded	
Viewshed	2023:05:12 10:08 AM	Yes	Caribou	3	Foraging	N	2000	176	West		-96.6038	65.3862				Not Exceeded	
Viewshed	2023:05:15 1:36 AM	Yes	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:05:15 1:36 AM	Yes	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:05:15 1:36 AM	Yes	Caribou	5	Walking	E	1500	116	West		-96.0206	65.0803				Not Exceeded	
Viewshed	2023:05:15 1:36 AM	Yes	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:05:15 1:36 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:05:15 1:36 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:05:15 1:36 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:05:15 1:36 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:05:15 1:36 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:05:15 1:36 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:05:15 1:36 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:05:15 1:36 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:05:15 1:36 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:05:15 1:36 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:05:15 1:36 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:05:15 1:36 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:05:15 1:36 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:05:15 1:36 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:05:15 1:36 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:05:15 1:36 AM	Yes	Caribou	8	Foraging	Not Recorded	500	138	East		-96.2602	65.2238				Not Exceeded	
Viewshed	2023:05:15 1:36 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:05:15 1:36 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:05:15 1:36 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:05:15 1:36 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:05:15 1:36 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:05:15 1:36 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:05:15 1:36 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:05:15 1:36 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:05:15 1:36 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:05:15 1:36 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:05:15 1:36 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:05:15 1:36 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:05:15 1:36 AM	Yes	Caribou	1	Foraging	Not Recorded	1500	156	West		-96.4521	65.2622				Not Exceeded	



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:05:15 1:36 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:05:15 1:36 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:05:15 1:36 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:05:15 1:36 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:05:15 1:36 AM	Yes	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:05:15 1:36 AM	Yes	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:05:15 1:36 AM	Yes	Caribou	7	Walking	S	2000	166	West		-96.4882	65.3253				Not Exceeded	
Viewshed	2023:05:15 1:36 AM	Yes	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:05:15 1:36 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:05:15 1:36 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:05:15 1:36 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:05:15 1:36 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:05:15 1:36 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:05:15 1:36 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:05:15 1:36 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:05:15 1:36 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:05:18 12:55 PM	Yes	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:05:18 12:55 PM	Yes	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:05:18 12:55 PM	Yes	Caribou	13	Foraging	N/A	1000	116	West		-96.0206	65.0803				Not Exceeded	
Viewshed	2023:05:18 12:55 PM	Yes	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:05:18 12:55 PM	Yes	Muskox	4	Feeding	N/A	500	118	East		-96.0551	65.0865				Not Exceeded	
Viewshed	2023:05:18 12:55 PM	Yes	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:05:18 12:55 PM	Yes	Muskox	0	Walking	N	500	118	West		-96.0551	65.0865				Not Exceeded	
Viewshed	2023:05:18 12:55 PM	Yes	Caribou	8	Foraging	N/A	500	118	West		-96.0551	65.0865				Not Exceeded	
Viewshed	2023:05:18 12:55 PM	Yes	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:05:18 12:55 PM	Yes	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:05:18 12:55 PM	Yes	Caribou	19	Walking	N	1500	121-122	West		-96.0864	65.1071				Not Exceeded	
Viewshed	2023:05:18 12:55 PM	Yes	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:05:18 12:55 PM	Yes	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:05:18 12:55 PM	Yes	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:05:18 12:55 PM	Yes	Caribou	4	Alert	N	400	128	West		-96.1358	65.1614				Not Exceeded	
Viewshed	2023:05:18 12:55 PM	Yes	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:05:18 12:55 PM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:05:18 12:55 PM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:05:18 12:55 PM	Yes	Caribou	12	Walking	N	1000	133	West		-96.1754	65.1992				Not Exceeded	
Viewshed	2023:05:18 12:55 PM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:05:18 12:55 PM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:05:18 12:55 PM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:05:18 12:55 PM	Yes	Caribou	9	Walking	N	1000	138	West		-96.2602	65.2238				Not Exceeded	
Viewshed	2023:05:18 12:55 PM	Yes	Caribou	14	Feeding	N/A	800	138	West		-96.2602	65.2238				Not Exceeded	
Viewshed	2023:05:18 12:55 PM	Yes	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:05:18 12:55 PM	Yes	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:05:18 12:55 PM	Yes	Caribou	8	Walking	N	500	144	West		-96.3580	65.2237				Not Exceeded	
Viewshed	2023:05:18 12:55 PM	Yes	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:05:18 12:55 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:05:18 12:55 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:05:18 12:55 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:05:18 12:55 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:05:18 12:55 PM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:05:18 12:55 PM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:05:18 12:55 PM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:05:18 12:55 PM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:05:18 12:55 PM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:05:18 12:55 PM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:05:18 12:55 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:05:18 12:55 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:05:18 12:55 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:05:18 12:55 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:05:18 12:55 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:05:18 12:55 PM	No	-	N/A			N/A	169			-96.5370	65.3400					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:05:18 12:55 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:05:18 12:55 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:05:18 12:55 PM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:05:18 12:55 PM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:05:18 12:55 PM	Yes	Muskox	1	Resting	N/A	1000	176	West		-96.6038	65.3862				Not Exceeded	
Viewshed	2023:05:18 12:55 PM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:05:22 11:21 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:05:22 11:21 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:05:22 11:21 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:05:22 11:21 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:05:22 11:21 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:05:22 11:21 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:05:22 11:21 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:05:22 11:21 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:05:22 11:21 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:05:22 11:21 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:05:22 11:21 AM	Yes	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:05:22 11:21 AM	Yes	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:05:22 11:21 AM	Yes	Caribou	17	Walking	N	400	128	West		-96.1358	65.1614				Not Exceeded	
Viewshed	2023:05:22 11:21 AM	Yes	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:05:22 11:21 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:05:22 11:21 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:05:22 11:21 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:05:22 11:21 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:05:22 11:21 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:05:22 11:21 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:05:22 11:21 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:05:22 11:21 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:05:22 11:21 AM	Yes	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:05:22 11:21 AM	Yes	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:05:22 11:21 AM	Yes	Caribou	5	Walking	S	1500	144	West		-96.3580	65.2237				Not Exceeded	
Viewshed	2023:05:22 11:21 AM	Yes	Caribou	2	Foraging	N/A	500	144	West		-96.3580	65.2237				Not Exceeded	
Viewshed	2023:05:22 11:21 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:05:22 11:21 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:05:22 11:21 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:05:22 11:21 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:05:22 11:21 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:05:22 11:21 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:05:22 11:21 AM	Yes	Caribou	2	Walking	S	700	156	West		-96.4521	65.2622				Not Exceeded	
Viewshed	2023:05:22 11:21 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:05:22 11:21 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:05:22 11:21 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:05:22 11:21 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:05:22 11:21 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:05:22 11:21 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:05:22 11:21 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:05:22 11:21 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:05:22 11:21 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:05:22 11:21 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:05:22 11:21 AM	Yes	Caribou	3	Walking	N	700	169	West		-96.5370	65.3400				Not Exceeded	
Viewshed	2023:05:22 11:21 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:05:22 11:21 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:05:22 11:21 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:05:22 11:21 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:05:22 11:21 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	118			-96.0551	65.0865					

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:05:25 9:09 AM	Yes	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:05:25 9:09 AM	Yes	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:05:25 9:09 AM	Yes	Caribou	25	Resting	N/A	1000	128	West		-96.1358	65.1614				Not Exceeded	
Viewshed	2023:05:25 9:09 AM	Yes	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:05:25 9:09 AM	Yes	Muskox	2	Feeding	N/A	200	166	East		-96.4882	65.3253				Not Exceeded	
Viewshed	2023:05:25 9:09 AM	Yes	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:05:25 9:09 AM	Yes	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:05:25 9:09 AM	Yes	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:05:25 9:09 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	128			-96.1358	65.1614					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:05:31 9:20 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:06:03 3:50 AM	Yes	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:06:03 3:50 AM	Yes	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:06:03 3:50 AM	Yes	Caribou	3	Feeding	N/A	20	121-122	West		-96.0864	65.1071				Not Exceeded	
Viewshed	2023:06:03 3:50 AM	Yes	Muskox	1	Feeding	N/A	8	121-122	West		-96.0864	65.1071				Not Exceeded	
Viewshed	2023:06:03 3:50 AM	Yes	Muskox	2	Feeding	N/A	20	128	East		-96.1358	65.1614				Not Exceeded	
Viewshed	2023:06:03 3:50 AM	Yes	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:06:03 3:50 AM	Yes	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:06:03 3:50 AM	Yes	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:06:03 3:50 AM	Yes	Caribou	6	Feeding	N/A	1000	133	East		-96.1754	65.1992				Not Exceeded	
Viewshed	2023:06:03 3:50 AM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:06:03 3:50 AM	Yes	Caribou	6	Feeding	N/A	1200	133	West		-96.1754	65.1992				Not Exceeded	
Viewshed	2023:06:03 3:50 AM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	144			-96.3580	65.2237					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:06:03 3:50 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:06:22 1:18 AM	Yes	Muskox	1	Feeding	N/A	20	169	East		-96.5370	65.3400				Not Exceeded	
Viewshed	2023:06:22 1:18 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:06:22 1:18 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:06:22 1:18 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:06:22 1:18 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:06:27 10:13 AM	Yes	Muskox	3	Foraging	N/A	1600	160-161	East		-96.4136	65.2943				Not Exceeded	
Viewshed	2023:06:27 10:13 AM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:06:27 10:13 AM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:06:27 10:13 AM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	176			-96.6038	65.3862					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:06:27 10:13 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:07:04 12:50 PM		-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:07:04 12:50 PM		-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:07:04 12:50 PM		-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:07:04 12:50 PM		-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:07:04 12:50 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:07:11 7:48 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:07:11 7:48 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:07:11 7:48 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:07:11 7:48 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:07:11 7:48 AM	Yes	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:07:11 7:48 AM	Yes	-	N/A			N/A	118			-96.0551	65.0865					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:07:11 7:48 AM	Yes	Rough-legged-Hawk	1	Flying	N/A	1000	118	West		-96.0551	65.0865				Not Exceeded	
Viewshed	2023:07:11 7:48 AM	Yes	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:07:11 7:48 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:07:11 7:48 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:07:11 7:48 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:07:11 7:48 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:07:11 7:48 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:07:11 7:48 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:07:11 7:48 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:07:11 7:48 AM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:07:11 7:48 AM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:07:11 7:48 AM	Yes	Canada goose	13	Walking	N/A	400	133	West		-96.1754	65.1992				Not Exceeded	
Viewshed	2023:07:11 7:48 AM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:07:11 7:48 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:07:11 7:48 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:07:11 7:48 AM	Yes	Muskox	14	Walking	S	2000	138	West		-96.2602	65.2238				Exceeded	>1.5Km from the Road
Viewshed	2023:07:11 7:48 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:07:11 7:48 AM	Yes	Duck	1	Flying	NE	300	144	East		-96.3580	65.2237				Not Exceeded	
Viewshed	2023:07:11 7:48 AM	Yes	Crow	1	Flying	S	0	144	East		-96.3580	65.2237				Not Exceeded	
Viewshed	2023:07:11 7:48 AM	Yes	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:07:11 7:48 AM	Yes	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:07:11 7:48 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:07:11 7:48 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:07:11 7:48 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:07:11 7:48 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:07:11 7:48 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:07:11 7:48 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:07:11 7:48 AM	Yes	Muskox	7	Walking	E	2000	156	West		-96.4521	65.2622				Not Exceeded	
Viewshed	2023:07:11 7:48 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:07:11 7:48 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:07:11 7:48 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:07:11 7:48 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:07:11 7:48 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:07:11 7:48 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:07:11 7:48 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:07:11 7:48 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:07:11 7:48 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:07:11 7:48 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:07:11 7:48 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:07:11 7:48 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:07:11 7:48 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:07:11 7:48 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:07:11 7:48 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:07:21 12:41 PM	Yes	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:07:21 12:41 PM	Yes	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:07:21 12:41 PM	Yes	Canada goose	6	Feeding	N/A	200	116	West		-96.0206	65.0803				Not Exceeded	
Viewshed	2023:07:21 12:41 PM	Yes	Muskox	1	Lying Down	N/A	250	116	West		-96.0206	65.0803				Not Exceeded	
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:07:21 12:41 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:07:25 7:33 AM	Yes	Wolf	1	Walking	E	0	133	East		-96.1754	65.1992				Not Exceeded	
Viewshed	2023:07:25 7:33 AM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:07:25 7:33 AM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:07:25 7:33 AM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	138			-96.2602	65.2238					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:07:25 7:33 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:08:03 7:48 AM	Yes	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:08:03 7:48 AM	Yes	Muskox	1	Foraging	O	100	118	West		-96.0551	65.0865				Not Exceeded	
Viewshed	2023:08:03 7:48 AM	Yes	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	156			-96.4521	65.2622					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:08:03 7:48 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:08:10 7:23 AM	Yes	Arctic fox	1	Running	N	0	128	East		-96.1358	65.1614				Not Exceeded	
Viewshed	2023:08:10 7:23 AM	Yes	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:08:10 7:23 AM	Yes	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:08:10 7:23 AM	Yes	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:08:10 7:23 AM	No	-	N/A			N/A	166			-96.4882	65.3253					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:08:10 7:23 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:08:10 7:23 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:08:10 7:23 AM	Yes	Muskox	3	Foraging	O	1200	169	West		-96.5370	65.3400				Not Exceeded	
Viewshed	2023:08:10 7:23 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:08:10 7:23 AM		-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:08:10 7:23 AM		-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:08:10 7:23 AM		-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:08:19 7:08 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:08:19 7:08 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:08:19 7:08 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:08:19 7:08 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:08:19 7:08 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:08:19 7:08 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:08:19 7:08 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:08:19 7:08 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:08:19 7:08 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:08:19 7:08 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:08:19 7:08 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:08:19 7:08 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:08:19 7:08 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:08:19 7:08 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:08:19 7:08 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:08:19 7:08 AM	Yes	Caribou	2	Foraging	N/A	300	138	East		-96.2602	65.2238				Not Exceeded	
Viewshed	2023:08:19 7:08 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:08:19 7:08 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:08:19 7:08 AM	Yes	Caribou	10	Foraging	N/A	30	144	East		-96.3580	65.2237				Not Exceeded	
Viewshed	2023:08:19 7:08 AM	Yes	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:08:19 7:08 AM	Yes	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:08:19 7:08 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:08:19 7:08 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:08:19 7:08 AM	Yes	Caribou	3	Foraging	Not Recorded	1500	154	West		-96.4630	65.2546				Not Exceeded	
Viewshed	2023:08:19 7:08 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:08:19 7:08 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:08:19 7:08 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:08:19 7:08 AM	Yes	Caribou	5	Foraging	N/A	300	156	West		-96.4521	65.2622				Not Exceeded	
Viewshed	2023:08:19 7:08 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:08:19 7:08 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:08:19 7:08 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:08:19 7:08 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:08:19 7:08 AM	Yes	Caribou	4	Foraging	N	90	166	East		-96.4882	65.3253				Not Exceeded	
Viewshed	2023:08:19 7:08 AM	Yes	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:08:19 7:08 AM	Yes	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:08:19 7:08 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:08:19 7:08 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:08:19 7:08 AM	Yes	Caribou	2	Foraging	SO	50	169	West		-96.5370	65.3400				Not Exceeded	
Viewshed	2023:08:19 7:08 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:08:19 7:08 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:08:19 7:08 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:08:19 7:08 AM	Yes	Caribou	3	Foraging	N/A	500	176	West		-96.6038	65.3862				Not Exceeded	
Viewshed	2023:08:19 7:08 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:08:24 7:35 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:08:24 7:35 AM	No	-	N/A			N/A	116			-96.0206	65.0803					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:08:24 7:35 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:08:24 7:35 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:08:24 7:35 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:08:24 7:35 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:08:24 7:35 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:08:24 7:35 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:08:24 7:35 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:08:24 7:35 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:08:24 7:35 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:08:24 7:35 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:08:24 7:35 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:08:24 7:35 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:08:24 7:35 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:08:24 7:35 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:08:24 7:35 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:08:24 7:35 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:08:24 7:35 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:08:24 7:35 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:08:24 7:35 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:08:24 7:35 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:08:24 7:35 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:08:24 7:35 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:08:24 7:35 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:08:24 7:35 AM	Yes	Caribou	6	Feeding	N/A	400	154	East		-96.4630	65.2546				Not Exceeded	
Viewshed	2023:08:24 7:35 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:08:24 7:35 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:08:24 7:35 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:08:24 7:35 AM	Yes	Caribou	3	Feeding	N/A	300	156	East		-96.4521	65.2622				Not Exceeded	
Viewshed	2023:08:24 7:35 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:08:24 7:35 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:08:24 7:35 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:08:24 7:35 AM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:08:24 7:35 AM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:08:24 7:35 AM	Yes	Caribou	3	Feeding	N/A	200	160-161	West		-96.4136	65.2943				Not Exceeded	
Viewshed	2023:08:24 7:35 AM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:08:24 7:35 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:08:24 7:35 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:08:24 7:35 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:08:24 7:35 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:08:24 7:35 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:08:24 7:35 AM	Yes	Caribou	4	Feeding	N/A	900	169	West		-96.5370	65.3400				Not Exceeded	
Viewshed	2023:08:24 7:35 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:08:24 7:35 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:08:24 7:35 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:08:24 7:35 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:08:24 7:35 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:08:31 1:15 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:08:31 1:15 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:08:31 1:15 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:08:31 1:15 AM	Yes	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:08:31 1:15 AM	Yes	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:08:31 1:15 AM	Yes	Muskox	13	Foraging	N/A	1000	118	West		-96.0551	65.0865				Not Exceeded	
Viewshed	2023:08:31 1:15 AM	Yes	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:08:31 1:15 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:08:31 1:15 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:08:31 1:15 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:08:31 1:15 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:08:31 1:15 AM	No	-	N/A			N/A	128			-96.1358	65.1614					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:08:31 1:15 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:08:31 1:15 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:08:31 1:15 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:08:31 1:15 AM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:08:31 1:15 AM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:08:31 1:15 AM	Yes	Muskox	1	Trotting/running	N	2000	133	West		-96.1754	65.1992				Not Exceeded	
Viewshed	2023:08:31 1:15 AM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:08:31 1:15 AM	Yes	Caribou	8	Foraging	N/A	300	138	East		-96.2602	65.2238				Not Exceeded	
Viewshed	2023:08:31 1:15 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:08:31 1:15 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:08:31 1:15 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:08:31 1:15 AM	Yes	Caribou	1	Foraging	N/A	200	144	East		-96.3580	65.2237				Not Exceeded	
Viewshed	2023:08:31 1:15 AM	Yes	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:08:31 1:15 AM	Yes	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:08:31 1:15 AM	Yes	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:08:31 1:15 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:08:31 1:15 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:08:31 1:15 AM	Yes	Caribou	1	Foraging	N/A	1000	154	West		-96.4630	65.2546				Not Exceeded	
Viewshed	2023:08:31 1:15 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:08:31 1:15 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:08:31 1:15 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:08:31 1:15 AM	Yes	Muskox	12	Resting	Not Recorded	5	156	West		-96.4521	65.2622				Not Exceeded	
Viewshed	2023:08:31 1:15 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:08:31 1:15 AM	Yes	Caribou	1	Walking	N	150	160-161	East		-96.4136	65.2943				Not Exceeded	
Viewshed	2023:08:31 1:15 AM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:08:31 1:15 AM	Yes	Caribou	4	Foraging	N/A	100	160-161	West		-96.4136	65.2943				Not Exceeded	
Viewshed	2023:08:31 1:15 AM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:08:31 1:15 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:08:31 1:15 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:08:31 1:15 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:08:31 1:15 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:08:31 1:15 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:08:31 1:15 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:08:31 1:15 AM	Yes	Caribou	2	Foraging	N/A	400	169	West		-96.5370	65.3400				Not Exceeded	
Viewshed	2023:08:31 1:15 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:08:31 1:15 AM	Yes	Caribou	4	Foraging	N/A	50	176	East		-96.6038	65.3862				Not Exceeded	
Viewshed	2023:08:31 1:15 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:08:31 1:15 AM	Yes	Caribou	1	Foraging	N/A	1000	176	West		-96.6038	65.3862				Not Exceeded	
Viewshed	2023:08:31 1:15 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:09:07 7:51 AM	Yes	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:09:07 7:51 AM	Yes	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:09:07 7:51 AM	Yes	Snow goose	8	Foraging	N/A	500	116	West		-96.0206	65.0803				Not Exceeded	
Viewshed	2023:09:07 7:51 AM	Yes	Snow goose	14	Foraging	N/A	1000	116	West		-96.0206	65.0803				Not Exceeded	
Viewshed	2023:09:07 7:51 AM	Yes	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:09:07 7:51 AM	Yes	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:09:07 7:51 AM	Yes	Muskox	3	Walking	N	700	118	West		-96.0551	65.0865				Not Exceeded	
Viewshed	2023:09:07 7:51 AM	Yes	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:09:07 7:51 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:09:07 7:51 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:09:07 7:51 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:09:07 7:51 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:09:07 7:51 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:09:07 7:51 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:09:07 7:51 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:09:07 7:51 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:09:07 7:51 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:09:07 7:51 AM	No	-	N/A			N/A	133			-96.1754	65.1992					

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:09:07 7:51 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:09:07 7:51 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:09:07 7:51 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:09:07 7:51 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:09:07 7:51 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:09:07 7:51 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:09:07 7:51 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:09:07 7:51 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:09:07 7:51 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:09:07 7:51 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:09:07 7:51 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:09:07 7:51 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:09:07 7:51 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:09:07 7:51 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:09:07 7:51 AM	Yes	Caribou	3	Walking	O	0	160-161	East		-96.4136	65.2943				Not Exceeded	
Viewshed	2023:09:07 7:51 AM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:09:07 7:51 AM	Yes	Caribou	5	Foraging	O	0	160-161	West		-96.4136	65.2943				Not Exceeded	
Viewshed	2023:09:07 7:51 AM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:09:07 7:51 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:09:07 7:51 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:09:07 7:51 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:09:07 7:51 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:09:07 7:51 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:09:07 7:51 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:09:07 7:51 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:09:07 7:51 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:09:07 7:51 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:09:07 7:51 AM	Yes	Caribou	4	Foraging	N/A	50	176	West		-96.6038	65.3862				Not Exceeded	
Viewshed	2023:09:07 7:51 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:09:14 7:13 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:09:14 7:13 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:09:14 7:13 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:09:14 7:13 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:09:14 7:13 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:09:14 7:13 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:09:14 7:13 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:09:14 7:13 AM	Yes	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:09:14 7:13 AM	Yes	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:09:14 7:13 AM	Yes	Snow goose	12	Foraging	N/A	50	121-122	West		-96.0864	65.1071				Not Exceeded	
Viewshed	2023:09:14 7:13 AM	Yes	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:09:14 7:13 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:09:14 7:13 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:09:14 7:13 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:09:14 7:13 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:09:14 7:13 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:09:14 7:13 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:09:14 7:13 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:09:14 7:13 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:09:14 7:13 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:09:14 7:13 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:09:14 7:13 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:09:14 7:13 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:09:14 7:13 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:09:14 7:13 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:09:14 7:13 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:09:14 7:13 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:09:14 7:13 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:09:14 7:13 AM	Yes	Snow goose	2	Standing	N/A	500	154	West		-96.4630	65.2546				Not Exceeded	
Viewshed	2023:09:14 7:13 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:09:14 7:13 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:09:14 7:13 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:09:14 7:13 AM	Yes	Snow goose	4	Standing	N/A	1500	156	West		-96.4521	65.2622				Not Exceeded	
Viewshed	2023:09:14 7:13 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:09:14 7:13 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:09:14 7:13 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:09:14 7:13 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:09:14 7:13 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:09:14 7:13 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:09:14 7:13 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:09:14 7:13 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:09:14 7:13 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:09:14 7:13 AM	Yes	Caribou	1	Foraging	N/A	1750	169	East		-96.5370	65.3400				Not Exceeded	
Viewshed	2023:09:14 7:13 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:09:14 7:13 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:09:14 7:13 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:09:14 7:13 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:09:14 7:13 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:09:14 7:13 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:09:14 7:13 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:09:20 2:48 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:09:20 2:48 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:09:20 2:48 AM	Yes	Snow goose	8	Lying Down	N/A	600	138	West		-96.2602	65.2238				Not Exceeded	
Viewshed	2023:09:20 2:48 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:09:20 2:48 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:09:20 2:48 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:09:20 2:48 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:09:20 2:48 AM	Yes	Snow goose	6	Standing	N/A	200	176	West		-96.6038	65.3862				Not Exceeded	
Viewshed	2023:09:20 2:48 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:09:26 1:08 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:09:26 1:08 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:09:26 1:08 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:09:26 1:08 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:09:26 1:08 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:09:26 1:08 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:09:26 1:08 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:09:26 1:08 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:09:26 1:08 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:09:26 1:08 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:09:26 1:08 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:09:26 1:08 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:09:26 1:08 AM	Yes	Muskox	2	Resting	N/A	100	133	East		-96.1754	65.1992				Not Exceeded	
Viewshed	2023:09:26 1:08 AM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:09:26 1:08 AM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:09:26 1:08 AM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:09:26 1:08 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:09:26 1:08 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:09:26 1:08 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:09:26 1:08 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:09:26 1:08 AM	Yes	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:09:26 1:08 AM	Yes	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:09:26 1:08 AM	Yes	Muskox	7	Resting	N/A	200	144	West		-96.3580	65.2237				Not Exceeded	
Viewshed	2023:09:26 1:08 AM	Yes	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:09:26 1:08 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:09:26 1:08 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:09:26 1:08 AM	Yes	Muskox	6	Lying Down	N/A	2500	154	West		-96.4630	65.2546				Not Exceeded	
Viewshed	2023:09:26 1:08 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:09:26 1:08 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:09:26 1:08 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:09:26 1:08 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:09:26 1:08 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:09:26 1:08 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:09:26 1:08 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:09:26 1:08 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:09:26 1:08 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:09:26 1:08 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:09:26 1:08 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:09:26 1:08 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:09:26 1:08 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:09:26 1:08 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:09:26 1:08 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:09:26 1:08 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:09:26 1:08 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:09:26 1:08 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:09:26 1:08 AM	Yes	Arctic fox	1	Resting	N/A	2000	176	West		-96.6038	65.3862				Not Exceeded	



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:09:26 1:08 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:09:30 6:31 AM	Yes	Muskox	2	Feeding	NE	25	118	East		-96.0551	65.0865				Not Exceeded	
Viewshed	2023:09:30 6:31 AM	Yes	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:09:30 6:31 AM	Yes	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:09:30 6:31 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:09:30 6:31 AM	Yes	Muskox	4	Walking	E	1000	154	West		-96.4630	65.2546				Not Exceeded	
Viewshed	2023:09:30 6:31 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:09:30 6:31 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:02 1:10 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:02 1:10 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:02 1:10 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:02 1:10 AM	Yes	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:02 1:10 AM	Yes	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:02 1:10 AM	Yes	Muskox	3	Feeding	N	250	118	West		-96.0551	65.0865				Not Exceeded	
Viewshed	2023:10:02 1:10 AM	Yes	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:02 1:10 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:02 1:10 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:10:02 1:10 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:02 1:10 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:02 1:10 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:02 1:10 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:02 1:10 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:02 1:10 AM	Yes	Muskox	3	Feeding	SE	75	133	East		-96.1754	65.1992				Not Exceeded	
Viewshed	2023:10:02 1:10 AM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:02 1:10 AM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:02 1:10 AM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:02 1:10 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:02 1:10 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:02 1:10 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:02 1:10 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:02 1:10 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:02 1:10 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:02 1:10 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:02 1:10 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:02 1:10 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:02 1:10 AM	Yes	Muskox	1	Feeding	NE	250	154	West		-96.4630	65.2546				Not Exceeded	
Viewshed	2023:10:02 1:10 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:02 1:10 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:02 1:10 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:02 1:10 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:02 1:10 AM	Yes	Arctic fox	1	Walking	N	160	160-161	East		-96.4136	65.2943				Not Exceeded	
Viewshed	2023:10:02 1:10 AM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:02 1:10 AM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:02 1:10 AM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:02 1:10 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:02 1:10 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:02 1:10 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:02 1:10 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:02 1:10 AM	Yes	Caribou	7	Feeding	S	250	169	East		-96.5370	65.3400				Not Exceeded	
Viewshed	2023:10:02 1:10 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:02 1:10 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:02 1:10 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:02 1:10 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:02 1:10 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:02 1:10 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:02 1:10 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	138			-96.2602	65.2238					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:05 10:08 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:05 10:08 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:05 10:08 AM	Yes	Muskox	1	Resting	N/A	40	156	West		-96.4521	65.2622				Not Exceeded	
Viewshed	2023:10:05 10:08 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:05 10:08 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:07 10:29 AM		-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:07 10:29 AM		-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:07 10:29 AM		-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:07 10:29 AM		-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:07 10:29 AM		-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:07 10:29 AM		-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:07 10:29 AM		-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:07 10:29 AM		-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:07 10:29 AM		-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:07 10:29 AM		-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:07 10:29 AM		-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:07 10:29 AM		-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	156			-96.4521	65.2622					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:07 10:29 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:09 8:44 AM	Yes	Muskox	1	Standing	N/A	600	116	East		-96.0206	65.0803				Not Exceeded	
Viewshed	2023:10:09 8:44 AM	Yes	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:09 8:44 AM	Yes	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:09 8:44 AM	Yes	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:09 8:44 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:09 8:44 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:09 8:44 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:09 8:44 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:09 8:44 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:09 8:44 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:09 8:44 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:09 8:44 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:09 8:44 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:09 8:44 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:09 8:44 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:09 8:44 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:09 8:44 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:09 8:44 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:09 8:44 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:09 8:44 AM	Yes	Muskox	3	Walking	S	600	138	East		-96.2602	65.2238				Not Exceeded	
Viewshed	2023:10:09 8:44 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:09 8:44 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:09 8:44 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:09 8:44 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:09 8:44 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:09 8:44 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:09 8:44 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:09 8:44 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:09 8:44 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:09 8:44 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:09 8:44 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:09 8:44 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:09 8:44 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:09 8:44 AM	Yes	Muskox	2	Standing	N/A	3000	156	West		-96.4521	65.2622				Not Exceeded	
Viewshed	2023:10:09 8:44 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:09 8:44 AM	Yes	Muskox	17	Lying Down	Not Recorded	1500	160-161	East		-96.4136	65.2943				Exceeded	>1.5Km from the road
Viewshed	2023:10:09 8:44 AM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:09 8:44 AM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:09 8:44 AM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:09 8:44 AM	Yes	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:09 8:44 AM	Yes	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:09 8:44 AM	Yes	Canada goose	13	Standing	Not Recorded	700	166	West		-96.4882	65.3253				Not Exceeded	
Viewshed	2023:10:09 8:44 AM	Yes	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:09 8:44 AM	No	-	N/A			N/A	169			-96.5370	65.3400					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:10:09 8:44 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:09 8:44 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:09 8:44 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:09 8:44 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:09 8:44 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:09 8:44 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:09 8:44 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:11 8:46 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:11 8:46 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:11 8:46 AM	Yes	Muskox	2	Feeding	N/A	2000	156	West		-96.4521	65.2622				Not Exceeded	
Viewshed	2023:10:11 8:46 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:11 8:46 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:11 8:46 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:11 8:46 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:11 8:46 AM	Yes	Muskox	2	Feeding	N/A	1200	169	West		-96.5370	65.3400				Not Exceeded	
Viewshed	2023:10:11 8:46 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:11 8:46 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:11 8:46 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:11 8:46 AM	Yes	Caribou	6	Feeding	O	800	176	West		-96.6038	65.3862				Not Exceeded	
Viewshed	2023:10:11 8:46 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	116			-96.0206	65.0803					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:13 8:02 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:14 12:18 PM	Yes	Muskox	2	Foraging	NE	20	118	East		-96.0551	65.0865				Not Exceeded	
Viewshed	2023:10:14 12:18 PM	Yes	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:14 12:18 PM	Yes	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:14 12:18 PM	Yes	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	128			-96.1358	65.1614					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:14 12:18 PM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:16 8:02 AM		-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:16 8:02 AM		-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:16 8:02 AM		-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:16 8:02 AM		-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:16 8:02 AM		-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:16 8:02 AM		-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:16 8:02 AM		-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:16 8:02 AM		-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:16 8:02 AM		-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:16 8:02 AM		-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:16 8:02 AM		-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:16 8:02 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:16 8:02 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:16 8:02 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:16 8:02 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:16 8:02 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:16 8:02 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:16 8:02 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:16 8:02 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:16 8:02 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:16 8:02 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:16 8:02 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:16 8:02 AM	No	-	N/A			N/A	144			-96.3580	65.2237					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:10:16 8:02 AM		-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:16 8:02 AM		-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:16 8:02 AM		-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:16 8:02 AM		-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:16 8:02 AM		-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:16 8:02 AM		-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:16 8:02 AM		-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:16 8:02 AM		-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:16 8:02 AM		-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:16 8:02 AM		-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:16 8:02 AM		-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:16 8:02 AM		-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:16 8:02 AM		-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:16 8:02 AM		-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:16 8:02 AM		-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:16 8:02 AM		-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:16 8:02 AM		-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:16 8:02 AM		-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:16 8:02 AM		-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:16 8:02 AM		-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:16 8:02 AM		-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:16 8:02 AM		-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:18 8:05 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:18 8:05 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:18 8:05 AM	Yes	Muskox	1	Feeding	N/A	800	138	West		-96.2602	65.2238				Not Exceeded	
Viewshed	2023:10:18 8:05 AM	Yes	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:18 8:05 AM	Yes	Caribou	7	Foraging	N/A	75	144	East		-96.3580	65.2237				Not Exceeded	
Viewshed	2023:10:18 8:05 AM	Yes	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:18 8:05 AM	Yes	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:18 8:05 AM	Yes	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:18 8:05 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:18 8:05 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:18 8:05 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:18 8:05 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:18 8:05 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:18 8:05 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:18 8:05 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:18 8:05 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:18 8:05 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:18 8:05 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:18 8:05 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:18 8:05 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:18 8:05 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:18 8:05 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:18 8:05 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:18 8:05 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:18 8:05 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	118			-96.0551	65.0865					

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:20 8:24 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	128			-96.1358	65.1614					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:10:22 8:21 AM	Yes	Caribou	2	Lying Down	N/A	2000	133	East		-96.1754	65.1992				Not Exceeded	
Viewshed	2023:10:22 8:21 AM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:22 8:21 AM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:22 8:21 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:22 8:21 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:22 8:21 AM	Yes	Muskox	7	Standing	Not Recorded	1500	156	West		-96.4521	65.2622				Not Exceeded	
Viewshed	2023:10:22 8:21 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:22 8:21 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	144			-96.3580	65.2237					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:24 8:41 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:24 8:41 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:24 8:41 AM	Yes	Muskox	7	Feeding	N/A	1500	154	West		-96.4630	65.2546				Not Exceeded	
Viewshed	2023:10:24 8:41 AM	Yes	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:24 8:41 AM	Yes	Caribou	1	Walking	N	1500	166	East		-96.4882	65.3253				Not Exceeded	
Viewshed	2023:10:24 8:41 AM	Yes	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:24 8:41 AM	Yes	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:24 8:41 AM	Yes	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:24 8:41 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:26 8:12 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:26 8:12 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:26 8:12 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:26 8:12 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:26 8:12 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:26 8:12 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:26 8:12 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:26 8:12 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:26 8:12 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:26 8:12 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:26 8:12 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:26 8:12 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:26 8:12 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:26 8:12 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:26 8:12 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:26 8:12 AM	Yes	Caribou	6	Foraging	N/A	2000	133	East		-96.1754	65.1992				Not Exceeded	
Viewshed	2023:10:26 8:12 AM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:26 8:12 AM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:26 8:12 AM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:26 8:12 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:26 8:12 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:26 8:12 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:26 8:12 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:26 8:12 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:26 8:12 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:26 8:12 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:26 8:12 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:26 8:12 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:26 8:12 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:26 8:12 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:26 8:12 AM	Yes	Muskox	22	Foraging	N/A	25	156	East		-96.4521	65.2622				Exceeded	Road closed
Viewshed	2023:10:26 8:12 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:26 8:12 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:26 8:12 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:10:26 8:12 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:26 8:12 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:26 8:12 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:26 8:12 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:26 8:12 AM	Yes	Caribou	17	Foraging	N/A	3000	166	East		-96.4882	65.3253				Not Exceeded	
Viewshed	2023:10:26 8:12 AM	Yes	Caribou	150	Foraging	N/A	500	166	East		-96.4882	65.3253				Exceeded	Road closed
Viewshed	2023:10:26 8:12 AM	Yes	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:26 8:12 AM	Yes	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:26 8:12 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:26 8:12 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:26 8:12 AM	Yes	Muskox	3	Foraging	N/A	3000	169	West		-96.5370	65.3400				Not Exceeded	
Viewshed	2023:10:26 8:12 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:26 8:12 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:26 8:12 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:26 8:12 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:26 8:12 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:28 1:14 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:28 1:14 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:28 1:14 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:28 1:14 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:28 1:14 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:28 1:14 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:28 1:14 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:28 1:14 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:28 1:14 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:28 1:14 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:28 1:14 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:28 1:14 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:28 1:14 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:28 1:14 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:28 1:14 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:28 1:14 AM	No	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:28 1:14 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:28 1:14 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:28 1:14 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:28 1:14 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:28 1:14 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:28 1:14 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:28 1:14 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:28 1:14 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:28 1:14 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:28 1:14 AM	Yes	Muskox	10	Foraging	N/A	2000	156	East		-96.4521	65.2622				Not Exceeded	
Viewshed	2023:10:28 1:14 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:28 1:14 AM	Yes	Caribou	5	Foraging	N/A	2000	156	West		-96.4521	65.2622				Not Exceeded	
Viewshed	2023:10:28 1:14 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:28 1:14 AM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:28 1:14 AM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:28 1:14 AM	Yes	Muskox	2	Foraging	N/A	1000	160-161	West		-96.4136	65.2943				Not Exceeded	
Viewshed	2023:10:28 1:14 AM	Yes	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:28 1:14 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:28 1:14 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:28 1:14 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:28 1:14 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:28 1:14 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:28 1:14 AM	Yes	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:28 1:14 AM	Yes	Caribou	1	Walking	O	0	169	West		-96.5370	65.3400				Not Exceeded	



Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2023:10:28 1:14 AM	Yes	Caribou	25	Walking	O	1500	169	West		-96.5370	65.3400				Not Exceeded	
Viewshed	2023:10:28 1:14 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:28 1:14 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:28 1:14 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:28 1:14 AM	No	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	116			-96.0206	65.0803					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	118			-96.0551	65.0865					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	121-122			-96.0864	65.1071					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	128			-96.1358	65.1614					
Viewshed	2023:10:30 9:26 AM	Yes	Caribou	81	Walking	S	3000	133	East		-96.1754	65.1992				Not Exceeded	
Viewshed	2023:10:30 9:26 AM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:30 9:26 AM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:30 9:26 AM	Yes	-	N/A			N/A	133			-96.1754	65.1992					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	138			-96.2602	65.2238					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	144			-96.3580	65.2237					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	154			-96.4630	65.2546					
Viewshed	2023:10:30 9:26 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:30 9:26 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:30 9:26 AM	Yes	Muskox	3	Foraging	N/A	1500	156	West		-96.4521	65.2622				Not Exceeded	
Viewshed	2023:10:30 9:26 AM	Yes	-	N/A			N/A	156			-96.4521	65.2622					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	160-161			-96.4136	65.2943					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	166			-96.4882	65.3253					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:30 9:26 AM	No	-	N/A			N/A	169			-96.5370	65.3400					
Viewshed	2023:10:30 9:26 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:30 9:26 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					
Viewshed	2023:10:30 9:26 AM	Yes	Gyrfalcon	1	Flying	E	0	176	West		-96.6038	65.3862				Not Exceeded	
Viewshed	2023:10:30 9:26 AM	Yes	-	N/A			N/A	176			-96.6038	65.3862					



Table A-3: Wildlife Observations at Meadowbank Mine in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2023:01:02 8:00 AM	Yes	Wolverine	1	Walking	N/A	N/A	N/A			-96.0675	65.0161			No	Not Exceeded	
Incidental	2023:01:03 1:28 PM	Yes	Wolverine	1	Walking	NW	N/A	N/A			-96.0675	65.0161	Successful deterrence		No	Not Exceeded	
Mine & Pit	2023:01:03 1:42 PM	Yes	Wolverine	1	Walking	W	15	N/A	West	No	-96.0675	65.0161	Successful deterrence		No	Not Exceeded	
Mine & Pit	2023:01:03 1:42 PM	Yes	Arctic fox	1	Walking	W	15	N/A	West	No	-96.0675	65.0161			No	Not Exceeded	
Incidental	2023:01:05 9:06 AM	Yes	Wolverine	2	Walking	SW	N/A	N/A	West		-96.0675	65.0161	Successful deterrence		No	Not Exceeded	
Incidental	2023:01:05 9:06 AM	Yes	Wolverine	1	Walking	SW	N/A	N/A			-96.0675	65.0161			No	Not Exceeded	
Incidental	2023:01:05 9:06 AM	Yes	Wolverine	1	Walking	N/A	N/A	N/A			-96.0675	65.0161			No	Not Exceeded	
Incidental	2023:01:06 7:41 AM	Yes	Wolverine	1	Foraging	NW	N/A	N/A	West		-96.0675	65.0161	Successful deterrence		Yes - Repeating observation despite deterrence effort	Not Exceeded	
Incidental	2023:01:06 7:41 AM	Yes	Wolverine	1	Foraging	NW	N/A	N/A	West		-96.0675	65.0161	Successful deterrence		Yes - Repeating observation despite deterrence effort	Not Exceeded	
Mine & Pit	2023:01:07 3:11 PM	Yes	Wolverine	1	Walking	W	100	N/A	West	Yes	-96.0725	65.0250	Successful deterrence		Yes - Repeating observation despite deterrence effort	Not Exceeded	
Incidental	2023:01:08 2:53 PM	Yes	Wolverine	1	Walking	W	N/A	N/A	South,North,West,East		-96.0650	65.0156	Successful deterrence		Yes - Repeating observation despite deterrence effort	Not Exceeded	
Incidental	2023:01:10 9:00 AM	Yes	Wolverine	1	Hiding	N/A	N/A	N/A	West		-96.0544	65.0333			Yes - Repeating observation despite deterrence effort	Not Exceeded	
Incidental	2023:01:11 7:46 AM	Yes	Wolverine	1	Walking	N	N/A	N/A	West		-96.0675	65.0161	Successful deterrence		Yes - Repeating observation despite deterrence effort	Not Exceeded	
Incidental	2023:01:11 7:46 AM	Yes	Wolf	1	Walking	S	N/A	N/A	South,North,West,East		-96.0022	65.0511	Successful deterrence		No	Not Exceeded	
Incidental	2023:01:11 7:46 AM	Yes	Wolverine	1	Walking	N/A	N/A	N/A	South,North,West,East		-96.0650	65.0156	Successful deterrence		Yes - Repeating observation despite deterrence effort	Not Exceeded	
Incidental	2023:01:11 3:00 PM	Yes	Wolverine	1	Walking	N	2	N/A	West	Yes	-96.0675	65.0161	Successful deterrence		No	Not Exceeded	
Incidental	2023:01:12 6:57 AM	Yes	Wolverine	1	Walking	N/A	N/A	N/A	South,North,West,East		-96.0913	65.0543	Successful deterrence		Yes - Repeating observation despite deterrence effort	Not Exceeded	
Incidental	2023:01:12 6:57 AM	Yes	Wolf	1	Walking	N/A	N/A	N/A	South,North,West,East		-96.0022	65.0511	Successful deterrence		Yes - Repeating observation despite deterrence effort	Not Exceeded	
Incidental	2023:01:14 10:05 AM	Yes	Wolverine	1	Walking	N/A	N/A	N/A	South,North,West,East		-96.0675	65.0161	Successful deterrence		Yes - Repeating observation despite deterrence effort	Not Exceeded	
Incidental	2023:01:14 10:05 AM	Yes	Wolverine	1	Walking	N/A	N/A	N/A	South,North,West,East		-96.0675	65.0161	Successful deterrence		Yes - Repeating observation despite deterrence effort	Not Exceeded	
Incidental	2023:01:14 10:05 AM	Yes	Wolf	2	Foraging	N/A	N/A	N/A	West		-96.0544	65.0333	Successful deterrence		Yes - Repeating observation despite deterrence effort	Not Exceeded	
Incidental	2023:01:14 10:05 AM	Yes	Wolverine	1	Walking	N/A	N/A	N/A	South,North,West,East		-96.0675	65.0161	Successful deterrence		Yes - Repeating observation despite deterrence effort	Not Exceeded	
Mine & Pit	2023:01:14 2:20 PM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023:01:15 7:00 AM	Yes	Wolf	1	Foraging	N/A	N/A	N/A	South,North,West,East		-96.0544	65.0333	Successful deterrence		Yes - Repeating observation despite deterrence effort	Not Exceeded	
Incidental	2023:01:15 7:00 AM	Yes	Wolverine	2	Foraging	N/A	N/A	N/A	North,West,East		-96.0544	65.0333	Successful deterrence		Yes - Repeating observation despite deterrence effort	Not Exceeded	
Incidental	2023:01:15 7:00 AM	Yes	Wolf	1	Walking	N/A	N/A	N/A	South,North,West,East		-96.0669	65.0219	Successful deterrence		Yes - Repeating observation despite deterrence effort	Not Exceeded	
Incidental	2023:01:15 7:00 AM	Yes	Wolf	1	Walking	NE	N/A	N/A	West		-96.0675	65.0161	Successful deterrence		Yes - Repeating observation despite deterrence effort	Not Exceeded	
Incidental	2023:01:16 4:00 PM	Yes	Wolf	1	Walking	N/A	N/A	N/A	South		-96.0445	65.0418			No	Not Exceeded	
Incidental	2023:01:16 4:33 PM	Yes	Wolverine	1	Running	E	N/A	N/A	East		-96.0675	65.0161			No	Not Exceeded	
Incidental	2023:01:18 4:38 PM	Yes	Wolf	1	Running	E	N/A	N/A	North,East		-96.0544	65.0333			No	Not Exceeded	



Table A-3: Wildlife Observations at Meadowbank Mine in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2023:01:18 4:38 PM	Yes	Wolverine	1	Walking	E	N/A	N/A	North		-96.0675	65.0161			No	Not Exceeded	
Incidental	2023:01:19 6:30 AM	Yes	Wolverine	1	Dead	E	N/A	N/A	North		-96.0675	65.0161	Deterrents did not succeed	Project related	No	Not Exceeded	
Incidental	2023:01:19 7:02 AM	Yes	Wolverine	1	Walking	E	N/A	N/A	North		-96.0675	65.0161			No	Not Exceeded	
Incidental	2023:01:19 2:07 PM	Yes	Wolf	1	Not recorded	N/A	N/A	N/A	South		-96.0445	65.0418			No	Not Exceeded	
Incidental	2023:01:19 2:07 PM	Yes	Wolf	1	Walking	N	N/A	N/A	East		-96.0544	65.0333			No	Not Exceeded	
Incidental	2023:01:21 9:41 AM	Yes	Wolf	1	Walking	E	N/A	N/A	North		-96.0544	65.0333			No	Not Exceeded	
Incidental	2023:01:21 9:41 AM	Yes	Wolf	1	Walking	E	N/A	N/A	North		-96.0544	65.0333	Successful deterrence		No	Not Exceeded	
Incidental	2023:01:21 9:58 AM	Yes	Wolf	1	Walking	N	N/A	N/A	North		-96.0445	65.0418			No	Not Exceeded	
Incidental	2023:01:21 9:58 AM	Yes	Wolf	1	Walking	Not Recorded	N/A	N/A	South		-96.0022	65.0511			No	Not Exceeded	
Incidental	2023:01:21 11:05 AM	Yes	Wolf	2	Foraging	E	N/A	N/A	East		-96.0544	65.0333	Successful deterrence		No	Not Exceeded	
Mine & Pit	2023:01:21 1:40 PM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023:01:22 1:00 AM	Yes	Wolverine	1	Walking	S	N/A	N/A			-96.0700	65.0214			No	Not Exceeded	
Incidental	2023:01:22 1:00 AM	Yes	Wolf	1	Walking	S	N/A	N/A			-96.0445	65.0418			No	Not Exceeded	
Incidental	2023:01:22 1:00 AM	Yes	Wolf	1	Alert	Not Recorded	N/A	N/A			-96.0022	65.0511			No	Not Exceeded	
Incidental	2023:01:22 1:00 AM	Yes	Wolverine	1	Walking	E	N/A	N/A			-96.0675	65.0161			No	Not Exceeded	
Incidental	2023:01:22 9:00 AM	Yes	Wolf	1	Walking	SE	N/A	N/A	West		-96.0544	65.0333	Successful deterrence		No	Not Exceeded	
Incidental	2023:01:22 9:00 AM	Yes	Wolf	1	Walking	N/A	N/A	N/A	South		-96.0669	65.0219			No	Not Exceeded	
Incidental	2023:01:22 9:00 AM	Yes	Wolf	1	Walking	N/A	N/A	N/A	West		-96.0639	65.0150			No	Not Exceeded	
Incidental	2023:01:24 2:45 AM	Yes	Wolf	1	Walking	N/A	N/A	N/A	West,East		-96.0445	65.0418			No	Not Exceeded	
Incidental	2023:01:24 2:45 AM	Yes	Wolverine	1	Foraging	N/A	N/A	N/A	North		-96.0675	65.0161	Deterrents did not succeed		No	Not Exceeded	
Incidental	2023:01:24 2:45 AM	Yes	Wolf	1	Foraging	S	N/A	N/A	East		-96.0544	65.0333			No	Not Exceeded	
Incidental	2023:01:24 2:45 AM	Yes	Wolverine	1	Foraging	E	N/A	N/A	West		-96.0675	65.0161	Successful deterrence		No	Not Exceeded	
Incidental	2023:01:24 6:30 PM	Yes	Wolverine	1	Walking	Not Recorded	N/A	N/A			-96.0675	65.0161	Successful deterrence		No	Not Exceeded	
Incidental	2023:01:25 5:45 AM	Yes	Wolf	1	Dead	N/A	0	N/A	west	N/A	-96.0675	65.0161	Deterrents did not succeed	Project related	No	Not Exceeded	
Incidental	2023:01:30 7:57 AM	Yes	Wolf	2	Lying Down	Not Recorded	N/A	N/A			-96.0544	65.0333			No	Not Exceeded	
Incidental	2023:01:30 7:57 AM	Yes	Wolf	1	Walking	NW	N/A	N/A			-96.0675	65.0161	Successful deterrence		No	Not Exceeded	
Incidental	2023:01:30 7:57 AM	Yes	Wolf	1	Walking	N	N/A	N/A			-96.0578	65.0328	Deterrents did not succeed		No	Not Exceeded	
Incidental	2023:01:30 7:57 AM	Yes	Wolf	1	Walking		N/A	N/A			-96.0700	65.0214			No	Not Exceeded	
Incidental	2023:01:31 10:16 AM	Yes	Wolf	1	Walking	SW	N/A	N/A			-96.0569	65.0053	Successful deterrence		No	Not Exceeded	
Incidental	2023:02:02 2:22 PM	Yes	Wolf	2	Lying Down	Not Recorded	N/A	N/A	West		-96.0544	65.0333			Yes - A male and a cub	Not Exceeded	
Mine & Pit	2023:02:03 10:00 AM	Yes	Wolf	1	Resting	N/A	5	N/A	North,South,East,West	No	-96.0544	65.0333			Yes - Seen him all run last run and still there.....	Not Exceeded	
	2023:02:04 12:00 AM	Yes	Wolf	1	Dead		N/A	N/A			N/A	N/A	Deterrents did not succeed	Project related		Not Exceeded	
Incidental	2023:02:04 7:15 AM	Yes	Wolf	1	Dead	N/A	0	N/A		No	-96.0544	65.0333		Project related	No	Not Exceeded	
Incidental	2023:02:05 1:15 PM	Yes	Wolverine	1	Dead	N	0	N/A		N/A	-96.0544	65.0333		Project related	No	Not Exceeded	
Mine & Pit	2023:02:05 3:30 PM	Yes	Wolverine	1	Running	E	300	N/A	East	No	-96.0483	65.0108			No	Not Exceeded	
	2023:02:06 12:00 AM	Yes	Wolverine	1	Dead		N/A	N/A			N/A	N/A	Deterrents did not succeed	Project related		Not Exceeded	
Mine & Pit	2023:02:16 3:24 PM	Yes	Arctic fox	1	Walking	N/A	0	N/A	North,South,East,West	N/A	-96.0650	65.0156			No	Not Exceeded	
Mine & Pit	2023:02:18 8:45 AM	Yes	Arctic fox	1	Feeding	N/A	0	N/A	North,South,East,West	N/A	-96.0675	65.0161			No	Not Exceeded	
Incidental	2023:02:18 9:30 AM	Yes	Wolf	1	Walking	SE	800	N/A	East	No	-96.0445	65.0418			No	Not Exceeded	
Incidental	2023:02:24 7:32 AM	Yes	Wolverine	1	Fleeing	W	N/A	N/A	East		-96.0544	65.0333			No	Not Exceeded	
Mine & Pit	2023:02:24 1:31 PM	Yes	Wolf	1	Walking	E	0	N/A		Yes	-96.0544	65.0333	Deterrents did not succeed		No	Not Exceeded	
Mine & Pit	2023:02:25 12:36 PM	Yes	Wolf	1	Walking	E	0	N/A		Yes	-96.0767	65.0392			No	Not Exceeded	
Mine & Pit	2023:02:25 12:36 PM	Yes	Arctic fox	1	Walking	N/A	15	N/A	East	No	-96.0483	65.0108			No	Not Exceeded	
Mine & Pit	2023:02:25 12:36 PM	Yes	Wolf	1	Alert	N/A	0	N/A	West	N/A	-96.0675	65.0161	Deterrents did not succeed		No	Not Exceeded	
Mine & Pit	2023:02:25 12:36 PM	Yes	Arctic fox	1	Dead	N/A	30	N/A	East	No	-96.0569	65.0053		Project non-related	No	Not Exceeded	
Incidental	2023:02:26 11:25 AM	Yes	Wolverine	1	Walking	W	N/A	N/A	West		-96.0578	65.0328	Successful deterrence		No	Not Exceeded	
Incidental	2023:02:26 2:08 PM	Yes	Wolf	1	Walking	S	N/A	N/A	East		-96.0675	65.0161	Successful deterrence		No	Not Exceeded	

Table A-3: Wildlife Observations at Meadowbank Mine in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation	
Incidental	2023:02:27 11:22 AM	Yes	Wolf	1	Walking	E	N/A	N/A			-96.0700	65.0214			No	Not Exceeded		
Mine & Pit	2023:02:27 2:12 PM	Yes	Wolf	1	Walking	S	30	N/A	South	No	-96.0497	65.0147	Successful deterrence		No	Not Exceeded		
Incidental	2023:02:28 12:10 PM	Yes	Caribou	2	Walking	W	N/A	N/A	East		-96.0445	65.0418			No	Not Exceeded		
Incidental	2023:02:28 2:40 PM	Yes	Wolf	1	Walking	S	N/A	N/A	East		-96.0675	65.0161	Successful deterrence		No	Not Exceeded		
Incidental	2023:02:28 3:21 PM	No		N/A			N/A	N/A			N/A	N/A						
Incidental	2023:03:02 9:53 AM	Yes	Wolverine	1	Running	N	N/A	N/A	West		-96.0544	65.0333			No	Not Exceeded		
Incidental	2023:03:02 9:53 AM	Yes	Arctic fox	1	Walking	W	N/A	N/A	West		-96.0700	65.0214			No	Not Exceeded		
Incidental	2023:03:02 11:28 AM	Yes	Wolf	1	Walking	E	N/A	N/A	East		-96.0544	65.0333	Successful deterrence		No	Not Exceeded		
Incidental	2023:03:02 5:09 PM	Yes	Wolverine	1	Walking	W	N/A	N/A	East		-96.0675	65.0161	Successful deterrence		No	Not Exceeded		
Mine & Pit	2023:03:03 7:36 AM	No		N/A			N/A	N/A			N/A	N/A						
Incidental	2023:03:03 3:56 PM	Yes	Wolf	1	Walking	S	N/A	N/A	South		-96.0022	65.0511	Deterrents did not succeed		No	Not Exceeded		
Mine & Pit	2023:03:04 8:50 AM	No		N/A			N/A	N/A			N/A	N/A						
	2023:03:07 12:00 AM	Yes	Wolf	1	Dead		N/A	N/A			N/A	N/A	Deterrents did not succeed	Project related		Not Exceeded		
Mine & Pit	2023:03:07 2:14 PM	Yes	Wolf	1	Walking	N	0	N/A		N/A	-96.0611	65.0311			No	Not Exceeded		
Incidental	2023:03:07 3:10 PM	Yes	Wolf	1	Dead	N/A	0	N/A	North	Yes	-96.0544	65.0333		Project related	No	Not Exceeded		
	2023:03:10 12:00 AM	Yes	Wolverine	1	Dead		N/A	N/A			N/A	N/A	Deterrents did not succeed	Project related		Not Exceeded		
Incidental	2023:03:10 1:35 PM	Yes	Wolverine	1	Dead		N/A	N/A			-96.0578	65.0328		Project related	No	Not Exceeded		
Mine & Pit	2023:03:12 5:54 PM	Yes	Caribou	2	Walking	E	4000	N/A	South	No	-96.0445	65.0418			No	Not Exceeded		
Road	2023:03:13 10:00 AM	Yes	Caribou	4	Walking	E	0	95	West	Yes	-96.1952	65.0129			No	Not Exceeded		
Mine & Pit	2023:03:18 4:22 PM	No		N/A			N/A	N/A			N/A	N/A						
Mine & Pit	2023:03:22 8:54 AM	No		N/A			N/A	N/A			N/A	N/A						
Mine & Pit	2023:03:25 1:52 PM	Yes	Red fox	1	Walking	E	1	N/A	West	No	-96.0544	65.0333			No	Not Exceeded		
Mine & Pit	2023:03:25 1:52 PM	Yes	Arctic fox	1	Walking	Not Recorded	50	N/A	West	No	-96.0544	65.0333			No	Not Exceeded		
Incidental	2023:03:27 7:37 AM	Yes	Wolverine	1	Trotting/running	S	N/A	N/A	East		-96.0675	65.0161			No	Not Exceeded		
Mine & Pit	2023:04:02 8:57 AM	Yes	Arctic fox	3	Alert	N/A	0	N/A	North	N/A	-96.0544	65.0333			No	Not Exceeded		
Mine & Pit	2023:04:09 1:00 PM	No		N/A			N/A	N/A			N/A	N/A						
Mine & Pit	2023:04:15 4:01 PM	No		N/A			N/A	N/A			N/A	N/A						
Incidental	2023:04:22 10:06 AM	Yes	Caribou	16	Foraging	W	N/A	N/A	East		-96.0445	65.0418			No	Not Exceeded		
Mine & Pit	2023:04:28 3:51 PM	No		N/A			N/A	N/A			N/A	N/A						
Mine & Pit	2023:05:03 9:00 AM	Yes	Caribou	5	Foraging	N/A	400	N/A	West	No	-96.0036	65.0750			No	Not Exceeded		
Mine & Pit	2023:05:13 7:15 AM	No		N/A			N/A	N/A			N/A	N/A						
Mine & Pit	2023:05:20 9:41 AM	Yes	Arctic fox	1	Walking	W	100	N/A	West	N/A	-96.0675	65.0161			No	Not Exceeded		
Mine & Pit	2023:05:21 6:54 AM	Yes	Arctic fox	1	Walking	W	10	N/A	West	No	-96.0675	65.0161			No	Not Exceeded		
Mine & Pit	2023:06:05 12:47 PM	Yes	Caribou	1	Walking	E	150	N/A	South	No	-96.0675	65.0161			No	Not Exceeded		
Mine & Pit	2023:06:05 12:47 PM	Yes	Caribou	2	Foraging	N/A	500	N/A	East	No	-96.0445	65.0418			No	Not Exceeded		
Incidental	2023:06:08 9:44 AM	Yes	Caribou	7	Foraging	N/A	N/A	N/A	North		-96.0725	65.0250	Successful deterrence		No	Not Exceeded		
Mine & Pit	2023:06:10 8:51 AM	Yes	Arctic fox	1	Walking		N/A	N/A			-95.9933	65.0588				Not Exceeded		
Incidental	2023:06:12 10:00 AM	Yes	Caribou	7	Foraging	N/A	N/A	N/A			-96.0725	65.0250			No	Not Exceeded		
Incidental	2023:06:15 7:51 AM	Yes	Muskox	2	Foraging	N/A	N/A	N/A	South,North		-96.0725	65.0250	Successful deterrence		No	Not Exceeded		
Incidental	2023:06:19 12:21 PM	Yes	Caribou	4	Foraging	S	N/A	N/A	South		-96.0725	65.0250			Yes - They have been hanging around for over 1 week		Not Exceeded	
Incidental	2023:06:20 5:45 PM	Yes	Caribou	4	Running	E	N/A	N/A	South		-96.0725	65.0250			No	Not Exceeded		
Mine & Pit	2023:06:24 8:42 AM	Yes	Muskox	1	Foraging	N/A	10	N/A	East	No	-96.0036	65.0750			No	Not Exceeded		
Mine & Pit	2023:06:24 8:42 AM	Yes	Muskox	1	Foraging	N/A	10	N/A	East	No	-96.0445	65.0418			No	Not Exceeded		
Mine & Pit	2023:06:24 8:42 AM	Yes	Muskox	2	Resting	N/A	70	N/A	West	No	-96.0569	65.0053			No	Not Exceeded		
Incidental	2023:06:25 3:34 PM	Yes	Muskox	3	Feeding		N/A	N/A	East		-96.0725	65.0250	Successful deterrence		No	Not Exceeded		
Mine & Pit	2023:06:28 10:38 AM	Yes	Caribou	2	Walking	W	0	N/A	North,South,East,West	Yes	-96.0675	65.0161			No	Not Exceeded		
Mine & Pit	2023:06:28 10:38 AM	Yes	Muskox	4	Foraging	NW	10	N/A	East,West	Yes	-96.0725	65.0250	Successful deterrence		No	Not Exceeded		
Incidental	2023:06:30 6:42 AM	Yes	Muskox	2	Foraging	NW	N/A	N/A	West,East		-96.0725	65.0250	Successful deterrence		No	Not Exceeded		
Incidental	2023:06:30 6:42 AM	Yes	Caribou	1	Walking	N	N/A	N/A	South,North,West,East		-96.0675	65.0161	Successful deterrence		No	Not Exceeded		
Incidental	2023:07:01 6:37 AM	Yes	Muskox	4	Resting	N	N/A	N/A	West,East		-96.0725	65.0250	Successful deterrence		No	Not Exceeded		
Mine & Pit	2023:07:01 9:34 AM	Yes	Muskox	1	Foraging	N/A	15	N/A	East	No	-96.0445	65.0418			No	Not Exceeded		
Mine & Pit	2023:07:01 9:34 AM	Yes	Caribou	2	Foraging	N/A	40	N/A	West	No	-96.0725	65.0250			No	Not Exceeded		

Table A-3: Wildlife Observations at Meadowbank Mine in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Mine & Pit	2023:07:01 9:34 AM	Yes	Muskox	2	Foraging	N/A	50	N/A	East	No	-96.0725	65.0250			No	Not Exceeded	
Incidental	2023:07:05 11:00 AM	Yes	Caribou	2	Foraging	N/A	N/A	N/A	East		-96.0700	65.0200			No	Not Exceeded	
Incidental	2023:07:05 6:03 PM	Yes	Muskox	1	Resting	N	N/A	N/A	West		-96.0814	65.0183			Yes - Been there all week	Not Exceeded	
Incidental	2023:07:06 9:30 AM	Yes	Muskox	1	Foraging	S	N/A	N/A	North		-96.0725	65.0250			No	Not Exceeded	
Incidental	2023:07:07 9:45 AM	Yes	Muskox	2	Foraging	N/A	150	N/A	North	No	-96.0725	65.0250	Successful deterrence		No	Not Exceeded	
Mine & Pit	2023:07:09 5:38 PM	Yes	Muskox	1	Foraging	N/A	50	N/A	South	No	-96.0725	65.0250			No	Not Exceeded	
Mine & Pit	2023:07:09 5:38 PM	Yes	Muskox	2	Foraging	N/A	200	N/A	South	No	-96.0767	65.0392			No	Not Exceeded	
Incidental	2023:07:11 9:45 AM	Yes	Muskox	1	Lying Down	N/A	N/A	N/A	South		-96.0445	65.0418			No	Not Exceeded	
Incidental	2023:07:11 9:45 AM	Yes	Caribou	1	Lying Down	N/A	N/A	N/A	South		-96.0700	65.0214			No	Not Exceeded	
Incidental	2023:07:11 9:45 AM	Yes	Muskox	1	Feeding	N/A	N/A	N/A	South		-96.0736	65.0217			No	Not Exceeded	
Incidental	2023:07:12 10:33 AM	Yes	Muskox	1	Foraging	N	N/A	N/A	North		-96.0725	65.0250	Successful deterrence		No	Not Exceeded	
Incidental	2023:07:13 10:11 AM	Yes	Muskox	1	Foraging	N/A	N/A	N/A	West		-96.0700	65.0200			No	Not Exceeded	
Incidental	2023:07:13 10:11 AM	Yes	Caribou	1	Foraging	N/A	N/A	N/A	East		-96.0814	65.0183			No	Not Exceeded	
Incidental	2023:07:13 1:30 PM	Yes	Muskox	2	Feeding	N	N/A	N/A	South		-96.0445	65.0418			No	Not Exceeded	
Incidental	2023:07:14 8:30 AM	Yes	Caribou	1	Lying Down	N/A	N/A	N/A	East		-96.0611	65.0311			No	Not Exceeded	
Incidental	2023:07:14 9:15 AM	Yes	Muskox	2	Feeding	S	N/A	N/A	North		-96.0725	65.0250	Successful deterrence		No	Not Exceeded	
Mine & Pit	2023:07:14 10:45 AM	Yes	Muskox	1	Feeding	W	25	N/A	East	No	-96.0700	65.0200			No	Not Exceeded	
Incidental	2023:07:14 4:00 PM	Yes	Muskox	3	Feeding	S	N/A	N/A	South		-96.0725	65.0250	Successful deterrence		No	Not Exceeded	
Incidental	2023:07:15 4:40 PM	Yes	Muskox	2	Foraging	S	N/A	N/A	North		-96.0725	65.0250	Successful deterrence		No	Not Exceeded	
Incidental	2023:07:15 4:40 PM	Yes	Caribou	2	Foraging	S	N/A	N/A			-96.0725	65.0250	Successful deterrence		No	Not Exceeded	
Incidental	2023:07:29 10:30 AM	Yes	Caribou	1	Walking	S	N/A	N/A	North		-96.0650	65.0156			No	Not Exceeded	
Mine & Pit	2023:07:29 4:00 PM	Yes	Caribou	2	Walking	E	0	N/A	North	No	-96.0736	65.0217			No	Not Exceeded	
Incidental	2023:07:31 8:30 AM	Yes	Caribou	1	Trotting/running	N/A	N/A	N/A	East		-96.0445	65.0418			No	Not Exceeded	
Incidental	2023:07:31 8:30 AM	Yes	Caribou	1	Trotting/running	N/A	N/A	N/A	North		-96.0725	65.0250			No	Not Exceeded	
Incidental	2023:08:01 6:44 AM	Yes	Caribou	1	Trotting/running	N	N/A	N/A	South		-96.0445	65.0418			No	Not Exceeded	
Incidental	2023:08:01 3:00 PM	Yes	Caribou	1	Lying Down	N/A	N/A	N/A	East		-96.0700	65.0214			No	Not Exceeded	
Incidental	2023:08:03 12:40 PM	Yes	Caribou	1	Walking	S	N/A	N/A	South		-96.0736	65.0217			No	Not Exceeded	
Mine & Pit	2023:08:04 5:00 PM	No		N/A			N/A	N/A			N/A	N/A					
Mine & Pit	2023:08:13 9:30 AM	No		N/A			N/A	N/A			N/A	N/A					
Mine & Pit	2023:08:18 8:41 AM	Yes	Canada goose	16	Alert	S	20	N/A	North	No	-96.0445	65.0418			No	Not Exceeded	
Mine & Pit	2023:08:18 8:41 AM	Yes	Caribou	1	Feeding	N/A	15	N/A	North	No	-96.0445	65.0418			No	Not Exceeded	
Mine & Pit	2023:08:18 8:41 AM	Yes	Canada goose	19	Feeding	N/A	100	N/A	West	No	-96.0036	65.0750			No	Not Exceeded	
Mine & Pit	2023:08:18 8:41 AM	Yes	Muskox	28	Feeding	N/A	4000	N/A	South	No	-96.0445	65.0418			No	Exceeded	None. They are not close to any road. In tundra, behind a lake.
Mine & Pit	2023:08:26 2:41 PM	No		N/A			N/A	N/A			N/A	N/A					
Mine & Pit	2023:09:01 5:03 PM	Yes	Canada goose	50	Resting	S	350	N/A	West	No	-96.0814	65.0183			No	Not Exceeded	
Mine & Pit	2023:09:01 5:03 PM	Yes	Canada goose	80	Resting	N/A	15	N/A	West	No	-96.0814	65.0183			No	Not Exceeded	
Mine & Pit	2023:09:01 5:03 PM	Yes	Snow goose	60	Resting	N/A	250	N/A	North	No	-96.0767	65.0392			No	Not Exceeded	
Mine & Pit	2023:09:09 5:18 PM	No		N/A			N/A	N/A			N/A	N/A					
Mine & Pit	2023:09:16 1:04 PM	Yes	Muskox	6	Foraging	NW	200	N/A	West	No	-96.0036	65.0750			No	Not Exceeded	
Mine & Pit	2023:09:30 5:55 PM	Yes	Arctic fox	1	Running	S	0	N/A		Yes	-96.0700	65.0214			No	Not Exceeded	
Mine & Pit	2023:09:30 5:55 PM	Yes	Arctic hare	1	Foraging	S	100	N/A	East	No	-96.0445	65.0418			No	Not Exceeded	
Mine & Pit	2023:10:02 1:00 PM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023:10:05 1:00 PM	Yes	Muskox	1	Walking	N	N/A	N/A	North		-96.0725	65.0250			No	Not Exceeded	
Mine & Pit	2023:10:07 8:59 AM	Yes	Arctic fox	2	Running	N	500	N/A	East	No	-96.0445	65.0418			No	Not Exceeded	
Incidental	2023:10:10 2:52 PM	Yes	Muskox	15	Fighting	N/A	N/A	N/A	South,North		-96.0767	65.0392			No	Exceeded	The muskox were over 2km from the road by the north cell diversion ditches.
Mine & Pit	2023:10:14 5:15 PM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023:10:19 8:15 AM	Yes	Wolverine	1	Foraging	N	N/A	N/A	North		-96.0544	65.0333	Successful deterrence		No	Not Exceeded	
Mine & Pit	2023:10:22 2:00 PM	No		N/A			N/A	N/A			N/A	N/A					
Mine & Pit	2023:10:28 8:50 AM	Yes	Arctic fox	1	Walking	E	10	N/A	West	No	-96.0767	65.0392			No	Not Exceeded	
Mine & Pit	2023:11:01 3:31 PM	No		N/A			N/A	N/A			N/A	N/A					
Mine & Pit	2023:11:04 1:00 PM	No		N/A			N/A	N/A			N/A	N/A					
Mine & Pit	2023:11:12 7:18 AM	No		N/A			N/A	N/A			N/A	N/A					
Mine & Pit	2023:11:17 10:18 AM	No		N/A			N/A	N/A			N/A	N/A					
Mine & Pit	2023:11:25 2:56 PM	No		N/A			N/A	N/A			N/A	N/A					

Table A-3: Wildlife Observations at Meadowbank Mine in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Mine & Pit	2023:12:18 10:26 AM	Yes	Crow	6	Flying	N/A	0	N/A	South	No	-96.0544	65.0333			No	Not Exceeded	
Mine & Pit	2023:12:23 1:00 PM	No		N/A			N/A	N/A			N/A	N/A					
Mine & Pit	2023:12:30 2:30 PM	Yes	Arctic fox	1	Running	W	0	N/A	East	Yes	-96.0445	65.0418			No	Not Exceeded	

Table A-4: Wildlife Observations at Whale Tail Mine in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2023:01:04 2:20 PM	Yes	Arctic fox	1	Trotting/running	E	N/A	N/A	North		-96.6973	65.4037			No	Not Exceeded	
Mine & Pit	2023:01:07 2:30 PM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023:01:11 10:00 AM	Yes	Caribou	12	Foraging	Not Recorded	N/A	N/A	South		-96.6692	65.4119			No	Not Exceeded	
Incidental	2023:01:13 12:38 PM	Yes	Red fox	1	Walking		N/A	N/A	South		-96.6973	65.4037			No	Not Exceeded	
Incidental	2023:01:15 5:20 PM	Yes	Wolverine	1	Trotting/running	N	N/A	N/A	North,East		-96.7082	65.4075	Successful deterrence		No	Not Exceeded	
Incidental	2023:01:19 11:30 AM	Yes	Wolverine	1	Walking	W	N/A	N/A	West		-96.6692	65.4119			No	Not Exceeded	
Incidental	2023:01:20 9:50 AM	Yes	Arctic fox	1	Walking	W	N/A	N/A	South		-96.7053	65.4039			No	Not Exceeded	
Incidental	2023:01:20 9:50 AM	Yes	Red fox	1	Lying Down	N/A	N/A	N/A	South		-96.6894	65.4023			No	Not Exceeded	
Incidental	2023:01:20 4:40 PM	Yes	Wolverine	1	Trotting/running	W	N/A	N/A	South		-96.6915	65.4147			No	Not Exceeded	
Mine & Pit	2023:01:21 2:59 PM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023:01:22 10:09 AM	Yes	Arctic fox	1	Feeding	N	N/A	N/A	South		-96.7053	65.4039			No	Not Exceeded	
Incidental	2023:01:22 10:09 AM	Yes	Red fox	1	Trotting/running	S	N/A	N/A	West		-96.6915	65.4147			No	Not Exceeded	
Incidental	2023:01:23 12:57 PM	Yes	Red fox	1	Trotting/running	N	N/A	N/A	South		-96.6973	65.4037			No	Not Exceeded	
Incidental	2023:01:24 10:07 AM	Yes	Red fox	1	Walking	E	N/A	N/A	South		-96.6973	65.4037			Yes - There's only one red fox around here	Not Exceeded	
Mine & Pit	2023:01:24 10:52 AM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023:01:24 11:43 AM	Yes	Red fox	1	Trotting/running	SE	N/A	N/A	East		-96.6692	65.4119			Yes - Only red fox around site and was spotted/reported for a week now	Not Exceeded	
Mine & Pit	2023:01:25 10:20 AM	No		N/A			N/A	N/A			N/A	N/A					
Mine & Pit	2023:01:26 12:25 PM	No		N/A			N/A	N/A			N/A	N/A					
Mine & Pit	2023:01:27 2:51 PM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023:01:28 12:08 PM	Yes	Red fox	1	Hunting	N/A	N/A	N/A	South		-96.6973	65.4037			Yes - Only one red fox has been seen for a couple of weeks now around site	Not Exceeded	
Incidental	2023:01:28 12:08 PM	Yes	Wolverine	1	Trotting/running	S	N/A	N/A	West		-96.6973	65.4037			No	Not Exceeded	
Incidental	2023:01:29 11:00 AM	Yes	Red fox	1	Feeding	N/A	N/A	N/A	South		-96.6973	65.4037			No	Not Exceeded	
Incidental	2023:01:29 4:10 PM	Yes	Arctic fox	1	Dead	N/A	N/A	N/A	South		-96.6973	65.4037		Project non-related	No	Not Exceeded	
Mine & Pit	2023:01:31 9:34 AM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023:02:03 10:07 AM	Yes	Red fox	1	Trotting/running	Not Recorded	N/A	N/A	South		-96.6973	65.4037			No	Not Exceeded	
Mine & Pit	2023:02:06 3:45 PM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023:02:08 10:45 AM	Yes	Red fox	1	Trotting/running	S	N/A	N/A	West		-96.6973	65.4037			No	Not Exceeded	
Mine & Pit	2023:02:11 12:55 PM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023:02:12 2:15 PM	Yes	Red fox	1	Trotting/running	N/A	N/A	N/A	East		-96.6973	65.4037			No	Not Exceeded	
Incidental	2023:02:13 7:35 AM	Yes	Wolverine	1	Trotting/running	N	N/A	N/A	South		-96.6731	65.4009			No	Not Exceeded	
Incidental	2023:02:13 1:23 PM	Yes	Red fox	1	Trotting/running	E	N/A	N/A	South		-96.7023	65.4039			No	Not Exceeded	
Incidental	2023:02:13 1:23 PM	Yes	Red fox	1	Trotting/running	E	N/A	N/A	South		-96.6973	65.4037			No	Not Exceeded	
Incidental	2023:02:13 3:00 PM	Yes	Red fox	1	Trotting/running	NW	N/A	N/A			-96.7053	65.4039			No	Not Exceeded	
Mine & Pit	2023:02:16 9:22 AM	No		N/A			N/A	N/A			N/A	N/A					
Mine & Pit	2023:02:17 9:15 AM	No		N/A			N/A	N/A			N/A	N/A					
Mine & Pit	2023:02:18 1:47 PM	Yes	Common raven	2	Flying	S	0	N/A	East	No	-96.6732	65.4062			No	Not Exceeded	



Table A-4: Wildlife Observations at Whale Tail Mine in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2023:02:21 4:24 PM	Yes	Red fox	1	Trotting/running	S	N/A	N/A	West,East		-96.7053	65.4039			Yes - Its here since a month now	Not Exceeded	
Mine & Pit	2023:02:25 9:20 AM	Yes	Common raven	2	Lying Down	N/A	0	N/A	South	No	-96.6973	65.4037			No	Not Exceeded	
Incidental	2023:02:26 12:16 PM	Yes	Red fox	1	Foraging	N/A	N/A	N/A	South		-96.6973	65.4037			Yes - Same fox that was seen around for a couple of months now	Not Exceeded	
Mine & Pit	2023:03:14 3:45 PM	No		N/A			N/A	N/A			N/A	N/A					
Mine & Pit	2023:03:18 4:38 PM	No		N/A			N/A	N/A			N/A	N/A					
Mine & Pit	2023:03:19 12:53 PM	No		N/A			N/A	N/A			N/A	N/A					
Mine & Pit	2023:03:21 9:11 AM	Yes	Red fox	1	Trotting/running	E	0	N/A	South	Yes	-96.7053	65.4039			No	Not Exceeded	
Mine & Pit	2023:03:25 2:35 PM	No		N/A			N/A	N/A			N/A	N/A					
Mine & Pit	2023:04:01 4:40 PM	No		N/A			N/A	N/A			N/A	N/A					
Mine & Pit	2023:04:08 9:00 AM	No		N/A			N/A	N/A			N/A	N/A					
Mine & Pit	2023:04:22 1:20 PM	No		N/A			N/A	N/A			N/A	N/A					
Mine & Pit	2023:04:29 3:45 PM	Yes	Caribou	15	Foraging	N/A	500	N/A	South	No	-96.7334	65.3953			No	Not Exceeded	
Mine & Pit	2023:04:29 3:45 PM	Yes	Arctic hare	3	Feeding	N/A	30	N/A	North	No	-96.7334	65.3953			No	Not Exceeded	
Mine & Pit	2023:04:29 3:45 PM	Yes	Caribou	54	Resting	N/A	1000	N/A	West	No	-96.6973	65.4037			No	Exceeded	Road is closed and scheduled blast was postponed.
Incidental	2023:05:05 2:57 PM	Yes	Arctic fox	2	Resting	N/A	N/A	N/A	North		-96.6887	65.4169			No	Not Exceeded	
Mine & Pit	2023:05:06 4:01 PM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023:05:10 3:15 PM	Yes	Falcon	1	Flying	N	N/A	N/A	West		-96.7279	65.4093			No	Not Exceeded	
Mine & Pit	2023:05:13 12:43 PM	No		N/A			N/A	N/A			N/A	N/A					
Mine & Pit	2023:05:21 9:57 AM	Yes	Caribou	4	Foraging	N/A	300	N/A	East	No	-96.7279	65.4093			No	Not Exceeded	
Mine & Pit	2023:05:27 1:30 PM	Yes	Arctic hare	1	Resting	N/A	1	N/A	West	No	-96.6887	65.4169			No	Not Exceeded	
Incidental	2023:05:31 3:00 PM	Yes	Arctic fox	1	Dead	N/A	N/A	N/A	West		-96.7279	65.4093		Project non-related	No	Not Exceeded	
Mine & Pit	2023:06:03 10:45 AM	No		N/A			N/A	N/A			N/A	N/A					
Mine & Pit	2023:06:10 2:17 PM	No		N/A			N/A	N/A			N/A	N/A					
Mine & Pit	2023:06:17 9:58 AM	Yes	Canada goose	2	Flying	N	10	N/A	East	No	-96.6862	65.3957			No	Not Exceeded	
Mine & Pit	2023:06:24 8:45 AM	No		N/A			N/A	N/A			N/A	N/A					
Mine & Pit	2023:07:01 3:51 PM	No		N/A			N/A	N/A			N/A	N/A					
Mine & Pit	2023:07:08 11:00 AM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023:07:08 3:09 PM	Yes	Caribou	1	Foraging	N/A	N/A	N/A	West		-96.7053	65.4039			No	Not Exceeded	
Incidental	2023:07:11 9:40 AM	Yes	Caribou	1	Milling	W	N/A	N/A	North		-96.6863	65.4051			No	Not Exceeded	
Incidental	2023:07:11 11:45 AM	Yes	Caribou	1	Walking		N/A	N/A			-96.6973	65.4037			No	Not Exceeded	
Incidental	2023:07:14 6:26 AM	Yes	Caribou	1	Walking	N/A	N/A	N/A	South		-96.6973	65.4037			No	Not Exceeded	
Incidental	2023:07:15 6:54 AM	Yes	Caribou	1	Alert	N/A	N/A	N/A	East		-96.7053	65.4039			No	Not Exceeded	
Mine & Pit	2023:07:15 4:32 PM	No		N/A			N/A	N/A			N/A	N/A					
Incidental	2023:07:17 9:07 AM	Yes	Caribou	1	Walking	S	N/A	N/A	West		-96.7053	65.4039			No	Not Exceeded	
Incidental	2023:07:18 1:55 PM	Yes	Caribou	1	Running	N	N/A	N/A	North		-96.7053	65.4039			No	Not Exceeded	
Incidental	2023:07:23 3:00 PM	Yes	Caribou	1	Walking	S	N/A	N/A	South		-96.6973	65.4037			No	Not Exceeded	
Incidental	2023:07:25 12:45 PM	Yes	Caribou	1	Standing	E	N/A	N/A	East		-96.6692	65.4119	Successful deterrence		No	Not Exceeded	
Incidental	2023:07:28 11:10 AM	Yes	Caribou	1	Standing	N/A	N/A	N/A	East		-96.6692	65.4119	Successful deterrence		No	Not Exceeded	
Incidental	2023:07:28 11:10 AM	Yes	Caribou	1	Walking	E	N/A	N/A	North		-96.6863	65.4051			No	Not Exceeded	
Incidental	2023:07:28 11:10 AM	Yes	Caribou	1	Walking	Not Recorded	N/A	N/A	South		-96.7053	65.4039			No	Not Exceeded	
Incidental	2023:07:29 6:55 AM	Yes	Caribou	1	Walking	E	N/A	N/A	East		-96.6973	65.4037			No	Not Exceeded	
Incidental	2023:07:29 6:55 AM	Yes	Caribou	1	Walking	Not Recorded	N/A	N/A			-96.7053	65.4039			No	Not Exceeded	



Table A-4: Wildlife Observations at Whale Tail Mine in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2023:07:29 6:55 AM	Yes	Caribou	1	Walking	Not Recorded	N/A	N/A	North		-96.6915	65.4147			No	Not Exceeded	
Incidental	2023:07:29 6:55 AM	Yes	Caribou	1	Walking	N/A	N/A	N/A	West		-96.7053	65.4039			No	Not Exceeded	
Incidental	2023:07:29 6:55 AM	Yes	Caribou	1	Injured	Not Recorded	N/A	N/A	East		-96.7279	65.4093			No	Not Exceeded	
Incidental	2023:07:29 6:55 AM	Yes	Muskox	1	Walking	W	N/A	N/A			-96.6887	65.4169			No	Not Exceeded	
Mine & Pit	2023:07:29 8:30 AM	Yes	Caribou	1	Standing	N/A	50	N/A	West	No	-96.7053	65.4039			No	Not Exceeded	
Mine & Pit	2023:07:29 8:30 AM	Yes	Arctic fox	1	Walking	S	25	N/A		No	-96.6887	65.4169			No	Not Exceeded	
Mine & Pit	2023:07:29 8:30 AM	Yes	Arctic fox	1	Trotting/running	N	100	N/A	South	No	-96.6731	65.4009			No	Not Exceeded	
Incidental	2023:07:30 11:29 AM	Yes	Caribou	1	Standing	Not Recorded	N/A	N/A	North		-96.7279	65.4093			No	Not Exceeded	
Incidental	2023:07:31 8:21 AM	Yes	Caribou	2	Walking	W	N/A	N/A	North		-96.6973	65.4037			No	Not Exceeded	
Incidental	2023:08:01 12:01 AM	Yes	Caribou	2	Resting	Not Recorded	N/A	N/A	North		-96.7334	65.3953			No	Not Exceeded	
Incidental	2023:08:01 12:01 AM	Yes	Caribou	2	Walking	E	N/A	N/A	South		-96.6973	65.4037			No	Not Exceeded	
Incidental	2023:08:03 6:15 AM	Yes	Caribou	3	Walking	W	N/A	N/A	East		-96.6973	65.4037			No	Not Exceeded	
Incidental	2023:08:03 6:15 AM	Yes	Caribou	1	Walking	S	N/A	N/A	West		-96.7279	65.4093			No	Not Exceeded	
Mine & Pit	2023:08:04 8:02 AM	Yes	Caribou	2	Lying Down	N/A	0	N/A	North	N/A	-96.7279	65.4093			No	Not Exceeded	
Mine & Pit	2023:08:04 8:02 AM	Yes	Arctic hare	2	Running	W	0	N/A	South	Yes	-96.7279	65.4093			No	Not Exceeded	
Mine & Pit	2023:08:04 8:02 AM	Yes	Caribou	1	Resting	N/A	10	N/A	East	No	-96.7279	65.4093			No	Not Exceeded	
Incidental	2023:08:07 1:06 PM	Yes	Caribou	1	Walking	N/A	N/A	N/A	West		-96.7053	65.4039			No	Not Exceeded	
Incidental	2023:08:07 1:06 PM	Yes	Caribou	1	Standing	N/A	N/A	N/A	West		-96.6973	65.4037			No	Not Exceeded	
Incidental	2023:08:08 11:20 AM	Yes	Caribou	1	Walking	S	N/A	N/A	West		-96.6903	65.4118			No	Not Exceeded	
Incidental	2023:08:08 11:20 AM	Yes	Caribou	1	Walking	E	N/A	N/A	West		-96.6903	65.4118			No	Not Exceeded	
Incidental	2023:08:08 11:20 AM	Yes	Caribou	2	Trotting/running	S	N/A	N/A	North		-96.6903	65.4118			No	Not Exceeded	
Incidental	2023:08:09 3:04 PM	Yes	Caribou	1	Walking	W	N/A	N/A	South		-96.7279	65.4093			No	Not Exceeded	
Incidental	2023:08:09 3:04 PM	Yes	Caribou	1	Walking	S	N/A	N/A	South		-96.7334	65.3953			No	Not Exceeded	
Incidental	2023:08:09 3:04 PM	Yes	Caribou	3	Alert	N/A	N/A	N/A	South		-96.6973	65.4037			No	Not Exceeded	
Incidental	2023:08:11 12:04 PM	Yes	Caribou	11	Foraging	N/A	N/A	N/A	West,East		-96.6887	65.4169			No	Not Exceeded	
Mine & Pit	2023:08:12 3:24 PM	Yes	Caribou	1	Foraging	E	10	N/A	East	No	-96.7053	65.4039			No	Not Exceeded	
Mine & Pit	2023:08:12 3:24 PM	Yes	Caribou	1	Foraging	N/A	25	N/A	West	No	-96.7334	65.3953			No	Not Exceeded	
Mine & Pit	2023:08:12 3:24 PM	Yes	Caribou	1	Standing	N/A	25	N/A	East	No	-96.7334	65.3953			No	Not Exceeded	
Mine & Pit	2023:08:12 3:24 PM	Yes	Caribou	2	Standing	N/A	30	N/A	East	No	-96.7279	65.4093			No	Not Exceeded	
Mine & Pit	2023:08:12 3:24 PM	Yes	Caribou	1	Running	W	0	N/A	East	Yes	-96.7053	65.4039			No	Not Exceeded	
Mine & Pit	2023:08:19 9:00 AM	Yes	Caribou	1	Foraging	N/A	500	N/A	South	No	-96.7334	65.3953			No	Not Exceeded	
Mine & Pit	2023:08:19 9:00 AM	Yes	Caribou	1	Foraging	N/A	300	N/A	South	No	-96.7279	65.4093			No	Not Exceeded	
Mine & Pit	2023:08:19 9:00 AM	Yes	Caribou	1	Foraging	N/A	100	N/A	North,South	N/A	-96.7279	65.4093			No	Not Exceeded	
Incidental	2023:08:23 9:00 AM	Yes	Grizzly bear	1	Walking	N	N/A	N/A	West		-96.7053	65.4039			No	Not Exceeded	
Mine & Pit	2023:08:26 1:05 PM	Yes	Muskox	7	Lying Down	N/A	100	N/A	North	No	-96.6887	65.4169			No	Not Exceeded	
Incidental	2023:08:28 2:51 PM	Yes	Caribou	3	Lying Down	Not Recorded	N/A	N/A			-96.7334	65.3953			No	Not Exceeded	
Incidental	2023:08:31 2:44 PM	Yes	Caribou	1	Walking	E	N/A	N/A	North		-96.7082	65.4075			No	Not Exceeded	
Incidental	2023:08:31 2:44 PM	Yes	Caribou	1	Trotting/running	NW	N/A	N/A			-96.6610	65.4170			No	Not Exceeded	
Mine & Pit	2023:09:02 7:27 AM	Yes	Muskox	7	Feeding	Not Recorded	10	N/A	South	No	-96.7334	65.3953			No	Not Exceeded	
Mine & Pit	2023:09:02 7:27 AM	Yes	Caribou	2	Feeding	Not Recorded	30	N/A	South	No	-96.7334	65.3953			No	Not Exceeded	
Mine & Pit	2023:09:17 1:36 PM	Yes	Caribou	2	Walking	N/A	0	N/A	North	N/A	-96.7279	65.4093			No	Not Exceeded	
Mine & Pit	2023:09:23 9:13 AM	Yes	Caribou	3	Walking	N	0	N/A		Yes	-96.6894	65.4023			No	Not Exceeded	
Incidental	2023:09:25 9:45 AM	Yes	Wolf	1	Walking	N	N/A	N/A	North		-96.6791	65.4062			No	Not Exceeded	
Incidental	2023:09:25 9:45 AM	Yes	Caribou	1	Walking	S	N/A	N/A	North		-96.6863	65.4051			No	Not Exceeded	
Mine & Pit	2023:09:30 8:30 AM	Yes	Caribou	6	Walking	N	0	N/A		Yes	-96.7279	65.4093			No	Not Exceeded	
Mine & Pit	2023:09:30 8:30 AM	Yes	Arctic hare	1	Resting	N/A	25	N/A	North	No	-96.7279	65.4093			No	Not Exceeded	
Mine & Pit	2023:10:07 4:00 PM	No		N/A			N/A	N/A			N/A	N/A					
Mine & Pit	2023:10:17 3:38 PM	Yes	Arctic hare	1	Resting	N/A	10	N/A	North	No	-96.7279	65.4093			No	Not Exceeded	
Mine & Pit	2023:10:21 3:02 PM	No		N/A			N/A	N/A			N/A	N/A					
Mine & Pit	2023:10:28 4:14 PM	No		N/A			N/A	N/A			N/A	N/A					
Mine & Pit	2023:11:04 12:25 PM	No		N/A			N/A	N/A			N/A	N/A					
Mine & Pit	2023:11:05 2:02 PM	No		N/A			N/A	N/A			N/A	N/A					
Mine & Pit	2023:11:11 2:36 PM	Yes	Arctic fox	1	Trotting/running	E	0	N/A	East	Yes	-96.6863	65.4051			No	Not Exceeded	
Mine & Pit	2023:11:18 3:08 PM	No		N/A			N/A	N/A			N/A	N/A					
Mine & Pit	2023:11:25 10:58 AM	No		N/A			N/A	N/A			N/A	N/A					
Mine & Pit	2023:12:02 2:03 PM	No		N/A			N/A	N/A			N/A	N/A					
Mine & Pit	2023:12:09 1:00 PM	No		N/A			N/A	N/A			N/A	N/A					
Mine & Pit	2023:12:16 10:15 AM	Yes	Arctic fox	1	Trotting/running	N	0	N/A	North	Yes	-96.6732	65.4062			No	Not Exceeded	

Table A-4: Wildlife Observations at Whale Tail Mine in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2023:12:17 11:45 AM	Yes	Arctic fox	1	Milling	W	N/A	N/A	East		-96.7053	65.4039			No	Not Exceeded	
Mine & Pit	2023:12:23 10:44 AM	Yes	Arctic fox	1	Trotting/running	W	0	N/A	East,West	Yes	-96.6973	65.4037			No	Not Exceeded	
Mine & Pit	2023:12:23 10:44 AM	Yes	Arctic fox	2	Foraging	N/A	0	N/A	East	No	-96.7279	65.4093			No	Not Exceeded	
Mine & Pit	2023:12:31 9:30 AM	No		N/A			N/A	N/A			N/A	N/A					
Blast	2023:01:02 2:18 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:01:03 2:56 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:01:04 2:40 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:01:06 5:49 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:01:07 3:30 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:01:07 5:30 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:01:12 3:15 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:01:13 2:20 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:01:14 2:40 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:01:15 2:40 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:01:09 3:02 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:01:10 3:50 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:01:11 3:49 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:01:22 2:43 AM	Wildlife observed	Arctic fox	2	Trotting/running	N/A	N/A	N/A	N/A	N/A	-96.6679	65.4028	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:01:27 3:10 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:01:28 3:54 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:01:29 3:16 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:01:30 3:48 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:02:01 4:10 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:02:04 4:19 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:02:05 3:56 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:02:06 4:30 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:02:07 4:13 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:02:09 3:50 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:02:10 4:00 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:02:11 2:30 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:02:14 3:30 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:02:16 3:34 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:02:17 3:12 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:01:19 2:45 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:01:20 2:45 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:02:19 3:23 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:02:20 3:26 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:02:21 3:44 AM	Wildlife observed	Red fox	1	Trotting/running	N/A	N/A	N/A	N/A	N/A	-96.6666	65.4014	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:02:23 3:06 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:02:24 4:30 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:02:25 3:39 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:02:27 4:30 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:02:28 4:32 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:03:06 4:07 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:03:07 4:30 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:03:08 3:33 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:03:10 4:30 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:03:11 4:00 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:03:16 4:52 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:03:17 5:00 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:03:18 4:40 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:03:13 4:30 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:03:14 4:00 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:03:15 4:12 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:03:19 4:54 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:03:20 4:29 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA
Blast	2023:03:21 4:34 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA



Table A-4: Wildlife Observations at Whale Tail Mine in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Blast	2023:03:22 5:08 AM	Wildlife observed	Arctic fox	1	Trotting/running	N/A	N/A	N/A	N/A	N/A	-96.6886	65.4170	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:03:22 5:08 AM	Wildlife observed	Arctic fox	1	Running	N/A	N/A	N/A	N/A	N/A	-96.6886	65.4170	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:03:24 5:00 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:03:25 4:41 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:03:27 4:30 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:03:28 5:00 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:03:29 5:30 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:03:31 4:00 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:04:01 4:30 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:03:27 4:45 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:04:03 4:00 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:04:04 3:40 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:04:06 4:10 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:04:07 4:05 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:04:08 4:25 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:04:09 4:30 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:04:10 4:30 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:04:11 4:30 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:04:12 5:15 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:04:14 4:45 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:04:16 5:00 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:04:17 4:42 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:04:18 4:30 AM	Wildlife observed	Caribou	42	Foraging	N/A	N/A	N/A	N/A	N/A	-96.6334	65.4042	N/A	N/A	N/A	Exceeded	NA. Blast cancelled.
Blast	2023:04:18 4:30 AM	Wildlife observed	Caribou	24	Foraging	N/A	N/A	N/A	N/A	N/A	-96.6334	65.4042	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:04:19 5:07 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:04:20 4:44 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:04:21 4:41 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:04:23 5:27 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:04:26 4:45 AM	Wildlife observed	Caribou	175	Resting	N/A	N/A	N/A	N/A	N/A	-96.6665	65.4017	N/A	N/A	N/A	Exceeded	NA. Blast cancelled.
Blast	2023:04:26 5:15 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:04:27 4:32 AM	Wildlife observed	Caribou	150	Resting	N/A	N/A	N/A	N/A	N/A	-96.6665	65.4017	N/A	N/A	N/A	Exceeded	NA. Blast cancelled.
Blast	2023:04:28 4:45 AM	Wildlife observed	Caribou	44	Resting	N/A	N/A	N/A	N/A	N/A	-96.6665	65.4017	N/A	N/A	N/A	Exceeded	NA. Blast cancelled.
Blast	2023:04:28 4:00 AM	Wildlife observed	Caribou	175	Feeding	N/A	N/A	N/A	N/A	N/A	-96.6665	65.4017	N/A	N/A	N/A	Exceeded	NA. Blast cancelled.
Blast	2023:04:29 4:40 AM	Wildlife observed	Caribou	48	Resting	N/A	N/A	N/A	N/A	N/A	-96.6665	65.4017	N/A	N/A	N/A	Exceeded	NA. Blast cancelled.
Blast	2023:04:29 4:43 AM	Wildlife observed	Caribou	15	Feeding	N/A	N/A	N/A	N/A	N/A	-96.6664	65.4017	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:04:29 4:43 AM	Wildlife observed	Caribou	3	Foraging	N/A	N/A	N/A	N/A	N/A	-96.6664	65.4017	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:04:29 4:43 AM	Wildlife observed	Caribou	54	Resting	N/A	N/A	N/A	N/A	N/A	-96.6664	65.4017	N/A	N/A	N/A	Exceeded	NA. Blast cancelled.
Blast	2023:05:06 3:50 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:04:30 4:00 AM	Wildlife observed	Caribou	6	Foraging	N/A	N/A	N/A	N/A	N/A	-96.6645	65.4024	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:04:30 4:00 AM	Wildlife observed	Caribou	12	Feeding	N/A	N/A	N/A	N/A	N/A	-96.6645	65.4024	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:04:30 3:45 AM	Wildlife observed	Caribou	25	Feeding	N/A	N/A	N/A	N/A	N/A	-96.6642	65.4027	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:04:30 3:45 AM	Wildlife observed	Caribou	5	Foraging	N/A	N/A	N/A	N/A	N/A	-96.6642	65.4027	N/A	N/A	N/A	Not Exceeded	NA

Table A-4: Wildlife Observations at Whale Tail Mine in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Blast	2023:04:30 3:45 AM	Wildlife observed	Caribou	12	Feeding	N/A	N/A	N/A	N/A	N/A	-96.6642	65.4027	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:05:01 5:00 AM	Wildlife observed	Caribou	5	Walking	N/A	N/A	N/A	N/A	N/A	-96.6561	65.4034	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:05:01 5:00 AM	Wildlife observed	Caribou	28	Resting	N/A	N/A	N/A	N/A	N/A	-96.6561	65.4034	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:05:01 5:00 AM	Wildlife observed	Caribou	30	Walking	N/A	N/A	N/A	N/A	N/A	-96.6561	65.4034	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:05:12 3:53 AM	Wildlife observed	Caribou	2	Walking	N/A	N/A	N/A	N/A	N/A	-96.6666	65.4017	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:05:12 3:53 AM	Wildlife observed	Arctic fox	1	Trotting/running	N/A	N/A	N/A	N/A	N/A	-96.6666	65.4017	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:05:15 11:47 AM	Wildlife observed	Caribou	10	Walking	N/A	N/A	N/A	N/A	N/A	-96.0659	65.0939	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:05:15 11:47 AM	Wildlife observed	Caribou	54	Walking	N/A	N/A	N/A	N/A	N/A	-96.0659	65.0939	N/A	N/A	N/A	Exceeded	NA. Blast Postponed.
Blast	2023:05:19 4:51 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:05:20 4:27 AM	Wildlife observed	Caribou	4	Foraging	N/A	N/A	N/A	N/A	N/A	-96.7307	65.4131	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:05:22 5:05 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:05:29 4:00 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:05:31 4:30 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:06:04 4:00 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:06:05 3:03 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:06:07 7:44 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:06:08 4:36 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:06:09 4:19 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:06:10 3:46 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:05:11 4:40 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:05:14 3:55 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:05:15 3:48 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:06:15 4:10 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:06:16 4:27 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:06:17 4:28 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:06:19 4:35 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:06:21 4:30 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:06:22 3:45 AM	Wildlife observed	Muskox	8	Resting	N/A	N/A	N/A	N/A	N/A	-96.6669	65.4003	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:06:23 5:47 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:06:24 3:54 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:06:26 4:27 AM	Wildlife observed	Muskox	10	Feeding	N/A	N/A	N/A	N/A	N/A	-96.7448	65.4089	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:06:26 4:27 AM	Wildlife observed	Muskox	2	Feeding	N/A	N/A	N/A	N/A	N/A	-96.7448	65.4089	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:06:27 5:12 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:06:29 3:48 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:06:18 4:31 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:06:20 4:31 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:07:02 4:30 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:07:03 3:30 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:07:04 4:11 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:07:07 5:56 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:07:08 4:30 AM	Wildlife observed	Caribou	1	Foraging	N/A	N/A	N/A	N/A	N/A	-96.6666	65.4014	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:07:19 4:30 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:07:21 4:30 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:07:22 4:00 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:07:16 4:00 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:07:18 5:00 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA



Table A-4: Wildlife Observations at Whale Tail Mine in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Blast	2023:07:13 3:30 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:07:14 5:20 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:07:15 4:02 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:07:25 4:40 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:07:26 4:15 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:07:27 5:15 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:07:28 4:09 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:08:01 2:25 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:07:09 4:00 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:07:31 4:32 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:08:02 3:20 AM	Wildlife observed	Caribou	1	Standing	N/A	N/A	N/A	N/A	N/A	-96.6665	65.4017	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:08:04 3:35 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:08:05 4:02 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:08:14 4:44 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:08:15 3:02 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:08:17 4:30 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:08:18 5:00 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:08:19 5:39 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:08:07 3:58 AM	Wildlife observed	Caribou	1	Walking	N/A	N/A	N/A	N/A	N/A	0.0000	65.4014	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:08:07 4:10 AM	Wildlife observed	Caribou	4	Foraging	N/A	N/A	N/A	N/A	N/A	-96.6666	65.4014	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:08:08 4:11 AM	Wildlife observed	Caribou	1	Walking	N/A	N/A	N/A	N/A	N/A	0.0000	65.4014	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:08:08 4:11 AM	Wildlife observed	Caribou	1	Trotting/running	N/A	N/A	N/A	N/A	N/A	0.0000	65.4014	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:08:11 3:50 AM	Wildlife observed	Caribou	10	Foraging	N/A	N/A	N/A	N/A	N/A	-96.6666	65.4014	N/A	N/A	N/A	Not Exceeded	NA. Blast cancelled.
Blast	2023:08:12 4:07 AM	Wildlife observed	Caribou	1	Walking	N/A	N/A	N/A	N/A	N/A	-96.6665	65.4014	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:08:12 4:07 AM	Wildlife observed	Caribou	2	Foraging	N/A	N/A	N/A	N/A	N/A	-96.6665	65.4014	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:08:12 4:07 AM	Wildlife observed	Caribou	2	Trotting/running	N/A	N/A	N/A	N/A	N/A	-96.6665	65.4014	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:08:20 5:00 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:08:22 4:28 AM	Wildlife observed	Caribou	5	Walking	N/A	N/A	N/A	N/A	N/A	-96.7088	65.4003	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:08:23 3:43 AM	Wildlife observed	Caribou	1	Feeding	N/A	N/A	N/A	N/A	N/A	-96.6919	65.4169	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:08:23 3:43 AM	Wildlife observed	Muskox	6	Feeding	N/A	N/A	N/A	N/A	N/A	-96.6919	65.4169	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:08:23 3:43 AM	Wildlife observed	Caribou	4	Walking	N/A	N/A	N/A	N/A	N/A	-96.6919	65.4169	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:08:28 5:22 AM	Wildlife observed	Caribou	2	Feeding	N/A	N/A	N/A	N/A	N/A	-96.6666	65.4017	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:08:29 5:20 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:08:31 5:29 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:09:01 4:22 AM	Wildlife observed	Caribou	3	Foraging	N/A	N/A	N/A	N/A	N/A	-96.7288	65.3976	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:09:01 4:22 AM	Wildlife observed	Caribou	6	Foraging	N/A	N/A	N/A	N/A	N/A	-96.7288	65.3976	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:09:01 4:22 AM	Wildlife observed	Caribou	2	Foraging	N/A	N/A	N/A	N/A	N/A	-96.7288	65.3976	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:09:11 4:53 AM	Wildlife observed	Caribou	5	Foraging	N/A	N/A	N/A	N/A	N/A	-96.6665	65.4015	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:09:11 4:53 AM	Wildlife observed	Muskox	7	Foraging	N/A	N/A	N/A	N/A	N/A	-96.6665	65.4015	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:09:12 4:59 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA



Table A-4: Wildlife Observations at Whale Tail Mine in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Blast	2023:09:14 4:45 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:09:15 5:00 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:09:16 4:45 AM	Wildlife observed	Caribou	10	Feeding	N/A	N/A	N/A	N/A	N/A	-96.7144	65.3995	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:09:03 3:03 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:09:04 2:38 AM	Wildlife observed	Caribou	8	Foraging	N/A	N/A	N/A	N/A	N/A	-96.6649	65.4007	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:09:04 2:38 AM	Wildlife observed	Caribou	1	Foraging	N/A	N/A	N/A	N/A	N/A	-96.6649	65.4007	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:09:04 2:38 AM	Wildlife observed	Caribou	4	Foraging	N/A	N/A	N/A	N/A	N/A	-96.6649	65.4007	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:09:04 2:38 AM	Wildlife observed	Caribou	1	Foraging	N/A	N/A	N/A	N/A	N/A	-96.6649	65.4007	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:09:04 2:38 AM	Wildlife observed	Caribou	1	Foraging	N/A	N/A	N/A	N/A	N/A	-96.6649	65.4007	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:09:06 5:30 AM	Wildlife observed	Caribou	1	Foraging	N/A	N/A	N/A	N/A	N/A	-96.6671	65.4020	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:09:08 4:26 AM	Wildlife observed	Muskox	7	Resting	N/A	N/A	N/A	N/A	N/A	-96.6667	65.4018	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:09:08 4:26 AM	Wildlife observed	Caribou	7	Resting	N/A	N/A	N/A	N/A	N/A	-96.6667	65.4018	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:09:09 4:49 AM	Wildlife observed	Caribou	1	Trotting/running	N/A	N/A	N/A	N/A	N/A	-96.6924	65.4033	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:09:09 4:49 AM	Wildlife observed	Caribou	2	Foraging	N/A	N/A	N/A	N/A	N/A	-96.6924	65.4033	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:09:17 4:45 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:09:18 5:00 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:09:19 5:00 AM	Wildlife observed	Caribou	2	Foraging	N/A	N/A	N/A	N/A	N/A	-96.6666	65.4018	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:09:20 4:45 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:09:22 4:24 AM	Wildlife observed	Caribou	2	Foraging	N/A	N/A	N/A	N/A	N/A	-96.7338	65.3951	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:09:23 4:24 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:09:24 3:57 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:09:26 4:08 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:09:27 3:52 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:09:30 4:29 AM	Wildlife observed	Caribou	9	Resting	N/A	N/A	N/A	N/A	N/A	-96.6666	65.4017	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:10:01 4:10 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:10:03 3:30 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:10:06 2:28 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:10:07 3:53 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:10:15 4:26 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:10:19 4:12 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:10:20 4:08 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:10:21 4:17 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:10:22 3:04 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:10:24 3:46 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:10:27 3:27 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:10:23 5:34 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:10:28 4:03 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:10:30 3:40 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:10:08 4:08 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:10:09 4:00 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:10:10 4:15 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:10:11 4:23 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:10:12 2:01 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:10:14 3:00 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:11:01 3:48 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA



Table A-4: Wildlife Observations at Whale Tail Mine in 2023

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Blast	2023:11:03 3:00 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:11:05 3:00 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:11:06 3:58 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:11:08 3:10 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:11:11 2:38 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:11:12 4:34 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:11:13 3:02 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:11:17 5:19 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:11:18 3:02 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:11:26 2:21 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:12:15 3:20 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:12:17 3:29 AM	Wildlife observed	Arctic fox	1	Trotting/running	N/A	N/A	N/A	N/A	N/A	-96.6666	65.4014	N/A	N/A	N/A	Not Exceeded	NA
Blast	2023:12:22 4:55 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:12:23 1:40 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:12:24 2:04 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:12:28 4:18 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:12:29 5:05 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA
Blast	2023:12:31 3:30 AM	None		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		NA

APPENDIX B

Road Restrictions

Table B-1: Summary of road restrictions (Closed - 24 hours, Closed – less than 24 hours, Speed Restrictions, and Traffic Restrictions) along the All-Weather Access Road, 2023

Date	Closure Status	Closure Hours	Cause for Closure	Wildlife Observed	Number of Individuals Observed	Distance from Road	Monitoring Method	Monitoring Conducted			Reason for Re-opening	Consultation for Re-Opening
								Viewshed Surveys	Road Surveys	Collaring Data Reviewed		
2023-01-01	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-01-02	Closed (< 24 hour)	5.5	Weather	N/A	N/A	N/A	N/A	N/A	0	Y		Road closed
2023-01-03	Closed (< 24 hour)	13.5	Weather	N/A	N/A	N/A	Survey	N/A	1	Y	Weather Improvement	None - Road closed for weather conditions
2023-01-04	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-01-05	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-01-06	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-01-07	Open	0.0	NA	Muskox	11	990	Survey	N/A	1	Y		
2023-01-08	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-01-09	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-01-10	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-01-11	Closed (< 24 hour)	22.6	Weather	N/A	N/A	N/A	N/A	N/A	0	Y		Road closed
2023-01-12	Closed (< 24 hour)	9.0	Weather	N/A	N/A	N/A	N/A	N/A	0	Y	Weather Improvement	None - Road closed for weather conditions
2023-01-13	Open	0.0	NA	Wolverine	1	0	Survey	N/A	1	Y		
2023-01-14	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-01-15	Closed (< 24 hour)	8.0	Weather	N/A	N/A	N/A	N/A	N/A	0	Y		Road closed
2023-01-16	Closed (< 24 hour)	12.9	Weather	N/A	N/A	N/A	N/A	N/A	0	Y	Weather Improvement	None - Road closed for weather conditions
2023-01-17	Open	0.0	NA	Muskox	9	990	Survey	N/A	1	Y		
2023-01-18	Closed (< 24 hour)	20.3	Weather	N/A	N/A	N/A	N/A	N/A	0	Y		Road closed
2023-01-19	Closed (< 24 hour)	3.1	Weather	N/A	N/A	N/A	N/A	N/A	0	Y	Weather Improvement	None - Road closed for weather conditions
2023-01-20	Closed	24.0	Weather	N/A	N/A	N/A	N/A	N/A	0	Y		Road closed
2023-01-21	Closed	24.0	Weather	N/A	N/A	N/A	N/A	N/A	0	Y		Road closed
2023-01-22	Closed	24.0	Weather	N/A	N/A	N/A	N/A	N/A	0	Y		Road closed
2023-01-23	Closed (< 24 hour)	2.1	Weather	Muskox	2	100	Survey	N/A	1	Y	Weather Improvement	None - Road closed for weather conditions
2023-01-24	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-01-25	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-01-26	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-01-27	Open	0.0	NA	N/A	N/A	N/A	Survey	N/A	1	Y		
2023-01-28	Closed (< 24 hour)	18.0	Weather	N/A	N/A	N/A	N/A	N/A	0	Y		Road closed
2023-01-29	Closed	24.0	Weather	N/A	N/A	N/A	N/A	N/A	0	Y		Road closed
2023-01-30	Closed	24.0	Weather	N/A	N/A	N/A	N/A	N/A	0	Y		Road closed
2023-01-31	Closed (< 24 hour)	10.7	Weather	N/A	N/A	N/A	N/A	N/A	0	Y	Weather Improvement	None - Road closed for weather conditions
2023-02-01	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-02-02	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-02-03	Open	0.0	NA	Muskox	10	20	HTO Observation	N/A	0	Y		
2023-02-04	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-02-05	Open	0.0	NA	Muskox	8	300	Survey	N/A	1	Y		
2023-02-06	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-02-07	Open	0.0	NA	Muskox	8	1200	Survey	N/A	1	Y		
2023-02-08	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-02-09	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-02-10	Open	0.0	NA	N/A	N/A	N/A	Survey	N/A	1	Y		
2023-02-11	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-02-12	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-02-13	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-02-14	Open	0.0	NA	N/A	N/A	N/A	Survey	N/A	1	Y		
2023-02-15	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-02-16	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-02-17	Open	0.0	NA	N/A	N/A	N/A	Survey	N/A	1	Y		
2023-02-18	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-02-19	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-02-20	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-02-21	Open	0.0	NA	N/A	N/A	N/A	Survey	N/A	1	Y		
2023-02-22	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-02-23	Closed (< 24 hour)	15.0	Weather	Caribou	13	70	HTO Observation	N/A	1	Y		Road closed
2023-02-24	Closed (< 24 hour)	11.8	Weather	N/A	N/A	N/A	Survey	N/A	1	Y	Weather Improvement	None - Road closed for weather conditions
2023-02-25	Open	0.0	NA	N/A	N/A	N/A	Survey	N/A	1	Y		



Table B-1: Summary of road restrictions (Closed - 24 hours, Closed – less than 24 hours, Speed Restrictions, and Traffic Restrictions) along the All-Weather Access Road, 2023

Date	Closure Status	Closure Hours	Cause for Closure	Wildlife Observed	Number of Individuals Observed	Distance from Road	Monitoring Method	Monitoring Conducted			Reason for Re-opening	Consultation for Re-Opening
								Viewshed Surveys	Road Surveys	Collaring Data Reviewed		
2023-02-26	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-02-27	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-02-28	Open	0.0	NA	N/A	N/A	N/A	Survey	N/A	1	Y		
2023-03-01	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-03-02	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-03-03	Open	0.0	NA	N/A	N/A	N/A	Survey	N/A	1	Y		
2023-03-04	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-03-05	Open	0.0	NA	N/A	N/A	N/A	Survey	N/A	1	Y		
2023-03-06	Open	0.0	NA	Muskox	35	2000	Survey	N/A	1	Y		
2023-03-07	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-03-08	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-03-09	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-03-10	Open	0.0	NA	N/A	N/A	N/A	Survey	N/A	1	Y		
2023-03-11	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-03-12	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-03-13	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-03-14	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-03-15	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-03-16	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-03-17	Open	0.0	NA	N/A	N/A	N/A	Survey	N/A	1	Y		
2023-03-18	Open	0.0	NA	N/A	N/A	N/A	Survey	N/A	1	N		
2023-03-19	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-03-20	Open	0.0	NA	Caribou	9	500	Survey	N/A	1	Y		
2023-03-21	Speed Restriction	0.0	Caribou	Caribou	5	80	Incidental	N/A	1	Y		
2023-03-22	Open	0.0	NA	N/A	N/A	N/A	Survey	N/A	1	Y		
2023-03-23	Speed restriction	0.0	Caribou	Caribou	45	250	Incidental	N/A	1	Y		
2023-03-24	Speed Restriction	0.0	Caribou	Caribou	50	N/A	Road User	N/A	1	Y		
2023-03-25	Speed Restriction	0.0	Caribou	Caribou	45	700	Survey	N/A	1	Y		
2023-03-26	Speed Restriction	0.0	Caribou	Caribou	26	200	Survey	N/A	1	Y		
2023-03-27	Speed Restriction	0.0	Caribou	Caribou	24	300	Incidental	N/A	1	Y		
2023-03-28	Closed (< 24 hour)	19.5	Weather	Caribou	50	500	Incidental	N/A	0	Y		Road closed
2023-03-29	Closed	24.0	Weather	N/A	N/A	N/A	N/A	N/A	0	Y		Road closed
2023-03-30	Closed (< 24 hour)	20.0	Caribou	Caribou	146	2	Survey	N/A	1	Y	Weather Improvement	None - Road closed for weather condition before being closed again for caribou above GST
2023-03-31	Closed	24.0	Caribou	Caribou	65	1000	Survey	N/A	1	Y		Road closed
2023-04-01	Closed (< 24 hour)	14.2	Caribou	Caribou	170	1000	Incidental	N/A	1	Y	Weather Improvement	Road closed
2023-04-02	Closed	24.0	Caribou	Caribou	290	80	Survey	N/A	1	Y		Road closed
2023-04-03	Closed	24.0	Caribou	Caribou	300	600	Survey	N/A	1	Y		Road closed
2023-04-04	Closed	24.0	Caribou	Caribou	650	450	Survey	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio call
2023-04-05	Closed	24.0	Caribou	Caribou	700	500	Survey	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio call.
2023-04-06	Closed	24.0	Caribou	Caribou	800	0	Survey	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio call.
2023-04-07	Closed	24.0	Caribou	Caribou	900	0	Survey	N/A	1	N		Communication with Baker Lake HTO monitors regarding observation via radio call.

Table B-1: Summary of road restrictions (Closed - 24 hours, Closed – less than 24 hours, Speed Restrictions, and Traffic Restrictions) along the All-Weather Access Road, 2023

Date	Closure Status	Closure Hours	Cause for Closure	Wildlife Observed	Number of Individuals Observed	Distance from Road	Monitoring Method	Monitoring Conducted			Reason for Re-opening	Consultation for Re-Opening
								Viewshed Surveys	Road Surveys	Collaring Data Reviewed		
2023-04-08	Closed	24.0	Caribou	Caribou	1100	1	Survey	N/A	1	N		Communication with Baker Lake HTO monitors regarding observation via radio call. Discussion with Baker Lake HTO monitors regarding convoy of essential needs. Convoy approved.
2023-04-09	Closed	24.0	Caribou	Caribou	400	100	Survey	N/A	1	N		Communication with Baker Lake HTO monitors regarding observation via radio call
2023-04-10	Closed	24.0	Caribou	Caribou	380	390	Survey	N/A	1	N		Communication with Baker Lake HTO monitors regarding observation via radio call
2023-04-11	Closed	24.0	Caribou	Caribou	280	250	Survey	N/A	1	Y		Communication with Baker Lake HTO monitors & KIA regarding observation via radio call
2023-04-12	Closed	24.0	Caribou	Caribou	433	80	Survey	N/A	1	Y		Communication with Baker Lake HTO monitors & KIA regarding observation via radio call. Following days crew change was planned with KIA and HTO.
2023-04-13	Closed	24.0	Caribou	Caribou	400	400	HTO Observation	N/A	0	Y		Communication with KIA regarding observation via radio call
2023-04-14	Closed	24.0	Caribou	Caribou	302	120	Incidental	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio call
2023-04-15	Closed	24.0	Caribou	Caribou	120	200	Incidental	N/A	1	Y		Road status was communicated to Stakeholders via email with observations
2023-04-16	Closed	24.0	Caribou	Caribou	204	1100	Incidental	N/A	1	Y		Road status was communicated to Stakeholders via email with observations
2023-04-17	Closed	24.0	Caribou	Caribou	200	300	Incidental	N/A	1	Y		Communication with Baker Lake HTO monitors & KIA representatives. Following days crew change was planned with KIA and HTO. Agnico, Baker Lake HTO, KIA and Agnico to escort convoy.
2023-04-18	Closed	24.0	Caribou	Caribou	202	0	Incidental	N/A	1	Y		Communication with Baker Lake HTO monitors & KIA regarding observation via radio call
2023-04-19	Closed	24.0	Caribou	Caribou	340	650	Survey	N/A	1	Y		Communication with Baker Lake HTO monitors & KIA representatives. Following days crew change was planned with KIA and HTO. Baker Lake HTO and KIA to escort convoy.

Table B-1: Summary of road restrictions (Closed - 24 hours, Closed – less than 24 hours, Speed Restrictions, and Traffic Restrictions) along the All-Weather Access Road, 2023

Date	Closure Status	Closure Hours	Cause for Closure	Wildlife Observed	Number of Individuals Observed	Distance from Road	Monitoring Method	Monitoring Conducted			Reason for Re-opening	Consultation for Re-Opening
								Viewshed Surveys	Road Surveys	Collaring Data Reviewed		
2023-04-20	Closed	24.0	Caribou	Caribou	82	800	Road	N/A	1	Y		Communication with Baker Lake HTO monitors & KIA regarding observation via radio call
2023-04-21	Closed	24.0	Caribou	Caribou	166	300	Survey	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio call
2023-04-22	Closed	24.0	Caribou	Caribou	107	300	Survey	N/A	1	Y		Road status was communicated to Stakeholders via email with observations
2023-04-23	Closed	24.0	Caribou	Caribou	284	50	Survey	N/A	1	Y		Road status was communicated to Stakeholders via email with observations
2023-04-24	Closed	24.0	Caribou	Caribou	493	100	Survey	N/A	1	Y		Communication with Baker Lake HTO monitors & KIA representatives. Following days crew change was planned with KIA and HTO. Baker Lake HTO and KIA to escort convoy.
2023-04-25	Closed	24.0	Caribou	Caribou	143	900	Survey	N/A	1	Y		Communication with Baker Lake HTO monitors & KIA representatives regarding convoy status. Convoy cancelled. Following days convoy to be led by Baker Lake HTO & KIA
2023-04-26	Closed	24.0	Caribou	Caribou	171	150	Road	N/A	1	Y		Communication with Baker Lake HTO monitors & KIA representatives. Following days crew change was planned with KIA and HTO. Baker Lake HTO to escort convoy.
2023-04-27	Closed	24.0	Caribou	Caribou	379	300	Incidental	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio call
2023-04-28	Closed	24.0	Caribou	Caribou	450	800	Road	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio call
2023-04-29	Closed	24.0	Caribou	Caribou	525	0	Survey	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio call
2023-04-30	Closed	24.0	Caribou	Caribou	300	700	Incidental	N/A	1	Y		Road status was communicated to Stakeholders via email with observations
2023-05-01	Closed	24.0	Caribou	Caribou	124	250	Survey	N/A	1	Y		Road status was communicated to Stakeholders via email with observations
2023-05-02	Closed	24.0	Caribou	Caribou	58	300	Survey	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio call. Following Days convoy planned with Baker Lake HTO escort.

Table B-1: Summary of road restrictions (Closed - 24 hours, Closed – less than 24 hours, Speed Restrictions, and Traffic Restrictions) along the All-Weather Access Road, 2023

Date	Closure Status	Closure Hours	Cause for Closure	Wildlife Observed	Number of Individuals Observed	Distance from Road	Monitoring Method	Monitoring Conducted			Reason for Re-opening	Consultation for Re-Opening
								Viewshed Surveys	Road Surveys	Collaring Data Reviewed		
2023-05-03	Closed	24.0	Caribou	Caribou	180	400	Survey	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio call.
2023-05-04	Closed	24.0	Weather	N/A	N/A	N/A	N/A	N/A	0	Y		Road closed for weather conditions. Convoy rescheduled to following day.
2023-05-05	Closed	24.0	Caribou	Caribou	50	600	Survey	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio call. Following Days convoy planned with Baker Lake HTO escort.
2023-05-06	Closed	24.0	Caribou	Caribou	160	300	Survey	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio call. Following Days convoy planned with Baker Lake HTO escort.
2023-05-07	Closed	24.0	Caribou	Caribou	600	0	HTO Observation	N/A	0	Y		Communication with Baker Lake HTO monitors regarding observation via radio call. Following Days convoy planned with Baker Lake HTO escort.
2023-05-08	Closed	24.0	Caribou	Caribou	200	N/A	HTO Observation	N/A	0	Y		Communication with Baker Lake HTO monitors regarding observation via radio call. Following Days convoy planned with Baker Lake HTO escort.
2023-05-09	Closed	24.0	Caribou	Caribou	300	100	HTO Observation	N/A	0	Y		Communication with Baker Lake HTO monitors regarding observation via radio call. Following Days convoy planned with Baker Lake HTO escort.
2023-05-10	Closed	24.0	Caribou	Caribou	300	100	HTO Observation	N/A	0	Y		Communication with Baker Lake HTO monitors regarding observation via radio call. Following Days convoy planned with Baker Lake HTO escort.
2023-05-11	Closed	24.0	Caribou	Caribou	350	500	HTO Observation	N/A	0	Y		Communication with Baker Lake HTO monitors regarding observation via radio call.
2023-05-12	Closed	24.0	Caribou	Caribou	400	0	HTO Observation	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio call. Convoy planned with Baker Lake HTO escort for after the weekend. Agnico to escort during the weekend.
2023-05-13	Closed	24.0	Caribou	Caribou	210	600	Survey	N/A	1	Y		Road status was communicated to Stakeholders via email with observations

Table B-1: Summary of road restrictions (Closed - 24 hours, Closed – less than 24 hours, Speed Restrictions, and Traffic Restrictions) along the All-Weather Access Road, 2023

Date	Closure Status	Closure Hours	Cause for Closure	Wildlife Observed	Number of Individuals Observed	Distance from Road	Monitoring Method	Monitoring Conducted			Reason for Re-opening	Consultation for Re-Opening
								Viewshed Surveys	Road Surveys	Collaring Data Reviewed		
2023-05-14	Closed	24.0	Caribou	Caribou	120	150	Survey	N/A	1	Y		Road status was communicated to Stakeholders via email with observations
2023-05-15	Closed	24.0	Caribou	Caribou	117	290	Survey	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio call. Following Days convoy planned with Baker Lake HTO escort.
2023-05-16	Closed	24.0	Caribou	Caribou	87	N/A	HTO Observation	N/A	0	Y		Communication with Baker Lake HTO monitors regarding observation via radio call. Following Days convoy planned with Baker Lake HTO escort.
2023-05-17	Closed	24.0	Caribou	Caribou	200	N/A	HTO Observation	N/A	0	Y		Communication with Baker Lake HTO monitors regarding observation via radio call. Following Days convoy planned with Baker Lake HTO escort.
2023-05-18	Closed	24.0	Caribou	Caribou	60	800	Survey	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio call. Following Days convoy planned with Baker Lake HTO escort.
2023-05-19	Closed (< 24 hour)	16.8	Caribou	Caribou	42	500	Survey	N/A	1	Y	Caribou below GST	Communication with Baker Lake HTO monitors regarding observation via radio call. Decision to reopen the road due to no groups above GST.
2023-05-20	Open	0.0	NA	Caribou	32	1000	Incidental	N/A	1	Y		
2023-05-21	Open	0.0	NA	Caribou	31	450	Incidental	N/A	1	Y		
2023-05-22	Closed (< 24 hour)	16.5	Caribou	Caribou	38	1000	Survey	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio call. Following Days convoy planned with Baker Lake HTO escort.
2023-05-23	Closed	24.0	Caribou	Caribou	46	800	Survey	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio call.
2023-05-24	Closed (< 24 hour)	15.5	Caribou	Caribou	41	30	Incidental	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio call. Decision to reopen the road due to no groups above GST in the morning. Decision to close the road in the afternoon when group appeared.
2023-05-25	Closed (< 24 hour)	16.2	Caribou	Caribou	47	800	Incidental	N/A	1	Y	Caribou below GST	Communication with Baker Lake HTO monitors regarding observation via radio call. Decision to reopen the road due to no groups above GST.

Table B-1: Summary of road restrictions (Closed - 24 hours, Closed – less than 24 hours, Speed Restrictions, and Traffic Restrictions) along the All-Weather Access Road, 2023

Date	Closure Status	Closure Hours	Cause for Closure	Wildlife Observed	Number of Individuals Observed	Distance from Road	Monitoring Method	Monitoring Conducted			Reason for Re-opening	Consultation for Re-Opening
								Viewshed Surveys	Road Surveys	Collaring Data Reviewed		
2023-05-26	Closed (< 24 hour)	8.5	Caribou	Caribou	113	100	Survey	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio call.
2023-05-27	Closed	24.0	Caribou	Caribou	63	230	Survey	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio call.
2023-05-28	Closed (< 24 hour)	18.0	Caribou	Caribou	43	120	Survey	N/A	1	Y	Caribou below GST	Discussions with HTO/KIA to allow NS operations of road maintenance & 2 tankers
2023-05-29	Closed (< 24 hour)	12.5	Caribou	Caribou	29	60	Survey	N/A	1	Y	Caribou below GST	Communication with Baker Lake HTO monitors regarding observation via radio call. Decision to reopen the road due to no groups above GST.
2023-05-30	Closed (< 24 hour)	8.0	Caribou	Caribou	52	300	Survey	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio call.
2023-05-31	Closed (< 24 hour)	6.8	Caribou	Caribou	18	200	Incidental	N/A	1	Y	Caribou below GST	Communication with Baker Lake HTO monitors regarding observation via radio call. Decision to reopen the road due to no groups above GST.
2023-06-01	Speed Restriction	0.0	Caribou	Caribou	26	250	Survey	N/A	1	Y		
2023-06-02	Open	0.0	NA	Caribou	18	250	Incidental	N/A	1	Y		
2023-06-03	Closed (< 24 hour)	4.2	Weather	N/A	N/A	N/A	N/A	N/A	0	Y	Weather Improvement	None - Road closed for weather conditions
2023-06-04	Speed Restriction	0.0	Muskox	Muskox	14	1500	Survey	N/A	1	Y		
2023-06-05	Speed Restriction	0.0	Caribou	Caribou	30	250	Survey	N/A	1	Y		
2023-06-06	Open	0.0	NA	Caribou	14	800	Survey	N/A	1	Y		
2023-06-07	Speed Restriction	0.0	Muskox	Muskox	20	700	Incidental	N/A	1	Y		
2023-06-08	Open	0.0	NA	Caribou	7	400	HTO Observation	N/A	0	Y		
2023-06-09	Speed Restriction	0.0	Caribou	Caribou	37	600	Survey	N/A	1	Y		
2023-06-10	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-06-11	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-06-12	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-06-13	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-06-14	Open	0.0	NA	Caribou	7	50	Survey	N/A	1	Y		
2023-06-15	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-06-16	Open	0.0	NA	Muskox	1	75	Survey	N/A	1	Y		
2023-06-17	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-06-18	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-06-19	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-06-20	Open	0.0	NA	Muskox	32	1000	Survey	N/A	1	Y		
2023-06-21	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-06-22	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-06-23	Open	0.0	NA	Muskox	3	150	Survey	N/A	1	Y		
2023-06-24	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-06-25	Speed Restriction	0.0	Muskox	Muskox	20	110	Survey	N/A	1	Y		
2023-06-26	Open	0.0	NA	Muskox	20	1500	Survey	N/A	1	Y		
2023-06-27	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-06-28	Open	0.0	NA	Muskox	20	800	HTO Observation	N/A	0	Y		
2023-06-29	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-06-30	Open	0.0	NA	Muskox	11	600	Survey	N/A	1	Y		
2023-07-01	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-07-02	Open	0.0	NA	Muskox	5	900	Survey	N/A	1	Y		
2023-07-03	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-07-04	Open	0.0	NA	Muskox	2	30	Survey	N/A	1	Y		



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Date	Closure Status	Closure Hours	Cause for Closure	Wildlife Observed	Number of Individuals Observed	Distance from Road	Monitoring Method	Monitoring Conducted			Reason for Re-opening	Consultation for Re-Opening
								Viewshed Surveys	Road Surveys	Collaring Data Reviewed		
2023-07-05	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-07-06	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-07-07	Speed Restriction	0.0	Muskox	Muskox	14	150	Incidental	N/A	1	Y		
2023-07-08	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-07-09	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-07-10	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-07-11	Open	0.0	NA	Muskox	2	5	Survey	N/A	1	Y		
2023-07-12	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-07-13	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-07-14	Speed Restriction	0.0	Muskox	Muskox	17	75	Survey	N/A	1	Y		
2023-07-15	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-07-16	Open	0.0	NA	Muskox	4	750	Survey	N/A	1	Y		
2023-07-17	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-07-18	Open	0.0	NA	Muskox	4	200	Survey	N/A	1	Y		
2023-07-19	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-07-20	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-07-21	Speed Restriction	0.0	Muskox	Muskox	15	350	Survey	N/A	1	Y		
2023-07-22	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-07-23	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-07-24	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-07-25	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-07-26	Open	0.0	NA	Muskox	3	280	Survey	N/A	1	Y		
2023-07-27	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-07-28	Open	0.0	NA	Artic Hare	1	0	Incidental	N/A	0	Y		
2023-07-29	Open	0.0	NA	Caribou	2	300	Incidental	N/A	0	Y		
2023-07-30	Open	0.0	NA	Wolf	1	50	Incidental	N/A	0	Y		
2023-07-31	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-08-01	Open	0.0	NA	N/A	N/A	N/A	Survey	N/A	1	Y		
2023-08-02	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-08-03	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-08-04	Open	0.0	NA	SikSik	1	0	Survey	N/A	1	Y		
2023-08-05	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-08-06	Open	0.0	NA	Muskox	9	800	Survey	N/A	1	Y		
2023-08-07	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-08-08	Open	0.0	NA	Muskox	11	100	Survey	N/A	1	Y		
2023-08-09	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-08-10	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-08-11	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-08-12	Open	0.0	NA	Muskox	1	15	Survey	N/A	1	Y		
2023-08-13	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-08-14	Open	0.0	NA	Muskox	1	100	Survey	N/A	1	Y		
2023-08-15	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-08-16	Open	0.0	NA	Muskox	1	350	Survey	N/A	1	Y		
2023-08-17	Open	0.0	NA	Muskox	1	800	Survey	N/A	1	Y		
2023-08-18	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-08-19	Open	0.0	NA	Caribou	1	100	Survey	N/A	1	Y		
2023-08-20	Open	0.0	NA	Muskox	33	1900	Survey	N/A	1	Y		
2023-08-21	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-08-22	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-08-23	Open	0.0	NA	Muskox	1	100	Survey	N/A	1	Y		
2023-08-24	Open	0.0	NA	Sandhill crane	2	300	Survey	N/A	1	Y		
2023-08-25	Open	0.0	NA	N/A	N/A	N/A	Survey	N/A	1	Y		
2023-08-26	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-08-27	Open	0.0	NA	Snow goose	150	30	Survey	N/A	1	Y		
2023-08-28	Open	0.0	NA	Muskox	6	1700	Survey	N/A	1	Y		
2023-08-29	Open	0.0	NA	Bald eagle	1	300	Survey	N/A	1	Y		
2023-08-30	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-08-31	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-09-01	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-09-02	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-09-03	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-09-04	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-09-05	Speed Restriction	0.0	Muskox	Muskox	21	1000	Incidental	N/A	1	Y		



Table B-1: Summary of road restrictions (Closed - 24 hours, Closed – less than 24 hours, Speed Restrictions, and Traffic Restrictions) along the All-Weather Access Road, 2023

Date	Closure Status	Closure Hours	Cause for Closure	Wildlife Observed	Number of Individuals Observed	Distance from Road	Monitoring Method	Monitoring Conducted			Reason for Re-opening	Consultation for Re-Opening
								Viewshed Surveys	Road Surveys	Collaring Data Reviewed		
2023-09-06	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-09-07	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-09-08	Speed Restriction	0.0	Muskox	Muskox	20	500	Incidental	N/A	0	Y		
2023-09-09	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-09-10	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-09-11	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-09-12	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-09-13	Open	0.0	NA	Muskox	6	100	Survey	N/A	1	Y		
2023-09-14	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-09-15	Open	0.0	NA	Muskox	1	200	Incidental	N/A	1	Y		
2023-09-16	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-09-17	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-09-18	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-09-19	Open	0.0	NA	Caribou	2	400	HTO Observation	N/A	0	Y		
2023-09-20	Closed (< 24 hour)	5.0	Weather	Muskox	5	200	Survey	N/A	1	Y		Road closed
2023-09-21	Closed (< 24 hour)	10.0	Weather	Muskox	5	50	Survey	N/A	1	Y	Weather Improvement	None - Road closed for weather conditions
2023-09-22	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-09-23	Open	0.0	NA	Muskox	1	50	Survey	N/A	1	Y		
2023-09-24	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-09-25	Closed (< 24 hour)	6.5	Cyanide Convoy	Muskox	2	10	Survey	N/A	1	Y	Cyanide Convoy Concluded	None - Bake Lake community advised of closure and reopening of the road
2023-09-26	Closed (< 24 hour)	6.5	Cyanide Convoy	Muskox	7	150	Survey	N/A	1	Y	Cyanide Convoy Concluded	None - Bake Lake community advised of closure and reopening of the road
2023-09-27	Closed (< 24 hour)	6.0	Cyanide Convoy	Muskox	1	20	Survey	N/A	1	Y	Cyanide Convoy Concluded	None - Bake Lake community advised of closure and reopening of the road
2023-09-28	Closed (< 24 hour)	7.8	Cyanide Convoy	Muskox	10	1000	Survey	N/A	1	Y	Cyanide Convoy Concluded	None - Bake Lake community advised of closure and reopening of the road
2023-09-29	Closed (< 24 hour)	7.0	Cyanide Convoy	Caribou	4	200	Survey	N/A	1	Y	Cyanide Convoy Concluded	None - Bake Lake community advised of closure and reopening of the road
2023-09-30	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-10-01	Open	0.0	NA	Muskox	1	10	Survey	N/A	1	Y		
2023-10-02	Open	0.0	NA	Muskox	1	150	Incidental	N/A	0	Y		
2023-10-03	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-10-04	Closed (< 24 hour)	6.8	Weather	Muskox	1	30	Survey	N/A	1	Y	Weather Improvement	None - Road closed for weather conditions
2023-10-05	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-10-06	Open	0.0	NA	Muskox	2	25	Survey	N/A	1	Y		
2023-10-07	Open	0.0	NA	Arctic Fox	1	100	Survey	N/A	1	Y		
2023-10-08	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-10-09	Open	0.0	NA	Muskox	3	12	Survey	N/A	1	Y		
2023-10-10	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-10-11	Open	0.0	NA	Muskox	1	10	Survey	N/A	1	Y		
2023-10-12	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-10-13	Closed (< 24 hour)	4.0	Weather	Muskox	22	2500	Survey	N/A	1	N	Weather Improvement	Road closed
2023-10-14	Closed (< 24 hour)	9.3	Weather	Caribou	29	2900	Survey	N/A	1	Y	Weather Improvement	Road closed
2023-10-15	Closed (< 24 hour)	6.1	Weather	N/A	N/A	N/A	N/A	N/A	0	Y	Weather Improvement	None - Road closed for weather conditions
2023-10-16	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-10-17	Open	0.0	NA	Muskox	1	20	Incidental	N/A	0	N		
2023-10-18	Open	0.0	NA	Muskox	40	2300	Survey	N/A	1	Y		
2023-10-19	Open	0.0	NA	N/A	N/A	N/A	N/A	N/A	0	Y		
2023-10-20	Open	0.0	NA	Muskox	10	1900	Survey	N/A	1	Y		



Table B-1: Summary of road restrictions (Closed - 24 hours, Closed – less than 24 hours, Speed Restrictions, and Traffic Restrictions) along the All-Weather Access Road, 2023

Date	Closure Status	Closure Hours	Cause for Closure	Wildlife Observed	Number of Individuals Observed	Distance from Road	Monitoring Method	Monitoring Conducted			Reason for Re-opening	Consultation for Re-Opening
								Viewshed Surveys	Road Surveys	Collaring Data Reviewed		
2023-10-21	Open	0.0	NA	Muskox	2	10	Survey	N/A	1	Y		
2023-10-22	Open	0.0	NA	N/A	N/A	N/A	Survey	N/A	1	N		
2023-10-23	Open	0.0	NA	Muskox	2	10	Survey	N/A	1	Y		
2023-10-24	Open	0.0	NA	N/A	N/A	N/A	Survey	N/A	1	Y		
2023-10-25	Open	0.0	NA	Muskox	2	100	Survey	N/A	1	Y		
2023-10-26	Closed (< 24 hour)	12.7	Caribou	Caribou	102	2000	Survey	N/A	1	Y		Baker Lake HTO Reported large group above GST. Road was closed and agreement was made to keep the road closed until tomorrow morning.
2023-10-27	Closed	24.0	Caribou	Caribou	382	1250	Survey	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio call.
2023-10-28	Closed	24.0	Caribou	Caribou	500+	5	Incidental	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio call.
2023-10-29	Closed	24.0	Caribou	Caribou	1200	1000	Survey	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio call. Baker Lake HTO authorized fuel truck to refuel genset at km 37 and escorted through sensitive zones.
2023-10-30	Closed	24.0	Caribou	Caribou	2500	75	Incidental	N/A	1	Y		Communication with Baker Lake HTO and KIA monitors regarding observation via radio call. Recurrent meeting - planning for Oct 31 crew change.
2023-10-31	Closed	24.0	Caribou	Caribou	100	300	Survey	N/A	1	Y		Communication with Baker Lake HTO and KIA monitors regarding observation via radio call. Crew change postponed.
2023-11-01	Closed	24.0	Caribou	Caribou	250	500	Survey	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio call. Crew change postponed
2023-11-02	Closed	24.0	Caribou	Caribou	230	100	Survey	N/A	1	Y		Communication with Baker Lake HTO and KIA monitors regarding observation via radio call. Crew change completed lead by HTO.
2023-11-03	Closed	24.0	Caribou	Caribou	130	100	Survey	N/A	1	Y		Communication with Baker Lake HTO and KIA monitors regarding observation via radio call.
2023-11-04	Closed	24.0	Caribou	Caribou	280	200	Survey	N/A	1	Y		Road status was communicated to Stakeholders via email with observations
2023-11-05	Closed	24.0	Caribou	Caribou	200	350	Incidental	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio call.

Table B-1: Summary of road restrictions (Closed - 24 hours, Closed – less than 24 hours, Speed Restrictions, and Traffic Restrictions) along the All-Weather Access Road, 2023

Date	Closure Status	Closure Hours	Cause for Closure	Wildlife Observed	Number of Individuals Observed	Distance from Road	Monitoring Method	Monitoring Conducted			Reason for Re-opening	Consultation for Re-Opening
								Viewshed Surveys	Road Surveys	Collaring Data Reviewed		
2023-11-06	Closed (< 24 hour)	12.0	Caribou	Caribou	227	1850	Incidental	N/A	1	Y	Caribou below GST	Communication with Baker Lake HTO monitors regarding observation via radio call. Following discussions with KIA and HTO road was opened.
2023-11-07	Closed (< 24 hour)	14.2	Caribou	Caribou	296	300	Survey	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio call. Recurrent meeting - update provided to all stakeholders
2023-11-08	Closed	24.0	Caribou	Caribou	350	100	Survey	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio call.
2023-11-09	Closed	24.0	Caribou	Caribou	255	500	Incidental	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio call. Recurrent meeting - update provided to GN.
2023-11-10	Closed	24.0	Caribou	Caribou	600	1000	Survey	N/A	1	N		Communication with Baker Lake HTO monitors regarding observation via radio call & Recurrent Meeting - update on fuel and road status.
2023-11-11	Closed	24.0	Caribou	Caribou	120	300	Survey	N/A	1	Y		Road status was communicated to Stakeholders via email with observations
2023-11-12	Closed	24.0	Caribou	Caribou	285	300	Incidental	N/A	1	Y		Road status was communicated to Stakeholders via email with observations
2023-11-13	Closed	24.0	Caribou	Caribou	250	320	Survey	N/A	1	Y		Road status was communicated to Stakeholders via email with observations
2023-11-14	Closed	24.0	Caribou	Caribou	290	10	Survey	N/A	1	Y		Communication with Baker Lake HTO and KIA monitors regarding observation via radio call. Recurrent meeting - agreement for crew change convoy to be lead by KIA and HTO with a grader due to poor road conditions (freezing rain)
2023-11-15	Closed	24.0	Caribou	Caribou	127	1600	HTO Observation	N/A	1	N		Communication with Baker Lake HTO monitors regarding observation via radio call
2023-11-16	Closed	24.0	Caribou	Caribou	180	30	Survey	N/A	1	N		Communication with Baker Lake HTO and KIA monitors regarding observation via radio call & Recurrent Meeting - Baker Lake crew change to commence with Baker Lake HTO escort.

Table B-1: Summary of road restrictions (Closed - 24 hours, Closed – less than 24 hours, Speed Restrictions, and Traffic Restrictions) along the All-Weather Access Road, 2023

Date	Closure Status	Closure Hours	Cause for Closure	Wildlife Observed	Number of Individuals Observed	Distance from Road	Monitoring Method	Monitoring Conducted			Reason for Re-opening	Consultation for Re-Opening
								Viewshed Surveys	Road Surveys	Collaring Data Reviewed		
2023-11-17	Closed	24.0	Caribou	Caribou	260	400	Survey	N/A	1	N		Communication with Baker Lake HTO and KIA monitors regarding observation via radio call & Recurrent Meeting - update on fuel and road status.
2023-11-18	Closed	24.0	Caribou	Caribou	290	290	Survey	N/A	1	N		Communication with Baker Lake HTO monitors regarding observation via radio call
2023-11-19	Closed	24.0	Caribou	Caribou	105	330	Survey	N/A	1	N		Communication with Baker Lake HTO monitors regarding observation via radio call
2023-11-20	Closed	24.0	Caribou	Caribou	120	190	Survey	N/A	1	N		Communication with Baker Lake HTO monitors regarding observation via radio call & Recurrent Meeting - update on fuel and road status.
2023-11-21	Closed	24.0	Weather	N/A	N/A	N/A	N/A	N/A	0	N		Road status was communicated to Stakeholders via email with observations
2023-11-22	Closed	24.0	Weather	N/A	N/A	N/A	N/A	N/A	0	N		Road status was communicated to Stakeholders via email with observations
2023-11-23	Closed	24.0	Weather	N/A	N/A	N/A	N/A	N/A	0	N		Recurrent Meeting - update on fuel and road status - road maintenance after blizzard to secure road conditions for monitoring
2023-11-24	Closed	24.0	Caribou	Caribou	220	130	Incidental	N/A	1	Y		Recurrent Meeting - update on fuel and road status - crew change convoy planning - pending observations. Request for tankers to join convoy made by Agnico.
2023-11-25	Closed	24.0	Caribou	Caribou	500	10	Survey	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio call. No tanker allowed due to number of caribou groups observed.
2023-11-26	Closed	24.0	Weather	N/A	N/A	N/A	N/A	N/A	0	Y		Road status was communicated to Stakeholders via email with observations & Closed for weather
2023-11-27	Closed	24.0	Caribou	Caribou	450	500	Incidental	N/A	1	Y		Recurrent Meeting - update on fuel and road status - crew change convoy planning - pending observations. Request for tankers to join convoy made by Agnico. Tankers approved to join convoys.

Table B-1: Summary of road restrictions (Closed - 24 hours, Closed – less than 24 hours, Speed Restrictions, and Traffic Restrictions) along the All-Weather Access Road, 2023

Date	Closure Status	Closure Hours	Cause for Closure	Wildlife Observed	Number of Individuals Observed	Distance from Road	Monitoring Method	Monitoring Conducted			Reason for Re-opening	Consultation for Re-Opening
								Viewshed Surveys	Road Surveys	Collaring Data Reviewed		
2023-11-28	Closed	24.0	Caribou	Caribou	170	250	Survey	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio call & Recurrent Meeting - update on fuel and road status.
2023-11-29	Closed	24.0	Weather	N/A	N/A	N/A	N/A	N/A	0	Y		Recurrent Meeting - update on fuel and road status.
2023-11-30	Closed	24.0	Weather	N/A	N/A	N/A	N/A	N/A	0	Y		Recurrent Meeting - update on fuel and road status.
2023-12-01	Closed	24.0	Caribou	Caribou	190	2000	Incidental	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio call & Recurrent Meeting - update on fuel and road status.
2023-12-02	Closed	24.0	Caribou	Caribou	135	300	Survey	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio call & Recurrent Meeting - update on fuel and road status.
2023-12-03	Closed	24.0	Weather	Muskox	2	100	Survey	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio call & Recurrent Meeting - update on fuel and road status.
2023-12-04	Closed	24.0	Weather	Muskox	34	1000	Survey	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio call & Recurrent Meeting - update on fuel and road status.
2023-12-05	Closed (< 24 hour)	12.3	Caribou	Caribou	19	2000	Incidental	N/A	1	Y	Caribou below GST	Communication with Baker Lake HTO monitors regarding observation via radio call & Recurrent Meeting - update on fuel and road status.
2023-12-06	Closed (< 24 hour)	11.7	Caribou	Caribou	200	200	Survey	N/A	1	N		Communication with Baker Lake HTO monitors regarding observation via radio call & Recurrent Meeting - update on fuel and road status.
2023-12-07	Closed	24.0	Caribou	Caribou	250	1000	Survey	N/A	1	N		Communication with Baker Lake HTO monitors regarding observation via radio call & Recurrent Meeting - update on fuel and road status. Convoy to occur for crew change
2023-12-08	Closed (< 24 hour)	14.0	Caribou	Caribou	37	800	Survey	N/A	1	Y	Caribou below GST	Communication with Baker Lake HTO monitors regarding observation via radio call & Recurrent Meeting - update on fuel and road status. Road restricted to only road maintenance and Tankers
2023-12-09	Open	0.0	NA	Muskix	14	2000	Survey	N/A	1	Y		
2023-12-10	Open	0.0	NA	Caribou	27	900	Survey	N/A	1	Y		

Table B-1: Summary of road restrictions (Closed - 24 hours, Closed – less than 24 hours, Speed Restrictions, and Traffic Restrictions) along the All-Weather Access Road, 2023

Date	Closure Status	Closure Hours	Cause for Closure	Wildlife Observed	Number of Individuals Observed	Distance from Road	Monitoring Method	Monitoring Conducted			Reason for Re-opening	Consultation for Re-Opening
								Viewshed Surveys	Road Surveys	Collaring Data Reviewed		
2023-12-11	Open	0.0	NA	Muskox	8	150	Survey	N/A	1	Y		
2023-12-12	Open	0.0	NA	Caribou	24	200	Survey	N/A	1	Y		
2023-12-13	Closed (< 24 hour)	13.3	Weather	N/A	N/A	N/A	Survey	N/A	1	Y		Road closed
2023-12-14	Closed	24.0	Weather	N/A	N/A	N/A	Survey	N/A	0	Y		Road closed
2023-12-15	Closed (< 24 hour)	16.8	Weather	Caribou	12	2000	Survey	N/A	1	Y	Weather Improvement	None - Road closed for weather conditions
2023-12-16	Open	0.0	NA	Caribou	21	2000	Incidental	N/A	1	Y		
2023-12-17	Restricted Access	0.0	Caribou	Caribou	43	1000	Survey	N/A	1	Y		Road status was communicated to Stakeholders via email with observations
2023-12-18	Closed (< 24 hour)	12.5	Caribou	Caribou	187	800	Survey	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio
2023-12-19	Closed (< 24 hour)	12.0	Caribou	Caribou	34	800	Incidental	N/A	1	Y	Status changed to restricted	After discussion with the HTO monitors on the road, the road was re-open with restrictions to limited traffic.
2023-12-20	Closed (< 24 hour)	1.3	Caribou	Caribou	200	200	Survey	N/A	1	Y	Status changed to restricted	Communication with Baker Lake HTO monitors regarding observation via radio
2023-12-21	Closed (< 24 hour)	19.2	Weather	N/A	N/A	N/A	N/A	N/A	0	Y	Weather Improvement	None - Road closed for weather conditions
2023-12-22	Restricted Access	0.0	Caribou	Caribou	78	750	Survey	N/A	1	Y		Communication with Baker Lake HTO monitors regarding observation via radio
2023-12-23	Closed (< 24 hour)	13.4	Caribou	Caribou	200	500	Survey	N/A	1	Y		Road status was communicated to Stakeholders via email with observations
2023-12-24	Closed	24.0	Weather	N/A	N/A	N/A	N/A	N/A	0	Y		Road status was communicated to Stakeholders via email with observations
2023-12-25	Closed	24.0	Caribou	Caribou	250	1250	Survey	N/A	1	Y		Road status was communicated to Stakeholders via email with observations
2023-12-26	Closed (< 24 hour)	11.9	Caribou	Caribou	52	800	Survey	N/A	1	Y	Status changed to restricted	Road status was communicated to Stakeholders via email with observations
2023-12-27	Closed (< 24 hour)	22.0	Weather	N/A	N/A	N/A	N/A	N/A	0	Y		Road closed
2023-12-28	Closed (< 24 hour)	15.6	Caribou	Caribou	88	750	Survey	N/A	1	Y	Status changed to restricted	Road status was communicated to Stakeholders via email with observations
2023-12-29	Closed (< 24 hour)	6.5	Caribou	Caribou	200	1000	Survey	N/A	1	Y	Status changed to restricted	Road status was communicated to Stakeholders via email with observations
2023-12-30	Closed (< 24 hour)	10.2	Caribou	Caribou	200	750	Survey	N/A	1	Y		Road status was communicated to Stakeholders via email with observations
2023-12-31	Closed (< 24 hour)	12.3	Caribou	Caribou	50	2000	Survey	N/A	1	Y	Status changed to restricted	Road status was communicated to Stakeholders via email with observations

Table B-2: Summary of road restrictions (Closed - 24 hours, Closed – less than 24 hours, Speed Restrictions, and Traffic Restrictions) along the Whale Tail Haul Road, 2023

Date	Closure Status	Closure Hours	Cause for Closure	Wildlife Observed	Number of Individuals Observed	Distance from Road	Monitoring Method	Monitoring Conducted			Reason for Re-opening	Consultation for Re-opening
								Viewshed Surveys	Road Surveys	Collaring Data Reviewed		
2023-01-01	Speed Restriction	0.0	Muskox	Muskox	25	25	Incidental	0	0	Y		
2023-01-02	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-01-03	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-01-04	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-01-05	Speed Restriction	0.0	Muskox	Muskox	21	150	Survey	1	1	Y		
2023-01-06	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-01-07	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-01-08	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-01-09	Open	0.0	NA	Caribou	4	100	Survey	0	1	Y		
2023-01-10	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-01-11	Closed (< 24 hour)	15.5	Weather	N/A	N/A	N/A	Survey	0	1	Y		None - Road closed for weather conditions
2023-01-12	Closed (< 24 hour)	10.0	Weather	N/A	N/A	N/A	N/A	0	0	Y	Weather Improvement	None - Road closed for weather conditions
2023-01-13	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-01-14	Open	0.0	NA	Muskox	12	300	Survey	0	1	Y		
2023-01-15	Closed (< 24 hour)	8.0	Weather	N/A	N/A	N/A	N/A	0	0	Y		Road closed
2023-01-16	Closed (< 24 hour)	14.7	Weather	N/A	N/A	N/A	N/A	0	0	Y	Weather Improvement	None - Road closed for weather conditions
2023-01-17	Open	0.0	NA	Caribou	7	500	Incidental	0	0	Y		
2023-01-18	Closed (< 24 hour)	21.0	Weather	N/A	N/A	N/A	N/A	0	0	Y		Road closed
2023-01-19	Closed (< 24 hour)	3.2	Weather	N/A	N/A	N/A	N/A	0	0	Y	Weather Improvement	None - Road closed for weather conditions
2023-01-20	Closed	24.0	Weather	N/A	N/A	N/A	N/A	0	0	Y		Road closed
2023-01-21	Closed (< 24 hour)	21.9	Weather	N/A	N/A	N/A	N/A	0	0	Y	Weather Improvement	None - Road closed for weather conditions
2023-01-22	Speed Restriction	0.0	Muskox	Muskox	37	150	Incidental	0	1	Y		
2023-01-23	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-01-24	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-01-25	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-01-26	Open	0.0	NA	N/A	N/A	N/A	Survey / Viewshed	1	1	Y		
2023-01-27	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-01-28	Closed (< 24 hour)	18.0	Weather	N/A	N/A	N/A	N/A	0	0	Y		Road closed
2023-01-29	Closed (< 24 hour)	1.9	Weather	N/A	N/A	N/A	N/A	0	0	Y	Weather Improvement	None - Road closed for weather conditions
2023-01-30	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-01-31	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	N		
2023-02-01	Open	0.0	NA	Muskox	9	29	Survey	1	1	Y		
2023-02-02	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-02-03	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-02-04	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-02-05	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-02-06	Open	0.0	NA	Muskox	5	1000	Survey	0	1	Y		
2023-02-07	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-02-08	Open	0.0	NA	Caribou	15	1500	Incidental	1	1	Y		
2023-02-09	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-02-10	Open	0.0	NA	Caribou	1	10	Incidental	0	0	Y		
2023-02-11	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-02-12	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-02-13	Open	0.0	NA	Caribou	6	1000	Viewshed	1	0	Y		
2023-02-14	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-02-15	Open	0.0	NA	N/A	N/A	N/A	Survey	0	1	Y		
2023-02-16	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-02-17	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-02-18	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-02-19	Open	0.0	NA	Caribou	1	1	Survey	0	1	Y		
2023-02-20	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-02-21	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-02-22	Open	0.0	NA	N/A	N/A	N/A	Survey / Viewshed	1	1	Y		
2023-02-23	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-02-24	Closed (< 24 hour)	5.2	Weather	N/A	N/A	N/A	N/A	0	0	Y	Weather Improvement	None - Road closed for weather conditions
2023-02-25	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-02-26	Open	0.0	NA	Red Fox	1	400	Incidental	0	1	Y		
2023-02-27	Open	0.0	NA	N/A	N/A	N/A	Survey	0	1	Y		
2023-02-28	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-03-01	Open	0.0	NA	N/A	N/A	N/A	Survey / Viewshed	1	1	Y		
2023-03-02	Speed Restriction	0.0	Muskox	Muskox	28	2000	Survey	0	1	Y		
2023-03-03	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-03-04	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-03-05	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		



Table B-2: Summary of road restrictions (Closed - 24 hours, Closed – less than 24 hours, Speed Restrictions, and Traffic Restrictions) along the Whale Tail Haul Road, 2023

Date	Closure Status	Closure Hours	Cause for Closure	Wildlife Observed	Number of Individuals Observed	Distance from Road	Monitoring Method	Monitoring Conducted			Reason for Re-opening	Consultation for Re-opening
								Viewshed Surveys	Road Surveys	Collaring Data Reviewed		
2023-03-06	Speed Restriction	0.0	Muskox	Muskox	22	80	Survey	0	1	Y		
2023-03-07	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-03-08	Closed (< 24 hour)	4.0	Weather	Muskox	14	100	Viewshed	1	0	Y	Weather Improvement	None - Road closed for weather conditions
2023-03-09	Speed Restriction	0.0	Muskox	Muskox	20	50	Survey	0	1	Y		
2023-03-10	Speed Restriction	0.0	Muskox	N/A	N/A	N/A	N/A	0	0	Y		
2023-03-11	Speed Restriction	0.0	Muskox	Muskox	21	800	Survey	0	1	Y		
2023-03-12	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-03-13	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-03-14	Speed Restriction	0.0	Muskox	Muskox	21	60	Survey	0	1	Y		
2023-03-15	Speed Restriction	0.0	Muskox	Muskox	25	25	Survey	1	1	Y		
2023-03-16	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-03-17	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-03-18	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-03-19	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-03-20	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-03-21	Open	0.0	NA	N/A	N/A	N/A	Viewshed	1	0	Y		
2023-03-22	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-03-23	Open	0.0	NA	N/A	N/A	N/A	Survey	0	1	Y		
2023-03-24	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-03-25	Open	0.0	NA	Common Raven	1	50	Survey	0	1	Y		
2023-03-26	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-03-27	Speed Restriction	0.0	Caribou	Caribou	30	150	Survey	0	1	Y		
2023-03-28	Speed Restriction	0.0	Caribou	Caribou	2	50	Incidental	0	1	Y		
2023-03-29	Open	0.0	NA	N/A	N/A	N/A	Survey	0	1	Y		
2023-03-30	Speed Restriction	0.0	Caribou	Caribou	25	500	Incidental	0	1	Y		
2023-03-31	Closed (< 24 hour)	10.5	Caribou	Caribou	200	600	Incidental	0	1	Y		Road Closed
2023-04-01	Closed	24.0	Caribou	Caribou	400	150	Incidental	0	1	Y		Road Closed
2023-04-02	Closed	24.0	Caribou	Caribou	187	0	Incidental	0	1	Y		Road Closed
2023-04-03	Closed (< 24 hour)	13.7	Caribou	Caribou	500	500	Survey	0	1	Y	Caribou below GST	Road status was communicated to Stakeholders via email with observations
2023-04-04	Open	0.0	NA	N/A	N/A	N/A	Survey	0	1	Y		
2023-04-05	Open	0.0	NA	Caribou	2	600	Survey	1	1	Y		
2023-04-06	Open	0.0	NA	MuskOx	10	2000	Survey	0	1	Y		
2023-04-07	Closed (< 24 hour)	8.3	Caribou	Caribou	160	200	Incidental	1	1	Y		Road Closed
2023-04-08	Closed (< 24 hour)	20.0	Caribou	Caribou	120	200	Survey	0	1	Y	Caribou below GST	Road status was communicated to Stakeholders via email with observations
2023-04-09	Closed (< 24 hour)	14.2	Caribou	Caribou	130	200	Survey	0	1	Y		Road Closed
2023-04-10	Closed	24.0	Caribou	Caribou	250	200	Survey	1	1	N		Road Closed
2023-04-11	Closed	24.0	Caribou	Caribou	340	500	Incidental	0	1	Y		Road Closed
2023-04-12	Closed	24.0	Caribou	Caribou	500	50	Survey	1	1	Y		Road Closed
2023-04-13	Closed	24.0	Caribou	Caribou	204	700	Incidental	0	1	Y		Road Closed
2023-04-14	Closed	24.0	Caribou	Caribou	532	0	Incidental	0	1	Y		Road Closed
2023-04-15	Closed	24.0	Caribou	Caribou	450	0	Survey	0	2	Y		Road Closed
2023-04-16	Closed	24.0	Caribou	Caribou	365	100	Survey	0	2	Y		Road Closed
2023-04-17	Closed	24.0	Caribou	Caribou	117	50	Survey	1	1	Y		Road Closed
2023-04-18	Closed (< 24 hour)	22.0	Caribou	Caribou	102	500	Survey	0	1	Y	Caribou below GST	Road status was communicated to Stakeholders via email with observations
2023-04-19	Speed Restriction	0.0	Caribou	Caribou	32	4000	Survey	1	1	Y		
2023-04-20	Open	0.0	NA	Caribou	5	400	Survey	0	1	Y		
2023-04-21	Speed Restriction	0.0	Caribou	Caribou	14	500	Incidental	1	1	Y		
2023-04-22	Closed (< 24 hour)	12.2	Caribou	Caribou	167	300	Survey	0	1	Y		Road Closed
2023-04-23	Closed	24.0	Caribou	Caribou	>600	20	Viewshed	1	1	Y		Road Closed
2023-04-24	Closed	24.0	Caribou	Caribou	880	0	Survey	0	1	Y		Road Closed
2023-04-25	Closed	24.0	Caribou	Caribou	500+	20	Incidental	0	1	Y		Road Closed
2023-04-26	Closed	24.0	Caribou	Caribou	165	80	Survey	0	1	Y		Road Closed
2023-04-27	Closed	24.0	Caribou	Caribou	310	0	Survey	1	1	Y		Road Closed
2023-04-28	Closed	24.0	Caribou	Caribou	246	300	Survey	0	1	Y		Road Closed
2023-04-29	Closed	24.0	Caribou	Caribou	317	400	Survey	1	1	Y		Road Closed
2023-04-30	Closed	24.0	Caribou	Caribou	102	0	Survey	0	1	Y		Road Closed
2023-05-01	Closed	24.0	Caribou	Caribou	370	1	Survey	0	1	Y		Road Closed
2023-05-02	Closed	24.0	Caribou	Caribou	75	600	Survey	0	1	Y		Road Closed
2023-05-03	Closed	24.0	Caribou	Caribou	120	600	Survey	0	1	Y		Road Closed
2023-05-04	Closed	24.0	Caribou	Caribou	50	50	Survey	0	1	Y		Road Closed
2023-05-05	Closed	24.0	Caribou	Caribou	46	350	Survey	0	1	Y		Road Closed



Table B-2: Summary of road restrictions (Closed - 24 hours, Closed – less than 24 hours, Speed Restrictions, and Traffic Restrictions) along the Whale Tail Haul Road, 2023

Date	Closure Status	Closure Hours	Cause for Closure	Wildlife Observed	Number of Individuals Observed	Distance from Road	Monitoring Method	Monitoring Conducted			Reason for Re-opening	Consultation for Re-opening
								Viewshed Surveys	Road Surveys	Collaring Data Reviewed		
2023-05-06	Closed	24.0	Caribou	Caribou	120	350	Incidental	0	1	Y		Road Closed
2023-05-07	Closed	24.0	Caribou	Caribou	131	290	Survey	0	1	Y		Road Closed
2023-05-08	Closed (< 24 hour)	17.0	Caribou	Caribou	50	1500	Survey	0	1	Y	Caribou below GST	Discussion with Baker Lake HTO road monitors at 17:00 when no groups were observed above the GST. Consensus was the road was opened with speed restrictions of 20km/hr and no road maintenance in areas where caribou were observed/are present
2023-05-09	Closed (< 24 hour)	10.0	Caribou	Caribou	152	130	Survey	0	1	Y		Road Closed
2023-05-10	Closed	24.0	Caribou	Caribou	71	560	Survey	0	1	Y		Road Closed
2023-05-11	Closed	24.0	Caribou	Caribou	107	100	Survey	0	1	Y		Road Closed
2023-05-12	Closed	24.0	Caribou	Caribou	75	500	Survey	1	1	Y		Road Closed
2023-05-13	Closed	24.0	Caribou	Caribou	55	500	Survey	0	1	Y		Road Closed
2023-05-14	Closed (< 24 hour)	7.0	Caribou	Caribou	32	400	Survey	0	1	Y	Caribou below GST	Road status was communicated to Stakeholders via email with observations
2023-05-15	Closed (< 24 hour)	1.0	Caribou	Caribou	54	0	Incidental	1	1	Y	Caribou below GST	Road status was communicated to Stakeholders via email with observations
2023-05-16	Open	0.0	NA	Caribou	29	450	Survey	0	1	Y		
2023-05-17	Closed (< 24 hour)	1.5	Caribou	Caribou	59	200	Incidental	0	1	Y	Caribou below GST	Road status was communicated to Stakeholders via email with observations
2023-05-18	Open	0.0	NA	Caribou	20	100	Survey	1	1	Y		
2023-05-19	Closed (< 24 hour)	2.0	Caribou	Caribou	38	500	Incidental	0	1	Y	Caribou below GST	Road status was communicated to Stakeholders via email with observations
2023-05-20	Open	0.0	NA	Caribou	4	300	Incidental	0	1	Y		
2023-05-21	Open	0.0	NA	Caribou	10	250	Survey	0	1	Y		
2023-05-22	Closed (< 24 hour)	3.0	Caribou	Caribou	47	400	Incidental	1	1	Y	Caribou below GST	Road status was communicated to Stakeholders via email with observations
2023-05-23	Speed Restriction	0.0	Caribou	Caribou	30	400	Incidental	0	1	Y		
2023-05-24	Open	0.0	NA	Caribou	23	900	Survey	0	1	Y		
2023-05-25	Open	0.0	NA	Caribou	26	200	Survey	1	1	Y		
2023-05-26	Closed (< 24 hour)	1.8	Emergency	Caribou	19	350	survey	0	1	Y	Code 1 Stand Down	None - Emergency (Code 1)
2023-05-27	Open	0.0	NA	Caribou	15	75	Survey	0	1	Y		
2023-05-28	Open	0.0	NA	Caribou	12	500	Survey	0	1	Y		
2023-05-29	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-05-30	Open	0.0	NA	Caribou	7	800	Survey	0	1	Y		
2023-05-31	Open	0.0	NA	Caribou	10	500	Survey	1	1	Y		
2023-06-01	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-06-02	Speed Restriction	0.0	Caribou	Caribou	30	250	Survey	0	1	Y		
2023-06-03	Closed (< 24 hour)	4.7	Weather	Caribou	20	1100	Survey	1	1	Y	Weather Improvement	None - Road closed for weather conditions
2023-06-04	Open	0.0	NA	Caribou	3	300	Incidental	0	0	Y		
2023-06-05	Open	0.0	NA	Caribou	16	100	Incidental	0	0	Y		
2023-06-06	Open	0.0	NA	Caribou	16	100	Survey	0	1	Y		
2023-06-07	Open	0.0	NA	Caribou	16	1000	Incidental	0	0	Y		
2023-06-08	Open	0.0	NA	Caribou	9	400	Incidental	0	0	Y		
2023-06-09	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-06-10	Open	0.0	NA	Caribou	12	500	Survey	0	1	Y		
2023-06-11	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-06-12	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-06-13	Open	0.0	NA	Caribou	18	75	Survey	0	1	Y		
2023-06-14	Open	0.0	NA	Caribou	18	200	Survey	0	1	Y		
2023-06-15	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-06-16	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-06-17	Open	0.0	NA	Caribou	16	100	Incidental	0	0	Y		
2023-06-18	Open	0.0	NA	Caribou	N/A	N/A	N/A	0	0	Y		
2023-06-19	Open	0.0	NA	Caribou	7	700	Survey	0	1	Y		
2023-06-20	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		



Table B-2: Summary of road restrictions (Closed - 24 hours, Closed – less than 24 hours, Speed Restrictions, and Traffic Restrictions) along the Whale Tail Haul Road, 2023

Date	Closure Status	Closure Hours	Cause for Closure	Wildlife Observed	Number of Individuals Observed	Distance from Road	Monitoring Method	Monitoring Conducted			Reason for Re-opening	Consultation for Re-opening
								Viewshed Surveys	Road Surveys	Collaring Data Reviewed		
2023-06-21	Speed Restriction	0.0	Caribou	Caribou	23	200	Survey	0	1	Y		
2023-06-22	Speed Restriction	0.0	Caribou	Caribou	23	100	Survey	1	1	Y		
2023-06-23	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-06-24	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-06-25	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-06-26	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-06-27	Speed Restriction	0.0	Muskox	Muskox	9	0	Survey	1	1	Y		
2023-06-28	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-06-29	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-06-30	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-07-01	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-07-02	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-07-03	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-07-04	Open	0.0	NA	Muskox	1	50	Survey	1	1	Y		
2023-07-05	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-07-06	Speed Restriction	0.0	Muskox	Muskox	16	500	Survey	0	1	Y		
2023-07-07	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-07-08	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-07-09	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-07-10	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-07-11	Open	0.0	NA	MuskOx	14	2000	Viewshed	1	1	Y		
2023-07-12	Closed (< 24 hour)	11.0	Weather	N/A	N/A	N/A	N/A	0	0	Y		Road Closed
2023-07-13	Closed (< 24 hour)	8.0	Weather	Wolf	1	0	Incidental	0	0	Y	Weather Improvement	None - Road closed for road conditions/weather
2023-07-14	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-07-15	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-07-16	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-07-17	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-07-18	Open	0.0	NA	MuskOx	1	25	Survey	0	1	Y		
2023-07-19	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-07-20	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-07-21	Open	0.0	NA	MuskOx	1	250	Viewshed	1	0	Y		
2023-07-22	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-07-23	Open	0.0	NA	Wolf	1	100	Incidental	0	0	Y		
2023-07-24	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-07-25	Open	0.0	NA	Wolf	1	0	Incidental	1	1	Y		
2023-07-26	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-07-27	Open	0.0	NA	Caribou	1	50	Incidental	0	0	Y		
2023-07-28	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-07-29	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-07-30	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-07-31	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-08-01	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-08-02	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-08-03	Open	0.0	NA	Muskox	1	100	Viewshed	1	0	Y		
2023-08-04	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-08-05	Open	0.0	NA	Muskox	23	2000	Incidental	0	1	Y		
2023-08-06	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-08-07	Open	0.0	NA	Muskox	9	500	Survey	0	1	Y		
2023-08-08	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-08-09	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-08-10	Open	0.0	NA	Muskox	3	1200	Viewshed	1	0	Y		
2023-08-11	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-08-12	Open	0.0	NA	Caribou	3	2000	Survey	0	1	Y		
2023-08-13	Closed (< 24 hour)	13.8	Caribou	Caribou	120	0	Road	0	1	Y		Road status was communicated to Stakeholders via email with observations
2023-08-14	Closed	24.0	Caribou	Caribou	63	300	Survey	0	1	Y		Road Closed
2023-08-15	Closed	24.0	Caribou	Caribou	90	400	Survey	0	1	Y		Road Closed
2023-08-16	Closed	24.0	Caribou	Caribou	70	500	Survey	0	1	Y		Road Closed
2023-08-17	Closed (< 24 hour)	17.3	Caribou	Caribou	16	200	Survey	0	1	Y	Caribou below GST	Road status was communicated to Stakeholders via email with observations
2023-08-18	Closed (< 24 hour)	19.0	Caribou	caribou	200	90	survey	0	1	Y		Road Closed
2023-08-19	Closed (< 24 hour)	15.5	Caribou	Caribou	29	30	Survey	1	1	Y	Caribou below GST	Road status was communicated to Stakeholders via email with observations
2023-08-20	Speed Restriction	0.0	Muskox	Muskox	14	50	Incidental	0	1	Y		



Table B-2: Summary of road restrictions (Closed - 24 hours, Closed – less than 24 hours, Speed Restrictions, and Traffic Restrictions) along the Whale Tail Haul Road, 2023

Date	Closure Status	Closure Hours	Cause for Closure	Wildlife Observed	Number of Individuals Observed	Distance from Road	Monitoring Method	Monitoring Conducted			Reason for Re-opening	Consultation for Re-opening
								Viewshed Surveys	Road Surveys	Collaring Data Reviewed		
2023-08-21	Closed (< 24 hour)	1.0	Caribou	Caribou	29	400	survey	0	2	Y	Caribou below GST	Road status was communicated to Stakeholders via email with observations
2023-08-22	Closed (< 24 hour)	1.0	Caribou	Caribou	40	10	Survey	0	1	Y	Caribou below GST	Road status was communicated to Stakeholders via email with observations
2023-08-23	Speed Restriction	0.0	Caribou	Caribou	17	500	Survey	0	1	Y		
2023-08-24	Open	0.0	NA	Caribou	15	200	Incidental	1	1	Y		
2023-08-25	Closed (< 24 hour)	8.1	Weather	Caribou	14	50	Incidental	0	1	Y		
2023-08-26	Closed (< 24 hour)	6.0	Weather	Caribou	28	50	Survey	0	1	Y	Weather Improvement	None - Road closed for weather conditions
2023-08-27	Open	0.0	NA	Caribou	15	120	Survey	0	1	Y		
2023-08-28	Speed Restriction	0.0	Muskox	Muskox	16	500	Survey	0	1	Y		
2023-08-29	Speed Restriction	0.0	Muskox	Muskox	16	300	Survey	0	1	Y		
2023-08-30	Speed Restriction	0.0	Muskox	Muskox	18	100	Survey	0	1	Y		
2023-08-31	Speed Restriction	0.0	Muskox	Muskox	13	1000	Survey	1	1	Y		
2023-09-01	Speed Restriction	0.0	Muskox	Muskox	19	0	Survey	0	1	Y		
2023-09-02	Open	0.0	NA	Caribou	6	150	Survey	0	1	Y		
2023-09-03	Open	0.0	NA	Caribou	24	0	Incidental	0	1	Y		
2023-09-04	Open	0.0	NA	Muskox	12	5	Survey	0	1	Y		
2023-09-05	Open	0.0	NA	Muskox	16	600	Survey	0	1	Y		
2023-09-06	Speed Restriction	0.0	Muskox	Muskox	14	10	Survey	0	1	Y		
2023-09-07	Speed Restriction	0.0	Muskox	Muskox	21	2	survey	1	1	Y		
2023-09-08	Open	0.0	NA	Caribou	25	25	Survey	0	1	Y		
2023-09-09	Speed Restriction	0.0	Caribou	Caribou	35	400	Incidental	0	1	Y		
2023-09-10	Closed (< 24 hour)	0.3	Muskox	Muskox	17	10	Survey	0	1	Y	Muskox Moved	N/A
2023-09-11	Open	0.0	NA	Caribou	4	1	Survey	0	1	Y		
2023-09-12	Open	0.0	NA	Muskox	9	25	Survey	0	1	Y		
2023-09-13	Speed Restriction	0.0	Muskox	Muskox	20	300	Survey	0	1	Y		
2023-09-14	Open	0.0	NA	Muskox	10	200	Survey	1	1	Y		
2023-09-15	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-09-16	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-09-17	Speed Restriction	0.0	Muskox	Muskox	14	200	Survey	0	1	Y		
2023-09-18	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-09-19	Speed Restriction	0.0	Muskox	Muskox	23	300	Survey	0	1	Y		
2023-09-20	Closed (< 24 hour)	5.0	Weather	Caribou	3	50	Survey	1	1	Y	Weather Improvement	
2023-09-21	Closed (< 24 hour)	9.3	Weather	N/A	N/A	N/A	N/A	0	0	Y	Weather Improvement	None - Road closed for weather conditions
2023-09-22	Open	0.0	NA	Caribou	12	50	Survey	0	1	Y		
2023-09-23	Speed Restriction	0.0	Muskox	Muskox	16	40	Survey	0	1	Y		
2023-09-24	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-09-25	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-09-26	Open	0.0	NA	Muskox	10	750	Road	1	1	Y		
2023-09-27	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-09-28	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-09-29	Open	0.0	NA	Muskox	8	100	Survey	0	1	Y		
2023-09-30	Open	0.0	NA	Muskox	7	10	Survey	1	1	Y		
2023-10-01	Speed Restriction	0.0	Muskox	Muskox	19	5	Incidental	0	1	Y		
2023-10-02	Open	0.0	NA	Caribou	7	250	Viewshed	1	0	Y		
2023-10-03	Speed Restriction	0.0	Muskox	Muskox	16	250	Survey	0	1	Y		
2023-10-04	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-10-05	Open	0.0	NA	Caribou	2	400	Survey	1	1	Y		
2023-10-06	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-10-07	Speed Restriction	0.0	Muskox	Muskox	24	5	Incidental	1	1	Y		
2023-10-08	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-10-09	Open	0.0	NA	Caribou	31	500	Survey	1	1	Y		
2023-10-10	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-10-11	Open	0.0	NA	Caribou	6	800	Viewshed	1	1	Y		
2023-10-12	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-10-13	Closed (< 24 hour)	2.0	Weather	muskox	23	20	Incidental	1	0	Y	Weather Improvement	None - Road closed for weather conditions
2023-10-14	Closed (< 24 hour)	1.5	Weather	Muskox	16	5	Survey	1	1	Y	Weather Improvement	None - Road closed for weather conditions
2023-10-15	Closed (< 24 hour)	2.2	Weather	Caribou	5	75	Incidental	0	0	Y	Weather Improvement	None - Road closed for weather conditions
2023-10-16	Closed (< 24 hour)	19.4	Weather	muskox	2	10	survey	1	1	Y	Weather Improvement	Road Closed
2023-10-17	Closed (< 24 hour)	0.7	Weather	N/A	N/A	N/A	N/A	0	0	Y	Weather improvement	None - Road closed for weather conditions
2023-10-18	Speed Restriction	0.0	Muskox	Muskox	3	5	Survey	1	1	Y		



Table B-2: Summary of road restrictions (Closed - 24 hours, Closed – less than 24 hours, Speed Restrictions, and Traffic Restrictions) along the Whale Tail Haul Road, 2023

Date	Closure Status	Closure Hours	Cause for Closure	Wildlife Observed	Number of Individuals Observed	Distance from Road	Monitoring Method	Monitoring Conducted			Reason for Re-opening	Consultation for Re-opening
								Viewshed Surveys	Road Surveys	Collaring Data Reviewed		
2023-10-19	Closed (< 24 hour)	8.1	Weather	N/A	N/A	N/A	N/A	0	0	Y	Weather improvement	None - Road closed for weather conditions
2023-10-20	Open	0.0	NA	muskox	7	30	Survey	1	1	Y		
2023-10-21	Open	0.0	NA	Caribou	9	750	Survey	0	1	Y		
2023-10-22	Open	0.0	NA	Caribou	8	150	Survey	1	1	Y		
2023-10-23	Open	0.0	NA	muskox	9	100	Incidental	0	1	Y		
2023-10-24	Open	0.0	NA	caribou	15	100	Incidental	1	1	Y		
2023-10-25	Open	0.0	NA	muskox	3	100	Survey	0	1	Y		
2023-10-26	Closed (< 24 hour)	14.0	Caribou	Caribou	200	100	Incidental	1	1	Y		Road Closed
2023-10-27	Closed	24.0	Caribou	Caribou	200	50	Incidental	0	1	Y		Road Closed
2023-10-28	Closed (< 24 hour)	16.3	Caribou	Caribou	400	150	Survey	1	1	Y	Caribou below GST	Road status was communicated to Stakeholders via email with observations
2023-10-29	Speed Restriction	0.0	Caribou/Muskox	Muskox	23	500	Incidental	0	1	Y		
2023-10-30	Speed Restriction	0.0	Caribou/Muskox	Muskox	26	100	Survey	1	1	Y		
2023-10-31	Closed (< 24 hour)	3.6	Weather	N/A	N/A	N/A	N/A	0	1	Y	Weather Improvement	Road closed
2023-11-01	Closed (< 24 hour)	5.5	Caribou	Caribou	105	500	Survey	1	1	Y	Caribou below GST	Road status was communicated to Stakeholders via email with observations
2023-11-02	Closed (< 24 hour)	10.2	Weather	Muskox	7	100	Survey	0	1	Y		Road closed
2023-11-03	Closed (< 24 hour)	0.4	Weather	Muskox	18	50	Survey	1	1	Y	Weather Improvement	None - Road closed for weather conditions
2023-11-04	Open	0.0	NA	Muskox	7	50	Incidental	1	1	Y		
2023-11-05	Speed Restriction	0.0	Muskox	Muskox	10	156	Survey	1	1	Y		
2023-11-06	Speed Restriction	0.0	Muskox	Muskox	21	500	Survey	1	1	Y		
2023-11-07	Open	0.0	NA	Muskox	7	200	Survey	1	1	Y		
2023-11-08	Speed Restriction	0.0	Muskox	Muskox	7	500	Survey	1	1	Y		
2023-11-09	Open	0.0	NA	Muskox	7	2000	Survey	1	1	Y		
2023-11-10	Open	0.0	NA	Muskox	6	500	Survey	1	1	Y		
2023-11-11	Speed Restriction	0.0	Muskox	Muskox	7	200	Survey	1	1	Y		
2023-11-12	Speed Restriction	0.0	Muskox	Muskox	7	20	Survey	0	1	Y		
2023-11-13	Speed Restriction	0.0	Muskox	Muskox	19	1000	Survey	1	1	Y		
2023-11-14	Speed Restriction	0.0	Muskox	caribou	30	50	Incidental	0	1	Y		
2023-11-15	Open	0.0	NA	MuskOx	2	800	survey	0	1	Y		
2023-11-16	Open	0.0	NA	MuskOx	3	150	survey	1	1	Y		
2023-11-17	Open	0.0	NA	N/A	N/A	N/A	Survey	0	1	Y		
2023-11-18	Open	0.0	NA	Muskox	5	100	Incidental	1	1	Y		
2023-11-19	Open	0.0	NA	Muskox	4	30	Incidental	0	1	Y		
2023-11-20	Closed (< 24 hour)	11.4	Weather	Muskox	4	100	Incidental	1	1	Y		Road closed
2023-11-21	Closed	24.0	Weather	N/A	N/A	N/A	N/A	0	0	Y		Road closed
2023-11-22	Closed	24.0	Weather	N/A	N/A	N/A	N/A	0	0	Y		Road closed
2023-11-23	Closed (< 24 hour)	7.5	Weather	Muskox	14	100	Incidental	0	1	Y	Weather Improvement	None - Road closed for weather conditions
2023-11-24	Speed Restriction	0.0	Muskox	Muskox	22	700	Incidental	0	1	Y		
2023-11-25	Closed (< 24 hour)	4.8	Weather	N/A	N/A	N/A	Survey / Viewshed	1	1	Y		Road closed
2023-11-26	Closed (< 24 hour)	9.0	Weather	Muskox	19	25	Incidental	0	1	Y	Weather Improvement	None - Road closed for weather conditions
2023-11-27	Speed Restriction	0.0	Muskox	Muskox	19	200	Viewshed	1	1	Y		
2023-11-28	Open	0.0	NA	Muskox	4	1500	Survey	0	1	Y		
2023-11-29	Closed (< 24 hour)	20.9	Weather	N/A	N/A	N/A	N/A	0	0	Y		Road closed
2023-11-30	Closed (< 24 hour)	17.2	Weather	N/A	N/A	N/A	N/A	0	0	Y	Weather Improvement	None - Road closed for weather conditions
2023-12-01	Open	0.0	NA	N/A	N/A	N/A	Survey / Viewshed	1	1	Y		
2023-12-02	Open	0.0	NA	Caribou	15	200	Incidental	1	1	Y		
2023-12-03	Open	0.0	NA	N/A	N/A	N/A	Survey	0	1	Y		
2023-12-04	Open	0.0	NA	N/A	N/A	N/A	Survey / Viewshed	1	1	Y		
2023-12-05	Speed Restriction	0.0	Muskox	Muskox	29	70	Survey	0	1	Y		
2023-12-06	Speed Restriction	0.0	Muskox	Muskox	20	50	Viewshed	1	1	Y		
2023-12-07	Speed Restriction	0.0	Muskox	Muskox	25	20	Incidental	0	1	Y		
2023-12-08	Speed Restriction	0.0	Caribou	Caribou	12	200	Incidental	1	1	Y		
2023-12-09	Speed Restriction	0.0	Muskox	Muskox	30	100	Survey	0	1	Y		
2023-12-10	Speed Restriction	0.0	Muskox	Muskox	28	20	Survey	1	1	Y		
2023-12-11	Open	0.0	NA	N/A	N/A	N/A	Survey	0	1	Y		
2023-12-12	Speed Restriction	0.0	Muskox	Muskox	17	20	Incidental	1	1	Y		
2023-12-13	Closed (< 24 hour)	13.3	Weather	Muskox	17	100	Survey	0	1	Y		Road closed
2023-12-14	Closed	24.0	Weather	N/A	N/A	N/A	N/A	0	0	Y		Road closed
2023-12-15	Closed (< 24 hour)	7.5	Weather	Muskox	23	200	survey	0	1	Y	Weather Improvement	None - Road closed for weather conditions
2023-12-16	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		



Table B-2: Summary of road restrictions (Closed - 24 hours, Closed – less than 24 hours, Speed Restrictions, and Traffic Restrictions) along the Whale Tail Haul Road, 2023

Date	Closure Status	Closure Hours	Cause for Closure	Wildlife Observed	Number of Individuals Observed	Distance from Road	Monitoring Method	Monitoring Conducted			Reason for Re-opening	Consultation for Re-opening
								Viewshed Surveys	Road Surveys	Collaring Data Reviewed		
2023-12-17	Open	0.0	NA	N/A	N/A	N/A	Survey / Viewshed	1	1	Y		
2023-12-18	Speed Restriction	0.0	Muskox	Muskox	17	50	Incidental	0	1	Y		
2023-12-19	Speed Restriction	0.0	Muskox	Muskox	17	100	Survey	1	1	Y		
2023-12-20	Open	0.0	NA	Arctic Fox	1	20	Incidental	0	1	Y		
2023-12-21	Closed (< 24 hour)	9.5	Weather	N/A	N/A	N/A	N/A	0	0	Y	Weather Improvement	None - Road closed for weather conditions
2023-12-22	Open	0.0	NA	Caribou	1	400	Survey	0	1	Y		
2023-12-23	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-12-24	Closed (< 24 hour)	12.5	Weather	N/A	N/A	N/A	N/A	0	0	Y	Weather Improvement	None - Road closed for weather conditions
2023-12-25	Speed Restriction	0.0	Muskox	Muskox	18	2500	Viewshed	1	1	Y		
2023-12-26	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-12-27	Closed (< 24 hour)	20.9	Weather	N/A	N/A	N/A	N/A	0	0	Y		Road closed
2023-12-28	Closed (< 24 hour)	9.5	Weather	Muskox	5	250	Survey	1	1	Y	Weather Improvement	None - Road closed for weather conditions
2023-12-29	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		
2023-12-30	Open	0.0	NA	Muskox	5	500	Viewshed	1	1	Y		
2023-12-31	Open	0.0	NA	N/A	N/A	N/A	N/A	0	0	Y		

APPENDIX C

Wildlife Mortalities

Wildlife Incident Report Form

Date:	2023-01-19	Time:	6:30
Individuals involved:	Louis Dubois		
	Derek Nateela		
Species:	Wolverine		
Number, gender, age:	1, Male		
Location (description):	Incinerator		
Location (UTM):	N 65°00'56.4" S 96°04'02.8"		
Digital photo numbers:	Photo 1	Photo 2	Photo 3
Describe the incident or accident that occurred. Was there a threat to wildlife or human safety? What was the situation that caused it?			
<p>On January 19, 2023 - Environment started performing a wildlife survey around the site at 6h00. At 6h25, fresh wolverine tracks were observed near the incinerator. Environment patrolled the area on foot and observed the wolverine at the northwest corner of the incinerator building.</p> <p>In previous days, the wolverine was observed numerous times near the incinerator, assay lab, core shacks and at the landfill. Attempts to deter the wolverine away from the site were unsuccessful as the wolverine had become habituated to the site.</p>			
Describe any use of wildlife deterrents: Describe any wildlife mortality:			
<p>Frequent reports/observations of the wolverine continued between January 01 and January 18, 2023.</p> <p>Two 12 g slugs were used to dispatch the Wolverine.</p>			
Describe any communication with GN-DOE:			
<p>Environment department provided GN-DOE the wildlife reports regarding our monitoring and deterring efforts related to the Wolverine observations.</p> <p>On January 16th GN DOE issued a wildlife destruction authorization to ensure the safety of personnel on site.</p>			
What immediate measures were taken to reduce risk or harm?			
<p>The Wolverine carcass was picked up and brought to the GN office in Baker Lake on 2023-01-19 by HTO.</p>			
What measures are recommended to prevent future occurrences?			
<p>A general reminder to all site personnel regarding food waste, cigarette butts, proper waste segregation, closing sea ca doors, and ensuring work areas are clean to avoid attracting wildlife on the site.</p>			
Report prepared by:	Louis Dubois	Reviewed by:	Tom Thomson

Photo 1



Photo 2



Wildlife Incident Report Form

Date:	2023-01-25	Time:	5:45
Individuals involved:	Louis Dubois		
	Samuel Tapp		
Species:	Wolf		
Number, gender, age:	1, Female		
Location (description):	Incinerator		
Location (UTM):	N 65°00'56.4" S 96°04'02.8"		
Digital photo numbers:	Photo 1	Photo 2	Photo 3
Describe the incident or accident that occurred. Was there a threat to wildlife or human safety? What was the situation that caused it?			
<p>On January 25, 2023 - Environment started performing a wildlife survey around the site at 5h00. At 5h45, a wolf was observed near the incinerator.</p> <p>In previous weeks, the wolf was observed numerous times near the incinerator, winter parking, fountain tire shop, cat dome, maintenance shop and at the landfill. Attempts to deter the wolf away from the site were unsuccessful as the wolf had become habituated to the site and several close encounters with employee were reported.</p>			
Describe any use of wildlife deterrents: Describe any wildlife mortality:			
<p>Previously rubber slugs were used as a deterrent but has been proven to be unsuccessful. One .223 bullet was used to dispatch the Wolf at the incinerator.</p>			
Describe any communication with GN-DOE:			
<p>On January 22nd, environment department provided GN-DOE the wildlife reports regarding our monitoring and deterring efforts related to the wolf observations.</p> <p>On January 22nd GN DOE issued a wildlife destruction authorization to ensure the safety of personnel on site.</p>			
What immediate measures were taken to reduce risk or harm?			
<p>The Wolf carcass will be picked up and brought to the GN office in Baker Lake on January 25th by HTO.</p>			
What measures are recommended to prevent future occurrences?			
<p>A general reminder to all site personnel and toolbox meetings regarding food waste, cigarette butts, proper waste segregation, closing sea can doors, and ensuring work areas are clean to avoid attracting wildlife on the site was enforce.</p>			
Report prepared by:	Louis Dubois	Reviewed by:	Samuel Tapp

Photo 1



Photo 2



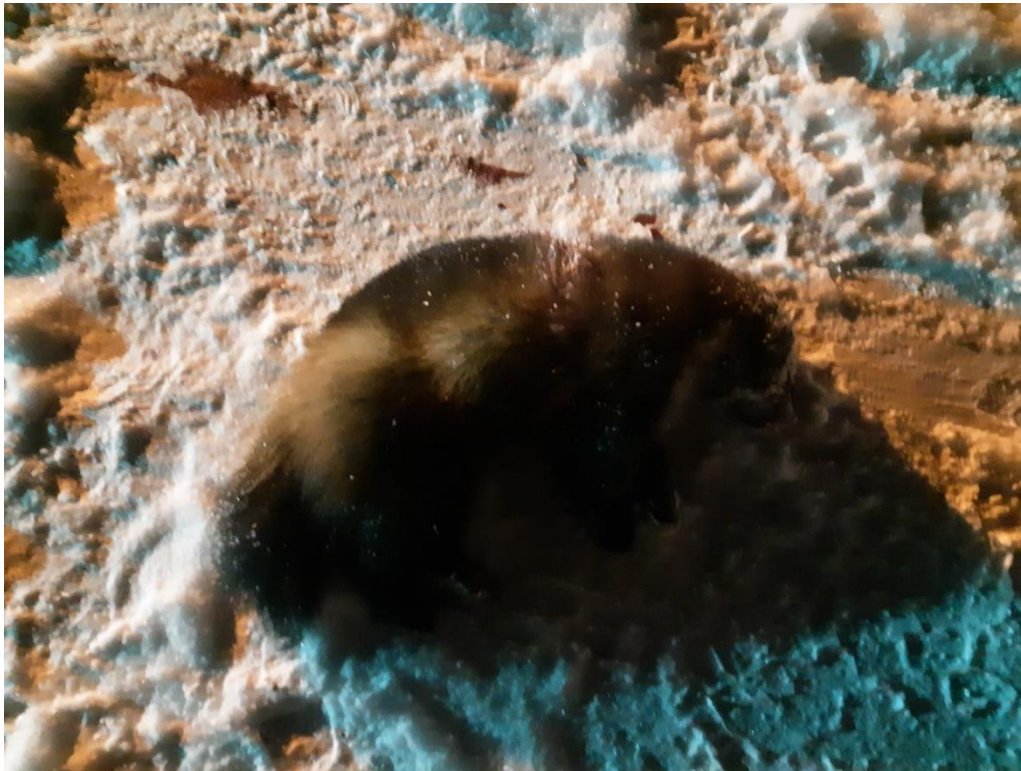
Photo 3



Photo 4



Photo 3



Wildlife Incident Report Form

Date:	2023-0-2-04	Time:	07:15
Individuals involved:	Tom Thomson		
	Derek Nateela		
Species:	Wolf		
Number, gender, age:	Adult Male		
Location (description):	Meadowbank Landfill		
Location (UTM):	14W 0638643 7215504		
Digital photo numbers:			
Describe the incident or accident that occurred. Was there a threat to wildlife or human safety? What was the situation that caused it?			
<p>On February 3, 2023 at 18:15 Environment responded to a report of a wolf observation near the front desk at Meadowbank. Environment patrolled the area without observation. On February 4, 2023 at 6:30am, Environment responded to a report of a wolf observation near the incinerator. Environment patrolled the area without observation. At 7:10 the wolf was observed by Environment at the landfill.</p> <p>Previous attempts to deter the wolf away from the site were unsuccessful as the wolf had become habituated to the site and several close encounters with employees were reported.</p>			
Describe any use of wildlife deterrents: Describe any wildlife mortality:			
<p>AEM Environment approached the wolf via pick-up truck. At 7:15 from approximately 25m away from the wolf, one 12g slug was fired. The wolf was hit with the slug but began to slowly move away and a second 12g slug was fired.</p> <p>AEM monitored the area, waiting for daylight. At 8:30 – AEM Environment picked up a faint blood trail and followed it to East side of the landfill. The wolf was observed moving his head but in area where shooting access was limited. 4 Bangers were fired to encourage the wolf to move into an open area but failed. One .223 bullet was fired to ensure the animal was dispatched.</p>			
Describe any communication with GN-DOE:			
<p>GN Conservation officer provided a wildlife destruction permit for the problematic wolves on January 22, 2023.</p>			
What immediate measures were taken to reduce risk or harm?			
<p>AEM Environment restricted vehicles from entering the landfill until the animal was dispatched.</p> <p>The carcass was picked up and will be delivered to the GN office in Baker Lake during the week of February 5th, 2023.</p>			
What measures are recommended to prevent future occurrences?			
<p>A general reminder to all site personnel regarding food waste, cigarette butts, proper waste segregation, closing sea can doors, and ensuring work areas are clean to avoid attracting wildlife on the site was sent via the daily communicator and through tool boxes.</p>			



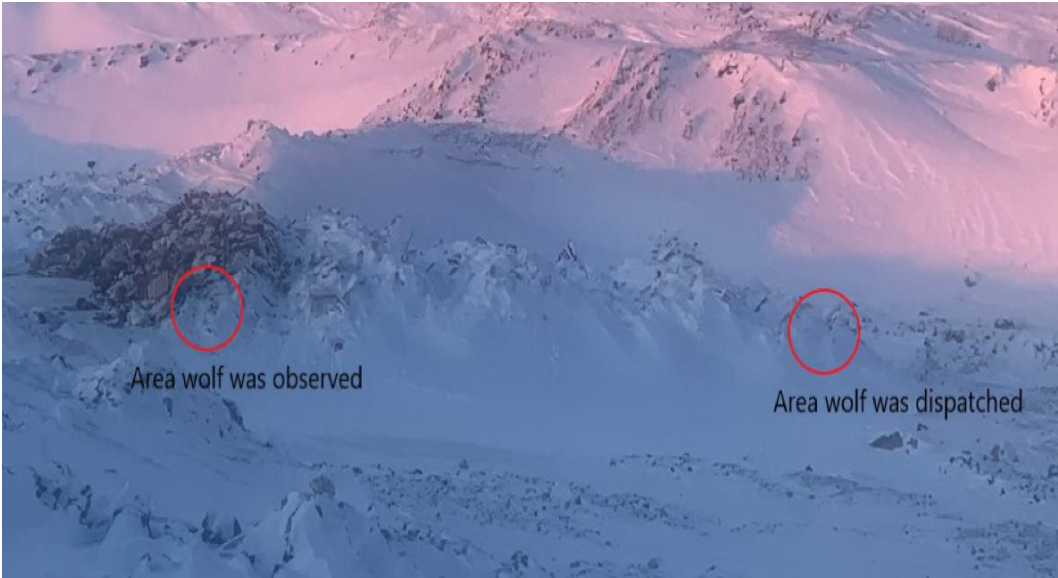
2023-02-04 (1)



2023-02-04 (2)



2023-02-04 (3)



2023-02-04 (4)

Report prepared by:	Tom Thomson	Reviewed by:	
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Wildlife Incident Report Form

Date:	2023-02-05	Time:	13:15
Individuals involved:	Tom Thomson		
	Derek Nateela		
	Felix Quessy Savard		
Species:	Wolverine		
Number, gender, age:	Male		
Location (description):	Meadowbank Landfill		
Location (UTM):	14W 0638579 7215599		
Digital photo numbers:			
Describe the incident or accident that occurred. Was there a threat to wildlife or human safety? What was the situation that caused it?			
<p>On February 6, 2023 at 13:00 during a routine inspection, Environment observed a wolverine at the Meadowbank landfill. Environment had responded to a report of a wolverine near the incinerator earlier in the day, but the animal was not observed.</p> <p>Previous attempts to deter the wolverine away from the site were unsuccessful as the animal had become habituated to the site and several close encounters with employees were reported.</p>			
Describe any use of wildlife deterrents: Describe any wildlife mortality:			
<p>AEM Environment was parked near the entrance to the Meadowbank landfill. As the AEM pick up truck entered the landfill area, the wolverine began to run North towards the waste rock pile. The wolverine stopped at the crest of a berm and at 13:15 from approximately 150m away from the wolverine was dispatched with a .223 bullet.</p> <p>.</p>			
Describe any communication with GN-DOE:			
<p>GN Conservation officer provided a wildlife destruction permit for the problematic wolverines on January 16, 2023.</p>			
What immediate measures were taken to reduce risk or harm?			
<p>The carcass was picked up and will be delivered to the GN office in Baker Lake during the week of February 5th, 2023.</p>			
What measures are recommended to prevent future occurrences?			
<p>A general reminder to all site personnel regarding food waste, cigarette butts, proper waste segregation, closing sea can doors, and ensuring work areas are clean to avoid attracting wildlife on the site was sent via the daily communicator and through tool boxes.</p>			



2023-02-05 (1)



2023-02-05 (2)



2023-02-05 (3)

Report prepared by:	Tom Thomson	Reviewed by:	
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Wildlife Incident Report Form

Date:	2023-03-07	Time:	15:10
Individuals involved:	Tom Thomson	Derek Nateela	Felix Quessy-Savard
Species:	Wolf		
Number, gender, age:	Adult Male		
Location (description):	Meadowbank Landfill		
Location (UTM):	14W 0638557 7215575		
Digital photo numbers:			
Describe the incident or accident that occurred. Was there a threat to wildlife or human safety? What was the situation that caused it?			
<p>On March 7, 2023, at 14:30 a wolf was reported between the South Cell tailings area and the Meadowbank landfill. Environment responded to the call and observed the wolf lie down on top of a berm at the edge of the road. Environment workers attempted to deter the wolf away with the horn of the pick-up. The wolf did not respond at first but slowly moved towards the East side of the landfill and laid down.</p> <p>Previous attempts to deter the wolf away from the site were unsuccessful as the wolf had become habituated to the site and several close encounters with employees were reported.</p>			
Describe any use of wildlife deterrents: Describe any wildlife mortality:			
<p>AEM Environment approached the landfill via pick-up truck. As the Environment workers moved away from the vehicle, the wolf began to walk North and away from them. At 15:10 from approximately 75m away from the wolf, a .223 rifle bullet was fired. The wolf was hit near the hind quarter but slowly got up. A second .223 bullet was fired from the same location and dispatched the animal.</p>			
Describe any communication with GN-DOE:			
<p>GN Conservation officer provided a wildlife destruction permit for the problematic wolves on January 22, 2023.</p> <p>At 16:30 AEM Environment advised GN Conservation officers via phone.</p>			
What immediate measures were taken to reduce risk or harm?			
<p>AEM Environment restricted vehicles from entering the landfill until the animal was dispatched.</p> <p>The carcass was picked up and will be delivered to the GN office in Baker Lake during the week of March 5th, 2023.</p>			
What measures are recommended to prevent future occurrences?			
<p>A general reminder to all site personnel regarding food waste, cigarette butts, proper waste segregation, closing sea can doors, and ensuring work areas are clean to avoid attracting wildlife on the site was sent via the daily communicator and through tool boxes.</p>			

Wildlife Incident Report Form

Date:	2023-03-10	Time:	13:35
Individuals involved:	Louis Dubois	Wammy Kreelak	Felix Tutanuq
Species:	Wolverine		
Number, gender, age:	Adult Male		
Location (description):	Meadowbank Landfarm		
Location (UTM):	14W 638530 7215213		
Digital photo numbers:			
Describe the incident or accident that occurred. Was there a threat to wildlife or human safety? What was the situation that caused it?			
<p>On March 10, 2023, at 13:30 while performing wildlife monitoring, a wolverine was observed by HTO and AEM environment at the bottom of the South Cell tailings ramp near the Meadowbank landfarm. Environment had responded to a report of a wolverine on the airstrip earlier in the day.</p> <p>Previous attempts to deter the wolverine away from the site were unsuccessful as the animal had become habituated to the site and several encounters with employees were reported.</p>			
Describe any use of wildlife deterrents: Describe any wildlife mortality:			
<p>HTO and Environment approached the bottom of the ramp via pick-up truck. The wolverine was standing at the bottom of the ramp observing the vehicle. At 13h35, from approximately 50 m away from the wolverine, a rifle bullet was fired by HTO. The wolverine was hit and staggered but continued to move away. A second bullet was fired from the same location and the wolverine went down. While approaching the wolverine, the leg was still moving, so a third and final bullet was fired to dispatch the animal.</p>			
Describe any communication with GN-DOE:			
<p>GN Conservation officer provided a wildlife destruction authorization to HTO for problematic wildlife February 24, 2023.</p> <p>At 15:30 on March 10, 2023 - AEM Environment advised GN Conservation officers via email.</p>			
What immediate measures were taken to reduce risk or harm?			
<p>The carcass was picked up and delivered to the GN office in Baker Lake on March 10th by HTO members.</p>			
What measures are recommended to prevent future occurrences?			
<p>A general reminder to all site personnel regarding food waste, cigarette butts, proper waste segregation, closing sea can doors, and ensuring work areas are clean to avoid attracting wildlife on the site was sent via the daily communicator and through tool boxes.</p>			



Report prepared by: Louis Dubois

Reviewed by: Tom Thomson



2023-03-07

Report prepared by: Tom Thomson	Reviewed by:
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Wildlife Incident Report Form

Date:	2023/05/12	Time:	8:55
Individuals involved:	Brandon Ipkarnerk	Kathleen Newberry	
Species:	Sik sik		
Number, gender, age:	N/A		
Location (description):	AWAR (KM98)		
Location (UTM):	14W 633636.33 m E 7214836.35 m N		
Digital photo numbers:	N/A		
Describe the incident or accident that occurred. Was there a threat to wildlife or human safety? What was the situation that caused it?			
While doing a wildlife survey on the WTHR, the environmental department noticed a siksik that appears to have been struck by a vehicle.			
Describe any use of wildlife deterrents: Describe any wildlife mortality:			
N/A			
Describe any communication with GN-DOE:			
Communication with the GN-DOE will be done during the monthly report.			
What immediate measures were taken to reduce risk or harm?			
The siksik was picked up and disposed of at the Meadowbank site.			
What measures are recommended to prevent future occurrences?			
General reminder to every operator that there's wildlife presence around the road.			
Report prepared by:	Kathleen Newberry	Reviewed by:	

Wildlife Incident Report Form

Date:	2023-07-28	Time:	8:32
Individuals involved:	Derek Nateela		
Species:	Arctic Hare		
Number, gender, age:	Adult		
Location (description):	AWAR KM 73		
Location (UTM):	N/A		
Digital photo numbers:			
Describe the incident or accident that occurred. Was there a threat to wildlife or human safety? What was the situation that caused it?			
During a routine inspection along the AWAR an environmental employee observed a carcass of an arctic hare along the road. The carcass appears to have been struck by a vehicle.			
Describe any use of wildlife deterrents: Describe any wildlife mortality:			
N/A			
Describe any communication with GN-DOE:			
Communications with the GN-DOE will be done during the monthly report.			
What immediate measures were taken to reduce risk or harm?			
The carcass was collected to reduce the risk of scavenging. The carcass was disposed of at the MBK composter.			
What measures are recommended to prevent future occurrences?			
A reminder to all AWAR users to be aware of wildlife presence along the road and to slow down when an animal has been sighted in the area.			
Report prepared by:	Kathleen Newberry	Reviewed by:	

Wildlife Incident Report Form

Date:	2023-11-05	Time:	08:37
Individuals involved:	Kate Walker	Felix Quessy-Savard	
Species:	Arctic Fox		
Number, gender, age:	1, Adult		
Location (description):	Whale Tail Haul Road km153		
Location (UTM):	14W 0617879 7238478		
Digital photo numbers:	Picture 1	Picture 2	
Describe the incident or accident that occurred. Was there a threat to wildlife or human safety? What was the situation that caused it?			
<p>On 5th November 2023 Environmental team was conducting a view sheds survey along the whale tail haul road when they observed an arctic fox and an arctic hare lying on the haul road. The carcasses appeared to have been struck by a vehicle.</p>			
Describe any use of wildlife deterrents: Describe any wildlife mortality:			
No wildlife deterrents were used			
Describe any communication with GN-DOE:			
GN-DOE was notified via a phone call on Nov.6 th around 9:10AM with and via an email report.			
What immediate measures were taken to reduce risk or harm?			
The carcass was collected to reduce the risk of scavenging. Small parts of the carcass were disposed of at the MBK Composter. The area was then scrapped with a grader to remove any additional attractant for wildlife.			
What measures are recommended to prevent future occurrences?			
A reminder to all Road users to be alert and cautious of wildlife presence along the road and to slow down when an animal has been sighted in the area.			
Report prepared by:	Kate Walker	Reviewed by:	Rowan Woodall



Picture 1 – Arctic Hare at KM153



Picture 2– Arctic Fox at KM153

Wildlife Incident Report Form

Date:	2023-11-05	Time:	08:37
Individuals involved:	Kate Walker	Felix Quessy-Savard	
Species:	Arctic Hare		
Number, gender, age:	1, Adult		
Location (description):	Whale Tail Haul Road km153		
Location (UTM):	14W 0617879 7238478		
Digital photo numbers:	Picture 1	Picture 2	
Describe the incident or accident that occurred. Was there a threat to wildlife or human safety? What was the situation that caused it?			
<p>On 5th November 2023 Environmental team was conducting view sheds along the whale tail haul road when they observed an arctic fox and an arctic hare lying on the haul road. The carcasses appeared to have been struck by a vehicle.</p>			
Describe any use of wildlife deterrents: Describe any wildlife mortality:			
No wildlife deterrents were used			
Describe any communication with GN-DOE:			
GN-DOE was notified via a phone call on Nov.6 th around 9:10AM with and via an email report.			
What immediate measures were taken to reduce risk or harm?			
The carcass was collected to reduce the risk of scavenging. Small parts of the carcass were disposed of at the MBK Composter. The area was then scrapped with a grader to remove any additional attractant for wildlife.			
What measures are recommended to prevent future occurrences?			
Road users are reminded to be alert and cautious of wildlife presence along the road and to slow down when an animal has been sighted in the area.			
Report prepared by:	Kate Walker	Reviewed by:	Rowan Woodall



Picture 1 – Arctic Hare at KM153



Picture 2– Arctic Fox at KM153

Wildlife Incident Report Form

Date:	2023-11-06	Time:	1:40AM
Individuals involved:	Felix Quessy-Savard (AEM Environment)		
Species:	Muskox		
Number, gender, age:	1, Adult		
Location (description):	Whale Tail Haul Road km158		
Location (UTM):	14W 0620856 7242566		
Digital photo numbers:	Picture 1		
Describe the incident or accident that occurred. Was there a threat to wildlife or human safety? What was the situation that caused it?			
On November 6 th , 2023, while travelling Northbound along the Whale Tail Haul Road a long haul truck inadvertently struck and killed a muskox that was onto the road.			
Describe any use of wildlife deterrents: Describe any wildlife mortality:			
No wildlife deterrents were used			
Describe any communication with GN-DOE:			
GN-DOE was notified via a phone call on Nov.6 th around 9:10AM with and via an email report.			
What immediate measures were taken to reduce risk or harm?			
The carcass was collected to reduce the risk of scavenging and brought to Baker Lake by the HTO monitors.			
What measures are recommended to prevent future occurrences?			
Road users are reminded to be alert and cautious of wildlife presence along the road and to slow down when an animal has been sighted in the area. An investigation is being conducted to determine the root cause.			
Report prepared by:	Rowan Woodall	Reviewed by:	Rowan Woodall



Picture 1 – Muskox carcass at KM158



2023-11-06 Muskox Mortality KM158 WTHR

Please find the following information as a follow up to the report submitted November 6th, 2023, by Agnico Eagle Meadowbank division.

Incident Description

On Nov. 6th at ~1:40am an unloaded long haul truck (LHT) was travelling northbound along the Whale Tail Haul Road at a rate of 50km/hr. As the driver of the LHT was driving along the haul road a muskox ran onto the road from the shoulder directly into the path of the vehicle. The driver did not have time to react and inadvertently struck and killed the muskox. There were reports of poor visibility in areas along the Whale Tail Haul Road throughout the night. Agnico Environment responded to the scene of the incident to collect the carcass. Agnico Environment notified the conservation officer as soon as possible and made arrangements with HTO to bring the carcass to Government of Nunavut office in Baker Lake.



Incident Location: 14W 0620856 7242566 (KM158)

Personnel Involved:

Felix Quesy-Savard: Agnico Eagle – Environmental Lead Technician: Notified the conservation officer of the incident via phone call and responded on scene to collect the carcass

Russel Toolooktook: Government of Nunavut – Conservation Officer: Was the conservation officer working & received the notification via phone call by Agnico.

Felix Tutanuaq & Wamy Kreelak: HTO – Environmental Monitors: Facilitated the transfer of the carcass from Meadowbank to Baker Lake.

Martin Rousseau: Agnico Eagle – LHT Driver – Driver that was involved in the incident

Facts

- Reports of freezing fog and poor visibility areas throughout the night were reported to the dispatch.
- LHT Driver was not travelling at excessive speeds throughout the duration of their shift.
- LHT Driver is on their regular rotation and was not working overtime.
- Road conditions were compliant.
- Speed restriction was in place at KM151 to KM153 due to Muskox near the road.
- A group of 10 Muskox were observed near the road at KM161 but ~160m away from the road laying down during the morning wildlife survey by AEM Environment.
- Stopping distance of an unloaded LHT is ~50m when traveling 50km/hr

Corrective measures

The carcass was moved into a near by quarry but the road crew until AEM Environment could collect it. As a result of this incident Environment Standdown's will be taking place with all LHT Crews to review the incident. All road users were reminded to be alert and cautious of wildlife's presence along the road. The dispatch will be increasing the frequency of announcements of wildlife along the roadways during Nightshift & Low visibility operations. In addition, periodic validations of the wildlife's locations will be conducted by the road maintenance team during nightshift operations to ensure dispatch and road users are updated on wildlife locations along the road.



Closure






We trust that the above details described appropriately the wildlife mortality that occurred along the Whale Tail Haul Road on Nov. 6th, 2023. Please contact the undersigned should you have any questions.



Rowan Woodall | Environmental Coordinator

rowan.woodall@agnicoeagle.com | Direct 819.759.3555 | 4606744

Agnico Eagle Mines Limited - Meadowbank Division, Suite 540 - Baker Lake, Nunavut, Canada X0C 0A0

agnicoeagle.com     

APPENDIX D

Exemption Permits



Agnico Eagle Mines Limited – Meadowbank Division
Suite 540
Baker Lake, NU
X0C 0A0

August 24, 2023

Re: Exemption Permit to remove/destroy a robin's nest from fuel tank

To Whom It May Concern:

As per the notification from the Agnico Eagle Mines Limited, it is being requested for permission to remove/destroy a raven's nest on a fuel tank. The reason for this request is that nest poses a risk to the proper maintenance and impedes the tank being refilled.

I authorize the removal/destruction of the nest and its contents by Agnico Eagle staff under the supervision of a Conservation Officer. If supervision by a Conservation Officer is not possible, we would request that pictures be provided in lieu of direct supervision by the Conservation Officer.

Ravens and their nests are by law protected. Specifically, by section 72 of the *Wildlife Act* (Nunavut) which states:

Bird's Eggs

72.(1) Unless lawfully harvesting eggs, no person shall injure, molest or destroy an egg of a bird.

Bird's Nest

72.(2) Unless lawfully harvesting down, no person shall injure, molest or destroy
(a) the nest of a bird when the nest is occupied by a bird or its eggs; or
(b) the nest of a bird of prey or prescribed bird.

Also, pursuant to the prescribed matter regulations, ravens are a prescribed bird for the purposes of Section 72(2)(b) of the *Wildlife Act*.



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Department of Environment

Ministère de l'Environnement

Wildlife Destruction Authorization Form

In accordance with section 25 of the *Wildlife Act*, I, Brad McInnes, a Conservation Officer in Nunavut, authorize Meadow Bank Environment Division of Agnico Eagle Gold mine in Nunavut, Canada.

(Name of Person)

(Address of Person)

to destroy the following wildlife:

Species: 3 Wolves

Location: MeadowBank Mine site

Reason wildlife is to be destroyed: Problem Wildlife

Equipment to be used to destroy the wildlife: Rifle or shot gun

Brad McInnes [Signature]

Officer Signature

Conservation Officer III

Position

January 22 2023

Date



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Department of Environment

Ministère de l'Environnement

Wildlife Destruction Authorization Form

In accordance with section 25 of the *Wildlife Act*, I, Brad McInnes, a Conservation Officer in Nunavut, authorize Meadowbank Environment Division of Agnico Eagle Gold mine in Nunavut, Canada.

(Name of Person)

(Address of Person)

to destroy the following wildlife:

Species: 2 Wolverines

Location: Meadowbank Mine site

Reason wildlife is to be destroyed: Problem Wildlife

Equipment to be used to destroy the wildlife: Rifle or shot gun

Brad McInnes

Officer Signature

Conservation officer III

Position

January 16 / 2023

Date

APPENDIX E

Helicopter Flights

Flight Range	Season	Aircraft	Date	Flight Report Number	Flight Leg	Flight Code	Flight Type	Low Flight Permissible?	Mean Height Lower Than Restriction?	Comment Justification for Low Flight	Mean Height Above Ground (m)
Short-Range	Spring	UIT	2023-04-04	320134	1	CrewChg	Passenger	No	Yes		276.7
Short-Range	Spring	UIT	2023-04-05	320452	1	CrewChg	Passenger	No	No		337.6
Short-Range	Spring	UIT	2023-04-05	320452	2	CrewChg	Passenger	No	Yes		105.7
Short-Range	Spring	UIT	2023-04-06	320857	1	CrewChg	Passenger	No	No		355.0
Short-Range	Spring	UIT	2023-04-07	321142	1	CrewChg	Passenger	No	No		466.6
Short-Range	Spring	UIT	2023-04-07	321142	11	DrillServ	Slinging	Yes	No	Slinging	352.6
Short-Range	Spring	UIT	2023-04-07	321142	12	CrewChg	Passenger	No	No		446.2
Short-Range	Spring	UIT	2023-04-07	321142	2	Core	Slinging	Yes	No	Slinging	361.0
Short-Range	Spring	UIT	2023-04-07	321142	4	PaxLoc	Passenger	No	No		446.3
Short-Range	Spring	UIT	2023-04-07	321142	6	PaxLoc	Passenger	No	No		512.0
Short-Range	Spring	UIT	2023-04-07	321142	8	PaxLoc	Passenger	No	No		432.6
Short-Range	Spring	UIT	2023-04-07	321142	9	PaxLoc	Passenger	No	No		490.6
Short-Range	Spring	UIT	2023-04-08	321271	1	CrewChg	Passenger	No	No		439.3
Short-Range	Spring	UIT	2023-04-08	321271	3	CrewChg	Passenger	No	No		483.2
Short-Range	Spring	UIT	2023-04-10	321928	2	Wildlife	Wildlife	Yes	No	Environmental Survey	930.7
Short-Range	Spring	UIT	2023-04-10	321928	3	CrewChg	Passenger	No	No		404.2
Short-Range	Spring	UIT	2023-04-11	322369	1	CrewChg	Passenger	No	No		479.8
Short-Range	Spring	UIT	2023-04-11	322369	3	CrewChg	Passenger	No	No		441.8
Short-Range	Spring	UIT	2023-04-12	322846	1	CrewChg	Passenger	No	No		507.0
Short-Range	Spring	UIT	2023-04-12	322846	3	CrewChg	Passenger	No	No		502.1
Short-Range	Spring	UIT	2023-04-12	322846	2	Reposition	Slinging	Yes	Yes	Slinging	Full flight too low to distinguish from takeoff/landing
Short-Range	Spring	UIT	2023-04-13	323314	1	CrewChg	Passenger	No	No		522.9
Short-Range	Spring	UIT	2023-04-13	323314	3	CrewChg	Passenger	No	No		459.0
Short-Range	Spring	UIT	2023-04-14	323728	1	CrewChg	Passenger	No	No		448.0
Short-Range	Spring	UIT	2023-04-14	323728	3	PaxLoc	Passenger	No	No		635.0
Short-Range	Spring	UIT	2023-04-14	323728	4	PaxLoc	Passenger	No	No		641.9
Short-Range	Spring	UIT	2023-04-14	323728	5	CrewChg	Passenger	No	No		644.7
Short-Range	Spring	UIT	2023-04-14	323728	6	Reposition	Slinging	Yes	Yes	Slinging	Full flight too low to distinguish from takeoff/landing
Short-Range	Spring	UIT	2023-04-15	323977	1	CrewChg	Passenger	No	No		533.5
Short-Range	Spring	UIT	2023-04-15	323977	3	CrewChg	Passenger	No	No		549.3
Short-Range	Spring	UIT	2023-04-16	324244	1	CrewChg	Passenger	No	No		556.0
Short-Range	Spring	UIT	2023-04-16	324244	2	CrewChg	Passenger	No	No		570.8
Short-Range	Spring	UIT	2023-04-17	324613	1	CrewChg	Passenger	No	No		567.3
Short-Range	Spring	UIT	2023-04-17	324613	3	CrewChg	Passenger	No	No		495.0
Short-Range	Spring	UIT	2023-04-18	324997	1	CrewChg	Passenger	No	No		488.6
Short-Range	Spring	UIT	2023-04-18	324997	2	CrewChg	Passenger	No	No		514.2
Short-Range	Spring	UIT	2023-04-19	325363	1	CrewChg	Passenger	No	No		474.2
Short-Range	Spring	UIT	2023-04-19	325363	2	CrewChg	Passenger	No	Yes		186.8
Short-Range	Spring	UIT	2023-04-20	325813	1	CrewChg	Passenger	No	Yes		218.1
Short-Range	Spring	UIT	2023-04-20	325813	2	Medevac	Medevac	Yes	Yes		234.7
Short-Range	Spring	UIT	2023-04-20	325813	3	Medevac	Medevac	Yes	Yes		234.0
Short-Range	Spring	UIT	2023-04-20	325813	4	CrewChg	Passenger	No	No		464.2
Short-Range	Spring	UIT	2023-04-21	326209	1	CrewChg	Passenger	No	No		457.0
Short-Range	Spring	UIT	2023-04-21	326209	3	CrewChg	Passenger	No	Yes		80.6
Short-Range	Spring	UIT	2023-04-22	326410	1	CrewChg	Passenger	No	No		509.8
Short-Range	Spring	UIT	2023-04-23	326590	1	CrewChg	Passenger	No	No		488.8
Short-Range	Spring	UIT	2023-04-23	326590	2	CrewChg	Passenger	No	No		532.5
Short-Range	Spring	UIT	2023-04-24	326995	1	CrewChg	Passenger	No	Yes		274.7
Short-Range	Spring	UIT	2023-04-24	326995	2	CrewChg	Passenger	No	No		445.8
Short-Range	Spring	UIT	2023-04-24	326995	3	Reposition	Slinging	Yes	Yes	Slinging	Full flight too low to distinguish from takeoff/landing
Short-Range	Spring	UIT	2023-04-25	327367	1	CrewChg	Passenger	No	No		417.3
Short-Range	Spring	UIT	2023-04-25	327367	3	CrewChg	Passenger	No	No		454.6
Short-Range	Spring	UIT	2023-04-25	327367	4	Reposition	Slinging	Yes	Yes	Slinging	Full flight too low to distinguish from takeoff/landing

Flight Range	Season	Aircraft	Date	Flight Report Number	Flight Leg	Flight Code	Flight Type	Low Flight Permissible?	Mean Height Lower Than Restriction?	Comment Justification for Low Flight	Mean Height Above Ground (m)
Short-Range	Spring	UIT	2023-04-26	327850	1	CrewChg	Passenger	No	Yes		93.7
Short-Range	Spring	UIT	2023-04-27	328315	1	CrewChg	Passenger	No	Yes		141.1
Short-Range	Spring	UIT	2023-04-27	328315	2	Core	Slinging	Yes	Yes	Slinging	147.2
Short-Range	Spring	UIT	2023-04-27	328315	3	CrewChg	Passenger	No	Yes		75.9
Short-Range	Spring	UIT	2023-04-28	328723	1	CrewChg	Passenger	No	Yes		117.2
Short-Range	Spring	UIT	2023-04-28	328723	3	CrewChg	Passenger	No	Yes		292.8
Short-Range	Spring	UIT	2023-04-29	329113	1	CrewChg	Passenger	No	No		354.4
Short-Range	Spring	UIT	2023-04-29	329113	3	CrewChg	Passenger	No	Yes		198.3
Short-Range	Spring	UIT	2023-04-30	329185	1	CrewChg	Passenger	No	No		341.7
Short-Range	Spring	UIT	2023-04-30	329185	3	CrewChg	Passenger	No	Yes		261.7
Short-Range	Spring	UIT	2023-05-01	329557	1	CrewChg	Passenger	No	Yes		96.0
Short-Range	Spring	UIT	2023-05-01	329557	4	Medevac	Medevac	Yes	Yes		73.1
Short-Range	Spring	UIT	2023-05-01	329557	5	CrewChg	Passenger	No	Yes		259.5
Short-Range	Spring	UIT	2023-05-03	330793	1	CrewChg	Passenger	No	Yes		118.9
Short-Range	Spring	UIT	2023-05-03	330793	3	CrewChg	Passenger	No	Yes		117.2
Short-Range	Spring	UIT	2023-05-04	331123	1	CrewChg	Passenger	No	Yes		244.1
Short-Range	Spring	UIT	2023-05-05	331414	1	CrewChg	Passenger	No	No		384.0
Short-Range	Spring	UIT	2023-05-07	311960	1	CrewChg	Passenger	No	No		366.6
Short-Range	Spring	UIT	2023-05-07	311960	2	Core	Slinging	Yes	Yes	Slinging	214.4
Short-Range	Spring	UIT	2023-05-07	311960	3	Move	Slinging	Yes	Yes	Slinging	93.6
Short-Range	Spring	C-FGAV	2023-05-21	338781	1	CrewChg	Passenger	No	Yes		235.6
Short-Range	Spring	C-FGAV	2023-05-21	338781	3	PaxLoc	Passenger	No	Yes		169.0
Short-Range	Spring	C-FGAV	2023-05-21	338781	4	PaxLoc	Passenger	Yes	Yes	Site Inspection	179.5
Short-Range	Spring	C-FGAV	2023-05-21	338781	5	Core	Slinging	Yes	Yes	Slinging	202.7
Short-Range	Spring	C-FGAV	2023-05-21	338781	6	CrewChg	Passenger	No	Yes		294.2
Short-Range	Spring	C-FGAV	2023-05-22	339102	1	CrewChg	Passenger	No	Yes		103.3
Short-Range	Spring	C-FGAV	2023-05-22	339102	2	PaxLoc	Passenger	Yes	Yes	Weather	88.1
Short-Range	Spring	C-FGAV	2023-05-22	339102	3	Move	Slinging	Yes	Yes	Slinging	81.5
Short-Range	Spring	C-FGAV	2023-05-22	339102	4	Move	Slinging	Yes	Yes	Slinging	134.7
Short-Range	Spring	C-FGAV	2023-05-22	339102	5	Move	Slinging	Yes	Yes	Slinging	69.9
Short-Range	Spring	C-FGAV	2023-05-22	339102	6	Floor	Slinging	Yes	Yes	Slinging	90.5
Short-Range	Spring	C-FGAV	2023-05-22	339102	7	PaxLoc	Passenger	No	Yes		247.1
Short-Range	Spring	C-FGAV	2023-05-22	339102	8	CrewChg	Passenger	Yes	Yes	Weather	286.5
Short-Range	Spring	C-FGAV	2023-05-23	339614	1	CrewChg	Passenger	No	Yes		249.8
Short-Range	Spring	C-FGAV	2023-05-23	339614	2	Core	Slinging	Yes	Yes	Slinging	225.3
Short-Range	Spring	C-FGAV	2023-05-23	339614	4	PaxLoc	Passenger	No	Yes		223.3
Short-Range	Spring	C-FGAV	2023-05-23	339614	5	PaxLoc	Passenger	Yes	Yes	Site Inspection	243.8
Short-Range	Spring	C-FGAV	2023-05-23	339614	6	CrewChg	Passenger	No	Yes		236.1
Short-Range	Spring	C-FGAV	2023-05-24	340389	1	Core	Slinging	Yes	No	Slinging	315.6
Short-Range	Spring	C-FGAV	2023-05-24	340389	3	PaxLoc	Passenger	No	No		463.7
Short-Range	Spring	C-FGAV	2023-05-24	340389	4	PaxLoc	Passenger	No	Yes		164.5
Short-Range	Spring	C-FGAV	2023-05-24	340389	5	Move	Slinging	Yes	Yes	Slinging	98.4
Short-Range	Spring	C-FGAV	2023-05-24	340389	6	Move	Slinging	Yes	Yes	Slinging	123.1
Short-Range	Spring	C-FGAV	2023-05-24	340389	7	PaxLoc	Passenger	No	No		381.2
Short-Range	Spring	C-FGAV	2023-05-24	340389	9	CrewChg	Passenger	No	No		355.1
Short-Range	Spring	C-FGAV	2023-05-24	340389	2	Reposition	Slinging	Yes	Yes	Slinging	Full flight too low to distinguish from takeoff/landing
Short-Range	Spring	C-FGAV	2023-05-24	340389	8	Reposition	Slinging	Yes	Yes	Slinging	Full flight too low to distinguish from takeoff/landing
Short-Range	Spring	C-FGAV	2023-05-25	341017	1	CrewChg	Passenger	Yes	Yes	Weather	117.2
Short-Range	Spring	C-FGAV	2023-05-25	341017	5	Core	Slinging	Yes	Yes	Slinging	212.7
Short-Range	Spring	C-FGAV	2023-05-25	341017	6	CrewChg	Passenger	No	No		316.4
Short-Range	Summer	C-FGAV	2023-05-26	341590	5	PaxLoc	Passenger	No	Yes		147.9
Short-Range	Summer	C-FGAV	2023-05-26	341590	6	Move	Slinging	Yes	Yes	Slinging	138.9
Short-Range	Summer	C-FGAV	2023-05-26	341590	7	Move	Slinging	Yes	Yes	Slinging	150.8
Short-Range	Summer	C-FGAV	2023-05-27	342007	1	Move	Slinging	Yes	Yes	Slinging	163.5
Short-Range	Summer	C-FGAV	2023-05-27	342007	2	Move	Slinging	Yes	Yes	Slinging	150.2
Short-Range	Summer	C-FGAV	2023-05-27	342007	3	Move	Slinging	Yes	Yes	Slinging	205.9

Flight Range	Season	Aircraft	Date	Flight Report Number	Flight Leg	Flight Code	Flight Type	Low Flight Permissible?	Mean Height Lower Than Restriction?	Comment Justification for Low Flight	Mean Height Above Ground (m)
Short-Range	Summer	C-FGAV	2023-05-27	342007	4	Move	Slinging	Yes	Yes	Slinging	195.5
Short-Range	Summer	C-FGAV	2023-05-27	342007	5	Move	Slinging	Yes	Yes	Slinging	185.1
Short-Range	Summer	C-FGAV	2023-05-27	342007	6	Move	Slinging	Yes	Yes	Slinging	183.5
Short-Range	Summer	C-FGAV	2023-05-27	342007	7	Reposition	Slinging	Yes	Yes	Slinging	Full flight too low to distinguish from takeoff/landing
Short-Range	Summer	C-FGAV	2023-05-28	342286	1	Move	Slinging	Yes	Yes	Slinging	157.6
Short-Range	Summer	C-FGAV	2023-05-28	342286	2	Move	Slinging	Yes	Yes	Slinging	166.6
Short-Range	Summer	C-FGAV	2023-05-28	342286	3	Move	Slinging	Yes	Yes	Slinging	150.6
Short-Range	Summer	UIT	2023-05-29	342973	3	Wildlife	Ferry	Yes	Yes	Environmental Survey	299.0
Short-Range	Summer	UIT	2023-05-29	342973	5	Ferry	Ferry	No	No		386.4
Short-Range	Summer	C-FGAV	2023-05-31	408322	1	Reposition	Slinging	Yes	No	Slinging	611.2
Short-Range	Summer	C-FGAV	2023-06-02	587407	1	PaxLoc	Passenger	Yes	Yes	Weather	65.4
Short-Range	Summer	C-FGAV	2023-06-02	587407	3	Reposition	Slinging	Yes	Yes	Slinging	Full flight too low to distinguish from takeoff/landing
Short-Range	Summer	CFNDN	2023-06-20	598824	2	PaxLoc	Passenger	No	Yes		89.5
Short-Range	Summer	CFNDN	2023-06-20	598824	3	PaxLoc	Passenger	No	Yes		151.4
Short-Range	Summer	CFNDN	2023-06-21	598833	1	PaxLoc	Passenger	No	Yes		145.8
Short-Range	Summer	CFNDN	2023-06-21	598833	2	PaxLoc	Passenger	No	Yes		111.9
Short-Range	Summer	CFNDN	2023-06-21	598833	3	PaxLoc	Passenger	No	Yes		112.6
Short-Range	Summer	CFNDN	2023-06-21	598833	4	PaxLoc	Passenger	No	Yes		173.2
Short-Range	Summer	CFNDN	2023-06-21	598833	5	PaxLoc	Passenger	No	Yes		145.3
Short-Range	Summer	CFNDN	2023-06-21	598833	6	PaxLoc	Passenger	No	Yes		174.8
Short-Range	Summer	CFNDN	2023-06-23	599715	1	PaxLoc	Passenger	No	Yes		243.3
Short-Range	Summer	CFNDN	2023-06-23	599715	2	PaxLoc	Passenger	No	Yes		204.0
Short-Range	Summer	CFNDN	2023-06-25	600858	1	PaxLoc	Passenger	No	Yes		167.3
Short-Range	Summer	CFNDN	2023-06-25	600858	2	PaxLoc	Passenger	No	Yes		134.6
Short-Range	Summer	CFNDN	2023-06-26	601413	1	PaxLoc	Passenger	No	Yes		232.3
Short-Range	Summer	CFNDN	2023-06-26	601413	2	PaxLoc	Passenger	No	Yes		276.5
Short-Range	Summer	CFNDN	2023-06-27	602505	1	Core	Slinging	Yes	Yes	Slinging	79.4
Short-Range	Summer	CFNDN	2023-06-28	603156	1	PaxLoc	Passenger	No	Yes		210.4
Short-Range	Summer	CFNDN	2023-06-28	603156	4	PaxLoc	Passenger	No	Yes		125.6
Short-Range	Summer	CFNDN	2023-06-29	603840	2	PaxLoc	Passenger	No	Yes		164.5
Short-Range	Summer	CFNDN	2023-06-29	603840	3	PaxLoc	Passenger	No	Yes		185.6
Short-Range	Summer	CFNDN	2023-06-29	603840	4	PaxLoc	Passenger	No	Yes		174.1
Short-Range	Summer	CFNDN	2023-06-29	603840	5	PaxLoc	Passenger	No	Yes		156.9
Short-Range	Summer	CFNDN	2023-06-29	603840	6	PaxLoc	Passenger	No	Yes		252.5
Short-Range	Summer	CFNDN	2023-06-29	603840	7	PaxLoc	Passenger	No	Yes		241.1
Short-Range	Summer	CFNDN	2023-06-29	603840	1	Reposition	Slinging	Yes	Yes	Slinging	Full flight too low to distinguish from takeoff/landing
Short-Range	Summer	CFNDN	2023-06-30	604095	10	PaxLoc	Passenger	No	Yes		221.6
Short-Range	Summer	CFNDN	2023-06-30	604095	3	PaxLoc	Passenger	No	Yes		123.7
Short-Range	Summer	CFNDN	2023-06-30	604095	4	PaxLoc	Passenger	No	Yes		37.1
Short-Range	Summer	CFNDN	2023-06-30	604095	7	PaxLoc	Passenger	No	Yes		103.9
Short-Range	Summer	CFNDN	2023-06-30	604095	9	PaxLoc	Passenger	No	Yes		131.8
Short-Range	Summer	CFNDN	2023-06-30	604095	1	Reposition	Slinging	Yes	Yes	Slinging	Full flight too low to distinguish from takeoff/landing
Short-Range	Summer	CFNDN	2023-06-30	604095	8	PaxLoc	Passenger	No	Yes		Full flight too low to distinguish from takeoff/landing
Short-Range	Summer	CFNDN	2023-07-01	605001	1	PaxLoc	Passenger	No	Yes		174.1
Short-Range	Summer	CFNDN	2023-07-01	605001	3	PaxLoc	Passenger	No	Yes		217.4
Short-Range	Summer	CFNDN	2023-07-01	605001	4	PaxLoc	Passenger	No	Yes		121.8
Short-Range	Summer	CFNDN	2023-07-01	605001	5	PaxLoc	Passenger	No	Yes		253.0
Short-Range	Summer	CFNDN	2023-07-01	605001	6	PaxLoc	Passenger	No	Yes		119.0
Short-Range	Summer	CFNDN	2023-07-01	605001	8	PaxLoc	Passenger	No	Yes		144.4
Short-Range	Summer	CFNDN	2023-07-02	605517	2	PaxLoc	Passenger	No	Yes		144.7

Flight Range	Season	Aircraft	Date	Flight Report Number	Flight Leg	Flight Code	Flight Type	Low Flight Permissible?	Mean Height Lower Than Restriction?	Comment Justification for Low Flight	Mean Height Above Ground (m)
Short-Range	Summer	CFNDN	2023-07-02	605517	3	PaxLoc	Passenger	No	Yes		78.3
Short-Range	Summer	CFNDN	2023-07-03	606033	1	PaxLoc	Passenger	No	Yes		209.6
Short-Range	Summer	CFNDN	2023-07-03	606033	2	PaxLoc	Passenger	No	Yes		165.5
Short-Range	Summer	CFNDN	2023-07-03	606033	3	PaxLoc	Passenger	No	Yes		115.8
Short-Range	Summer	CFNDN	2023-07-03	606033	4	PaxLoc	Passenger	No	Yes		121.6
Short-Range	Summer	CFNDN	2023-07-05	607410	1	PaxLoc	Passenger	No	Yes		114.0
Short-Range	Summer	CFNDN	2023-07-05	607410	2	PaxLoc	Passenger	No	Yes		131.1
Short-Range	Summer	CFNDN	2023-07-05	607410	4	PaxLoc	Passenger	No	Yes		130.3
Short-Range	Summer	CFNDN	2023-07-05	607410	3	Reposition	Slinging	Yes	Yes	Full flight too low to distinguish from takeoff/landing	
Short-Range	Summer	CFNDN	2023-07-06	607713	3	PaxLoc	Passenger	No	Yes		219.5
Short-Range	Summer	CFNDN	2023-07-07	608349	1	PaxLoc	Passenger	No	Yes		171.1
Short-Range	Summer	CFNDN	2023-07-07	608349	2	PaxLoc	Passenger	No	Yes		133.9
Short-Range	Summer	CFNDN	2023-07-07	608349	3	PaxLoc	Passenger	No	Yes		114.6
Short-Range	Summer	CFNDN	2023-07-07	608349	4	PaxLoc	Passenger	No	Yes		227.5
Short-Range	Summer	CFNDN	2023-07-08	609303	1	PaxLoc	Passenger	No	Yes		145.7
Short-Range	Summer	CFNDN	2023-07-08	609303	2	PaxLoc	Passenger	No	Yes		187.5
Short-Range	Summer	CFNDN	2023-07-09	609516	4	PaxLoc	Passenger	No	Yes		91.9
Short-Range	Summer	CFNDN	2023-07-09	609516	1	Reposition	Slinging	Yes	Yes	Full flight too low to distinguish from takeoff/landing	
Short-Range	Summer	CFNDN	2023-07-10	610088	1	PaxLoc	Passenger	No	Yes		214.6
Short-Range	Summer	CFNDN	2023-07-10	610088	2	PaxLoc	Passenger	No	Yes		161.9
Short-Range	Summer	CFNDN	2023-07-10	610088	3	Reposition	Slinging	Yes	Yes	Full flight too low to distinguish from takeoff/landing	
Short-Range	Summer	CFNDN	2023-07-11	610758	1	PaxLoc	Passenger	No	Yes		241.9
Short-Range	Summer	CFNDN	2023-07-11	610758	3	Reposition	Slinging	Yes	Yes		23.2
Short-Range	Summer	CFNDN	2023-07-11	610758	6	PaxLoc	Passenger	No	Yes		57.1
Short-Range	Summer	CFNDN	2023-07-11	610758	7	PaxLoc	Passenger	No	Yes		89.7
Short-Range	Summer	CFNDN	2023-07-11	610758	2	Reposition	Slinging	Yes	Yes	Full flight too low to distinguish from takeoff/landing	
Short-Range	Summer	CFNDN	2023-07-13	612051	2	Pax	Passenger	No	Yes		195.3
Short-Range	Summer	CFNDN	2023-07-13	612051	3	PaxLoc	Passenger	No	Yes		223.4
Short-Range	Summer	CFNDN	2023-07-13	612051	1	Reposition	Slinging	Yes	Yes	Full flight too low to distinguish from takeoff/landing	
Short-Range	Summer	CFNDN	2023-07-14	612696	1	Pax	Passenger	No	Yes		104.1
Short-Range	Summer	CFNDN	2023-07-14	612696	2	Reposition	Slinging	Yes	Yes		20.1
Short-Range	Summer	CFNDN	2023-07-14	612696	3	Pax	Passenger	No	Yes		225.7
Short-Range	Summer	CFNDN	2023-07-14	612696	4	Pax	Passenger	No	Yes		112.7
Short-Range	Summer	CFNDN	2023-07-14	612696	6	Pax	Passenger	No	Yes		45.2
Short-Range	Summer	CFNDN	2023-07-14	612696	7	PaxLoc	Passenger	No	Yes		130.3
Short-Range	Summer	CFNDN	2023-07-15	613317	2	PaxLoc	Passenger	No	Yes		143.7
Short-Range	Summer	CFNDN	2023-07-15	613317	3	Reposition	Slinging	Yes	Yes		23.2
Short-Range	Summer	CFNDN	2023-07-15	613317	4	PaxLoc	Passenger	No	Yes		128.3
Short-Range	Summer	CFNDN	2023-07-15	613317	5	Reposition	Slinging	Yes	Yes		20.8
Short-Range	Summer	CFNDN	2023-07-15	613317	1	Reposition	Slinging	Yes	Yes	Full flight too low to distinguish from takeoff/landing	
Short-Range	Summer	CFNDN	2023-07-16	613785	1	PaxLoc	Passenger	No	Yes		104.8
Short-Range	Summer	CFNDN	2023-07-16	613785	2	PaxLoc	Passenger	No	Yes		119.3
Short-Range	Summer	CFNDN	2023-07-16	613785	3	PaxLoc	Passenger	No	Yes		162.5
Short-Range	Summer	CFNDN	2023-07-16	613785	5	PaxLoc	Passenger	No	Yes		126.8
Short-Range	Summer	CFNDN	2023-07-16	613785	7	PaxLoc	Passenger	No	Yes		86.0
Short-Range	Summer	CFNDN	2023-07-17	614478	1	PaxLoc	Passenger	No	Yes		86.5
Short-Range	Summer	CFNDN	2023-07-17	614478	2	PaxLoc	Passenger	No	Yes		103.3
Short-Range	Summer	CFNDN	2023-07-17	614478	3	Reposition	Slinging	Yes	Yes		22.3
Short-Range	Summer	CFNDN	2023-07-19	615783	1	PaxLoc	Passenger	No	Yes		185.0
Short-Range	Summer	CFNDN	2023-07-19	615783	4	PaxLoc	Passenger	No	Yes		278.9
Short-Range	Summer	CFNDN	2023-07-20	616494	1	PaxLoc	Passenger	No	Yes		203.8
Short-Range	Summer	CFNDN	2023-07-20	616494	2	Reposition	Slinging	Yes	Yes		22.6

Flight Range	Season	Aircraft	Date	Flight Report Number	Flight Leg	Flight Code	Flight Type	Low Flight Permissible?	Mean Height Lower Than Restriction?	Comment Justification for Low Flight	Mean Height Above Ground (m)
Short-Range	Summer	CFNDN	2023-07-20	616494	3	PaxLoc	Passenger	No	Yes		162.7
Short-Range	Summer	CFNDN	2023-07-20	616494	4	PaxLoc	Passenger	No	Yes		196.0
Short-Range	Summer	CFNDN	2023-07-21	617184	3	PaxLoc	Passenger	No	Yes		159.6
Short-Range	Summer	CFNDN	2023-07-21	617184	4	PaxLoc	Passenger	No	Yes		168.1
Short-Range	Summer	CFNDN	2023-07-21	617184	5	PaxLoc	Passenger	No	Yes		152.8
Short-Range	Summer	CFNDN	2023-07-22	617829	1	PaxLoc	Passenger	No	Yes		205.4
Short-Range	Summer	CFNDN	2023-07-22	617829	2	PaxLoc	Passenger	No	Yes		84.7
Short-Range	Summer	CFNDN	2023-07-22	617829	3	PaxLoc	Passenger	No	Yes		65.1
Short-Range	Summer	CFNDN	2023-07-22	617829	4	Reposition	Slinging	Yes	Yes		21.1
Short-Range	Summer	CFNDN	2023-07-23	618453	1	Reposition	Slinging	Yes	Yes		29.1
Short-Range	Summer	CFNDN	2023-07-23	618453	4	PaxLoc	Passenger	No	Yes		92.1
Short-Range	Summer	CFNDN	2023-07-23	618453	5	PaxLoc	Passenger	No	Yes		63.9
Short-Range	Summer	CFNDN	2023-07-26	620635	1	PaxLoc	Passenger	No	Yes		263.3
Short-Range	Summer	CFNDN	2023-07-26	620635	2	PaxLoc	Passenger	No	Yes		153.4
Short-Range	Summer	CFNDN	2023-07-27	621361	1	PaxLoc	Passenger	No	No		317.0
Short-Range	Summer	CFNDN	2023-07-27	621361	3	PaxLoc	Passenger	No	Yes		280.2
Short-Range	Summer	CFNDN	2023-07-27	621361	5	PaxLoc	Passenger	No	Yes		199.4
Short-Range	Summer	CFNDN	2023-07-27	621361	6	PaxLoc	Passenger	No	Yes		286.3
Short-Range	Summer	CFNDN	2023-07-28	621940	1	PaxLoc	Passenger	No	Yes		233.5
Short-Range	Summer	CFNDN	2023-07-28	621940	2	PaxLoc	Passenger	No	Yes		93.3
Short-Range	Summer	CFNDN	2023-07-28	621940	3	PaxLoc	Passenger	No	Yes		138.5
Short-Range	Summer	CFNDN	2023-07-28	621940	4	PaxLoc	Passenger	No	Yes		53.7
Short-Range	Summer	CFNDN	2023-07-28	621940	5	PaxLoc	Passenger	No	Yes		79.7
Short-Range	Summer	CFNDN	2023-07-28	621940	6	PaxLoc	Passenger	No	No		331.9
Short-Range	Summer	CFNDN	2023-07-29	622549	10	PaxLoc	Passenger	No	Yes		177.6
Short-Range	Summer	CFNDN	2023-07-29	622549	3	PaxLoc	Passenger	No	Yes		135.9
Short-Range	Summer	CFNDN	2023-07-29	622549	4	PaxLoc	Passenger	No	Yes		190.4
Short-Range	Summer	CFNDN	2023-07-29	622549	5	PaxLoc	Passenger	No	Yes		243.8
Short-Range	Summer	CFNDN	2023-07-29	622549	6	PaxLoc	Passenger	No	No		396.3
Short-Range	Summer	CFNDN	2023-07-29	622549	7	PaxLoc	Passenger	No	Yes		156.0
Short-Range	Summer	CFNDN	2023-07-29	622549	8	PaxLoc	Passenger	No	No		386.2
Short-Range	Summer	CFNDN	2023-07-29	622549	9	PaxLoc	Passenger	No	Yes		276.7
Short-Range	Summer	CFNDN	2023-07-30	623143	1	PaxLoc	Passenger	No	Yes		108.8
Short-Range	Summer	CFNDN	2023-07-30	623143	2	PaxLoc	Passenger	No	No		341.3
Short-Range	Summer	CFNDN	2023-07-30	623143	3	Ferry	Ferry	No	Yes		260.6
Short-Range	Summer	CFNDN	2023-07-30	623143	4	PaxLoc	Passenger	No	Yes		259.6
Short-Range	Summer	CFNDN	2023-07-30	623143	5	Ferry	Ferry	No	No		322.9
Short-Range	Summer	CFNDN	2023-07-30	623143	6	PaxLoc	Passenger	No	No		417.2
Short-Range	Summer	CFNDN	2023-07-30	623143	7	PaxLoc	Passenger	No	Yes		169.6
Short-Range	Summer	CFNDN	2023-07-30	623143	8	PaxLoc	Passenger	No	Yes		191.5
Short-Range	Summer	CFNDN	2023-07-31	623830	1	PaxLoc	Passenger	No	Yes		203.7
Short-Range	Summer	CFNDN	2023-07-31	623830	10	PaxLoc	Passenger	No	Yes		178.6
Short-Range	Summer	CFNDN	2023-07-31	623830	2	PaxLoc	Passenger	No	Yes		202.5
Short-Range	Summer	CFNDN	2023-07-31	623830	3	PaxLoc	Passenger	No	No		303.5
Short-Range	Summer	CFNDN	2023-07-31	623830	5	PaxLoc	Passenger	No	Yes		269.2
Short-Range	Summer	CFNDN	2023-07-31	623830	6	PaxLoc	Passenger	No	Yes		235.5
Short-Range	Summer	CFNDN	2023-07-31	623830	9	Ferry	Ferry	No	Yes		115.7
Short-Range	Summer	CFNDN	2023-08-01	624580	1	PaxLoc	Passenger	No	Yes		169.8
Short-Range	Summer	CFNDN	2023-08-01	624580	2	PaxLoc	Passenger	No	Yes		204.0
Short-Range	Summer	CFNDN	2023-08-01	624580	3	PaxLoc	Passenger	No	Yes		219.5
Short-Range	Summer	CFNDN	2023-08-01	624580	4	PaxLoc	Passenger	No	Yes		299.6
Short-Range	Summer	CFNDN	2023-08-02	625363	2	Reposition	Slinging	Yes	Yes	Slinging	20.7
Short-Range	Summer	CFNDN	2023-08-02	625363	3	Ferry	Ferry	No	Yes		154.0
Short-Range	Summer	CFNDN	2023-08-02	625363	4	PaxLoc	Passenger	No	Yes		131.4
Short-Range	Summer	CFNDN	2023-08-02	625363	5	PaxLoc	Passenger	No	Yes		102.3
Short-Range	Summer	CFNDN	2023-08-02	625363	6	Floor	Slinging	Yes	Yes	Slinging	155.5
Short-Range	Summer	CFNDN	2023-08-02	625363	7	Floor	Slinging	Yes	Yes	Slinging	191.4
Short-Range	Summer	CFNDN	2023-08-02	625363	8	PaxLoc	Passenger	No	Yes		164.4
Short-Range	Summer	CFNDN	2023-08-02	625363	9	Reposition	Slinging	Yes	Yes	Slinging	113.9

Flight Range	Season	Aircraft	Date	Flight Report Number	Flight Leg	Flight Code	Flight Type	Low Flight Permissible?	Mean Height Lower Than Restriction?	Comment Justification for Low Flight	Mean Height Above Ground (m)
Short-Range	Summer	CFNDN	2023-08-02	625363	1	Reposition	Slinging	Yes	Yes	Slinging	Full flight too low to distinguish from takeoff/landing
Short-Range	Summer	CFNDN	2023-08-02	625363	10	Reposition	Slinging	Yes	Yes	Slinging	Full flight too low to distinguish from takeoff/landing
Short-Range	Summer	CFNDN	2023-08-03	626074	11	PaxLoc	Passenger	No	Yes		123.7
Short-Range	Summer	CFNDN	2023-08-03	626074	13	PaxLoc	Passenger	No	Yes		171.9
Short-Range	Summer	CFNDN	2023-08-03	626074	14	Move	Slinging	Yes	Yes	Slinging	128.0
Short-Range	Summer	CFNDN	2023-08-03	626074	15	PaxLoc	Passenger	No	Yes		182.0
Short-Range	Summer	CFNDN	2023-08-03	626074	16	PaxLoc	Passenger	No	Yes		165.7
Short-Range	Summer	CFNDN	2023-08-03	626074	3	Move	Slinging	Yes	Yes	Slinging	147.7
Short-Range	Summer	CFNDN	2023-08-03	626074	4	PaxLoc	Passenger	No	Yes		181.2
Short-Range	Summer	CFNDN	2023-08-03	626074	5	Move	Slinging	Yes	Yes	Slinging	153.7
Short-Range	Summer	CFNDN	2023-08-03	626074	6	Move	Slinging	Yes	Yes	Slinging	162.3
Short-Range	Summer	CFNDN	2023-08-03	626074	7	Move	Slinging	Yes	Yes	Slinging	167.6
Short-Range	Summer	CFNDN	2023-08-03	626074	8	Move	Slinging	Yes	Yes	Slinging	149.5
Short-Range	Summer	CFNDN	2023-08-03	626074	9	PaxLoc	Passenger	No	Yes		156.3
Short-Range	Summer	CFNDN	2023-08-03	626074	1	PaxLoc	Passenger	No	Yes		Full flight too low to distinguish from takeoff/landing
Short-Range	Summer	CFNDN	2023-08-04	626620	1	CrewChg	Passenger	No	Yes		128.8
Short-Range	Summer	CFNDN	2023-08-04	626620	10	PaxLoc	Passenger	No	Yes		212.9
Short-Range	Summer	CFNDN	2023-08-04	626620	11	PaxLoc	Passenger	No	Yes		152.3
Short-Range	Summer	CFNDN	2023-08-04	626620	12	DrillServ	Slinging	Yes	Yes	Slinging	153.0
Short-Range	Summer	CFNDN	2023-08-04	626620	13	DrillServ	Slinging	Yes	Yes	Slinging	114.5
Short-Range	Summer	CFNDN	2023-08-04	626620	14	PaxLoc	Passenger	No	Yes		144.4
Short-Range	Summer	CFNDN	2023-08-04	626620	15	CrewChg	Passenger	No	Yes		170.0
Short-Range	Summer	CFNDN	2023-08-04	626620	2	Floor	Slinging	Yes	Yes	Slinging	227.2
Short-Range	Summer	CFNDN	2023-08-04	626620	3	PaxLoc	Passenger	No	Yes		245.1
Short-Range	Summer	CFNDN	2023-08-04	626620	4	DrillServ	Slinging	Yes	Yes	Slinging	134.8
Short-Range	Summer	CFNDN	2023-08-04	626620	7	DrillServ	Slinging	Yes	Yes	Slinging	163.6
Short-Range	Summer	CFNDN	2023-08-04	626620	8	PaxLoc	Passenger	No	Yes		127.4
Short-Range	Summer	CFNDN	2023-08-04	626620	9	PaxLoc	Passenger	No	Yes		149.5
Short-Range	Summer	CFNDN	2023-08-05	627196	1	CrewChg	Passenger	No	Yes		154.5
Short-Range	Summer	CFNDN	2023-08-05	627196	10	Core	Slinging	Yes	Yes	Slinging	127.1
Short-Range	Summer	CFNDN	2023-08-05	627196	11	CrewChg	Passenger	No	Yes		148.9
Short-Range	Summer	CFNDN	2023-08-05	627196	2	Core	Slinging	Yes	Yes	Slinging	138.0
Short-Range	Summer	CFNDN	2023-08-05	627196	3	DrillServ	Slinging	Yes	Yes	Slinging	166.3
Short-Range	Summer	CFNDN	2023-08-05	627196	4	PaxLoc	Passenger	No	Yes		106.4
Short-Range	Summer	CFNDN	2023-08-05	627196	5	PaxLoc	Passenger	No	Yes		123.0
Short-Range	Summer	CFNDN	2023-08-05	627196	6	PaxLoc	Passenger	No	Yes		155.9
Short-Range	Summer	CFNDN	2023-08-05	627196	7	Reposition	Slinging	Yes	Yes	Slinging	Full flight too low to distinguish from takeoff/landing
Short-Range	Summer	CFNDN	2023-08-06	627772	1	CrewChg	Passenger	No	Yes		127.7
Short-Range	Summer	CFNDN	2023-08-06	627772	10	CrewChg	Passenger	No	Yes		172.4
Short-Range	Summer	CFNDN	2023-08-06	627772	2	Core	Slinging	Yes	Yes	Slinging	141.7
Short-Range	Summer	CFNDN	2023-08-06	627772	3	PaxLoc	Passenger	No	Yes		237.1
Short-Range	Summer	CFNDN	2023-08-06	627772	4	PaxLoc	Passenger	No	Yes		140.6
Short-Range	Summer	CFNDN	2023-08-06	627772	5	PaxLoc	Passenger	No	Yes		136.8
Short-Range	Summer	CFNDN	2023-08-06	627772	6	PaxLoc	Passenger	No	Yes		121.9
Short-Range	Summer	CFNDN	2023-08-06	627772	7	PaxLoc	Passenger	No	Yes		130.6
Short-Range	Summer	CFNDN	2023-08-06	627772	8	DrillServ	Slinging	Yes	Yes	Slinging	148.8
Short-Range	Summer	CFNDN	2023-08-06	627772	9	DrillServ	Slinging	Yes	Yes	Slinging	141.0
Short-Range	Summer	CFNDN	2023-08-07	628129	1	CrewChg	Passenger	No	Yes		135.4
Short-Range	Summer	CFNDN	2023-08-07	628129	2	DrillServ	Slinging	Yes	Yes	Slinging	132.9
Short-Range	Summer	CFNDN	2023-08-07	628129	3	PaxLoc	Passenger	No	Yes		125.7
Short-Range	Summer	CFNDN	2023-08-07	628129	4	Move	Slinging	Yes	Yes	Slinging	137.7
Short-Range	Summer	CFNDN	2023-08-07	629050	1	Move	Slinging	Yes	Yes	Slinging	130.9
Short-Range	Summer	CFNDN	2023-08-07	629050	2	Move	Slinging	Yes	Yes	Slinging	122.2
Short-Range	Summer	CFNDN	2023-08-07	629050	3	CrewChg	Passenger	No	Yes		110.2
Short-Range	Summer	CFNDN	2023-08-08	629062	1	CrewChg	Passenger	No	Yes		143.5
Short-Range	Summer	CFNDN	2023-08-08	629062	10	Move	Slinging	Yes	Yes	Slinging	126.2
Short-Range	Summer	CFNDN	2023-08-08	629062	11	Move	Slinging	Yes	Yes	Slinging	149.7
Short-Range	Summer	CFNDN	2023-08-08	629062	12	PaxLoc	Passenger	No	Yes		200.7
Short-Range	Summer	CFNDN	2023-08-08	629062	13	CrewChg	Passenger	No	Yes		172.6

Flight Range	Season	Aircraft	Date	Flight Report Number	Flight Leg	Flight Code	Flight Type	Low Flight Permissible?	Mean Height Lower Than Restriction?	Comment Justification for Low Flight	Mean Height Above Ground (m)
Short-Range	Summer	CFNDN	2023-08-08	629062	2	PaxLoc	Passenger	No	Yes		92.1
Short-Range	Summer	CFNDN	2023-08-08	629062	3	Move	Slinging	Yes	Yes	Slinging	147.2
Short-Range	Summer	CFNDN	2023-08-08	629062	4	Move	Slinging	Yes	Yes	Slinging	158.8
Short-Range	Summer	CFNDN	2023-08-08	629062	5	Move	Slinging	Yes	Yes	Slinging	126.8
Short-Range	Summer	CFNDN	2023-08-08	629062	6	Move	Slinging	Yes	Yes	Slinging	162.3
Short-Range	Summer	CFNDN	2023-08-08	629062	7	Move	Slinging	Yes	Yes	Slinging	160.8
Short-Range	Summer	CFNDN	2023-08-08	629062	8	Move	Slinging	Yes	Yes	Slinging	176.4
Short-Range	Summer	CFNDN	2023-08-08	629062	9	Move	Slinging	Yes	Yes	Slinging	149.9
Short-Range	Summer	CFNDN	2023-08-09	629686	1	CrewChg	Passenger	No	Yes		177.3
Short-Range	Summer	CFNDN	2023-08-09	629686	2	Core	Slinging	Yes	Yes	Slinging	187.0
Short-Range	Summer	CFNDN	2023-08-09	629686	3	PaxLoc	Passenger	No	Yes		194.6
Short-Range	Summer	CFNDN	2023-08-09	629686	4	Floor	Slinging	Yes	Yes	Slinging	171.2
Short-Range	Summer	CFNDN	2023-08-09	629686	5	Floor	Slinging	Yes	Yes	Slinging	110.3
Short-Range	Summer	CFNDN	2023-08-09	629686	6	PaxLoc	Passenger	No	Yes		238.9
Short-Range	Summer	CFNDN	2023-08-09	629686	9	Core	Slinging	Yes	Yes	Slinging	181.8
Short-Range	Summer	CFNDN	2023-08-10	630403	1	CrewChg	Passenger	No	Yes		242.2
Short-Range	Summer	CFNDN	2023-08-10	630403	10	CrewChg	Passenger	No	Yes		227.5
Short-Range	Summer	CFNDN	2023-08-10	630403	2	Core	Slinging	Yes	Yes	Slinging	134.5
Short-Range	Summer	CFNDN	2023-08-10	630403	4	PaxLoc	Passenger	No	Yes		159.4
Short-Range	Summer	CFNDN	2023-08-10	630403	5	Move	Slinging	Yes	Yes	Slinging	66.1
Short-Range	Summer	CFNDN	2023-08-10	630403	6	Move	Slinging	Yes	Yes	Slinging	81.7
Short-Range	Summer	CFNDN	2023-08-10	630403	7	Move	Slinging	Yes	Yes	Slinging	77.6
Short-Range	Summer	CFNDN	2023-08-10	630403	9	PaxLoc	Passenger	No	Yes		135.8
Short-Range	Summer	CFNDN	2023-08-10	630403	3	Reposition	Slinging	Yes	Yes	Slinging	Full flight too low to distinguish from takeoff/landing
Short-Range	Summer	CFNDN	2023-08-11	630904	1	CrewChg	Passenger	No	Yes		195.3
Short-Range	Summer	CFNDN	2023-08-11	630904	11	Core	Slinging	Yes	Yes	Slinging	207.2
Short-Range	Summer	CFNDN	2023-08-11	630904	4	DrillServ	Slinging	Yes	Yes	Slinging	137.0
Short-Range	Summer	CFNDN	2023-08-11	630904	5	PaxLoc	Passenger	No	Yes		157.8
Short-Range	Summer	CFNDN	2023-08-11	630904	6	Floor	Slinging	Yes	Yes	Slinging	69.3
Short-Range	Summer	CFNDN	2023-08-11	630904	8	PaxLoc	Passenger	No	Yes		105.2
Short-Range	Summer	CFNDN	2023-08-11	630904	9	Wildlife	Passenger	Yes	Yes	Environmental Survey	98.2
Short-Range	Summer	CFNDN	2023-08-12	631567	1	CrewChg	Passenger	No	Yes		177.9
Short-Range	Summer	CFNDN	2023-08-12	631567	10	Move	Slinging	Yes	Yes	Slinging	98.0
Short-Range	Summer	CFNDN	2023-08-12	631567	11	PaxLoc	Passenger	No	Yes		179.0
Short-Range	Summer	CFNDN	2023-08-12	631567	12	PaxLoc	Passenger	No	Yes		113.1
Short-Range	Summer	CFNDN	2023-08-12	631567	13	CrewChg	Passenger	No	Yes		191.5
Short-Range	Summer	CFNDN	2023-08-12	631567	2	DrillServ	Slinging	Yes	Yes	Slinging	162.1
Short-Range	Summer	CFNDN	2023-08-12	631567	3	PaxLoc	Passenger	No	Yes		194.6
Short-Range	Summer	CFNDN	2023-08-12	631567	4	Move	Slinging	Yes	Yes	Slinging	188.1
Short-Range	Summer	CFNDN	2023-08-12	631567	5	Move	Slinging	Yes	Yes	Slinging	84.6
Short-Range	Summer	CFNDN	2023-08-12	631567	6	PaxLoc	Passenger	No	Yes		193.0
Short-Range	Summer	CFNDN	2023-08-12	631567	7	Move	Slinging	Yes	Yes	Slinging	90.2
Short-Range	Summer	CFNDN	2023-08-12	631567	8	Move	Slinging	Yes	Yes	Slinging	95.6
Short-Range	Summer	CFNDN	2023-08-12	631567	9	Move	Slinging	Yes	Yes	Slinging	86.0
Short-Range	Summer	CFNDN	2023-08-13	632167	1	DrillServ	Slinging	Yes	Yes	Slinging	140.4
Short-Range	Summer	CFNDN	2023-08-13	632167	10	PaxLoc	Passenger	No	Yes		174.1
Short-Range	Summer	CFNDN	2023-08-13	632167	12	CrewChg	Passenger	No	Yes		226.1
Short-Range	Summer	CFNDN	2023-08-13	632167	3	PaxLoc	Passenger	No	Yes		131.0
Short-Range	Summer	CFNDN	2023-08-13	632167	5	PaxLoc	Passenger	No	Yes		165.9
Short-Range	Summer	CFNDN	2023-08-13	632167	6	Floor	Slinging	Yes	Yes	Slinging	53.0
Short-Range	Summer	CFNDN	2023-08-13	632167	7	PaxLoc	Passenger	No	Yes		189.3
Short-Range	Summer	CFNDN	2023-08-13	632167	8	PaxLoc	Passenger	No	Yes		144.1
Short-Range	Summer	CFNDN	2023-08-14	633085	1	CrewChg	Passenger	Yes	Yes	Weather	129.3
Short-Range	Summer	CFNDN	2023-08-14	633085	2	PaxLoc	Passenger	Yes	Yes	Weather/Site Inspection	119.3
Short-Range	Summer	CFNDN	2023-08-14	633085	3	Core	Slinging	Yes	Yes	Weather	155.8
Short-Range	Summer	CFNDN	2023-08-14	633085	4	PaxLoc	Passenger	No	Yes		196.0



Flight Range	Season	Aircraft	Date	Flight Report Number	Flight Leg	Flight Code	Flight Type	Low Flight Permissible?	Mean Height Lower Than Restriction?	Comment Justification for Low Flight	Mean Height Above Ground (m)
Short-Range	Summer	CFNDN	2023-08-14	633085	5	DrillServ	Slinging	Yes	Yes	Slinging	177.5
Short-Range	Summer	CFNDN	2023-08-14	633085	6	DrillServ	Slinging	Yes	Yes	Slinging	178.5
Short-Range	Summer	CFNDN	2023-08-14	633085	7	CrewChg	Passenger	No	Yes		184.7
Short-Range	Summer	CFNDN	2023-08-14	633085	8	DrillServ	Slinging	Yes	Yes	Slinging	187.8
Short-Range	Summer	CFNDN	2023-08-15	633826	1	CrewChg	Passenger	No	Yes		185.7
Short-Range	Summer	CFNDN	2023-08-15	633826	2	PaxLoc	Passenger	No	Yes		270.7
Short-Range	Summer	CFNDN	2023-08-15	633826	3	DrillServ	Slinging	Yes	Yes	Slinging	158.6
Short-Range	Summer	CFNDN	2023-08-15	633826	4	PaxLoc	Passenger	No	Yes		208.7
Short-Range	Summer	CFNDN	2023-08-15	633826	5	Floor	Slinging	Yes	Yes	Slinging	81.4
Short-Range	Summer	CFNDN	2023-08-15	633826	6	PaxLoc	Passenger	No	Yes		186.9
Short-Range	Summer	CFNDN	2023-08-15	633826	7	CrewChg	Passenger	No	Yes		209.6
Short-Range	Summer	CFNDN	2023-08-16	634648	1	CrewChg	Passenger	No	Yes		156.7
Short-Range	Summer	CFNDN	2023-08-16	634648	10	Floor	Slinging	Yes	Yes	Slinging	138.1
Short-Range	Summer	CFNDN	2023-08-16	634648	11	PaxLoc	Passenger	No	Yes		166.5
Short-Range	Summer	CFNDN	2023-08-16	634648	12	CrewChg	Passenger	No	Yes		149.2
Short-Range	Summer	CFNDN	2023-08-16	634648	2	DrillServ	Slinging	Yes	Yes	Slinging	153.7
Short-Range	Summer	CFNDN	2023-08-16	634648	3	PaxLoc	Passenger	No	Yes		132.2
Short-Range	Summer	CFNDN	2023-08-16	634648	4	Move	Slinging	Yes	Yes	Slinging	53.2
Short-Range	Summer	CFNDN	2023-08-16	634648	5	PaxLoc	Passenger	No	Yes		62.7
Short-Range	Summer	CFNDN	2023-08-16	634648	6	PaxLoc	Passenger	No	Yes		112.7
Short-Range	Summer	CFNDN	2023-08-16	634648	7	Move	Slinging	Yes	Yes	Slinging	73.0
Short-Range	Summer	CFNDN	2023-08-16	634648	8	PaxLoc	Passenger	Yes	Yes	Slinging	112.8
Short-Range	Summer	CFNDN	2023-08-16	634648	9	Floor	Slinging	Yes	Yes	Slinging	114.2
Short-Range	Summer	CFNDN	2023-08-17	635308	1	CrewChg	Passenger	No	Yes		140.3
Short-Range	Summer	CFNDN	2023-08-17	635308	10	Reposition	Slinging	Yes	Yes	Slinging	116.6
Short-Range	Summer	CFNDN	2023-08-17	635308	11	PaxLoc	Passenger	No	Yes		108.5
Short-Range	Summer	CFNDN	2023-08-17	635308	12	PaxLoc	Passenger	No	Yes		200.4
Short-Range	Summer	CFNDN	2023-08-17	635308	13	PaxLoc	Passenger	No	Yes		122.1
Short-Range	Summer	CFNDN	2023-08-17	635308	15	DrillServ	Slinging	Yes	Yes	Slinging	158.6
Short-Range	Summer	CFNDN	2023-08-17	635308	16	CrewChg	Passenger	No	Yes		218.6
Short-Range	Summer	CFNDN	2023-08-17	635308	17	CrewChg	Passenger	No	Yes		174.5
Short-Range	Summer	CFNDN	2023-08-17	635308	3	PaxLoc	Passenger	No	Yes		135.1
Short-Range	Summer	CFNDN	2023-08-17	635308	4	CrewChg	Passenger	No	Yes		185.9
Short-Range	Summer	CFNDN	2023-08-17	635308	6	DrillServ	Slinging	Yes	Yes	Slinging	158.5
Short-Range	Summer	CFNDN	2023-08-17	635308	8	PaxLoc	Passenger	No	Yes		177.3
Short-Range	Summer	CFNDN	2023-08-17	635308	9	PaxLoc	Passenger	No	Yes		134.3
Short-Range	Summer	CFNDN	2023-08-18	635650	1	Core	Slinging	Yes	Yes	Slinging	163.1
Short-Range	Summer	CFNDN	2023-08-18	635650	11	Move	Slinging	Yes	Yes	Slinging	140.6
Short-Range	Summer	CFNDN	2023-08-18	635650	12	Move	Slinging	Yes	Yes	Slinging	133.6
Short-Range	Summer	CFNDN	2023-08-18	635650	13	Move	Slinging	Yes	Yes	Slinging	105.3
Short-Range	Summer	CFNDN	2023-08-18	635650	2	CrewChg	Passenger	No	Yes		204.9
Short-Range	Summer	CFNDN	2023-08-18	635650	4	PaxLoc	Passenger	No	Yes		53.0
Short-Range	Summer	CFNDN	2023-08-18	635650	5	PaxLoc	Passenger	No	Yes		104.5
Short-Range	Summer	CFNDN	2023-08-18	635650	7	DrillServ	Slinging	Yes	Yes	Slinging	128.1
Short-Range	Summer	CFNDN	2023-08-18	635650	8	PaxLoc	Passenger	No	Yes		149.0
Short-Range	Summer	CFNDN	2023-08-18	635650	9	Move	Slinging	Yes	Yes	Slinging	118.3
Short-Range	Summer	CFNDN	2023-08-19	636559	1	CrewChg	Passenger	No	Yes		130.4
Short-Range	Summer	CFNDN	2023-08-19	636559	10	PaxLoc	Passenger	No	Yes		196.8
Short-Range	Summer	CFNDN	2023-08-19	636559	11	PaxLoc	Passenger	No	Yes		66.1
Short-Range	Summer	CFNDN	2023-08-19	636559	12	PaxLoc	Passenger	No	Yes		145.5
Short-Range	Summer	CFNDN	2023-08-19	636559	13	PaxLoc	Passenger	Yes	Yes	Weather	80.1
Short-Range	Summer	CFNDN	2023-08-19	636559	14	PaxLoc	Passenger	Yes	Yes	Weather	129.9
Short-Range	Summer	CFNDN	2023-08-19	636559	16	Core	Slinging	Yes	Yes	Weather	97.1
Short-Range	Summer	CFNDN	2023-08-19	636559	17	CrewChg	Passenger	No	Yes		121.0
Short-Range	Summer	CFNDN	2023-08-19	636559	2	Move	Slinging	Yes	Yes	Slinging	102.8
Short-Range	Summer	CFNDN	2023-08-19	636559	3	Move	Slinging	Yes	Yes	Slinging	102.9
Short-Range	Summer	CFNDN	2023-08-19	636559	4	Move	Slinging	Yes	Yes	Slinging	124.4
Short-Range	Summer	CFNDN	2023-08-19	636559	5	Move	Slinging	Yes	Yes	Slinging	122.5
Short-Range	Summer	CFNDN	2023-08-19	636559	6	PaxLoc	Passenger	No	Yes		68.9
Short-Range	Summer	CFNDN	2023-08-19	636559	8	PaxLoc	Passenger	No	Yes		68.3



Flight Range	Season	Aircraft	Date	Flight Report Number	Flight Leg	Flight Code	Flight Type	Low Flight Permissible?	Mean Height Lower Than Restriction?	Comment Justification for Low Flight	Mean Height Above Ground (m)
Short-Range	Summer	CFNDN	2023-08-19	636559	9	GenSIng	Slinging	Yes	Yes	Slinging	102.6
Short-Range	Summer	CFNDN	2023-08-20	637141	1	CrewChg	Passenger	No	Yes		113.2
Short-Range	Summer	CFNDN	2023-08-20	637141	2	Core	Slinging	Yes	Yes	Slinging	107.7
Short-Range	Summer	CFNDN	2023-08-20	637141	3	PaxLoc	Passenger	No	Yes		85.8
Short-Range	Summer	CFNDN	2023-08-20	637141	4	PaxLoc	Passenger	No	Yes		131.8
Short-Range	Summer	CFNDN	2023-08-20	637141	6	PaxLoc	Passenger	No	Yes		98.0
Short-Range	Summer	CFNDN	2023-08-20	637141	8	CrewChg	Passenger	No	Yes		116.5
Short-Range	Summer	CFNDN	2023-08-20	637141	9	Core	Slinging	Yes	Yes	Slinging/Weather	124.5
Short-Range	Summer	CFNDN	2023-08-21	637885	1	Core	Slinging	Yes	Yes	Slinging	137.6
Short-Range	Summer	CFNDN	2023-08-21	637885	10	LocSIng	Slinging	Yes	Yes	Slinging	153.3
Short-Range	Summer	CFNDN	2023-08-21	637885	11	DrillServ	Slinging	Yes	Yes	Slinging	155.9
Short-Range	Summer	CFNDN	2023-08-21	637885	12	CrewChg	Passenger	No	Yes		112.7
Short-Range	Summer	CFNDN	2023-08-21	637885	2	CrewChg	Passenger	No	Yes		105.2
Short-Range	Summer	CFNDN	2023-08-21	637885	4	PaxLoc	Passenger	No	Yes		131.9
Short-Range	Summer	CFNDN	2023-08-21	637885	5	PaxLoc	Passenger	No	Yes		139.6
Short-Range	Summer	CFNDN	2023-08-21	637885	6	Floor	Slinging	Yes	Yes	Slinging	152.7
Short-Range	Summer	CFNDN	2023-08-21	637885	7	Move	Slinging	Yes	Yes	Slinging	70.9
Short-Range	Summer	CFNDN	2023-08-21	637885	8	Move	Slinging	Yes	Yes	Slinging	59.7
Short-Range	Summer	CFNDN	2023-08-21	637885	9	PaxLoc	Passenger	No	Yes		160.4
Short-Range	Summer	CFNDN	2023-08-22	638707	1	CrewChg	Passenger	No	Yes		121.2
Short-Range	Summer	CFNDN	2023-08-22	638707	2	Core	Slinging	Yes	Yes	Slinging	111.0
Short-Range	Summer	CFNDN	2023-08-22	638707	3	PaxLoc	Passenger	No	Yes		72.5
Short-Range	Summer	CFNDN	2023-08-22	638707	4	PaxLoc	Passenger	No	Yes		143.3
Short-Range	Summer	CFNDN	2023-08-22	638707	5	Floor	Slinging	Yes	Yes	Slinging	188.5
Short-Range	Summer	CFNDN	2023-08-22	638707	6	Floor	Slinging	Yes	Yes	Slinging	168.4
Short-Range	Summer	CFNDN	2023-08-22	638707	7	Core	Slinging	Yes	Yes	Slinging	127.8
Short-Range	Summer	CFNDN	2023-08-22	638707	8	CrewChg	Passenger	No	Yes		107.9
Short-Range	Summer	GCHZ	2023-08-22	638758	1	PaxLoc	Passenger	Yes	Yes	Weather	148.0
Short-Range	Summer	GCHZ	2023-08-22	638758	2	PaxLoc	Passenger	No	Yes		129.3
Short-Range	Summer	GCHZ	2023-08-22	638758	5	PaxLoc	Passenger	No	Yes		156.2
Short-Range	Summer	GCHZ	2023-08-23	639040	4	CrewChg	Passenger	No	Yes		142.0
Short-Range	Summer	GCHZ	2023-08-24	639928	3	PaxLoc	Passenger	No	Yes		Full flight too low to distinguish from takeoff/landing
Short-Range	Summer	CFNDN	2023-08-25	640744	1	PaxLoc	Passenger	No	Yes		105.6
Short-Range	Summer	CFNDN	2023-08-25	640744	2	Move	Slinging	Yes	Yes	Slinging	86.7
Short-Range	Summer	CFNDN	2023-08-25	640744	3	Move	Slinging	Yes	Yes	Slinging	54.7
Short-Range	Summer	UIT	2023-08-27	641932	1	PaxLoc	Passenger	No	Yes		209.1
Short-Range	Summer	UIT	2023-08-27	641932	10	Move	Slinging	Yes	Yes	Slinging	242.8
Short-Range	Summer	UIT	2023-08-27	641932	2	Move	Slinging	Yes	Yes	Slinging	184.7
Short-Range	Summer	UIT	2023-08-27	641932	3	Move	Slinging	Yes	Yes	Slinging	252.9
Short-Range	Summer	UIT	2023-08-27	641932	4	Move	Slinging	Yes	Yes	Slinging	231.6
Short-Range	Summer	UIT	2023-08-27	641932	5	Move	Slinging	Yes	Yes	Slinging	243.5
Short-Range	Summer	UIT	2023-08-27	641932	6	Move	Slinging	Yes	Yes	Slinging	196.1
Short-Range	Summer	UIT	2023-08-27	641932	7	Move	Slinging	Yes	Yes	Slinging	217.2
Short-Range	Summer	BWN	2023-08-30	643837	3	PaxLoc	Passenger	No	Yes		139.5
Short-Range	Summer	BWN	2023-08-30	643837	4	PaxLoc	Passenger	No	Yes		71.9
Short-Range	Summer	AVH	2023-09-06	647912	3	PaxLoc	Passenger	No	Yes		175.9
Short-Range	Summer	AVH	2023-09-06	647912	4	PaxLoc	Passenger	No	Yes		162.7
Short-Range	Summer	AVH	2023-09-06	647912	5	PaxLoc	Passenger	No	Yes		Full flight too low to distinguish from takeoff/landing
Short-Range	Summer	AVH	2023-09-07	648415	4	PaxLoc	Passenger	No	Yes		54.2
Short-Range	Summer	AVH	2023-09-07	648415	5	PaxLoc	Passenger	No	Yes		34.1
Short-Range	Summer	AVH	2023-09-08	649151	2	PaxLoc	Passenger	No	Yes		158.9
Short-Range	Summer	AVH	2023-09-08	649151	4	PaxLoc	Passenger	No	Yes		66.0
Short-Range	Summer	AVH	2023-09-08	649151	7	PaxLoc	Passenger	No	Yes		54.5
Short-Range	Summer	AVH	2023-09-09	649648	2	PaxLoc	Passenger	No	Yes		149.0
Short-Range	Summer	AVH	2023-09-09	649648	3	PaxLoc	Passenger	No	Yes		48.1
Short-Range	Summer	AVH	2023-09-09	649648	4	PaxLoc	Passenger	No	Yes		79.5
Short-Range	Summer	AVH	2023-09-09	649648	6	PaxLoc	Passenger	No	Yes		110.4

Flight Range	Season	Aircraft	Date	Flight Report Number	Flight Leg	Flight Code	Flight Type	Low Flight Permissible?	Mean Height Lower Than Restriction?	Comment Justification for Low Flight	Mean Height Above Ground (m)
Short-Range	Summer	AVH	2023-09-09	649648	7	PaxLoc	Passenger	No	Yes		92.7
Short-Range	Summer	AVH	2023-09-09	649648	8	PaxLoc	Passenger	No	Yes		36.0
Short-Range	Summer	AVH	2023-09-10	650200	1	PaxLoc	Passenger	No	Yes		91.6
Short-Range	Summer	AVH	2023-09-10	650200	5	PaxLoc	Passenger	No	Yes		76.8
Short-Range	Summer	AVH	2023-09-10	650200	6	Reposition	Slinging	Yes	Yes		Full flight too low to distinguish from takeoff/landing
Short-Range	Summer	GCHZ	2023-09-11	650825	2	Slinging	Slinging	Yes	Yes		67.3
Short-Range	Summer	GCHZ	2023-09-11	650825	5	Slinging	Slinging	Yes	Yes		109.8
Short-Range	Summer	GCHZ	2023-09-11	650825	7	PaxLoc	Passenger	No	Yes		Full flight too low to distinguish from takeoff/landing
Short-Range	Summer	GCHZ	2023-09-12	651418	1	PaxLoc	Passenger	Yes	Yes	Weather	75.3
Short-Range	Summer	GCHZ	2023-09-12	651418	5	PaxLoc	Passenger	No	Yes		120.2
Short-Range	Summer	GCHZ	2023-09-12	651418	6	PaxLoc	Passenger	No	Yes		114.6
Short-Range	Summer	GCHZ	2023-09-12	651418	3	PaxLoc	Passenger	No	Yes		Full flight too low to distinguish from takeoff/landing
Short-Range	Summer	GCHZ	2023-09-13	651982	1	PaxLoc	Passenger	Yes	Yes	Weather	127.0
Short-Range	Summer	GCHZ	2023-09-13	651982	2	PaxLoc	Passenger	No	Yes		138.4
Short-Range	Fall	GCHZ	2023-09-22	657468	4	Reposition	Slinging	Yes	Yes	Slinging	Full flight too low to distinguish from takeoff/landing
Short-Range	Fall	GCHZ	2023-09-23	658002	5	Reposition	Slinging	Yes	Yes	Slinging	Full flight too low to distinguish from takeoff/landing
Short-Range	Fall	GCHZ	2023-09-26	660123	1	PaxLoc	Passenger	No	Yes		162.9
Short-Range	Fall	GCHZ	2023-09-26	660123	2	PaxLoc	Passenger	No	Yes		259.3
Short-Range	Fall	GCHZ	2023-09-26	660123	3	PaxLoc	Passenger	No	Yes		156.6
Short-Range	Fall	GCHZ	2023-09-26	660123	4	PaxLoc	Passenger	No	Yes		135.6
Short-Range	Fall	GCHZ	2023-09-29	661803	1	PaxLoc	Passenger	No	Yes		62.1
Long-Range	Spring	UIT	2023-05-01	329557	3	Medevac	Medevac	Yes	Yes		201.6
Long-Range	Spring	C-FGAV	2023-05-25	341017	2	Core	Slinging	Yes	Yes	Slinging	245.2
Long-Range	Spring	C-FGAV	2023-05-25	341017	3	Wildlife	Passenger	Yes	Yes	Environmental Survey	205.2
Long-Range	Spring	C-FGAV	2023-05-25	341017	4	Wildlife	Passenger	Yes	Yes	Environmental Survey	144.7
Long-Range	Summer	C-FGAV	2023-05-26	341590	1	CrewChg	Passenger	No	Yes		202.9
Long-Range	Summer	C-FGAV	2023-05-26	341590	2	Wildlife	Passenger	Yes	Yes	Environmental Survey	133.9
Long-Range	Summer	C-FGAV	2023-05-26	341590	3	Wildlife	Passenger	Yes	Yes	Environmental Survey	119.8
Long-Range	Summer	C-FGAV	2023-05-26	341590	4	Wildlife	Ferry	Yes	Yes	Environmental Survey	332.0
Long-Range	Summer	UIT	2023-05-29	342973	4	Wildlife	Passenger	Yes	Yes	Environmental Survey	151.3
Long-Range	Summer	C-FGAV	2023-05-31	408322	2	PaxLoc	Passenger	No	No		902.9
Long-Range	Summer	C-FGAV	2023-05-31	408322	3	PaxLoc	Passenger	No	No		892.9
Long-Range	Summer	C-FGAV	2023-06-02	587407	2	PaxLoc	Passenger	Yes	Yes	Site Inspection	122.8
Long-Range	Summer	C-FGAV	2023-06-03	587803	1	Ferry	Ferry	Yes	Yes	Weather	101.6
Long-Range	Summer	C-FGAV	2023-06-03	587803	2	PaxLoc	Passenger	No	Yes		534.6
Long-Range	Summer	C-FGAV	2023-06-03	587803	3	PaxLoc	Passenger	No	No		798.2
Long-Range	Summer	C-FGAV	2023-06-03	587891	1	Ferry	Ferry	No	No		1008.4
Long-Range	Summer	CFNDN	2023-06-20	598824	1	Ferry	Ferry	No	Yes		496.4
Long-Range	Summer	CFNDN	2023-06-24	600303	1	PaxLoc	Passenger	Yes	Yes	Road Survey	157.4
Long-Range	Summer	CFNDN	2023-06-24	600303	2	PaxLoc	Passenger	Yes	Yes	Site Survey	110.1
Long-Range	Summer	CFNDN	2023-06-28	603156	2	Ferry	Ferry	No	Yes		235.9
Long-Range	Summer	CFNDN	2023-06-28	603156	5	PaxLoc	Passenger	No	Yes		177.4
Long-Range	Summer	CFNDN	2023-06-30	604095	2	Ferry	Ferry	No	Yes		211.2
Long-Range	Summer	CFNDN	2023-06-30	604095	6	Ferry	Ferry	No	Yes		196.6
Long-Range	Summer	CFNDN	2023-07-01	605001	2	Fuel	Slinging	Yes	Yes		266.9
Long-Range	Summer	CFNDN	2023-07-01	605001	7	Ferry	Ferry	No	Yes		314.6
Long-Range	Summer	CFNDN	2023-07-02	605517	1	Ferry	Ferry	No	Yes		284.3
Long-Range	Summer	CFNDN	2023-07-02	605517	4	PaxLoc	Passenger	No	Yes		227.8
Long-Range	Summer	CFNDN	2023-07-09	609516	2	PaxLoc	Passenger	No	Yes		236.4
Long-Range	Summer	CFNDN	2023-07-09	609516	3	PaxLoc	Passenger	Yes	Yes	Site Inspection	95.9
Long-Range	Summer	CFNDN	2023-07-09	609516	5	PaxLoc	Passenger	Yes	Yes	Site Inspection	213.8
Long-Range	Summer	CFNDN	2023-07-09	609516	6	PaxLoc	Passenger	No	Yes		250.5
Long-Range	Summer	CFNDN	2023-07-11	610758	4	PaxLoc	Passenger	No	Yes		427.7
Long-Range	Summer	CFNDN	2023-07-11	610758	5	Ferry	Ferry	No	Yes		341.8
Long-Range	Summer	CFNDN	2023-07-14	612696	5	Ferry	Ferry	No	Yes		401.3
Long-Range	Summer	CFNDN	2023-07-14	612696	8	PaxLoc	Passenger	No	Yes		269.1
Long-Range	Summer	CFNDN	2023-07-16	613785	4	Ferry	Ferry	No	Yes		325.6



Flight Range	Season	Aircraft	Date	Flight Report Number	Flight Leg	Flight Code	Flight Type	Low Flight Permissible?	Mean Height Lower Than Restriction?	Comment Justification for Low Flight	Mean Height Above Ground (m)
Long-Range	Summer	CFNDN	2023-07-16	613785	6	PaxLoc	Passenger	No	Yes		256.2
Long-Range	Summer	CFNDN	2023-07-19	616783	2	PaxLoc	Passenger	No	Yes		235.5
Long-Range	Summer	CFNDN	2023-07-19	615783	3	PaxLoc	Passenger	No	Yes		197.6
Long-Range	Summer	CFNDN	2023-07-21	617184	1	PaxLoc	Passenger	No	Yes		203.5
Long-Range	Summer	CFNDN	2023-07-21	617184	2	PaxLoc	Passenger	No	Yes		219.6
Long-Range	Summer	CFNDN	2023-07-23	618453	2	PaxLoc	Passenger	No	Yes		284.4
Long-Range	Summer	CFNDN	2023-07-23	618453	3	PaxLoc	Passenger	No	Yes		401.7
Long-Range	Summer	CFNDN	2023-07-25	620082	1	Ferry	Ferry	No	No		664.4
Long-Range	Summer	CFNDN	2023-07-25	620082	2	PaxLoc	Passenger	No	No		656.6
Long-Range	Summer	CFNDN	2023-07-25	620082	3	PaxLoc	Passenger	No	Yes		498.2
Long-Range	Summer	CFNDN	2023-07-25	620082	4	Ferry	Ferry	No	Yes		466.4
Long-Range	Summer	CFNDN	2023-07-25	620082	5	PaxLoc	Passenger	No	No		954.4
Long-Range	Summer	CFNDN	2023-07-25	620082	6	Ferry	Ferry	No	No		798.7
Long-Range	Summer	CFNDN	2023-07-25	620082	7	PaxLoc	Passenger	No	Yes		574.7
Long-Range	Summer	CFNDN	2023-07-27	621361	2	PaxLoc	Passenger	No	No		942.6
Long-Range	Summer	CFNDN	2023-07-27	621361	4	Ferry	Ferry	No	No		946.9
Long-Range	Summer	CFNDN	2023-07-29	622549	1	PaxLoc	Passenger	No	Yes		383.0
Long-Range	Summer	CFNDN	2023-07-29	622549	2	PaxLoc	Passenger	No	Yes		408.6
Long-Range	Summer	CFNDN	2023-07-31	623830	7	PaxLoc	Passenger	No	Yes		363.0
Long-Range	Summer	CFNDN	2023-07-31	623830	8	PaxLoc	Passenger	No	Yes		417.8
Long-Range	Summer	CFNDN	2023-08-03	626074	10	PaxLoc	Passenger	No	Yes		421.0
Long-Range	Summer	CFNDN	2023-08-03	626074	12	PaxLoc	Passenger	No	Yes		454.1
Long-Range	Summer	CFNDN	2023-08-04	626620	5	Medevac	Medevac	Yes	Yes	Emergency	384.3
Long-Range	Summer	CFNDN	2023-08-04	626620	6	Medevac	Medevac	Yes	Yes	Emergency	436.2
Long-Range	Summer	CFNDN	2023-08-05	627196	8	PaxLoc	Passenger	No	Yes		204.1
Long-Range	Summer	CFNDN	2023-08-05	627196	9	PaxLoc	Passenger	No	Yes		212.4
Long-Range	Summer	CFNDN	2023-08-09	629686	7	Wildlife	Passenger	Yes	Yes	Environmental Survey	127.4
Long-Range	Summer	CFNDN	2023-08-09	629686	8	Wildlife	Passenger	Yes	Yes	Environmental Survey	172.5
Long-Range	Summer	CFNDN	2023-08-10	630403	8	Wildlife	Passenger	Yes	Yes	Environmental Survey	101.3
Long-Range	Summer	CFNDN	2023-08-11	630904	10	Wildlife	Passenger	Yes	Yes	Environmental Survey	157.3
Long-Range	Summer	CFNDN	2023-08-11	630904	2	Wildlife	Passenger	Yes	Yes	Environmental Survey	111.6
Long-Range	Summer	CFNDN	2023-08-11	630904	3	Wildlife	Passenger	Yes	Yes	Environmental Survey	211.6
Long-Range	Summer	CFNDN	2023-08-11	630904	7	Wildlife	Passenger	Yes	Yes	Environmental Survey	90.9
Long-Range	Summer	CFNDN	2023-08-13	632167	11	Reposition	Slinging	Yes	Yes	Slinging	377.7
Long-Range	Summer	CFNDN	2023-08-13	632167	2	Reposition	Slinging	Yes	Yes	Slinging	395.2
Long-Range	Summer	CFNDN	2023-08-13	632167	4	Reposition	Slinging	Yes	Yes	Slinging	289.2
Long-Range	Summer	CFNDN	2023-08-13	632167	9	Reposition	Slinging	Yes	Yes	Slinging	325.3
Long-Range	Summer	CFNDN	2023-08-16	634648	13	Reposition	Slinging	Yes	Yes	Slinging	211.4
Long-Range	Summer	CFNDN	2023-08-16	634648	14	PaxLoc	Passenger	No	Yes		221.7
Long-Range	Summer	CFNDN	2023-08-17	635308	14	PaxLoc	Passenger	No	Yes		288.8
Long-Range	Summer	CFNDN	2023-08-17	635308	2	Reposition	Slinging	Yes	Yes	Slinging	220.2
Long-Range	Summer	CFNDN	2023-08-17	635308	5	Medevac	Passenger	Yes	Yes	Emergency	251.7
Long-Range	Summer	CFNDN	2023-08-17	635308	7	PaxLoc	Passenger	No	Yes		240.6
Long-Range	Summer	CFNDN	2023-08-18	635650	10	PaxLoc	Passenger	No	Yes		191.9
Long-Range	Summer	CFNDN	2023-08-18	635650	14	PaxLoc	Passenger	No	Yes		196.6
Long-Range	Summer	CFNDN	2023-08-18	635650	3	Ferry	Ferry	No	Yes		241.0
Long-Range	Summer	CFNDN	2023-08-18	635650	6	PaxLoc	Passenger	No	Yes		290.1
Long-Range	Summer	CFNDN	2023-08-19	636559	15	PaxLoc	Passenger	Yes	Yes	Weather	209.3
Long-Range	Summer	CFNDN	2023-08-19	636559	7	PaxLoc	Passenger	No	Yes		182.0
Long-Range	Summer	CFNDN	2023-08-20	637141	5	PaxLoc	Passenger	No	Yes		322.8
Long-Range	Summer	CFNDN	2023-08-20	637141	7	PaxLoc	Passenger	No	Yes		251.5
Long-Range	Summer	CFNDN	2023-08-21	637885	3	PaxLoc	Passenger	No	Yes		227.9
Long-Range	Summer	GCHZ	2023-08-22	638758	3	PaxLoc	Passenger	No	Yes		150.2
Long-Range	Summer	GCHZ	2023-08-22	638758	4	PaxLoc	Passenger	No	Yes		194.5
Long-Range	Summer	GCHZ	2023-08-23	639040	1	PaxLoc	Passenger	No	Yes		140.5
Long-Range	Summer	GCHZ	2023-08-23	639040	2	PaxLoc	Passenger	No	Yes		171.1

Flight Range	Season	Aircraft	Date	Flight Report Number	Flight Leg	Flight Code	Flight Type	Low Flight Permissible?	Mean Height Lower Than Restriction?	Comment Justification for Low Flight	Mean Height Above Ground (m)
Long-Range	Summer	GCHZ	2023-08-23	639040	3	PaxLoc	Passenger	No	Yes		174.5
Long-Range	Summer	GCHZ	2023-08-24	639928	1	PaxLoc	Passenger	No	Yes		153.6
Long-Range	Summer	GCHZ	2023-08-24	639928	4	Ferry	Ferry	No	Yes		215.5
Long-Range	Summer	GCHZ	2023-08-24	639928	5	PaxLoc	Passenger	No	Yes		198.5
Long-Range	Summer	CFNDN	2023-08-26	641476	1	PaxLoc	Passenger	No	Yes		127.1
Long-Range	Summer	CFNDN	2023-08-26	641476	2	PaxLoc	Passenger	No	Yes		188.5
Long-Range	Summer	UIT	2023-08-27	641932	8	PaxLoc	Passenger	No	Yes		296.6
Long-Range	Summer	UIT	2023-08-27	641932	9	PaxLoc	Passenger	No	Yes		344.0
Long-Range	Summer	BWN	2023-08-29	643210	1	Ferry	Ferry	Yes	Yes	Weather	263.1
Long-Range	Summer	BWN	2023-08-30	643837	2	Ferry	Ferry	No	Yes		332.2
Long-Range	Summer	BWN	2023-08-30	643837	5	Ferry	Ferry	No	Yes		329.7
Long-Range	Summer	AVH	2023-09-07	648415	1	PaxLoc	Passenger	Yes	Yes	Weather	90.0
Long-Range	Summer	AVH	2023-09-07	648415	2	PaxLoc	Passenger	Yes	Yes	Weather	233.4
Long-Range	Summer	AVH	2023-09-07	648415	3	PaxLoc	Passenger	Yes	Yes	Weather	115.6
Long-Range	Summer	AVH	2023-09-07	648415	6	PaxLoc	Passenger	Yes	Yes	Weather	100.2
Long-Range	Summer	AVH	2023-09-08	649151	1	Ferry	Ferry	Yes	Yes	Weather	99.8
Long-Range	Summer	AVH	2023-09-08	649151	6	PaxLoc	Passenger	No	Yes		202.8
Long-Range	Summer	AVH	2023-09-09	649648	1	Ferry	Ferry	No	Yes		254.1
Long-Range	Summer	AVH	2023-09-09	649648	5	PaxLoc	Passenger	No	Yes		109.0
Long-Range	Summer	AVH	2023-09-10	650200	10	Ferry	Ferry	No	Yes		278.8
Long-Range	Summer	AVH	2023-09-10	650200	2	Ferry	Ferry	No	Yes		283.1
Long-Range	Summer	AVH	2023-09-10	650200	3	PaxLoc	Passenger	No	Yes		223.5
Long-Range	Summer	AVH	2023-09-10	650200	4	Ferry	Ferry	No	Yes		193.8
Long-Range	Summer	AVH	2023-09-10	650200	7	Medevac	Medevac	Yes	Yes	Emergency	201.9
Long-Range	Summer	AVH	2023-09-10	650200	8	Medevac	Medevac	No	Yes		185.2
Long-Range	Summer	AVH	2023-09-10	650200	9	PaxLoc	Passenger	No	Yes		218.1
Long-Range	Summer	GCHZ	2023-09-11	650825	1	Ferry	Ferry	No	Yes		143.3
Long-Range	Summer	GCHZ	2023-09-11	650825	3	Slinging	Slinging	Yes	Yes		131.9
Long-Range	Summer	GCHZ	2023-09-11	650825	4	Ferry	Ferry	No	Yes		159.1
Long-Range	Summer	GCHZ	2023-09-11	650825	6	Ferry	Ferry	No	Yes		204.5
Long-Range	Summer	GCHZ	2023-09-12	651418	2	PaxLoc	Passenger	Yes	Yes	Weather	75.2
Long-Range	Summer	GCHZ	2023-09-21	656997	1	PaxLoc	Passenger	No	Yes		186.6
Long-Range	Summer	GCHZ	2023-09-21	656997	2	PaxLoc	Passenger	No	Yes		199.7
Long-Range	Fall	GCHZ	2023-09-22	657468	2	PaxLoc	Passenger	Yes	Yes	Weather	169.1
Long-Range	Fall	GCHZ	2023-09-22	657468	3	PaxLoc	Passenger	Yes	Yes	Weather	188.7
Long-Range	Fall	GCHZ	2023-09-23	658002	1	PaxLoc	Passenger	Yes	Yes	Weather	96.5
Long-Range	Fall	GCHZ	2023-09-23	658002	4	PaxLoc	Passenger	Yes	Yes	Weather	178.3
Long-Range	Fall	GCHZ	2023-09-24	658434	1	PaxLoc	Passenger	Yes	Yes	Smoke	298.2
Long-Range	Fall	GCHZ	2023-09-24	658434	2	PaxLoc	Passenger	Yes	Yes	Smoke	223.8
Long-Range	Fall	GCHZ	2023-09-25	659187	2	Medevac	Passenger	Yes	Yes	Emergency/Weather	382.5
Long-Range	Fall	GCHZ	2023-09-25	659187	3	Ferry	Ferry	Yes	Yes	Weather	336.7

APPENDIX F

Caribou Migration Memo



TECHNICAL MEMORANDUM

DATE October 11, 2023

Reference No. 21502960-590-TM-Rev1

TO Eric Haley
Agnico Eagle Mines Limited

CC Charity Beres, Jennifer Foca

FROM Dan Coulton, Corey De La Mare

EMAIL Daniel.Coulton@wsp.com

UPDATED CARIBOU MIGRATION TIMING WITH THE WHALE TAIL HAUL ROAD AND ALL-WEATHER ACCESS ROAD

1.0 INTRODUCTION

Meadowbank Mine (Mine) implements a Terrestrial Ecosystem Management Plan (TEMP) to protect caribou from Mine-related effects including safe passage across the Whale Tail Haul Road (WTHR) and the All-weather Access Road (AWAR) at all times but particularly during spring and fall migration seasons. The Government of Nunavut (GN) has defined seasonal migrations as occurring from April 1 to May 25 for spring and September 22 to December 15 for fall (Agnico Eagle 2019). The road-related mitigation of the TEMP includes use of partial and full road closures and convoys. The WTHR and AWAR closure mitigation is currently triggered by exceedance of a caribou group size threshold (GST), which requires monitoring and recording of caribou group size observations to assess against the threshold.

The TAG and Mine are currently evaluating alternate ways to successfully protect caribou while maintaining operational safety. For example, the Mine previously proposed the use of a cap and pulse system where the cap is a maximum number of days roads will be closed and the pulse represents alternative mitigations such as convoys. More recently, the Kivalliq Inuit Association (KivIA) has recommended alternative timing of closures that allow the lead caribou to move through more easily as suggested by Inuit Qaujimagatuqangit (IQ) holders. One approach that may address the uncertainty of when road closures would occur includes if the fall and spring migrations through the Mine are annually predictable. If so, then road closures could be scheduled to occur at certain times of the year when they maximize the intended benefit to caribou.

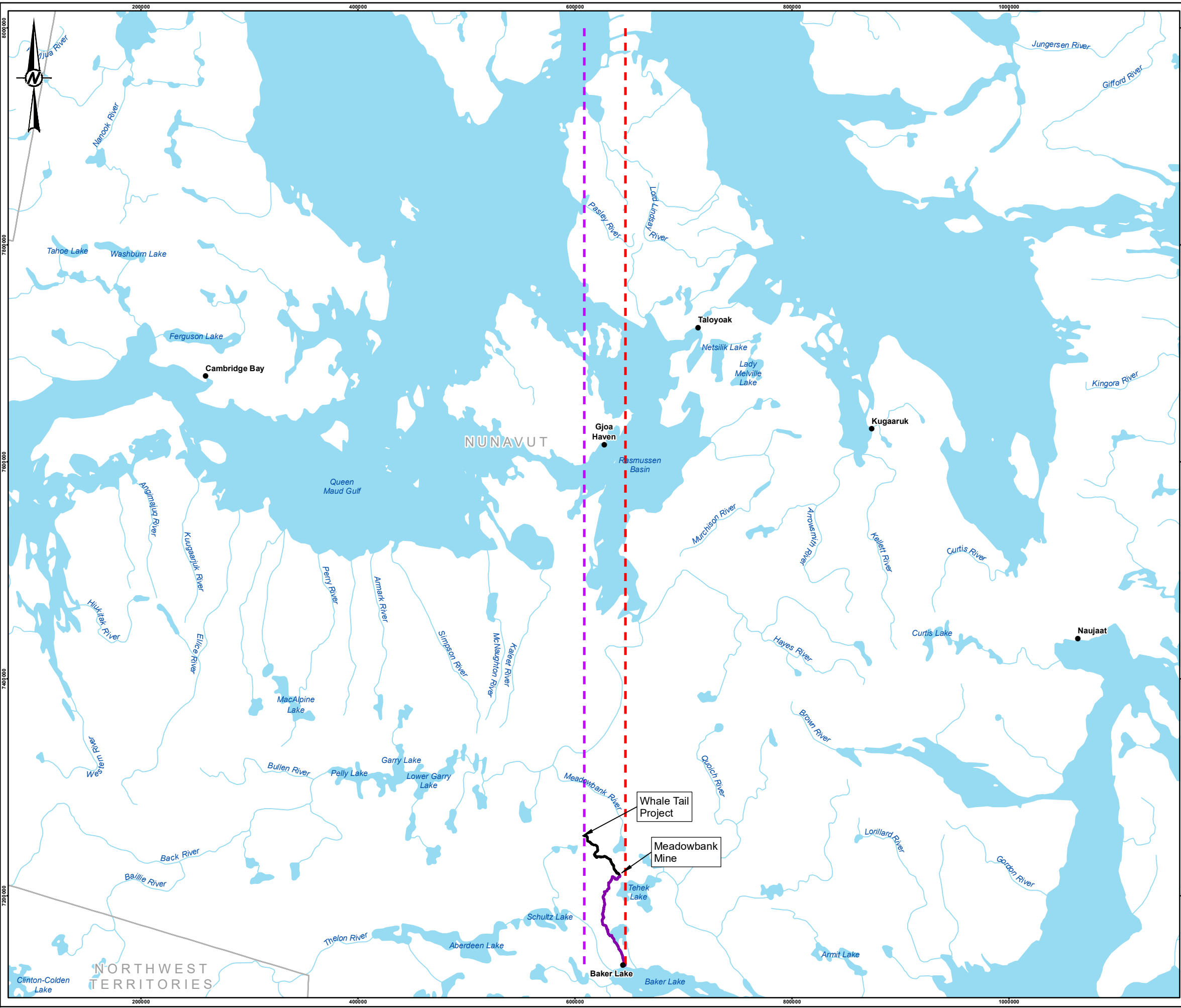
WSP Canada Inc. (WSP) previously completed an analysis of the Lorillard caribou migration timing through the Mine, WTHR, and AWAR during spring and fall seasons, obtained from telemetry data collected from 2005–2019 (Golder 2021). The previous analysis focused on the Lorillard herd, as according to the environmental assessment of the Whale Tail Project, this herd has the greatest potential to interact with the Mine, WTHR, and AWAR during spring and fall seasons (Golder 2017). The analysis aimed to determine if the fall and spring migrations through the Mine are annually predictable. If migration dates are predictable, the predicted timing of migration could be used to inform mitigation planning and the timing of road closures during sensitive seasons (i.e., spring and fall migration). Recommendations from the KivIA, including removal of years with three or fewer collared caribou were incorporated into the analysis (Gunn and Poole 2021). The results for spring migration indicated that annual timing of caribou migration through the Mine and roads area was relatively consistent (i.e., predictable) across years. Pre-defined seasonal migration periods were buffered by an additional 7 to 10 days to maximize the number of migration trajectories used in the analysis. Movement trajectories occurring March 31 to June 6

(inclusive) were considered spring migration, and buffered movement trajectories occurring September 1 to December 31 (inclusive) were considered fall migration.

The mean spring migration date was May 1 over all years. Across years, 96% individuals on average migrated through the Mine area over a period of 25 days (mean of annual 2 standard deviations). Early (September 1 to October 17) and late (October 18 to December 1) fall periods were defined. Fall migration was more variable than spring migration and, in 78% of years (7 of 9 years), caribou moved through the Mine area during the late fall period beginning October 18. The mean date of late fall migration was November 8 over all years. Across years, 96% individuals on average migrated through the Mine area over a period of 7 days (mean of annual two standard deviations) during late fall.

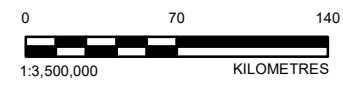
Telemetry collars are typically deployed so that collared animals represent a herd (i.e., semi-random deployment), which is important for herd management and conservation. Collars provide the location of animals based on fix frequencies to satellites that may occur up to multiple times in a day (e.g., up to every 4 hours or 6 fixes per day). It is possible to measure the distribution of dates of collared caribou migrated through the Mine and roads area on an annual basis. Comparison of distributions among years make it possible to determine whether the timing of caribou migration through the Mine and roads area is annually predictable. The distribution of collar data can also be compared to the distribution of ground counts (e.g., road and viewshed surveys) of caribou groups monitored for road closure.

Agnico Eagle requested an update of the analysis using the most recent telemetry data provided from the GN, current to 28 March 2023. The updated analysis includes individuals that interacted with spring and fall migration reference lines. The update included individuals were from the Ahiak, Beverly, Lorillard, Qamanirjuaq, and Wager Bay herds, as well as individuals not yet assigned to a herd and marked as Northeast Mainland (NEM) in the data (Figure 1). The first objective of this analysis was to determine whether timing of migration through the Mine area is predictable during spring and fall based on telemetry data. The second objective was to explore relationships between collared caribou distribution and patterns in observed abundances of caribou-based group sizes from ground counts. If migration through the Mine area is predictable, the predicted timing of migration could be used to inform the timing of road closures during periods most beneficial to caribou, rather than using the current GST approach. The analysis undertaken was of exploratory nature.



LEGEND

- POPULATED PLACE
- SPRING MIGRATION REFERENCE LINE
- FALL MIGRATION REFERENCE LINE
- ALL WEATHER ACCESS ROAD
- HAUL ROAD
- WATERCOURSE
- WATERBODY
- PROVINCIAL AND TERRITORIAL BOUNDARY



REFERENCE(S)
 1. BASE DATA OBTAINED FROM GEOGRATIS, © DEPARTMENT OF NATURAL RESOURCES, CANADA. ALL RIGHTS RESERVED.
 2. HAUL ROAD AND ALL WEATHER ACCESS ROAD OBTAINED FROM AEM.
 COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 14N

CLIENT **AGNICO EAGLE MINES LIMITED: MEADOWBANK DIVISION**

PROJECT **WHALE TAIL PROJECT**

TITLE **FALL AND SPRING MIGRATION REFERENCE LINES USED FOR MEADOWBANK CARIBOU MIGRATION ANALYSES**

CONSULTANT	YYYY-MM-DD	2023-08-25
	DESIGNED	MB
	PREPARED	LH
	REVIEWED	DC
	APPROVED	CDLM

PROJECT NO.	PHASE	REV.	FIGURE
21502960	8000/8010	0	1

PATH: Y:\nrc\mby\CAD-GIS\client\Agnico_Eagle_Mines_Ltd\WHALE_TAIL\09_PROJECTS\21502960\8000_8010_01_Meadowbank_Caribou_Migration.mxd PRINTED ON: 2023-08-25 AT 9:19:29 AM
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2.0 METHODS

Two north-south reference lines were placed along and beyond the WTHR and AWAR to maximize the number of collared movements (i.e., animals that do and do not interact with the WTHR and AWAR). The WTHR and AWAR do not have a straight north-south alignment and therefore cannot be used to standardize the timing of migration. In contrast, a straight north-south reference line does standardize timing because it occurs at the same point in space regardless of where a caribou encounters it. One north-south reference line was placed at the most western point of the WTHR and AWAR, north of Baker Lake, to capture migration of caribou from western wintering grounds to eastern calving grounds (i.e., the spring reference line; Figure 1). A second north-south reference line was placed at the most eastern point of the WTHR and AWAR, north of Baker Lake, to capture migration of caribou from eastern summering range to western wintering grounds (i.e., the fall reference line; Figure 1).

Caribou movement trajectories were estimated between subsequent telemetry locations, then trajectories were separated based on a unique caribou identifier (caribou ID), year, and season. Pre-defined seasonal migration periods were buffered by an additional 7 to 10 days to maximize migration trajectories and the number of reference line interaction dates; buffered dates were used to define movement trajectories occurring during spring and fall migration. Buffered movement trajectories occurring March 31 to June 6 (inclusive) were considered spring migration, and buffered movement trajectories occurring September 1 to December 31 (inclusive) were considered fall migration. For each spring trajectory, dates of intersection with the spring reference line were predicted; fall dates of intersection were predicted for fall trajectories using the fall reference line. Dates of intersection were predicted based on the average of the date and time of telemetry locations on either side of the reference line.

Individuals with a minimum fix rate (i.e., time between subsequent locations) greater than 24 hours were not included in the analysis. In addition, fixes less than 5 minutes apart were removed due to the uncertainty associated with these positions. If individuals crossed reference lines prior to buffered seasonal date ranges (i.e., March 31 in spring and September 1 in fall), they were not included in analysis. When a trajectory intersected with a reference line more than once during a season, the earliest date of intersection followed by westward movement in fall, or eastward movement in spring was used. Intersection dates (i.e., the standardized timing of migration) were stratified by caribou ID, year, and season. Since mitigation (e.g., road closure) is applied to all caribou regardless of herd, data from all herds were pooled by year. Analyses were not completed separately for each herd that interacted with spring or fall reference lines. For clarity, the intersection dates are not intended to represent the beginning, middle, or end of caribou migration but rather provide a standardized date that describes when caribou are moving through a specific place during migration.

To meet the first objective of this analysis, inter-annual variation in migration trends was assessed visually. To facilitate visual comparison of migration trends, probability density plots were created. Probability density plots can be interpreted similarly to histograms in that both plots display the general shape and spread of continuous data, except probability density plots represent the probability of obtaining the range of values represented on the x-axis and histograms represent the frequency of x-axis values obtained (Figure 2). In this case, the x-axis reflects the date values of intersection with reference lines for the spring and fall migrations of collared caribou.

The KivIA have highlighted the importance of protecting migratory leaders (i.e., the first wave of individuals interacting with reference lines) for preserving natural migratory patterns among caribou herds. Because fall migration appeared to be multimodal (i.e., caribou interacted with the fall reference line in multiple waves), the fall season was split into an early and late period, and inter-annual variation in fall migration was considered for each period separately. Migrations by leading caribou were, therefore, considered in early fall. Start and end dates for early and late fall periods were determined by visually assessing telemetry data collected from 2004 to 2022, for years with $n \geq 4$ caribou. Previously defined early and late fall date ranges were used (Golder 2021). Therefore, interactions with the fall reference line occurring September 1 to October 17 were considered early fall and interactions occurring October 18 to December 1 were considered late fall.

Inter-annual variation in migration trends was also estimated using linear mixed-effects models, where caribou ID was included as a random intercept to account for correlated migration behaviour of the same animal, and year was included as a fixed effect. If the effect of year was significant, post-hoc comparisons were completed between pairs of years using ANOVA to determine statistically significant differences in migration trends over time. Adjusted p -values are reported to account for multiple testing. All statistical analyses were implemented in *R* (R Core Team 2023) using the *glmmTMB* (Brooks et al. 2017), and *emmeans* (Lenth 2023) packages.

To address the second objective of this analysis, ground observations of caribou groups from 2018 to 2023 were compared with seasonal migration trends obtained from telemetry data from these years to determine whether similar migration timings were obtained. Given the proximity of the reference lines to Mine roads, the telemetry and ground observations are comparable because they are measuring approximately the timing of caribou movements through the roads area. Years from 2018 onwards were selected for these comparisons because substantial effort was allocated to ground-based caribou surveys in these years, and because the WTHR construction ceased in 2018. Lastly, the dates when 50% of caribou had completed migration were estimated and compared between ground observations and telemetry data for 2018 to 2023.

KivIA proposed that annual variations in traffic and road closures may have contributed to annual variations in timing of migration (Gunn and Poole 2021). In response, an additional analysis was completed to assess the effect of WTHR construction on spring and fall migration patterns. Migration data collected before 2018 were pooled into 'pre-WTHR' and data collected from 2018 onwards were pooled into 'post-WTHR', by season and period. Variation in migration trends pre- and post-WTHR were tested using a mixed effects model with season and period as the fixed effects, and year and caribou ID included as random intercepts; type II p -values were used in the analysis.

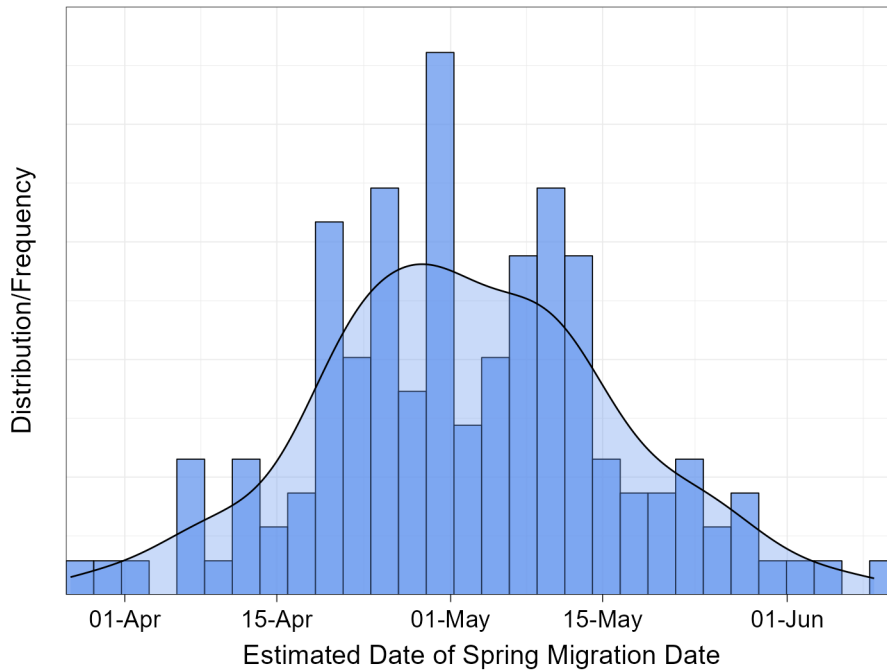
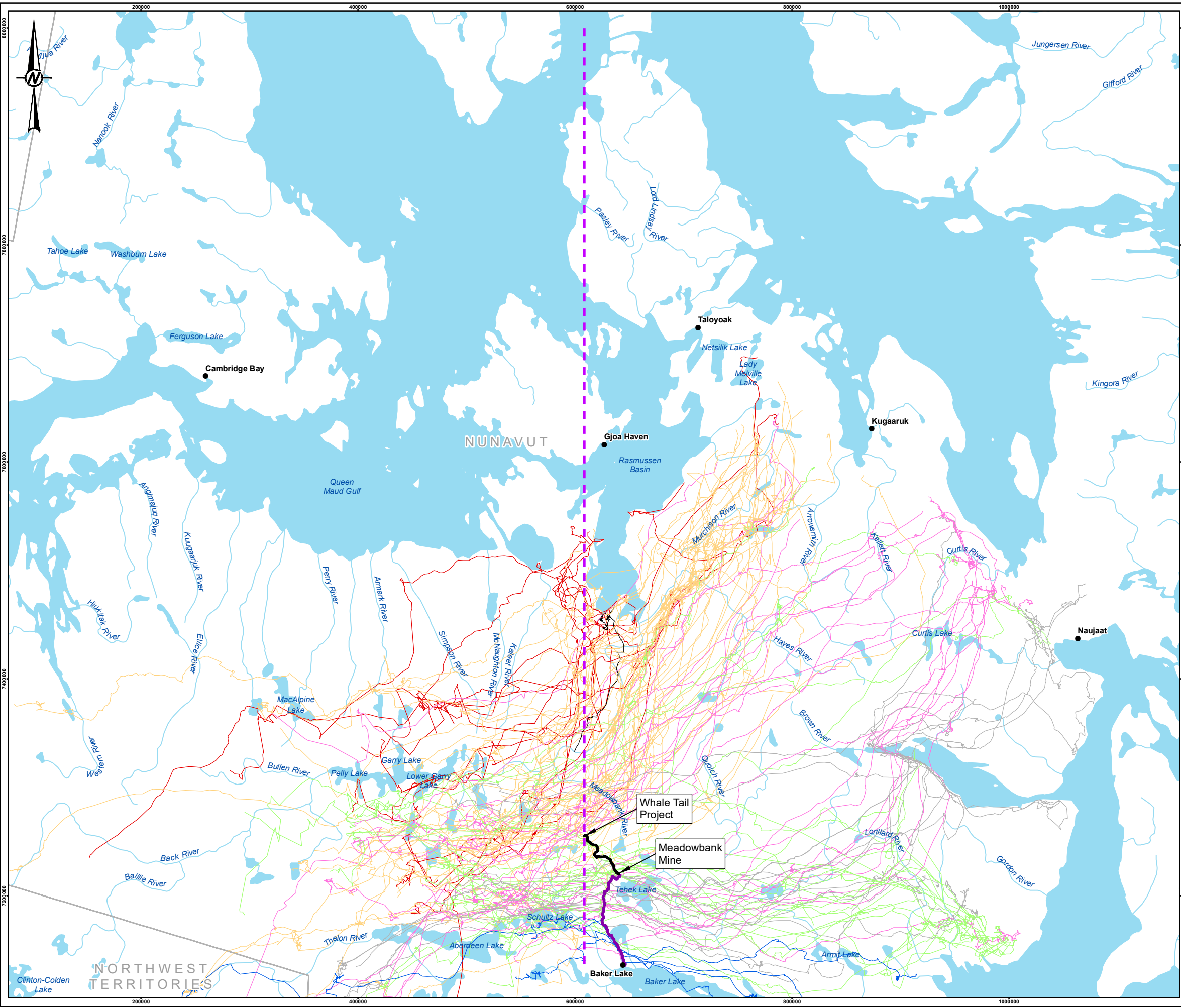


Figure 2: Probability density plot (translucent smoothed curve) and histogram plot (teal bars) depicting the shape and spread of continuous spring migration data. The probability density plot represents the continuous probability of obtaining the range of spring migration dates whereas the histogram plot represents the frequency of spring migration dates obtained. This figure was simulated as an example and does not depict any particular year of spring migration data.

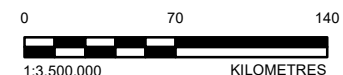
3.0 RESULTS

The individual tracklines and interactions with the AWAR/WTHR roads are shown in Figure 3 (spring migration) and Figure 4 (fall migration).



LEGEND

- POPULATED PLACE
- SPRING MIGRATION REFERENCE LINE
- SPRING TRAJECTORIES (2005-2023)
- AHIAK
- BEVERLY
- LORILLARD
- NEM
- QAMANIRJUAQ
- UNKNOWN
- WAGER BAY
- ALL WEATHER ACCESS ROAD
- HAUL ROAD
- WATERCOURSE
- WATERBODY
- PROVINCIAL AND TERRITORIAL BOUNDARY



REFERENCE(S)

1. BASE DATA OBTAINED FROM GEOGRATIS, © DEPARTMENT OF NATURAL RESOURCES, CANADA. ALL RIGHTS RESERVED.
2. HAUL ROAD AND ALL WEATHER ACCESS ROAD OBTAINED FROM AEM.

COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 14N

CLIENT **AGNICO EAGLE MINES LIMITED: MEADOWBANK DIVISION**

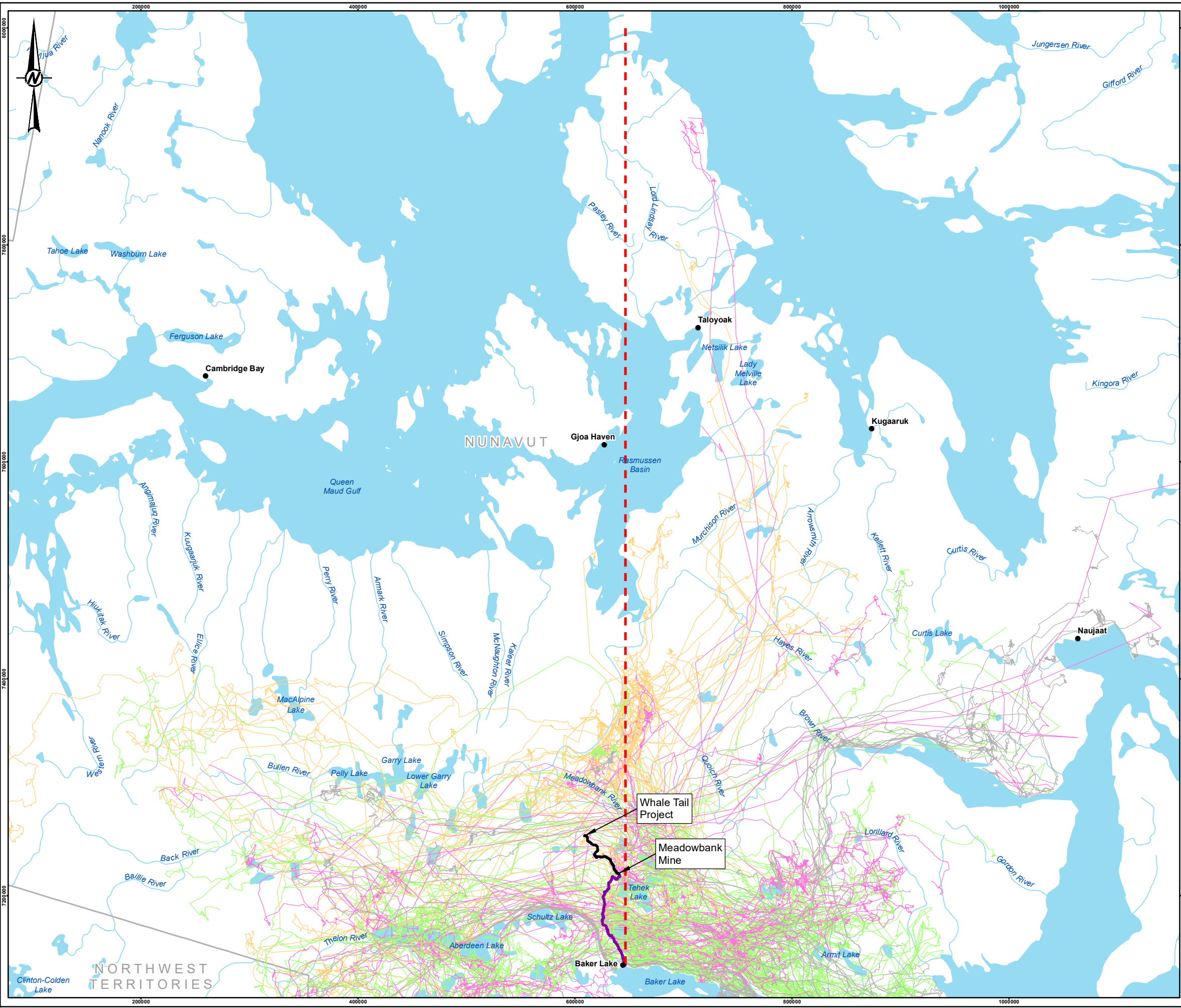
PROJECT **WHALE TAIL PROJECT**

TITLE **SPRING MIGRATION REFERENCE LINE AND TRAJECTORIES USED FOR MEADOWBANK CARIBOU MIGRATION ANALYSES (2005-2023)**

CONSULTANT	YYYY-MM-DD	2023-08-23
	DESIGNED	SW
	PREPARED	CDB
	REVIEWED	DC
	APPROVED	CDLM

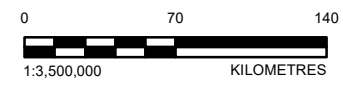
PROJECT NO.	PHASE	REV.	FIGURE
21502960	8000/8010	0	3

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LEGEND

- POPULATED PLACE
- - - FALL MIGRATION REFERENCE LINE
- AHIAK
- LORILLARD
- NEM
- WAGER BAY
- ALL WEATHER ACCESS ROAD
- HAUL ROAD
- WATERCOURSE
- WATERBODY
- PROVINCIAL AND TERRITORIAL BOUNDARY



REFERENCE(S)
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 2. HAUL ROAD AND ALL WEATHER ACCESS ROAD OBTAINED FROM AEM.
 COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 14N

CLIENT **AGNICO EAGLE MINES LIMITED:
MEADOWBANK DIVISION**

PROJECT **WHALE TAIL PROJECT**

TITLE **FALL MIGRATION REFERENCE LINE AND TRAJECTORIES
USED FOR MEADOWBANK CARIBOU MIGRATION ANALYSES
(2003-2022)**

CONSULTANT	YYYY-MM-DD	2023-08-23
	DESIGNED	SU
	PREPARED	CDB
	REVIEWED	DC
	APPROVED	CDLM

PROJECT NO. 21502960 PHASE 8000/8010 REV. 0 FIGURE 4

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The sample size of individuals by season, year, and herd are provided in Table 1. Across all years, the Ahiak herd had greatest number of interactions with the spring reference line ($n = 53$), followed by Lorillard ($n = 26$), and the Lorillard herd had the greatest number of interactions with the fall reference line ($n = 59$), followed by Wager Bay herd ($n = 36$). Four individuals from the Qamanirjuaq herd interacted with the spring reference line in 2018, and two caribou from the Beverly herd interacted with the fall reference line (one collar in 2012 and 2014 each). Caribou that have not been assigned to a herd (NEM herd designation) were only documented in fall 2022 (21 individuals) and spring 2023 (14 individuals).

Table 2 summarizes mean spring migration dates, with associated sample sizes and standard deviations, obtained from telemetry data from 2005 to 2023. Figure 5 displays migration dates for years with $n \geq 4$ caribou. Standard deviations represent the spread and variation of data, assuming a normal distribution; one standard deviation represents 67% of the data and two standard deviations represent 96% of the data. Standard deviations were not provided for years in which $n = 1$ (i.e., a sample size of one caribou interaction was available).

The estimated mean date of spring migration pooled across all years with $n \geq 4$ caribou was May 1 (Table 2; Figure 5). With a standard deviation of 16 days, the period encompassing mean ± 1 SD (covering 67% of spring migrations, assuming a normal distribution) extended between April 15 and May 17. The period encompassing mean ± 2 SD (covering 96% of spring migrations, assuming a normal distribution) extended between March 29 and June 2 (Table 2; Figure 5). From years with $n \geq 4$ caribou, the earliest mean spring migration date occurred in 2020 (April 19) and the latest mean spring migration date occurred in 2021 (May 21; Table 2; Figure 5). Standard deviations of spring migration from years with $n \geq 4$ caribou were relatively wide, ranging from 7 to 24 days. Wider spring migration date ranges than seen in the previous analysis may be related to inclusion of all herds, whereas the previous analysis only included the Lorillard herd (Golder 2021).

Spring migration distributions differed significantly across all years ($\chi^2 = 32.76$, $df = 11$, $p < 0.001$), based on linear mixed-effects model with earliest spring migration date by individual as the response variable ($n = 127$ observations). However, when Tukey contrasts were completed among pairs of years (Table 1 of Attachment 1), only two pairwise year comparison differed significantly (2017 compared to 2010 and 2020). The difference between these 2017 and 2010 was 27.8 days, and the difference between 2017 and 2020 was 27.4 days. Spring migration distributions did not vary pre- and post-WTHR construction ($\chi^2 = 0.543$, $df = 1$, $p = 0.46$).

The date at which approximately 50% of caribou counted during each year's ground observations had been recorded during the spring, ranged from April 19 (2018) to April 29 (2021; Figure 6). The average migration date based on telemetry data ranged from April 18 (2020) to May 16 (2022). The largest difference between the average date of spring migration from telemetry, and the date when approximately 50% of caribou counted during each year's ground observations had been recorded during the spring, was 25 days (2022; Figure 6). The smallest difference in migration timing estimated from the two methods was 3 days, observed in 2020 and 2023 (Figure 6).

The distribution of fall migration dates prior to separating data into early and late fall periods was highly variable in years with $n \geq 4$ caribou (Figure 7). The mean date of fall migration calculated based on all 14 years with $n \geq 4$ caribou was October 19 (Figure 7). With a standard deviation of 29 days, the period encompassing mean ± 1 SD (covering 67% of fall migrations, assuming a normal distribution) extended between September 19 and November 17. The period encompassing mean ± 2 SD (covering 96% of fall migrations, assuming a normal distribution) extended between August 21 and December 16 (Figure 7).

To reduce variability, the fall distributions were split into early and late fall periods for the 14 years with $n \geq 4$ caribou (Figure 8). The estimated date of early fall migration pooled across the seven years with $n \geq 4$ caribou was September 18 (Figure 8). With a standard deviation of 12 days, the period encompassing mean ± 1 SD (covering 67% of early fall migrations, assuming a normal distribution) extended between September 06 and September 30. The period encompassing mean ± 2 SD (covering 96% of early fall migrations, assuming a normal distribution) extended between August 25 and October 12 (Table 3; Figure 8). The estimated date of late fall migration pooled across the nine years with $n \geq 4$ caribou was November 10 (Figure 8). With a standard deviation of 13 days, the period encompassing mean ± 1 SD (covering 67% of late fall migrations, assuming a normal distribution) extended between October 28 and November 23. The period encompassing mean ± 2 SD (covering 96% of late fall migrations, assuming a normal distribution) extended between October 15 and December 6. Linear mixed-effects models to test differences in migration timing, where earliest migration date by individual was the response variable, could not be estimated for early fall ($n = 54$ observations) due to model convergence issues. Late fall migration distributions differed significantly across all years ($\chi^2 = 194.1$, $df = 8$, $p < 0.001$), based on linear mixed-effects model with earliest early fall migration date by individual as the response variable ($n = 68$ observations, after removal of 2 statistical outliers from 2010). Tukey contrasts were completed among pairs of years (Table 2 of Attachment 1), and a total of 25 out of the performed 36 pairwise year comparisons differed significantly. Overall, 2004, 2017, and 2019 had significantly earlier late fall migrations, while 2010, 2013, and 2015 had significantly later late fall migrations. Models for comparison of early and late fall migration distributions pre- and post-WTHR construction could not be completed due to lack of convergence.

Comparisons between telemetry data and ground observations are presented for the fall season as a whole, and not split into early and late fall periods. The date at which approximately 50% of caribou counted during each year's ground observations had been recorded during the fall, ranged from October 12 (2018) to December 9 (2021; Figure 9). The average migration date based on telemetry data ranged from September 22 (2018) to November 5 (2022). The largest difference between the average date of spring migration from telemetry, and the date when approximately 50% of caribou had migrated across the spring reference line based on road survey data was 49 days (2021; Figure 9). The smallest difference in migration timing estimated from the two methods was 5 days, observed in 2022 (Figure 9).

Table 1: Number of individuals by caribou herd that interacted with spring and fall reference lines by year (only years with at least one interaction are shown).

Year	Season	Ahiak	Beverly	Lorillard	NEM	Qamanirjuaq	Wager Bay	Total
2003	fall	0	0	1	0	0	0	1
2004	fall	0	0	3	0	0	4	7
2005	spring	0	0	1	0	0	0	1
2008	fall	3	0	0	0	0	0	3
2009	spring	3	0	0	0	0	0	3
	fall	2	0	0	0	0	0	2
2010	spring	13	0	0	0	0	1	14
	fall	10	0	0	0	0	1	11
2011	spring	5	0	0	0	0	0	5
	fall	5	0	7	0	0	2	14
2012	spring	4	0	4	0	0	1	9
	fall	3	1	4	0	0	0	8
2013	spring	2	4	1	0	0	0	7
	fall	1	0	5	0	0	0	6
2014	spring	0	1	1	0	0	1	3
	fall	0	1	2	0	0	1	4
2015	spring	1	0	0	0	0	1	2
	fall	1	0	4	0	0	3	8
2016	spring	1	2	3	0	0	3	9
	fall	1	0	3	0	0	5	9
2017	spring	1	5	0	0	0	1	7
	fall	1	0	6	0	0	3	10
2018	spring	3	1	4	0	3	3	14
	fall	1	0	15	0	0	8	24
2019	spring	4	1	6	0	0	7	18
	fall	3	0	3	0	0	3	9
2020	spring	3	0	1	0	0	3	7
	fall	1	0	4	0	0	5	10
2021	spring	1	0	4	0	0	3	8
	fall	1	0	2	0	0	1	4
2022	spring	2	1	1	0	0	0	4
	fall	0	0	0	21	0	0	21
2023	spring	10	0	0	14	1	0	25

Table 2: Mean spring caribou migration dates, and associated sample sizes (n), date ranges for standard deviations, and widths of standard deviation. Distributions associated with these data are visually presented in Figure 3.

Year	Sample Size (n)	Mean Date of Spring Migration	One Standard Deviation (# of Days)	+/- One Standard Deviation (Dates)	+/- Two Standard Deviations (Dates)
2005	1	21-Apr	N/A	N/A	N/A
2009	3	19-Apr	21	29-Mar - 10-May	08-Mar - 31-May
2010	14	24-Apr	19	05-Apr - 13-May	17-Mar - 01-Jun
2011	5	02-May	20	12-Apr - 22-May	23-Mar - 11-Jun
2012	9	07-May	8	29-Apr - 15-May	21-Apr - 23-May
2013	7	06-May	17	19-Apr - 23-May	02-Apr - 09-Jun
2014	3	06-May	10	26-Apr - 16-May	16-Apr - 26-May
2015	2	05-May	18	17-Apr - 23-May	30-Mar - 10-Jun
2016	9	27-Apr	7	20-Apr - 04-May	13-Apr - 11-May
2017	7	21-May	10	11-May - 31-May	01-May - 10-Jun
2018	14	05-May	15	20-Apr - 20-May	05-Apr - 04-Jun
2019	18	29-Apr	14	15-Apr - 13-May	01-Apr - 27-May
2020	7	19-Apr	12	07-Apr - 01-May	26-Mar - 13-May
2021	8	07-May	17	20-Apr - 24-May	03-Apr - 10-Jun
2022	4	16-May	24	22-Apr - 09-Jun	29-Mar - 03-Jul
2023	25	25-Apr	14	11-Apr - 09-May	28-Mar - 23-May

N/A = not applicable; value could not be calculated due to low sample size.

Table 3: Mean early and late fall caribou migration dates, and associated sample sizes (n), date ranges for standard deviations, and widths of standard deviations. Distributions associated with these data are visually presented in Figure 6.

Year	Period	Sample Size (n)	Mean Date of Migration	One Standard Deviation Width (# of Days)	+/- One Standard Deviation (Dates)	Two Standard Deviation Width (# of Days)
2008	Early	3	07-Oct	10	27-Sep - 17-Oct	17-Sep - 27-Oct
2009		2	04-Oct	14	20-Sep - 18-Oct	06-Sep - 01-Nov
2010		6	16-Sep	11	05-Sep - 27-Sep	25-Aug - 08-Oct
2011		4	25-Sep	16	09-Sep - 11-Oct	24-Aug - 27-Oct
2012		4	03-Oct	16	17-Sep - 19-Oct	01-Sep - 04-Nov
2013		1	06-Sep	N/A	N/A	N/A
2014		1	11-Sep	N/A	N/A	N/A
2015		2	24-Sep	19	05-Sep - 13-Oct	17-Aug - 01-Nov
2016		8	25-Sep	11	14-Sep - 06-Oct	03-Sep - 17-Oct
2017		1	13-Oct	N/A	N/A	N/A
2018		21	13-Sep	7	06-Sep - 20-Sep	30-Aug - 27-Sep
2019		4	21-Sep	20	01-Sep - 11-Oct	12-Aug - 31-Oct
2020		7	13-Sep	4	09-Sep - 17-Sep	05-Sep - 21-Sep
2021		2	28-Sep	1	27-Sep - 29-Sep	26-Sep - 30-Sep
2022		2	23-Sep	14	09-Sep - 07-Oct	26-Aug - 21-Oct
2003	Late	1	21-Oct	N/A	N/A	N/A
2004		7	26-Oct	4	22-Oct - 30-Oct	18-Oct - 03-Nov
2010		5	16-Nov	26	21-Oct - 12-Dec	25-Sep - 07-Jan
2011		10	12-Nov	11	01-Nov - 23-Nov	21-Oct - 04-Dec
2012		4	16-Nov	0	16-Nov - 16-Nov	16-Nov - 16-Nov
2013		5	28-Nov	7	21-Nov - 05-Dec	14-Nov - 12-Dec
2014		3	21-Nov	3	18-Nov - 24-Nov	15-Nov - 27-Nov
2015		6	23-Nov	1	22-Nov - 24-Nov	21-Nov - 25-Nov
2016		1	14-Dec	N/A	N/A	N/A
2017		9	30-Oct	2	28-Oct - 01-Nov	26-Oct - 03-Nov
2018		3	20-Nov	3	17-Nov - 23-Nov	14-Nov - 26-Nov
2019		5	29-Oct	5	24-Oct - 03-Nov	19-Oct - 08-Nov
2020		3	04-Nov	9	26-Oct - 13-Nov	17-Oct - 22-Nov
2021		2	13-Nov	17	27-Oct - 30-Nov	10-Oct - 17-Dec
2022		19	10-Nov	8	02-Nov - 18-Nov	25-Oct - 26-Nov

N/A = not applicable; value could not be calculated due to low sample size.

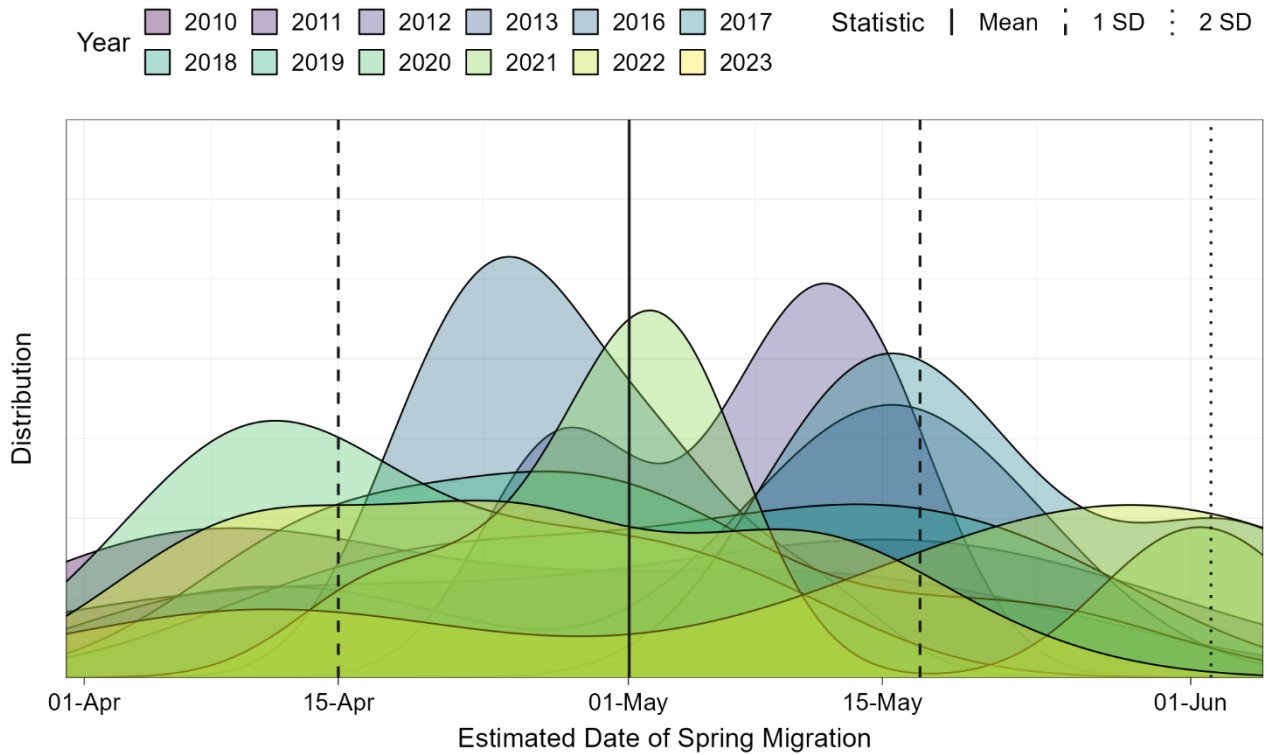


Figure 5: Distribution of estimated spring migration dates based on caribou telemetry data. Data were constrained to years with $n \geq 4$ caribou. Vertical lines indicate the mean spring migration date across all years (May 1), and the ± 1 SD (dashed) and ± 2 SD dates (dotted). Mean spring migration dates, sample sizes, and standard deviations for these data are summarized by year in Table 2.

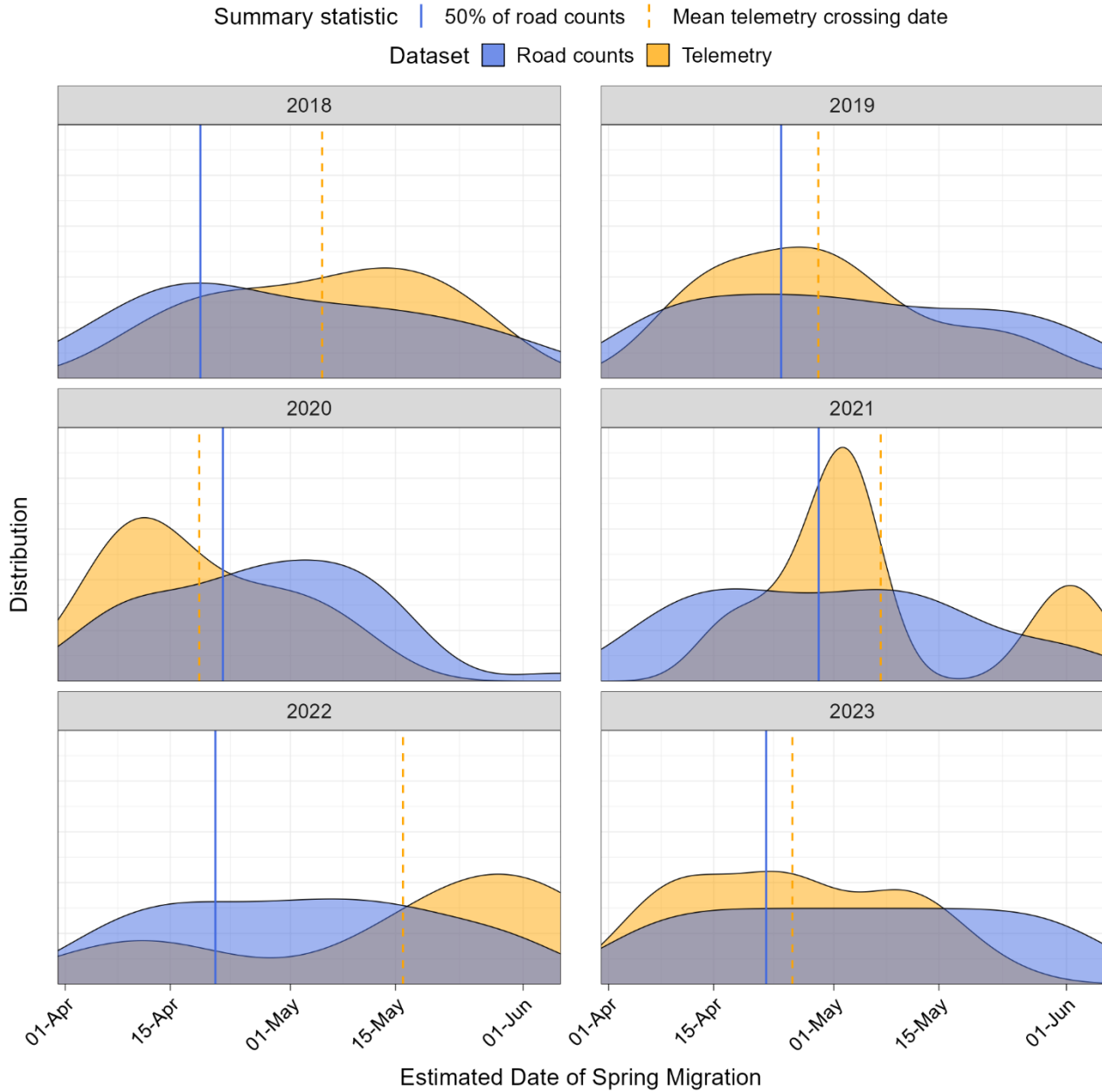


Figure 6: Comparison of spring migration dates based on ground observations and telemetry data from 2018 to 2023. Probability density plots depict the estimated distribution of spring migration per year from telemetry and road data. Vertical lines indicate the date at which 50% of caribou were estimated to have completed spring migration (road counts) and the average date of spring migration (telemetry data).

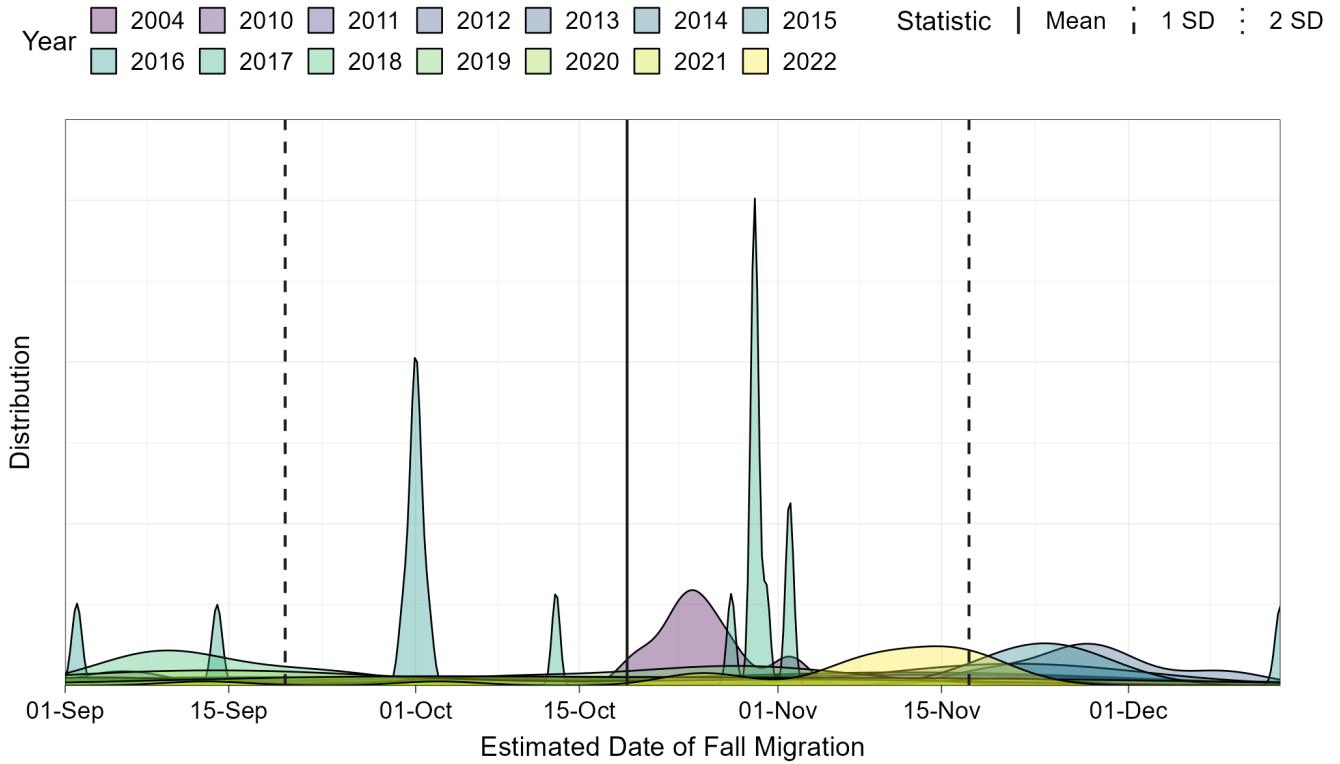


Figure 7: Distribution of estimated dates of fall migration based on caribou telemetry data. Data were constrained to years with $n \geq 4$ caribou. Vertical lines indicate the mean spring migration date across all years (May 1), and the ± 1 SD (dashed) and ± 2 SD dates (dotted).

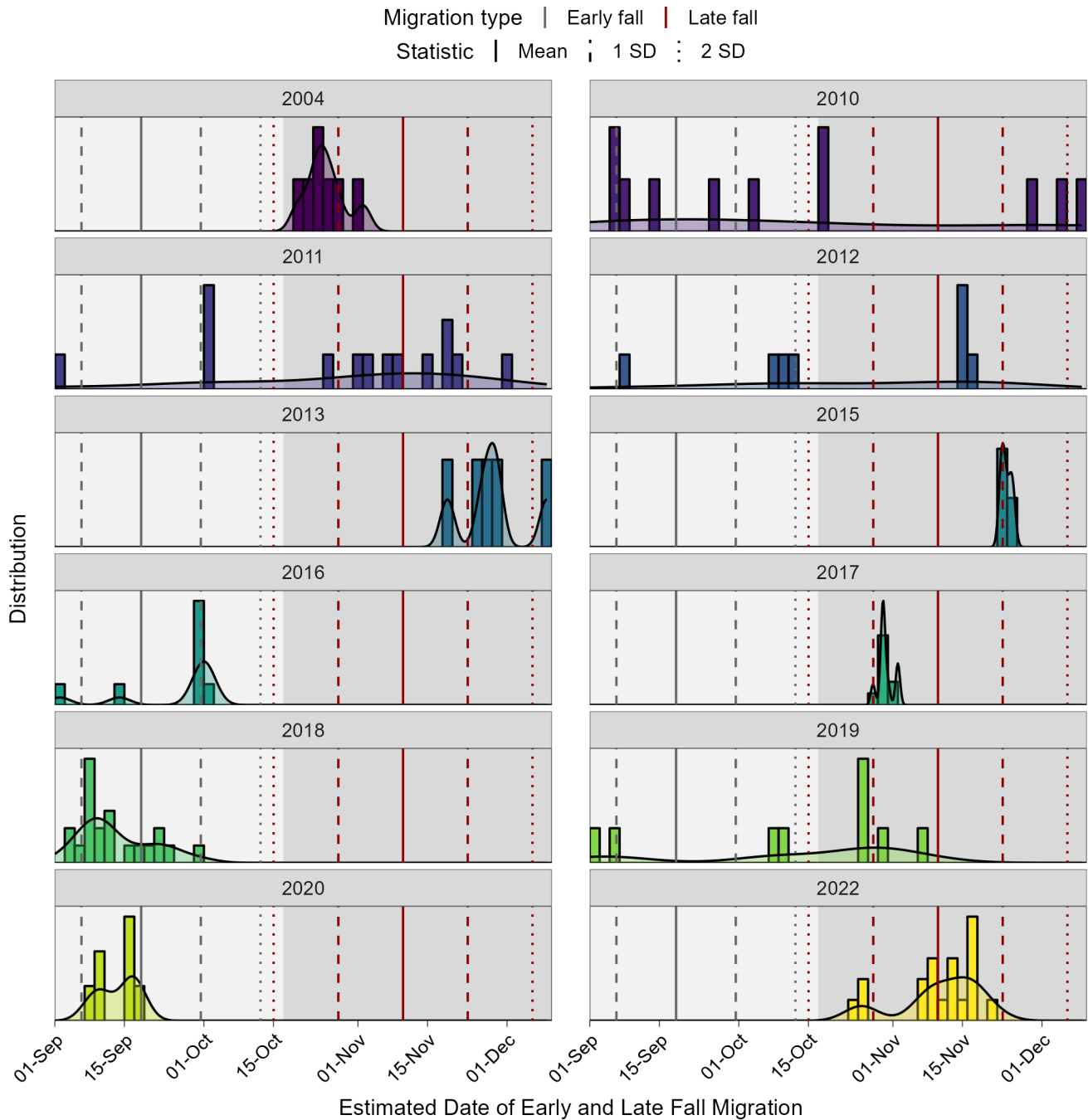


Figure 8: Distribution of estimated dates of early and late fall caribou migration based on telemetry data. Light grey boxes from day 220–290 represent the early fall period and dark grey boxes from day 291–360 represent the late fall period. Data were constrained to years with $n \geq 4$ caribou. Vertical lines indicate the mean early and late fall migration dates across all years (September 18 and November 10, respectively), and the ± 1 SD (dashed) and ± 2 SD dates (dotted). Mean early and late fall migration dates, sample sizes, and standard deviations for these data are summarized by year in Table 3.

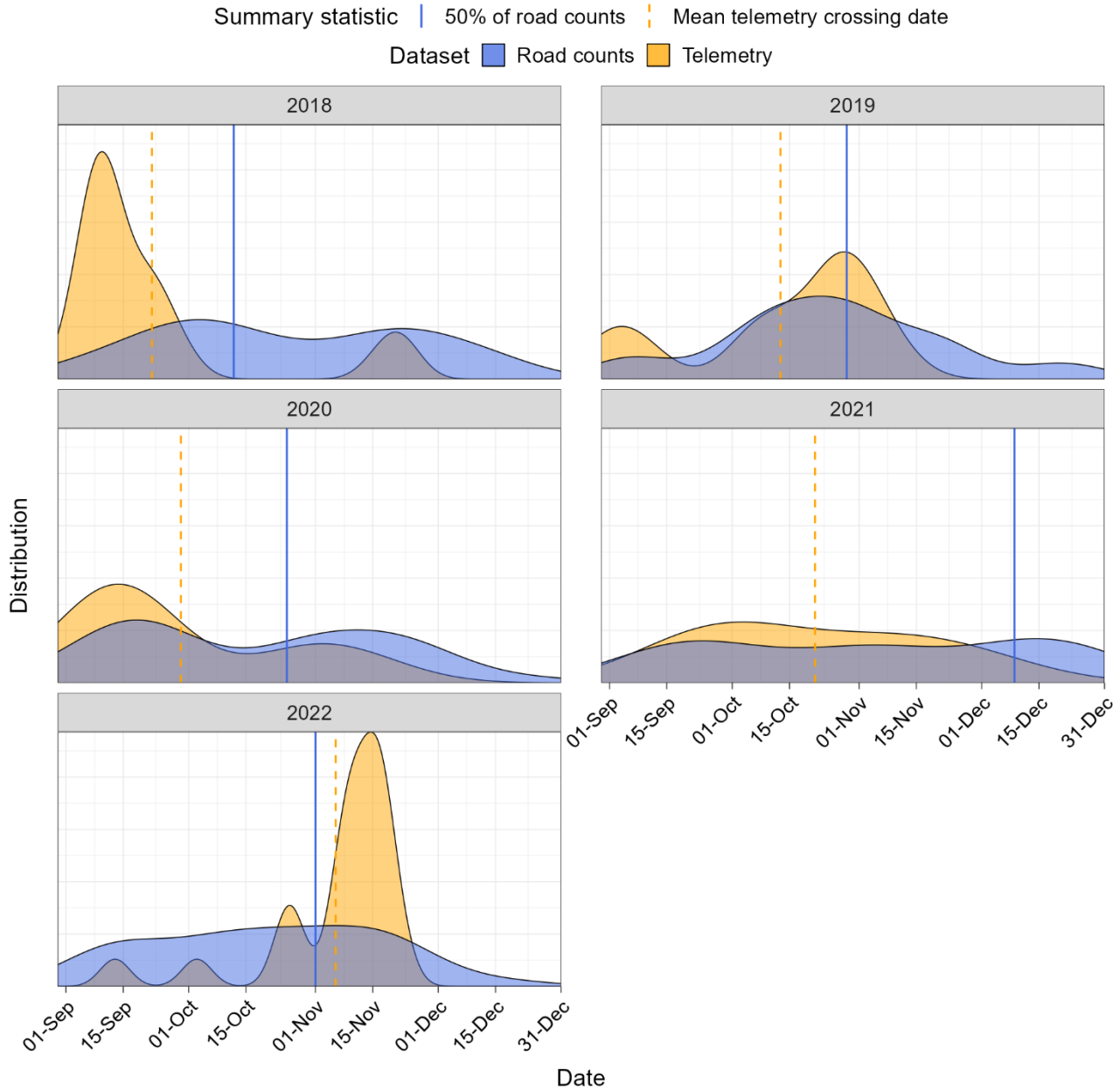


Figure 9: Comparison of fall migration dates based on ground observations and telemetry data from 2018 to 2022. Probability density plots depict the estimated distribution of fall migration per year from telemetry and road data. Vertical lines indicate the date at which 50% of caribou were estimated to have completed fall migration (road counts) and the average date of fall migration (telemetry data).

4.0 SUMMARY AND RECOMMENDATIONS

The updated analysis included data from 2003 to 2023, and individuals from five caribou herds (Ahiak, Beverly, Lorillard, Qamanirjuaq, and Wager Bay herds), as well as individuals not assigned to a herd (designated as NEM). The mean spring migration date was May 1, with 96% of spring migrations (assuming a normal distribution) occurring during 64 days between March 29 and June 2 when pooled across all years. Spring migration distributions differed significantly among years, and patterns of spring migration distributions did not differ pre- and post-WTHR construction. The mean overall fall migration date was October 19, with 96% of fall migrations (assuming a normal distribution) occurring during 117 days between August 21 and December 16. Early fall migrations (with $n \geq 4$ caribou) were observed in 7 years, and late fall migrations (with $n \geq 4$ caribou) were observed in 9 years. The mean early fall migration date was September 18, with 96% of early fall migrations (assuming a normal distribution) occurring between August 25 and October 12. The mean late fall migration date was November 10, with 96% of early fall migrations (assuming a normal distribution) occurring between October 15 and December 6.

Similarity between migration dates between telemetry and ground observations varied across years, but overall were more similar in the spring than in the fall. The date at which approximately 50% of caribou counted during each year's ground observations had been recorded during the spring, ranged from April 19 to April 29. The average spring migration date based on telemetry data ranged from April 18 to May 16. In the fall, migration dates based on ground observations ranged from day October 12 to December 9, and the average migration date based on telemetry data ranged from September 22 to November 5. Larger differences in estimated migration from ground and telemetry are expected in the fall, as fall migration extends over a longer period (117 days) than spring migration (64 days), and data were not summarized into early and late fall periods for this comparison.

Larger variation (i.e., standard deviation) in date ranges than seen in the previous analysis (Golder 2021) may be related to inclusion of individuals from all herds, whereas the previous analysis focused on the Lorillard herd because this is the herd that interacts with the Mine most frequently. A wider range of dates means that previously suggested mitigations, such as cap and pulse (e.g., convoys), may require a different trigger than date. It also means that pulse mitigation may be applied for a longer duration in some years. Other approaches, such as road closure during the approach of 'lead caribou' towards the Mine area should be investigated. The lead caribou approach would implement road closures to allow caribou leading herds to migrate through the Mine area, promoting movement of remaining caribou in the herd according to IQ.

Further exploratory analysis could aim to determine spring and fall migration timing differences between herds, where sample size allows. Influence of other variables on migration timing, such as snow conditions (Mallory et al. 2020) or weather (Gurarie et al. 2019) could be investigated. If differences can be explained by other variables, such as weather, then it may be possible to forecast when mitigation should be applied annually. The results of these analyses should be reviewed with the TAG to establish desired caribou protection outcomes (e.g., protection of lead caribou, protection of maximum number of caribou, or both) and how to best apply mitigation to reach the desired outcomes.

5.0 CLOSURE

We trust that the information contained in this report meets your present requirements. Please contact the undersigned if you have any questions or concerns.

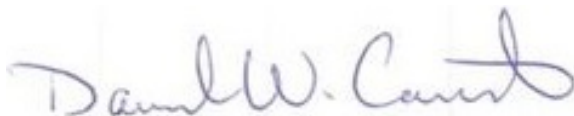
WSP Canada Inc.



Sima Usvyatsov, PhD
Senior, Biological Scientist



Corey De La Mare, PBIOL
Principal, Senior Ecologist



Daniel Coulton, PhD, RPBio
Senior Wildlife Biologist

SW/CDLM/DC/jlb

Attachments: Attachment 1 - Results of Tukey Comparisons

[https://golderassociates.sharepoint.com/sites/155895/project files/5 technical work/02_tag special studies/updated caribou migration analysis/rev1/21502960-590-tm-updated caribou analysis-rev1_clean.docx](https://golderassociates.sharepoint.com/sites/155895/project%20files/5%20technical%20work/02_tag%20special%20studies/updated%20caribou%20migration%20analysis/rev1/21502960-590-tm-updated%20caribou%20analysis-rev1_clean.docx)

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ATTACHMENT 1

Results of Post-Hoc Comparisons

Table 1: Post-hoc comparisons of mean spring migration dates for collared caribou. Years with n <4 caribou were excluded from comparisons. Bold rows indicate significant differences between pairs of years (p <0.05).

Comparison Years	Estimate	Standard Error	t Test Statistic	Tukey Adjusted p-value
2010 - 2011	-8.11	6.76	-1.2	0.988
2010 - 2012	-19.17	5.94	-3.228	0.069
2010 - 2013	-12.99	6.83	-1.901	0.756
2010 - 2016	-9.95	6.3	-1.58	0.912
2010 - 2017	-27.75	7.19	-3.858	0.010
2010 - 2018	-16.9	5.65	-2.99	0.126
2010 - 2019	-10.8	5.25	-2.057	0.654
2010 - 2020	-0.39	6.35	-0.061	1.000
2010 - 2021	-20.96	6.57	-3.192	0.075
2010 - 2022	-23.79	7.74	-3.072	0.103
2010 - 2023	-9.74	5.32	-1.833	0.796
2011 - 2012	-11.06	7.61	-1.453	0.950
2011 - 2013	-4.88	8.33	-0.587	1.000
2011 - 2016	-1.84	7.93	-0.232	1.000
2011 - 2017	-19.65	8.64	-2.274	0.501
2011 - 2018	-8.8	7.41	-1.187	0.989
2011 - 2019	-2.7	7.13	-0.378	1.000
2011 - 2020	7.72	7.96	0.97	0.998
2011 - 2021	-12.85	8.15	-1.576	0.914
2011 - 2022	-15.68	9.07	-1.729	0.851
2011 - 2023	-1.64	7.09	-0.231	1.000
2012 - 2013	6.18	7.17	0.862	0.999
2012 - 2016	9.22	6.36	1.45	0.950
2012 - 2017	-8.59	7.59	-1.131	0.993
2012 - 2018	2.26	5.85	0.387	1.000
2012 - 2019	8.36	5.52	1.515	0.933
2012 - 2020	18.78	6.71	2.797	0.196
2012 - 2021	-1.79	6.48	-0.277	1.000
2012 - 2022	-4.62	8.28	-0.559	1.000
2012 - 2023	9.43	6.26	1.505	0.936
2013 - 2016	3.04	6.91	0.44	1.000
2013 - 2017	-14.76	7.09	-2.083	0.635
2013 - 2018	-3.91	6.72	-0.582	1.000
2013 - 2019	2.19	6.43	0.34	1.000
2013 - 2020	12.6	7.57	1.665	0.880
2013 - 2021	-7.97	7.49	-1.064	0.996
2013 - 2022	-10.8	8.52	-1.268	0.981

Table 1: Post-hoc comparisons of mean spring migration dates for collared caribou. Years with n <4 caribou were excluded from comparisons. Bold rows indicate significant differences between pairs of years (p <0.05).

Comparison Years	Estimate	Standard Error	t Test Statistic	Tukey Adjusted p-value
2013 - 2023	3.25	7.1	0.458	1.000
2016 - 2017	-17.8	7.11	-2.506	0.348
2016 - 2018	-6.95	5.83	-1.192	0.989
2016 - 2019	-0.85	5.45	-0.157	1.000
2016 - 2020	9.56	6.75	1.417	0.958
2016 - 2021	-11.01	6.47	-1.703	0.863
2016 - 2022	-13.84	8.28	-1.671	0.877
2016 - 2023	0.21	6.61	0.031	1.000
2017 - 2018	10.85	7.04	1.541	0.925
2017 - 2019	16.95	6.68	2.538	0.328
2017 - 2020	27.37	7.84	3.493	0.032
2017 - 2021	6.8	7.83	0.868	0.999
2017 - 2022	3.96	8.61	0.46	1.000
2017 - 2023	18.01	7.47	2.411	0.408
2018 - 2019	6.1	4.97	1.228	0.986
2018 - 2020	16.52	6.29	2.625	0.279
2018 - 2021	-4.06	6.08	-0.668	1.000
2018 - 2022	-6.89	7.96	-0.865	0.999
2018 - 2023	7.16	5.82	1.231	0.985
2019 - 2020	10.42	5.84	1.784	0.823
2019 - 2021	-10.16	5.67	-1.791	0.819
2019 - 2022	-12.99	7.52	-1.728	0.851
2019 - 2023	1.06	5.64	0.188	1.000
2020 - 2021	-20.57	6.89	-2.985	0.128
2020 - 2022	-23.4	8.54	-2.741	0.221
2020 - 2023	-9.36	6.67	-1.403	0.961
2021 - 2022	-2.83	8.62	-0.329	1.000
2021 - 2023	11.22	6.86	1.634	0.892
2022 - 2023	14.05	8	1.755	0.838

Table 2: Post-hoc comparisons of mean late fall migration dates for collared caribou. Years with n <4 caribou were excluded from comparisons. Bold rows indicate significant differences between pairs of years (p <0.05).

Comparison Years	Estimate	Standard Error	t Test Statistic	Tukey Adjusted p-value
2004 - 2010	-20.3	5.12	-3.967	0.006
2004 - 2011	-16.85	4.31	-3.912	0.007
2004 - 2012	-21.75	5.48	-3.97	0.006
2004 - 2013	-32.6	5.12	-6.37	<0.001
2004 - 2015	-27.92	4.86	-5.741	<0.001
2004 - 2017	-3.67	4.4	-0.833	0.995
2004 - 2019	-2.9	5.12	-0.567	1.000
2004 - 2022	-14.71	3.86	-3.807	0.010
2010 - 2011	3.45	4.79	0.721	0.998
2010 - 2012	-1.45	5.86	-0.247	1.000
2010 - 2013	-12.3	5.53	-2.225	0.404
2010 - 2015	-7.62	5.29	-1.439	0.878
2010 - 2017	16.63	4.87	3.412	0.030
2010 - 2019	17.4	5.53	3.148	0.060
2010 - 2022	5.59	4.39	1.272	0.935
2011 - 2012	-4.9	5.17	-0.948	0.989
2011 - 2013	-15.75	4.79	-3.29	0.042
2011 - 2015	-11.07	4.51	-2.452	0.276
2011 - 2017	13.18	4.02	3.283	0.042
2011 - 2019	13.95	4.79	2.914	0.106
2011 - 2022	2.14	3.41	0.627	0.999
2012 - 2013	-10.85	5.86	-1.851	0.649
2012 - 2015	-6.17	5.64	-1.093	0.973
2012 - 2017	18.08	5.25	3.443	0.027
2012 - 2019	18.85	5.86	3.215	0.051
2012 - 2022	7.04	4.81	1.464	0.867
2013 - 2015	4.68	5.29	0.885	0.993
2013 - 2017	28.93	4.87	5.935	<0.001
2013 - 2019	29.7	5.53	5.373	<0.001
2013 - 2022	17.89	4.39	4.072	0.004
2015 - 2017	24.25	4.61	5.265	<0.001
2015 - 2019	25.02	5.29	4.727	<0.001
2015 - 2022	13.21	4.09	3.227	0.049
2017 - 2019	0.77	4.87	0.157	1.000
2017 - 2022	-11.04	3.54	-3.123	0.064
2019 - 2022	-11.81	4.39	-2.689	0.174

APPENDIX G

Hunter Harvest Study



MEADOWBANK COMPLEX MINE

2023 HUNTER HARVEST STUDY AND CREEL SURVEY SUMMARY REPORT

MARCH 2024 FINAL

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SECTION 1 • EXECUTIVE SUMMARY

A Baker Lake Hunter Harvest Study (HHS) conducted from 2007 to 2015 was relaunched in 2019 and continued into 2023. The 2023 study included 75 participants of which 63 reported harvesting Caribou (*Rangifer tarandus*). Given an estimated 300 to 350 active hunters in the Hamlet of Baker Lake, the HHS represents from 18 to 21% of hunters in the community. With a total reported Caribou harvest of 646 in 2023, the total Caribou harvest in Baker Lake in 2023 is estimated to range from 3,076 to 3,589 Caribou, which is comparable to the annual harvest between 1996 and 2001 (NWMB 2004).

Compared to the average across other years, Caribou in 2023 were harvested at a lower percentage within 5 km of the All-Weather Access Road (i.e., 37%) and at a lower percentage (71%) within the Regional Study Area (RSA). Harvest levels in 2023 near mining facilities were well within threshold levels established during the impact assessment (i.e., Caribou harvest levels within the RSA).

Seven (7) Muskox (*Ovibos moschatus*) and 18 Wolverine (*Gulo gulo*) were harvested in 2023, which is lower than in 2022 (i.e., 18 and 25, respectively). A total of 47 Wolves (*Canis lupus*) were reported as being harvested in 2023, which is considerably lower than the 92 reported in 2022. Red Fox (*Vulpes vulpes*) and Grizzly Bear (*Ursus arctos*) were also harvested, although Grizzly Bear was harvested outside the HHS boundaries. Several bird species were harvested in 2023 with Canada Goose (*Branta canadensis*) being the most common species. For the second year in a row, Beluga (*Huso huso*) and seal were reported as being harvested by Baker Lake hunters, but all were harvested outside the RSA.

Lake Trout (*Salvelinus namaycush*) and Lake Whitefish (*Coregonus clupeaformis*) were the most common fish species caught by fisherman in 2023, with Lake Trout reported at considerably lower numbers than in 2022.

SECTION 2 • OVERVIEW

As outlined in the original TEMP (Cumberland 2006) and the June 2019 version (Agnico Eagle 2019), and as a requirement of NIRB Project Certificate No. 004 Terms and Conditions 51 and 54, the Baker Lake Hunter Harvest Study (HHS) was initiated in March 2007 by Agnico Eagle. The HHS was conducted in association with the Baker Lake Hunters and Trappers Association (HTO) to monitor and document the spatial distribution, seasonal patterns, and harvest rates of hunter kills and angler catches within the Meadowbank Regional Study Area (RSA).

After low participation during the first year of the study, methods were strategically adapted, participation increased steadily, and valuable information on harvest patterns in the Baker Lake area was collected. The HHS, through regular visits, contributed to developing a strong relationship with local harvesters, the HTO, and the Government of Nunavut, Department of Environment (GN). Data were provided annually in monitoring reports from 2007 to 2015 and in 2019 to 2022.

The HHS was suspended for three years (2016 to 2018) to develop new approaches and direction. Following consultation with the HTO, Kivalliq Inuit Association (KivIA), GN, and other agencies in November 2016 (Winnipeg) and June 2017 (Ottawa), Agnico Eagle reinitiated the HHS in March 2019, which for the first time also encompassed the Whale Tail RSA as part of the Meadowbank Complex. The study approach was similar to previous years, but suggestions and guidance received during the consultation period were incorporated into the study. The study was conducted from 2020 to 2023 and continues into 2024.

SECTION 3 • OBJECTIVES

The primary objectives of the HHS are to monitor potential project-related effects on harvesting of wildlife by residents of Baker Lake. This objective is achieved by estimating the following key metrics:

1. The distribution of Caribou (*Rangifer tarandus*), Muskox (*Ovibos moschatus*), and Wolverine (*Gulo gulo*) harvest by residents of Baker Lake; and
2. The total level (or an index of) Caribou, Muskox, and Wolverine harvest by residents of Baker Lake.

Other objectives of the HHS, established in consultation with the Terrestrial Advisory Group (TAG), or other participants include:

- 1) Supporting creel surveys by gathering information on Arctic Char (*Salvelinus alpinus*), Lake Trout (*Salvelinus namaycush*), Lake Whitefish (*Coregonus clupeaformis*), and Arctic Grayling (*Thymallus arcticus*) catch rates and Inuit-use patterns in the Baker Lake area;
- 2) Understanding regional distribution of hunting and fishing activity;
- 3) Investigating seasonal timing of hunting and fishing activity; and
- 4) Determining whether increased harvest and catch rates are associated with the Meadowbank All-Weather Access Road (AWAR) and Whale Tail Haul Road (WTHR).

As discussed during consultation with stakeholders, the HHS will further seek to: a) increase and maintain the hunter participant rate in the future of the program; b) improve resource protection; c) improve hunter awareness and education; d) increase the integration of Inuit Qaujimagatuqangit and Traditional Knowledge; e) increase availability of data to support a collective approach to understanding wildlife harvest; and f) assist Agnico Eagle in mitigative actions and the GN in management decisions.

SECTION 4 • METHODOLOGY

The wildlife species that are the focus of the HHS are Caribou, Muskox, and Wolverine; however, harvest data on other species, such as Wolf (*Canis lupus*), Arctic Fox (*Vulpes lagopus*), geese, and other birds are also collected. The few species in the study were deliberately chosen to make data entry and collection as simple as possible. To support creel surveys, data on fish harvest (i.e., Arctic Char, Lake Trout, Lake Whitefish, and Arctic Grayling) are also collected.

Inuit and non-Inuit residents, at least 16 years of age, are eligible to participate in the harvest survey. Harvest calendars are provided on a household basis, rather than an individual basis, to simplify data entry and collection, and reflect household hunting patterns. The harvest calendar is attractive and consists of local photographs of wildlife and Baker Lake residents primarily taken by HHS participants (see **Appendix A** for 2023 calendar). Space is provided for each calendar day where harvest details can be documented. A map is provided at the end of the calendar that delineates a 4 km² UTM grid within the Baker Lake and Meadowbank Complex areas. Each grid has a unique code to facilitate recording of information. When calendars are issued, participants or participating households are encouraged to write harvest details (e.g., number of animals, sex, age, and location [i.e., grid code]) for the appropriate date on the calendar.

Participants were interviewed in person three times during the year (i.e., June 2023, October 2023, and January 2024) by the harvest study coordinator. During the January 2024 interviews, remaining data from 2023 were collected. The purpose of the interviews is to ensure all harvest data are recorded on the calendars and to collect incidental information to compliment calendar data, including notable Caribou movements, aggregations, and unique observations. Between interview periods, participants were often contacted by phone or social media to encourage recording of harvest data.

Features of the 2023 HHS included: 1) building long-term relationships between participants and researchers; 2) increasing engagement with participants on social media platforms such as Facebook and Instagram; and 3) increasing incentives for participating in the study (e.g., gas vouchers and prizes).

SECTION 5 • HISTORICAL RESULTS

The Baker Lake HTO member list (provided by Ms. Joan Scottie [HTO Board Member] in 2008) consisted of 683 local area hunters/trappers/fishermen, a number that has likely changed since then. The member count in 2008 was a highly conservative (i.e., high) estimate of the number of individuals that hunt, trap or fish in the community as the list typically includes entire families. If just the heads of each household are counted, there were 389 potential hunters within the Baker Lake community in 2008. Although this value is still likely conservative (given that many of these individuals do not actively hunt or fish), the number is comparable to the comprehensive 5-year Nunavut Wildlife Harvest Study (NWMB 2004) in which 336 Baker Lake hunters were contacted and interviewed.

Between 1996 and 2001, 18% of Caribou harvests were estimated to be within 5 km of the AWAR (prior to construction) and 67% of harvests occurred within the RSA (NWMB 2004). In the first year of the HHS study (2007), prior to completion of the AWAR, 34% of harvests were reported within 5 km of the AWAR alignment and 79% were recorded within the RSA. The HHS data (2007 to 2015 and 2019 to 2022) fluctuated between 34 and 43% of reported harvest within 5 km of the AWAR, and between 62 and 85% within the RSA.

In 2008, 296 Caribou were reported as being harvested by Baker Lake HHS study participants. Harvest numbers steadily increased to 680 in 2011, and then decreased to 269 in 2014, the lowest reported harvest in seven years, and 305 in 2015. Between 2016 and 2018 (3 years) the HHS was not conducted. Total Caribou harvests in 2019 (648 animals) and 2020 (652) were higher than in 2021, when a total of 513 Caribou were harvested, but lower than in 2022 when 766 Caribou were harvested. If an average of approximately 20% of all Baker Lake hunters actively participated in the study (5% estimated for 2014), extrapolation of historical HHS values suggests approximately 3,000 to 4,000 Caribou are harvested each year in the Hamlet of Baker Lake. These estimates are in general agreement with historical harvest studies. Specifically, using the upper limit of the standard error in the Nunavut Wildlife Harvest Study, between 2,230 and 3,116 Caribou were harvested each year between 1996 and 2001 (NWMB 2004). Similarly, the Interdisciplinary Systems (IDS) report (IDS 1978) estimated an annual Caribou harvest in Baker Lake of 4,100 during the 1970s.

Based on the NWMB (2004) and HHS results (2007 to 2015 and 2019 to 2022), highest Caribou harvests have occurred between August and December with a second smaller peak between March and May. The similar pattern between the studies indicates that seasonal hunting preferences have not changed markedly in the last two decades.

Reported harvests of Muskox and Wolverine were relatively high in 2022. Low densities of these species and their general aversion to humans require hunters to hunt well away from the AWAR; therefore, the presence of the AWAR is thought to have little effect on participant hunting patterns for Muskox and Wolverine. Wolverine harvest reports decreased from 15 animals in 2010 to one (1) animal in 2015; however, in 2019, 2020, and 2022 reported Wolverine harvests were at all-time highs of 18, 22, and 25 individuals, respectively.

SECTION 6 • 2023 HUNTER HARVEST STUDY RESULTS

6.1 NUMBER OF HUNTERS

The HHS included 75 participants by the end of 2023, which is higher than participants in 2022, 2021 and 2020 (i.e., 59, 55, and 64, respectively). Higher numbers in 2023 are because of several new participants. Of the 2023 participants, Caribou harvest data were collected from 63 participants, which is higher than the 55 participants reporting Caribou harvests in 2022 and considerably higher than the 39 hunters in 2021. The 63 participants reporting Caribou harvest in 2023 is the highest number since the HHS began.

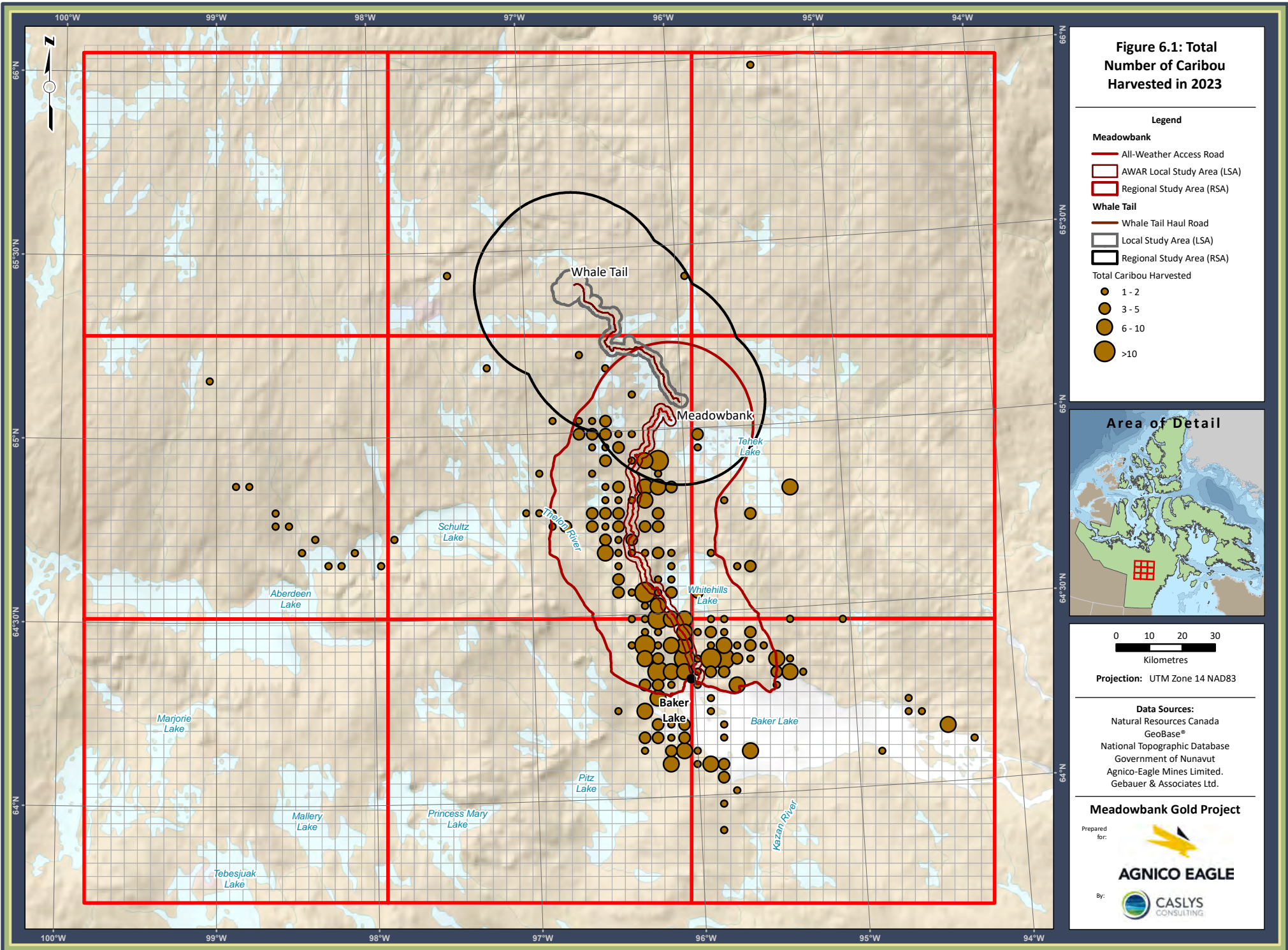
Based on the previous discussion of total numbers of hunters in the Hamlet of Baker Lake (**Section 5 Historical Results**), there were 389 potential hunters within the Baker Lake community in 2008. The number is comparable to the comprehensive 5-year Nunavut Wildlife Harvest Study (NWMB 2004) in which 336 Baker Lake hunters were contacted and interviewed. Discussions with Baker Lake HTO members in 2019 suggest the total number of hunters is over 300. Given the historical and current number of hunters in Baker Lake, an estimate of 300 to 350 active hunters is used in this analysis. Based on these numbers, the 63 hunters reporting Caribou harvest in 2023 conservatively represent from 18 to 21% of total hunters in the community.

6.2 DISTRIBUTION OF HUNTING

Figure 6.1 shows the distribution of Caribou harvest within the HHS data collection area. Hunting is highly concentrated in the vicinity of the Hamlet of Baker Lake and along the AWAR to approximately Km 85. More moderate harvests were reported along the northeastern and southwestern shores of Baker Lake, while limited hunting was reported within the Thelon River system to Aberdeen Lake. Annual variation in harvest location and intensity is attributable to numerous factors. For instance, many hunters have stated during informal discussions that they have a 'favorite' hunting area that they frequent each year. Some hunters have stated that they prefer hunting in 'convenient' locations, whereas other hunters prefer remote locations well away from frequented areas. A percentage of hunters also enjoyed partaking in long distance hunting trips over multiple days.

Between 1996 and 2001, 18% of Caribou harvests were estimated to be within 5 km of the AWAR (prior to construction) and 67% of harvests occurred within the Meadowbank RSA (NWMB 2004). In the first year of the HHS study (2007), prior to completion of the AWAR, 34% of harvests were reported within 5 km of the AWAR alignment and 79% were recorded within the Meadowbank RSA (see **Table 6.1**). The HHS data (2007 to 2015 and 2019 to 2022) fluctuated between 34 and 54% of reported harvest within 5 km of the AWAR, and between 62 and 85% within the Meadowbank RSA. The 2023 HHS data indicated that 37% of reported harvest occurred within 5 km of the AWAR, and 71% occurred within the Meadowbank RSA (see **Table 6.1**). As was the case in other years, threshold levels of 20% set for monitoring the effects of the Meadowbank mine development (note – does not include the Whale Tail mine, which was approved under a separate permit with a different effect assessment) on the distribution of Caribou harvest within the RSA were not exceeded (see **Figure 6.2**).

Figure 6.1: Total Number of Caribou Harvested in 2023



Legend

Meadowbank

- All-Weather Access Road
- AWAR Local Study Area (LSA)
- Regional Study Area (RSA)

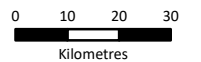
Whale Tail

- Whale Tail Haul Road
- Local Study Area (LSA)
- Regional Study Area (RSA)

Total Caribou Harvested

- 1 - 2
- 3 - 5
- 6 - 10
- >10

Area of Detail



Projection: UTM Zone 14 NAD83

Data Sources:

- Natural Resources Canada
GeoBase®
- National Topographic Database
Government of Nunavut
- Agnico-Eagle Mines Limited.
Gebauer & Associates Ltd.

Meadowbank Gold Project

Prepared for:



AGNICO EAGLE

By:



2023 HUNTER HARVEST STUDY SUMMARY

Table 6.1: Caribou Harvest Distribution along the AWAR and within the Meadowbank LSA and RSA (1996 to 2001 [NWMB], and 2007 to 2015 and 2019 to 2023 [Baker Lake HHS]).

Study	Participation Rate within 5 km of AWAR (% of total hunters)	Average Caribou Harvest within 5 km of AWAR per Participant	% of Annual Harvest within 5 km of AWAR	% of Annual Harvest within Meadowbank LSA	% of Annual Harvest within Meadowbank RSA
NWMB 1996 to 2001	n/a	n/a	18	7	67
Baker Lake HHS 2007	17 (49%)	4.8	34	12	79
Baker Lake HHS 2008	16 (94%)	6.9	37	28	73
Baker Lake HHS 2009	27 (75%)	7.9	36	20	78
Baker Lake HHS 2010	33 (89%)	7.3	38	22	73
Baker Lake HHS 2011	40 (85%)	7.1	42	25	74
Baker Lake HHS 2012	31 (67%)	5.6	35	20	80
Baker Lake HHS 2013	38 (86%)	4.8	43	27	85
Baker Lake HHS 2014	19 (70%)	5.7	40	28	83
Baker Lake HHS 2015	24 (67%)	6.9	54	34	84
Baker Lake HHS 2019	40 (95%)	5.4	34	22	64
Baker Lake HHS 2020	34 (79%)	5.8	30	19	62
Baker Lake HHS 2021	34 (87%)	6.6	43	32	71
Baker Lake HHS 2022	50 (91%)	6.0	39	24	70
Baker Lake HHS 2023	43 (68%)	5.6	37	22	71
Average (2007 to 2022)	31 (80%)	6.2	39	24	75
Average (2007 to 2023)	32 (79%)	6.2	39	24	75

In 2023, only one (1) Caribou was harvested within 5 km of the WTHR, which compares to no reported harvest during the NWMB harvest study, no Caribou harvested in 2022, and three (3) Caribou harvested in 2021 (see **Table 6.2**). Overall harvest numbers were too low to determine whether harvests have increased following construction of the WTHR. Within the Whale Tail RSA (note – overlaps with the Meadowbank RSA), a total of 74 harvests were reported in 2023, which is well above the average across the first 13 years of the study. Most harvests occurred along the northern end of the Meadowbank AWAR (i.e., up to Km 85) where the two RSAs overlap. Given the low numbers of reported harvests close to the WTHR and the prohibition of the public from the WTHR, it is unlikely that the presence of the road has resulted in increased harvest.

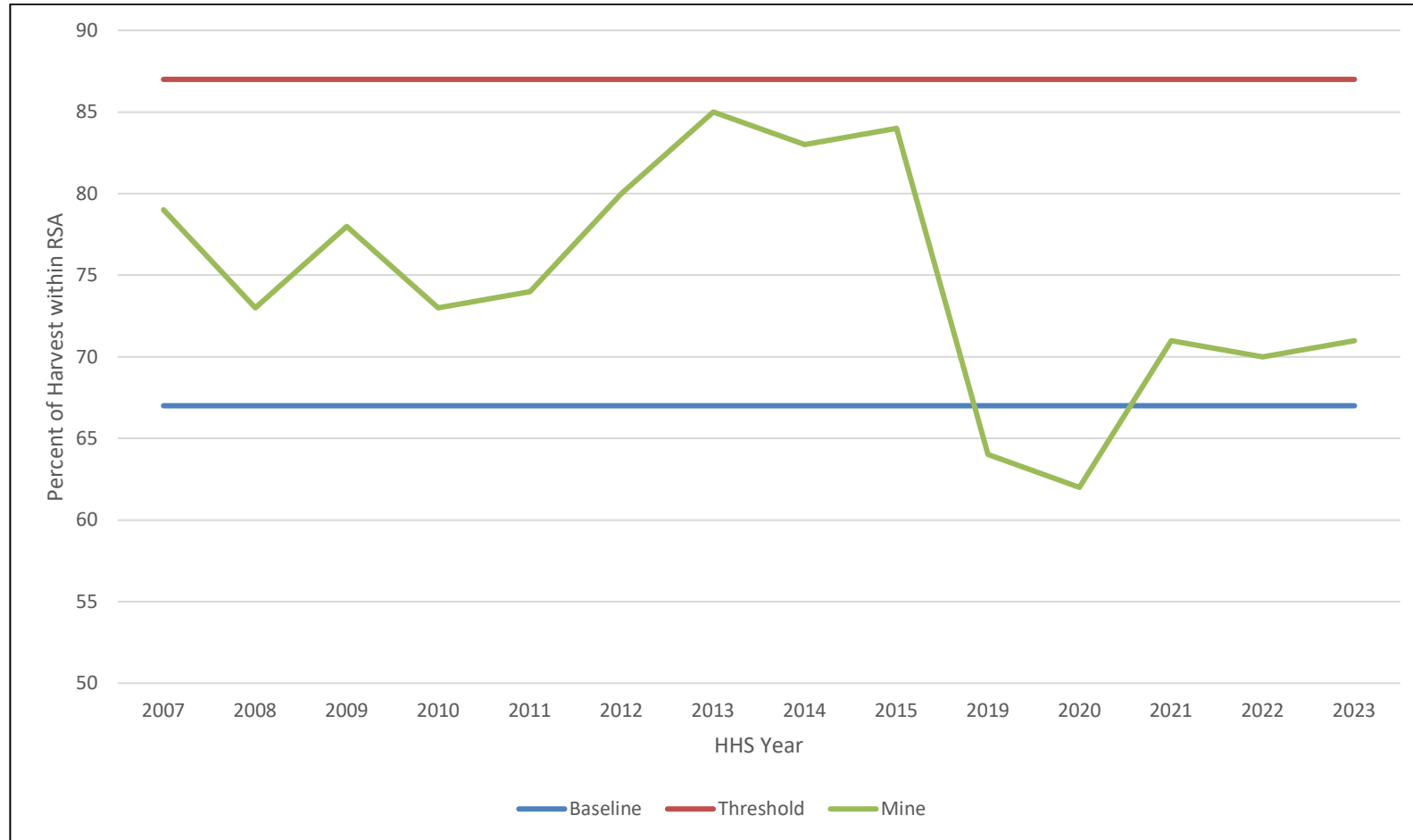


Figure 6.2: Percent of Caribou Harvest within the Meadowbank RSA from 2007 to 2015 (Years 1 to 9), and 2019 to 2023 (Years 10 to 14) Compared to Baseline and Threshold Levels.

Table 6.2: Caribou Harvest Distribution along the WTHR and within the Whale Tail LSA and RSA (1996 to 2001 [NWMB], and 2007 to 2015 and 2019 to 2023 [Baker Lake HHS]).

Study	Annual Harvest within 5 km of WTHR	Annual Harvest within Whale Tail LSA	Annual Harvest within Whale Tail RSA
NWMB 1996 to 2001	0	0	17
Baker Lake HHS 2007	1	1	1
Baker Lake HHS 2008	0	0	15
Baker Lake HHS 2009	1	0	15
Baker Lake HHS 2010	0	0	20
Baker Lake HHS 2011	0	0	103
Baker Lake HHS 2012	0	0	7
Baker Lake HHS 2013	0	0	16
Baker Lake HHS 2014	0	0	17
Baker Lake HHS 2015	0	0	53
Baker Lake HHS 2019	5	5	85
Baker Lake HHS 2020	0	0	12
Baker Lake HHS 2021	3	3	48
Baker Lake HHS 2022	0	0	34
Baker Lake HHS 2023	1	0	74
Average (2007 to 2022)	0.77	0.69	32.77
Average (2007 to 2023)	0.79	0.64	35.71

6.3 MAGNITUDE OF HUNTING

In 2023, a total of 646 Caribou were reported as being harvested by 63 participants in the Baker Lake HHS, which includes harvests in the Meadowbank and Whale Tail study areas (see **Table 6.3**). The number of participants reporting harvest and the total number of Caribou harvested are one of the highest since the HHS was initiated. Given that the 63 hunters represent an estimated 18 to 21% of the Baker Lake hunting community (see **Section 6.1**), the total estimated number of Caribou harvested in 2023 in the Baker Lake community ranged from 3,076 to 3,589 animals, which is lower than in 2022 (i.e., range of 4,256 to 4,788 animals) but comparable to historical predictions. Several participants expressed concern about the increase in sport hunting and hunting to distribute Caribou to other regions in Nunavut where Caribou harvest quotas are in place (e.g., Iqaluit). Comments included, “the sport hunters are keeping the animals away from town” or “sport hunting is scaring off wildlife”.

2023 HUNTER HARVEST STUDY SUMMARY

Table 6.3: Hunter Caribou Harvest Statistics from the NWMB (2004) Study and Baker Lake HHS (2007 to 2015; 2019 to 2023), which includes the Meadowbank and Whale Tail Areas.

Baker Lake Hunter Harvest Study – Agnico Eagle Mines Ltd.

Year	January	February	March	April	May	June	July	August	September	October	November	December	Yearly Total
2007	0	7	89	22	44	6	6	6	37	14	5	2	238
2008	13	15	14	10	19	14	25	34	56	47	24	25	296
2009	42	52	41	28	28	18	30	88	114	102	11	33	587
2010	27	35	34	66	47	41	46	67	82	117	48	18	628
2011	14	47	64	53	78	39	42	35	123	108	2	75	680
2012	43	30	60	71	41	44	13	19	39	37	72	27	496
2013	5	47	55	28	18	18	20	46	76	40	35	32	420
2014	13	26	20	42	7	11	4	5	43	68	14	16	269
2015	7	9	17	13	6	46	12	8	66	74	35	12	305
2019	7	25	72	86	30	39	17	29	52	187	55	48	648
2020	6	14	8	14	12	16	18	95	119	151	88	111	652
2021	29	27	61	16	44	23	20	54	90	54	36	56	513
2022	35	15	33	29	79	14	28	113	113	219	46	42	766
2023	21	31	25	61	78	24	11	37	61	151	53	93	646
Total #	262	380	593	539	531	353	292	636	1,071	1,369	527	590	7,143
Average	20.2	27.1	42.4	38.5	37.9	25.2	20.9	45.4	76.5	97.8	37.6	42.1	510.2
% of Total	3.7	5.3	8.3	7.5	7.4	4.9	4.1	8.9	15.0	19.2	7.4	8.3	100.0

2023 HUNTER HARVEST STUDY SUMMARY

Table 6.3: Continued.

Nunavut Wildlife Harvest Study - Nunavut Wildlife Management Board (NWMB)

Year	January	February	March	April	May	June	July	August	September	October	November	December	Yearly Total
1996						141	190	490	428	435	202	178	2,064
1997	118	144	146	167	217	159	162	354	322	553	295	196	2,833
1998	137	124	192	193	159	85	163	153	272	407	254	135	2,274
1999	137	131	99	211	222	111	148	433	528	409	74	66	2,569
2000	96	86	75	135	213	76	187	333	309	98	186	163	1,957
2001	150	126	146	156	127								705
Total #	638	611	658	862	938	572	850	1,763	1,859	1,902	1,011	738	12,402
Average	127.6	122.2	131.6	172.4	187.6	114.4	170	352.6	371.8	380.4	202.2	147.6	2,067
% of Total	5.1	4.9	5.3	7.0	7.6	4.6	6.9	14.2	15.0	15.3	8.2	6.0	100.0

6.4 SEASONAL DISTRIBUTION AND TIMING OF HUNTING

Based on the NWMB (2004) and inclusive Baker Lake HHS results (2007 to 2015; 2019 to 2023), highest Caribou harvests have occurred between August and December, with a second smaller peak between March and May (see **Figure 6.3**). The similar pattern between the studies indicates that seasonal hunting preferences have not changed markedly in the last decade. More details on the seasonal timing of harvest in 2023 can be found in **Figure 6.4** (i.e., numbers of animals harvested, numbers of participants, and average number of animals harvested by participant by month) and **Figure 6.5** (i.e., Caribou harvest numbers by season and proximity to the access roads).

The seasonal distribution of hunting is illustrated in **Figures 6.6a to 6.6d**, representing the spring, summer, fall, and winter Caribou seasons outlined in the TEMP. In spring 2023, overall Caribou hunting in the Meadowbank RSA was quite high with hunting occurring from the Hamlet of Baker Lake to the south end of Third Portage Lake around the Km 85 mark (**Figure 6.6a**). Within the Whale Tail RSA, several Caribou were harvested at the south end of Third Portage Lake, which is also within the Meadowbank RSA (**Figure 6.6a**). During the summer, Caribou in the Meadowbank RSA were harvested across a larger area but particularly along the AWAR up to around Km 85 and near the Hamlet of Baker Lake (**Figure 6.6b**). Some harvesting occurred along the Thelon River to Aberdeen Lake and on the northeastern shore of Baker Lake (**Figure 6.6b**). Several Caribou were harvested up to around Km 85 at the south end of the Whale Tail RSA (**Figure 6.6b**). In the fall, hunting was much more concentrated along the AWAR around the Hamlet of Baker Lake and in the vicinity of Whitehills Lake, around the Prince River, and along the southwestern shore of Baker Lake (**Figure 6.6c**). A small number of Caribou were reported as being harvested in the southern portion of the Whale Tail RSA in fall 2023 (**Figure 6.6c**). In winter, fewer Caribou were hunted along the AWAR and successful hunters were those that travelled further afield by snowmobile (e.g., along the Thelon River to Aberdeen Lake, east of Tehek Lake, and the southwestern side of Baker Lake) (**Figure 6.6d**). Scattered Caribou harvests were reported in the Whale Tail RSA (**Figure 6.6d**).

6.5 OTHER WILDLIFE SPECIES

There were seven (7) reported harvests for Muskox in 2023, which was considerably lower than the 18 reported harvests in 2022. Muskox harvests in 2023 were located outside the Meadowbank RSA in the vicinity of Pitz Lake and the Kazan River (**Figure 6.7**). Wolverine (total of 18 in 2023) was hunted in the Whitehills Lake area, along the Thelon River between Schulz and Aberdeen lakes, and at the southwestern end of Baker Lake (see **Figure 6.8**). Wolf harvest in 2023 (47) was considerably lower than the 92 reported in 2022 and higher than the 26 reported in 2021. Wolves were either harvested close to Baker Lake, in the Whitehills Lake area, or east and northeast of the Whale Tail site (**Figure 6.8**). In 2023, the presence of the AWAR may have had some influence on participant hunting patterns for Wolf.

Arctic Fox was not reported as being harvested in 2023, which compares to 36 harvests in 2022, five (5) in 2021, and 11 in 2020, while Red Fox (3 individuals) was harvested near the Hamlet of Baker Lake (**Figure 6.7**). One (1) Grizzly Bear was reported as being taken in 2023 but this was outside the HHS boundaries.

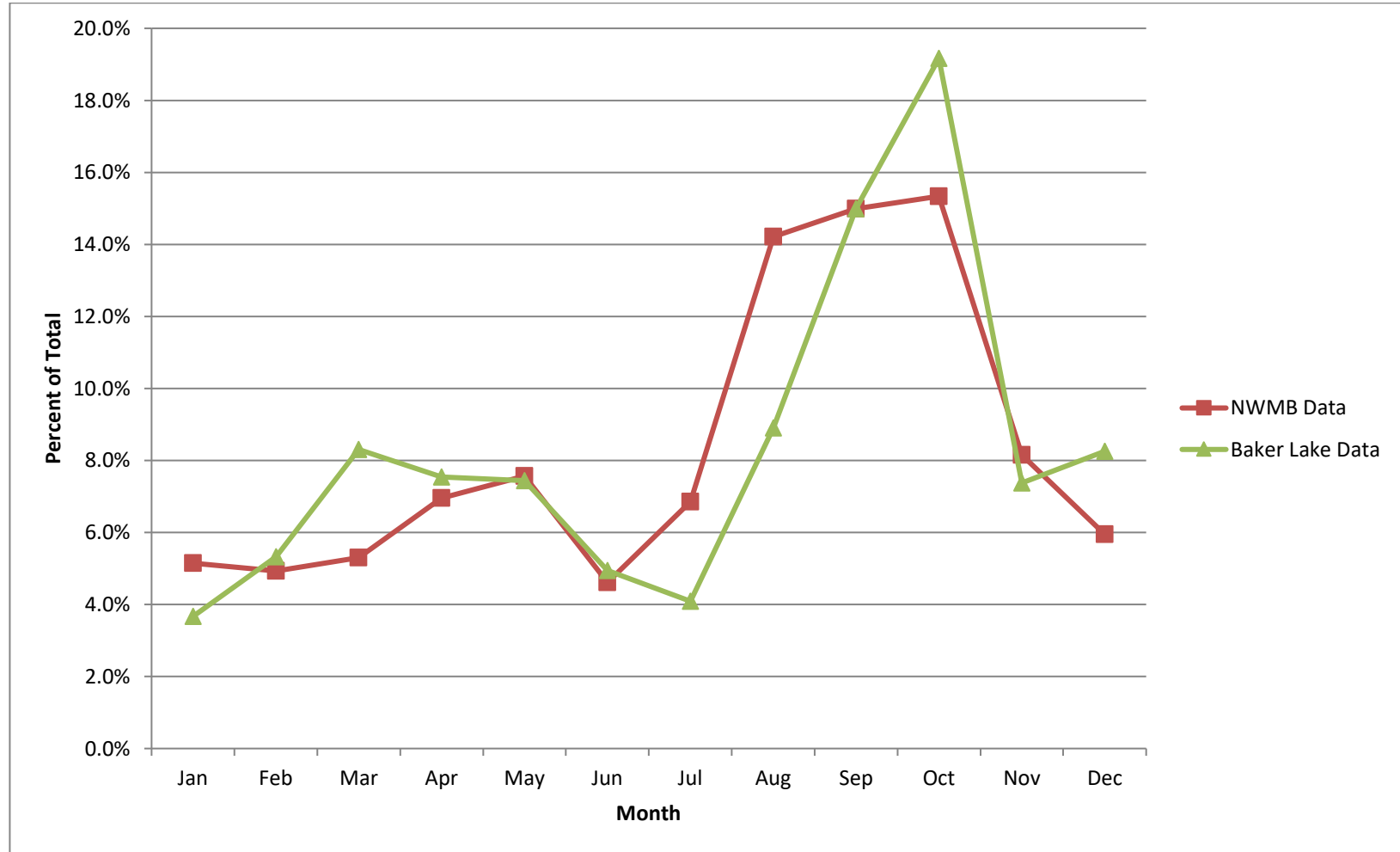


Figure 6.3: Seasonal Trends in Caribou Harvest from the Baker Lake HHS (2007 to 2015; 2019 to 2023) and the NWMB Study (1996 to 2001).

2023 HUNTER HARVEST STUDY SUMMARY

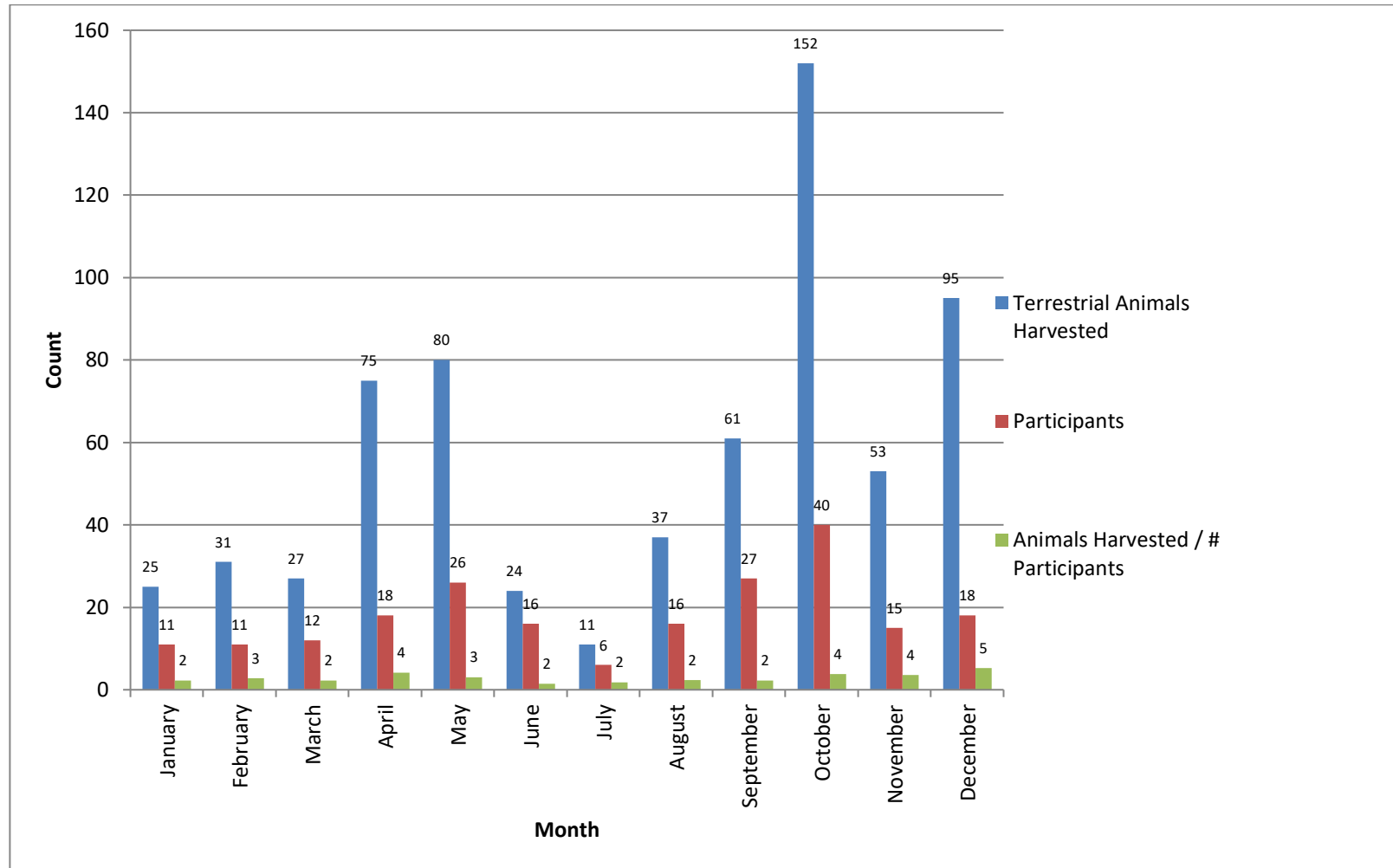


Figure 6.4: Terrestrial Animals Harvested per Month and by Participant in 2023.

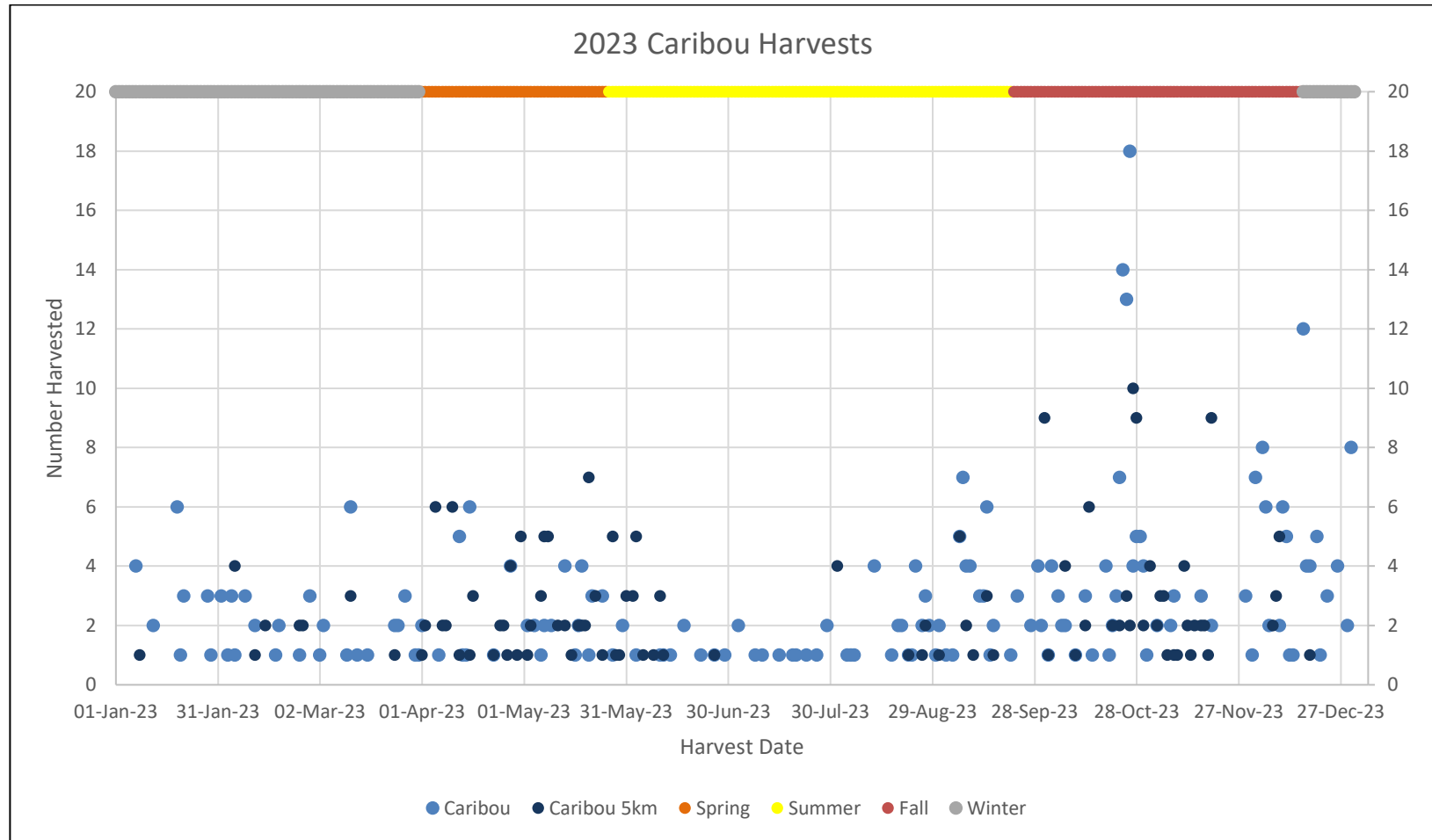











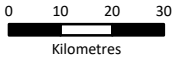
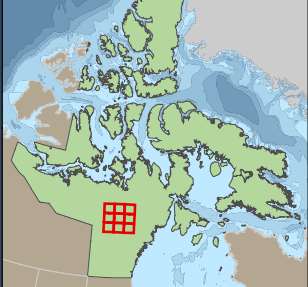
Figure 6.5: Number of Caribou harvested in each Caribou Season and Proximity to Access Roads in 2023.

Figure 6.6a: Total Number of Caribou Harvested Spring 2023 (Apr 1 - May 25)

Legend

- Meadowbank**
-  All-Weather Access Road
 -  AWAR Local Study Area (LSA)
 -  Regional Study Area (RSA)
- Whale Tail**
-  Whale Tail Haul Road
 -  Local Study Area (LSA)
 -  Regional Study Area (RSA)
- Total Caribou Harvested**
-  1 - 2
 -  3 - 5
 -  >5

Area of Detail



Projection: UTM Zone 14 NAD83

Data Sources:
 Natural Resources Canada
 GeoBase®
 National Topographic Database
 Government of Nunavut
 Agnico-Eagle Mines Limited.
 Gebauer & Associates Ltd.

Meadowbank Gold Project

Prepared for:



AGNICO EAGLE

By:



CASLYS CONSULTING

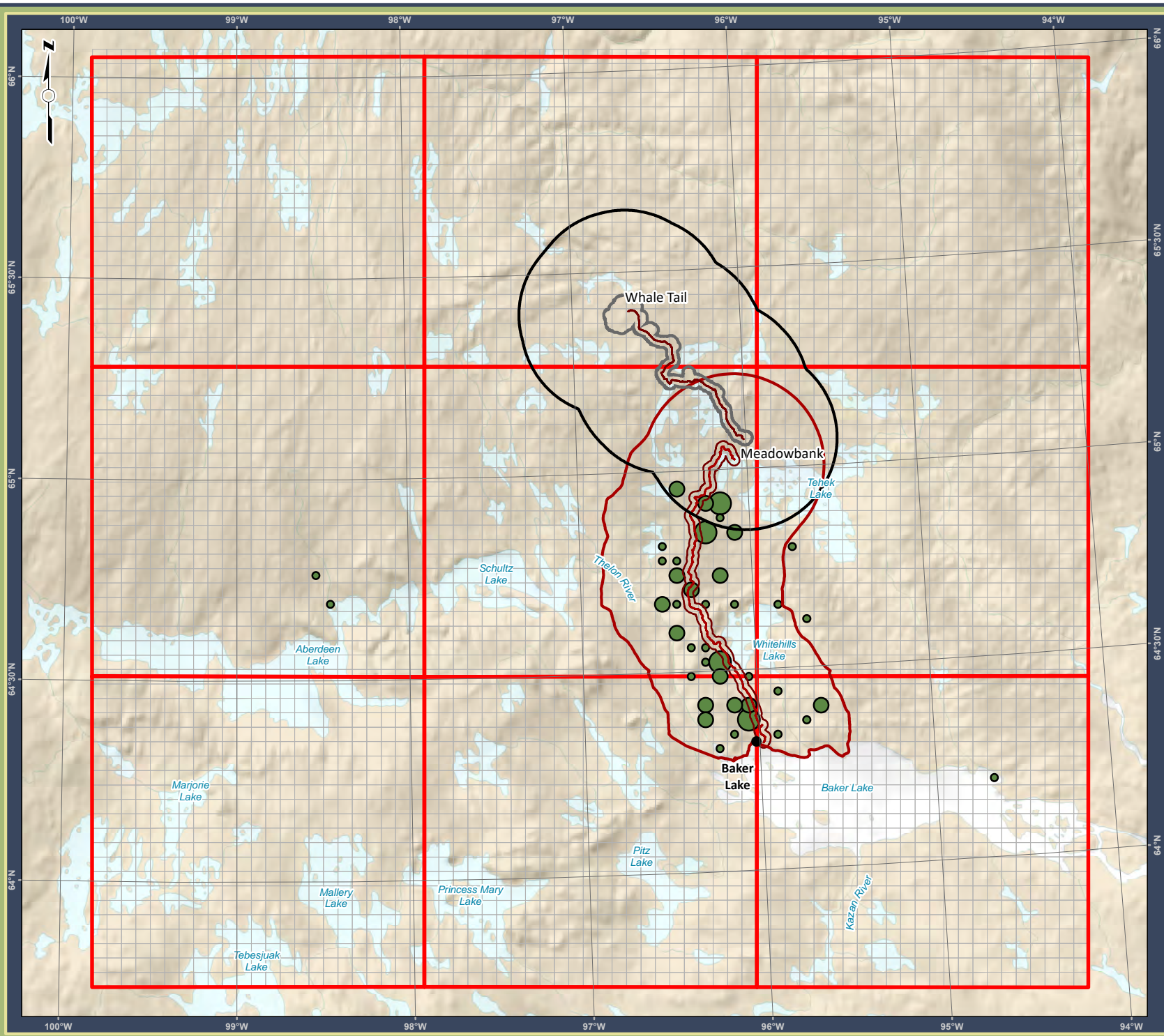


Figure 6.6b: Total Number of Caribou Harvested Summer 2023 (May 26 - Sep 21)

Legend

Meadowbank

- All-Weather Access Road
- AWAR Local Study Area (LSA)
- Regional Study Area (RSA)

Whale Tail

- Whale Tail Haul Road
- Local Study Area (LSA)
- Regional Study Area (RSA)

Total Caribou Harvested

- 1 - 2
- 3 - 5
- 6 - 10
- >10



0 10 20 30
Kilometres

Projection: UTM Zone 14 NAD83

Data Sources:
 Natural Resources Canada
 GeoBase®
 National Topographic Database
 Government of Nunavut
 Agnico-Eagle Mines Limited.
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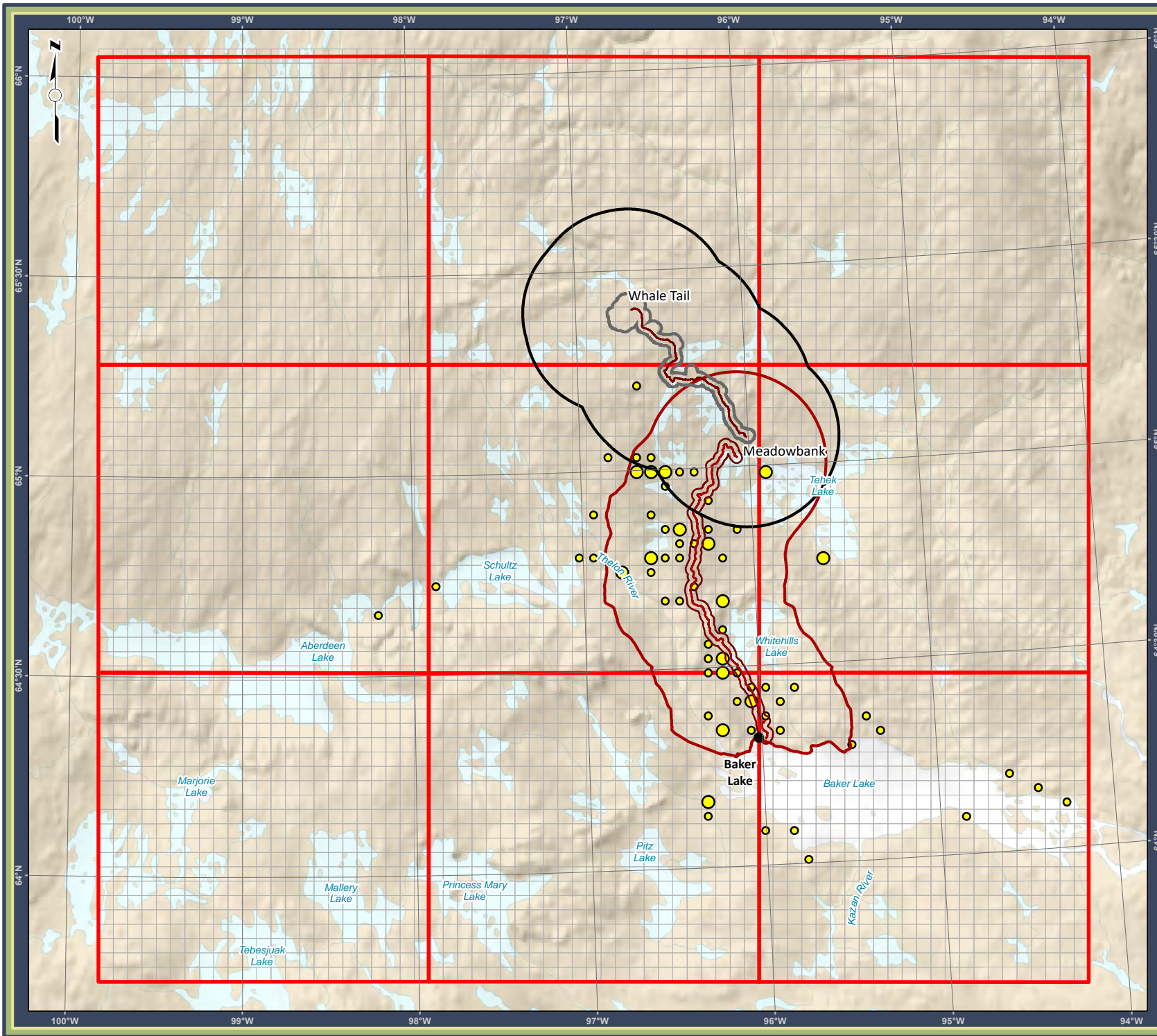


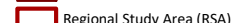



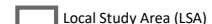
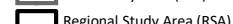
Figure 6.6c: Total Number of Caribou Harvested Fall 2023 (Sep 22 - Dec 15)

Legend




Meadowbank

-  All-Weather Access Road
-  AWAR Local Study Area (LSA)
-  Regional Study Area (RSA)

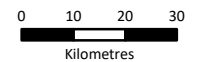
Whale Tail

-  Whale Tail Haul Road
-  Local Study Area (LSA)
-  Regional Study Area (RSA)

Total Caribou Harvested

-  1 - 2
-  3 - 5
-  6 - 10
-  >10

Area of Detail



Projection: UTM Zone 14 NAD83

Data Sources:

Natural Resources Canada
GeoBase®
National Topographic Database
Government of Nunavut
Agnico-Eagle Mines Limited.
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Meadowbank Gold Project

Prepared for:



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By:

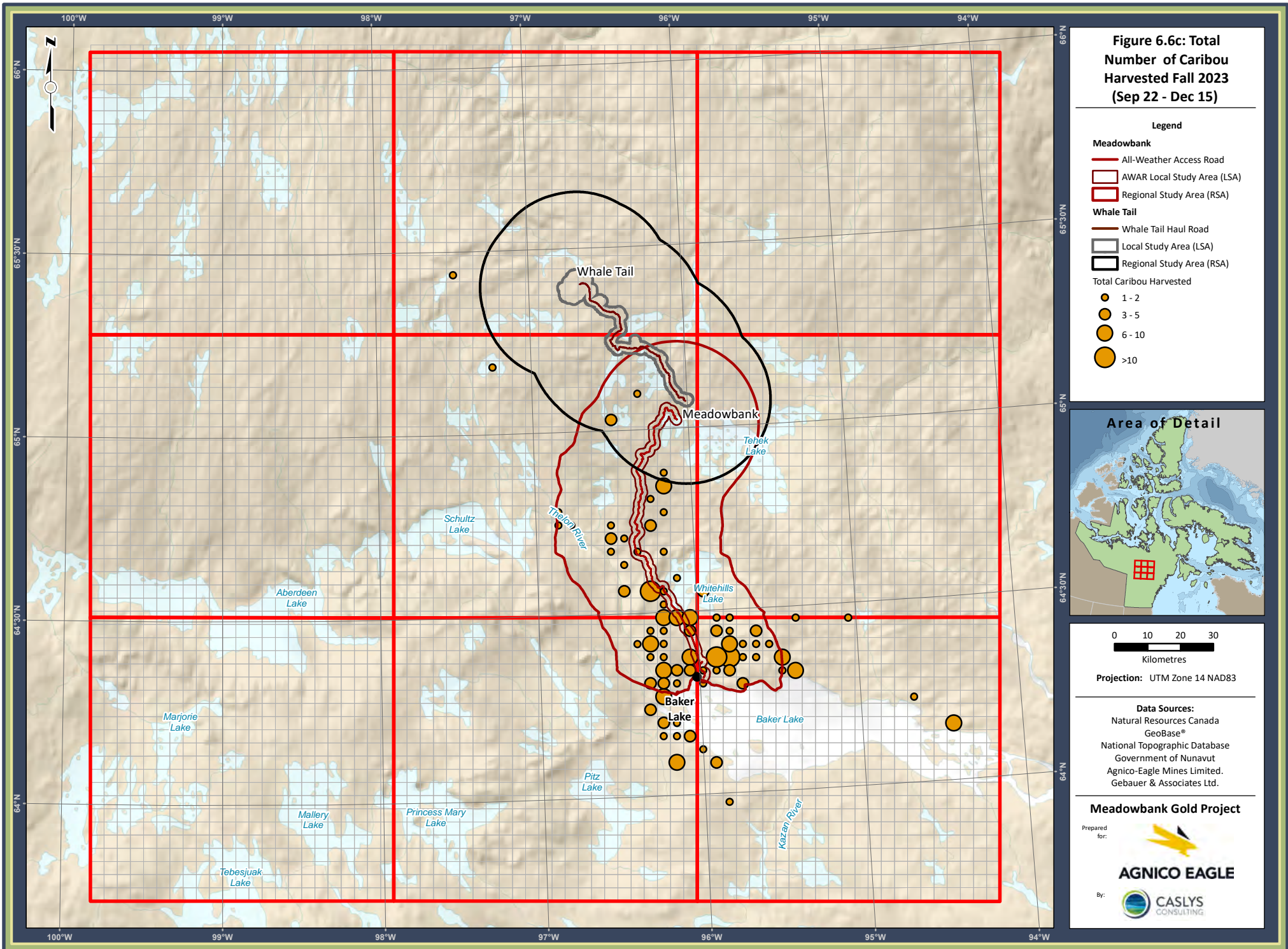


Figure 6.6d: Total Number of Caribou Harvested Winter 2023 (Dec 16 - Mar 31)

Legend

Meadowbank

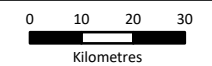
- All-Weather Access Road
- AWAR Local Study Area (LSA)
- Regional Study Area (RSA)

Whale Tail

- Whale Tail Haul Road
- Local Study Area (LSA)
- Regional Study Area (RSA)

Total Caribou Harvested

- 1 - 2
- 3 - 5
- 6 - 10
- >10



Projection: UTM Zone 14 NAD83

Data Sources:
 Natural Resources Canada
 GeoBase®
 National Topographic Database
 Government of Nunavut
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Meadowbank Gold Project

Prepared for:



By:

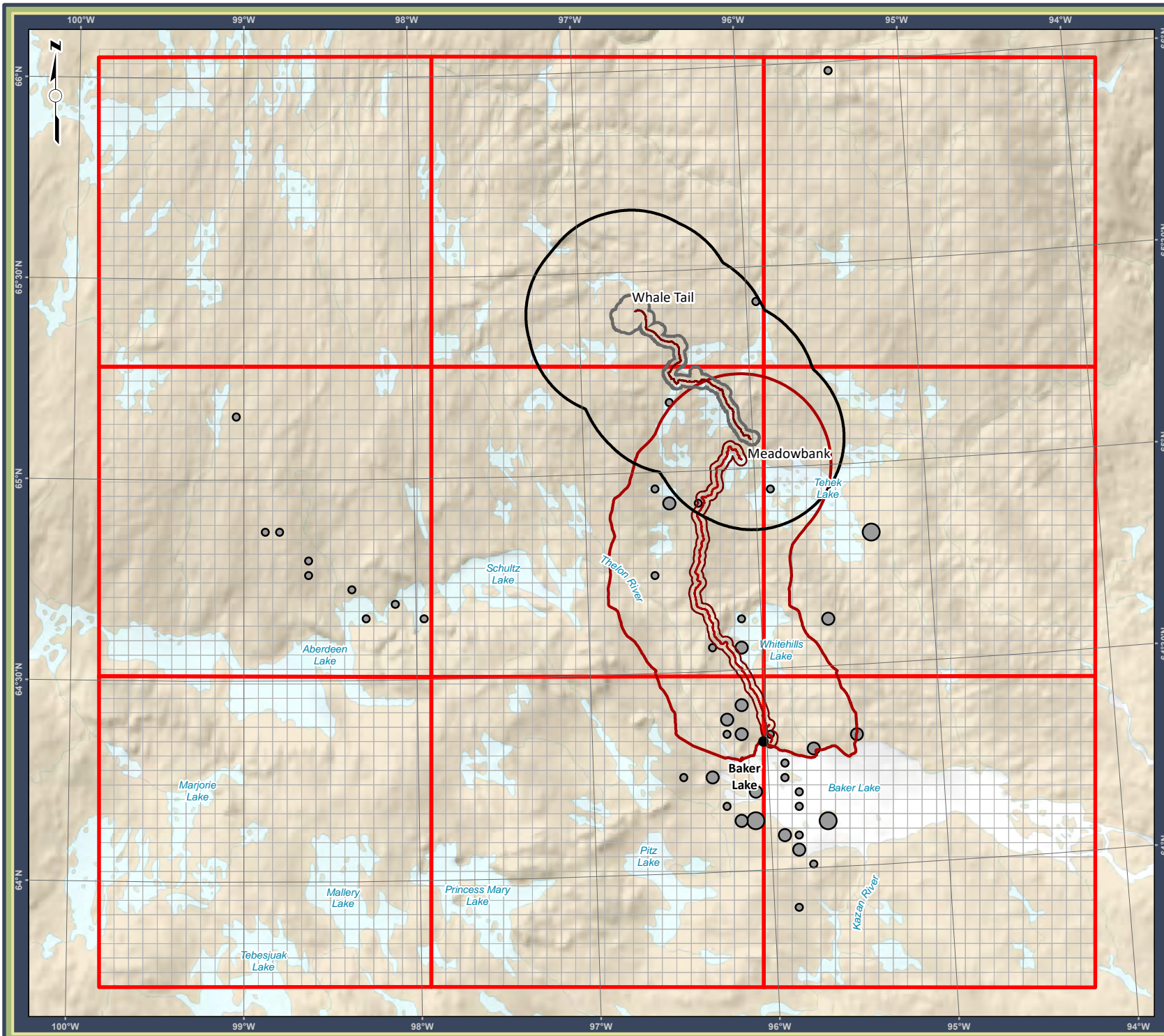


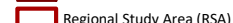



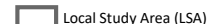
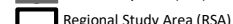
Figure 6.7: Total Number of Muskox and Red Fox Harvested in 2023

Legend

Meadowbank

-  All-Weather Access Road
-  AWAR Local Study Area (LSA)
-  Regional Study Area (RSA)

Whale Tail

-  Whale Tail Haul Road
-  Local Study Area (LSA)
-  Regional Study Area (RSA)

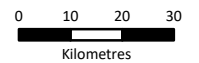
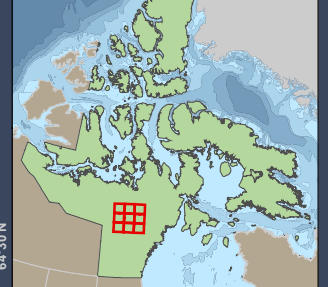
Muskox Harvest

-  1
-  2

Red Fox Harvest

-  1
-  2

Area of Detail



Projection: UTM Zone 14 NAD83

Data Sources:

- Natural Resources Canada
- GeoBase®
- National Topographic Database
- Government of Nunavut
- Agnico-Eagle Mines Limited.
- Gebauer & Associates Ltd.

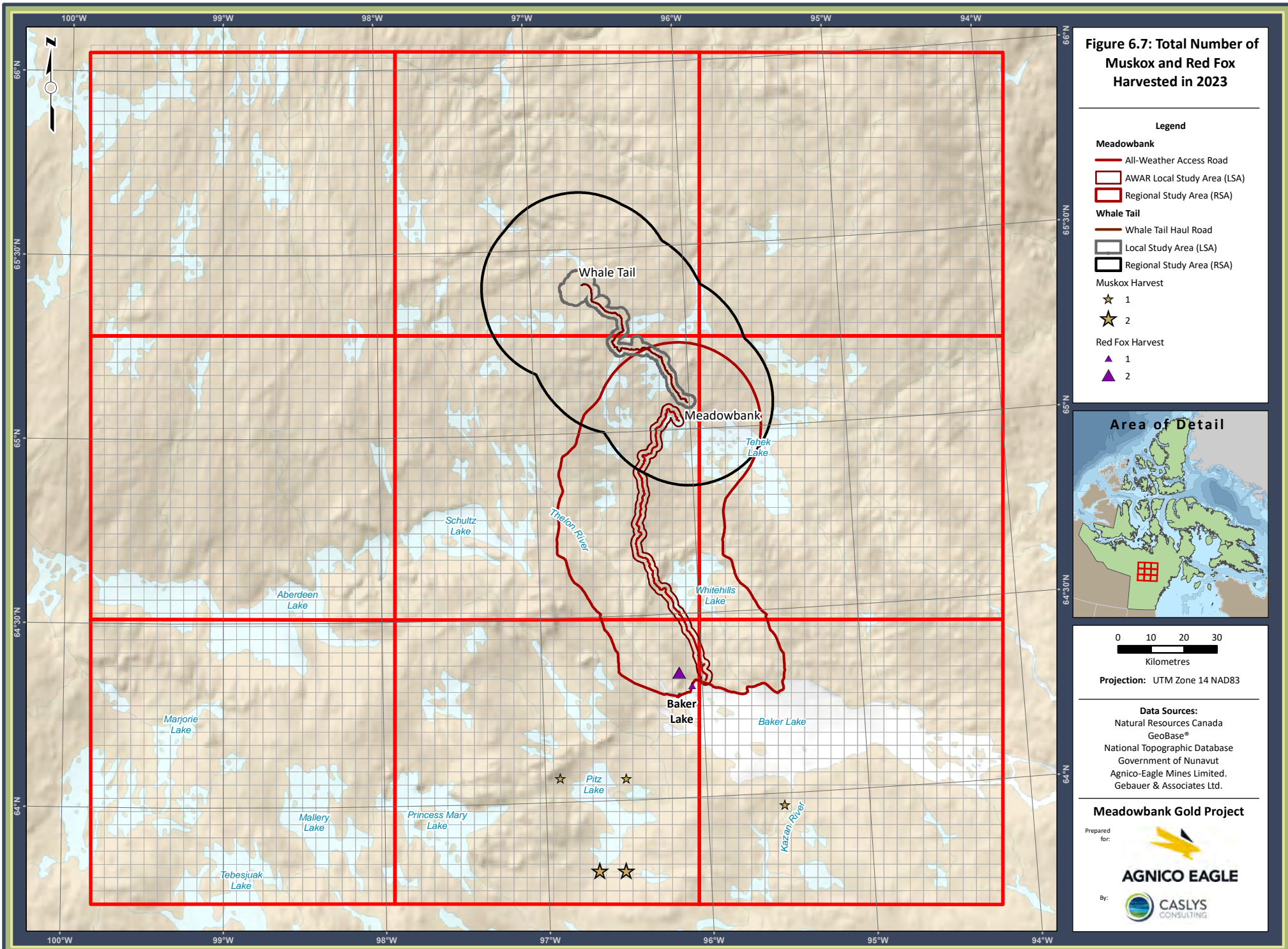
Meadowbank Gold Project

Prepared for:



AGNICO EAGLE

By:



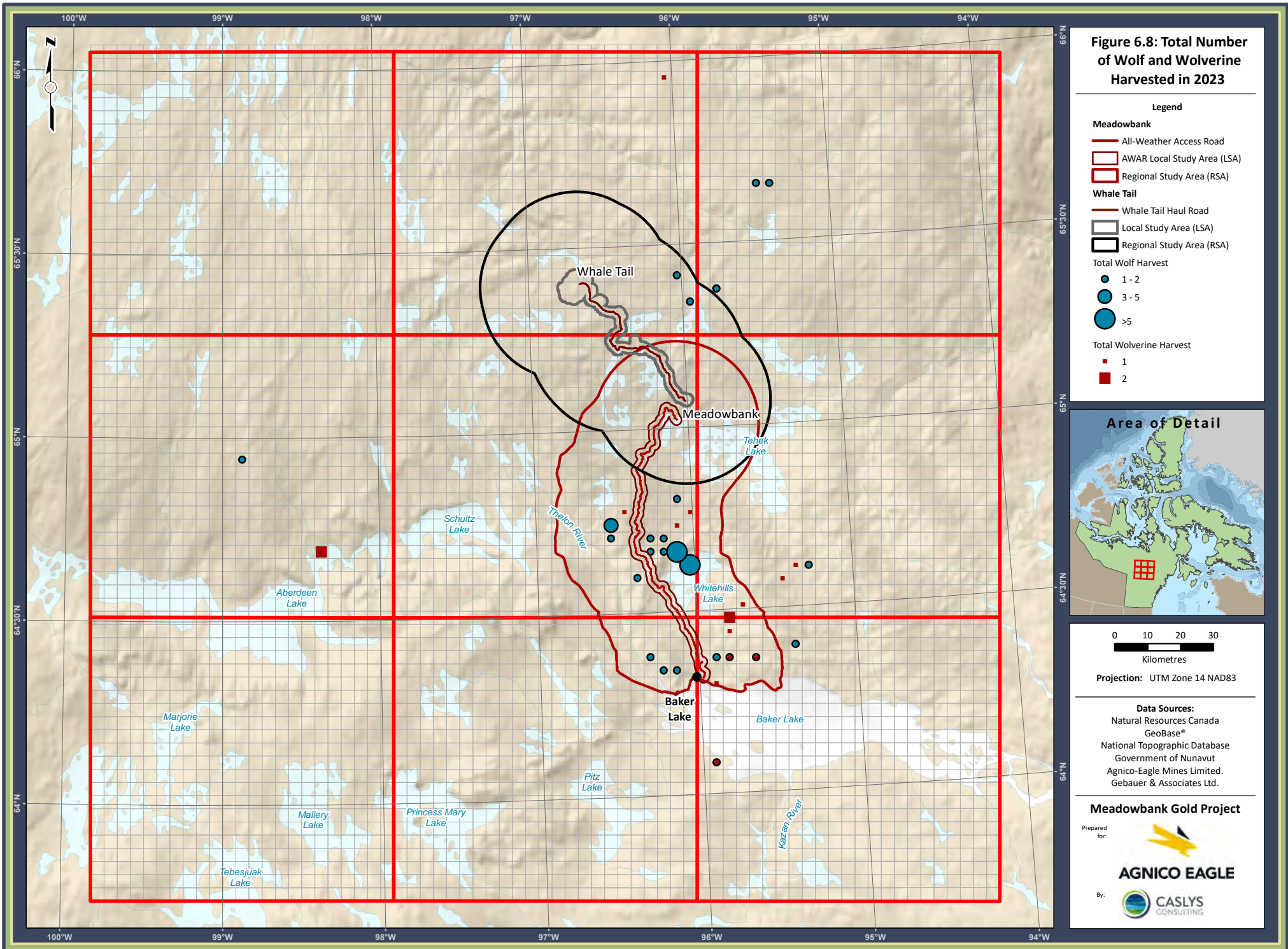


Figure 6.8: Total Number of Wolf and Wolverine Harvested in 2023

Legend

Meadowbank

- All-Weather Access Road
- AWAR Local Study Area (LSA)
- Regional Study Area (RSA)

Whale Tail

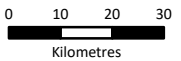
- Whale Tail Haul Road
- Local Study Area (LSA)
- Regional Study Area (RSA)

Total Wolf Harvest

- 1 - 2
- 3 - 5
- >5

Total Wolverine Harvest

- 1
- 2



Projection: UTM Zone 14 NAD83

Data Sources:
 Natural Resources Canada
 GeoBase®
 National Topographic Database
 Government of Nunavut
 Agnico-Eagle Mines Limited.
 Gebauer & Associates Ltd.

Meadowbank Gold Project

Prepared for:

By:

Bird species reported as being harvested in 2023 included Canada Goose (*Branta canadensis*; 82 individuals), ptarmigan sp. (*Lagopus* sp.; 48), Snow Goose (*Anser caerulescens*; 8), Greater White-fronted Goose (*Anser albifrons*; 2), gull species (*Larus* sp.; 2), Tundra Swan (*Cygnus columbianus*; 2), and Sandhill Crane (*Grus canadensis*; 1). Birds were reported as being collected primarily around the Hamlet of Baker Lake and Third Portage Lake near the Meadowbank Mine (**Figure 6.9**).

For the second year in a row, marine mammals were reported as being harvested. Beluga (*Huso huso*; 1 individual) and an unidentified seal species (1), were reported as being harvested by Baker Lake hunters in 2023 but these were outside the Meadowbank RSA.

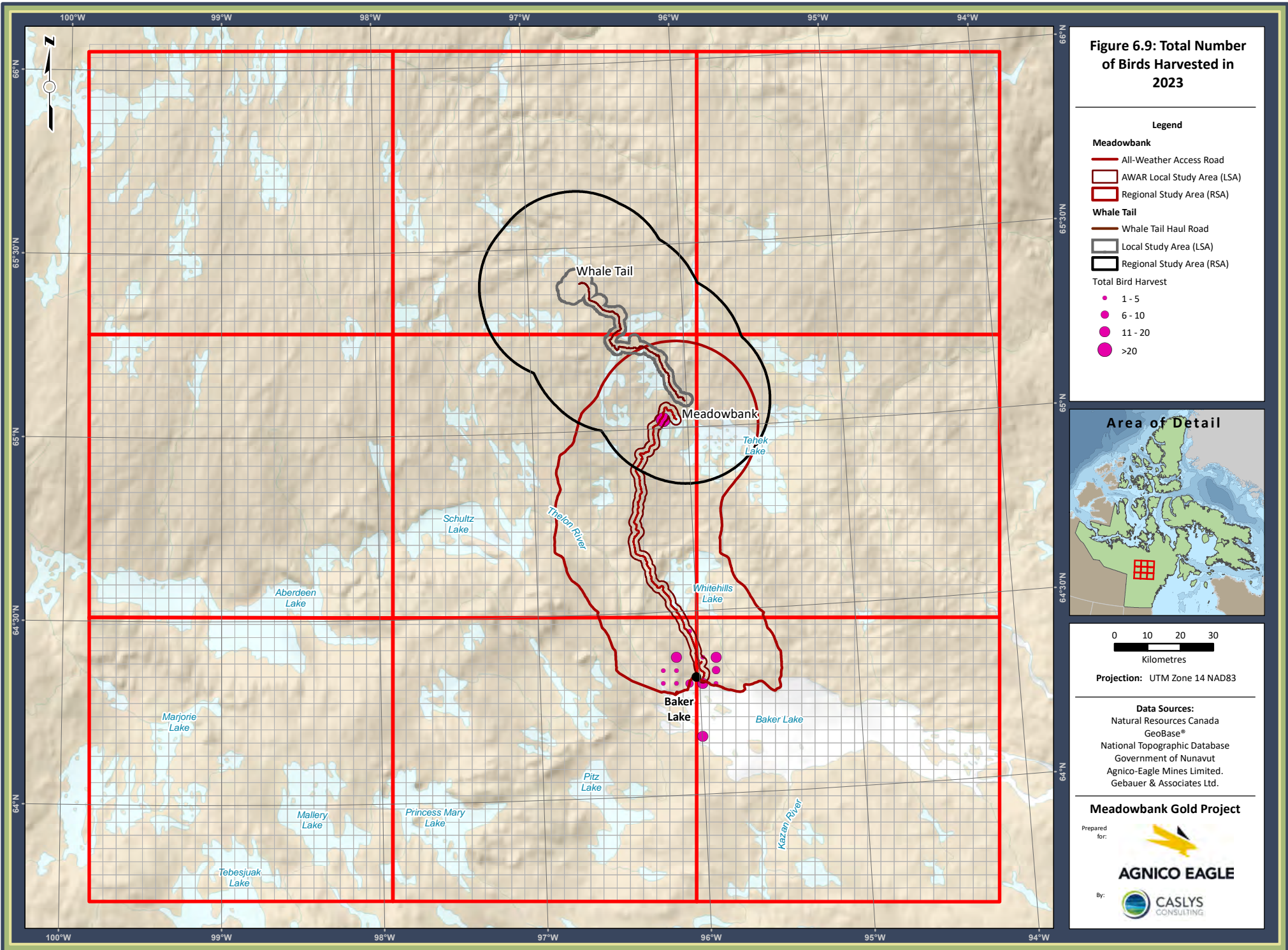


Figure 6.9: Total Number of Birds Harvested in 2023

Legend

- Meadowbank**
- All-Weather Access Road
 - AWAR Local Study Area (LSA)
 - Regional Study Area (RSA)
- Whale Tail**
- Whale Tail Haul Road
 - Local Study Area (LSA)
 - Regional Study Area (RSA)
- Total Bird Harvest**
- 1 - 5
 - 6 - 10
 - 11 - 20
 - >20



Projection: UTM Zone 14 NAD83

Data Sources:
 Natural Resources Canada
 GeoBase®
 National Topographic Database
 Government of Nunavut
 Agnico-Eagle Mines Limited.
 Gebauer & Associates Ltd.

Meadowbank Gold Project

Prepared for:

By:

SECTION 7 • 2023 CREEL SURVEY RESULTS

7.1 NUMBER OF FISHERMEN

The number of fishermen reporting successful fishing trips in 2023 was 30, which is higher than the average of 23 fisherman from 2007 to 2015 and 2019 to 2021 (12 years), and the same as the number of fisherman reporting success in 2022. The highest number of fisherman reporting success in 2023 were in May and June (see **Table 7.1** and **Section 7.4 Magnitude of Fishing**).

Table 7.1: Number of Fisherman in the Baker Lake Area who have Recorded Fishing Success by Year and Month.

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2007			4	6	7	1	1		1				20
2008	1	1	2	6	6	6	4	3			2	1	32
2009	2	2	5	10	9	9	9	6	1	8	2	2	65
2010			6	13	18	17	13	4	2	2	3	1	79
2011	1	3	6	15	21	18	9	6	2	9	9	5	104
2012	3	1	1	7	7	18	12	4	3	9	7	3	75
2013			2	5	4	11	9	1		2	1	1	36
2014	2	1	1	4	6	3	4	2		2	2	2	29
2015	1	1	1	2	9	8	6	2		3	4	2	39
2019	1	2	3	12	14	15	7	3	1	1	8	4	71
2020				1	6	9	9	5	1	4	3		38
2021	1		3	3	15	15	3	4	1	1	4		50
2022	2		2	4	16	16	7	2	3	3	2		57
2023				10	13	12	6	7	2	2	5		57
Total	14	11	36	98	151	158	99	49	17	46	52	21	752

7.2 COMPOSITION OF CATCH

The most common fish species captured, Lake Trout, represented 67% of the total catch in 2023, which was lower than in 2022 (72%) but the same as in 2020 and 2021 (67% in both years) (see **Table 7.2**). Lake Trout catch in 2023 was higher than the average of 58% from 2007 to 2015 and 2019 to 2022 (see **Table 7.2**). Arctic Char were caught at lower numbers in 2023 (52 individuals) than the average from 2007 to 2015 and 2019 to 2022 (74) (see **Table 7.2**). Lake Whitefish were captured in relatively low numbers in 2023.

Table 7.2: Total Number of Fish Caught between 2007 and 2015, and 2019 to 2023.

Species	2007	2008	2009	2010	2011	2012	2013	2014	2015	2019	2020	2021	2022	2023	Total
Arctic Char	3	24	117	103	113	24	96	22	41	89	75	54	202	52	1,015
Arctic Grayling			1	3	1	1			29			1	1	0	37
Lake Trout	210	825	525	860	1,710	1,014	490	353	370	900	219	481	894	490	9,341
Lake Whitefish		192	51	326	460	471	50	651	1,386	1,573	32	184	147	183	5,706
Unidentified										119	2	1		2	124
Total #	213	1,041	694	1,292	2,284	1,510	636	1,026	1,826	2,681	328	721	1,244	727	16,223
% Char	1	2	17	8	5	2	15	2	2	3	23	7	16	7	6
% Lake Trout	99	79	76	67	75	67	77	34	20	34	67	67	72	67	58

7.3 DISTRIBUTION OF FISHING

Fishing trips, regardless of success rate, did not generally occur beyond the immediate areas of Baker Lake, Whitehills Lake, and the lower AWAR (see **Figure 7.1**). Some fishing occurred at Pitz Lake and along the northeastern shore of Baker Lake but, unlike in 2022, fishing was not reported along the Thelon River (**Figure 7.1**). Results indicate that study participants are less willing to travel long distances to catch fish, regardless of AWAR access, likely due to the abundance of fish near the Hamlet of Baker Lake and around Whitehills Lake.

7.4 MAGNITUDE OF FISHING

The average number of fish harvested per fisherman in each month was highest in November with lower averages in the summer months (**Figure 7.2**). In 2023, the most captured fish species, in order of abundance, were Lake Trout, Lake Whitefish, Arctic Char, and Unidentified (see **Table 7.2**). Lower numbers of Lake Trout and Arctic Char were reported as being caught in 2023 compared to 2022. Participants mentioned during interviews that the early freshet and ice break-up appeared to have changed patterns of fish movement in 2023 with many harvesters reporting “no fish around” in the spring. Fishing was very challenging due to lack of ice for nets or jigging and incomplete open water for boat access.




7.5 SEASONAL TIMING OF FISHING

In 2023, fishing periods with the most active fisherman was May and June (see **Table 7.1**). The periods with the most fish caught included the summer months (May and June), which reflects the high number of Lake Trout caught by fisherman heading out on the land after ice melt, and November (**Figure 7.3**). This trend can be observed in the overall trends from 2007 to 2015 and 2019 to 2022 (**Figure 7.3**).




Figure 7.1: Total Number of Fish Caught in 2023

Legend





Meadowbank

-  All-Weather Access Road
-  AWAR Local Study Area (LSA)
-  Regional Study Area (RSA)

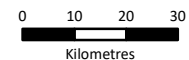
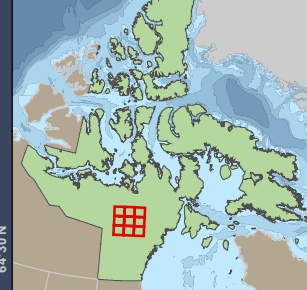
Whale Tail

-  Whale Tail Haul Road
-  Local Study Area (LSA)
-  Regional Study Area (RSA)

Total Fish Caught

-  1 - 5
-  6 - 15
-  16 - 25
-  >25

Area of Detail



Projection: UTM Zone 14 NAD83

Data Sources:

- Natural Resources Canada GeoBase®
- National Topographic Database Government of Nunavut
- Agnico-Eagle Mines Limited. Gebauer & Associates Ltd.

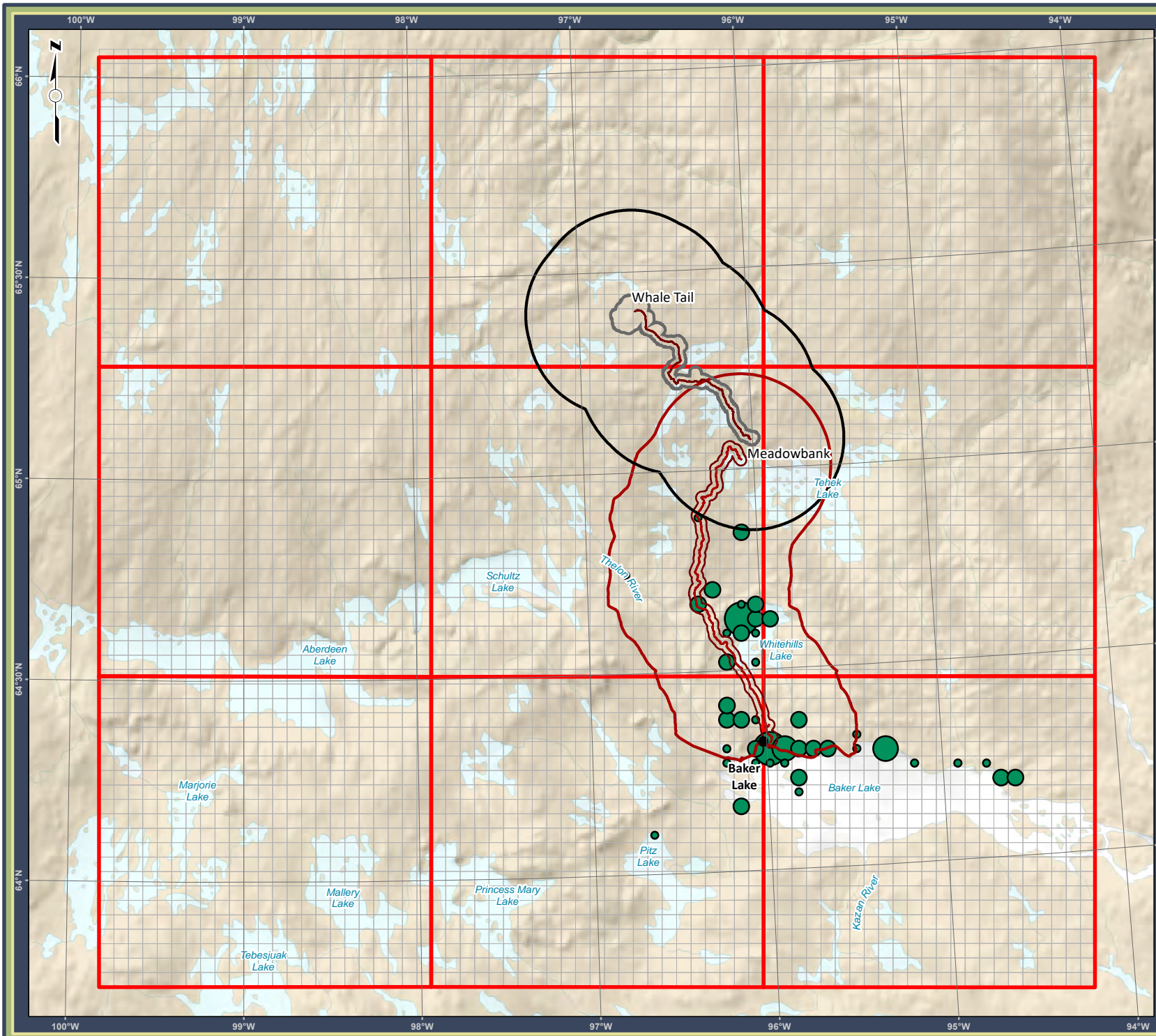
Meadowbank Gold Project

Prepared for:



AGNICO EAGLE

By:



66°N
65°30'N
65°N
64°30'N
64°N

100°W 99°W 98°W 97°W 96°W 95°W 94°W

2023 HUNTER HARVEST STUDY SUMMARY

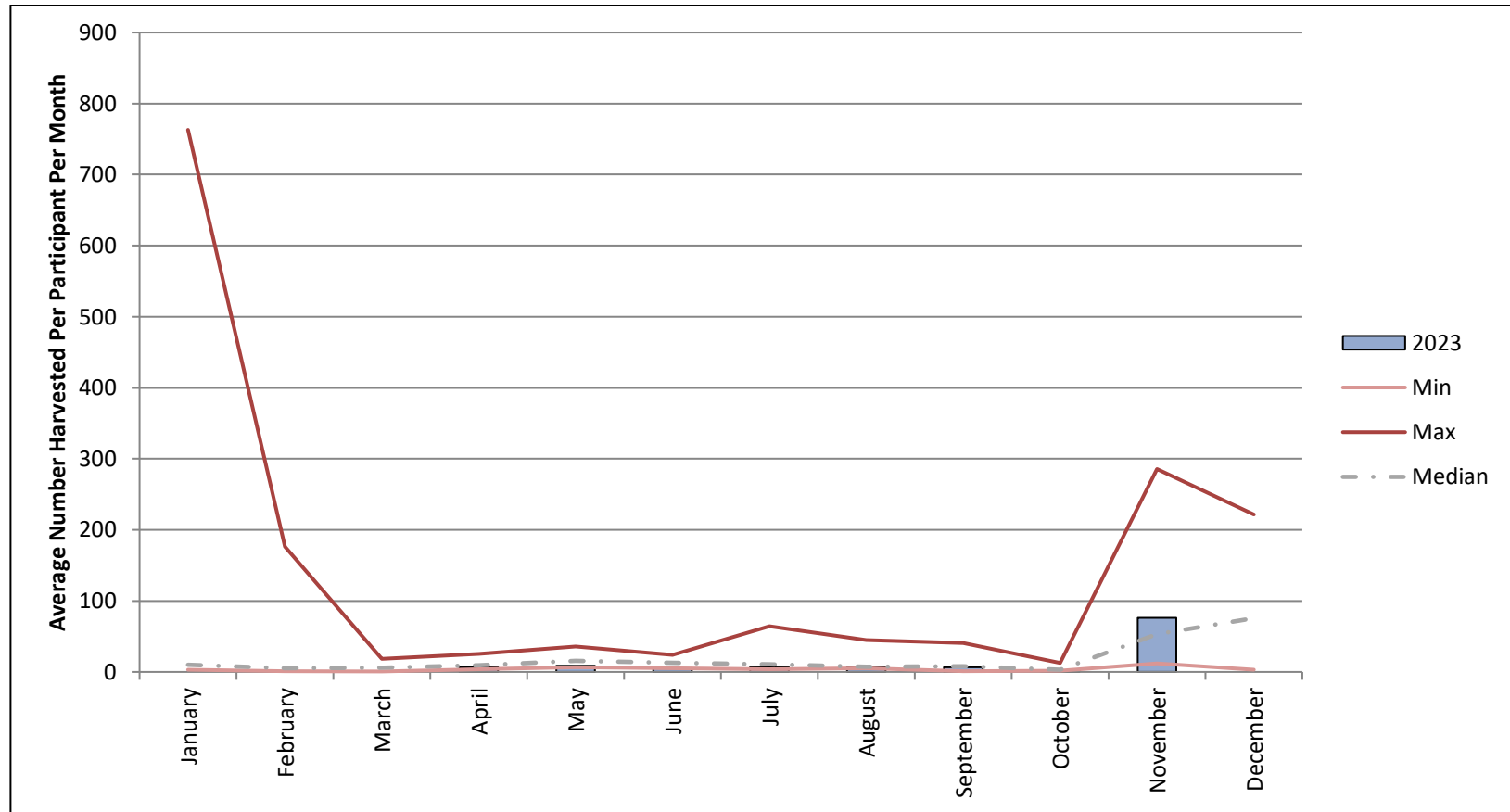


Figure 7.2: Average Number of Fish Caught per Participant in 2023 and the Minimum and Maximum Range from 2007 to 2015 and 2019 to 2022.

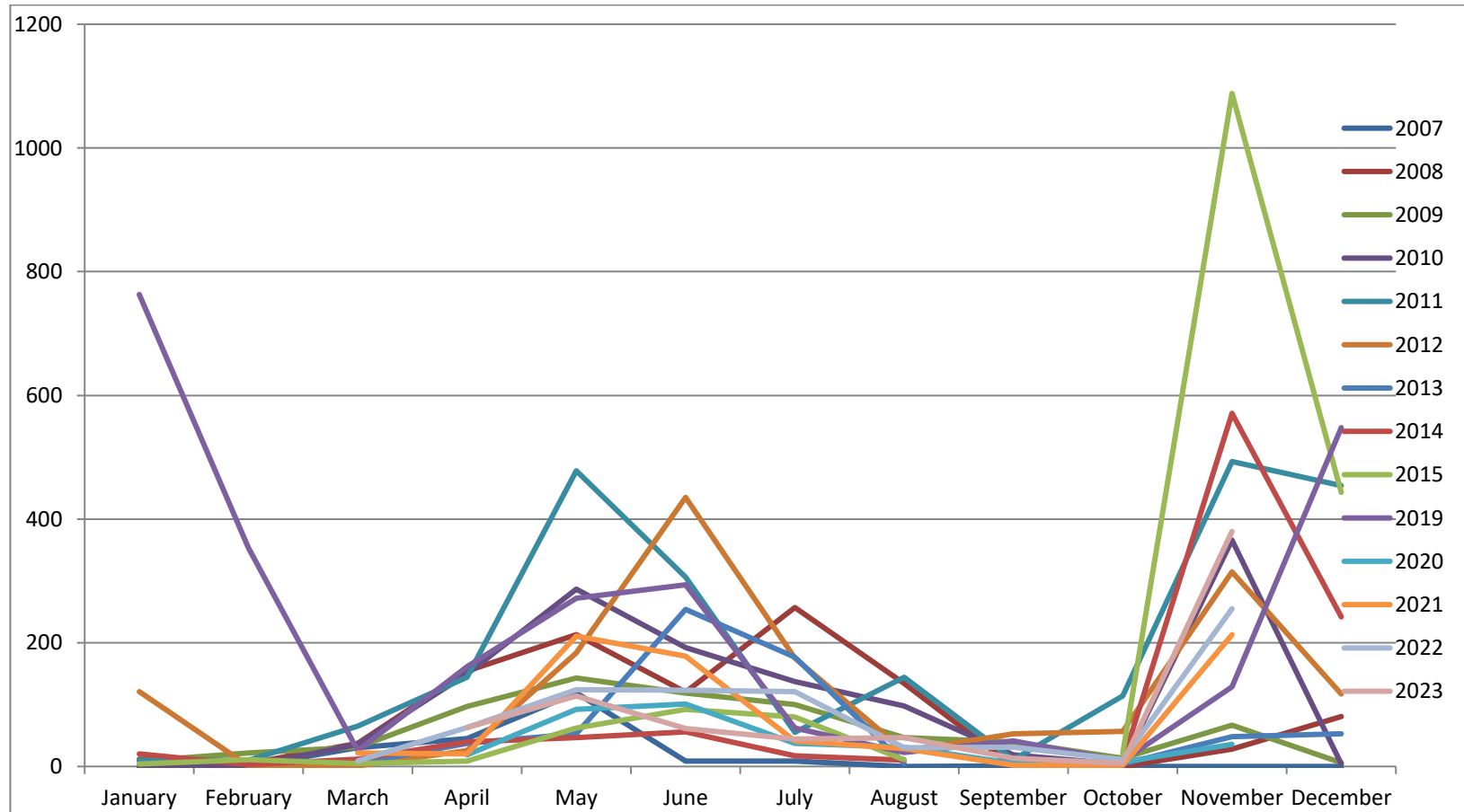


Figure 7.3: Seasonal Trends in Fishing (Number of Fish Caught) in the Baker Lake Area from 2007 to 2015 and 2019 to 2023.

SECTION 8 • ACCURACY OF IMPACT PREDICTIONS

Table 8.1 provides a summary of the impact predictions identified in the original TEMP (Cumberland 2006) and the updated June 2019 version (Agnico Eagle 2019). The 2023 HHS data were compared to the impact prediction thresholds to evaluate adherence to the impact predictions and the provision of adaptive management, as either a necessary or proactive measure. No thresholds were surpassed in 2023.

Table 8.1: Accuracy of Impact Predictions – 2023 Baker Lake HHS

Potential Effect	Threshold	RSA 20% Threshold Exceeded (2023)	Adaptive Management Implemented	Status
Meadowbank All-Weather Access Road (AWAR)				
Hunting by Baker Lake Residents	The AWAR will not result in significant changes in the spatial distribution, seasonal pattern, or harvest levels of Caribou kills by Baker Lake hunters. Changes will not exceed 20% of historical harvest activities within the RSA	NO (71% of harvest in RSA in 2023 compared to 67% baseline and average of 75% of harvest within RSA since 2007)	Future discussion with HTO and GN representatives required to identify management options	HHS Creel Survey
Whale Tail Haul Road (WTHR)				
Hunting by Baker Lake Residents	No change in harvest	NO (Only one harvest recorded within 5 km of the WTHR; harvests within the WTHR RSA were higher than most other years (except 2011 and 2019), including pre-construction)	None required. Access by hunters is restricted in the growing season and very limited hunting occurs in the winter.	HHS Satellite-collaring Program

SECTION 9 • MANAGEMENT RECOMMENDATIONS

The Baker Lake HHS and Creel Survey should be continued on an annual basis to monitor the hunting and fishing patterns of Baker Lake residents, and the potential effects of the Meadowbank Complex Mine. Meetings with participants every four months (3 times/year) in 2024 are particularly important in maintaining contact, building relationships, expanding the study, and collecting good harvest data. Participation rates can be maintained by continuing to use social media platforms such as Facebook and Instagram, expanding connections on these platforms, ensuring that all participants are visited during the three scheduled field visits, and continuing with distribution of the well-received year-end prizes while in the community. In addition, an effort should be made to continue recruiting new, and particularly young, hunters for the HHS.

SECTION 10 • LITERATURE CITED

Agnico Eagle Mines Ltd. (AEM) 2019. Meadowbank Division, Terrestrial Ecosystem Management Plan. Version 6, June 2019.

Cumberland Resources Ltd. 2006. Meadowbank Gold Mine Project Terrestrial Ecosystem Management Plan (TEMP). Final Report, December 2006.

NWMB, Nunavut Wildlife Management Board. 2004. The Nunavut Wildlife Harvest Study. Prepared by Priest, H., Harvest Study Coordinator, NWMB and Usher, P. J., P.J. Usher Consulting Services.

APPENDIX A

2023 Hunter Harvest Calendar



Large Winter Herd

Georgina Kamimallik

January | ᓇᐅᐅᐅ 2023

Baker Lake Harvest Study
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Winter Bulls

Richard Aksawnee



Mom with Three Cubs

Lars Qaggaq



Migrating Caribou

Georgina Kamimallik







Resting along the River

Georgina Kamimmalik



Resting on the River

Paul Kabloona

September | ᑭᑎᐱᑕ 2023

Baker Lake Harvest Study
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17	18	19	20	21	22	23 First Day of Autumn
24	25	26	27	28	29	30 National Day for Truth and Reconciliation





Winter Foraging

Daniel Tagoona

November | ᓃᐱᐱᓂ 2023

Baker Lake Harvest Study
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December | ᑎᑦᑲᑦ 2023

Baker Lake Harvest Study
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November 2023

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First day of Winter

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Christmas Day

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Boxing Day

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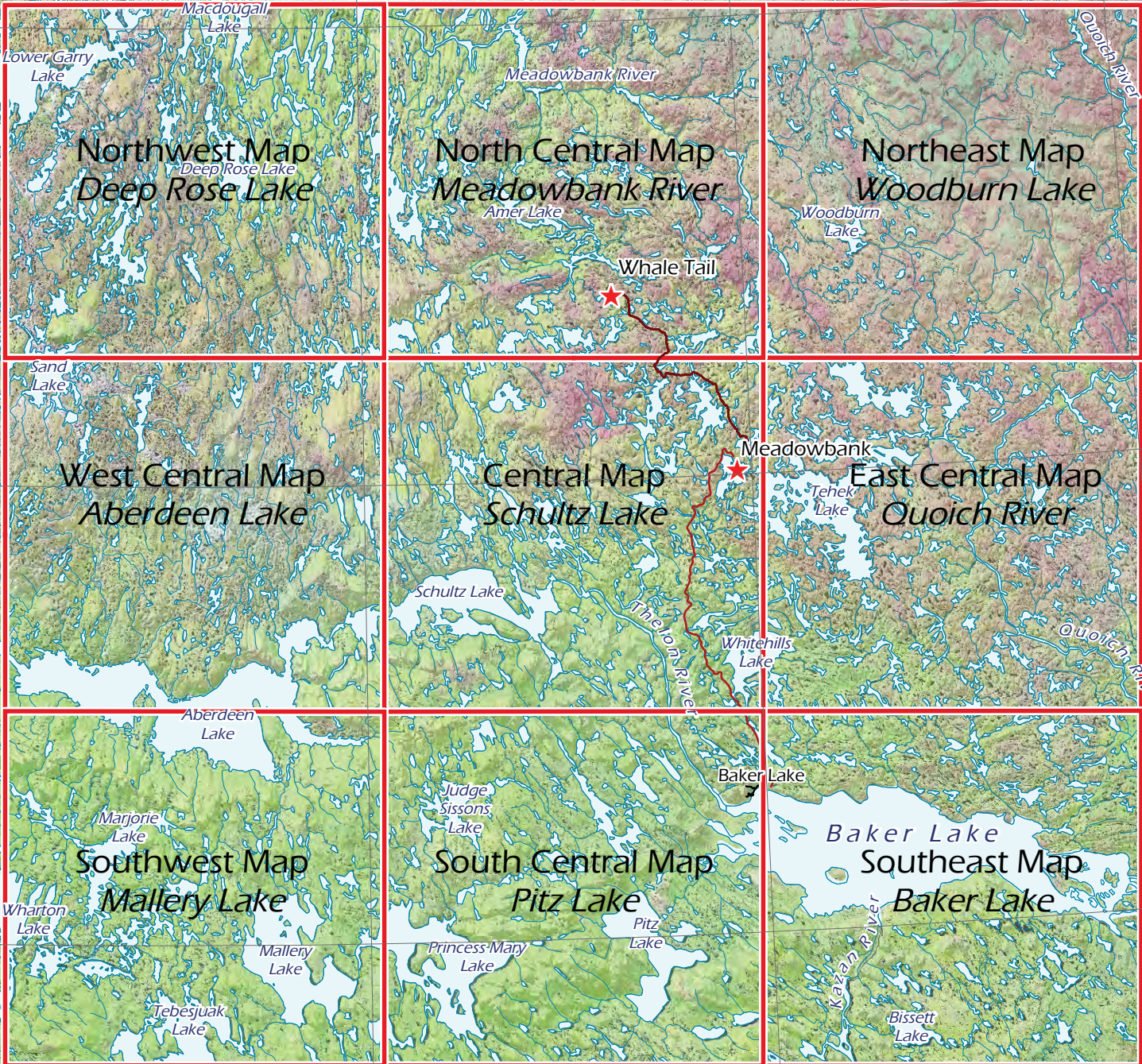
31

Please return the calendar to the Agnico-Eagle office for entry into the participant draw.

Wildlife and Fish Species of Interest



KEY MAP



Gary Lake

Macdougall Lake

Lower Gary Lake

Deep Rose Lake

Meadowbank River

North Central Map
Meadowbank River

Amer Lake

Whale Tail

Northeast Map
Woodburn Lake

Woodburn Lake

Quoich River

Sand Lake

West Central Map
Aberdeen Lake

Central Map
Schultz Lake

Schultz Lake

Meadowbank

East Central Map
Quoich River

Tehok Lake

The Ion River

Whitehills Lake

Quoich River

Aberdeen Lake

Southwest Map
Mallery Lake

Marjorie Lake

Wharton Lake

Mallery Lake

Tebesjuak Lake

South Central Map
Pitz Lake

Judge Sissons Lake

Princess Mary Lake

Pitz Lake

Baker Lake

Southeast Map
Baker Lake

Kazan River

Bissett Lake

100°W

98°W

96°W

94°W

N 69°

N 65°

N 64°

N

N 65°

N 64°

100°W

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96°W

94°W

*Baker Lake
Harvest Study*

*Northwest Map
Deep Rose Lake*

Key Map

 Deep Rose Lake	 Meadowbank River	 Woodburn Lake
 Aberdeen Lake	 Schultz Lake	 Quoich River
 Mallory Lake	 Pitz Lake	 Baker Lake



Projection: UTM Zone 14 NAD83

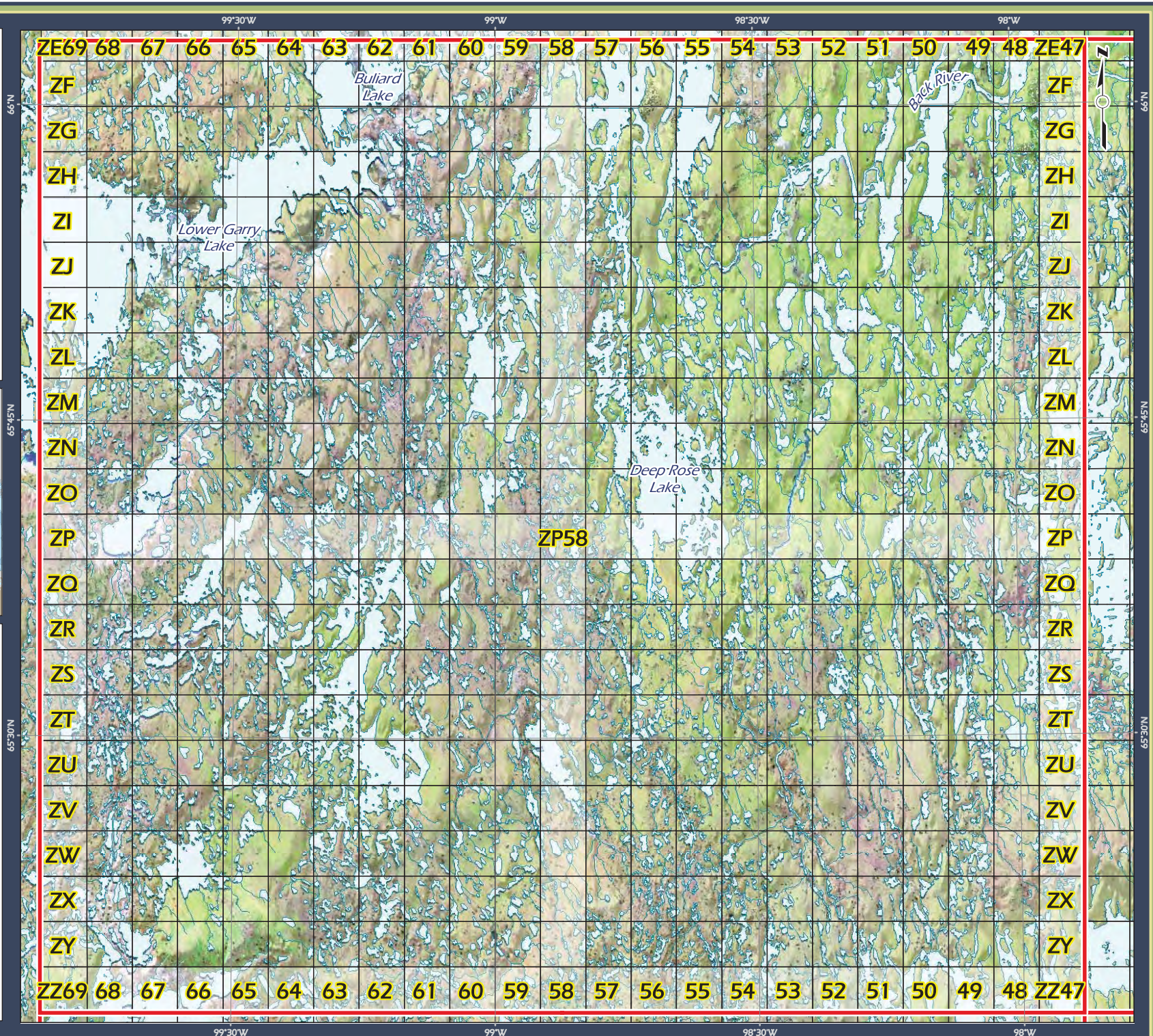
Data Sources:

Natural Resources Canada
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National Topographic Database
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Agnico-Eagle Mines Inc.
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By:



Baker Lake Harvest Study

West Central Map Aberdeen Lake

Key Map

Deep Rose Meadowbank Lake	River	Woodburn Lake
Aberdeen Lake	Schultz Lake	Quoich River
Mallery Lake	Pitz Lake	Baker Lake



Projection: UTM Zone 14 NAD83

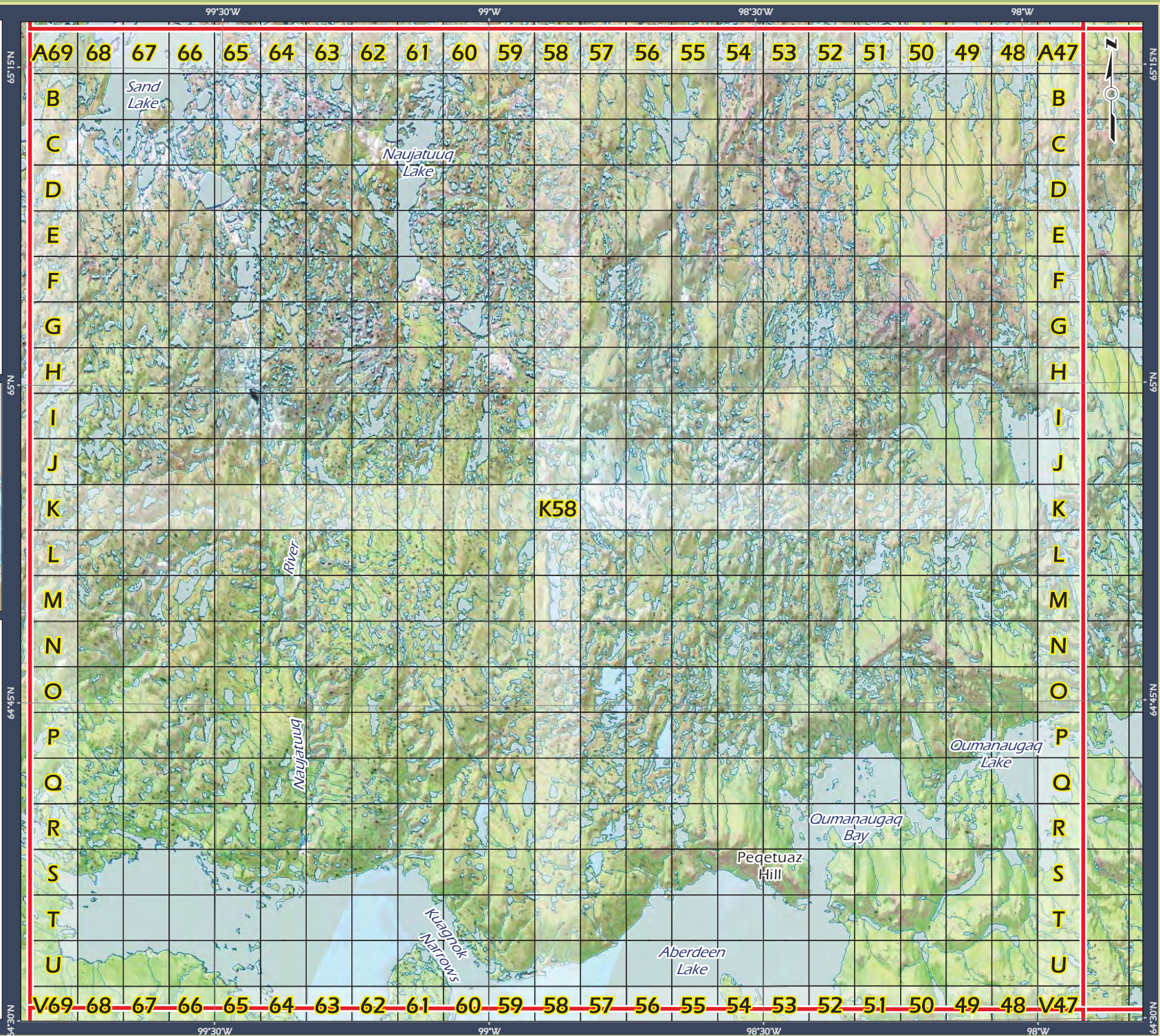
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Baker Lake Harvest Study

Southwest Map Mallery Lake

Key Map

Deep Rose Lake	Meadowbank River	Woodburn Lake
Aberdeen Lake	Schultz Lake	Quoich River
Mallery Lake	Pitz Lake	Baker Lake



Projection: UTM Zone 14 NAD83

Data Sources:

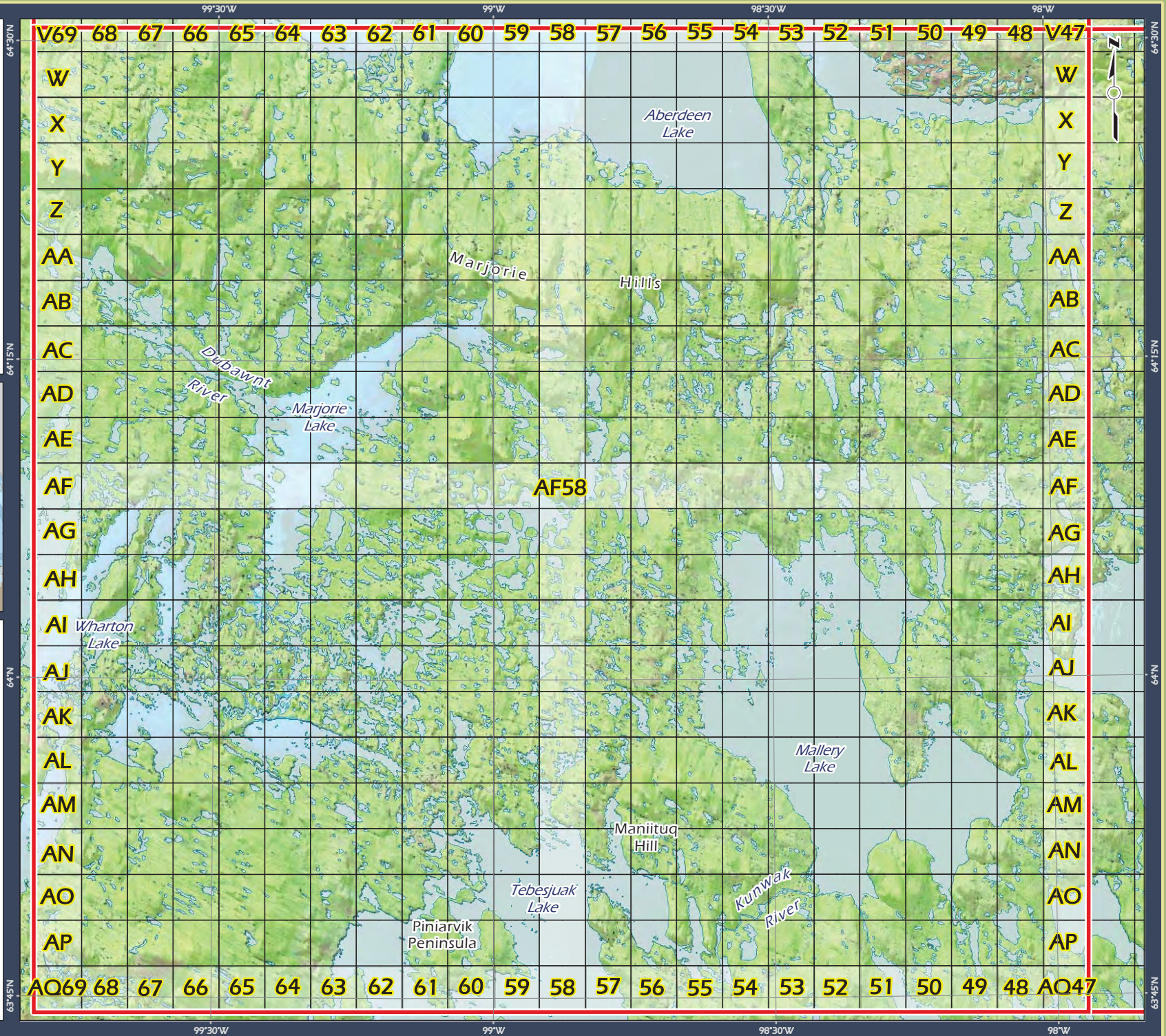
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Government of Nunavut
Agnico-Eagle Mines Inc.
Caslys Consulting Ltd.

Prepared for:



By:

Nunavut ENVIRONMENTAL CONSULTING LTD

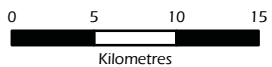


Baker Lake
Harvest Study

North Central Map
Meadowbank River

Key Map

Deep Rose Lake	Meadowbank River	Woodburn Lake
Aberdeen Lake	Schultz Lake	Quoich River
Mallery Lake	Pitz Lake	Baker Lake



Projection: UTM Zone 14 NAD83

Data Sources:

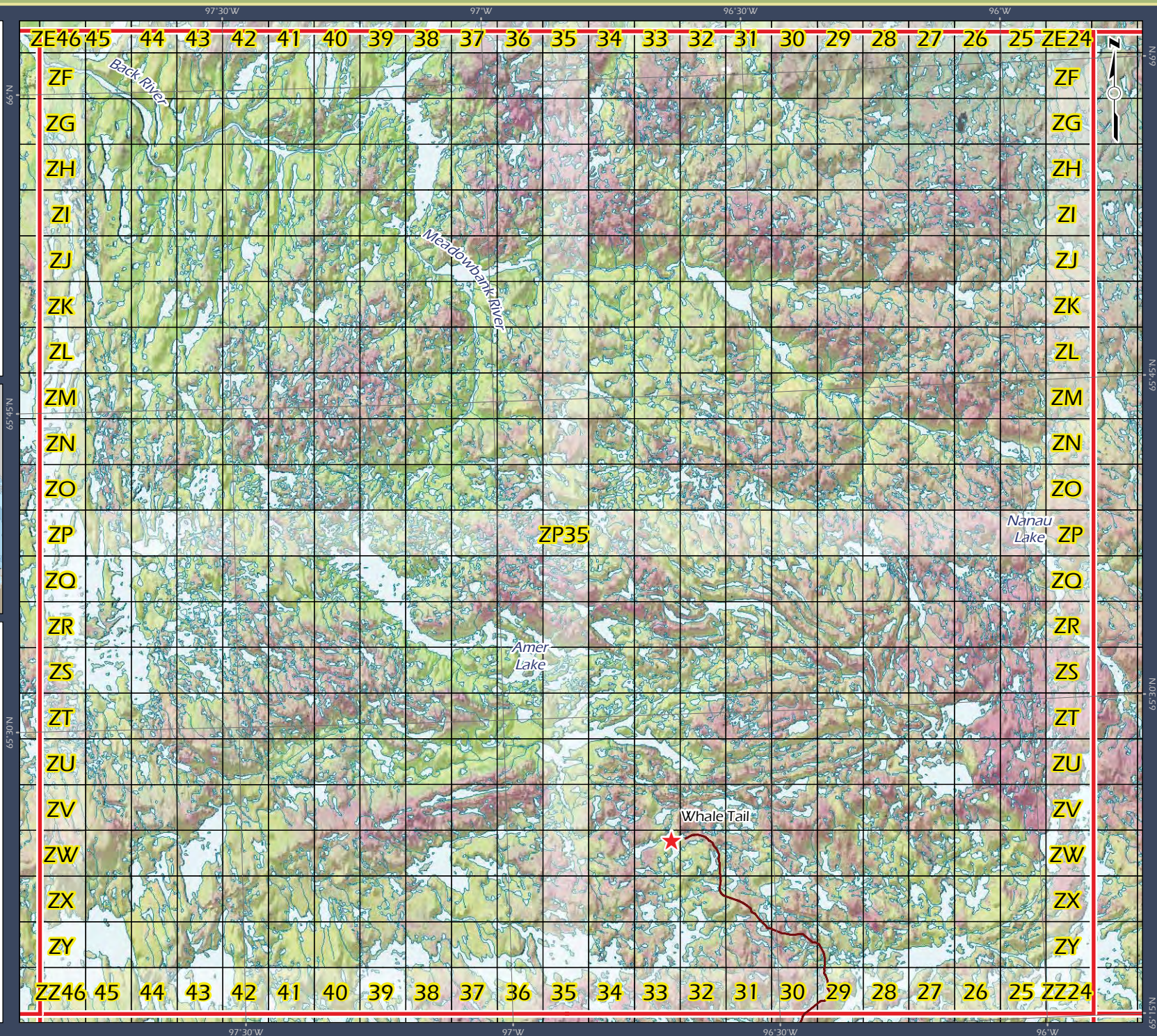
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- Agnico-Eagle Mines Inc.
- Caslys Consulting Ltd.

Prepared for:



By:

Nunavut ENVIRONMENTAL CONSULTING LTD



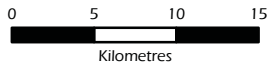
*Baker Lake
Harvest Study*

*Central Map
Schultz Lake*

Key Map

Deep Rose Lake	Meadowbank River	Woodburn Lake
Aberdeen Lake	Schultz Lake	Quoich River
Mallery Lake	Pitz Lake	Baker Lake

Area of Detail



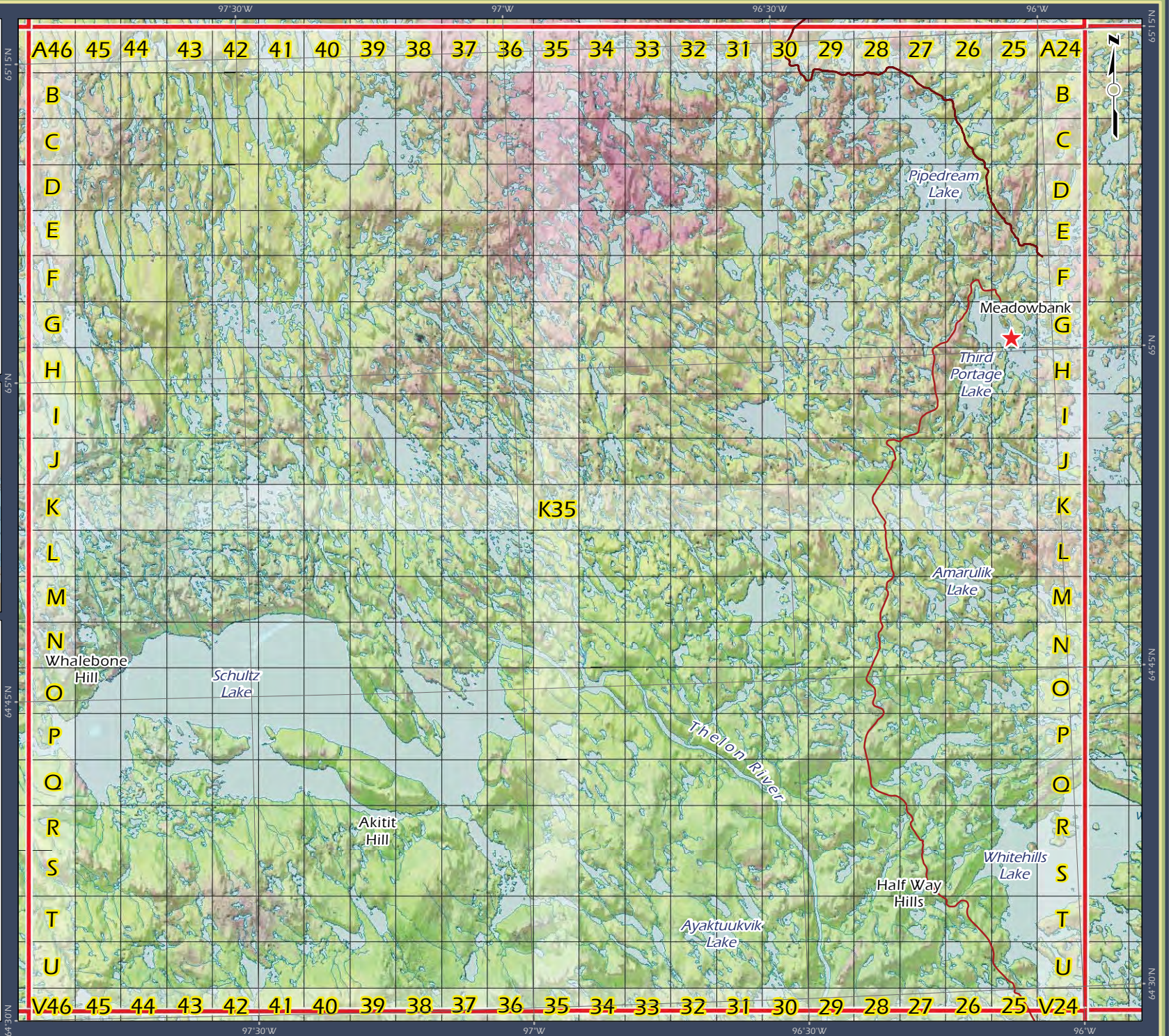
Projection: UTM Zone 14 NAD83

Data Sources:
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 National Topographic Database
 Government of Nunavut
 Agnico-Eagle Mines Inc.
 Caslys Consulting Ltd.

Prepared for:



By:



Baker Lake Harvest Study

South Central Map Pitz Lake

Key Map

Deep Rose Lake	Meadowbank River	Woodburn Lake
Aberdeen Lake	Schultz Lake	Quoich River
Mallery Lake	Pitz Lake	Baker Lake



Projection: UTM Zone 14 NAD83

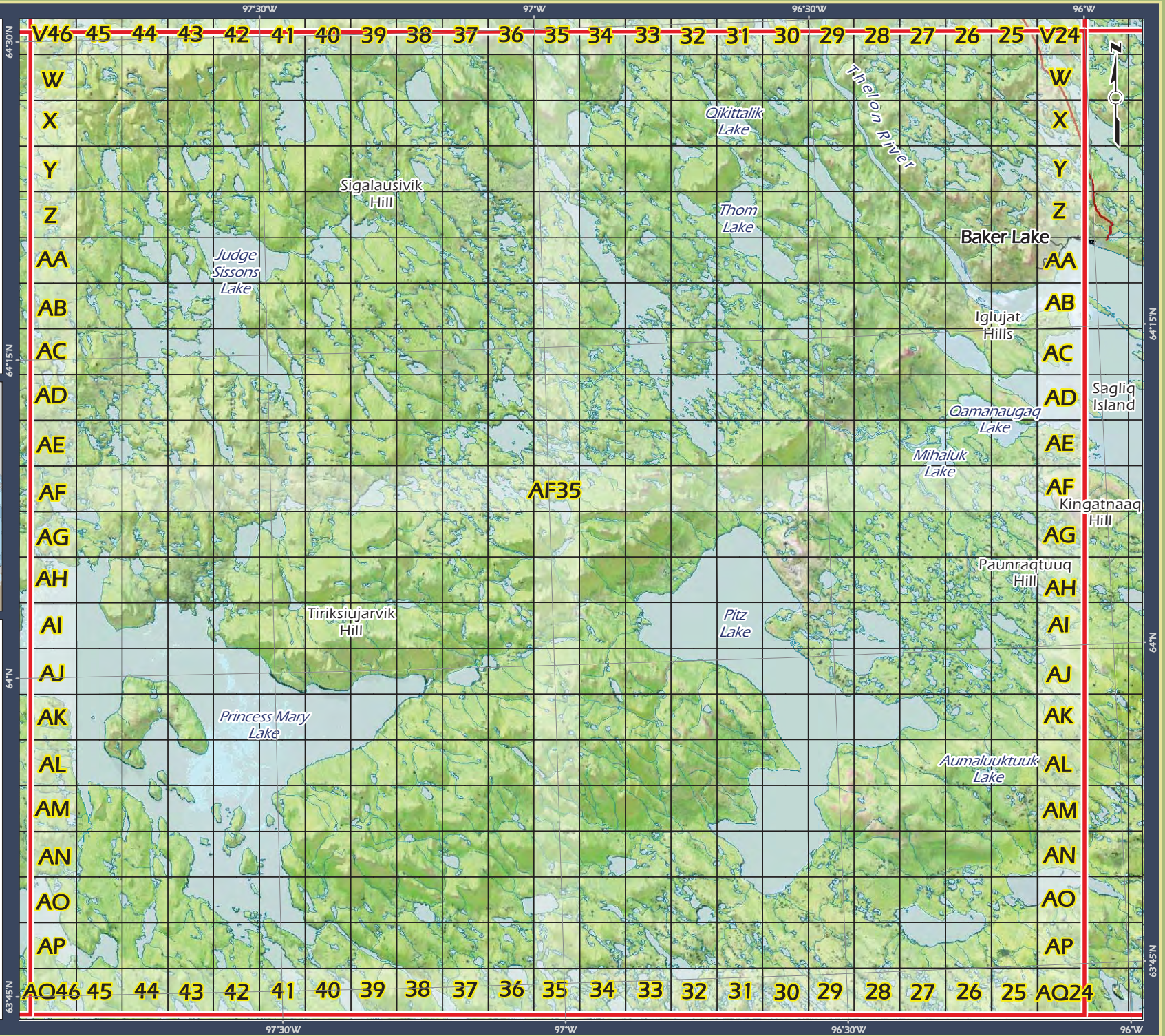
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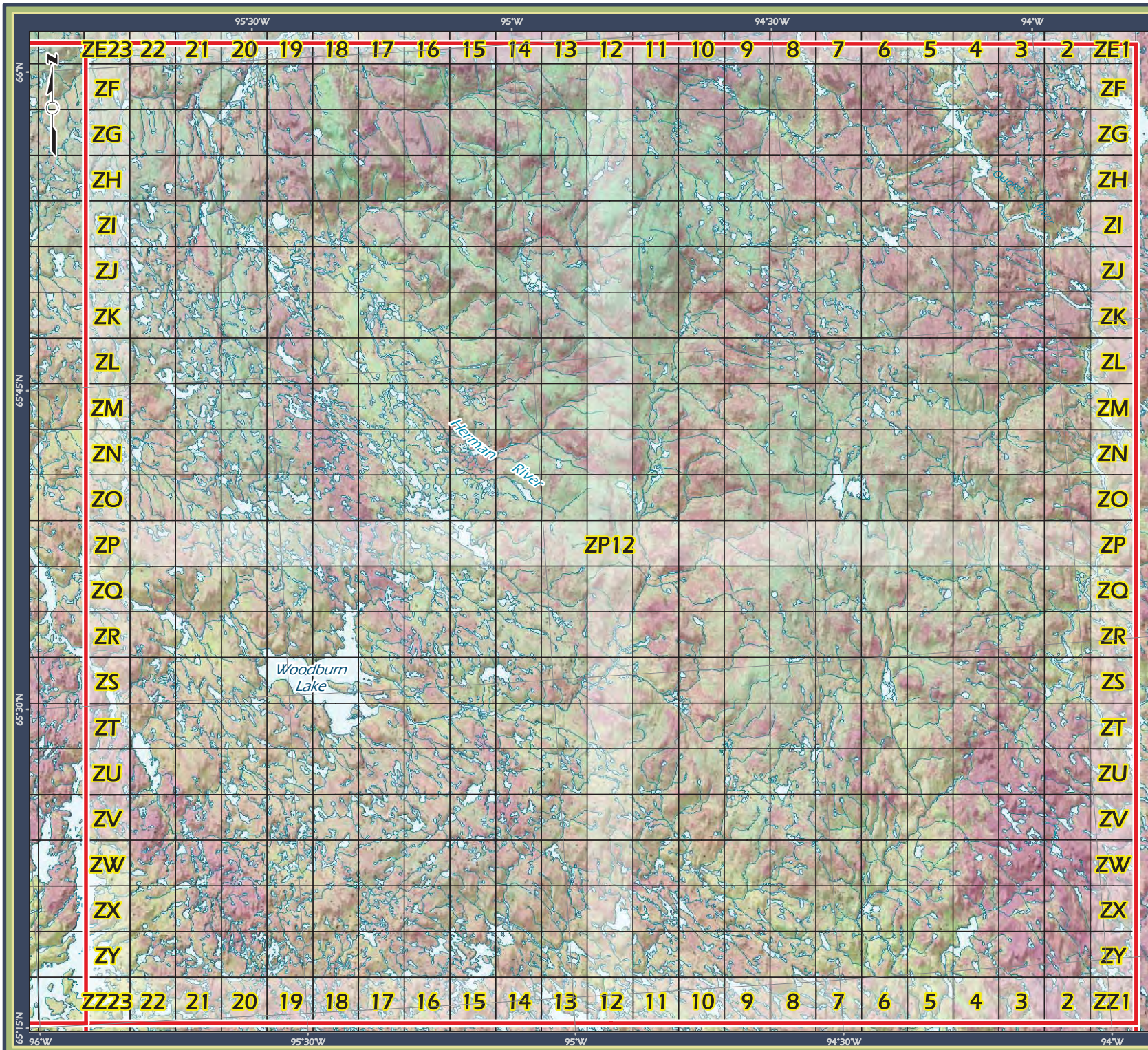
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Government of Nunavut
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Caslys Consulting Ltd.

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By:



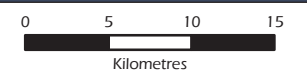


*Baker Lake
Harvest Study*

*Northeast Map
Woodburn Lake*

Key Map

Deep Rose Lake	Meadowbank River	Woodburn Lake
Aberdeen Lake	Schultz Lake	Quoich River
Mallery Lake	Pitz Lake	Baker Lake



Projection: UTM Zone 14 NAD83

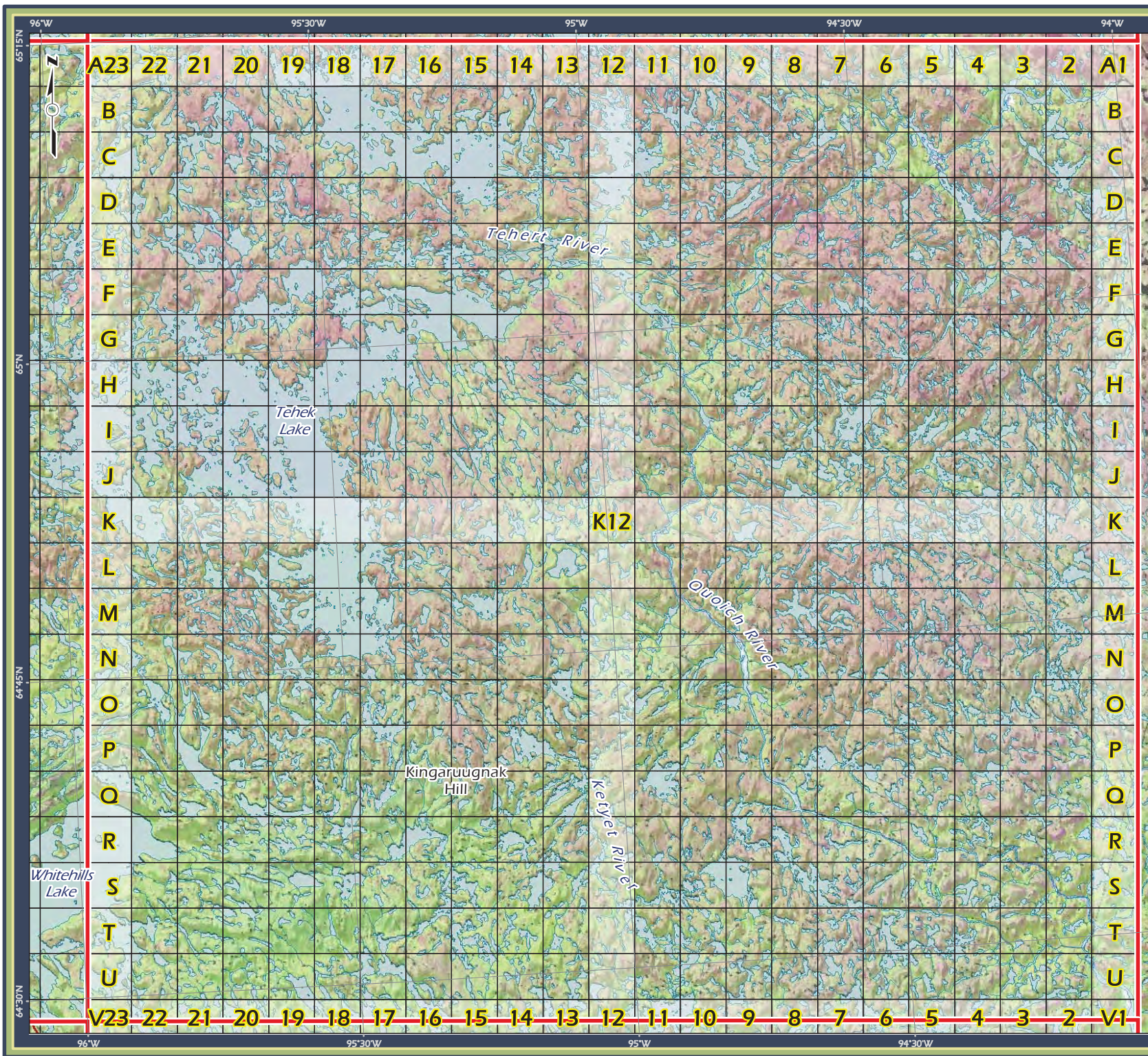
Data Sources:
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 Agnico-Eagle Mines Inc.
 Caslys Consulting Ltd.

Prepared for:



By:





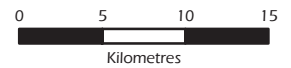
*Baker Lake
Harvest Study*

*East Center Map
Quoich River*

Key Map

Deep Rose Lake	Meadowbank River	Woodburn Lake
Aberdeen Lake	Schultz Lake	Quoich River
Mallery Lake	Pitz Lake	Baker Lake

Area of Detail



Projection: UTM Zone 14 NAD83

Data Sources:
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 National Topographic Database
 Government of Nunavut
 Agnico-Eagle Mines Inc.
 Caslys Consulting Ltd.

Prepared for:



By:





*Baker Lake
Harvest Study*

*Southeast Map
Baker Lake*

Key Map

Deep Rose Lake	Meadowbank River	Woodburn Lake
Aberdeen Lake	Schultz Lake	Ouoiich River
Mallery Lake	Pitz Lake	Baker Lake



Projection: UTM Zone 14 NAD83

Data Sources:
 Natural Resources Canada
 GeoBase®
 National Topographic Database
 Government of Nunavut
 Agnico-Eagle Mines Inc.
 Caslys Consulting Ltd.

Prepared for:



By:



Produced By:



AGNICO EAGLE



and



APPENDIX H

Arctic Raptors Report



ARCTIC RAPTORS

Prepared For:
Marie-Pier Marcil
Environmental Project Coordinator
marie-pier.marcil@agnicoeagle.com
Agnico Eagle Mines Limited
Meadowbank Complex
Suite 540
Baker Lake, Nunavut
X0C 0A0

Prepared By:
Arctic Raptors Inc.
170 52260 RR223
Sherwood Park, Alberta
T8C 1J3

Contact:
Alastair Franke PhD
alastair.franke@ualberta.ca

Background

Broad scale monitoring of raptors in the vicinity of the Meadowbank Mine including the Whale Tail site (Meadowbank Complex) was first initiated in 2015. The purpose of the monitoring program from 2015 through 2019 focused on searching for nesting sites located near to, and far from proposed or existing infrastructure. In 2018, the Government of Nunavut (GN) indicated that monitoring to that point did not have the power to detect and mitigate Project-related effects on raptor nesting success. In addition, the GN argued that the study design did support analysis that would allow detection of project-related nest failures (e.g., by examining nest success as a function of intensity of project-related disturbance). Starting in 2021 (no monitoring was completed in 2020 due pandemic restrictions), Agnico Eagle conducted two broad-scale helicopter surveys per year with the intent of estimating project effects. In addition, Agnico Eagle has conducted regular monitoring of project-related infrastructure considered to be typical of nesting habitat (e.g., road-side quarries).

Monitoring objectives are outlined in the Agnico Eagle Meadowbank Division Terrestrial Ecosystem Management Plan (TEMP; Agnico Eagle Mine 2019). The TEMP outlines requirements for avoiding and managing disturbance to nesting raptors, as follows:

- Develop a nest-specific response plan for identified raptor nests within areas of concern to ensure that nesting success is not affected by development activities
- Follow GN-DoE guidelines for avoiding disturbance to raptor nests
- Active nest monitoring

In addition, the TEMP also outlines the general monitoring approach, as follows:

- document and map raptor nesting sites (see Project Certificate No. 008 Condition 33)
- evaluate the success of mitigation to prevent disturbance to raptors or raptor nests
- estimate project-related disturbance effects.
- develop site-specific management plans for nesting sites within 1.5km of project infrastructure, including minimum “no disturbance” buffers.
- in the event of deterrence or removal of a nest, Agnico Eagle must contact the Government of Nunavut (GN) and secure the required permits (see Project Certificate No. 008 Condition 36).

Species Descriptions

Peregrine Falcon (*Falco peregrinus tundrius*)

The Arctic peregrine falcon (Figure 1) is medium- to large-sized falcon. It has a dark hood and face with distinct dark malar stripe, cream to white throat, slate-grey back, barred belly, legs, and tail. Long pointed wings, stocky body. Plumage of immature birds brown rather than grey, and the breast is streaked rather than barred. In adults, the cere and orbital ring are yellow, and bluish in immature birds. Compared with gyrfalcons, the peregrine is smaller and less stocky. In flight, the wings of peregrines appear narrower and more pointed. In peregrine falcons, wing tips extend to bottom of the tail when perched, while in gyrfalcons, wing tips extend two-thirds down the length of tail.

F. p. tundrius breeds mainly north of the treeline from Alaska east throughout northern Canada to Greenland. It breeds throughout the taiga and tundra wherever suitable nesting habitat and sufficient prey are present. In Nunavut, peregrines appear to have their highest densities in the Kivalliq and

Kitikmeot regions. Highest breeding density on record is on the western shores of Hudson Bay in the Kivalliq Region.



Figure 1 Peregrine Falcon (male)

F. p. tundrius is a long-distance migrant, wintering mainly throughout South and Central America, but also in southern United States and Mexico. Northern-breeding American and Arctic peregrines are highly migratory (Yates et al. 1988, Schmutz et al. 1991, Fuller et al. 1998), and although fall migration occurs over a broad geographic range (Fuller et al. 1998), Yates et al. (1988) indicated that “separate and distinct autumn migratory populations pass through the east and Gulf coasts” of the United States.

Peregrine falcons usually nests on cliffs and rocky outcrops, but also nest on hilltops, river canyons, rock screes, and on occasion directly on the ground (Court et al. 1988, Ratcliffe 1993). They prefer nesting in locations close to water in south-facing, rugged terrain. Hunting habitat includes rugged coastline areas and rolling tundra that consists of raised beaches, dry tundra, sedge meadows, wetlands, and lakes that are inhabited by a diversity of breeding songbirds and shorebirds.

Peregrine Falcons do not build a nest but make a depression (called a scrape) in the substrate on a cliff ledge. Scrapes are usually approximately 20 cm in diameter and 4 cm deep. Females usually do the majority of incubation and brooding of small young. Males provision incubating females and provide most of the prey when nestlings are small. Thereafter, females do most of the feeding, beginning to hunt after young are large enough to thermoregulate on their own. Clutch size is typically 3 or 4 eggs in Nunavut. In Rankin Inlet and Igloodik, the median incubation period of the first egg was 36 days and decreased 1 day for each additional egg. The incubation period of the 4th egg (33 days) was similar to what has been reported elsewhere (Burnham 1983).

The Arctic peregrine falcon is a generalist predator with a diverse diet that includes passerines, shorebirds, ducks, gulls, terns, jaegers, black guillemots, and, when available, collared lemmings, brown lemmings, and Arctic ground squirrels. Bradley and Oliphant (1991) indicated that, around Rankin Inlet, small birds (64% of prey items) represented the greatest portion of prey items, followed by microtine rodents (25%), large birds (8%), and Arctic ground squirrels (4%). The most important prey measured by percent biomass were large birds (43%), followed by small birds (25%), microtine rodents (18%), and Arctic ground squirrels (15%).

In Nunavut, the earliest documented arrival for Peregrine Falcons is 10 May at a known breeding site near Rankin Inlet. Although arrival timing varies with spring conditions, most sites are occupied during the 3rd week of May. Median laying date in Rankin Inlet (9 June) is typically earlier than Igloodik (15 June) and northern Baffin Island (16 June). Median date of hatching ranges from 14 July at Rankin Inlet to 18 July on northern Baffin Island and 20 July at Igloodik (Jaffre et al. 2015). Birds depart the breeding grounds from mid-September through early October, arriving on the wintering grounds throughout Central and South America in November.

The peregrine falcon is no longer included on the list of endangered and threatened species in Canada (SARA 2002, as amended); furthermore North American populations including those monitored in Nunavut are considered to be stable (Franke 2016, Franke et al. 2020).

Gyrfalcon (*Falco rusticolus*)

The gyrfalcon (Figure 2) is large with pointed wings, but more rounded and broader than the wings of other falcon species. The tail is relatively long. When perched, wings extend 2/3 down the tail. The body is thick and powerful, particularly in females. Adults have yellow ceres, eye-rings and legs. As in all falcons, the eyes appear black. Three main color morphs occur: black, grey and white. White adults have almost pure white breasts and bellies, with dark wingtips (dipped-in-ink appearance). Grey adults have slate-colored back, with white underparts mottled with gray arrowhead-shaped markings. Dark adults are dark grey overall above and dark-streaked breasts and belly. There is extreme reverse sex dimorphism, with males being approximately 2/3 the size of females (Ferguson-Lees et al. 2001).

Gyrfalcons distribution extends throughout the circumpolar Arctic. Most of the breeding range occurs north of 60°N, but breeding pairs are known to exist as far south as 55°N, mainly along seacoasts in eastern Canada. Many adults remain within the breeding range throughout the year, but some disperse southwards in winter, small numbers reaching the northern United States (Cade 1982, Poole 1987). Immature birds are much more likely to winter to south of breeding range, and females are thought to disperse more widely, with many males remaining relatively close to breeding territories throughout the year.

Ptarmigan are often cited as the most important prey species by biomass, but Arctic ground squirrel and Arctic hare are also important, as well as small mammals (mice and voles) and other birds (ducks, sparrows, buntings). In central Nunavut, Poole and Boag (1988) identified eleven species of birds and five species of mammals among the prey. Birds accounted for three quarters of the diet, and adult rock ptarmigan were the most common. Arctic ground squirrel and arctic hare made up the bulk of mammalian prey.

Males occupy and defend nesting territories as early as the end of January, with females arriving in mid-March. In Nunavut, laying typically begin in the first week of May with most pairs laying by the end of the second week in May. Nestlings typically hatch in mid-June, but hatching can occur throughout June. Nestlings fledge in late July or early August after 7 weeks in the nest. In Nunavut, gyrfalcon usually nest

on cliff ledges, ideally beneath sheltering overhang; sometimes nests in trees or on man-made structures. Nests are generally on rock ledges or abandoned rough-legged hawk or common raven nests. Use of alternate nest sites is not uncommon. Pairs do not necessarily attempt breeding every year, depending on food supply. Typical clutch size is 3-4 eggs (Booms et al. 2008) that are incubated for 34-36 days mostly by the female (ca. 80%). The North American population including Nunavut is considered to be stable (Clum and Cade 1994, Kirk and Hyslop 1998). Although low spring temperatures are associated with later arrival at nesting territories in Nunavut (Poole and Bromley 1988), there was no effect on laying dates. However, (Poole and Bromley 1988) indicated that increased spring precipitation (snow) reduced reproductive success.



Figure 2. Gyrfalcon (female)

Rough-legged Hawk (*Buteo lagopus*)

The rough-legged hawk (Figure 3) is a medium-large bird of prey, with a small beak, predominantly brown in colour and often mottled. Plumage is highly variable with recognized light and dark morphs. Extensive field experience is required to distinguish between males and females, and between adults and juveniles based on plumage alone. A broad chest band is evident in most plumage variations, and in flight, a dark carpal patch is characteristic in light morph individuals. One or more dark terminal bands appear on the tail. The wing tips are long enough to reach or extend past the tail when the animal is perched. Legs are feathered to feet (Ferguson-Lees et al. 2005).

Widespread throughout North America, breeding from the Aleutian Islands, the interior of Alaska, Yukon, northern Mackenzie, and across Nunavut to northern Labrador and Newfoundland and south to Manitoba and southeastern Quebec. In Nunavut, rough-legged hawks are present over most of the territory except for islands without lemmings (Bechard and Swem 2002).

Regularly hovers, or “kites” while facing into the wind scanning for prey. Soars with wings raised in a slight dihedral (V-shape). It is a diurnal raptor that still-hunts from prominent perching structure on both breeding and wintering grounds. Prey is captured on the ground. Courtship involves soaring and calling, with the male engaged in a flight display of repeated undulating stoops rising upward to mid-air stall. It is gregarious on migration, often travelling in flocks, but small groups or individuals are not uncommon.

Breeding pairs prefer rugged terrain areas with steeper slopes in areas associated with vegetation, and were most likely to nest in large, productive valleys surrounded by high-elevation plateaus (Galipeau et al. 2016). It is widely distributed in winter, usually found in open habitat such as prairies, plains, coastal marshes, agricultural fields, and airports (Johnsgard and Johnsgard 1990). More common in wintering areas with short growing seasons and low precipitation, with highest densities in the northern United States, Great Basin area, and the western shortgrass prairies (Bock and Lepthien 1976, Bock et al. 1977).

The rough-legged hawk is a small mammal specialist; thus, its breeding activity is generally associated with local abundance of ground squirrels, voles, or lemmings (Hanski 1991, Potapov 1997). It will prey on birds when small mammals are scarce, particularly juvenile passerines and shorebirds, and will resort to consuming carrion (Watson 1986). Usually reproductively mature at 2 years of age. Stick-nests are built soon after arrival on territory, typically on cliffs, bluffs, or on the ground. Clutch size varies (1-7 eggs), depending on food availability, but 3-5 eggs are usual and laid in May. Incubation 31-33 days, provided almost entirely by the female. Nestling period is 35-40 days, and fledglings remain dependent on adults for another 2 weeks. The male provisions the young and the female feeds the young. Pairs show nest site fidelity, and in locations where ground squirrels are entirely absent, they may forgo breeding or have small broods when lemmings are low (Bechard and Swem 2002). Bechard and Swem (2002) indicated that egg-laying date was associated with spring temperatures and snow-free ledges, but Potapov (1997) reported no effect of snow melting date or spring/summer temperatures on number of nesting pairs.



Figure 3. Rough-legged Hawk (male)

Methods

Field Surveys

Structured surveys were conducted from 2015 – 2017, 2019 and 2021-2023 (Table 1). The focus of these surveys was to search known nesting sites for the presence of cliff-nesting raptors. In addition to the structured surveys, favorable habitat was searched opportunistically when ferrying between known sites, camps, or other mine infrastructure and when raptors or signs of site use (e.g., whitewash, orange-colored lichen, and unused nests) were observed. Sites were considered occupied if one or more adults displayed territorial or reproductive behavior (e.g., vocalization and/or flight behavior associated with defense of breeding territory or presence of nest building, nest, or eggs). Locations with partially built or unused nests without detection of breeding aged adults were noted as such (e.g., old stick nest; no birds detected). Raptor monitoring in 2023 involved two helicopter surveys (23 May – 28 May, 09 – 12 August), and ground monitoring of potential nesting habitat (natural cliffs, quarries and borrow pits) along the Whale Tail Haul Road (WTHR; Meadowbank to Whale Tail) and All Weather Access Road (AWAR; Baker Lake to Meadowbank).

Table 1. Broad scale survey effort from 2015-2023 for raptors breeding in the vicinity of the Meadowbank Complex.

Year	2015		2016		2017		2018		2019		2020		2021		2022		2023	
Survey	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
Start	28/05	—	18/05	21/07	28/05	—	—	—	13/06	—	—	—	23/05	04/08	28/05	12/08	23/05	09/08
End	30/05	—	20/05	23/07	30/05	—	—	—	15/06	—	—	—	30/05	08/08	03/06	17/08	28/05	12/08
Hours	12	—	10	10	12	—	—	—	10	—	—	—	12	12	11.7	12.4	10.7	11.4

Mapping

Shapefiles for the most recent projection of the combined footprint of the AWAR, WTHR, and project site were read into R using the `readOGR` function in the `rddal` package and converted to a data frame for `ggplot2` using the `fortify` function. The spatial extent for the mapping exercise was set using the `get_map` function in the `ggmap` package. Maps portraying species-specific nesting sites were plotted using `ggmap`.

Data Analysis

Distance to disturbance

Spatial objects (lines and polygons) describing the project footprint were acquired from Agnico Eagle. Euclidean distances from nesting sites to the nearest spatial object were calculated in R (R Development Core Team 2017) using the `sp`, `rgeos`, and `geosphere` packages.

Occupancy

Although estimation of nesting site occupancy can serve as a metric of population status (MacKenzie et al. 2002, 2003), detection of nesting pairs is imperfect, and estimating the proportion of occupied sites without accounting for detection error can lead to underestimation of true occupancy (Kéry and Schmidt 2008). Occupancy modeling estimates parameters that influence occupancy, and simultaneously accounts for imperfect detection (Marsh and Trenham 2008). In any given year, the status of a nesting site is limited to one of only two outcomes: occupied or not occupied. Occupancy modelling estimates the following parameters:

1. initial colonization – the probability that a nesting site is occupied in the first survey year (ψ),
2. colonization – the probability that an unoccupied site becomes occupied between years (ϵ),
3. extinction – the probability that occupied site becomes unoccupied between years (γ); and,
4. detection – the probability that PEFA are detected given that the nesting site is occupied (ρ).

Nesting site survival is estimated as the reciprocal of extinction (i.e., the probability an occupied site remains occupied between years; $1-\gamma$). In addition, environmental covariates can be added to an occupancy model to test whether they influence the above parameters using a logit link function. Multi-year occupancy was calculated in R (R Development Core Team 2019) using the ‘unmarked’ package. When appropriate, data were standardized (e.g., distance to disturbance was standardized by subtracting the mean from each distance value and dividing by the standard deviation), and then formatted specifically for ‘unmarked’ using the *unmarkedMultFrame* function.

Occupancy among years was analyzed separately for peregrine falcons, rough-legged hawks, and gyrfalcons. To do so, the total number of nesting sites was filtered to include only those nesting sites that were occupied at least once between 2015 and 2023 for each species. Model fitting of candidate models (Table 2) was performed using the *colext* function. Akaike Information Criterion (AIC) was used for model selection.

Three candidate models were selected *a priori* to estimate the effect anthropogenic disturbance or time (Table 2). The aim of this analysis was two-fold: 1) to estimate the proportion of occupied nesting sites annually, and; 2) to estimate the trend in nesting site occupancy from 2015 to 2023. Trend in occupancy was estimated using annual occupancy probabilities to calculate average rate of change (λ) at the population level (MacKenzie et al. 2003) where a value <1 indicates population decline and >1 indicates an increase. Initial occupancy and detection probability were set to constant (i.e., 1) time varying (i.e., year), respectively, for all models. Model structure for extinction and colonization varied according to the test for effects (see Table 2).

Table 2. Candidate models

Model structure	Model #	Tests for effect of:
$\psi(1) + \epsilon(1) + \gamma(1) + \rho(\text{year})$	m0	Null (contrast to m1 and m2)
$\psi(1) + \epsilon(d2d) + \gamma(d2d) + \rho(\text{year})$	m1	Distance to disturbance (project infrastructure)
$\psi(1) + \epsilon(\text{year}) + \gamma(\text{year}) + \rho(\text{year})$	m2	Time (captures effect of missing covariates)

Reproductive success

Over the course of the nine-year period, four surveys were conducted during brood rearing (2016, and 2021 -2023). For this report, estimates of reproductive success are reported as the number of young hatched from a single nesting attempt by a pair of birds, regardless of age at the time they were observed. Because nestling age varied considerably between years and among sites, measures of annual productivity *per se* are expected to be biased high. All nesting sites were assumed to be contained within a unique nesting territory (i.e., no nesting territories were occupied by more than one pair of birds of the same species, regardless of the potential for alternative nesting sites within nesting territories).

Results

Mapping

Among survey years (see Table 1), 144 locations considered to be typical of raptor nesting habitat were surveyed at least once from 2015 – 2017, 2019, and 2021 - 2023. Of the 144 locations surveyed (Figure 4), nesting raptors have been detected at 96 nesting sites (Table 13). Peregrine falcons have been documented at 77 nesting sites, rough-legged hawks at 33 nesting sites and gyrfalcons have been documented at 13 nesting sites.

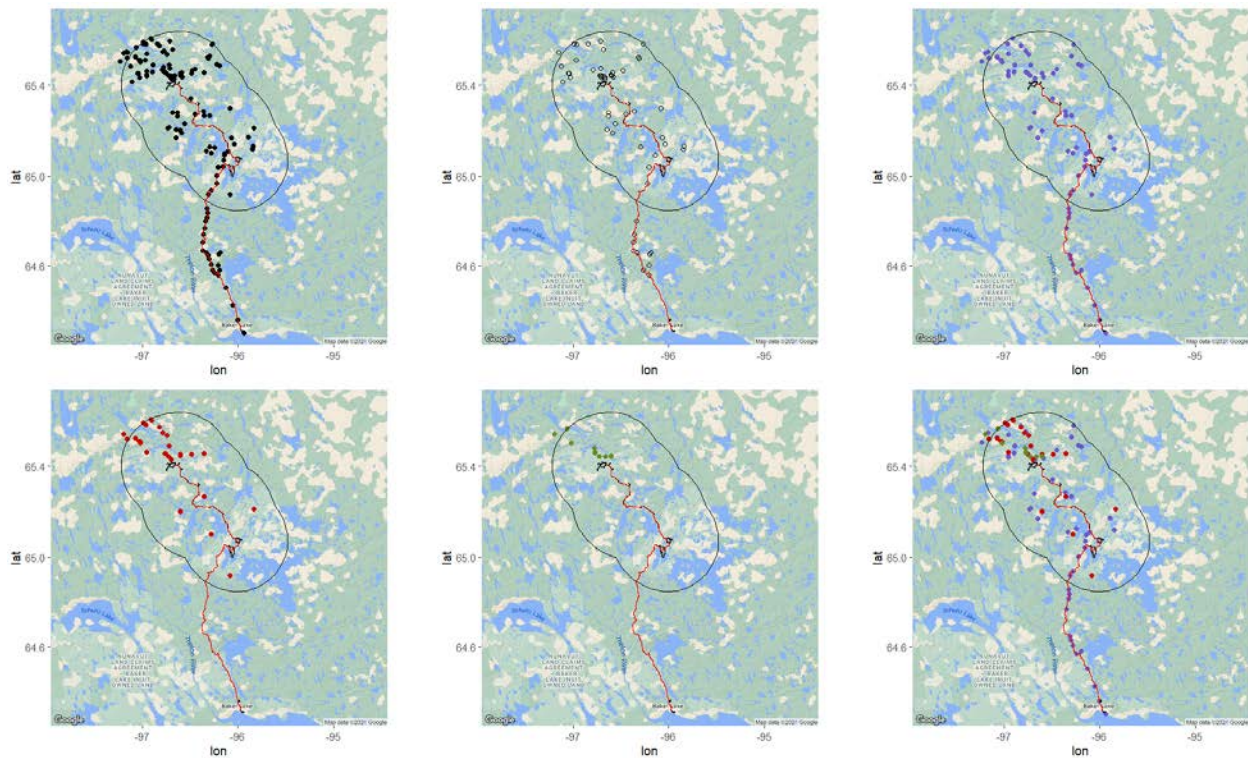


Figure 4. All cliffs surveyed (n=144; top L), cliffs with no record of occupancy (n= 48; top C), PEFA nesting sites (n = 77; top R), RLHA nesting sites (n=33; bottom L), GYRF nesting sites (n=13; bottom C), and all recorded nesting sites combined (bottom R) for the period 2015 – 2023 in the vicinity of the Meadowbank Complex

Distance to Disturbance

Mean distance from known occupied nesting sites to project infrastructure was 8.93 km (SD=8.30 km, range = 0 – 25.42 km). Twenty-one nesting sites fell within 1.5 km of the footprint of AWAR Road, Whale Tail Haul Road, or MBK Complex and are considered candidates for development of a site-specific management plans. Twenty of the 21 nesting sites within 1.5 km of the footprint have been occupied by only peregrine falcons, one nesting site has been occupied by only rough-legged hawks. Sixteen of the 20 peregrine falcon nesting sites were in rock quarries that were excavated for road building and maintenance, and four were located on natural cliffs. The two rough-legged hawk nesting sites located within 1.5 km of the project footprint were located on natural cliffs. There were no gyrfalcon nesting sites detected within 1.5 km of the project footprint. Seventeen nesting sites were within the 600m limit (500m baseline setback, plus additional 100m setback during the breeding season) identified by the Government of British Columbia (2013) for species with moderate ability to co-exist with human activity.

Occupancy

Peregrine Falcons

The minimum and maximum number of nesting sites sampled in any year was 16 (2018) and 77 (2022 and 2023), respectively (Table 3). The minimum and maximum number of breeding pairs detected was 8 (2020) and 36 (2022), respectively (Table 3). The top occupancy model (i.e., m1) included colonization and extinction effects of distance to disturbance, and a year effect for detection (Table 4; see Table 5 for parameter estimates). Delta AIC for the second-ranked model (m0, the null model) compared to m1 was 3.28 (i.e., >2.0), suggesting that effect size associated with distance to disturbance was important (Table 4). In this regard, the relationship between distance to disturbance and the probability that an unoccupied site would become occupied was negative (i.e., unoccupied nesting sites closer to the project footprint had a higher probability of becoming occupied when contrasted with those further from the project; Figure 5). Similarly, occupied nesting sites closer to the project footprint had a lower probability of becoming unoccupied when contrasted with those further away (Figure 5). Using m1, trend in occupancy (Figure 6) was $\lambda = 0.99$ (SE=0.04).

Table 3. Count of peregrine falcon nesting sites sampled, detected, colonized, extinct, static, and common from 2015 – 2023 for birds breeding in the vicinity of the Meadowbank Complex.

year	sampled	detected	colonized	extinct	static	common
2015	60	29	NA	NA	NA	NA
2016	63	32	8	9	39	56
2017	71	31	4	9	50	63
2018	16	9	2	3	11	16
2019	71	28	1	5	10	16
2020	17	8	4	2	11	17
2021	75	25	3	2	12	17
2022	77	36	19	10	46	75
2023	77	31	15	20	42	77

Table 4. Model selection based on AIC score for peregrine falcons.

Model structure	Model #	Parameters	AIC score	delta AIC	AICwt	Cumltwt
-.d2d.d2d.year	m1	14	979.50	0	0.84	0.84
-.-.-.year	m0	12	982.78	3.28	0.16	1
-.year.year.year	m2	26	991.87	12.37	1.7E-03	1

Table 5. Parameter estimates (null model; log odds scale) for peregrine falcon initial occupancy (ψ), colonization (γ) and extinction (ϵ), and a year effect for detection (ρ).

	$\psi(\text{Int})$	$\text{col}(\text{Int})$	$\text{col}(\text{d2d})$	$\text{ext}(\text{Int})$	$\text{ext}(\text{d2d})$	$\rho(\text{Int})$	$\rho(2016)$	$\rho(2017)$	$\rho(2018)$	$\rho(2019)$	$\rho(2020)$	$\rho(2021)$	$\rho(2022)$	$\rho(2023)$
estimate	0.54	-0.91	-0.29	-0.73	0.26	0.65	1.01	9.08	1.31	1.62	1.93	-0.44	0.28	-0.81
SE	0.46	0.17	0.17	0.19	0.17	0.58	0.68	32.33	0.98	1.24	1.25	0.69	0.66	0.65

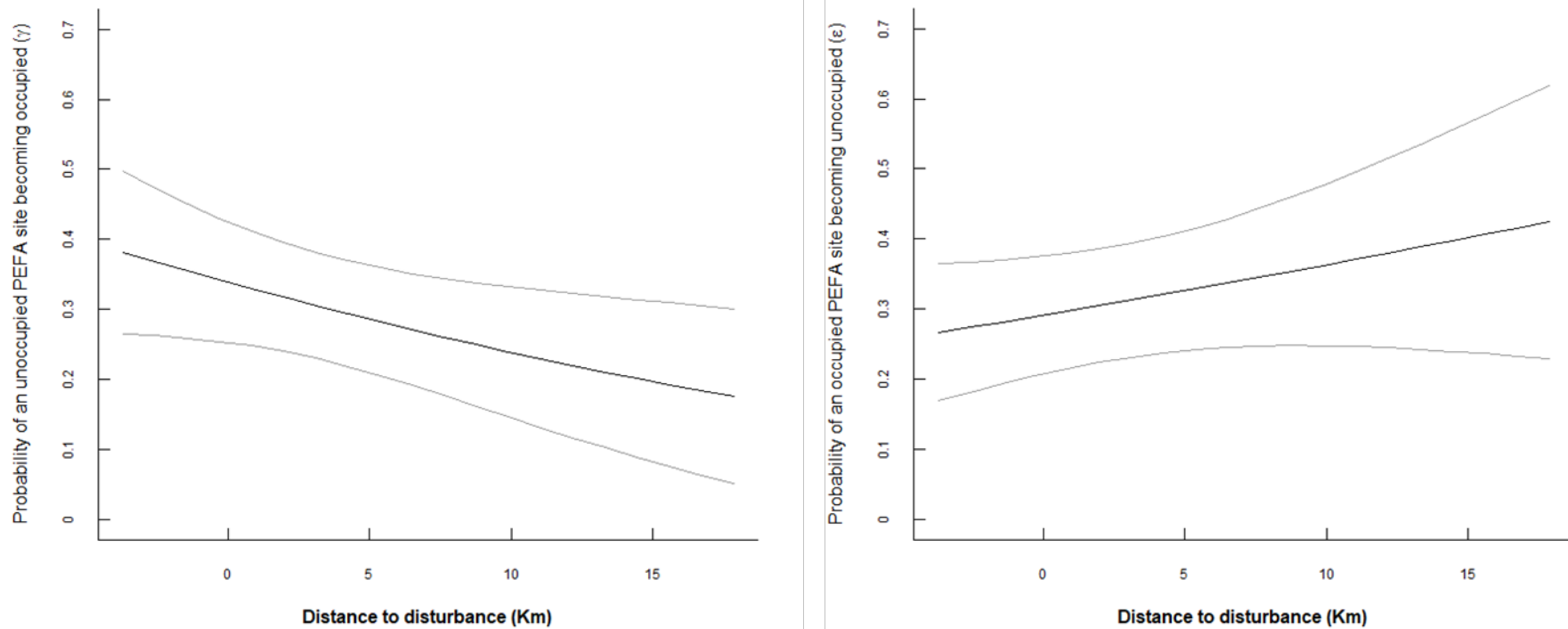


Figure 5. The effect of distance to disturbance on the probability that an unoccupied site would become occupied (γ), and the effect of distance to disturbance on the probability that an occupied site would become unoccupied (ϵ).

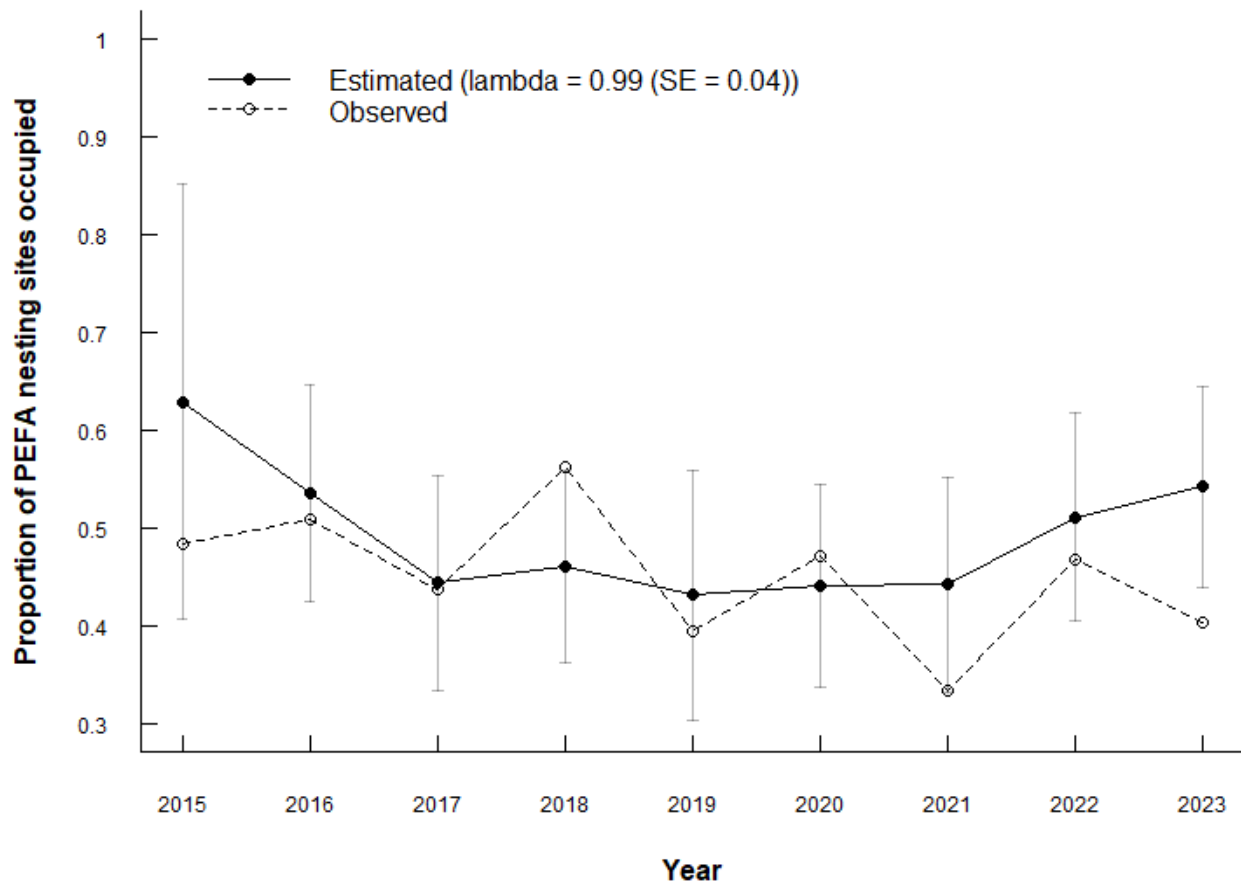


Figure 6. Proportion of PEFA nesting sites occupied from 2015 – 2023 in the vicinity of the Meadowbank Complex. The proportion observed (open circles with dashed lines) are point estimates, and do not account for detection error. The proportion estimated (closed circles with solid lines) accounts for detection error and includes standard error bars. $\lambda = 0.99 \pm 0.04$

Rough-legged Hawks

The null model was ranked first among the candidates for rough-legged hawk occupancy (Table 6; see Table 7 for parameter estimates). Trend in occupancy (Figure 7) calculated as average rate of change at the population level was $\lambda = 1.01$ ($SE=0.11$), where a value <1 indicates population decline and >1 indicates an increase (MacKenzie et al. 2003). The minimum and maximum number of nesting site sampled in any year was 0 (2018 and 2020) and 33 (2022 and 2023), respectively (Table 8). The minimum and maximum number of breeding pairs detected was 0 (2018 and 2020) and 16 (2017), respectively (Table 8).

Table 6. Model selection based on AIC score for rough-legged hawks.

Model structure	Model #	Parameters	AIC score	delta AIC	AICwt	Cumltwt
-.-.year	m0	12	342.31	0	0.78	0.78
-.d2d.d2d.year	m1	14	344.38	2.51	0.21	1.00
-.year.year.year	m2	26	363.13	20.81	0.00	1.00

Table 7. Parameter estimates (null model; log odds scale) for rough-legged hawk initial occupancy (ψ) colonization (γ) and extinction (ϵ), and a year effect for detection (ρ).

	$\psi(\text{Int})$	$\text{col}(\text{Int})$	$\text{ext}(\text{Int})$	$p(\text{Int})$	$p(2016)$	$p(2017)$	$p(2018)$	$p(2019)$	$p(2020)$	$p(2021)$	$p(2022)$	$p(2023)$
estimate	-0.90	-0.51	-0.54	0.65	0.13	6.44	0.00	-0.88	0.00	-0.96	-1.10	-1.93
SE	2.45	0.41	0.42	5.17	5.03	24.71	84.04	5.35	84.02	5.32	5.33	5.31

Table 8. Count of rough-legged hawk nesting sites sampled, detected, colonized, extinct, static, and common from 2015 - 2023 for birds breeding in the vicinity of the Meadowbank Complex.

year	sampled	detected	colonized	extinct	static	common
2015	22	4	NA	NA	NA	NA
2016	29	12	5	1	16	22
2017	30	16	6	4	18	28
2018	0	0	0	0	0	0
2019	31	7	0	0	0	0
2020	0	0	0	0	0	0
2021	32	10	0	0	0	0
2022	33	9	5	7	20	32
2023	33	6	3	6	24	33

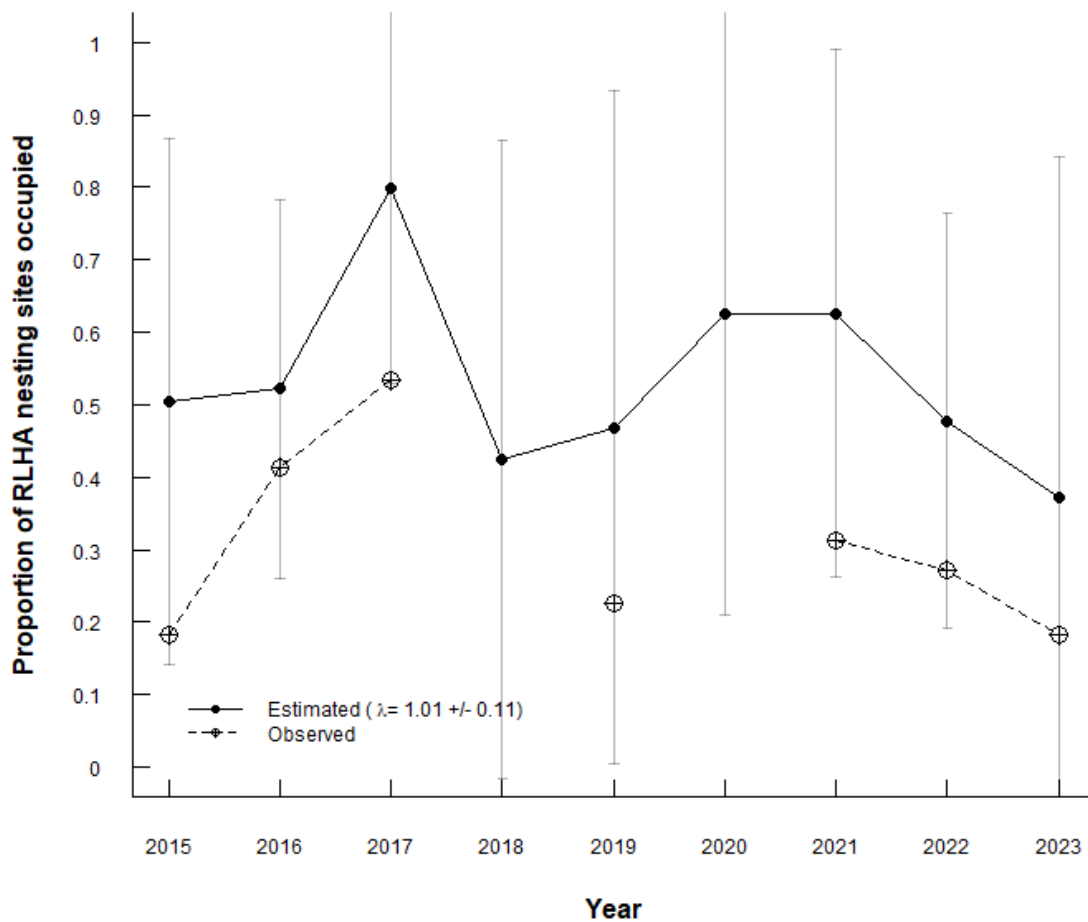


Figure 7. Proportion of RLHA nesting sites occupied from 2015 – 2023 in the vicinity of the Meadowbank Complex. The proportion observed (open circles with dashed lines) are point estimates without error bars,

and do not account for detection error. The proportion estimated (closed circles with solid lines) accounts for detection error and includes standard error bars. $\lambda = 1.01 \pm 0.11$

Gyrfalcons

The null model was ranked first among the candidates for gyrfalcon occupancy (Table 9; see Table 10 for parameter estimates). Although, the delta AIC was less than 2.0 (1.90) for the second-ranked model which included distance to disturbance as an explanatory variable, this should not be interpreted as being an important effect size of distance to disturbance. Using the null model, trend in occupancy (Figure 8) calculated as average rate of change at the population level was λ 1.13 (SE=0.22), where a value <1 indicates population decline and >1 indicates an increase (MacKenzie et al. 2003). The minimum and maximum number of nesting site sampled in any year was 0 (2018 and 2020) and 13 (2022 and 2023), respectively (Table 11). The minimum and maximum number of breeding pairs detected was 0 (2018 and 2020) and 5 (2022 ad 2023), respectively (Table 11).

Table 9. Model selection based on AIC score for gyrfalcons.

Model structure	Model #	Parameters	AIC score	delta AIC	AICwt	Cumltvwt
-.-.year	m0	12	151.91	0.00	0.72	0.72
-.d2d.d2d.year	m1	14	153.81	1.90	0.28	1.00
-.year.year.year	m2	26	176.05	24.14	0.00	1.00

Table 10. Parameter estimates (null model; log odds scale) for gyrfalcon initial occupancy (ψ) colonization (γ) and extinction (ϵ), and a year effect for detection (ρ).

	ψ (Int)	col(Int)	ext(Int)	ρ (Int)	p(2016)	p(2017)	p(2018)	p(2019)	p(2020)	p(2021)	p(2022)	p(2022)
estimate	-0.36	-0.34	-0.59	3.18	-3.77	-3.64	0.00	-3.84	0.00	-3.40	-3.73	-3.53
SE	1.42	0.74	0.87	18.60	18.43	18.59	97.62	18,62	97.63	18.61	18.64	18.62

Table 11. Count of gyrfalcon nesting sites sampled, detected, colonized, extinct, static, and common from 2015 - 2023 for birds breeding in the vicinity of the Meadowbank Complex.

year	sampled	detected	colonized	extinct	static	common
2015	10	4	NA	NA	NA	NA
2016	11	2	1	3	6	10
2017	10	2	1	1	8	10
2018	0	0	0	0	0	0
2019	11	2	0	0	0	0
2020	0	0	0	0	0	0
2021	12	5	0	0	0	0
2022	13	4	1	3	8	12
2023	13	5	3	2	8	13

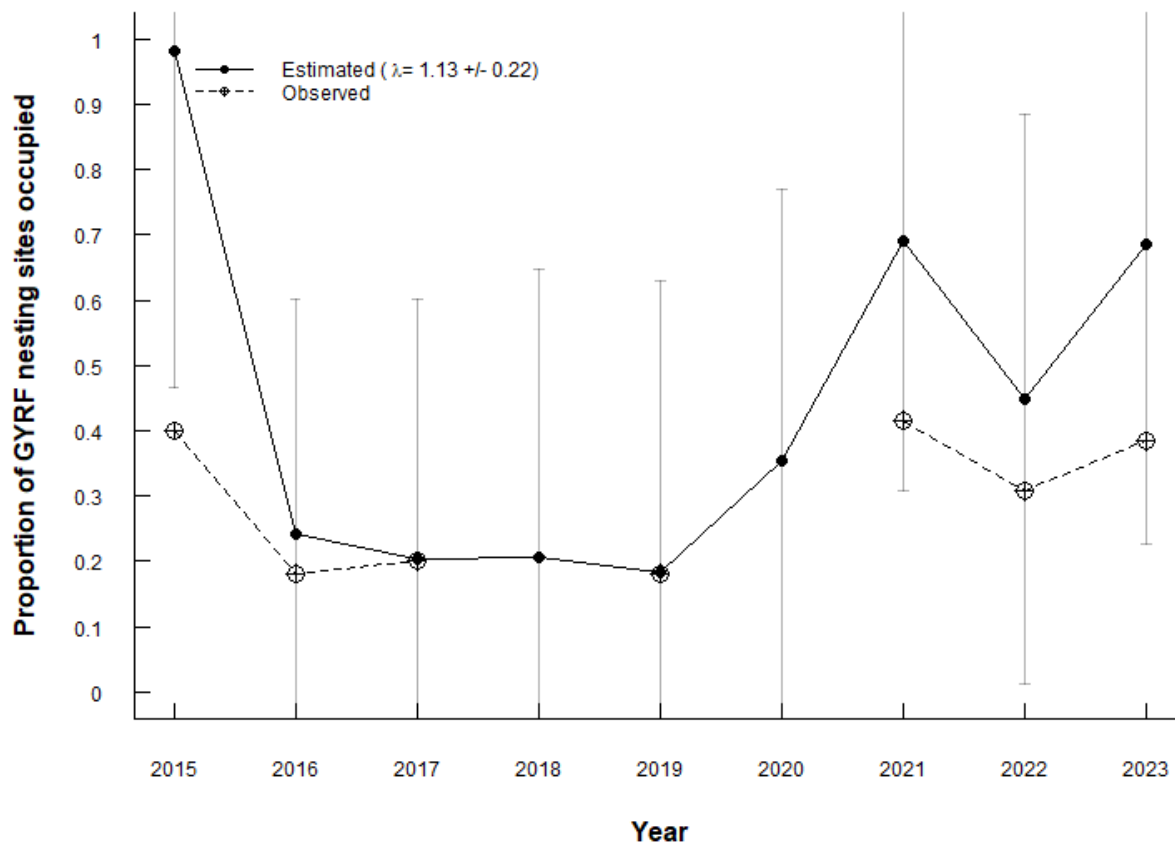


Figure 8. Proportion of GYRF nesting sites occupied from 2015 – 2023 in the vicinity of the Meadowbank Complex. The proportion observed (open circles with dashed lines) are point estimates without error bars, and do not account for detection error. The proportion estimated (closed circles with solid lines) accounts for detection error and includes standard error bars. Lambda = 1.13±0.22

Reproductive Success

Table 12. Estimates of reproductive success for peregrine falcons, rough-legged hawks, and gyrfalcons detected in 2016 and 2021 – 2023 during broad scale surveys in the vicinity of the Meadowbank Complex. Values are reported as number of young hatched from a single nesting attempt, regardless of nestling age at the time they were observed. Because nestling age varied considerably between years and among sites, measures of annual productivity per se are expected to be biased high.

Year	Peregrine falcons				Rough-legged Hawks				Gyrfalcons			
	2016	2021	2022	2023	2016	2021	2022	2023	2016	2021	2022	2023
Count of occupied sites	32	25	32 ¹	30	12	10	7	6	2	5	4	5
Count of nestlings	9	9	37	9	20	11	6	3	4	6	0	2
Productivity (apparent)	0.28	0.36	1.16	0.30	1.67	1.1	0.86	0.50	2.00	1.2	0.0*	0.4*

¹ Count of sites at which nestlings were detected, * Gyrfalcon nestlings may have fledged prior to surveys.

Conclusion

This report applies GN-DoE guidelines (Government of British Columbia 2013) to assess potential disturbance to known nesting sites that have been identified over the course of nine survey-years. Agnico

Eagle has detected peregrine falcon nesting sites in 15 rock quarries excavated for building and maintenance of the AWAR Road. To date there have been no instances of rough-legged hawks or gyrfalcons nesting in rock quarries. To date there have been no instances of raptors establishing nests on artificial structures along the Whale Tail Haul Road or Whale Tail site.

Monitoring has focused on searching for, documenting, and mapping nesting sites for three raptor species (peregrine falcons, rough-legged hawks, and gyrfalcons). Study design was limited to single surveys in some years, which limits estimation of detection error. To address this limitation, starting in 2021, the study design was updated to incorporate multiple surveys annually, and took advantage of the distribution of known nesting sites to monitor occupancy as a function of distance to project-related disturbance. This approach addresses the GN comment in the 2018 Annual Report regarding the potential for insufficient power to detect to project-related effects by correcting for inconsistent monitoring within and among seasons. There has been no incident requiring permitting for removal of a nest (Term and Condition 36).

This report meets Term and Condition 33 by documenting and mapping raptor nesting sites (Figure 4, Table 13). There is no evidence for project-related related disturbance effects for peregrine falcons, rough-legged hawk occupancy, and gyrfalcons.

In 2023, pre-season deterrence was conducted at two sites known to harbour raptors for quarries along the AWAR where project-related activity was expected. Despite ongoing in-season and broad scale monitoring there is currently no history of nesting raptors along the WTHR (all habitat with the potential to harbour nesting raptors will be monitored in 2024). Where occupied nesting sites were detected, mine-related activity within the quarries was restricted. Nesting sites were monitored to minimize disturbance. Nest visits were conducted periodically to conduct egg and nestling counts. Presence of nesting pairs was not made public to minimize disturbance. In the next iteration of the TEMP, expected to be completed in 2024, Agnico Eagle will look at updating the management and response plans. Improved monitoring and management of these nesting sites has the potential to fulfill the requirements outlined in the TEMP (active nest monitoring, evaluating the success of mitigation to limit disturbance to raptors or raptor nests, and estimating project-related nest failures). However, for this to be achieved, factors associated with natural disturbance (e.g., weather, prey abundance, predation) must also be estimated to avoid confounding the effect of natural disturbance with project-related disturbance. In 2024, in addition to the regular monitoring conducted by Agnico Eagle Environment, two broad scale surveys are expected, and will contribute to meeting NIRB Project Certificate Term and Condition. It is possible that the effect of distance to disturbance for peregrine falcons is related to the quantity of nesting sites that have been established in quarries creating a bias for nesting sites located close to the project footprint. Searching for nesting sites parallel to, and far from the AWAR would reduce any potential bias that exists.

Table 13. Geographic coordinates (decimal degrees), distance to disturbance (Km) for known nesting sites surveyed between 2015 and 2023. Nesting sites that require management plans are identified.

NSID	Quarry	LAT	LON	PEFA.	RLHA.	GYRF.	minD2D	Mgt Plan
117	NA	65.4444	-96.9512	1	0	0	10.3	No
69	NA	65.4399	-96.9561	1	0	0	10.4	No
83	NA	65.5043	-97.2294	1	0	0	24.8	No
108	NA	65.5387	-97.1977	0	1	1	25.4	No
109	NA	65.5396	-97.1966	1	1	0	25.4	No
121	NA	65.5451	-97.1639	1	0	0	24.6	No
122	NA	65.5435	-97.1504	0	1	0	23.9	No
95	NA	65.5180	-97.1627	1	1	0	22.8	No
90	NA	65.5239	-97.0747	1	0	0	19.8	No
89	NA	65.5229	-97.0726	1	1	0	19.7	No
88	NA	65.5104	-97.0353	1	1	0	17.5	No
87	NA	65.5096	-97.0309	1	1	0	17.3	No
86	NA	65.5060	-97.0200	0	1	0	16.6	No
85	NA	65.5011	-97.0226	1	1	1	16.4	No
94	NA	65.4598	-96.9551	1	1	0	11.2	No
123	NA	65.4592	-96.8975	1	0	0	8.9	No
126	NA	65.4299	-96.6958	0	1	0	1.3	Yes
112	NA	65.4418	-96.7152	0	0	0	2.7	No
14	NA	65.4419	-96.7278	1	0	0	2.9	No
16	NA	65.4441	-96.7286	0	1	1	3.1	No
17	NA	65.4449	-96.7334	1	0	0	3.3	No
74	NA	65.4548	-96.7583	1	1	0	4.7	No
75	NA	65.4552	-96.7645	1	1	0	4.8	No
73	NA	65.4566	-96.7737	1	0	1	5.1	No
157	NA	65.4610	-96.7695	0	0	1	5.5	No
71	NA	65.4791	-96.7799	0	0	1	7.5	No
128	NA	65.4885	-96.8873	1	0	0	10.9	No
20	NA	65.5107	-96.9705	1	0	0	15.3	No
21	NA	65.5366	-96.9563	1	0	0	17.1	No
127	NA	65.5656	-97.0678	1	0	1	22.9	No
97	NA	65.5780	-96.9643	1	1	0	21.1	No
119	NA	65.5899	-96.9895	0	1	0	22.9	No
28	NA	65.6049	-96.9071	1	1	1	22.7	No
27	NA	65.5984	-96.9029	0	1	0	22.0	No
26	NA	65.5720	-96.8261	1	0	0	18.0	No
25	NA	65.5691	-96.8200	1	1	0	17.7	No
24	NA	65.5488	-96.7702	1	1	0	14.9	No
23	NA	65.5470	-96.7894	1	1	0	14.9	No
99	NA	65.5352	-96.7453	1	1	0	13.2	No
100	NA	65.4894	-96.7170	1	1	0	7.9	No
77	NA	65.4438	-96.6637	0	0	1	2.8	No
76	NA	65.4385	-96.6751	0	0	1	2.3	No

58	NA	65.4316	-96.6778	1	0	0	1.5	No
93	NA	65.4429	-96.6009	0	0	1	3.2	No
11	NA	65.4456	-96.6039	0	1	1	3.5	No
10	NA	65.4470	-96.6058	0	0	0	3.6	No
9	NA	65.4508	-96.6041	1	1	0	4.1	No
12	NA	65.4438	-96.5928	0	0	1	3.4	No
6	NA	65.4375	-96.5886	1	0	0	2.8	No
78	NA	65.4527	-96.4856	1	1	0	7.2	No
91	NA	65.4693	-96.4458	1	0	0	9.8	No
36	NA	65.5213	-96.3184	1	0	0	18.1	No
39	NA	65.5273	-96.2980	1	0	0	19.2	No
41	NA	65.5754	-96.2762	1	0	0	23.7	No
92	NA	65.4903	-96.2212	1	0	0	20.0	No
38	NA	65.4844	-96.1955	1	0	0	20.5	No
79	NA	65.4562	-96.3541	0	1	0	12.8	No
4	NA	65.2687	-96.2974	1	0	0	4.7	No
49	NA	65.2672	-96.3507	1	1	0	2.7	No
65	NA	65.2056	-96.6023	0	1	0	6.6	No
67	NA	65.2015	-96.6061	1	1	0	7.0	No
64	NA	65.1691	-96.6444	1	0	0	10.2	No
107	NA	65.2139	-96.7367	1	0	0	12.3	No
68	NA	65.2164	-96.7209	1	0	0	11.5	No
55	NA	65.2811	-96.6848	1	0	0	8.8	No
46	NA	65.3424	-96.4942	1	0	0	1.6	No
32	NA	65.1177	-95.8505	1	0	0	6.8	No
31	NA	65.1223	-95.8498	1	0	0	7.1	No
158	NA	65.2148	-95.8341	0	1	0	14.2	No
61	NA	65.1749	-95.8958	1	0	0	9.3	No
42	NA	65.1109	-96.1045	1	0	0	0.5	Yes
62	NA	65.1287	-96.2463	1	0	0	1.5	No
63	NA	65.1124	-96.3323	1	0	0	0.6	Yes
54	NA	65.1041	-96.2826	1	1	0	0.6	Yes
51	NA	65.0982	-96.1389	1	0	0	2.6	No
52	NA	65.0708	-96.1520	1	0	0	1.7	No
130	Q22	65.0427	-96.1570	1	0	0	0.0	Yes
34	Q21	65.2880	-96.3603	1	0	0	2.3	No
156	Q21	65.0027	-96.2243	1	0	0	0.0	Yes
131	Q20	64.9706	-96.2202	1	0	0	0.0	Yes
150	NA	64.9208	-96.0800	1	1	0	1.8	No
44	Q19	64.9376	-96.2774	1	0	0	0.0	Yes
45	Q18	64.9187	-96.3070	1	0	0	0.0	Yes
132	Q17	64.8592	-96.3248	1	0	0	0.0	Yes
133	Q16	64.8384	-96.3178	1	0	0	0.0	Yes
134	Q15	64.8166	-96.3270	1	0	0	0.0	Yes

136	Q13	64.7718	-96.3440	1	0	0	0.0	Yes
140	Q9	64.6471	-96.3090	1	0	0	0.0	Yes
141	Q8	64.6341	-96.3019	1	0	0	0.0	Yes
142	Q7	64.6092	-96.2829	1	0	0	0.0	Yes
152	NA	64.5826	-96.1892	1	0	0	1.5	No
144	Q5	64.5703	-96.2423	1	0	0	0.0	Yes
146	Q3	64.5038	-96.1266	1	0	0	0.0	Yes
147	Q2	64.4244	-96.0506	1	0	0	0.0	Yes
148	Q1	64.3576	-96.0010	1	0	0	0.0	Yes
149	NA	64.2989	-95.9356	1	0	0	0.8	Yes

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APPENDIX I

Meadowbank Bird Surveys Report



MEADOWBANK COMPLEX

FINAL

2023 BREEDING BIRD SURVEYS AND PRISM PLOTS SUMMARY REPORT

31 JANUARY 2024

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SECTION 1 • OVERVIEW

Environmental baseline studies were conducted in the Project area prior to Meadowbank Mine approvals and integrated into Project designs according to the Terrestrial Ecosystem Management Plan (TEMP). Wildlife Valued Ecosystem Components (VECs) for the Meadowbank Complex were identified in consultation with regulatory agencies and Baker Lake residents. Upland Breeding Birds was one of the key terrestrial VECs determined for the Meadowbank Mine; therefore, an extensive bird monitoring program, consisting of Program for Regional and International Shorebird Monitoring (PRISM) plots at the mine site and a reference area, and bird transects along the Meadowbank All-Weather Access Road (AWAR), was established to determine potential effects of the Meadowbank Mine. The breeding bird PRISM plot and bird transect monitoring programs were designed to evaluate potential Project-related changes in breeding bird species abundance, richness, and diversity over time.

In 2020, Agnico Eagle sent Environment and Climate Change Canada (ECCC) the comprehensive 2003-2015 analysis of all PRISM and breeding bird transect data. Results of the comprehensive analysis determined there were no significant effects of the Project or Mine-related infrastructure on bird abundance, diversity, or community composition, which supported that mitigation is effective. In 2022, Agnico Eagle Meadowbank Complex finalized a collaboration agreement with ECCC, with a focus on contributing to regional bird monitoring programs. The agreement includes a commitment to conduct 48 PRISM plots selected by Canadian Wildlife Service (CWS) over 10 years (2021 to 2031), and to complete Breeding Bird Survey (BBS) routes along the Meadowbank AWAR and the Whale Tail Haul Road (WTHR) opportunistically when qualified individuals are on site. At a minimum, BBS routes will be conducted every three (3) years during the operations, closure, and post-closure phases of the Project.

In 2022, two BBS routes, consisting of 50 stations each, were established along the AWAR and the WTHR. As well, four (4) of 48 designated PRISM plots were surveyed at Meadowbank site. In 2023, both BBS routes were surveyed, and 17 PRISM plots were completed at the Meadowbank site.

SECTION 2 • OBJECTIVES

The primary objectives of this report are to:

- 1) Provide a brief overview of the Meadowbank Complex and the rationale for breeding bird surveys;
- 2) Describe the methods used to conduct BBS and PRISM surveys;
- 3) Summarize results of the 2023 BBS and PRISM surveys; and
- 4) Make recommendations for surveys in subsequent years.

SECTION 3 • METHODOLOGY

3.1 BREEDING BIRD SURVEYS (BBS)

Breeding Bird Survey (BBS) route stops were established in accordance with the North American BBS methods provided by CWS. These methods are coordinated by the United States Geological Survey's (USGS) Patuxent Wildlife Research Center in partnership with ECCC, CWS, and Comisión Nacional para el Conocimiento y Uso de la Biodiversidad (CONABIO, Mexico).

The BBS protocol consists of 50 survey stations set every 800 m for a total of 40 km along the Meadowbank AWAR (Route 62049) and 40 km along the Whale Tail Haul Road (Route 62091). The starting points and orientation of BBS routes along the AWAR and WTHR were chosen by ECCC personnel in early 2022 (see **Figures 3.1** and **3.2**). Stations were established by field personnel on 15 June 2022, and GPS coordinates and detailed descriptions of each station were recorded. The route and stations are a permanent survey to be conducted on a schedule provided by ECCC (i.e., at a minimum every 3 years during operations, closure, and post-closure, and opportunistically when PRISM surveys are conducted). The first year of BBS surveys was scheduled between 15 and 30 June 2023, the prime bird breeding season.

Only one observer counted birds from each stationary point. Every bird seen or heard within 400 m was tallied during the designated three minutes at each stop. Birds documented beyond three minutes were not recorded. Birds seen between or before stops were not counted but were noted in the margin of the datasheet. The number of individuals in large flocks was estimated. Birds known to be non-breeding (late migrant, injured bird, or summer vagrant) were included but marked on the data sheet as a non-breeder (Mig). Species not already listed on the forms were added at the bottom. As well, the number of vehicles that passed by during each three-minute stop, excessive noise, and weather conditions were recorded.

The BBS data were entered directly into the USGS system and copies of the datasheet were provided to the ECCC CWS BSS Coordinator by August 31, 2023. Valid stop descriptions of each stop along both routes were maintained and kept up to date in the USGS database. Agnico Eagle will notify the Canadian national BBS office if adjustments to stop locations are necessary due to safety issues.





3.2 PRISM PLOTS

The PRISM plot surveys followed ECCC protocols (Bart et al. 2005) in compliance with the Meadowbank-ECCC Collaboration Agreement. A total of 48 plots were chosen by ECCC in early 2022, many of which were previously established at Meadowbank and Whale Tail (see **Figures 3.3** and **3.4**). Four (4) plots were surveyed in 2022, 17 plots were surveyed in 2023, and 12 plots are proposed to be surveyed in 2024. The remaining 15 plots will likely be surveyed in 2025 or other years prior to the expected mine closure date, although the option exists to survey some or all remaining plots each year. Plots are chosen each year depending on access logistics (e.g., helicopter support), proximity to other PRISM plots, local weather conditions, and ECCC priority.

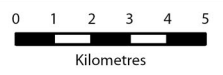
In 2022 and 2023, the 300x400m plots were surveyed by a team of two field qualified personnel that transected the site every 25 m (team members were spaced 25 m apart and used geolocation to orient along transect lines). The purpose of the surveys was to document all birds (i.e., absolute abundance) on the plots and to contribute to the ECCC Arctic database on bird diversity and abundance.

PRISM survey raw data will be provided to ECCC CWS technical expert and the CWS Environmental Assessment Officer every year by March 31. Raw data will include: a) bird and plot habitat data entered into the CWS provided spreadsheet; and b) a digital scan of all field data sheets. Photos of PRISM plot corners as per PRISM protocols were inadvertently not taken in 2022 for the four (4) PRISM plots, but these plots were revisited in 2023 to take corner photos.

Figure 3.1:
Location of the Breeding Bird Survey (BBS) Route
Along the Meadowbank
All-Weather Access Road
(AWAR)

-  All-Weather Access Road
- BBS Survey**
-  Start
-  End
-  Route

Route: 62-049
MEADOWBANK MINE



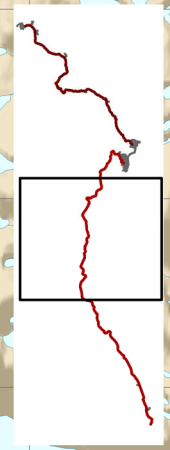
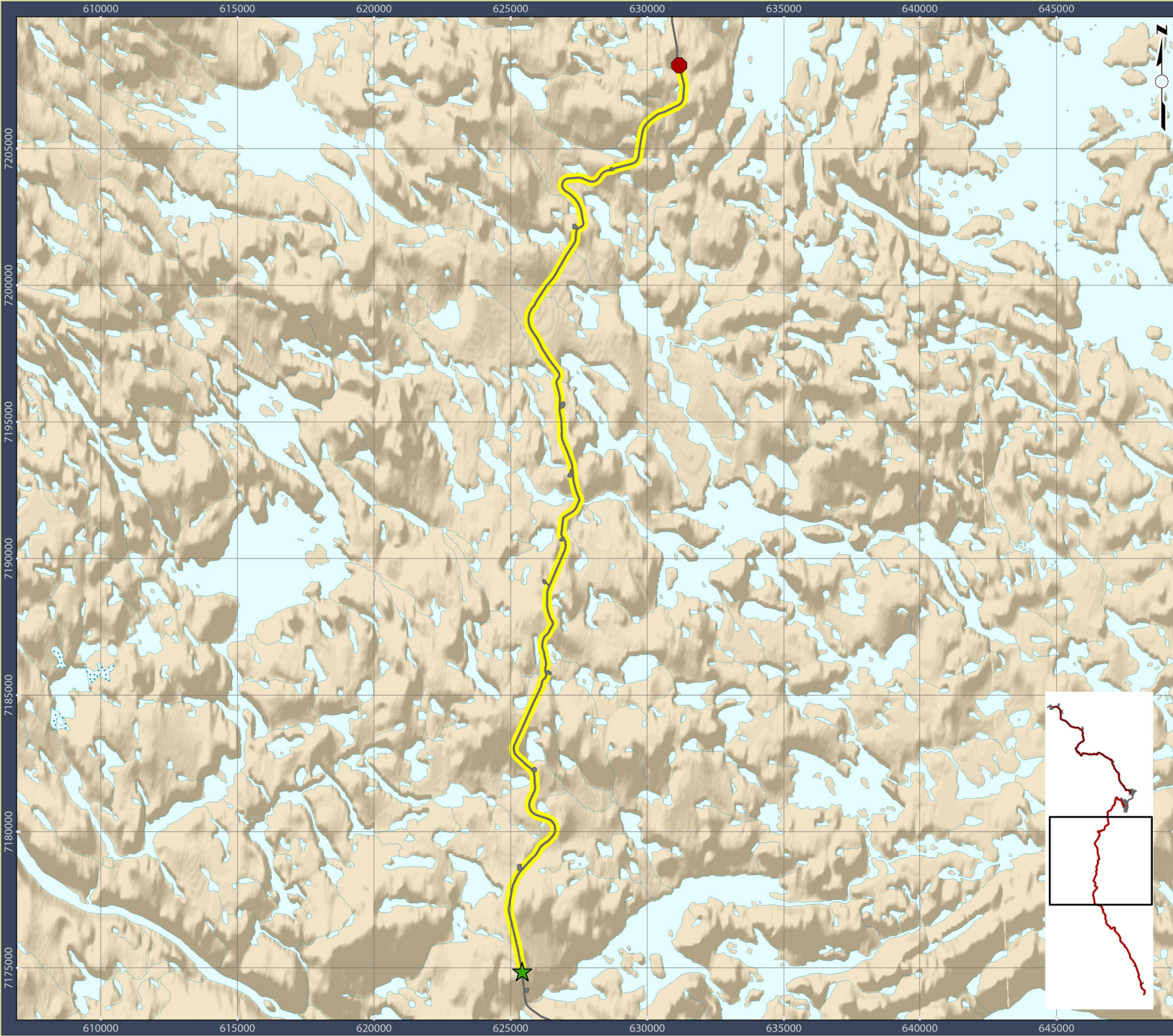
Projection: UTM Zone 14 NAD83

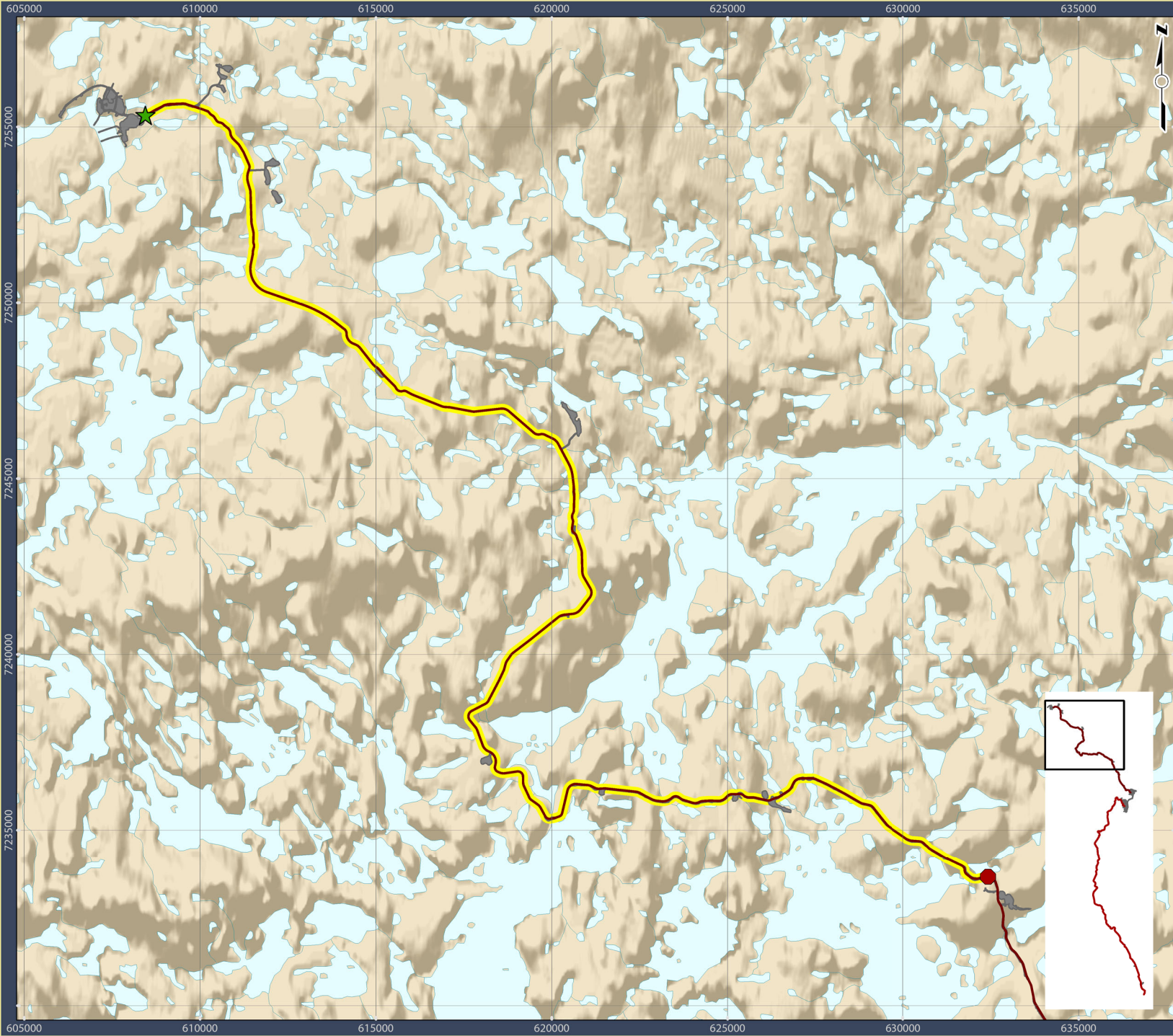
Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.
Gebauer & Associates Ltd.

Meadowbank Gold Project

Prepared for: 
AGNICO EAGLE

By: 
CASLYS CONSULTING





**Figure 3.2:
Location of the Breeding
Bird Survey (BBS) Route
Along the Whale Tail Haul
Road (WTHR)**

- Whale Tail Haul Road
- BBS Survey
- ★ Start
- End
- Route

**Route: 62-091
WHALE TAIL MINE**



Projection: UTM Zone 14 NAD83

Data Sources:
Natural Resources Canada, GeoBase®
National Topographic Database
Agnico-Eagle Mines Limited.
Gebauer & Associates Ltd.

Meadowbank Gold Project

Prepared for: 
AGNICO EAGLE

By: 
CASLYS CONSULTING

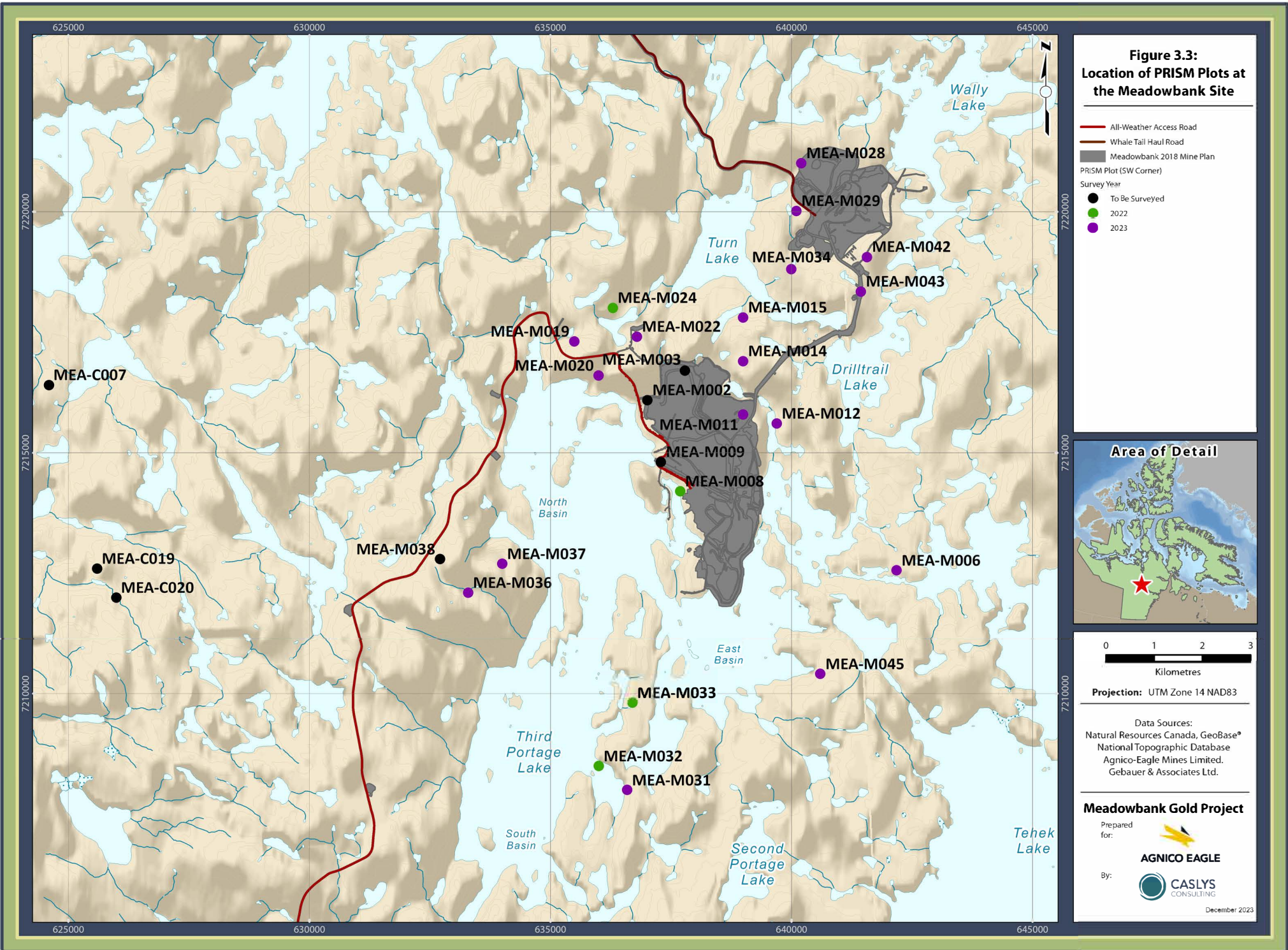
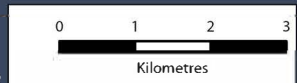


Figure 3.3:
Location of PRISM Plots at the Meadowbank Site

— All-Weather Access Road
— Whale Tail Haul Road
 Meadowbank 2018 Mine Plan
PRISM Plot (SW Corner)
 Survey Year
● To Be Surveyed
● 2022
● 2023



Projection: UTM Zone 14 NAD83

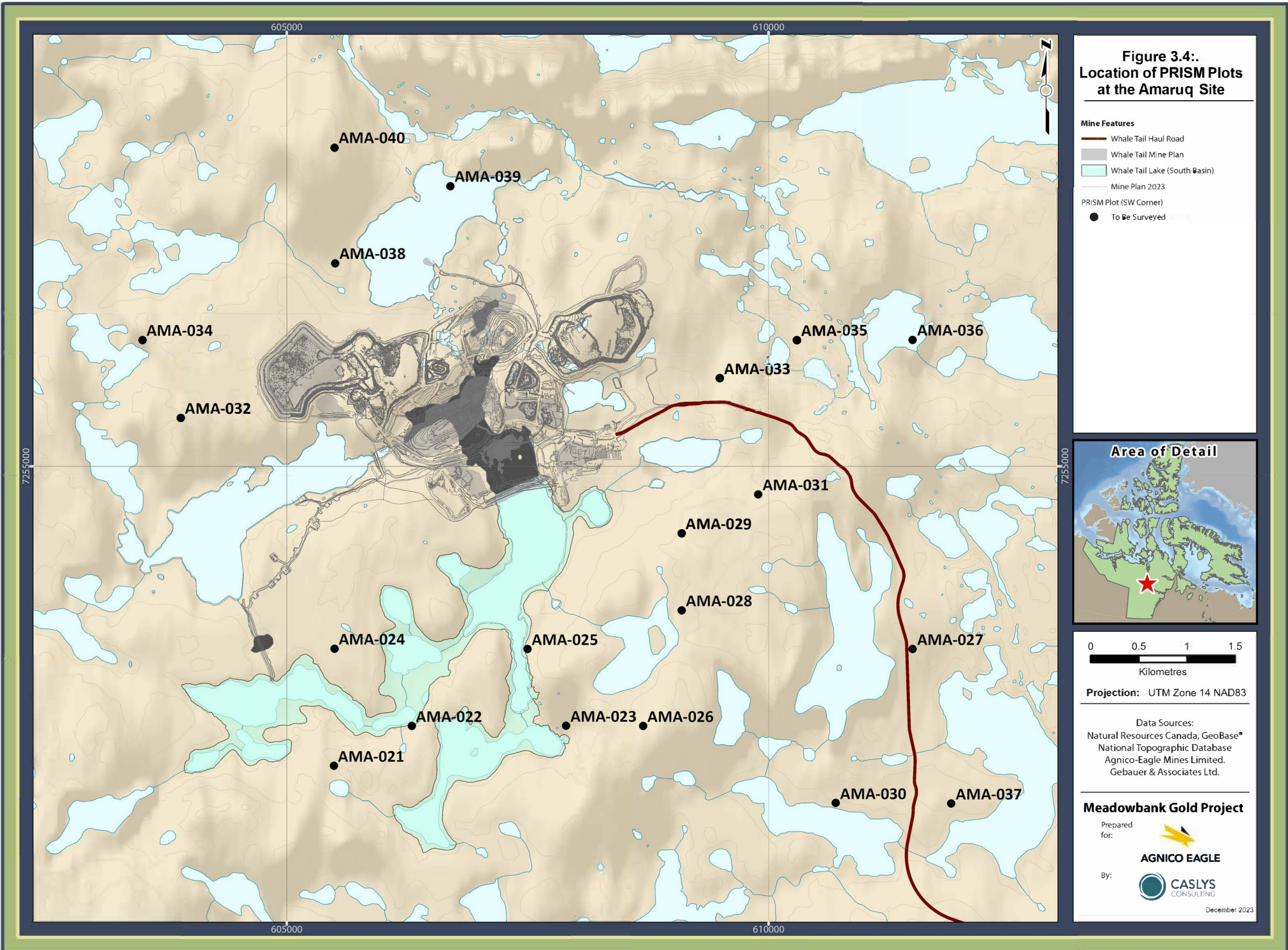
Data Sources:
 Natural Resources Canada, GeoBase®
 National Topographic Database
 Agnico-Eagle Mines Limited.
 Gebauer & Associates Ltd.

Meadowbank Gold Project

Prepared for:

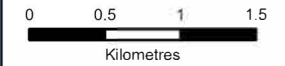
By:

December 2023



**Figure 3.4.:
Location of PRISM Plots
at the Amaruq Site**

- Mine Features**
- Whale Tail Haul Road
 - Whale Tail Mine Plan
 - Whale Tail Lake (South Basin)
 - Mine Plan 2023
- PRISM Plot (SW Corner)**
- To Be Surveyed



Projection: UTM Zone 14 NAD83

Data Sources:
 Natural Resources Canada, GeoBase®
 National Topographic Database
 Agnico-Eagle Mines Limited,
 Gebauer & Associates Ltd.

Meadowbank Gold Project

Prepared for:



AGNICO EAGLE

By:



CASLYS CONSULTING

SECTION 4 • 2023 BIRD SURVEY RESULTS

4.1 BREEDING BIRD SURVEYS (BBS)

The Meadowbank AWAR (62049) and WTHR (62091) routes were completed in 2023 (see **Table 4.1** for survey timing, and **Figures 3.1** and **3.2** for general BBS locations).

Table 4.1: Breeding Bird Survey (BBS) 2023 Fieldwork Dates for Meadowbank All-Weather Access Road (AWAR) and Whale Tail Haul Road (WTHR) Routes.

Date & Time	Weather	Observers	Fieldwork Type
Meadowbank All-Weather Access Road (BBS Route 62049)			
June 18, 2023 03:30 to 08:28	Start: 5°C, cloudy, light breeze End: 10°C, partially cloudy, light breeze	Lars Qaqqaq Dylan White	BBS route station survey
Whale Tail Haul Road (BBS Route 62091)			
June 20, 2023 03:30 to 08:29	Start: 3°C, cloudy, light breeze End: 7°C, cloudy, breeze	Lars Qaqqaq Dylan White	BBS route station survey

A total of 24 bird species were recorded on the Meadowbank AWAR route in 2023. The five most common bird species were Lapland Longspur (200; cumulative number), Horned Lark (113), Canada Goose (106), Savannah Sparrow (52), and Sandhill Crane (34). Mammal species recorded incidentally included Arctic Hare, Arctic Fox, Caribou, and Muskox. **Table 4.2** summarizes BBS results for the Meadowbank AWAR route.

A total number of 19 bird species were recorded on the WTHR route in 2023. The five most common bird species were Lapland Longspur (142; cumulative number), Horned Lark (81), Canada Goose (51), Savannah Sparrow (32), and redpoll sp. (18). Mammal species recorded incidentally included Arctic Hare, Arctic Fox, Caribou, and Muskox. **Table 4.2** summarizes BBS results for the WTHR route.

BBS data were entered and submitted into the USGS system on 22 August 2023 and copies of the datasheet were provided by email to ECCC CWS BSS Coordinator on 31 August 2023. Valid stop descriptions of each stop along both routes were also maintained in the USGS database and no adjustments to stop locations were needed for the 2023 surveys along both AWAR and WTHR.

Table 4.2: Breeding Bird Survey (BBS) 2023 Results for Meadowbank All-Weather Access Road (AWAR) and Whale Tail Haul Road (WTHR) Routes. Numbers are cumulative across all 50 survey points.

Common Name	Scientific Name	AWAR	WTHR
BIRDS			
American Golden Plover	<i>Pluvialis dominica</i>	1	
American Pipit	<i>Anthus rubescens</i>	1	4
Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	1
Canada Goose	<i>Branta canadensis</i>	106	51
Common Loon	<i>Gavia immer</i>	5	1
Common Raven	<i>Corvus corax</i>	6	2
Greater Scaup	<i>Aythya marila</i>	6	
Herring Gull	<i>Larus argentatus</i>	23	4
Horned Lark	<i>Eremophila alpestris</i>	113	81
Lapland Longspur	<i>Calcarius lapponicus</i>	200	142
Least Sandpiper	<i>Calidris minutilla</i>		3
Long-tailed Duck	<i>Clangula hyemalis</i>	12	5
Peregrine Falcon	<i>Falco peregrinus</i>	2	
Redpoll sp.	<i>Acanthis</i> sp.	31	18
Red-breasted Merganser	<i>Mergus serrator</i>		2
Red-necked Phalarope	<i>Phalaropus lobatus</i>	1	
Red-throated Loon	<i>Gavia stellata</i>		2
Rock Ptarmigan	<i>Lagopus muta</i>	2	16
Rough-legged Hawk	<i>Buteo lagopus</i>	2	
Sandhill Crane	<i>Grus canadensis</i>	34	
Savannah Sparrow	<i>Passerculus sandwichensis</i>	52	32
Semipalmated Plover	<i>Charadrius semipalmatus</i>	1	
Semipalmated Sandpiper	<i>Calidris pusilla</i>	11	13
Snow Goose	<i>Anser caerulescens</i>	4	1
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>	33	14
Willow Ptarmigan	<i>Lagopus lagopus</i>	12	1
Wilson's Snipe	<i>Gallinago delicata</i>	2	
Total # of Species		24	19
MAMMALS			
Arctic Hare	<i>Lepus arcticus</i>	2	2
Arctic Fox	<i>Vulpes lagopus</i>	4	1
Barren-land Caribou	<i>Rangifer tarandus</i>	3	89
Muskox	<i>Ovibos moschatus</i>	2	16

4.2 PRISM PLOTS

Seventeen (17) PRISM plots were surveyed in 2023 between June 15 and June 21: MEA-M006, MEA-M011, MEA-M012, MEA-M014, MEA-M015, MEA-M019, MEA-M020, MEA-M022, MEA-M028, MEA-M029, MEA-M031, MEA-M034, MEA-M036, MEA-M037, MEA-M042, MEA-M043, and MEA-M045 (see **Table 4.3** for timing and weather details and **Figures 3.3** and **3.4** for plot locations). The focus on 2023 was on PRISM plots around the Meadowbank Mine because these were listed as being of higher priority by ECCC.







A total of five (5) Lapland Longspur nests and two (2) Hoary Redpoll nests were documented on PRISM plots in 2023. Nest details and photos are provided in **Table 4.4**.

Table 4.3: Meadowbank PRISM Plot 2023 Fieldwork Details.

Plot (MEA)	Date	Time	Weather	Observers ¹
M006	June 21	08:55 to 10:00	13°C, mainly clear, no precipitation, gentle breeze	LQ & DW
M011	June 16	10:52 to 11:35	ND°C, cloudy, rain, fresh breeze	LQ & DW
M012	June 16	17:20 to 18:40	ND°C, cloudy, drizzle, light breeze	LQ & DW
M014	June 17	07:20 to 08:40	4°C, cloudy, no precipitation, gentle breeze	LQ & DW
M015	June 17	09:10 to 11:20	6°C, cloudy, drizzle, gentle breeze	LQ & DW
M019	June 15	07:20 to 09:08	9°C, cloudy, drizzle, light breeze	LQ & DW
M020	June 15	09:45 to 11:15	9°C, cloudy, drizzle, gentle breeze	LQ & DW
M022	June 15	12:01 to 13:55	10°C, cloudy, no precipitation, gentle breeze	LQ & DW
M028	June 17	13:10 to 14:00	10°C, mostly cloudy, no precipitation, gentle breeze	LQ & DW
M029	June 19	06:15 to 06:50	3°C, mostly cloudy, drizzle, freezing drizzle and snow, fresh breeze	LQ & DW
M031	June 20	15:45 to 17:00	13°C, mostly cloudy, no precipitation, light breeze	LQ & DW
M034	June 19	07:20 to 08:40	ND°C, ND cloud cover, freezing drizzle, fresh breeze	LQ & DW
M036	June 21	11:15 to 12:35	14°C, mainly clear, no precipitation, moderate breeze	LQ & DW
M037	June 21	13:35 to 15:00	15°C, mainly clear, no precipitation, gentle breeze	LQ & DW
M042	June 16	14:10 to 15:30	3°C, cloudy, no precipitation, fresh breeze	LQ & DW
M043	June 15	14:30 to 15:40	9°C, cloudy, drizzle, moderate breeze	LQ & DW
M045	June 21	06:45 to 08:00	ND°C, mostly cloudy, ND precipitation, moderate breeze	LQ & DW

¹ LQ = Lars Qaqqaq; DW = Dylan White

Table 4.4: Details and Representative Photos of Nests Found during 2023 PRISM Plots.

Date (2023)	Plot (MEA)	Nest Name	Species ¹	# of Eggs	UTM Coordinates (14W)	Details	Representative Photo
June 17	M014	014_N01	LALO	5	639454 7216838	Under a Dwarf Birch; female flushed	
June 15	M019	019_N01	LALO	4	635585 7217701	Under a Dwarf Birch; nest well lined with downy feathers	
June 19	M034	034_N01	LALO	3	640300 7219200	In heath mound with vaccinium, lichen, and grass	
June 21	M045	045_N01	HORE	4	640839 7210446	Down-lined cup with 4 blue eggs, perched in Dwarf Birch	
June 21	M045	045_N02	HORE	0	640774 7210544	Qiviut (Muskox wool)-lined grass bowl perched in Dwarf Birch.	
June 21	M036	036_N01	LALO	5	633449 7212346	Down-lined grass bowl in graminoid tundra (moist area) and moss	
June 21	M036	036_N02	LALO	5	633622 7212165	Down-lined grass bowl in grass tundra near dwarf birches	

¹LALO = Lapland Longspur; HORE = Hoary Redpoll

Twenty-three (23) bird and four (4) mammal species were observed during 2023 PRISM plot surveys (**Table 4.5**). Eleven (11) of these (9 birds and 2 mammals) were only observed incidentally outside plots, while the other species were observed while surveying PRISM plots (**Table 4.5**). Species numbers, behaviours, nests, and other details have been recorded in the PRISM plot data spreadsheets as per the templates provided by CWS that will be provided to ECCC by March 31, 2024.

Table 4.5: Wildlife Species Observed on Meadowbank PRISM Plots in 2023. Additional Species Observed outside Plots are Listed as Incidental. Species only Observed Incidentally are in Gray.

Common Name	Scientific Name	PRISM Plots (MEA-0)																Incidental (Plot #s)	
		06	11	12	14	15	19	20	22	28	29	31	34	36	37	42	43		45
BIRDS																			
American Pipit	<i>Anthus rubescens</i>						1								1				28
American Robin	<i>Turdus migratorius</i>								2										
Bald Eagle	<i>Haliaeetus leucocephalus</i>																		11,43
Canada Goose	<i>Branta canadensis</i>	6													5				06,14,15,19,28, 42, 43,45
Common Loon	<i>Gavia immer</i>																		12,20,37
Common Raven	<i>Corvus corax</i>																		31
Common Redpoll	<i>Acanthis flammea</i>		1			1													
Herring Gull	<i>Larus argentatus</i>																		06,12,15,19,31, 43,45
Hoary Redpoll	<i>Acanthis hornemanni</i>	2		1	5	4	5	1		2	3	4	4	1	2	1		4	
Horned Lark	<i>Eremophila alpestris</i>	1	1		4	4	3	3	1		1		2	2	2	6	2	2	15,19,20,34,37, 43
Lapland Longspur	<i>Calcarius lapponicus</i>	6	5	10	9	6	10	7	7	2	3	6	9	3	8	7	3	2	06,14,15,19,20, 22,28,31,34,36, 37,42,43,45
Least Sandpiper	<i>Calidris minutilla</i>																		12
Northern Pintail	<i>Anas acuta</i>																		11
Red-breasted Merganser	<i>Mergus serrator</i>																		15,37
Rock Ptarmigan	<i>Lagopus muta</i>	1								1		1			1	1	1		19,20,22
Sandhill Crane	<i>Grus canadensis</i>			2															19

Table 4.5: Continued.

Common Name	Scientific Name	PRISM Plots (MEA-0)																Incidental (Plot #s)	
		06	11	12	14	15	19	20	22	28	29	31	34	36	37	42	43		45
BIRDS																			
Savannah Sparrow	<i>Passerculus sandwichensis</i>					1	3	2	3				1	3		1		1	06,12,14,15,19,28,34,36
Semipalmated Plover	<i>Charadrius semipalmatus</i>				1														
Semipalmated Sandpiper	<i>Calidris pusilla</i>		1										3					1	15,31
Tundra Swan	<i>Cygnus columbianus</i>																		15,43
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>			1	2		2	1	2						1		2	1	06,19
Willow Ptarmigan	<i>Lagopus lagopus</i>											2							
Yellow-billed Loon	<i>Gavia adamsii</i>																		29
Total # of Species		5	4	4	5	5	6	5	5	3	3	4	4	5	6	6	4	6	23 Species
MAMMALS																			
Arctic Ground Squirrel	<i>Urocitellus parryii</i>							x	x										
Arctic Hare	<i>Lepus arcticus</i>																		19
Barren-ground Caribou	<i>Rangifer tarandus</i> ssp. <i>groenlandicus</i>					13													34,37
Muskox	<i>Ovibos moschatus</i>																		15,20,28,34,42

SECTION 5 • RECOMMENDATIONS

In 2024, continue PRISM and BBS survey between June 15 and 30 per the ECCC Agreement. The remaining 27 PRISM plots to be surveyed before mine closure with the BBS routes opportunistically conducted within the committed 3-year cycle.

SECTION 6 • LITERATURE CITED

Bart, J., Andres, B., Brown, S., Donaldson, G., Harrington, B., Johnston, V., Jones, S., Morrison, G., and Skagen, S. 2005. The Program for Regional and International Shorebird Monitoring (PRISM). USDA Forest Service General Technical Report, PSW-GTR-191, 893-901.

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APPENDIX J

Native Plant Poster

Non-Native & Invasive species In Nunavut

In 2010 the Canadian Endangered Species Conservation Council (CESCC) identified 17 species not normally found in Nunavut.

These are called "non-native species". Some of these plants and animals can become an "invasive species", which represents a potential major concern for the future health of the Arctic.

What is a non-native species?

A non-native species is defined as an organism that is not normally found in a region. They are introduced by human activities, which can be intentional (e.g. species introduced to control a pest species), accidental (e.g. shipping and ballast water exchange), or environmental (e.g. changes in climate leading to wildlife movements). An example of a non-native species in Nunavut is the European Starling (*Sturnus vulgaris*), which was introduced to North America from Europe intentionally by humans.

What is an invasive species?

Not all non-native species are considered invasive. This term is reserved for species that do so well in their new habitat that they end up causing harm to the environment, other species, human health, or economic activity (ISAC, 2006). An example of an invasive species in southern Canada is the Zebra Mussel (*Dreissena polymorpha*), which was introduced to North America by ships releasing their ballast water. The Zebra mussel reproduces quickly and establishes large colonies on any hard surface. In this way they take over habitat occupied by native species, reducing the availability of food for other species, and also attaching themselves in great numbers to boats and other infrastructure in the water. (Benson and Raikow, 2010).

Why should you be concerned about invasive species?

When invasive species are introduced and survive, their populations can increase rapidly because there are no natural predators. Invasive species may feed on native species, compete for food and space, as well as expose native species to new parasites and disease. Invasive species are now widely recognized as a leading cause of endangerment and/or extinction of native species (Lassuy and Lewis, 2010).

There are currently no known species in Nunavut that can be classified as aquatic or terrestrial invasive species.



Species: Field Sow Thistle (*Sonchus arvensis*)

Impact: The Field Sow Thistle grows quickly, easily and when there are many of them they can reduce the water resources available to other plants. They have the potential to decrease native plant diversity by competing for space and water.

Introduction pathway: Accidentally introduced from Europe into North America in a containment of agricultural crop seed. This plant has been able to spread long distances across Canada because the seeds can travel far in the wind.



Species: The European Starling (*Sturnus vulgaris*)

Impact: The European Starling can displace native bird species by taking over nesting sites and competing for food.

Introduction pathway: Introduced intentionally to North America from Europe. These birds then dispersed naturally into Canada through migration.

How might invasive species get into Nunavut?

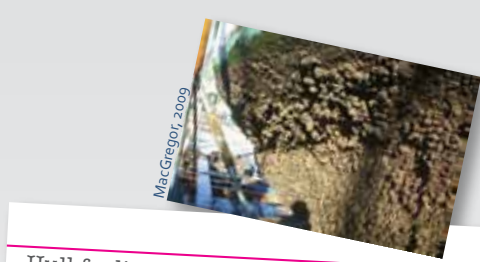
Species are transported throughout the world by human activities, like shipping, which allows species to move further distances and over barriers that they could not do on their own. Nunavut remains very remote compared to the rest of Canada and so the lack of major road systems, infrequent shipping and cold climate has limited their introduction and survival.

However, as climate change alters Arctic ecosystems, it creates conditions that are more favorable to the survival and reproduction of non-native species. It also enables greater human activity and development, which gives potential invasive species more opportunities to establish themselves. (Lassuy and Lewis, 2010).

Pathways of introduction for invasive species into Nunavut

- Ballast water exchange and hull fouling have the greatest potential for introducing invasive species into the aquatic ecosystems of Nunavut. Ballast water is used to stabilize ships. It is pumped aboard ships from different ports around the world and often exchanged far from the region it was obtained. This water can contain species that are not native, and may establish themselves locally.
- Seeds, insects and even small mammals can be transported around the world through the shipping of grocery produce, lumber, construction supplies, and packing materials, even dirt from someone's footwear can contain plant seeds (IASC, 2010).
- As climate continues to change in the Arctic, many terrestrial and aquatic plants and animals will move further north looking for the food and habitat they desire. These wildlife movements are not a threat when it comes to invasive species, but it is important to note that some species, (especially rare or threatened ones) may not survive the transition. Others may do well, like flying insects, which are already increasing in number in some areas of Nunavut. (IASC, 2010).

Wildlife movements are often referred to as "range extensions" where a species expands the area they can live in when the habitat and climate is favorable for them.



Hull fouling occurs when organisms attach themselves to the outside of a ship's hull where they can then be transported around the world.



The Migratory Grasshopper (*Melanoplus sanguinipes*) is a winged insect that is widely distributed across Canada and is one example of a species that may expand its range into Nunavut.

How can you help?

Report

Have you seen a different plant, animal or insect in Nunavut?

You help identifying these species is important. Report the **location** where you observed the species (GPS Coordinates are very helpful) and provide a **detailed description** of the plant, animal, or insect. If possible **take a photo**.

Remember that not all non-native species are considered invasive. If you see an unknown plant or animal, it is very important to report it.

Do not take any extreme actions; the first step is reporting the species so that territorial and federal agencies can respond appropriately. We will report our findings back to you and information about the species you have observed.

Share

Keep yourself informed and educate others about non-native and invasive species. Let them know what to do if they see an unknown or uncommon species.



Report a species to your local Conservation Officer.

For More Information or if your CO is not available please contact:

Janelle Kennedy
Sr. Science Advisor (Aquatic)
Department of Environment,
Fisheries and Sealing Division
Box 1000 Station 1310, Iqaluit, Nunavut, X0A 0H0
☎: (867) 975-7706, 📠: (867) 975-7754
✉: jkennedy1@gov.nu.ca

Matthew Fredlund
Legislation and Management Wildlife Technician
Department of Environment, Wildlife Division
Iglulik, Nunavut
☎: (867) 934-2178
✉: mfredlund@gov.nu.ca

Kimberly Howland
Research Scientist, Arctic Stock Assessment
Fisheries and Oceans Canada
501 University Crescent, Winnipeg,
Manitoba R3T 2N6
☎: (204)-984-4227, 📠: (204)-984-2403
✉: kimberly.howland@dfo-mpo.gc.ca

Non-Native Species in Nunavut

As of 2011, there are 17 species known to be non-native in Nunavut, these are listed below and are all terrestrial species. Please note that it is not currently known what the potential is for any of these species to become invasive and to what extent. Two species, the starling and the sow thistle are described in more detail below.

SCIENTIFIC NAME	COMMON NAME	ORGANISM TYPE
<i>Carum carvi</i>	Wild Caraway	Flowering Plant
<i>Taraxacum officinale</i>	Common Dandelion	Flowering Plant
<i>Sonchus arvensis</i>	Field Sow Thistle	Flowering Plant
<i>Leucanthemum vulgare</i>	Oxeye Daisy	Flowering Plant
<i>Thlaspi arvense</i>	Field Pennycress	Flowering Plant
<i>Capsella bursa-pastoris</i>	Shepherd's Purse	Flowering Plant
<i>Barbarea vulgaris</i>	Yellow Rocket	Flowering Plant
<i>Amaranthus retroflexus</i>	Green Amaranth	Flowering Plant
<i>Hordeum vulgare</i>	Common Barley	Flowering Plant
<i>Puccinellia distans</i>	Spreading Alkali Grass	Flowering Plant
<i>Vicia cracca</i>	Tufted Vetch	Flowering Plant
<i>Papaver somniferum</i>	Opium Poppy	Flowering Plant
<i>Plantago major</i>	Common Plantain	Flowering Plant
<i>Polygonum aviculare</i>	Prostrate Knotweed	Flowering Plant
<i>Pieris rapae</i>	Cabbage White	Butterfly
<i>Sturnus vulgaris</i>	European Starling	Passerine Bird
<i>Passer domesticus</i>	House Sparrow	Passerine Bird

Potential Invasive Species in Nunavut

As trade and shipping continues to increase, some aquatic invasive species known to commonly foul ship hulls and ballast waters, like the Chinese Mitten Crab, are more likely to arrive at ports around Nunavut.

A recent report commissioned by Fisheries and Oceans Canada identified a number of potential aquatic invasive species, mainly for the Hudson Bay region. The table below lists only those species considered as "High Risk" to Nunavut and they are found in freshwater & marine environments.

SCIENTIFIC NAME	COMMON NAME	ORGANISM TYPE
<i>Osmerus mordax</i>	Rainbow Smelt	Fish
<i>Gymnocephalus cernuus</i>	Ruffe	Fish
<i>Caprella mutica</i>	Skeleton Shrimp	Crustacean
<i>Chelicorophium curvispinum</i>	Data unavailable	Crustacean
<i>Dikerogammarus villosus</i>	Killer Shrimp	Crustacean
<i>Gmelinoides fasciatus</i>	Data unavailable	Crustacean
<i>Pontogammarus robustoides</i>	Data unavailable	Crustacean
<i>Eriocheir sinensis</i>	Chinese Mitten Crab	Crustacean
<i>Hemimysis anomala</i>	Data unavailable	Crustacean
<i>Balanus improvisus</i>	Acorn Barnacle	Crustacean
<i>Corbicula fluminea</i>	Asian Clam	Mollusc
<i>Dreissena bugensi</i>	Quagga Mussel	Mollusc
<i>Bythotrephes longimanus</i>	Spiny Water Flea	Zooplankton
<i>Cercopagis pengo</i>	Fishhook Water Flea	Zooplankton
<i>Eubosmina maritima</i>	Data unavailable	Zooplankton
<i>Marenzelleria cf. viridis</i>	Data unavailable	Worm
<i>Marenzelleria cf. wireni</i>	Data unavailable	Worm
<i>Cordylophora caspia</i>	Freshwater Hydroid	Hydrozoa
<i>Coscinodiscus wailesii</i>	Data unavailable	Phytoplankton
<i>Odontella sinensi</i>	Data unavailable	Phytoplankton
<i>Prorocentrum minimum</i>	Data unavailable	Phytoplankton
<i>Codium fragile ssp. tomentosoides</i>	Oyster Thief	Algae
<i>Glugea hertwigi</i>	Data unavailable	Protozoa
<i>Amphilinga foliacea</i>	Data unavailable	Parasite



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Environment
Canada

Environnement
Canada



APPENDIX K

Caribou Behaviour Monitoring



Meadowbank Gold Mine

Caribou Behaviour Study, 2023

PREPARED FOR



AGNICO EAGLE

Agnico Eagle Mines Limited

DATE

23 February 2024

REFERENCE

0688749-01



ACKNOWLEDGEMENTS

Meadowbank Gold Mine

Caribou Behaviour Study, 2023

23 February 2024

This report was authored by Mitch Fennell (MSc), Dr. Arianne Albert (PhD), and Dr. Greg Sharam (PhD) of ERM Consultants Canada Ltd. (ERM), for Agnico Eagle Mines Limited (Agnico Eagle). Caribou behaviour data were collected by Agnico Eagle staff in 2023, using protocols described herein. Data collection and analytical approaches were designed with the collaboration of the Meadowbank Terrestrial Advisory Group, whose input the authors gratefully acknowledge.

ERM Consultants Canada Ltd.
120 Adelaide Street West, Suite 2010
Toronto, ON
Canada M5H 1T1
T +1 416 646 3608

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CLIENT: Agnico Eagle Mines Limited
PROJECT NO: 0688749-01 DATE: 23 February 2024 VERSION: B.1

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ACRONYMS AND ABBREVIATIONS

Agnico Eagle	Agnico Eagle Mines Limited
AIC	Akaike information criterion
ATV	All-terrain vehicle
AWAR	Meadowbank Mine All Weather Access Road
CIRNAC	Crown-Indigenous Relations and Northern Affairs Canada
GLMMs	Generalized linear mixed-effects models
GN	Government of Nunavut
GNWT ENR	Government of Northwest Territories Department of Environment and Natural Resources
IOL	Inuit Owned Land
KivIA	Kivalliq Inuit Association
km	Kilometre
km/hr	Speed expressed as kilometre per hour
m	Metre
NIRB	Nunavut Impact Review Board
T&C	Terms and Conditions
the Mine	Meadowbank Gold Mine
the Mine Complex	The Mine and associated roads, including the WTHR and AWAR
TEMP	Meadowbank Mine Terrestrial Ecosystem Management Plan
WTHR	Whale Tail Haul Road

EXECUTIVE SUMMARY

The Meadowbank Complex, owned and operated by Agnico Eagle Mines Limited (Agnico Eagle), is located on Inuit Owned Land (IOL) and includes the Meadowbank Gold Mine (the Mine) approximately 90 km north of the Hamlet of Baker Lake, and the Whale Tail Mine located approximately 150 km north of the Hamlet. A 108 km All Weather Access Road (AWAR) connects the Meadowbank Gold Mine to Baker Lake, and the 72 km Whale Tail Haul Road (WTHR) connects the Meadowbank Gold Mine to the Whale Tail Mine. During spring and fall migration, Lorillard caribou, along with smaller numbers of Wager Bay and Ahiak caribou occur in the Mine area, regularly crossing through the Mine site, AWAR, and WTHR.

As part of the Nunavut Impact Review Board (NIRB) Project Certificates #004 and #008, Agnico Eagle is required to study and report on the effects of the Mine on caribou. The Agnico Eagle Terrestrial Ecosystem Management Plan (TEMP Agnico Eagle 2020) includes behaviour monitoring for caribou.

Behaviour monitoring was conducted annually from 2020 to 2023. Agnico Eagle retained ERM Consultants Canada Ltd. (ERM) to update the field protocols used for behaviour monitoring in early 2020. ERM adapted standard methods for caribou behaviour monitoring developed by the Government of Northwest Territories Department of Environment and Natural Resources (GNWT ENR).

A Terrestrial Advisory Group (TAG) was formed in 2019 as a collaborative forum to discuss Inuit Qaujimagajatuqangit (IQ), Traditional Knowledge (TK) and western science applications to mitigation and monitoring programs for the Meadowbank Mine, including on caribou movement in the Mine area. Following the discussion of the caribou behaviour survey results in 2020, 2021, and 2022, the TAG and particularly the Kivalliq Inuit Association suggested several improvements to the survey protocol and analysis methods. Agnico Eagle endeavored to incorporate all the suggestions of the TAG into the 2023 data collection process and analysis.

Field surveys were conducted primarily during spring and fall migration by the Agnico Eagle environmental technicians, contractors, and Nunavummiut seasonal workers. These technicians were trained and were dedicated to conducting behaviour surveys. Each survey lasted 30 minutes, with scan samples conducted every three minutes.

The behaviour monitoring data from 2023 were combined with data from 2020 to 2022, and all results outlined in this report use all three years, unless otherwise stated. The key findings from the 2023 program aligned with the previous three study years, and included:

- 70 surveys were conducted in 2023, totalling 424 surveys collected from 2020-2023.
- Small groups (<3 caribou) tended to have a higher proportion of response behaviours (running, alert) than larger groups, irrespective of disturbances.
- Distance to the road did not appear to have a significant effect on caribou behaviour.
- Approximately half of the surveys included a disturbance event, typically from Mine vehicles, mostly pickups or heavy vehicles, and all-terrain vehicles (ATVs) used by community members on the AWAR for travel or harvesting. The AWAR was closed to Mine vehicles (with the exception of approved convoys and the survey vehicle) when caribou were near the road and

all Mine vehicles are required to stop when caribou are on the road. Note that surveys were conducted specifically to record responses to disturbances, so the proportion of surveys with disturbances is higher than the actual proportion of caribou exposed to disturbances.

- Cox's proportional hazards modelling suggests that following a single disturbance, 94% of groups will return to normal behaviour after approximately 6 minutes, and 100% of groups will return to baseline behaviour after approximately 15 minutes.
- Following a disturbance event, the proportion of response behaviours in a group of caribou was significantly higher, but generally returned to baseline behaviours within two sampling intervals (i.e., approximately six minutes).
- In response to comments from the Kivalliq Inuit Association (KivIA) in 2022, the behaviour of "walking" was investigated for whether it may be an "alert" behaviour instead of a non-response behaviour. Disturbances did statistically increase the proportion of caribou walking observed, suggesting this behaviour may be useful as a response in future analyses.
- Findings from these analyses suggest that the use of convoys to consolidate multiple essential vehicles into a single disturbance event is an effective mitigation measure for reducing disturbance to caribou.

1. PROJECT OVERVIEW

The Agnico Eagle Mines Ltd. (Agnico Eagle) Meadowbank Gold Mine (the Mine), located in the Kivalliq Region of Nunavut (Figure 1-1), received a Project Certificate (#004) from the NIRB in 2006. The adjacent Whale Tail Mine received a Project Certificate (#008) from the NIRB in 2018, which was amended in 2020. The Project Certificates, and subsequent Water Licenses (#2AM-WTP1830), GN, and Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) Land Lease, and KivIA Production Lease, allowed development of five gold deposits in the 12 years since the start of operations at the Meadowbank Gold Mine and the first phase of the Whale Tail Mine. This has included construction of a gold mine and ancillary facilities including an AWAR, WTHR, barge unloading facilities, lay-down area, and a fuel tank farm near the Hamlet of Baker Lake.

The Meadowbank Gold Mine is located approximately 90 km north of the Hamlet of Baker Lake. Mining has ceased at Meadowbank, but the site hosts accommodation, an active mill, and ancillary mechanical, maintenance facilities, and vehicles. The Whale Tail Mine, located approximately 150 km north of the Hamlet, is an open-pit, truck-and-shovel mine operation and will produce an estimated 23.5 M tons of ore. Ore is hauled from Whale Tail to the Meadowbank Gold Mine for milling on the WTHR.

Studies of caribou behaviour were conducted during spring migration, summer, and fall migration from 2020 to 2023 at the Meadowbank Gold Mine, AWAR, and WTHR to monitor for potential Mine effects on caribou.

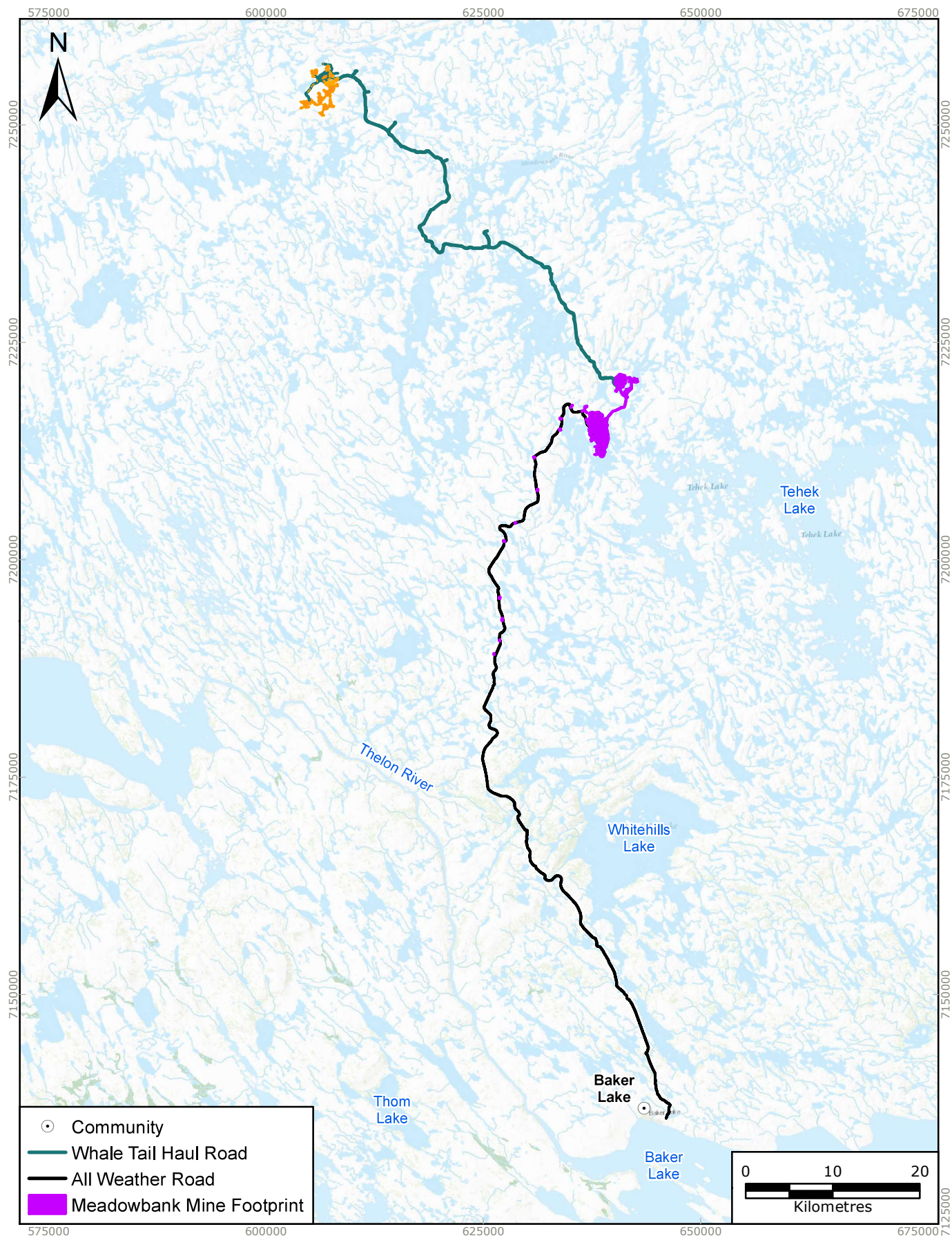
1.1 PROJECT TERMS AND CONDITIONS AND TEMP

Under the NIRB Certificate #008 for the Whale Tail Mine, Term and Condition 28 requires the Mine to have a TEMP:

(NIRB #008; T&C 28) The Proponent shall maintain a Terrestrial Ecosystem Management Plan (TEMP) throughout all phases of the Project. The Plan shall include detailed monitoring, mitigation, and adaptive management measures for wildlife, with consideration for each Project activity predicted to affect wildlife, and with inclusion of specific triggers for mitigation and adaptive management intervention. The TEMP shall demonstrate consideration for all relevant commitments made by the Proponent throughout the Nunavut Impact Review Board's review of the Project.

The Meadowbank Complex TEMP (Agnico Eagle 2020) is designed to meet this condition. The TEMP includes a survey program for caribou that records caribou behaviour in response to various disturbances.

FIGURE 1-1 LOCATION OF MEADOWBANK GOLD MINE AND WHALE TAIL PIT PROJECT



2. STUDY OBJECTIVES

Based on guidance from the TEMP, the overall objective of the caribou behaviour monitoring program is:

- To determine if caribou activity budgets (the proportion of time caribou spend exhibiting different behaviours) change with distance from the Mine, and to document caribou response to stressors.

The detailed objectives of the 2023 study were:

1. To conduct a study using behaviour survey methodology at the Mine site to estimate how the roads and other site infrastructure may contribute to the effects of the Mine on caribou.
2. To use information from the surveys (combined across three years of data collection) to determine factors predict caribou behaviour near the Mine site, specifically comparing:
 - Near vs. far;
 - Large groups of caribou vs. small groups;
 - Surveys with and without disturbances;
 - Road open vs. closed; and
 - Upstream vs. downstream side of the road (east or west side, as determined by dominant direction of travel in each season).

The primary hypothesis of this study was that caribou closer to the road would demonstrate a stronger response to vehicle disturbances.

3. BACKGROUND

Five caribou sub-populations may interact with the Meadowbank Mine Area: Lorillard, Wager Bay, Qamanirjuaq, Beverly, and Ahiak. Primarily, caribou from Lorillard herd interact with the Mine, and smaller numbers of caribou from the Ahiak and Wager Bay herds interact with the Mine. Collar data indicates that caribou occur mostly in the area in late winter and during fall rut.

3.1 LORILLARD HERD

The majority of recorded interactions of collared caribou with the Mine site and road have been from Lorillard caribou. The Lorillard caribou herd is a mid-sized caribou herd that numbered 33,454 animals in 2021 (GN DOE 2021). Previous estimates from 2002 and prior were grouped with Wager Bay because it was not known how the calving areas were delineated in the area. As a result, no assessment of trends can be made. The Lorillard herd range occurs entirely in Nunavut, with the core of its range stretching northward from Chesterfield Inlet on the Hudson Bay coast and westward toward Baker Lake.

The herd generally winters on the tundra in northern central mainland Nunavut. Spring migration is westward and north of Chesterfield Inlet, past the community of Baker Lake to a calving ground south of Wager Bay and close to the Hudson Bay coast (Nagy and Campbell 2012). During late April and early May, groups of animals from this herd interact with the community of Baker Lake, Meadowbank Mine, Whale Tail Mine, the AWAR and WTHR (Agnico Eagle 2020).

Following calving, the caribou form into large groups and generally move west and inland, gradually returning west towards their wintering areas by early December (Nagy and Campbell 2012). Throughout this period, caribou may interact with Mine infrastructure.

3.2 EXISTING CARIBOU MANAGEMENT MEASURES

As per the TEMP, during peak migration the road is closed to all but essential Mine traffic. During road closures, essential mine traffic typically occurs in the form of scheduled convoys of vehicles travelling tightly in one group to minimize the sensory disturbance to caribou. During non-peak periods, caribou observations near the road trigger speed restrictions that apply to all mine traffic. Road closures are triggered separately for the WTHR and the AWAR. Drivers for the Mine are also trained to slow when caribou are within sight and follow the mitigation measures outlined in the TEMP.

Caribou surveys were considered an essential activity by the Mine, allowing the survey pickup truck to be used on the AWAR and WTHR even when these roads were closed to normal mine traffic.

3.3 TERRESTRIAL ADVISORY GROUP

A Terrestrial Advisory Group (TAG) was formed in 2019 as a collaborative forum to discuss Inuit Qaujimaqatuqangit (IQ), Traditional Knowledge (TK) and western science applications to mitigation and monitoring programs for the Meadowbank Mine, including on caribou movement in the Mine area. Members of the group include the Government of Nunavut (GN) and the KivIA and the Baker Lake Hunters and Trappers Association (HTO). Following a discussion of the caribou behaviour survey results in 2020 and 2021, the TAG and particularly KivIA suggested several improvements

to the survey protocol and analysis methods. These improvements included adding a variable for road closures and testing whether caribou walking could be considered a response behaviour. In 2022, a variable for caribou movement direction relative to the road was added and additional information was collected on the speed of passing vehicles. Agnico Eagle endeavored to incorporate all the suggestions of the TAG into the 2023 data collection process and analysis.

4. STUDY AREA

The Meadowbank Gold Mine is located approximately 90 km north of the Hamlet of Baker Lake, and the Whale Tail Mine is located approximately 150 km north of the Hamlet. Overall, the Meadowbank Complex, consisting of both mines, processing facility, roads, and associated infrastructure and activities, is approximately 300 km inland from the northwest coast of Hudson Bay and is above the tree line near the Arctic Circle. The local physiography is characterized by numerous lakes and low, rolling hills covered mainly by lichen/rock complexes, and heath tundra.

The study area for behaviour monitoring included the existing footprint for the Meadowbank Gold Mine site, the AWAR, and the WTHR (See Figure 1-1). Surveys were conducted on any caribou that could be visually surveyed from Mine infrastructure up to a distance of 3 km with the aid of binoculars.

5. METHODS

5.1 FIELD SURVEYS

Survey methods followed protocols for monitoring caribou behaviour developed by the Government of Northwest Territories Department of Environment and Natural Resources (GNWT ENR 2017). During 2020, ERM refined these methods for Agnico Eagle's Nunavut mine operations. The updated methods focus on scan samples, *in lieu* of both scan and focal samples. Given time and personnel constraints, this was determined to be a more efficient use of time and produce better quality data that is suitable for statistical analysis. The updated methods also include an initial survey step to randomize which group of caribou to monitor when multiple groups are available. In 2022 and 2021 these methods were further refined to reflect lessons learned in 2020. The 2021 updates included recording additional information such as whether the caribou occurred on the east or west side of the road. The 2022 updates included recording the direction of caribou travel and the speed of vehicle traffic. These updates were retained in 2023. Detailed survey protocols are attached in Appendix A.

The overall method for the field surveys was to identify caribou groups visible from the Mine site, AWAR and WTHR; randomly select groups for observation; and record the behaviour of individuals in groups of different sizes, including their responses without any disturbance and in response to mine-related activities and natural factors. Surveys were conducted during spring migration, summer, and fall migration with efforts to conduct roughly equal numbers of surveys in spring and fall migration seasons.

A reconnaissance survey was first conducted during the 2020 field season to identify where caribou groups were located but this initial survey was abandoned after 2020 since many caribou groups would move away from the road before a full survey could be completed and the field crew returned to conduct the behaviour survey. Where multiple groups were observed, surveyors randomly chose which group to sample, or specifically chose groups to fill data gaps. Field methods included the recording of site information at the location of each survey, including GPS coordinates, weather conditions, road structure, and location of the caribou group in relation to the surveyors and the road. Individuals in the observed-group were categorized when the survey started and every three minutes (referred to here as a "time interval") until 30 minutes had elapsed.

Behaviour categories and their definitions were standardized following GNWT ENR (2017) classifications. The behaviour categories were feeding, lying down, standing, alert, walking, and trotting or running.

At each three-minute interval, surveyors recorded the numbers of individuals in the group exhibiting each behaviour at that time. If the group was too large to be counted in each interval (>100 individuals), an identifiable subset of the group was surveyed during each interval and the total group size was recorded on the datasheet. In the case that a disturbance event occurred during the survey the time and type of disturbance was recorded. A disturbance is defined as any human-caused loud noise, low-flying aircraft, or vehicle travelling on the road. Of the disturbances recorded in the four years of data collection, 97% were from road related disturbances (vehicles) and 3% were from blasts or helicopters. Blast disturbances were monitored under the scope of the

Blast Monitoring Program, developed in collaboration with the TAG (Agnico Eagle 2020). In the analysis all disturbances are treated equally.

Alert behaviour and trotting or running were considered disturbance “response behaviours” and were grouped together in the subsequent data analysis. In this report, alert and running behaviours are referred to collectively as response behaviours, but it is important to note that this is irrespective of whether there were disturbances recorded. Caribou may exhibit these behaviours without a disturbance occurring. Walking was also assessed as a response behaviour in some analyses, which are specifically noted in the results.

Following recommendations from the TAG in 2021, an additional set of longer surveys was completed to specifically look at the behavioural response to convoys of vehicles. These surveys were 90 minutes each, consisting of a “before convoy”, “during convoy” and “after convoy” survey. Observers sought out caribou that were likely to remain within view for 90 minutes based on surrounding terrain. Nine surveys were completed in 2022 and nine in 2021 using this extended methodology. Multiple 90-minute surveys were conducted in 2023, though caribou frequently walked out of sight prior to completion of the 90-minute survey period.

5.2 DATA ANALYSIS

The objective of the data analysis was to quantify trends in the survey data and determine whether factors such as distance to Mine infrastructure (road), group size, or the disturbances could be used to explain caribou behavior. The primary hypothesis was that caribou closer to the road would demonstrate a stronger response to disturbances. An initial exploratory analysis was conducted to visualize the data and determine the appropriate method for analyzing the data.

A regression analysis was conducted to test whether the data from these surveys could be analyzed statistically. To increase the power to detect changes in caribou behaviour, the behaviour categories were grouped for analysis into response behaviours (alert and running) and non-response behaviours (feeding, lying down, standing, and walking).

Following the 2020 analysis, there was a suggestion from the TAG to explore whether the proportion of walking caribou changed as a response to disturbance. This was done to see if walking would be better categorized as a response behaviour or a non-response behaviour. To test this, a model that included walking, running, and alert behaviours was run in addition to the original model with just running and alert behaviours.

Generalized linear mixed-effects models (GLMMs) were used to assess the differences in the proportion of response behaviours in surveyed animals as a function of various controlling variables, including the occurrence of disturbances. Proportions were modelled using a binomial distribution. Because small groups naturally have greater variability in values (i.e., more likely that “all” or “none” of caribou are alarmed when there are only two caribou) an offset for the total number of caribou with tallied behaviour was included. This regression framework provides a means to control for environmental variables, repeated measurements, and spatial correlation. Random effects for survey id to control for spatial and temporal autocorrelation were also included.

Statistical analyses were conducted using R Statistical Software version 4.3.1 (R Core Development Team, 2023). Two dependent variables were tested:

1. The first dependent variable tested was the proportion of response behaviours (alert and running) in each 3-minute interval in each survey.
2. The second dependent variable tested was the proportion of walking plus response behaviours in each 3-minute interval in each survey.

The two dependent variables were each modelled against a suite of potentially important variables to determine if there was any statistical relationship with response behaviour. The variables included in this analysis were group size, distance to road, temperature, wind speed, season and side of the road (upstream/downstream), the roads status (closed or open), and a binary variable identifying whether or not a disturbance occurred during each 3-minute interval. Season and side of the road were included as an interaction term, because direction of travel is seasonally dependent. This means that season and side of the road are included in the model together as an interaction *and* individually as fixed effects. The interaction term makes it possible to identify the "upstream" and "downstream" side of the road, based on the season.

For each dependent variable, GLMMs were constructed and tested for model fit, as evidenced by the Akaike Information Criterion (AIC). AIC is a number that is helpful for comparing models as it includes measures of both how well the model fits the data and how complex the model is (simpler is usually better). The top models were identified as having a low AIC and were within a 2 unit difference in AIC ($\Delta AIC \leq 2$) of the top-ranked model (i.e., the model with the lowest AIC; Burnham & Anderson 2004). This is the industry standard for identifying models that are essentially 'equally good' at explaining the data. Models with a difference in AIC (ΔAIC) of 2 to 4 from the top model are generally considered to have 'limited support' (Burnham & Anderson 2004).

A second modelling procedure was used to investigate the amount of time caribou were engaged in response behaviour associated with disturbances during a survey. For a response to be included, the proportion of alert or running caribou after a disturbance had to be 40% greater than in the interval before disturbance. The response was considered "over" when the proportion of alert or running caribou returned to the level observed in the interval before the disturbance ($\pm 5\%$). This variable, called "duration of response", was assessed for each survey during which at least one disturbance occurred. Surveys that started with 100% of individuals exhibiting response behaviour were excluded as the associated disturbance was unclear. In surveys where there was more than a single period of response behaviour, the total time disturbed was calculated for that survey. Because the duration of response is a 'time to event' variable (time to return to background behaviour), we used a Cox's proportional hazards regression to model the duration. Durations were right-censored if the caribou did not return to background behaviour prior to the end of the observation period. As the start and end of the response could happen within 3-minute intervals, but the exact time was not recorded, we assumed the duration was three minutes for every interval included. For example, if the response behaviour occurred only within one interval it was given a duration of three minutes, while if it occurred in two intervals it was given a duration of six minutes. If no response occurred after a disturbance, it was given a duration of 0 minutes.

A model was fit with caribou group size, and a variable indicating the number of intervals which contained a disturbance (number of disturbances). The sample size was too small to include other variables or interaction terms and still achieve convergence.

6. RESULTS AND DISCUSSION

6.1 CARIBOU DISTRIBUTION RELATIVE TO THE MINE

During spring migration in the four years surveyed (2020-2023), caribou GPS collar locations were provided to Agnico Eagle by the GN. These data indicated when collared caribou were approaching the Mine site. Viewsheds or road surveys were conducted as required by Agnico Eagle personnel to trigger management actions. These data informed the decision to begin dedicated behaviour surveys for caribou as they approached the site. Through the summer, surveys were conducted opportunistically as caribou were observed. A final set of dedicated surveys was conducted in the fall during peak fall migration.

Survey locations by season are presented in Figure 6.1-1. During spring migration (March to May), calving/summer (June to August) and fall migration (September to December), scattered groups of caribou from the Lorillard herd were observed passing through or near the study area, with the highest numbers of caribou observed in May. During spring migration in 2020, most surveys were conducted on the WTHR, as this was where the caribou were observed. In contrast, the 2021 spring season saw more caribou along the AWAR. In 2022, more surveys were conducted along the WTHR in all seasons. During summer and during fall migration in 2020, caribou were observed more frequently in the southern portion of the study area along the AWAR, but these trends were not clearly visible in 2021 or 2022. In 2023, most surveys were completed on the AWAR, though surveys were distributed across both roads wherever possible.

6.2 CARIBOU BEHAVIOUR FIELD SURVEYS

In total, 70 behaviour surveys were conducted in 2023 when groups of caribou were near the Mine Complex (the Mine and associated roads, including the WTHR and AWAR) (Tables 6.2-1 and 6.2-2), including 38 surveys in spring migration, 1 survey in calving and summer, and 31 surveys in fall migration. In 2021 the survey effort was concentrated during spring migration, and fewer surveys were completed in summer and fall. In 2022 greater emphasis was put on completing surveys during fall migration. Surveys were conducted opportunistically whenever caribou were encountered during reconnaissance drives, primarily along the AWAR and WTHR.

TABLE 6.2-1 MEADOWBANK COMPLEX CARIBOU BEHAVIOUR SURVEYS SEASONAL DISTRIBUTION, 2020 TO 2023

Season	2020	2021	2022	2023
Spring Migration	71	114	63	38
Calving/ Summer	31	15	18	1
Fall Migration	14	5	23	31
Winter	-	-	1	-
Total	116	134	104	70

FIGURE 6.1-1 LOCATIONS OF BEHAVIOUR SURVEYS BY DATE

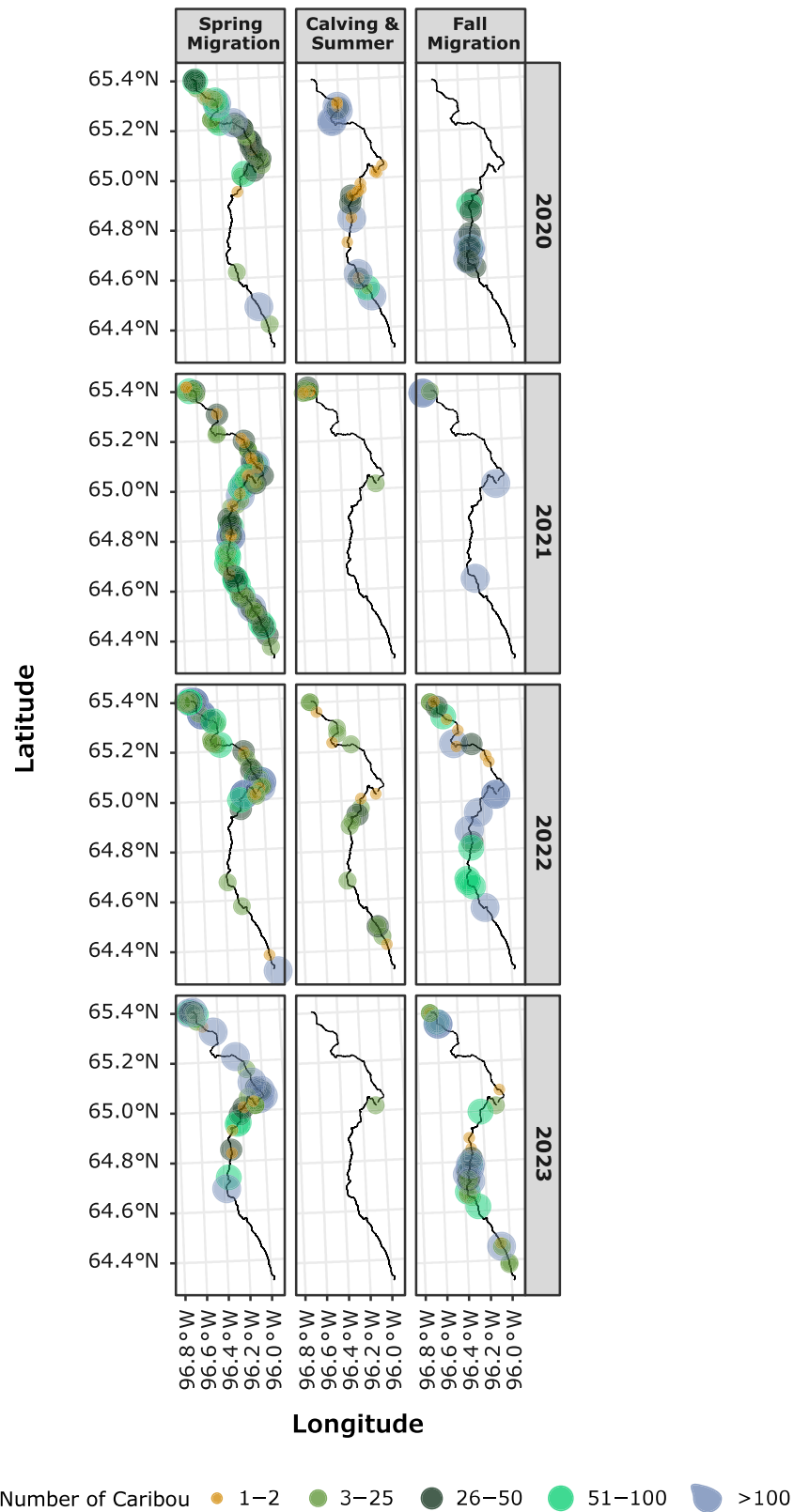


TABLE 6.2-2 MEADOWBANK COMPLEX CARIBOU BEHAVIOUR SURVEYS DATA SUMMARY, 2020 TO 2023

Caribou Group Size	Total Surveys (All Years)	Total # 2020	Surveys with Disturbance 2020	Surveys with Road Crossing 2020	Total # 2021	Surveys with Disturbance 2021	Surveys with Road Crossing 2021	Total # 2022	Surveys with Disturbance 2022	Surveys with Road Crossing 2022	Total # 2023	Surveys with Disturbance 2023	Surveys with Road Crossing 2023
1-2	67	28	15	1	23	15	0	16	10	1	10	5	1
3-25	142	35	22	1	63	35	2	44	28	3	22	6	1
26-50	60	28	13	2	21	9	0	11	4	0	12	2	2
51-100	38	9	5	0	17	9	0	12	3	1	10	0	0
>100	47	16	13	1	10	6	4	21	5	2	16	6	1
Total	354	116	68	5	134	74	6	104	50	7	70	19	5

Overall, the survey methodology worked well for the Mine Complex location and circumstances, and the survey results were generally consistent between years. All reported results use the combined data from 2020 to 2023, unless otherwise stated. General observations on survey methodology and results included:

- Surveys were well distributed across a range of group sizes (Table 6.2-2). Surveyors reported that the addition of a reconnaissance survey and random selection of survey group assisted with a relatively even distribution of survey intensity across group sizes.
- Of the 424 surveys, approximately half recorded at least one disturbance during the survey (Table 6.2-2). Most of these disturbances were haul trucks and light trucks travelling between Whale Tail Mine and Meadowbank Mine. On the AWAR, the disturbances were sometimes ATVs travelling north from Baker Lake. Non-essential Mine traffic was suspended for both roads during periods when groups of caribou above the group size threshold were within 1.5 km of the road.
- In total, 59% of disturbances were from heavy vehicles (including haul trucks, tractor trailers, fuel trucks, and graders), 30% were from light trucks, <1% were from ATVs, 1% were from blasts, and <1% were from helicopters.
- The methodology allowed for the estimation of baseline behaviour, response to disturbance, and return to baseline behaviour. Few, if any, surveys ended before caribou returned to baseline behaviour. When they did not, it was typically due to caribou disappearing from field of vision or because disturbances occurred toward the end of the 30-minute survey. Thus, 30 minutes appears to be an appropriate survey length.
- One source of uncertainty was consistently estimating distance. Hence, the average distance of each group of caribou was categorized into blocks of 0-50 m, 50-100 m, etc. Though distance has been estimated with a rangefinder since 2021, the data were still binned into distance intervals to allow the multiple years of data to be analyzed together.
- In 2020, only 16% of surveys were conducted on caribou within 300 m from the road at the start of the survey. In 2021, an effort was made to increase the number of surveys on caribou within 300 m of the road, and this resulted in an increase to 43% of surveys. In 2022, half of surveys were within 300m of the road. In 2023, 26 (37%) of surveys were within 300m of the road.
- Most caribou behaviours were calm, generally foraging, and not moving quickly (non-response). The one exception was smaller groups who moved more than larger groups – more walking and trotting. Consequently, caribou were observed crossing the road in only 4% of surveys in 2020, in 4% of surveys in 2021, in 7% of surveys in 2022, and in 8% of surveys in 2023. This occurred primarily in small groups of less than 25 individuals. In total, 15 crossings occurred during road closures, three during speed restrictions, and five when the road was open.
- During spring migration when caribou move east towards their calving grounds, 79% of caribou were observed on the west (upstream) side of the Mine infrastructure (Table 6.2-3). This was highly consistent across all years of surveying. During summer and fall migration, caribou move west towards their overwintering grounds. In 2020 and 2022, 68% and 63% of caribou were observed on the east (upstream) side of the Mine infrastructure, respectively. In summer and fall of 2021 the opposite trend was true (Table 6.2-3). This inconsistency may reflect the smaller sample size in the later seasons in 2021.

TABLE 6.2-3 SUMMARY OF SPATIAL DISTRIBUTION OF SURVEYS

Season	Surveys of Caribou on East Side of the Mine Infrastructure 2020	Surveys of Caribou on West Side of the Mine Infrastructure 2020	Surveys of Caribou on East Side of the Mine Infrastructure 2021	Surveys of Caribou on West Side of the Mine Infrastructure 2021	Surveys of Caribou on East Side of the Mine Infrastructure 2022	Surveys of Caribou on West Side of the Mine Infrastructure 2022	Surveys of Caribou on East Side of the Mine Infrastructure 2023	Surveys of Caribou on West Side of the Mine Infrastructure 2023
Spring Migration	12	46	23	89	13	47	4	34
Calving/ Summer	11	7	3	12	15	12	1	0
Fall Migration	10	3	1	4	16	6	21	10
Total	33	56	27	105	45	56	26	44

Notes:

Side of the road data was not recorded in 27 surveys in 2020. It was recorded in all surveys in 2021 to 2023. Caribou observed on both sides of the road at the start of the survey are not included in this table.

6.3 EXPLORATORY ANALYSIS RESULTS

The exploratory analysis was conducted to determine if there were any trends or interactions in the following variables: road crossing group size, distance to infrastructure (AWAR, WTHR and mine site), weather and timing, road closure status, side of the road (east or west), number of disturbances, and response time following disturbances.

6.3.1 COMPARING ROAD CROSSINGS WITH GROUP SIZE AND DISTANCE TO INFRASTRUCTURE

6.3.1.1 ROAD CROSSING

Plotting the data did not show a clear relationship between caribou group size and the observation of road crossings. Although in 2020, four of the five observed road crossing events occurred in groups smaller than 25 individuals, the trend was less apparent in 2021 and 2022 when observations of road crossings included both large and small groups. In 2023, three of the six observed road crossings were in groups of 25 or less. There was also no clear relationship between caribou distance from road and the observation of road crossings, meaning that caribou located closer to the road were not more likely to cross the road than caribou positioned further away (Figure 6.3-1a).

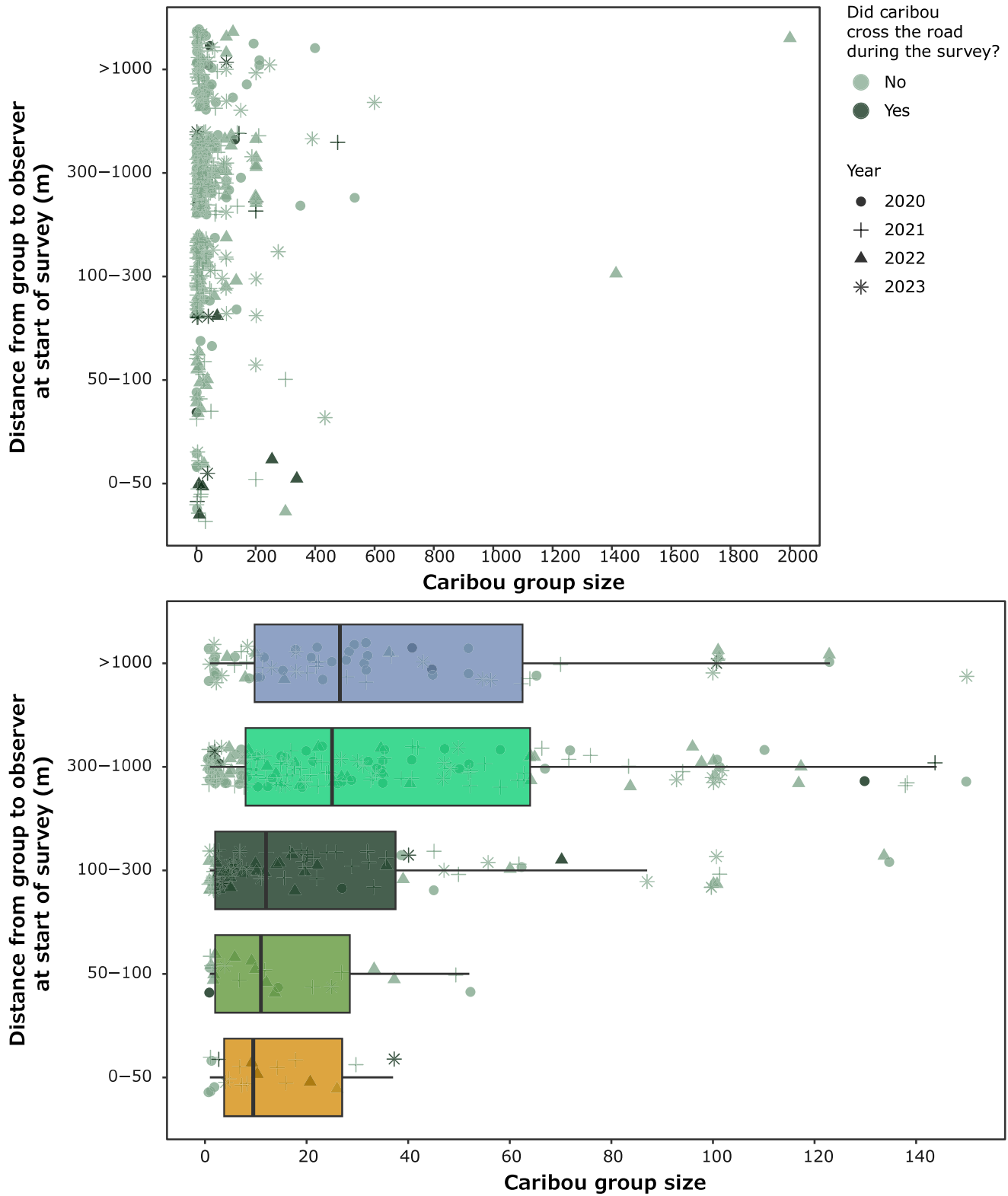
6.3.1.2 GROUP SIZE AND DISTANCE TO INFRASTRUCTURE

Plotting the caribou group size against the distance of caribou groups to the road at the start of the survey revealed that small groups (less than 50 individuals) were observed at all distances within the study area (Figure 6.3-1a). Note that distance to the road and distance to the observer/surveyor are considered equivalent in this analysis.

From 2021 to 2023, effort was taken to increase the sample size of caribou (and specifically large groups of caribou) within 300 m of the road at the start of the survey. Despite this there is still a slight trend for larger groups to be observed further from the road at the start of the survey (Figure 6.3-1b). Only seven groups larger than 100 individuals were recorded within 100 m of the road at the start of the survey, two in 2023, three in 2022 and two in 2021.

This may be indicative of a trend that caribou tend to avoid areas within 100 to 300 m of the road, or may be a by-product of observability bias, where smaller groups are more difficult to spot at distances greater than 300 m away from the road. Regardless of the mechanism, these trends highlight a potential source of error and were considered in the statistical analyses so that the results were not biased (see Section 6.4.1).

FIGURE 6.3-1 CARIBOU GROUP SIZE VERSUS DISTANCE FROM THE CARIBOU TO THE ROAD



6.3.2 COMPARING BEHAVIOUR TYPE WITH GROUP SIZE AND DISTANCE TO INFRASTRUCTURE

Average proportions of each behaviour type by group size and by distance to road are presented in Figure 6.3-2. When analyzed by group size, the results suggest that the average proportion of the response behaviours of “Alert” and “Trotting” remain stable as group size increases. The largest proportion of alert or trotting behaviours was observed in groups of one to two individuals. No group size had more than 10% alert or trotting, when averaged across observations with and without disturbances (Figure 6.3-2a).

When analyzed by distance to road, the results suggest that the proportion of response behaviours is relatively stable for groups within 1,000 m of the road and lower in groups further than 1,000 m from the road, but the difference is very small – at most one or two percent lower (Figure 6.3-2b). As with group size, no distance category had surveys with more than 10% of caribou with alert or trotting behaviour.

Overall, no clear differences in behaviour can be visually distinguished among group sizes or distances to the road. These relationships are examined in greater detail in the statistical analysis.

6.3.3 BEHAVIOUR TYPE AND ENVIRONMENTAL/TEMPORAL VARIABLES

Figure 6.3-3 shows the relationship between 1) the proportion of response behaviours and 2) environmental and temporal variables: temperature, wind speed, and date. This comparison was included to exclude the possibility that environmental factors such as heat or high winds were influencing caribou behaviour during the survey. No trend is visible in the data and trend lines fit to the weather data are nearly flat with wide confidence intervals, suggesting that the weather conditions observed during the surveys do not have a substantial effect on behaviour. It should be noted that surveyors typically did not go out in extreme weather events and therefore variability in weather conditions was low. Date was also not associated with caribou behaviour.

6.3.4 ROAD CLOSURE STATUS

An additional comparison was added in 2021 to explore the effect of the road closure status on average caribou behaviour. During caribou active months, the road may be open, closed, or open with speed restrictions. During peak caribou migration the road is closed, with some allowances for essential traffic in convoys.

Surveyors were out collecting data when the road was open and when it was closed, as caribou surveys were considered an essential activity. As a result, there are relatively even numbers of surveys from when the road was open vs. when it was closed to non-essential Mine traffic (Figure 6.3-4). Although it was expected that the level of response behaviours would be higher on average when the road was open due to an increase in traffic, this difference is not visually apparent. The level of response behaviour (averaged across all observations with and without disturbances) is low (<10%) both when the road is closed and when the road is open. If walking is included, there are a higher proportion of animals walking on average during road closed surveys. However, this may be due to closures occurring mainly during peak migration times.

FIGURE 6.3-2 AVERAGE PROPORTION OF EACH BEHAVIOUR TYPE OBSERVED

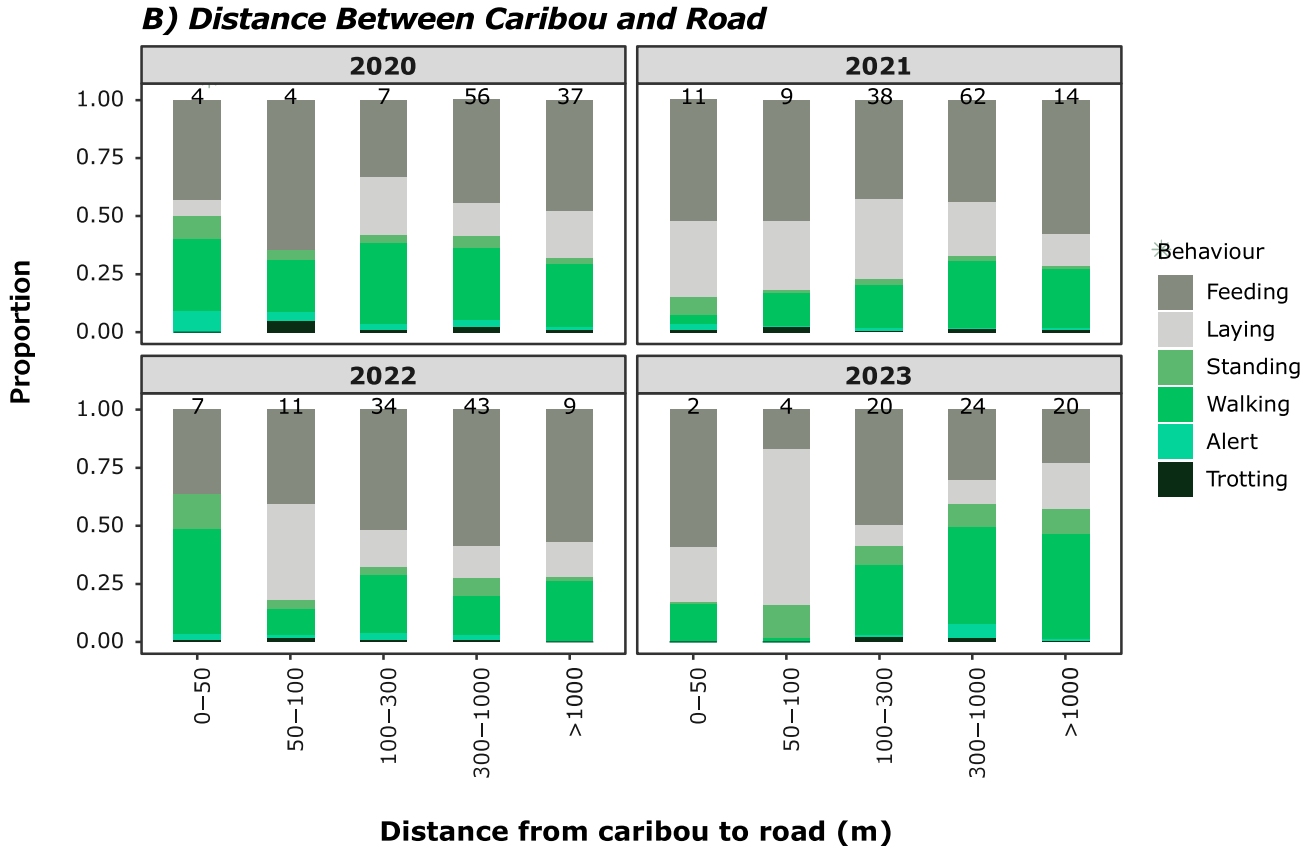
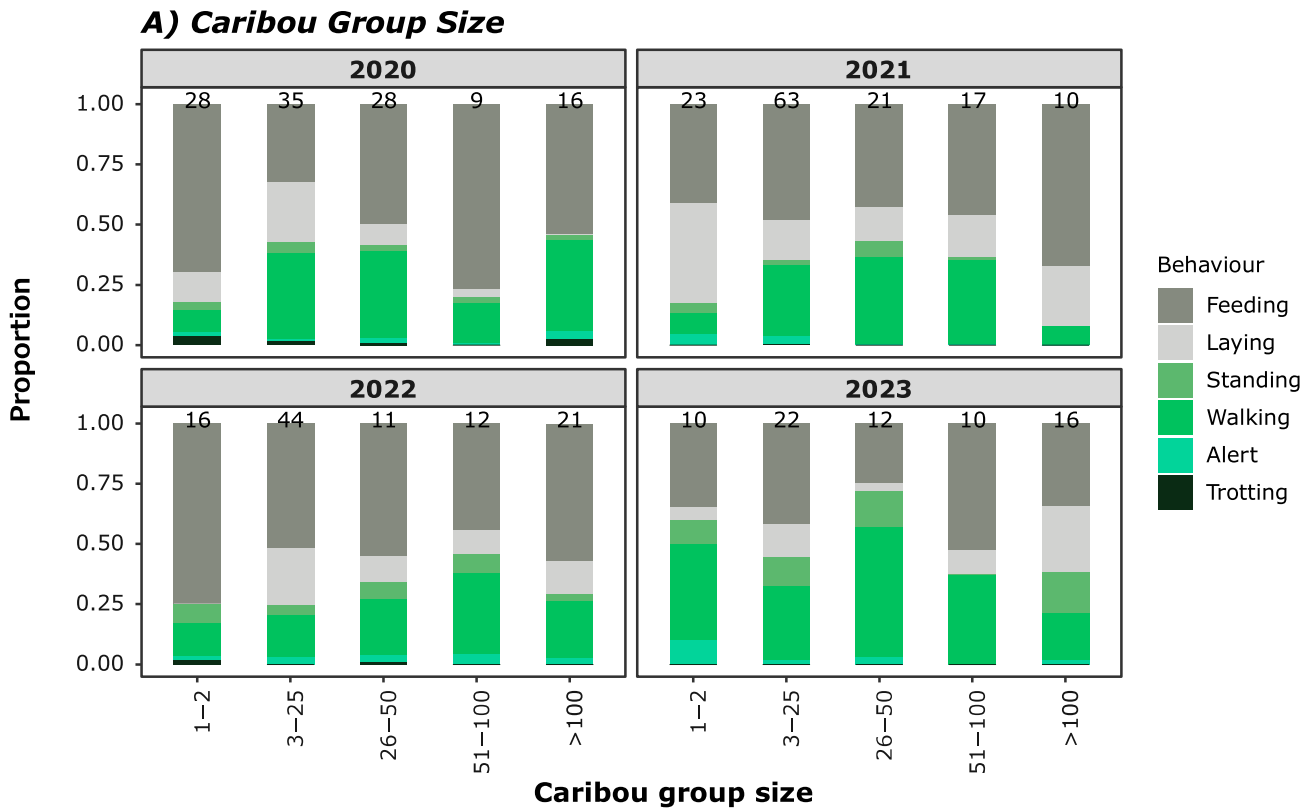


FIGURE 6.3-3 PROPORTION OF ALERT OR RUNNING CARIBOU BY TEMPERATURE, WINDSPEED AND DATE

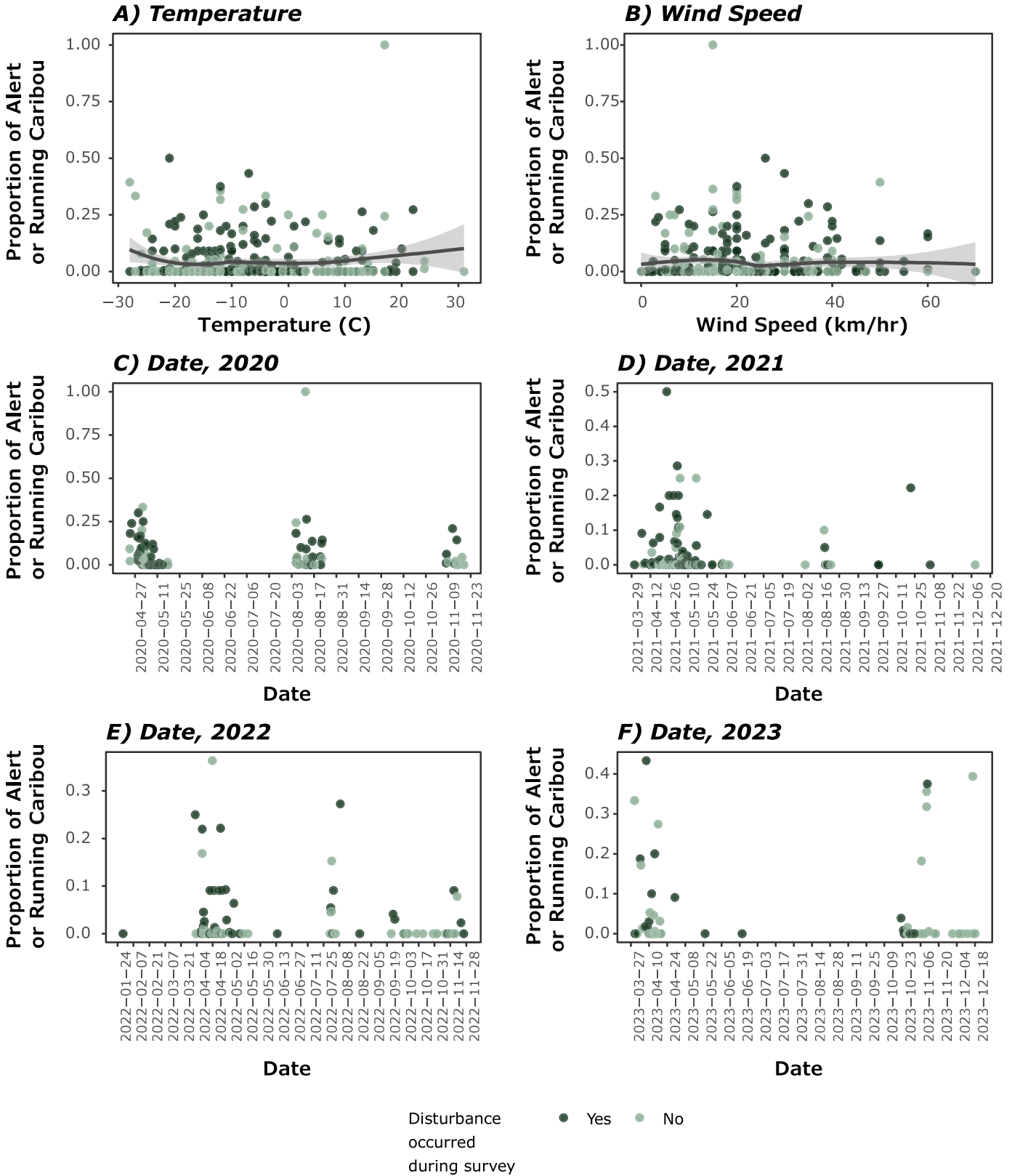
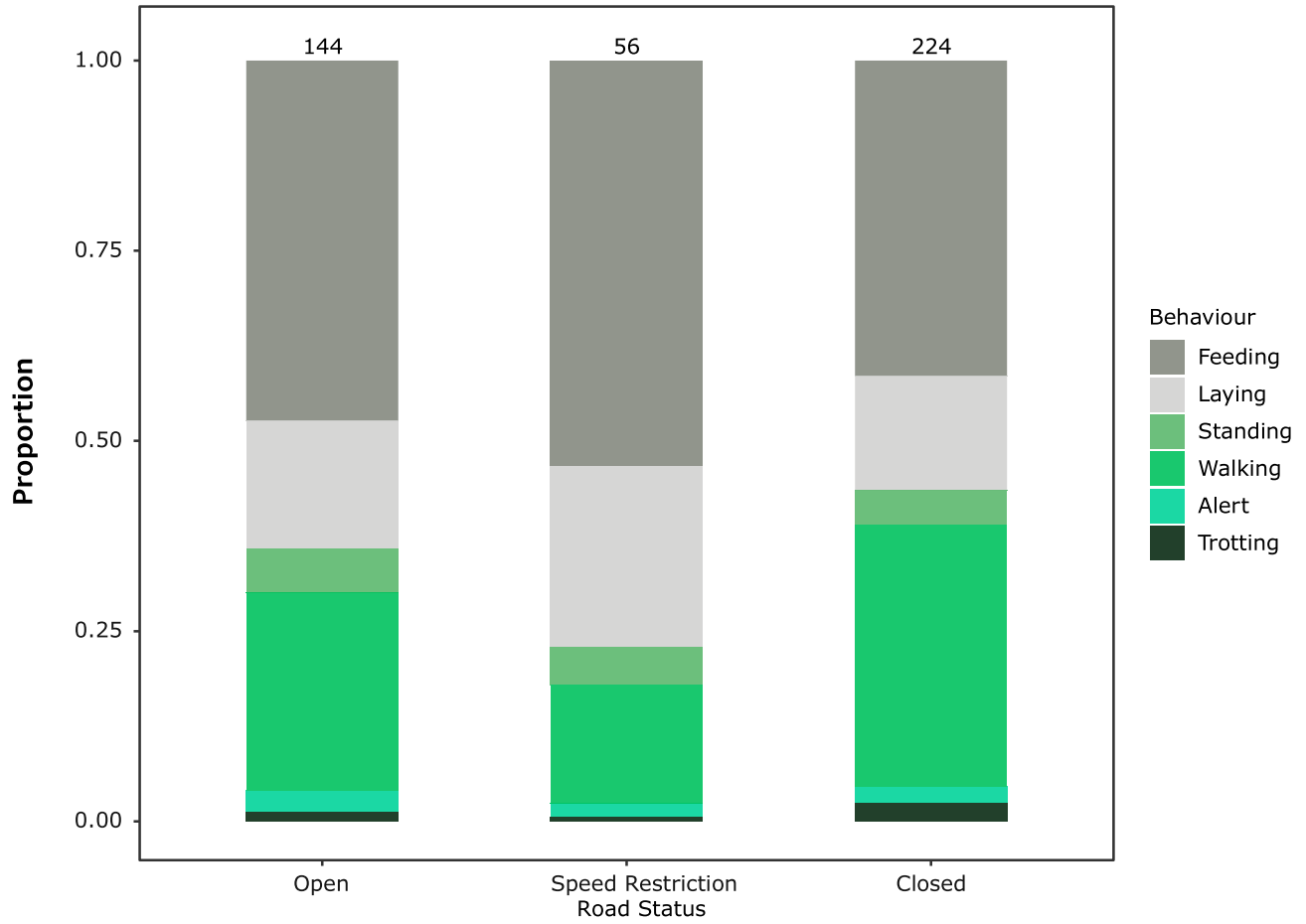


FIGURE 6.3-4 AVERAGE PROPORTION OF EACH BEHAVIOUR TYPE BY ROAD STATUS



It should be noted that convoy surveys were included in the summary figure, and these always occurred during road closures. However, this accounts for only 8% of surveys during road closures, so cannot entirely explain the differences observed in Figure 6.3-4. This relationship is further explored in the statistical analysis.

6.3.5 SEASON AND SIDE OF THE ROAD (UPSTREAM/DOWNSTREAM)

The movement pattern for caribou in the Mine area is variable based on the season. During spring migration, the dominant direction of travel is west to east, whereas in summer and during fall migration it is east to west. It was hypothesized that behaviour may vary depending on whether the caribou had crossed the road already ("downstream") or whether they were anticipating doing so ("upstream").

One hypothesis is that caribou are hesitating to cross the road but that once they cross the road, they move away quickly. If this were the case, the prediction would be that groups of caribou would be observed close to the road on the upstream side with fewer groups or groups further away on the downstream side. This predicted distribution was not observed. Instead, groups of caribou were observed near the road on both sides of the road. Figure 6.3-5 compares the distance to the road at the start of the survey with the location relative to the road (east or west). In spring migration, a greater number of surveys were recorded on caribou on the west side of the road, which is upstream for that season. This may be an indication that caribou tend to gather before crossing the road.

While differences in response behaviour (running/alert) do not appear to vary with the side of the road the observations are from, one trend that does stand out is that there appears to be a higher proportion of walking behaviour on the upstream side of the road at least during the spring migration. This is explored further in the statistical analysis.

6.3.6 NUMBER OF DISTURBANCES

When duration of response (i.e., time taken for caribou to return to a baseline condition following a disturbance) is compared with the proportion of response behaviours, it appears that surveys with a higher proportion of caribou responding to the disturbance tend to take longer to recover to a baseline condition (Figure 6.3-6 panel a). Interestingly, it appears that surveys with multiple disturbances don't consistently produce a larger response or a longer one. Although the long-lasting full-group responses are in surveys with multiple disturbances, there are surveys with multiple disturbances that don't have large reactions or longer-lasting response durations.

Figure 6.3-6 (panel b) shows a density plot for the proportion of response behaviours in three subsets of surveys, those with no disturbances, those with one disturbance, and those with multiple disturbances. The results suggest a slightly higher proportion of alert or running caribou in surveys when one or more disturbances occurred. Surveys with multiple disturbances do not appear to have a greater overall response than surveys with one disturbance. It should be noted that this figure is an average proportion of response behaviours across the entire 30-minute survey, so in some instances the proportion of response behaviours may have been obscured by the large number of intervals with no response behaviour.

FIGURE 6.3-5 AVERAGE PROPORTION OF EACH BEHAVIOUR TYPE OBSERVED ON EAST AND WEST SIDE OF ROAD

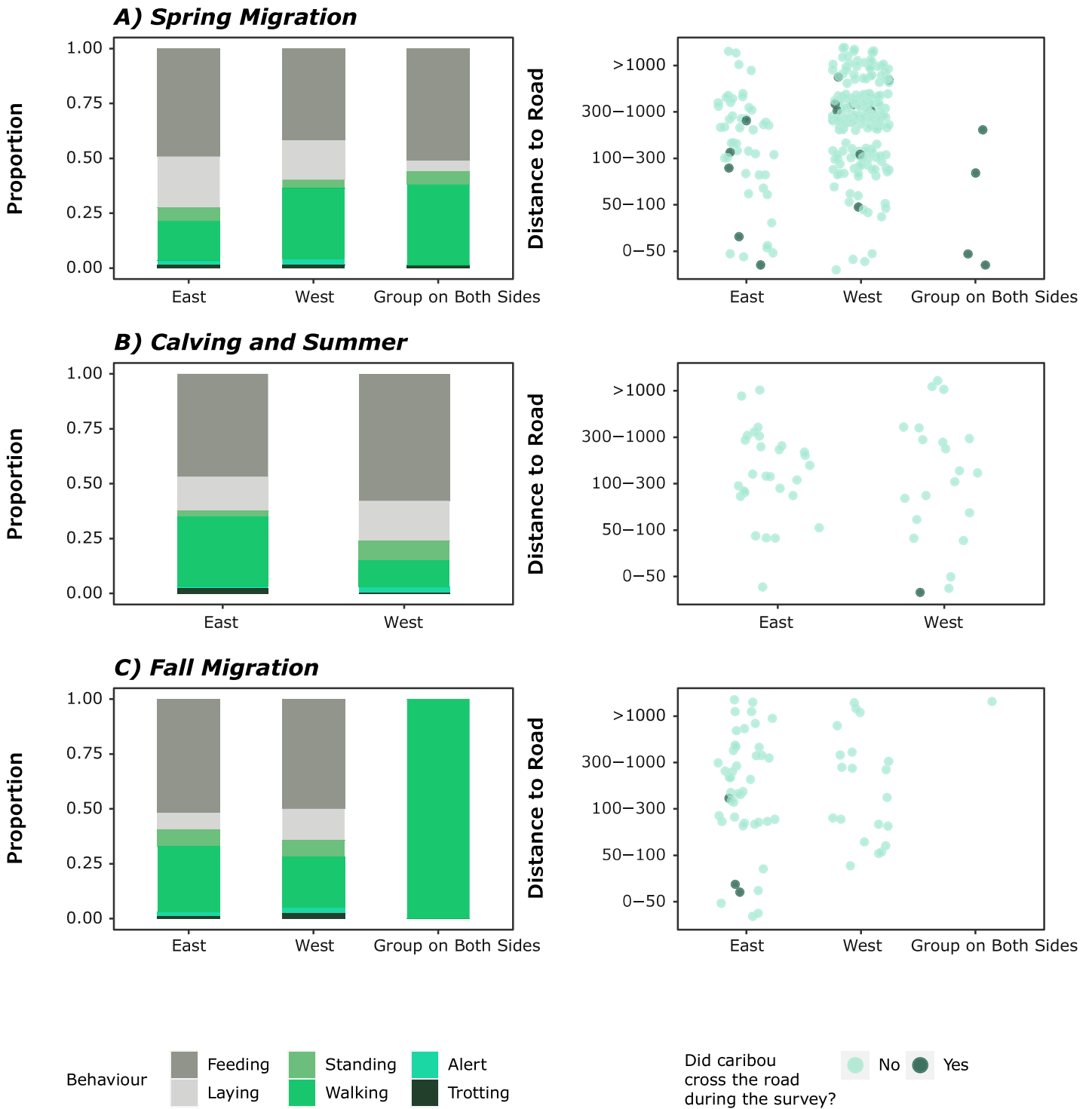
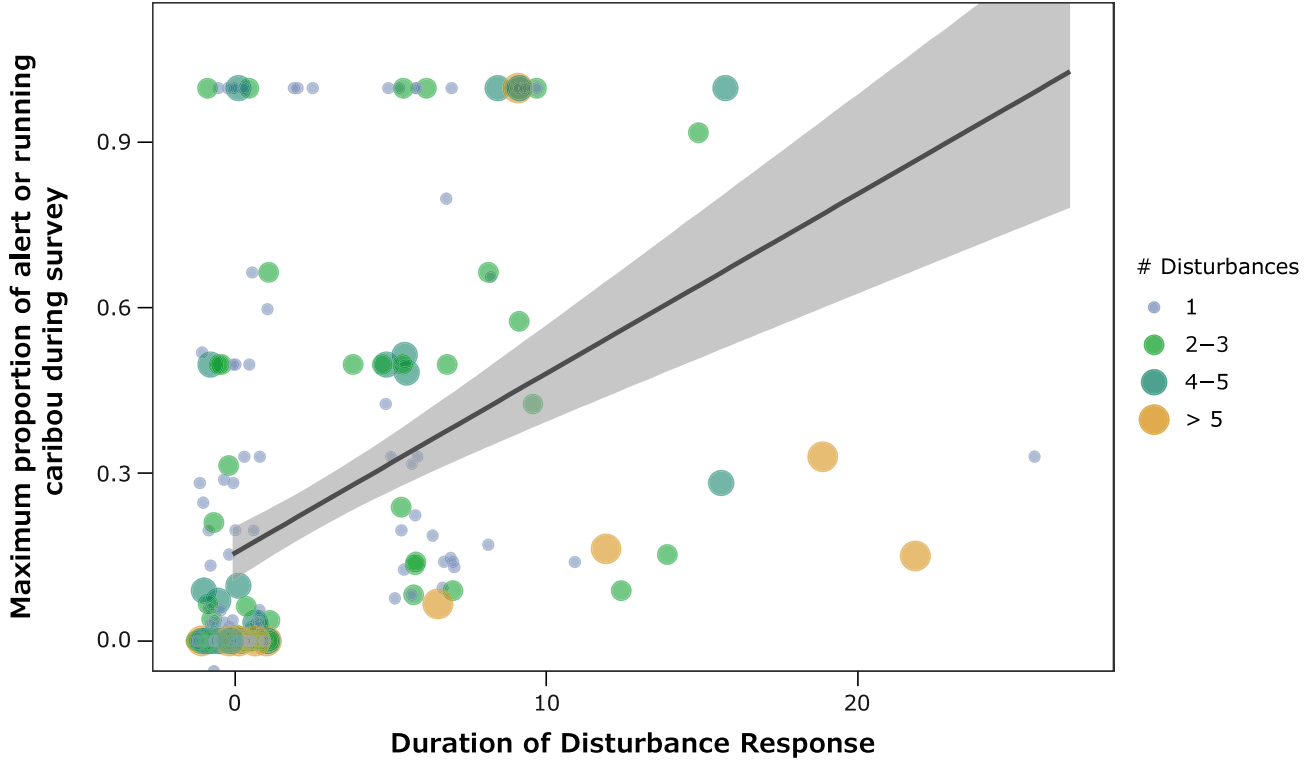
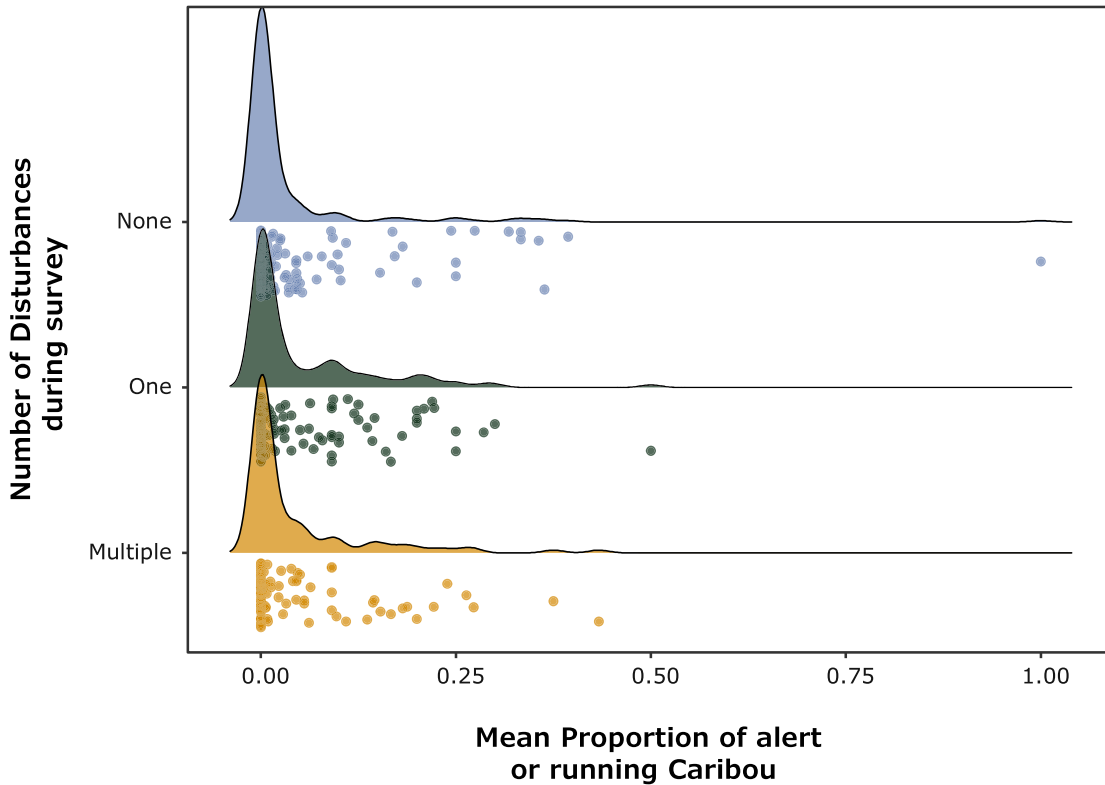


FIGURE 6.3-6 COMPARISON OF RESPONSE BEHAVIOURS BY NUMBER OF DISTURBANCES

A) Proportion of Response Behaviour vs. Duration of Response



B) Proportion of Response Behaviour Grouped by Number of Disturbances



6.3.7 RESPONSE TO DISTURBANCES

Summarizing data over the entire 30-minute survey is useful for broad comparisons but has the disadvantage that response behaviour can be obscured in a relatively uneventful survey. To examine the response to disturbances within a survey, the proportion of response behaviours was plotted by three minute interval for each survey, as shown for a subset of surveys in Figure 6.3-7. See Appendix C for plots of all surveys. In Figure 6.3-7, the response behaviours of “alert” and “trotting or running” are combined to create the total proportion of responding caribou in any given time interval and plotted over time within the 30-minute survey. Disturbances are denoted with a vertical bar. A spike in response behaviours in the interval during a disturbance or immediately following a disturbance suggests that the caribou are responding to the disturbance.

The results show that in the absence of disturbances, an average of 0-10% of caribou typically exhibit response behaviours at any given time. Figure 6.3-7 and Appendix C suggest that following many of the disturbance events, there was commonly a spike in the proportion of response behaviours to 60-90% of caribou in the group. The proportion of caribou with response behaviours returned to pre-disturbance levels quickly, often within two intervals (6 minutes). For example, when a truck passed, most caribou would look up (which is classified as a response behaviour) and then return to feeding or laying down (a pre-disturbance behaviour).

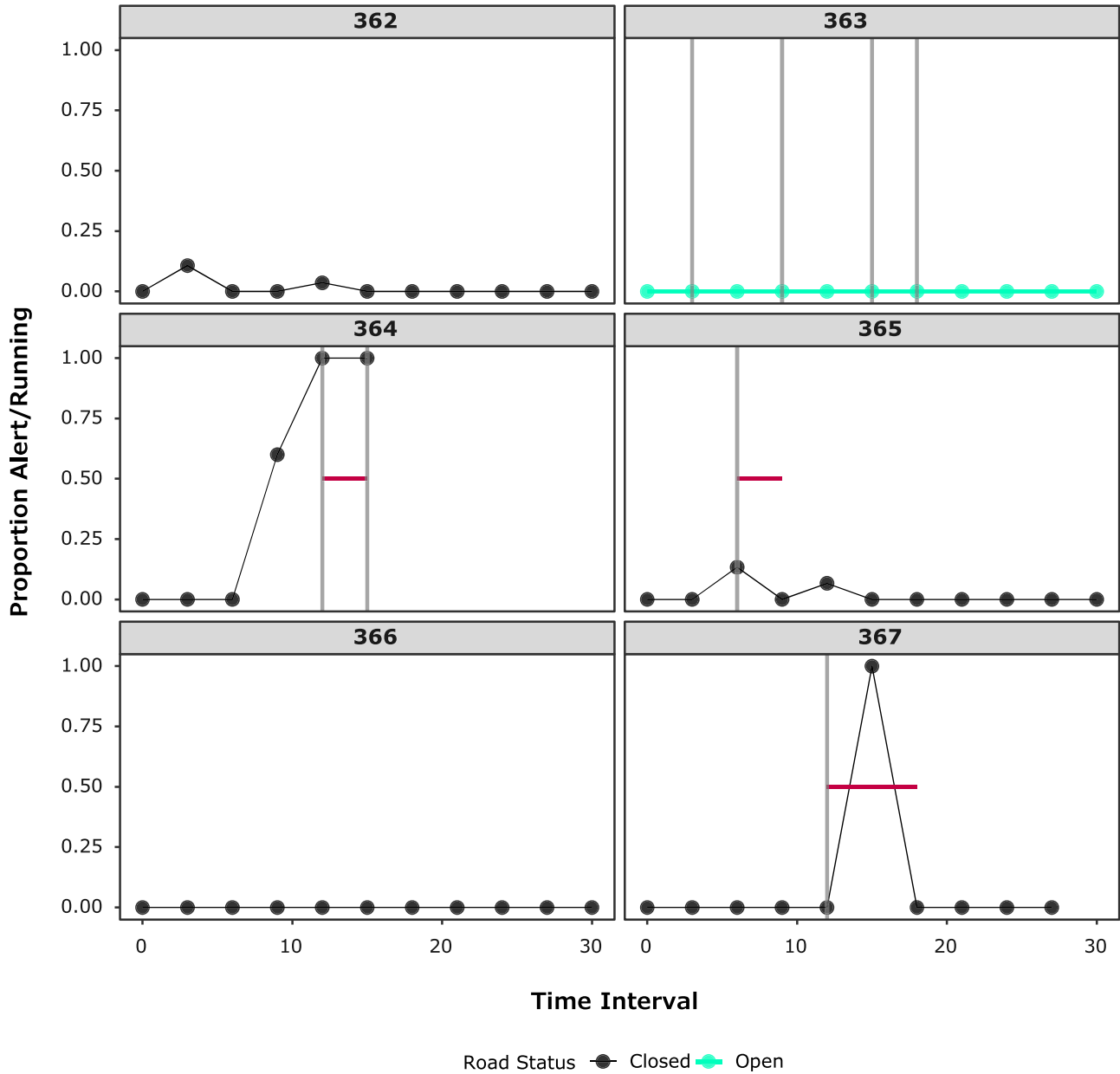
There was some variability in the proportion of response behaviours. During some surveys, there was a spike in response behaviours when no vehicle or other obvious disturbance was observed. In some surveys a vehicle passed by (a disturbance), but there was no increase in response behaviours observed in the caribou group on the subsequent time period.

6.3.8 DIRECTION OF CARIBOU TRAVEL

Following the 2021 analysis there was a suggestion from the TAG to incorporate the direction caribou travelled relative to the road, i.e., if caribou were walking parallel to the road or perpendicular. Walking parallel to a potential threat is a known behaviour in some cervid species. Inclusion of this variable in combination with whether caribou were upstream or downstream of the dominant direction of travel was suggested to help determine if caribou were walking as a response to a disturbance or not. In response to this suggestion, a field for direction of travel was added for the 2022 survey season. Note that the suggestion was made after spring migration 2022, so data are only available for surveys in summer and fall of 2022, resulting in 41 entries for direction of travel in 2022. 70 entries were available in 2023.

From the 70 surveys with this information in 2023, 29 groups were recorded as travelling parallel to the road (41%), 16 were travelling perpendicular to the road (23%), and 25 were stationary for much of the survey (36%).

FIGURE 6.3-7 PROPORTION OF RESPONSE BEHAVIOUR DURING EACH SURVEY – EXAMPLE SUBSET



Note: See Appendix C for all surveys from 2020, 2021, 2022, and 2023.



From the 41 surveys with this information in 2022, 18 groups were recorded as travelling parallel to the road (44%), four were travelling perpendicular to the road (10%), and 19 were stationary for much of the survey (46%). Of those travelling parallel to the road, all but one were recorded upstream of the dominant direction of travel (94%). However, it should be noted that most surveys completed during this time period were of caribou on the upstream side of the road, regardless of direction of travel. 63% of stationary caribou groups were also recorded on the upstream side of the road. Caribou moving perpendicular to the road were recorded equally on the upstream and downstream side of the road. These results point to a trend that caribou may travel parallel to the road before crossing it, but the small sample size makes it challenging to form conclusions.

6.4 STATISTICAL ANALYSIS RESULTS

6.4.1 MODEL FORMULATION

As distance to road and caribou group size were identified as being potentially correlated during the exploratory analysis, a Chi-square test was conducted between the two variables to determine if they were too closely related to be included in a model together. A Chi-square (χ^2) statistic is a test that measures how a model compares to actual observed data and can be used to test for the correlation between two categorical variables. The resulting Chi-square statistic was significant ($p=0.01$), indicating that group size was statistically associated with distance from the road. To prevent overfitting, models were run that included group size as an independent variable and distance to road as an independent variable separately.

Initial model results suggested that distance of the caribou to the observer was not a good predictor for response behaviour regardless of how models were parameterized. Therefore, further models did not include this variable. The final models had many parameters, and it was difficult to attain model convergence. As a result, model variables that had little or no explanatory power and were not variables of interest (temperature and wind speed) were dropped from the models. Final models for proportion of response, or response and walking behaviour included caribou group size, whether a disturbance occurred, road status, and the interaction between season and side of road.

The estimates and significance levels for the final model that used response behaviour as the dependent variable are presented in Table 6.4-1, for the final model that used walking behaviour as the dependent variable in Table 6.4-2, and for the final model that used duration of response as the response variable in Table 6.4-3.

In Tables 6.4-1 and 6.4-2, the statistics presented include the type of term in the model (fixed vs random effects), and variable estimate (Odds Ratio), which can be interpreted as the expected effect on the dependent variable as the independent variable changes. Significant p-values (<0.05) for variables with more than two categories were followed up with pairwise post-hoc tests to determine which groups were different. A p-value of less than 0.05 suggests that the variable is an important determinant of the response, as it indicates there was less than 5% probability that we would see an association as strong as we did if there was no relationship.

TABLE 6.4-1 SUMMARY OF MODEL COEFFICIENTS AND SIGNIFICANCE LEVELS FOR RESPONSE BEHAVIOUR MODEL

Effect Type	Variable	Estimate	Standard Error	P-value	Significance
Fixed	(Intercept)	0.004	0.003		
	Caribou Group Size:			< 0.001	***
	• 1-2	Reference	Reference		
	• 3-25	0.067	0.038		
	• 26-50	0.042	0.027		
	• 51-100	0.011	0.008		
	• >100	0.018	0.012		
	Disturbance during interval	6.074	0.371	< 0.001	***
	Road status (Open)	0.691	0.261	0.33	
	Season:			-	
	• Summer and Calving	Reference	Reference		
	• Fall Migration	0.306	0.259		
	• Spring Migration	0.421	0.352		
	Side of Road:			-	
	• East	Reference	Reference		
	• West	0.59	0.636		
	Interaction (Summer and Calving* West)	Reference	Reference	0.52	
Interaction (Spring Migration* West)	4.064	5.712			
Interaction (Fall Migration* West)	3.885	4.866			
Random	SD for random effect	2.913			

Note:

Statistically significant p-values <0.05 are indicated with a single asterisk. Highly significant values ($p < 0.001$) are indicated with three asterisks. Near significant values ($0.09 > p > 0.05$) are indicated with a dot.

TABLE 6.4-2 SUMMARY OF MODEL COEFFICIENTS AND SIGNIFICANCE LEVELS FOR WALKING MODEL

Effect Type	Variable	Estimate	Standard Error	P-value	Significance
Fixed	(Intercept)	0.635	0.46		
	Caribou Group Size:			< 0.001	***
	• 1-2	Reference	Reference		
	• 3-25	0.121	0.061		

Effect Type	Variable	Estimate	Standard Error	P-value	Significance
Fixed (cont'd)	• 26-50	0.08	0.048		
	• 51-100	0.036	0.024		
	• >100	0.012	0.008		
	Disturbance during interval	1.128	0.045	0.003	*
	Road status (Open)	0.121	0.061	< 0.001	***
	Season:			-	
	• Summer and Calving	Reference	Reference		
	• Fall Migration	0.667	0.515		
	• Spring Migration	0.148	0.112		
	Side of Road:			-	
	• East	Reference	Reference		
	• West	0.148	0.139		
	Interaction (Summer and Calving* West)	Reference	Reference	0.003	*
	Interaction (Spring Migration* West)	3.302	4.148		
Interaction (Fall Migration* West)	36.132	39.752			
Random	SD for random effect	3.182			

Note:

Statistically significant p-values <0.05 are indicated with a single asterisk. Highly significant values ($p < 0.001$) are indicated with three asterisks. Near significant values ($0.09 > p > 0.05$) are indicated with a dot.

TABLE 6.4-3 SUMMARY OF MODEL COEFFICIENTS AND SIGNIFICANCE LEVELS FOR DURATION OF RESPONSE MODEL

Variable	Hazard Ratio	95% Confidence Interval	P-value
Number of Disturbances ^a	0.89	0.81-0.98	0.02 *
Caribou Group Size:			0.03 *
Caribou group size 1-2	Reference	Reference	
Caribou group size 3-25	0.60	0.41-0.89	
Caribou group size 26-50	0.52	0.31-0.86	
Caribou group size 51-100	0.68	0.37-1.25	
Caribou group size >100	0.47	0.28-0.78	

Notes:

Statistically significant p-values <0.05 are indicated with a single asterisk. Highly significant values ($p < 0.001$) are indicated with three asterisks. P-values <0.10 and >0.05 are indicated with a dot.

^a Number of 3-minute intervals during which a disturbance occurred. May be the same source of disturbance over several intervals.

6.4.2 EFFECT OF DISTURBANCES

Tables 6.4-1 and 6.4-2 suggest that in both models, whether a disturbance occurred during an interval was a significant predictor of the proportion of animals exhibiting response behaviour during that interval. In the model for response alone, the Odds Ratio is approximately 6, suggesting that there is a 6 times higher odds of response behaviour in intervals containing a disturbance averaged across group size, road status, season, and side of road. In the model with walking behaviour included there is approximately 13% higher odds of exhibiting this behaviour in intervals where a disturbance occurred. This indicates that walking may be less associated with disturbance than the other response behaviours.

6.4.3 EFFECT OF GROUP SIZE

The models also suggest caribou group size is significantly associated with the proportion of caribou exhibiting response behaviour. Post-hoc pairwise test results are illustrated in Figures 6.4-1 and 6.4-2. The shaded grey bars indicate the 95% confidence intervals around the estimates of average proportion of caribou exhibiting response behaviour. The points indicate the means (averaged over whether a disturbance occurred), and the green arrows the pairwise comparisons among groups. Where these arrows do not overlap suggests a significantly different response between the groups.

For the response model, the smallest group size had the largest proportion of response behaviour and this was different from all other group sizes. The next largest size bin (3-25 animals) also showed a significantly higher proportion of response compared to the 51-100 animals group. All other pairwise comparisons were not significant. The response and walking model had a similar pattern of results except that the 3-55 and the 26-50 groups were significantly different from the >100 group.

6.4.4 EFFECT OF ROAD CLOSURE STATUS

Road closure status was not a significantly important predictor of response behaviour (Table 6.4-1), but was significantly associated with response and walking behaviour (Table 6.4-2). The model for response alone suggests that caribou respond similarly to disturbances regardless of whether the road is open or closed (see Figure 6.3-4). This may be because the analysis included convoy surveys, which occurred during road closures and had the potential to bias the results. There are typically fewer disturbances during road closures. It may also be simply because the other variables in the model are better at explaining the variation observed in the data. However, when walking is included, there was a lower proportion of animals with the response when the road was open. This may be due to closures occurring mainly during peak migration times when animals are walking.

FIGURE 6.4-1 PAIR WISE COMPARISONS OF AVERAGE PROPORTION OF CARIBOU EXHIBITING RESPONSE BEHAVIOUR AMONG CATEGORIES OF CARIBOU GROUP SIZE

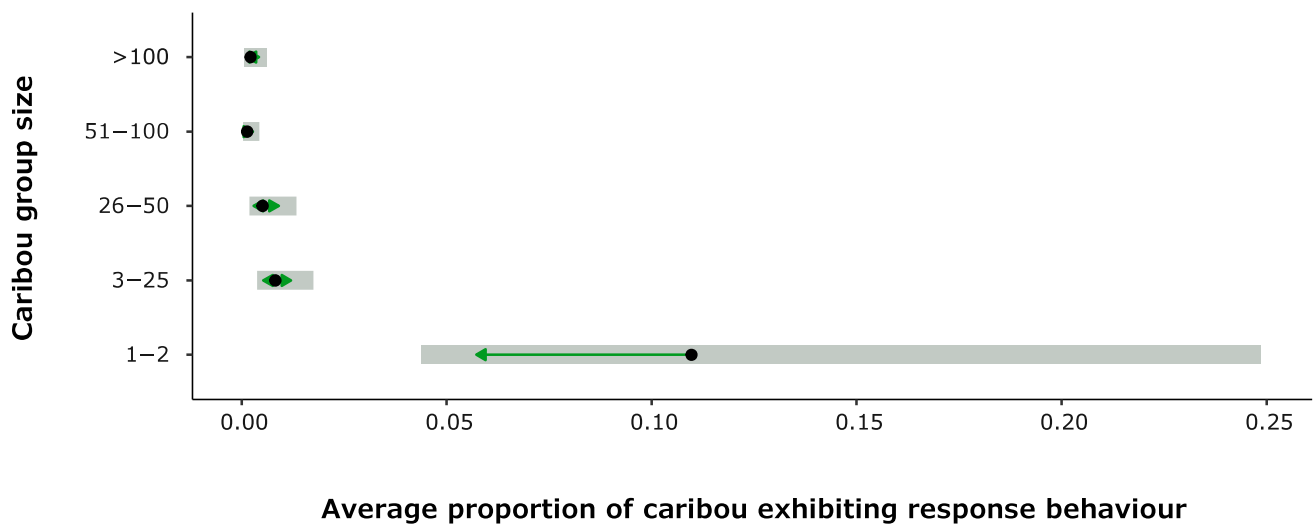
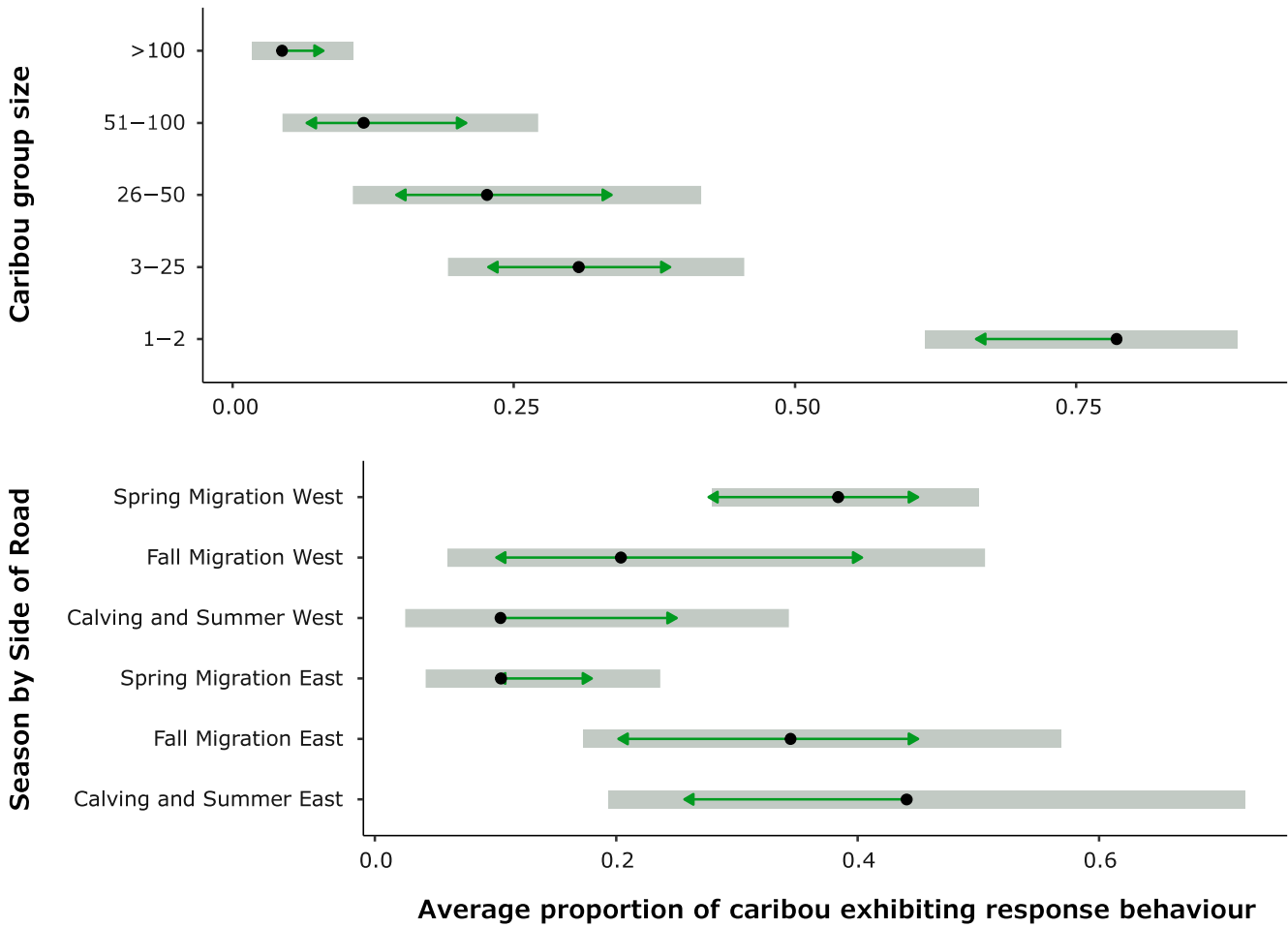


FIGURE 6.4-2 PAIR WISE COMPARISONS OF AVERAGE PROPORTION OF CARIBOU EXHIBITING RESPONSE AND WALKING BEHAVIOUR AMONG CATEGORIES OF CARIBOU GROUP SIZE AND ROAD STATUS



6.4.5 EFFECT OF SEASON AND SIDE OF THE ROAD (UPSTREAM/DOWNSTREAM)

Season and side of the road were not significant in the response behaviour model but were significant in the model that included walking as a response (Tables 6.4-1, and 6.4-2). Model results indicate that during spring migration caribou are walking less on the east side of the road compared to the west side of the road (pairwise post-hoc p-value = 0.02). Since west is upstream of the typical direction of movement in spring, and downstream in fall, another way to interpret this result is that caribou tend to be walking more on the upstream side of the road during the spring migration. None of the other pairwise comparisons of season and side of road were significant. In this study, similar numbers of surveys were conducted on the upstream and downstream sides of the road (See Table 6.2-2).

An analysis conducted by the GN on the 2019 road survey data from Agnico Eagle reported that most observations of caribou groups were made on the upstream side of the road (GN, Feb. 2021 presentation to the TAG). In that presentation, the GN hypothesized that caribou are walking alongside and parallel to the road on the upstream side before crossing, which would be consistent with caribou hesitating to cross the road. More surveys in spring and fall would allow for greater confidence in these results.

6.4.6 DURATION OF RESPONSE

Table 6.4-3 gives the model summary for the duration of response model. The median number of survey intervals with a disturbance was 1, with a mean of 2.1, and a maximum of 9. The final model included the number of disturbances that occurred during the survey, and group size. The estimated term (Hazard ratio) for number of disturbances being less than one indicates a longer duration of response for increasing numbers of disturbances. The model also suggests that larger groups of animals took significantly longer to return to normal compared to the smallest group size (1-2 animals). We can use the estimates from the model to calculate the probability of returning to normal behaviour within a certain period of time for different group sizes and numbers of disturbances. Over the range of number of disturbances and group sizes, the model suggests that over 85% (95% CI = 72-92%) of surveys will have returned to normal behaviour within 3 minutes, 94% (85-98%) within 6 minutes, and 100% within 15 minutes of the start of the response. Table 6.4-4 and Figure 6.4-3 give the estimates and confidence intervals for the probability of returning to normal behaviour within a certain time by group size and number of disturbances.

TABLE 6.4-4 PROBABILITY OF RETURNING TO NORMAL BEHAVIOUR WITHIN A CERTAIN TIME BY GROUP SIZE AND NUMBER OF DISTURBANCES

Variable	Time to Return to Normal Behaviour			
	3 Minutes	6 Minutes	9 Minutes	15 Minutes
Caribou Group Size:				
1-2	84% (69%, 92%)	91% (77%, 96%)	100% (77%, 96%)	— (—, —)
3-25	72% (60%, 80%)	80% (70%, 87%)	87% (75%, 93%)	96% (84%, 99%)
26-50	57% (34%, 72%)	79% (56%, 89%)	95% (66%, 99%)	95% (66%, 99%)
51-100	69% (35%, 85%)	92% (50%, 99%)	— (—, —)	— (—, —)
>100	59% (36%, 73%)	77% (55%, 89%)	86% (63%, 95%)	91% (68%, 97%)

Variable	Time to Return to Normal Behaviour			
	3 Minutes	6 Minutes	9 Minutes	15 Minutes
Number of Survey Intervals with a Disturbance:				
1	72% (62%, 79%)	89% (81%, 94%)	97% (88%, 99%)	98% (89%, 100%)
2-3	69% (55%, 79%)	75% (61%, 84%)	89% (72%, 96%)	96% (77%, 99%)
>3	67% (47%, 79%)	78% (59%, 88%)	86% (69%, 94%)	92% (75%, 97%)

6.4.7 STATISTICAL ANALYSIS SUMMARY

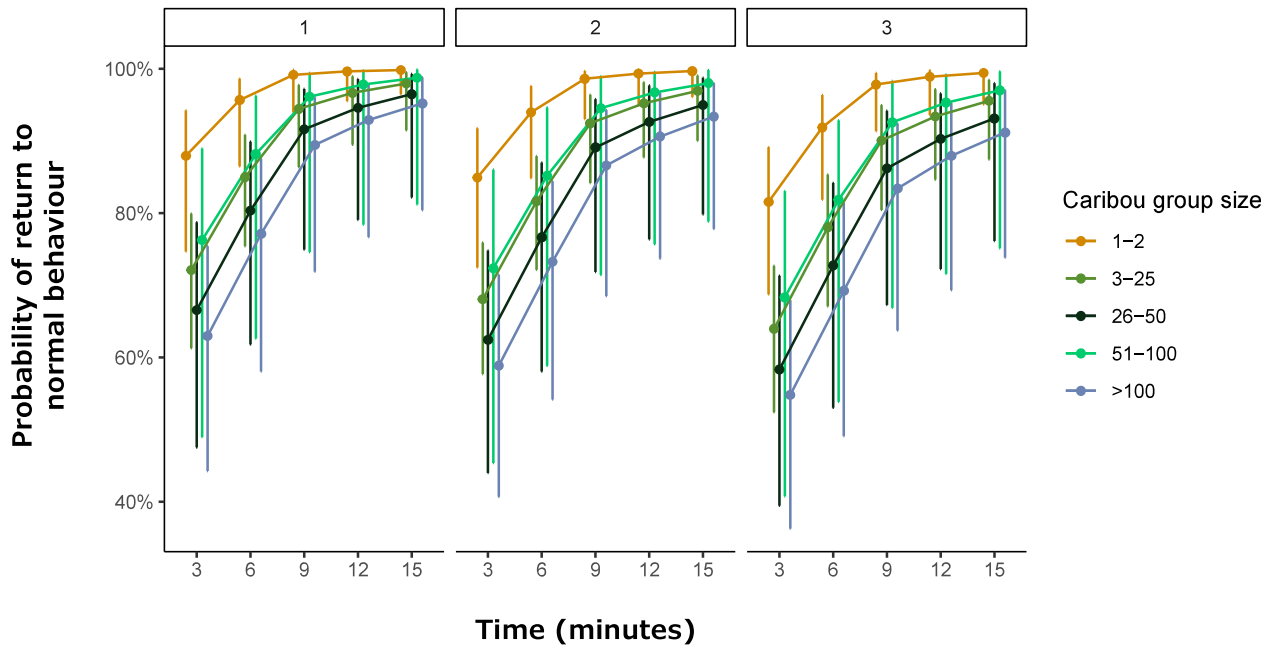
The results of the statistical analysis provided support for the key hypothesis that caribou tend to respond to disturbances, particularly when they are close to the road. However, the analysis also found that disturbances did not have a detectable effect on caribou behaviour after approximately six minutes. An interesting finding from this analysis included that behaviour was not significantly different when the road was open vs. when it was closed for the response only model, but was significantly different when walking was included as a response variable.

Cox's proportional hazards modelling using all four years of data suggests that following a single disturbance, the probability of returning to normal behaviour within 6 minutes is 94%, and 100% after 15 minutes. The probabilities for returning to normal behaviour within 6 minutes are lower for larger groups, and surveys with more disturbances – 75% for 2 to 3 intervals with a disturbance and 77% for groups with >100 individuals.

The proportion of caribou responding was linked to disturbance occurring within an interval, for both walking and response behaviours. However, caribou were significantly more likely to be walking on the upstream side of the road. The results suggest that walking behaviour should not be excluded from analyses. The inclusion of a separate model set for walking behaviour allows for the detection of trends that are not apparent with the alert/running behaviour models.

These results should be treated with caution due to the high number of variables and the variability in the behaviours observed. Nevertheless, it should be noted that the results from this analysis are highly similar to results from previous years, suggesting that the effects are stable year to year. These results are also consistent with other surveys recorded on barren-ground caribou during the post-calving and early summer periods, which suggest that caribou behavioural responses to all-season haul roads tend to taper off beyond approximately 500 m (Curatolo et al. 1987; Johnson and Lawhead 1989; Dyer et al. 2001). However, zone of influence estimates are highly variable in the literature and this method of data collection is not designed to estimate it, particularly given the observability bias noted in Section 6.3-1. In addition, responses to roads and infrastructure have previously been linked to increased harvest from roadways (Plante et al. 2018; Russell and Gunn 2019), a factor which was not included in this analysis.

FIGURE 6.4-3 CUMULATIVE PROBABILITY OF RETURN TO NORMAL BEHAVIOUR BY GROUP SIZE AND NUMBER OF DISTURBANCES



7. SUMMARY

The behaviour monitoring data from 2023 were combined with data from 2020 to 2022, to determine if caribou activity budgets change with distance from the Mine, and to document caribou response to stressors. All results outlined in this report use all four years, unless otherwise stated. The program and combined data resulted in several key findings:

- The standard monitoring protocols adapted from the GNWT ENR worked well at the Mine site.
- 70 surveys were conducted in 2023, compared to 104 surveys were conducted in 2022, 134 in 2021 and 116 in 2020; 38 surveys occurred during spring migration from March to May; 1 occurred during calving and summer from June to August; and 31 occurred during fall migration from September to December.
- Caribou mostly exhibited the non-response behaviours of standing, laying, feeding, and walking.
- Observations were well distributed across a range of caribou group sizes from 1 to 2 individuals to >1,000.
- Larger groups of caribou tended to be recorded further from the road. Seven groups larger than 100 individuals were recorded within 100 m of the road at the start of the survey.
- Caribou group size was linked to increased response behaviour or walking behaviour for groups of 1-2 caribou.
- Approximately 50% of the surveys from 2020 to 2023 included a disturbance event; typically haul traffic and light trucks from the Mine, and occasionally ATVs from Baker Lake on the AWAR for travel and harvesting.
- Following a disturbance event, the proportion of response behaviours in a group of caribou was significantly higher, but generally returned to baseline behaviours within two sampling intervals (i.e., six minutes).
- Cox's proportional hazards modelling suggests that following a single disturbance, 94% of groups will return to normal behaviour after approximately 6 minutes, and 100% of groups will return to baseline behaviour after approximately 15 minutes.
- In response to comments from the KivIA, the behaviour of "walking" was investigated for whether it may be an "alert" behaviour instead of a non-response behaviour. Disturbances did statistically effect the proportion of caribou walking.
- During periods when large groups of caribou are present, the AWAR and Haul Roads are closed to non-essential Mine traffic following a decision tree in the Meadowbank Mine TEMP, reducing the potential to record interactions between vehicles and caribou. Road closure status did not affect response behaviour in the statistical analysis, though the road being open was significantly positively correlated with walking behaviour.
- Groups of caribou were observed on both the east and west sides of the road in all seasons, but were more commonly observed on the west side during spring migration and the east side during fall migration (a.k.a. upstream of the dominant direction of travel). Statistical analysis found that side of road and season did not affect response behaviour (alert/running), but that caribou were significantly more likely to be walking on the upstream side of the road. The dominant behaviour on the downstream side was feeding or laying down.

Based on commitments in the TEMP, the overall objective of the caribou behaviour monitoring program was to determine if caribou activity budgets changed with distance from the Mine, and to document caribou response to stressors. The primary hypothesis of this study was that caribou closer to the road would demonstrate a stronger response to vehicle disturbances. Overall, the results of the statistical analysis provided support for this hypothesis, as caribou tended to respond to disturbances, particularly when close to the road. However, the analysis also found that response to disturbance typically returned to baseline levels within approximately six minutes post-disturbance (for one disturbance), suggesting that caribou behaviour returns to baseline relatively quickly following a disturbance. The updates applied to the survey protocol in previous years were helpful in improving the overall quality of the data, and precision of the analyses. Interestingly, even with these changes, the trends in the results were highly consistent between the four years of data. This increases the confidence that trends are repeatable year to year.

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APPENDIX A DETAILED METHODS FOR CARIBOU BEHAVIOUR SURVEYS



Meadowbank Gold Mine

Caribou Behaviour Monitoring

February 2022

Project No.: 0656774

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APPENDIX A MEADOWBANK GOLD MINE: CARIBOU BEHAVIOUR MONITORING DATA SHEET

1. INTRODUCTION

Agnico Eagle Mines Ltd. (Agnico Eagle) would like to determine whether caribou behaviour changes in response to mine activities. The purpose of caribou behaviour surveys is to provide information to characterize the effects of the physical road and mine-related activities on caribou behaviour, including the All Weather Access Road (AWAR) and Haul Road.

The planned monitoring program is designed to collect data on caribou behaviour using standardized, scientifically-defensible methods. The data will be used to monitor Project effects.

1.1 Objectives

Following discussions with the Kivalliq Inuit Association and Government of Nunavut during the spring of 2021, the objectives of the behaviour monitoring program for caribou have been updated to the following:

- Evaluate the baseline behaviour of caribou (behaviour in the absence of disturbance);
- Evaluate the response of caribou to disturbances;
- Compare the behaviour of caribou between the following categories, if there is sufficient data:
 - 1) in large vs. small groups,
 - 2) near vs. far from the road,
 - 3) when the road is open vs. closed,
 - 4) east vs. west of the road, (upstream and downstream), and
 - 5) spring migration vs. summer and fall periods.

2. STUDY AREA

The study area for behaviour monitoring is anywhere that caribou may interact with the mine, including the All Weather Access Road (AWAR), the Meadowbank Mine site, Whale Tail site and the Haul Road connecting Meadowbank to Whale Tail.

3. STANDARD OPERATING PROCEDURES

The purpose of caribou behaviour surveys is to provide information to characterize the effects of the physical road and mine-related activities on caribou behaviour, including the All Weather Access Road (AWAR) and Haul Road. The overall method for the surveys is to identify caribou groups visible from the road, to select some groups for observation, and to record the behaviour of individuals in groups of different sizes including their behaviour without any disturbance and responses to both mine-related activities and natural factors.

Notes to guide the work include:

- Systematic surveys will be conducted along all Project roads during spring, summer and fall periods.
- The survey team will consist of a driver/observer and a second observer when available.

Surveys should be performed:

- During spring, summer and fall when caribou may be in the Project area,
- Of caribou at various distances from the road and group sizes, and
- If surveying effects of a convoy, conduct two surveys, one at least an hour before convoy deployment so that a pre-disturbance measurement can be made, and a second survey during the convoy passing by caribou.

3.1 General Field Data

For each survey day, the appropriate general field data will be recorded onto field data sheets supplied in Appendix A and B. A new data sheet will be used for each survey, including additional sheets as necessary to record all observations. General information includes:

- Survey date and start and end times.
- Field personnel (full names on the data sheet header and initials thereafter).
- Weather conditions during and prior to sampling (e.g., snow in the last 24 hours, current wind conditions).
- Site description: provide location and description (GPS coordinates, road name and distance marker).
- Photographs or video (if possible):
 - Take a photo of the caribou every time an observation is recorded so that the observations can be verified by a biologist.
 - For any photographs taken, record the picture IDs in the comments field on the field data sheet.
 - Write descriptions of any photos taken for specific reasons.
- General observations/notes of the environment/sampling procedures.
- Any deviation from the SOPs outlined below.

Note: When in doubt take pictures and make field notes explaining the situation, your response or consequent changes in methods. It is better to have more data/notes than not enough when interpreting the results later on.

3.2 General Equipment List

- A GPS unit with waypoints of road km markings.
- Field data sheets (Appendix A and B), clipboard, pencils, or iPad with data form.
- A timer capable of alarm setting for repeat time intervals (i.e., can be set to go off every three minutes, like a smart phone).
- Binoculars or spotting scope.
- Compass (or use compass function on GPS unit).
- Portable weather station (temperature and wind speed).
- Camera.
- Rangefinder.

3.3 Field Methods

3.3.1 Group Selection

The survey day will begin with a reconnaissance survey to determine how many caribou groups are present near the road, how large they are, and where they are. This will be accomplished by driving from the mine site along the road and noting relevant information about the groups and their sizes along the way (using the standard, tablet-based road survey form). Observers will preferentially choose groups to survey to across group sizes and distances from the road. Ideally, caribou would be sampled in an even distribution across these variables and along the AWAR and Haul Road. However, the nature of caribou and field sampling mean that observers may need to survey what caribou are available, rather than what is “ideal”.

Allow approximately one hour to survey each group. If the length of the survey day permits all groups to be surveyed then they should all be surveyed. If there are more groups to survey than the time in the day, then do the following:

1. Look at how many of each group size (bullet list below) have been surveyed to date. If one of them is under-represented and there is a group of that size on the road, then go survey that group. If there is more than one group of that size, choose it randomly using the procedure in step 4.
 - 1 or 2 caribou
 - 3 to 25 caribou
 - 26 to 50 caribou
 - >50 caribou
2. During 2020, few groups of caribou within 300 m of the road were observed or sampled. Preferentially choose groups of caribou within 300 m of the road, with a soft target of approximately 1/3 of samples in this area.
3. If any Project-tolerant caribou are observed (e.g., caribou observed near the road or mine site for more than 72 hours in summer and 48 hours in other seasons; TEMP 2020), then select these animals for sampling. In Appendix A data sheet, record that the group is Project tolerant in the notes field.
4. If there are multiple groups available, choose groups to fill in an even distribution of group sizes and distances from roads.

Record all caribou groups observed during the reconnaissance survey in the standard, tablet-based survey form and submit that data along with the results of behaviour monitoring.

3.3.2 Selection of an Observation Site

Find a safe parking location and follow site safety protocols. The observation location may be the vehicle itself or a safe location off the road. If observers exit the vehicle, the observation location should be chosen where observer activity is not likely to influence caribou behaviour and where the observer can remain comfortable for a period of approximately 45 minutes without needing to move. Ideally, the vehicle should be stopped a minimum of ~250-300 m from the caribou – adapt this distance as needed. If the animals are staring at the truck or moving away, then the truck is too close.

3.3.3 Data Recording

Allow 15 minutes between arrival and the time at which behavioural observations begin. This is to allow animals to return to behaviour that may have been interrupted by the arrival of observers. In the time before recording behaviour, fill in the top portion of the form with location, weather, and group size information.

After 15 minutes, begin recording data in the form in Appendix A. The start time to record is the time that observations begin.

3.3.3.1 Location

Location: Collect a waypoint of the location from which the observations will be made. Note the waypoint number and the UTM coordinates on the data sheet.

Road Status: If observing caribou on a road, record whether the AWAR or Haul Road are open or closed.

Distance from observer to caribou: Estimate the distance to the group using a laser rangefinder and, using a compass or the GPS unit compass feature, record the bearing (0° to 360°) to the group being observed. If the group of caribou is large and spread over a considerable distance from the road, estimate the distance to nearby caribou and the caribou furthest away that will be sampled. If some caribou in the group are too far away to sample, then do not include them in the distance estimate.

Distance from road to caribou: If caribou are closer to the road than to the observer, as is the case when the observer vehicle is stopped at a distance, visually estimate the distance from the road to the group.

East vs. West: Note if the group is on the east or west side of the road. At the end of the 30 minute observation period return to the top of the form and record (Y or N) if the group crossed the road during the survey period. If monitoring at the mine site or Whale Tail, leave this section blank.

Direction of Travel: Note if caribou are moving parallel to the road, perpendicular to the road, or are stationary.

3.3.3.2 Weather Conditions

Use the portable weather station to record:

- Air temperature;
- Wind speed;
- Wind direction;
- Precipitation; and
- Humidity (if the weather station has this function).

3.3.3.3 Road Structure

At the location of the caribou group, record the road characteristics:

- Height of the road above the tundra (m);
- Slope of the road side (with of the slope in m);
- Approximate height of snow bank (m); and
- Any structures, such as bridges, present.

3.3.3.4 Caribou Behaviour

Individuals in the group being observed will be categorized when the survey starts and at three minute intervals. Standardized behaviour categories will be used (Section 3.3.4). The standardization of behaviour is necessary for clarity and data analysis. If the observed behaviour does not fit within any of the categories then observers have the option of noting other behaviour in the comments field. However, this should be used only rarely as most behaviour should fit in the primary categories listed below. If noting a new/different behaviour, please take a photo or video of the caribou.

The data to record at each three-minute interval are the numbers of individuals in the group exhibiting each behaviour at that time. Do not attempt to characterize the behaviour that occurred during the interval. If the group is too large to be counted in each interval, choose an identifiable subset of the group, count the individuals exhibiting each behaviour at each time interval, and add a comment that a subset of the group was sampled. For clarity, observers should record zero values for behaviours not observed.

Indicate the total group size at the top of the data form, not the size of the subset whose behaviour was recorded. Count the number of caribou up to 100 animals, and then record group size in categories above 100; 100-200 animals, etc. (see Appendix A).

Practically, the easiest way to do this is to have the observer scan across the group of caribou from Left to Right, calling out the behaviour of each animal, while the recorder adds tick marks to the data sheet. When complete, count up the tick marks.

Sex: Note the sex of the group. This can be difficult in large groups, so record in the following categories: mostly males, mostly females, mostly females with calves, juveniles, or mixed group.

3.3.3.5 Disturbance Events

Caribou behaviour is expected to vary in response to some disturbance events. The bottom of the data form should be used to record any potential disturbance events evident to the observer regardless of whether caribou respond to them. The main categories of events are included in the data sheet:

- Light truck;
- Haul truck;
- Road maintenance vehicle (e.g., grader);
- ATV or skidoo;
- Aircraft; and
- Predator (note species).

Record the number and approximate speed of the vehicle (regular driving speed, or moving slowly, ~10 km/h, past caribou).

Record the time of the disturbance event (0:00 to 30:00 of the survey), indicate which type of disturbance was observed in the appropriate column. Record any additional comments and records of photographs taken in the final column.

Record whether the vehicle stopped when approaching caribou or continued to drive slowly. If possible, coordinate with passing vehicles on the road to have some vehicles stop for 10 minutes, and others drive by slowly.

3.3.4 Behaviour Classification

With the exception of Alert behaviour, the primary behaviour categories and their definitions follow classifications from the Government of Northwest Territories (GNWT 2017). The categories appear as columns on the data form, with descriptions on the form. The behaviour categories are:

- **Feeding** – standing or walking posture, with the muzzle touching or nearly touching the ground; can be ingesting food or not; head down or moving from side to side.
- **Lying down** – bedded on the ground, either upright or lying on its side, in a resting or ruminating position.
- **Standing** – stationary in an upright, standing posture with head elevated above the ground, and usually above the knees; if cow is nursing, if possible record the time spend nursing.
- **Alert** – head up scanning horizon or focused on a source of disturbance (e.g., vehicle, predator, human).
- **Walking** – similar to standing posture but moving at a slow gait (<5 km/h).
- **Trotting/running** – similar to standing posture but moving rapidly in symmetrical or asymmetrical gait.

Other behaviours that may be observed (record in comments field on form) are:

- **Nursing** – calf is suckling cow.
- **Sparring** – two males in contact.
- **Insect response behavior** – twitching, stamping, tossing head.

In the comments, record if any animals are moving towards the road, parallel or away from the road.

4. DATA MANAGEMENT

Please scan all data sheets at the end of the day. Data from behaviour surveys should be entered into Excel. Data from group selection surveys (standard tablet data form) and behaviour surveys should be delivered at the end of each month to ERM for QA/QC.

5. CLOSURE

This SOP has been produced for Agnico Eagle Meadowbank Division by ERM Canada. Please contact the authors with any questions.

DRAFT

Nina Morrell, MSc
Wildlife Biologist, Statistician
Nina.Morrell@erm.com

DRAFT

Dr. Greg Sharam
Technical Director, Wildlife
Greg.Sharam@erm.com

6. REFERENCES

GNWT-ENR. 2017. *Caribou behaviour monitoring field protocols*. Government of the Northwest Territories Environment and Natural Resources, 10 page unpublished document. Yellowknife, NT.

TEMP. 2020. Meadowbank Division. Terrestrial Ecosystem Management Plan. Version 8, April 2020

Meadowbank Gold Mine: Caribou Behaviour Monitoring Data Sheet

Date:		Time (24 hr [00:00 to 24:00]) Start:		End:			
Observers:							
Location Waypoint number:		UTM Easting:		UTM Northing:			
Road name and distance marker:		Distance from caribou to observer location (use rangefinder):					
Bearing:		Distance from caribou to road (if different):					
Is group location East or West of the Road at start of survey? Circle one: E W			Did the group cross the road during the survey? Circle one: Y N				
Caribou group size: Exact count (up to 100): _____ Estimated size for larger groups. Circle one: 101-200 201-500 501-1000 >1000							
Record sex of group (mostly males, females, females with calves, mostly juveniles, or mixed group):							
Record direction of travel as parallel, perpendicular, or stationary relative to road:							
Temperature: ____°C Wind speed: _____ km/h Wind direction: _____° Humidity: ____% Days since last snow or wind event: _____							
Weather observations:							
Road: Open? Closed?		Road Height:		Road Side Width:			
Structures/snowbank Present:							
Observation time from start of survey	Number of animals exhibiting each behaviour type						Comments and photo numbers (Note if any caribou crossed road or travelled along road)
	Feeding	Lying Down	Standing	Walking	Alert	Trotting or running	
0 minutes							
3 minutes							
6 minutes							
9 minutes							
12 minutes							
15 minutes							
18 minutes							
21 minutes							
24 minutes							
27 minutes							
30 minutes							
Observed disturbance events							
(record time from start of survey and check type of disturbance. Record whether vehicle stopped (s) or drove slowly (d) past caribou)							
Time from start of survey	Light truck	Haul Truck	Road maintenance vehicle (e.g., grader)	ATV	Aircraft	Predator (note species)	Comments and photo numbers. Note other disturbances here

Categories and Definitions of Behaviour¹:

- **Feeding** – standing or walking posture, with the muzzle touching or nearly touching the ground; can be ingesting food or not; head down or moving from side to side.
- **Lying down** – bedded on the ground, either upright or lying on its side, in a resting or ruminating position.
- **Standing** – stationary in an upright, standing posture with head elevated above the ground, and usually above the knees; if cow is nursing, if possible record the time spend nursing.
- **Alert** – head up scanning horizon or focused on a source of disturbance (e.g., vehicle, predator, human).
- **Walking** – similar to standing posture but moving at a slow gait (<5 km/h).
- **Trotting/running** – similar to standing posture but moving rapidly in symmetrical or asymmetrical gait.

Other behaviours that may be observed (record in comments field on form) are:

- **Nursing** – calf is suckling cow.
- **Sparring** – two males in contact.
- **Insect response behavior** – twitching, stamping, tossing head.

¹ Primary source: GNWT-ENR 2017 caribou behaviour monitoring field protocols, courtesy of GNWT Yellowknife, NT.

APPENDIX B DATA FROM CARIBOU BEHAVIOUR SURVEYS

APPENDIX B: DATA FROM CARIBOU BEHAVIOUR SURVEYS

Survey Number	Date	Observers	Waypoint	Road name and distance marker	Distance from caribou to observer location binned	Bearing to caribou group	Is group East or West of survey	Did the group cross the road during the survey
355	3/30/2023	Felix Quessy Savard	NA	AWAR KM 87	100-300	270	West	No
356	3/31/2023	Kendra MacMillan	NA	AWAR KM 57	>1000	150	West	No
357	4/1/2023	Felix Quessy	NA	Haul Road KM 121	300-1000	270	West	No
358	4/1/2023	Felix Quessy	NA	Haul Road KM 129	>1000	270	West	No
359	4/1/2023	Felix Quessy	NA	Haul Road KM 137	>1000	180	West	Yes
360	4/3/2023	Derek Nateela	NA	Haul Road KM 112	300-1000	20	West	No
361	4/4/2023	FQS DN	NA	AWAR KM 92	100-300	215	West	Yes
362	4/5/2023	Derek	NA	AWAR KM 87	100-300	305	West	No
363	3/30/2023	Guillaume Baril & Rowan Woodall	NA	Haul Road KM 169	300-1000	330	East	Yes
364	4/8/2023	Sylvain Singaqti	NA	AWAR KM 95.5	300-1000	90	West	NA
365	4/7/2023	Eric Thomson	NA	AWAR KM 93	300-1000	340	West	No
366	4/14/2023	Louis Dubois	NA	AWAR KM 93	300-1000	0	West	No
367	4/12/2023	Louis Dubois	NA	Haul Road KM 130	300-1000	300	East	No
368	4/10/2023	Eric Thomson	NA	Haul Road KM 111	100-300	300	West	No
369	4/15/2023	Thomas Dahl	NA	Haul Road KM 174	>1000	360	West	No
370	4/15/2023	Thomas Dahl	NA	Haul Road KM 174	>1000	360	West	No
371	4/14/2023	Eric Thomson	NA	Haul Road KM 118	300-1000	300	West	No
372	4/14/2023	Eric Thomson	NA	Haul Road KM 112	300-1000	300	East	No
373	4/14/2023	Eric Thomson	NA	Haul Road KM 112	>1000	360	West	No
374	4/15/2023	Eric Thomson	NA	AWAR KM 101	300-1000	300	West	No
375	4/12/2023	Sylvain Singaqti	NA	AWAR KM 51	50-100	0	West	No
376	4/9/2023	Eric Thomson	NA	Haul Road KM 122	>1000	330	West	No
377	4/10/2023	Guillaume Baril, Kathleen Newberry	NA	Haul Road KM 178	100-300	252	East	Yes
378	4/10/2023	Guillaume Baril, Kathleen Newberry	NA	Haul Road KM 175	>1000	110	West	No
379	4/11/2023	Guillaume Baril, Kathleen Newberry	NA	Haul Road KM 176	100-300	55	West	No
380	4/11/2023	Guillaume Baril, Kathleen Newberry	NA	Haul Road KM 178	300-1000	120	West	No
381	4/14/2023	Kathleen Newberry	NA	Haul Road KM 176	300-1000	150	West	No
382	4/14/2023	Laurence Archambault & Kathleen Newberry	NA	Haul Road KM 174	300-1000	270	West	No
383	4/14/2023	Laurence Archambault & Kathleen Newberry	NA	Haul Road KM 165	>1000	180	West	No
384	4/15/2023	Thomas Dahm	NA	Haul Road KM 171	>1000	360	West	No
385	4/16/2023	Eric Thomson	NA	AWAR KM 96	100-300	360	West	No
386	4/16/2023	Eric Thomson	NA	AWAR KM 81	>1000	360	West	No
387	4/18/2023	Thomas Dahm Kendra Macmillan Leonard sweeting	NA	Haul Road KM 177	300-1000	360	West	No
388	4/17/2023	Kendra MacMillan Sylvain Singaqti	NA	Haul Road KM 154	300-1000	45	West	NA
389	4/19/2023	Kendra MacMillan Sylvain Singaqti	NA	AWAR KM 95	100-300	45	West	No
390	4/19/2023	Kendra MacMillan Sylvain Singaqti	NA	AWAR KM 93	>1000	30	West	No
391	4/30/2023	Derek Nateela	NA	AWAR KM 68	>1000	245	West	No
392	5/23/2023	Thomas Dahm	NA	AWAR KM 83	>1000	270	West	No
393	6/21/2023	Felix Quessy	NA	Meadowbank KM NA	50-100	0	East	No
394	10/24/2023	Eric Leonard	NA	Haul Road KM 172	100-300	90	East	No
395	10/22/2023	GUI Baril Eric Leonard	NA	Haul Road KM 116	100-300	10	East	No
396	10/24/2023	Eric Leonard Guillaume Baril	NA	Haul Road KM 133	100-300	0	East	No
397	10/27/2023	Laurence Archambault	NA	Haul Road KM 173	100-300	90	East	No

APPENDIX B: DATA FROM CARIBOU BEHAVIOUR SURVEYS

Survey Number	Date	Caribou group size	Temperature	Wind speed km h	Wind direction	Humidity	Days since last snow or wind event	Weather observations	Road Height cm	Road side width cm	Structures present	Feeding 0	Laying 0
355	3/30/2023	100	-27	20	E	0	1	Precipitation: 0 Sunny	100	1000	No	5	0
356	3/31/2023	56	-17	30	NE	0	3	Precipitation: 0	100	500	NA	0	56
357	4/1/2023	30	-21	10	NE	0	1	Precipitation: 0 Sunny	0	900	No	10	0
358	4/1/2023	10	-21	10	E	0	1	Precipitation: 0 Sunny	200	700	No	0	0
359	4/1/2023	NA	-19	10	E	0	1	Precipitation: 0 Sunny	100	900	No	0	48
360	4/3/2023	390	-16	20	NW	50	2	Precipitation: Sunny Clear	100	1500	No	20	10
361	4/4/2023	40	-25	10	NW	0	1	Precipitation: 0 Sunny	0	1000	No	5	0
362	4/5/2023	56	-16	10	N	20	1	Precipitation: Nada Cloudy	200	1200	Nada	0	0
363	3/30/2023	2	-22	20	NW	45	1	Precipitation: None	100	500	NA	0	0
364	4/8/2023	50	-7	30	SW	0	0	Precipitation: Blowing snow Blowing snow	0	1600	No	46	4
365	4/7/2023	NA	-18	10	SW	0	0	Precipitation: 0 Sunny	500	600	0	0	0
366	4/14/2023	93	-21	5	NW	80	9	Precipitation: 0 Sunny	0	1200	Flags	0	0
367	4/12/2023	34	-20	5	W	80	7	Precipitation: 0 Sunny	0	1800	Flags	0	0
368	4/10/2023	NA	-11	20	N	0	0	Precipitation: 0 Cloudy	0	1000	0	1	0
369	4/15/2023	18	-17	15	N	0	0	Precipitation: 0 Sunny	300	300	0	0	0
370	4/15/2023	18	-17	15	N	0	0	Precipitation: 0 Sunny	300	300	0	0	0
371	4/14/2023	47	-16	10	N	0	0	Precipitation: 0 Sunny	1000	800	0	0	0
372	4/14/2023	47	-14	10	N	0	0	Precipitation: 0 0	1000	800	Vault	0	0
373	4/14/2023	247	-14	10	N	0	0	Precipitation: 0 Sunny	1500	1200	Vault	3	7
374	4/15/2023	4	-13	10	N	0	0	Precipitation: 0 Sunny	100	600	0	4	0
375	4/12/2023	433	-13	9	NE	0	4	Precipitation: 0 Sunny	0	1500	0	7	73
376	4/9/2023	NA	-7	10	NW	0	0	Precipitation: 0 Cloudy	3000	800	0	0	0
377	4/10/2023	3	-8	20	N	77	0	Precipitation: 0	100	900	Tower light, flags	3	0
378	4/10/2023	55	-9	20	N	77	0	Precipitation: 0	100	800	None	55	0
379	4/11/2023	47	-7	11	NW	70	0	Precipitation: None	100	900	None	44	0
380	4/11/2023	48	-13	13	NW	68	1	Precipitation: None	100	900	NA	0	3
381	4/14/2023	16	-20	20	N	67	0	Precipitation: 0	100	900	None	10	0
382	4/14/2023	16	-17	18	NW	71	0	Precipitation: 0 Sunny	0	2000	None	16	0
383	4/14/2023	NA	-11	18	NW	71	0	Precipitation: 0 Sunny	0	2500	None	3	0
384	4/15/2023	8	-14	15	S	0	0	Precipitation: 0 Sunny and clear	2000	1000	0	0	0
385	4/16/2023	2	-7	5	W	0	0	Precipitation: 0 Cloudy	0	800	0	2	0
386	4/16/2023	1	-12	12	S	0	0	Precipitation: 0 Cloudy	0	800	0	0	0
387	4/18/2023	102	-12	9	SE	0	0	Precipitation: 0 Sun with cloud	500	1500	0	88	0
388	4/17/2023	31	-8	15	SE	89	8	Precipitation: 0 Cloudy	0	0	0	0	0
389	4/19/2023	7	-18	30	NW	20	9	Precipitation: Light snow Snowing	400	400	NA	0	0
390	4/19/2023	3	-18	30	NW	30	9	Precipitation: Light snow Light snow	400	400	NA	0	1
391	4/30/2023	2	-14	5	S	50	1	Precipitation: Foggy Cloudy	100	1200	Ridge, ccan	0	0
392	5/23/2023	2	-8	40	NW	0	0	Precipitation: 0 Cold , windy , some light snow that didn't stay on ground	200	1000	0	0	0
393	6/21/2023	4	15	10	E	0	3	Precipitation: 0 Sunny	100	800	No	0	4
394	10/24/2023	11	-5	5	E	98	0	Precipitation: Snowing Light snow	200	1000	None	10	0
395	10/22/2023	8	-5	50	W	90	0	Precipitation: 0 Windy, blowing snow , visibility	300	1000	Road	0	0
396	10/24/2023	2	-5	25	E	98	0	Precipitation: None Sun/cloud	200	1000	None	2	0
397	10/27/2023	87	-12	12	NW	93	0	Precipitation: None Sun and cloud	0	2000	None	24	0

APPENDIX B: DATA FROM CARIBOU BEHAVIOUR SURVEYS

Survey Number	Date	Standing 0	Walking 0	Alert 0	Trotting 0	Feeding 3	Laying 3	Standing 3	Walking 3	Alert 3	Trotting 3	Feeding 6	Laying 6	Standing 6	Walking 6	Alert 6	Trotting 6	Feeding 9	Laying 9
355	3/30/2023	0	5	0	0	0	0	0	0	10	0	3	0	0	3	0	0	0	0
356	3/31/2023	0	0	0	0	0	64	0	2	0	0	0	54	0	2	0	0	0	56
357	4/1/2023	5	15	0	0	10	0	5	15	0	0	21	0	0	9	0	0	12	0
358	4/1/2023	0	10	0	0	0	0	0	10	0	0	0	7	3	0	0	0	5	0
359	4/1/2023	2	0	0	0	0	46	2	2	0	0	0	50	0	0	0	0	0	45
360	4/3/2023	0	0	0	0	5	10	5	10	0	0	0	20	10	0	0	0	0	0
361	4/4/2023	0	35	0	0	8	0	0	32	0	0	0	0	0	33	7	0	6	0
362	4/5/2023	0	56	0	0	0	0	1	49	3	3	25	0	16	15	0	0	35	0
363	3/30/2023	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0
364	4/8/2023	0	0	0	0	38	12	0	0	0	0	30	10	10	0	0	0	0	10
365	4/7/2023	0	30	0	0	0	0	0	30	0	0	0	0	1	25	3	1	0	0
366	4/14/2023	0	93	0	0	0	0	0	93	0	0	0	0	0	93	0	0	0	0
367	4/12/2023	0	34	0	0	0	0	0	34	0	0	0	0	0	34	0	0	0	0
368	4/10/2023	4	0	0	0	5	0	0	0	0	0	5	0	0	0	0	0	5	0
369	4/15/2023	0	18	0	0	0	0	0	18	0	0	0	0	0	18	0	0	0	0
370	4/15/2023	0	18	0	0	0	0	0	18	0	0	0	0	0	18	0	0	0	0
371	4/14/2023	0	47	0	0	0	0	0	47	0	0	0	0	0	47	0	0	0	0
372	4/14/2023	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	2	0
373	4/14/2023	0	0	0	0	1	7	2	0	0	0	4	6	0	0	0	0	4	6
374	4/15/2023	0	0	0	0	2	0	2	0	0	0	3	0	0	1	0	0	4	0
375	4/12/2023	0	0	0	0	5	75	0	0	0	0	5	75	0	0	0	0	4	76
376	4/9/2023	5	5	0	0	0	0	2	8	0	0	0	0	0	10	0	0	0	0
377	4/10/2023	0	0	0	0	3	0	0	0	0	0	3	0	0	0	0	0	3	0
378	4/10/2023	0	0	0	0	44	0	0	11	0	0	38	0	0	14	0	0	41	0
379	4/11/2023	0	3	0	0	46	0	0	1	0	0	46	1	0	1	0	0	38	2
380	4/11/2023	45	0	0	0	0	13	29	6	0	0	0	44	4	0	0	0	0	48
381	4/14/2023	4	2	0	0	7	0	0	5	0	0	4	0	0	6	2	0	0	0
382	4/14/2023	0	0	0	0	14	0	2	0	0	0	14	0	0	0	0	0	13	0
383	4/14/2023	0	0	0	0	1	0	0	0	2	0	2	0	0	0	1	0	3	0
384	4/15/2023	0	8	0	0	0	0	0	18	0	0	0	0	0	8	0	0	0	0
385	4/16/2023	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	1	0
386	4/16/2023	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0
387	4/18/2023	0	18	0	0	88	0	0	18	0	0	94	0	0	8	0	0	92	0
388	4/17/2023	0	31	0	0	29	0	0	0	2	0	0	0	0	0	31	0	0	0
389	4/19/2023	0	2	0	0	0	0	2	0	0	0	0	0	0	2	0	0	0	0
390	4/19/2023	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1
391	4/30/2023	2	0	2	0	0	0	0	2	2	0	0	0	2	0	0	0	0	0
392	5/23/2023	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0
393	6/21/2023	0	0	0	0	0	4	0	0	0	0	0	4	0	0	0	0	0	2
394	10/24/2023	0	0	1	0	10	0	0	1	0	0	11	0	0	0	0	0	11	0
395	10/22/2023	8	0	0	0	0	0	7	1	0	0	0	0	0	8	0	0	0	0
396	10/24/2023	0	0	0	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0
397	10/27/2023	1	1	0	0	18	0	0	8	0	0	25	0	0	0	0	0	13	0

APPENDIX B: DATA FROM CARIBOU BEHAVIOUR SURVEYS

Survey Number	Date	Standing 9	Walking 9	Alert 9	Trotting 9	Feeding 12	Laying 12	Standing 12	Walking 12	Alert 12	Trotting 12	Feeding 15	Laying 15	Standing 15	Walking 15	Alert 15	Trotting 15
355	3/30/2023	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
356	3/31/2023	0	0	0	0	0	56	0	0	0	0	0	56	0	0	0	0
357	4/1/2023	0	18	0	0	8	0	0	28	0	0	10	0	0	26	0	0
358	4/1/2023	0	2	0	0	3	0	0	3	0	0	0	0	0	6	0	0
359	4/1/2023	0	5	0	0	0	40	2	8	0	0	0	48	0	2	0	0
360	4/3/2023	0	30	30	0	0	0	0	30	30	0	0	0	0	30	30	0
361	4/4/2023	0	33	1	0	2	0	0	28	0	0	0	0	0	30	0	0
362	4/5/2023	5	16	0	0	50	0	0	4	2	0	50	3	2	1	0	0
363	3/30/2023	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0
364	4/8/2023	0	10	30	0	0	0	0	0	0	50	0	0	0	0	0	50
365	4/7/2023	0	30	0	0	0	0	0	28	2	0	0	0	0	30	0	0
366	4/14/2023	0	93	0	0	0	0	0	93	0	0	0	0	0	93	0	0
367	4/12/2023	0	34	0	0	0	0	0	34	0	0	0	0	0	0	0	34
368	4/10/2023	0	0	0	0	5	0	0	0	0	0	4	0	1	0	0	0
369	4/15/2023	0	18	0	0	0	0	0	18	0	0	0	0	0	18	0	0
370	4/15/2023	0	18	0	0	0	0	0	18	0	0	0	0	0	18	0	0
371	4/14/2023	0	47	0	0	0	0	0	47	0	0	0	0	0	47	0	0
372	4/14/2023	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0
373	4/14/2023	0	0	0	0	0	4	6	0	0	0	1	2	5	2	0	0
374	4/15/2023	0	0	0	0	1	0	3	0	0	0	0	0	3	1	0	0
375	4/12/2023	0	0	0	0	0	79	1	0	0	0	1	79	0	0	0	0
376	4/9/2023	0	10	0	0	0	0	0	10	0	0	0	0	0	10	0	0
377	4/10/2023	0	0	0	0	3	0	0	0	0	0	2	0	0	1	0	0
378	4/10/2023	0	11	0	0	37	0	0	12	0	0	42	0	0	3	0	0
379	4/11/2023	0	8	0	0	34	2	11	1	0	0	24	13	8	3	0	0
380	4/11/2023	0	0	0	0	0	48	0	0	0	0	0	20	0	0	28	0
381	4/14/2023	1	19	0	0	10	0	4	5	0	0	4	0	1	4	0	0
382	4/14/2023	0	0	1	0	13	1	0	0	0	0	13	1	0	0	0	0
383	4/14/2023	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
384	4/15/2023	0	8	0	0	0	0	0	8	0	0	0	0	0	18	0	0
385	4/16/2023	1	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0
386	4/16/2023	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
387	4/18/2023	0	10	0	0	90	0	0	12	0	0	89	0	0	13	0	0
388	4/17/2023	0	30	1	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA
389	4/19/2023	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0
390	4/19/2023	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0
391	4/30/2023	2	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0
392	5/23/2023	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0
393	6/21/2023	2	0	0	0	0	3	1	0	0	0	0	3	1	0	0	0
394	10/24/2023	0	0	0	0	9	0	2	0	0	0	10	0	1	0	0	0
395	10/22/2023	7	0	0	0	0	0	5	2	0	0	6	0	0	0	0	0
396	10/24/2023	0	2	0	0	2	0	0	0	0	0	2	0	0	0	0	0
397	10/27/2023	0	0	0	0	12	0	0	0	0	0	3	0	0	3	0	0

APPENDIX B: DATA FROM CARIBOU BEHAVIOUR SURVEYS

Survey Number	Date	Feeding 18	Laying 18	Standing 18	Walking 18	Alert 18	Trotting 18	Feeding 21	Laying 21	Standing 21	Walking 21	Alert 21	Trotting 21	Feeding 24	Laying 24	Standing 24	Walking 24
355	3/30/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
356	3/31/2023	0	55	1	0	0	0	0	56	0	0	0	0	0	56	0	0
357	4/1/2023	15	0	0	21	0	0	18	0	0	32	0	0	24	0	0	26
358	4/1/2023	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
359	4/1/2023	0	46	4	0	0	0	0	30	10	10	0	0	0	40	10	0
360	4/3/2023	30	0	30	0	0	0	0	0	0	30	0	0	NA	NA	NA	NA
361	4/4/2023	0	0	0	0	0	30	0	0	0	0	0	0	NA	NA	NA	NA
362	4/5/2023	53	3	0	0	0	0	31	0	5	20	0	0	45	0	4	7
363	3/30/2023	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0
364	4/8/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
365	4/7/2023	0	0	0	30	0	0	0	0	3	27	0	0	0	0	1	29
366	4/14/2023	0	0	0	76	0	0	0	0	0	38	0	0	0	0	0	21
367	4/12/2023	0	0	0	34	0	0	0	0	0	34	0	0	0	0	0	34
368	4/10/2023	2	0	0	3	0	0	3	0	0	2	0	0	5	0	0	0
369	4/15/2023	0	0	0	18	0	0	0	0	0	18	0	0	0	0	0	18
370	4/15/2023	0	0	0	18	0	0	0	0	0	18	0	0	0	0	0	18
371	4/14/2023	0	0	0	47	0	0	0	0	0	47	0	0	0	0	0	47
372	4/14/2023	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
373	4/14/2023	NA	NA	NA	NA	NA	NA	4	3	2	1	0	0	4	6	0	0
374	4/15/2023	4	0	0	0	0	0	4	0	0	0	0	0	2	0	2	0
375	4/12/2023	2	78	0	0	0	0	1	79	0	0	0	0	1	79	0	0
376	4/9/2023	0	0	0	10	0	0	0	0	0	10	0	0	0	0	0	8
377	4/10/2023	3	0	0	0	0	0	3	0	0	0	0	0	2	0	0	1
378	4/10/2023	38	0	0	4	0	0	40	0	0	2	0	0	37	1	0	4
379	4/11/2023	28	18	1	1	0	0	22	20	6	0	0	0	17	22	0	9
380	4/11/2023	8	37	3	0	0	0	1	46	1	0	0	0	0	48	0	0
381	4/14/2023	0	0	0	8	0	0	0	0	0	4	1	0	0	0	0	0
382	4/14/2023	12	1	0	1	0	0	11	1	0	0	0	0	10	1	0	0
383	4/14/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
384	4/15/2023	0	0	0	8	0	0	0	0	0	8	0	0	0	0	0	8
385	4/16/2023	1	0	1	0	0	0	2	0	0	0	0	0	1	0	0	1
386	4/16/2023	0	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0
387	4/18/2023	87	0	0	15	0	0	98	0	0	4	0	0	67	0	0	0
388	4/17/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
389	4/19/2023	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	2
390	4/19/2023	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1
391	4/30/2023	0	0	1	1	0	0	0	0	0	2	0	0	0	0	0	2
392	5/23/2023	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	2
393	6/21/2023	1	3	0	0	0	0	0	4	0	0	0	0	0	4	0	0
394	10/24/2023	8	0	4	2	0	0	14	0	1	0	0	0	6	0	0	9
395	10/22/2023	0	1	5	0	1	0	0	1	6	0	0	0	0	0	7	0
396	10/24/2023	0	0	0	2	0	0	2	0	0	0	0	0	2	0	0	0
397	10/27/2023	5	0	0	0	0	0	1	0	0	2	0	0	0	0	0	1

APPENDIX B: DATA FROM CARIBOU BEHAVIOUR SURVEYS

Survey Number	Date	Alert 24	Trotting 24	Feeding 27	Laying 27	Standing 27	Walking 27	Alert 27	Trotting 27	Feeding 30	Laying 30	Standing 30	Walking 30	Alert 30	Trotting 30
355	3/30/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
356	3/31/2023	0	0	0	56	0	0	0	0	0	56	0	0	0	0
357	4/1/2023	0	0	12	0	0	38	0	0	25	0	0	25	0	0
358	4/1/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
359	4/1/2023	0	0	0	35	5	10	0	0	0	40	5	5	0	0
360	4/3/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
361	4/4/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
362	4/5/2023	0	0	50	0	6	0	0	0	54	0	0	2	0	0
363	3/30/2023	0	0	0	0	0	2	0	0	0	0	0	2	0	0
364	4/8/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
365	4/7/2023	0	0	0	0	0	30	0	0	0	0	0	30	0	0
366	4/14/2023	0	0	0	0	0	36	0	0	0	0	0	69	0	0
367	4/12/2023	0	0	0	0	0	34	0	0	0	0	0	0	0	0
368	4/10/2023	0	0	5	0	0	0	0	0	5	0	0	0	0	0
369	4/15/2023	0	0	0	0	0	18	0	0	0	0	0	18	0	0
370	4/15/2023	0	0	0	0	0	18	0	0	0	0	0	18	0	0
371	4/14/2023	0	0	0	0	0	47	0	0	0	0	0	47	0	0
372	4/14/2023	0	0	0	0	0	0	0	0	0	0	0	2	0	0
373	4/14/2023	0	0	2	0	0	8	0	0	0	0	0	10	0	0
374	4/15/2023	0	0	0	0	4	0	0	0	0	0	3	1	0	0
375	4/12/2023	0	0	1	79	0	0	0	0	1	79	0	0	0	0
376	4/9/2023	0	2	0	0	0	10	0	0	0	0	0	10	0	0
377	4/10/2023	0	0	2	0	0	0	1	0	0	0	0	3	0	0
378	4/10/2023	0	0	35	0	0	5	0	0	36	0	0	1	0	0
379	4/11/2023	0	0	20	27	0	1	0	0	20	27	0	1	0	0
380	4/11/2023	0	0	0	48	0	0	0	0	0	48	0	0	0	0
381	4/14/2023	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
382	4/14/2023	0	0	7	1	2	0	0	0	7	2	0	0	0	0
383	4/14/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
384	4/15/2023	0	0	0	0	0	8	0	0	0	0	0	8	0	0
385	4/16/2023	0	0	0	0	0	2	0	0	2	0	0	0	0	0
386	4/16/2023	0	0	1	0	0	0	0	0	0	0	0	1	0	0
387	4/18/2023	9	26	82	0	0	10	0	0	72	0	0	20	0	0
388	4/17/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
389	4/19/2023	0	0	0	0	0	2	0	0	0	0	0	2	0	0
390	4/19/2023	0	0	1	0	0	0	0	0	0	0	0	1	0	0
391	4/30/2023	0	0	0	0	0	2	0	0	0	0	0	2	0	0
392	5/23/2023	0	0	0	0	0	2	0	0	0	0	0	2	0	0
393	6/21/2023	0	0	0	4	0	0	0	0	2	2	0	0	0	0
394	10/24/2023	0	0	15	0	0	0	0	0	14	0	1	0	0	0
395	10/22/2023	0	0	5	0	0	0	0	2	7	0	0	0	0	0
396	10/24/2023	0	0	2	0	0	0	0	0	1	0	1	0	0	0
397	10/27/2023	0	0	12	0	0	0	0	0	18	0	0	5	0	0

APPENDIX B: DATA FROM CARIBOU BEHAVIOUR SURVEYS

Survey Number	Date	Disturbance 0	Disturbance 3	Disturbance 6	Disturbance 9	Disturbance 12	Disturbance 15	Disturbance 18	Disturbance 21	Disturbance 24	Disturbance 27	Disturbance 30
355	3/30/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
356	3/31/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
357	4/1/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
358	4/1/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
359	4/1/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
360	4/3/2023	NA	NA	NA	NA	Convoy	Convoy	Convoy	NA	NA	NA	NA
361	4/4/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
362	4/5/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
363	3/30/2023	NA	Heavy Equipment	NA	Heavy Equipment	NA	Heavy Equipment	Heavy Equipment	NA	NA	NA	NA
364	4/8/2023	NA	NA	NA	NA	Light Truck	Light Truck	NA	NA	NA	NA	NA
365	4/7/2023	NA	NA	Light Truck	NA	NA	NA	NA	NA	NA	NA	NA
366	4/14/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
367	4/12/2023	NA	NA	NA	NA	Light Truck	NA	NA	NA	NA	NA	NA
368	4/10/2023	NA	NA	NA	NA	NA	NA	Convoy	NA	NA	NA	NA
369	4/15/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
370	4/15/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
371	4/14/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
372	4/14/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
373	4/14/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
374	4/15/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
375	4/12/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
376	4/9/2023	NA	NA	NA	NA	NA	NA	NA	NA	Convoy	NA	NA
377	4/10/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	Light Truck	NA
378	4/10/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
379	4/11/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
380	4/11/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
381	4/14/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
382	4/14/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
383	4/14/2023	NA	NA	NA	NA	Convoy	Convoy	NA	NA	NA	NA	NA
384	4/15/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
385	4/16/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
386	4/16/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
387	4/18/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
388	4/17/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
389	4/19/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
390	4/19/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
391	4/30/2023	NA	Light Truck	NA	NA	NA	NA	NA	NA	NA	NA	NA
392	5/23/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Convoy
393	6/21/2023	NA	Aircraft	NA	NA	NA	NA	NA	NA	NA	NA	NA
394	10/24/2023	NA	NA	Heavy Equipment	Heavy Equipment	NA	Tanker	NA	NA	Tanker	Heavy Equipment	NA
395	10/22/2023	Tanker	NA	NA	NA	Heavy Equipment	Heavy Equipment	Heavy Equipment	NA	NA	Heavy Equipment	NA
396	10/24/2023	Heavy Equipment	NA	NA	NA	NA	Light Truck	NA	NA	NA	NA	NA
397	10/27/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX B: DATA FROM CARIBOU BEHAVIOUR SURVEYS

Survey Number	Date	Year	Long	Lat	Reconnaissance Survey	Project Tolerant Info	Distance from caribou to road	Caribou group size estimate	Size of subset	Dominant group sex	Road open or closed
355	3/30/2023	2023	-96.23867151	64.95483398	Yes	No	100-300 m	NA	10	Mixed group	Closed
356	3/31/2023	2023	-96.35583992	64.7364502	Yes	No	1 - 1.5 km	NA	56	Mixed group	Closed
357	4/1/2023	2023	-96.06180441	65.09124756	Yes	No	300 m -1 km	NA	30	Mixed group	Closed
358	4/1/2023	2023	-96.145	65.16674805	No	No	1 - 1.5 km	NA	10	Mixed group	Closed
359	4/1/2023	2023	-96.2437	65.21966553	Yes	No	1 - 1.5 km	101-200	50	Mixed group	Closed
360	4/3/2023	2023	-95.99454854	65.05688477	Yes	No	300 m -1 km	NA	30	Mixed group	Closed
361	4/4/2023	2023	-96.22457718	64.98718262	Yes	No	100-300 m	NA	40	Mixed group	Closed
362	4/5/2023	2023	-96.25158494	64.94891357	No	No	0-50 m	NA	56	Mixed group	Closed
363	3/30/2023	2023	-96.54625757	65.34368894	Yes	No	0-50 m	NA	2	Mixed group	Open
364	4/8/2023	2023	-96.18693505	65.01470947	No	No	100-300 m	NA	50	Mixed group	Closed
365	4/7/2023	2023	-96.66659717	65.40148926	No	No	300 m -1 km	101-200	30	Mixed group	Closed
366	4/14/2023	2023	-96.66659717	65.40148926	No	No	300 m -1 km	NA	93	Mixed group	Closed
367	4/12/2023	2023	-96.66659717	65.40148926	Yes	Yes Same group reported on wildlife surveys	300 m -1 km	NA	34	Mixed group	Closed
368	4/10/2023	2023	-96.03010645	65.04632568	Yes	No	100-300 m	101-200	5	Mixed group	Closed
369	4/15/2023	2023	-96.60235	65.37683105	Yes	Yes Same group as survey northbound	>1.5 km	NA	18	Mixed group	Closed
370	4/15/2023	2023	-96.60261667	65.36560059	Yes	Yes Same group as survey northbound	>1.5 km	NA	18	Mixed group	Closed
371	4/14/2023	2023	-96.66659717	65.40148926	Yes	No	300 m -1 km	NA	47	Mixed group	Closed
372	4/14/2023	2023	-96.020609	65.080258	Yes	No	300 m -1 km	NA	2	Mixed group	Closed
373	4/14/2023	2023	-96.020609	65.080258	Yes	No	300 m -1 km	NA	10	Mixed group	Closed
374	4/15/2023	2023	-96.14354307	65.05554199	Yes	No	300 m -1 km	NA	4	Mixed group	Closed
375	4/12/2023	2023	-96.37826667	64.69146729	Yes	No	51-100 m	NA	80	Mixed group	Closed
376	4/9/2023	2023	-96.09730336	65.11499023	Yes	No	300 m -1 km	201-500	10	Mixed group	Closed
377	4/10/2023	2023	-96.63238252	65.40477781	No	Yes The environment team did a wildlife survey this morning and noted the 3 caribous at this exact location.	51-100 m	NA	3	Juveniles	Closed
378	4/10/2023	2023	-96.60683474	65.39318845	Yes	No	>1.5 km	NA	55	Mixed group	Closed
379	4/11/2023	2023	-96.6329453	65.40411374	No	No	51-100 m	NA	47	Mixed group	Closed
380	4/11/2023	2023	-96.63295793	65.40411374	Yes	Yes We did a behaviour survey on them a few minutes before this one.	100-300 m	NA	48	Mixed group	Closed
381	4/14/2023	2023	-96.620775	65.40020749	No	No	300 m -1 km	NA	16	Mixed group	Closed
382	4/14/2023	2023	-96.60225916	65.37716036	No	No	300 m -1 km	NA	16	Mixed group	Closed
383	4/14/2023	2023	-96.44545583	65.32177732	No	No	300 m -1 km	101-200	6	Mixed group	Closed
384	4/15/2023	2023	-96.0734269	65.02124023	No	No	>1.5 km	NA	8	Mixed group	Closed
385	4/16/2023	2023	-96.18638513	65.01501465	Yes	No	300 m -1 km	NA	2	Mostly females	Closed
386	4/16/2023	2023	-96.30177276	64.92462158	No	No	1 - 1.5 km	NA	1	Mixed group	Closed
387	4/18/2023	2023	-96.63295793	65.40411374	No	No	300 m -1 km	NA	102	Mixed group	Closed
388	4/17/2023	2023	-96.32189777	64.84722898	Yes	No	300 m -1 km	NA	31	Mixed group	Closed
389	4/19/2023	2023	-96.07342705	65.02124021	No	No	51-100 m	NA	2	Mostly males	Closed
390	4/19/2023	2023	-96.07342705	65.02124021	No	No	>1.5 km	NA	1	Mostly males	Closed
391	4/30/2023	2023	-96.31511618	64.83319092	No	No	100-300 m	NA	2	Mixed group	Closed
392	5/23/2023	2023	-96.09228266	65.03778076	No	No	100-300 m	NA	2	Mixed group	Closed
393	6/21/2023	2023	-96.07369983	65.0211792	No	Yes Walking around airstrip for the past week	51-100 m	NA	4	Mixed group	Open
394	10/24/2023	2023	-96.60003674	65.35797119	No	No	100-300 m	NA	11	Mixed group	Open
395	10/22/2023	2023	-96.66661909	65.40142819	Yes	No	100-300 m	NA	8	Mixed group	Open
396	10/24/2023	2023	-96.66658429	65.40136719	No	No	100-300 m	NA	2	Mixed group	Open
397	10/27/2023	2023	-96.6027059	65.36505124	Yes	No	100-300 m	NA	26	Mixed group	Closed

APPENDIX B: DATA FROM CARIBOU BEHAVIOUR SURVEYS

Survey Number	Date	Road open2	survey id	Type survey caribou	Direction travel survey	survey type	Caribou group size exact	Caribou group size binned	road cross	Season
355	3/30/2023	NA	31482949	Normal	W	01- Behavior	100	51-100	0	Spring Migration
356	3/31/2023	NA	31489794	Normal	NA	01- Behavior	56	51-100	0	Spring Migration
357	4/1/2023	NA	31491320	Normal	S	01- Behavior	30	26-50	0	Spring Migration
358	4/1/2023	NA	31491321	Normal	E	01- Behavior	10	25-Mar	0	Spring Migration
359	4/1/2023	NA	31491322	Normal	S	01- Behavior	101	>100	1	Spring Migration
360	4/3/2023	NA	31502264	Convoy	N	01- Behavior	390	>100	0	Spring Migration
361	4/4/2023	NA	31517336	Convoy	S	01- Behavior	40	26-50	1	Spring Migration
362	4/5/2023	NA	31517337	Normal	W	01- Behavior	56	51-100	0	Spring Migration
363	3/30/2023	NA	31520356	Normal	W	01- Behavior	2	2-Jan	1	Spring Migration
364	4/8/2023	NA	31523310	Convoy	NA	01- Behavior	50	26-50	NA	Spring Migration
365	4/7/2023	NA	31526729	Convoy	N	01- Behavior	101	>100	0	Spring Migration
366	4/14/2023	NA	31548100	Normal	E	01- Behavior	93	51-100	0	Spring Migration
367	4/12/2023	NA	31548932	Convoy	S	01- Behavior	34	26-50	0	Spring Migration
368	4/10/2023	NA	31553241	Convoy	NA	01- Behavior	101	>100	0	Spring Migration
369	4/15/2023	NA	31558160	Normal	N	01- Behavior	18	25-Mar	0	Spring Migration
370	4/15/2023	NA	31558160	Normal	N	01- Behavior	18	25-Mar	0	Spring Migration
371	4/14/2023	NA	31561292	Convoy	S	01- Behavior	47	26-50	0	Spring Migration
372	4/14/2023	NA	31561293	Convoy	E	01- Behavior	47	26-50	0	Spring Migration
373	4/14/2023	NA	31561294	Normal	NA	01- Behavior	247	>100	0	Spring Migration
374	4/15/2023	NA	31568507	Normal	NA	01- Behavior	4	25-Mar	0	Spring Migration
375	4/12/2023	NA	31570231	Normal	NA	01- Behavior	433	>100	0	Spring Migration
376	4/9/2023	NA	31570232	Convoy	E	01- Behavior	201	>100	0	Spring Migration
377	4/10/2023	NA	31584092	Convoy	NA	01- Behavior	3	25-Mar	1	Spring Migration
378	4/10/2023	NA	31584093	Normal	NA	01- Behavior	55	51-100	0	Spring Migration
379	4/11/2023	NA	31584094	Convoy	NA	01- Behavior	47	26-50	0	Spring Migration
380	4/11/2023	NA	31584095	Convoy	W	01- Behavior	48	26-50	0	Spring Migration
381	4/14/2023	NA	31584096	Convoy	W	01- Behavior	16	25-Mar	0	Spring Migration
382	4/14/2023	NA	31584097	Normal	NA	01- Behavior	16	25-Mar	0	Spring Migration
383	4/14/2023	NA	31584098	Convoy	W	01- Behavior	101	>100	0	Spring Migration
384	4/15/2023	NA	31590587	Normal	N	01- Behavior	8	25-Mar	0	Spring Migration
385	4/16/2023	NA	31591417	Normal	NA	01- Behavior	2	2-Jan	0	Spring Migration
386	4/16/2023	NA	31591418	Normal	N	01- Behavior	1	2-Jan	0	Spring Migration
387	4/18/2023	NA	31603281	Convoy	N	01- Behavior	102	>100	0	Spring Migration
388	4/17/2023	NA	31607822	Convoy	S	01- Behavior	31	26-50	NA	Spring Migration
389	4/19/2023	NA	31620087	Normal	E	01- Behavior	7	25-Mar	0	Spring Migration
390	4/19/2023	NA	31620088	Normal	S	01- Behavior	3	25-Mar	0	Spring Migration
391	4/30/2023	NA	31712929	Normal	NA	01- Behavior	2	2-Jan	0	Spring Migration
392	5/23/2023	NA	31857444	Normal	S	01- Behavior	2	2-Jan	0	Spring Migration
393	6/21/2023	NA	32002681	Normal	NA	01- Behavior	4	25-Mar	0	Calving and Summer
394	10/24/2023	NA	33181926	Normal	NA	01- Behavior	11	25-Mar	0	Fall Migration
395	10/22/2023	NA	33183054	Normal	N	01- Behavior	8	25-Mar	0	Fall Migration
396	10/24/2023	NA	33183055	Normal	NA	01- Behavior	2	2-Jan	0	Fall Migration
397	10/27/2023	NA	33183056	Normal	N	01- Behavior	87	51-100	0	Fall Migration

APPENDIX B: DATA FROM CARIBOU BEHAVIOUR SURVEYS

Survey Number	Date	Observers	Waypoint	Road name and distance marker	Distance from caribou to observer location binned	Bearing to caribou group	Is group East or West of survey	Did the group cross the road during the survey
398	10/27/2023	Laurence Archambault	NA	Haul Road KM 171	100-300	55	East	No
399	10/27/2023	Laurence Archambault	NA	Haul Road KM 171	100-300	55	East	No
400	10/28/2023	Brandon Ipkarnerk	NA	AWAR KM 9	50-100	45	West	No
401	10/28/2023	Brandon Ipkarnerk	NA	AWAR KM 9	300-1000	280	West	No
402	10/31/2023	Brandon Ipkarnerk	NA	AWAR KM 50	100-300	225	East	NA
403	11/2/2023	Brandon Ipkarnerk Brendan mannik	NA	AWAR KM 50	100-300	70	East	No
404	11/2/2023	Brandon Ipkarnerk Brendan mannik	NA	AWAR KM 47	0-50	45	East	No
405	10/29/2023	Eric Leonard	NA	Haul Road KM 154	300-1000	335	East	No
406	11/7/2023	Kelly Habib Brenden Mannik	NA	AWAR KM 60	100-300	60	West	No
407	11/6/2023	TD	NA	AWAR KM 77	100-300	90	East	No
408	11/9/2023	Kelly Habib and Brendan Mannik	NA	AWAR KM 40	300-1000	90	East	NA
409	11/12/2023	Derek	NA	AWAR KM 64	300-1000	285	West	No
410	11/8/2023	Brandon Ipkarnerk	NA	AWAR KM 63	50-100	330	West	No
411	11/11/2023	Renee Pudnak	NA	AWAR KM 8	300-1000	15	East	No
412	11/11/2023	Renee Pudnak	NA	AWAR KM 17	>1000	30	West	NA
413	11/11/2023	Renee Pudnak	NA	AWAR KM 60	300-1000	35	West	NA
414	11/1/2023	Kate Walker, Laurence Archambault, Felix Quessy S.	NA	Haul Road KM 117	100-300	80	East	No
415	11/17/2023	Derek	NA	AWAR KM 93	>1000	215	East	No
416	11/18/2023	Derek	NA	AWAR KM 55	>1000	10	East	No
417	12/6/2023	Brendan Mannik	NA	AWAR KM 49	100-300	45	West	No
418	12/6/2023	Brendan Mannik	NA	AWAR KM 19	>1000	90	West	No
419	12/1/2023	Brendan Mannik	NA	AWAR KM 57	0-50	355	East	Yes
420	12/8/2023	Kelly Habib and Brendon Mannik	NA	AWAR KM 17	>1000	270	West	No
421	12/12/2023	Kelly Habib and Branden Mannik	NA	AWAR KM 56	300-1000	90	East	No
422	12/16/2023	Renee	NA	AWAR KM 73	300-1000	280	East	No
423	12/17/2023	Renee Pudnak	NA	AWAR KM 67	>1000	20	East	No
424	12/18/2023	Renee pudnak	NA	AWAR KM 65	300-1000	0	East	No

APPENDIX B: DATA FROM CARIBOU BEHAVIOUR SURVEYS

Survey Number	Date	Caribou group size	Temperature	Wind speed km h	Wind direction	Humidity	Days since last snow or wind event	Weather observations	Road Height cm	Road side width cm	Structures present	Feeding 0	Laying 0
398	10/27/2023	NA	-8	12	NW	93	0	Precipitation: Light snow Cloudy	100	2000	None	10	10
399	10/27/2023	NA	-8	12	NW	93	0	Precipitation: Light snow Cloudy	200	2000	None	8	16
400	10/28/2023	25	-7	15	NW	93	0	Precipitation: 0	200	800	NA	23	0
401	10/28/2023	20	7	15	NW	93	0	Precipitation: 0	100	900	Bridge	0	0
402	10/31/2023	100	11	40	NW	0	1	Precipitation: 0	100	1000	0	16	0
403	11/2/2023	6	11	50	NW	0	1	Precipitation: 50	100	900	Barrel	6	0
404	11/2/2023	4	11	50	NW	0	1	Precipitation: 50	0	1000	Sea cans	0	4
405	10/29/2023	8	-13	2	NE	92	0	Precipitation: Light snow Light snow, overcast	100	1000	None	3	0
406	11/7/2023	276	-8	15	NW	30	1	Precipitation: 0	200	600	0	0	0
407	11/6/2023	2	-17	20	NW	90	5	Precipitation: 0 No wind sunny	500	1000	NA	0	0
408	11/9/2023	100	-15	20	NW	30	0	Precipitation: 0 Overcast	100	500	No	100	0
409	11/12/2023	100	-4	15	N	10	1	Precipitation: White out White out	200	1000	P	26	0
410	11/8/2023	200	15	20	NW	75	1	Precipitation: 0	100	1000	Emergency seaman	15	0
411	11/11/2023	3	-12	20	NE	1	1	Precipitation: 1 Cold	300	300	No	3	0
412	11/11/2023	600	-12	20	NE	1	1	Precipitation: 1 Cold	300	200	0	100	0
413	11/11/2023	27	-12	20	NE	1	1	Precipitation: 1 Cold	3000	200	0	13	15
414	11/1/2023	1	-11	50	NW	83	1	Precipitation: 0 Foggy	0	2000	None	1	0
415	11/17/2023	100	-14	30	N	40	1	Precipitation: Snowing White out snowing	200	1000	None	0	0
416	11/18/2023	150	-20	30	NW	40	1	Precipitation: Clear ..	0	1200	None	9	9
417	12/6/2023	5	-12	20	E	50	1	Precipitation: Snow Snowy	100	500	NA	5	0
418	12/6/2023	2	-13	15	E	50	1	Precipitation: Snow Snowy	100	400	NA	1	1
419	12/1/2023	37	-18	0	N	0	1	Precipitation: 50 Foggy	100	1000	0	0	0
420	12/8/2023	13	-20	15	NW	50	1	Precipitation: 0 Overcast	0	1000	No	0	0
421	12/12/2023	12	-27	15	NW	75	0	Precipitation: 0 Sunny	0	1000	No	12	0
422	12/16/2023	1	-28	50	NW	0	2	Precipitation: 0 â€¦.	70000	200	0	0	0
423	12/17/2023	43	-24	30	W	0	3	Precipitation: 0 0	2000	200	0	43	0
424	12/18/2023	187	-24	15	W	1	4	Precipitation: 1 1	500	200	0	187	0

APPENDIX B: DATA FROM CARIBOU BEHAVIOUR SURVEYS

Survey Number	Date	Standing 0	Walking 0	Alert 0	Trotting 0	Feeding 3	Laying 3	Standing 3	Walking 3	Alert 3	Trotting 3	Feeding 6	Laying 6	Standing 6	Walking 6	Alert 6	Trotting 6	Feeding 9	Laying 9
398	10/27/2023	0	0	0	0	12	8	0	2	0	0	11	9	0	0	0	0	7	13
399	10/27/2023	0	1	0	0	7	18	0	0	0	0	7	18	0	0	0	0	0	2
400	10/28/2023	2	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
401	10/28/2023	0	20	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
402	10/31/2023	0	3	0	0	19	0	0	0	0	0	19	0	0	0	0	0	19	0
403	11/2/2023	0	0	0	0	7	3	0	3	0	0	8	0	0	5	0	0	0	0
404	11/2/2023	0	0	0	0	0	4	0	0	0	0	0	4	0	0	0	0	0	3
405	10/29/2023	0	4	0	0	8	0	0	0	0	0	0	0	0	1	0	0	0	0
406	11/7/2023	0	100	0	0	0	0	0	100	0	0	0	0	0	100	0	0	0	0
407	11/6/2023	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	2	0
408	11/9/2023	0	0	0	0	100	0	0	0	0	0	0	100	0	0	0	0	0	100
409	11/12/2023	0	0	0	0	25	0	0	1	0	0	0	0	0	26	0	0	0	0
410	11/8/2023	15	0	0	0	12	0	14	0	0	0	14	0	14	2	0	0	15	0
411	11/11/2023	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0
412	11/11/2023	100	100	100	0	0	0	100	100	100	100	NA	NA	NA	NA	NA	NA	NA	NA
413	11/11/2023	15	0	27	0	15	4	15	15	15	0	0	0	27	27	27	0	NA	NA
414	11/1/2023	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0
415	11/17/2023	0	50	0	0	0	0	1	49	0	0	2	2	7	39	0	0	40	6
416	11/18/2023	2	5	0	0	20	0	5	0	0	0	13	0	10	2	0	0	20	0
417	12/6/2023	0	0	0	0	5	0	0	0	0	0	5	0	0	0	0	0	0	0
418	12/6/2023	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	2
419	12/1/2023	0	4	0	0	4	0	0	0	0	0	4	0	0	0	0	0	4	0
420	12/8/2023	13	0	0	0	0	0	13	0	0	0	0	0	13	0	0	0	0	0
421	12/12/2023	0	0	0	0	9	0	0	3	0	0	9	0	0	3	0	0	9	0
422	12/16/2023	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0
423	12/17/2023	43	0	0	0	43	0	43	0	0	0	43	0	43	0	0	0	43	0
424	12/18/2023	187	0	0	0	187	0	187	0	0	0	187	0	187	0	0	0	187	0

APPENDIX B: DATA FROM CARIBOU BEHAVIOUR SURVEYS

Survey Number	Date	Standing 9	Walking 9	Alert 9	Trotting 9	Feeding 12	Laying 12	Standing 12	Walking 12	Alert 12	Trotting 12	Feeding 15	Laying 15	Standing 15	Walking 15	Alert 15	Trotting 15
398	10/27/2023	0	0	0	0	3	17	0	0	0	0	2	18	0	0	0	0
399	10/27/2023	0	23	0	0	18	2	5	0	0	0	21	4	0	0	0	0
400	10/28/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
401	10/28/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
402	10/31/2023	0	0	0	0	19	0	0	0	0	0	NA	NA	NA	NA	NA	NA
403	11/2/2023	0	13	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA
404	11/2/2023	0	1	0	0	0	3	0	1	0	0	0	3	0	1	0	0
405	10/29/2023	1	5	0	0	6	0	0	0	0	0	NA	NA	NA	NA	NA	NA
406	11/7/2023	0	100	0	0	0	0	0	0	0	100	0	0	0	0	0	100
407	11/6/2023	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0
408	11/9/2023	0	0	0	0	0	100	0	0	0	0	0	100	0	0	0	0
409	11/12/2023	0	25	0	1	0	0	0	26	0	0	0	0	3	23	0	0
410	11/8/2023	15	3	0	0	15	0	15	4	0	0	15	0	15	1	0	0
411	11/11/2023	3	0	3	0	3	0	3	0	3	0	0	0	3	3	3	3
412	11/11/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
413	11/11/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
414	11/1/2023	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
415	11/17/2023	4	0	0	0	40	6	4	0	0	0	45	5	0	0	0	0
416	11/18/2023	3	2	0	0	25	0	0	0	0	0	5	0	3	17	0	0
417	12/6/2023	0	5	0	0	0	0	0	5	0	0	0	0	5	0	0	0
418	12/6/2023	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0
419	12/1/2023	0	0	0	0	3	0	0	1	0	0	4	0	0	0	0	0
420	12/8/2023	0	13	0	0	0	0	0	13	0	0	0	0	0	13	0	0
421	12/12/2023	0	3	0	0	8	0	0	4	0	0	8	0	0	4	0	0
422	12/16/2023	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0
423	12/17/2023	43	0	0	0	43	0	43	0	0	0	43	0	43	0	0	0
424	12/18/2023	187	0	0	0	187	0	187	0	0	0	187	0	187	0	0	0

APPENDIX B: DATA FROM CARIBOU BEHAVIOUR SURVEYS

Survey Number	Date	Feeding 18	Laying 18	Standing 18	Walking 18	Alert 18	Trotting 18	Feeding 21	Laying 21	Standing 21	Walking 21	Alert 21	Trotting 21	Feeding 24	Laying 24	Standing 24	Walking 24
398	10/27/2023	3	16	1	0	0	0	2	18	0	0	0	0	2	18	0	0
399	10/27/2023	14	11	0	0	0	0	14	11	0	0	0	0	9	16	0	0
400	10/28/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
401	10/28/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
402	10/31/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
403	11/2/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
404	11/2/2023	0	0	0	4	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
405	10/29/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
406	11/7/2023	0	0	0	100	0	0	0	0	0	100	0	0	0	0	0	100
407	11/6/2023	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2
408	11/9/2023	0	100	0	0	0	0	0	100	0	0	0	0	0	100	0	0
409	11/12/2023	0	0	0	26	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
410	11/8/2023	15	0	15	6	0	0	15	0	15	2	0	0	NA	NA	NA	NA
411	11/11/2023	0	0	0	3	3	0	3	0	3	0	3	0	3	0	3	0
412	11/11/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
413	11/11/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
414	11/1/2023	1	0	0	0	0	0	1	0	0	0	0	0	NA	NA	NA	NA
415	11/17/2023	43	7	0	0	0	0	44	6	0	0	0	0	39	6	5	0
416	11/18/2023	25	0	0	0	0	0	25	0	0	0	0	0	23	0	2	0
417	12/6/2023	0	0	0	5	0	0	0	0	0	5	0	0	0	0	0	5
418	12/6/2023	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0
419	12/1/2023	3	0	1	0	0	0	3	0	0	0	0	0	3	0	0	1
420	12/8/2023	0	0	13	0	0	0	0	0	0	13	0	0	0	0	0	13
421	12/12/2023	5	0	0	7	0	0	0	0	0	12	0	0	0	0	0	12
422	12/16/2023	1	0	1	0	1	0	1	0	1	0	1	0	0	1	0	0
423	12/17/2023	43	0	43	0	0	0	43	0	43	0	0	0	43	0	43	0
424	12/18/2023	187	0	187	0	0	0	187	0	187	0	0	0	187	0	187	0

APPENDIX B: DATA FROM CARIBOU BEHAVIOUR SURVEYS

Survey Number	Date	Alert 24	Trotting 24	Feeding 27	Laying 27	Standing 27	Walking 27	Alert 27	Trotting 27	Feeding 30	Laying 30	Standing 30	Walking 30	Alert 30	Trotting 30
398	10/27/2023	0	0	3	21	0	0	0	5	2	18	5	0	0	0
399	10/27/2023	0	0	5	15	0	5	0	0	4	18	3	0	0	0
400	10/28/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
401	10/28/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
402	10/31/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
403	11/2/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
404	11/2/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
405	10/29/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
406	11/7/2023	0	0	0	0	0	100	0	0	0	0	0	100	0	0
407	11/6/2023	0	0	0	0	0	2	0	0	0	0	0	2	0	0
408	11/9/2023	0	0	0	100	0	0	0	0	0	100	0	0	0	0
409	11/12/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
410	11/8/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
411	11/11/2023	3	0	3	0	3	0	3	0	3	0	3	3	3	0
412	11/11/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
413	11/11/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
414	11/1/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
415	11/17/2023	0	0	44	6	0	0	0	0	43	7	0	0	0	0
416	11/18/2023	0	0	25	0	0	0	0	0	20	0	1	4	0	0
417	12/6/2023	0	0	0	0	0	5	0	0	0	0	0	5	0	0
418	12/6/2023	0	0	0	2	0	0	0	0	0	0	0	0	0	0
419	12/1/2023	0	0	4	0	0	0	0	0	4	0	0	0	0	0
420	12/8/2023	0	0	0	0	13	0	0	0	0	0	0	13	0	0
421	12/12/2023	0	0	0	0	0	12	0	0	0	0	0	12	0	0
422	12/16/2023	1	0	0	1	0	0	1	0	0	1	0	0	1	0
423	12/17/2023	0	0	43	0	43	0	0	0	43	0	43	0	0	0
424	12/18/2023	0	0	187	0	187	0	0	0	187	0	187	0	0	0

APPENDIX B: DATA FROM CARIBOU BEHAVIOUR SURVEYS

Survey Number	Date	Disturbance 0	Disturbance 3	Disturbance 6	Disturbance 9	Disturbance 12	Disturbance 15	Disturbance 18	Disturbance 21	Disturbance 24	Disturbance 27	Disturbance 30
398	10/27/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
399	10/27/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
400	10/28/2023	Aircraft	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
401	10/28/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
402	10/31/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
403	11/2/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
404	11/2/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
405	10/29/2023	NA	NA	NA	Heavy Equipment	NA	NA	NA	NA	NA	NA	NA
406	11/7/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
407	11/6/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
408	11/9/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
409	11/12/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
410	11/8/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
411	11/11/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
412	11/11/2023	Aircraft	Aircraft	NA	NA	NA	NA	NA	NA	NA	NA	NA
413	11/11/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
414	11/1/2023	Convoy	NA	Heavy Equipment	NA	Heavy Equipment	Light Truck	NA	NA	NA	NA	NA
415	11/17/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
416	11/18/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
417	12/6/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
418	12/6/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
419	12/1/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
420	12/8/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
421	12/12/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
422	12/16/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
423	12/17/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
424	12/18/2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX B: DATA FROM CARIBOU BEHAVIOUR SURVEYS

Survey Number	Date	Year	Long	Lat	Reconnaissance Survey	Project Tolerant Info	Distance from caribou to road	Caribou group size estimate	Size of subset	Dominant group sex	Road open or closed
398	10/27/2023	2023	-96.59262888	65.355957	No	No	0-50 m	201-500	20	Mixed group	Closed
399	10/27/2023	2023	-96.59215857	65.355957	No	No	0-50 m	201-500	25	Mixed group	Closed
400	10/28/2023	2023	-96.07370258	65.02117917	Yes	No	300 m -1 km	NA	25	Mostly females with calves	Closed
401	10/28/2023	2023	-96.01488327	64.38830564	No	No	300 m -1 km	NA	20	Mixed group	Closed
402	10/31/2023	2023	-96.37330395	64.67999265	No	No	100-300 m	NA	19	Mixed group	Closed
403	11/2/2023	2023	-96.3720009	64.6762695	No	No	100-300 m	NA	6	Mixed group	Closed
404	11/2/2023	2023	-96.33443142	64.65618894	No	No	0-50 m	NA	4	Mixed group	Closed
405	10/29/2023	2023	-96.66662244	65.40142822	Yes	No	300 m -1 km	NA	8	Mixed group	Open
406	11/7/2023	2023	-96.37091667	64.74804688	Yes	No	100-300 m	NA	100	Mixed group	Closed
407	11/6/2023	2023	-96.33808333	64.89556885	No	No	100-300 m	NA	2	Mostly males	Open
408	11/9/2023	2023	-96.28005	64.61932373	No	No	300 m -1 km	NA	100	Mixed group	Closed
409	11/12/2023	2023	-96.3377803	64.78826901	Yes	No	300 m -1 km	NA	25	Mostly males	Closed
410	11/8/2023	2023	-96.3471258	64.7698364	No	No	51-100 m	NA	11	Mixed group	Closed
411	11/11/2023	2023	-96.01581688	64.38208008	No	Yes Same group same location as yesterday	300 m -1 km	NA	3	Mixed group	Open
412	11/11/2023	2023	-96.0802399	64.45458984	No	Yes Same area as yesterday	1 - 1.5 km	NA	600	Mixed group	Closed
413	11/11/2023	2023	-96.36201315	64.75671387	No	No	300 m -1 km	NA	27	Mixed group	Closed
414	11/1/2023	2023	-96.03221505	65.08325192	Yes	No	100-300 m	NA	1	Mostly females	Closed
415	11/17/2023	2023	-96.22065309	64.99853513	Yes	No	1 - 1.5 km	NA	50	Mixed group	Closed
416	11/18/2023	2023	-96.34191615	64.72253415	Yes	No	300 m -1 km	NA	25	Mixed group	Closed
417	12/6/2023	2023	-96.3707172	64.66748044	No	No	100-300 m	NA	5	Mixed group	Open
418	12/6/2023	2023	-96.08516365	64.46765134	No	No	1 - 1.5 km	NA	2	Mixed group	Open
419	12/1/2023	2023	-96.35804665	64.72729489	No	No	0-50 m	NA	4	Mixed group	Closed
420	12/8/2023	2023	-96.07764107	64.45355225	Yes	Yes Same group from road survey at KM18 2023-12-08	1 - 1.5 km	NA	13	Mixed group	Closed
421	12/12/2023	2023	-96.35923098	64.72796631	Yes	Yes Same group as 12/12/2023	300 m -1 km	NA	12	Mixed group	Open
422	12/16/2023	2023	-96.32383275	64.85174561	No	No	300 m -1 km	NA	1	Mostly males	Open
423	12/17/2023	2023	-96.32478738	64.81390381	No	No	1 - 1.5 km	NA	43	Mixed group	Open
424	12/18/2023	2023	-96.33683558	64.78894043	No	No	300 m -1 km	NA	187	Mixed group	Open

APPENDIX B: DATA FROM CARIBOU BEHAVIOUR SURVEYS

Survey Number	Date	Road open2	survey id	Type survey caribou	Direction travel survey	survey type	Caribou group size exact	Caribou group size binned	road cross	Season
398	10/27/2023	NA	33183057	Normal	NA	01- Behavior	201	>100	0	Fall Migration
399	10/27/2023	NA	33183058	Convoy	NA	01- Behavior	201	>100	0	Fall Migration
400	10/28/2023	NA	33195601	Normal	E	01- Behavior	25	25-Mar	0	Fall Migration
401	10/28/2023	NA	33195602	Normal	W	01- Behavior	20	25-Mar	0	Fall Migration
402	10/31/2023	NA	33222678	Normal	N	01- Behavior	100	51-100	NA	Fall Migration
403	11/2/2023	NA	33223645	Normal	S	01- Behavior	6	25-Mar	0	Fall Migration
404	11/2/2023	NA	33223646	Normal	N	01- Behavior	4	25-Mar	0	Fall Migration
405	10/29/2023	NA	33234609	Normal	S	01- Behavior	8	25-Mar	0	Fall Migration
406	11/7/2023	NA	33244159	Normal	NA	01- Behavior	276	>100	0	Fall Migration
407	11/6/2023	NA	33249244	Normal	S	01- Behavior	2	2-Jan	0	Fall Migration
408	11/9/2023	NA	33264150	Normal	NA	01- Behavior	100	51-100	NA	Fall Migration
409	11/12/2023	NA	33285335	Normal	S	01- Behavior	100	51-100	0	Fall Migration
410	11/8/2023	NA	33290087	Normal	W	01- Behavior	200	>100	0	Fall Migration
411	11/11/2023	NA	33315326	Normal	E	01- Behavior	3	25-Mar	0	Fall Migration
412	11/11/2023	NA	33315327	Normal	S	01- Behavior	600	>100	NA	Fall Migration
413	11/11/2023	NA	33315328	Normal	NA	01- Behavior	27	26-50	NA	Fall Migration
414	11/1/2023	NA	33315331	Normal	NA	01- Behavior	1	2-Jan	0	Fall Migration
415	11/17/2023	NA	33350455	Normal	W	01- Behavior	100	51-100	0	Fall Migration
416	11/18/2023	NA	33350456	Normal	NA	01- Behavior	150	>100	0	Fall Migration
417	12/6/2023	NA	33400083	Normal	N	01- Behavior	5	25-Mar	0	Fall Migration
418	12/6/2023	NA	33400084	Normal	W	01- Behavior	2	2-Jan	0	Fall Migration
419	12/1/2023	NA	33401116	Normal	S,W	01- Behavior	37	26-50	1	Fall Migration
420	12/8/2023	NA	33415168	Normal	NA	01- Behavior	13	25-Mar	0	Fall Migration
421	12/12/2023	NA	33466361	Normal	NA	01- Behavior	12	25-Mar	0	Fall Migration
422	12/16/2023	NA	33479489	Normal	S	01- Behavior	1	2-Jan	0	Fall Migration
423	12/17/2023	NA	33489584	Normal	E	01- Behavior	43	26-50	0	Fall Migration
424	12/18/2023	NA	33490415	Normal	N,E	01- Behavior	187	>100	0	Fall Migration

APPENDIX C PROPORTION OF RESPONSE BEHAVIOUR DURING EACH SURVEY

FIGURE C-1 PROPORTION OF RESPONSE BEHAVIOUR DURING EACH SURVEY – 2020

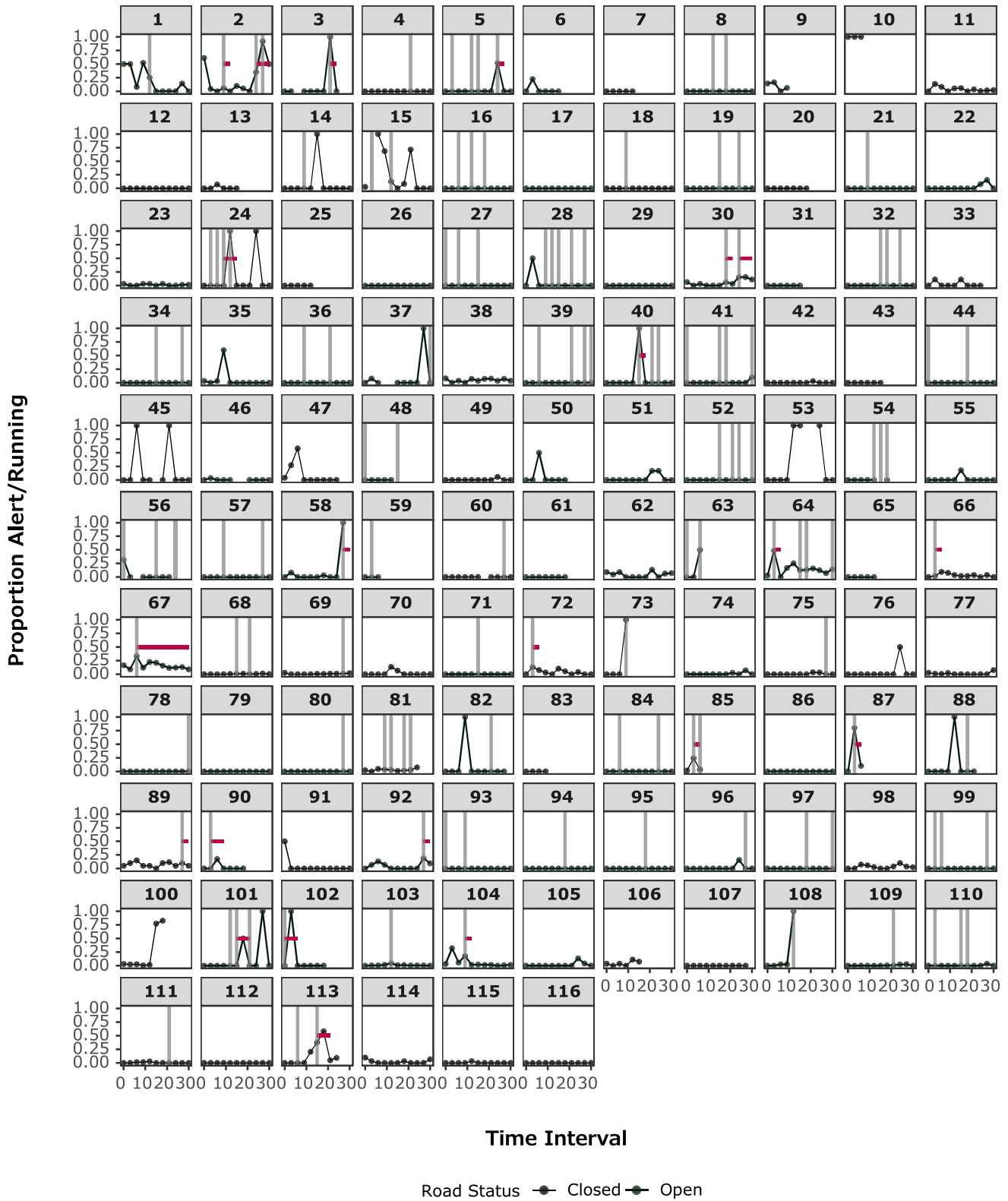


FIGURE C-2 PROPORTION OF RESPONSE BEHAVIOUR DURING EACH SURVEY – 2021

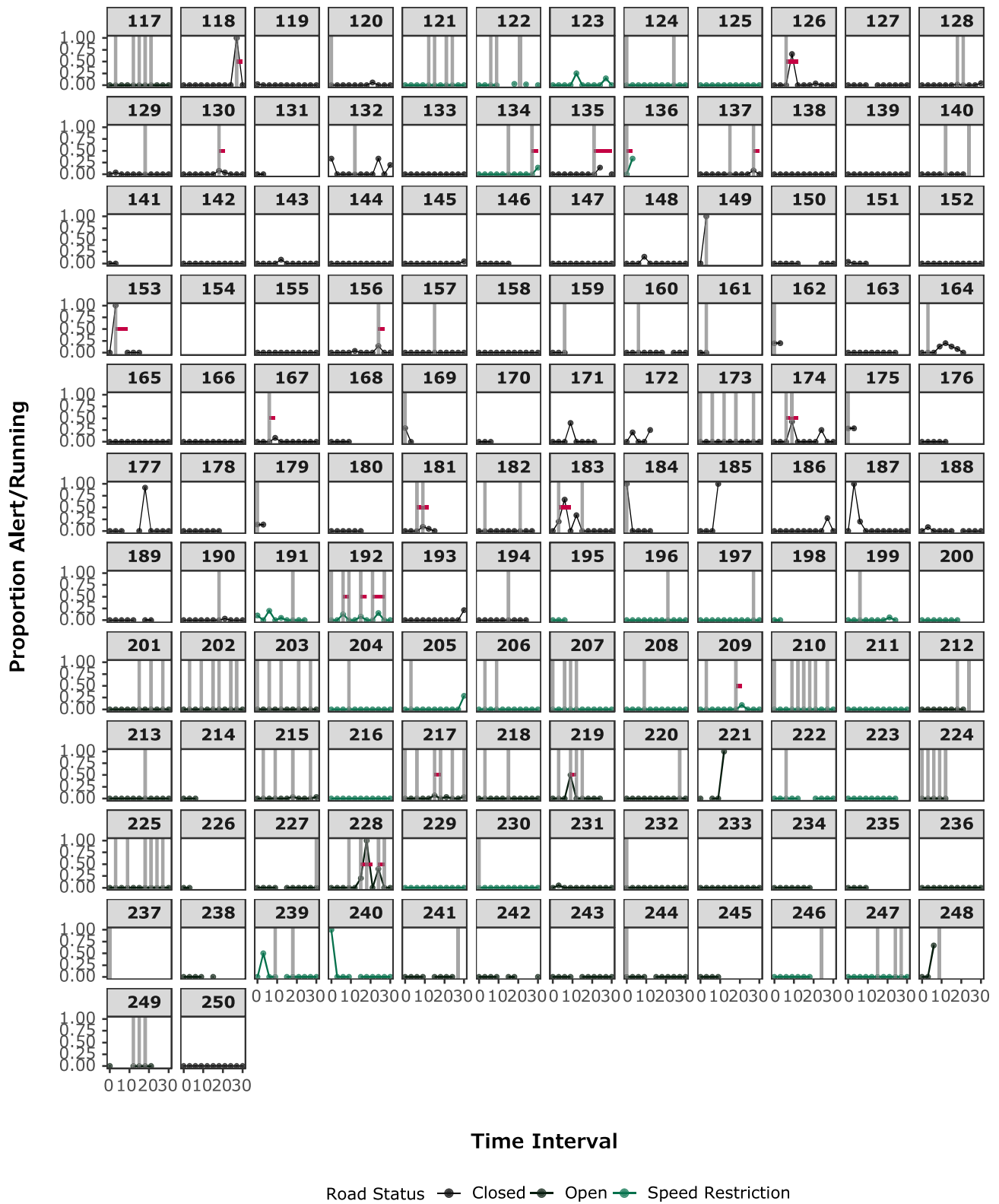


FIGURE C-3 PROPORTION OF RESPONSE BEHAVIOUR DURING EACH SURVEY – 2022

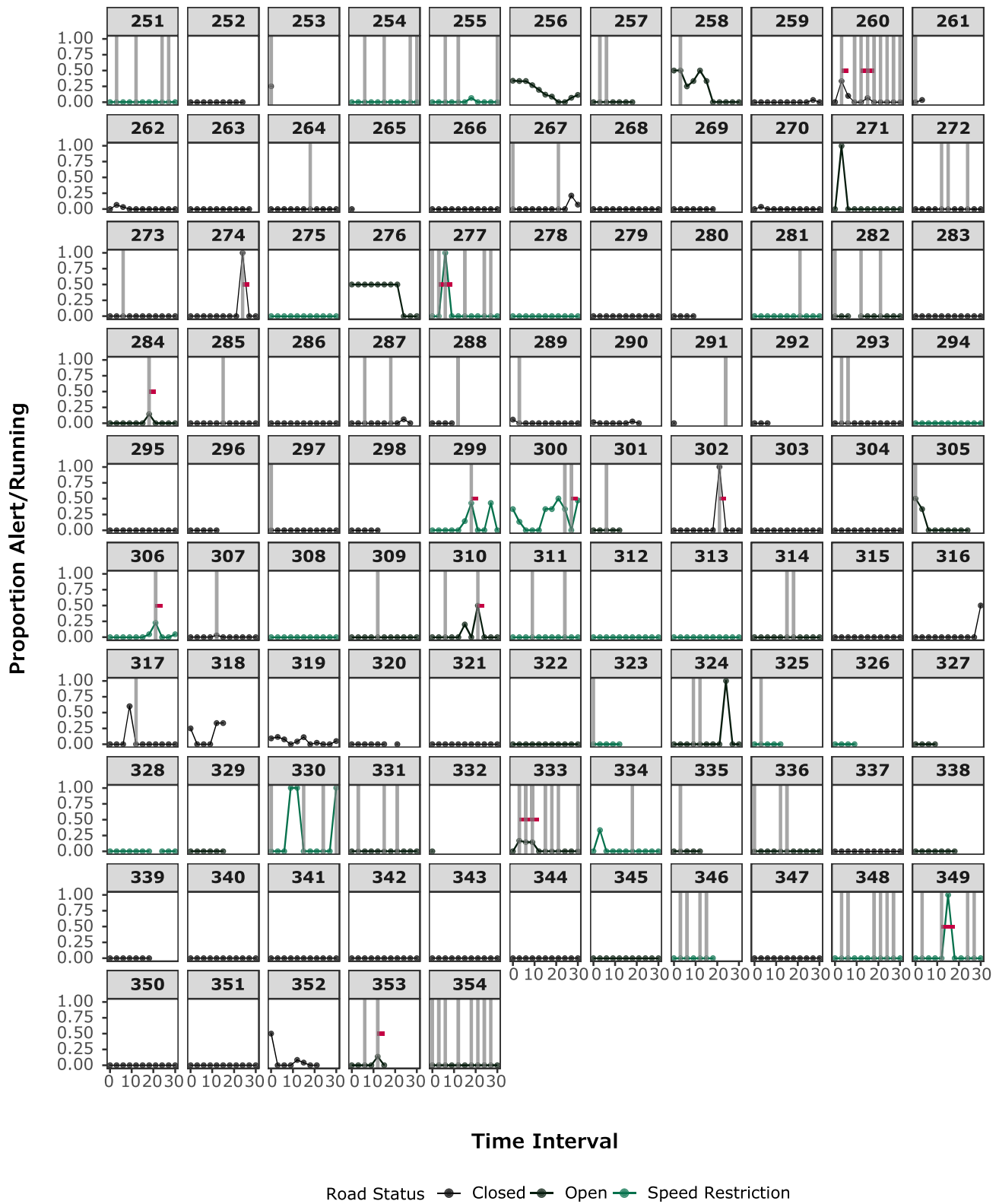
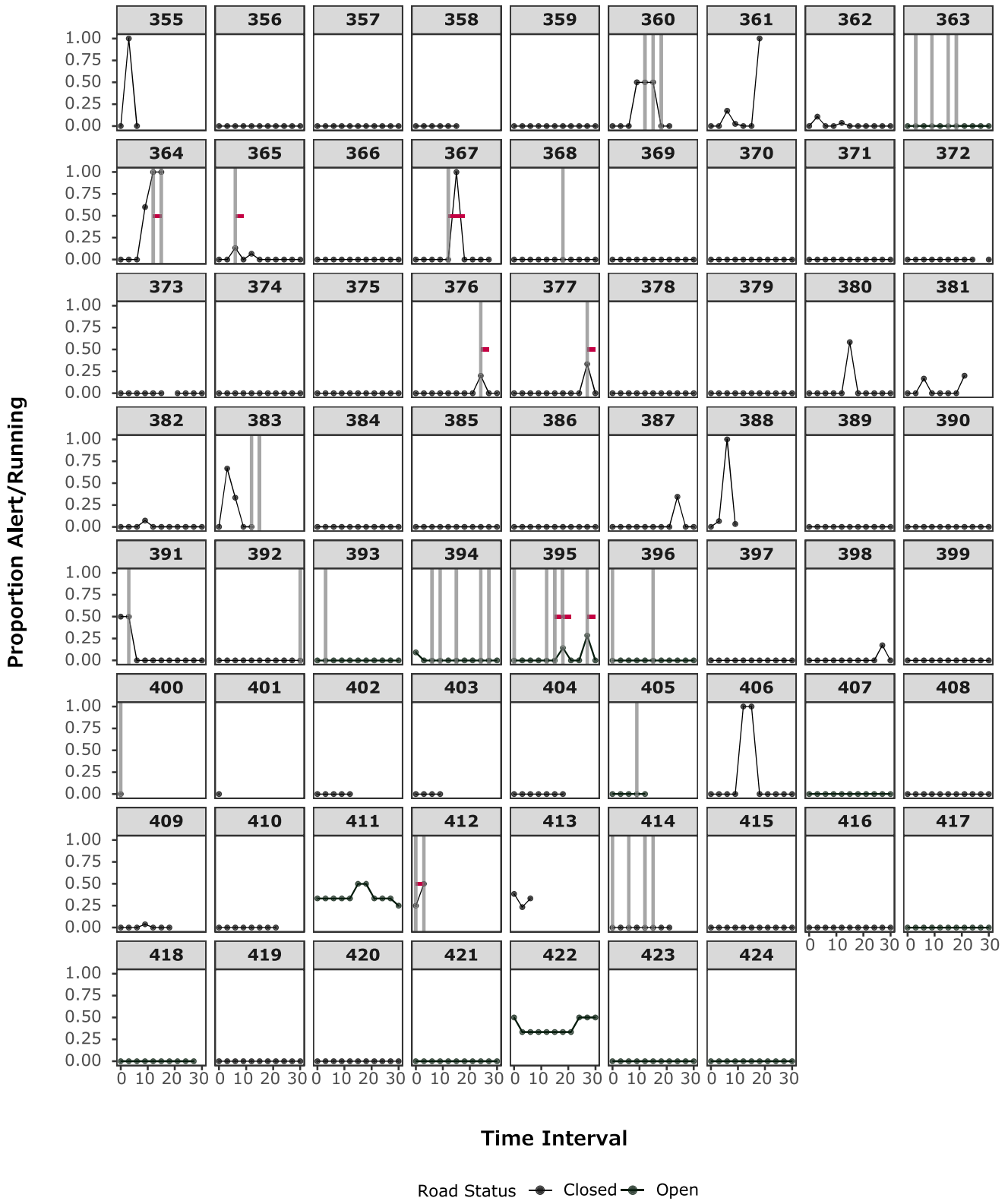


FIGURE C-4 PROPORTION OF RESPONSE BEHAVIOUR DURING EACH SURVEY – 2023





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ERM's Toronto Office

120 Adelaide Street West,
Suite 2010
Toronto, ON
Canada M5H 1T1

T: +1 416 646 3608

F: +1 416 642 1269

www.erm.com

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