

Appendix 47

Meadowbank and Whale Tail 2022 Wildlife Monitoring Summary Report



REPORT

Agnico Eagle Mines Limited - Meadowbank Complex
2022 Wildlife Monitoring Summary Report

Submitted to:

Agnico Eagle Mines Limited

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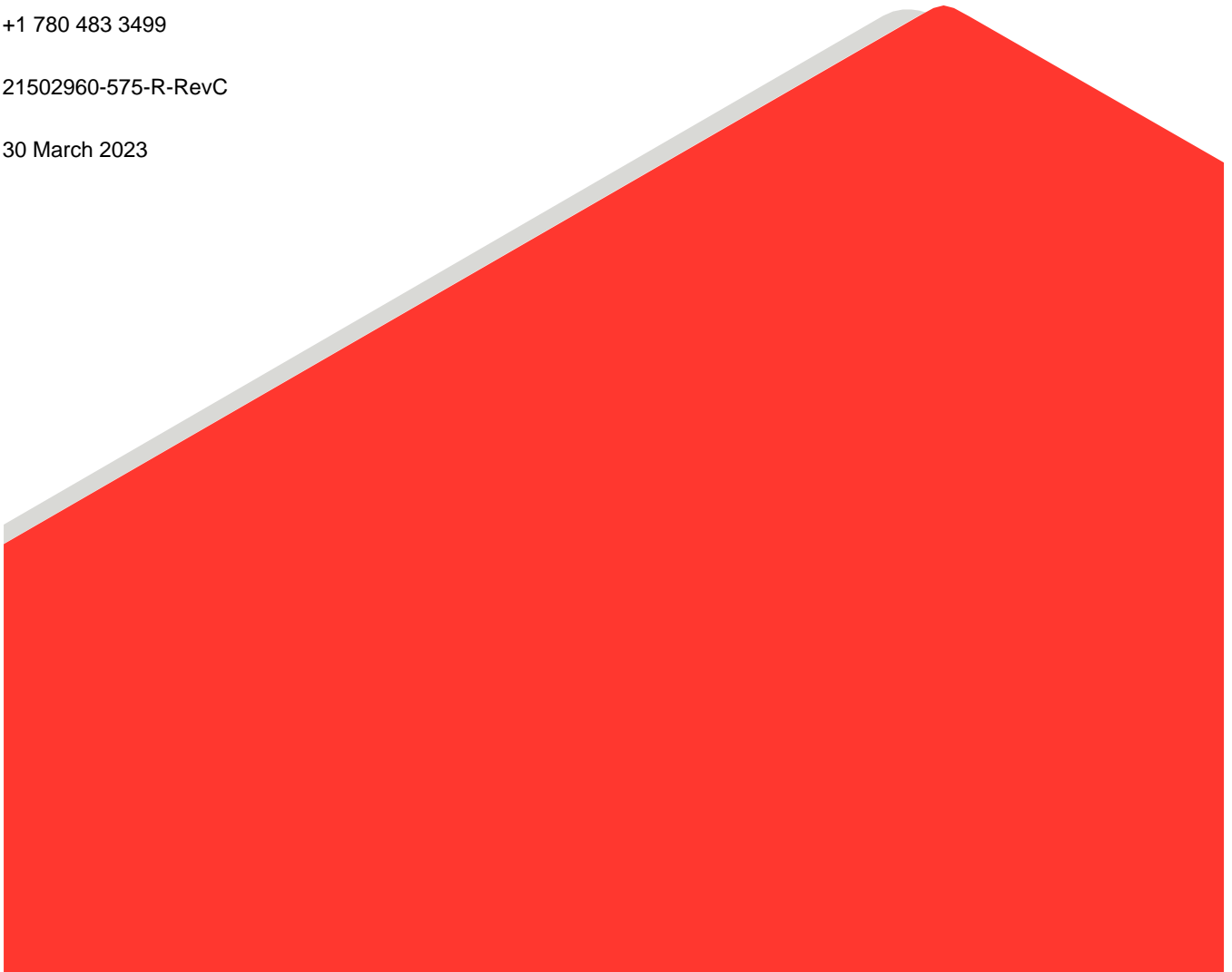
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Executive Summary

As a requirement of the NIRB Project Certificate, the 2022 Wildlife Monitoring Summary Report (2022 Annual Report) represents the 17th 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 Mine. Details of the wildlife monitoring program for the Project are provided in the Terrestrial Ecosystem Management Plan (Version 7, Agnico Eagle 2019). The 2022 Annual Report provides the monitoring objectives, methodology, historical and current year results, and management recommendations for each monitoring program. The 2022 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 2022 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 2022, 235 road surveys were conducted along the All-weather Access Road (AWAR) and 193 were conducted along the Whale Tail Haul Road (WTHR).
- A total of 50,093 caribou were observed along the AWAR (213 caribou per survey) and 6,355 caribou were detected along the WTHR (33 caribou per survey).
- Road surveys helped facilitate mitigation decisions along the AWAR and WTHR. The AWAR was fully closed (24-hour closure) on 45 days, closed for less than 24 hours on 71 days, and had speed restrictions applied for 84 days. In total the AWAR was closed for 1,808 hours. The WTHR was fully closed (24-hour closure) on 15 days, partially closed (less than 24-hour closure) on 63 days and had speed restrictions applied for 93 days. The WTHR was closed for 894 hours during 2022.
- A total of 11,242 caribou were observed crossing the AWAR and 849 caribou were observed crossing the WTHR in 2022. For annual caribou crossing observations on the AWAR, 96% (10,750 of 11,242 caribou) of observed crossing events occurred on dates with an AWAR closure. For annual caribou crossing observations on the WTHR, 83% (706 of 849 caribou) of observed crossing events occurred on dates with a WTHR closure.
- On eight occasions, observed caribou were identified as Project tolerant as defined in TEMP Version 7. One caribou was identified as Project tolerant at Meadowbank, 13 caribou were identified as Project tolerant at Whale Tail, 23 caribou were identified as Project tolerant on the AWAR, and 20 caribou were identified as Project tolerant on the WTHR.
- There were 10 road related mortalities recorded in 2022, including seven Arctic hares, one Arctic ground squirrel, one ptarmigan, and one wolverine. There were no road-related caribou, grizzly bear, or wolf mortalities associated with the AWAR or WTHR in 2022.

Pit and Mine Site Ground Surveys

- In 2022, 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 42 occasions in 2022, and were used for Arctic fox, caribou, muskox, red fox, wolf, and wolverine.
- There were six project-related mortalities in 2022 at Meadowbank and Whale Tail sites, including one wolverine, three Arctic fox, and two Arctic hare.

Wildlife Habitat Monitoring

- A 109.2 ha, or 8.4% change in footprint at the Whale Tail site occurred between the assessment in 2021 and 2022. The change in footprint since the previous assessment less than 25%. Therefore, the next comprehensive analysis is scheduled for 2024.

Caribou Satellite-Collaring Program

- Agnico Eagle intends to continue collaboration with the Government of Nunavut Department of Environment (GN DoE) caribou satellite-collaring program. Collar data were not available to complete the 2022 analysis.

Viewshed Surveys

- A total of 739 viewshed surveys were conducted over 58 days in 2022. Of the 739 viewshed surveys, 41 surveys (6%) had caribou sightings, and a total of 461 caribou were reported. Survey efforts were conducted between 5 January and 28 December, with the highest survey effort occurring in the summer.

Remote Camera Program

- Artificial intelligence was used to pre-sort wildlife images from remote cameras on the Whale Tail Haul Road in 2022. Photographs flagged as containing wildlife by artificial intelligence were reviewed by a human observer. Caribou crossing events were detected in spring, summer, and winter; no caribou were detected in the fall on remote cameras.
- Approximately equal numbers of crossing events were observed while the road was open ($n = 13$) or when a restriction was in place ($n = 14$). 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 prior to blasts were performed on 191 days between 23 January to 31 December 2022. One blast was cancelled, on 29 April 2022, due to caribou presence within 600 m of the blast.
- There were 18 surveys between 2021 and 2022 where behaviour monitoring following blasting could be linked to modelled peak particle velocity (PPV) and peak pressure level (PPL). Response behaviours (i.e., alert, walking, trotting or running) were observed following half of the blasts. However, preliminary analysis based on 18 surveys found overall that the proportion of caribou performing response behaviours in a six-minute interval following blasting was not correlated with modelled PPV and PPL values. Future

analyses using more behaviour monitoring sessions could account for other factors, such as caribou group size.

Hunter Harvest Study

- The Hunter Harvest Study (HHS) included 59 participants in 2022. A total of 766 caribou were reported as being harvested by 55 participants in the Baker Lake HHS.
- The 2022 HHS data indicated that 39% of reported harvest occurred within 5 km of the AWAR, and 70% occurred within the Meadowbank RSA.
- In 2022, no Caribou were 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 2022 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 2022.

Raptor Nest Monitoring

- Six peregrine falcon nests were documented in Quarries 2, 8, 18, 21, and 22 in 2022. No raptor nesting evidence was observed in quarries 10.5, 26, 30, 35, 50, and 52 along the WTHR in 2022. One peregrine falcon nest was identified on a communication tower on site. No other raptor nests were identified during pit checks or incidentally during other surveys in 2022.
- 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 will be included in a second Trent University MSc Thesis manuscript to be submitted in 2023. References for any publications produced in 2023 will be provided in the 2023 Annual Report, but otherwise reporting under the Migratory Bird Protection Plan is considered complete at this time.

Breeding Bird Monitoring

- Agnico Eagle will continue to survey 48 PRISM plots selected by the Canadian Wildlife Service 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 a minimum of

12 PRISM plots and both BBS routes be surveyed in June 2023. The four PRISM plots completed in 2022 will need to be revisited to take photographs of the plots from the plot corners.

Non-Native Plant Surveys

- No non-native plants, as identified by the CESSC, were recorded along the AWAR, WTHR, Baker Lake tank farm, Whale Tail and Meadowbank Mine sites. Eleven 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

- 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.
- Results of the power analysis indicate that sample sizes are already sufficient to evaluate at least moderate differences in snow hardness between plots (i.e., effect sizes of 50% or greater), but no such differences in snow hardness were observed. To assess differences in snow hardness for smaller effect sizes (e.g., 25%) for both study questions, snow data should be collected at a minimum of 65 locations, with six plots completed at each locations as per the study design.

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 I).

Road and Viewshed Comparison

- 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. A preliminary discussion of the comparison was presented at the November/December TAG meeting in 2022.
- 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, however the sample size for comparison was relatively low. Results indicate that road surveys may be capable of detecting caribou at long distances (up to 4 km) from the road. Increased sample size of caribou observations from viewshed surveys would allow a more rigorous comparison of road and 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 2022 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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Hunter Harvest Study

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Arctic Raptors Report

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Meadowbank Bird Surveys Report

APPENDIX I

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 Qaujimajatuqangit
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). The April 2020, Version 8 TEMP was prepared and reviewed by the TAG and to serve as the basis for the 2020 Annual Report. However, due to uncertainties and on-going discussions with TAG over TEMP Version 8 updates, Version 7 of the TEMP continued as the basis for 2022 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 2022, the 13 year of Mine operation, and is the 17 of a series of annual Wildlife Monitoring Summary Reports for the Project. The purpose of this report is to summarize 2022 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 2022 Annual Report describes monitoring objectives and methods, historical and current year results, mitigation activities, and management recommendations based on 2022 monitoring results. Furthermore, comments received from various intervenors through the NIRB review of the 2021 annual report were incorporated, where possible, into analyses and reporting in this document.

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, mining activities at Meadowbank in 2022 were only ongoing in Whale Tail Mine with ore from this pit being processed at the mill at the Meadowbank site.

To extend Mine operations and milling at Meadowbank Mine, Agnico Eagle has 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).

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 194 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 5,106 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

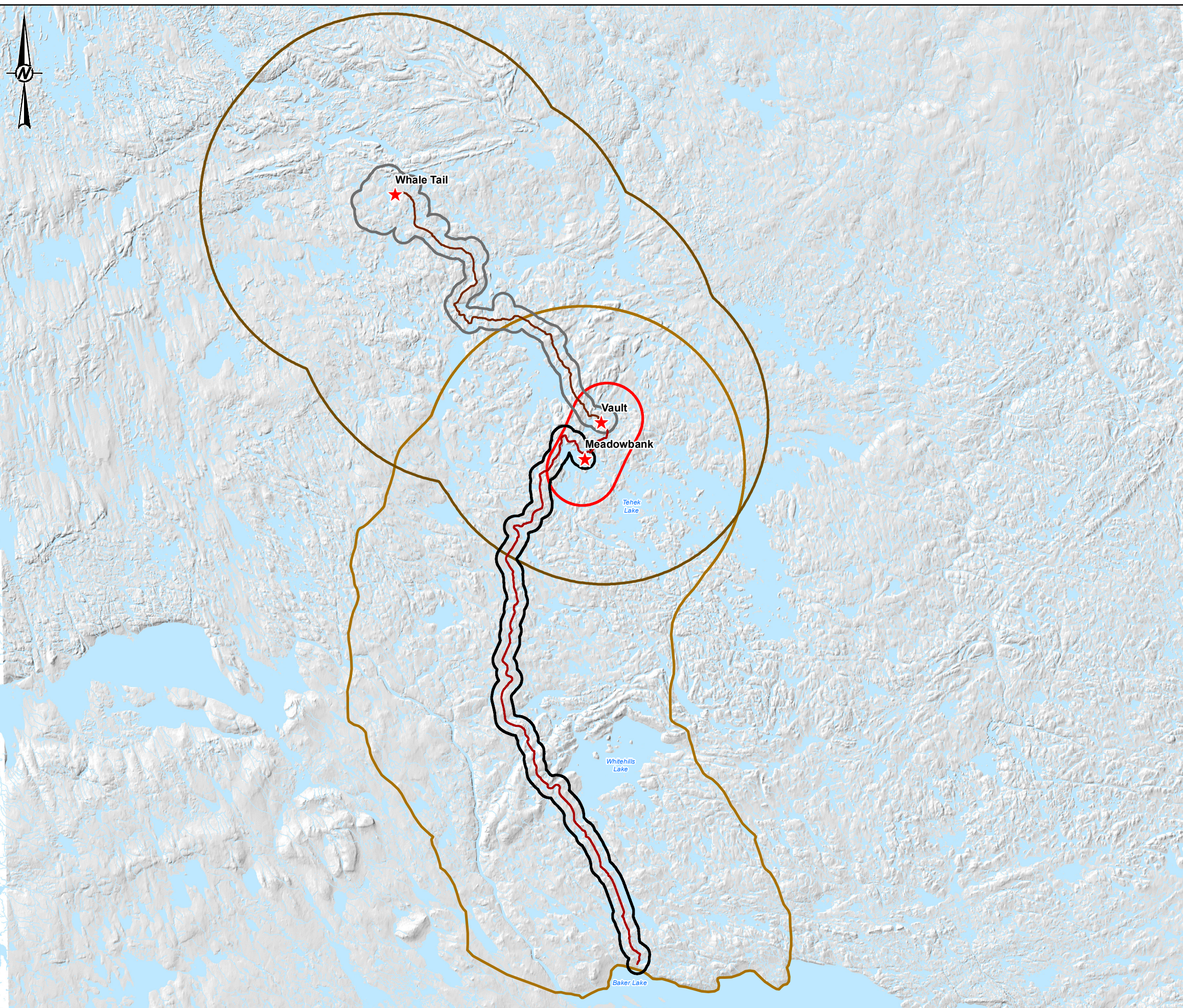
corridor centred on the WTHR alignment (i.e., 25 km on either side of the WTHR and borrow site access roads, and 25 km around borrow areas), with a total area of 5,017 km² (Figure 1-1).

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.

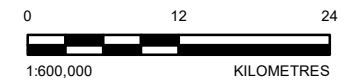
Environmental staff monitor wildlife near Project facilities (i.e., Meadowbank Mine and Whale Tail Mine) and along the AWAR and WTHR on a regular basis (Section 3.6). Where unacceptable risks to wildlife are observed, mitigation measures are implemented to avert animals from site activities and hazards 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, 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.

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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)
-  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 AND WHALE TAIL PIT TEMP 2022

TITLE

MEADOWBANK COMPLEX LOCATION AND MONITORING STUDIES BOUNDARIES

CONSULTANT



YYYY-MM-DD	2023-03-27
DESIGNED	SW
PREPARED	CDB
REVIEWED	DC
APPROVED	CDLM

PROJECT NO.
21502960

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1-1

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1.5 Report Objectives

The primary objectives of the 2022 Wildlife Monitoring Summary Report are to:

- a) Report the results of the 2022 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 2023.
- 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).

Three Inuit workers were under the employment of the environmental department and were involved in the monitoring programs in 2022. 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 2022, 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 Qaujimanituqaugit”; therefore, Indigenous Traditional Knowledge or IQ has been incorporated in this annual report.

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 9 February, and from 29 November to 1 December (in person). A series of meetings were held in October and November 2022 regarding fall caribou migration.

The 9 February meeting ((Agnico Eagle 2022a) included discussion of vehicle traffic rates, roadside flags, review of 2021 road closures, the lead group size threshold (GST) approach, caribou migration patterns, the remote camera program, and the caribou behaviour monitoring program.

The 29 November to 1 December meeting (Agnico Eagle 2023b) included a site visit to the Whale Tail Mine, and discussion of project tolerant caribou, the lead GST approach, responses to comments on the 2021 annual report, the snow study, viewshed surveys, and caribou satellite collar data. Report sections influenced by these discussions include the road survey section (Section 3.0), road vs. viewshed comparison (Section 17.3), and snow study (Section 17.1).

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 2022 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 2022.

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	112
Winter	16 December to 31 March	25

2.5 Results

The decision trees were used throughout 2022. Data collection methods were implemented in 2022 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 2022 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 ground survey monitoring program for the AWAR, and WTHR has been designed to evaluate sensory disturbance for wildlife, particularly caribou (*Rangifer tarandus*), muskoxen (*Ovibos moschatus*), 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 ground 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 ground 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 2022, 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

Ground 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 surveys in 2007, surveys along the AWAR have been conducted every 1.6 to every 6.1 days with an average survey frequency of every 4.3 days (Table 3-1). Surveys along the WTHR began in 2017 and have been conducted every 1.9 to every 7.7 days with an average survey frequency of every 3.7 days (Table 3-3).

3.6 2022 Results

3.6.1 AWAR Surveys

The number of AWAR surveys completed each season in 2022 is provided in Table 3-1. The number of systematic road surveys completed in 2022 (n=235) is higher than the number of surveys completed the previous year (n=177) and considerably higher than the annual goal of 75 surveys. In 2022, surveys were conducted on average every 1.6 days, and were conducted between 02 January and 29 December. The number of surveys completed was highest in the summer (n=78) and lowest in winter (n=38). By month, the highest numbers of surveys were conducted in October, November, and August, with October and November corresponding with higher numbers of caribou observed within the LSA.

Two Baker Lake Hunters and Trappers Organization (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 50,093 caribou were detected across 235 AWAR road surveys (i.e., approximately 213 caribou per survey), and caribou were recorded in all months. The highest average caribou observed per survey occurred in November and October (Table 3-2). Record numbers of average caribou per survey were observed for January, July, October, and November in 2022 (Table 3-2). This is different than previous years and particularly 2020, when record numbers of average caribou per survey were observed for March, May, June, August, September, October, and November (Golder 2022).

Table 3-1: Details of All-Weather Access Road Wildlife Surveys from 2007 to 2022

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

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: Monthly Averages of the Number of Caribou Observed per Survey Trip Along the All-Weather Access Road from 2007 to 2022

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
Average	7.0	11.5	18.9	62.9	53.7	10.6	3.4	29.5	42.5	137.1	162.5	69.8

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 2022 there were 193 surveys conducted between 02 January and 28 December with a survey being conducted every 1.9 days on average (Table 3-3). The number of surveys conducted in 2022 was higher than the number conducted in any previous years. More surveys were conducted in spring and summer compared to fall and winter (Table 3-3).

A total of 6,355 caribou were detected across 193 WTHR surveys (i.e., approximately 33 caribou per survey) in 2022, fewer than the 11,928 caribou detected in 2021 despite survey effort being higher in 2022 (Table 3-3). The majority of caribou sightings along the WTHR were observed in April corresponding with spring migration, with a total of 4,164 caribou observed and an average of 115.7 caribou sightings per survey (Table 3-4). August had the second highest caribou sighting per survey that was observed in 2022 with 36.3 caribou sightings per survey. Caribou were detected along the WTHR during every month in 2022, and December has the lowest average number of caribou detections per survey (Table 3-4). The average number of caribou observed along the WTHR in 2022 was lower than the monthly averages across years for most months, including March-July and September-December (Table 3-4). The largest discrepancy occurred in May with an average of 14.6 caribou detected per survey in 2022 versus average detections of over 300 caribou per survey in May 2020 and 2021. The average number of caribou observed in 2022 was higher than the average across years for January, February, and August.

Table 3-3: Details of Whale Tail Haul Road Surveys from 2017 to 2022

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

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 3-4: Monthly Averages of the Number of Caribou Observed per Survey Trip Along the Whale Tail Haul Road from 2007 to 2022

Year	Location	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2017	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
Average		1.4	1.6	2.8	28.8	132.5	160.3	13.3	1.8	23.1	23.1	33.6	8.3

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.

3.6.3 Caribou Counts along AWAR and WTHR

The total number of caribou observed in 2022 along the AWAR were slightly higher than numbers from 2019, 2020, and 2021 (Figure 3-1). The total number of caribou observed along the WTHR in 2022 was slightly lower than numbers observed in 2020 and 2021, and total numbers from 2020-2022 were much lower than 2019 counts (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.

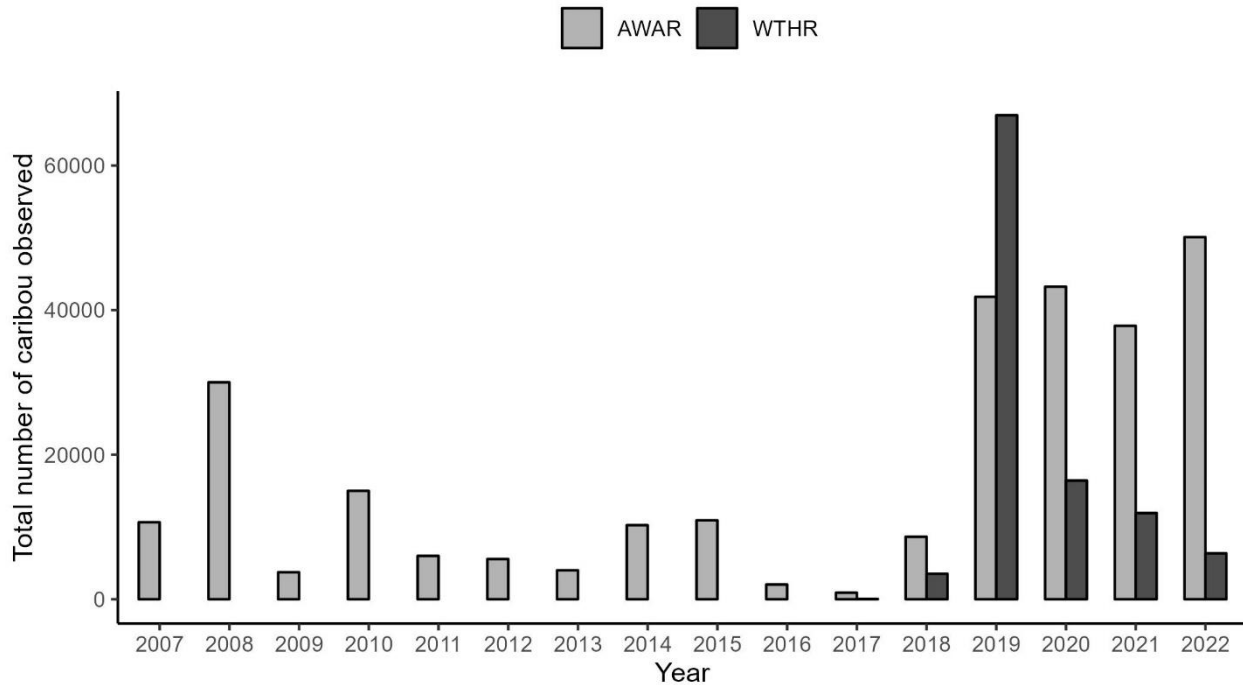


Figure 3-1: Total Number of Caribou Observed Each Year During All-Weather Access Road and Whale Tail Haul Road Surveys.

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 2022 (235 AWAR surveys and 193 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 2022 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.

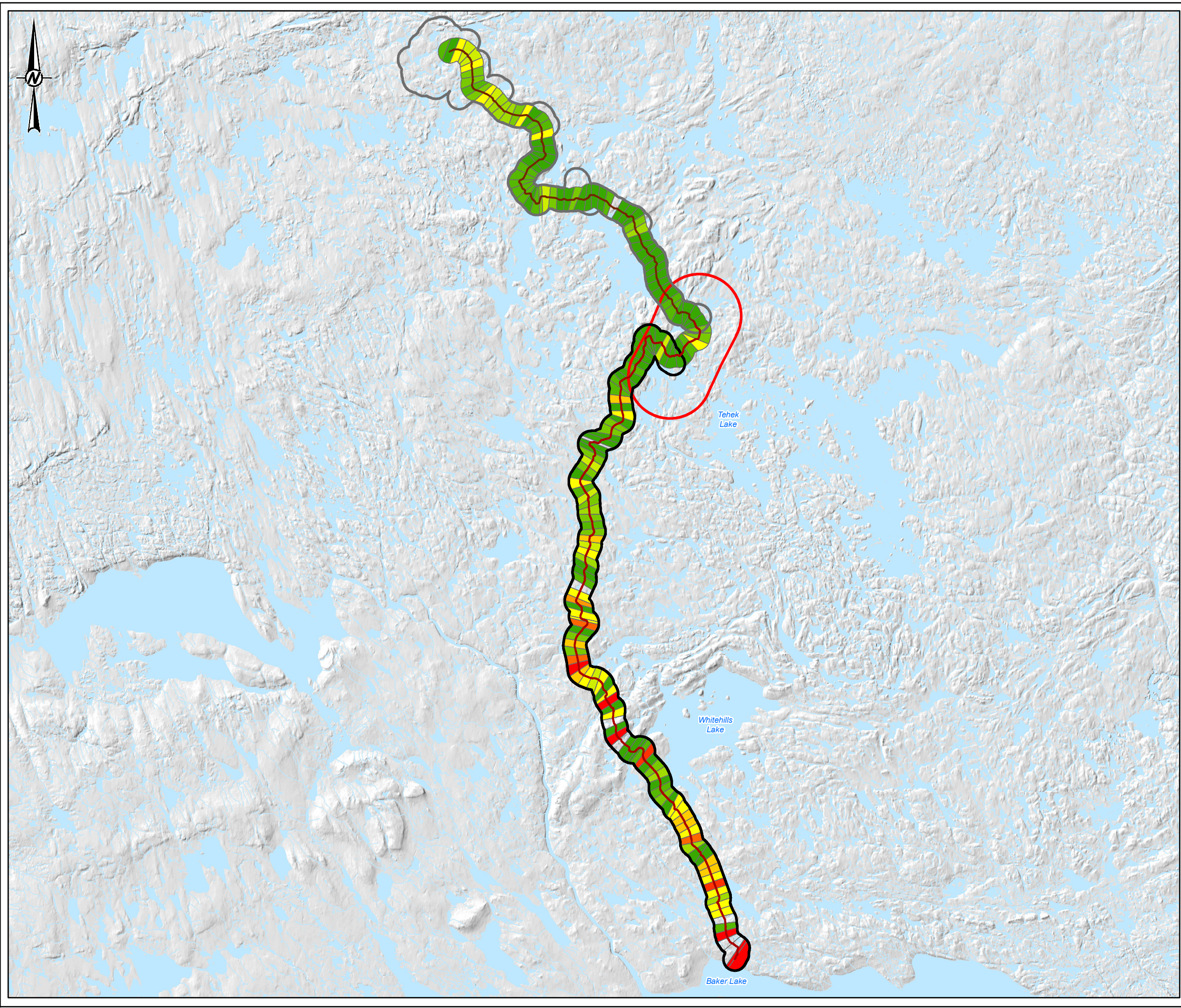
Year-round caribou counts along the AWAR varied substantially with totals ranging between 0 to 9,037 caribou for each 1-km section of road, though most kilometre sections had few caribou counts ranging between 1 and 150 caribou (Figure 3-2). Along the AWAR, caribou counts were lowest south of Meadowbank LSA with caribou count annual totals ranging between 0 and 98 caribou from KM 93 to 100. The highest counts were observed between

KM 1 to 5 near Baker Lake where 2,602 and 9,307 caribou were observed, which contradicts 2021 observations, where this section of the AWAR was lowest. During the spring months, caribou counts were very low along the AWAR. Most of the observation occurred northwest of Whitehills Lake, between KM 48 to 67, and north of KM 88. The fewest sightings were recorded near Baker Lake in the southern portion of the AWAR (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 KM 0 to 5 and KM 33 to 51 (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 KM 46 to 58 and KM 73 to 78 (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 2020b). Road survey results from 2020 found a similar pattern of year-round distribution along the AWAR and identified the stretch of road from KM 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 2022 show similar patterns to the cumulative caribou counts prior to 2020, where the highest density of caribou were observed north of Baker Lake 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 between KM 111 to 113 and KM 163 to 179. 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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- 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 - 1500
- 1500 - 2500
- 2500 - 10000

*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 AND WHALE TAIL PIT TEMP 2022

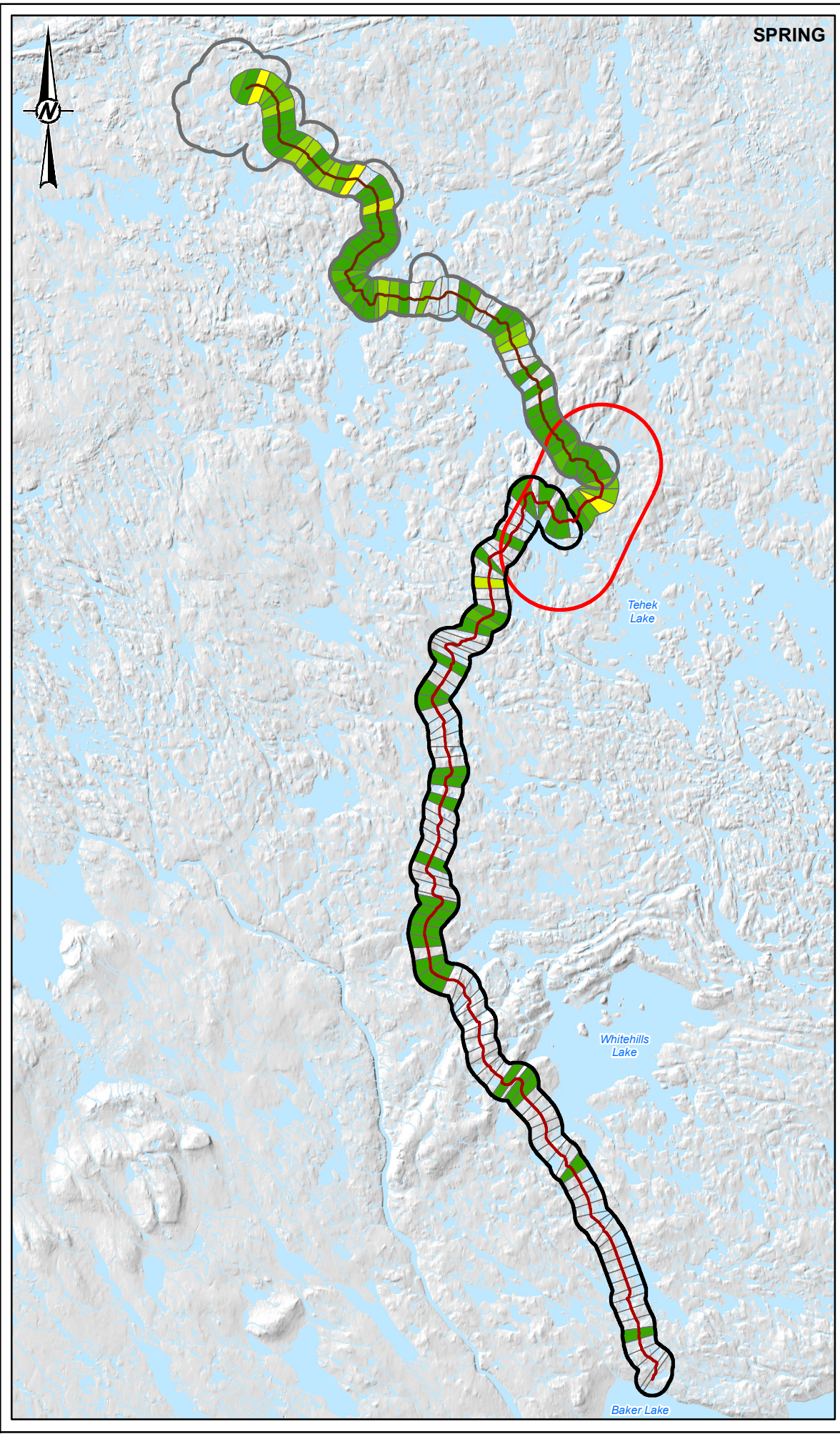
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CONSULTANT	YYYY-MM-DD 2023-03-27
	DESIGNED JF
	PREPARED CDB
	REVIEWED DC
	APPROVED CDLM

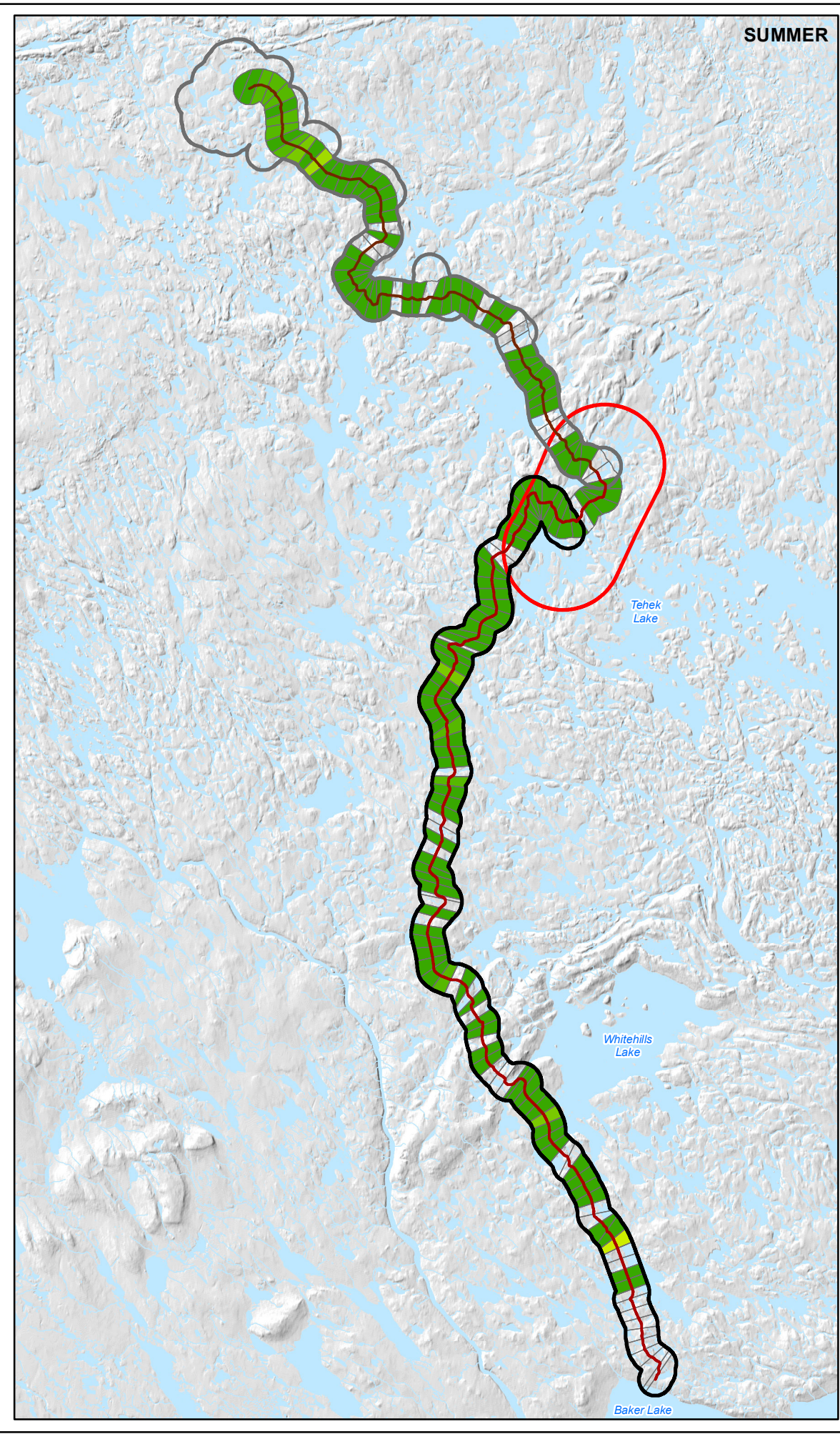
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SPRING



SUMMER

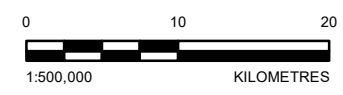
LEGEND

- 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

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- 150 - 200
- 200 - 250
- 250 - 500
- 500 - 750
- 750 - 1000
- 1000 - 1500
- 1500 - 2500
- 2500 - 10000

*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**

PROJECT
MEADOWBANK AND WHALE TAIL PIT TEMP 2022

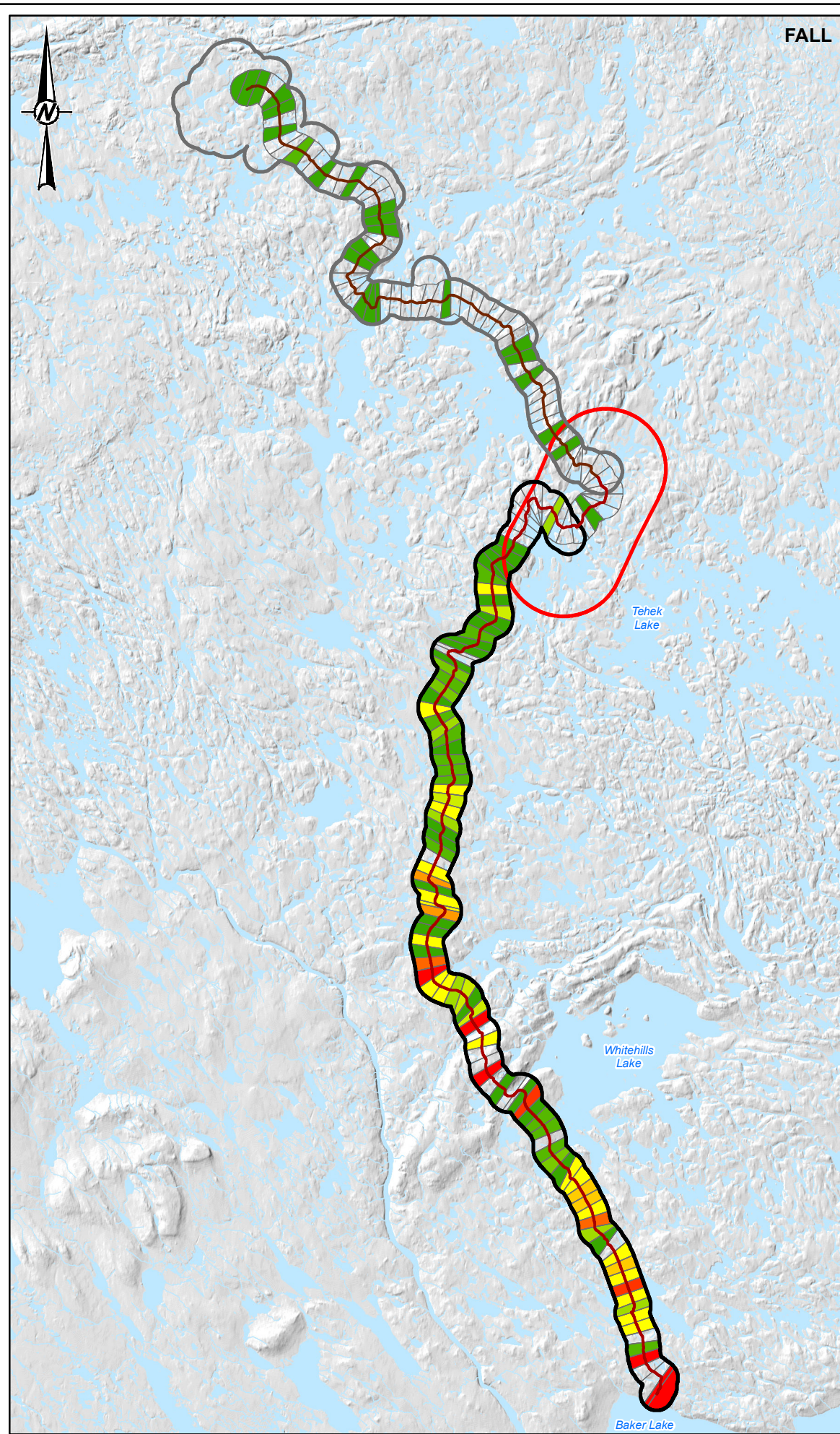
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	DESIGNED	JF
	PREPARED	CDB
	REVIEWED	DC
	APPROVED	CDLM

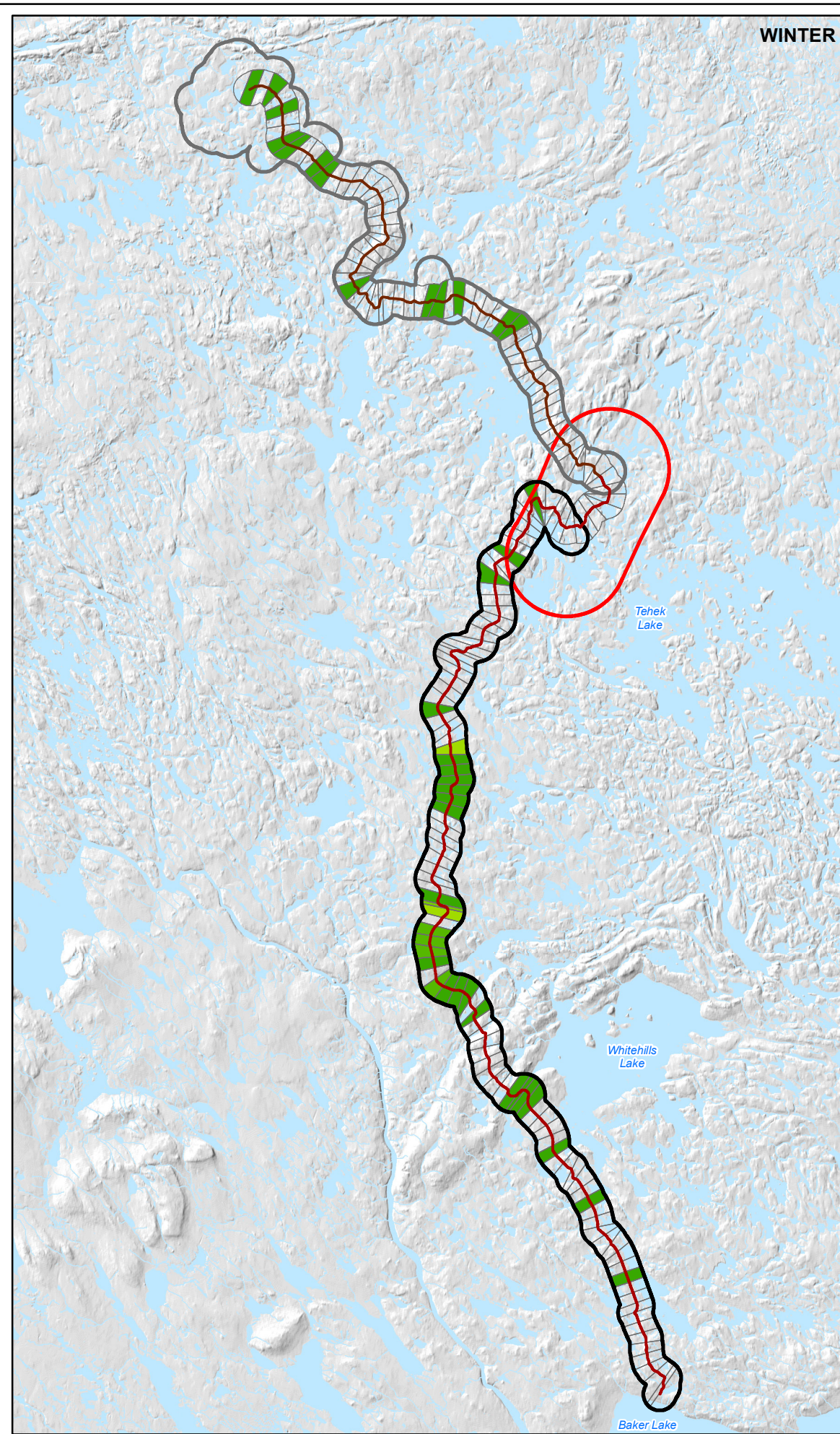
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FALL



WINTER

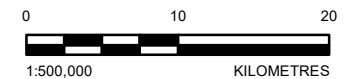
LEGEND

- 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
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CARIBOU COUNT

- 1 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- 200 - 250
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- 750 - 1000
- 1000 - 1500
- 1500 - 2500
- 2500 - 10000

*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 AND WHALE TAIL PIT TEMP 2022

TITLE

CARIBOU COUNTS ALONG THE ALL-WEATHER ACCESS ROAD AND WHALE TAIL HAUL ROAD, FALL-WINTER (2022)

CONSULTANT



YYYY-MM-DD	2023-03-27
DESIGNED	JF
PREPARED	CDB
REVIEWED	DC
APPROVED	CDLM

PROJECT NO.
21502960

CONTROL
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 2022 caribou road survey data as well as historical data (Table 3-6). 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 2022 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 3-6. Spring and fall GSTs for 2023 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 five years of spring data with at least 100 caribou group observations (2008, 2018, 2019, 2020, and 2021; Table 3-6), and spring GSTs were averaged across those five years to calculate a spring 2023 GST of 35 caribou (Table 3-6). There were three years of fall data with at least 100 caribou group observations (2008, 2019, and 2022; Table 3-6), and fall GSTs were averaged across those three years to calculate a fall 2023 GST of 96 caribou (Table 3-6). For the purpose of calculating thresholds, GSTs were rounded down to the nearest whole number.

Table 3-5: Caribou group observation sample sizes for spring and fall road surveys, 2007-2022

Year	Sample Size ^(a)		Location ^(b)	Group Size 75 th Percentile Spring	Group Size 75 th 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

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 3-6: Caribou GST summaries for spring and fall based on 2022 data

Season ^(a)	Number of Observations ^(b)	Average group size	Group size range	Group size 75 th percentile	Calculated GSTs for 2023 ^(c)
Spring	81	33.9	1-250	44	33
Fall	108	46.4	1-350	54	93

- a) 2022 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 2023 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

Seven mammalian species and twelve avian species were detected and identified during road surveys in 2022 (Table 3-7). All 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*). Caribou and muskox were the most frequently observed mammals. Seven avian species were observed at both sites including American crow (*Corvus brachyrhynchos*), bald eagle (*Haliaeetus leucocephalus*), Canada goose (*Branta canadensis*), ptarmigan sp. (*Lagopus* sp.), rough-legged hawk (*Buteo lagopus*), sandhill crane (*Antigone canadensis*), and snow goose (*Chen caerulescens*). Hawk sp. (*Buteo*), osprey (*Pandion haliaetus*), and peregrine falcon (*Falco peregrinus*) were only observed at AWAR. Common raven (*Corvus corax*) and gull sp. (*Larus*) were only observed at WTHR. At both AWAR and WTHR Snow geese and Canada 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 2022 (Table 3-8). Grizzly bears (*Ursus arctos horribilis*) and wolverines were only observed on the AWAR, and Arctic ground squirrel were only observed on the WTHR. The remainder of the species observed were recorded on both roads, including Arctic fox, Arctic hare, caribou, muskox, and wolf. On both roads, caribou and muskox were the most frequently observed species. Peregrine falcon were observed at both the AWAR and the WTHR. Ptarmigan sp., which includes rock ptarmigan (*Lagopus muta*) and/or willow ptarmigan (*Lagopus lagopus*), as well as snowy owl (*Bubo scandiacus*) were observed incidentally at the AWAR only.

Table 3-7: Species Detected During Road Surveys at All-Weather Access Road and Whale Tail Haul Road in 2022 by Month

Species Group	Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
AWAR														
Mammal	Arctic fox	0	0	2	1	1	2	0	1	2	0	0	0	9
	Arctic ground squirrel	0	0	0	0	0	0	0	1	0	0	0	0	1
	Arctic hare	0	0	0	2	8	0	0	2	3	0	0	0	15
	Caribou	537	488	90	665	175	112	456	268	803	22,708	23,788	3	50,093
	Muskox	66	10	16	102	64	217	185	212	180	90	611	196	1,949
	Wolf	0	0	0	0	0	0	0	0	7	14	3	0	24
	Wolverine	0	0	0	0	0	1	0	0	0	0	0	0	1

Table 3-7: Species Detected During Road Surveys at All-Weather Access Road and Whale Tail Haul Road in 2022 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	0	1	1	0	0	0	0	2
	Canada goose	0	0	0	0	0	25	6	147	0	0	0	0	178
	Crow	0	0	0	0	3	0	0	0	0	0	0	0	3
	Hawk sp.	0	0	0	0	0	1	0	0	0	0	0	0	1
	Osprey	0	0	0	0	1	0	0	0	0	0	0	0	1
	Peregrine falcon	0	0	0	0	2	1	0	4	0	0	0	0	7
	Ptarmigan	0	0	0	18	49	2	0	0	25	0	0	0	94
	Rough-legged-Hawk	0	0	0	0	1	0	0	0	0	0	0	0	1
	Sandhill crane	0	0	0	0	56	5	18	11	0	0	0	0	90
Snow goose	0	0	0	0	507	0	12	262	0	0	0	0	781	
WTHR														
Mammal	Arctic fox	0	1	3	1	3	1	3	0	0	7	3	0	22
	Arctic ground squirrel	0	0	0	0	0	2	0	1	0	0	0	0	3
	Arctic hare	0	0	0	0	4	2	0	0	0	1	0	0	7
	Caribou	29	50	9	4,164	366	80	2	1,306	99	114	134	2	6,355
	Muskox	46	8	20	164	97	47	92	124	236	349	549	39	1,771
	Wolf	0	0	0	5	0	1	4	1	0	5	0	0	16
	Wolverine	0	1	0	0	0	0	0	0	0	0	1	0	2
Bird	Bald Eagle	0	0	0	0	0	1	0	1	0	0	0	0	2
	Canada goose	0	0	0	0	0	14	22	71	294	0	0	0	401
	Common raven	0	0	0	0	0	0	0	0	0	0	1	0	1
	Crow	0	0	0	1	0	0	0	0	0	0	0	0	1
	Gull sp.	0	0	0	0	1	0	0	0	0	0	0	0	1
	Ptarmigan	0	0	0	0	0	0	0	0	4	0	0	0	4
	Rough-legged-Hawk	0	0	0	0	2	0	0	0	1	0	0	0	3
	Sandhill crane	0	0	0	0	2	2	0	2	0	0	0	0	6
Snow goose	0	0	0	0	350	0	0	13	0	0	0	0	363	

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

Table 3-8: Species Detected Incidentally at All-Weather Access Road and Whale Tail Haul Road in 2022 by Month

Species Group	Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
AWAR														
Mammal	Arctic fox	0	3	0	0	0	0	0	0	0	0	0	0	3
	Arctic hare	0	1	0	0	0	0	0	0	0	0	2	0	3
	Caribou	160	173	5	647	245	5	362	102	29	684	1,161	0	3,573
	Grizzly bear	0	0	0	0	1	0	0	2	0	0	0	0	3
	Muskox	0	0	3	110	27	26	105	45	55	0	124	80	575
	Wolf	0	0	0	1	2	0	1	0	0	0	0	0	4
Bird	Wolverine	0	0	0	0	0	0	0	1	0	0	0	0	1
	Peregrine falcon	0	0	0	0	0	0	0	0	3	0	0	0	3
	Ptarmigan	0	0	0	1	0	0	0	0	0	0	0	0	1
	Snow goose	0	0	0	0	0	0	0	0	600	0	0	0	
	Snowy owl	0	0	0	0	0	0	0	0	1	0	0	0	1

Table 3-8: Species Detected Incidentally at All-Weather Access Road and Whale Tail Haul Road in 2022 by Month

Species Group	Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
WTHR														
Mammal	Arctic fox	0	0	0	0	0	0	0	0	1	1	4	0	6
	Arctic ground squirrel	0	0	0	0	0	0	0	0	1	0	0	0	1
	Arctic hare	0	0	0	0	0	0	2	0	2	0	0	0	4
	Caribou	20	22	50	3,803	289	24	2	159	47	309	3	6	4,734
	Muskox	11	111	30	20	4	9	22	22	136	59	114	3	541
	Wolf	0	6	33	8	0	0	0	0	0	4	0	0	51
Bird	Peregrine falcon	0	0	0	0	0	0	3	0	0	0	0	0	3

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 2022 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 limited 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. Convoys were organized by Mine Environment staff, who had the training to decide whether vehicles could continue along the road when caribou were sighted, and at times assisted by the BLHTO or the KivIA.

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 2022, resulting in multiple closures to Project-related traffic. The AWAR was closed (i.e., 24-hour closure) on 45 days in 2022, with 23 days due to caribou, 21 days due to weather, and 1 day due to maintenance activities (Table 3-9). The AWAR was had closure days with less than 24 hours of closure on 71 occasions, including 28 closure days due to caribou (Table 3-9). October and November had the highest number of days with closures (both for 24-hour closures and less than 24-hour closures), aligning with caribou fall migration. In total, the AWAR was closed for a total of 1,808 hours in 2022, with the highest number of closure hours reported in October and November due to caribou migration and January due to weather (Table 3-10). Speed restrictions were applied on 84 days on the AWAR and were mostly applied in response to both caribou and muskox presence (Table 3-9). Mitigation measures such as reduced speeds were instituted due to the presence both muskox and caribou herds throughout the year. Traffic restrictions were applied on the AWAR on two days, during which traffic was restricted to light vehicles only due to weather. In total, there were 134 days in 2022 with road closures and speed

restrictions applied on the AWAR in response to caribou and/or muskox (Table 3-9). 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 15 days, with seven closure days due to caribou and eight closure days due to weather (Table 3-9). On 63 days, the WTHR experience closures occurring for less than 24 hours, with 20 closure days related to caribou and one closure day related to muskox (Table 3-9). In total, the WTHR was closed for a total of 894 hours in 2022, with the highest number of closure hours reported in April due to caribou spring migration and January due to weather (Table 3-10). Speed restrictions were applied on 93 days on the WTHR and in all cases were applied in response to caribou and/or muskox presence (Table 3-9). Reduced speeds were instituted due to the presence of both muskox and caribou herds throughout the year. There were three days in 2022 during which a closure and speed restriction on the WTHR were implemented for separate reasons (Table 3-9). On each of these three days, a speed restriction was in place due to muskox and a closure was implemented for less than 24 hours due to either weather or maintenance. Traffic restrictions were applied on the WTHR on six days, during which traffic was restricted to light vehicles only for some sections of road. In total, there were 129 days in 2022 with road closures and speed restrictions applied on the WTHR in response to caribou and/or muskox (Table 3-9). Full summaries of WTHR road closures, restrictions, and reasons for reopening are available in Appendix B in Table B-2.

Table 3-9: Number of Road Closures and Restrictions Implemented Due to Ungulate Activity, Weather, or Maintenance Along the All-Weather Access Road and Whale Tail Haul Road, 2022.

Closure Status	Cause	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
AWAR														
Closure 24 hours	Caribou	1	-	-	1	-	-	1	-	-	10	10	-	23
	Maintenance	-	-	-	-	-	1	-	-	-	-	-	-	1
	Weather	12	2	-	1	3	-	-	-	-	-	1	2	21
Closure < 24 hours	Caribou	1	-	-	11	1	-	1	1	-	8	5	-	28
	Cyanide Convoy	-	-	-	-	-	-	-	-	4	-	-	-	4
	Maintenance	-	-	2	-	-	1	-	-	-	-	-	-	3
	Weather	2	3	11	1	2	-	-	-	-	4	2	11	36
Speed Restriction	Caribou	5	6	1	3	8	-	1	14	7	4	-	-	49
	Caribou/Muskox	1	-	-	-	-	-	-	-	1	-	-	-	2
	Muskox	2	-	-	4	-	3	9	6	5	-	3	-	32
	Not Specified	-	-	-	-	-	-	-	-	1	-	-	-	1
Traffic Restriction ^(a)	Weather	-	-	-	-	-	-	-	-	-	2	-	-	2
WTHR														
Closure 24 hours	Caribou	-	-	-	7	-	-	-	-	-	-	-	-	7
	Weather	6	-	1	-	-	-	-	-	-	-	-	1	8
Closure < 24 hours	Caribou	-	-	-	15	2	-	-	1	-	2	-	-	20
	Maintenance	1	-	-	-	-	-	-	-	-	-	-	-	1
	Muskox	-	-	1	-	-	-	-	-	-	-	-	-	1
	Visible Smoke	-	2	-	-	-	-	-	-	-	-	-	-	2
	Weather	6	-	7	-	1	2	-	-	-	10	3	7	36

Table 3-9: Number of Road Closures and Restrictions Implemented Due to Ungulate Activity, Weather, or Maintenance Along the All-Weather Access Road and Whale Tail Haul Road, 2022.

Closure Status	Cause	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Closure/ Speed Restriction ^(b)	Maintenance/ Muskox	-	-	-	-	-	-	-	-	-	-	1	-	1
	Weather/Muskox	-	-	-	-	-	-	-	-	-	1	1	-	2
Speed Restriction	Caribou	-	1	-	6	18	1	-	19	2	-	-	-	47
	Caribou/Muskox	-	-	-	-	-	-	-	1	-	-	-	-	1
	Muskox	2	2	-	-	2	2	3	4	9	5	13	-	42
Traffic Restriction	Covid	-	1	-	-	-	-	-	-	-	-	-	-	1
	Not Specified	-	-	-	-	-	-	-	-	-	1	-	-	1
	Weather	-	-	-	-	-	-	-	-	-	2	2	-	4

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 3-10: Number of Road Closure Hours Due to Ungulate Activity, Weather, or Maintenance Along the All-Weather Access Road and Whale Tail Haul Road, 2022.

Closure Status	Cause	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
AWAR														
Closure 24 hours	Caribou	24.0	-	-	24.0	-	-	24.0	-	-	240.0	240.0	-	552.0
	Maintenance	-	-	-	-	-	24.0	-	-	-	-	-	-	24.0
	Weather	288.0	48.0	-	24.0	72.0	-	-	-	-	-	24.0	48.0	504.0
Closure < 24 hours	Caribou	11.0	-	-	151.8	4.5	-	11.5	17.5	-	87.3	69.8	-	353.3
	Cyanide Convoy	-	-	-	-	-	-	-	-	0.0	-	-	-	0.0
	Maintenance	-	-	26.0	-	-	18.0	-	-	-	-	-	-	44.0
	Weather	17.5	16.0	114.5	9.5	13.3	-	-	-	-	48.3	18.0	94.2	331.2
WTHR														
Closure 24 hours	Caribou	-	-	-	168.0	-	-	-	-	-	-	-	-	168.0
	Weather	144.0	-	24.0	-	-	-	-	-	-	-	-	24.0	192.0
Closure < 24 hours	Caribou	-	-	-	143.8	31.6	-	-	6.8	-	3.9	-	-	186.0
	Maintenance	4.5	-	-	-	-	-	-	-	-	-	-	-	4.5
	Muskox	-	-	2.0	-	-	-	-	-	-	-	-	-	2.0
	Visible Smoke	-	2.0	-	-	-	-	-	-	-	-	-	-	2.0
	Weather	48.3	-	63.3	-	5.0	28.0	-	-	-	127.0	12.9	55.7	340.1

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

The percentage of caribou that encountered the AWAR when closed was 76% of caribou observed during spring (1,276 of 1,683 caribou observed in spring) and 98% of caribou observed in fall (47,802 of 48,575 caribou observed in fall; Table 3-11). The percentage of caribou that encountered the WTHR when closed was 91% during the spring (8,366 out of 9,236 caribou observed in spring) and 66% during the fall (414 of 632 caribou observed in fall; Table 3-11). 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 3-11: 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	1,276	1,683	75.82
	Summer	882	1,954	45.14
	Fall	47,802	48,575	98.41
	Winter	381	1,454	26.20
	Annual	50,341	53,666	93.80
WTHR	Spring	8,366	9,236	90.58
	Summer	321	1,757	18.27
	Fall	414	632	65.51
	Winter	27	203	13.30
	Annual	9,128	11,828	77.17
AWAR + WTHR	Spring	9,642	10,919	88.30
	Summer	1,203	3,711	32.42
	Fall	48,216	49,207	97.99
	Winter	408	1,657	24.62
	Annual	59,469	65,494	90.80

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

3.6.7 Traffic Data

Total one-way traffic along the AWAR in 2022 included 90 heavy equipment, 15,055 medium equipment, and 11,283 light equipment vehicles for a total of 26,428 vehicles (Table 3-12). Total traffic along the WTHR included 54,856 heavy equipment, 2,943 medium equipment, and 3,271 light equipment vehicles, for a total of 61,070 vehicles (Table 3-13). Total traffic along the AWAR was about 10% higher in 2021 (n=29,516) than the 2022 total of vehicles, and traffic along the WTHR was 2% lower in 2022 compared to the vehicles in 2021 (n=62,037) (Golder 2021). Monthly vehicle traffic for the AWAR and WTHR fluctuated throughout the year (Figure 3-5). Lowest traffic rates on the AWAR occurred in January, and highest traffic rates occurred in September (Table 3-12; Figure 3-5). On the WTHR, lowest traffic rates were recorded in January, and highest traffic rates were recorded in August (Table 3-13; Figure 3-5). While caribou counts for the month of August were relatively high along the WTHR (Table 3-7) and seemingly coincided with high traffic rates, group sizes were generally small and only triggered traffic mitigation on two days resulting in a less than 24 hour road closure on 10 August and a speed restriction on 11 August (Appendix B). Although only two days in August had caribou observations on the WTHR that exceeded GSTs and triggered mitigation and there were no days with muskox

observations that exceeded the GST, speed restrictions were implemented on the WTHR on 24 days in August due to observed ungulate activity as a precaution.

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 (road maintenance, food, etc.). From this meeting, departure time, departure location, and the list of vehicles authorized to travel on the road will be determined. Only essential vehicles are permitted in convoys. 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 9 convoys between 7 October and 22 November along the AWAR, and 22 convoys between 3 April and 10 August along the WTHR in 2022 (Table 3-14). 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. Medium vehicles were the most common vehicle type (n=89), followed by light vehicles (n=84; Table 3-14).

Table 3-12: Monthly Traffic Data for the Meadowbank All-Weather Access Road in 2022

Month	Heavy Equipment	Medium Equipment	Light Equipment	Total
January	0	836	698	1,534
February	0	1,174	730	1,904
March	5	1,462	1,060	2,527
April	8	1,178	1,107	2,293
May	2	1,306	1,155	2,463
June	0	1,190	911	2,101
July	2	1,128	860	1,990
August	0	1,987	829	2,816
September	1	1,906	1,023	2,930
October	35	781	1,079	1,895
November	14	1,114	1,000	2,128
December	23	993	831	1,847
Total	90	15,055	11,283	26,428

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, and other similar sized vehicles.

Table 3-13: Monthly Traffic Data for the Meadowbank Whale Tail Haul Road in 2022

Month	Heavy Equipment	Medium Equipment	Light Equipment	Total
January	1,944	163	278	2,385
February	3,890	194	272	4,356
March	4,316	257	254	4,827
April	3,126	192	236	3,554
May	5,278	336	205	5,819
June	5,392	345	304	6,041
July	6,098	283	286	6,667
August	6,238	319	235	6,792
September	5,270	206	228	5,704
October	3,572	191	467	4,230

Table 3-13: Monthly Traffic Data for the Meadowbank Whale Tail Haul Road in 2022

Month	Heavy Equipment	Medium Equipment	Light Equipment	Total
November	4,630	243	332	5,205
December	5,102	214	174	5,490
Total	54,856	2,943	3,271	61,070

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, and other similar sized vehicles.

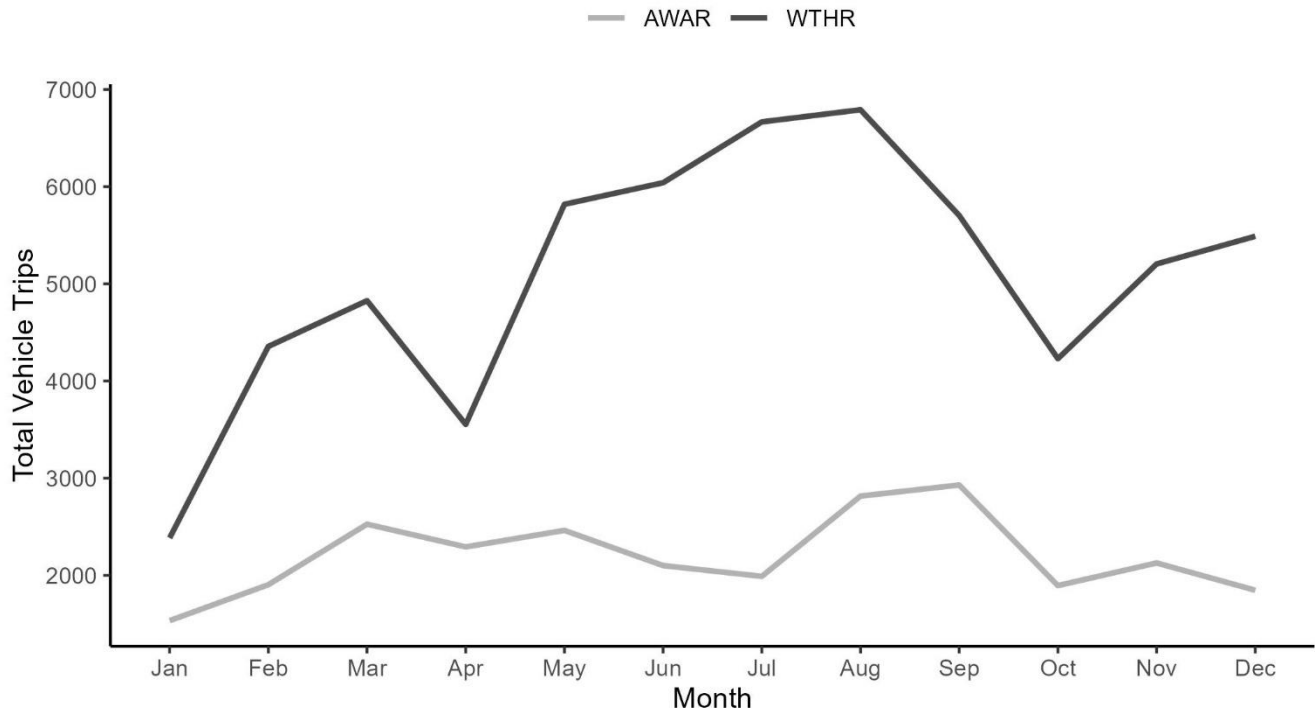


Figure 3-5: Total Vehicle Traffic (One-way Trips) Along All-Weather Access Road and Whale Tail Haul Road per Month in 2022

Table 3-14 Convoy Tracker for the AWAR and WTHR in 2022

Date	Direction of Travel	Convoy Type	Light	Medium	Heavy	Total ^(a)
AWAR						
2022-10-07	North & South (twice)	Passenger transport escort	2	0	0	2
2022-10-21	South	H&S (medical escort to Baker Lake)	2	0	0	2
2022-10-23	South/North	H&S (medical escort to Baker Lake)	2	0	0	2
2022-10-24	South	H&S (medical escort to Baker Lake)	2	0	0	2
2022-11-02	South	Escort back to hubs	1	8	0	9
2022-11-03	South	Essential Needs (food, etc.)	2	0	0	2
2022-11-12	South	Escort back to hubs	1	3	0	4
2022-11-13	North	Escort back to hubs	1	3	0	4
2022-11-22	North	Fuel Convoy	4	6	0	10
WTHR						
2022-04-03	South	Passenger transport escort	5	2	0	7
2022-04-03	North	Passenger transport escort	5	3	0	8
2022-04-07	South	Passenger transport escort	5	2	0	7
2022-04-10	South	Essential Needs (food, etc.)	1	2	0	3
2022-04-10	North	Essential Needs (food, etc.)	3	2	0	5
2022-04-11	South	Passenger transport escort	7	3	0	10
2022-04-11	North	Passenger transport escort	4	4	0	8
2022-04-14	North	Passenger transport escort	3	5	0	8
2022-04-15	North	Passenger transport escort	2	1	0	3
2022-04-15	South	Essential Needs (food, etc.)	1	2	0	3
2022-04-16	North	Essential Needs (food, etc.)	2	3	0	5
2022-04-16	South	Essential Needs (food, etc.)	2	4	0	6
2022-04-17	North	Essential Needs (food, etc.)	2	5	0	7
2022-04-21	South	Passenger transport escort	3	3	0	6
2022-04-21	North	Passenger transport escort	3	4	0	7
2022-04-22	South	Passenger transport escort	2	2	0	4
2022-04-22	North	Passenger transport escort	6	5	1	12
2022-04-23	South	Essential Needs (food, etc.)	2	6	0	8
2022-04-23	North	Essential Needs (food, etc.)	2	3	0	5
2022-04-24	South	Essential Needs (food, etc.)	2	2	0	4
2022-08-10	South	Passenger transport escort	3	6	0	9
2022-08-10	North	Passenger transport escort	2	0	0	2
Total^(b)			84	89	1	174

Heavy equipment = haul trucks, float; Medium equipment = cube trucks, emulsion, fuel tanker, tractor trailer, roll off, vacuum, lube truck, and other similar sized vehicles; Light equipment = wildlife monitors, pick-up trucks, bus, 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 2022 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 2022 recorded in the Wildlife Log (Appendix A) and road surveys showed that caribou crossed roads throughout the year, with especially high numbers during spring and fall migration (Table 3-15).

A total of 11,242 caribou were observed crossing the AWAR and 849 caribou were observed crossing the WTHR in 2022. Additionally, at Meadowbank there were two records of caribou crossings with one group of four observed on 14 June 2022, and another group of four observed on 27 July 2022. For the AWAR, the majority of caribou crossing observations occurred during fall migration with 95% (10,673 of 11,242 caribou) of observed AWAR caribou crossings occurring during this season. The months with the greatest number of caribou observed crossing the AWAR included October (over 4,000 observed crossings), and November (over 4,000 observations; Figure 3-6). During fall migration, 100% (10,673 of 10,673 caribou) of observed caribou crossings on the AWAR occurred on dates with an AWAR closure (Table 3-15). For annual caribou crossing observations on the AWAR, 96% (10,750 of 11,242 caribou) of observed crossing events occurred on dates with an AWAR closure and 4% (455 of 11,242 caribou) occurred on a day with a speed restriction in place.

For the WTHR, the majority of caribou crossing observations occurred during the spring migration with 62% (527 of 849) of observed WTHR caribou crossing occurring during this season. The month with the greatest number of caribou crossing the WTHR was April with 254 caribou crossings observed. There were no observed caribou crossings on the AWAR in May and December, and there were no observed caribou crossings on the WTHR during January, November, June, and December (Figure 3-6). During spring migration, 91% (478 of 527 caribou) of observed caribou crossings on the WTHR occurred on dates with a WTHR closure (Table 3-15). For annual caribou crossing observations on the WTHR, 83% (706 of 849 caribou) of observed crossing events occurred on dates with a WTHR closure and 15% (128 of 849 caribou) occurred on a day with a speed restriction in place. Caribou movement patterns continue to require close monitoring and analysis in 2023.

Table 3-15: Observations of Caribou Crossing AWAR and WTHR in 2022

Season	Date	Closure Status	Crossing KM Marker	Number of Caribou Crossing
AWAR				
Winter	2022-01-27	Speed Restriction	57	15
	2022-02-03	Speed Restriction	56	80
	2022-02-11	Speed Restriction	56	23
	2022-02-11	Speed Restriction	57	1
	2022-02-11	Speed Restriction	58	100
	2022-02-15	Speed Restriction	54	10
	2022-02-15	Speed Restriction	49	10
	2022-02-18	Open	56	19
	2022-02-25	Speed Restriction	56	20
	2022-03-05	Speed Restriction	102	9

Table 3-15: Observations of Caribou Crossing AWAR and WTHR in 2022

Season	Date	Closure Status	Crossing KM Marker	Number of Caribou Crossing
Spring	2022-04-03	Closure (< 24 hours)	50	10
	2022-04-06	Open	55	2
	2022-04-19	Closure (< 24 hours)	94	28
	2022-04-20	Closure (< 24 hours)	32	3
	2022-04-21	Closure (< 24 hours)	54	16
Summer	2022-06-02	Open	101	2
	2022-06-15	Open	79	5
	2022-07-22	Speed Restriction	93	1
	2022-07-26	Speed Restriction	90	1
	2022-07-27	Open	93	1
	2022-07-31	Closure (24 hours)	49	2
	2022-08-01	Closure (< 24 hours)	93	18
	2022-08-04	Open	68	2
	2022-08-06	Speed Restriction	78	1
	2022-08-07	Speed Restriction	104	1
	2022-08-10	Speed Restriction	78	1
	2022-08-10	Speed Restriction	103	2
	2022-08-14	Speed Restriction	52	1
	2022-08-14	Speed Restriction	101	6
	2022-08-16	Open	36	1
	2022-08-22	Speed Restriction	11	10
	2022-08-24	Speed Restriction	41	4
	2022-08-28	Open	104	3
	2022-09-12	Speed Restriction	58	12
	2022-09-13	Speed Restriction	15	101
2022-09-14	Speed Restriction	16	45	
2022-09-16	Speed Restriction	93	1	
2022-09-18	Open	102	2	
Fall	2022-10-08	Closure (24 hours)	60	14
	2022-10-08	Closure (24 hours)	48	294
	2022-10-16	Closure (< 24 hours)	18	200
	2022-10-23	Closure (24 hours)	60	310
	2022-10-26	Closure (24 hours)	5	4000
	2022-10-27	Closure (24 hours)	19	420
	2022-10-27	Closure (24 hours)	14	210
	2022-11-02	Closure (< 24 hours)	81	124
	2022-11-02	Closure (< 24 hours)	81	338
	2022-11-02	Closure (< 24 hours)	83	87
	2022-11-08	Closure (24 hours)	9	270
	2022-11-09	Closure (< 24 hours)	82	3
	2022-11-13	Closure (24 hours)	38	4000
	2022-11-19	Closure (24 hours)	68	153
2022-11-20	Closure (24 hours)	60	250	
Total				12115

Table 3-15: Observations of Caribou Crossing AWAR and WTHR in 2022

Season	Date	Closure Status	Crossing KM Marker	Number of Caribou Crossing
WTHR				
Winter	2022-02-23	Speed Restriction	169	3
	2022-03-01	Open	161	4
Spring	2022-04-07	Closure (< 24 hours)	165	20
	2022-04-07	Closure (< 24 hours)	173	17
	2022-04-13	Speed Restriction	112	9
	2022-04-13	Speed Restriction	114	14
	2022-04-14	Closure (< 24 hours)	154	4
	2022-04-22	Closure (24 hours)	111	254
	2022-04-26	Closure (< 24 hours)	113	120
	2022-04-26	Closure (< 24 hours)	112	8
	2022-04-27	Closure (< 24 hours)	151	10
	2022-04-27	Closure (< 24 hours)	157	6
	2022-04-28	Closure (< 24 hours)	112	39
	2022-05-23	Speed Restriction	112	26
Summer	2022-07-07	Open	119	1
	2022-07-11	Open	155	1
	2022-08-09	Speed Restriction	166	8
	2022-08-10	Closure (< 24 hours)	117	2
	2022-08-10	Closure (< 24 hours)	167	133
	2022-08-10	Closure (< 24 hours)	171	13
	2022-08-10	Closure (< 24 hours)	170	10
	2022-08-11	Speed Restriction	140	34
	2022-08-18	Speed Restriction	136	2
	2022-08-20	Speed Restriction	158	4
	2022-08-20	Speed Restriction	161	3
	2022-08-21	Speed Restriction	174	5
	2022-08-22	Speed Restriction	128	1
	2022-08-22	Speed Restriction	112	1
	2022-08-24	Speed Restriction	171	1
	2022-08-25	Open	148	5
	2022-08-28	Speed Restriction	111	3
	2022-08-30	Speed Restriction	145	3
	2022-08-31	Speed Restriction	172	5
2022-09-01	Open	171	4	
2022-09-07	Speed Restriction	167	6	
Fall	2022-10-07	Closure (< 24 hours)	169	70
Total				849

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

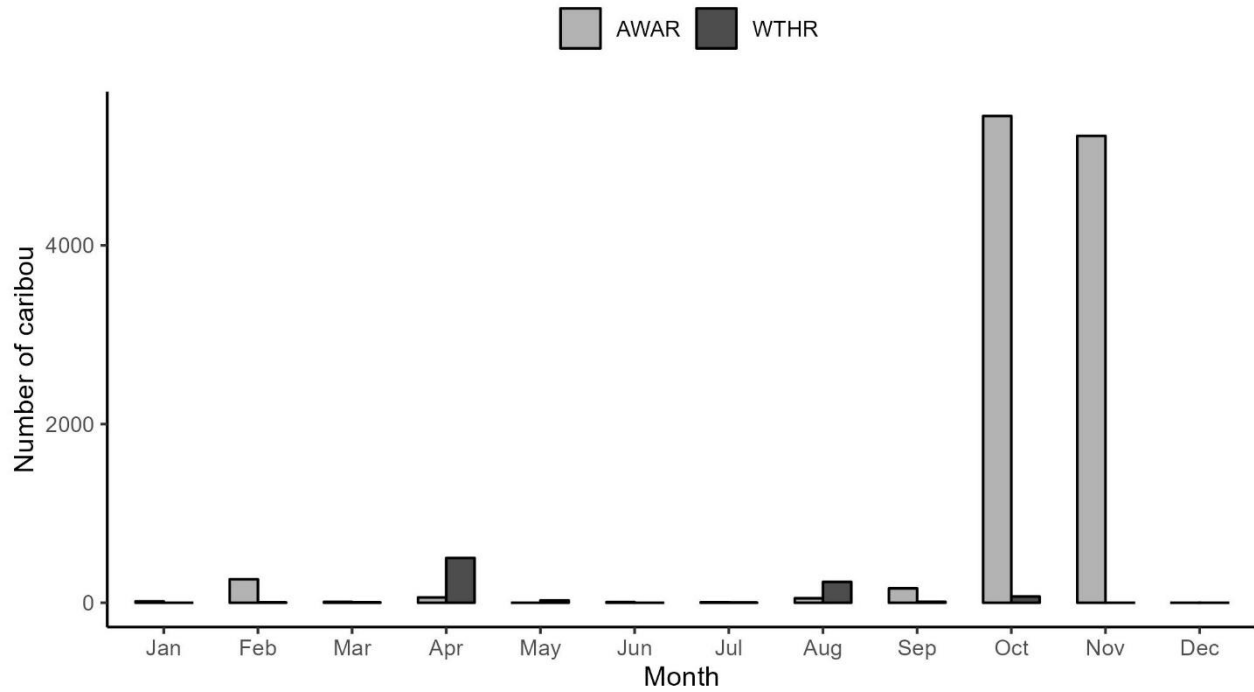


Figure 3-6: Number of Caribou Crossing Observations per Month on the All-Weather Access Road (AWAR) and Whale Tail Haul Road (WTHR) during 2022

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 eight occasions, observed caribou were identified as Project tolerant as defined in TEMP Version 7 (Agnico Eagle 2019) (Table 3-16). One caribou was identified as Project tolerant at Meadowbank on 11 July, and 13 caribou were identified as Project tolerant at Whale Tail with the same group identified as Project tolerant on April 19 and 20 after multiple days of observation (Table 3-16). On the AWAR, 23 caribou were identified as Project tolerant, including one group identified on 11 January and one group identified on 19 April. On the WTHR, 20 caribou were identified as Project tolerant, with groups identified on 11 February, 10 May, and 20 August (Table 3-16). Note, identification of project tolerant caribou did not impact the decision tree process or relax mitigation measures in place.

Table 3-16: Observations of Tolerant Caribou in 2022

Location	Date	Survey Type	KM Marker	Distance	Number of caribou	Tolerance
AWAR	2022-01-11	Road	70	900	17	Yes – Same location, about the same size of herd since few days.
	2022-04-19	Incidental	33	250	6	Yes – Same place as last observation.
Meadowbank	2022-07-11	Mine & Pit	NA	1	1	Yes – Same caribou that has been on site for a while.
Whale Tail Mine	2022-04-19	Incidental	NA	NA	13	Yes – Same individuals are hanging around the area since a couple of days now. Same numbers and place, no stress about mine activities.
	2022-04-20	Incidental	NA	NA	13	Yes – Same group that we saw for almost 4 days now. Same numbers and general location. They are migrating east.
WTHR	2022-02-11	Road	170	100	10	Yes – Same group size and location as previous survey.
	2022-05-10	Road	119	350	5	Yes – Seen them the other day.
	2022-08-20	Road	147	350	5	Yes – Seen them the other day around this area so could be the same group.

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 2022 are recorded in Table 3-17, and reports are included in Appendix C. There were no road-related caribou, grizzly bear, or wolf mortalities associated with the AWAR or WTHR in 2022. There was one wolverine mortality that took place on the AWAR on 2 August 2022 (Table 3-17). Road related mortalities from 2007 to 2022 are presented in Table 3-18. Mine site related mortalities are described in Section 4.5.8. There were substantially fewer road related mortalities reported in 2022 than in 2021 (Golder 2022).

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 3-17: Wildlife Mortalities Related to the All-Weather Access Road and Whale Tail Haul Road in 2022

Date	Species	Count	Project Related	Location	Comments
AWAR					
2022-02-03	Arctic Hare	1	Yes	KM 16	Struck by a vehicle on the road.
2022-04-22	Ptarmigan	1	Yes	KM 40	Struck by a vehicle on the road.
2022-08-02	Wolverine	1	Yes	KM 80	Struck by a vehicle on a bridge.
2022-11-11	Arctic Hare	1	Yes	KM 15	Struck by a vehicle on the road.
2022-11-11	Arctic Hare	1	Yes	KM 2	Struck by a vehicle on the road.
WTHR					
2022-06-26	Arctic ground squirrel	1	Yes	KM 132	Struck by a vehicle on the road.
2022-07-23	Arctic Hare	1	Yes	KM 135	Carcass found on the road.
2022-07-23	Arctic Hare	1	Yes	KM 143	Struck by a vehicle on the road.
2022-09-05	Arctic Hare	1	Yes	KM 121	Carcass found on the road.
2022-10-23	Arctic Hare	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 3-18: Summary of Road-related Wildlife Mortality Records (2007 to 2022)

Year	Caribou	Grizzly Bear	Wolverine	Wolf	Fox	Small Mammals	Small Birds	Unidentified Small Animal
AWAR								
2007	31	0	0	0	0	3	3	0
2008	102	0	0	2	13	7	17	0
2009	13	0	0	0	1	6	2	0
2010	1	0	0	0	2	6	2	0
2011	23	0	0	1	0	5	4	0
2012	24	0	1	0	0	3	1	0
2013	5	0	0	0	1	1	1	0
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	1	4	2	1
2016	0	0	0	0	2	0	1	0
2017	0	0	0	0	5	3	3	0
2018	0	0	0	0	0	2	0	0
2019	0	0	0	0	0	3	0	0
2020	1	0	0	0	0	0	0	0
2021	0	0	0	0	5	9	1	0
2022	0	0	1	0	0	3	1	0
WTHR								
2018	0	0	0	0	0	2	0	0
2019	0	0	0	0	1	1	1	0
2020	0	0	0	0	0	0	0	0
2021	0	0	0	0	2	11	0	0
2022	0	0	0	0	0	5	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 3-19. The 2022 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 2022.

Table 3-19: Accuracy of Impact Predictions – Sensory Disturbance and Mortality along the All-Weather Access Road and Whale Tail Haul Road in 2022

Potential Effect	Threshold	Threshold Exceeded (2022)	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	NO	AWAR and WTHR surveys Satellite-collaring data surveys
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; one wolverine killed on AWAR in 2022.	NO	AWAR, and WTHR surveys
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

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 Decisions 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 environmental 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 2022, 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. 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 2022, 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 2022 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 2022 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. Weekly mine inspections at Meadowbank and Whale Tail include a wildlife observation component and are also included in this count.

In 2022, Meadowbank had a total of 58 formal Mine and Pit surveys conducted between 1 January and 24 December. The average frequency of surveys was approximately one survey every 6.2 days during this period, with the largest number of surveys occurring in July and May with eight and seven respectively. Whale Tail had a total of 71 formal Mine and Pit surveys conducted between 1 January and 31 December. The average frequency of surveys was approximately one survey every 5.1 days during this period, with the largest number of surveys occurring in April.

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

Location	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Meadowbank	5	4	6	4	7	5	8	5	2	4	5	3	58
Whale Tail	6	4	5	10	6	6	7	4	4	5	6	8	71

4.5.2 Wildlife Observations from Pit and Mine Surveys

Wildlife observations from formal Pit and Mine surveys conducted between January and December of 2022 are shown in Table 4-2 and wildlife observations from incidental surveys at the Meadowbank and Whale Tail sites are provided in Table 4-3. Observations were used by Environment personnel to monitor wildlife activity within the Project and to identify potential problematic or sensitive animals requiring deterrence.

Six mammal species were reported during formal Pit and Mine surveys at Meadowbank in 2022, including Arctic fox, Arctic hare, caribou, muskox, red fox (*Vulpes vulpes*), and wolverine (Table 4-2). Caribou sightings were highest from March to July, peaking in observations during May, and muskox sightings were highest in July. Wolverines were only reported once in March and once in November. Four species of birds were reported during

formal Pit and Mine surveys at Meadowbank, including Canada goose, sandhill cranes, an unidentified ptarmigan, and unidentified gulls. The Canada goose was the most frequently observed bird species and was reported mostly in June and August.

Four mammal species were reported during formal Pit and Mine surveys Whale Tail Mine in 2022, including Arctic fox, Arctic hare, caribou, and muskox (Table 4-2). The highest caribou sightings took place in August and September, followed by May and April. Muskox sightings were only recorded in July while the Arctic fox was recorded during almost every month except for June, July, and October. Arctic hare had two observations at Whale Tail Mine, once in June and once in July. Six species of birds, as well as unidentified species of geese, ducks, and ptarmigan, were observed during formal surveys at Whale Tail in 2022 (Table 4-2). Species observed include bald eagle, Canada goose, raven, crow, greater white-fronted goose (*Answer albifrons*), and peregrine falcon.

Table 4-2: Wildlife Observations from Formal Pit and Mine Site Ground Surveys by Month 2022

Species Group	Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Meadowbank														
Mammal	Arctic fox	1	1	2	0	1	0	0	0	0	0	4	2	11
	Arctic hare	1	0	0	3	10	0	2	0	0	0	1	0	17
	Caribou	0	0	12	5	38	9	10	6	0	0	0	0	80
	Muskox	0	0	0	0	0	2	23	1	3	0	5	0	34
	Red fox	0	1	1	0	0	0	0	0	0	0	0	0	2
	Wolverine	0	0	1	0	0	0	0	0	0	0	0	1	0
Bird	Canada goose	0	0	0	0	2	34	0	44	0	0	0	0	80
	Ptarmigan sp.	0	0	0	0	0	1	0	0	0	0	0	0	1
	Sandhill crane	0	0	0	0	0	0	0	2	0	0	0	0	2
	Gull sp.	0	0	0	0	13	0	0	0	0	0	0	0	13
Whale Tail														
Mammal	Arctic fox	2	4	8	2	6	0	0	1	1	0	9	8	41
	Arctic hare	0	0	0	0	0	1	1	0	0	0	0	0	2
	Caribou	10	0	0	31	38	0	4	73	49	0	2	8	215
	Muskox	0	0	0	0	0	0	16	0	0	0	0	0	16
Bird	Bald eagle	0	0	0	0	0	0	0	1	0	0	0	0	1
	Canada goose	0	0	0	0	0	2	0	6	0	0	0	0	8
	Common raven	0	0	0	0	1	1	0	0	0	0	0	0	2
	Crow	0	0	0	0	0	0	1	0	0	0	0	0	1
	Duck sp.	0	0	0	0	0	0	0	6	0	0	0	0	6
	Goose sp.	0	0	0	0	0	60	0	0	0	0	0	0	60
	Greater white-fronted goose	0	0	0	0	1	0	0	0	0	0	0	0	1
	Peregrine falcon	0	0	0	0	0	0	0	0	1	0	0	0	1
Ptarmigan sp.	0	0	0	0	0	0	0	0	0	2	0	0	2	

Six mammal species were reported as incidental sightings at Meadowbank in 2022 including Arctic fox, caribou, wolves, muskox, red fox, and wolverine (Table 4-3). Incidental caribou sightings were highest in May and trailed

off into July. Muskox and grey wolf sightings were highest June to July and July to August respectively. Wolverines were sighted more frequently during the winter, with the highest number of incidental wolverine sightings occurring during January to March at Meadowbank. Arctic fox were sighted once in January and the red fox were sighted once in both January and March at Meadowbank in 2022. There were no bird species recorded incidentally at Meadowbank in 2022 (Table 4-3).

Five mammal species were reported as incidental sightings at Whale Tail in 2022 including Arctic fox, Arctic hare, caribou, wolves, and wolverine (Table 4-3). The highest caribou sightings took place in June, August, and April, though caribou were observed each month from February to August. Grey wolf were only observed in March and wolverine were only detected in November. Arctic hare were only detected in March and November. Arctic fox were observed at low frequencies throughout the year. Canada goose was the only bird species reported as an incidental sighting at Whale Tail in 2022 and was observed in August (Table 4-3).

Table 4-3: Incidental Wildlife Observations in 2022 by Month

Species Group	Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Meadowbank														
Mammal	Arctic fox	1	0	0	0	0	0	0	0	0	0	0	0	1
	Caribou	0	1	0	0	32	8	6	0	0	0	0	0	47
	Muskox	0	0	0	0	0	6	5	0	0	0	0	0	11
	Red fox	1	0	1	0	0	0	0	0	0	0	0	0	2
	Grey wolf	1	2	0	3	0	0	5	11	0	0	0	0	22
	Wolverine	7	18	7	2	2	0	0	0	0	0	2	4	6
Whale Tail														
Mammal	Arctic fox	0	1	3	4	0	0	0	0	2	0	0	5	15
	Arctic hare	0	0	1	0	0	0	0	0	0	0	1	0	2
	Caribou	0	5	17	52	3	61	2	54	0	0	1	0	195
	Grey wolf	0	0	2	0	0	0	0	0	0	0	0	0	2
	Wolverine	0	0	0	0	0	0	0	0	0	0	0	1	1
Bird	Canada goose	0	0	0	0	0	0	0	4	0	0	0	0	4

4.5.3 Bird Nests

Exemption permits were obtained on 05 April 2022 and 10 May 2022 from the GN for removal of two common raven nest that posed risk to proper maintenance of the fuel tank and could possibly result in fire hazard. These nests also prevented proper maintenance and could result in fire hazard. Exemption permits are provided in Appendix D.

Results of raptor nest monitoring and waterbird nest monitoring are provided in Sections 13 and 14, 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 2022 at the Project. A total of 42 deterrence activities were reported from interactions with six species of mammals: Arctic fox, caribou, muskox, red fox, wolf, and wolverine (Table 4-4, Table 4-5). In some cases, deterrent actions were taken in response to the same animal over multiple days, as was the case with one wolverine observed near the tailings or the incinerator at Meadowbank in February 2022.

The total number of deterrence actions was higher in 2022 compared to 2021 (37 deterrence events recorded), and similar to previous years (43 deterrence activities in 2020, 31 in 2019, 32 in 2018, and 21 in 2017). Deterrence actions in the winter months were primarily related to wolverine and foxes, whereas in the spring and summer deterrence actions were related mostly to caribou and wolves. There were three muskox deterrence events which all occurred along the Meadowbank airstrip in June and July.

Most wolverine deterrence actions were taken at Meadowbank with only one action taken at Whale Tail. Caribou actions were taken at both Meadowbank and Whale Tail Mine. Deterrence actions were taken for muskox, wolves, and red fox only at Meadowbank, while the Arctic fox was deterred at Whale Tail Mine and the Whale Tail Haul Road. Of the 42 deterrence actions taken, 39 were classified as successful deterrence and 3 were classified as unsuccessful deterrence. In one instance involving a wolverine near the south cell at Meadowbank, a destruction permit was issued by the GN as a result of unsuccessful deterrence and the animal was dispatched on 04 April 2022 (Table 4-4, Table 4-5). Additional details on the mortality are provided in Section 4.5.7 and Appendix C.

Table 4-4: Details of Deterrence Activities for 2022

Date	Species	Number	Behaviour	Deterrence Reason/Context	Deterrence Method	Deterrence Action	Deterrence Reaction	Deterrence Outcome	Additional Comments
Meadowbank Mine									
2022-01-01	Wolverine	1	Walking	Too close of the camp.	6mm pistol launcher	When the environment crew arrived, the wolverine was walking slowly on the airstrip. The 6mm pistol was used as a deterrent. A banger and a whistler were used.	After the banger and whistler, the wolverine ran out of sight.	Successful deterrence	-
2022-01-19	Wolverine	1	Running	Dewatering called environment for a wolverine at the incinerator. It moved towards the fuel farm and then was seen going towards Goose pit.	Bangers	Environment fired a banger to scare him away from site.	-	Successful deterrence	-
2022-02-03	Wolverine	1	Standing	E&I called ENV for a wolverine behind the incinerator.	Pistol – Bangers	ENV shot 2 bangers and the wolverine ran south towards Third Portage Lake. It was dark, so hard to say where it went after. But went back 15 minutes later and the wolverine was not back.	Spoke with the incinerator operator and told him to make sure to call us if it comes back.	Successful deterrence	-
2022-02-04	Wolverine	1	Trotting/running	When the environment team saw the wolverine close to the incinerator, they shot 2 bangers to lead him towards Third Portage Lake.	Pistol – Bangers. Bangers were used to scare the wolverine away from camp.	Then lost sight of it. After following tracks, env. Team found it close to winter parking and pushed him with the pickup truck towards Goose pit. Another banger was shot to try and push it away further.	After seeing tracks going East towards the Pit, environment team went back to the office.	Successful deterrence	-
2022-02-18	Wolverine	1	Feeding	While performing a wildlife survey, a wolverine was observed licking frozen grease at the location where sewage and kitchen grease are dumped. For safety reason, the wolverine was deterred.	Bangers and whistlers	Deterred the animal. Communications with the GN-DOE will be done during the monthly report.	Deterred the animal. Communications with the GN-DOE will be done during the monthly report.	Successful deterrence	The wolverine started running towards the landfill and disappeared in a field of boulders located south of the landfill.

Table 4-4: Details of Deterrence Activities for 2022

Date	Species	Number	Behaviour	Deterrence Reason/Context	Deterrence Method	Deterrence Action	Deterrence Reaction	Deterrence Outcome	Additional Comments
2022-02-21	Wolverine	1	Running	The wolverine was on site near installations.	Bangers.	Two bangers were shot near its position.	It ran towards FGL in the tundra and the environment team then lost sight of it. A wolverine was again seen at the incinerator at 10:00. It fled in the tundra once again.	Successful deterrence	
2022-02-21	Wolverine	1	Foraging	This wolverine has been seen on site multiple times near the tailings or the incinerator.	Banger rounds.	Three banger rounds had been used to deter the wolverine. The first one (red) was a whistler, the two others were bangers.	It went in the airstrip direction to escape in the tundra, so I drove near the airstrip to make sure he fled off site.	Successful deterrence	-
2022-03-16	Wolverine	1	Feeding	He was alert on the tundra side when I arrived, and he was on site.	Explosive bangs.	One round was shot in the air in a secure place near the wolverine.	-	Deterrents did not succeed	-
2022-03-29	Red fox	1	Feeding	fox feeding near the tailings area.	12-gauge bear banger.	1 shot over the animal.	Fox run away	Successful deterrence	-
2022-04-02	Wolverine	1	Feeding	Was feeding with sewage, on the mine site.	Horn.	Deterred with the Sherp, horning.	Deterred with horn, it was the only tool at hand.	Successful deterrence	Beside land farm and south cell, where they dump the sewage.
2022-04-04	Wolverine	1	Dead	Destruction permit was issued by the wildlife officer	Animal was dispatched: Shoot 2x 12-gauge shotgun slugs to the animal.	Wildlife mortality report was sent to wildlife officer.	Carcass was brought to wildlife officer	Deterrents did not succeed – Euthanized	South cell where sewage truck is dumping.
2022-04-25	Wolf	1	Standing	The wolf was at vault parking near operations.	Rattler, truck, truck horn. We followed him with the truck, and we were shaking the rattler to scare him away from the WTHR and Vault Parking.	We made sure that the wolf left the site, no communication has been made.	None	Successful deterrence	-
2022-05-21	Wolverine	1	Running	Was going into camp site.	Bangers	Shot two bangers towards the wolverine.	Ran away from south cell after shooting two bangers.	Successful deterrence	Wolverine was at the south cell land farm.

Table 4-4: Details of Deterrence Activities for 2022

Date	Species	Number	Behaviour	Deterrence Reason/Context	Deterrence Method	Deterrence Action	Deterrence Reaction	Deterrence Outcome	Additional Comments
2022-06-12	Caribou	4	Foraging	Plane landing.	Clapping, honking, whistlers	-	-	Successful deterrence	Four caribous were reported on the airstrip just before a plane departure. An environment employee went to deter them by clapping hands, but caribous were not cooperating. Afterwards, the employee used the pick-up horn to make them move. This time, they went off the runway but stayed on the edge between the airstrip and Q23. They were still too close to the runway, so a second environment employee came to with deterrent gear. Two whistlers were fired, and caribous started walking crossing the runway and move towards the freshwater barge.
2022-06-14	Caribou	4	Alert	Plane landing.	Honking the horn	Honking the horn repeatedly	Walked away from air strip.	Successful deterrence	-

Table 4-4: Details of Deterrence Activities for 2022

Date	Species	Number	Behaviour	Deterrence Reason/Context	Deterrence Method	Deterrence Action	Deterrence Reaction	Deterrence Outcome	Additional Comments
2022-06-22	Muskox	2	Feeding	Plane on approach: serious safety concern.	Bear banger	Two bangers and one whistler shots.	Move at a safer place south of the AWAR, return to feeding behaviour 1 minute and deterring action.	Successful deterrence	10 m from airstrip, between AWAR and airstrip.
2022-07-01	Caribou	4	Alert	Plane landing.	Whistler banger	Moved only 2 m so shot a few bangers.		Successful deterrence	Communication will be end of the month
2022-07-03	Wolf	1	Walking	Got calls for it from fountain tire guys that seen it outside their building.	Banger	Bangers.	Started running away.	Successful deterrence	Got a call from fountain tire. But seen it at the airstrip and chased it to the way and went in the tundra towards np2.
2022-07-06	Wolf	1	Walking	Got a call from dewatering.	Bangers	Bangers.	Started running after the first shot of banger.	Successful deterrence	-
2022-07-09	Caribou	2	Feeding	Pit A is not a good place due to the presence of tailings water, screamed at them to make them go up the ramp. Ended up at the back of FGL shop.	Scream, honks, bangers.	Scream, honks, bangers.	They ran.	Successful deterrence	Down the ramp of pit A
2022-07-11	Muskox	1	Alert	Airplane landing.	Honking horn.	Honking the horn.	Ran to the water and away from the air strip.	Successful deterrence	-
2022-07-21	Caribou	1	Lying Down	The environment team wanted the caribou to leave the Tailings area, since it was lying down in it.	Used the pistol with bangers, whistlers.	Used the pistol to push it away since we could not go on the TSF.	Used the pistol to push it away since we could not go on the TSF.	Successful deterrence	Somebody reported a caribou on the tailings south cell. Environment team went to push it away from the TSF.

Table 4-4: Details of Deterrence Activities for 2022

Date	Species	Number	Behaviour	Deterrence Reason/Context	Deterrence Method	Deterrence Action	Deterrence Reaction	Deterrence Outcome	Additional Comments
2022-07-23	Wolf	1	Trotting/ running	Wolf was first spotted by the road going to Central dike sampling point.	Honking with the truck	We deterred the wolf by honking and following him by truck. He headed towards the landfill and then NP1.	We deterred the wolf by honking and following him by truck. He headed towards the landfill and then NP1.	Successful deterrence	Wolf was first spotted by the road going to Central dike sampling point.
2022-07-28	Muskox	2	Feeding	Plane on approach: serious safety concern.	Bear bangers	Used bear bangers to make them go away from the airstrip and into the tundra where they can get away safely of the mine site.	Told the airport tower controller that muskox were gone and that it was safe for the plane to land.	Successful deterrence	Two Muskox between the airstrip and the AWAR.
2022-07-30	Wolf	1	Walking	Wolf spotted near the camp and walked towards camp.	Bangers	Bangers.	The wolf started running towards tailing. We chase him with the pick-up truck until we see him at the north cell tailings.	Successful deterrence	-
2022-08-01	Wolf	10	Feeding	Five adults and five pups were feeding in a puddle at the bottom of the ramp near the land farm at south cell.	Pick-up horn	We made the pack go away by honking with our pick-up truck.	The wolf pack headed away towards the north cell tailing until we lost sight of them. We called E&I to come and bury what they were trying to feed on.	Successful deterrence	South cell, bottom of the ramp near the land farm.
2022-10-02	Wolverine	1	Alert	Safety of workers on site.	Banger	We used 4 bangers to deter the wolverine and it ran out of site.	Ran out of site after shooting 4 bangers at the wolverine.	Successful deterrence	-
2022-10-12	Wolverine	1	Walking	Honking with the vehicle, wolverine reacted and ran away immediately away from main site.	Vehicle	Communicated with supervisor.	Running away.	Successful deterrence	-
2022-12-09	Wolverine	1	Walking	Got a call about it.	Flares	N/A	Started running away from site.	Successful deterrence	SS coverall.
2022-12-13	Wolverine	1	Foraging	Got a call.	Banger flares	Deterrence.	Running.	Successful deterrence	Near the C-Cans and went behind the building after shooting bangers.

Table 4-4: Details of Deterrence Activities for 2022

Date	Species	Number	Behaviour	Deterrence Reason/Context	Deterrence Method	Deterrence Action	Deterrence Reaction	Deterrence Outcome	Additional Comments
2022-12-14	Wolverine	1	Walking	Calls.	Banger	N/A	Running through C-Cans.	Successful deterrence	C-Cans row.
2022-12-20	Wolverine	2	Hiding	Getting calls.	Bangers	Yes	Running away like usual.	Successful deterrence	
Whale Tail Mine									
2022-03-21	Arctic fox	1	Resting	The fox was curled up sleeping in the travelled section of road (inside of the berm). The concern was that the fox could be struck by an approaching vehicle if the operator didn't notice it there.	Pickup truck (horn)	Used a pickup truck horn in close proximity as a deterrent to get the fox off the road, this had no effect and it continued to sleep on a traveled portion of road.	No reaction.	Deterrents did not succeed.	The fox was sleeping but aware of our presence in observing him, when we moved around it would open an eye and watch our movements. Just as we were preparing to place orange delineators around his chosen resting location another fox showed up, and within about 30 seconds of the second fox's presence the first fox got up and scurried off. No visible injuries on the first fox, no limp or gait observed either.
2022-03-31	Wolf	2	Walking	-	-	-	-	Successful deterrence	-
2022-04-04	Arctic fox	2	Feeding	Had to go get the coordinates of the dead caribou and take some pictures.	Pistol	Shot two bangers with the pistol.	They ran in the opposite direction, West of the road towards Nemo Lake.	Successful deterrence	IVR new ring road, they were eating the carcass of the dead caribou reported on 2022-04-03.

Table 4-4: Details of Deterrence Activities for 2022

Date	Species	Number	Behaviour	Deterrence Reason/Context	Deterrence Method	Deterrence Action	Deterrence Reaction	Deterrence Outcome	Additional Comments
2022-04-08	Arctic fox	2	Feeding	Foxes were in a dangerous location, and not easily visible to heavy equipment operators.	Pistol	Shot one banger.	They ran away towards Nemo Lake.	Successful deterrence	IVR new ring road on the west side.
2022-08-06	Caribou	1	Foraging	Caribou was too close to mine operation for their safety. Trucks and handclapping were used to push it to the final position (info in survey).	Truck, shouting, clapping	Push the caribou out of the radius. Told dispatch/blast supervisor when the animal was out.	A bit stress and tired but looks fine (eating and drinking).	Successful deterrence	-
2022-08-08	Caribou	1	Feeding	Caribou was too close to mine operation for their safety.	Pickup truck	I followed the road adjacent to the caribou, using short blasts of the horn prompting it to move away from the blast area.	Moved south and resumed feeding near the waters edge.	Successful deterrence	-
2022-08-09	Caribou	5	Standing	Caribou was too close to mine operations for their safety.	Horn of truck	We push the caribou out of the radius before the blast.	It went to eat in the tundra.	Successful deterrence	-
2022-11-08	Arctic fox	3	Feeding	Deterrents were used to scare off scavengers to remove carcass.	Truck horn	Deterrents were used to scare off scavengers to remove Arctic hare carcass.	Ran away behind snowbanks.	Successful deterrence	On Road 7 near entrance to IVR 2.
2022-11-22	Wolverine	1	Walking	Wolverine was walking around camp. Observed it for a bit and it was coming back closer to camp.	Pistol, bangers	Shot two bangers to scare it away.	Ran in the opposite direction after the first banger. After, he was coming back close to camp shot another banger and then he went east till we could not see him anymore.	Successful deterrence	Behind wing 26.

Table 4-4: Details of Deterrence Activities for 2022

Date	Species	Number	Behaviour	Deterrence Reason/Context	Deterrence Method	Deterrence Action	Deterrence Reaction	Deterrence Outcome	Additional Comments
Whale Tail Haul Road									
2022-10-22	Arctic fox	1	Feeding	The fox wouldn't leave the road regardless of approaching vehicles.	Banged two shovels together loudly while approaching the area of interest on the road surface.	Once the fox moved away, I used the shovel to chip and scrape the unknown substance into a garbage bag so as to reduce the attractant so that the fox will stay away from this travelled area.	The fox moved off to the side of the road.	Successful deterrence	The fox was on the road gnawing on a frozen substance on the road surface. Once I left the area, I observed the fox return to the road to sniff and scratch at that same spot.

GN-DoE=Government of Nunavut Department of Environment

Table 4-5: Summary of Deterrence Events in 2022

Location	Species	Number of Deterrence Events		
		Successful	Unsuccessful	Total
Meadowbank	Caribou	5		5
	Muskox	3		3
	Red fox	1		1
	Wolf	6		6
	Wolverine	15	2	17
Whale Tail Mine	Arctic fox	3	1	4
	Caribou	3		3
	Wolf	1		1
	Wolverine	1		1
Whale Tail Haul Road	Arctic Fox	1		1
Total		39	3	42

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. Regular inspections were completed throughout the migratory period and during weekly or daily inspections, as deemed necessary by Environment personnel. Additionally, a noise cannon was deployed in the South Cell tailings storage facility on 24 July 2022 to deter waterbirds from landing in the tailings pond. Further discussion of 2022 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. In addition to observations as part of the raptor nest monitoring (Section 13), there were 4 bald eagle detections (June, July, August), one osprey detection (May), 13 peregrine falcon detections (May, June, July, September), 4 rough-legged hawk detections (May, September), and 1 snowy owl detection (September) along the AWAR and WTHR (Table 3-7, Table 3-8). Additionally, 1 unidentified hawk was observed along the AWAR (Table 3-7).

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 2022

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

Wolverines were regularly observed around the Project particularly during the winter months in 2022 (Table 4-4). Deterrence actions for wolverines, which followed the Wildlife Protection and Response Plan (Appendix C in 2019 TEMP), were required on 17 occasions at the Meadowbank site and 1 occasion at the Whale Tail site (Table 4-5). For the wolverine deterrence actions at Meadowbank Mine, 15 were successful and 2 were unsuccessful. The unsuccessful deterrence events were for the same wolverine, and a destruction permit was issued by the wildlife officer. The wolverine was dispatched on 4 April 2022 (Appendix C). The single deterrence action for wolverine at Whale Tail Mine was successful. Well-defined food-handling practices and employee awareness programs have minimized wolverine fatalities or wolverine-human interactions, and the number of deterrence efforts were similar in 2022 to previous years (Table 4-6).

Wolves were also regularly observed around the Meadowbank site primarily in the summer months (Table 4-4). Deterrence actions were required on six occasions at Meadowbank, with one in April, four in July, and one in August (Table 4-4). One deterrence action was required at Whale Tail in March. All wolf deterrence events were successful (Table 4-5). 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.

Arctic fox were observed at Whale Tail in 2022 (Table 4-4) and deterrence actions were required on four occasions, with one of which noted as not successful. A red fox was observed at Meadowbank and was successfully deterred (Table 4-4).

4.5.8 Wildlife Mortality – Meadowbank and Whale Tail Sites

One wildlife project-related mortality, a wolverine, was observed at Meadowbank in 2022 (Table 4-7). This mortality was related to deterrence (Section 4.5.4). At the Whale Tail Mine, there were three Arctic fox and two Arctic hare 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 2022

Date	Species	Count	Project Related	Location	Comments
Meadowbank					
2022-04-04	Wolverine	1	Yes	South Cell Tailings Area	A wolverine was frequently observed and was unaltered by deterrents. On March 21, 2022, GN DOE issued a wildlife destruction authorization to ensure the safety of personnel on site.
Whale Tail Mine					
2022-03-01	Arctic Fox	1	Yes	AMQ Metal Screening Pad	Fox was trapped under a pile of snow and a cement wall that was being constructed for the metal removal system.
2022-03-15	Arctic Fox	1	Yes	Northwest of AMQ Warehouse	Struck by a vehicle on the road.
2022-03-18	Arctic Hare	1	Yes	IVR Ring Road	Carcass found on the road.
2022-11-08	Arctic Hare	1	Yes	On Road 7 near entrance to IVR 2	Struck by a vehicle and scavenged by three foxes.
2022-12-13	Arctic fox	1	Yes	Intersection of Phase 3 Ramp and Whale Tail Ring Road	Dead fox spotted on the intersection of Phase 3 Ramp and Whale Tail Ring Road. Carcass was retrieved to avoid attracting predators to the area. GN-DOE was informed of the fox mortality, and GN-DOE authorized via email that the carcass could be incinerated 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 2022)

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

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 were reported at the Project in 2022.

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.

One wolverine mortality associated with the Mine site was reported in 2022. A phone call between Agnico Eagle environment department and GN-DOE was completed on 18 March 2022 regarding the monitoring and deterring efforts related to the wolverine observations. Use of deterrents and location of wolverine observations were issued to GN-DOE on 19 March 2022. Frequent reports/observations of the wolverine continued between 19 March and 4 April 2022. On 21 March 2022, GN-DOE issued a wildlife destruction authorization to ensure the safety of personnel on site. On 4 April environment technicians received a call from Meadowbank security at 12:30pm about a wolverine moving north across the airstrip towards the South Cell tailing area. At 12:50pm the environmental technician went to patrol the area around the South Cell and Waste rock storage facility. Two 12-gauge slugs were used to dispatch the wolverine. The carcass was removed and brought to the GN office in Baker lake on 5 April. Details of the incident can be found in Appendix C.

4.5.8.3 Other Wildlife

There were three project related Arctic fox mortalities associated with the Whale Tail Mine in 2022. On 1 March 2022, while removing snow at the construction site for the Metal Screening Pad at the Whale Tail site, workers noticed a fox carcass in the snow. The operator called his supervisor who then contacted the Environmental personnel to come and assess the carcass. Upon investigating the location of the carcass, it

appeared as though the fox had been trapped under a pile of snow and a cement wall that was being constructed for the metal removal system. On 15 March 2022, an Agnico Eagle employee found a dead Arctic fox that on the northwest side of the Whale Tail Warehouse in the middle of the road. The employee called his supervisor who then contacted the Environmental personnel to come and assess the carcass. Upon investigating, it appeared that the fox was struck by a vehicle. On 13 December 2022, a dead fox was identified on the intersection of the Phase 3 Ramp and the Whale Tail Ring Road. The auxiliary supervisor delivered the carcass to environment, and the GN-DOE was called and advised of the fox mortality. GN-DOE authorized for the carcass to be incinerated on site at Meadowbank.

There were two Arctic hare related mortalities associated with the Whale Tail site in 2022. On 23 October 2022, an Arctic hare carcass was identified on the WTHR by an environmental technician. The carcass appeared to have been struck by a vehicle. The carcass could not be removed because it was frozen to the road. On 8 November 2022, three foxes were observed fighting over an Arctic hare carcass on the road near the IVR 2 Pit entrance. Environmental technicians used deterrents to move the scavengers (Table 4-4), and then removed the carcass from the roadway to prevent risks to other wildlife. The environmental technician monitored the area for approximately 30 minutes to ensure the scavengers did not return. Details of the incidents can be found in Appendix C.

4.5.9 Helicopter Activity

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

- Long-range flights are a minimum of 650 m above ground level, except for take off and landing.
- 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.

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.

Flight length and altitude calculations were determined by trip number using helicopter track data in ArcGIS (Table 4-9; Figure 4-1, Figure 4-2, and Figure 4-3) Portions of flights extending outside the RSA were only removed from calculation of flight length. Data were summarized based on unique trip number in track data, which may represent multiple arrivals and departures. Entries in track data identified as arrival or departure not included in altitude calculations, in effort to limit the periods where helicopters were ascending or descending to cruising altitude. The average altitude throughout the entire trip (i.e., excluding departure and arrival), and average maximum altitude across all trips were calculated for 2022. The average maximum altitude was calculated by

averaging the maximum altitude of each trip. Maximum altitude was included to avoid bias of ascent and descent altitudes in calculation of averages but is not expected to be representative of altitude throughout the entire trip. Flight duration was summarized based on flight log data (Appendix E).

The number of flights, and flight hours were highest in the summer In 2022 (Table 4-9). Average maximum altitudes were above 300 m in each season (Table 4-9). Flights with maximum altitudes less than 300 m excluding departure and arrival in 2022 are displayed in Figure 4-1, Figure 4-2, and Figure 4-3. In spring and fall, flights with altitudes less than 300 m appear concentrated around the Meadowbank and Vault sites (Figure 4-1; Figure 4-3). In summer, flights with altitudes less than 300 m occur in an area south of the Whale Tail site, between Baker Lake and Meadowbank, and in an area east of Meadowbank (Figure 4-2). Some of these flights are related to a helicopter on site that completed dust suppression from 6 to 20 August. These flights were included in summary of flight length and altitude.

Flights and their associated purpose are provided in Appendix E. Some flights for environmental monitoring require lower altitudes, including flights to visually inspect water quality of the water bodies around bridges and roads, inspection of various mine infrastructure for runoffs, lake water sampling, and raptor surveys. Flights occurred in 2022 related to search and rescue operations in Baker Lake, where low elevation flights are expected. Meteorological conditions and visibility may also limit flight altitudes. For shorter flights, ascending to 300 m cannot always be justified. The helicopters ascend gradually and cannot always ascend directly to an elevation above 300 m and begin horizontal movement immediately.

Many low elevation flights are related to slinging operations, and short-distance flights (Figure 4-2). Flights that involve slinging, and some passenger loads required flights under 300 m. This includes slinging of the diamond drill core, drilling equipment, additives, drilling rods, fuel tanks, and the wooden floor used as a base to assemble the fly drill. Moving the drill and drill parts from one site to another (often less than 1 km from each other) often occurs at low altitudes. Helicopter maintenance, and small moves to accommodate different aircrafts at the fueling station at airport often include low altitude flights. The number of hours related to flights where these flight types occurred are presented as flights with expected low altitudes (Table 4-9).

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

Helicopter use varies across years based on operations, including establishment of remote camps and the amount of exploration. Different data sources and availability prevent accurate comparison of helicopter traffic between years. Variation in altitude and length of some trips suggests that some unique trip numbers represented more than one departure and arrival. Where possible, unique trip numbers should represent a single arrival and departure. When data are available, future Wildlife Monitoring Summary Reports could present helicopter flights in relation to caribou satellite collar locations to demonstrate avoidance of caribou by the required 1,000 m vertical and 1,500 m horizontal distance.

Table 4-9: Summary of Helicopter Flights in 2022.

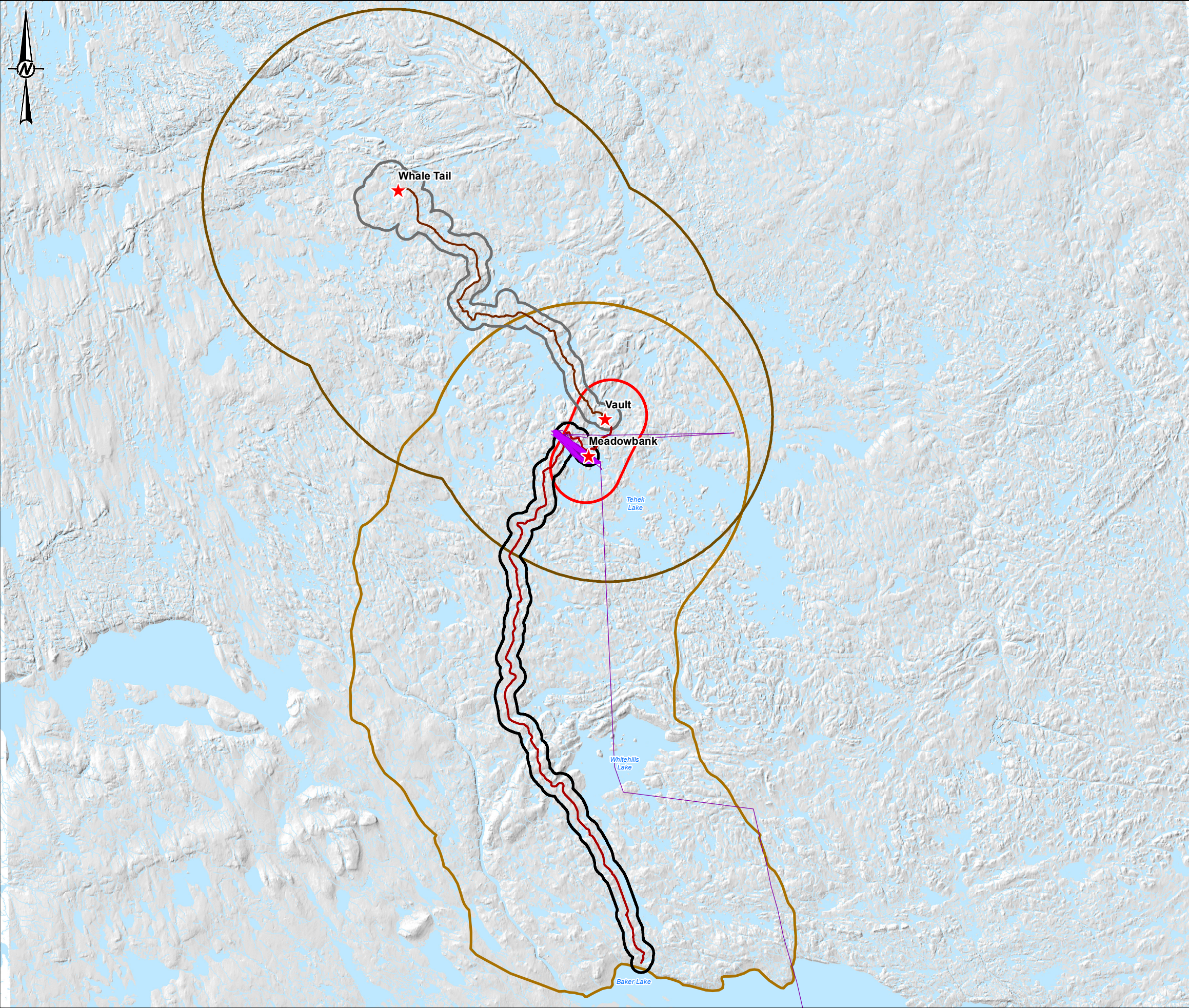
Season	Flight Days	Number of Flights	Total Distance within RSA (km)	Average Distance (km) (mean \pm SD)	Total Duration (hours)	Duration of Flights with Expected Low Altitudes ^(a)	Average Altitude (m) (mean \pm SD) ^(b)	Average Maximum Altitude (m) (mean \pm SD) ^(b)
Spring	30	31	3,514.03	17.31 \pm 22.72	82.50	52.80	214.32 \pm 36.91	326.74 \pm 50.25
Summer	118	209	53,110.81	32.70 \pm 46.54	760.12	391.50	237.77 \pm 78.37	352.33 \pm 130.32
Fall	22	24	4,114.33	27.43 \pm 43.74	84.30	54.50	213.85 \pm 76.28	317.01 \pm 131.11

a) Represents flights where slinging or other activities with expected low altitudes were performed.

b) Values exclude departure and arrival; values in metres above sea level.

km = kilometres; m = metres; SD = standard deviation.

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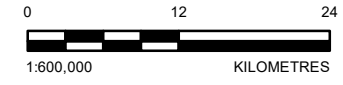


LEGEND

MINE-RELATED HELICOPTER ACTIVITY

SEASON

- SPRING 2022 (MAXIMUM ALTITUDE <300 m)
- SPRING 2022
- 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 AND WHALE TAIL PIT TEMP 2022

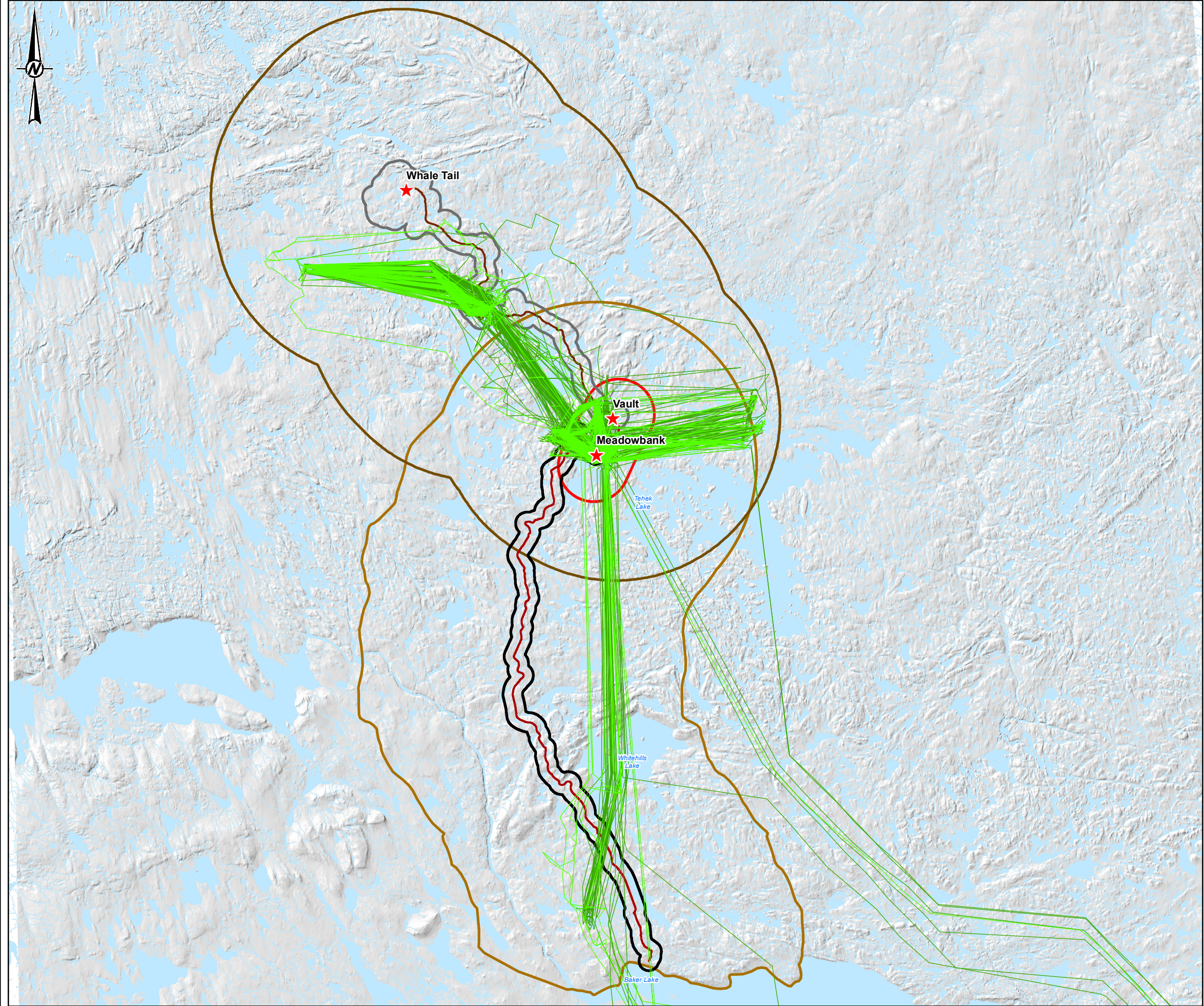
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MINE-RELATED HELICOPTER ACTIVITY ALONG THE ALL-WEATHER ACCESS ROAD AND WHALE TAIL HAUL ROAD, SPRING 2022

CONSULTANT	YYYY-MM-DD	2023-03-27
	DESIGNED	SW
	PREPARED	CDB
	REVIEWED	DC
	APPROVED	CDLM

PROJECT NO.	CONTROL	REV.	FIGURE
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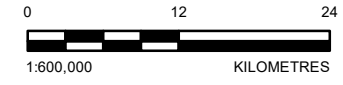


LEGEND

MINE-RELATED HELICOPTER ACTIVITY

SEASON

- SUMMER 2022 (MAXIMUM ALTITUDE <300 m)
- SUMMER 2022
- 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**

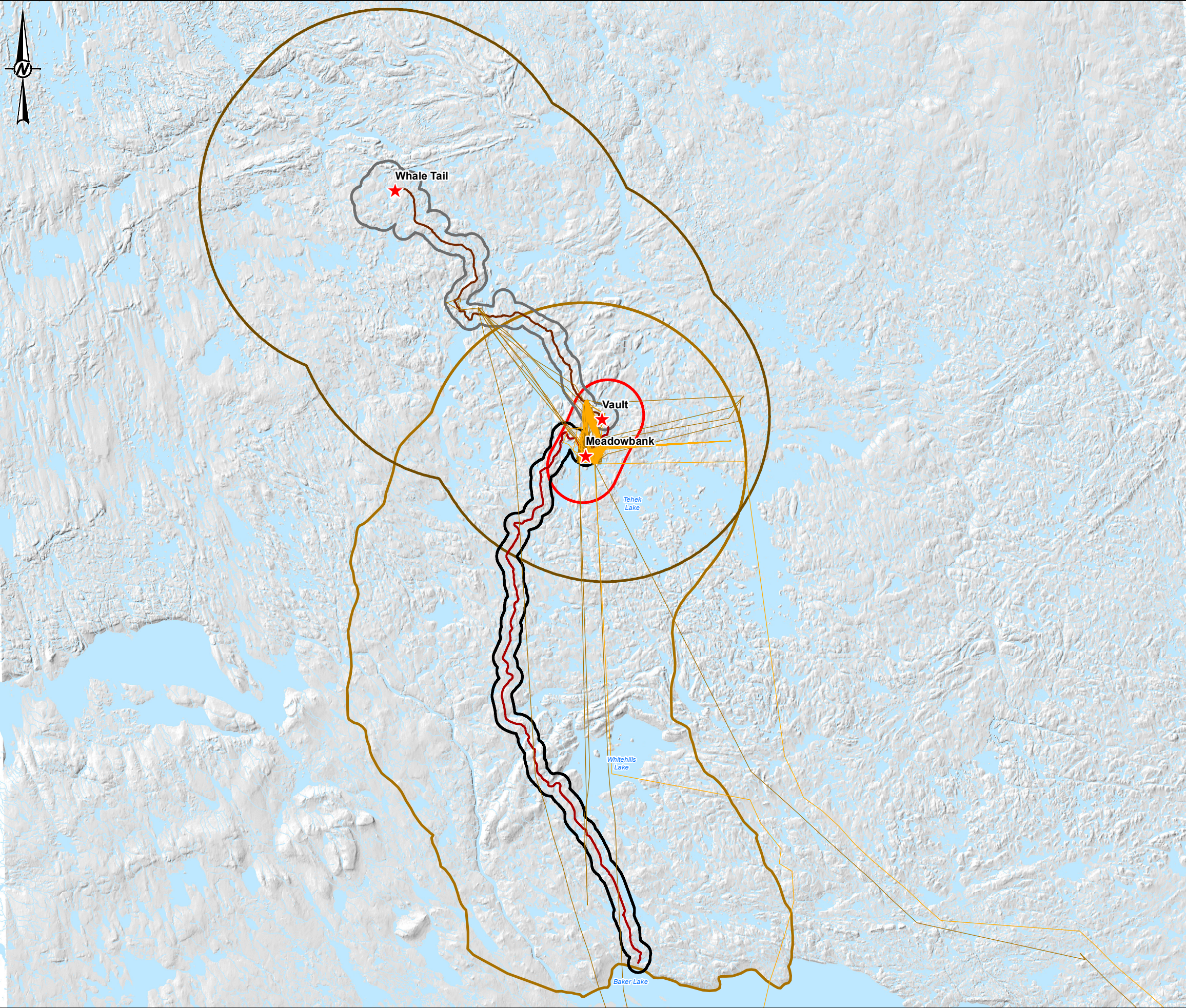
PROJECT
MEADOWBANK AND WHALE TAIL PIT TEMP 2022

TITLE
MINE-RELATED HELICOPTER ACTIVITY ALONG THE ALL-WEATHER ACCESS ROAD AND WHALE TAIL HAUL ROAD, SUMMER 2022

CONSULTANT		YYYY-MM-DD	2023-03-27
		DESIGNED	SW
		PREPARED	CDB
		REVIEWED	DC
		APPROVED	CDLM

PROJECT NO. 21502960	CONTROL 4000/4040	REV. 0	FIGURE 4-2
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LEGEND

MINE-RELATED HELICOPTER ACTIVITY

SEASON

- FALL 2022 (MAXIMUM ALTITUDE <300 m)
- FALL 2022
- 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

0 12 24
1:600,000 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 AND WHALE TAIL PIT TEMP 2022

TITLE
MINE-RELATED HELICOPTER ACTIVITY ALONG THE ALL-WEATHER ACCESS ROAD AND WHALE TAIL HAUL ROAD, FALL 2022

CONSULTANT	YYYY-MM-DD	2023-03-27
	DESIGNED	SW
	PREPARED	CDB
	REVIEWED	DC
	APPROVED	CDLM

PROJECT NO.	CONTROL	REV.	FIGURE
21502960	4000/4040	0	4-3

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

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 4-10. Specifically, the 2022 Mine site ground survey monitoring 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 2022.

Table 4-10: Accuracy of Impact Predictions – Mine Site Wildlife Disturbances

Potential Effect	Threshold	Threshold Exceeded? (2022)	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. Threshold is one nest failure per year.	NO	YES Mine-related activity restricted within quarries with nesting activity.	Daily and weekly pit and Mine-site ground surveys Incidental wildlife reporting 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 Waterbird nest surveys Incidental wildlife reporting
Project-related Mortality	Destruction of two problem grizzly bear, wolverine, or wolf per year.	NO One wolverine mortality in 2022.	YES All crews were reminded on wildlife procedures, right-of-way and reporting incident reporting requirements	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	NO	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 2022 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 incinerator.
- 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.
- Gather detailed information (e.g., sex, age, photos) on deceased animals and include in incident reports, when possible.

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 changes to footprint exceed 25%.

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. This approach was difficult to execute due to regular Mine plan changes and subsequent approvals; therefore, 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 footprint was updated based on 2022 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 disturbance 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 2022. 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.

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.

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

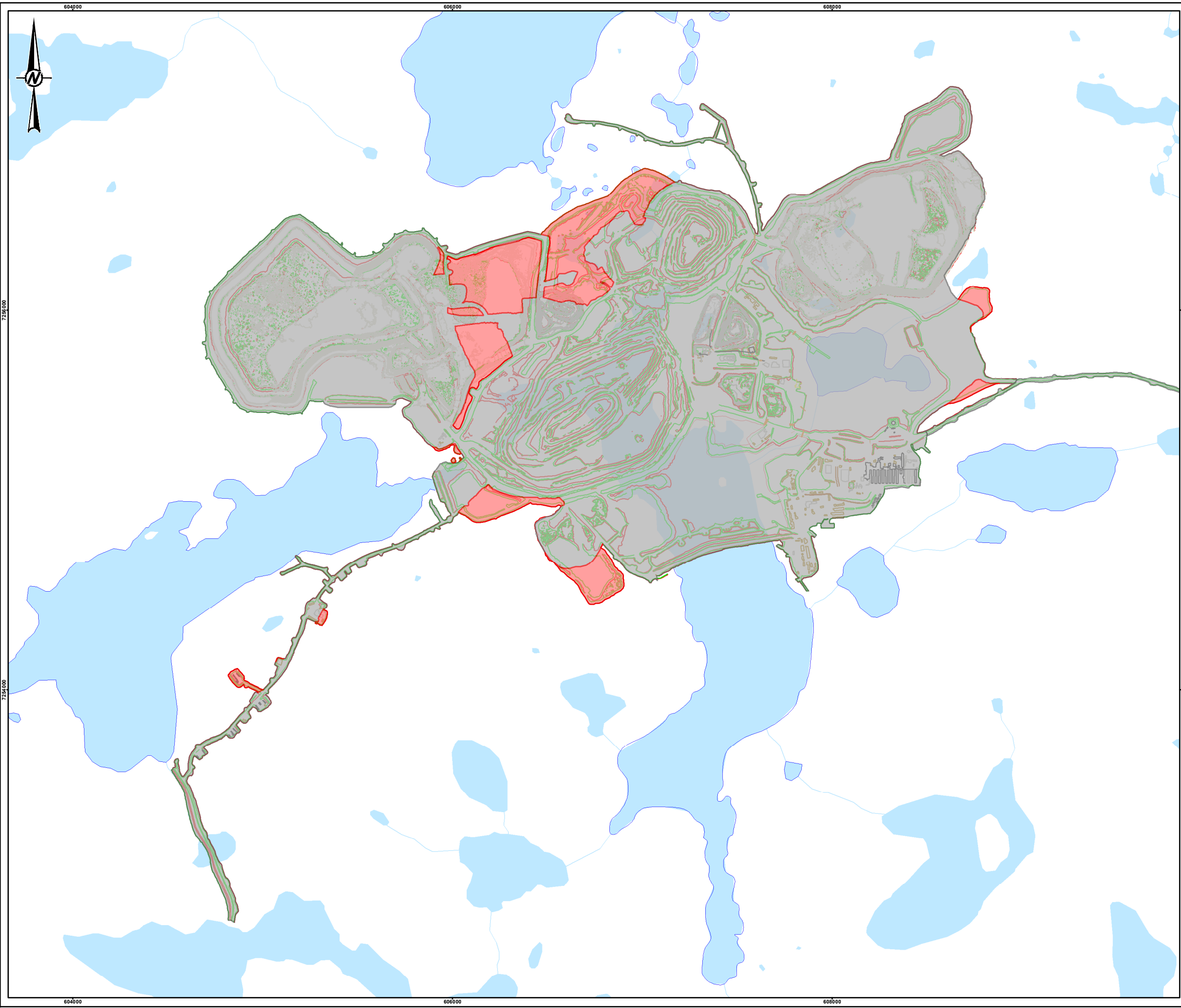
in 2010 were compared to predicted high suitability habitat losses for ungulates (growing and winter season), waterbirds, other breeding birds, and small mammals. In all cases, the measured high suitability habitat losses were significantly less than predicted losses and no thresholds (i.e., >5 to 10% 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.

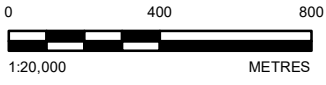
5.6 Results

A 109.2 ha, or 8.4% change in footprint at the Whale Tail site occurred between the assessment in 2021 and 2022 (Figure 5-1). The change in footprint since the previous assessment less than 25%. Therefore, the next comprehensive analysis is scheduled for 2024.



LEGEND

- FOOTPRINT (2022)
- 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 AND WHALE TAIL PIT TEMP 2022

TITLE
WHALE TAIL PIT AND HAUL ROAD FOOTPRINT (2022)

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CONSULTANT	YYYY-MM-DD	2023-03-27															
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PROJECT NO. 21502960	CONTROL 4000/4040	REV. 0	FIGURE 5-1
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5.7 Accuracy of Impact Predictions

The 2022 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 (2022)	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. Therefore, the next comprehensive habitat analysis will be completed in 2024, unless changes to the footprint from 2023 exceed 25%.

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, Qamanirjuaq, and other herds that are used by the GN for herd management. 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]).

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. Caribou in the Baker Lake area were first collared in May 2008, and the program has continued for more than a decade. Monitoring of collars continued in 2022 and is expected to continue through 2023.

6.4 Methods

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. Collar data are regularly¹ retrieved electronically via satellite and distributed to GN DOE and Nunavut Environmental personnel by CLS America, the data-management company.

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.

Collar data collected between 2005 and 2019 was analyzed in 2021 to assess inter-annual trends in migration timing, comparison between telemetry and ground survey observations in 2018 and 2019, and the effect of WTHR construction on spring and fall migration patterns. Full methodology of 2005 to 2019 collar analysis is included in Appendix F of Golder (2022).

¹ Data are often retrieved on a daily basis but may vary depending on signal strength and weather conditions.

6.5 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.

6.6 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).

6.7 2022 Results

Agnico Eagle intends to continue collaboration with the GN DOE caribou satellite-collaring program, however, a data sharing agreement has not existed since 2019. Without a data sharing agreement, Agnico Eagle has not had access to collar data to complete the 2020, 2021, and 2022 analyses. Agnico Eagle and the GN DOE have been working on a revised data sharing agreement that is mutually beneficial to both parties and hope to have this resolved soon.

6.8 Accuracy of Impact Predictions

The accuracy of impact predictions could not be completed for the 2022 monitoring year. Collar data were not available to complete the analysis at the time of reporting.

6.9 Management Recommendations

Future collar data analysis should be discussed with the TAG. Recommendations based on analysis of 2005 to 2019 collar data include further exploratory analysis aimed at explaining annual differences in the timing of spring and fall migration may be completed with environmental covariates such as snow conditions (Mallory et al. 2020) or weather (Gurarie et al. 2019). If differences can be explained by readily available information such as weather, then it may be possible to forecast when mitigation should be applied annually. Further analyses can be carried forward with additional comparisons to ground observations during both seasons as collar data becomes available.

7.0 VIEWSHED SURVEYS

7.1 Overview

Viewshed surveys were implemented in 2020 to survey standardized and readily accessible survey 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 (2020c) 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 58 occasions in 2022.

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 2020a). Survey locations were established to cover the length of the WTHR. In 2022, 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 hares, Arctic foxes, and Arctic ground squirrel (Table 7-3). Five species of birds were observed including Canada geese, common ravens, ptarmigan (willow ptarmigan or rock ptarmigan), sandhill cranes, and snow geese. 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.

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
Geese sp.	0	167	0	0
Gull sp.	0	2	0	0
Owl sp.	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

7.5 2022 Results

Viewshed surveys were conducted on 58 dates in 2022, though not all locations were surveyed each day (Figure 7-1). Each location was surveyed a minimum of 56 times each throughout the year, with a maximum of 57 survey visits. A total of 739 surveys were conducted between 5 January and 28 December, with the highest survey effort occurring in the summer (28%, Table 7-4).

Table 7-4: Viewshed Survey Effort by Season, 2022

Season	Survey Days	Surveys Completed (% of total effort)
Spring	14	182 (25%)
Summer	16	207 (28%)
Fall	12	155 (21%)
Winter	16	195 (26%)
Total	58	739 (100%)

Of the 739 viewshed surveys completed in 2022, only 41 surveys (6%) had caribou sightings, and a total of 461 caribou were reported (Table 7-5). All survey locations had surveys with caribou detections, except for Viewshed 5 (Table 7-5). Three survey locations had only one survey with caribou sightings (Viewshed 2, 3, and 7), three survey locations had two surveys with caribou sightings (Viewshed 4, 6, and 8), and one survey location had three surveys with caribou sightings (Viewshed 11). Viewshed 9 had four surveys with sightings, Viewsheds 1 and 13 each had five surveys with sightings, Viewshed 10 had six surveys with sightings, and Viewshed 12 had the most surveys with sightings at nine. Of the 41 surveys with caribou sightings, 20 occurred during the summer, 12 occurred during the spring, five occurred during the fall, and four occurred during winter (Table 7-5).

Group sizes ranged from 1-100 individuals (Table 7-6). 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.

Other mammals recorded during viewshed surveys include Arctic fox, Arctic hare, muskox, and grey wolf. Bird species recorded include American crow, Canada goose, common raven, greater white-fronted goose, ptarmigan sp., rough-legged hawk, and snow goose (Table 7-7).

Table 7-5: Viewshed Surveys Completed and Number of Caribou Observed per Season in 2022

Date	Viewshed Survey Location												
	1	2	3	4	5	6	7	8	9	10	11	12	13
Spring Caribou Season (01 Apr – 25 May)													
2022-04-06	0	0	0	0	0	0	0	0	0	14	0	0	0
2022-04-09	0	0	0	0	0	0	0	0	0	0	0	0	0
2022-04-12	0	0	0	0	0	0	0	0	0	0	0	0	0
2022-04-18	0	0	0	0	0	0	0	0	0	0	0	0	0
2022-04-20	0	0	0	0	0	0	0	100	100	4	0	0	66
2022-04-25	0	0	0	0	0	0	0	3	0	0	0	33	0
2022-04-29	0	0	6	0	0	0	0	0	0	0	0	0	0
2022-05-04	0	0	0	0	0	0	0	0	0	0	0	0	0
2022-05-05	0	0	0	0	0	0	0	0	0	0	0	0	0
2022-05-09	0	0	0	0	0	0	0	0	0	0	0	0	0
2022-05-11	0	0	0	0	0	0	0	0	6	0	0	0	0
2022-05-17	0	0	0	0	0	0	0	0	0	0	0	0	0
2022-05-22	6	0	0	0	0	0	0	0	0	0	0	0	0
2022-05-25	2	0	0	5	0	0	0	0	0	0	0	0	0
Summer Caribou Season (26 May – 21 Sep)													
2022-06-09	0	0	0	0	0	0	0	0	0	0	0	0	0
2022-06-22	0	0	0	0	0	4	0	0	0	0	0	0	0
2022-06-30	0	0	0	0	0	0	0	0	0	0	0	0	0
2022-07-06	0	0	0	0	0	0	0	0	0	0	0	0	0
2022-07-15	0	0	0	0	0	0	0	0	0	0	0	0	0
2022-07-19	0	0	0	0	0	0	0	0	0	0	0	0	0
2022-07-28	0	0	0	0	0	0	0	0	0	0	0	0	0
2022-07-31	1	0	0	0	0	0	0	0	0	0	-	0	0
2022-08-08	0	0	0	0	0	0	0	0	0	0	0	1	0
2022-08-11	0	0	0	0	0	0	0	0	0	0	1	0	0
2022-08-19	0	0	0	0	0	2	5	0	0	1	0	5	14
2022-08-24	0	0	0	0	0	0	0	0	0	1	0	1	2
2022-08-31	0	0	0	0	0	0	0	0	1	1	3	4	1
2022-09-05	0	0	0	0	0	0	0	0	0	11	0	8	0
2022-09-07	0	0	0	0	0	0	0	0	0	0	0	0	0
2022-09-14	0	0	0	0	0	0	0	0	0	0	0	0	3
Fall Caribou Season (22 Sep – 15 Dec)													
2022-09-22	9	1	0	0	0	0	0	0	0	0	0	1	0
2022-09-24	0	0	0	0	0	0	0	0	0	0	0	0	0
2022-09-28	0	0	0	2	0	0	0	0	0	0	0	0	0
2022-10-04	0	0	0	0	0	0	0	0	0	0	0	0	0
2022-10-08	16	0	0	0	0	0	0	0	0	0	0	0	0
2022-10-22	0	0	0	0	0	0	0	0	0	0	0	0	0
2022-10-28	0	0	0	0	0	0	0	0	0	0	0	0	0
2022-10-30	0	0	0	0	0	0	0	0	0	0	0	0	0
2022-11-08	0	0	0	0	0	0	0	0	0	0	0	0	0
2022-11-16	0	0	0	0	0	0	0	0	0	0	0	0	-

Table 7-5: Viewshed Surveys Completed and Number of Caribou Observed per Season in 2022

Date	Viewshed Survey Location												
	1	2	3	4	5	6	7	8	9	10	11	12	13
2022-11-24	0	0	0	0	0	0	0	0	0	0	0	0	0
2022-12-03	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Caribou Season (16 Dec – 31 Mar)													
2022-01-05	0	0	0	0	0	0	0	0	0	0	-	-	-
2022-01-07	-	-	-	-	-	-	-	-	-	-	0	0	0
2022-01-12	0	0	0	0	0	0	0	0	0	0	0	0	0
2022-01-18	0	0	0	0	0	0	0	0	0	0	0	0	0
2022-02-02	0	0	0	0	0	0	0	0	0	0	6	0	0
2022-02-09	0	0	0	0	0	0	0	0	0	0	0	5	0
2022-02-19	0	0	0	0	0	0	0	0	0	0	0	0	0
2022-02-23	0	0	0	0	0	0	0	0	4	0	0	0	0
2022-03-01	0	0	0	0	0	0	0	0	0	0	0	2	0
2022-03-12	0	0	0	0	0	0	0	0	0	0	0	0	0
2022-03-19	0	0	0	0	0	0	0	0	0	0	0	0	0
2022-03-27	0	0	0	0	0	0	0	0	0	0	0	0	0

Dashed line indicates survey location was not surveyed. Zero indicates the area was surveyed and there were no caribou detected.

Table 7-6: Survey Condition Details for Viewshed Surveys with Caribou Sightings, 2022

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 10	2022-04-06	-8	30	> 1 km	West	14	Heath Tundra, Rock & Boulder	Foraging	900
Viewshed 8	2022-04-20	-20	12	> 1 km	West	100	Heath Tundra	Foraging	3000
Viewshed 9	2022-04-20	-20	12	> 1 km	West	100	Heath Tundra	Feeding	2000
Viewshed 10	2022-04-20	-20	12	> 1 km	East	4	Heath Tundra	Resting	2500
Viewshed 13	2022-04-20	-20	12	> 1 km	West	66	Heath Tundra	Foraging	2000
Viewshed 8	2022-04-25	-14	20	> 1 km	East	3	Heath Tundra	Foraging	733
Viewshed 12	2022-04-25	-14	20	> 1 km	West	33	Heath Tundra	Foraging	1200
Viewshed 3	2022-04-29	-17	30	> 1 km	West	6	Ice	Walking	1000
Viewshed 9	2022-05-11	-1	17	1 km	West	6	Heath Tundra, Lichen-Rock, Rock & Boulder	Feeding	100
Viewshed 1	2022-05-22	-9	21	> 1 km	East	6	Heath Tundra	Feeding	100
Viewshed 4	2022-05-25	-4	20	> 1 km	West	5	Ice	Walking	400
Viewshed 1	2022-05-25	-4	20	> 1 km	West	2	Hilltop	Feeding	400

Table 7-6: Survey Condition Details for Viewshed Surveys with Caribou Sightings, 2022

Survey Location	Date	Temperature (°C)	Wind Speed (km/hr)	Visibility*	Cardinal Direction	Number	Habitat	Behaviour	Distance from Road (m)
Summer Caribou Season (26 May To 21 Sep)									
Viewshed 6	2022-06-22	14	20	1 km	West	4	Heath Tundra	Walking	80
Viewshed 1	2022-07-31	5	30	> 1 km	East	1	Heath Tundra, Hilltop, Rock & Boulder	Walking	100
Viewshed 12	2022-08-08	10	10	> 1 km	West	1	Lichen-Rock	Feeding	350
Viewshed 11	2022-08-11	12	40	> 1 km	West	1	Hilltop, Rock & Boulder	Walking	400
Viewshed 6	2022-08-19	11	30	1 km	West	2	Heath Tundra	Feeding	50
Viewshed 7	2022-08-19	11	30	1 km	East	5	Heath Tundra	Walking	500
Viewshed 10	2022-08-19	11	30	1 km	East	1	Heath Tundra, Water	Trotting/running	200
Viewshed 12	2022-08-19	11	30	1 km	West	5	Heath Tundra	Walking	200
Viewshed 13	2022-08-19	11	30	1 km	West	14	Heath Tundra	Feeding	400
Viewshed 10	2022-08-24	6	40	> 1 km	East	1	Heath Tundra	Feeding	300
Viewshed 12	2022-08-24	6	40	> 1 km	West	1	Heath Tundra	Feeding	200
Viewshed 13	2022-08-24	6	40	> 1 km	West	2	Heath Tundra	Feeding	5
Viewshed 13	2022-08-31	12	12	> 1 km	East	1	Birch & Riparian Shrub	Foraging	200
Viewshed 12	2022-08-31	12	12	> 1 km	East	2	Lichen-Rock	Feeding	300
Viewshed 12	2022-08-31	12	12	> 1 km	West	2	Lichen-Rock	Feeding	300
Viewshed 11	2022-08-31	12	12	> 1 km	East	1	Lichen-Rock	Feeding	200
Viewshed 11	2022-08-31	12	12	> 1 km	West	2	Birch & Riparian Shrub, Lichen-Rock	Feeding	250
Viewshed 10	2022-08-31	12	12	> 1 km	West	1	Heath Tundra	Feeding	800
Viewshed 9	2022-08-31	12	12	> 1 km	West	1	Birch & Riparian Shrub	Feeding	1000
Viewshed 12	2022-09-05	9	20	> 1 km	East	5	Heath Tundra, Hilltop	Feeding	150
Viewshed 12	2022-09-05	9	20	> 1 km	West	3	Heath Tundra, Hilltop	Feeding	2500
Viewshed 10	2022-09-05	9	20	> 1 km	East	2	Heath Tundra, Hilltop	Feeding	1500
Viewshed 10	2022-09-05	9	20	> 1 km	West	9	Heath Tundra, Hilltop	Feeding	450
Viewshed 13	2022-09-14	5	15	> 1 km	East	2	Heath Tundra	Foraging	30
Viewshed 13	2022-09-14	5	15	> 1 km	West	1	Heath Tundra	Foraging	100
Fall Caribou Season (22 Sep – 15 Dec)									
Viewshed 1	2022-09-22	10	14	> 1 km	West	7	Lichen	Foraging	500
Viewshed 1	2022-09-22	10	14	> 1 km	West	2	Heath Tundra	Foraging	20
Viewshed 2	2022-09-22	10	14	> 1 km	West	1	Lichen-Rock	Foraging	2000
Viewshed 12	2022-09-22	10	14	> 1 km	West	1	Heath Tundra, Lichen-Rock	Foraging	1000
Viewshed 4	2022-09-28	8	32	> 1 km	West	2	Lichen-Rock	Foraging	1000
Viewshed 1	2022-10-08	-2	20	1 km	East	16	Heath Tundra	Walking	300

Table 7-6: Survey Condition Details for Viewshed Surveys with Caribou Sightings, 2022

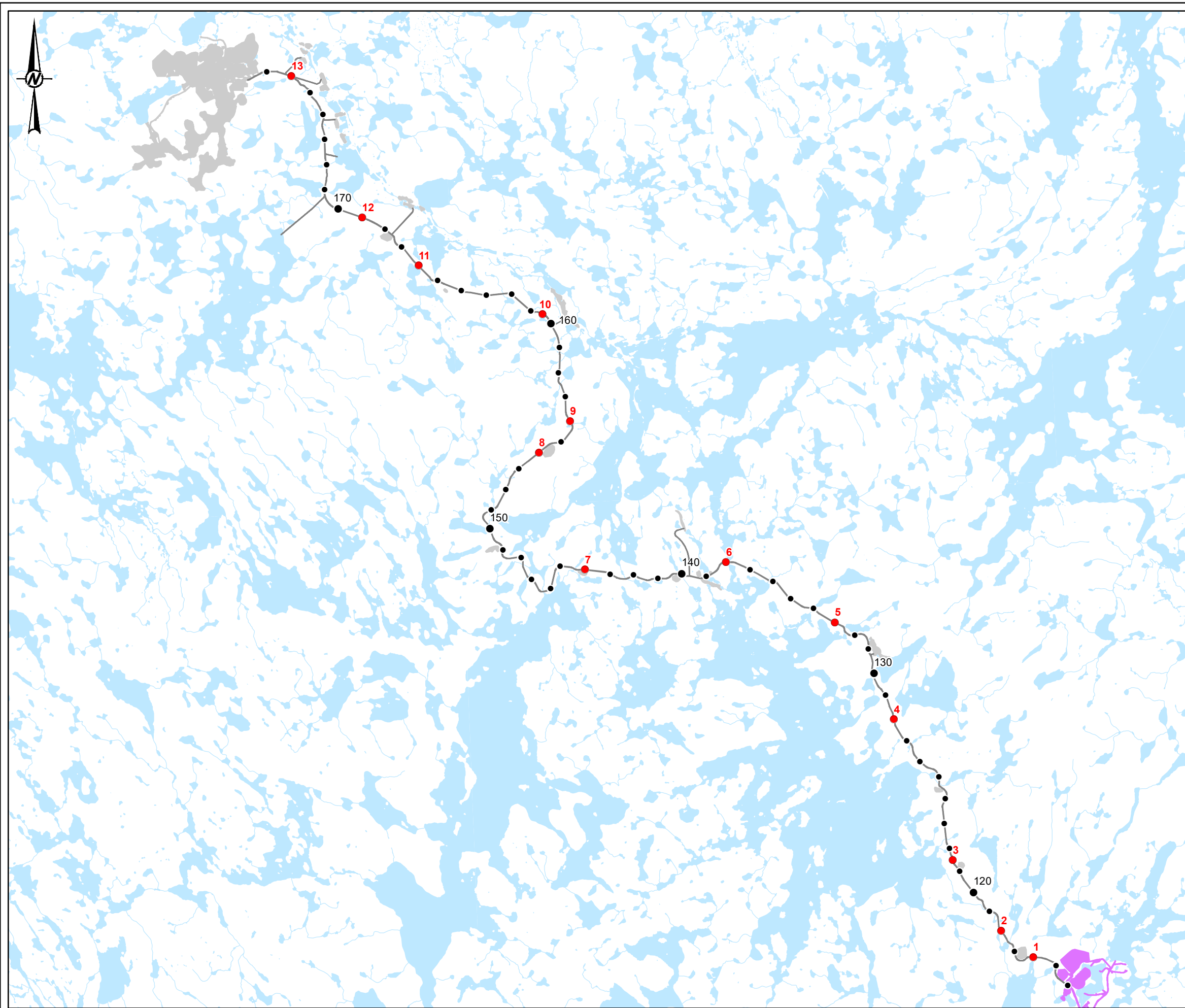
Survey Location	Date	Temperature (°C)	Wind Speed (km/hr)	Visibility*	Cardinal Direction	Number	Habitat	Behaviour	Distance from Road (m)
Winter Caribou Season (16 Dec – 31 Mar)									
Viewshed 11	2022-02-02	-36	26	1 km	West	6	Hilltop	Feeding	150
Viewshed 12	2022-02-09	-36	31	> 1 km	East	5	Heath Tundra	Foraging	1000
Viewshed 9	2022-02-23	-35	16	1 km	West	4	Heath Tundra	Foraging	1200
Viewshed 12	2022-03-01	-33	40	1 km	West	2	Heath Tundra	Feeding	150

*Methods for noting visibility changed during September 2021 including an additional option for “>1 km” being added to tablets used for data collection. Visibility of 1km prior to September 2021 may have been selected for visibility that was 1 km or visibility that was greater than 1 km.

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

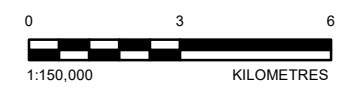
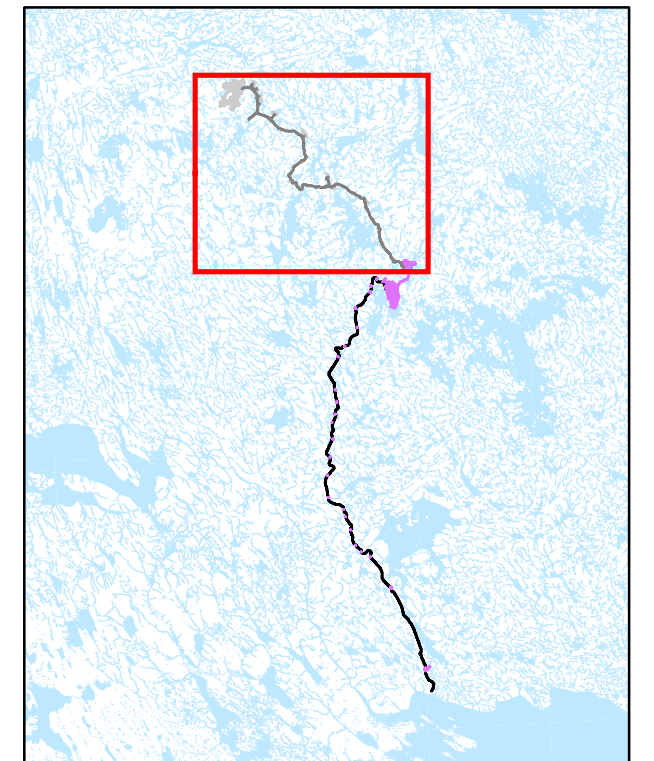
Species	Caribou Seasons			
	Spring (01 Apr to 25 May)	Summer (26 May to 21 Sep)	Fall (22 Sep to 15 Dec)	Winter (16 Dec to 31 Mar)
Mammals				
Arctic fox	0	2	0	0
Arctic hare	0	1	0	0
Caribou	345	70	29	17
Muskox	73	62	110	12
Wolf	0	1	0	0
Birds				
American crow	0	1	3	2
Canada goose	32	7	0	0
Common raven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

PATH: Y:\mining\CAD-GIS\client\Agnico_Eagle_Mines_Ltd\White_Tail\09_PROD\PROJECTS\1502960_4000_4040_07_01_Viewshed_Survey_Location_2022.mxd PRINTED ON: 2023-03-27 AT: 11:01:00 AM



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 AND WHALE TAIL PIT TEMP 2022

TITLE
LOCATION OF VIEWSHED SURVEYS ALONG WHALE TAIL HAUL ROAD, 2022

CONSULTANT	YYYY-MM-DD	2023-03-27
	DESIGNED	JF
	PREPARED	CDB
	REVIEWED	DC
	APPROVED	CDLM

PROJECT NO.	CONTROL	REV.	FIGURE
21502960	4000/4040	0	7-1

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

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. Fifty-eight days of viewshed surveys were conducted in 2022, 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 and 2021 Wildlife Monitoring Summary Reports (Golder 2021, 2022). Results from the 2022 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). The same locations were used in 2022 as in 2021. 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 purposes, and to facilitate wildlife crossings (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, 2022

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 2022 were pre-sorted using artificial intelligence (Section 8.4.2.1). 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. Instances of caribou crossing the road were recorded where applicable.

8.4.2.1 Artificial Intelligence Classification

An automated approach was used to classify the 2,727,572 photos collected in 2022 as “near wildlife” (i.e., wildlife close enough to cameras that they could be easily identified by humans) and “far wildlife” (i.e., wildlife far away from cameras that can only be detected by differences in pixels between subsequent photographs, Agnico Eagle 2023b).

An image classification machine learning model was used to classify “near wildlife”. Photographs from the 2021 camera program were used as a training dataset for the model. The dataset was augmented to obtain a suitable number of training images. An object detection model was trained to recognize trucks, and photographs containing trucks were filtered out and not passed through the main image classification model. Therefore, photographs containing both trucks and near wildlife are not selected by the classification model. For each camera, approximately 500 to 2000 photographs were selected by the classification model. Many of these photographs were false positives (i.e., classified as containing wildlife, but do not actually contain wildlife), and were manually filtered for wildlife photographs. Four cameras with high numbers of false positives were re-trained, with false positives photographs re-classified as not containing wildlife.

An image comparison tool was used to classify “far wildlife”. The algorithm analyzes what changes in two consecutive photographs near the horizon. The truck object detection model was used to eliminate the area on photographs occupied by trucks, otherwise, each truck near the horizon would be identified as wildlife. The image comparison tool could be applied for 14 of 20 cameras. The six remaining cameras did not have a clear view of the horizon, or had high rates of false positives. The photographs selected by the tool were manually reviewed to confirm presence of wildlife. If the presence of wildlife was uncertain, they were classified as containing wildlife.

8.4.3 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 (Angico Eagle 2023a). Therefore, time between caribou crossing events, and previous vehicle time is not presented.

8.5 Results

A total of 1,453 photographs were selected by the automated approach, and reviewed by a human observer. There were 281 total observations, 187 observations were “near wildlife” detections and 93 “far wildlife” detections. Six species were detected in 2022: Arctic fox, Arctic hare, caribou, common raven, gray wolf, and muskox. All six species were detected on both “near wildlife” and “far wildlife” detections.

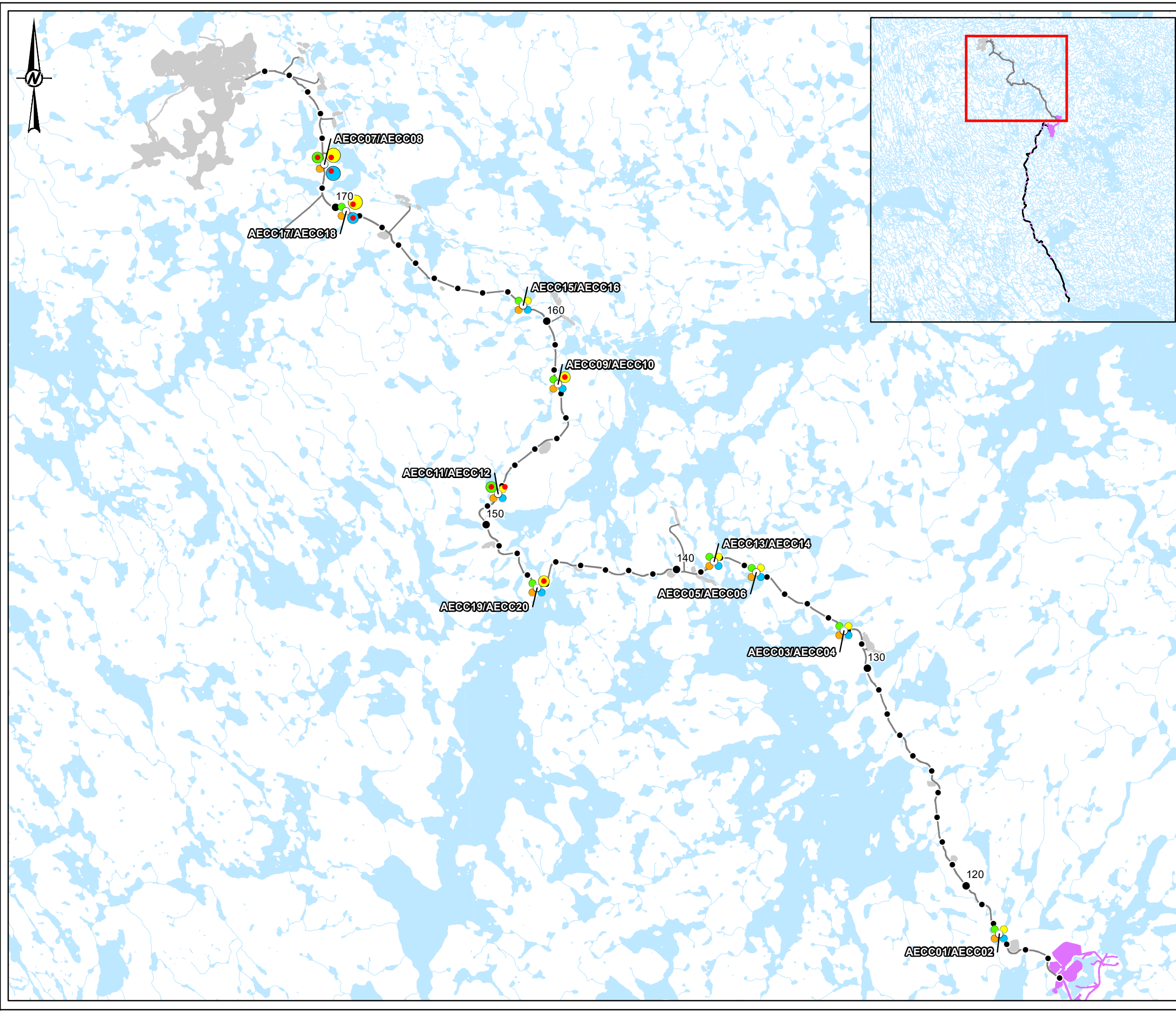
Caribou were detected between 2 February 2022 and 3 September 2022. The highest detection rate occurred at camera pair 4 (KM 172) in the summer, and the highest crossing rate was observed at camera pair 6 (KM 152) in the spring (Figure 8-1; Table 8-2). No caribou were detected on remote cameras in the fall (Table 8-2). There were 27 crossing events in 2022 (Table 8-3). Approximately equal numbers of crossing events were observed while the road was open ($n = 13$) or when a restriction was in place ($n = 14$; Table 8-3).

Table 8-2 Caribou Detection Rates from Remote Cameras, 2022

Camera Pair	Spring (Caribou/Active Days)		Summer (Caribou/Active Days)		Fall (Caribou/Active Days)		Winter (Caribou/Active Days)	
	Caribou Rate	Crossing Rate	Caribou Rate	Crossing Rate	Caribou Rate	Crossing Rate	Caribou Rate	Crossing Rate
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.04	0.02	0.18	0.08	0.00	0.00	0.11	0.04
5	0.00	0.00	0.03	0.03	0.00	0.00	0.00	0.00
6	0.08	0.08	0.02	0.02	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.00
9	0.00	0.00	0.13	0.06	0.00	0.00	0.04	0.03
10	0.00	0.00	0.04	0.03	0.00	0.00	0.00	0.00

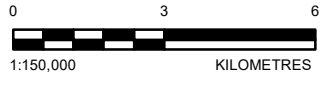
Too few crossing events were detected to statistically compare crossing rates between different road heights, backfill materials, and backfill slopes. However, crossing events occurred on cameras of all road heights, both backfill slope categories and backfill slopes.

PATH: Y:\mining\CAD-GIS\client\Agnico_Eagle_Mines_Ltd\White_Tail\09_PROJECTS\2150960\4000_4040_00_01_Caribou_Division_Crossing_Rates_2022.mxd PRINTED ON: 2023-03-28 AT: 10:44:26 AM



LEGEND

- REMOTE CAMERA LOCATION
- CARIBOU CROSSING
- CARIBOU RATE SPRING (CARIBOU/ACTIVE CAMERA DAYS)**
- 0.00 - 0.02
- 0.02 - 0.10
- 0.10 - 0.18
- CARIBOU RATE SUMMER (CARIBOU/ACTIVE CAMERA DAYS)**
- 0.00 - 0.02
- 0.02 - 0.10
- 0.10 - 0.18
- CARIBOU RATE FALL (CARIBOU/ACTIVE CAMERA DAYS)**
- 0.00 - 0.02
- 0.02 - 0.10
- 0.10 - 0.18
- CARIBOU RATE WINTER (CARIBOU/ACTIVE CAMERA DAYS)**
- 0.00 - 0.02
- 0.02 - 0.10
- 0.10 - 0.18
- 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**
 MEADOWBANK AND WHALE TAIL PIT TEMP 2022

PROJECT
 MEADOWBANK AND WHALE TAIL PIT TEMP 2022

TITLE
CARIBOU DETECTION AND CROSSING RATES FROM REMOTE CAMERA DATA (2022)

CONSULTANT	YYYY-MM-DD	2023-03-28
	DESIGNED	SW
	PREPARED	CDB
	REVIEWED	DC
	APPROVED	CDLM

PROJECT NO.	CONTROL	REV.	FIGURE
2150960	4000/4040	0	8-1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANS I 28mm

Table 8-3 Caribou Crossing Events on Remote Cameras, 2022

Camera Pair	Crossing Time	Number of Individuals	Road Closure Status
7	2022-03-04 7:33	2	Open
8	2022-03-04 8:40	2	Open
8	2022-04-21 4:25	1	Open
7	2022-05-21 23:11	1	Open
9	2022-06-03 9:52	1	Speed Restriction (Muskox)
9	2022-07-03 12:49	2	Open
10	2022-07-23 3:14	1	Speed Restriction (Muskox)
10	2022-07-24 7:33	1	Open
8	2022-08-08 9:51	1	Speed Restriction (Caribou)
8	2022-08-13 15:05	1	Speed Restriction (Caribou)
8	2022-08-14 6:00	1	Speed Restriction (Caribou)
10	2022-08-17 9:22	1	Speed Restriction (Caribou)
8	2022-08-17 11:21	1	Speed Restriction (Caribou)
10	2022-08-18 9:45	1	Open
10	2022-08-19 12:59	1	Open
8	2022-08-24 12:15	1	Speed Restriction (Caribou)
9	2022-08-27 18:36	1	Open
8	2022-08-28 5:50	1	Open
9	2022-08-30 6:13	1	Speed Restriction (Caribou)
9	2022-08-30 6:18	3	Speed Restriction (Caribou)
8	2022-08-30 6:38	3	Speed Restriction (Caribou)
10	2022-09-02 17:14	1	Speed Restriction (Caribou)
6	2022-09-03 7:06	1	Open
9	2022-09-18 12:49	1	Open
9	2022-09-20 17:49	2	Open
6	2022-10-04 9:50	4	Closed (Caribou)
6	2022-10-09 20:36	1	Closed (Caribou)

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 (2,727,572), 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 more photographs with far-away wildlife are present that were not detected by the automated approach. Object detection techniques could be applied to improve the accuracy of the process. Further research and improvement in quality control methods would benefit the process of wildlife detection (Agnico Eagle 2023b).

Results from 2022 are 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 (Angico Eagle 2023a). 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 future of the remote camera program should be discussed with the TAG. The remote camera program is unlikely to contribute to adaptive management but could 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.

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. Locations of caribou groups that could be linked to blast events in 2022 are shown in Figure 9-1.

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 2020a). 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 5 of the 11 blasts at the measurement location 193 m from the Whale Tail Mine, and 2 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 2020a).

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

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.

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

Pre-blast surveys for caribou were performed on 191 days between 23 January to 31 December 2022 (Appendix A). Caribou were observed on 45 days, Muskox on two days, and Canada geese and Arctic fox were observed on one day. One blast was cancelled, on 29 April 2022, due to caribou presence within 600 m of the blast. Another blast was cancelled 23 August 2022, though the reason for cancellation was not noted. Caribou behaviour monitoring sessions occurred on 14 days in 2022 (Table 9-1). Additional information on blast surveys conducted in 2021 are provided in Golder (2022).

Table 9-1: Number of Pre-blast Caribou Surveys Performed in 2022.

Month	Number of Days with Pre-Blast Surveys	Caribou Behaviour Monitoring Sessions
January	4	1
February	13	0
March	8	0
April	14	7
May	16	3
June	16	1
July	13	0
August	21	1
September	15	1
October	22	0

Table 9-1: Number of Pre-blast Caribou Surveys Performed in 2022.

Month	Number of Days with Pre-Blast Surveys	Caribou Behaviour Monitoring Sessions
November	27	0
December	22	0
Total	191	14

Between 2021 and 2022, there were 13 behaviour monitoring sessions where behaviour before, during, and after the blast was monitored in 3-minute intervals (Figure 9-3). 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 (Figure 9-2; Figure 9-3; Table 9-2).

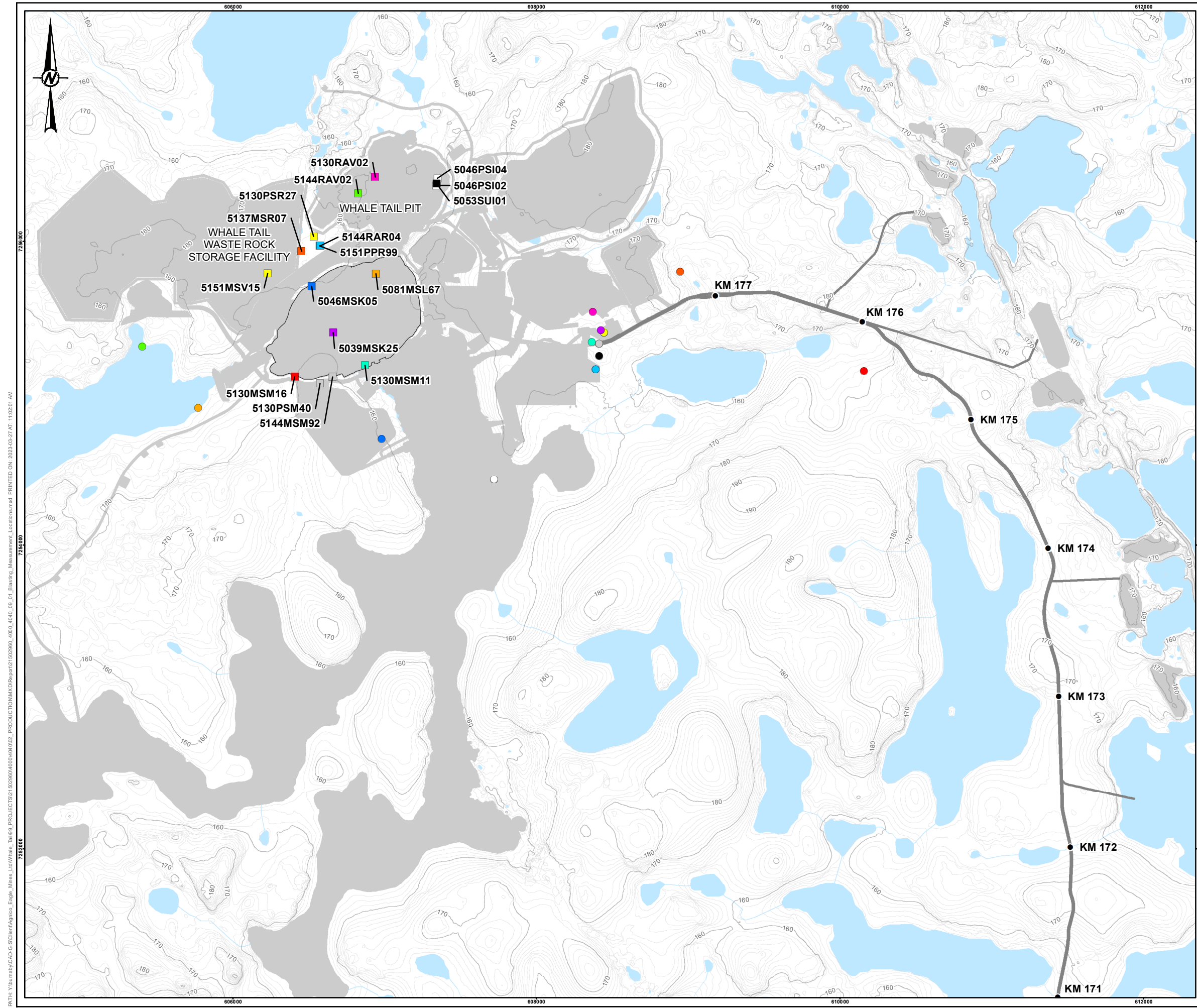
On 6 May 2021, when two blasts were performed at the same time, walking and alert behaviours increased following blasts. However, several vehicle disturbances were also recorded that appeared to elicit changes in caribou behaviour on this day. On 19 August 2021, alert behaviours were observed in the 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 9-2). On 15 April 2022, caribou walked towards the 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 9-2). Other forms of disturbance (e.g., vehicle traffic) occurred on five days where behaviour monitoring occurred (Figure 9-2). 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 (Table 9-2). Response behaviours were observed on half of days following blasting. However, the average proportion of the caribou group performing response behaviours in 6 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 (Table 9-2).

Caribou behaviour in the three minutes before, the three minutes during, and the three minutes following a blast is shown in Figure 9-3. 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.

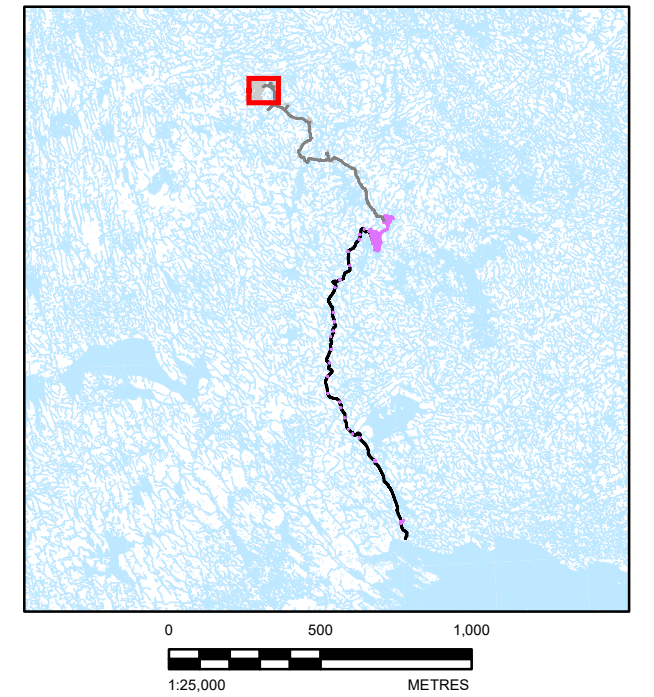
Table 9-2: Caribou Behaviour Monitoring and Blast Data

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)



LEGEND

BLASTING LOCATION	CARIBOU LOCATION (DURING BLAST)
■ 1/29/2022	● 1/29/2022
■ 4/10/2022	● 4/10/2022
■ 4/11/2022	● 4/11/2022
■ 4/15/2022	● 4/15/2022
■ 4/16/2022	● 4/16/2022
■ 4/24/2022	● 4/24/2022
■ 4/30/2022	● 4/30/2022
■ 5/3/2022	● 5/3/2022
■ 5/5/2022	● 5/5/2022
■ 6/14/2022	● 6/14/2022
■ 8/26/2022	● 8/26/2022
□ 9/23/2022	○ 9/23/2022
■ 9/26/2022	● 9/26/2022
● KILOMETRE MARKER	
— CONTOUR (1 m)	
— CONTOUR (10 m)	
— WATERCOURSE	
— WATERBODY	
— WHALE TAIL MINE SITE	
— HAUL ROAD	



REFERENCE(S)

1. INFRASTRUCTURE OBTAINED FROM AGNICO EAGLE MINES LIMITED.
2. ROAD, WATERCOURSE AND WATERBODY DATA OBTAINED FROM NATURAL RESOURCES CANADA.
3. CONTOUR DATA OBTAINED FROM PHOTOSAT (2015).

COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 14N

CLIENT **AGNICO EAGLE**
 MEADOWBANK DIVISION

PROJECT
MEADOWBANK AND WHALE TAIL PIT TEMP 2022

TITLE
BLASTING MEASUREMENT LOCATIONS

CONSULTANT		YYYY-MM-DD	2023-03-27
DESIGNED		SW	
PREPARED		CDB	
REVIEWED		DC	
APPROVED		CDLM	

PROJECT NO.	CONTROL	REV.	FIGURE
21502960	4000/4040	0	9-1

PATH: Y:\mine\CAD-GIS\client\Agnico_Eagle_Mine_Lit\W\hale_Tail\hale_Tail\09_PROJECTS\21502960_4000_4040_09_01_Blasting_Measurement_Locations.mxd PRINTED ON: 2023-03-27 AT: 11:02:01 AM

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

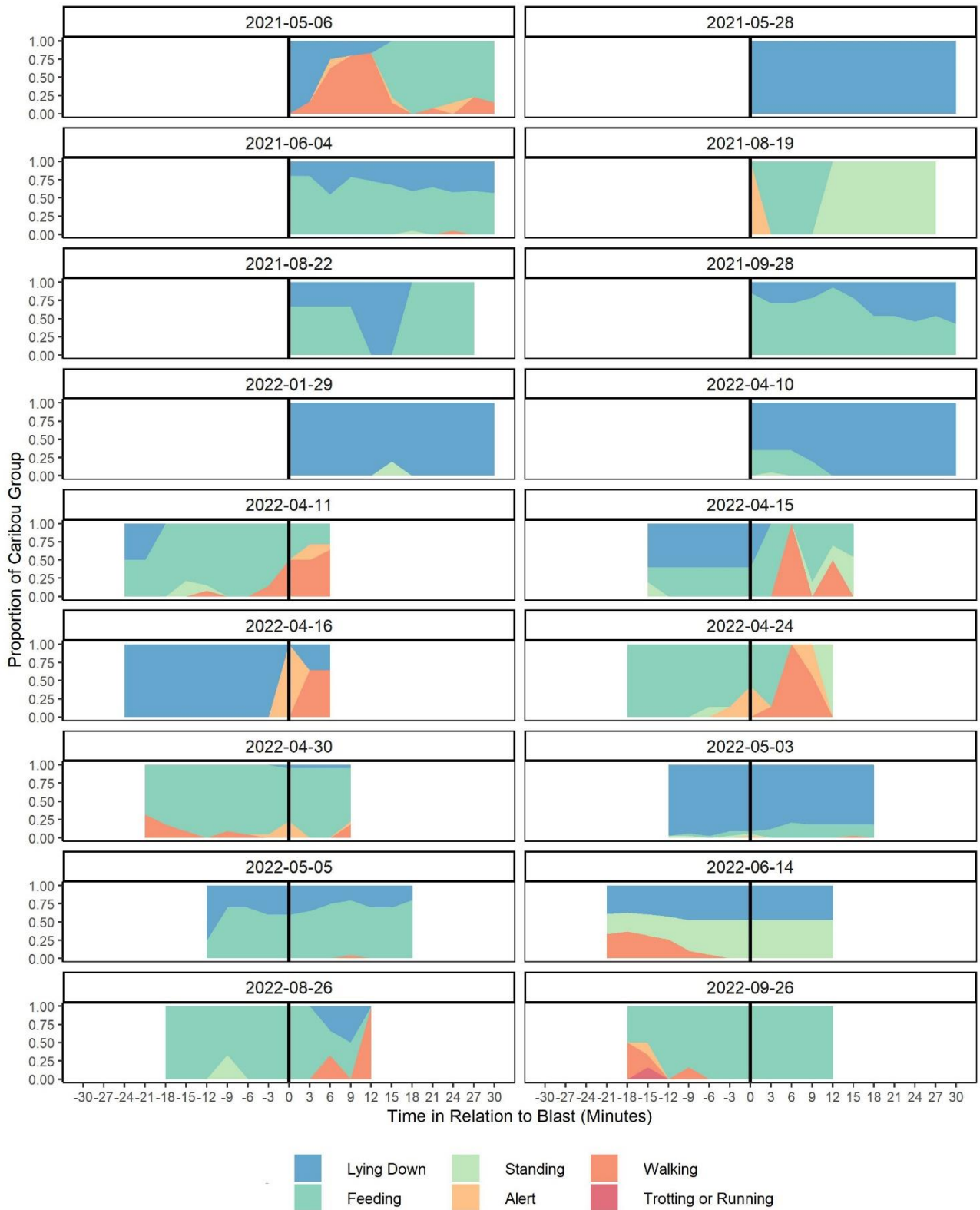


Figure 9-2: Caribou Behavioural Response Following Blasting Events

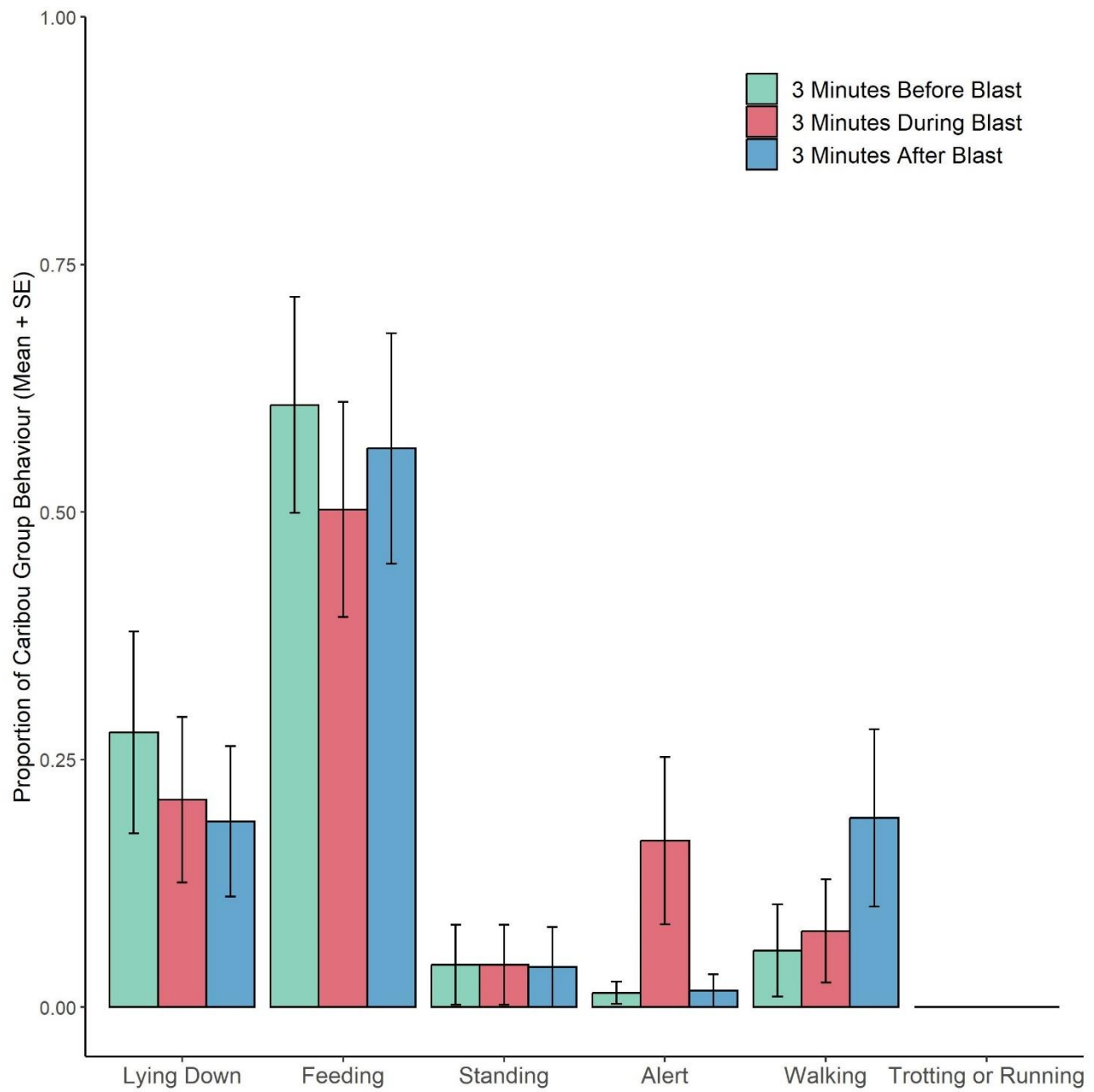


Figure 9-3: Caribou Behaviour Before, During, and After Blasting.

9.6 Management Recommendations

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 behaviour monitoring, the exact time of blast within thirty-minute surveys should continue to be recorded to allow time correction of surveys where necessary. Accurate locations of caribou groups (i.e., distance and bearing from observation location) should continue to be recorded on all behaviour monitoring surveys.

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, GN. Data were provided annually in monitoring reports from 2007 to 2015 and in 2019 to 2021.

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 2022 HHS report is provided in Appendix F (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 Appendix A of Appendix F for 2022 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 2022, October 2022, and February 2023) by the harvest study coordinator. During the January 2023 interviews, remaining data from 2022 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 2022 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

The HHS included 59 participants by the end of 2022, which is higher than the 55 participants in 2021 and lower than the 64 participating in 2020. Higher numbers in 2022 are because of several new younger participants that are replacing older hunters that “don’t hunt anymore”. Of the 2022 participants, Caribou harvest data had been collected from 55 participants, which is considerably higher than the 39 hunters reporting Caribou harvests in 2021 and the highest number since the HHS began.

Based on the previous discussion of total numbers of hunters in the Hamlet of Baker Lake, 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 2005) in which 336 Baker Lake hunters were contacted and interviewed. Discussions with 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 55 hunters reporting Caribou harvest in 2022 conservatively represent from 16% to 18% of total hunters in the community.

Hunting is highly concentrated in the vicinity of the Hamlet of Baker Lake and along the AWAR to approximately KM 85. Limited harvests were reported along the Thelon River system to Aberdeen Lake, and along the northeastern and southwestern shores of Baker 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.

The 2022 HHS data indicated that 39% of reported harvest occurred within 5 km of the AWAR, and 70% occurred within the Meadowbank RSA. 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.

In 2022, no Caribou were harvested within 5 km of the WTHR, which compares to no reported harvest during the NWMB harvest study, and three caribou harvested in 2021. 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 34 harvests were reported in 2022, which is just above the average across the first 12 years of the study but lower than reported harvests in 2021 (48), 2019 (85), 2015 (53), and 2011 (103 caribou). 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 2022, a total of 766 caribou were reported as being harvested by 55 participants in the Baker Lake HHS, which includes harvests in the Meadowbank and Whale Tail study areas. The number of participants reporting harvest and the total number of caribou reported as being harvested are the highest since the HHS was initiated. Given that the 55 hunters represent an estimated 16% to 18% of the Baker Lake hunting community, the total estimated number of caribou harvested in 2022 in the Baker Lake community ranged from 4,256 to 4,788 animals, which is slightly higher than in 2021 (i.e., range of 3,946 to 4,664 animals). This estimate is very likely conservative (i.e., high) since the Baker Lake HHS targeted known hunters in the community with some known to be particularly successful.

Based on the NWMB (2005) and inclusive Baker Lake HHS results (2007 to 2015; 2019 to 2022), highest caribou harvests have occurred in September and October, with a second smaller peak in March and April. The similar pattern between the studies indicates that seasonal hunting preferences have not changed markedly in the last decade. Figures of and discussion of seasonal distribution of hunting are provided in Appendix F.

Eighteen muskox and 25 wolverine were harvested in 2022, which is higher than in 2021. A total of 92 wolves were reported as being harvested in 2022, which is considerably higher than the 26 reported in 2021. Arctic fox, red fox, grizzly bear, ermine, and American marten were also harvested. Several bird species were harvested in 2022 with the most common species being Canada goose. For the first time in the HHS, beluga (*Huso huso*), bearded seal (*Erignathus barbatus*), harp seal (*Pagophilus groenlandicus*), and ringed seal (*Pusa hispida*), were reported as being harvested by Baker Lake hunters but all were harvested well beyond the RSA (e.g., Christopher Island at the east end of Baker Lake).

The number of fishermen reporting successful fishing trips in 2022 was 30, which is higher than the average of 23 fisherman from 2007 to 2015 and 2019 to 2021 (12 years), and the highest number of fisherman reporting success since 2012. The highest numbers of fisherman reporting success in 2022 were in May and June period. 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. In 2022, fishing periods with the most active fisherman was May and June. The periods with the most fish caught included the summer months

(especially May and June), which reflects the high number of Lake Trout caught by fisherman heading out on the land after ice melt, and November. This trend can be observed in the overall trends from 2007 to 2015 and 2019 to 2022. Lake trout (*Salvelinus namaycush*) and Arctic char (*Salvelinus alpinus*) were the most common species caught by fisherman and were reported at considerably higher numbers than in 2021.

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 (2022)	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 (70% of harvest in RSA in 2022 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 (No harvests recorded within 5 km of the WTHR; harvests within the WTHR RSA were lower than some other years, 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 Complex Mine. Meetings with participants every four months (3 times/year) in 2023 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 (Sections 2.0 to 10.0) to understand and manage Mine-related effects on caribou. This section summarizes caribou monitoring data collected in 2022 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 2022, while Table 11-2 summarizes potential Mine-related effects on caribou in 2022.

Table 11-1: Summary of Caribou Monitoring Activities and Management Responses in 2022

Monitoring Program	Summary of 2022 Monitoring Results	Summary of 2022 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 3.0)	A total of 235 surveys completed on the AWAR, and 193 on the WTHR. High caribou numbers were observed along the AWAR in October and November. High numbers of caribou were observed along the WTHR in April.	The AWAR was fully closed (24-hour closure) on 45 days, closed for less than 24 hours on 71 days, and had speed restrictions applied for 84 days. In total the AWAR was closed for 1,808 hours. The WTHR was fully closed (24-hour closure) on 15 days, partially closed (less than 24-hour closure) on 63 days and had speed restrictions applied for 93 days. The WTHR was closed for 894 hours during 2022. The majority of mitigations resulted from observations made during road surveys. Approximately 184 caribou and muskox observations from road surveys were tied to mitigations (Appendix A).
Pits and Mine Site Ground Surveys (Section 4.0)	Mine site surveys conducted on a weekly basis at minimum, and incidental observations recorded. Caribou were observed throughout the year, with highest numbers reported in May at Meadowbank, and August/September at Whale Tail.	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 109.2 ha, or 8.4% change in footprint at the Whale Tail site occurred between the assessment in 2021 and 2022. 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. Collar data were not available to complete analyses from 2022 to 2022.	Data were not accessible at the time of reporting. Daily satellite collar maps still received during sensitive seasons and used to assess need for increased monitoring.
Viewshed Surveys (Section 7.0)	Viewshed surveys were conducted on 58 days in 2022. Of the 58 surveys, 41 surveys (6%) had caribou sightings, and a total of 461 caribou were reported. Survey efforts were conducted between 5 January and 28 December, with the highest survey effort occurring in the summer.	Viewshed surveys informed road closure by acting as an early warning system for caribou approaching the WTHR. Seven speed restrictions were implemented based on viewshed surveys (Appendix A).
Remote Camera (Section 8.0)	Remote cameras were deployed at 10 Locations along the WTHR. Caribou were detected at six locations, and road crossings were identified at five locations	No management response based on remote camera program in 2022.

Table 11-1: Summary of Caribou Monitoring Activities and Management Responses in 2021

Monitoring Program	Summary of 2022 Monitoring Results	Summary of 2022 Management Responses
Blast Monitoring (Section 9.0)	Caribou monitoring conducted prior to blasts throughout 2022. Caribou behavioural response to blasting, based on 18 behaviour monitoring sessions was assessed in relation to modelled PPL and PPV. Response behaviours (i.e., alert, walking, trotting or running) were observed following half of blasts. However, preliminary analysis based on 18 surveys found overall that the proportion of caribou performing response behaviours in a six-minute interval following blasting was not correlated with modelled PPV and PPL values.	One blast postponed due to presence of caribou in the vicinity of the Whale Tail Mine.
Hunter Harvest Study (Section 10.0)	A total of 766 caribou were reported as being harvested by 55 participants in the Baker Lake HHS. The data indicated that 39% of reported harvest occurred within 5 km of the AWAR, and 70% occurred within the Meadowbank RSA. In 2022, three Caribou were 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 on Nunavut Department of Environment, GST = Group Size Threshold, HHS = Hunter Harvest Study, PPL = Peak Pressure Level, PPV = Peak Particle Velocity, RSA = Regional Study Area, WTHR = Whale Tail Haul Road.

Table 11-2: Summary of Mine-related Effects on Caribou in 2022

Monitoring Program	Potential Effect	Threshold	Threshold Exceeded (2022)	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	NO.
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.

Table 11-2: Summary of Mine-related Effects on Caribou in 2022

Monitoring Program	Potential Effect	Threshold	Threshold Exceeded (2022)	Adaptive Management Implemented
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 one occasion 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: grey 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 were conducted informally in 2022 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 2022.

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 2022.

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

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 2022 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 2022, to determine the relationship between nest success and Mine activity (Appendix G).

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 2022 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 2022 (Table 13-1). Quarries along the AWAR (Table 13-1) were visited on an approximately weekly basis between 7 May and 8 September in 2022. 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 in May and August 2022. Surveys were focused on nesting habitat along the AWAR and WTHR (Appendix G).

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, which would require approaching nests by foot, is not conducted. Deterrents were applied to 22 in 2022 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 – 2022 at 144 locations considered to be raptor nesting habitat. Occupancy modelling was used to determine nest occupancy across years for peregrine falcons (71 nest sites) and rough-legged hawks (30 nest sites). Insufficient data were available to complete models for gyrfalcon (*Falco rusticolus*; 10 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 G (Arctic Raptors 2022).

13.5 Results

13.5.1 Nest Monitoring

Six peregrine falcon nests were documented in Quarries 2, 8, 18, 21, and 22 in 2022 (Table 13-1; Figure 13-1). A peregrine falcon was observed at Quarry 7, however the nest containing eggs in this quarry appeared to be occupied by a common raven. Nests have previously been identified in all these quarries (Table 13-1). No raptor nesting evidence was observed in quarries along the WTHR in 2022 (Quarries 10.5, 26, 30, 35, 50, and 52; Table 13-1). Peregrine falcon nesting activity (i.e., territorial behaviour) was identified on a communication tower on site, and in the Phaser Lake extension of the Vault Pit area during the NIRB site visit. However, these nests were not identified during subsequent raptor nest monitoring. No other raptor nests were identified during pit checks or incidentally during other surveys in 2022.

A summary of observations made at the peregrine falcon nests along the AWAR in 2022 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 2022

Location	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Comments (2022)
All-Weather Access Road															
Quarry 1	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Peregrine falcon pair circling around
Quarry 2	No	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes	No	Yes	Yes	Yes	Two nestlings observed
Quarry 3	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	No	A lot of peregrine falcon whitewash specially on west walls, peregrine falcon pair observed
Quarry 4	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No raptors observed
Quarry 5	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	Peregrine falcon observed
Quarry 6	No	No	No	No	No	No	No	No	No	No	No	No	No	No	One peregrine falcon observed
Quarry 7	No	No	No	No	No	No	No	Yes	Yes	No	No	Yes	Yes	No	Common raven nest with one egg; potentially failed, one falcon observed
Quarry 8	No	No	No	No	No	No	No	No	Yes	No	No	No	No	Yes	Three falcon nestlings observed
Quarry 9	No	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	No	One peregrine falcon observed
Quarry 10	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 falcons observed
Quarry 12	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 falcons observed

Table 13-1: Record of Peregrine falcon Nesting from 2009 and 2022

Location	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Comments (2022)
Quarry 14	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 falcons observed
Quarry 16	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	One peregrine falcon observed
Quarry 17	No	No	No	No	No	No	No	No	Yes	No	No	No	No	No	No falcons observed
Quarry 18	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Four peregrine falcon nestlings observed
Quarry 19	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	No falcons observed
Quarry 20	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	Three peregrine falcon nestlings observed
Quarry 22	No	No	No	No	No	No	No	No	Yes	Yes	Yes	No	Yes	Yes	Three peregrine falcon nestlings observed
Whale Tail Haul Road															
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 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 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 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 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 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 falcons observed

Table 13-1: Record of Peregrine falcon Nesting from 2009 and 2022

Location	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Comments (2022)
Meadowbank Mine															
Portage Pit	No	No	No	Yes	Yes	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 falcons observed
Goose Pit	N/A	N/A	No	No	No	No	No	Yes	No	No	No	No	No	No	No falcons observed
Whale Tail Mine															
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 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 falcons observed

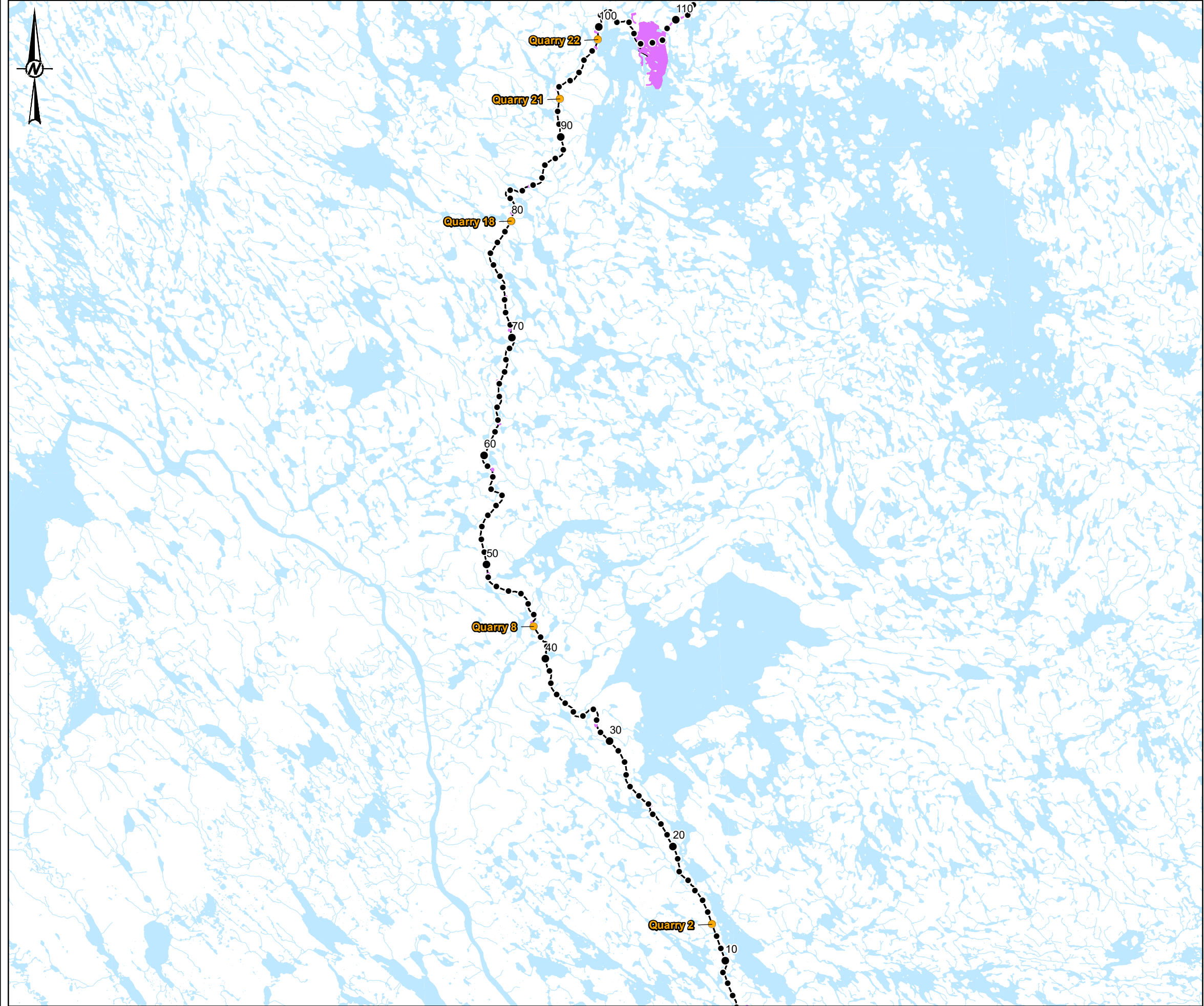
N/A = Not Applicable

Table 13-2: Peregrine Falcon Nest Monitoring Data, 2022

Date	Quarry 2 (-96.049, 64.424)	Quarry 8 (-96.126, 64.504)	Quarry 18 (-96.307, 64.919)	Quarry 21 (-96.224, 65.003)	Quarry 22 (-96.155, 65.042)
24-May-22	No falcon observed	-	-	-	One peregrine falcon observed
29-May-22	Pair of peregrine falcon hunting	Pair of falcons observed	One falcon observed	Pair of peregrine falcons observed	Pair of peregrine falcons observed
03-Jun-22	Two peregrine falcons observed	-	One falcon observed	One peregrine falcon observed	Pair of peregrine falcons observed
08-Jun-22	Two peregrine falcons observed	Pair of falcons observed	Pair of falcons observed	Pair of peregrine falcons observed	Pair of peregrine falcons observed
05-Jul-22	Two peregrine falcons observed	No observations	No observations	Pair of peregrine falcons with one nestling	One peregrine falcon observed
12-Jul-22	One peregrine falcon observed	-	-	One peregrine falcon observed	One peregrine falcon observed
27-Jul-22	One peregrine falcon observed	Pair of falcons with three nestlings	Pair of peregrine falcons with four nestlings	Pair of peregrine falcons with three nestling	-
04-Aug-22	One peregrine falcon observed	Pair of falcons observed	Pair of peregrine falcons with four nestlings	Pair of peregrine falcons with one nestling	No observations
10-Aug-22	-	-	-	-	Pair of peregrine falcons observed
14-Aug-22	Pair of peregrine falcons with two nestlings	Pair of falcons with three nestlings	Pair of peregrine falcons with four nestlings	one peregrine falcon with two fledglings	One peregrine falcon and three nestlings
26-Aug-22	Four peregrine falcons observed	No observations	Five peregrine falcons observed	Three peregrine falcons observed	Pair of peregrine falcons observed
08-Sep-22	One peregrine falcon observed	No observations	Pair of peregrine falcons with four nestlings	No observations	No observations

“-“ indicates no monitoring event on given day.

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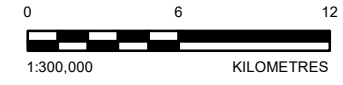
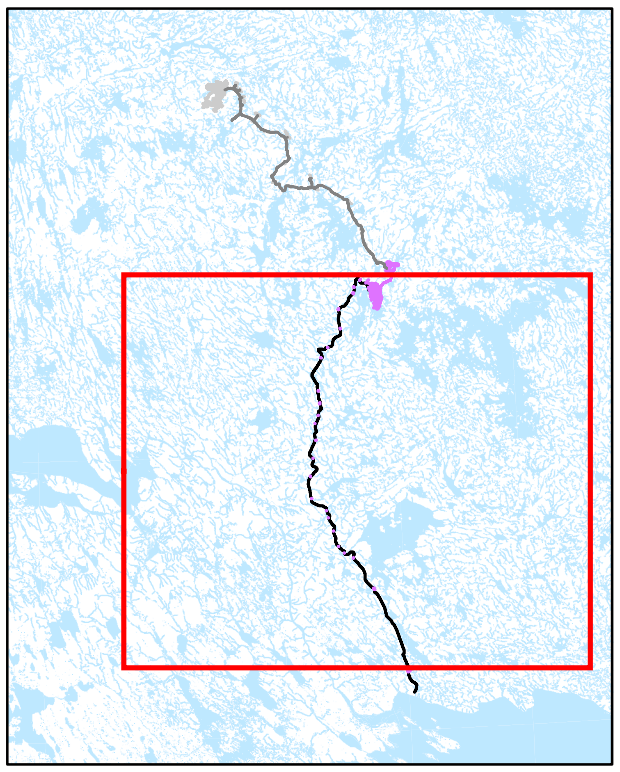


LEGEND

ACTIVE PEREGRINE FACON NEST LOCATION (2022)

STATUS

- SUCCESSFUL
- 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 AND WHALE TAIL PIT TEMP 2022

TITLE
PEREGRINE FALCON NEST LOCATIONS (2022)

CONSULTANT	YYYY-MM-DD	2023-03-27
	DESIGNED	SW
	PREPARED	CDB
	REVIEWED	DC
	APPROVED	CDLM

PROJECT NO.	CONTROL	REV.	FIGURE
21502960	4000/4040	0	13-1

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

13.5.2 Nest Occupancy Analysis

Results of the analysis did not indicate project-related effects on rough-legged hawk occupancy ($\lambda = 1.08 \pm 0.17$ [mean \pm standard error]). Although the value is positive, the standard error overlaps one, indicating that the population is unlikely to be increasing or decreasing (i.e., likely stable). Marginal decrease in peregrine falcon occupancy was observed ($\lambda = 0.98 \pm 0.04$) but results could not be strongly correlated to effects from the Project. Results may be related to inconsistent monitoring (e.g., monitoring that ensures minimal disturbance) and lack of statistical power to determine project-related effects. Full results of the nest occupancy analysis are included in Appendix G (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 G).

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

Potential Effect	Threshold	Threshold Exceeded (2022)	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 2022 include applying deterrents to quarries in early May, regular monitoring of viewshed quarries, and signage to identify nesting raptors to limit disturbance (Appendix G; Arctic Raptors 2023).

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. 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 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.

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.

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 (Sarah Bonnett), expected to be submitted in 2023. References for any publications produced in 2023 will be provided in the 2023 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. Unfortunately, no official surveys were conducted in 2022 due to a non-work-related medical issue. Detailed descriptions of the routes and station locations are provided in the Meadowbank Complex 2022 Breeding Bird Surveys and PRISM Plots Summary Report (Appendix H).

15.1.2 PRISM Plots

Four PRISM plots were surveyed during two field days in June 2022. In total, twelve bird and one mammal species were observed in the PRISM plots and five bird and four mammal species were observed incidentally while travelling between plots. Horned lark (*Eremophila alpestris*) and Lapland longspur were the only species observed at all four plots, and savannah sparrow (*Passerculus sandwichensis*) and semipalmated sandpiper were observed at three plots each. Full results of the 2022 surveys, as well as sampling methods and locations are available in Appendix H.

15.2 Management Recommendations

Agnico Eagle will continue to survey 48 PRISM plots selected by Canadian Wildlife Service 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.

With the limited survey efforts due to an unforeseen medical issue, it is recommended that a minimum of 12 PRISM plots and both BBS routes be surveyed in June 2023. The four PRISM plots completed in 2022 will need to be revisited to take photographs of the plots from the plot corners.

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*, SNU 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 2020b). Subsequent monitoring events occurred in the month of July in each of 2020-2022. 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; Table 1). 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*, SNU 2003, c 26.

Surveys at the Meadowbank Complex were conducted by a Golder vegetation ecologist between 20 to 26 July 2022. 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 2019 to 2021 where non-native plants were observed. 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. A total of 193 individual locations were surveyed for non-native plants in 2022 (Table 16-1). This number is slightly lower than the number of survey locations in 2021 (202 locations) however, some locations around the Meadowbank Mine Site were eliminated as some populations of previously observed plants had merged together.

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 2022 Results

No non-native plants, as identified by the CESCC, were recorded along the AWAR, WTHR, Baker Lake tank farm, Whale Tail and Meadowbank Mine sites. Eleven surveys were completed in undisturbed tundra to survey the

presence/absence of non-native weeds. No non-native plants were found in the undisturbed areas surveyed. A summary of the locations where weed surveys were completed is presented in Table 16-1 and Figure 16-1.

Table 16-1: Summary of 2022 Non-Native Plant Survey Effort

Location of survey	Total number of survey locations
AWAR	16
AWAR quarry	23
Baker Lake tank farm	2
Meadowbank Mine site	85
Undisturbed tundra	11
Whale Tail Mine site	31
WTHR	11
WTHR Esker/Quarry	14
Total	193

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

16.3.1 Historical Results

From 2019 to 2021, many observations of what was then identified as flixweed (*Descurainiasophiaa*) were reported (Agnico Eagle 2019, 2020a and 2022b) (Table 16-2). A specimen of this species was collected in July 2022 and sent to the Canadian Museum of Nature for identification by a botanist. The specimen was confirmed to be the native species, northern tansy mustard (*Descurainia sophioides*) (P. Sokoloff [personal communication, August 24, 2022]). This species is a biennial herb that colonizes gravel bars, roadsides, waste sites and disturbed soils which is why it is so abundant at the Meadowbank site. It is common in the western arctic around settlements and along roads (Aiken et al. 2007). Known populations of northern tansy mustard have been collected from Baker Lake and Rankin Inlet (BC CDC 2022). The differences between northern tansy mustard and flixweed are subtle. In flixweed, the septae, which are the walls that divide the seed pod (fruit) into chambers, are veined; while in northern tansy mustard the septae are not veined (FNA 2022). Flixweed also has stellate (star like) hairs which are only visible under five to ten times magnification, while northern tansy mustard has glandular hairs (Densmore et al. 2001). Due to the visual similarity between these two species, ongoing monitoring is recommended.

Trials of eradication on what were thought to be flixweed populations, but are now known as northern tansy mustard, were implemented in July 2021 at the Meadowbank Mine site. In total 17 sites underwent trials involving a combination of geotextile placement, hand pulling and mechanical removal. Results of these trials are found in Table 16-2. In summary, the geotextile fabric was effective at reducing populations of northern tansy mustard but only in its immediate vicinity. Areas adjacent to the geotextile fabric and areas with soil accumulated on top of the fabric had sustained populations of northern tansy mustard. Hand pulling and weed eating were found to be not effective methods at controlling northern tansy mustard. The eradication trials will be suspended now that it is known that northern tansy mustard is a native species. Northern tansy mustard may be considered useful for short term ground cover in reclamation areas, providing organic soil inputs on disturbed substrates (Agnico Eagle, 2022).

Table 16-2: 2021 Eradication Trial Results

Trial Location Name	Eradication Methods	Results	Estimated number of Individuals in 2020	Estimated number of Individuals in 2022
21F01	Weed eater	Not effective, population growth since eradication trial.	500	8,000
21F02	Geotextile/ hand pulling	Effective in areas directly under geotextile. Northern tansy mustard surrounding the geotextile fabric.	2,000	1,000
21F03	Geotextile/Weed eater	Effective in areas under geotextile fabric.	500	800
21F04	Hand pulling	Not effective. Northern tansy mustard present in large populations.	50	1,000
21F05	Geotextile/Weed eater	Not effective, northern tansy mustard present in large populations.	3,000	8,000
21F06	Hand pulling	Somewhat effective in managing small populations.	30	35
21F07	Weed eater/ hand pulling	Not effective.	2000	50,000
21F08	Weed eater/ hand pulling	Little evidence of eradication success.	500	500
21F09	Hand pulling	Too large of a population to control by hand.	15,000	20,000
21F10	Geotextile	Not effective. Northern tansy mustard is growing on soil accumulated on top of fabric and adjacent to fabric.	1,000	50,000
W008	Geotextile	Geotextile only effective when in place and only in immediate area. Areas adjacent to geotextile have sustained populations. Areas where geotextile was removed have populations returned.	2,000	850
W012	Hand pulling	Not effective – no evidence that populations were reduced.	10,000	10,000
W013	Weed eater/hand pulling	Not effective.	200,000	200,000
W015	Geotextile	Geotextile effective when in place and only in immediate area. Geotextile was not covering entire population.	2,000	10,000
W024	Hand pulling	Not effective.	100	800
W027	Hand pulling	Not effective.	2,000	2,000
W039	Geotextile/Weed eater	Eradication only effective in areas immediately under geotextile fabric.	10,000	200,000

Similarly, previous annual TEMP reports have reported the non-native species, scentless chamomile (*Tripleurospermum inodorum*) (Table 16-3). Scentless chamomile is very similar to the native species sea mayweed (*Tripleurospermum maritima*). Upon closer inspection by WSP ecologists, the populations observed in previous years have been confirmed to be the native species, sea mayweed. Sea mayweed have fleshy leaf lobes while scentless chamomile leaf lobes are not fleshy (FNA 2022). The margins of phyllaries (the leaf like structure that surrounds the flower head) in scentless chamomile are light brown and narrow, while in sea mayweed the phyllaries are dark brown and relatively wide (FNA 2022). The native species is common in coastal areas, among grasses near human habitation and has been confirmed in continental Nunavut (Aiken at al. 2007).

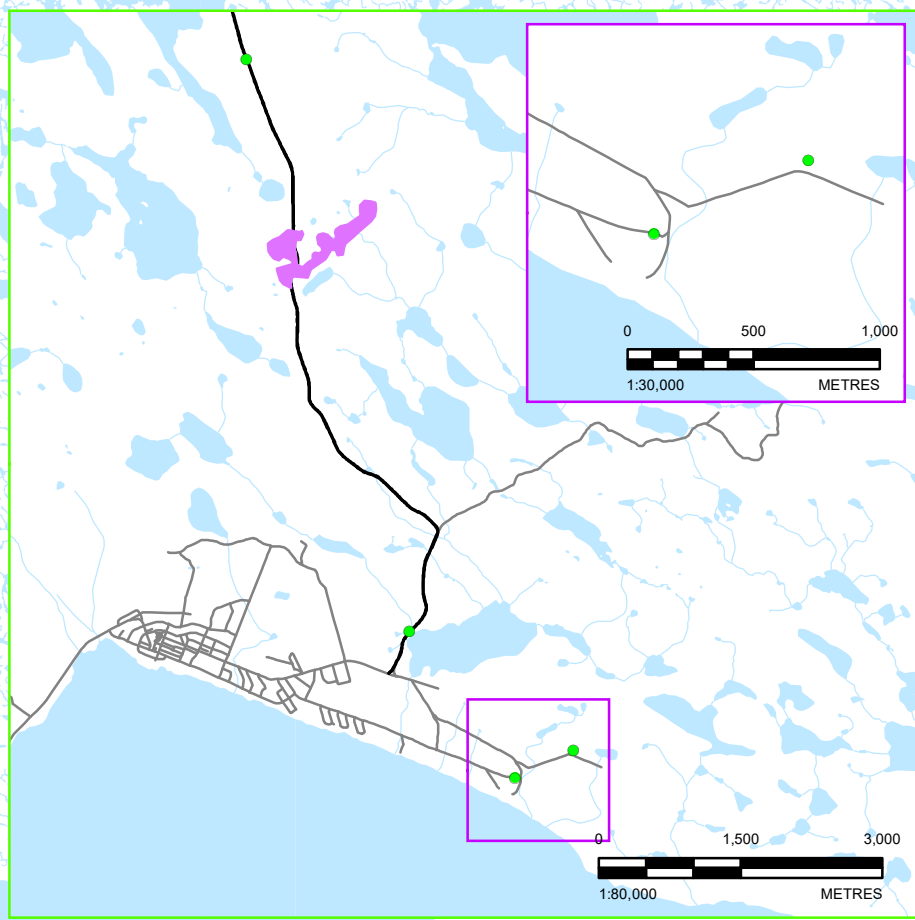
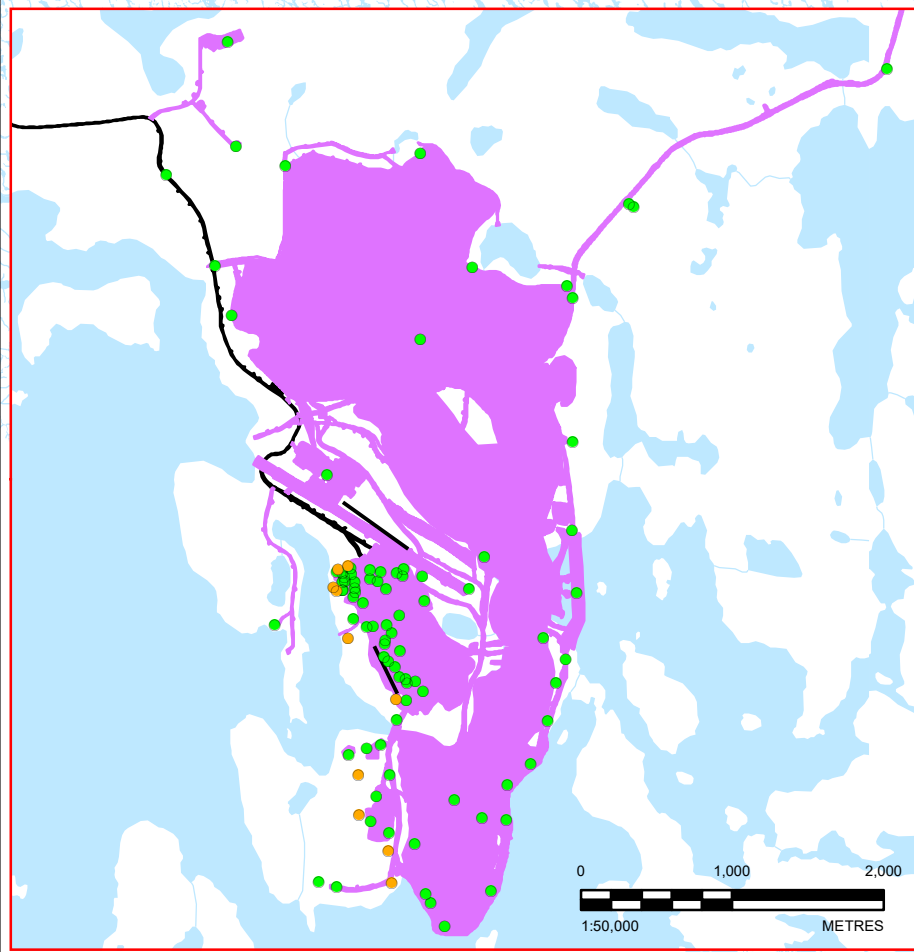
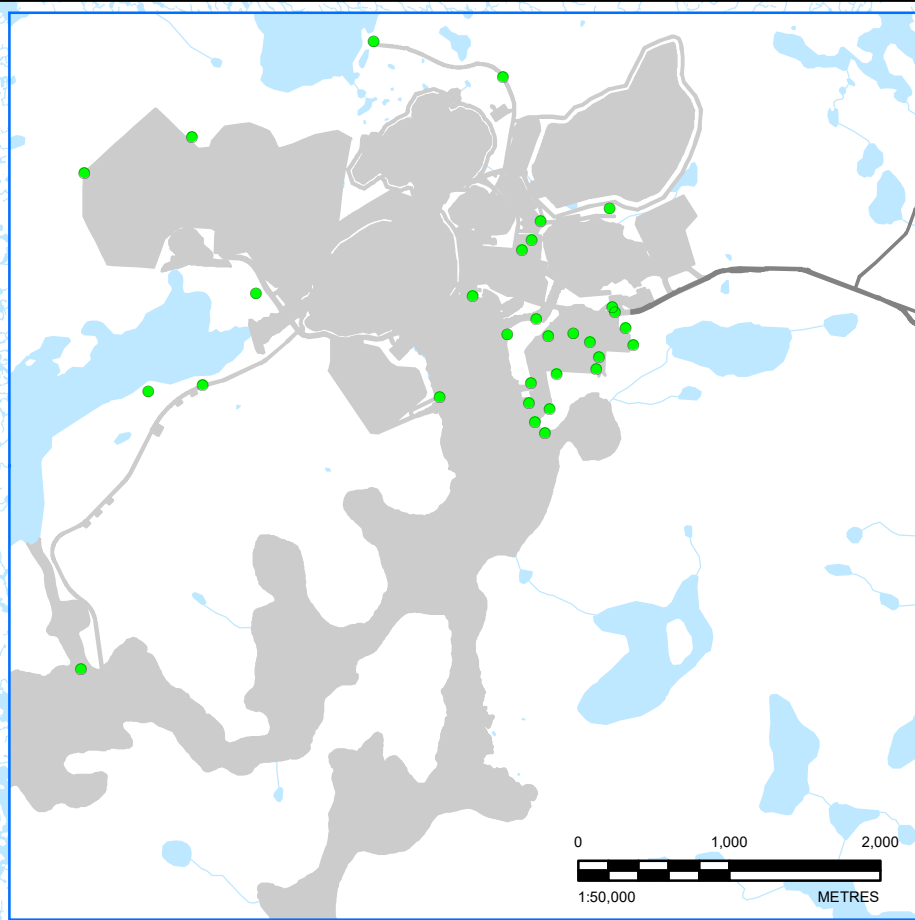
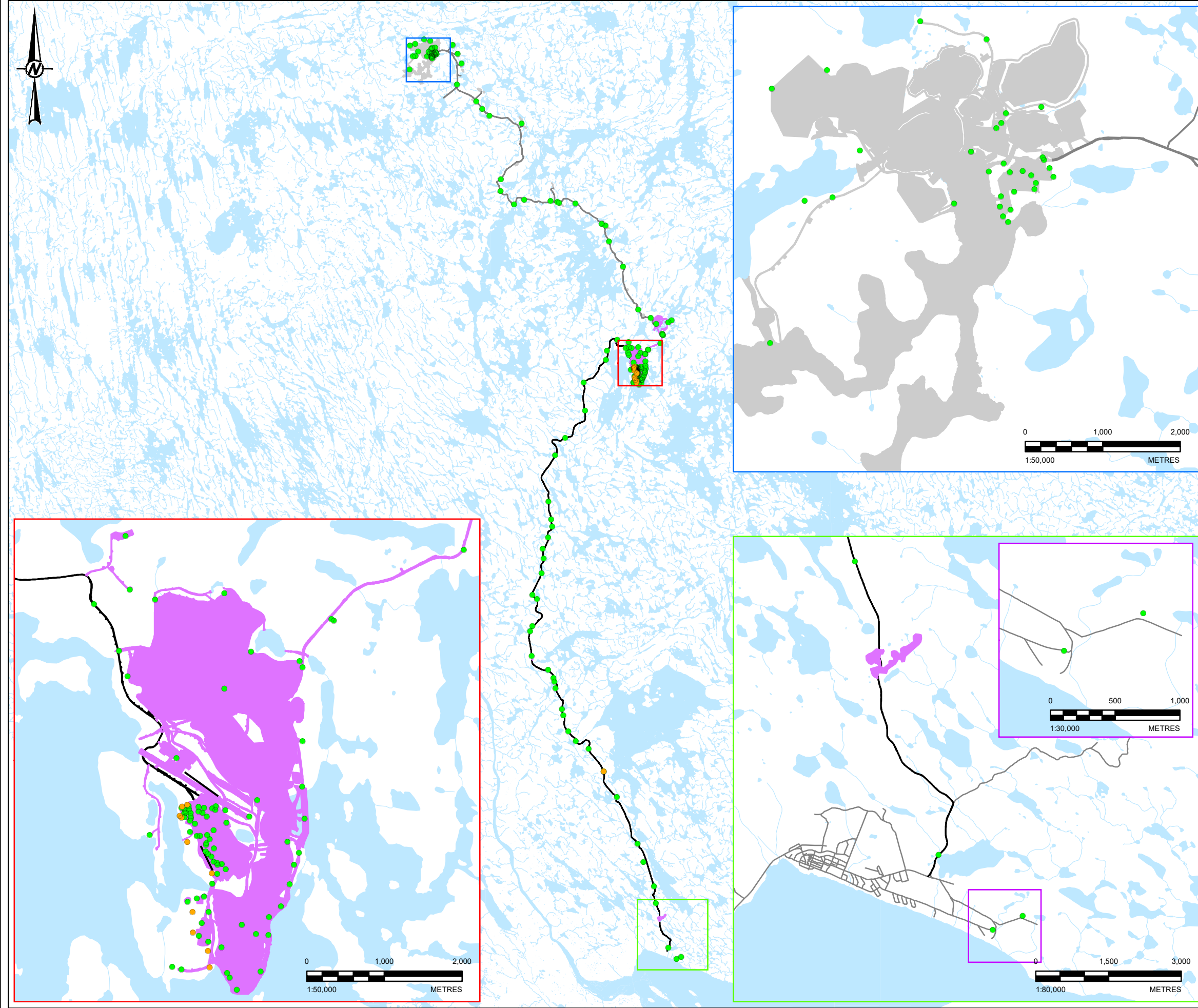
The populations of non-native species of lamb's quarters (*Chenopodium album*) and alsike clover (*Trifolium hybridum*) were observed in 2020. There have been no observations of these species in the years since 2020.

Table 16-3: Historical Non-Native Plant Survey Results

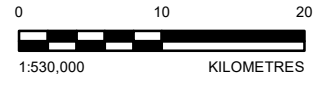
Year	Number of Survey Locations	Non-Native Plants Observed ^(a)
2019	107	Flixweed, scentless chamomile
2020	175	Flixweed, scentless chamomile, lamb's quarters, alsike clover
2021	202	Flixweed, scentless chamomile
2022	193	none

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.

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- LEGEND**
- PROJECT DATA**
- SURVEY LOCATIONS - NO NON-NATIVE PLANTS OBSERVED
 - SURVEY LOCATIONS - 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 AND WHALE TAIL PIT TEMP 2022**

TITLE **2022 NON-NATIVE PLANT SURVEY RESULTS**

CONSULTANT	YYYY-MM-DD	2023-03-27
	DESIGNED	SOD
	PREPARED	CDB
	REVIEWED	DC
	APPROVED	CDLM

PROJECT NO. 21502960 CONTROL 4000/4040 REV. 0 FIGURE 16-1

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16.4 Management Recommendations

The 2022 survey was the fourth consecutive year of non-native species monitoring for the Meadowbank complex.

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 CESCC 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 CESCC (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 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.

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 June 11-13, 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:

- 1) 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?
- 2) 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. Snow condition monitoring data collected in 2020, 2021, and 2022 are presented below, as well as the results of the power analysis. These data represent preliminary results of snow condition monitoring.

17.1.2 Methods

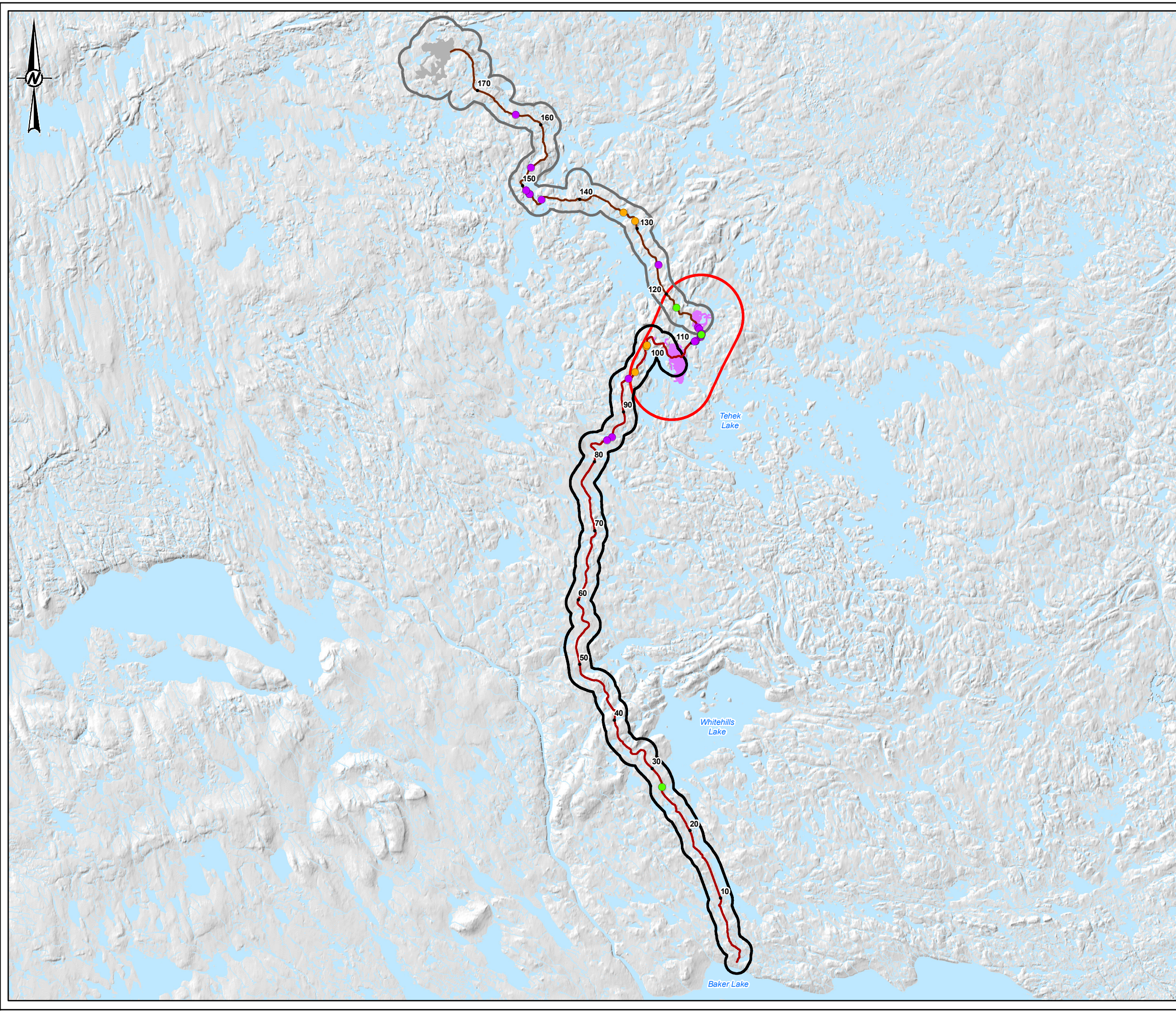
Twenty-eight survey locations have been sampled along the AWAR and WTHR between 2020 and 2022, including five survey locations in May 2020, three locations in April 2021, and twenty locations in April and May of 2022 (Figure 17-1). Survey locations were chosen opportunistically based on the availability 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 2020d). 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 5.0 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
- KILOMETRE MARKER
- 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)
- WHALE TAIL MINE SITE
- MEADOWBANK MINE SITE
- WATERCOURSE
- WATERBODY

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 AND WHALE TAIL PIT TEMP 2022

TITLE
SNOW SURVEY LOCATIONS ALONG THE ALL-WEATHER ACCESS ROAD AND WHALE TAIL HAUL ROAD (2020-2022)

CONSULTANT	YYYY-MM-DD	2023-03-27
	DESIGNED	JF
	PREPARED	CDB
	REVIEWED	DC
	APPROVED	CDLM

PROJECT NO.	CONTROL	REV.	FIGURE
21502960	4000/4040	0	17-1

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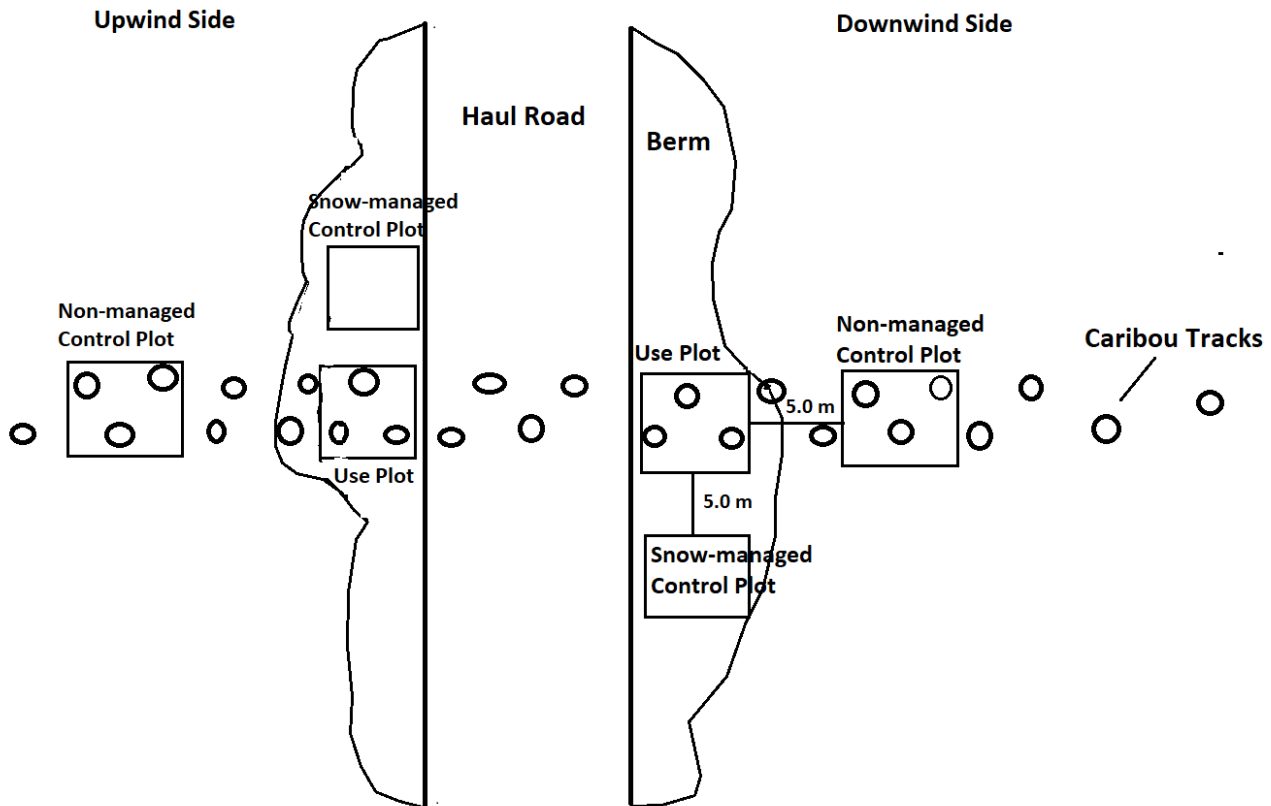


Figure 17-2: Survey Plot Configuration Used During Snow Survey Monitoring Along the Whale Tail Haul Road

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.

The power analysis was conducted in R (R Core Team 2021) using the package *simr* (Green and MacLeod 2016). Mixed effect linear regression models were created using mean snow hardness as the response variable, plot type as the explanatory variable, and location ID as a random effect. The location ID refers to a unique location associated with a caribou crossing event where a set of six plots were established (i.e., the six plots all share the same location ID). The first model was associated with question one (how do snow conditions within the managed snow area where caribou are crossing differ from the snow conditions in adjacent portions of the berm where crossing did not occur) and as such this model only included use plots and snow-managed control plots (Figure 17-2) for plot type. The second model was associated with question two (how do snow conditions differ between areas within the snow berm and areas beyond the berm) and as such this model only included use plots and non-managed control plots (Figure 17-2) for plot type. Both models were evaluated to determine the number of survey locations required to reach sufficient power (80% power; Green and MacLeod 2016) subject to detect three different statistical effect sizes: 10% (very small), 25% (small), and 50% (moderate) (Cohen 1988; Sawilowsky 2009). For example, using model one we calculated the number of survey locations that would be required to detect a 10%, 25% or 50% difference in mean snow hardness between use

plots and snow-managed control plots. These three statistical effect sizes were chosen to provide a gradient of statistical effect sizes ranging from a very small difference to a moderate size difference (Cohen 1988; Sawilowsky 2009) in snow hardness between plots.

17.1.3 Results

A total of 20 survey locations were completed during the spring migration of 2022 out of an ideal target of 36. Across all years (2020-2022), snow surveys were completed at a total of 28 survey locations with data collected from 172 individual snow plots. The targeted number of plots was not met in 2020 (five plots), 2021 (three locations), or 2022 (20 locations). Challenges in meeting the targeted number of plots were related to locating fresh caribou tracks before they were filled with snow, or no longer reflected the snow conditions when caribou travelled through the area. Of the 28 survey locations, 21 were along the WTHR and 7 were along the AWAR. Workers were patrolling on a daily basis along the AWAR and the WTHR during the migration season (between 01 April and late May) for signs of caribou crossing tracks adequate for snow sampling measurements. Excluding hours spent on identifying crossing track locations, 140 survey hours were required to sample the 20 survey locations for 2022, which included over 120 individual snow plots. A full suite of snow data were collected at use plots and snow-managed control plots, and caribou track data were collected at use plots. Due to issues with datasheets, only snow hardness data was collected at non-managed control plots instead of a full suite of snow data and caribou track data. Some snow measurements were excluded due to inconsistencies with reporting units.

Table 16-1 provides a summary of snow metrics recorded at use plots, snow-managed control plots, and non-managed control plots during 2020, 2021, and 2022 survey periods. Average berm height, berm width, and slope were similar on the upwind (west) and downwind (east) sides of the haul road (Table 16-1).

Considering all plot types sampled, mean snow depth was not significantly different on the upwind side of the haul road (0.35 m [95% CI: 0.27-0.43]) compared to the downwind side of the road (0.24 m [0.18-0.31]) (Table 17-1; Figure 17-3). Average snow depth in use plots on the upwind side of the road (0.35 m [0.25-0.45]) was similar to the average snow depth in the snow-managed control plots (i.e., plots within the berm but not used by caribou) on the upwind side of the road (0.34 m [0.22-0.46]). Downwind use plots (0.23 m [0.16-0.30]) had similar average snow depths compared to downwind snow-managed control plots (0.25 m [0.16-0.34]).

Snow hardness, as measured using the push-pull gauge, was similar between plots on the upwind side (14 Newtons (N) [12-16]) and the downwind side (15 N [12-17]) of the WTHR. On both the upwind and downwind sides of the WTHR, average snow hardness was similar between use plots, snow-managed control plots, and non-managed control plots (Table 17-1; Figure 17-4).

Caribou track depth measurements were only collected in use plots during 2020, 2021, and 2022, and will also be collected in non-managed control plots in future years to facilitate berm and non-berm comparisons. Average track depths (cm) collected at use plots are shown in Table 17-1.

Table 17-1: Summary of Snow Depth and Snow Hardness Data Collected at Survey Plots on the Upwind and Downwind Side of the Whale Tail Haul Road

Snow Metric	Plot Type	Upwind	Downwind
Snow Berm Height (m) (Average [95% CI])	Use Plot	0.25 [0.05-0.45]	0.26 [0.00-0.54]
	Snow-management Control	0.20 [0.02-0.38]	0.32 [0.02-0.62]
	Non-managed Control	NA	NA
Average Snow Berm Height-- All Plots		0.22 [0.09-0.35]	0.29 [0.09-0.49]
Snow Berm Width (m) (Average [95% CI])	Use Plot	1.80 [0.75-2.85]	4.04 [0.51-7.57]
	Snow-management Control	1.58 [0.61-2.55]	4.67 [1.02-8.32]
	Non-managed Control	NA	NA
Average Snow Berm Width – All Plots		1.70 [0.99-2.41]	4.37 [1.85-6.89]
Slope (°) (Average [95% CI])	Use Plot	4.05 [1.54-6.56]	3.83 [1.27-6.39]
	Snow-management Control	3.84 [1.26-6.42]	4.81 [1.67-7.95]
	Non-managed Control	-	-
Average Slope-- All Plots		3.95 [2.17-5.73]	4.33 [2.31-6.35]
Snow Depth (m) (Average [95%CI])	Use Plot	0.35 [0.25-0.45]	0.23 [0.16-0.30]
	Snow-management Control	0.34 [0.22-0.46]	0.25 [0.16-0.34]
	Non-managed Control	-	-
Average Snow Depth-- All Plots		0.35 [0.27-0.43]	0.24 [0.18-0.30]
Snow Hardness (N) (Average [95%CI])	Use Plot	13 [9-16]	14 [9-18]
	Snow-management Control	14 [9-19]	17 [12-22]
	Non-managed Control	16 [12-19]	14 [10-17]
Average Snow Hardness-- All Plots		14 [12-16]	15 [12-17]
Track Depth (cm) (Average [95%CI])	Use Plot	5.4 [4.0-6.8]	5.5 [4.1-6.8]
	Snow-management Control	NA	NA
	Non-managed Control	-	-
		5.4 [4.0-6.8]	5.5 [4.1-6.8]

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

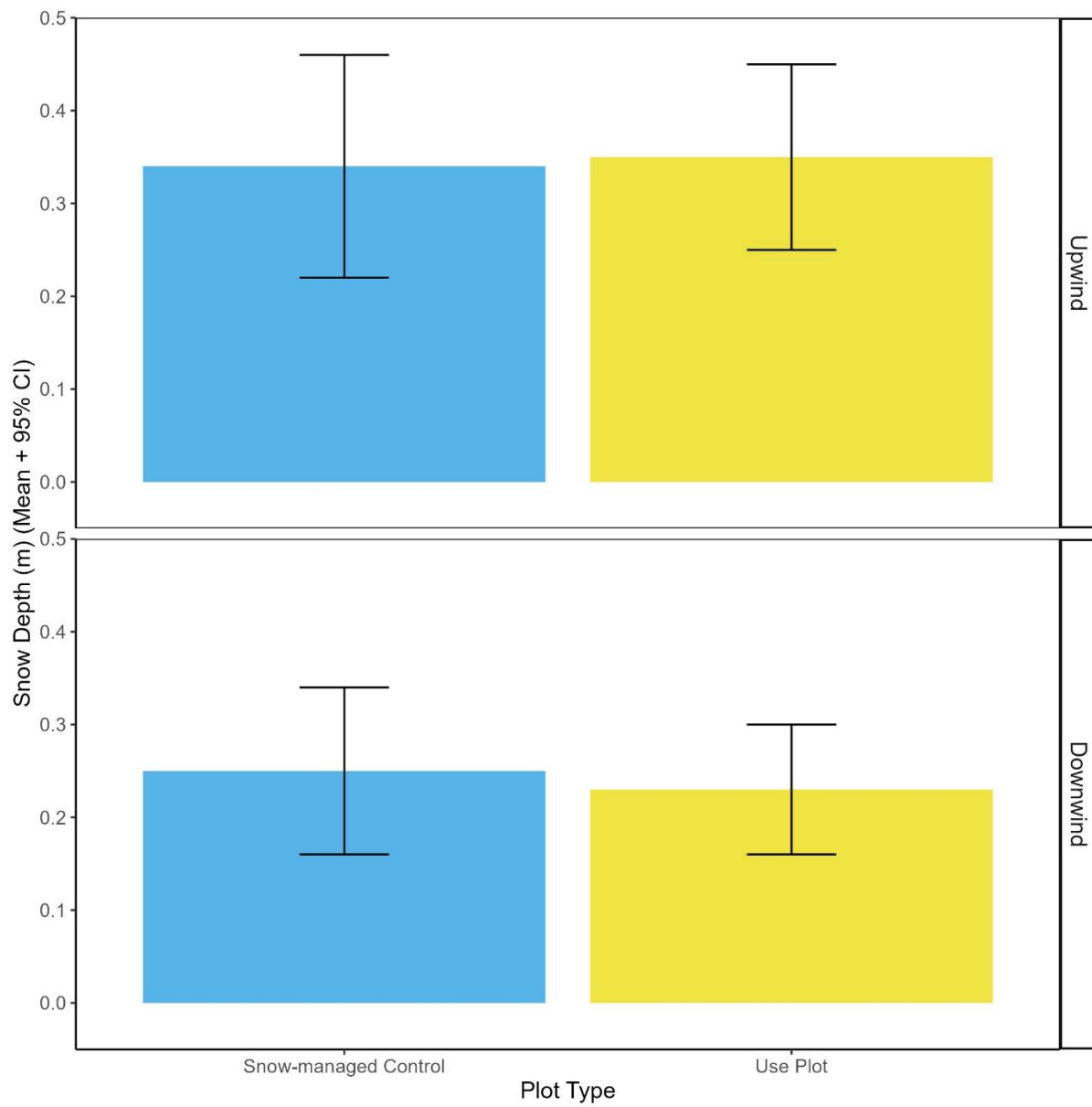


Figure 17-3: Average Snow Depth (m) at Survey Plots on the Upwind and Downwind Side of the Whale Tail Haul Road. Error Bars Represent 95% Confidence Intervals.

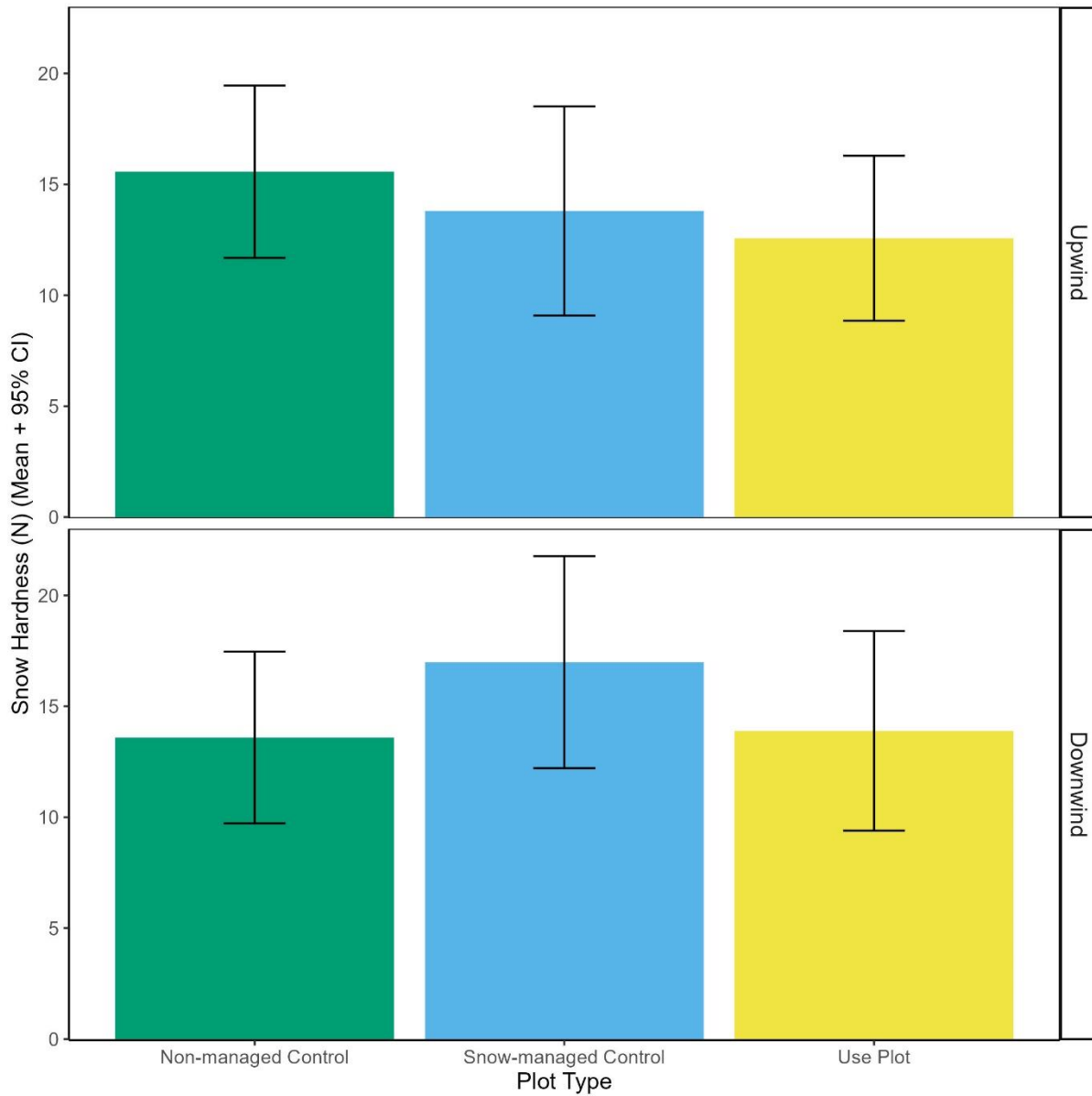


Figure 17-4: Average Snow Hardness (N) at Survey Plots on the Upwind and Downwind Side of the Whale Tail Haul Road. Error Bars Represent 95% Confidence Intervals.

Two mixed effect linear regression models were used to compare (i) snow hardness between use plots and snow-managed control plots, and (ii) snow hardness between use plots and non-managed control plots. Both models were evaluated to determine the number of survey locations required to reach sufficient power (80% power; Green and MacLeod 2016), to detect three different effect sizes: 10%, 25%, and 50%. Results of the power analysis are presented in Table 17-2.

Table 17-2: Number of Survey Locations Needed to Reach Sufficient Power Based on Results of the Snow Hardness Power Analysis

Model ^(a)	Number of Locations per Effect Size ^(b)		
	Effect Size 10%	Effect Size 25%	Effect Size 50%
Use Plots vs Snow-managed Control	400 locations	65 locations	20 locations
Use Plots vs Non-managed Control	320 locations	50 locations	20 locations

- a) Snow models used in the power analysis were mixed effects linear regression models with location ID as a random intercept and snow hardness as the response variable. Each model included only two plot types, one for use plots versus snow-managed control and one for use plots versus non-managed control.
- b) Approximate number of locations to reach 80% power for a given effect size: 10%, 25%, 50%.

Models for use plots versus snow-managed control plots would require approximately 400 survey locations to detect a 10% effect size, 65 survey locations for a 25% effect size, or 20 survey locations for a 50% effect size (Table 17-2). Models for use plots versus non-managed control plots would require approximately 320 survey locations to detect a 10% effect size, 50 survey locations for a 25% effect size, or 20 survey locations for a 50% effect size (Table 17-2). The current sample size of 28 survey locations is already sufficient to detect an effect size of 50% for both models, however, a 50% difference in snow hardness (i.e., effect sizes) was not observed.

17.1.4 Management Recommendations

Based on preliminary snow data collected between 2020 and 2022, snow hardness appears to be similar across all plot types (Figure 17-4). Results of the power analysis indicate that sample sizes are already sufficient to evaluate at least moderate differences in snow hardness between plots (i.e., effect sizes of 50% or greater), but no such differences in snow hardness were observed. To assess differences in snow hardness for smaller effect sizes (e.g., 25%) for both study questions, snow data should be collected at a minimum of 65 locations, with six plots completed at each location as per the study design (Golder 2020d). The power analysis was completed using snow hardness data rather than other metrics based on snow data availability for each plot type from 2020-2022 survey locations (i.e., snow depth data not collected for non-managed control plots) as well as the documented influence of snow hardness on sinking depth and caribou locomotion (Fancy and White 1987). For future snow data collection, a full suite of snow characteristics data (snow depth, snow hardness, slope) will be collected for each plot type to facilitate comparisons. Additionally, caribou track depth information will be collected in both the use plot and in the non-managed control plot to facilitate comparison between the snow conditions within the berm area and beyond the berm area. Agnico Eagle will communicate data recording improvements to field crews, including protocols for post-field data sheet checks for quality assurance. In 2023 Agnico Eagle will explore the possibility for HTO wildlife monitors to report fresh caribou crossing tracks along the WTHR to Agnico Eagle. HTO wildlife monitors are frequently on the WTHR conducting other surveys, and prompt reporting of locations with fresh caribou crossing tracks would increase opportunities for surveying snow conditions. Data collected between 2020 and 2022 allowed for the evaluation of survey techniques and allowed for the completion of a power analysis to assess the minimum number of survey locations needed to answer monitoring questions.

17.2 Caribou Behaviour

The following is a summary of the Meadowbank Gold Mine Caribou Behaviour Study, 2022, completed by ERM Consultants Canada Ltd. (ERM 2023; Appendix I).

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.

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.

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 2022 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 AWAR, WTHR, and 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 primarily during spring and fall migration in all years (2020-2022) 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.

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. These are explored visually in the results but were not analysed in a separate statistical analysis due to the small sample size.

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.

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. For the analysis, walking data was still kept separate from running or alert behaviours (the previous response behaviours), because the proportion of caribou walking was substantially higher at any given time than the proportion exhibiting alert or running behaviour. Grouping the three “response” behaviours together would risk washing out the potentially higher stress behaviours of alert and running.

Generalized linear mixed-effects models 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. Three dependent variables were tested:

- 1) Proportion of response behaviours in each time interval.
- 2) Proportion of walking and response behaviour in each time interval.
- 3) The number of minutes it took caribou to return to background behavior levels every time there was a disturbance.

The three 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. A random effect was included for survey ID, because the three-minute intervals within each 30-minute survey are interrelated.

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

17.2.3 Results

The behaviour monitoring data from 2022 were combined with data from 2020 and 2021, and all results outlined in this report use both 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.
- 104 surveys were conducted in 2022, compared to 134 surveys were conducted in 2021 and 116 in 2020; 63 surveys occurred during spring migration from March to May, 18 occurred during calving and summer from June to August, and 23 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. Only five groups larger than 100 individuals were recorded within 100 m of the road at the start of the survey, two in 2021 and three in 2022.
- Caribou group size was not linked to response behaviour or walking behaviour in statistical analyses.
- Statistical analysis indicated that there is a trend for caribou at greater distance from the road (>1,000 m) to have a lower proportion of response behaviours (alert and running) than caribou within 100 m of the road.
- Approximately 54% 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 one or two sampling intervals (i.e., three or six 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; however, disturbances did not statistically affect the proportion of caribou walking.
- Surveyors conducted 18 special 90-minute surveys (nine in both 2022 and 2021) during convoys to assess whether the response to convoys was similar to that of other vehicles. Caribou responded similarly to convoys but possibly for longer than for other vehicles. More convoy surveys are needed to analyze the data statistically.
- 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, possibly due to it having less explanatory power than the other variables included.
- 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 I.

17.2.4 Management Recommendations

The updates applied to the survey protocol in 2021 and 2022 used feedback 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 three 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. However, the analysis also found that disturbances did not have a detectable effect on caribou behaviour after three to six minutes. Additional data collection during convoys would bolster the sample size and improve the likelihood of detecting statistically significant effects.

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 2022c). 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 Whale Tail Haul Road 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 (Table 17-4). 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
Total		314	191	60.83	85	37	43.53

17.3.3 Results

There were 71 days where both survey types were completed on the same day across all seasons in 2021 and 2022, and on 19 of these 71 days, caribou were detected during road and viewshed surveys. 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 2021 and spring 2022, however more observations on the west side of the road were observed in fall 2022.

There were relatively few observations from both survey types in winter (Table 17-4), none of which exceeded the GST (Figure 17-5). The percentage of viewshed surveys that detected caribou was higher in the summer than in other seasons, but no observations exceeded the GST (Table 17-4; Figure 17-5). Smaller average caribou group sizes from maximum distance observations were observed from viewshed surveys in the fall, 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 17-5). In spring 2022, three viewshed observations exceeded the GST (Figure 17-5). All other 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’. This trend was observed in all seasons where both surveys were performed consistently, except fall 2021, however the sample size for comparison was relatively low. Results indicate that road surveys may be capable of detecting caribou at long distances (up to 4 km) from the road. Increased sample size of caribou observations from viewshed surveys would allow a more rigorous comparison of road and viewshed surveys.

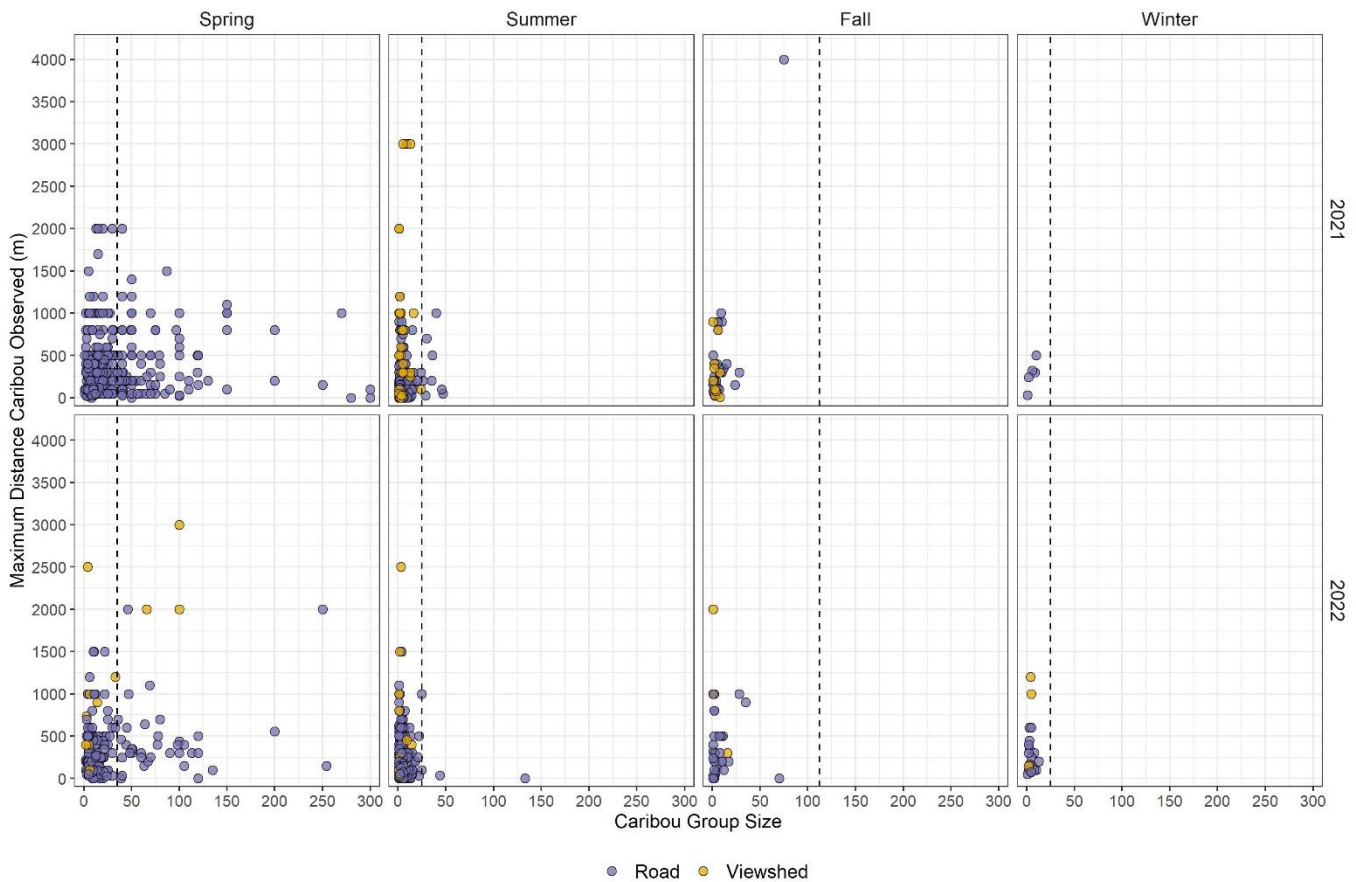


Figure 17-5: Group Size and Distance of all Caribou Observation from the Road by Survey Type and Season. Dashed Line Indicates Group Size Threshold for each Season.

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	

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 should be performed, especially those completed on the same day as road surveys to allow a more rigorous comparison of the two survey methods. Viewshed observations exceeding GST values only occurred in spring 2022. Continuation of viewshed surveys in summer and winter (i.e., outside of sensitive periods) could be discussed at future TAG meetings. A spotting scope should be used rather than binoculars during viewshed surveys to increase detection distance.

18.0 SUMMARY

The 2022 Annual Report describes the data collected to date from the various monitoring programs associated with the TEMP Version 7 (Agnico Eagle 2019). The 2022 Annual Report describes natural and Project-related effects on wildlife populations and plant communities occurring near the Project.

In 2022, 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 2022 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 2022

Potential Effect	Thresholds	Monitoring Methods	Frequency	Completed in 2022	Threshold Exceeded (2022)
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 = 531 ha Winter = 407 ha Whale Tail: Growing = 76 ha Winter = 602 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	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
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 2022

Potential Effect	Thresholds	Monitoring Methods	Frequency	Completed in 2022	Threshold Exceeded (2022)
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	NO. one wolverine killed on AWAR in 2022.
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. PRISM surveys completed; Breeding Birds Surveys not completed.	N/A. Population trend not assessed in 2022.

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:**

Scott Wilson, R.P.Bio
Wildlife Biologist

**Original
signed
by:**

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**Original
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SW/CDML/sw/jr

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APPENDIX A

Wildlife Database

Table A-1: Wildlife Observations along the All Weather Access Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2022-01-02 9:31	Yes	Caribou	16	Feeding	N/A	1000	93	West	No		-96.22197	65.00077			No	Not Exceeded	
Road	2022-01-02 9:31	Yes	Muskox	11	Feeding	N/A	1500	93	West	No		-96.22197	65.00077			No	Not Exceeded	
Road	2022-01-02 9:31	Yes	Caribou	164	Feeding	N/A	750	73	West	No		-96.32423	64.86213			No	Exceeded	Road closed
Road	2022-01-02 9:31	Yes	Caribou	4	Feeding	N/A	250	54	West	No		-96.35835	64.71319			No	Not Exceeded	
Road	2022-01-02 9:31	Yes	Caribou	3	Walking	S	300	51	West	No		-96.37907	64.69323			No	Not Exceeded	
Incidental	2022-01-02 14:15	Yes	Caribou	26	Feeding	N/A	300	32	West	No		-96.20446	64.56469			No	Exceeded	Road closed
Incidental	2022-01-02 15:01	Yes	Caribou	35	Lying Down	N/A	500	54	West	No		-96.35835	64.71319			No	Exceeded	Road closed
Road	2022-01-05 10:08	Yes	Caribou	25	Feeding	N/A	500	77	West	No	Gps not working	-96.33908	64.89511			No	Not Exceeded	
Road	2022-01-05 10:08	Yes	Muskox	1	Walking	N	750	57	West	No	Gps not working	-96.36013	64.73137			No	Not Exceeded	
Road	2022-01-06 11:54	No					NA					NA	NA					
Incidental	2022-01-06 18:52	Yes	Caribou	9	Not recorded	N/A	NA	50	West	No		-96.3731	64.67942			No	Not Exceeded	
Road	2022-01-06 23:54	No					NA					NA	NA					
Road	2022-01-07 10:57	Yes	Caribou	33	Lying Down	N/A	900	47	West	No	Km47 gps not working	-96.34656	64.65799			No	Exceeded	Open with speed restriction
Road	2022-01-07 10:57	Yes	Caribou	29	Lying Down	N/A	2000	51	West	N/A		-96.37907	64.69323			No	Exceeded	Open with speed restriction More than 1.5km
Road	2022-01-07 10:57	Yes	Caribou	9	Feeding	N/A	850	72	West	No		-96.32384	64.85386			No	Not Exceeded	
Road	2022-01-08 10:25	Yes	Muskox	15	Feeding	N/A	400	93	West	No	Gps not working	-96.22197	65.00077			No	Exceeded	Communicate to coordinator. Open with speed restriction
Road	2022-01-08 10:25	Yes	Caribou	31	Feeding	N/A	2000	53	West	No		-96.37309	64.70606			No	Exceeded	Open with speed restriction More than 1.5km
Road	2022-01-08 10:25	Yes	Caribou	48	Walking	S	2000	49	West	No		-96.37072	64.6688			No	Exceeded	Open with speed restriction More than 1.5km
Road	2022-01-09 9:51	Yes	Caribou	10	Feeding	N/A	1000	69	West	No		-96.31427	64.82772			No	Not Exceeded	
Road	2022-01-11 10:50	Yes	Muskox	24	Feeding	N/A	30	91	West	No		-96.22486	64.98469			No	Exceeded	Speed restriction of 30km/h between KM 90 -92
Road	2022-01-11 10:50	Yes	Caribou	17	Feeding	N/A	900	70	West	No		-96.31652	64.83649			Yes - Same location, about the same size of herd since few days	Not Exceeded	
Incidental	2022-01-12 9:55	Yes	Caribou	16	Walking	E	100	104	East	No		-96.09721	65.04458			No	Not Exceeded	
Road	2022-01-14 10:06	Yes	Caribou	4	Foraging	N/A	170	57	West	N/A		-96.36013	64.73137			No	Not Exceeded	
Road	2022-01-14 10:06	Yes	Caribou	17	Foraging	N/A	150	69	West	N/A		-96.31427	64.82772			No	Not Exceeded	
Road	2022-01-14 10:06	Yes	Muskox	15	Resting	N/A	710	92	West	N/A		-96.22191	64.99435			No	Exceeded	Speed restriction of 30km/h between KM 91 -93
Road	2022-01-19 11:10	Yes	Caribou	2	Feeding	N/A	250	68	West	No		-96.32681	64.82032			No	Not Exceeded	
Road	2022-01-19 11:10	Yes	Caribou	11	Feeding	N/A	50	56	East	No		-96.35139	64.72588			No	Not Exceeded	
Road	2022-01-19 11:10	Yes	Caribou	17	Feeding	N/A	650	46	West	No		-96.32957	64.65622			No	Not Exceeded	
Incidental	2022-01-19 15:10	Yes	Caribou	64	Feeding	N	350	50	West	No		-96.3731	64.67942			No	Exceeded	Open with speed restriction
Road	2022-01-27 9:07	Yes	Caribou	15	Feeding	N/A	0	57	Both	Yes	Crossing west to east	-96.36013	64.73137			No	Not Exceeded	
Road	2022-01-27 9:07	Yes	Caribou	10	Feeding	N/A	300	53	East	No		-96.37309	64.70606			No	Not Exceeded	
Road	2022-01-27 9:07	Yes	Caribou	4	Feeding	N/A	75	49	West	No		-96.37072	64.6688			No	Not Exceeded	
Road	2022-01-27 9:07	Yes	Caribou	5	Feeding	N/A	75	46	West	No		-96.32957	64.65622			No	Not Exceeded	
Incidental	2022-01-29 11:55	Yes	Caribou	10	Foraging	Not Recorded	25	55	East	No		-96.34597	64.71855			No	Not Exceeded	
Road	2022-01-30 11:34	Yes	Caribou	17	Lying Down	N/A	50	57	Both	No		-96.36013	64.73137			No	Not Exceeded	
Road	2022-01-30 11:34	Yes	Caribou	27	Lying Down	N/A	75	56	Both	No		-96.35139	64.72588			No	Exceeded	Speed restriction was put in place
Road	2022-01-30 11:34	Yes	Caribou	14	Feeding	N/A	200	54	Both	No		-96.35835	64.71319			No	Not Exceeded	
Road	2022-01-30 11:34	Yes	Caribou	5	Feeding	N/A	100	52	West	No		-96.37745	64.70086			No	Not Exceeded	
Incidental	2022-02-02 11:27	Yes	Caribou	10	Foraging	N/A	20	53	East	No		-96.37309	64.70606	No		No	Not Exceeded	
Road	2022-02-03 8:49	Yes	Muskox	10	Foraging	E	0	95	Both	Yes	Speed restriction was implemented from km 94 to 96, to 30 km/h.	-96.19522	65.01286			No	Not Exceeded	
Road	2022-02-03 8:49	Yes	Caribou	3	Foraging	N/A	300	72	East	No		-96.32384	64.85386			No	Not Exceeded	
Road	2022-02-03 8:49	Yes	Caribou	80	Foraging	E	50	56	Both	Yes	Speed restriction to 30km/h from Km 53 to 57	-96.35139	64.72588			No	Exceeded	Open with speed restriction
Road	2022-02-03 8:49	Yes	Caribou	7	Feeding	N/A	400	54	West	No	Speed restriction to 30 km/h from Km 53 to 57.	-96.35835	64.71319			No	Not Exceeded	
Incidental	2022-02-03 12:22	Yes	Arctic hare	1	Dead	N/A	0	16	North	N/A	Visibility was bad at some places because of blowing snow.	-96.06242	64.44628		Project related	No	Not Exceeded	
Incidental	2022-02-07 12:00	Yes	Caribou	60	Not recorded		NA	53				-96.37309	64.70606	No		No	Exceeded	speed restriction between KM 49-55
Road	2022-02-11 14:38	Yes	Caribou	14	Lying Down	N/A	81	48	East	N/A		-96.36878	64.66417			No	Not Exceeded	
Road	2022-02-11 14:38	Yes	Caribou	23	Walking	W	0	56	Both	Yes	7 of the 22 caribou cross to the west side. The other ones were walking east.	-96.35139	64.72588			No	Not Exceeded	
Road	2022-02-11 14:38	Yes	Caribou	5	Foraging	N/A	84	71	East	N/A		-96.3197	64.84471			No	Not Exceeded	
Incidental	2022-02-11 16:00	Yes	Caribou	1	Dead	W	20	57	West	Yes	HTO wildlife monitor (Felix Tutanuaq) was observing a group of caribou crossing the road at km 57 along the AWAR. One Caribou was limping and appeared injured. After crossing the road, the injured Caribou layed down on the ground approximately 20 metres from the road. HTO wildlife monitor performed a visual inspection and observed that the injured animal appeared to have received a bullet in the left shoulder. HTO wildlife monitor took the initiative to dispatch the animal to prevent further suffering. AEM Environment technician arrived at the scene after the animal had been dispatched.	-96.36013	64.73137		Project non-related	No	Not Exceeded	
Incidental	2022-02-11 17:01	Yes	Caribou	100	Not recorded	W	0	58	Both	Yes		-96.35794	64.74165			No	Exceeded	Speed restriction from KM 54 to 58
Road	2022-02-13 8:04	Yes	Caribou	11	Foraging	N/A	300	58	West	No		-96.35794	64.74165			No	Not Exceeded	
Road	2022-02-13 8:04	Yes	Caribou	6	Foraging	N/A	100	57	East	No		-96.36013	64.73137			No	Not Exceeded	
Road	2022-02-13 8:04	Yes	Caribou	42	Foraging	N/A	50	57	East	No		-96.36013	64.73137			No	Exceeded	Speed restriction from km 54 to 59
Road	2022-02-13 8:04	Yes	Caribou	12	Foraging	N/A	250	48	East	No		-96.36878	64.66417			No	Not Exceeded	
Road	2022-02-15 22:00	Yes	Caribou	5	Foraging	N/A	80	72	West	N/A		-96.32384	64.85386			No	Not Exceeded	
Road	2022-02-15 22:00	Yes	Caribou	10	Walking	E	0	54	East	Yes		-96.35835	64.71319			No	Not Exceeded	
Road	2022-02-15 22:00	Yes	Caribou	10	Walking	E	0	49	East	Yes		-96.37072	64.6688			No	Not Exceeded	
Road	2022-02-15 22:00	Yes	Caribou	2	Foraging	N/A	68	33	East	N/A		-96.21631	64.57146			No	Not Exceeded	
Road	2022-02-17 6:42	Yes	Caribou	13	Foraging	N/A	200	57	Both	No		-96.36013	64.73137			No	Not Exceeded	

Table A-1: Wildlife Observations along the All Weather Access Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2022-02-17 6:42	Yes	Caribou	9	Resting	N/A	100	56	East	No		-96.35139	64.72588			No	Not Exceeded	
Road	2022-02-17 6:42	Yes	Caribou	17	Foraging	N/A	300	53	West	No		-96.37309	64.70606			No	Not Exceeded	
Road	2022-02-17 6:42	Yes	Caribou	7	Resting	N/A	70	46	West	No		-96.32957	64.65622			No	Not Exceeded	
Road	2022-02-17 6:42	Yes	Caribou	6	Feeding	N/A	212	27	East	No		-96.16125	64.53222			No	Not Exceeded	
Road	2022-02-17 6:42	Yes	Caribou	3	Feeding	N/A	50	35	East	No		-96.24426	64.57386			No	Not Exceeded	
Road	2022-02-17 6:42	Yes	Caribou	8	Foraging	S	50	46	Both	No		-96.32957	64.65622			No	Not Exceeded	
Road	2022-02-18 8:31	Yes	Caribou	19	Feeding	N/A	0	56	Both	Yes		-96.35139	64.72588			No	Not Exceeded	
Road	2022-02-18 8:31	Yes	Caribou	25	Foraging	W	140	54	West	No		-96.35835	64.71319			No	Not Exceeded	
Road	2022-02-18 8:31	Yes	Caribou	9	Resting	N/A	170	53	East	No		-96.37309	64.70606			No	Not Exceeded	
Road	2022-02-18 8:31	Yes	Caribou	23	Foraging	W	120	52	West	No		-96.37745	64.70086			No	Not Exceeded	
Road	2022-02-18 8:31	Yes	Caribou	2	Foraging	S	340	21	East	No		-96.1045	64.48693			No	Not Exceeded	
Road	2022-02-18 8:31	Yes	Caribou	5	Feeding	N/A	140	44	East	No		-96.30352	64.64171			No	Not Exceeded	
Road	2022-02-22 7:44	Yes	Caribou	2	Feeding	N/A	100	96	West	No		-96.18089	65.0181			No	Not Exceeded	
Road	2022-02-22 7:44	Yes	Caribou	6	Feeding	N/A	750	67	East	No		-96.3262	64.81233			No	Not Exceeded	
Road	2022-02-22 7:44	Yes	Caribou	15	Lying Down	N/A	150	57	West	No		-96.36013	64.73137			No	Not Exceeded	
Road	2022-02-22 7:44	Yes	Caribou	5	Walking	S	100	54	West	No		-96.35835	64.71319			No	Not Exceeded	
Road	2022-02-22 7:44	Yes	Caribou	7	Feeding	N/A	150	49	West	No		-96.37072	64.6688			No	Not Exceeded	
Incidental	2022-02-23 17:00	Yes	Caribou	1	Injured	N/A	100	91		No	The Baker lake Dispatch Called the Environment DPT to let them know that there was a limping caribou at km 91 at about 100 meters from the road.	-96.22486	64.98469	No		No	Not Exceeded	
Road	2022-02-24 14:37	Yes	Caribou	9	Resting	W	100	34	East	No		-96.23991	64.56848			No	Not Exceeded	
Road	2022-02-24 14:37	Yes	Caribou	7	Foraging	SE	400	46	West	No		-96.34735	64.65819			No	Not Exceeded	
Road	2022-02-25 7:42	Yes	Caribou	20	Feeding	N/A	0	56	Both	Yes	Some of them were crossing west to east	-96.35139	64.72588			No	Not Exceeded	
Road	2022-02-25 7:42	Yes	Caribou	28	Feeding	N/A	100	49	West	No		-96.37072	64.6688			No	Exceeded	Speed restriction
Road	2022-02-25 7:42	Yes	Caribou	2	Feeding	N/A	2000	34	West	No		-96.24047	64.56875			No	Not Exceeded	
Road	2022-02-25 7:42	Yes	Caribou	2	Lying Down	N/A	200	34	East	No		-96.24047	64.56875			No	Not Exceeded	
Incidental	2022-02-25 12:30	Yes	Arctic fox	3	Feeding	N/A	190	60	West	No	3 Arctic fox were feeding on caribou	-96.36363	64.75548			No	Not Exceeded	
Incidental	2022-02-25 15:43	Yes	Caribou	1	Dead	N/A	190	60	West	No	By looking at the carcass with binoculars it was determined that it was the leftovers of a harvested caribou	-96.36363	64.75548	Project non-related		No	Not Exceeded	
Road	2022-02-28 12:20	Yes	Caribou	9	Foraging	S	300	53	West	No		-96.35672	64.71398			No	Not Exceeded	
Road	2022-03-01 9:05	Yes	Arctic fox	1	Walking	W	0	71	Both	Yes		-96.3197	64.84471			No	Not Exceeded	
Road	2022-03-01 9:05	Yes	Caribou	6	Feeding	N/A	75	52	East	No		-96.37745	64.70086			No	Not Exceeded	
Road	2022-03-01 9:05	Yes	Caribou	4	Walking	S	700	32	East	No		-96.20446	64.56469			No	Not Exceeded	
Road	2022-03-02 9:19	Yes	Caribou	9	Foraging	N/A	150	33	East	No		-96.21022	64.57174			No	Not Exceeded	
Road	2022-03-05 8:04	Yes	Caribou	9	Foraging	N/A	0	102	East	Yes		-96.12783	65.0517			No	Not Exceeded	
Road	2022-03-05 8:04	Yes	Muskox	9	Feeding	N/A	500	91	East	No		-96.22486	64.98469			No	Not Exceeded	
Road	2022-03-05 8:04	Yes	Caribou	3	Foraging	N/A	300	53	East	No		-96.37309	64.70606			No	Not Exceeded	
Road	2022-03-05 8:04	Yes	Caribou	33	Foraging	N/A	100	52	Both	No		-96.37745	64.70086			No	Exceeded	30km/hr speed restriction in place at KM52.
Road	2022-03-05 8:04	Yes	Caribou	11	Resting	N/A	100	33	East	No		-96.21631	64.57146			No	Not Exceeded	
Road	2022-03-09 10:28	Yes	Arctic fox	1	Running	S	10	81	East	No		-96.30208	64.92518			No	Not Exceeded	
Road	2022-03-09 10:28	Yes	Caribou	4	Feeding	N/A	20	52	West	No		-96.37745	64.70086			No	Not Exceeded	
Road	2022-03-11 12:39	No					NA					NA	NA					
Road	2022-03-15 9:25	No					NA					NA	NA					
Road	2022-03-15 16:38	No					NA					NA	NA					
Road	2022-03-18 9:14	Yes	Caribou	2	Walking	NE	148	13	East	No		-96.03681	64.42344			No	Not Exceeded	
Road	2022-03-18 13:15	No					NA					NA	NA					
Road	2022-03-24 7:52	No					NA					NA	NA					
Road	2022-03-28 9:21	Yes	Muskox	7	Feeding	N/A	1500	93	West	No		-96.22197	65.00077			No	Not Exceeded	
Incidental	2022-03-28 13:15	Yes	Muskox	3	Feeding	Not Recorded	1000	37	West	No		-96.269	64.58416			No	Not Exceeded	
Incidental	2022-03-28 13:27	Yes	Caribou	5	Lying Down	Not Recorded	582	53	East	No		-96.37309	64.70606			No	Not Exceeded	
Road	2022-03-30 11:32	Yes	Caribou	9	Feeding	Not Recorded	857	51	East	No		-96.37133	64.67306			No	Not Exceeded	
Road	2022-04-01 8:15	Yes	Muskox	6	Walking	NW	999	82	East	No		-96.31204	64.9306			No	Not Exceeded	
Road	2022-04-01 8:15	Yes	Caribou	9	Foraging	N/A	999	53	East	No		-96.37309	64.70606			No	Not Exceeded	
Road	2022-04-01 8:15	Yes	Caribou	4	Walking	S	100	52	West	No		-96.37745	64.70086			No	Not Exceeded	
Road	2022-04-02 7:41	Yes	Caribou	8	Resting	N/A	100	106	East	No		-96.08289	65.02713			No	Not Exceeded	
Road	2022-04-02 7:41	Yes	Muskox	8	Resting	N/A	1500	93	West	No		-96.22197	65.00077			No	Not Exceeded	
Road	2022-04-02 7:41	Yes	Caribou	4	Resting	N/A	100	52	West	No		-96.37745	64.70086			No	Not Exceeded	
Road	2022-04-03 8:46	Yes	Caribou	250	Walking	S	500	92	West	No		-96.22191	64.99435			No	Exceeded	Closing Road
Road	2022-04-03 8:46	Yes	Caribou	5	Walking	NW	300	33	East	No		-96.21631	64.57146			No	Not Exceeded	
Road	2022-04-03 8:46	Yes	Caribou	10	Walking	S	5	50	East	Yes		-96.3731	64.67942			No	Not Exceeded	
Road	2022-04-03 8:46	Yes	Caribou	5	Resting	N/A	900	53	West	No		-96.37309	64.70606			No	Not Exceeded	
Road	2022-04-04 7:43	No					NA					NA	NA					
Incidental	2022-04-04 8:34	Yes	Caribou	40	Walking	NW	150	87	West	No		-96.24102	64.9542			No	Exceeded	Road closed
Incidental	2022-04-04 9:35	Yes	Caribou	1	Running	S	700	52	West	No		-96.37745	64.70086			No	Not Exceeded	
Incidental	2022-04-04 10:33	Yes	Caribou	5	Walking	S	300	33	East	No		-96.21631	64.57146			No	Not Exceeded	
Incidental	2022-04-04 15:17	Yes	Caribou	33	Resting	N/A	500	87	East	No		-96.24102	64.9542			No	Not Exceeded	
Incidental	2022-04-04 17:01	Yes	Wolf	1	Walking	S	1	96	East	Yes		-96.18089	65.0181			No	Not Exceeded	

Table A-1: Wildlife Observations along the All Weather Access Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2022-04-04 18:00	Yes	Caribou	1	Dead	N/A	20	103	West	No	Located SE of the EMR Road at KM103. 14W 634922 7217913. On the morning of April, Environment received a call that 7 Wolves were near the AWAR at KM102. The pack of wolves had killed a Caribou and were feeding on the carcass. Environment monitored the area throughout the day on April 3. The Wolves remained close to the carcass during the day. On April 4th, no wildlife was present and Environment staff were able to get close to the carcass. Only a few pieces of scattered hair and bones remained. An email was sent to the Baker Lake Conservation Officer to inform them of the carcass on April 3rd @ 6:02pm. Environmental personnel have been inspecting the area to ensure there is no risk to other wildlife or personnel. □	-96.11079	65.0489		Project non-related	No	Not Exceeded	
Road	2022-04-05 7:32	No					NA					NA	NA					
Road	2022-04-06 8:16	Yes	Caribou	12	Walking	NW	5	52	West	No		-96.37745	64.70086			No	Not Exceeded	
Road	2022-04-06 8:16	Yes	Caribou	2	Walking	E	0	55	East	Yes		-96.34597	64.71855			No	Not Exceeded	
Road	2022-04-06 8:16	Yes	Caribou	17	Walking	NW	450	54	West	No		-96.35835	64.71319			No	Not Exceeded	
Road	2022-04-07 8:10	Yes	Caribou	16	Walking	N	700	48	West	No		-96.36878	64.66417			No	Not Exceeded	
Road	2022-04-07 8:10	Yes	Caribou	5	Feeding	N/A	60	32	West	No		-96.20446	64.56469			No	Not Exceeded	
Road	2022-04-07 8:10	Yes	Caribou	5	Walking	S	900	89	West	No		-96.21956	64.96744			No	Not Exceeded	
Road	2022-04-08 10:30	Yes	Caribou	8	Walking	S	200	52	East	No		-96.37745	64.70086			No	Not Exceeded	
Road	2022-04-08 10:30	Yes	Muskox	9	Resting	N/A	100	92	West	No		-96.22191	64.99435			No	Not Exceeded	
Road	2022-04-09 8:36	Yes	Caribou	27	Walking	N	600	88	West	No		-96.2206	64.95809			No	Not Exceeded	
Road	2022-04-09 8:36	Yes	Caribou	8	Resting	N/A	300	35	West	No		-96.24426	64.57386			No	Not Exceeded	
Incidental	2022-04-09 16:39	Yes	Caribou	70	Walking	W	500	23	West	No		-96.12442	64.50056			No	Exceeded	Road open/closed
Road	2022-04-11 9:58	Yes	Muskox	10	Resting	N/A	700	90	West	No		-96.22208	64.97501			No	Not Exceeded	
Road	2022-04-12 7:28	No					NA					NA	NA					
Road	2022-04-13 6:58	No					NA					NA	NA					
Road	2022-04-14 7:17	No					NA					NA	NA					
Road	2022-04-15 6:31	Yes	Caribou	31	Walking	N	240	97	West	No		-96.17115	65.02594			No	Not Exceeded	
Road	2022-04-15 6:31	Yes	Muskox	8	Feeding	N/A	40	92	East	No		-96.22191	64.99435			No	Not Exceeded	
Road	2022-04-15 6:31	Yes	Caribou	69	Walking	E	22	88	East	No		-96.2206	64.95809			No	Exceeded	Road open/closed
Road	2022-04-15 6:31	Yes	Caribou	21	Walking	S	1000	87	West	No		-96.24102	64.9542			No	Not Exceeded	
Road	2022-04-15 6:31	Yes	Caribou	6	Walking	S	350	70	West	No		-96.31652	64.83649			No	Not Exceeded	
Road	2022-04-16 8:35	No					NA					NA	NA					
Road	2022-04-17 9:31	No					NA					NA	NA					
Incidental	2022-04-17 12:48	Yes	Caribou	6	Walking	N	200	12	West	No		-96.02992	64.41394			No	Not Exceeded	
Incidental	2022-04-17 14:33	Yes	Muskox	11	Feeding	N/A	50	90	East	No		-96.22208	64.97501			No	Not Exceeded	
Road	2022-04-18 8:39	Yes	Muskox	1	Alert	N/A	50	91	East	No		-96.22486	64.98469			No	Not Exceeded	
Road	2022-04-18 8:39	Yes	Caribou	6	Feeding	Not Recorded	50	33	East	No		-96.21631	64.57146			No	Not Exceeded	
Incidental	2022-04-18 13:32	Yes	Muskox	12	Feeding	Not Recorded	50	90	West	No	12 musk ox	-96.22208	64.97501			No	Not Exceeded	
Incidental	2022-04-18 13:44	Yes	Caribou	134	Feeding	Not Recorded	200	95	West	No	134 caribou	-96.19522	65.01286			No	Exceeded	Road open/closed
Road	2022-04-19 5:57	Yes	Caribou	2	Feeding	N/A	200	106	East	No		-96.08289	65.02713			No	Not Exceeded	
Road	2022-04-19 5:57	Yes	Caribou	28	Walking	S	100	94	Both	Yes		-96.21269	65.00751			No	Not Exceeded	
Road	2022-04-19 5:57	Yes	Muskox	12	Feeding	N/A	200	90	East	No		-96.22208	64.97501			Yes - They're still there since the day before	Not Exceeded	
Incidental	2022-04-19 11:23	Yes	Caribou	6	Lying Down	N/A	250	33	East	No	6 caribou	-96.21631	64.57146			Yes - Same place as last observation.	Not Exceeded	
Incidental	2022-04-19 12:38	Yes	Caribou	123	Walking	SW	400	93	West			-96.22197	65.00077			No	Exceeded	Close the road
Incidental	2022-04-19 13:48	Yes	Caribou	43	Alert	N	1200	97	West	No	25 caribou	-96.17115	65.02594			No	Exceeded	Road closed.
Road	2022-04-20 6:00	Yes	Caribou	6	Walking	SW	700	69	West	No		-96.31427	64.82772			No	Not Exceeded	
Road	2022-04-20 6:00	Yes	Caribou	16	Feeding	N/A	50	49	East	No		-96.37072	64.6688			No	Not Exceeded	
Road	2022-04-20 6:00	Yes	Caribou	3	Walking	SE	0	32	East	Yes		-96.20446	64.56469			No	Not Exceeded	
Incidental	2022-04-20 6:28	Yes	Muskox	11	Feeding	N/A	0	90	West East	Yes		-96.22208	64.97501			No	Not Exceeded	
Road	2022-04-21 6:28	Yes	Caribou	16	Walking	W	0	54	Both	Yes		-96.35835	64.71319			No	Not Exceeded	
Incidental	2022-04-21 12:58	Yes	Caribou	19	Running	S	1600	93	West	No		-96.22197	65.00077			No	Not Exceeded	
Road	2022-04-22 7:18	Yes	Muskox	6	Standing	N/A	450	90	West	No		-96.22208	64.97501			No	Not Exceeded	
Road	2022-04-22 7:18	Yes	Caribou	12	Feeding	N/A	3	50	East	No		-96.3731	64.67942			No	Not Exceeded	
Incidental	2022-04-22 16:25	Yes	Ptarmigan	1	Dead	N/A	0	40		N/A	While doing a wildlife survey on the AWAR the environment department noticed a ptarmigan that appears to have been struck by a vehicle	-96.28144	64.60429		Project related	No	Not Exceeded	
Road	2022-04-23 10:01	Yes	Ptarmigan	18	Running	N/A	10	8	Both	N/A		-96.01547	64.38131			No	Not Exceeded	
Road	2022-04-23 10:01	Yes	Caribou	1	Injured	S	100	50	East	No		-96.3731	64.67942			No	Not Exceeded	
Road	2022-04-23 10:01	Yes	Caribou	12	Feeding	Not Recorded	800	50	East	No		-96.3731	64.67942			No	Not Exceeded	
Road	2022-04-23 10:01	Yes	Arctic fox	1	Running	NE	10	58	Both	No		-96.35794	64.74165			No	Not Exceeded	
Road	2022-04-24 7:30	Yes	Muskox	11	Lying Down	N/A	275	90	West	No		-96.22208	64.97501			No	Not Exceeded	
Road	2022-04-24 7:30	Yes	Arctic hare	1	Running	S	10	82	East	No		-96.31204	64.9306			No	Not Exceeded	
Road	2022-04-24 7:30	Yes	Arctic hare	1	Running	SE	69	5	East	Yes		-95.99998	64.35657			No	Not Exceeded	
Road	2022-04-25 12:39	Yes	Muskox	11	Feeding	N/A	100	90	East	N/A		-96.22208	64.97501			No	Not Exceeded	
Incidental	2022-04-25 16:33	Yes	Muskox	38	Feeding	Not Recorded	1000	38	West	No	musk ox 38	-96.27582	64.59073			No	Exceeded	Speed restriction put in place.
Incidental	2022-04-25 17:45	Yes	Caribou	32	Walking	N	1000	95	West	No	32 caribou	-96.19522	65.01286			No	Not Exceeded	
Incidental	2022-04-26 13:19	Yes	Muskox	30	Foraging	N/A	400	38	West	No		-96.27582	64.59073			No	Exceeded	Speed Restriction
Road	2022-04-27 10:17	Yes	Muskox	20	Feeding	N/A	1600	37	East	No		-96.269	64.58416			No	Exceeded	Speed restriction has been put in place.
Incidental	2022-04-27 14:49	Yes	Caribou	4	Running	W	1500	61	West	No	West of the road being chased by snowmobile. Hunters	-96.35467	64.76327			No	Not Exceeded	
Road	2022-04-28 10:30	No					NA					NA	NA					

Table A-1: Wildlife Observations along the All Weather Access Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2022-04-28 11:53	Yes	Caribou	3	Running	S	400	77	West	No	3 caribou running from 2 hunters	-96.33908	64.89511			No	Not Exceeded	
Road	2022-04-28 11:53	Yes	Caribou	12	Walking	SE	800	67	West	No		-96.3262	64.81233			No	Not Exceeded	
Road	2022-04-28 11:53	Yes	Caribou	6	Feeding	N/A	700	56	West	No		-96.35139	64.72588			No	Not Exceeded	
Incidental	2022-04-28 12:40	Yes	Caribou	98	Not recorded	SE	500	90	West	No	Moving SE and towards the road	-96.22208	64.97501			No	Exceeded	Road closed
Road	2022-04-29 7:55	Yes	Caribou	11	Walking	W	100	81	West	No		-96.30208	64.92518			No	Not Exceeded	
Road	2022-04-29 7:55	Yes	Caribou	7	Walking	S	200	23	West	No		-96.12442	64.50056			No	Not Exceeded	
Road	2022-04-29 7:55	Yes	Caribou	2	Alert	W	200	6	West	No		-96.00083	64.36427			No	Not Exceeded	
Incidental	2022-04-30 7:18	Yes	Muskox	8	Feeding	N/A	50	90	East	No		-96.22208	64.97501			No	Not Exceeded	
Incidental	2022-04-30 7:35	Yes	Caribou	12	Not recorded	N/A	NA	103		No		-96.11079	65.0489			No	Not Exceeded	Speed restriction put in place
Incidental	2022-04-30 7:35	Yes	Caribou	20	Not recorded	N/A	NA	102		No		-96.12783	65.0517			No	Not Exceeded	Speed restriction put in place
Incidental	2022-05-02 7:32	Yes	Caribou	50	Not recorded	N/A	500	83		No		-96.30111	64.935			No	Exceeded	Road remained closed
Road	2022-05-03 13:17	Yes	Muskox	9	Resting	S	200	91	East	No		-96.22486	64.98469			No -	Not Exceeded	
Road	2022-05-03 15:04	Yes	Muskox	4	Foraging	S	200	145	East	No		-96.3769	65.22422			No -	Not Exceeded	
Road	2022-05-03 15:04	Yes	Muskox	24	Foraging	S	200	37	West	No		-96.269	64.58416			No -	Exceeded	HTO observation
Road	2022-05-03 15:04	Yes	Caribou	20	Foraging	S	50	107	East	No		-96.07193	65.02338			No -	Not Exceeded	HTO observation
Incidental	2022-05-04 17:12	Yes	Caribou	21	Not recorded	N/A	40	106	East	No		-96.08289	65.02713			No	Not Exceeded	Speed restriction
Incidental	2022-05-04 18:35	Yes	Grizzly bear	1	Not recorded		500	33			A local hunter reported seeing a Grizzly Bear at Km 33 about 500 meters away from the road. I believe he said east side.	-96.21631	64.57146			No	Not Exceeded	
Incidental	2022-05-05 6:58	Yes	Caribou	18	Not recorded	N/A	NA	70		No		-96.31652	64.83649			No	Not Exceeded	
Incidental	2022-05-05 6:58	Yes	Caribou	15	Not recorded	N/A	NA	18		No		-96.0824	64.46103			No	Not Exceeded	
Road	2022-05-06 12:57	Yes	Caribou	13	Walking	N/A	60	109	West	No		-96.08633	65.02864			No	Not Exceeded	
Road	2022-05-06 12:57	Yes	Caribou	5	Walking	S	600	78	West	No		-96.32437	64.90319			No	Not Exceeded	
Incidental	2022-05-06 14:59	Yes	Caribou	27	Not recorded	N/A	350	72	West	No		-96.32384	64.85386			No	Not Exceeded	
Road	2022-05-07 7:31	Yes	Arctic hare	1	Running	W	0	101	Both	Yes		-96.14029	65.05669			No	Not Exceeded	
Road	2022-05-07 7:31	Yes	Caribou	24	Feeding	N/A	200	67	West	No		-96.3262	64.81233			No	Not Exceeded	
Incidental	2022-05-07 14:33	Yes	Caribou	31	Not recorded	N/A	700	69		No	Group from earlier merged	-96.31427	64.82772			No	Not Exceeded	
Road	2022-05-10 13:25	Yes	Caribou	3	Feeding	SW	50	33	East	No		-96.21631	64.57146			No	Not Exceeded	
Road	2022-05-11 10:10	Yes	Muskox	2	Resting	N/A	150	93	East	No		-96.22197	65.00077			No	Not Exceeded	
Road	2022-05-11 10:10	Yes	Caribou	20	Resting	S	450	104	East	No		-96.09721	65.04458			No	Not Exceeded	
Road	2022-05-12 8:59	No				NA						NA	NA					
Incidental	2022-05-12 13:35	Yes	Caribou	12	Feeding	N/A	50	105	East	No		-96.08773	65.03413			No	Not Exceeded	
Incidental	2022-05-12 13:52	Yes	Caribou	5	Walking	SE	100	106	East	No		-96.08289	65.02713			No	Not Exceeded	
Road	2022-05-13 8:26	Yes	Arctic hare	1	Trotting/running	S	10	62	East	No		-96.3444	64.77373			No	Not Exceeded	
Road	2022-05-14 7:06	Yes	Arctic fox	1	Running	N	100	95	West	No		-96.19522	65.01286			No	Not Exceeded	
Road	2022-05-14 7:06	Yes	Arctic hare	1	Running	N	40	65	West	No		-96.34062	64.7948			No	Not Exceeded	
Incidental	2022-05-14 10:39	Yes	Wolf	2	Running	S	0	44	West,East	Yes		-96.30352	64.64171			No	Not Exceeded	
Incidental	2022-05-14 12:04	Yes	Caribou	9	Walking	NE	500	95	West	No		-96.19522	65.01286			No	Not Exceeded	
Road	2022-05-15 7:40	Yes	Sandhill crane	1	Walking	N/A	100	80	West	No		-96.30624	64.91707			No	Not Exceeded	
Incidental	2022-05-15 17:52	Yes	Caribou	5	Feeding	N/A	80	93	West	No		-96.22197	65.00077			No	Not Exceeded	
Road	2022-05-16 10:27	Yes	Arctic hare	1	Standing	N/A	10	23	East	No		-96.12442	64.50056			No	Not Exceeded	
Road	2022-05-16 10:27	Yes	Ptarmigan	10	Walking	N/A	1	39	West	No		-96.27514	64.59586			No	Not Exceeded	
Road	2022-05-16 10:27	Yes	Sandhill crane	1	Feeding	N/A	45	49	East	No		-96.37072	64.6688			No	Not Exceeded	
Road	2022-05-16 10:27	Yes	Caribou	27	Feeding	N/A	175	101	East	No		-96.14029	65.05669			No	Not Exceeded	
Incidental	2022-05-16 17:13	Yes	Caribou	9	Walking	E	500	98	East	No		-96.15765	65.03248			No	Not Exceeded	
Road	2022-05-17 8:13	Yes	Caribou	2	Feeding	N/A	280	102	West	No		-96.12783	65.0517			No	Not Exceeded	
Road	2022-05-18 6:50	Yes	Ptarmigan	9	Feeding	N/A	25	79	West	No		-96.31492	64.90953			No	Not Exceeded	
Road	2022-05-18 6:50	Yes	Arctic hare	1	Feeding	N/A	20	73	West	No		-96.32423	64.86213			No	Not Exceeded	
Road	2022-05-18 6:50	Yes	Ptarmigan	15	Feeding	N/A	30	51	West	No		-96.37907	64.69323			No	Not Exceeded	
Road	2022-05-18 6:50	Yes	Arctic hare	2	Feeding	N/A	20	49	West	No		-96.37072	64.6688			No	Not Exceeded	
Road	2022-05-18 6:50	Yes	Sandhill crane	2	Feeding	N/A	25	49	West	No		-96.37072	64.6688			No	Not Exceeded	
Road	2022-05-18 6:50	Yes	Ptarmigan	7	Feeding	E	3	17	East	No		-96.07705	64.45326			No	Not Exceeded	
Road	2022-05-18 6:50	Yes	Caribou	22	Foraging	S	100	163	East	No		-96.4304	65.31741			No	Not Exceeded	
Incidental	2022-05-18 15:58	Yes	Caribou	9	Walking	E	850	102	East	No		-96.12783	65.0517			No	Not Exceeded	
Incidental	2022-05-18 16:56	Yes	Muskox	7	Feeding	N/A	40	93	East	No		-96.22197	65.00077			No	Not Exceeded	
Road	2022-05-19 8:15	Yes	Muskox	5	Feeding	N/A	60	94	East	No		-96.21269	65.00751			No	Not Exceeded	
Road	2022-05-19 8:15	Yes	Peregrine falcon	1	Flying	N/A	10	41	West	No	Hoovering, a raptor not sure what kind	-96.28113	64.62028			No	Not Exceeded	
Road	2022-05-19 8:15	Yes	Sandhill crane	2	Alert	N/A	100	23	West	No		-96.12442	64.50056			No	Not Exceeded	
Incidental	2022-05-19 14:29	Yes	Caribou	22	Feeding	N/A	250	101	East	No		-96.14029	65.05669			No	Not Exceeded	
Road	2022-05-20 11:45	Yes	Crow	3	Flying	N/A	6	2	West	No		-95.97432	64.33258			No	Not Exceeded	
Road	2022-05-20 11:45	Yes	Other	1	Flying	W	10	2	Both	Yes	Unidentified Osprey.	-95.97432	64.33258			No	Not Exceeded	
Road	2022-05-20 11:45	Yes	Sandhill crane	2	Walking	W	40	22	West	No		-96.11256	64.4935			No	Not Exceeded	
Road	2022-05-20 11:45	Yes	Sandhill crane	3	Standing	N/A	40	34	West	No		-96.24047	64.56875			No	Not Exceeded	
Road	2022-05-20 11:45	Yes	Muskox	2	Lying Down	N/A	275	96	West	No		-96.18089	65.0181			No	Not Exceeded	
Road	2022-05-21 9:42	Yes	Sandhill crane	1	Walking	E	20	84	West	No		-96.28276	64.9366			No	Not Exceeded	
Incidental	2022-05-21 15:13	Yes	Muskox	4	Feeding	N/A	150	98	West	No	4 musk ox	-96.15765	65.03248			No	Not Exceeded	
Road	2022-05-23 9:15	Yes	Muskox	6	Foraging	N/A	250	99	West	No		-96.15317	65.04196			No	Not Exceeded	
Road	2022-05-23 9:15	Yes	Arctic hare	1	Alert	N/A	20	65	East	No		-96.34062	64.7948			No	Not Exceeded	
Road	2022-05-23 9:15	Yes	Peregrine falcon	1	Flying	N	15	49	West	N/A		-96.37072	64.6688			No	Not Exceeded	
Road	2022-05-23 9:15	Yes	Ptarmigan	1	Flying	N	10	49	East	N/A		-96.37072	64.6688			No	Not Exceeded	
Road	2022-05-23 9:15	Yes	Sandhill crane	7	Alert	N/A	40	46	West	No		-96.32957	64.65622			No	Not Exceeded	
Road	2022-05-23 9:15	Yes	Sandhill crane	2	Feeding	N/A	300	7	East	N/A		-96.00916	64.37262			No	Not Exceeded	
Road	2022-05-24 9:03	Yes	Ptarmigan	1	Flying	W	0	77	Both	Yes		-96.33908	64.89511			No	Not Exceeded	
Road	2022-05-24 9:03	Yes	Caribou	2	Walking	N	1300	61	West	No		-96.35467	64.76327			No	Not Exceeded	
Road	2022-05-24 9:03	Yes	Sandhill crane	6	Walking	SE	5											

Table A-1: Wildlife Observations along the All Weather Access Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2022-05-25 13:13	Yes	Sandhill crane	2	Walking	S	10	25	West	No		-96.14948	64.5142			No	Not Exceeded	
Road	2022-05-25 13:13	Yes	Ptarmigan	6	Courting	N/A	10	29	West	No		-96.18125	64.54733			No	Not Exceeded	
Road	2022-05-25 13:13	Yes	Sandhill crane	2	Standing	N/A	20	31	West	No		-96.19574	64.55426			No	Not Exceeded	
Road	2022-05-25 13:13	Yes	Sandhill crane	3	Standing	N/A	25	36	West	No		-96.26192	64.58043			No	Not Exceeded	
Road	2022-05-25 13:13	Yes	Snow goose	7	Foraging	N/A	30	75	West	N/A		-96.33614	64.87946			No	Not Exceeded	
Road	2022-05-25 13:13	Yes	Rough-legged-Hawk	1	Flying	W	50	84	East	N/A		-96.28276	64.9366			No	Not Exceeded	
Road	2022-05-25 13:13	Yes	Muskox	2	Walking	S	75	90	East	N/A		-96.22208	64.97501			No	Not Exceeded	
Road	2022-05-26 10:31	Yes	Caribou	18	Walking	S	100	38	West	No		-96.27582	64.59073			No	Not Exceeded	
Road	2022-05-27 14:53	Yes	Caribou	4	Feeding	N/A	75	83	West	No		-96.30111	64.935			No	Not Exceeded	
Road	2022-05-29 8:39	Yes	Snow goose	500	Not recorded	Not Recorded	20	88	East	N/A		-96.2206	64.95809			No	Not Exceeded	
Road	2022-05-29 8:39	Yes	Muskox	10	Walking	S	NA					-96.24953	64.95112			No	Not Exceeded	
Road	2022-05-29 8:39	Yes	Caribou	10	Foraging	S	350	77	West	No		-96.33908	64.89511			No	Not Exceeded	
Road	2022-05-29 8:39	Yes	Caribou	5	Walking	SW	100	52	West	No		-96.37745	64.70086			No	Not Exceeded	
Road	2022-05-29 8:39	Yes	Sandhill crane	2	Feeding	N/A	25	33	West	No		-96.21631	64.57146			No	Not Exceeded	
Road	2022-05-29 8:39	Yes	Sandhill crane	2	Standing	N/A	100	25	West	No		-96.14948	64.5142			No	Not Exceeded	
Road	2022-05-29 8:39	Yes	Sandhill crane	4	Standing	N/A	50	8	West	No		-96.01547	64.38131			No	Not Exceeded	
Incidental	2022-05-29 13:46	Yes	Caribou	12	Running	S	200	40	West	No		-96.28144	64.60429			No	Not Exceeded	
Incidental	2022-05-31 5:45	Yes	Muskox	12	Not recorded	N/A	NA	15	West	No		-96.0525	64.43981			No	Not Exceeded	Slow down when close to blind corner
Road	2022-06-01 15:34	Yes	Caribou	17	Foraging	S	200	67	West	No		-96.3262	64.81233			No	Not Exceeded	
Road	2022-06-02 13:19	Yes	Caribou	7	Foraging	S	400	77	West	No		-96.33908	64.89511			No	Not Exceeded	
Road	2022-06-02 13:19	Yes	Caribou	4	Foraging	S	300	82	West	No		-96.31204	64.9306			No	Not Exceeded	
Road	2022-06-02 13:19	Yes	Muskox	57	Foraging	S	200	14	West	No		-96.043	64.43121			No	Exceeded	HTO observation
Road	2022-06-02 13:19	Yes	Caribou	1	Foraging	S	300	76	East	No		-96.34565	64.88789			No	Not Exceeded	
Road	2022-06-02 13:19	Yes	Caribou	15	Foraging	S	200	63	West	No		-96.34437	64.77932			No	Not Exceeded	
Road	2022-06-02 13:19	Yes	Caribou	2	Foraging	N	50	101	East	Yes		-96.14029	65.05669			No	Not Exceeded	
Road	2022-06-02 13:19	Yes	Muskox	3	Foraging	S	150	101	West	No		-96.14029	65.05669			No	Not Exceeded	
Road	2022-06-02 13:19	Yes	Caribou	1	Foraging	S	50	98	East	No		-96.15765	65.03248			No	Not Exceeded	
Road	2022-06-02 13:19	Yes	Caribou	10	Foraging	N	400	91	West	No		-96.22486	64.98469			No	Not Exceeded	
Road	2022-06-02 13:19	Yes	Caribou	2	Foraging	S	150	77	East	No		-96.33908	64.89511			No	Not Exceeded	
Road	2022-06-02 13:19	Yes	Caribou	2	Foraging	N	100	69	West	No		-96.31427	64.82772			No	Not Exceeded	
Road	2022-06-03 12:55	Yes	Muskox	60	Resting	N/A	350	14	West	No		-96.043	64.43121			No	Exceeded	Speed restriction put in place.
Road	2022-06-03 12:55	Yes	Caribou	13	Alert	S	350	53	West	No		-96.37309	64.70606			No	Not Exceeded	
Road	2022-06-06 10:18	No					NA					NA	NA					
Road	2022-06-06 11:12	Yes	Caribou	4	Foraging	NW	100	66	West	No		-96.33501	64.80451			No	Not Exceeded	
Road	2022-06-06 11:12	Yes	Caribou	5	Foraging	SW	200	81	West	No		-96.30208	64.92518			No	Not Exceeded	
Road	2022-06-06 11:12	Yes	Caribou	2	Walking	S	200	93	East	No		-96.22197	65.00077			No	Not Exceeded	
Road	2022-06-06 11:12	Yes	Caribou	1	Foraging	S	500	69	West	No		-96.31427	64.82772			No	Not Exceeded	
Road	2022-06-07 14:36	Yes	Muskox	1	Resting	N/A	300	103	East	No		-96.11079	65.0489			No	Not Exceeded	
Road	2022-06-10 7:13	Yes	Caribou	10	Feeding	N/A	60	101	West	No		-96.14029	65.05669			No	Not Exceeded	
Road	2022-06-10 7:13	Yes	Caribou	7	Feeding	N/A	170	81	West	No		-96.30208	64.92518			No	Not Exceeded	
Road	2022-06-10 7:13	Yes	Muskox	1	Feeding	N/A	900	23	West	No		-96.12442	64.50056			No	Not Exceeded	
Road	2022-06-14 7:19	Yes	Muskox	1	Feeding	N/A	50	99	West	No		-96.15317	65.04196			No	Not Exceeded	
Road	2022-06-14 7:19	Yes	Muskox	1	Feeding	N/A	100	91	East	No		-96.22486	64.98469			No	Not Exceeded	
Road	2022-06-14 7:19	Yes	Ptarmigan	2	Feeding	N/A	0	83	Both	Yes		-96.30111	64.935			No	Not Exceeded	
Road	2022-06-14 7:19	Yes	Muskox	1	Feeding	N	150	82	West	No		-96.31204	64.9306			No	Not Exceeded	
Road	2022-06-14 7:19	Yes	Muskox	1	Feeding	S	100	15	West	No		-96.0525	64.43981			No	Not Exceeded	
Incidental	2022-06-14 13:33	Yes	Muskox	16	Running	NW	10	15	East	No		-96.0525	64.43981			No	Exceeded	Speed restriction put in place.
Road	2022-06-15 10:05	Yes	Muskox	1	Feeding	S	10	101	East	No		-96.14029	65.05669			No	Not Exceeded	
Road	2022-06-15 10:05	Yes	Muskox	1	Feeding	N	50	102	West	No		-96.12783	65.0517			No	Not Exceeded	
Road	2022-06-15 10:05	Yes	Muskox	1	Feeding	N/A	10	103	East	No		-96.11079	65.0489			No	Not Exceeded	
Road	2022-06-15 10:05	Yes	Caribou	5	Running	S	0	79	Both	Yes		-96.31492	64.90953			No	Not Exceeded	
Road	2022-06-15 10:05	Yes	Canada goose	12	Feeding	N/A	200	72	West	No		-96.32384	64.85386			No	Not Exceeded	
Road	2022-06-15 10:05	Yes	Arctic fox	1	Running	S	10	45	West	No		-96.31336	64.65243			No	Not Exceeded	
Road	2022-06-15 10:05	Yes	Arctic fox	1	Alert	N/A	20	33	West	N/A		-96.21631	64.57146			No	Not Exceeded	
Road	2022-06-15 10:05	Yes	Canada goose	2	Alert	N/A	50	32	West	N/A		-96.20446	64.56469			No	Not Exceeded	
Road	2022-06-15 10:05	Yes	Other	1	Flying	W	50	11	West	No	Hawk.	-96.02386	64.40539			No	Not Exceeded	
Road	2022-06-15 10:05	Yes	Sandhill crane	2	Walking	E	0	6	Both	Yes		-96.00083	64.36427			No	Not Exceeded	
Incidental	2022-06-15 16:42	Yes	Caribou	2	Walking	W	200	70	West	No		-96.31652	64.83649			No	Not Exceeded	
Road	2022-06-17 8:00	Yes	Caribou	4	Feeding	N/A	1000	93	West	No		-96.22197	65.00077			No	Not Exceeded	
Road	2022-06-17 8:00	Yes	Canada goose	11	Feeding	N/A	200	81	West	No		-96.30208	64.92518			No	Not Exceeded	
Road	2022-06-17 8:00	Yes	Muskox	2	Feeding	N/A	1300	68	East	No		-96.32681	64.82032			No	Not Exceeded	
Road	2022-06-17 8:00	Yes	Muskox	18	Feeding		700	58	West	No		-96.35794	64.74165			No	Exceeded	Speed restriction put in place.
Road	2022-06-17 8:00	Yes	Muskox	20	Feeding	N/A	2000	34	West	No		-96.24047	64.56875			No	Exceeded	More than 1.5km from the road. None needed
Road	2022-06-17 8:00	Yes	Muskox	1	Feeding	N/A	50	24	East	No		-96.13651	64.50789			No	Not Exceeded	
Road	2022-06-17 8:00	Yes	Muskox	22	Resting	N/A	150	20	West	No		-96.09597	64.47868			No	Exceeded	Speed restriction put in place.
Road	2022-06-17 8:00	Yes	Muskox	2	Feeding	N/A	250	18	West	No		-96.0824	64.46103			No	Not Exceeded	
Incidental	2022-06-20 9:43	Yes	Caribou	1	Running	W	100	76	West	No		-96.34565	64.88789			No	Not Exceeded	
Road	2022-06-22 10:37	Yes	Muskox	1	Feeding	N/A	100	53	East	No		-96.37309	64.70606			No	Not Exceeded	
Road	2022-06-22 10:37	Yes	Sandhill crane	2	Walking	E	30	47	East	Yes		-96.34656	64.65799			No	Not Exceeded	
Road	2022-06-24 7:57	No					NA					NA	NA					
Incidental	2022-06-24 12:50	Yes	Muskox	3	Feeding	N/A	200	15	West	No	Baby present	-96.0525	64.43981			No	Not Exceeded	
Incidental	2022-06-24 13:52	Yes	Caribou	2	Running	N	150	145	West	No		-96.3769	65.22422			No	Not Exceeded	
Incidental	2022-06-24 14:09	Yes	Muskox	2	Feeding	N/A	100	53	West	No		-96.37309	64.70606			No	Not Exceeded	
Incidental	2022-06-24 14:36	Yes	Muskox	1	Feeding	N/A	30	69	West	N/A		-96.31427	64.82772			No	Not Exceeded	
Incidental	2022-06-26 9:00	Yes	Muskox	2	Feeding	N/A	150	54	East	No		-96.35835	64.71319			No	Not Exceeded	
Incidental	2022-06-26 9:05	Yes	Muskox	1	Feeding	N/A	30	52	East	No		-96.37745	64.70086			No	Not Exceeded	
Incidental	2022-06-26 10:57	Yes	Muskox	1	Feeding	N/A	10	25	West	No		-96.14948	64.5142			No	Not Exceeded	
Road	2022-06-28 10:30	Yes	Wolverine	1	Running	E	0	105	Both	Yes		-96.08773	65.03413			No	Not Exceeded	
Road	2022-06-28 10:30	Yes	Peregrine falcon	1	Standing	Not Recorded	50	70	West	No		-96.31652	64.83649			No	Not Exceeded	
Road	2022-06-28 10:30	Yes	Muskox	8	Walking	E	1000	54	East	No		-96.35835	64.71319			No	Not Exceeded	

Table A-1: Wildlife Observations along the All Weather Access Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2022-06-28 10:30	Yes	Muskox	2	Lying Down	W	100	48	West	No		-96.36878	64.66417			No	Not Exceeded	
Road	2022-06-28 10:30	Yes	Muskox	8	Lying Down	N/A	500	41	West	No		-96.28113	64.62028			No	Not Exceeded	
Road	2022-06-28 10:30	Yes	Muskox	1	Feeding	N	50	35	West	No		-96.24426	64.57386			No	Not Exceeded	
Road	2022-06-28 10:30	Yes	Muskox	3	Feeding	N/A	25	25	West	No		-96.14948	64.5142			No	Not Exceeded	
Road	2022-06-28 10:30	Yes	Sandhill crane	1	Walking	N/A	25	9	West	No		-96.0143	64.38902			No	Not Exceeded	
Road	2022-07-01 6:50	Yes	Muskox	2	Foraging	Not Recorded	75	104	West	No		-96.09721	65.04458			No	Not Exceeded	
Road	2022-07-01 6:50	Yes	Muskox	1	Walking	E	5	101	East	Deflection		-96.14029	65.05669			No	Not Exceeded	
Road	2022-07-01 6:50	Yes	Sandhill crane	2	Walking	Not Recorded	150	65	East	No		-96.34062	64.7948			No	Not Exceeded	
Road	2022-07-01 6:50	Yes	Muskox	1	Lying Down	N/A	200	54	West	No		-96.35835	64.71319			No	Not Exceeded	
Road	2022-07-01 6:50	Yes	Muskox	2	Lying Down	N/A	150	23	East	No		-96.12442	64.50056			No	Not Exceeded	
Road	2022-07-01 6:50	Yes	Sandhill crane	1	Foraging	W	20	10	West	No		-96.01786	64.3971			No	Not Exceeded	
Road	2022-07-01 6:50	Yes	Muskox	1	Feeding	N/A	300	1	West	No		-95.9717	64.32525			No	Not Exceeded	
Incidental	2022-07-01 15:06	Yes	Muskox	17	Feeding	N/A	25	12	East	Deflection		-96.02992	64.41394			No	Exceeded	Speed restriction between km11 and km12
Road	2022-07-05 7:50	Yes	Muskox	1	Lying Down	N/A	70	99	West	No		-96.15317	65.04196			No	Not Exceeded	
Road	2022-07-05 7:50	Yes	Muskox	1	Feeding	NE	140	45	East	No		-96.31336	64.65243			No	Not Exceeded	
Road	2022-07-05 7:50	Yes	Muskox	2	Feeding	NE	30	39	East	No		-96.27514	64.59586			No	Not Exceeded	
Road	2022-07-08 13:56	Yes	Muskox	1	Lying Down	W	35	18	West	No		-96.0824	64.46103			No	Not Exceeded	
Road	2022-07-08 13:56	Yes	Muskox	3	Lying Down	N/A	150	26	East	No		-96.16146	64.52353			No	Not Exceeded	
Road	2022-07-08 13:56	Yes	Muskox	1	Feeding	N/A	118	87	West	No		-96.24102	64.9542			No	Not Exceeded	
Road	2022-07-08 13:56	Yes	Muskox	1	Walking	SW	40	98	West	No		-96.15765	65.03248			No	Not Exceeded	
Road	2022-07-08 13:56	Yes	Caribou	1	Walking	N	10	101	West	No		-96.14029	65.05669			No	Not Exceeded	
Road	2022-07-08 13:56	Yes	Muskox	2	Feeding	N/A	80	105	East	No		-96.08773	65.03413			No	Not Exceeded	
Road	2022-07-08 13:56	Yes	Muskox	1	Lying Down	N/A	25	106	West	No		-96.08289	65.02713			No	Not Exceeded	
Road	2022-07-12 9:33	Yes	Bald Eagle	1	Standing	N/A	275	8	West	No		-96.01547	64.38131			No	Not Exceeded	
Road	2022-07-12 9:33	Yes	Canada goose	6	Flying	NE	300	12	West	Yes		-96.02992	64.41394			No	Not Exceeded	
Road	2022-07-12 9:33	Yes	Muskox	1	Feeding	N/A	125	13	East	No		-96.03681	64.42344			No	Not Exceeded	
Road	2022-07-12 9:33	Yes	Sandhill crane	3	Feeding	N/A	70	15	West	No		-96.0525	64.43981			No	Not Exceeded	
Road	2022-07-12 9:33	Yes	Caribou	1	Feeding	NE	50	89	East	No		-96.21956	64.96744			No	Not Exceeded	
Road	2022-07-12 9:33	Yes	Muskox	1	Feeding	N/A	8	106	West	No		-96.08289	65.02713			No	Not Exceeded	
Incidental	2022-07-13 10:05	Yes	Muskox	18	Not recorded	N/A	NA	9		No		-96.0143	64.38902			No	Exceeded	Speed restriction put in place.
Road	2022-07-14 11:18	Yes	Muskox	18	Feeding	N/A	100	10	West	No		-96.01786	64.3971			No	Exceeded	Speed Restriction
Road	2022-07-14 11:18	Yes	Muskox	1	Feeding	N/A	1	79	West	No		-96.31492	64.90953			No	Not Exceeded	
Road	2022-07-14 11:18	Yes	Muskox	3	Feeding	N/A	1	104	West	No		-96.09721	65.04458			No	Not Exceeded	
Incidental	2022-07-15 7:05	Yes	Muskox	40	Not recorded	N/A	NA	9		No		-96.0143	64.38902			No	Exceeded	Speed restriction put in place
Road	2022-07-16 12:05	Yes	Muskox	9	Feeding	N/A	400	18	East	No		-96.0824	64.46103			No	Not Exceeded	
Road	2022-07-16 12:05	Yes	Muskox	13	Feeding	W	20	13	East	No	Km 13	-96.03681	64.42344			No	Not Exceeded	
Road	2022-07-16 12:05	Yes	Muskox	1	Feeding	N/A	600	26	East	No		-96.16146	64.52353			No	Not Exceeded	
Road	2022-07-16 12:05	Yes	Muskox	3	Feeding	N/A	80	105	East	No		-96.08773	65.03413			No	Not Exceeded	
Road	2022-07-18 8:12	Yes	Caribou	1	Feeding	N/A	120	33	West	No		-96.21631	64.57146			No	Not Exceeded	
Road	2022-07-18 8:12	Yes	Muskox	1	Resting	N/A	50	25	West	No		-96.14948	64.5142			No	Not Exceeded	
Incidental	2022-07-18 16:39	Yes	Muskox	15	Feeding	N/A	15	15	West,East	Yes		-96.0525	64.43981			No	Exceeded	Speed restriction put in place.
Road	2022-07-19 5:27	Yes	Muskox	1	Feeding	N/A	3	104	East	No		-96.09721	65.04458			No	Not Exceeded	
Road	2022-07-19 5:27	Yes	Snow goose	12	Resting	N/A	100	96	West	No		-96.18089	65.0181			No	Not Exceeded	
Road	2022-07-19 5:27	Yes	Muskox	12	Feeding	N/A	150	93	West	No		-96.22197	65.00077			No	Not Exceeded	
Road	2022-07-19 5:27	Yes	Muskox	1	Feeding	N/A	1	46	West	Yes		-96.32957	64.65622			No	Not Exceeded	
Road	2022-07-19 5:27	Yes	Sandhill crane	2	Walking	E	2	42	East	Yes		-96.2949	64.62757			No	Not Exceeded	
Road	2022-07-19 5:27	Yes	Muskox	1	Walking	N/A	30	42	East	No		-96.2949	64.62757			No	Not Exceeded	
Road	2022-07-19 5:27	Yes	Muskox	1	Resting	N/A	50	25	East	No		-96.14948	64.5142			No	Not Exceeded	
Road	2022-07-19 5:27	Yes	Sandhill crane	2	Walking	S	50	21	West	No		-96.1045	64.48693			No	Not Exceeded	
Road	2022-07-19 5:27	Yes	Muskox	12	Resting	N/A	20	20	East	No		-96.09597	64.47868			No	Not Exceeded	
Road	2022-07-19 5:27	Yes	Sandhill crane	2	Resting	N/A	50	20	East	No		-96.09597	64.47868			No	Not Exceeded	
Road	2022-07-22 10:45	Yes	Caribou	1	Walking	N	0	93	East	Yes		-96.22197	65.00077			No	Not Exceeded	
Incidental	2022-07-23 8:35	Yes	Muskox	7	Feeding	N/A	300	54	East	N/A	Did not put a speed restriction as they were pretty far away, and were not facing the road.	-96.35835	64.71319			No	Not Exceeded	
Incidental	2022-07-23 13:16	Yes	Muskox	7	Feeding	Not Recorded	800	8	West	No	They are not moving towards the road. No speed restriction.	-96.01547	64.38131			No	Not Exceeded	
Incidental	2022-07-23 16:31	Yes	Muskox	1	Lying Down	N/A	25	49	West	No	Speed restriction placed at 30km/h	-96.37072	64.6688			No	Not Exceeded	
Incidental	2022-07-25 4:00	Yes	Wolf	1	Injured		0	32			AEM Grader 2 – Junior reported a wolf at Km 32 walking south, he believed it was injured also.	-96.20446	64.56469			No	Not Exceeded	
Road	2022-07-26 7:30	Yes	Caribou	1	Walking	W	0	90	Both	Yes	Caribou in quarry 20 went on the road after	-96.22208	64.97501			No	Not Exceeded	
Road	2022-07-26 7:30	Yes	Muskox	1	Feeding	N/A	350	55	West	No		-96.34597	64.71855			No	Not Exceeded	
Road	2022-07-26 7:30	Yes	Muskox	4	Foraging	N/A	400	33	East	No		-96.21631	64.57146			No	Not Exceeded	
Road	2022-07-26 7:30	Yes	Sandhill crane	3	Walking	W	200	24	West	No		-96.13651	64.50789			No	Not Exceeded	
Road	2022-07-26 7:30	Yes	Muskox	15	Walking	N/A	300	9	East	No		-96.0143	64.38902			No	Exceeded	Speed restriction put in place.
Road	2022-07-27 6:42	Yes	Muskox	5	Resting	N/A	500	13	East	No		-96.03681	64.42344			Yes - Could be. A lot of muskox on the road	Not Exceeded	
Road	2022-07-27 6:42	Yes	Caribou	1	Walking	E	0	93	West	Yes		-96.22197	65.00077			No	Not Exceeded	
Road	2022-07-29 8:28	Yes	Muskox	33	Foraging	N/A	700	49	Both	No		-96.37072	64.6688			No	Exceeded	HTO observation
Road	2022-07-30 6:44	Yes	Muskox	2	Resting	N/A	100	60	West	No		-96.36363	64.75548			No	Not Exceeded	
Road	2022-07-30 6:44	Yes	Muskox	1	Foraging	S	400	53	West	No		-96.37309	64.70606			No	Not Exceeded	
Road	2022-07-30 6:44	Yes	Caribou	60	Foraging	N	800	48	East	No		-96.36878	64.66417			No	Exceeded	Road closed
Road	2022-07-30 6:44	Yes	Muskox	18	Feeding	N/A	1000	44	West	No		-96.30352	64.64171			No	Exceeded	Partial closure due to caribou.
Road	2022-07-30 6:44	Yes	Caribou	45	Foraging	S	800	44	East	No		-96.30352	64.64171			No	Exceeded	Road closed
Road	2022-07-30 6:44	Yes	Sandhill crane	3	Walking	N/A	25	200	West	No		-96.29704	64.63748			No	Not Exceeded	
Incidental	2022-07-30 11:21	Yes	Caribou	19	Feeding	N/A	600	57	East	No		-96.36013	64.73137			No	Not Exceeded	
Incidental	2022-07-30 11:24	Yes	Caribou	10	Feeding	N/A	1200	58	East	No		-96.35794	64.74165			No	Not Exceeded	
Incidental	2022-07-30 11:26	Yes	Caribou	9	Feeding	N/A	500	59	East	No		-96.37059	64.74953			No	Not Exceeded	
Incidental	2022-07-30 11:33	Yes	Caribou	264	Feeding	N/A	400	60	East	No		-96.36363	64.75548			No	Exceeded	Road closed
Incidental	2022-07-30 11:43	Yes	Caribou	50	Feeding	N/A	300	66	East	No		-96.33501	64.80451			No	Exceeded	Road closed
Incidental	2022-07-30 13:23	Yes	Caribou	10	Foraging	N	800	72	East	No		-96.32384	64.85386			No	Not Exceeded	

Table A-1: Wildlife Observations along the All Weather Access Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2022-07-31 13:55	Yes	Muskox	7	Resting	N/A	300	40	West	No		-96.28144	64.60429			No	Not Exceeded	
Road	2022-07-31 13:55	Yes	Caribou	4	Feeding	N/A	300	42	East	No		-96.2949	64.62757			No	Not Exceeded	
Road	2022-07-31 13:55	Yes	Caribou	4	Walking	N	100	46	West	No		-96.32957	64.65622			No	Not Exceeded	
Road	2022-07-31 13:55	Yes	Caribou	2	Walking	W	10	49	West	Yes		-96.37072	64.6688			No	Not Exceeded	
Road	2022-07-31 13:55	Yes	Caribou	25	Walking	N	700	52	East	No		-96.37745	64.70086			No	Not Exceeded	
Road	2022-07-31 13:55	Yes	Caribou	20	Walking	N	500	53	East	No		-96.37309	64.70606			No	Not Exceeded	
Road	2022-07-31 13:55	Yes	Caribou	55	Walking	N	500	69	East	No		-96.31427	64.82772			No	Exceeded	Road closed
Road	2022-07-31 13:55	Yes	Caribou	25	Feeding	N/A	500	72	East	No		-96.32384	64.85386			No	Not Exceeded	
Road	2022-07-31 13:55	Yes	Caribou	70	Walking	N	500	74	East	No		-96.33028	64.87523			No	Exceeded	Road closed
Road	2022-07-31 13:55	Yes	Caribou	20	Feeding	N/A	500	78	Both	No		-96.32437	64.90319			No	Not Exceeded	
Road	2022-07-31 13:55	Yes	Caribou	120	Resting	E	5	80	East	No		-96.30624	64.91707			No	Exceeded	Road already close. I am doing a convoy for one pck and a grader. Some caribou crossed. Some are staying there feeding and laying down. A big group starts to walking and run in opposite direction even if we were stop or moving really slow
Road	2022-08-01 7:45	Yes	Caribou	4	Walking	N	200	89	East	No		-96.21956	64.96744			No	Not Exceeded	
Road	2022-08-01 7:45	Yes	Caribou	15	Walking	N/A	250	87	East	No		-96.24102	64.9542			No	Not Exceeded	
Road	2022-08-01 7:45	Yes	Caribou	5	Walking	NE	100	72	East	No		-96.32384	64.85386			No	Not Exceeded	
Road	2022-08-01 7:45	Yes	Caribou	23	Walking	N	450	49	East	No		-96.37072	64.6688			No	Not Exceeded	
Incidental	2022-08-01 14:52	Yes	Caribou	4	Foraging	N	150	33	East	No		-96.21631	64.57146			No	Not Exceeded	
Incidental	2022-08-01 16:43	Yes	Caribou	18	Foraging	E	10	93	East	Yes		-96.22197	65.00077			No	Not Exceeded	
Road	2022-08-02 7:05	Yes	Muskox	15	Lying Down	N/A	170	89	East	No		-96.21956	64.96744			No	Exceeded	Speed restriction put in place.
Road	2022-08-02 7:05	Yes	Muskox	2	Feeding	N/A	250	42	West	No		-96.2949	64.62757			No	Not Exceeded	
Road	2022-08-02 7:05	Yes	Caribou	13	Walking	SE	700	33	East	No		-96.21631	64.57146			No	Not Exceeded	
Road	2022-08-02 7:05	Yes	Caribou	5	Walking	NE	250	31	East	No		-96.19574	64.55426			No	Not Exceeded	
Road	2022-08-02 7:05	Yes	Caribou	3	Walking	SW	600	26	East	No	ATV in Tundra close by to the caribous. Caribous seemed to be heading NE.	-96.16146	64.52353			No	Not Exceeded	
Road	2022-08-02 7:05	Yes	Muskox	3	Resting	N/A	120	18	West	No		-96.0824	64.46103			No	Not Exceeded	
Incidental	2022-08-02 8:00	Yes	Wolverine	1	Dead	N/A	0	80			AFS Tanker 3 Paul Niego informed dispatch at around 20h00 that he ran over a wolverine on the bridge at km 80. Wildlife Mortality report will be sent to the GN on august 3rd via email. AFS driver informed dispatch around 20h00. At 20h10, dispatch communicated with the environment coordinator how send an employee to remove the carcass. Mean will, the wolverine had died instantly, and the carcass was moved to the side of the road by the grader to allow free access to the road. The driver was already driving slowly, and no food waste was found near the accident. □ □ Maintaining good vigilance is the best measure to avoid another accident.	-96.30624	64.91707			No	Not Exceeded	
Road	2022-08-03 9:41	Yes	Muskox	1	Feeding	N/A	25	100	East	No		-96.14649	65.04884		Project related	No	Not Exceeded	
Road	2022-08-03 9:41	Yes	Caribou	1	Trotting/running	N	1000	17	East	No		-96.07705	64.45326			No	Not Exceeded	
Road	2022-08-03 9:41	Yes	Caribou	5	Walking	W	300	15	East	No		-96.0525	64.43981			No	Not Exceeded	
Incidental	2022-08-03 15:44	Yes	Muskox	1	Walking	SE	300	22	East	No		-96.11256	64.4935			No	Not Exceeded	
Road	2022-08-04 6:42	Yes	Muskox	1	Feeding	N/A	600	9	East	No		-96.0143	64.38902			No	Not Exceeded	
Road	2022-08-04 6:42	Yes	Caribou	3	Running	SE	750	20	East	No		-96.09597	64.47868			No	Not Exceeded	
Road	2022-08-04 6:42	Yes	Caribou	3	Walking	NE	250	49	East	No		-96.37072	64.6688			No	Not Exceeded	
Road	2022-08-04 6:42	Yes	Caribou	2	Running	E	300	68	Both	Yes		-96.32681	64.82032			No	Not Exceeded	
Road	2022-08-04 6:42	Yes	Canada goose	22	Feeding	N/A	60	71	East	No		-96.3197	64.84471			No	Not Exceeded	
Road	2022-08-04 6:42	Yes	Muskox	1	Walking	NE	400	103	West	No		-96.11079	65.0489			No	Not Exceeded	
Road	2022-08-05 7:00	Yes	Caribou	3	Feeding	N/A	300	17	West	No		-96.07705	64.45326			No	Not Exceeded	
Road	2022-08-05 7:00	Yes	Muskox	1	Resting	N/A	110	42	West	No		-96.2949	64.62757			No	Not Exceeded	
Road	2022-08-05 7:00	Yes	Caribou	2	Feeding	N	400	75	East	No		-96.33614	64.87946			No	Not Exceeded	
Road	2022-08-05 7:00	Yes	Caribou	7	Walking	NE	550	78	East	No		-96.32437	64.90319			No	Not Exceeded	
Road	2022-08-05 7:00	Yes	Caribou	1	Walking	NE	250	94	East	No		-96.21269	65.00751			No	Not Exceeded	
Road	2022-08-06 9:55	Yes	Caribou	1	Feeding	N/A	10	106	West	No		-96.08289	65.02713			No	Not Exceeded	
Road	2022-08-06 9:55	Yes	Muskox	1	Feeding	N/A	200	97	West	No		-96.17115	65.02594			No	Not Exceeded	
Road	2022-08-06 9:55	Yes	Caribou	1	Walking	N	0	78	West	Yes		-96.32437	64.90319			No	Not Exceeded	
Road	2022-08-06 9:55	Yes	Arctic hare	1	Walking	SW	0	74	East	No		-96.33028	64.87523			No	Not Exceeded	
Road	2022-08-06 9:55	Yes	Siksik	1	Resting	N/A	0	70	West	No		-96.31652	64.83649			No	Not Exceeded	
Road	2022-08-06 9:55	Yes	Caribou	1	Walking	N	245	51	East	No		-96.37907	64.69323			No	Not Exceeded	
Road	2022-08-06 9:55	Yes	Sandhill crane	2	Standing	N/A	100	46	East	No		-96.32957	64.65622			No	Not Exceeded	
Road	2022-08-06 9:55	Yes	Peregrine falcon	2	Flying	N/A	100	43	West	N/A		-96.3007	64.63477			No	Not Exceeded	
Road	2022-08-06 9:55	Yes	Peregrine falcon	2	Flying	N/A	600	13	West	No		-96.03681	64.42344			No	Not Exceeded	
Road	2022-08-06 9:55	Yes	Arctic hare	1	Alert	N/A	600	13	West	No		-96.03681	64.42344			No	Not Exceeded	
Road	2022-08-06 9:55	Yes	Muskox	31	Feeding	N/A	1500	15	East	No		-96.03681	64.42344			No	Exceeded	Speed Restriction
Road	2022-08-07 7:59	Yes	Caribou	1	Feeding	E	150	92	East	No		-96.22191	64.99435			No	Not Exceeded	
Road	2022-08-07 7:59	Yes	Caribou	1	Walking	SE	100	74	West	No		-96.33028	64.87523			No	Not Exceeded	
Road	2022-08-07 7:59	Yes	Caribou	2	Feeding	NE	105	55	West	No		-96.34597	64.71855			No	Not Exceeded	
Road	2022-08-07 7:59	Yes	Muskox	22	Feeding	N/A	1500	15	East	No		-96.0525	64.43981			No	Exceeded	Speed restriction put in place.
Road	2022-08-07 7:59	Yes	Muskox	11	Feeding	Not Recorded	200	12	East	No		-96.02992	64.41394			No	Not Exceeded	
Incidental	2022-08-07 16:18	Yes	Caribou	1	Feeding	W	30	104	West,East	Yes		-96.09721	65.04458			No	Not Exceeded	
Road	2022-08-08 6:54	Yes	Caribou	1	Feeding	Not Recorded	80	103	East	No		-96.11079	65.0489			No	Not Exceeded	
Road	2022-08-09 10:16	Yes	Muskox	1	Resting	N/A	100	93	East	No		-96.22197	65.00077			No	Not Exceeded	
Road	2022-08-09 10:16	Yes	Muskox	1	Feeding	N/A	700	27	East	No		-96.16125	64.53222			No	Not Exceeded	
Road	2022-08-10 6:35	Yes	Caribou	1	Trotting/running	E	600	78	East	Yes		-96.32437	64.90319			No	Not Exceeded	
Road	2022-08-10 6:35	Yes	Caribou	2	Walking	SE	30	103	East	Yes		-96.11079	65.0489			No	Not Exceeded	

Table A-1: Wildlife Observations along the All Weather Access Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2022-08-10 12:28	Yes	Caribou	1	Feeding	N/A	250	48	West	No		-96.36878	64.66417			No	Not Exceeded	
Incidental	2022-08-10 14:11	Yes	Caribou	1	Feeding	N/A	525	6	West	No		-96.00083	64.36427			No	Not Exceeded	
Road	2022-08-11 6:29	Yes	Muskox	21	Resting	N/A	260	4	West	No		-95.99845	64.34605			No	Exceeded	Speed restriction was put in place from km 4 to 5
Road	2022-08-11 6:29	Yes	Muskox	1	Walking	N	500	10	East	No		-96.01786	64.3971			No	Not Exceeded	
Road	2022-08-11 6:29	Yes	Caribou	1	Feeding	N	200	48	West	No		-96.36878	64.66417			No	Not Exceeded	
Road	2022-08-11 6:29	Yes	Caribou	5	Feeding	N	650	75	East	No		-96.33614	64.87946			No	Not Exceeded	
Road	2022-08-11 6:29	Yes	Caribou	1	Walking	E	350	87	East	No		-96.24102	64.9542			No	Not Exceeded	
Incidental	2022-08-11 10:36	Yes	Caribou	5	Walking	NE	550	82	East	No		-96.31204	64.9306			No	Not Exceeded	
Incidental	2022-08-11 11:30	Yes	Caribou	13	Walking	NE	200	52	East	No		-96.37745	64.70086			No	Not Exceeded	
Incidental	2022-08-11 11:55	Yes	Caribou	17	Walking	NE	350	37	East	No		-96.269	64.58416			No	Not Exceeded	
Road	2022-08-12 7:02	Yes	Caribou	2	Walking	N	220	12	East	No		-96.02992	64.41394			No	Not Exceeded	
Road	2022-08-12 7:02	Yes	Caribou	8	Feeding	SE	120	17	East	No		-96.07705	64.45326			No	Not Exceeded	
Road	2022-08-12 7:02	Yes	Caribou	3	Walking	SE	320	26	East	No		-96.16146	64.52353			No	Not Exceeded	
Road	2022-08-12 7:02	Yes	Caribou	5	Walking	N	400	60	East	No		-96.36363	64.75548			No	Not Exceeded	
Road	2022-08-12 7:02	Yes	Caribou	7	Feeding	N/A	1200	76	East	No		-96.34565	64.88789			No	Not Exceeded	
Road	2022-08-12 7:02	Yes	Caribou	16	Walking	SE	1100	77	East	No		-96.33908	64.89511			No	Not Exceeded	
Road	2022-08-12 7:02	Yes	Caribou	4	Feeding	N/A	700	93	East	No		-96.22197	65.00077			No	Not Exceeded	
Incidental	2022-08-12 15:02	Yes	Caribou	1	Feeding	NW	200	82	West	No		-96.31204	64.9306			No	Not Exceeded	
Incidental	2022-08-12 15:15	Yes	Caribou	8	Feeding	W	350	77	East	No		-96.33908	64.89511			No	Not Exceeded	
Incidental	2022-08-12 15:35	Yes	Caribou	8	Walking	E	600	69	East	No		-96.31427	64.82772			No	Not Exceeded	
Road	2022-08-13 6:51	Yes	Muskox	8	Lying Down	N/A	645	42	West	No		-96.2949	64.62757			No	Not Exceeded	
Road	2022-08-13 6:51	Yes	Caribou	13	Walking	S	300	41	East	No		-96.28113	64.62028			No	Not Exceeded	
Road	2022-08-13 6:51	Yes	Caribou	12	Walking	N	100	38	East	No		-96.27582	64.59073			No	Not Exceeded	
Road	2022-08-13 6:51	Yes	Caribou	3	Walking	E	460	23	East	No		-96.12442	64.50056			No	Not Exceeded	
Road	2022-08-13 6:51	Yes	Caribou	1	Feeding	N/A	520	21	East	No		-96.1045	64.48693			No	Not Exceeded	
Incidental	2022-08-13 12:45	Yes	Caribou	1	Feeding	N/A	80	66	West	No		-96.33501	64.80451			No	Not Exceeded	
Incidental	2022-08-13 13:08	Yes	Caribou	1	Feeding	N/A	100	76	West	No		-96.34565	64.88789			No	Not Exceeded	
Incidental	2022-08-13 13:15	Yes	Caribou	4	Walking	S	310	78	West	No		-96.32437	64.90319			No	Not Exceeded	
Incidental	2022-08-13 13:42	Yes	Caribou	2	Walking	N/A	120	94	West	No		-96.21269	65.00751			No	Not Exceeded	
Road	2022-08-14 8:00	Yes	Caribou	1	Feeding	SE	1700	69	East	No		-96.31427	64.82772			No	Not Exceeded	
Road	2022-08-14 8:00	Yes	Caribou	1	Walking	E	100	52	West	Yes	Caribou crossed the road west to east	-96.37745	64.70086			No	Not Exceeded	
Road	2022-08-14 8:00	Yes	Bald Eagle	1	Flying	Not Recorded	1800	48	Both	No		-96.36878	64.66417			No	Not Exceeded	
Incidental	2022-08-14 14:30	Yes	Caribou	6	Walking	NE	70	101	West,East	Yes		-96.14029	65.05669			No	Not Exceeded	
Road	2022-08-16 8:19	No					NA					NA	NA					
Incidental	2022-08-16 14:09	Yes	Caribou	1	Walking	N	0	36	East	Yes		-96.26192	64.58043			No	Not Exceeded	
Road	2022-08-17 7:31	Yes	Caribou	1	Standing	N/A	450	86	East	No		-96.2528	64.94684			No	Not Exceeded	
Road	2022-08-17 7:31	Yes	Caribou	3	Walking	N	200	32	East	No		-96.20446	64.56469			No	Not Exceeded	
Road	2022-08-18 11:35	Yes	Caribou	5	Foraging	S	20	106	East	No		-96.08289	65.02713			No	Not Exceeded	
Road	2022-08-19 9:57	Yes	Canada goose	65	Feeding	N/A	400	83	West	No		-96.30111	64.935			No	Not Exceeded	
Road	2022-08-19 9:57	Yes	Sandhill crane	2	Alert	W	20	39	West	No		-96.27514	64.59586			No	Not Exceeded	
Road	2022-08-19 9:57	Yes	Muskox	2	Feeding	N/A	250	11	East	No		-96.02386	64.40539			No	Not Exceeded	
Incidental	2022-08-20 8:35	Yes	Grizzly bear	2	Running	E	300	54	East	No	Hunter stop by to advise the environment team that he just saw a mother bear and a tall cub	-96.35835	64.71319			No	Not Exceeded	
Road	2022-08-20 15:56	Yes	Sandhill crane	3	Flying	N	0	15	East	Yes		-96.0525	64.43981			No	Not Exceeded	
Road	2022-08-20 15:56	Yes	Muskox	32	Feeding	N/A	250	21	West	No		-96.1045	64.48693			No	Exceeded	Speed restriction from km 95 to km 97 and from km 26 to km 28.
Road	2022-08-20 15:56	Yes	Muskox	1	Feeding	N/A	300	32	East	No		-96.20446	64.56469			No	Not Exceeded	
Road	2022-08-20 15:56	Yes	Arctic fox	1	Running	SE	0	49	East	Yes		-96.37072	64.6688			No	Not Exceeded	
Road	2022-08-20 15:56	Yes	Caribou	1	Feeding	N/A	20	106	East	No		-96.08289	65.02713			No	Not Exceeded	
Road	2022-08-22 11:18	Yes	Caribou	10	Trotting/running	W	0	11	Both	Yes		-96.02386	64.40539			No	Not Exceeded	
Road	2022-08-22 11:18	Yes	Muskox	1	Resting	N/A	600	25	West	No		-96.14948	64.5142			No	Not Exceeded	
Road	2022-08-22 11:18	Yes	Caribou	8	Trotting/running	N	780	29	East	No		-96.18125	64.54733			No	Not Exceeded	
Road	2022-08-22 11:18	Yes	Muskox	8	Resting	N/A	700	53	West	No		-96.37309	64.70606			No	Not Exceeded	
Road	2022-08-22 11:18	Yes	Caribou	1	Walking	W	100	71	West	No		-96.3197	64.84471			No	Not Exceeded	
Road	2022-08-22 11:18	Yes	Caribou	2	Foraging	N/A	250	81	East	No		-96.30208	64.92518			No	Not Exceeded	
Road	2022-08-22 11:18	Yes	Caribou	3	Foraging	E	80	97	West	No		-96.17115	65.02594			No	Not Exceeded	
Road	2022-08-23 13:48	Yes	Caribou	1	Foraging	S	120	102	East	No		-96.12783	65.0517			No	Not Exceeded	
Road	2022-08-23 13:48	Yes	Caribou	1	Foraging	N/A	150	100	West	No		-96.14649	65.04884			No	Not Exceeded	
Road	2022-08-24 10:14	Yes	Muskox	11	Foraging	N	2000	17	West	No		-96.07705	64.45326			No	Not Exceeded	
Road	2022-08-24 10:14	Yes	Muskox	1	Foraging	N	10	29	West	Yes		-96.18125	64.54733			No	Not Exceeded	
Road	2022-08-24 10:14	Yes	Caribou	4	Foraging	W	50	41	Both	Yes		-96.28113	64.62028			No	Not Exceeded	
Road	2022-08-24 10:14	Yes	Caribou	2	Foraging	S	10	97	West	No		-96.17115	65.02594			No	Not Exceeded	
Road	2022-08-24 10:14	Yes	Caribou	4	Foraging	SE	500	77	East	No		-96.33908	64.89511			No	Not Exceeded	
Road	2022-08-25 6:55	Yes	Caribou	2	Foraging	E	600	105	West	No		-96.08773	65.03413			No	Not Exceeded	
Road	2022-08-25 6:55	Yes	Caribou	1	Resting	N/A	400	86	West	No		-96.2528	64.94684			No	Not Exceeded	
Road	2022-08-25 6:55	Yes	Caribou	1	Foraging	N/A	700	78	West	No		-96.32437	64.90319			No	Not Exceeded	
Road	2022-08-25 6:55	Yes	Muskox	1	Resting	N/A	600	49	West	No		-96.37072	64.6688			No	Not Exceeded	
Incidental	2022-08-25 11:00	Yes	Muskox	29	Foraging	E	100	10	West	No		-96.01786	64.3971			No	Exceeded	Speed restriction put in place.
Incidental	2022-08-25 11:43	Yes	Caribou	1	Trotting/running	N/A	50	39	East	No		-96.27514	64.59586			No	Not Exceeded	
Incidental	2022-08-25 12:05	Yes	Caribou	3	Walking	E	100	49	East	No		-96.37072	64.6688			No	Not Exceeded	
Incidental	2022-08-25 13:04	Yes	Muskox	1	Walking	E	25	91	West	No		-96.22486	64.98469			No	Not Exceeded	
Road	2022-08-26 7:00	Yes	Caribou	1	Feeding	N/A	100	100	East	No		-96.14649	65.04884			No	Not Exceeded	
Road	2022-08-26 7:00	Yes	Caribou	1	Foraging	N/A	100	99	West	No		-96.15317	65.04196			No	Not Exceeded	
Road	2022-08-26 7:00	Yes	Snow goose	100	Standing	N/A	30	93	West	No		-96.22197	65.00077			No	Not Exceeded	
Road	2022-08-26 7:00	Yes	Snow goose	100	Standing	N/A	300	90</										

Table A-1: Wildlife Observations along the All Weather Access Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2022-08-26 7:00	Yes	Muskox	23	Lying Down	N/A	500	8	West	No		-96.01547	64.38131			No	Exceeded	Speed restriction put in place.
Road	2022-08-27 12:30	Yes	Muskox	8	Walking	E	0	12	Both	Yes		-96.02992	64.41394			No	Not Exceeded	
Road	2022-08-27 12:30	Yes	Caribou	2	Walking	S	300	58	East	No		-96.35794	64.74165			No	Not Exceeded	
Road	2022-08-27 12:30	Yes	Muskox	1	Foraging	N/A	600	83	West	No		-96.30111	64.935			No	Not Exceeded	
Road	2022-08-27 12:30	Yes	Caribou	2	Foraging	N	250	102	East	No		-96.12783	65.0517			No	Not Exceeded	
Road	2022-08-28 11:59	Yes	Caribou	1	Foraging	S	60	79	East	No		-96.31492	64.90953			No	Not Exceeded	
Road	2022-08-28 11:59	Yes	Muskox	1	Resting	N/A	100	89	East	No		-96.21956	64.96744			No	Not Exceeded	
Road	2022-08-28 11:59	Yes	Caribou	5	Resting	N/A	300	97	West	No		-96.17115	65.02594			No	Not Exceeded	
Road	2022-08-28 11:59	Yes	Caribou	2	Foraging	W	500	101	West	No		-96.14029	65.05669			No	Not Exceeded	
Road	2022-08-28 11:59	Yes	Caribou	3	Walking	W	0	104	East	Yes		-96.09721	65.04458			No	Not Exceeded	
Road	2022-08-30 7:25	Yes	Caribou	2	Feeding	W	125	106	East	No		-96.08289	65.02713			No	Not Exceeded	
Incidental	2022-08-30 14:17	Yes	Caribou	2	Feeding	Not Recorded	65	98	West,East	No	The one on East side is feeding and not crossing.	-96.15765	65.03248			No	Not Exceeded	
Road	2022-08-30 15:02	No				NA						NA	NA					
Road	2022-08-31 6:41	Yes	Muskox	1	Resting	N/A	600	42	West	No		-96.2949	64.62757			No	Not Exceeded	
Road	2022-08-31 6:41	Yes	Caribou	6	Walking	SE	550	75	East	No		-96.33614	64.87946			No	Not Exceeded	
Road	2022-08-31 6:41	Yes	Caribou	3	Feeding	NW	100	82	East	No		-96.31204	64.9306			No	Not Exceeded	
Incidental	2022-08-31 16:30	Yes	Caribou	1	Feeding	N/A	80	98	West	No		-96.15765	65.03248			No	Not Exceeded	
Incidental	2022-08-31 16:43	Yes	Caribou	2	Feeding	N/A	200	88	East	No		-96.2206	64.95809			No	Not Exceeded	
Incidental	2022-08-31 16:55	Yes	Caribou	1	Walking	N/A	125	80	East	No		-96.30624	64.91707			No	Not Exceeded	
Incidental	2022-08-31 17:46	Yes	Muskox	14	Resting	N/A	350	42	West	No		-96.2949	64.62757			No	Exceeded	Speed restriction put in place.
Road	2022-09-01 7:02	Yes	Muskox	1	Feeding	N	450	5	West	No		-95.99998	64.35657			No	Not Exceeded	
Road	2022-09-01 7:02	Yes	Caribou	5	Feeding	N	150	59	West	No		-96.37059	64.74953			No	Not Exceeded	
Road	2022-09-01 7:02	Yes	Muskox	1	Feeding	W	30	89	East	No		-96.21956	64.96744			No	Not Exceeded	
Road	2022-09-01 7:02	Yes	Caribou	4	Resting	N/A	100	103	East	No		-96.11079	65.0489			No	Not Exceeded	
Incidental	2022-09-01 15:11	Yes	Caribou	1	Feeding	NE	80	106	South	No		-96.08289	65.02713			No	Not Exceeded	
Incidental	2022-09-01 17:08	Yes	Muskox	8	Feeding	N/A	500	16	East	No		-96.06242	64.44628			No	Not Exceeded	
Road	2022-09-02 8:01	Yes	Muskox	17	Resting	N/A	200	12	East	No		-96.02992	64.41394			No	Exceeded	Speed restriction was put in place from 97 to 99 km
Road	2022-09-02 8:01	Yes	Muskox	8	Resting	N/A	500	16	East	No		-96.06242	64.44628			No	Not Exceeded	
Road	2022-09-02 8:01	Yes	Muskox	2	Feeding	N/A	850	43	West	No		-96.3007	64.63477			No	Not Exceeded	
Road	2022-09-02 8:01	Yes	Caribou	1	Feeding	N	25	98	East	No		-96.15765	65.03248			No	Not Exceeded	
Road	2022-09-06 7:04	Yes	Arctic hare	3	Walking	S	1	105	East	Yes		-96.08773	65.03413			No	Not Exceeded	
Road	2022-09-07 6:37	Yes	Muskox	1	Walking	NW	85	6	West	No		-96.00083	64.36427			No	Not Exceeded	
Road	2022-09-07 6:37	Yes	Muskox	15	Feeding	N/A	120	11	East	No		-96.02386	64.40539			No	Exceeded	Speed restriction was implemented from Km 10 to 12
Road	2022-09-07 6:37	Yes	Muskox	5	Feeding	NW	350	72	West	No		-96.32384	64.85386			No	Not Exceeded	
Road	2022-09-07 6:37	Yes	Caribou	7	Walking	N	1250	75	East	No		-96.33614	64.87946			No	Not Exceeded	
Road	2022-09-08 7:31	Yes	Caribou	2	Feeding	N/A	275	21	East	No		-96.1045	64.48693			No	Not Exceeded	
Road	2022-09-08 7:31	Yes	Muskox	2	Resting	N/A	350	90	West	No		-96.22208	64.97501			No	Not Exceeded	
Incidental	2022-09-08 12:55	Yes	Muskox	1	Feeding	N	55	95	West	No		-96.19522	65.01286			No	Not Exceeded	
Incidental	2022-09-08 13:06	Yes	Muskox	3	Feeding	N/A	8	89	East	No		-96.21956	64.96744			No	Not Exceeded	
Incidental	2022-09-08 14:51	Yes	Muskox	1	Walking	N	500	12	East	No		-96.02992	64.41394			No	Not Exceeded	
Road	2022-09-09 7:20	Yes	Muskox	2	Resting	N/A	325	18	East	No		-96.0824	64.46103			No	Not Exceeded	
Road	2022-09-09 7:20	Yes	Muskox	6	Feeding	N/A	400	20	East	No		-96.09597	64.47868			No	Not Exceeded	
Road	2022-09-09 7:20	Yes	Caribou	1	Walking	E	80	111	East	No		-96.02402	65.04815			No	Not Exceeded	
Incidental	2022-09-09 14:52	Yes	Muskox	6	Resting	N/A	200	101	East	No		-96.14029	65.05669			No	Not Exceeded	
Incidental	2022-09-09 15:05	Yes	Peregrine falcon	3	Flying	N/A	80	93	West	No		-96.22197	65.00077			No	Not Exceeded	
Incidental	2022-09-09 16:12	Yes	Muskox	1	Feeding	N/A	75	43	West	No		-96.3007	64.63477			No	Not Exceeded	
Incidental	2022-09-09 16:32	Yes	Muskox	9	Resting	N/A	550	25	West	No		-96.14948	64.5142			No	Not Exceeded	
Road	2022-09-10 6:55	Yes	Muskox	1	Feeding	N/A	3	43	East	No		-96.3007	64.63477			No	Not Exceeded	
Road	2022-09-10 6:55	Yes	Muskox	13	Resting	N/A	100	53	West	No		-96.37309	64.70606			No	Not Exceeded	
Other	2022-09-11 10:08	Yes	Caribou	5	Feeding	S	40	106	West	No		-96.08289	65.02713			No	Not Exceeded	
Other	2022-09-11 10:08	Yes	Muskox	1	Resting	N/A	100	89	East	No		-96.21956	64.96744			No	Not Exceeded	
Other	2022-09-11 10:08	Yes	Snow goose	200	Feeding	N/A	30	88	West	No		-96.2206	64.95809			No	Not Exceeded	
Other	2022-09-11 10:08	Yes	Muskox	5	Resting	N/A	200	84	West	No		-96.28276	64.9366			No	Not Exceeded	
Other	2022-09-11 10:08	Yes	Caribou	1	Feeding	N/A	250	84	West	No		-96.28276	64.9366			No	Not Exceeded	
Other	2022-09-11 10:08	Yes	Snow goose	400	Feeding	N/A	200	81	East	No		-96.30208	64.92518			No	Not Exceeded	
Other	2022-09-11 10:08	Yes	Muskox	18	Walking	S	800	52	West	No		-96.37745	64.70086			No	Exceeded	Speed restriction was implemented
Road	2022-09-12 12:57	Yes	Caribou	25	Foraging	S	400	58	East	No		-96.35794	64.74165			No	Not Exceeded	
Road	2022-09-12 13:37	Yes	Caribou	19	Foraging	NW	400	27	East	No		-96.16125	64.53222			No	Not Exceeded	
Road	2022-09-12 13:37	Yes	Caribou	2	Foraging	N	300	42	East	No		-96.2949	64.62757			No	Not Exceeded	
Road	2022-09-12 13:37	Yes	Caribou	6	Foraging	N	200	53	West	No		-96.37309	64.70606			No	Not Exceeded	
Road	2022-09-12 13:37	Yes	Caribou	12	Foraging	SW	100	58	West	Yes		-96.35794	64.74165			No	Not Exceeded	
Road	2022-09-12 13:37	Yes	Caribou	23	Foraging	N	500	32	East	No		-96.20446	64.56469			No	Not Exceeded	
Road	2022-09-12 13:37	Yes	Caribou	8	Foraging	N	600	30	East	No		-96.19577	64.55431			No	Not Exceeded	
Road	2022-09-12 13:37	Yes	Caribou	98	Foraging	N	400	15	East	No		-96.0525	64.43981			No	Exceeded	HTO implemented a speed restriction
Road	2022-09-13 13:23	Yes	Caribou	15	Foraging	N	100	76100	East	No		-96.07335	65.02124			No	Not Exceeded	
Road	2022-09-13 13:23	Yes	Caribou	11	Foraging	S	300	69	East	No		-96.31427	64.82772			No	Not Exceeded	
Road	2022-09-13 13:23	Yes	Caribou	13	Foraging	E	300	61	East	No		-96.35467	64.76327			No	Not Exceeded	
Road	2022-09-13 14:41	Yes	Caribou	66	Foraging	N	200	29	East	No		-96.18125	64.54733			No	Exceeded	HTO implemented a speed restriction
Road	2022-09-13 14:41	Yes	Caribou	101	Walking	SW	100	15	West	Yes		-96.0525	64.43981			No	Exceeded	HTO implemented a speed restriction
Road	2022-09-14 16:34	Yes	Caribou	17	Foraging	S	500	20	East	No		-96.09597	64.47868			No	Not Exceeded	
Road	2022-09-14 16:34	Yes	Caribou	13	Foraging	N	500	22	East	No		-96.11256	64.4935			No	Not Exceeded	
Road	2022-09-14 16:34	Yes	Caribou	3	Foraging	S	100	73	East	No		-96.32423	64.86213			No	Not Exceeded	
Road	2022-09-14 16:34	Yes	Caribou	45	Walking	SW												

Table A-1: Wildlife Observations along the All Weather Access Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2022-09-17 7:40	Yes	Caribou	2	Trotting/running	E	400	34	East	No		-96.24047	64.56875			No	Not Exceeded	
Road	2022-09-18 8:16	Yes	Caribou	2	Walking	W	0	102	Both	Yes		-96.12783	65.0517			No	Not Exceeded	
Road	2022-09-18 8:16	Yes	Caribou	30	Foraging	E	700	29	East	Deflection		-96.18125	64.54733			No	Exceeded	ATV's disturbed the group and they got spread out
Road	2022-09-18 8:16	Yes	Wolf	4	Foraging	N/A	990	45	East	No		-96.31336	64.65243			No	Not Exceeded	
Road	2022-09-18 8:16	Yes	Caribou	2	Walking	N	150	75	East	No		-96.33614	64.87946			No	Not Exceeded	
Road	2022-09-18 8:16	Yes	Caribou	1	Foraging	N/A	900	85	East	No		-96.26143	64.93886			No	Not Exceeded	
Road	2022-09-18 8:16	Yes	Muskox	1	Walking	W	0	88	East	Yes		-96.2206	64.95809			No	Not Exceeded	
Road	2022-09-18 8:16	Yes	Caribou	1	Foraging	N/A	300	88	East	No		-96.2206	64.95809			No	Not Exceeded	
Road	2022-09-19 10:32	Yes	Muskox	29	Resting	N/A	1000	39	West	No		-96.27514	64.59586			No	Exceeded	Speed restriction put in place.
Road	2022-09-19 10:32	Yes	Caribou	3	Foraging	N/A	300	108	East	No		-96.08468	65.02733			No	Not Exceeded	
Road	2022-09-20 10:40	Yes	Caribou	3	Walking	S	100	50	West	No		-96.3731	64.67942			No	Not Exceeded	
Road	2022-09-20 10:40	Yes	Caribou	6	Foraging	S	50	105	East	No		-96.08773	65.03413			No	Not Exceeded	
Road	2022-09-20 10:40	Yes	Caribou	2	Foraging	NW	300	76	East	No		-96.34565	64.88789			No	Not Exceeded	
Road	2022-09-20 15:16	No					NA					NA	NA					
Road	2022-09-21 13:38	Yes	Caribou	4	Foraging	E	1000	39	East	No		-96.27514	64.59586			No	Not Exceeded	
Road	2022-09-21 13:38	Yes	Caribou	6	Running	E	20	49	East	No		-96.37072	64.6688			No	Not Exceeded	
Road	2022-09-21 13:38	Yes	Caribou	10	Foraging	N	200	51	East	No		-96.37907	64.69323			No	Not Exceeded	
Road	2022-09-21 13:38	Yes	Caribou	5	Foraging	N	100	60	West	No		-96.36363	64.75548			No	Not Exceeded	
Road	2022-09-22 8:57	Yes	Wolf	3	Walking	S	1200	61	East	No		-96.35467	64.76327			No	Not Exceeded	
Road	2022-09-22 8:57	Yes	Muskox	20	Resting	N/A	300	49	West	No		-96.37072	64.6688			No	Exceeded	Speed restriction implemented
Road	2022-09-22 8:57	Yes	Caribou	11	Foraging	NE	120	36	East	No		-96.26192	64.58043			No	Not Exceeded	
Road	2022-09-25 13:07	Yes	Ptarmigan	25	Foraging	N/A	300	9	East	No		-96.0143	64.38902			No	Not Exceeded	
Road	2022-09-25 13:07	Yes	Muskox	25	Resting	N/A	2000	20	East	No		-96.09597	64.47868			No	Exceeded	More than 1.5km from the road. None needed
Road	2022-09-25 13:07	Yes	Caribou	40	Foraging	W	1100	44	East	No		-96.30352	64.64171			No	Not Exceeded	
Road	2022-09-25 13:07	Yes	Caribou	31	Foraging	N/A	1000	70	East	No		-96.31652	64.83649			No	Not Exceeded	
Road	2022-09-25 13:07	Yes	Arctic fox	2	Walking	N	30	75	East	No		-96.33614	64.87946			No	Not Exceeded	
Road	2022-09-25 13:07	Yes	Muskox	20	Foraging	N/A	800	94	West	No		-96.21269	65.00751			No	Exceeded	Partial closure due to caribou.
Road	2022-09-27 8:05	No					NA					NA	NA					
Incidental	2022-09-27 14:09	Yes	Muskox	2	Resting	N/A	50	94	West	No		-96.21269	65.00751			No	Not Exceeded	
Road	2022-09-28 9:17	Yes	Caribou	9	Foraging	E	300	41	East	No		-96.28113	64.62028			No	Not Exceeded	
Road	2022-09-28 9:17	Yes	Caribou	52	Foraging	S	2000	60	East	No		-96.36363	64.75548			No	Not Exceeded	
Road	2022-09-28 9:17	Yes	Caribou	67	Resting	W	300	46	East	No		-96.32957	64.65622			No	Not Exceeded	
Road	2022-09-29 7:33	Yes	Muskox	4	Feeding	W	45	95	West	No		-96.19522	65.01286			No	Not Exceeded	
Incidental	2022-09-29 11:22	Yes	Caribou	1	Dead	N/A	0	67		No	No bullet hole was seen. A bit of blood coming out of his mouth. Seem to have something weird with his behind, black matter and flesh was seen	-96.3262	64.81233		Unknown - The night road crew saw a dead caribou on the road they moved it on the side of the road. The next morning the environment crew brought the caribou to Russel. For now the death of the caribou is unknown. Waiting for russel investigation	No	Not Exceeded	
Incidental	2022-09-29 11:32	Yes	Caribou	14	Walking	N	1000	30	East	No		-96.19577	64.55431			No	Not Exceeded	
Road	2022-09-30 7:30	Yes	Muskox	4	Feeding	N/A	30	95	East	No		-96.19522	65.01286			No	Not Exceeded	
Road	2022-09-30 7:30	Yes	Muskox	1	Feeding	N/A	15	93	West	No		-96.22197	65.00077			No	Not Exceeded	
Incidental	2022-09-30 13:14	Yes	Snowy owl	1	Standing	Not Recorded	70	54	East	No		-96.35835	64.71319			No	Not Exceeded	
Incidental	2022-09-30 13:29	Yes	Caribou	7	Feeding	N/A	1500	61	East	No		-96.35467	64.76327			No	Not Exceeded	
Road	2022-10-01 7:24	Yes	Muskox	4	Foraging	N/A	100	95	East	No		-96.19522	65.01286			No	Not Exceeded	
Road	2022-10-01 7:24	Yes	Caribou	30	Foraging	N/A	3000	63	East	No		-96.34437	64.77932			No	Not Exceeded	
Road	2022-10-02 8:03	No					NA					NA	NA					
Incidental	2022-10-02 12:08	Yes	Caribou	5	Feeding	S	600	60		No		-96.36363	64.75548			No	Not Exceeded	
Road	2022-10-03 8:12	Yes	Muskox	3	Feeding	Not Recorded	20	98	West	No		-96.15765	65.03248			No	Not Exceeded	
Road	2022-10-03 8:12	Yes	Caribou	12	Walking	E	700	67	East	No		-96.3262	64.81233			No	Not Exceeded	
Road	2022-10-03 8:12	Yes	Caribou	32	Feeding	Not Recorded	300	66	East	No		-96.33501	64.80451			No	Not Exceeded	
Road	2022-10-03 8:12	Yes	Caribou	30	Feeding	Not Recorded	800	60	East	No		-96.36363	64.75548			No	Not Exceeded	
Road	2022-10-03 8:12	Yes	Caribou	59	Lying Down	Not Recorded	200	58	East	No		-96.35794	64.74165			No	Not Exceeded	
Road	2022-10-03 8:12	Yes	Caribou	128	Walking	N	150	57	East	No		-96.36013	64.73137			No	Exceeded	Road Closed
Road	2022-10-03 8:12	Yes	Caribou	26	Walking	NE	200	55	East	No		-96.34597	64.71855			No	Not Exceeded	
Road	2022-10-03 8:12	Yes	Caribou	30	Walking	N	150	54	East	No		-96.35835	64.71319			No	Not Exceeded	
Road	2022-10-03 8:12	Yes	Caribou	92	Walking	N	200	26	East	No		-96.16146	64.52353			No	Not Exceeded	
Road	2022-10-03 8:12	Yes	Caribou	54	Feeding	N	900	23	East	No		-96.12442	64.50056			No	Not Exceeded	
Road	2022-10-03 8:12	Yes	Caribou	96	Walking	W	1000	15	East	No		-96.0525	64.43981			No	Not Exceeded	
Road	2022-10-04 10:55	Yes	Caribou	28	Running	E	3000	21	East	No	Running away from hunters	-96.1045	64.48693			No	Not Exceeded	
Road	2022-10-04 10:55	Yes	Caribou	224	Feeding	N/A	1000	32	East	No		-96.20446	64.56469			No	Exceeded	Road was closed
Road	2022-10-04 10:55	Yes	Caribou	16	Feeding	N	400	58	East	No		-96.35794	64.74165			No	Not Exceeded	
Road	2022-10-04 10:55	Yes	Caribou	16	Walking	N	1500	67	East	No		-96.3262	64.81233			No	Not Exceeded	
Road	2022-10-04 10:55	Yes	Caribou	49	Walking	S	700	70	East	No		-96.31652	64.83649			No	Not Exceeded	
Road	2022-10-04 10:55	Yes	Caribou	48	Walking	N	700	69	East	No		-96.31427	64.82772			No	Not Exceeded	
Incidental	2022-10-05 7:31	Yes	Caribou	250	Feeding	W	50	78	East	No		-96.32437	64.90319			No	Exceeded	Road was already closed
Incidental	2022-10-05 7:36	Yes	Caribou	21	Feeding	W	200	72	East	No		-96.32384	64.85386			No	Not Exceeded	
Incidental	2022-10-05 7:38	Yes	Caribou	12	Feeding	W	300	71	East	No		-96.3197	64.84471			No	Not Exceeded	
Incidental	2022-10-05 7:42	Yes	Caribou	35	Feeding	W	400	69	East	No		-96.31427	64.82772			No	Not Exceeded	

Table A-1: Wildlife Observations along the All Weather Access Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2022-10-05 8:23	Yes	Caribou	9	Feeding	W	500	29	East	No		-96.18125	64.54733			No	Not Exceeded	
Incidental	2022-10-05 8:58	Yes	Caribou	16	Feeding	W	400	16	East	No		-96.06242	64.44628			No	Not Exceeded	
Road	2022-10-05 15:04	Yes	Caribou	1	Alert	N/A	400	21	West	No		-96.1045	64.48693			No	Not Exceeded	
Road	2022-10-05 15:04	Yes	Caribou	42	Walking	NW	500	50	East	No		-96.3731	64.67942			No	Not Exceeded	
Road	2022-10-05 15:04	Yes	Caribou	57	Feeding	N/A	400	76	East	No		-96.34565	64.88789			No	Not Exceeded	
Road	2022-10-05 15:04	Yes	Muskox	5	Feeding	N/A	50	97	East	No		-96.17115	65.02594			No	Not Exceeded	
Road	2022-10-05 15:04	Yes	Muskox	7	Resting	N/A	125	98	West	No		-96.15765	65.03248			No	Not Exceeded	
Road	2022-10-06 6:33	Yes	Caribou	118	Running	W	1000	75	East	No		-96.33614	64.87946			No	Exceeded	Road was already closed
Road	2022-10-06 6:33	Yes	Caribou	80	Walking	W	600	61	West	No		-96.35467	64.76327			No	Not Exceeded	
Road	2022-10-06 6:33	Yes	Caribou	169	Walking	W	40	58	West	No		-96.35794	64.74165			No	Exceeded	Road was already closed
Road	2022-10-06 6:33	Yes	Caribou	43	Feeding	Not Recorded	400	50	East	No		-96.3731	64.67942			No	Not Exceeded	
Road	2022-10-07 7:23	Yes	Caribou	2	Walking	E	250	70	East	No		-96.31652	64.83649			No	Not Exceeded	
Road	2022-10-07 7:23	Yes	Caribou	66	Feeding	N/A	1000	69	East	No		-96.31427	64.82772			No	Not Exceeded	
Road	2022-10-07 7:23	Yes	Caribou	6	Feeding	N/A	800	67	East	No		-96.3262	64.81233			No	Not Exceeded	
Road	2022-10-07 7:23	Yes	Caribou	11	Walking	N	900	65	East	No		-96.34062	64.7948			No	Not Exceeded	
Road	2022-10-07 7:23	Yes	Caribou	84	Feeding	S	600	60	East	No		-96.36363	64.75548			No	Not Exceeded	
Road	2022-10-07 7:23	Yes	Caribou	72	Walking	S	200	51	East	No		-96.37907	64.69323			No	Not Exceeded	
Road	2022-10-07 7:23	Yes	Caribou	260	Walking	E	1200	20	East	No		-96.09597	64.47868			No	Exceeded	Road already closed
Road	2022-10-07 7:23	Yes	Caribou	104	Foraging	NW	1500	15	East	No		-96.0525	64.43981			No	Not Exceeded	
Road	2022-10-07 7:23	Yes	Caribou	5	Feeding	S	100	12	East	No		-96.02992	64.41394			No	Not Exceeded	
Road	2022-10-08 6:56	Yes	Caribou	12	Feeding	N/A	100	77	West	No		-96.33908	64.89511			No	Not Exceeded	
Road	2022-10-08 6:56	Yes	Caribou	10	Feeding	E	700	65	East	No		-96.34062	64.7948			No	Not Exceeded	
Road	2022-10-08 6:56	Yes	Caribou	14	Alert	E	50	60	West	Yes		-96.36363	64.75548			No	Not Exceeded	
Road	2022-10-08 6:56	Yes	Caribou	5	Running	S	500	54	East	No	Running from a fox chasing them	-96.35835	64.71319			No	Not Exceeded	
Road	2022-10-08 6:56	Yes	Caribou	294	Walking	W	160	48	East	Yes		-96.36878	64.66417			No	Exceeded	Road already closed
Road	2022-10-08 6:56	Yes	Caribou	203	Walking	S	900	15	East	No		-96.0525	64.43981			No	Exceeded	Road already closed
Road	2022-10-09 6:22	Yes	Wolf	14	Feeding	E	150	70	East	No		-96.31652	64.83649			No	Not Exceeded	
Road	2022-10-09 6:22	Yes	Caribou	96	Walking	N	100	61	East	No		-96.35467	64.76327			No	Not Exceeded	
Road	2022-10-09 6:22	Yes	Caribou	49	Walking	NE	500	47	East	No		-96.34656	64.65799			No	Not Exceeded	
Road	2022-10-09 6:22	Yes	Caribou	15	Standing	E	200	17	East	No		-96.07705	64.45326			No	Not Exceeded	
Road	2022-10-10 8:16	Yes	Caribou	33	Feeding	NE	400	77	East	No		-96.33908	64.89511			No	Not Exceeded	
Road	2022-10-11 8:50	Yes	Muskox	1	Resting	N/A	150	86	East	No		-96.2528	64.94684			No	Not Exceeded	
Road	2022-10-11 8:50	Yes	Caribou	4	Walking	NW	160	33	West	No		-96.21631	64.57146			No	Not Exceeded	
Road	2022-10-11 8:50	Yes	Caribou	5	Walking	W	300	21	West	No		-96.1045	64.48693			No	Not Exceeded	
Incidental	2022-10-11 13:39	Yes	Caribou	8	Foraging	N/A	160	42	West	No		-96.2949	64.62757			No	Not Exceeded	
Incidental	2022-10-11 15:01	Yes	Caribou	1	Walking	N	180	85	East	No		-96.26143	64.93886			No	Not Exceeded	
Road	2022-10-12 8:04	Yes	Caribou	10	Walking	W	350	77	West	No		-96.33908	64.89511			No	Not Exceeded	
Road	2022-10-12 8:04	Yes	Caribou	2	Walking	W	475	59	West	No		-96.37059	64.74953			No	Not Exceeded	
Road	2022-10-12 8:04	Yes	Caribou	18	Walking	W	250	6	West	No		-96.00083	64.36427			No	Not Exceeded	
Road	2022-10-13 1:49	Yes	Caribou	30	Foraging	W	250	72	West	No		-96.32384	64.85386			No	Not Exceeded	
Road	2022-10-13 1:49	Yes	Caribou	1	Walking	N	350	78	West	No		-96.32437	64.90319			No	Not Exceeded	
Road	2022-10-13 1:49	Yes	Muskox	12	Resting	N/A	550	96	West	No		-96.18089	65.0181			No	Not Exceeded	
Road	2022-10-14 15:09	No					NA					NA	NA					
Road	2022-10-16 16:11	Yes	Caribou	200	Foraging	E	2	18	Both	Yes		-96.0824	64.46103			No	Exceeded	Road closed
Road	2022-10-16 16:11	Yes	Muskox	14	Foraging	N/A	400	93	East	No		-96.22197	65.00077			No	Exceeded	Speed restriction put in place
Road	2022-10-17 9:40	Yes	Muskox	12	Walking	SE	300	93	West	No		-96.22197	65.00077			not applicable	Not Exceeded	
Road	2022-10-18 8:07	Yes	Muskox	15	Foraging	NE	150	91	West	No		-96.22486	64.98469			No	Exceeded	Speed restriction put in place
Road	2022-10-18 8:07	Yes	Caribou	100	Walking	N	150	38	East	No		-96.27582	64.59073			No	Not Exceeded	
Road	2022-10-19 10:08	Yes	Caribou	62	Foraging	NW	300	49	East	No		-96.37072	64.6688			No	Not Exceeded	
Road	2022-10-19 10:08	Yes	Caribou	3	Walking	E	30	88	East	No		-96.2206	64.95809			No	Not Exceeded	
Road	2022-10-21 12:05	Yes	Caribou	199	Foraging	NW	350	41	East	Deflection		-96.28113	64.62028			No	Exceeded	Road closed
Road	2022-10-22 8:00	Yes	Caribou	130	Walking	NW	2000	47	East	No		-96.34656	64.65799			No	Exceeded	Road Closed / Group is more than 1.5 KM away
Road	2022-10-22 8:00	Yes	Caribou	200	Foraging	NW	190	69	West	Deflection		-96.31427	64.82772			No	Exceeded	Close the road
Road	2022-10-23 8:25	Yes	Caribou	4	Foraging	SE	400	69	East	No		-96.31427	64.82772			No	Not Exceeded	
Road	2022-10-23 8:25	Yes	Caribou	150	Walking	W	250	46	East	No		-96.32957	64.65622			No	Exceeded	Road Closed
Road	2022-10-23 8:25	Yes	Caribou	310	Walking	W	0	60	Both	Yes		-96.36363	64.75548			No	Exceeded	Road Closed
Road	2022-10-24 7:36	Yes	Caribou	1	Alert	S	600	63	East	No		-96.34437	64.77932			No	Not Exceeded	
Incidental	2022-10-24 12:28	Yes	Caribou	12	Resting	N/A	400	42	East	No		-96.2949	64.62757			No	Not Exceeded	
Road	2022-10-25 13:48	Yes	Caribou	2	Foraging	S	500	59	East	No		-96.37059	64.74953			No	Not Exceeded	
Road	2022-10-25 14:35	Yes	Caribou	28	Walking	N	500	25	East	No		-96.14948	64.5142			No	Not Exceeded	
Road	2022-10-25 14:35	Yes	Caribou	9000	Walking	N	50	2	East	No		-95.97432	64.33258			No	Exceeded	Road closed
Road	2022-10-26 9:28	Yes	Caribou	402	Foraging	NW	100	1	East	No		-95.9717	64.32525			No	Exceeded	Road closed
Road	2022-10-26 9:28	Yes	Caribou	1	Walking	N	200	12	East	No		-96.02992	64.41394			No	Not Exceeded	
Road	2022-10-26 9:28	Yes	Caribou	2200	Foraging	W	40	1	East	No		-95.9717	64.32525			No	Exceeded	Road closed
Road	2022-10-26 9:28	Yes	Caribou	8	Foraging	S	300	8	East	No		-96.01547	64.38131			No	Not Exceeded	
Road	2022-10-26 9:28	Yes	Caribou	142	Walking	N	50	5	East	No		-95.99998	64.35657			not applicable	Exceeded	Road closed
Road	2022-10-26 9:28	Yes	Caribou	4000	Walking	W	5	5	Both	Yes		-95.99998	64.35657			No	Exceeded	Road closed
Road	2022-10-26 9:28	Yes	Caribou	55	Foraging	N	100	9	East	No		-96.0143	64.38902			No	Not Exceeded	
Road	2022-10-27 13:55	Yes	Muskox	5	Lying Down	N/A	10	89	East	No		-96.21956	64.96744			No	Not Exceeded	
Road	2022-10-27 13:55	Yes	Caribou	20	Running	S	300	85	East	No		-96.26143	64.93886			No	Not Exceeded	
Road	2022-10-27 13:55	Yes	Caribou	3	Walking	W	400	78	West	No		-96.32437	64.90319			No	Not Exceeded	
Road	2022-10-27 13:55	Yes	Caribou	1	Feeding	N/A	300	66	East	No		-96.33501	64.80451			No	Not Exceeded	
Road	2022-10-27 13:55	Yes	Caribou	420	Walking	W	0	19	Both	Yes		-96.0866	64.4702			No	Exceeded	Road closed
Road	2022-10-27 13:55	Yes	Caribou	210	Lying Down	N/A	0	14	Both	Yes	About 20 of them crossed from west to east	-96.043	64.43121			No	Exceeded	Road closed
Road	2022-10-27 13:55	Yes	Caribou	310	Walking	N	200	11	East	No		-96.02386	64.40539			No	Exceeded	Road closed
Road	2022-10-27 13:55	Yes	Caribou	200	Feeding	N/A	150	8	East	No		-96.01547	64.38131			No	Exceeded	Road closed
Road	2022-10-27 13:55	Yes	Caribou	3	Walking	N	800	2	East	No		-95.97432	64.33258			No	Not Exceeded	
Road	2022-10-27 13:55	Yes	Caribou	56	Feeding	N/A	1000	0	East	No		-95.971	64.32312			No	Not Exceeded	
Road	2022-10-28 13:20	Yes	Caribou	31	Feeding	N/A	1000	81	East	N/A		-96.30208	64.92518			No	Not Exceeded	
Road	2022-10-28 13:20	Yes	Caribou	220	Walking	N	284	24	East	No		-96.13651	64.50789			No	Exceeded	Road is already close
Road	2022-10-28 13:20	Yes	Muskox	7	Standing	N/A	112	24	West	N/A		-96.13651	64.50789			No	Not Exceeded	

Table A-1: Wildlife Observations along the All Weather Access Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2022-10-28 13:20	Yes	Caribou	54	Walking	N	273	22	East	N/A		-96.11256	64.4935			No	Not Exceeded	
Road	2022-10-28 13:20	Yes	Caribou	162	Walking	N	202	21	East	No		-96.1045	64.48693			No	Exceeded	Road is already close
Road	2022-10-28 13:20	Yes	Caribou	46	Resting	N/A	794	15	East	N/A		-96.0525	64.43981			No	Not Exceeded	
Road	2022-10-28 13:20	Yes	Caribou	7	Feeding	N/A	276	13	East	N/A		-96.03681	64.42344			No	Not Exceeded	
Road	2022-10-28 13:20	Yes	Caribou	134	Walking	N	437	12	East	N/A		-96.02992	64.41394			No	Exceeded	Road already closed
Road	2022-10-29 9:15	Yes	Caribou	50	Foraging	E	200	71	East	No		-96.3197	64.84471			No	Not Exceeded	
Road	2022-10-29 9:15	Yes	Caribou	160	Walking	N	800	44	East	No		-96.30352	64.64171			No	Exceeded	Road closed
Road	2022-10-29 9:15	Yes	Caribou	165	Walking	NW	300	10	East	No		-96.01786	64.3971			No	Exceeded	Road closed
Road	2022-10-29 9:15	Yes	Caribou	48	Resting	N/A	100	8	East	No		-96.01547	64.38131			No	Not Exceeded	
Road	2022-10-30 8:13	Yes	Muskox	5	Lying Down	N/A	150	89	East	No		-96.21956	64.96744			No	Not Exceeded	
Road	2022-10-30 8:13	Yes	Caribou	35	Walking	W	600	67	East	No		-96.3262	64.81233			No	Not Exceeded	
Road	2022-10-30 8:13	Yes	Caribou	155	Walking	W	400	61	East	No		-96.35467	64.76327			No	Exceeded	Road Closed
Road	2022-10-30 8:13	Yes	Caribou	2	Standing	Not Recorded	600	32	East	No		-96.20446	64.56469			No	Not Exceeded	
Road	2022-10-30 8:13	Yes	Caribou	43	Walking	NW	1800	23	East	No		-96.12442	64.50056			No	Not Exceeded	
Road	2022-10-30 8:13	Yes	Caribou	51	Standing	Not Recorded	1000	11	East	No		-96.02386	64.40539			No	Not Exceeded	
Road	2022-10-30 8:13	Yes	Caribou	34	Walking	NE	600	2	East	No		-95.97432	64.33258			No	Not Exceeded	
Incidental	2022-10-30 13:41	Yes	Caribou	5	Walking	S	900	78	East	No		-96.32437	64.90319			No	Not Exceeded	
Incidental	2022-10-30 14:42	Yes	Caribou	310	Walking	NE	2500	65	East	No		-96.34062	64.7948			No	Exceeded	Road Closed / Group is more than 1.5 KM away
Road	2022-10-31 8:26	No					NA					NA	NA					
Road	2022-11-01 10:10	Yes	Caribou	50	Walking	NE	300	79	East	No		-96.31492	64.90953			No	Not Exceeded	
Road	2022-11-01 10:10	Yes	Caribou	15	Trotting/running	N	400	77	East	No		-96.33908	64.89511			No	Not Exceeded	
Road	2022-11-01 10:10	Yes	Caribou	16	Foraging	N/A	100	47	East	No		-96.34656	64.65799			No	Not Exceeded	
Road	2022-11-02 8:45	Yes	Caribou	236	Walking	S	600	92	East	No		-96.22191	64.99435			No	Exceeded	Road closure
Road	2022-11-02 8:45	Yes	Caribou	21	Walking	N	400	79	East	No		-96.31492	64.90953			No	Not Exceeded	
Road	2022-11-02 8:45	Yes	Caribou	8	Feeding	N/A	700	76	East	No		-96.34565	64.88789			No	Not Exceeded	
Incidental	2022-11-02 15:24	Yes	Caribou	124	Walking	W	500	81	East	Yes		-96.30208	64.92518			No	Exceeded	Closed the roadStopped all traffic and closed the road.
Incidental	2022-11-02 15:27	Yes	Caribou	338	Walking	W	0	81	East	Yes		-96.30208	64.92518			not applicable	Exceeded	Road closureStopped all traffic and closed the road.
Incidental	2022-11-02 16:27	Yes	Caribou	87	Walking	W	500	83	East	Yes		-96.30111	64.935			No	Not Exceeded	
Incidental	2022-11-02 16:35	Yes	Caribou	76	Walking	SW	500	86	East	No		-96.2528	64.94684			No	Not Exceeded	
Road	2022-11-03 8:25	Yes	Caribou	26	Lying Down	N/A	1000	86	East	No		-96.2528	64.94684			No	Not Exceeded	
Road	2022-11-03 8:25	Yes	Caribou	36	Standing	N	250	72	East	No		-96.32384	64.85386			No	Not Exceeded	
Road	2022-11-03 8:25	Yes	Caribou	4	Walking	E	400	69	East	No		-96.31427	64.82772			No	Not Exceeded	
Road	2022-11-04 10:12	Yes	Caribou	7	Walking	E	600	87	East	No		-96.24102	64.9542			No	Not Exceeded	
Road	2022-11-04 10:12	Yes	Muskox	36	Lying Down	Not Recorded	100	47	West	No		-96.34656	64.65799			No	Exceeded	Speed restriction was put in place at 46 to 48 and removed at 14:10
Incidental	2022-11-04 13:57	Yes	Caribou	5	Standing	Not Recorded	10	10	East	No	Km 10 600m east side standing.	-96.01786	64.3971			No	Not Exceeded	
Incidental	2022-11-04 13:57	Yes	Caribou	18	Walking	N	1200	63	East	No	Km 63 1200m east walking north.	-96.34437	64.77932			No	Not Exceeded	
Incidental	2022-11-04 13:57	Yes	Caribou	22	Walking	S	1100	78	East	No	Km 78 east walking south 1100m.	-96.32437	64.90319			No	Not Exceeded	
Road	2022-11-05 8:23	Yes	Caribou	7	Walking	E	400	24	East	No		-96.13651	64.50789			No	Not Exceeded	
Road	2022-11-08 6:36	Yes	Caribou	270	Walking	W	0	9	Both	Yes		-96.0143	64.38902			No	Exceeded	Road closure
Road	2022-11-08 6:36	Yes	Caribou	3	Walking	W	700	6	East	No		-96.00083	64.36427			No	Not Exceeded	
Road	2022-11-08 6:36	Yes	Caribou	60	Walking	E	2000	5	East	No		-95.99998	64.35657			No	Not Exceeded	
Road	2022-11-08 8:51	Yes	Muskox	6	Foraging	N/A	500	96	East	No		-96.18089	65.0181			No	Not Exceeded	
Road	2022-11-08 8:51	Yes	Caribou	3	Trotting/running	S	300	91	East	No		-96.22486	64.98469			No	Not Exceeded	
Road	2022-11-08 8:51	Yes	Caribou	8	Walking	S	120	79	East	No		-96.32362	64.90356			No	Not Exceeded	
Road	2022-11-08 8:51	Yes	Caribou	150	Walking	E	120	77	East	No		-96.33908	64.89511			No	Exceeded	Road already closed
Road	2022-11-08 8:51	Yes	Caribou	70	Walking	N	800	27	East	No		-96.16125	64.53222			No	Not Exceeded	
Road	2022-11-09 8:01	Yes	Caribou	3	Walking	W	50	82	East	Yes		-96.31204	64.9306			No	Not Exceeded	
Road	2022-11-09 8:01	Yes	Caribou	36	Walking	N	500	80	East	No		-96.30624	64.91707			No	Not Exceeded	
Road	2022-11-09 8:01	Yes	Caribou	12	Walking	S	800	75	East	No		-96.33614	64.87946			No	Not Exceeded	
Road	2022-11-09 8:01	Yes	Caribou	103	Standing	Not Recorded	300	57	East	No		-96.36013	64.73137			No	Not Exceeded	
Road	2022-11-09 8:01	Yes	Caribou	70	Walking	N	300	6	East	No		-96.00083	64.36427			No	Not Exceeded	
Road	2022-11-10 9:02	Yes	Caribou	21	Walking	NE	2000	73	East	No		-96.32423	64.86213			No	Not Exceeded	
Road	2022-11-10 9:02	Yes	Muskox	12	Foraging	N/A	300	66	West	No		-96.33501	64.80451			No	Not Exceeded	
Road	2022-11-10 9:02	Yes	Caribou	2	Walking	NE	200	31	East	No		-96.19574	64.55426			No	Not Exceeded	
Road	2022-11-10 9:02	Yes	Caribou	6	Foraging	N/A	300	12	East	No		-96.02992	64.41394			No	Not Exceeded	
Incidental	2022-11-10 15:37	Yes	Caribou	60	Not recorded	Not Recorded	700	51	East	N/A		-96.37907	64.69323			No	Not Exceeded	
Incidental	2022-11-10 16:34	Yes	Muskox	66	Not recorded	Not Recorded	200	67	West	N/A		-96.3262	64.81233			No	Exceeded	Speed restriction put into place from KM 66-68
Incidental	2022-11-11 7:31	Yes	Arctic hare	1	Dead	N/A	0	15	East	N/A	On the road.	-96.0525	64.43981		Project-related	No	Not Exceeded	
Incidental	2022-11-11 7:31	Yes	Arctic hare	1	Dead	N/A	0	2	West	N/A	On the road.	-95.97432	64.33258		Project-related	No	Not Exceeded	
Road	2022-11-11 10:15	Yes	Caribou	1	Walking	N	500	82	West	No		-96.31204	64.9306			No	Not Exceeded	
Road	2022-11-11 10:15	Yes	Muskox	43	Resting	N/A	500	24	West	N/A		-96.13651	64.50789			No	Exceeded	Speed restriction km24-25
Road	2022-11-11 10:15	Yes	Muskox	1	Walking	W	60	61	West	No		-96.35467	64.76327			No	Not Exceeded	
Road	2022-11-12 9:43	Yes	Caribou	39	Walking	NE	400	94	East	No		-96.21269	65.00751			No	Not Exceeded	
Road	2022-11-12 9:43	Yes	Caribou	24	Foraging	N/A	500	79	East	No		-96.31492	64.90953			No	Not Exceeded	
Road	2022-11-12 9:43	Yes	Muskox	9	Foraging	N/A	700	74	West	No		-96.33028	64.87523			No	Not Exceeded	
Road	2022-11-12 9:43	Yes	Caribou	25	Foraging	N/A	500	44	East	N/A		-96.30352	64.64171			No	Not Exceeded	
Road	2022-11-12 9:43	Yes	Muskox	39	Foraging	N/A	800	24	West	No		-96.13651	64.50789			No	Exceeded	Speed restriction km24-25
Road	2022-11-12 9:43	Yes	Caribou	350	Walking	N	800	22	East	No		-96.11256	64.4935			No	Exceeded	Closing the road at 11:45 am for all vehicles
Road	2022-11-12 9:43	Yes	Caribou	200	Walking	N	1000	24	East	No		-96.13651	64.50789			No	Exceeded	Road is close since 11:45
Road	2022-11-12 9:43	Yes	Caribou	160	Walking	N	550	23	East	No		-96.12442	64.50056			No	Exceeded	Road is close since 11:45 am
Road	2022-11-12 9:43	Yes	Caribou	220	Walking	N	500	21	East	No		-96.1045	64.48693			No	Exceeded	Road is close since 11:45 am
Road	2022-11-12 9:43	Yes	Caribou	100	Trotting/running	N	10											

Table A-1: Wildlife Observations along the All Weather Access Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2022-11-13 9:36	Yes	Caribou	2000	Walking	NE	0	32	Both	No		-96.20446	64.56469			No	Exceeded	Road is close since the day before
Road	2022-11-13 9:36	Yes	Muskox	29	Resting	N/A	1000	26	West	No		-96.16146	64.52353			No	Exceeded	Road is close
Road	2022-11-13 9:36	Yes	Muskox	32	Resting	N/A	500	25	West	No		-96.14948	64.5142			No	Exceeded	Road is close
Road	2022-11-13 9:36	Yes	Caribou	150	Walking	N	300	21	West	No		-96.1045	64.48693			No	Exceeded	Road is close
Road	2022-11-13 9:36	Yes	Caribou	200	Foraging	N	250	19	East	No		-96.0866	64.4702			No	Exceeded	Road is close
Road	2022-11-13 9:36	Yes	Caribou	400	Walking	N	200	14	East	No		-96.043	64.43121			No	Exceeded	Road is close
Road	2022-11-13 9:36	Yes	Caribou	2000	Walking	W	2000	12	East	No	2 hunters facing north	-96.02992	64.41394			No	Exceeded	Road is close / Group is more than 1.5 KM away
Road	2022-11-14 7:35	Yes	Muskox	1	Foraging	N/A	400	54	West	No		-96.35835	64.71319			No	Not Exceeded	
Road	2022-11-14 7:35	Yes	Caribou	2	Foraging	N/A	250	53	East	No		-96.37309	64.70606			No	Not Exceeded	
Road	2022-11-14 7:35	Yes	Caribou	18	Foraging	NW	100	51	West	No		-96.37907	64.69323			No	Not Exceeded	
Road	2022-11-14 7:35	Yes	Caribou	17	Walking	S	500	48	East	No		-96.36878	64.66417			No	Not Exceeded	
Road	2022-11-14 7:35	Yes	Caribou	3	Walking	N	75	41	East	No		-96.28113	64.62028			No	Not Exceeded	
Road	2022-11-14 7:35	Yes	Caribou	100	Resting	N/A	1500	32	East	No		-96.20446	64.56469			No	Not Exceeded	
Road	2022-11-14 7:35	Yes	Caribou	100	Walking	N	750	30	East	No		-96.19577	64.55431			No	Not Exceeded	
Road	2022-11-14 7:35	Yes	Caribou	60	Walking	N	250	29	East	No		-96.18125	64.54733			No	Not Exceeded	
Road	2022-11-14 7:35	Yes	Caribou	41	Walking	N	1000	26	East	No		-96.16146	64.52353			No	Not Exceeded	
Road	2022-11-14 7:35	Yes	Muskox	70	Resting	N/A	700	25	West	No		-96.14948	64.5142			No	Exceeded	Road closed , speed restriction km23to26 if we reopen
Road	2022-11-14 7:35	Yes	Caribou	210	Walking	N	200	22	East	No		-96.11256	64.4935			No	Exceeded	Road closed, speed restriction km 24 to 20
Road	2022-11-14 7:35	Yes	Caribou	500	Walking	N	100	19	East	No		-96.0866	64.4702			No	Exceeded	Road already closed
Road	2022-11-14 7:35	Yes	Caribou	90	Walking	NE	1500	14	East	No		-96.043	64.43121			No	Not Exceeded	
Road	2022-11-14 7:35	Yes	Caribou	300	Walking	N	1500	13	East	No		-96.03681	64.42344			No	Exceeded	Road already closed
Road	2022-11-14 7:35	Yes	Caribou	18	Walking	NE	50	10	East	No		-96.01786	64.3971			No	Not Exceeded	
Road	2022-11-15 7:40	Yes	Muskox	10	Resting	N/A	200	81	West	No		-96.30208	64.92518			No	Not Exceeded	
Road	2022-11-15 7:40	Yes	Caribou	4	Walking	W	300	76	West	No		-96.34565	64.88789			No	Not Exceeded	
Road	2022-11-15 7:40	Yes	Caribou	3	Resting	N/A	100	69	East	No		-96.31427	64.82772			No	Not Exceeded	
Road	2022-11-15 7:40	Yes	Caribou	300	Foraging	N/A	100	53	East	No		-96.37309	64.70606			No	Exceeded	Road already closed, monitor on the way back
Road	2022-11-15 7:40	Yes	Caribou	1	Dead	N/A	10	50	West	No		-96.3731	64.67942		Project non-related	No	Not Exceeded	
Road	2022-11-15 7:40	Yes	Muskox	50	Foraging	N/A	50	25	West	No		-96.14948	64.5142			No	Exceeded	Road already closed
Road	2022-11-16 8:35	Yes	Muskox	6	Foraging	N/A	200	85	West	No		-96.26143	64.93886			No	Not Exceeded	
Road	2022-11-16 8:35	Yes	Caribou	6	Walking	N	300	69	East	No		-96.31427	64.82772			No	Not Exceeded	
Road	2022-11-16 8:35	Yes	Caribou	700	Walking	N	100	56	East	No		-96.35139	64.72588			No	Exceeded	Road closed already
Road	2022-11-16 8:35	Yes	Caribou	1000	Walking	N	75	51	East	No		-96.37907	64.69323			No	Exceeded	Road already closed
Road	2022-11-16 8:35	Yes	Caribou	40	Foraging	N/A	200	45	East	No		-96.31336	64.65243			No	Not Exceeded	
Road	2022-11-16 8:35	Yes	Caribou	3000	Walking	N	75	43	East	No		-96.3007	64.63477			No	Exceeded	Road is closed. Survey suspended at km43 and turned around after a conversation with HTO saying there is between 10000-15000 caribou between 38 an 15. Survey cancelled and heading back to MBK. To reasses tomorrow
Road	2022-11-17 9:03	Yes	Muskox	1	Foraging	N/A	100	96	East	No		-96.18089	65.0181			No	Not Exceeded	
Road	2022-11-17 9:03	Yes	Caribou	14	Walking	S	100	95	East	No		-96.19522	65.01286			No	Not Exceeded	
Road	2022-11-17 9:03	Yes	Caribou	16	Walking	S	400	93	East	No		-96.22197	65.00077			No	Not Exceeded	
Road	2022-11-17 9:03	Yes	Muskox	4	Foraging	N/A	1000	93	West	No		-96.22197	65.00077			No	Not Exceeded	
Road	2022-11-17 9:03	Yes	Caribou	42	Walking	S	75	92	East	No		-96.22191	64.99435			No	Not Exceeded	
Road	2022-11-17 9:03	Yes	Caribou	250	Standing	N/A	1000	90	East	No		-96.22208	64.97501			No	Exceeded	Rd closed
Road	2022-11-17 9:03	Yes	Caribou	36	Walking	NE	200	88	East	No		-96.2206	64.95809			No	Not Exceeded	
Road	2022-11-17 9:03	Yes	Caribou	31	Standing	N/A	2000	77	East	No		-96.33908	64.89511			No	Not Exceeded	
Road	2022-11-17 9:03	Yes	Caribou	11	Walking	S	200	69	East	No		-96.31427	64.82772			No	Not Exceeded	
Road	2022-11-17 9:03	Yes	Caribou	30	Walking	S	500	61	East	No		-96.35467	64.76327			No	Not Exceeded	
Road	2022-11-17 9:03	Yes	Caribou	290	Standing	N/A	1000	49	East	No		-96.37072	64.6688			No	Exceeded	Road closed
Road	2022-11-17 9:03	Yes	Caribou	100	Walking	NE	300	41	East	No		-96.28113	64.62028			No	Not Exceeded	
Road	2022-11-17 9:03	Yes	Muskox	41	Standing	N/A	500	29	West	No		-96.18125	64.54733			No	Exceeded	Road closed
Road	2022-11-17 9:03	Yes	Caribou	2	Walking	NE	100	21	East	No		-96.1045	64.48693			No	Not Exceeded	
Road	2022-11-18 8:40	Yes	Muskox	5	Feeding	N/A	50	93	West	No		-96.22197	65.00077			No	Not Exceeded	
Road	2022-11-18 8:40	Yes	Muskox	1	Standing	N/A	1000	91	East	No		-96.22486	64.98469			No	Not Exceeded	
Road	2022-11-18 8:40	Yes	Caribou	74	Walking	SW	100	81	East	No		-96.30208	64.92518			No	Not Exceeded	
Road	2022-11-18 8:40	Yes	Caribou	52	Standing	N/A	1000	80	East	No		-96.30624	64.91707			No	Not Exceeded	
Road	2022-11-18 8:40	Yes	Caribou	45	Standing	N/A	100	69	East	No		-96.31427	64.82772			No	Not Exceeded	
Road	2022-11-18 8:40	Yes	Caribou	31	Standing	N/A	300	67	East	No		-96.3262	64.81233			No	Not Exceeded	
Road	2022-11-18 8:40	Yes	Caribou	40	Standing	N/A	40	58	East	No		-96.35794	64.74165			No	Not Exceeded	
Road	2022-11-18 8:40	Yes	Caribou	12	Foraging	N/A	200	55	East	No		-96.34597	64.71855			No	Not Exceeded	
Road	2022-11-18 8:40	Yes	Caribou	103	Walking	S	100	53	East	No		-96.37309	64.70606			No	Not Exceeded	
Road	2022-11-18 8:40	Yes	Caribou	3000	Walking	S	100	50	East	No		-96.3731	64.67942			No	Exceeded	Road closed
Road	2022-11-18 8:40	Yes	Muskox	42	Standing	N/A	300	25	West	No		-96.14948	64.5142			No	Exceeded	Road closed
Incidental	2022-11-18 14:31	Yes	Muskox	12	Lying Down	N/A	200	88	West	No		-96.2206	64.95809			No	Not Exceeded	
Road	2022-11-19 8:45	Yes	Caribou	52	Standing	N/A	200	93	East	No		-96.22197	65.00077			No	Not Exceeded	
Road	2022-11-19 8:45	Yes	Caribou	7	Standing	N/A	100	85	East	No		-96.26143	64.93886			No	Not Exceeded	
Road	2022-11-19 8:45	Yes	Caribou	9	Standing	N/A	100	82	East	No		-96.31204	64.9306			No	Not Exceeded	
Road	2022-11-19 8:45	Yes	Caribou	8	Standing	N/A	1000	73	East	No		-96.32423	64.86213			No	Not Exceeded	
Road	2022-11-19 8:45	Yes	Caribou	6	Standing	N/A	100	70	East	No		-96.31652	64.83649			No	Not Exceeded	
Road	2022-11-19 8:45	Yes	Caribou	43	Standing	N/A	100	69	East	No		-96.31427	64.82772			No	Not Exceeded	
Road	2022-11-19 8:45	Yes	Caribou	153	Walking	W	0	68	East	Yes		-96.32681	64.82032			No	Exceeded	Road closed
Road	2022-11-19 8:45	Yes	Caribou	30	Standing	N/A	100	60	East	No		-96.36363	64.75548			No	Not Exceeded	
Road	2022-11-19 8:45	Yes	Caribou	80	Standing	N/A	50	57	East	No		-96.36013	64.73137			No	Not Exceeded	
Road	2022-11-19 8:45	Yes	Caribou	67	Standing	N/A	300	56	West	No		-96.35139	64.72588			No	Not Exceeded	
Road	2022-11-19 8:45	Yes	Caribou	41	Walking	S	300	51	East	No		-96.37907	64.69323			No	Not Exceeded	
Road	2022-11-19 8:45	Yes	Caribou	52	Walking	W	200	49	West	No		-96.37072	6					

Table A-1: Wildlife Observations along the All Weather Access Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2022-11-20 8:46	Yes	Caribou	4	Foraging	N/A	150	89	West	No		-96.21956	64.96744			No	Not Exceeded	
Road	2022-11-20 8:46	Yes	Caribou	130	Foraging	NW	260	77	East	No		-96.33908	64.89511			No	Exceeded	Road already closed
Road	2022-11-20 8:46	Yes	Caribou	55	Walking	NW	580	75	East	No		-96.33614	64.87946			No	Not Exceeded	
Road	2022-11-20 8:46	Yes	Caribou	17	Walking	NW	560	69	East	No		-96.31427	64.82772			No	Not Exceeded	
Road	2022-11-20 8:46	Yes	Caribou	25	Foraging	NW	370	67	East	No		-96.3262	64.81233			No	Not Exceeded	
Road	2022-11-20 8:46	Yes	Caribou	150	Walking	NW	110	66	East	No		-96.33501	64.80451			No	Exceeded	Road already closed
Road	2022-11-20 8:46	Yes	Caribou	49	Walking	NW	200	64	East	No		-96.34001	64.78668			No	Not Exceeded	
Road	2022-11-20 8:46	Yes	Caribou	31	Foraging	SW	1200	60	East	No		-96.36363	64.75548			No	Not Exceeded	
Road	2022-11-20 8:46	Yes	Caribou	250	Walking	W	0	60	Both	Yes		-96.36363	64.75548			No	Exceeded	Road already closed
Road	2022-11-20 8:46	Yes	Muskox	48	Resting	N/A	140	25	West	No		-96.14948	64.5142			No	Exceeded	Road already closed
Road	2022-11-21 8:36	Yes	Caribou	200	Trotting/running	NE	300	105	East	No		-96.08773	65.03413			not applicable	Exceeded	Road closed
Road	2022-11-21 8:36	Yes	Caribou	30	Foraging	NE	100	97	East	No		-96.17115	65.02594			No	Not Exceeded	
Road	2022-11-21 8:36	Yes	Caribou	73	Walking	NW	530	74	East	No		-96.33028	64.87523			not applicable	Not Exceeded	
Road	2022-11-21 8:36	Yes	Caribou	23	Walking	SW	120	63	East	No		-96.34437	64.77932			No	Not Exceeded	
Road	2022-11-21 8:36	Yes	Caribou	150	Lying Down	N/A	1000	67	East	N/A		-96.3262	64.81233			No	Exceeded	Road closed
Incidental	2022-11-21 9:51	Yes	Caribou	200	Running		NA	48			200+ caribou, km48, 2 hunters make them run	-96.09597	64.47868				Exceeded	Road was already closed due to caribou presence.
Road	2022-11-22 5:22	Yes	Caribou	45	Standing	N/A	200	56	East	No		-96.35139	64.72588			No	Not Exceeded	
Road	2022-11-22 5:22	Yes	Caribou	50	Standing	N/A	300	68	East	No		-96.32681	64.82032			No	Not Exceeded	
Road	2022-11-22 5:22	Yes	Caribou	15	Standing	N/A	200	71	West	No		-96.3197	64.84471			No	Not Exceeded	
Road	2022-11-22 5:22	Yes	Caribou	4	Standing	N/A	1000	81	West	No		-96.30208	64.92518			No	Not Exceeded	
Road	2022-11-22 5:22	Yes	Caribou	4	Standing	N/A	1000	88	West	No		-96.2206	64.95809			No	Not Exceeded	
Road	2022-11-22 5:22	Yes	Caribou	6	Lying Down	N/A	300	91	West	No		-96.22486	64.98469			No	Not Exceeded	
Incidental	2022-11-22 11:30	Yes	Caribou	160	Walking	S	300	105	East	No	Third portage lake. Blind hill emr..	-96.08773	65.03413			No	Exceeded	Closed the road between explo and mbk
Road	2022-11-23 9:02	Yes	Caribou	60	Foraging	E	1000	87	West	No		-96.24102	64.9542			No	Not Exceeded	
Road	2022-11-23 9:02	Yes	Caribou	4	Foraging	N/A	450	48	West	No		-96.36878	64.66417			No	Not Exceeded	
Road	2022-11-23 9:02	Yes	Muskox	17	Foraging	N/A	740	92	West	No		-96.22191	64.99435			No	Exceeded	Speed restriction
Road	2022-11-24 8:45	Yes	Muskox	10	Lying Down	N/A	1000	91	West	No		-96.22486	64.98469			No	Not Exceeded	
Road	2022-11-24 8:45	Yes	Caribou	4	Standing	N/A	500	53	West	No		-96.37309	64.70606			No	Not Exceeded	
Road	2022-11-24 8:45	Yes	Muskox	40	Standing	N/A	50	25	West	No		-96.14948	64.5142			No	Exceeded	Speed restriction
Incidental	2022-11-24 13:30	Yes	Caribou	12	Standing	N/A	300	53	West	No		-96.37309	64.70606			No	Not Exceeded	
Road	2022-11-25 8:58	Yes	Caribou	1	Walking	SE	150	93	East	No		-96.22197	65.00077			No	Not Exceeded	
Road	2022-11-25 8:58	Yes	Caribou	1	Standing	Not Recorded	300	87	East	No		-96.24102	64.9542			No	Not Exceeded	
Road	2022-11-25 8:58	Yes	Caribou	2	Walking	N	300	38	East	No		-96.27582	64.59073			No	Not Exceeded	
Incidental	2022-11-25 15:30	Yes	Caribou	12	Walking	East	400	66	East	No		-96.28188	64.6052			No	Not Exceeded	
Incidental	2022-11-25 15:30	Yes	Caribou	12	Not recorded	E	400	66	East	N/A		-96.33501	64.80451			No	Not Exceeded	
Road	2022-11-26 9:16	Yes	Muskox	45	Feeding	N/A	900	29	West	No		-96.18125	64.54733			No	Exceeded	Speed restriction put in place from km 27 to 29
Incidental	2022-11-26 14:31	Yes	Caribou	10	Running	S	300	77	East	No	Km 77 east side 300m running south.	-96.33908	64.89511			No	Not Exceeded	
Road	2022-11-27 9:38	No					NA					NA	NA					
Road	2022-11-28 9:08	No					NA					NA	NA					
Road	2022-11-29 10:05	No					NA					NA	NA					
Road	2022-11-30 9:13	No					NA					NA	NA					
Road	2022-12-01 9:42	No					NA					NA	NA					
Road	2022-12-02 10:38	No					NA					NA	NA					
Road	2022-12-03 9:36	Yes	Muskox	6	Feeding	N/A	1500	26	East	No		-96.16146	64.52353			No	Not Exceeded	
Road	2022-12-04 9:22	Yes	Caribou	2	Foraging	N/A	500	72	East	No		-96.32384	64.85386			No	Not Exceeded	
Road	2022-12-07 9:46	No					NA					NA	NA					
Incidental	2022-12-07 13:23	Yes	Muskox	45	Feeding	N/A	2000	26	West	No	45 muskox km 26 west side 2km eating.	-96.16146	64.52353			No	Exceeded	Not within 1500m
Road	2022-12-09 9:08	No					NA					NA	NA					
Incidental	2022-12-10 7:29	Yes	Muskox	25	Not recorded	Not Recorded	1000	24	West	No	Tundra.	-96.13651	64.50789			No	Exceeded	Road was closed.
Road	2022-12-14 12:45	Yes	Muskox	59	Resting	N/A	1250	22	West	No		-96.11256	64.4935			No	Exceeded	Nothing they are over 1km from road
Road	2022-12-14 12:45	Yes	Muskox	7	Resting	N/A	25	90	East	No		-96.22208	64.97501			No	Not Exceeded	
Road	2022-12-18 9:27	Yes	Muskox	59	Foraging	W	970	19	West	No		-96.0866	64.4702			not applicable.	Exceeded	Nothing, they are far from road on west side walking south west
Road	2022-12-21 11:00	Yes	Muskox	59	Resting	N/A	1100	15	West	No		-96.0525	64.43981			not applicable	Exceeded	Road open and no restrictions as they are over 1Km
Incidental	2022-12-22 16:56	Yes	Muskox	10	Feeding	Not Recorded	20	94	West East	N/A	Km 94 20m both sides of the road.	-96.21269	65.00751			No	Not Exceeded	
Road	2022-12-23 9:45	Yes	Muskox	6	Feeding	N/A	700	95	East	No		-96.19522	65.01286			No	Not Exceeded	
Road	2022-12-23 9:45	Yes	Caribou	1	Feeding	N/A	200	56	East	No		-96.35139	64.72588			No	Not Exceeded	
Road	2022-12-29 9:52	No					NA					NA	NA					

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2022-01-02 9:45	Yes	Muskox	12	Foraging	N/A	99	155	East	No		-96.43417	65.267612			No	Not Exceeded	
Road	2022-01-02 9:45	Yes	Muskox	4	Foraging	N/A	889	141	East	No		-96.31809	65.223683			No	Not Exceeded	
Road	2022-01-02 9:45	Yes	Caribou	3	Walking	SE	449	140	East	No		-96.29851	65.221968			No	Not Exceeded	
Road	2022-01-05 10:48	Yes	Caribou	3	Walking	SW	350	176	East	No		-96.60379	65.38622			No	Not Exceeded	
Road	2022-01-05 10:48	Yes	Caribou	8	Feeding	N/A	300	170	East	No		-96.54979	65.346648			No	Not Exceeded	
Viewshed	2022-01-05 13:29		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-01-05 13:29		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-01-05 13:29		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-01-05 13:29		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-01-05 13:29		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-01-05 13:29		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-01-05 13:29		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-01-05 13:29		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-01-05 13:29		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-01-05 13:29		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-01-05 13:29		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-01-05 13:29		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-01-05 13:29		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-01-05 13:29		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-01-05 13:29		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-01-05 13:29		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-01-05 13:29		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-01-05 13:29		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-01-05 13:29		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-01-05 13:29		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-01-05 13:29		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-01-05 13:29		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-01-05 13:29		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-01-05 13:29		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-01-05 13:29		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-01-05 13:29		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-01-05 13:29		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-01-05 13:29		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-01-05 13:29		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-01-05 13:29		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-01-05 13:29		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-01-05 13:29		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-01-05 13:29		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-01-05 13:29		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-01-05 13:29		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-01-05 13:29		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-01-05 13:29		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-01-05 13:29		-	-			NA	160-161				-96.41356	65.294293					
Road	2022-01-07 10:55	Yes	Caribou	5	Walking	N	250	138	East	No		-96.26018	65.2238			No	Not Exceeded	
Road	2022-01-07 10:55	Yes	Caribou	3	Resting	N/A	600	140	East	N/A		-96.29851	65.221968			No	Not Exceeded	
Road	2022-01-07 10:55	Yes	Muskox	4	Feeding	N/A	1000	140	East	N/A		-96.29851	65.221968			No	Not Exceeded	
Viewshed	2022-01-07 12:14		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-01-07 12:14		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-01-07 12:14		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-01-07 12:14		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-01-07 12:14		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-01-07 12:14		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-01-07 12:14		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-01-07 12:14		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-01-07 12:14		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-01-07 12:14		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-01-07 12:14		-	-			NA	176				-96.60379	65.38622					
Road	2022-01-09 10:00	No					NA					NA	NA					
Viewshed	2022-01-12 9:44		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-01-12 9:44		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-01-12 9:44		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-01-12 9:44		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-01-12 9:44		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-01-12 9:44		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-01-12 9:44		Muskox	8	Feeding	N/A	540	118	West			-96.05506	65.086475				Not Exceeded	
Viewshed	2022-01-12 9:44		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-01-12 9:44		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-01-12 9:44		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-01-12 9:44		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-01-12 9:44		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-01-12 9:44		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-01-12 9:44		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-01-12 9:44		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-01-12 9:44		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-01-12 9:44		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-01-12 9:44		-	-			NA	133				-96.17538	65.199246					

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2022-01-12 9:44		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-01-12 9:44		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-01-12 9:44		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-01-12 9:44		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-01-12 9:44		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-01-12 9:44		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-01-12 9:44		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-01-12 9:44		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-01-12 9:44		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-01-12 9:44		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-01-12 9:44		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-01-12 9:44		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-01-12 9:44		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-01-12 9:44		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-01-12 9:44		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-01-12 9:44		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-01-12 9:44		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-01-12 9:44		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-01-12 9:44		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-01-12 9:44		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-01-12 9:44		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-01-12 9:44		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-01-12 9:44		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-01-12 9:44		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-01-12 9:44		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-01-12 9:44		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-01-12 9:44		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-01-12 9:44		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-01-12 9:44		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-01-12 9:44		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-01-12 9:44		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-01-12 9:44		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-01-12 9:44		-	-			NA	176				-96.60379	65.38622					
Road	2022-01-14 9:36	Yes	Muskox	4	Foraging	N/A	125	141	East	No		-96.31809	65.223683			No	Not Exceeded	
Incidental	2022-01-14 13:19	Yes	Caribou	3	Foraging	N/A	494	140	East	No		-96.29851	65.221968			No	Not Exceeded	
Road	2022-01-18 9:12	No					NA					NA	NA					
Viewshed	2022-01-18 11:13		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-01-18 11:13		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-01-18 11:13		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-01-18 11:13		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-01-18 11:13		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-01-18 11:13		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-01-18 11:13		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-01-18 11:13		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-01-18 11:13		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-01-18 11:13		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-01-18 11:13		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-01-18 11:13		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-01-18 11:13		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-01-18 11:13		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-01-18 11:13		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-01-18 11:13		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-01-18 11:13		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-01-18 11:13		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-01-18 11:13		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-01-18 11:13		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-01-18 11:13		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-01-18 11:13		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-01-18 11:13		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-01-18 11:13		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-01-18 11:13		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-01-18 11:13		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-01-18 11:13		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-01-18 11:13		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-01-18 11:13		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-01-18 11:13		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-01-18 11:13		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-01-18 11:13		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-01-18 11:13		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-01-18 11:13		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-01-18 11:13		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-01-18 11:13		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-01-18 11:13		-	-			NA	128				-96.13583	65.161371					

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2022-01-18 11:13		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-01-18 11:13		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-01-18 11:13		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-01-18 11:13		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-01-18 11:13		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-01-18 11:13		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-01-18 11:13		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-01-18 11:13		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-01-18 11:13		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-01-18 11:13		-	-			NA	116				-96.02061	65.080258					
Road	2022-01-28 10:10	Yes	Muskox	8	Foraging	N/A	800	118	West			-96.05506	65.086475				Not Exceeded	
Road	2022-01-28 10:10	Yes	Muskox	4	Foraging	N/A	500	141	East	No		-96.31809	65.223683			No	Not Exceeded	
Road	2022-01-28 10:10	Yes	Caribou	2	Foraging	N/A	100	141	East	No		-96.31809	65.223683			No	Not Exceeded	
Road	2022-01-28 10:10	Yes	Muskox	10	Foraging	N/A	750	149	East	No		-96.44264	65.223273			No	Not Exceeded	
Road	2022-01-28 10:10	Yes	Caribou	5	Foraging	N/A	150	150	East	No		-96.45008	65.230216			No	Not Exceeded	
Incidental	2022-01-28 15:45	Yes	Caribou	10	Foraging	N/A	200	179	East	No		-96.00217	65.051123			No	Not Exceeded	
Incidental	2022-01-29 14:37	Yes	Muskox	11	Foraging	N/A	75	150	East	No		-96.45008	65.230216			No	Not Exceeded	
Incidental	2022-01-29 16:44	Yes	Caribou	7	Foraging	N/A	300	144	East	No		-96.00217	65.051123			No	Not Exceeded	
Road	2022-02-02 13:03	Yes	Wolverine	1	Running	W	0	149	Both	Yes		-96.44264	65.223273			No	Not Exceeded	
Road	2022-02-02 13:03	Yes	Caribou	6	Feeding	N/A	150	166	West	No		-96.48819	65.325287			No	Not Exceeded	
Viewshed	2022-02-02 13:04		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-02-02 13:04		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-02-02 13:04		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-02-02 13:04		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-02-02 13:04		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-02-02 13:04		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-02-02 13:04		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-02-02 13:04		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-02-02 13:04		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-02-02 13:04		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-02-02 13:04		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-02-02 13:04		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-02-02 13:04		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-02-02 13:04		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-02-02 13:04		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-02-02 13:04		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-02-02 13:04		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-02-02 13:04		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-02-02 13:04		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-02-02 13:04		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-02-02 13:04		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-02-02 13:04		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-02-02 13:04		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-02-02 13:04		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-02-02 13:04		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-02-02 13:04		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-02-02 13:04		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-02-02 13:04		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-02-02 13:04		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-02-02 13:04		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-02-02 13:04		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-02-02 13:04		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-02-02 13:04		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-02-02 13:04		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-02-02 13:04		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-02-02 13:04		Caribou	6	Feeding	N/A	150	166	West			-96.48819	65.325287				Not Exceeded	
Viewshed	2022-02-02 13:04		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-02-02 13:04		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-02-02 13:04		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-02-02 13:04		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-02-02 13:04		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-02-02 13:04		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-02-02 13:04		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-02-02 13:04		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-02-02 13:04		-	-			NA	176				-96.60379	65.38622					
Incidental	2022-02-03 14:26	Yes	Caribou	17	Feeding	N/A	25	169	East	No		-96.53703	65.340029			No	Not Exceeded	
Road	2022-02-04 10:44	No					NA					NA	NA					
Road	2022-02-06 14:04	Yes	Arctic fox	1	Trotting/running	S	10	172	West	No		-96.58667	65.355041			No	Not Exceeded	
Road	2022-02-06 14:04	Yes	Muskox	4	Resting	N/A	500	144	West	No		-96.36752	65.222582			No	Not Exceeded	

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2022-02-09 13:19	Yes	Caribou	5	Foraging	N/A	600	133	East	No		-96.17538	65.199246			No	Not Exceeded	
Road	2022-02-09 13:19	Yes	Muskox	4	Lying Down	N/A	150	142	East	No		-96.3371	65.222192			No	Not Exceeded	
Road	2022-02-09 13:19	Yes	Caribou	13	Foraging	N	200	170	East	No		-96.54979	65.346648			No	Not Exceeded	
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	116	-	-		-96.02061	65.080258					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	116	-	-		-96.02061	65.080258					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	116	-	-		-96.02061	65.080258					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	118	-	-		-96.05506	65.086475					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	118	-	-		-96.05506	65.086475					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	118	-	-		-96.05506	65.086475					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	121-122	-	-		-96.08638	65.10712					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	121-122	-	-		-96.08638	65.10712					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	121-122	-	-		-96.08638	65.10712					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	128	-	-		-96.13583	65.161371					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	128	-	-		-96.13583	65.161371					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	128	-	-		-96.13583	65.161371					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	133	-	-		-96.17538	65.199246					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	133	-	-		-96.17538	65.199246					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	133	-	-		-96.17538	65.199246					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	138	-	-		-96.26018	65.2238					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	138	-	-		-96.26018	65.2238					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	138	-	-		-96.26018	65.2238					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	144	-	-		-96.35797	65.223666					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	144	-	-		-96.35797	65.223666					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	144	-	-		-96.35797	65.223666					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	154	-	-		-96.46296	65.254604					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	154	-	-		-96.46296	65.254604					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	154	-	-		-96.46296	65.254604					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	154	-	-		-96.46296	65.254604					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	156	-	-		-96.45207	65.262217					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	156	-	-		-96.45207	65.262217					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	156	-	-		-96.45207	65.262217					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	160-161	-	-		-96.41356	65.294293					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	160-161	-	-		-96.41356	65.294293					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	160-161	-	-		-96.41356	65.294293					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	166	-	-		-96.48819	65.325287					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	166	-	-		-96.48819	65.325287					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	166	-	-		-96.48819	65.325287					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	166	-	-		-96.48819	65.325287					
Viewshed	2022-02-09 13:20	-	Caribou	5	Foraging	N	1000	169	East			-96.53703	65.340029				Not Exceeded	
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	169	-	-		-96.53703	65.340029					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	169	-	-		-96.53703	65.340029					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	169	-	-		-96.53703	65.340029					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	176	-	-		-96.60379	65.38622					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	176	-	-		-96.60379	65.38622					
Viewshed	2022-02-09 13:20	-	-	-	-	-	NA	176	-	-		-96.60379	65.38622					
Road	2022-02-11 9:30	Yes	Caribou	10	Lying Down	N/A	100	170	East	No		-96.54979	65.346648			Yes - Same group size and location as previous survey	Not Exceeded	
Road	2022-02-19 9:50	No	-	-	-	-	NA	-	-	-		NA	NA					
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	176	-	-		-96.60379	65.38622					
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	176	-	-		-96.60379	65.38622					
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	176	-	-		-96.60379	65.38622					
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	176	-	-		-96.60379	65.38622					
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	169	-	-		-96.53703	65.340029					
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	169	-	-		-96.53703	65.340029					
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	169	-	-		-96.53703	65.340029					
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	166	-	-		-96.48819	65.325287					
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	166	-	-		-96.48819	65.325287					
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	166	-	-		-96.48819	65.325287					
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	160-161	-	-		-96.41356	65.294293					
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	160-161	-	-		-96.41356	65.294293					
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	160-161	-	-		-96.41356	65.294293					
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	156	-	-		-96.45207	65.262217					
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	156	-	-		-96.45207	65.262217					

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	156	-	-	-	-96.45207	65.262217	-	-	-	-	-
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	156	-	-	-	-96.45207	65.262217	-	-	-	-	-
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	154	-	-	-	-96.46296	65.254604	-	-	-	-	-
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	154	-	-	-	-96.46296	65.254604	-	-	-	-	-
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	154	-	-	-	-96.46296	65.254604	-	-	-	-	-
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	154	-	-	-	-96.46296	65.254604	-	-	-	-	-
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	144	-	-	-	-96.35797	65.223666	-	-	-	-	-
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	144	-	-	-	-96.35797	65.223666	-	-	-	-	-
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	144	-	-	-	-96.35797	65.223666	-	-	-	-	-
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	138	-	-	-	-96.26018	65.2238	-	-	-	-	-
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	138	-	-	-	-96.26018	65.2238	-	-	-	-	-
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	138	-	-	-	-96.26018	65.2238	-	-	-	-	-
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	133	-	-	-	-96.17538	65.199246	-	-	-	-	-
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	133	-	-	-	-96.17538	65.199246	-	-	-	-	-
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	133	-	-	-	-96.17538	65.199246	-	-	-	-	-
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	128	-	-	-	-96.13583	65.161371	-	-	-	-	-
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	128	-	-	-	-96.13583	65.161371	-	-	-	-	-
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	128	-	-	-	-96.13583	65.161371	-	-	-	-	-
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	121-122	-	-	-	-96.08638	65.10712	-	-	-	-	-
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	121-122	-	-	-	-96.08638	65.10712	-	-	-	-	-
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	121-122	-	-	-	-96.08638	65.10712	-	-	-	-	-
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	121-122	-	-	-	-96.08638	65.10712	-	-	-	-	-
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	118	-	-	-	-96.05506	65.086475	-	-	-	-	-
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	118	-	-	-	-96.05506	65.086475	-	-	-	-	-
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	118	-	-	-	-96.05506	65.086475	-	-	-	-	-
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	116	-	-	-	-96.02061	65.080258	-	-	-	-	-
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	116	-	-	-	-96.02061	65.080258	-	-	-	-	-
Viewshed	2022-02-19 14:15	-	-	-	-	-	NA	116	-	-	-	-96.02061	65.080258	-	-	-	-	-
Viewshed	2022-02-23 9:00	-	-	-	-	-	NA	176	-	-	-	-96.60379	65.38622	-	-	-	-	-
Viewshed	2022-02-23 9:00	-	-	-	-	-	NA	176	-	-	-	-96.60379	65.38622	-	-	-	-	-
Viewshed	2022-02-23 9:00	-	-	-	-	-	NA	176	-	-	-	-96.60379	65.38622	-	-	-	-	-
Viewshed	2022-02-23 9:00	-	-	-	-	-	NA	169	-	-	-	-96.53703	65.340029	-	-	-	-	-
Viewshed	2022-02-23 9:00	-	-	-	-	-	NA	169	-	-	-	-96.53703	65.340029	-	-	-	-	-
Viewshed	2022-02-23 9:00	-	-	-	-	-	NA	169	-	-	-	-96.53703	65.340029	-	-	-	-	-
Viewshed	2022-02-23 9:00	-	-	-	-	-	NA	166	-	-	-	-96.48819	65.325287	-	-	-	-	-
Viewshed	2022-02-23 9:00	-	-	-	-	-	NA	166	-	-	-	-96.48819	65.325287	-	-	-	-	-
Viewshed	2022-02-23 9:00	-	-	-	-	-	NA	166	-	-	-	-96.48819	65.325287	-	-	-	-	-
Viewshed	2022-02-23 9:00	-	-	-	-	-	NA	160-161	-	-	-	-96.41356	65.294293	-	-	-	-	-
Viewshed	2022-02-23 9:00	-	-	-	-	-	NA	160-161	-	-	-	-96.41356	65.294293	-	-	-	-	-
Viewshed	2022-02-23 9:00	-	-	-	-	-	NA	160-161	-	-	-	-96.41356	65.294293	-	-	-	-	-
Viewshed	2022-02-23 9:00	-	-	-	-	-	NA	156	-	-	-	-96.45207	65.262217	-	-	-	-	-
Viewshed	2022-02-23 9:00	-	-	-	-	-	NA	156	-	-	-	-96.45207	65.262217	-	-	-	-	-
Viewshed	2022-02-23 9:00	-	Caribou	4	Foraging	N/A	1200	156	West	-	-	-96.45207	65.262217	-	-	-	Not Exceeded	-
Viewshed	2022-02-23 9:00	-	-	-	-	-	NA	156	-	-	-	-96.45207	65.262217	-	-	-	-	-
Viewshed	2022-02-23 9:00	-	-	-	-	-	NA	154	-	-	-	-96.46296	65.254604	-	-	-	-	-
Viewshed	2022-02-23 9:00	-	-	-	-	-	NA	154	-	-	-	-96.46296	65.254604	-	-	-	-	-
Viewshed	2022-02-23 9:00	-	-	-	-	-	NA	154	-	-	-	-96.46296	65.254604	-	-	-	-	-
Viewshed	2022-02-23 9:00	-	-	-	-	-	NA	154	-	-	-	-96.46296	65.254604	-	-	-	-	-
Viewshed	2022-02-23 9:00	-	-	-	-	-	NA	144	-	-	-	-96.35797	65.223666	-	-	-	-	-
Viewshed	2022-02-23 9:00	-	-	-	-	-	NA	144	-	-	-	-96.35797	65.223666	-	-	-	-	-
Viewshed	2022-02-23 9:00	-	-	-	-	-	NA	144	-	-	-	-96.35797	65.223666	-	-	-	-	-
Viewshed	2022-02-23 9:00	-	-	-	-	-	NA	138	-	-	-	-96.26018	65.2238	-	-	-	-	-
Viewshed	2022-02-23 9:00	-	-	-	-	-	NA	138	-	-	-	-96.26018	65.2238	-	-	-	-	-
Viewshed	2022-02-23 9:00	-	-	-	-	-	NA	138	-	-	-	-96.26018	65.2238	-	-	-	-	-
Viewshed	2022-02-23 9:00	-	-	-	-	-	NA	133	-	-	-	-96.17538	65.199246	-	-	-	-	-
Viewshed	2022-02-23 9:00	-	-	-	-	-	NA	133	-	-	-	-96.17538	65.199246	-	-	-	-	-
Viewshed	2022-02-23 9:00	-	-	-	-	-	NA	133	-	-	-	-96.17538	65.199246	-	-	-	-	-
Viewshed	2022-02-23 9:00	-	-	-	-	-	NA	128	-	-	-	-96.13583	65.161371	-	-	-	-	-
Viewshed	2022-02-23 9:00	-	-	-	-	-	NA	128	-	-	-	-96.13583	65.161371	-	-	-	-	-
Viewshed	2022-02-23 9:00	-	-	-	-	-	NA	128	-	-	-	-96.13583	65.161371	-	-	-	-	-
Viewshed	2022-02-23 9:00	-	-	-	-	-	NA	121-122	-	-	-	-96.08638	65.10712	-	-	-	-	-
Viewshed	2022-02-23 9:00	-	-	-	-	-	NA	121-122	-	-	-	-96.08638	65.10712	-	-	-	-	-
Viewshed	2022-02-23 9:00	-	-	-	-	-	NA	121-122	-	-	-	-96.08638	65.10712	-	-	-	-	-
Viewshed	2022-02-23 9:00	-	-	-	-	-	NA	121-122	-	-	-	-96.08638	65.10712	-	-	-	-	-

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2022-02-23 9:00		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-02-23 9:00		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-02-23 9:00		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-02-23 9:00		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-02-23 9:00		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-02-23 9:00		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-02-23 9:00		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-02-23 9:00		-	-			NA	116				-96.02061	65.080258					
Incidental	2022-02-23 10:15	Yes	Muskox	12	Foraging	N/A	100	157	East	No		-96.41584	65.271231			Yes - Same group since the beginning of winter	Not Exceeded	
Incidental	2022-02-23 10:50	Yes	Muskox	3	Foraging	N/A	250	141	East	No		-96.31809	65.223683			No	Not Exceeded	
Incidental	2022-02-23 14:45	Yes	Muskox	46	Foraging	N/A	1000	152	West	No	Speed restriction was put in place	-96.47617	65.241762			No	Exceeded	Speed restriction was put in place
Incidental	2022-02-23 15:25	Yes	Caribou	3	Foraging	W	0	169	West	Yes		-96.53703	65.340029			No	Not Exceeded	
Incidental	2022-02-23 15:35	Yes	Caribou	2	Standing	N/A	25	173	East	N/A		-96.60297	65.359721			No	Not Exceeded	
Road	2022-02-25 9:53	Yes	Caribou	4	Walking	E	75	178	East	N/A		-96.6219	65.400857			No	Not Exceeded	
Road	2022-02-25 9:53	Yes	Caribou	8	Feeding	W	100	174	East	N/A		-96.60128	65.368315			No	Not Exceeded	
Road	2022-02-25 9:53	Yes	Caribou	3	Walking	S	167	167	West	N/A		-96.5061	65.328371			No	Not Exceeded	
Road	2022-02-25 9:53	Yes	Caribou	1	Standing	N/A	50	132	East	N/A		-96.16457	65.194003			No	Not Exceeded	
Incidental	2022-02-25 18:00	Yes	Wolf	6	Walking	E	0	170	West,East	Yes		-96.54979	65.346648			No	Not Exceeded	
Incidental	2022-02-28 8:40	Yes	Muskox	50	Feeding	Not Recorded	1000	152	West	No		-96.47617	65.241762			No	Exceeded	Open with speed restriction
Road	2022-03-01 10:34	Yes	Caribou	2	Foraging	N/A	300	171	East	No		-96.5686	65.351995			No	Not Exceeded	
Road	2022-03-01 10:34	Yes	Muskox	7	Foraging	N/A	650	119	West	No		-96.06476	65.093211			No	Not Exceeded	
Viewshed	2022-03-01 13:33		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-03-01 13:33		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-03-01 13:33		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-03-01 13:33		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-03-01 13:33		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-03-01 13:33		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-03-01 13:33		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-03-01 13:33		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-03-01 13:33		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-03-01 13:33		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-03-01 13:33		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-03-01 13:33		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-03-01 13:33		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-03-01 13:33		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-03-01 13:33		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-03-01 13:33		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-03-01 13:33		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-03-01 13:33		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-03-01 13:33		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-03-01 13:33		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-03-01 13:33		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-03-01 13:33		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-03-01 13:33		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-03-01 13:33		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-03-01 13:33		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-03-01 13:33		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-03-01 13:33		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-03-01 13:33		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-03-01 13:33		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-03-01 13:33		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-03-01 13:33		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-03-01 13:33		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-03-01 13:33		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-03-01 13:33		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-03-01 13:33		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-03-01 13:33		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-03-01 13:33		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-03-01 13:33		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-03-01 13:33		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-03-01 13:33		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-03-01 13:33		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-03-01 13:33		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-03-01 13:33		Caribou	2	Feeding	N/A	150	169	West			-96.53703	65.340029				Not Exceeded	
Viewshed	2022-03-01 13:33		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-03-01 13:33		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-03-01 13:33		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-03-01 13:33		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-03-01 13:33		-	-			NA	176				-96.60379	65.38622					
Incidental	2022-03-01 13:59	Yes	Caribou	5	Feeding	N/A	200	113	East	No		-95.99327	65.058803			No	Not Exceeded	

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2022-03-01 14:20	Yes	Caribou	2	Foraging	N/A	200	119	East	No		-96.06476	65.093211			No	Not Exceeded	
Incidental	2022-03-01 16:03	Yes	Caribou	4	Walking	W	0	161	East	Yes		-96.41207	65.30324			No	Not Exceeded	
Incidental	2022-03-01 16:38	Yes	Caribou	4	Foraging	N/A	100	173	West	No		-96.60297	65.359721			No	Not Exceeded	
Road	2022-03-04 8:50	Yes	Caribou	5	Foraging	N/A	75	174	West	No		-96.60128	65.368315			No	Not Exceeded	
Road	2022-03-04 8:50	Yes	Arctic fox	1	Running	N	0	171	Both	Yes		-96.5686	65.351995			No	Not Exceeded	
Road	2022-03-04 8:50	Yes	Muskox	3	Foraging	N/A	800	141	East	No		-96.31809	65.223683			No	Not Exceeded	
Incidental	2022-03-04 13:06	Yes	Caribou	1	Walking	N/A	500	140	East	No		-96.29851	65.221968			No	Not Exceeded	
Incidental	2022-03-04 13:54	Yes	Caribou	5	Walking	N/A	150	178	West	No		-96.6219	65.400857			No	Not Exceeded	
Incidental	2022-03-06 13:00	Yes	Caribou	15	Foraging	N/A	30	172	North	No		-96.58667	65.355041			No	Not Exceeded	
Incidental	2022-03-08 11:00	Yes	Wolf	7	Walking	N/A	100	160	North	N/A	Dispatch called environment for 7 wolves at KM 160, the environment team went on the field but did not see them.	-96.41356	65.294293			No	Not Exceeded	
Road	2022-03-09 10:45	Yes	Caribou	2	Feeding	N/A	400	176	West	No		-96.60379	65.38622			No	Not Exceeded	
Incidental	2022-03-09 15:41	Yes	Muskox	4	Foraging	N/A	500	140	East	No		-96.29851	65.221968			No	Not Exceeded	
Incidental	2022-03-10 8:30	Yes	Wolf	10	Not recorded		NA	170				-96.54979	65.346648			No	Not Exceeded	
Incidental	2022-03-11 20:00	Yes	Wolf	10	Not recorded		NA	176				-96.60379	65.38622	No		No	Not Exceeded	
Viewshed	2022-03-12 15:15		-	-		NA	128					-96.13583	65.161371					
Viewshed	2022-03-12 15:15		-	-		NA	128					-96.13583	65.161371					
Viewshed	2022-03-12 15:15		-	-		NA	128					-96.13583	65.161371					
Viewshed	2022-03-12 15:15		-	-		NA	128					-96.13583	65.161371					
Viewshed	2022-03-12 15:15		-	-		NA	121-122					-96.08638	65.10712					
Viewshed	2022-03-12 15:15		-	-		NA	121-122					-96.08638	65.10712					
Viewshed	2022-03-12 15:15		-	-		NA	121-122					-96.08638	65.10712					
Viewshed	2022-03-12 15:15		-	-		NA	121-122					-96.08638	65.10712					
Viewshed	2022-03-12 15:15		-	-		NA	133					-96.17538	65.199246					
Viewshed	2022-03-12 15:15		-	-		NA	133					-96.17538	65.199246					
Viewshed	2022-03-12 15:15		-	-		NA	133					-96.17538	65.199246					
Viewshed	2022-03-12 15:15		-	-		NA	133					-96.17538	65.199246					
Viewshed	2022-03-12 15:15		-	-		NA	118					-96.05506	65.086475					
Viewshed	2022-03-12 15:15		-	-		NA	118					-96.05506	65.086475					
Viewshed	2022-03-12 15:15		-	-		NA	118					-96.05506	65.086475					
Viewshed	2022-03-12 15:15		-	-		NA	118					-96.05506	65.086475					
Viewshed	2022-03-12 15:15		-	-		NA	138					-96.26018	65.2238					
Viewshed	2022-03-12 15:15		-	-		NA	138					-96.26018	65.2238					
Viewshed	2022-03-12 15:15		-	-		NA	138					-96.26018	65.2238					
Viewshed	2022-03-12 15:15		-	-		NA	138					-96.26018	65.2238					
Viewshed	2022-03-12 15:15		-	-		NA	116					-96.02061	65.080258					
Viewshed	2022-03-12 15:15		-	-		NA	116					-96.02061	65.080258					
Viewshed	2022-03-12 15:15		-	-		NA	116					-96.02061	65.080258					
Viewshed	2022-03-12 15:15		-	-		NA	116					-96.02061	65.080258					
Viewshed	2022-03-12 15:15		-	-		NA	144					-96.35797	65.223666					
Viewshed	2022-03-12 15:15		-	-		NA	144					-96.35797	65.223666					
Viewshed	2022-03-12 15:15		-	-		NA	144					-96.35797	65.223666					
Viewshed	2022-03-12 15:15		-	-		NA	144					-96.35797	65.223666					
Viewshed	2022-03-12 15:15		-	-		NA	154					-96.46296	65.254604					
Viewshed	2022-03-12 15:15		-	-		NA	154					-96.46296	65.254604					
Viewshed	2022-03-12 15:15		-	-		NA	154					-96.46296	65.254604					
Viewshed	2022-03-12 15:15		-	-		NA	154					-96.46296	65.254604					
Viewshed	2022-03-12 15:15		-	-		NA	156					-96.45207	65.262217					
Viewshed	2022-03-12 15:15		-	-		NA	156					-96.45207	65.262217					
Viewshed	2022-03-12 15:15		-	-		NA	156					-96.45207	65.262217					
Viewshed	2022-03-12 15:15		-	-		NA	160-161					-96.41356	65.294293					
Viewshed	2022-03-12 15:15		-	-		NA	160-161					-96.41356	65.294293					
Viewshed	2022-03-12 15:15		-	-		NA	160-161					-96.41356	65.294293					
Viewshed	2022-03-12 15:15		-	-		NA	160-161					-96.41356	65.294293					
Viewshed	2022-03-12 15:15		-	-		NA	166					-96.48819	65.325287					
Viewshed	2022-03-12 15:15		-	-		NA	166					-96.48819	65.325287					
Viewshed	2022-03-12 15:15		-	-		NA	166					-96.48819	65.325287					
Viewshed	2022-03-12 15:15		-	-		NA	166					-96.48819	65.325287					
Viewshed	2022-03-12 15:15		-	-		NA	169					-96.53703	65.340029					
Viewshed	2022-03-12 15:15		-	-		NA	169					-96.53703	65.340029					
Viewshed	2022-03-12 15:15		-	-		NA	169					-96.53703	65.340029					
Viewshed	2022-03-12 15:15		-	-		NA	169					-96.53703	65.340029					
Viewshed	2022-03-12 15:15		-	-		NA	176					-96.60379	65.38622					
Viewshed	2022-03-12 15:15		-	-		NA	176					-96.60379	65.38622					
Viewshed	2022-03-12 15:15		-	-		NA	176					-96.60379	65.38622					
Viewshed	2022-03-19 7:11		-	-		NA	116					-96.02061	65.080258					
Viewshed	2022-03-19 7:11		-	-		NA	116					-96.02061	65.080258					
Viewshed	2022-03-19 7:11		-	-		NA	116					-96.02061	65.080258					
Viewshed	2022-03-19 7:11		-	-		NA	116					-96.02061	65.080258					
Viewshed	2022-03-19 7:11		-	-		NA	118					-96.05506	65.086475					
Viewshed	2022-03-19 7:11		-	-		NA	118					-96.05506	65.086475					
Viewshed	2022-03-19 7:11		-	-		NA	118					-96.05506	65.086475					
Viewshed	2022-03-19 7:11		-	-		NA	118					-96.05506	65.086475					
Viewshed	2022-03-19 7:11		-	-		NA	121-122					-96.08638	65.10712					

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2022-03-19 7:11		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-03-19 7:11		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-03-19 7:11		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-03-19 7:11		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-03-19 7:11		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-03-19 7:11		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-03-19 7:11		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-03-19 7:11		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-03-19 7:11		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-03-19 7:11		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-03-19 7:11		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-03-19 7:11		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-03-19 7:11		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-03-19 7:11		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-03-19 7:11		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-03-19 7:11		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-03-19 7:11		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-03-19 7:11		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-03-19 7:11		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-03-19 7:11		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-03-19 7:11		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-03-19 7:11		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-03-19 7:11		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-03-19 7:11		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-03-19 7:11		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-03-19 7:11		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-03-19 7:11		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-03-19 7:11		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-03-19 7:11		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-03-19 7:11		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-03-19 7:11		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-03-19 7:11		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-03-19 7:11		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-03-19 7:11		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-03-19 7:11		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-03-19 7:11		-	-			NA	176				-96.60379	65.38622					
Road	2022-03-19 8:06	No					NA					NA	NA					
Incidental	2022-03-20 9:25	Yes	Wolf	6	Resting	N	217	148	East	No		-96.42744	65.220477			No	Not Exceeded	
Road	2022-03-21 12:15	No					NA					NA	NA					
Viewshed	2022-03-27 8:38		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-03-27 8:38		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-03-27 8:38		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-03-27 8:38		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-03-27 8:38		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-03-27 8:38		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-03-27 8:38		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-03-27 8:38		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-03-27 8:38		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-03-27 8:38		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-03-27 8:38		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-03-27 8:38		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-03-27 8:38		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-03-27 8:38		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-03-27 8:38		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-03-27 8:38		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-03-27 8:38		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-03-27 8:38		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-03-27 8:38		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-03-27 8:38		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-03-27 8:38		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-03-27 8:38		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-03-27 8:38		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-03-27 8:38		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-03-27 8:38		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-03-27 8:38		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-03-27 8:38		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-03-27 8:38		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-03-27 8:38		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-03-27 8:38		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-03-27 8:38		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-03-27 8:38		-	-			NA	154				-96.46296	65.254604					

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation	
Viewshed	2022-03-27 8:38		-	-			NA	156				-96.45207	65.262217						
Viewshed	2022-03-27 8:38		-	-			NA	156				-96.45207	65.262217						
Viewshed	2022-03-27 8:38		-	-			NA	156				-96.45207	65.262217						
Viewshed	2022-03-27 8:38		-	-			NA	156				-96.45207	65.262217						
Viewshed	2022-03-27 8:38		-	-			NA	160-161				-96.41356	65.294293						
Viewshed	2022-03-27 8:38		-	-			NA	160-161				-96.41356	65.294293						
Viewshed	2022-03-27 8:38		-	-			NA	160-161				-96.41356	65.294293						
Viewshed	2022-03-27 8:38		-	-			NA	166				-96.48819	65.325287						
Viewshed	2022-03-27 8:38		-	-			NA	166				-96.48819	65.325287						
Viewshed	2022-03-27 8:38		-	-			NA	166				-96.48819	65.325287						
Viewshed	2022-03-27 8:38		-	-			NA	169				-96.53703	65.340029						
Viewshed	2022-03-27 8:38		-	-			NA	169				-96.53703	65.340029						
Viewshed	2022-03-27 8:38		-	-			NA	169				-96.53703	65.340029						
Viewshed	2022-03-27 8:38		-	-			NA	176				-96.60379	65.38622						
Viewshed	2022-03-27 8:38		-	-			NA	176				-96.60379	65.38622						
Viewshed	2022-03-27 8:38		-	-			NA	176				-96.60379	65.38622						
Viewshed	2022-03-27 8:38		-	-			NA	176				-96.60379	65.38622						
Road	2022-03-27 13:04	Yes	Muskox	10	Feeding	NE	10	153	East	No		-96.47626	65.248229				No	Not Exceeded	
Incidental	2022-03-27 16:00	Yes	Muskox	13	Foraging	N/A	100	154	East	No		-96.46296	65.254604				Yes ; Same group of musk ox hanging around the same km. Same numbers and place and proximity to the road.	Not Exceeded	Speed restriction of 30km/h was put in place from km 153-155.
Road	2022-03-29 12:38	Yes	Arctic fox	1	Running	S	5	164	East	N/A		-96.44722	65.322562				No	Not Exceeded	
Road	2022-03-29 12:38	Yes	Arctic fox	1	Walking	N	5	117	West	Yes		-96.03942	65.0837				No	Not Exceeded	
Incidental	2022-03-30 9:30	Yes	Caribou	2	Feeding	N/A	100	179	West	No		-96.00217	65.051123				No	Not Exceeded	
Incidental	2022-03-30 10:30	Yes	Caribou	9	Feeding	E	500	134	East	No		-96.19286	65.204805				No	Not Exceeded	
Viewshed	2022-03-30 12:20		-	-			NA	116				-96.02061	65.080258						
Viewshed	2022-03-30 12:20		-	-			NA	116				-96.02061	65.080258						
Viewshed	2022-03-30 12:20		Crow	2	Flying	E	0	116	West			-96.02061	65.080258					Not Exceeded	
Viewshed	2022-03-30 12:20		-	-			NA	116				-96.02061	65.080258						
Viewshed	2022-03-30 12:20		-	-			NA	118				-96.05506	65.086475						
Viewshed	2022-03-30 12:20		-	-			NA	118				-96.05506	65.086475						
Viewshed	2022-03-30 12:20		-	-			NA	118				-96.05506	65.086475						
Viewshed	2022-03-30 12:20		-	-			NA	118				-96.05506	65.086475						
Viewshed	2022-03-30 12:20		-	-			NA	121-122				-96.08638	65.10712						
Viewshed	2022-03-30 12:20		-	-			NA	121-122				-96.08638	65.10712						
Viewshed	2022-03-30 12:20		-	-			NA	121-122				-96.08638	65.10712						
Viewshed	2022-03-30 12:20		-	-			NA	121-122				-96.08638	65.10712						
Viewshed	2022-03-30 12:20		-	-			NA	128				-96.13583	65.161371						
Viewshed	2022-03-30 12:20		-	-			NA	128				-96.13583	65.161371						
Viewshed	2022-03-30 12:20		-	-			NA	128				-96.13583	65.161371						
Viewshed	2022-03-30 12:20		-	-			NA	128				-96.13583	65.161371						
Viewshed	2022-03-30 12:20		-	-			NA	133				-96.17538	65.199246						
Viewshed	2022-03-30 12:20		-	-			NA	133				-96.17538	65.199246						
Viewshed	2022-03-30 12:20		-	-			NA	133				-96.17538	65.199246						
Viewshed	2022-03-30 12:20		-	-			NA	133				-96.17538	65.199246						
Viewshed	2022-03-30 12:20		-	-			NA	138				-96.26018	65.2238						
Viewshed	2022-03-30 12:20		-	-			NA	138				-96.26018	65.2238						
Viewshed	2022-03-30 12:20		-	-			NA	138				-96.26018	65.2238						
Viewshed	2022-03-30 12:20		-	-			NA	138				-96.26018	65.2238						
Viewshed	2022-03-30 12:20		-	-			NA	144				-96.35797	65.223666						
Viewshed	2022-03-30 12:20		-	-			NA	144				-96.35797	65.223666						
Viewshed	2022-03-30 12:20		-	-			NA	144				-96.35797	65.223666						
Viewshed	2022-03-30 12:20		-	-			NA	144				-96.35797	65.223666						
Viewshed	2022-03-30 12:20		-	-			NA	154				-96.46296	65.254604						
Viewshed	2022-03-30 12:20		-	-			NA	154				-96.46296	65.254604						
Viewshed	2022-03-30 12:20		Muskox	4	Foraging	N/A	1500	154	West			-96.46296	65.254604					Not Exceeded	
Viewshed	2022-03-30 12:20		-	-			NA	154				-96.46296	65.254604						
Viewshed	2022-03-30 12:20		-	-			NA	156				-96.45207	65.262217						
Viewshed	2022-03-30 12:20		-	-			NA	156				-96.45207	65.262217						
Viewshed	2022-03-30 12:20		-	-			NA	156				-96.45207	65.262217						
Viewshed	2022-03-30 12:20		-	-			NA	156				-96.45207	65.262217						
Viewshed	2022-03-30 12:20		-	-			NA	160-161				-96.41356	65.294293						
Viewshed	2022-03-30 12:20		-	-			NA	160-161				-96.41356	65.294293						
Viewshed	2022-03-30 12:20		-	-			NA	160-161				-96.41356	65.294293						
Viewshed	2022-03-30 12:20		-	-			NA	160-161				-96.41356	65.294293						
Viewshed	2022-03-30 12:20		-	-			NA	166				-96.48819	65.325287						
Viewshed	2022-03-30 12:20		-	-			NA	166				-96.48819	65.325287						
Viewshed	2022-03-30 12:20		-	-			NA	166				-96.48819	65.325287						
Viewshed	2022-03-30 12:20		-	-			NA	166				-96.48819	65.325287						

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2022-03-30 12:20		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-03-30 12:20		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-03-30 12:20		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-03-30 12:20		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-03-30 12:20		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-03-30 12:20		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-03-30 12:20		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-03-30 12:20		-	-			NA	176				-96.60379	65.38622					
Incidental	2022-03-30 14:56	Yes	Muskox	3	Feeding	N/A	300	141	East	No		-96.31809	65.223683			No	Not Exceeded	
Incidental	2022-03-30 15:22	Yes	Muskox	10	Foraging	N/A	2000	149	East	N/A		-96.44264	65.223273			No	Not Exceeded	
Incidental	2022-03-30 16:28	Yes	Caribou	3	Foraging	N/A	400	174	West	No		-96.60128	65.368315			No	Not Exceeded	
Road	2022-04-01 14:24	Yes	Muskox	9	Resting	N/A	250	154	East	No		-96.46296	65.254604			No	Not Exceeded	
Road	2022-04-02 6:42	Yes	Muskox	12	Feeding	N/A	30	153	East	No		-96.47626	65.248229			No	Not Exceeded	
Road	2022-04-02 6:42	Yes	Muskox	3	Feeding	N/A	50	141	East	N/A		-96.31809	65.223683			No	Not Exceeded	
Road	2022-04-02 6:42	Yes	Caribou	10	Foraging	N/A	130	133	East	No		-96.17538	65.199246			No	Not Exceeded	
Road	2022-04-02 6:42	Yes	Caribou	13	Resting	N/A	500	114	East	N/A		-96.00424	65.066791			No	Not Exceeded	
Incidental	2022-04-02 8:57	Yes	Caribou	12	Walking	S	800	129	West	No		-96.14593	65.169019			No	Not Exceeded	
Incidental	2022-04-02 9:37	Yes	Caribou	4	Walking	SE	10	150	East	No		-96.45008	65.230216			No	Not Exceeded	
Road	2022-04-03 8:05	Yes	Muskox	8	Feeding	N/A	250	118	West	No		-96.05506	65.086475			No	Not Exceeded	
Road	2022-04-03 8:05	Yes	Caribou	15	Feeding	N/A	300	136	West	No		-96.2274	65.213075			No	Not Exceeded	
Road	2022-04-03 8:05	Yes	Caribou	10	Feeding	N/A	250	137	West	No		-96.2415	65.219441			No	Not Exceeded	
Road	2022-04-04 13:19	Yes	Muskox	6	Feeding	N/A	1000	119	West	No		-96.06476	65.093211			No	Not Exceeded	
Road	2022-04-04 13:19	Yes	Crow	1	Flying	S	50	150	Both	N/A		-96.45008	65.230216			No	Not Exceeded	
Road	2022-04-05 8:41	No					NA					NA	NA					
Incidental	2022-04-05 12:45	Yes	Caribou	10	Lying Down	N/A	200	179	South	No		-96.00217	65.051123			No	Not Exceeded	
Road	2022-04-06 9:34	Yes	Caribou	5	Resting	N/A	200	152	West	No		-96.47617	65.241762			No	Not Exceeded	
Viewshed	2022-04-06 12:40		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-04-06 12:40		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-04-06 12:40		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-04-06 12:40		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-04-06 12:40		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-04-06 12:40		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-04-06 12:40		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-04-06 12:40		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-04-06 12:40		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-04-06 12:40		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-04-06 12:40		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-04-06 12:40		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-04-06 12:40		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-04-06 12:40		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-04-06 12:40		Common raven	1	Flying	Not Recorded	400	128	West			-96.13583	65.161371				Not Exceeded	
Viewshed	2022-04-06 12:40		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-04-06 12:40		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-04-06 12:40		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-04-06 12:40		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-04-06 12:40		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-04-06 12:40		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-04-06 12:40		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-04-06 12:40		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-04-06 12:40		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-04-06 12:40		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-04-06 12:40		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-04-06 12:40		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-04-06 12:40		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-04-06 12:40		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-04-06 12:40		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-04-06 12:40		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-04-06 12:40		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-04-06 12:40		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-04-06 12:40		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-04-06 12:40		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-04-06 12:40		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-04-06 12:40		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-04-06 12:40		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-04-06 12:40		Caribou	14	Foraging	Not Recorded	900	160-161	West			-96.41356	65.294293				Not Exceeded	
Viewshed	2022-04-06 12:40		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-04-06 12:40		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-04-06 12:40		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-04-06 12:40		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-04-06 12:40		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-04-06 12:40		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-04-06 12:40		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-04-06 12:40		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-04-06 12:40		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-04-06 12:40		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-04-06 12:40		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-04-06 12:40		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-04-06 12:40		-	-			NA	176				-96.60379	65.38622					

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2022-04-06 15:23	Yes	Caribou	42	Foraging	N/A	500	165	West	No	GST exceeded, speed restriction implemented at 30 km/h till the road closes.	-96.46782	65.323887			No	Exceeded	Speed restriction (30km/h) from 165 to 166. The road was closed later that day.
Road	2022-04-07 7:10	Yes	Caribou	20	Walking	E	0	165	Both	Yes		-96.46782	65.323887			No	Not Exceeded	
Road	2022-04-07 9:00	Yes	Arctic fox	1	Running	S	50	178	East	No		-96.6219	65.400857			No	Not Exceeded	
Road	2022-04-07 9:00	Yes	Caribou	21	Lying Down	N/A	500	175	West	No		-96.60237	65.377259			No	Not Exceeded	
Road	2022-04-07 9:00	Yes	Caribou	17	Walking	W	0	173	East	Yes		-96.60297	65.359721			No	Not Exceeded	
Road	2022-04-07 9:00	Yes	Caribou	25	Feeding	NE	700	169	West	No		-96.53703	65.340029			No	Not Exceeded	
Road	2022-04-07 9:00	Yes	Muskox	8	Feeding	N/A	120	156	East	No		-96.45207	65.262217			No	Not Exceeded	
Road	2022-04-07 9:00	Yes	Muskox	2	Lying Down	N/A	200	153	West	No		-96.47626	65.248229			No	Not Exceeded	
Road	2022-04-07 9:00	Yes	Caribou	25	Feeding	N/A	800	151	West	No		-96.46622	65.234469			No	Not Exceeded	
Road	2022-04-07 9:00	Yes	Caribou	7	Standing	S	50	149	West	No		-96.44264	65.223273			No	Not Exceeded	
Road	2022-04-07 9:00	Yes	Caribou	6	Walking	S	1200	127	West	No		-96.12549	65.153813			No	Not Exceeded	
Road	2022-04-07 9:00	Yes	Caribou	4	Standing	N/A	500	111	West	No		-96.02402	65.048147			No	Not Exceeded	
Road	2022-04-08 8:25	Yes	Caribou	16	Foraging	N/A	400	179	West	No	Speed restriction implemented from KM 177 to AMQ	-96.66219	65.403044			No	Not Exceeded	
Road	2022-04-08 8:25	Yes	Caribou	22	Foraging	N/A	400	163	West	No	Speed restriction implemented from km 162 to 164	-96.4304	65.317408			No	Not Exceeded	
Road	2022-04-08 8:25	Yes	Muskox	6	Resting	N/A	300	153	West	No		-96.47626	65.248229			No	Not Exceeded	
Road	2022-04-08 8:25	Yes	Caribou	5	Feeding	N/A	300	147	West	No	Speed restriction implemented from km 146 to 148.	-96.41835	65.227863			No	Not Exceeded	
Road	2022-04-08 8:25	Yes	Caribou	11	Walking	W	1500	117	West	No		-96.03942	65.0837			No	Not Exceeded	
Road	2022-04-08 8:25	Yes	Caribou	10	Standing	N/A	1000	115	West	No		-96.00905	65.071117			No	Not Exceeded	
Viewshed	2022-04-09 8:09		-	-	-	-	NA	176				-96.60379	65.38622					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	176				-96.60379	65.38622					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	176				-96.60379	65.38622					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	176				-96.60379	65.38622					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	169				-96.53703	65.340029					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	169				-96.53703	65.340029					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	169				-96.53703	65.340029					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	166				-96.48819	65.325287					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	166				-96.48819	65.325287					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	166				-96.48819	65.325287					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	166				-96.48819	65.325287					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	160-161				-96.41356	65.294293					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	160-161				-96.41356	65.294293					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	160-161				-96.41356	65.294293					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	160-161				-96.41356	65.294293					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	156				-96.45207	65.262217					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	156				-96.45207	65.262217					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	156				-96.45207	65.262217					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	154				-96.46296	65.254604					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	154				-96.46296	65.254604					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	154				-96.46296	65.254604					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	154				-96.46296	65.254604					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	144				-96.35797	65.223666					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	144				-96.35797	65.223666					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	144				-96.35797	65.223666					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	144				-96.35797	65.223666					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	138				-96.26018	65.2238					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	138				-96.26018	65.2238					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	138				-96.26018	65.2238					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	133				-96.17538	65.199246					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	133				-96.17538	65.199246					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	133				-96.17538	65.199246					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	133				-96.17538	65.199246					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	128				-96.13583	65.161371					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	128				-96.13583	65.161371					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	128				-96.13583	65.161371					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	121-122				-96.08638	65.10712					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	121-122				-96.08638	65.10712					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	121-122				-96.08638	65.10712					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	121-122				-96.08638	65.10712					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	118				-96.05506	65.086475					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	118				-96.05506	65.086475					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	118				-96.05506	65.086475					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	116				-96.02061	65.080258					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	116				-96.02061	65.080258					
Viewshed	2022-04-09 8:09		-	-	-	-	NA	116				-96.02061	65.080258					
Road	2022-04-09 8:14	Yes	Caribou	14	Resting	N/A	100	173	West	No		-96.60297	65.359721			No	Not Exceeded	
Road	2022-04-09 8:14	Yes	Caribou	6	Feeding	N/A	600	163	West	No		-96.4304	65.317408			No	Not Exceeded	
Road	2022-04-09 8:14	Yes	Caribou	12	Resting	N/A	150	149	West	No		-96.44264	65.223273			No	Not Exceeded	

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2022-04-09 12:00	Yes	Caribou	110	Foraging	NE	1000	118	West	N/A		-96.05506	65.086475			No	Exceeded	Speed restriction implemented at 30 km/h till the road closes.
Incidental	2022-04-09 13:01	Yes	Caribou	22	Foraging	N/A	1000	148	West	No		-96.42744	65.220477			No	Not Exceeded	
Incidental	2022-04-09 13:09	Yes	Muskox	5	Feeding	N/A	200	153	West	No		-96.47626	65.248229			No	Not Exceeded	
Incidental	2022-04-09 16:48	Yes	Caribou	16	Walking	NW	1000	119	West	No		-96.06476	65.093211			No	Not Exceeded	
Road	2022-04-10 5:00	Yes	Muskox	12	Foraging	N/A	200	155	East	No	Road closed	-96.43417	65.267612			No	Not Exceeded	
Road	2022-04-10 5:00	Yes	Muskox	6	Resting	N/A	300	153	West	No		-96.47626	65.248229			No	Not Exceeded	
Road	2022-04-10 5:00	Yes	Caribou	3	Resting	N/A	500	149	East	No		-96.44264	65.223273			No	Not Exceeded	
Road	2022-04-10 5:00	Yes	Caribou	2	Foraging	N	200	148	East	No		-96.42744	65.220477			No	Not Exceeded	
Road	2022-04-10 5:00	Yes	Caribou	60	Foraging	N/A	300	144	West	No		-96.3908	65.225836			No	Exceeded	Road closed
Road	2022-04-10 5:55	Yes	Caribou	50	Walking	NW	300	130	West	No		-96.1528	65.17815			No	Exceeded	Road closed
Road	2022-04-10 5:55	Yes	Caribou	30		W	30	130	West	Deflection	3 males trying to cross, i was driving slow but they were the other side of a little hill so when i pass by i scared them cause inwasnt able to saw them before. They were scouting for a group of 30 so they deflect and didnt cross the road.	-96.1528	65.17815			No	Not Exceeded	
Road	2022-04-10 5:55	Yes	Caribou	23	Resting	N/A	500	137	West	No		-96.2415	65.219441			No	Not Exceeded	
Road	2022-04-10 5:55	Yes	Caribou	15	Walking	SW	500	118	West	No		-96.05506	65.086475			No	Not Exceeded	
Road	2022-04-10 5:55	Yes	Caribou	15	Walking	W	300	112	East	No	Heading for the road, potential crossing	-96.00217	65.051123			No	Not Exceeded	
Incidental	2022-04-10 7:17	Yes	Caribou	3	Foraging	N/A	300	158	West	No		-96.40471	65.277758			No	Not Exceeded	
Incidental	2022-04-10 7:27	Yes	Caribou	65	Foraging	N/A	400	165	West	No		-96.46782	65.323887			No	Exceeded	Road closed
Incidental	2022-04-10 7:41	Yes	Caribou	300	Foraging	N	400	167	West	No		-96.5061	65.328371			No	Exceeded	Road closed
Incidental	2022-04-10 8:00	Yes	Caribou	120	Foraging	N	500	170	West	No		-96.54979	65.346648			No	Exceeded	Road closed
Incidental	2022-04-10 8:53	Yes	Caribou	60	Foraging	N/A	800	178	West	No		-96.6219	65.400857			No	Exceeded	Road closed
Incidental	2022-04-10 9:58	Yes	Caribou	80	Running	N	800	175	West	No		-96.60237	65.377259			No	Exceeded	Road closed
Incidental	2022-04-10 13:55	Yes	Caribou	50	Walking	SE	800	143	West	No		-96.35797	65.223666			No	Exceeded	Road closed
Incidental	2022-04-10 14:20	Yes	Caribou	90	Foraging	N/A	1000	163	West	No		-96.4304	65.317408			No	Exceeded	Road closed
Incidental	2022-04-10 14:30	Yes	Caribou	300	Feeding	N/A	600	169	West	No		-96.53703	65.340029			No	Exceeded	Road closed
Incidental	2022-04-10 14:35	Yes	Caribou	200	Feeding	N/A	800	177	West	No		-96.60847	65.394344			No	Exceeded	Road closed
Blast	2022-04-10 16:50	Wildlife observed	Caribou	240	Feeding	Not recorded,N/A	600	177	West	N/A		-96.62162	65.400706				Exceeded	More than 4km from blast - none needed. Road Closed
Road	2022-04-11 9:06	Yes	Caribou	14	Feeding	N/A	50	179	West	No		-96.65445	65.404648			No	Not Exceeded	
Road	2022-04-11 9:06	Yes	Caribou	250	Feeding	N/A	2000	177	West	No		-96.60847	65.394344			No	Exceeded	The road is closed. We are performing a convoy
Road	2022-04-11 9:06	Yes	Caribou	6	Standing	N/A	600	167	West	No		-96.5061	65.328371			No	Not Exceeded	
Road	2022-04-11 9:06	Yes	Caribou	47	Walking	SE	1000	163	West	No		-96.4304	65.317408			No	Exceeded	Road closed
Road	2022-04-11 9:06	Yes	Caribou	8	Feeding	N/A	100	152	West	No		-96.47617	65.241762			No	Not Exceeded	
Road	2022-04-11 9:06	Yes	Caribou	80	Walking	SE	700	144	West	No		-96.36284	65.222656			No	Exceeded	Road closed
Road	2022-04-11 9:06	Yes	Caribou	16	Standing	N/A	200	119	West	No		-96.06476	65.093211			No	Not Exceeded	
Blast	2022-04-11 17:01	Wildlife observed	Caribou	5	Feeding	W	250	179	West	No		-96.64806	65.405173				Not Exceeded	
Road	2022-04-12 7:15	Yes	Caribou	5	Standing	Not Recorded	1000	166	West	No	No coordinates, did not take location on field. Can use KM coordinates.	-96.48819	65.325287			No	Not Exceeded	
Road	2022-04-12 7:15	Yes	Caribou	27	Feeding	Not Recorded	500	161	West	No	A caribou group were also observed in this location yesterday	-96.41207	65.30324			No	Not Exceeded	
Road	2022-04-12 7:15	Yes	Caribou	46	Feeding	Not Recorded	2000	176	West	No		-96.60379	65.38622			No	Exceeded	Road closed
Road	2022-04-12 7:17	Yes	Muskox	7	Foraging	N	600	119	West	No		-96.06476	65.093211			No	Not Exceeded	
Road	2022-04-12 7:17	Yes	Caribou	6	Walking	N	350	154	West	No		-96.46296	65.254604			No	Not Exceeded	
Viewshed	2022-04-12 9:46	-	-	-	-	-	NA	176	-	-		-96.60379	65.38622					
Viewshed	2022-04-12 9:46	-	-	-	-	-	NA	176	-	-		-96.60379	65.38622					
Viewshed	2022-04-12 9:46	-	-	-	-	-	NA	176	-	-		-96.60379	65.38622					
Viewshed	2022-04-12 9:46	-	-	-	-	-	NA	176	-	-		-96.60379	65.38622					
Viewshed	2022-04-12 9:46	-	-	-	-	-	NA	169	-	-		-96.53703	65.340029					
Viewshed	2022-04-12 9:46	-	-	-	-	-	NA	169	-	-		-96.53703	65.340029					
Viewshed	2022-04-12 9:46	-	-	-	-	-	NA	169	-	-		-96.53703	65.340029					
Viewshed	2022-04-12 9:46	-	-	-	-	-	NA	169	-	-		-96.53703	65.340029					
Viewshed	2022-04-12 9:46	-	-	-	-	-	NA	166	-	-		-96.48819	65.325287					
Viewshed	2022-04-12 9:46	-	-	-	-	-	NA	166	-	-		-96.48819	65.325287					
Viewshed	2022-04-12 9:46	-	-	-	-	-	NA	166	-	-		-96.48819	65.325287					
Viewshed	2022-04-12 9:46	-	-	-	-	-	NA	166	-	-		-96.48819	65.325287					
Viewshed	2022-04-12 9:46	-	-	-	-	-	NA	166	-	-		-96.48819	65.325287					
Viewshed	2022-04-12 9:46	-	-	-	-	-	NA	160-161	-	-		-96.41356	65.294293					
Viewshed	2022-04-12 9:46	-	-	-	-	-	NA	160-161	-	-		-96.41356	65.294293					
Viewshed	2022-04-12 9:46	-	-	-	-	-	NA	160-161	-	-		-96.41356	65.294293					
Viewshed	2022-04-12 9:46	-	-	-	-	-	NA	156	-	-		-96.45207	65.262217					
Viewshed	2022-04-12 9:46	-	-	-	-	-	NA	156	-	-		-96.45207	65.262217					
Viewshed	2022-04-12 9:46	-	-	-	-	-	NA	156	-	-		-96.45207	65.262217					
Viewshed	2022-04-12 9:46	-	-	-	-	-	NA	156	-	-		-96.45207	65.262217					
Viewshed	2022-04-12 9:46	-	-	-	-	-	NA	154	-	-		-96.46296	65.254604					
Viewshed	2022-04-12 9:46	-	-	-	-	-	NA	154	-	-		-96.46296	65.254604					
Viewshed	2022-04-12 9:46	-	-	-	-	-	NA	154	-	-		-96.46296	65.254604					
Viewshed	2022-04-12 9:46	-	-	-	-	-	NA	154	-	-		-96.46296	65.254604					

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2022-04-12 9:46		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-04-12 9:46		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-04-12 9:46		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-04-12 9:46		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-04-12 9:46		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-04-12 9:46		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-04-12 9:46		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-04-12 9:46		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-04-12 9:46		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-04-12 9:46		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-04-12 9:46		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-04-12 9:46		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-04-12 9:46		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-04-12 9:46		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-04-12 9:46		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-04-12 9:46		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-04-12 9:46		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-04-12 9:46		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-04-12 9:46		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-04-12 9:46		Muskox	8	Lying Down	N/A	50	118	West			-96.05506	65.086475				Not Exceeded	
Viewshed	2022-04-12 9:46		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-04-12 9:46		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-04-12 9:46		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-04-12 9:46		-	-			NA	116				-96.02061	65.080258					
Incidental	2022-04-12 16:45	Yes	Caribou	60	Foraging	Not Recorded	2000	174	West	No		-96.60128	65.368315			No	Exceeded	The caribou group is further than the 1.5km distance requirement
Incidental	2022-04-12 17:07	Yes	Caribou	140	Foraging	Not Recorded	2000	161	West	No		-96.41207	65.30324			No	Exceeded	The caribou were further away than the 1.5km requirement
Incidental	2022-04-12 17:25	Yes	Caribou	6	Foraging	Not Recorded	75	153	West	No		-96.47626	65.248229			No	Not Exceeded	
Road	2022-04-13 7:12	Yes	Caribou	9	Walking	E	0	112	Both	Yes		-96.00217	65.051123			No	Not Exceeded	
Road	2022-04-13 7:12	Yes	Caribou	7	Foraging	N/A	350	179	East	No		-96.65084	65.405101			No	Not Exceeded	
Road	2022-04-13 7:12	Yes	Caribou	8	Foraging	N/A	120	179	West	No		-96.65084	65.405101			No	Not Exceeded	
Incidental	2022-04-13 12:20	Yes	Caribou	14	Walking	E	0	114	West,East	Yes		-96.00424	65.066791			No	Not Exceeded	
Road	2022-04-14 7:18	Yes	Caribou	63	Feeding	N/A	150	110	West	No		-96.04065	65.0414			No	Exceeded	Road Open/Closed/Open
Road	2022-04-14 7:18	Yes	Caribou	11	Feeding	N/A	250	170	West	No		-96.54979	65.346648			No	Not Exceeded	
Incidental	2022-04-14 16:49	Yes	Caribou	4	Walking	E	0	154	West	Yes	The group size was a total of four, however I only observed the one (the last) caribou cross the road. I stopped my vehicle and turned off lights/beacons. I let the caribou cross over the first ridge out of my line of sight before proceeding slowly north with my vehicle.	-96.46296	65.254604			No	Not Exceeded	
Road	2022-04-15 6:55	Yes	Caribou	36	Walking	E	700	175	West	No		-96.60237	65.377259			No	Exceeded	Road open/closed
Incidental	2022-04-15 12:18	Yes	Muskox	7	Standing	N/A	500	153	West	No		-96.47626	65.248229			No	Not Exceeded	
Incidental	2022-04-15 13:05	Yes	Caribou	93	Foraging	E	100	117	West			-96.03942	65.0837			No	Exceeded	Road closure
Incidental	2022-04-15 13:46	Yes	Caribou	140	Walking	SE	300	118	West	No		-96.05506	65.086475			No	Exceeded	Road closure
Incidental	2022-04-15 15:10	Yes	Caribou	20	Trotting/running	N	1000	163	West	No		-96.4304	65.317408			No	Not Exceeded	
Incidental	2022-04-15 15:28	Yes	Caribou	55	Walking	S	1000	125	West	No		-96.10792	65.139082			No	Exceeded	Road open/closed
Incidental	2022-04-15 15:32	Yes	Caribou	200	Lying Down	Not Recorded	2000	159	West	No		-96.40886	65.286013			No	Exceeded	The haul road is closed.Groups are being monitored by Env personnel frequently.
Road	2022-04-16 6:50	Yes	Caribou	8	Feeding	N/A	60	149	East	No		-96.44264	65.223273			No	Not Exceeded	
Road	2022-04-16 6:50	Yes	Caribou	6	Walking	SE	60	157	East	No		-96.41584	65.271231			No	Not Exceeded	
Incidental	2022-04-16 8:09	Yes	Caribou	150	Feeding	N/A	300	177	West	No	Split into larger group and smaller group	-96.60847	65.394344			No	Exceeded	The road was closed.
Incidental	2022-04-16 8:30	Yes	Caribou	50	Feeding	N/A	1000	165	West	No		-96.46782	65.323887			No	Exceeded	The road was closed
Incidental	2022-04-16 8:43	Yes	Caribou	4	Walking	N/A	100	156	East	No		-96.45207	65.262217			No	Not Exceeded	
Incidental	2022-04-16 8:48	Yes	Muskox	4	Standing	N/A	1000	154	West	No		-96.46296	65.254604			No	Not Exceeded	
Incidental	2022-04-16 8:56	Yes	Caribou	8	Feeding	N/A	300	149	East	No		-96.44264	65.223273			No	Not Exceeded	
Incidental	2022-04-16 9:38	Yes	Caribou	16	Walking	E	300	115	West	No		-96.00905	65.071117			No	Not Exceeded	
Road	2022-04-16 13:15	Yes	Caribou	20	Standing	Not Recorded	448	160	West	No	No GPS point taken, mileage marker only	-96.41356	65.294293			No	Not Exceeded	
Road	2022-04-16 13:15	Yes	Caribou	9	Standing	Not Recorded	223	149	West	No	No GPS point taken, mileage marker only	-96.44264	65.223273			No	Not Exceeded	
Road	2022-04-16 13:15	Yes	Caribou	10	Walking	N	483	127	West	No	No GPS point taken, mileage marker only	-96.12549	65.153813			No	Not Exceeded	
Road	2022-04-16 13:15	Yes	Caribou	16	Feeding	Not Recorded	175	112	West	No	No GPS point taken, mileage marker only.	-96.00217	65.051123			No	Not Exceeded	
Road	2022-04-16 13:15	Yes	Caribou	200	Lying Down	Not Recorded	557	174	West	No		-96.60128	65.368315			No	Exceeded	The WTHR is closed.Environment staff monitoring caribou locations and escorting convoys

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2022-04-16 13:15	Yes	Caribou	40	Alert	Not Recorded	247	172	West	No	No gps coord recorded, mileage marker only	-96.58667	65.355041			No	Exceeded	The WTHR is closed.Environment staff is monitoring caribou locations and escorting convoys.
Road	2022-04-16 13:15	Yes	Caribou	100	Standing	Not Recorded	440	165	West	No	No GPS location recorded, mileage marker only	-96.46782	65.323887			No	Exceeded	WTHR is closed.Environment staff are monitoring caribou locations and escorting convoys.
Road	2022-04-17 5:46	Yes	Muskox	4	Feeding	N/A	60	143	West	No		-96.35797	65.223666			No	Not Exceeded	
Road	2022-04-17 5:46	Yes	Caribou	2	Walking	E	100	113	East	No		-95.99327	65.058803			No	Not Exceeded	
Road	2022-04-17 5:46	Yes	Caribou	12	Walking	E	80	114	East	No		-96.00424	65.066791			No	Not Exceeded	
Road	2022-04-17 5:46	Yes	Caribou	12	Feeding	Not Recorded	215	152	West	No		-96.47617	65.241762			No	Not Exceeded	
Road	2022-04-17 5:46	Yes	Caribou	12	Running	N	400	166	West	No		-96.48819	65.325287			No	Not Exceeded	
Incidental	2022-04-17 6:20	Yes	Caribou	59	Foraging	N/A	300	175	West	No		-96.60237	65.377259			No	Exceeded	The road was closed and technicians are monitoring it
Incidental	2022-04-17 6:48	Yes	Caribou	22	Resting	N/A	150	159	West	No		-96.40886	65.286013			No	Not Exceeded	
Incidental	2022-04-17 6:54	Yes	Caribou	4	Foraging	N/A	50	157	East	No		-96.41584	65.271231			No	Not Exceeded	
Incidental	2022-04-17 7:01	Yes	Caribou	3	Walking	E	50	154	East	No		-96.46296	65.254604			No	Not Exceeded	
Incidental	2022-04-17 7:36	Yes	Caribou	38	Foraging	N/A	350	154	West	No		-96.46296	65.254604			No	Exceeded	The road was closed and technicians were monitoring the situation
Incidental	2022-04-17 7:48	Yes	Caribou	10	Walking	N	600	161	West	No		-96.41207	65.30324			No	Not Exceeded	
Incidental	2022-04-17 8:05	Yes	Caribou	28	Walking	N	400	170	West	No		-96.54979	65.346648			No	Not Exceeded	
Incidental	2022-04-17 11:28	Yes	Caribou	22	Trotting/running	SW	500	161	West	No		-96.41207	65.30324			No	Not Exceeded	
Road	2022-04-18 7:00	No					NA					NA	NA					
Viewshed	2022-04-18 7:01		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-04-18 7:01		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-04-18 7:01		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-04-18 7:01		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-04-18 7:01		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-04-18 7:01		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-04-18 7:01		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-04-18 7:01		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-04-18 7:01		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-04-18 7:01		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-04-18 7:01		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-04-18 7:01		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-04-18 7:01		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-04-18 7:01		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-04-18 7:01		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-04-18 7:01		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-04-18 7:01		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-04-18 7:01		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-04-18 7:01		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-04-18 7:01		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-04-18 7:01		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-04-18 7:01		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-04-18 7:01		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-04-18 7:01		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-04-18 7:01		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-04-18 7:01		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-04-18 7:01		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-04-18 7:01		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-04-18 7:01		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-04-18 7:01		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-04-18 7:01		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-04-18 7:01		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-04-18 7:01		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-04-18 7:01		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-04-18 7:01		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-04-18 7:01		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-04-18 7:01		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-04-18 7:01		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-04-18 7:01		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-04-18 7:01		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-04-18 7:01		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-04-18 7:01		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-04-18 7:01		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-04-18 7:01		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-04-18 7:01		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-04-18 7:01		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-04-18 7:01		-	-			NA	176				-96.60379	65.38622					
Incidental	2022-04-18 10:53	Yes	Caribou	25	Alert	N/A	1200	176	West	No		-96.60379	65.38622			No	Not Exceeded	
Incidental	2022-04-18 10:55	Yes	Caribou	22	Feeding	N/A	1600	176	West	No		-96.60379	65.38622			No	Not Exceeded	
Incidental	2022-04-18 11:42	Yes	Caribou	8	Feeding	N/A	350	149	West	No		-96.44264	65.223273			No	Not Exceeded	
Incidental	2022-04-18 18:10	Yes	Wolf	2	Walking	N	5	149	West	No		-96.44264	65.223273			No	Not Exceeded	

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2022-04-19 6:59	Yes	Caribou	2	Standing	N/A	220	154	West	No		-96.46296	65.254604			No	Not Exceeded	
Incidental	2022-04-19 9:06	Yes	Caribou	22	Foraging	N/A	2000	172	West	No		-96.58667	65.355041			No	Not Exceeded	
Incidental	2022-04-19 10:14	Yes	Caribou	5	Lying Down	N/A	220	154	West	No		-96.46296	65.254604			No	Not Exceeded	
Road	2022-04-20 7:09	No					NA					NA	NA					
Viewshed	2022-04-20 9:38		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-04-20 9:38		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-04-20 9:38		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-04-20 9:38		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-04-20 9:38		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-04-20 9:38		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-04-20 9:38		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-04-20 9:38		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-04-20 9:38		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-04-20 9:38		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-04-20 9:38		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-04-20 9:38		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-04-20 9:38		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-04-20 9:38		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-04-20 9:38		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-04-20 9:38		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-04-20 9:38		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-04-20 9:38		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-04-20 9:38		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-04-20 9:38		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-04-20 9:38		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-04-20 9:38		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-04-20 9:38		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-04-20 9:38		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-04-20 9:38		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-04-20 9:38		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-04-20 9:38		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-04-20 9:38		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-04-20 9:38		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-04-20 9:38		Caribou	100	Foraging	N	3000	154	West			-96.46296	65.254604				Exceeded	No mitigation measures required as group was more than 1500 m from road
Viewshed	2022-04-20 9:38		Muskox	3	Feeding	Not Recorded	2000	154	West			-96.46296	65.254604				Not Exceeded	
Viewshed	2022-04-20 9:38		Muskox	9	Feeding	N/A	1000	156	East			-96.45207	65.262217				Not Exceeded	
Viewshed	2022-04-20 9:38		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-04-20 9:38		Caribou	100	Feeding	N	2000	156	West		A group of caribou on the valley floor, not the same group as seen at the km154	-96.45207	65.262217				Exceeded	No mitigation measures required as group was more than 1500 m from road
Viewshed	2022-04-20 9:38		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-04-20 9:38		Caribou	4	Resting	Not Recorded	2500	160-161	East			-96.41356	65.294293				Not Exceeded	
Viewshed	2022-04-20 9:38		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-04-20 9:38		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-04-20 9:38		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-04-20 9:38		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-04-20 9:38		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-04-20 9:38		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-04-20 9:38		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-04-20 9:38		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-04-20 9:38		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-04-20 9:38		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-04-20 9:38		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-04-20 9:38		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-04-20 9:38		Caribou	66	Foraging	Not Recorded	2000	176	West			-96.60379	65.38622				Exceeded	No mitigation measures required as group was more than 1500 m from road
Viewshed	2022-04-20 9:38		-	-			NA	176				-96.60379	65.38622					
Incidental	2022-04-20 15:15	Yes	Caribou	32	Walking	SW	450	116	West	No		-96.02061	65.080258			No	Not Exceeded	
Incidental	2022-04-20 15:25	Yes	Caribou	13	Feeding	N/A	700	113	East	No		-95.99327	65.058803			No	Not Exceeded	
Incidental	2022-04-20 15:26	Yes	Caribou	10	Feeding	N/A	2000	113	East	No		-95.99327	65.058803			No	Not Exceeded	
Incidental	2022-04-20 15:31	Yes	Caribou	40	Feeding	N/A	400	112	West	No		-96.00217	65.051123			No	Exceeded	Speed restriction
Road	2022-04-21 6:25	Yes	Caribou	24	Walking	N	100	176	West	No		-96.60379	65.38622			No	Not Exceeded	
Road	2022-04-21 6:25	Yes	Caribou	113	Alert	W	300	169	West	No		-96.53703	65.340029			No	Exceeded	Road is closed and convoy are done for crew change
Road	2022-04-21 6:25	Yes	Caribou	67	Foraging	N/A	200	168	West	No		-96.52405	65.333518			No	Exceeded	Road is closed and convoy are done for crew change
Road	2022-04-21 6:25	Yes	Caribou	105	Foraging	S	150	166	West	No		-96.48819	65.325287			No	Exceeded	Road is closed and convoy are done for crew change
Road	2022-04-21 6:25	Yes	Caribou	135	Alert	N/A	100	163	West	No		-96.4304	65.317408			No	Exceeded	Road is closed and convoy are done for crew change
Road	2022-04-21 6:25	Yes	Caribou	16	Trotting/running	NE	25	150	East	No		-96.45008	65.230216			No	Not Exceeded	
Road	2022-04-21 6:25	Yes	Caribou	77	Foraging	N/A	400	146	West	No		-96.39801	65.226268			No	Exceeded	Road is closed and convoy are done for crew change

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2022-04-21 6:25	Yes	Caribou	25	Foraging	N/A	400	132	West	No		-96.16457	65.194003			No	Not Exceeded	
Road	2022-04-21 6:25	Yes	Caribou	100	Foraging	N/A	300	130	West	No		-96.1528	65.17815			No	Exceeded	Road is closed and convoy are done for crew change
Road	2022-04-21 6:25	Yes	Caribou	30	Foraging	N/A	600	118	West	No		-96.05506	65.086475			No	Not Exceeded	
Road	2022-04-21 6:44	Yes	Caribou	44	Alert	SW	400	112	West	No		-96.00217	65.051123			No	Exceeded	Road closure
Road	2022-04-21 6:44	Yes	Caribou	5	Walking	N/A	300	121	West	No		-96.08638	65.10712			No	Not Exceeded	
Road	2022-04-21 6:44	Yes	Caribou	5	Standing	N/A	500	123	West	No		-96.10441	65.122168			No	Not Exceeded	
Road	2022-04-21 6:44	Yes	Caribou	105	Walking	S	400	131	West	No		-96.16073	65.18551			No	Exceeded	Road closed
Road	2022-04-21 6:44	Yes	Caribou	120	Trotting/running	S	500	145	West	No		-96.3769	65.224218			No	Exceeded	Road is closed
Incidental	2022-04-22 6:12	Yes	Caribou	79	Foraging	Not Recorded	490	175	West	No		-96.60237	65.377259			No	Exceeded	Wthr is closedEnv staff are escorting the daily convoy
Incidental	2022-04-22 6:15	Yes	Caribou	26	Standing	Not Recorded	469	173	West	No		-96.60297	65.359721			No	Not Exceeded	
Incidental	2022-04-22 6:20	Yes	Caribou	87	Standing	Not Recorded	206	170	West	No		-96.54979	65.346648			No	Exceeded	WTHR is closedEnv staff are providing escort service to the daily convoy
Incidental	2022-04-22 6:48	Yes	Caribou	29	Feeding	Not Recorded	371	159	West	No		-96.40886	65.286013			No	Not Exceeded	
Incidental	2022-04-22 7:58	Yes	Caribou	76	Feeding	SE	200	113	West	No	76 caribou	-95.99327	65.058803			No	Exceeded	Road closed
Road	2022-04-22 9:11	Yes	Caribou	64	Alert	Not Recorded	640	176	West	No		-96.60379	65.38622			No	Exceeded	Wthr is closedEnvironment team is providing convoy escort
Road	2022-04-22 9:11	Yes	Caribou	14	Feeding	Not Recorded	450	173	West	No		-96.60297	65.359721			No	Not Exceeded	
Road	2022-04-22 9:11	Yes	Caribou	22	Alert	S	1000	169	West	No		-96.53703	65.340029			No	Not Exceeded	
Road	2022-04-22 9:11	Yes	Caribou	51	Running	S	350	168	West	No		-96.52405	65.333518			No	Exceeded	WTHR is closedEnv staff are providing escort to convoy group
Road	2022-04-22 9:11	Yes	Caribou	78	Standing	Not Recorded	500	159	West	No	The caribou are nervous and easily spooked.	-96.40886	65.286013			No	Exceeded	WTHR is closedEnv staff are providing escort to daily convoy
Road	2022-04-22 9:11	Yes	Caribou	10	Resting	Not Recorded	450	149	East	No		-96.44264	65.223273			No	Not Exceeded	
Road	2022-04-22 9:11	Yes	Caribou	254	Walking	E	150	111	East	Yes		-96.02402	65.048147			No	Exceeded	WTHR is closedEnv staff is providing escort to daily convoy
Incidental	2022-04-22 17:24	Yes	Caribou	10	Alert	Not Recorded	131	148	East	No		-96.42744	65.220477			No	Not Exceeded	
Road	2022-04-23 6:15	Yes	Caribou	50	Running	S	350	168	West	No	No gps point taken, mileage marker only.	-96.52405	65.333518			No	Exceeded	The WTHR is closedEnv staff are providing escort service to daily convoy
Road	2022-04-23 6:15	Yes	Caribou	90	Running	NW	300	159	West	No	No gps point taken, mileage marker only.	-96.40886	65.286013			No	Exceeded	WTHR is closedEnv staff are providing escort to the daily convoy
Road	2022-04-23 6:15	Yes	Muskox	13	Foraging	Not Recorded	25	159	East	No	No gps point taken, mileage marker only.	-96.40886	65.286013			No	Not Exceeded	
Road	2022-04-23 6:15	Yes	Caribou	25	Running	NW	100	153	West	No	No gps point taken, mileage marker only.	-96.47626	65.248229			No	Not Exceeded	
Road	2022-04-23 6:15	Yes	Caribou	30	Standing	Not Recorded	300	151	West	No	No gos point taken, mileage marker only.	-96.46622	65.234469			No	Not Exceeded	
Road	2022-04-23 6:15	Yes	Caribou	45	Standing	Not Recorded	600	143	West	No	No GPS point taken, mileage marker only	-96.35797	65.223666			No	Exceeded	WTHR is closed.Env staff are providing escorts to the daily convoy.
Road	2022-04-23 6:15	Yes	Caribou	120	Alert	Not Recorded	300	141	West	No	No gps point taken, mileage marker only.	-96.31809	65.223683			No	Exceeded	WTHR is closed.Env staff are escorting the daily convoy.
Road	2022-04-23 6:15	Yes	Caribou	70	Walking	W	250	136	West	No	No gps point taken, mileage marker only.	-96.2274	65.213075			No	Exceeded	Road closed
Road	2022-04-23 6:15	Yes	Caribou	21	Foraging	Not Recorded	250	171	West	No	No gps location stored, mileage marker only.	-96.5686	65.351995			No	Not Exceeded	
Road	2022-04-23 6:15	Yes	Caribou	20	Standing	Not Recorded	250	165	West	No	No Gps point stored, mileage marker only.	-96.46782	65.323887			No	Not Exceeded	
Road	2022-04-23 6:15	Yes	Caribou	12	Running	S	30	150	West	No	No Gps point take, mileage marker only.	-96.45008	65.230216			No	Not Exceeded	
Road	2022-04-23 6:15	Yes	Caribou	60	Alert	Not Recorded	250	163	West	No	No gps point stored, mileage marker only.	-96.4304	65.317408			No	Exceeded	WTHR is closedEnv staff are providing escort service for the daily convoy
Road	2022-04-23 6:40	Yes	Caribou	48	Alert	N/A	300	122	West	No		-96.09715	65.114773			No	Exceeded	Road is closed
Road	2022-04-23 6:40	Yes	Caribou	69	Walking	N	1100	145	West	No		-96.3769	65.224218			No	Exceeded	Road is closed
Road	2022-04-23 6:40	Yes	Muskox	4	Lying Down	N/A	60	154	West	No		-96.46296	65.254604			No	Not Exceeded	
Road	2022-04-23 6:40	Yes	Caribou	22	Walking	SW	400	160	West	No		-96.41356	65.294293			No	Not Exceeded	
Road	2022-04-23 6:40	Yes	Caribou	6	Feeding	N/A	500	170	West	No		-96.54979	65.346648			No	Not Exceeded	
Incidental	2022-04-23 9:48	Yes	Caribou	10	Walking	SW	300	156	West	No		-96.45207	65.262217			No	Not Exceeded	
Road	2022-04-24 6:04	Yes	Caribou	3	Walking	W	75	165	West	No		-96.46782	65.323887			No	Not Exceeded	
Road	2022-04-24 6:04	Yes	Muskox	10	Foraging	N/A	50	156	East	No		-96.45207	65.262217			No	Not Exceeded	
Road	2022-04-24 6:04	Yes	Caribou	3	Walking	E	50	155	East	No		-96.43417	65.267612			No	Not Exceeded	
Road	2022-04-24 6:04	Yes	Muskox	6	Foraging	N/A	30	153	West	No		-96.47626	65.248229			No	Not Exceeded	
Road	2022-04-24 6:04	Yes	Caribou	12	Foraging	N/A	10	150	East	No		-96.45008	65.230216			No	Not Exceeded	
Road	2022-04-24 6:04	Yes	Caribou	5	Feeding	N/A	30	150	East	No		-96.45008	65.230216			No	Not Exceeded	
Incidental	2022-04-24 7:05	Yes	Caribou	5	Standing	N/A	600	113	East	No	On top of the hill, maybe more on the otherside	-95.99327	65.058803			No	Not Exceeded	
Incidental	2022-04-24 9:01	Yes	Wolf	6	Walking	E	0	176	East	Yes		-96.60379	65.38622			No	Not Exceeded	
Incidental	2022-04-24 16:07	Yes	Caribou	12	Feeding	N/A	20	150	West	No		-96.45008	65.230216			No	Not Exceeded	
Road	2022-04-25 10:37	Yes	Muskox	8	Resting	N/A	1092	153	West	No		-96.47626	65.248229			No	Not Exceeded	
Viewshed	2022-04-25 13:10	-	-	-	-	-	NA	116	-	-		-96.02061	65.080258			-	-	-
Viewshed	2022-04-25 13:10	-	-	-	-	-	NA	116	-	-		-96.02061	65.080258			-	-	-
Viewshed	2022-04-25 13:10	-	-	-	-	-	NA	116	-	-		-96.02061	65.080258			-	-	-
Viewshed	2022-04-25 13:10	-	-	-	-	-	NA	118	-	-		-96.05506	65.086475			-	-	-
Viewshed	2022-04-25 13:10	-	-	-	-	-	NA	118	-	-		-96.05506	65.086475			-	-	-
Viewshed	2022-04-25 13:10	-	-	-	-	-	NA	118	-	-		-96.05506	65.086475			-	-	-
Viewshed	2022-04-25 13:10	-	-	-	-	-	NA	118	-	-		-96.05506	65.086475			-	-	-

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2022-04-27 7:41	Yes	Caribou	5	Feeding	N/A	100	113	East	No		-95.99327	65.058803			No	Not Exceeded	
Incidental	2022-04-27 8:07	Yes	Caribou	28	Walking	NW	200	146	West	No		-96.39801	65.226268			No	Not Exceeded	
Incidental	2022-04-27 19:39	Yes	Caribou	16	Feeding	N/A	800	112	East	No		-96.00217	65.051123			No	Not Exceeded	
Incidental	2022-04-27 19:39	Yes	Caribou	6	Walking	E	0	157	West,East	Yes		-96.41584	65.271231			No	Not Exceeded	
Incidental	2022-04-27 19:50	Yes	Caribou	10	Feeding	N/A	100	116	East	No		-96.02061	65.080258			No	Not Exceeded	
Incidental	2022-04-27 20:09	Yes	Caribou	17	Feeding	N/A	600	127	West	No		-96.12549	65.153813			No	Not Exceeded	
Incidental	2022-04-27 20:20	Yes	Caribou	15	Walking	NW	300	145	West	No		-96.3769	65.224218			No	Not Exceeded	
Incidental	2022-04-27 20:45	Yes	Caribou	29	Resting	N/A	700	119	West	No		-96.06476	65.093211			No	Not Exceeded	
Incidental	2022-04-27 20:47	Yes	Caribou	14	Walking	SE	1000	118	West	No		-96.05506	65.086475			No	Not Exceeded	
Road	2022-04-28 7:59	Yes	Muskox	30	Lying Down	N/A	1750	157	West	No		-96.41584	65.271231			No	Exceeded	Road open/closed Not exceedance, as muskox are more than 1.5km from road.
Road	2022-04-28 7:59	Yes	Caribou	3	Walking	S	700	153	West	No		-96.47626	65.248229			No	Not Exceeded	
Road	2022-04-28 7:59	Yes	Wolf	5	Walking	W	0	147	West	Yes		-96.41835	65.227863			No	Not Exceeded	
Road	2022-04-28 7:59	Yes	Muskox	4	Feeding	N/A	30	145	West	No		-96.3769	65.224218			No	Not Exceeded	
Road	2022-04-28 7:59	Yes	Caribou	4	Walking	W	1000	117	West	No		-96.03942	65.0837			No	Not Exceeded	
Road	2022-04-28 7:59	Yes	Caribou	39	Walking	E	0	112	Both	Yes	Took a video of them crossing.	-96.00217	65.051123			No	Exceeded	Road open/closed
Incidental	2022-04-28 15:22	Yes	Caribou	9	Foraging	N/A	150	151	East	No		-96.46622	65.234469			No	Not Exceeded	
Incidental	2022-04-28 15:27	Yes	Caribou	7	Foraging	N/A	500	153	East	No		-96.47626	65.248229			No	Not Exceeded	
Incidental	2022-04-28 19:38	Yes	Caribou	26	Resting	N/A	250	111	East	No		-96.02402	65.048147			No	Not Exceeded	
Road	2022-04-29 7:29	Yes	Caribou	10	Resting	N/A	100	152	East	No		-96.47617	65.241762			No	Not Exceeded	
Road	2022-04-29 7:29	Yes	Caribou	18	Feeding	N/A	50	113	East	No		-95.99327	65.058803			No	Not Exceeded	
Viewshed	2022-04-29 10:15		-	-	-	-	NA	116	-	-		-96.02061	65.080258					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	116	-	-		-96.02061	65.080258					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	116	-	-		-96.02061	65.080258					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	118	-	-		-96.05506	65.086475					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	118	-	-		-96.05506	65.086475					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	118	-	-		-96.05506	65.086475					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	121-122	-	-		-96.08638	65.10712					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	121-122	-	-		-96.08638	65.10712					
Viewshed	2022-04-29 10:15		Caribou	6	Walking	SE	1000	121-122	West	-		-96.08638	65.10712				Not Exceeded	
Viewshed	2022-04-29 10:15		-	-	-	-	NA	121-122	-	-		-96.08638	65.10712					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	128	-	-		-96.13583	65.161371					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	128	-	-		-96.13583	65.161371					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	128	-	-		-96.13583	65.161371					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	128	-	-		-96.13583	65.161371					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	133	-	-		-96.17538	65.199246					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	133	-	-		-96.17538	65.199246					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	133	-	-		-96.17538	65.199246					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	133	-	-		-96.17538	65.199246					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	138	-	-		-96.26018	65.2238					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	138	-	-		-96.26018	65.2238					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	138	-	-		-96.26018	65.2238					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	138	-	-		-96.26018	65.2238					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	144	-	-		-96.35797	65.223666					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	144	-	-		-96.35797	65.223666					
Viewshed	2022-04-29 10:15		Muskox	4	Feeding	N/A	50	144	West	-		-96.35797	65.223666				Not Exceeded	
Viewshed	2022-04-29 10:15		-	-	-	-	NA	144	-	-		-96.35797	65.223666					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	154	-	-		-96.46296	65.254604					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	154	-	-		-96.46296	65.254604					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	154	-	-		-96.46296	65.254604					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	154	-	-		-96.46296	65.254604					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	156	-	-		-96.45207	65.262217					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	156	-	-		-96.45207	65.262217					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	156	-	-		-96.45207	65.262217					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	160-161	-	-		-96.41356	65.294293					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	160-161	-	-		-96.41356	65.294293					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	160-161	-	-		-96.41356	65.294293					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	160-161	-	-		-96.41356	65.294293					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	166	-	-		-96.48819	65.325287					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	166	-	-		-96.48819	65.325287					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	166	-	-		-96.48819	65.325287					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	166	-	-		-96.48819	65.325287					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	169	-	-		-96.53703	65.340029					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	169	-	-		-96.53703	65.340029					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	169	-	-		-96.53703	65.340029					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	176	-	-		-96.60379	65.38622					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	176	-	-		-96.60379	65.38622					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	176	-	-		-96.60379	65.38622					
Viewshed	2022-04-29 10:15		-	-	-	-	NA	176	-	-		-96.60379	65.38622					
Incidental	2022-04-29 11:18	Yes	Caribou	7	Walking	E	500	124	West	No		-96.10808	65.131545			No	Not Exceeded	
Road	2022-04-30 10:50	Yes	Muskox	2	Standing	N/A	500	165	West	No		-96.46782	65.323887			No	Not Exceeded	
Road	2022-04-30 10:50	Yes	Caribou	12	Walking	NW	1000	147	West	No		-96.41835	65.227863			No	Not Exceeded	
Road	2022-04-30 10:50	Yes	Caribou	4	Foraging	N/A	600	145	East	No		-96.3769	65.224218			No	Not Exceeded	

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2022-04-30 10:50	Yes	Caribou	10	Walking	NE	1500	127	West	No		-96.12549	65.153813			No	Not Exceeded	
Road	2022-04-30 10:50	Yes	Caribou	22	Walking	SE	1500	125	West	No		-96.10792	65.139082			No	Not Exceeded	
Road	2022-04-30 10:50	Yes	Caribou	11	Foraging	N/A	1000	118	West	No		-96.05506	65.086475			No	Not Exceeded	
Incidental	2022-04-30 14:12	Yes	Caribou	9	Foraging	N/A	1500	112	East	No		-96.00217	65.051123			No	Not Exceeded	
Incidental	2022-04-30 14:14	Yes	Caribou	14	Foraging	N/A	200	113	West	No		-95.99327	65.058803			No	Not Exceeded	
Road	2022-05-01 8:55	Yes	Muskox	16	Resting	N/A	300	165	West	No		-96.46782	65.323887			No	Exceeded	Speed restriction put in place
Road	2022-05-01 8:55	Yes	Caribou	3	Foraging	N/A	200	113	East	No		-95.99327	65.058803			No	Not Exceeded	
Road	2022-05-01 8:55	Yes	Caribou	4	Foraging	N/A	500	110	East	No		-96.04065	65.0414			No	Not Exceeded	
Incidental	2022-05-01 11:11	Yes	Caribou	7	Foraging	N/A	200	109	West	No		-96.00217	65.051123			No	Not Exceeded	
Incidental	2022-05-01 12:17	Yes	Caribou	7	Foraging	N/A	200	160	East	No		-96.41356	65.294293			No	Not Exceeded	
Road	2022-05-02 8:03	Yes	Caribou	11	Walking	N	150	153	East	No		-96.47626	65.248229			No	Not Exceeded	
Road	2022-05-02 8:03	Yes	Arctic hare	1	Walking	N/A	0	132	West	No		-96.16457	65.194003			No	Not Exceeded	
Incidental	2022-05-02 10:36	Yes	Caribou	6	Walking	NE	500	131	West	No		-96.16073	65.18551			No	Not Exceeded	
Incidental	2022-05-02 11:18	Yes	Caribou	18	Foraging	N/A	300	164	West	No		-96.44722	65.322562			No	Not Exceeded	Speed restriction put in place
Road	2022-05-03 11:37	Yes	Caribou	39	Walking	W	460	175	West	No		-96.60237	65.377259			No	Exceeded	Road closed
Road	2022-05-03 11:37	Yes	Muskox	12	Resting	N/A	450	162	West	No		-96.4168	65.311548			No	Not Exceeded	
Road	2022-05-03 11:37	Yes	Muskox	4	Feeding	N/A	400	145	East	No		-96.3769	65.224218			No	Not Exceeded	
Road	2022-05-03 11:37	Yes	Caribou	21	Feeding	N/A	70	106	East	No		-96.08289	65.027127			No	Not Exceeded	Road closed
Blast	2022-05-03 17:45	Wildlife observed	Caribou	33	Resting	N/A	100	179	West	No		-96.66657	65.401441				Not Exceeded	
Incidental	2022-05-04 4:52	Yes	Caribou	13	Resting	N/A	75	178	East	No		-96.6219	65.400857			No	Not Exceeded	
Incidental	2022-05-04 4:55	Yes	Caribou	19	Walking	NW	500	177	West	No		-96.60847	65.394344			No	Not Exceeded	
Incidental	2022-05-04 5:26	Yes	Caribou	8	Foraging	N/A	50	155	East	No		-96.43417	65.267612			No	Not Exceeded	
Incidental	2022-05-04 5:30	Yes	Caribou	4	Foraging	N/A	800	154	East	No		-96.46296	65.254604			No	Not Exceeded	
Road	2022-05-04 8:13	Yes	Caribou	15	Resting	N/A	150	179	East	No		-96.66668	65.401485			No	Not Exceeded	
Road	2022-05-04 8:13	Yes	Caribou	12	Feeding	N/A	100	149	East	No		-96.44264	65.223273			No	Not Exceeded	
Viewshed	2022-05-04 12:08		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-05-04 12:08		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-05-04 12:08		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-05-04 12:08		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-05-04 12:08		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-05-04 12:08		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-05-04 12:08		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-05-04 12:08		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-05-04 12:08		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-05-04 12:08		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-05-04 12:08		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-05-04 12:08		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-05-04 12:08		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-05-04 12:08		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-05-04 12:08		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-05-04 12:08		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-05-04 12:08		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-05-04 12:08		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-05-04 12:08		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-05-04 12:08		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-05-04 12:08		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-05-04 12:08		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-05-04 12:08		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-05-04 12:08		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-05-04 12:08		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-05-04 12:08		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-05-04 12:08		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-05-04 12:08		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-05-04 12:08		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-05-04 12:08		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-05-04 12:08		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-05-04 12:08		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-05-04 12:08		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-05-04 12:08		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-05-04 12:08		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-05-04 12:08		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-05-04 12:08		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-05-04 12:08		Muskox	21	Resting	N/A	1500	160-161	West			-96.41356	65.294293				Exceeded	No mitigation measures required as group was more than 1500 m from road
Viewshed	2022-05-04 12:08		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-05-04 12:08		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-05-04 12:08		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-05-04 12:08		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-05-04 12:08		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-05-04 12:08		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-05-04 12:08		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-05-04 12:08		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-05-04 12:08		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-05-04 12:08		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-05-04 12:08		-	-			NA	176				-96.60379	65.38622					

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2022-05-04 12:08		-	-			NA	176				-96.60379	65.38622					
Road	2022-05-05 8:13	Yes	Muskox	3	Feeding	N/A	100	144	East	No		-96.07129	65.022632			No	Not Exceeded	
Road	2022-05-05 8:13	Yes	Caribou	9	Lying Down	N/A	80	147	West	No		-96.41835	65.227863			No	Not Exceeded	
Road	2022-05-05 8:13	Yes	Muskox	20	Feeding	N/A	50	156	West	No		-96.45207	65.262217			No	Exceeded	Speed restriction put in place
Road	2022-05-05 8:13	Yes	Arctic fox	1	Trotting/running	S	150	178	East	No		-96.6219	65.400857			No	Not Exceeded	
Road	2022-05-05 8:13	Yes	Caribou	9	Walking	NE	600	116	West	No		-96.02061	65.080258			No	Not Exceeded	
Viewshed	2022-05-05 8:43		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-05-05 8:43		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-05-05 8:43		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-05-05 8:43		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-05-05 8:43		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-05-05 8:43		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-05-05 8:43		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-05-05 8:43		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-05-05 8:43		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-05-05 8:43		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-05-05 8:43		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-05-05 8:43		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-05-05 8:43		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-05-05 8:43		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-05-05 8:43		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-05-05 8:43		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-05-05 8:43		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-05-05 8:43		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-05-05 8:43		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-05-05 8:43		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-05-05 8:43		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-05-05 8:43		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-05-05 8:43		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-05-05 8:43		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-05-05 8:43		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-05-05 8:43		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-05-05 8:43		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-05-05 8:43		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-05-05 8:43		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-05-05 8:43		Muskox	20	Feeding	Not Recorded	50	156	West			-96.45207	65.262217				Exceeded	Speed restriction put in place
Viewshed	2022-05-05 8:43		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-05-05 8:43		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-05-05 8:43		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-05-05 8:43		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-05-05 8:43		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-05-05 8:43		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-05-05 8:43		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-05-05 8:43		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-05-05 8:43		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-05-05 8:43		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-05-05 8:43		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-05-05 8:43		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-05-05 8:43		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-05-05 8:43		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-05-05 8:43		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-05-05 8:43		-	-			NA	176				-96.60379	65.38622					
Incidental	2022-05-05 14:00	Yes	Caribou	1	Dead	N/A	230	153	West	No	Environment received a call that 2 wolves were near the WTHR at KM153 feeding on a caribou carcass. The environment team went to monitor the incident in the morning. Upon arrival, no wildlife was observed, only traces of blood and guts. □ No wildlife deterrents were used.	-96.47626	65.248229		Project non-related	No	Not Exceeded	
Road	2022-05-06 9:05	Yes	Caribou	33	Alert	W	600	177	East	No		-96.60847	65.394344			No	Not Exceeded	
Road	2022-05-07 7:08	Yes	Arctic fox	1	Walking	N/A	0	112	West	No		-96.00217	65.051123			No	Not Exceeded	
Road	2022-05-07 7:08	Yes	Caribou	6	Feeding	N	150	154	East	No		-96.46296	65.254604			No	Not Exceeded	
Incidental	2022-05-07 11:22	Yes	Caribou	20	Not recorded	N/A	50	111	West	No		-96.02402	65.048147			No	Not Exceeded	
Other	2022-05-07 14:13	Yes	Caribou	18	Feeding	N/A	NA	NA				-95.99325	65.060528			No	Not Exceeded	
Other	2022-05-07 14:13	Yes	Caribou	16	Walking	S	NA	NA				-95.99926	65.051247			No	Not Exceeded	
Road	2022-05-08 13:35	Yes	Caribou	40	Walking	N	30	159	East	No		-96.40886	65.286013			No	Exceeded	Road open/closed
Road	2022-05-08 13:35	Yes	Caribou	4	Feeding	N/A	200	118	West	No		-96.05506	65.086475			No	Not Exceeded	

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2022-05-09 6:38	Yes	Muskox	10	Resting	N/A	890	153	East	No		-96.47626	65.248229			Yes - Seen them the other day	Not Exceeded	
Road	2022-05-09 6:38	Yes	Caribou	5	Resting	N/A	200	111	East	No		-96.02402	65.048147			No	Not Exceeded	
Viewshed	2022-05-09 6:49		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-05-09 6:49		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-05-09 6:49		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-05-09 6:49		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-05-09 6:49		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-05-09 6:49		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-05-09 6:49		Muskox	8	Feeding	N/A	900	118	West			-96.05506	65.086475				Not Exceeded	
Viewshed	2022-05-09 6:49		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-05-09 6:49		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-05-09 6:49		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-05-09 6:49		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-05-09 6:49		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-05-09 6:49		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-05-09 6:49		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-05-09 6:49		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-05-09 6:49		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-05-09 6:49		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-05-09 6:49		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-05-09 6:49		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-05-09 6:49		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-05-09 6:49		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-05-09 6:49		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-05-09 6:49		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-05-09 6:49		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-05-09 6:49		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-05-09 6:49		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-05-09 6:49		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-05-09 6:49		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-05-09 6:49		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-05-09 6:49		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-05-09 6:49		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-05-09 6:49		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-05-09 6:49		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-05-09 6:49		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-05-09 6:49		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-05-09 6:49		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-05-09 6:49		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-05-09 6:49		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-05-09 6:49		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-05-09 6:49		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-05-09 6:49		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-05-09 6:49		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-05-09 6:49		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-05-09 6:49		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-05-09 6:49		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-05-09 6:49		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-05-09 6:49		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-05-09 6:49		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-05-09 6:49		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-05-09 6:49		-	-			NA	176				-96.60379	65.38622					
Road	2022-05-10 6:39	Yes	Muskox	13	Feeding	W	30	152	West	No		-96.47617	65.241762			No	Not Exceeded	
Road	2022-05-10 6:39	Yes	Caribou	5	Feeding	N/A	350	119	West	No		-96.06476	65.093211			Yes - Seen them the other day	Not Exceeded	
Incidental	2022-05-10 11:00	Yes	Caribou	30	Not recorded	N/A	NA	154		No		-96.46296	65.254604			No	Not Exceeded	Speed restriction put in place from KM 153 - 155
Road	2022-05-11 7:17	Yes	Caribou	9	Lying Down	N/A	800	147	West	No		-96.41835	65.227863			No	Not Exceeded	
Road	2022-05-11 7:17	Yes	Caribou	6	Feeding	Not Recorded	100	156	West	No		-96.45207	65.262217			No	Not Exceeded	
Road	2022-05-11 7:17	Yes	Caribou	24	Feeding	N/A	25	178	East	No		-96.6219	65.400857			No	Not Exceeded	
Viewshed	2022-05-11 7:27		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-05-11 7:27		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-05-11 7:27		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-05-11 7:27		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-05-11 7:27		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-05-11 7:27		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-05-11 7:27		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-05-11 7:27		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-05-11 7:27		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-05-11 7:27		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-05-11 7:27		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-05-11 7:27		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-05-11 7:27		-	-			NA	128				-96.13583	65.161371					

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2022-05-11 7:27		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-05-11 7:27		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-05-11 7:27		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-05-11 7:27		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-05-11 7:27		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-05-11 7:27		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-05-11 7:27		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-05-11 7:27		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-05-11 7:27		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-05-11 7:27		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-05-11 7:27		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-05-11 7:27		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-05-11 7:27		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-05-11 7:27		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-05-11 7:27		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-05-11 7:27		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-05-11 7:27		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-05-11 7:27		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-05-11 7:27		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-05-11 7:27		Caribou	6	Feeding	Not Recorded	100	156	West			-96.45207	65.262217				Not Exceeded	
Viewshed	2022-05-11 7:27		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-05-11 7:27		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-05-11 7:27		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-05-11 7:27		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-05-11 7:27		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-05-11 7:27		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-05-11 7:27		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-05-11 7:27		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-05-11 7:27		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-05-11 7:27		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-05-11 7:27		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-05-11 7:27		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-05-11 7:27		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-05-11 7:27		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-05-11 7:27		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-05-11 7:27		-	-			NA	176				-96.60379	65.38622					
Road	2022-05-12 9:31	Yes	Muskox	5	Feeding	N/A	500	146	East	No		-96.39801	65.226268			No	Not Exceeded	
Road	2022-05-12 9:31	Yes	Caribou	5	Standing	NW	150	119	West	No		-96.06476	65.093211			No	Not Exceeded	
Incidental	2022-05-12 16:05	Yes	Caribou	23	Not recorded	N/A	25	111	East	No		-96.02402	65.048147			No	Not Exceeded	
Road	2022-05-13 7:13	Yes	Caribou	14	Feeding	N/A	100	158	West	No		-96.40471	65.277758			No	Not Exceeded	
Incidental	2022-05-13 10:27	Yes	Muskox	4	Feeding	N/A	140	144	East	No		-96.00217	65.051123			No	Not Exceeded	
Road	2022-05-14 7:06	Yes	Caribou	8	Lying Down	Not Recorded	100	179	Both	No		-96.65852	65.40384			No	Not Exceeded	
Road	2022-05-15 8:13	Yes	Caribou	18	Feeding	Not Recorded	250	110	West	No		-96.04065	65.0414			No	Not Exceeded	
Road	2022-05-15 8:13	Yes	Arctic hare	1	Trotting/running	N	75	158	West	No		-96.40471	65.277758			No	Not Exceeded	
Road	2022-05-15 8:13	Yes	Arctic fox	1	Trotting/running	S	0	170	West	Yes		-96.54979	65.346648			No	Not Exceeded	
Incidental	2022-05-15 11:52	Yes	Caribou	5	Feeding	N/A	100	153	East	No	No speed restriction	-96.47626	65.248229			No	Not Exceeded	
Road	2022-05-16 12:09	Yes	Caribou	8	Resting	N/A	200	153	West	No	Location not accurate due to template being filled out in wrong server	-96.47626	65.248229			No	Not Exceeded	
Road	2022-05-16 12:09	Yes	Caribou	12	Foraging	N/A	251	111	East	No	Location not accurate due to template being filled out in wrong server	-96.02402	65.048147			No	Not Exceeded	
Incidental	2022-05-16 13:52	Yes	Caribou	22	Foraging	N/A	85	164	East	No		-96.44722	65.322562			No	Not Exceeded	
Viewshed	2022-05-17 12:45		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-05-17 12:45		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-05-17 12:45		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-05-17 12:45		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-05-17 12:45		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-05-17 12:45		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-05-17 12:45		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-05-17 12:45		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-05-17 12:45		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-05-17 12:45		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-05-17 12:45		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-05-17 12:45		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-05-17 12:45		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-05-17 12:45		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-05-17 12:45		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-05-17 12:45		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-05-17 12:45		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-05-17 12:45		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-05-17 12:45		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-05-17 12:45		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-05-17 12:45		-	-			NA	138				-96.26018	65.2238					

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2022-05-17 12:45		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-05-17 12:45		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-05-17 12:45		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-05-17 12:45		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-05-17 12:45		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-05-17 12:45		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-05-17 12:45		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-05-17 12:45		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-05-17 12:45		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-05-17 12:45		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-05-17 12:45		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-05-17 12:45		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-05-17 12:45		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-05-17 12:45		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-05-17 12:45		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-05-17 12:45		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-05-17 12:45		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-05-17 12:45		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-05-17 12:45		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-05-17 12:45		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-05-17 12:45		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-05-17 12:45		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-05-17 12:45		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-05-17 12:45		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-05-17 12:45		-	-			NA	176				-96.60379	65.38622					
Incidental	2022-05-18 11:31	Yes	Caribou	18	Walking	SE	170	162	East	No		-96.4168	65.311548			No	Not Exceeded	
Road	2022-05-19 7:22	Yes	Caribou	13	Feeding	N/A	275	115	West	No		-96.00905	65.071117			No	Not Exceeded	
Road	2022-05-19 7:22	Yes	Arctic hare	1	Feeding	N/A	25	140	East	No		-96.29851	65.221968			No	Not Exceeded	
Road	2022-05-19 7:22	Yes	Muskox	5	Feeding	N/A	100	146	East	No	1 calf	-96.39801	65.226268			No	Not Exceeded	
Incidental	2022-05-19 11:22	Yes	Caribou	13	Feeding	N/A	200	161	East	No		-96.41207	65.30324			No	Not Exceeded	
Road	2022-05-20 10:02	Yes	Caribou	9	Feeding	N/A	75	165	West	No		-96.46782	65.323887			No	Not Exceeded	
Road	2022-05-20 10:02	Yes	Muskox	5	Lying Down	N/A	100	146	East	No		-96.39801	65.226268			No	Not Exceeded	
Road	2022-05-21 7:48	Yes	Rough-legged-Hawk	1	Flying	N/A	NA	149100	West	No		-96.07402	65.02206			No	Not Exceeded	
Road	2022-05-21 7:48	Yes	Caribou	10	Foraging	N/A	100	165	East	No		-96.46782	65.323887			No	Not Exceeded	
Road	2022-05-22 8:15	Yes	Rough-legged-Hawk	1	Flying	N	40	155	West	No		-96.43417	65.267612			No	Not Exceeded	
Viewshed	2022-05-22 11:55		Caribou	6	Feeding	N/A	100	116	East			-96.02061	65.080258				Not Exceeded	
Viewshed	2022-05-22 11:55		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-05-22 11:55		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-05-22 11:55		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-05-22 11:55		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-05-22 11:55		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-05-22 11:55		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-05-22 11:55		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-05-22 11:55		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-05-22 11:55		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-05-22 11:55		Rough-legged-Hawk	1	Flying	E	400	121-122	West			-96.08638	65.10712				Not Exceeded	
Viewshed	2022-05-22 11:55		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-05-22 11:55		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-05-22 11:55		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-05-22 11:55		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-05-22 11:55		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-05-22 11:55		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-05-22 11:55		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-05-22 11:55		Ptarmigan	1	Walking	E	0	133	West		Standing/walking in the middle of the road. Was guide out of the road for its protection	-96.17538	65.199246				Not Exceeded	
Viewshed	2022-05-22 11:55		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-05-22 11:55		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-05-22 11:55		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-05-22 11:55		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-05-22 11:55		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-05-22 11:55		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-05-22 11:55		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-05-22 11:55		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-05-22 11:55		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-05-22 11:55		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-05-22 11:55		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-05-22 11:55		Rough-legged-Hawk	1	Flying	NE	50	154	West			-96.46296	65.254604				Not Exceeded	
Viewshed	2022-05-22 11:55		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-05-22 11:55		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-05-22 11:55		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-05-22 11:55		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-05-22 11:55		-	-			NA	156				-96.45207	65.262217					

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2022-05-22 11:55		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-05-22 11:55		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-05-22 11:55		Greater white-fronted goose	36	Flying	SO	0	160-161	West			-96.41356	65.294293				Not Exceeded	
Viewshed	2022-05-22 11:55		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-05-22 11:55		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-05-22 11:55		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-05-22 11:55		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-05-22 11:55		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-05-22 11:55		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-05-22 11:55		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-05-22 11:55		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-05-22 11:55		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-05-22 11:55		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-05-22 11:55		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-05-22 11:55		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-05-22 11:55		-	-			NA	176				-96.60379	65.38622					
Road	2022-05-23 8:03	Yes	Arctic hare	1	Feeding	NW	150	132	West	No		-96.16457	65.194003			No	Not Exceeded	
Road	2022-05-23 8:03	Yes	Muskox	4	Standing	N/A	800	148	East	No		-96.42744	65.220477			No	Not Exceeded	
Road	2022-05-23 8:03	Yes	Other	1	Flying	E	20	160	Both	Yes	Seagull .	-96.41356	65.294293			No	Not Exceeded	
Incidental	2022-05-23 16:03	Yes	Caribou	26	Walking	SE	75	112	West	Yes		-96.00217	65.051123			No	Not Exceeded	
Road	2022-05-24 9:04	No	-	-			NA					NA	NA					
Road	2022-05-25 8:05	Yes	Caribou	5	Feeding	Not Recorded	50	120	East	No		-96.0728	65.100208			No	Not Exceeded	
Viewshed	2022-05-25 10:41		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-05-25 10:41		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-05-25 10:41		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-05-25 10:41		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-05-25 10:41		Canada goose	16	Flying	NE	200	169	East			-96.53703	65.340029				Not Exceeded	
Viewshed	2022-05-25 10:41		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-05-25 10:41		Canada goose	16	Flying	NE	200	169	West			-96.53703	65.340029				Not Exceeded	
Viewshed	2022-05-25 10:41		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-05-25 10:41		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-05-25 10:41		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-05-25 10:41		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-05-25 10:41		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-05-25 10:41		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-05-25 10:41		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-05-25 10:41		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-05-25 10:41		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-05-25 10:41		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-05-25 10:41		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-05-25 10:41		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-05-25 10:41		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-05-25 10:41		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-05-25 10:41		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-05-25 10:41		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-05-25 10:41		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-05-25 10:41		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-05-25 10:41		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-05-25 10:41		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-05-25 10:41		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-05-25 10:41		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-05-25 10:41		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-05-25 10:41		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-05-25 10:41		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-05-25 10:41		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-05-25 10:41		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-05-25 10:41		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-05-25 10:41		Caribou	5	Walking	N	400	128	West			-96.13583	65.161371				Not Exceeded	
Viewshed	2022-05-25 10:41		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-05-25 10:41		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-05-25 10:41		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-05-25 10:41		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-05-25 10:41		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-05-25 10:41		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-05-25 10:41		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-05-25 10:41		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-05-25 10:41		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-05-25 10:41		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-05-25 10:41		Caribou	2	Feeding	N/A	400	116	West			-96.02061	65.080258				Not Exceeded	
Viewshed	2022-05-25 10:41		-	-			NA	116				-96.02061	65.080258					
Incidental	2022-05-25 12:31	Yes	Caribou	5	Walking	N	400	127	West	No		-96.12549	65.153813			No	Not Exceeded	
Incidental	2022-05-25 13:07	Yes	Caribou	10	Feeding	N/A	40	110	East	No		-96.04065	65.0414			No	Not Exceeded	
Road	2022-05-29 10:00	Yes	Caribou	7	Walking	E	100	178	West	No		-96.6219	65.400857			No	Not Exceeded	

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2022-05-29 10:00	Yes	Snow goose	50	Resting	N/A	300	177	West	No		-96.60847	65.394344			No	Not Exceeded	
Road	2022-05-29 10:00	Yes	Sandhill crane	2	Foraging	N/A	200	176	West	No		-96.60379	65.38622			No	Not Exceeded	
Road	2022-05-29 10:00	Yes	Snow goose	200	Resting	N/A	400	174	Both	No		-96.60128	65.368315			No	Not Exceeded	
Road	2022-05-29 10:00	Yes	Snow goose	100	Resting	N/A	600	168	East	N/A		-96.52405	65.333518			No	Not Exceeded	
Road	2022-05-31 9:20	Yes	Caribou	2	Feeding	N/A	50	123	East	No		-96.10441	65.122168			No	Not Exceeded	
Road	2022-06-01 11:36	Yes	Caribou	9	Foraging	E	100	125	East	No		-96.10792	65.139082			No	Not Exceeded	
Road	2022-06-01 11:36	Yes	Caribou	5	Resting	E	100	126	East	No		-96.11084	65.148182			No	Not Exceeded	
Road	2022-06-01 11:36	Yes	Caribou	16	Foraging	SE	200	175	West	No		-96.60237	65.377259			No	Not Exceeded	
Road	2022-06-03 7:28	Yes	Muskox	1	Walking	NW	200	140	West	No		-96.29851	65.221968			No	Not Exceeded	
Incidental	2022-06-03 12:09	Yes	Caribou	16	Walking	N	500	110	West	No		-96.04065	65.0414			No	Not Exceeded	
Road	2022-06-07 10:18	Yes	Caribou	6	Foraging	N/A	311	124	West	No		-96.10808	65.131545			No	Not Exceeded	
Road	2022-06-07 10:18	Yes	Siksik	1	Standing	W	0	123	West	No		-96.10441	65.122168			No	Not Exceeded	
Road	2022-06-07 10:18	Yes	Muskox	6	Feeding	N/A	500	119	West	No		-96.06476	65.093211			No	Not Exceeded	
Road	2022-06-09 7:22	Yes	Arctic hare	1	Feeding	N/A	75	120	East	No		-96.0728	65.100208			No	Not Exceeded	
Road	2022-06-09 7:22	Yes	Sandhill crane	2	Feeding	N/A	75	128	West	No		-96.13583	65.161371			No	Not Exceeded	
Road	2022-06-09 7:22	Yes	Muskox	11	Feeding	N/A	100	142	West	No		-96.3371	65.222192			No	Not Exceeded	
Road	2022-06-09 7:22	Yes	Arctic hare	1	Feeding	E	50	177	East	No		-96.60847	65.394344			No	Not Exceeded	
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	116	-	-		-96.02061	65.080258			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	116	-	-		-96.02061	65.080258			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	116	-	-		-96.02061	65.080258			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	118	-	-		-96.05506	65.086475			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	118	-	-		-96.05506	65.086475			-	-	-
Viewshed	2022-06-09 7:24	-	Ptarmigan	1	Standing	Not Recorded	0	118	West	-		-96.05506	65.086475			-	Not Exceeded	
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	118	-	-		-96.05506	65.086475			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	121-122	-	-		-96.08638	65.10712			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	121-122	-	-		-96.08638	65.10712			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	121-122	-	-		-96.08638	65.10712			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	121-122	-	-		-96.08638	65.10712			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	128	-	-		-96.13583	65.161371			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	128	-	-		-96.13583	65.161371			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	128	-	-		-96.13583	65.161371			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	128	-	-		-96.13583	65.161371			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	133	-	-		-96.17538	65.199246			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	133	-	-		-96.17538	65.199246			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	133	-	-		-96.17538	65.199246			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	133	-	-		-96.17538	65.199246			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	138	-	-		-96.26018	65.2238			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	138	-	-		-96.26018	65.2238			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	138	-	-		-96.26018	65.2238			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	138	-	-		-96.26018	65.2238			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	144	-	-		-96.35797	65.223666			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	144	-	-		-96.35797	65.223666			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	144	-	-		-96.35797	65.223666			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	144	-	-		-96.35797	65.223666			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	154	-	-		-96.46296	65.254604			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	154	-	-		-96.46296	65.254604			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	154	-	-		-96.46296	65.254604			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	154	-	-		-96.46296	65.254604			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	156	-	-		-96.45207	65.262217			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	156	-	-		-96.45207	65.262217			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	156	-	-		-96.45207	65.262217			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	160-161	-	-		-96.41356	65.294293			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	160-161	-	-		-96.41356	65.294293			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	160-161	-	-		-96.41356	65.294293			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	160-161	-	-		-96.41356	65.294293			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	166	-	-		-96.48819	65.325287			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	166	-	-		-96.48819	65.325287			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	166	-	-		-96.48819	65.325287			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	166	-	-		-96.48819	65.325287			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	169	-	-		-96.53703	65.340029			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	169	-	-		-96.53703	65.340029			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	169	-	-		-96.53703	65.340029			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	169	-	-		-96.53703	65.340029			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	176	-	-		-96.60379	65.38622			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	176	-	-		-96.60379	65.38622			-	-	-
Viewshed	2022-06-09 7:24	-	-	-	-	-	NA	176	-	-		-96.60379	65.38622			-	-	-
Incidental	2022-06-09 14:26	Yes	Muskox	3	Feeding	N/A	300	114	East	No		-96.00424	65.066791			No	Not Exceeded	
Road	2022-06-12 16:12	Yes	Bald Eagle	1	Standing	N/A	250	138	West	No	Km 138	-96.26018	65.2238			No	Not Exceeded	
Road	2022-06-12 16:12	Yes	Caribou	7	Feeding	N	800	129	West	No		-96.14593	65.169019			No	Not Exceeded	
Incidental	2022-06-14 17:12	Yes	Caribou	8	Foraging	NW	564	178	West	No	Located at base of hill, along eastern shore of lake A56	-96.6219	65.400857			No	Not Exceeded	
Road	2022-06-16 16:22	Yes	Muskox	16	Feeding	N/A	500	169	East	No		-96.53703	65.340029			No	Exceeded	Speed restriction put in place
Road	2022-06-16 16:22	Yes	Canada goose	12	Flying	N	300	148	East	N/A		-96.42744	65.220477			No	Not Exceeded	
Road	2022-06-16 16:22	Yes	Caribou	13	Walking	S	500	140	West	No		-96.29851	65.221968			No	Not Exceeded	
Road	2022-06-16 16:22	Yes	Caribou	22	Lying Down	N/A	500	133	Both	No		-96.17538	65.199246			No	Not Exceeded	

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2022-06-16 16:22	Yes	Muskox	1	Resting	N/A	250	132	East	No		-96.16457	65.194003			No	Not Exceeded	
Road	2022-06-20 7:00	Yes	Muskox	2	Feeding	N/A	300	160	West	N/A		-96.41356	65.294293			No	Not Exceeded	
Road	2022-06-20 7:00	Yes	Muskox	1	Feeding	W	1	132	West	No		-96.16457	65.194003			No	Not Exceeded	
Road	2022-06-20 7:00	Yes	Muskox	1	Feeding	N/A	1	115	West	No		-96.00905	65.071117			No	Not Exceeded	
Road	2022-06-22 9:05	Yes	Muskox	1	Feeding	N/A	1	122	East	No		-96.09715	65.114773			No	Not Exceeded	
Road	2022-06-22 9:05	Yes	Canada goose	2	Flying	E	20	175	East	No		-96.60237	65.377259			No	Not Exceeded	
Viewshed	2022-06-22 13:37	-	-	-	-	NA	176					-96.60379	65.38622					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	176					-96.60379	65.38622					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	176					-96.60379	65.38622					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	176					-96.60379	65.38622					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	169					-96.53703	65.340029					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	169					-96.53703	65.340029					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	169					-96.53703	65.340029					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	166					-96.48819	65.325287					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	166					-96.48819	65.325287					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	166					-96.48819	65.325287					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	160-161					-96.41356	65.294293					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	160-161					-96.41356	65.294293					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	160-161					-96.41356	65.294293					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	156					-96.45207	65.262217					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	156					-96.45207	65.262217					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	156					-96.45207	65.262217					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	154					-96.46296	65.254604					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	154					-96.46296	65.254604					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	154					-96.46296	65.254604					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	154					-96.46296	65.254604					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	144					-96.35797	65.223666					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	144					-96.35797	65.223666					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	144					-96.35797	65.223666					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	138					-96.26018	65.2238					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	138					-96.26018	65.2238					
Viewshed	2022-06-22 13:37	-	Caribou	4	Walking	E	80	138	West			-96.26018	65.2238				Not Exceeded	
Viewshed	2022-06-22 13:37	-	-	-	-	NA	138					-96.26018	65.2238					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	133					-96.17538	65.199246					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	133					-96.17538	65.199246					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	133					-96.17538	65.199246					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	128					-96.13583	65.161371					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	128					-96.13583	65.161371					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	128					-96.13583	65.161371					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	128					-96.13583	65.161371					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	121-122					-96.08638	65.10712					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	121-122					-96.08638	65.10712					
Viewshed	2022-06-22 13:37	-	Arctic fox	1	Walking	O	0	121-122	West			-96.08638	65.10712				Not Exceeded	
Viewshed	2022-06-22 13:37	-	-	-	-	NA	121-122					-96.08638	65.10712					
Viewshed	2022-06-22 13:37	-	Muskox	1	Feeding	Not Recorded	100	118	East			-96.05506	65.086475				Not Exceeded	
Viewshed	2022-06-22 13:37	-	-	-	-	NA	118					-96.05506	65.086475					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	118					-96.05506	65.086475					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	118					-96.05506	65.086475					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	116					-96.02061	65.080258					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	116					-96.02061	65.080258					
Viewshed	2022-06-22 13:37	-	-	-	-	NA	116					-96.02061	65.080258					
Road	2022-06-24 9:31	Yes	Muskox	1	Lying Down	N/A	500	178	West	No		-96.6219	65.400857			No	Not Exceeded	
Road	2022-06-24 9:31	Yes	Muskox	1	Foraging	N/A	50	136	West	No		-96.2274	65.213075			No	Not Exceeded	
Road	2022-06-24 9:31	Yes	Muskox	2	Feeding	N/A	250	117	West	No		-96.03942	65.0837			No	Not Exceeded	
Road	2022-06-26 7:45	Yes	Muskox	1	Foraging	N/A	200	177	West	No		-96.60847	65.394344			No	Not Exceeded	
Road	2022-06-26 7:45	Yes	Caribou	2	Foraging	N/A	300	166	West	No		-96.48819	65.325287			No	Not Exceeded	
Road	2022-06-26 7:45	Yes	Wolf	1	Trotting/running	SE	200	136	East	No		-96.2274	65.213075			No	Not Exceeded	
Road	2022-06-26 7:45	Yes	Siksik	1	Dead	N/A	0	133	Both	N/A		-96.17538	65.199246	Project related		No	Not Exceeded	
Incidental	2022-06-26 10:16	Yes	Muskox	5	Foraging	N/A	400	153	West	No		-96.47626	65.248229			No	Not Exceeded	
Road	2022-06-28 13:15	Yes	Muskox	1	Foraging	N/A	400	111	West	No		-96.02402	65.048147			No	Not Exceeded	
Road	2022-06-28 13:15	Yes	Arctic fox	1	Walking	W	0	117	Both	Yes		-96.03942	65.0837			No	Not Exceeded	
Incidental	2022-06-29 7:40	Yes	Muskox	1	Feeding	N/A	5	116	East	No		-96.02061	65.080258			No	Not Exceeded	
Road	2022-06-30 6:50	Yes	Muskox	1	Foraging	Not Recorded	300	111	East	No		-96.02402	65.048147			No	Not Exceeded	
Viewshed	2022-06-30 6:51	-	-	-	-	NA	116					-96.02061	65.080258					
Viewshed	2022-06-30 6:51	-	-	-	-	NA	116					-96.02061	65.080258					
Viewshed	2022-06-30 6:51	-	-	-	-	NA	116					-96.02061	65.080258					
Viewshed	2022-06-30 6:51	-	-	-	-	NA	116					-96.02061	65.080258					
Viewshed	2022-06-30 6:51	-	Arctic hare	1	Running	E	0	118	East			-96.05506	65.086475				Not Exceeded	
Viewshed	2022-06-30 6:51	-	-	-	-	NA	118					-96.05506	65.086475					
Viewshed	2022-06-30 6:51	-	-	-	-	NA	118					-96.05506	65.086475					
Viewshed	2022-06-30 6:51	-	-	-	-	NA	118					-96.05506	65.086475					

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	121-122	-	-	-	-96.08638	65.10712	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	121-122	-	-	-	-96.08638	65.10712	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	121-122	-	-	-	-96.08638	65.10712	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	121-122	-	-	-	-96.08638	65.10712	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	128	-	-	-	-96.13583	65.161371	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	128	-	-	-	-96.13583	65.161371	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	128	-	-	-	-96.13583	65.161371	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	128	-	-	-	-96.13583	65.161371	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	133	-	-	-	-96.17538	65.199246	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	133	-	-	-	-96.17538	65.199246	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	133	-	-	-	-96.17538	65.199246	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	138	-	-	-	-96.26018	65.2238	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	138	-	-	-	-96.26018	65.2238	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	138	-	-	-	-96.26018	65.2238	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	138	-	-	-	-96.26018	65.2238	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	144	-	-	-	-96.35797	65.223666	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	144	-	-	-	-96.35797	65.223666	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	144	-	-	-	-96.35797	65.223666	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	144	-	-	-	-96.35797	65.223666	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	154	-	-	-	-96.46296	65.254604	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	154	-	-	-	-96.46296	65.254604	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	154	-	-	-	-96.46296	65.254604	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	154	-	-	-	-96.46296	65.254604	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	156	-	-	-	-96.45207	65.262217	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	156	-	-	-	-96.45207	65.262217	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	156	-	-	-	-96.45207	65.262217	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	156	-	-	-	-96.45207	65.262217	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	160-161	-	-	-	-96.41356	65.294293	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	160-161	-	-	-	-96.41356	65.294293	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	160-161	-	-	-	-96.41356	65.294293	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	160-161	-	-	-	-96.41356	65.294293	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	166	-	-	-	-96.48819	65.325287	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	166	-	-	-	-96.48819	65.325287	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	166	-	-	-	-96.48819	65.325287	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	166	-	-	-	-96.48819	65.325287	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	169	-	-	-	-96.53703	65.340029	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	169	-	-	-	-96.53703	65.340029	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	169	-	-	-	-96.53703	65.340029	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	169	-	-	-	-96.53703	65.340029	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	176	-	-	-	-96.60379	65.38622	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	176	-	-	-	-96.60379	65.38622	-	-	-	-	-
Viewshed	2022-06-30 6:51	-	-	-	-	-	NA	176	-	-	-	-96.60379	65.38622	-	-	-	-	-
Road	2022-07-04 7:50	Yes	Muskox	1	Foraging	N/A	600	121	East	No	-	-96.08638	65.10712	-	-	No	Not Exceeded	-
Road	2022-07-04 7:50	Yes	Muskox	1	Resting	N/A	350	130	East	No	-	-96.1528	65.17815	-	-	No	Not Exceeded	-
Road	2022-07-06 7:16	Yes	Muskox	1	Feeding	N/A	30	111	East	No	-	-96.02402	65.048147	-	-	No	Not Exceeded	-
Road	2022-07-06 7:16	Yes	Muskox	7	Feeding	NE	100	116	West	No	-	-96.02061	65.080258	-	-	No	Not Exceeded	-
Road	2022-07-06 7:16	Yes	Canada goose	5	Flying	S	50	135	West	No	-	-96.20801	65.208904	-	-	No	Not Exceeded	-
Viewshed	2022-07-06 17:09	-	-	-	-	-	NA	121-122	-	-	-	-96.08638	65.10712	-	-	-	-	-
Viewshed	2022-07-06 17:09	-	-	-	-	-	NA	121-122	-	-	-	-96.08638	65.10712	-	-	-	-	-
Viewshed	2022-07-06 17:09	-	-	-	-	-	NA	121-122	-	-	-	-96.08638	65.10712	-	-	-	-	-
Viewshed	2022-07-06 17:09	-	-	-	-	-	NA	121-122	-	-	-	-96.08638	65.10712	-	-	-	-	-
Viewshed	2022-07-06 17:09	-	-	-	-	-	NA	128	-	-	-	-96.13583	65.161371	-	-	-	-	-
Viewshed	2022-07-06 17:09	-	-	-	-	-	NA	128	-	-	-	-96.13583	65.161371	-	-	-	-	-
Viewshed	2022-07-06 17:09	-	-	-	-	-	NA	128	-	-	-	-96.13583	65.161371	-	-	-	-	-
Viewshed	2022-07-06 17:09	-	-	-	-	-	NA	128	-	-	-	-96.13583	65.161371	-	-	-	-	-
Viewshed	2022-07-06 17:09	-	-	-	-	-	NA	133	-	-	-	-96.17538	65.199246	-	-	-	-	-
Viewshed	2022-07-06 17:09	-	-	-	-	-	NA	133	-	-	-	-96.17538	65.199246	-	-	-	-	-
Viewshed	2022-07-06 17:09	-	-	-	-	-	NA	133	-	-	-	-96.17538	65.199246	-	-	-	-	-
Viewshed	2022-07-06 17:09	-	-	-	-	-	NA	133	-	-	-	-96.17538	65.199246	-	-	-	-	-
Viewshed	2022-07-06 17:09	-	-	-	-	-	NA	144	-	-	-	-96.35797	65.223666	-	-	-	-	-
Viewshed	2022-07-06 17:09	-	-	-	-	-	NA	144	-	-	-	-96.35797	65.223666	-	-	-	-	-
Viewshed	2022-07-06 17:09	-	-	-	-	-	NA	144	-	-	-	-96.35797	65.223666	-	-	-	-	-
Viewshed	2022-07-06 17:09	-	-	-	-	-	NA	144	-	-	-	-96.35797	65.223666	-	-	-	-	-
Viewshed	2022-07-06 17:09	-	-	-	-	-	NA	156	-	-	-	-96.45207	65.262217	-	-	-	-	-
Viewshed	2022-07-06 17:09	-	-	-	-	-	NA	156	-	-	-	-96.45207	65.262217	-	-	-	-	-
Viewshed	2022-07-06 17:09	-	-	-	-	-	NA	156	-	-	-	-96.45207	65.262217	-	-	-	-	-
Viewshed	2022-07-06 17:09	-	-	-	-	-	NA	156	-	-	-	-96.45207	65.262217	-	-	-	-	-
Viewshed	2022-07-06 17:09	-	-	-	-	-	NA	160-161	-	-	-	-96.41356	65.294293	-	-	-	-	-
Viewshed	2022-07-06 17:09	-	-	-	-	-	NA	160-161	-	-	-	-96.41356	65.294293	-	-	-	-	-
Viewshed	2022-07-06 17:09	-	-	-	-	-	NA	160-161	-	-	-	-96.41356	65.294293	-	-	-	-	-
Viewshed	2022-07-06 17:09	-	-	-	-	-	NA	160-161	-	-	-	-96.41356	65.294293	-	-	-	-	-
Viewshed	2022-07-06 17:09	-	-	-	-	-	NA	166	-	-	-	-96.48819	65.325287	-	-	-	-	-
Viewshed	2022-07-06 17:09	-	-	-	-	-	NA	166	-	-	-	-96.48819	65.325287	-	-	-	-	-
Viewshed	2022-07-06 17:09	-	-	-	-	-	NA	166	-	-	-	-96.48819	65.325287	-	-	-	-	-
Viewshed	2022-07-06 17:09	-	-	-	-	-	NA	166	-	-	-	-96.48819	65.325287	-	-	-	-	-
Viewshed	2022-07-06 17:09	-	-	-	-	-	NA	169	-	-	-	-96.53703	65.340029	-	-	-	-	-

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2022-07-06 17:09		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-07-06 17:09		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-07-06 17:09		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-07-06 17:09		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-07-06 17:09		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-07-06 17:09		Muskox	7	Feeding	SO	100	116	West			-96.02061	65.080258				Not Exceeded	
Viewshed	2022-07-06 17:09		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-07-06 17:09		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-07-06 17:09		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-07-06 17:09		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-07-06 17:09		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-07-06 17:09		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-07-06 17:09		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-07-06 17:09		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-07-06 17:09		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-07-06 17:09		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-07-06 17:09		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-07-06 17:09		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-07-06 17:09		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-07-06 17:09		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-07-06 17:09		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-07-06 17:09		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-07-06 17:09		-	-			NA	176				-96.60379	65.38622					
Incidental	2022-07-07 17:25	Yes	Muskox	1	Foraging	W	5	122	West,East	Yes		-96.09715	65.114773			No		Not Exceeded
Incidental	2022-07-07 17:31	Yes	Caribou	1	Running	S	0	119	West	Yes		-96.06476	65.093211			No		Not Exceeded
Road	2022-07-11 13:42	Yes	Muskox	2	Resting	N/A	200	112	West	No		-96.00217	65.051123			No		Not Exceeded
Road	2022-07-11 13:42	Yes	Muskox	1	Feeding	N/A	600	127	West	No		-96.12549	65.153813			No		Not Exceeded
Road	2022-07-11 13:42	Yes	Muskox	1	Feeding	N/A	100	140	West	No		-96.29851	65.221968			No		Not Exceeded
Road	2022-07-11 13:42	Yes	Canada goose	17	Resting	N/A	100	175	West	No		-96.60237	65.377259			No		Not Exceeded
Incidental	2022-07-11 16:49	Yes	Caribou	1	Running	SE	0	155	East	Yes		-96.43417	65.267612			No		Not Exceeded
Road	2022-07-15 13:01	Yes	Muskox	5	Feeding	N/A	80	166	West	No		-96.48819	65.325287			No		Not Exceeded
Road	2022-07-15 13:01	Yes	Wolf	1	Walking	S	10	123	West	No		-96.10441	65.122168			No		Not Exceeded
Road	2022-07-15 13:01	Yes	Wolf	1	Feeding	N	200	122	East	No	Ripping up a ground squirrel	-96.09715	65.114773			No		Not Exceeded
Viewshed	2022-07-15 13:03		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-07-15 13:03		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-07-15 13:03		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-07-15 13:03		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-07-15 13:03		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-07-15 13:03		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-07-15 13:03		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-07-15 13:03		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-07-15 13:03		Muskox	5	Feeding	N/A	80	166	West			-96.48819	65.325287				Not Exceeded	
Viewshed	2022-07-15 13:03		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-07-15 13:03		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-07-15 13:03		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-07-15 13:03		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-07-15 13:03		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-07-15 13:03		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-07-15 13:03		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-07-15 13:03		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-07-15 13:03		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-07-15 13:03		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-07-15 13:03		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-07-15 13:03		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-07-15 13:03		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-07-15 13:03		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-07-15 13:03		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-07-15 13:03		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-07-15 13:03		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-07-15 13:03		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-07-15 13:03		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-07-15 13:03		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-07-15 13:03		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-07-15 13:03		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-07-15 13:03		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-07-15 13:03		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-07-15 13:03		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-07-15 13:03		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-07-15 13:03		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-07-15 13:03		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-07-15 13:03		Wolf	1	Feeding	N	200	121-122	West		Ripping up ground squirrel	-96.08638	65.10712				Not Exceeded	
Viewshed	2022-07-15 13:03		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-07-15 13:03		-	-			NA	118				-96.05506	65.086475					

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2022-07-15 13:03		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-07-15 13:03		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-07-15 13:03		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-07-15 13:03		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-07-15 13:03		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-07-15 13:03		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-07-15 13:03		-	-			NA	116				-96.02061	65.080258					
Road	2022-07-19 8:55	Yes	Caribou	1	Walking	W	1000	178	West	No		-96.6219	65.400857			No	Not Exceeded	
Road	2022-07-19 8:55	Yes	Muskox	8	Walking	W	0	153	West	Yes		-96.47626	65.248229			No	Not Exceeded	
Road	2022-07-19 8:55	Yes	Wolf	1	Walking	E	200	150	West	No		-96.45008	65.230216			No	Not Exceeded	
Viewshed	2022-07-19 14:05		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-07-19 14:05		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-07-19 14:05		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-07-19 14:05		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-07-19 14:05		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-07-19 14:05		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-07-19 14:05		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-07-19 14:05		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-07-19 14:05		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-07-19 14:05		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-07-19 14:05		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-07-19 14:05		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-07-19 14:05		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-07-19 14:05		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-07-19 14:05		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-07-19 14:05		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-07-19 14:05		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-07-19 14:05		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-07-19 14:05		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-07-19 14:05		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-07-19 14:05		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-07-19 14:05		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-07-19 14:05		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-07-19 14:05		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-07-19 14:05		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-07-19 14:05		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-07-19 14:05		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-07-19 14:05		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-07-19 14:05		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-07-19 14:05		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-07-19 14:05		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-07-19 14:05		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-07-19 14:05		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-07-19 14:05		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-07-19 14:05		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-07-19 14:05		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-07-19 14:05		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-07-19 14:05		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-07-19 14:05		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-07-19 14:05		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-07-19 14:05		-	-			NA	176				-96.60379	65.38622					
Incidental	2022-07-23 1:52	Yes	Arctic hare	1	Dead	N/A	0	135	North	Yes		-96.20801	65.208904		Project related	No	Not Exceeded	
Incidental	2022-07-23 7:50	Yes	Peregrine falcon	1	Standing	N/A	100	174	West	No		-96.60128	65.368315			No	Not Exceeded	
Incidental	2022-07-23 8:00	Yes	Arctic hare	1	Dead	N/A	0	143	East	No		-96.35797	65.223666		Project related	No	Not Exceeded	
Incidental	2022-07-23 13:54	Yes	Peregrine falcon	2	Nesting	N/A	50	132	West	No	There might be a nest in or close to the tower. To monitor	-96.16457	65.194003			No	Not Exceeded	
Road	2022-07-24 6:40	Yes	Caribou	1	Foraging	N/A	200	159	East	No	Coordinates not good. Put the data after the survey.	-96.40886	65.286013			No	Not Exceeded	
Road	2022-07-24 6:40	Yes	Muskox	23	Foraging	N/A	150	163	West	No	Not the good coordinates, entered the survey after.	-96.4304	65.317408			No	Exceeded	Speed Restriction
Incidental	2022-07-27 13:45	Yes	Muskox	14	Feeding	N	100	155	West	No		-96.43417	65.267612			No	Exceeded	Reduced speed limit on the road to 30 km/h between KM 154-156 around 13:45, remove the measure around 17:00 when we passed by again (no more muskoxs)
Road	2022-07-28 6:43	Yes	Muskox	19	Foraging	N/A	800	165	West	No		-96.46782	65.323887			No	Exceeded	Speed restriction put in place
Road	2022-07-28 6:43	Yes	Arctic fox	2	Running	N	0	176	Both	Yes		-96.60379	65.38622			No	Not Exceeded	

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2022-07-28 6:44		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-07-28 6:44		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-07-28 6:44		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-07-28 6:44		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-07-28 6:44		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-07-28 6:44		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-07-28 6:44		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-07-28 6:44		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-07-28 6:44		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-07-28 6:44		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-07-28 6:44		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-07-28 6:44		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-07-28 6:44		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-07-28 6:44		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-07-28 6:44		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-07-28 6:44		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-07-28 6:44		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-07-28 6:44		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-07-28 6:44		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-07-28 6:44		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-07-28 6:44		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-07-28 6:44		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-07-28 6:44		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-07-28 6:44		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-07-28 6:44		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-07-28 6:44		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-07-28 6:44		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-07-28 6:44		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-07-28 6:44		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-07-28 6:44		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-07-28 6:44		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-07-28 6:44		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-07-28 6:44		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-07-28 6:44		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-07-28 6:44		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-07-28 6:44		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-07-28 6:44		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-07-28 6:44		Muskox	19	Foraging	Not Recorded	900	166	West			-96.48819	65.325287				Exceeded	Speed restriction put in place
Viewshed	2022-07-28 6:44		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-07-28 6:44		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-07-28 6:44		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-07-28 6:44		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-07-28 6:44		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-07-28 6:44		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-07-28 6:44		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-07-28 6:44		Arctic fox	1	Running	N	0	176	West			-96.60379	65.38622				Not Exceeded	
Viewshed	2022-07-28 6:44		-	-			NA	176				-96.60379	65.38622					
Road	2022-07-30 12:38	Yes	Muskox	13	Lying Down	N/A	100	156	West	No		-96.45207	65.262217				No	Not Exceeded
Road	2022-07-30 12:38	Yes	Arctic fox	1	Running	E	0	147	East	No		-96.41835	65.227863				No	Not Exceeded
Road	2022-07-30 12:38	Yes	Muskox	10	Lying Down	N/A	200	117	West	No		-96.03942	65.0837				No	Not Exceeded
Incidental	2022-07-30 15:15	Yes	Muskox	7	Walking	S	0	116	South	Yes		-96.02061	65.080258				No	Not Exceeded
Road	2022-07-31 8:00	Yes	Wolf	1	Walking	E	0	109	Both	N/A	MBK Y near portage WRSF. The wolf was on the road walking towards the tailings. We chase him with the pick-up truck towards old sana crusher pad until the wolf ran in the tundra headind to np1 lake.	-96.06565	65.020529				No	Not Exceeded
Viewshed	2022-07-31 10:50		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-07-31 10:50		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-07-31 10:50		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-07-31 10:50		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-07-31 10:50		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-07-31 10:50		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-07-31 10:50		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-07-31 10:50		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-07-31 10:50		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-07-31 10:50		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-07-31 10:50		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-07-31 10:50		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-07-31 10:50		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-07-31 10:50		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-07-31 10:50		-	-			NA	156				-96.45207	65.262217					

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Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2022-07-31 10:50		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-07-31 10:50		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-07-31 10:50		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-07-31 10:50		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-07-31 10:50		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-07-31 10:50		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-07-31 10:50		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-07-31 10:50		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-07-31 10:50		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-07-31 10:50		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-07-31 10:50		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-07-31 10:50		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-07-31 10:50		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-07-31 10:50		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-07-31 10:50		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-07-31 10:50		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-07-31 10:50		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-07-31 10:50		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-07-31 10:50		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-07-31 10:50		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-07-31 10:50		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-07-31 10:50		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-07-31 10:50		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-07-31 10:50		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-07-31 10:50		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-07-31 10:50		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-07-31 10:50		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-07-31 10:50		Caribou	1	Walking	N	100	116	East			-96.02061	65.080258				Not Exceeded	
Viewshed	2022-07-31 10:50		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-07-31 10:50		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-07-31 10:50		-	-			NA	116				-96.02061	65.080258					
Road	2022-08-01 13:59	Yes	Muskox	1	Feeding	N/A	100	118	West	No		-96.05506	65.086475			No	Not Exceeded	
Road	2022-08-01 13:59	Yes	Wolf	1	Walking	S	0	114	East	No		-96.00424	65.066791			No	Not Exceeded	
Incidental	2022-08-01 17:09	Yes	Muskox	13	Foraging	N/A	1500	154	West	No		-96.46296	65.254604			No	Not Exceeded	
Road	2022-08-02 6:56	Yes	Muskox	2	Foraging	N/A	400	136	West	No		-96.2274	65.213075			No	Not Exceeded	
Road	2022-08-02 6:56	Yes	Caribou	7	Foraging	E	600	145	East	No		-96.3769	65.224218			No	Not Exceeded	
Incidental	2022-08-02 9:58	Yes	Caribou	15	Lying Down	N/A	600	169	East	No		-96.53703	65.340029			No	Not Exceeded	
Incidental	2022-08-02 11:47	Yes	Muskox	2	Feeding	N/A	10	137	East	No		-96.2415	65.219441			No	Not Exceeded	
Road	2022-08-03 10:38	Yes	Caribou	11	Foraging	N/A	300	169	East	No		-96.53703	65.340029			No	Not Exceeded	
Road	2022-08-03 10:38	Yes	Caribou	1	Walking	N/A	600	168	East	No		-96.52405	65.33518			No	Not Exceeded	
Road	2022-08-03 10:38	Yes	Muskox	2	Foraging	N/A	15	135	Both	No		-96.20801	65.208904			No	Not Exceeded	
Road	2022-08-04 7:50	Yes	Muskox	1	Feeding	N/A	300	116	East	No		-96.02061	65.080258			No	Not Exceeded	
Road	2022-08-04 7:50	Yes	Muskox	3	Feeding	N/A	600	137	West	No		-96.2415	65.219441			No	Not Exceeded	
Road	2022-08-04 7:50	Yes	Muskox	1	Walking	E	150	149	East	No		-96.44264	65.223273			No	Not Exceeded	
Road	2022-08-04 7:50	Yes	Muskox	10	Trotting/running	W	800	151	East	No		-96.46622	65.234469			No	Not Exceeded	
Incidental	2022-08-04 10:23	Yes	Caribou	6	Walking	N	200	160	East	No	Caribous walking away from the road	-96.41356	65.294293			No	Not Exceeded	
Incidental	2022-08-04 10:53	Yes	Muskox	1	Feeding	N/A	400	156	West	No		-96.45207	65.262217			No	Not Exceeded	
Road	2022-08-05 6:36	Yes	Muskox	2	Lying Down	N/A	50	116	East	No		-96.02061	65.080258			No	Not Exceeded	
Road	2022-08-05 6:36	Yes	Muskox	1	Lying Down	N/A	300	127	West	No		-96.12549	65.153813			No	Not Exceeded	
Road	2022-08-06 7:11	Yes	Caribou	4	Feeding	N/A	1500	177	West	No		-96.60847	65.394344			No	Not Exceeded	
Road	2022-08-06 7:11	Yes	Caribou	1	Feeding	N/A	100	176	East	No		-96.60379	65.38622			No	Not Exceeded	
Road	2022-08-06 7:11	Yes	Caribou	1	Feeding	Not Recorded	152	172	West	No		-96.58667	65.355041			No	Not Exceeded	
Road	2022-08-06 7:11	Yes	Caribou	2	Feeding	N/A	40	170	East	No		-96.54979	65.346648			No	Not Exceeded	
Road	2022-08-06 7:11	Yes	Caribou	2	Standing	N/A	50	147	East	No		-96.41835	65.227863			No	Not Exceeded	
Road	2022-08-06 7:11	Yes	Caribou	1	Feeding	NE	630	119	West	No		-96.06476	65.093211			No	Not Exceeded	
Road	2022-08-07 8:27	Yes	Muskox	9	Feeding	N/A	50	156	West	No		-96.45207	65.262217			No	Not Exceeded	
Road	2022-08-07 8:27	Yes	Caribou	1	Walking	W	50	110	West	No		-96.04065	65.0414			No	Not Exceeded	
Road	2022-08-08 6:28	Yes	Muskox	1	Resting	N/A	350	123	West	No		-96.10441	65.122168			No	Not Exceeded	
Road	2022-08-08 6:28	Yes	Muskox	10	Foraging	N/A	300	165	West	N/A		-96.46782	65.323887			No	Not Exceeded	
Road	2022-08-08 6:28	Yes	Caribou	4	Walking	S	250	168	East	No		-96.52405	65.33518			No	Not Exceeded	
Incidental	2022-08-08 8:44	Yes	Caribou	1	Feeding	N/A	60	179	East	No		-96.00217	65.051123			No	Not Exceeded	
Viewshed	2022-08-08 8:49		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-08-08 8:49		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-08-08 8:49		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-08-08 8:49		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-08-08 8:49		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-08-08 8:49		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-08-08 8:49		Caribou	1	Feeding	N	350	169	West			-96.53703	65.340029				Not Exceeded	
Viewshed	2022-08-08 8:49		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-08-08 8:49		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-08-08 8:49		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-08-08 8:49		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-08-08 8:49		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-08-08 8:49		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-08-08 8:49		-	-			NA	160-161				-96.41356	65.294293					

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2022-08-08 8:49		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-08-08 8:49		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-08-08 8:49		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-08-08 8:49		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-08-08 8:49		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-08-08 8:49		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-08-08 8:49		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-08-08 8:49		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-08-08 8:49		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-08-08 8:49		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-08-08 8:49		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-08-08 8:49		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-08-08 8:49		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-08-08 8:49		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-08-08 8:49		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-08-08 8:49		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-08-08 8:49		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-08-08 8:49		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-08-08 8:49		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-08-08 8:49		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-08-08 8:49		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-08-08 8:49		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-08-08 8:49		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-08-08 8:49		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-08-08 8:49		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-08-08 8:49		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-08-08 8:49		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-08-08 8:49		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-08-08 8:49		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-08-08 8:49		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-08-08 8:49		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-08-08 8:49		-	-			NA	116				-96.02061	65.080258					
Road	2022-08-09 8:07	Yes	Muskox	6	Feeding	N/A	1100	119	West	No		-96.06476	65.093211			No	Not Exceeded	
Road	2022-08-09 8:07	Yes	Caribou	1	Lying Down	N/A	60	161	West	No	Speed restriction in place from 160-162	-96.41207	65.30324			No	Not Exceeded	
Road	2022-08-09 8:07	Yes	Caribou	8	Feeding	N/A	1	166	East	Yes		-96.48819	65.325287			No	Not Exceeded	
Road	2022-08-09 8:07	Yes	Caribou	25	Feeding	Not Recorded	100	169	Both	No	Speed restriction in place 166-170. Caribou are spread out really far.	-96.53703	65.340029			No	Not Exceeded	
Road	2022-08-09 8:07	Yes	Caribou	4	Feeding	Not Recorded	120	170	East	No		-96.54979	65.346648			No	Not Exceeded	
Road	2022-08-09 8:07	Yes	Caribou	8	Walking	S	25	173	East	No		-96.60297	65.359721			No	Not Exceeded	
Road	2022-08-09 8:07	Yes	Caribou	1	Standing	N/A	25	177	East	No		-96.60847	65.394344			No	Not Exceeded	
Incidental	2022-08-09 13:14	Yes	Caribou	1	Standing	N	700	146	East	No		-96.39801	65.226268			No	Not Exceeded	
Incidental	2022-08-09 13:26	Yes	Muskox	1	Lying Down	Not Recorded	10	137	East	No		-96.2415	65.219441			No	Not Exceeded	
Road	2022-08-10 7:00	Yes	Caribou	2	Walking	E	0	117	East	Yes		-96.03942	65.0837			No	Not Exceeded	
Road	2022-08-10 7:00	Yes	Caribou	2	Feeding	N/A	450	143	East	No		-96.35797	65.223666			No	Not Exceeded	
Road	2022-08-10 7:00	Yes	Caribou	133	Walking	S	0	167	Both	Yes	Road closed	-96.5061	65.328371			No	Exceeded	Road closed
Road	2022-08-10 7:00	Yes	Caribou	44	Feeding	E	37	169	Both	No	Scattered groupe	-96.53703	65.340029			No	Exceeded	Road closed
Road	2022-08-10 7:00	Yes	Caribou	7	Feeding	N/A	75	171	East	No		-96.5886	65.351995			No	Not Exceeded	
Road	2022-08-10 7:00	Yes	Caribou	1	Running	W	100	172	West	No		-96.58667	65.355041			No	Not Exceeded	
Road	2022-08-10 7:00	Yes	Caribou	7	Feeding	N/A	75	174	Both	No	Scattered individual	-96.60128	65.368315			No	Not Exceeded	
Road	2022-08-10 7:00	Yes	Caribou	11	Feeding	N/A	50	176	Both	No	Scattered group	-96.60379	65.38622			No	Not Exceeded	
Road	2022-08-10 7:00	Yes	Caribou	1	Walking	W	120	177	West	No		-96.60847	65.394344			No	Not Exceeded	
Road	2022-08-10 7:00	Yes	Caribou	1	Injured	SE	50	178	East	No	Limping caribou	-96.6219	65.400857			No	Not Exceeded	
Road	2022-08-10 13:58	Yes	Caribou	2	Feeding	N/A	75	178	East	No		-96.6219	65.400857			No	Not Exceeded	
Road	2022-08-10 13:58	Yes	Caribou	3	Feeding	N/A	50	177	Both	No		-96.60847	65.394344			No	Not Exceeded	
Road	2022-08-10 13:58	Yes	Caribou	1	Feeding	N/A	900	175	West	No		-96.60237	65.377259			No	Not Exceeded	
Road	2022-08-10 13:58	Yes	Caribou	7	Resting	N/A	500	175	East	No		-96.60237	65.377259			No	Not Exceeded	
Road	2022-08-10 13:58	Yes	Caribou	5	Walking	S	25	174	Both	No		-96.60128	65.368315			No	Not Exceeded	
Road	2022-08-10 13:58	Yes	Caribou	15	Walking	N	100	172	Both	No		-96.58667	65.355041			No	Not Exceeded	
Road	2022-08-10 13:58	Yes	Caribou	13	Feeding	N/A	0	171	Both	Yes		-96.5886	65.351995			No	Not Exceeded	
Road	2022-08-10 13:58	Yes	Caribou	10	Walking	E	0	170	East	Yes		-96.54979	65.346648			No	Not Exceeded	
Road	2022-08-10 13:58	Yes	Caribou	22	Feeding	N/A	30	169	East	No		-96.53703	65.340029			No	Not Exceeded	
Road	2022-08-10 13:58	Yes	Caribou	12	Walking	E	300	168	East	No		-96.52405	65.333518			No	Not Exceeded	
Road	2022-08-10 13:58	Yes	Caribou	2	Feeding	N/A	400	167	East	No		-96.5061	65.328371			No	Not Exceeded	
Road	2022-08-10 13:58	Yes	Caribou	12	Feeding	Not Recorded	70	165	East	No		-96.46782	65.323887			No	Not Exceeded	
Road	2022-08-10 13:58	Yes	Caribou	3	Feeding	N/A	450	161	Both	No		-96.41207	65.30324			No	Not Exceeded	
Road	2022-08-10 13:58	Yes	Caribou	3	Feeding	Not Recorded	100	150	East	No		-96.45008	65.230216			No	Not Exceeded	
Road	2022-08-10 13:58	Yes	Caribou	1	Feeding	Not Recorded	20	147	West	No		-96.41835	65.227863			No	Not Exceeded	
Road	2022-08-10 13:58	Yes	Caribou	1	Feeding	Not Recorded	200	139	East	No		-96.27997	65.226857			No	Not Exceeded	
Road	2022-08-10 13:58	Yes	Muskox	1	Feeding	Not Recorded	700	133	East	No		-96.17538	65.199246			No	Not Exceeded	
Road	2022-08-11 7:30	Yes	Caribou	4	Walking	S	700	139	East	No		-96.27997	65.226857			No	Not Exceeded	

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2022-08-11 7:30	Yes	Caribou	3	Feeding	N/A	400	152	East	No		-96.47617	65.241762			No	Not Exceeded	
Road	2022-08-11 7:30	Yes	Caribou	1	Walking	S	400	166	West	No		-96.48819	65.325287			No	Not Exceeded	
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	116	-	-		-96.02061	65.080258					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	116	-	-		-96.02061	65.080258					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	116	-	-		-96.02061	65.080258					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	118	-	-		-96.05506	65.086475					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	118	-	-		-96.05506	65.086475					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	118	-	-		-96.05506	65.086475					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	121-122	-	-		-96.08638	65.10712					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	121-122	-	-		-96.08638	65.10712					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	121-122	-	-		-96.08638	65.10712					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	128	-	-		-96.13583	65.161371					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	128	-	-		-96.13583	65.161371					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	128	-	-		-96.13583	65.161371					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	133	-	-		-96.17538	65.199246					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	133	-	-		-96.17538	65.199246					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	133	-	-		-96.17538	65.199246					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	138	-	-		-96.26018	65.2238					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	138	-	-		-96.26018	65.2238					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	138	-	-		-96.26018	65.2238					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	144	-	-		-96.35797	65.223666					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	144	-	-		-96.35797	65.223666					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	144	-	-		-96.35797	65.223666					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	154	-	-		-96.46296	65.254604					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	154	-	-		-96.46296	65.254604					
Viewshed	2022-08-11 7:37	-	Muskox	13	Lying Down	N/A	2000	154	West			-96.46296	65.254604				Exceeded	No mitigation measures required as group was more than 1500 m from road
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	154	-	-		-96.46296	65.254604					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	156	-	-		-96.45207	65.262217					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	156	-	-		-96.45207	65.262217					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	156	-	-		-96.45207	65.262217					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	160-161	-	-		-96.41356	65.294293					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	160-161	-	-		-96.41356	65.294293					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	160-161	-	-		-96.41356	65.294293					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	166	-	-		-96.48819	65.325287					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	166	-	-		-96.48819	65.325287					
Viewshed	2022-08-11 7:37	-	Caribou	1	Walking	S	400	166	West			-96.48819	65.325287				Not Exceeded	
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	166	-	-		-96.48819	65.325287					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	169	-	-		-96.53703	65.340029					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	169	-	-		-96.53703	65.340029					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	169	-	-		-96.53703	65.340029					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	176	-	-		-96.60379	65.38622					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	176	-	-		-96.60379	65.38622					
Viewshed	2022-08-11 7:37	-	-	-	-	-	NA	176	-	-		-96.60379	65.38622					
Incidental	2022-08-11 14:14	Yes	Caribou	8	Walking	N	200	175	East	No		-96.60237	65.377259			No	Not Exceeded	
Incidental	2022-08-11 16:08	Yes	Caribou	3	Feeding	N/A	300	148	East	No		-96.42744	65.220477			No	Not Exceeded	
Incidental	2022-08-11 16:39	Yes	Caribou	19	Feeding	S	250	143	East	No	Speed restriction	-96.35797	65.223666			No	Not Exceeded	
Incidental	2022-08-11 17:16	Yes	Caribou	34	Walking	S	0	140	East	Yes		-96.29851	65.221968			No	Exceeded	Speed Restriction
Road	2022-08-12 7:00	Yes	Muskox	1	Standing	N/A	500	143	East	No		-96.35797	65.223666			No	Not Exceeded	
Road	2022-08-12 7:00	Yes	Caribou	5	Walking	N	500	145	East	No		-96.3769	65.224218			No	Not Exceeded	
Road	2022-08-12 7:00	Yes	Caribou	25	Walking	W	1000	146	East	No		-96.39801	65.226268			No	Not Exceeded	
Road	2022-08-12 7:00	Yes	Caribou	11	Walking	N	60	149	East	No		-96.44264	65.223273			No	Not Exceeded	
Road	2022-08-12 7:00	Yes	Caribou	3	Feeding	N/A	60	152	East	N/A		-96.47617	65.241762			No	Not Exceeded	
Road	2022-08-12 7:00	Yes	Caribou	2	Walking	N	40	159	West	No		-96.40886	65.286013			No	Not Exceeded	
Road	2022-08-12 7:00	Yes	Muskox	12	Lying Down	N/A	610	163	West	No		-96.4304	65.317408			No	Not Exceeded	
Road	2022-08-12 7:00	Yes	Caribou	13	Walking	N	263	167	East	No		-96.5061	65.328371			No	Not Exceeded	
Road	2022-08-12 7:00	Yes	Caribou	3	Walking	E	150	170	West	No		-96.54979	65.346648			No	Not Exceeded	
Road	2022-08-12 7:00	Yes	Caribou	9	Feeding	N/A	243	172	East	No		-96.58667	65.355041			No	Not Exceeded	
Road	2022-08-13 8:51	Yes	Caribou	5	Feeding	N/A	80	148	East	No		-96.42744	65.220477			No	Not Exceeded	
Road	2022-08-13 8:51	Yes	Caribou	11	Feeding	N/A	150	152	East	No		-96.47617	65.241762			No	Not Exceeded	
Road	2022-08-13 8:51	Yes	Caribou	2	Feeding	N/A	550	158	East	No		-96.40471	65.277758			No	Not Exceeded	
Road	2022-08-13 8:51	Yes	Caribou	5	Feeding	E	200	160	East	No		-96.41356	65.294293			No	Not Exceeded	
Road	2022-08-13 8:51	Yes	Muskox	11	Feeding	W	60	160	West	No		-96.41356	65.294293			No	Not Exceeded	
Road	2022-08-13 8:51	Yes	Caribou	5	Feeding	SW	200	166	East	No		-96.48819	65.325287			No	Not Exceeded	
Road	2022-08-13 8:51	Yes	Caribou	1	Feeding	N/A	90	167	East	No		-96.5061	65.328371			No	Not Exceeded	
Road	2022-08-13 8:51	Yes	Caribou	1	Walking	W	80	168	West	No		-96.52405	65.333518			No	Not Exceeded	

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2022-08-13 8:51	Yes	Caribou	2	Feeding	SW	140	169	West	No		-96.53703	65.340029			No	Not Exceeded	
Road	2022-08-13 8:51	Yes	Caribou	3	Feeding	N/A	65	170	East	No		-96.54979	65.346648			No	Not Exceeded	
Road	2022-08-13 8:51	Yes	Caribou	1	Feeding	SW	250	173	West	No		-96.60297	65.359721			No	Not Exceeded	
Road	2022-08-13 8:51	Yes	Caribou	8	Feeding	N/A	100	176	East	No		-96.60379	65.38622			No	Not Exceeded	
Road	2022-08-14 8:22	Yes	Caribou	1	Walking	E	110	137	East	No	Speed restriction from 136-138 9:15am	-96.2415	65.219441			No	Not Exceeded	
Road	2022-08-14 8:22	Yes	Caribou	1	Feeding	S	160	140	West	No	Speed restriction extended to 142 at 9:40	-96.29851	65.221968			No	Not Exceeded	
Road	2022-08-14 8:22	Yes	Muskox	1	Lying Down	N/A	50	141	East	No		-96.31809	65.223683			No	Not Exceeded	
Road	2022-08-14 8:22	Yes	Caribou	5	Walking	N	50	150	West	Deflection	Deflected by long haul. Speed restriction maintained 149-153 for now.	-96.45008	65.230216			No	Not Exceeded	
Road	2022-08-14 8:22	Yes	Caribou	3	Feeding	N/A	200	153	West	No	Speed restriction from yesterday still applies here 149-153	-96.47626	65.248229			No	Not Exceeded	
Road	2022-08-14 8:22	Yes	Muskox	8	Feeding	N/A	1000	156	West	No	No speed restriction	-96.45207	65.262217			No	Not Exceeded	
Road	2022-08-14 8:22	Yes	Caribou	4	Lying Down	N/A	130	159	East	No	Within speed restriction 159-161	-96.40886	65.286013			No	Not Exceeded	
Road	2022-08-14 8:22	Yes	Caribou	4	Walking	W	50	162	West	No		-96.4168	65.311548			No	Not Exceeded	
Road	2022-08-14 8:22	Yes	Caribou	8	Feeding	N/A	0	167	East	No	Caribou crossing at 167.5 stayed in the road for 40 minutes □ Speed restriction extended □ 158-168 as of 11:45am	-96.5061	65.328371			No	Not Exceeded	
Road	2022-08-14 8:22	Yes	Caribou	6	Feeding	E	45	170	East	No	Extended speed restriction to	-96.54979	65.346648			No	Not Exceeded	
Road	2022-08-14 8:22	Yes	Caribou	2	Feeding	NW	30	171	West	No		-96.5686	65.351995			No	Not Exceeded	
Road	2022-08-14 8:22	Yes	Caribou	3	Feeding	N/A	60	176	Both	No	Extended speed restriction 158-Amaruq	-96.60379	65.38622			No	Not Exceeded	
Road	2022-08-15 10:44	Yes	Caribou	2	Feeding	N/A	100	178	West	No		-96.6219	65.400857			No	Not Exceeded	
Road	2022-08-15 10:44	Yes	Caribou	1	Standing	Not Recorded	100	177	West	No		-96.60847	65.394344			No	Not Exceeded	
Road	2022-08-15 10:44	Yes	Caribou	1	Feeding	N/A	150	176	West	No		-96.60379	65.38622			No	Not Exceeded	
Road	2022-08-15 10:44	Yes	Caribou	2	Feeding	N/A	10	172	East	No		-96.58667	65.355041			No	Not Exceeded	
Road	2022-08-15 10:44	Yes	Caribou	5	Standing	N/A	150	161	East	No		-96.41207	65.30324			No	Not Exceeded	
Road	2022-08-15 10:44	Yes	Caribou	3	Feeding	N	300	160	East	No	Included in speed restriction 160-162	-96.41356	65.294293			No	Not Exceeded	
Road	2022-08-15 10:44	Yes	Caribou	1	Feeding	N/A	1	152	East	No		-96.47617	65.241762			No	Not Exceeded	
Road	2022-08-15 10:44	Yes	Caribou	2	Walking	N	10	151	East	No		-96.46622	65.234469			No	Not Exceeded	
Road	2022-08-15 10:44	Yes	Caribou	1	Feeding	N/A	10	142	East	No		-96.3371	65.222192			No	Not Exceeded	
Road	2022-08-16 7:42	Yes	Sandhill crane	1	Flying	E	0	130	Both	Yes		-96.1528	65.17815			No	Not Exceeded	
Road	2022-08-16 7:42	Yes	Snow goose	13	Resting	N/A	75	150	East	No		-96.45008	65.230216			No	Not Exceeded	
Road	2022-08-16 7:42	Yes	Caribou	6	Feeding	N/A	50	153	West	No		-96.47626	65.248229			No	Not Exceeded	
Road	2022-08-16 7:42	Yes	Caribou	8	Lying Down	N/A	5	159	East	No	speed restriction extended 152-159	-96.40886	65.286013			No	Not Exceeded	
Road	2022-08-16 7:42	Yes	Caribou	1	Walking	SW	50	168	West	No		-96.52405	65.333518			No	Not Exceeded	
Road	2022-08-16 7:42	Yes	Caribou	2	Feeding	N/A	75	169	West	No		-96.53703	65.340029			No	Not Exceeded	
Road	2022-08-16 7:42	Yes	Caribou	1	Feeding	N/A	10	171	West	No		-96.5686	65.351995			No	Not Exceeded	
Road	2022-08-16 7:42	Yes	Caribou	4	Feeding	Not Recorded	25	173	Both	No		-96.60297	65.359721			No	Not Exceeded	
Road	2022-08-16 7:42	Yes	Caribou	4	Feeding	N/A	25	175	Both	No		-96.60237	65.377259			No	Not Exceeded	
Incidental	2022-08-16 11:32	Yes	Caribou	5	Walking	W	250	163	West	No		-96.4304	65.317408			No	Not Exceeded	
Incidental	2022-08-16 12:23	Yes	Caribou	2	Feeding	N/A	50	149	West	No		-96.44264	65.223273			No	Not Exceeded	
Road	2022-08-17 7:23	Yes	Canada goose	31	Flying	E	0	122	Both	Yes		-96.09715	65.114773			No	Not Exceeded	
Road	2022-08-17 7:23	Yes	Sandhill crane	1	Flying	N	75	128	West	No		-96.13583	65.161371			No	Not Exceeded	
Road	2022-08-17 7:23	Yes	Canada goose	15	Standing	N/A	50	130	East	No		-96.1528	65.17815			No	Not Exceeded	
Road	2022-08-17 7:23	Yes	Siksik	1	Running	N	50	132	West	Yes	Crossing the road at the air station, not haul road.	-96.16457	65.194003			No	Not Exceeded	
Road	2022-08-17 7:23	Yes	Canada goose	9	Flying	W	0	140	Both	Yes		-96.29851	65.221968			No	Not Exceeded	
Road	2022-08-17 7:23	Yes	Caribou	4	Feeding	N/A	50	149	Both	No		-96.44264	65.223273			No	Not Exceeded	
Road	2022-08-17 7:23	Yes	Caribou	8	Feeding	N/A	25	151	East	No		-96.46622	65.234469			No	Not Exceeded	
Road	2022-08-17 7:23	Yes	Muskox	1	Feeding	NW	600	158	West	No		-96.40471	65.277758			No	Not Exceeded	
Road	2022-08-17 7:23	Yes	Caribou	1	Feeding	N/A	50	158	West	No		-96.40471	65.277758			No	Not Exceeded	
Road	2022-08-17 7:23	Yes	Canada goose	16	Resting	N/A	100	162	East	No		-96.4168	65.311548			No	Not Exceeded	
Road	2022-08-17 7:23	Yes	Caribou	2	Feeding	N/A	25	166	West	No		-96.48819	65.325287			No	Not Exceeded	
Road	2022-08-17 7:23	Yes	Caribou	5	Feeding	N/A	50	169	West	No		-96.53703	65.340029			No	Not Exceeded	
Road	2022-08-17 7:23	Yes	Caribou	12	Walking	N	600	172	West	No		-96.58667	65.355041			No	Not Exceeded	
Road	2022-08-17 7:23	Yes	Caribou	6	Walking	SE	400	173	West	No		-96.60297	65.359721			No	Not Exceeded	
Road	2022-08-17 7:23	Yes	Caribou	1	Feeding	N/A	75	175	West	No		-96.60237	65.377259			No	Not Exceeded	
Road	2022-08-17 7:23	Yes	Caribou	5	Feeding	N/A	100	177	Both	No		-96.60847	65.394344			No	Not Exceeded	
Road	2022-08-18 14:39	Yes	Muskox	5	Resting	N/A	10	109	East	No		-96.04183	65.03949			No	Not Exceeded	
Road	2022-08-18 14:39	Yes	Caribou	2	Feeding	N/A	10	150	East	No		-96.45008	65.230216			No	Not Exceeded	
Road	2022-08-18 14:39	Yes	Caribou	7	Standing	N/A	15	159	West	No		-96.40886	65.286013			No	Not Exceeded	
Road	2022-08-18 14:39	Yes	Muskox	1	Foraging	N/A	90	153	West	No		-96.47626	65.248229			No	Not Exceeded	
Road	2022-08-18 14:39	Yes	Caribou	1	Foraging	N/A	40	147	West	No		-96.41835	65.227863			No	Not Exceeded	
Road	2022-08-18 14:39	Yes	Caribou	1	Foraging	N	280	137	East	No		-96.2415	65.219441			No	Not Exceeded	
Road	2022-08-18 14:39	Yes	Caribou	2	Walking	SW	0	136	Both	Yes		-96.2274	65.213075			No	Not Exceeded	
Road	2022-08-18 14:39	Yes	Muskox	1	Foraging	N/A	350	123	West	No		-96.10441	65.122168			No	Not Exceeded	
Viewshed	2022-08-19 7:16	-	-	-	-	-	NA	116	-	-	-	-96.02061	65.080258			-	-	-
Viewshed	2022-08-19 7:16	-	-	-	-	-	NA	116	-	-	-	-96.02061	65.080258			-	-	-
Viewshed	2022-08-19 7:16	-	-	-	-	-	NA	116	-	-	-	-96.02061	65.080258			-	-	-

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2022-08-19 7:16		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-08-19 7:16		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-08-19 7:16		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-08-19 7:16		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-08-19 7:16		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-08-19 7:16		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-08-19 7:16		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-08-19 7:16		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-08-19 7:16		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-08-19 7:16		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-08-19 7:16		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-08-19 7:16		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-08-19 7:16		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-08-19 7:16		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-08-19 7:16		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-08-19 7:16		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-08-19 7:16		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-08-19 7:16		Caribou	2	Feeding	E	50	138	West			-96.26018	65.2238				Not Exceeded	
Viewshed	2022-08-19 7:16		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-08-19 7:16		Caribou	5	Walking	E	500	144	East		Walking further from the road. But expected to be coming back west.	-96.35797	65.223666				Not Exceeded	
Viewshed	2022-08-19 7:16		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-08-19 7:16		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-08-19 7:16		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-08-19 7:16		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-08-19 7:16		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-08-19 7:16		Crow	1	Flying	E	0	154	West			-96.46296	65.254604				Not Exceeded	
Viewshed	2022-08-19 7:16		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-08-19 7:16		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-08-19 7:16		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-08-19 7:16		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-08-19 7:16		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-08-19 7:16		Caribou	1	Trotting/running	E	200	160-161	East			-96.41356	65.294293				Not Exceeded	
Viewshed	2022-08-19 7:16		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-08-19 7:16		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-08-19 7:16		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-08-19 7:16		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-08-19 7:16		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-08-19 7:16		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-08-19 7:16		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-08-19 7:16		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-08-19 7:16		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-08-19 7:16		Caribou	5	Walking	O	200	169	West			-96.53703	65.340029				Not Exceeded	
Viewshed	2022-08-19 7:16		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-08-19 7:16		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-08-19 7:16		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-08-19 7:16		Caribou	14	Feeding	O	400	176	West			-96.60379	65.38622				Not Exceeded	
Viewshed	2022-08-19 7:16		-	-			NA	176				-96.60379	65.38622					
Incidental	2022-08-19 8:13	Yes	Caribou	1	Walking	W	900	136	West	No		-96.2274	65.213075			No	Not Exceeded	
Incidental	2022-08-19 8:16	Yes	Caribou	2	Feeding	E	50	137	West	No	Speed restriction 136-137	-96.2415	65.219441			No	Not Exceeded	
Incidental	2022-08-19 8:47	Yes	Caribou	1	Feeding	N/A	100	147	East	No	Speed restriction extended to 143-148	-96.41835	65.227863			No	Not Exceeded	
Incidental	2022-08-19 9:23	Yes	Caribou	10	Feeding	W	10	162	West,East	No	Speed restriction 160-164	-96.4168	65.311548			No	Not Exceeded	
Incidental	2022-08-19 9:45	Yes	Caribou	14	Walking	W	20	169	West	No	Speed restriction will be in place once evaluated down the road more.	-96.53703	65.340029			No	Not Exceeded	
Incidental	2022-08-19 9:57	Yes	Caribou	7	Feeding	N/A	300	172	West	No	Will put speed restriction once road further evaluated	-96.58667	65.355041			No	Not Exceeded	
Incidental	2022-08-19 10:04	Yes	Caribou	1	Feeding	N/A	20	177	West	No	Speed restriction in place 166-AMQ	-96.60847	65.394344			No	Not Exceeded	
Road	2022-08-19 10:38	Yes	Caribou	15	Foraging	S	50	176	West	No		-96.60379	65.38622			No	Not Exceeded	
Road	2022-08-19 10:38	Yes	Caribou	7	Foraging	N/A	80	173	Both	No		-96.60297	65.359721			No	Not Exceeded	
Road	2022-08-19 10:38	Yes	Caribou	10	Foraging	N/A	200	170	West	No		-96.54979	65.346648			No	Not Exceeded	
Road	2022-08-19 10:38	Yes	Caribou	5	Foraging	S	700	164	West	No		-96.44722	65.322562			No	Not Exceeded	
Road	2022-08-19 10:38	Yes	Caribou	2	Foraging	S	500	161	West	No		-96.41207	65.30324			No	Not Exceeded	
Road	2022-08-19 10:38	Yes	Caribou	3	Foraging	S	20	153	West	No		-96.47626	65.248229			No	Not Exceeded	
Road	2022-08-19 10:38	Yes	Caribou	4	Foraging	S	500	148	West	No		-96.42744	65.220477			No	Not Exceeded	
Road	2022-08-19 10:38	Yes	Muskox	4	Foraging	S	25	142	West	No		-96.3371	65.222192			No	Not Exceeded	
Road	2022-08-19 10:38	Yes	Caribou	5	Foraging	N/A	600	137	West	No		-96.2415	65.219441			No	Not Exceeded	
Incidental	2022-08-19 16:18	Yes	Caribou	5	Feeding	Not Recorded	25	148	West,East	No	Covered in current speed restriction from 143-148. □ □ Visibility is low due to smog.	-96.42744	65.220477			No	Not Exceeded	
Incidental	2022-08-19 16:31	Yes	Caribou	7	Feeding	N/A	500	178	West	No		-96.6219	65.400857			No	Not Exceeded	
Incidental	2022-08-19 16:35	Yes	Caribou	5	Feeding	N/A	50	176	West,East	No		-96.60379	65.38622			No	Not Exceeded	

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2022-08-19 16:43	Yes	Caribou	1	Feeding	N/A	1000	173	West	No		-96.60297	65.359721			No	Not Exceeded	
Incidental	2022-08-19 16:45	Yes	Caribou	1	Feeding	N/A	200	168	West	No		-96.52405	65.333518			No	Not Exceeded	
Road	2022-08-20 7:49	Yes	Caribou	1	Foraging	N/A	350	127	East	No		-96.12549	65.153813			No	Not Exceeded	
Road	2022-08-20 7:49	Yes	Caribou	5	Foraging	E	350	147	East	No		-96.41835	65.227863			Yes - Seen them the other day around this area so could be the same group.	Not Exceeded	
Road	2022-08-20 7:49	Yes	Caribou	3	Foraging	N/A	50	150	Both	No		-96.45008	65.230216			No	Not Exceeded	
Road	2022-08-20 7:49	Yes	Caribou	4	Walking	W	0	158	Both	Yes		-96.40471	65.277758			No	Not Exceeded	
Road	2022-08-20 7:49	Yes	Caribou	2	Foraging	W	300	159	East	No		-96.40886	65.286013			No	Not Exceeded	
Road	2022-08-20 7:49	Yes	Caribou	3	Foraging	W	0	161	Both	Yes		-96.41207	65.30324			No	Not Exceeded	
Road	2022-08-20 7:49	Yes	Caribou	4	Foraging	W	300	163	West	No		-96.4304	65.317408			No	Not Exceeded	
Road	2022-08-20 7:49	Yes	Caribou	9	Foraging	N/A	30	169	Both	No		-96.53703	65.340029			No	Not Exceeded	
Road	2022-08-20 7:49	Yes	Caribou	13	Foraging	W	10	175	Both	No		-96.60237	65.377259			No	Not Exceeded	
Road	2022-08-20 7:49	Yes	Caribou	1	Foraging	W	150	177	West	No		-96.60847	65.394344			No	Not Exceeded	
Incidental	2022-08-20 12:31	Yes	Muskox	5	Feeding	N/A	75	140	West	No		-96.29851	65.221968			No	Not Exceeded	
Incidental	2022-08-20 13:05	Yes	Caribou	1	Feeding	N/A	550	119	West	No		-96.06476	65.093211			No	Not Exceeded	
Road	2022-08-20 15:35	Yes	Caribou	1	Feeding	N/A	1000	176	West	No		-96.60379	65.38622			No	Not Exceeded	
Road	2022-08-20 15:35	Yes	Caribou	3	Feeding	N/A	100	175	East	No		-96.60237	65.377259			No	Not Exceeded	
Road	2022-08-20 15:35	Yes	Caribou	2	Feeding	N/A	200	175	West	No		-96.60237	65.377259			No	Not Exceeded	
Road	2022-08-20 15:35	Yes	Caribou	1	Feeding	N/A	300	174	West	No		-96.60128	65.368315			No	Not Exceeded	
Road	2022-08-20 15:35	Yes	Caribou	1	Feeding	W	50	172	West	No		-96.58667	65.355041			No	Not Exceeded	
Road	2022-08-20 15:35	Yes	Caribou	3	Feeding	N/A	100	170	West	No		-96.54979	65.346648			No	Not Exceeded	
Road	2022-08-20 15:35	Yes	Caribou	2	Running	S	50	168	West	No		-96.52405	65.333518			No	Not Exceeded	
Road	2022-08-20 15:35	Yes	Caribou	1	Feeding	N/A	50	166	West	No		-96.48819	65.325287			No	Not Exceeded	
Road	2022-08-20 15:35	Yes	Caribou	2	Lying Down	N/A	1000	165	West	No		-96.46782	65.323887			No	Not Exceeded	
Road	2022-08-20 15:35	Yes	Caribou	2	Feeding	N/A	500	164	West	No		-96.44722	65.322562			No	Not Exceeded	
Road	2022-08-20 15:35	Yes	Caribou	2	Feeding	N/A	500	163	West	No		-96.4304	65.317408			No	Not Exceeded	
Road	2022-08-20 15:35	Yes	Caribou	1	Feeding	S	100	159	West	No		-96.40886	65.286013			No	Not Exceeded	
Road	2022-08-20 15:35	Yes	Caribou	1	Feeding	N/A	500	152	West	No		-96.47617	65.241762			No	Not Exceeded	
Road	2022-08-20 15:35	Yes	Caribou	5	Feeding	N/A	109	153	East	No		-96.47626	65.248229			No	Not Exceeded	
Road	2022-08-21 8:22	Yes	Caribou	4	Feeding	Not Recorded	450	146	East	No		-96.39801	65.226268			No	Not Exceeded	
Road	2022-08-21 8:22	Yes	Caribou	3	Walking	W	10	149	East	Deflection		-96.44264	65.223273			No	Not Exceeded	
Road	2022-08-21 8:22	Yes	Caribou	1	Feeding	N/A	100	150	East	No		-96.45008	65.230216			No	Not Exceeded	
Road	2022-08-21 8:22	Yes	Caribou	1	Feeding	W	400	150	West	No		-96.45008	65.230216			No	Not Exceeded	
Road	2022-08-21 8:22	Yes	Caribou	15	Feeding	NW	300	159	West	No	Closest ones are at 300m but theyre walking away from the road.	-96.40886	65.286013			No	Not Exceeded	
Road	2022-08-21 8:22	Yes	Bald Eagle	1	Resting	N/A	550	160	East	No		-96.41356	65.294293			No	Not Exceeded	
Road	2022-08-21 8:22	Yes	Caribou	3	Feeding	W	100	162	East	No		-96.4168	65.311548			No	Not Exceeded	
Road	2022-08-21 8:22	Yes	Caribou	5	Feeding	N/A	700	163	West	No		-96.4304	65.317408			No	Not Exceeded	
Road	2022-08-21 8:22	Yes	Caribou	1	Feeding	N/A	550	166	West	No		-96.48819	65.325287			No	Not Exceeded	
Road	2022-08-21 8:22	Yes	Caribou	5	Feeding	N/A	100	169	West	No		-96.53703	65.340029			No	Not Exceeded	
Road	2022-08-21 8:22	Yes	Caribou	10	Feeding	N/A	50	173	West	No		-96.60297	65.359721			No	Not Exceeded	
Road	2022-08-21 8:22	Yes	Caribou	5	Feeding	E	0	174	Both	Yes	3 crossed going east.	-96.60128	65.368315			No	Not Exceeded	
Road	2022-08-21 8:22	Yes	Caribou	18	Feeding	N/A	200	176	West	No		-96.60379	65.38622			No	Not Exceeded	
Road	2022-08-21 8:22	Yes	Caribou	1	Feeding	N/A	200	177	West	No		-96.60847	65.394344			No	Not Exceeded	
Incidental	2022-08-21 12:52	Yes	Caribou	4	Alert	NE	50	135	East	No	Didnt put restriction because they walked fast behind hill	-96.20801	65.208904			No	Not Exceeded	
Road	2022-08-21 15:20	Yes	Caribou	2	Feeding	N/A	300	119	West	No		-96.06476	65.093211			No	Not Exceeded	
Road	2022-08-21 15:20	Yes	Muskox	1	Feeding	N/A	400	123	West	No		-96.10441	65.122168			No	Not Exceeded	
Road	2022-08-21 15:20	Yes	Muskox	1	Feeding	N/A	300	135	West	No		-96.20801	65.208904			No	Not Exceeded	
Road	2022-08-21 15:20	Yes	Caribou	2	Foraging	N/A	800	148	West	No		-96.42744	65.220477			No	Not Exceeded	
Road	2022-08-21 15:20	Yes	Caribou	3	Foraging	N/A	10	150	Both	No		-96.45008	65.230216			No	Not Exceeded	
Road	2022-08-21 15:20	Yes	Caribou	14	Foraging	N/A	50	151	East	No		-96.46622	65.234469			No	Not Exceeded	
Road	2022-08-21 15:20	Yes	Caribou	2	Resting	N/A	200	160	West	No		-96.41356	65.294293			No	Not Exceeded	
Road	2022-08-21 15:20	Yes	Caribou	3	Foraging	N/A	350	160	West	No		-96.41356	65.294293			No	Not Exceeded	
Road	2022-08-21 15:20	Yes	Caribou	4	Foraging	N/A	75	161	Both	No		-96.41207	65.30324			No	Not Exceeded	
Road	2022-08-21 15:20	Yes	Caribou	2	Foraging	N/A	600	162	West	No		-96.4168	65.311548			No	Not Exceeded	
Road	2022-08-21 15:20	Yes	Caribou	1	Foraging	N/A	100	162	East	No		-96.4168	65.311548			No	Not Exceeded	
Road	2022-08-21 15:20	Yes	Caribou	3	Foraging	N	400	166	West	No		-96.48819	65.325287			No	Not Exceeded	
Road	2022-08-21 15:20	Yes	Caribou	3	Foraging	N/A	300	167	East	No		-96.5061	65.328371			No	Not Exceeded	
Road	2022-08-21 15:20	Yes	Caribou	6	Foraging	N/A	200	167	West	No		-96.5061	65.328371			No	Not Exceeded	
Road	2022-08-21 15:20	Yes	Caribou	1	Foraging	N/A	200	169	West	No		-96.53703	65.340029			No	Not Exceeded	
Road	2022-08-21 15:20	Yes	Caribou	5	Foraging	N/A	100	170	West	No		-96.54979	65.346648			No	Not Exceeded	
Road	2022-08-21 15:20	Yes	Caribou	1	Alert	W	20	170	East	No		-96.54979	65.346648			No	Not Exceeded	
Road	2022-08-21 15:20	Yes	Caribou	1	Foraging	N/A	400	171	West	No		-96.5686	65.351995			No	Not Exceeded	
Road	2022-08-21 15:20	Yes	Caribou	2	Resting	N/A	75	172	West	No		-96.58667	65.355041			No	Not Exceeded	
Road	2022-08-21 15:20	Yes	Caribou	2	Foraging	N/A	500	173	West	No		-96.60297	65.359721			No	Not Exceeded	
Road	2022-08-21 15:20	Yes	Caribou	3	Foraging	N/A	15	173	Both	No		-96.60297	65.359721			No	Not Exceeded	
Road	2022-08-21 15:20	Yes	Caribou	4	Foraging	N/A	50	176	Both	No		-96.60379	65.38622			No	Not Exceeded	
Road	2022-08-21 15:20	Yes	Caribou	3	Walking	N/A	400	179	East	No		-96.64916	65.40509			No	Not Exceeded	
Road	2022-08-22 8:48	Yes	Caribou	7	Foraging	N/A	100	173	West	No		-96.60297	65.359721			No	Not Exceeded	
Road	2022-08-22 8:48	Yes	Caribou	5	Foraging	N/A	30	172	West	No		-96.58667	65.355041			No	Not Exceeded	
Road	2022-08-22 8:48	Yes	Caribou	2	Foraging	N/A	30	171	East	No		-96.5686	65.351995			No	Not Exceeded	
Road	2022-08-22 8:48	Yes	Caribou	3	Foraging	N/A	30	168	West	No		-96.52405	65.333518			No	Not Exceeded	

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2022-08-22 8:48	Yes	Caribou	4	Foraging	W	150	168	East	No	1 caribou swimming across a little lake	-96.52405	65.333518			No	Not Exceeded	
Road	2022-08-22 8:48	Yes	Caribou	2	Foraging	N/A	150	167	West	No		-96.5061	65.328371			No	Not Exceeded	
Road	2022-08-22 8:48	Yes	Caribou	1	Walking	W	175	161	West	No		-96.41207	65.30324			No	Not Exceeded	
Road	2022-08-22 8:48	Yes	Caribou	1	Foraging	N/A	100	161	East	No		-96.41207	65.30324			No	Not Exceeded	
Road	2022-08-22 8:48	Yes	Caribou	4	Foraging	N/A	300	161	West	N/A		-96.41207	65.30324			No	Not Exceeded	
Road	2022-08-22 8:48	Yes	Caribou	2	Foraging	N/A	150	152	East	No		-96.47617	65.241762			No	Not Exceeded	
Road	2022-08-22 8:48	Yes	Caribou	1	Walking	E	0	128	West	Yes		-96.13583	65.161371			No	Not Exceeded	
Road	2022-08-22 8:48	Yes	Caribou	1	Foraging	N/A	200	118	West	N/A		-96.05506	65.086475			No	Not Exceeded	
Incidental	2022-08-22 15:36	Yes	Caribou	1	Walking	E	0	112	East	Yes		-96.00217	65.051123			No	Not Exceeded	
Road	2022-08-22 16:44	Yes	Caribou	5	Foraging	N/A	200	148	East	No		-96.42744	65.220477			No	Not Exceeded	
Road	2022-08-22 16:44	Yes	Caribou	5	Foraging	N/A	5	149	West	No		-96.44264	65.223273			No	Not Exceeded	
Road	2022-08-22 16:44	Yes	Caribou	2	Foraging	N/A	75	151	West	No		-96.46622	65.234469			No	Not Exceeded	
Road	2022-08-22 16:44	Yes	Caribou	1	Foraging	N/A	200	153	West	No		-96.47626	65.248229			No	Not Exceeded	
Road	2022-08-22 16:44	Yes	Caribou	7	Foraging	N/A	75	162	East	No		-96.4168	65.311548			No	Not Exceeded	
Road	2022-08-22 16:44	Yes	Caribou	1	Foraging	N/A	300	165	West	No		-96.46782	65.323887			No	Not Exceeded	
Road	2022-08-22 16:44	Yes	Caribou	3	Foraging	N/A	50	166	Both	No		-96.48819	65.325287			No	Not Exceeded	
Road	2022-08-22 16:44	Yes	Caribou	1	Foraging	N/A	350	168	East	No		-96.52405	65.333518			No	Not Exceeded	
Road	2022-08-22 16:44	Yes	Caribou	5	Foraging	N/A	200	169	Both	No		-96.53703	65.340029			No	Not Exceeded	
Road	2022-08-22 16:44	Yes	Caribou	1	Foraging	SE	300	170	East	No		-96.54979	65.346648			No	Not Exceeded	
Road	2022-08-22 16:44	Yes	Caribou	1	Resting	N/A	30	171	West	No		-96.5686	65.351995			No	Not Exceeded	
Road	2022-08-22 16:44	Yes	Caribou	1	Walking	N	300	173	East	No		-96.60297	65.359721			No	Not Exceeded	
Road	2022-08-22 16:44	Yes	Caribou	1	Foraging	N/A	400	174	West	No		-96.60128	65.368315			No	Not Exceeded	
Road	2022-08-22 16:44	Yes	Caribou	6	Foraging	N/A	50	175	Both	No		-96.60237	65.377259			No	Not Exceeded	
Road	2022-08-22 16:44	Yes	Caribou	2	Foraging	N/A	300	177	West	No		-96.60847	65.394344			No	Not Exceeded	
Road	2022-08-22 16:44	Yes	Caribou	2	Foraging	N/A	100	178	West	No		-96.6219	65.400857			No	Not Exceeded	
Road	2022-08-23 7:55	Yes	Caribou	13	Foraging	N	100	138	East	No		-96.26018	65.2238			No	Not Exceeded	
Road	2022-08-23 7:55	Yes	Caribou	1	Feeding	E	400	140	West	No		-96.29851	65.221968			No	Not Exceeded	
Road	2022-08-23 7:55	Yes	Muskox	1	Lying Down	N/A	100	145	East	No		-96.3769	65.224218			No	Not Exceeded	
Road	2022-08-23 7:55	Yes	Caribou	6	Foraging	N/A	10	149	Both	No		-96.44264	65.223273			No	Not Exceeded	
Road	2022-08-23 7:55	Yes	Caribou	9	Foraging	N/A	50	167	Both	No		-96.5061	65.328371			No	Not Exceeded	
Road	2022-08-23 7:55	Yes	Caribou	4	Walking	W	500	170	West	No		-96.54979	65.346648			No	Not Exceeded	
Road	2022-08-23 7:55	Yes	Caribou	3	Feeding	N/A	50	172	Both	No		-96.58667	65.355041			No	Not Exceeded	
Road	2022-08-23 7:55	Yes	Caribou	15	Feeding	N/A	100	177	West	No		-96.60847	65.394344			No	Not Exceeded	
Incidental	2022-08-23 13:05	Yes	Caribou	4	Walking	E	300	124	West	No		-96.10808	65.131545			No	Not Exceeded	
Road	2022-08-23 16:52	Yes	Caribou	2	Foraging	N/A	100	166	Both	No		-96.48819	65.325287			No	Not Exceeded	
Road	2022-08-23 16:52	Yes	Caribou	1	Foraging	N/A	5	170	West	No		-96.54979	65.346648			No	Not Exceeded	
Road	2022-08-23 16:52	Yes	Caribou	1	Foraging	N/A	30	171	East	No		-96.5686	65.351995			No	Not Exceeded	
Road	2022-08-23 16:52	Yes	Caribou	5	Foraging	N/A	150	172	West	No		-96.58667	65.355041			No	Not Exceeded	
Road	2022-08-23 16:52	Yes	Caribou	1	Trotting/running	NE	400	172	East	No		-96.58667	65.355041			No	Not Exceeded	
Road	2022-08-23 16:52	Yes	Caribou	3	Resting	N/A	300	174	East	No		-96.60128	65.368315			No	Not Exceeded	
Road	2022-08-23 16:52	Yes	Caribou	3	Foraging	N/A	2	175	West	No		-96.60237	65.377259			No	Not Exceeded	
Road	2022-08-23 16:52	Yes	Caribou	1	Foraging	N/A	75	176	East	No		-96.60379	65.38622			No	Not Exceeded	
Road	2022-08-23 16:52	Yes	Caribou	21	Foraging	N/A	250	177	West	No		-96.60847	65.394344			No	Not Exceeded	
Road	2022-08-23 16:52	Yes	Caribou	1	Foraging	N/A	400	178	East	No		-96.6219	65.400857			No	Not Exceeded	
Viewshed	2022-08-24 6:21	-	Snow goose	50	Resting	Not Recorded	100	116	East			-96.02061	65.080258				Not Exceeded	
Viewshed	2022-08-24 6:21	-	Canada goose	2	Flying	SE	0	116	East			-96.02061	65.080258				Not Exceeded	
Viewshed	2022-08-24 6:21	-	Snow goose	20	Flying	O	300	116	West			-96.02061	65.080258				Not Exceeded	
Viewshed	2022-08-24 6:21	-	-	-	-	-	NA	116	-			-96.02061	65.080258					
Viewshed	2022-08-24 6:21	-	-	-	-	-	NA	118	-			-96.05506	65.086475					
Viewshed	2022-08-24 6:21	-	-	-	-	-	NA	118	-			-96.05506	65.086475					
Viewshed	2022-08-24 6:21	-	Snow goose	3	Flying	O	0	118	West			-96.05506	65.086475				Not Exceeded	
Viewshed	2022-08-24 6:21	-	Snow goose	15	Flying	O	500	118	West			-96.05506	65.086475				Not Exceeded	
Viewshed	2022-08-24 6:21	-	-	-	-	-	NA	121-122	-			-96.08638	65.10712					
Viewshed	2022-08-24 6:21	-	-	-	-	-	NA	121-122	-			-96.08638	65.10712					
Viewshed	2022-08-24 6:21	-	-	-	-	-	NA	121-122	-			-96.08638	65.10712					
Viewshed	2022-08-24 6:21	-	-	-	-	-	NA	121-122	-			-96.08638	65.10712					
Viewshed	2022-08-24 6:21	-	Snow goose	5	Feeding	Not Recorded	400	128	East			-96.13583	65.161371				Not Exceeded	
Viewshed	2022-08-24 6:21	-	-	-	-	-	NA	128	-			-96.13583	65.161371					
Viewshed	2022-08-24 6:21	-	-	-	-	-	NA	128	-			-96.13583	65.161371					
Viewshed	2022-08-24 6:21	-	-	-	-	-	NA	128	-			-96.13583	65.161371					
Viewshed	2022-08-24 6:21	-	Snow goose	20	Resting	Not Recorded	600	133	East			-96.17538	65.199246				Not Exceeded	
Viewshed	2022-08-24 6:21	-	-	-	-	-	NA	133	-			-96.17538	65.199246					
Viewshed	2022-08-24 6:21	-	-	-	-	-	NA	133	-			-96.17538	65.199246					
Viewshed	2022-08-24 6:21	-	-	-	-	-	NA	133	-			-96.17538	65.199246					
Viewshed	2022-08-24 6:21	-	-	-	-	-	NA	138	-			-96.26018	65.2238					
Viewshed	2022-08-24 6:21	-	-	-	-	-	NA	138	-			-96.26018	65.2238					
Viewshed	2022-08-24 6:21	-	Snow goose	15	Resting	Not Recorded	400	138	West			-96.26018	65.2238				Not Exceeded	
Viewshed	2022-08-24 6:21	-	-	-	-	-	NA	138	-			-96.26018	65.2238					
Viewshed	2022-08-24 6:21	-	-	-	-	-	NA	144	-			-96.35797	65.223666					
Viewshed	2022-08-24 6:21	-	-	-	-	-	NA	144	-			-96.35797	65.223666					
Viewshed	2022-08-24 6:21	-	Snow goose	30	Flying	O	100	144	West			-96.35797	65.223666				Not Exceeded	
Viewshed	2022-08-24 6:21	-	-	-	-	-	NA	144	-			-96.35797	65.223666					
Viewshed	2022-08-24 6:21	-	-	-	-	-	NA	154	-			-96.46296	65.254604					
Viewshed	2022-08-24 6:21	-	-	-	-	-	NA	154	-			-96.46296	65.254604					

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2022-08-24 6:21		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-08-24 6:21		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-08-24 6:21		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-08-24 6:21		Caribou	1	Feeding	N/A	300	160-161	East			-96.41356	65.294293				Not Exceeded	
Viewshed	2022-08-24 6:21		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-08-24 6:21		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-08-24 6:21		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-08-24 6:21		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-08-24 6:21		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-08-24 6:21		Snow goose	15	Flying	O	0	166	West			-96.48819	65.325287				Not Exceeded	
Viewshed	2022-08-24 6:21		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-08-24 6:21		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-08-24 6:21		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-08-24 6:21		Caribou	1	Feeding	Not Recorded	200	169	West			-96.53703	65.340029				Not Exceeded	
Viewshed	2022-08-24 6:21		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-08-24 6:21		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-08-24 6:21		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-08-24 6:21		Caribou	2	Feeding	N/A	5	176	West			-96.60379	65.38622				Not Exceeded	
Viewshed	2022-08-24 6:21		Snow goose	30	Flying	SO	300	176	West			-96.60379	65.38622				Not Exceeded	
Road	2022-08-24 7:08	Yes	Caribou	8	Feeding	N/A	50	175	Both	No		-96.60237	65.377259			No	Not Exceeded	
Road	2022-08-24 7:08	Yes	Caribou	1	Running	W	0	171	Both	Yes		-96.5686	65.351995			No	Not Exceeded	
Road	2022-08-24 7:08	Yes	Caribou	1	Feeding	N/A	300	170	West	No		-96.54979	65.346648			No	Not Exceeded	
Road	2022-08-24 7:08	Yes	Caribou	1	Feeding	N/A	25	168	West	No		-96.52405	65.333518			No	Not Exceeded	
Road	2022-08-24 7:08	Yes	Caribou	3	Feeding	N/A	200	165	West	No		-96.46782	65.323887			No	Not Exceeded	
Road	2022-08-24 7:08	Yes	Caribou	1	Feeding	N/A	100	158	East	No		-96.40471	65.277758			No	Not Exceeded	
Road	2022-08-24 7:08	Yes	Caribou	2	Feeding	N/A	10	151	West	No		-96.46622	65.234469			No	Not Exceeded	
Road	2022-08-24 7:08	Yes	Caribou	2	Standing	N/A	300	148	West	No		-96.42744	65.220477			No	Not Exceeded	
Road	2022-08-25 8:49	Yes	Caribou	1	Feeding	S	500	177	West	No		-96.60847	65.394344			No	Not Exceeded	
Road	2022-08-25 8:49	Yes	Caribou	3	Feeding	N/A	300	176	West	No		-96.60379	65.38622			No	Not Exceeded	
Road	2022-08-25 8:49	Yes	Caribou	4	Feeding	N/A	100	160	East	No		-96.41356	65.294293			No	Not Exceeded	
Road	2022-08-25 8:49	Yes	Caribou	1	Feeding	E	500	156	West	No		-96.45207	65.262217			No	Not Exceeded	
Road	2022-08-25 8:49	Yes	Caribou	4	Feeding	N	200	153	West	No		-96.47626	65.248229			No	Not Exceeded	
Road	2022-08-25 8:49	Yes	Caribou	5	Feeding	N/A	25	148	Both	Yes		-96.42744	65.220477			No	Not Exceeded	
Road	2022-08-25 8:49	Yes	Muskox	2	Lying Down	N/A	300	144	East	No		-96.38695	65.225525			No	Not Exceeded	
Road	2022-08-25 8:49	Yes	Caribou	3	Feeding	N/A	75	142	East	No		-96.3371	65.222192			No	Not Exceeded	
Road	2022-08-25 8:49	Yes	Caribou	1	Feeding	N/A	100	128	West	No		-96.13583	65.161371			No	Not Exceeded	
Road	2022-08-25 8:49	Yes	Caribou	5	Feeding	W	50	125	West	No		-96.10792	65.139082			No	Not Exceeded	
Road	2022-08-26 13:52	Yes	Caribou	1	Feeding	N/A	200	116	West	No		-96.02061	65.080258			No	Not Exceeded	
Road	2022-08-26 13:52	Yes	Caribou	2	Walking	S	100	147	West	No		-96.41835	65.227863			No	Not Exceeded	
Road	2022-08-26 13:52	Yes	Caribou	2	Walking	N	100	150	East	No		-96.45008	65.230216			No	Not Exceeded	
Road	2022-08-26 13:52	Yes	Caribou	2	Feeding	N/A	100	160	West	No		-96.41356	65.294293			No	Not Exceeded	
Road	2022-08-26 13:52	Yes	Caribou	1	Feeding	N/A	400	165	West	No		-96.46782	65.323887			No	Not Exceeded	
Road	2022-08-26 13:52	Yes	Caribou	3	Feeding	N/A	100	168	West	No		-96.52405	65.333518			No	Not Exceeded	
Road	2022-08-26 13:52	Yes	Caribou	3	Feeding	N/A	50	174	Both	No		-96.60128	65.368315			No	Not Exceeded	
Road	2022-08-26 13:52	Yes	Caribou	1	Feeding	N/A	100	175	East	No		-96.60237	65.377259			No	Not Exceeded	
Road	2022-08-27 9:18	Yes	Caribou	2	Feeding	N/A	10	176	West	No		-96.60379	65.38622			No	Not Exceeded	
Road	2022-08-27 9:18	Yes	Caribou	3	Lying Down	N/A	100	175	East	No		-96.60237	65.377259			No	Not Exceeded	
Road	2022-08-27 9:18	Yes	Caribou	1	Feeding	N/A	300	174	West	No		-96.60128	65.368315			No	Not Exceeded	
Road	2022-08-27 9:18	Yes	Caribou	1	Feeding	N/A	100	174	East	No		-96.60128	65.368315			No	Not Exceeded	
Road	2022-08-27 9:18	Yes	Caribou	2	Lying Down	N/A	200	173	West	No		-96.60297	65.359721			No	Not Exceeded	
Road	2022-08-27 9:18	Yes	Caribou	2	Feeding	N/A	100	170	East	No		-96.54979	65.346648			No	Not Exceeded	
Road	2022-08-27 9:18	Yes	Caribou	1	Feeding	N/A	100	161	East	No		-96.41207	65.30324			No	Not Exceeded	
Road	2022-08-27 9:18	Yes	Caribou	10	Feeding	N/A	25	160	Both	No		-96.41356	65.294293			No	Not Exceeded	
Road	2022-08-27 9:18	Yes	Caribou	5	Feeding	N/A	100	152	Both	No		-96.47617	65.241762			No	Not Exceeded	
Road	2022-08-27 9:18	Yes	Caribou	3	Feeding	N/A	300	151	West	No		-96.46622	65.234469			No	Not Exceeded	
Road	2022-08-27 9:18	Yes	Caribou	2	Feeding	N/A	10	147	East	No		-96.41835	65.227863			No	Not Exceeded	
Road	2022-08-27 9:18	Yes	Muskox	7	Feeding	N/A	100	121	East	No		-96.08638	65.10712			No	Not Exceeded	
Road	2022-08-27 9:18	Yes	Caribou	1	Feeding	N/A	300	113	West	No		-95.99327	65.058803			No	Not Exceeded	
Road	2022-08-28 13:29	Yes	Caribou	3	Foraging	N	0	111	Both	Yes		-96.02402	65.048147			No	Not Exceeded	
Road	2022-08-28 13:29	Yes	Caribou	3	Foraging	N/A	300	148	East	N/A		-96.42744	65.220477			No	Not Exceeded	
Road	2022-08-28 13:29	Yes	Caribou	1	Foraging	N/A	300	166	West	N/A		-96.48819	65.325287			No	Not Exceeded	
Road	2022-08-28 13:29	Yes	Caribou	3	Foraging	N/A	150	172	East	N/A		-96.58667	65.355041			No	Not Exceeded	
Road	2022-08-28 13:29	Yes	Caribou	1	Foraging	N/A	150	173	West	N/A		-96.60297	65.359721			No	Not Exceeded	
Road	2022-08-29 13:42	Yes	Caribou	3	Feeding	N/A	300	177	Both	No		-96.60847	65.394344			No	Not Exceeded	
Road	2022-08-29 13:42	Yes	Caribou	1	Feeding	N/A	50	176	West	No		-96.60379	65.38622			No	Not Exceeded	
Road	2022-08-29 13:42	Yes	Caribou	2	Walking	W	10	175	West	No		-96.60237	65.377259			No	Not Exceeded	
Road	2022-08-29 13:42	Yes	Caribou	6	Feeding	N/A	100	173	East	No		-96.60297	65.359721			No	Not Exceeded	
Road	2022-08-29 13:42	Yes	Caribou	1	Feeding	N/A	100	170	West	No		-96.54979	65.346648			No	Not Exceeded	
Road	2022-08-29 13:42	Yes	Caribou	1	Running	E	1	164	East	No		-96.44722	65.322562			No	Not Exceeded	
Road	2022-08-29 13:42	Yes	Caribou	10	Lying Down	N/A	300	162	West	No		-96.4168	65.311548			No	Not Exceeded	
Road	2022-08-29 13:42	Yes	Caribou	2	Feeding	N/A	300	160	West	No		-96.41356	65.294293			No	Not Exceeded	
Road	2022-08-29 13:42	Yes	Caribou	3	Feeding	N/A	200	150	West	No		-96.45008	65.230216			No	Not Exceeded	
Road	2022-08-29 13:42	Yes	Caribou	1	Feeding	N/A	100	149	East	No		-96.44264	65.223273			No	Not Exceeded	
Road	2022-08-29 13:42	Yes	Caribou	2	Feeding	N/A	300	119	West	No		-96.06476	65.093211			No	Not Exceeded	
Road	2022-08-29 13:42	Yes	Caribou	3	Feeding	N/A	200	112	East	No		-96.00217	65.051123			No	Not Exceeded	
Road	2022-08-30 15:40	Yes	Caribou	1	Walking	SE	30	134	Both	N/A		-96.19286	65.204805			No	Not Exceeded	
Road	2022-08-30 15:40	Yes	Caribou	2	Foraging	N/A	200	137	East	No		-96.2415	65.219441			No	Not Exceeded	
Road	2022-08-30 15:40	Yes	Caribou	1	Foraging	N/A	300	140	East	No		-96.29851	65.221968			No	Not Exceeded	

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2022-08-30 15:40	Yes	Caribou	1	Foraging	N/A	400	140	East	No		-96.29851	65.221968			No	Not Exceeded	
Road	2022-08-30 15:40	Yes	Caribou	3	Walking	W	0	145	Both	Yes		-96.3769	65.224218			No	Not Exceeded	
Road	2022-08-30 15:40	Yes	Caribou	3	Foraging	N/A	100	149	East	No		-96.44264	65.223273			No	Not Exceeded	
Road	2022-08-30 15:40	Yes	Caribou	6	Foraging	N/A	25	159	West	No		-96.40886	65.286013			No	Not Exceeded	
Road	2022-08-30 15:40	Yes	Muskox	10	Walking	SW	15	159	West	No	Put a speed restriction from 158 to 160.	-96.40886	65.286013			No	Not Exceeded	
Road	2022-08-30 15:40	Yes	Caribou	5	Walking	W	50	160	West	No		-96.41356	65.294293			No	Not Exceeded	
Road	2022-08-30 15:40	Yes	Caribou	4	Foraging	N/A	75	166	Both	No		-96.48819	65.325287			No	Not Exceeded	
Road	2022-08-30 15:40	Yes	Caribou	3	Walking	NE	400	167	East	No		-96.5061	65.328371			No	Not Exceeded	
Road	2022-08-30 15:40	Yes	Caribou	1	Foraging	N/A	300	168	East	No		-96.52405	65.333518			No	Not Exceeded	
Road	2022-08-30 15:40	Yes	Caribou	1	Foraging	N/A	300	172	West	No		-96.58667	65.355041			No	Not Exceeded	
Road	2022-08-30 15:40	Yes	Caribou	2	Foraging	N/A	200	173	East	No		-96.60297	65.359721			No	Not Exceeded	
Road	2022-08-30 15:40	Yes	Caribou	1	Walking	N	200	174	East	No		-96.60128	65.368315			No	Not Exceeded	
Road	2022-08-30 15:40	Yes	Caribou	1	Foraging	N/A	25	174	West	No		-96.60128	65.368315			No	Not Exceeded	
Road	2022-08-30 15:40	Yes	Caribou	4	Walking	N/A	100	175	Both	No		-96.60237	65.377259			No	Not Exceeded	
Road	2022-08-30 15:40	Yes	Caribou	1	Foraging	N/A	500	177	West	No		-96.60847	65.394344			No	Not Exceeded	
Road	2022-08-30 15:40	Yes	Caribou	1	Walking	S	100	178	East	No		-96.6219	65.400857			No	Not Exceeded	
Road	2022-08-31 9:37	Yes	Caribou	1	Foraging	E	30	149	East	No		-96.44264	65.223273			No	Not Exceeded	
Road	2022-08-31 9:37	Yes	Caribou	7	Foraging	N/A	60	150	West	No		-96.45008	65.230216			No	Not Exceeded	
Road	2022-08-31 9:37	Yes	Muskox	7	Foraging	N/A	560	159	West	No		-96.40886	65.286013			No	Not Exceeded	
Road	2022-08-31 9:37	Yes	Caribou	1	Foraging	N/A	1100	160	East	No		-96.41356	65.294293			No	Not Exceeded	
Road	2022-08-31 9:37	Yes	Caribou	1	Foraging	N/A	20	166	East	No		-96.48819	65.325287			No	Not Exceeded	
Road	2022-08-31 9:37	Yes	Caribou	10	Foraging	N/A	250	168	Both	No		-96.52405	65.333518			No	Not Exceeded	
Road	2022-08-31 9:37	Yes	Caribou	2	Foraging	N/A	100	171	West	No		-96.5686	65.351995			No	Not Exceeded	
Road	2022-08-31 9:37	Yes	Caribou	5	Walking	SE	0	172	Both	Yes		-96.58667	65.355041			No	Not Exceeded	
Road	2022-08-31 9:37	Yes	Caribou	5	Foraging	N/A	250	174	Both	No		-96.60128	65.368315			No	Not Exceeded	
Viewshed	2022-08-31 13:44		Caribou	1	Foraging	N/A	200	176	East			-96.60379	65.38622				Not Exceeded	
Viewshed	2022-08-31 13:44		-	-	-	NA	176					-96.60379	65.38622					
Viewshed	2022-08-31 13:44		-	-	-	NA	176					-96.60379	65.38622					
Viewshed	2022-08-31 13:44		-	-	-	NA	176					-96.60379	65.38622					
Viewshed	2022-08-31 13:44		Caribou	2	Feeding	N/A	300	169	East			-96.53703	65.340029				Not Exceeded	
Viewshed	2022-08-31 13:44		-	-	-	NA	169					-96.53703	65.340029					
Viewshed	2022-08-31 13:44		Caribou	2	Feeding	N/A	300	169	West			-96.53703	65.340029				Not Exceeded	
Viewshed	2022-08-31 13:44		-	-	-	NA	169					-96.53703	65.340029					
Viewshed	2022-08-31 13:44		Caribou	1	Feeding	N/A	200	166	East			-96.48819	65.325287				Not Exceeded	
Viewshed	2022-08-31 13:44		-	-	-	NA	166					-96.48819	65.325287					
Viewshed	2022-08-31 13:44		Caribou	2	Feeding	N/A	250	166	West			-96.48819	65.325287				Not Exceeded	
Viewshed	2022-08-31 13:44		-	-	-	NA	166					-96.48819	65.325287					
Viewshed	2022-08-31 13:44		Muskox	3	Foraging	N/A	300	160-161	East			-96.41356	65.294293				Not Exceeded	
Viewshed	2022-08-31 13:44		-	-	-	NA	160-161					-96.41356	65.294293					
Viewshed	2022-08-31 13:44		Caribou	1	Feeding	N/A	800	160-161	West			-96.41356	65.294293				Not Exceeded	
Viewshed	2022-08-31 13:44		-	-	-	NA	160-161					-96.41356	65.294293					
Viewshed	2022-08-31 13:44		-	-	-	NA	156					-96.45207	65.262217					
Viewshed	2022-08-31 13:44		-	-	-	NA	156					-96.45207	65.262217					
Viewshed	2022-08-31 13:44		Caribou	1	Feeding	N/A	1000	156	West			-96.45207	65.262217				Not Exceeded	
Viewshed	2022-08-31 13:44		-	-	-	NA	156					-96.45207	65.262217					
Viewshed	2022-08-31 13:44		-	-	-	NA	154					-96.46296	65.254604					
Viewshed	2022-08-31 13:44		-	-	-	NA	154					-96.46296	65.254604					
Viewshed	2022-08-31 13:44		-	-	-	NA	154					-96.46296	65.254604					
Viewshed	2022-08-31 13:44		-	-	-	NA	144					-96.35797	65.223666					
Viewshed	2022-08-31 13:44		-	-	-	NA	144					-96.35797	65.223666					
Viewshed	2022-08-31 13:44		-	-	-	NA	144					-96.35797	65.223666					
Viewshed	2022-08-31 13:44		-	-	-	NA	144					-96.35797	65.223666					
Viewshed	2022-08-31 13:44		-	-	-	NA	138					-96.26018	65.2238					
Viewshed	2022-08-31 13:44		-	-	-	NA	138					-96.26018	65.2238					
Viewshed	2022-08-31 13:44		-	-	-	NA	138					-96.26018	65.2238					
Viewshed	2022-08-31 13:44		-	-	-	NA	133					-96.17538	65.199246					
Viewshed	2022-08-31 13:44		-	-	-	NA	133					-96.17538	65.199246					
Viewshed	2022-08-31 13:44		-	-	-	NA	133					-96.17538	65.199246					
Viewshed	2022-08-31 13:44		-	-	-	NA	128					-96.13583	65.161371					
Viewshed	2022-08-31 13:44		-	-	-	NA	128					-96.13583	65.161371					
Viewshed	2022-08-31 13:44		-	-	-	NA	128					-96.13583	65.161371					
Viewshed	2022-08-31 13:44		-	-	-	NA	121-122					-96.08638	65.10712					
Viewshed	2022-08-31 13:44		-	-	-	NA	121-122					-96.08638	65.10712					
Viewshed	2022-08-31 13:44		-	-	-	NA	121-122					-96.08638	65.10712					
Viewshed	2022-08-31 13:44		-	-	-	NA	121-122					-96.08638	65.10712					
Viewshed	2022-08-31 13:44		-	-	-	NA	118					-96.05506	65.086475					
Viewshed	2022-08-31 13:44		-	-	-	NA	118					-96.05506	65.086475					
Viewshed	2022-08-31 13:44		-	-	-	NA	118					-96.05506	65.086475					
Viewshed	2022-08-31 13:44		-	-	-	NA	118					-96.05506	65.086475					
Viewshed	2022-08-31 13:44		-	-	-	NA	116					-96.02061	65.080258					
Viewshed	2022-08-31 13:44		-	-	-	NA	116					-96.02061	65.080258					
Viewshed	2022-08-31 13:44		-	-	-	NA	116					-96.02061	65.080258					

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2022-09-01 9:03	Yes	Caribou	3	Lying Down	N/A	100	178	West	No		-96.6219	65.400857			No	Not Exceeded	
Road	2022-09-01 9:03	Yes	Caribou	2	Feeding	N/A	103	176	East	No		-96.60379	65.38622			No	Not Exceeded	
Road	2022-09-01 9:03	Yes	Caribou	3	Foraging	N/A	177	173	West	No		-96.60297	65.359721			No	Not Exceeded	
Road	2022-09-01 9:03	Yes	Caribou	4	Running	W	0	171	Both	Yes		-96.5686	65.351995			No	Not Exceeded	
Road	2022-09-01 9:03	Yes	Caribou	3	Foraging	N/A	400	170	West	No		-96.54979	65.346648			No	Not Exceeded	
Road	2022-09-01 9:03	Yes	Caribou	2	Foraging	N/A	25	170	East	No		-96.54979	65.346648			No	Not Exceeded	
Road	2022-09-01 9:03	Yes	Caribou	3	Feeding	N/A	25	169	Both	No		-96.53703	65.340029			No	Not Exceeded	
Road	2022-09-01 9:03	Yes	Caribou	2	Foraging	N/A	100	169	East	No		-96.53703	65.340029			No	Not Exceeded	
Road	2022-09-01 9:03	Yes	Muskox	10	Feeding	N/A	124	159	East	No		-96.40886	65.286013			No	Not Exceeded	
Road	2022-09-01 9:03	Yes	Caribou	2	Feeding	N/A	150	152	West	No		-96.47617	65.241762			No	Not Exceeded	
Road	2022-09-01 9:03	Yes	Caribou	1	Lying Down	N/A	100	150	East	No		-96.45008	65.230216			No	Not Exceeded	
Road	2022-09-01 9:03	Yes	Caribou	1	Foraging	N/A	200	147	West	No		-96.41835	65.227863			No	Not Exceeded	
Road	2022-09-01 9:03	Yes	Caribou	1	Foraging	N/A	200	136	West	No		-96.2274	65.213075			No	Not Exceeded	
Road	2022-09-01 9:03	Yes	Rough-legged-Hawk	1	Flying	N/A	0	125	Both	Yes		-96.10792	65.139082			No	Not Exceeded	
Incidental	2022-09-05 8:00	Yes	Arctic hare	1	Dead	N/A	0	121			During the day shift operations along the WTHR, a AEM employee reported to the environment department an animal carcass at KM121. An environment department employee traveled to the seen and confirmed the carcass was present and identify the arctic hare. Communications with the GN-DOE will be done during the monthly report.A reminder to all WTHR users to be aware of wildlife presence along the road and to slow down when an animal has been sighted in the area.	-96.08638	65.10712		Project related	No	Not Exceeded	
Road	2022-09-05 8:17	Yes	Caribou	1	Feeding	N/A	20	136	East	No		-96.2274	65.213075			No	Not Exceeded	
Road	2022-09-05 8:17	Yes	Muskox	14	Feeding	N/A	120	160	East	No		-96.41356	65.294293			No	Exceeded	Speed restriction was implemented at km 160km (159-161)
Road	2022-09-05 8:17	Yes	Caribou	3	Feeding	N/A	700	163	West	No		-96.4304	65.317408			No	Not Exceeded	
Road	2022-09-05 8:17	Yes	Caribou	3	Feeding	N/A	600	166	West	No		-96.48404	65.325134			No	Not Exceeded	
Road	2022-09-05 8:17	Yes	Caribou	5	Feeding	N/A	175	168	East	No		-96.52405	65.333518			No	Not Exceeded	
Road	2022-09-05 8:17	Yes	Caribou	1	Feeding	N	100	171	West	No		-96.5686	65.351995			No	Not Exceeded	
Road	2022-09-05 8:17	Yes	Caribou	1	Feeding	N	350	175	West	No		-96.60237	65.377259			No	Not Exceeded	
Viewshed	2022-09-05 10:41	-	-	-	-	-	NA	176	-	-		-96.60379	65.38622					
Viewshed	2022-09-05 10:41	-	-	-	-	-	NA	176	-	-		-96.60379	65.38622					
Viewshed	2022-09-05 10:41	-	-	-	-	-	NA	176	-	-		-96.60379	65.38622					
Viewshed	2022-09-05 10:41	-	-	-	-	-	NA	176	-	-		-96.60379	65.38622					
Viewshed	2022-09-05 10:41	-	Caribou	5	Feeding	N/A	150	169	East			-96.53703	65.340029				Not Exceeded	
Viewshed	2022-09-05 10:41	-	-	-	-	-	NA	169	-	-		-96.53703	65.340029					
Viewshed	2022-09-05 10:41	-	Caribou	3	Feeding	N/A	2500	169	West			-96.53703	65.340029				Not Exceeded	
Viewshed	2022-09-05 10:41	-	-	-	-	-	NA	169	-	-		-96.53703	65.340029					
Viewshed	2022-09-05 10:41	-	-	-	-	-	NA	166	-	-		-96.48819	65.325287					
Viewshed	2022-09-05 10:41	-	-	-	-	-	NA	166	-	-		-96.48819	65.325287					
Viewshed	2022-09-05 10:41	-	-	-	-	-	NA	166	-	-		-96.48819	65.325287					
Viewshed	2022-09-05 10:41	-	-	-	-	-	NA	166	-	-		-96.48819	65.325287					
Viewshed	2022-09-05 10:41	-	Caribou	2	Feeding	N/A	1500	160-161	East			-96.41356	65.294293				Not Exceeded	
Viewshed	2022-09-05 10:41	-	Muskox	14	Feeding	O	100	160-161	East			-96.41356	65.294293				Exceeded	Speed restriction put in place
Viewshed	2022-09-05 10:41	-	Caribou	9	Feeding	N/A	450	160-161	West			-96.41356	65.294293				Not Exceeded	
Viewshed	2022-09-05 10:41	-	-	-	-	-	NA	160-161	-	-		-96.41356	65.294293					
Viewshed	2022-09-05 10:41	-	-	-	-	-	NA	156	-	-		-96.45207	65.262217					
Viewshed	2022-09-05 10:41	-	-	-	-	-	NA	156	-	-		-96.45207	65.262217					
Viewshed	2022-09-05 10:41	-	-	-	-	-	NA	156	-	-		-96.45207	65.262217					
Viewshed	2022-09-05 10:41	-	-	-	-	-	NA	154	-	-		-96.46296	65.254604					
Viewshed	2022-09-05 10:41	-	-	-	-	-	NA	154	-	-		-96.46296	65.254604					
Viewshed	2022-09-05 10:41	-	-	-	-	-	NA	154	-	-		-96.46296	65.254604					
Viewshed	2022-09-05 10:41	-	-	-	-	-	NA	154	-	-		-96.46296	65.254604					
Viewshed	2022-09-05 10:41	-	-	-	-	-	NA	144	-	-		-96.35797	65.223666					
Viewshed	2022-09-05 10:41	-	-	-	-	-	NA	144	-	-		-96.35797	65.223666					
Viewshed	2022-09-05 10:41	-	-	-	-	-	NA	144	-	-		-96.35797	65.223666					
Viewshed	2022-09-05 10:41	-	-	-	-	-	NA	144	-	-		-96.35797	65.223666					
Viewshed	2022-09-05 10:41	-	-	-	-	-	NA	138	-	-		-96.26018	65.2238					
Viewshed	2022-09-05 10:41	-	-	-	-	-	NA	138	-	-		-96.26018	65.2238					
Viewshed	2022-09-05 10:41	-	-	-	-	-	NA	138	-	-		-96.26018	65.2238					
Viewshed	2022-09-05 10:41	-	-	-	-	-	NA	133	-	-		-96.17538	65.199246					
Viewshed	2022-09-05 10:41	-	-	-	-	-	NA	133	-	-		-96.17538	65.199246					
Viewshed	2022-09-05 10:41	-	-	-	-	-	NA	133	-	-		-96.17538	65.199246					
Viewshed	2022-09-05 10:41	-	-	-	-	-	NA	133	-	-		-96.17538	65.199246					
Viewshed	2022-09-05 10:41	-	-	-	-	-	NA	128	-	-		-96.13583	65.161371					
Viewshed	2022-09-05 10:41	-	-	-	-	-	NA	128	-	-		-96.13583	65.161371					
Viewshed	2022-09-05 10:41	-	-	-	-	-	NA	128	-	-		-96.13583	65.161371					

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2022-09-05 10:41		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-09-05 10:41		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-09-05 10:41		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-09-05 10:41		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-09-05 10:41		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-09-05 10:41		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-09-05 10:41		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-09-05 10:41		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-09-05 10:41		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-09-05 10:41		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-09-05 10:41		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-09-05 10:41		-	-			NA	116				-96.02061	65.080258					
Road	2022-09-07 7:01	Yes	Canada goose	36	Walking	N/A	20	118	East	No		-96.05506	65.086475			No	Not Exceeded	
Road	2022-09-07 7:01	Yes	Canada goose	16	Walking	N/A	5	123	East	No		-96.10441	65.122168			No	Not Exceeded	
Road	2022-09-07 7:01	Yes	Canada goose	72	Resting	N/A	100	134	West	No		-96.19286	65.204805			No	Not Exceeded	
Road	2022-09-07 7:01	Yes	Canada goose	42	Walking	Not Recorded	20	139	West	No		-96.27997	65.226857			No	Not Exceeded	
Road	2022-09-07 7:01	Yes	Canada goose	15	Resting	Not Recorded	30	144	West	No		-96.3726	65.22318			No	Not Exceeded	
Road	2022-09-07 7:01	Yes	Muskox	1	Standing	N/A	80	147	West	No		-96.41835	65.227863			No	Not Exceeded	
Road	2022-09-07 7:01	Yes	Caribou	11	Walking	N/A	100	152	Both	No	Speed restriction put in place 151 to 153	-96.47617	65.241762			No	Not Exceeded	
Road	2022-09-07 7:01	Yes	Caribou	6	Walking	E	0	167	East	Yes	Speed restriction put in place 165 to 167	-96.5061	65.328371			No	Not Exceeded	
Road	2022-09-07 7:01	Yes	Caribou	1	Walking	W	150	169	West	No		-96.53703	65.340029			No	Not Exceeded	
Road	2022-09-07 7:01	Yes	Canada goose	113	Walking	Not Recorded	60	172	East	No		-96.58667	65.355041			No	Not Exceeded	
Viewshed	2022-09-07 9:49		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-09-07 9:49		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-09-07 9:49		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-09-07 9:49		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-09-07 9:49		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-09-07 9:49		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-09-07 9:49		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-09-07 9:49		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-09-07 9:49		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-09-07 9:49		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-09-07 9:49		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-09-07 9:49		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-09-07 9:49		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-09-07 9:49		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-09-07 9:49		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-09-07 9:49		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-09-07 9:49		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-09-07 9:49		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-09-07 9:49		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-09-07 9:49		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-09-07 9:49		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-09-07 9:49		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-09-07 9:49		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-09-07 9:49		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-09-07 9:49		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-09-07 9:49		Canada goose	5	Flying	S	1500	144	West			-96.35797	65.223666				Not Exceeded	
Viewshed	2022-09-07 9:49		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-09-07 9:49		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-09-07 9:49		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-09-07 9:49		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-09-07 9:49		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-09-07 9:49		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-09-07 9:49		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-09-07 9:49		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-09-07 9:49		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-09-07 9:49		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-09-07 9:49		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-09-07 9:49		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-09-07 9:49		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-09-07 9:49		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-09-07 9:49		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-09-07 9:49		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-09-07 9:49		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-09-07 9:49		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-09-07 9:49		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-09-07 9:49		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-09-07 9:49		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-09-07 9:49		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-09-07 9:49		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-09-07 9:49		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-09-07 9:49		-	-			NA	116				-96.02061	65.080258					
Road	2022-09-10 8:34	Yes	Muskox	1	Walking	E	150	112	East	N/A		-96.00217	65.051123			No	Not Exceeded	

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Road	2022-09-10 8:34	Yes	Caribou	8	Feeding	E	100	166	Both	No		-96.48819	65.325287			No	Not Exceeded	
Road	2022-09-10 8:34	Yes	Caribou	3	Feeding	N/A	100	174	West	No		-96.60128	65.368315			No	Not Exceeded	
Incidental	2022-09-10 13:31	Yes	Caribou	7	Feeding	W	20	177	West	No	restricted road to light vehicles only.	-96.60847	65.394344			No	Not Exceeded	
Incidental	2022-09-10 14:10	Yes	Muskox	20	Standing	N/A	10	150	West,East	No	Monitored the traffic, musk ox crossed from west to east no more musk ox on west side.	-96.45008	65.230216			No	Exceeded	Speed restriction was implemented
Road	2022-09-13 7:40	Yes	Muskox	3	Foraging	N/A	3	119	Both	No		-96.06476	65.093211			No	Not Exceeded	
Road	2022-09-13 7:40	Yes	Muskox	2	Resting	N/A	50	140	West	No		-96.29851	65.221968			No	Not Exceeded	
Road	2022-09-13 7:40	Yes	Muskox	40	Foraging	N/A	50	150	East	No		-96.45008	65.230216			No	Exceeded	Speed restriction
Viewshed	2022-09-14 13:10		Caribou	2	Foraging	N/A	30	176	East			-96.60379	65.38622				Not Exceeded	
Viewshed	2022-09-14 13:10		-	-	-	NA	176					-96.60379	65.38622					
Viewshed	2022-09-14 13:10		Caribou	1	Foraging	N/A	100	176	West			-96.60379	65.38622				Not Exceeded	
Viewshed	2022-09-14 13:10		-	-	-	NA	176					-96.60379	65.38622					
Viewshed	2022-09-14 13:10		-	-	-	NA	169					-96.53703	65.340029					
Viewshed	2022-09-14 13:10		-	-	-	NA	169					-96.53703	65.340029					
Viewshed	2022-09-14 13:10		-	-	-	NA	169					-96.53703	65.340029					
Viewshed	2022-09-14 13:10		-	-	-	NA	166					-96.48819	65.325287					
Viewshed	2022-09-14 13:10		-	-	-	NA	166					-96.48819	65.325287					
Viewshed	2022-09-14 13:10		-	-	-	NA	166					-96.48819	65.325287					
Viewshed	2022-09-14 13:10		-	-	-	NA	160-161					-96.41356	65.294293					
Viewshed	2022-09-14 13:10		-	-	-	NA	160-161					-96.41356	65.294293					
Viewshed	2022-09-14 13:10		-	-	-	NA	160-161					-96.41356	65.294293					
Viewshed	2022-09-14 13:10		-	-	-	NA	156					-96.45207	65.262217					
Viewshed	2022-09-14 13:10		-	-	-	NA	156					-96.45207	65.262217					
Viewshed	2022-09-14 13:10		-	-	-	NA	156					-96.45207	65.262217					
Viewshed	2022-09-14 13:10		-	-	-	NA	156					-96.45207	65.262217					
Viewshed	2022-09-14 13:10		-	-	-	NA	154					-96.46296	65.254604					
Viewshed	2022-09-14 13:10		-	-	-	NA	154					-96.46296	65.254604					
Viewshed	2022-09-14 13:10		-	-	-	NA	154					-96.46296	65.254604					
Viewshed	2022-09-14 13:10		-	-	-	NA	144					-96.35797	65.223666					
Viewshed	2022-09-14 13:10		-	-	-	NA	144					-96.35797	65.223666					
Viewshed	2022-09-14 13:10		-	-	-	NA	144					-96.35797	65.223666					
Viewshed	2022-09-14 13:10		-	-	-	NA	138					-96.26018	65.2238					
Viewshed	2022-09-14 13:10		-	-	-	NA	138					-96.26018	65.2238					
Viewshed	2022-09-14 13:10		-	-	-	NA	138					-96.26018	65.2238					
Viewshed	2022-09-14 13:10		-	-	-	NA	133					-96.17538	65.199246					
Viewshed	2022-09-14 13:10		-	-	-	NA	133					-96.17538	65.199246					
Viewshed	2022-09-14 13:10		-	-	-	NA	133					-96.17538	65.199246					
Viewshed	2022-09-14 13:10		-	-	-	NA	128					-96.13583	65.161371					
Viewshed	2022-09-14 13:10		-	-	-	NA	128					-96.13583	65.161371					
Viewshed	2022-09-14 13:10		-	-	-	NA	128					-96.13583	65.161371					
Viewshed	2022-09-14 13:10		-	-	-	NA	118					-96.05506	65.086475					
Viewshed	2022-09-14 13:10		-	-	-	NA	118					-96.05506	65.086475					
Viewshed	2022-09-14 13:10		-	-	-	NA	118					-96.05506	65.086475					
Viewshed	2022-09-14 13:10		-	-	-	NA	118					-96.05506	65.086475					
Viewshed	2022-09-14 13:10		-	-	-	NA	121-122					-96.08638	65.10712					
Viewshed	2022-09-14 13:10		-	-	-	NA	121-122					-96.08638	65.10712					
Viewshed	2022-09-14 13:10		-	-	-	NA	121-122					-96.08638	65.10712					
Viewshed	2022-09-14 13:10		-	-	-	NA	116					-96.02061	65.080258					
Viewshed	2022-09-14 13:10		-	-	-	NA	116					-96.02061	65.080258					
Viewshed	2022-09-14 13:10		-	-	-	NA	116					-96.02061	65.080258					
Incidental	2022-09-14 13:34	Yes	Caribou	3	Foraging	N/A	30	176	West,East	No		-96.60379	65.38622			No	Not Exceeded	
Incidental	2022-09-14 18:17	Yes	Muskox	30	Not recorded	N/A	100	111		N/A		-96.42744	65.220477			No	Exceeded	Speed Restrictions
Road	2022-09-17 9:05	Yes	Caribou	1	Resting	N/A	500	179	West	No		-96.64666	65.40509			No	Not Exceeded	
Road	2022-09-17 9:05	Yes	Caribou	5	Feeding	E	150	174	East	No		-96.60128	65.368315			No	Not Exceeded	
Road	2022-09-17 9:05	Yes	Muskox	3	Feeding	N	75	150	East	No		-96.45008	65.230216			No	Not Exceeded	
Road	2022-09-17 9:05	Yes	Muskox	6	Feeding	S	15	113	West	No		-95.99327	65.058803			No	Not Exceeded	
Incidental	2022-09-17 13:36	Yes	Caribou	5	Not recorded	N/A	NA	111		N/A		-96.02402	65.048147			No	Not Exceeded	
Road	2022-09-18 14:19	Yes	Muskox	1	Walking	S	5	118	East	No		-96.05506	65.086475			No	Not Exceeded	
Road	2022-09-18 14:19	Yes	Muskox	1	Resting	N/A	30	119	East	No		-96.06476	65.093211			No	Not Exceeded	
Road	2022-09-18 14:19	Yes	Muskox	3	Feeding	N/A	100	140	East	No		-96.29851	65.221968			No	Not Exceeded	
Road	2022-09-18 14:19	Yes	Caribou	4	Feeding	E	300	149	West	No		-96.44264	65.223273			No	Not Exceeded	
Road	2022-09-18 14:19	Yes	Muskox	8	Feeding	S	375	153	West	No		-96.47626	65.248229			No	Not Exceeded	
Road	2022-09-18 14:19	Yes	Caribou	3	Resting	N/A	125	170	East	No		-96.54979	65.346648			No	Not Exceeded	
Road	2022-09-18 14:19	Yes	Caribou	5	Feeding	NE	70	172	East	No		-96.58667	65.355041			No	Not Exceeded	
Road	2022-09-18 14:19	Yes	Caribou	2	Walking	N	55	179	East	No		-96.66052	65.403442			No	Not Exceeded	
Incidental	2022-09-22 8:10	Yes	Caribou	4	Foraging	N/A	25	174	West	No		-96.60128	65.368315			No	Not Exceeded	

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2022-09-22 8:13	Yes	Muskox	27	Foraging	N/A	100	174	East	No	There is already a speed restriction from 174-176 in place	-96.60128	65.368315			No	Exceeded	There is already a speed restriction from 174-176 in place
Incidental	2022-09-22 8:18	Yes	Muskox	13	Foraging	N/A	1000	174	West	No		-96.60128	65.368315			No	Not Exceeded	
Incidental	2022-09-22 8:35	Yes	Caribou	2	Foraging	N/A	100	171	East	No		-96.5686	65.351995			No	Not Exceeded	
Incidental	2022-09-22 11:09	Yes	Caribou	2	Foraging	N/A	50	115	East	No		-96.00905	65.071117			No	Not Exceeded	
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	176					-96.60379	65.38622					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	176					-96.60379	65.38622					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	176					-96.60379	65.38622					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	176					-96.60379	65.38622					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	116					-96.02061	65.080258					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	116					-96.02061	65.080258					
Viewshed	2022-09-22 12:55	Yes	Caribou	7	Foraging	N/A	500	116	West			-96.02061	65.080258				Not Exceeded	
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	116					-96.02061	65.080258					
Viewshed	2022-09-22 12:55	Yes	Caribou	2	Foraging	N/A	20	116	West	No		-96.02061	65.080258			No	Not Exceeded	
Viewshed	2022-09-22 12:55	Yes	Caribou	1	Foraging	N/A	2000	118	West			-96.05506	65.086475				Not Exceeded	
Viewshed	2022-09-22 12:55	Yes	Muskox	10	Foraging	N/A	2500	118	West			-96.05506	65.086475				Not Exceeded	
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	118					-96.05506	65.086475					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	118					-96.05506	65.086475					
Viewshed	2022-09-22 12:55	Yes	Muskox	1	Foraging	N/A	500	118	West			-96.05506	65.086475				Not Exceeded	
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	121-122					-96.08638	65.10712					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	121-122					-96.08638	65.10712					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	121-122					-96.08638	65.10712					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	128					-96.13583	65.161371					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	128					-96.13583	65.161371					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	128					-96.13583	65.161371					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	128					-96.13583	65.161371					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	133					-96.17538	65.199246					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	133					-96.17538	65.199246					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	133					-96.17538	65.199246					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	133					-96.17538	65.199246					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	138					-96.26018	65.2238					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	138					-96.26018	65.2238					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	138					-96.26018	65.2238					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	138					-96.26018	65.2238					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	144					-96.35797	65.223666					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	144					-96.35797	65.223666					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	144					-96.35797	65.223666					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	144					-96.35797	65.223666					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	154					-96.46296	65.254604					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	154					-96.46296	65.254604					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	154					-96.46296	65.254604					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	154					-96.46296	65.254604					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	156					-96.45207	65.262217					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	156					-96.45207	65.262217					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	156					-96.45207	65.262217					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	156					-96.45207	65.262217					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	160-161					-96.41356	65.294293					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	160-161					-96.41356	65.294293					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	160-161					-96.41356	65.294293					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	166					-96.48819	65.325287					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	166					-96.48819	65.325287					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	166					-96.48819	65.325287					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	169					-96.53703	65.340029					
Viewshed	2022-09-22 12:55	Yes	-	-	-	NA	169					-96.53703	65.340029					
Viewshed	2022-09-22 12:55	Yes	Caribou	1	Foraging	N/A	1000	169	West			-96.53703	65.340029				Not Exceeded	
Viewshed	2022-09-22 12:55	Yes	Muskox	23	Foraging	N/A	400	169	West			-96.53703	65.340029				Exceeded	Speed restriction put in effect.
Incidental	2022-09-22 12:56	Yes	Muskox	3	Foraging	N/A	50	120	East	No		-96.0728	65.100208			No	Not Exceeded	
Incidental	2022-09-22 12:56	Yes	Caribou	2	Walking	NE	25	132	West	No		-96.16457	65.194003			No	Not Exceeded	
Incidental	2022-09-22 12:56	Yes	Muskox	2	Foraging	N/A	100	140	West	No		-96.29851	65.221968			No	Not Exceeded	
Incidental	2022-09-22 12:56	Yes	Caribou	2	Foraging	N/A	400	168	East	No		-96.52405	65.333518			No	Not Exceeded	
Incidental	2022-09-22 12:56	Yes	Muskox	23	Foraging	N/A	600	172	East	No	Speed restriction removed from 174-176 and 167-169. Changed it from 171-173	-96.58667	65.355041			No	Exceeded	The group has been there for a week now. They do not seem impacted by the road. Plus they were more than 500 meters from the road.
Road	2022-09-24 7:27	Yes	Ptarmigan	4	Resting	N/A	25	116	East	No		-96.02061	65.080258			No	Not Exceeded	
Road	2022-09-24 7:27	Yes	Muskox	1	Walking	E	25	120	East	No		-96.0728	65.100208			No	Not Exceeded	
Road	2022-09-24 7:27	Yes	Muskox	3	Foraging	N/A	25	120	East	No		-96.0728	65.100208			No	Not Exceeded	
Road	2022-09-24 7:27	Yes	Muskox	11	Feeding	N/A	91	140	West	No		-96.29851	65.221968			No	Not Exceeded	
Road	2022-09-24 7:27	Yes	Muskox	1	Resting	N/A	20	140	East	No		-96.29851	65.221968			No	Not Exceeded	
Road	2022-09-24 7:27	Yes	Muskox	7	Feeding	N/A	200	148	West	No		-96.42744	65.220477			No	Not Exceeded	
Road	2022-09-24 7:27	Yes	Muskox	2	Feeding	N/A	100	152	East	No		-96.47617	65.241762			No	Not Exceeded	
Road	2022-09-24 7:27	Yes	Muskox	21	Resting	N/A	220	171	East	No		-96.5686	65.351995			No	Exceeded	Speed restriction km171-173
Viewshed	2022-09-24 7:31	-	-	-	-	NA	116					-96.02061	65.080258					
Viewshed	2022-09-24 7:31	-	-	-	-	NA	116					-96.02061	65.080258					

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2022-09-24 7:31		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-09-24 7:31		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-09-24 7:31		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-09-24 7:31		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-09-24 7:31		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-09-24 7:31		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-09-24 7:31		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-09-24 7:31		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-09-24 7:31		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-09-24 7:31		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-09-24 7:31		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-09-24 7:31		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-09-24 7:31		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-09-24 7:31		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-09-24 7:31		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-09-24 7:31		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-09-24 7:31		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-09-24 7:31		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-09-24 7:31		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-09-24 7:31		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-09-24 7:31		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-09-24 7:31		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-09-24 7:31		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-09-24 7:31		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-09-24 7:31		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-09-24 7:31		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-09-24 7:31		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-09-24 7:31		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-09-24 7:31		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-09-24 7:31		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-09-24 7:31		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-09-24 7:31		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-09-24 7:31		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-09-24 7:31		Muskox	10	Resting	Not Recorded	1000	169	East		Distance was taken from the viewshed	-96.53703	65.340029				Not Exceeded	
Viewshed	2022-09-24 7:31		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-09-24 7:31		Muskox	8	Resting	Not Recorded	1500	169	West			-96.53703	65.340029				Not Exceeded	
Viewshed	2022-09-24 7:31		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-09-24 7:31		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-09-24 7:31		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-09-24 7:31		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-09-24 7:31		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-09-24 7:31		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-09-24 7:31		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-09-24 7:31		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-09-24 7:31		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-09-24 7:31		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-09-24 7:31		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-09-24 7:31		-	-			NA	176				-96.60379	65.38622					
Incidental	2022-09-24 13:24	Yes	Caribou	5	Foraging	N/A	258	174	West	No		-96.60128	65.368315			No	Not Exceeded	
Incidental	2022-09-24 14:48	Yes	Muskox	9	Foraging	N/A	200	148	North,West	No		-96.42744	65.220477			No	Not Exceeded	
Incidental	2022-09-24 14:58	Yes	Arctic hare	1	Running	S	0	141	West,East	Yes	Running from a fox	-96.31809	65.223683			No	Not Exceeded	
Incidental	2022-09-24 15:05	Yes	Arctic fox	1	Running	N	0	141	West,East	Yes	Running after a arctic hare	-96.31809	65.223683			No	Not Exceeded	
Incidental	2022-09-24 16:03	Yes	Muskox	3	Foraging	N/A	5	123	East	No		-96.10441	65.122168			No	Not Exceeded	
Incidental	2022-09-24 16:12	Yes	Caribou	2	Foraging	N/A	700	118	West	No		-96.05506	65.086475			No	Not Exceeded	
Incidental	2022-09-24 16:13	Yes	Caribou	3	Foraging	N/A	100	117	West	No		-96.03942	65.0837			No	Not Exceeded	
Road	2022-09-26 8:17	Yes	Muskox	19	Foraging	N/A	300	170	East	No		-96.54979	65.346648			No	Exceeded	Speed restriction 170-171 was put in place
Road	2022-09-26 8:17	Yes	Muskox	12	Foraging	N/A	400	154	West	No	Did not see group on the way back to amaruq	-96.46296	65.254604			No	Not Exceeded	
Road	2022-09-26 8:17	Yes	Muskox	9	Foraging	N/A	200	151	East	No		-96.46622	65.234469			No	Not Exceeded	
Road	2022-09-26 8:17	Yes	Muskox	6	Foraging	N/A	600	139	West	No		-96.27997	65.226857			No	Not Exceeded	
Road	2022-09-26 8:17	Yes	Muskox	1	Foraging	N/A	5	110	West	N/A		-96.04065	65.0414			No	Not Exceeded	
Incidental	2022-09-26 11:46	Yes	Siksik	1	Trotting/running	N/A	2	125	East	No		-96.10792	65.139082			No	Not Exceeded	
Incidental	2022-09-26 11:52	Yes	Caribou	4	Lying Down	N/A	200	131	East	No		-96.16073	65.18551			No	Not Exceeded	
Incidental	2022-09-26 12:05	Yes	Muskox	4	Foraging	N/A	800	140	East	No		-96.29851	65.221968			No	Not Exceeded	
Incidental	2022-09-26 12:54	Yes	Caribou	6	Foraging	N/A	1000	177	West	No		-96.60847	65.394344			No	Not Exceeded	
Road	2022-09-28 9:38	Yes	Caribou	1	Trotting/running	N/A	0	179	Both	No		-96.66364	65.40271			No	Not Exceeded	
Road	2022-09-28 9:38	Yes	Caribou	3	Trotting/running	S	50	172	East	No		-96.58667	65.355041			No	Not Exceeded	
Road	2022-09-28 9:38	Yes	Muskox	20	Lying Down	N/A	650	171	East	No		-96.5686	65.351995			No	Exceeded	Speed restriction at KM 172
Road	2022-09-28 9:38	Yes	Muskox	6	Feeding	N/A	400	140	East	No		-96.29851	65.221968			No	Not Exceeded	
Road	2022-09-28 9:38	Yes	Caribou	5	Foraging	N/A	100	110	East	No		-96.04065	65.0414			No	Not Exceeded	
Road	2022-09-28 9:38	Yes	Muskox	5	Feeding	N/A	1000	109	East	No		-96.01879	65.048523			No	Not Exceeded	
Viewshed	2022-09-28 12:55		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-09-28 12:55		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-09-28 12:55		-	-			NA	116				-96.02061	65.080258					

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Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2022-09-28 12:55		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-09-28 12:55		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-09-28 12:55		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-09-28 12:55		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-09-28 12:55		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-09-28 12:55		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-09-28 12:55		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-09-28 12:55		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-09-28 12:55		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-09-28 12:55		Caribou	2	Foraging	N/A	1000	128	West			-96.13583	65.161371				Not Exceeded	
Viewshed	2022-09-28 12:55		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-09-28 12:55		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-09-28 12:55		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-09-28 12:55		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-09-28 12:55		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-09-28 12:55		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-09-28 12:55		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-09-28 12:55		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-09-28 12:55		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-09-28 12:55		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-09-28 12:55		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-09-28 12:55		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-09-28 12:55		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-09-28 12:55		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-09-28 12:55		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-09-28 12:55		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-09-28 12:55		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-09-28 12:55		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-09-28 12:55		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-09-28 12:55		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-09-28 12:55		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-09-28 12:55		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-09-28 12:55		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-09-28 12:55		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-09-28 12:55		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-09-28 12:55		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-09-28 12:55		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-09-28 12:55		-	-			NA	176				-96.60379	65.38622					
Incidental	2022-09-28 13:13	Yes	Muskox	2	Feeding	N/A	20	119	East	No		-96.06476	65.093211			No	Not Exceeded	
Road	2022-09-30 11:34	Yes	Muskox	3	Feeding	N/A	650	140	East	No		-96.29851	65.221968			No	Not Exceeded	
Road	2022-09-30 11:34	Yes	Muskox	16	Feeding	N/A	700	171	East	No		-96.5686	65.351995			No	Exceeded	Speed restriction put in place
Road	2022-10-02 15:37	No					NA					NA	NA					
Road	2022-10-04 8:55	Yes	Muskox	18	Foraging	N/A	275	169	West	No		-96.53703	65.340029			No	Exceeded	Speed restriction (30km/h) was put between km 168 and 170
Road	2022-10-04 8:55	Yes	Muskox	8	Foraging	N/A	100	144	East	No		-96.36682	65.222473			No	Not Exceeded	
Road	2022-10-04 8:55	Yes	Caribou	2	Foraging	N/A	2	130	West	No		-96.1528	65.17815			No	Not Exceeded	
Road	2022-10-04 8:55	Yes	Caribou	1	Foraging	N/A	316	127	West	No		-96.12549	65.153813			No	Not Exceeded	
Viewshed	2022-10-04 13:44		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-10-04 13:44		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-10-04 13:44		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-10-04 13:44		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-10-04 13:44		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-10-04 13:44		Muskox	1	Lying Down	N/A	1000	118	West			-96.05506	65.086475				Not Exceeded	
Viewshed	2022-10-04 13:44		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-10-04 13:44		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-10-04 13:44		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-10-04 13:44		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-10-04 13:44		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-10-04 13:44		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-10-04 13:44		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-10-04 13:44		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-10-04 13:44		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-10-04 13:44		-	-			NA	133				-96.17538	65.199246					

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2022-10-04 13:44		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-10-04 13:44		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-10-04 13:44		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-10-04 13:44		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-10-04 13:44		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-10-04 13:44		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-10-04 13:44		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-10-04 13:44		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-10-04 13:44		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-10-04 13:44		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-10-04 13:44		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-10-04 13:44		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-10-04 13:44		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-10-04 13:44		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-10-04 13:44		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-10-04 13:44		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-10-04 13:44		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-10-04 13:44		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-10-04 13:44		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-10-04 13:44		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-10-04 13:44		Muskox	1	Walking	S	0	169	East			-96.53703	65.340029				Not Exceeded	
Viewshed	2022-10-04 13:44		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-10-04 13:44		Muskox	18	Resting	N/A	275	169	West			-96.53703	65.340029				Exceeded	Speed restriction (30km/h) was put between km 168 and 170
Viewshed	2022-10-04 13:44		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-10-04 13:44		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-10-04 13:44		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-10-04 13:44		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-10-04 13:44		-	-			NA	176				-96.60379	65.38622					
Incidental	2022-10-07 10:10	Yes	Muskox	6	Foraging	W	5	140	West	Yes	Speed restriction	-95.99998	64.356567			No	Not Exceeded	
Road	2022-10-07 13:19	Yes	Muskox	2	Foraging	N/A	320	119	West	No		-96.06476	65.093211			No	Not Exceeded	
Road	2022-10-07 13:19	Yes	Muskox	1	Foraging	E	90	147	East	No		-96.41835	65.227863			No	Not Exceeded	
Road	2022-10-07 13:19	Yes	Muskox	14	Trotting/running	N/A	320	157	East	No		-96.41584	65.271231			No	Exceeded	Speed restriction
Road	2022-10-07 13:19	Yes	Caribou	70	Foraging	N/A	0	169	East	Yes	Speed restriction has been put	-96.53703	65.340029			No	Not Exceeded	
Road	2022-10-08 8:40	Yes	Muskox	10	Foraging	N/A	100	157	East	No		-96.41584	65.271231			No	Not Exceeded	
Road	2022-10-08 8:40	Yes	Caribou	5	Walking	S	150	147	East	No		-96.41835	65.227863			No	Not Exceeded	
Road	2022-10-08 8:40	Yes	Muskox	9	Foraging	N/A	30	140	East	No		-96.29851	65.221968			No	Not Exceeded	
Road	2022-10-08 8:40	Yes	Arctic fox	2	Running	N	0	118	Both	Yes	Another fox (3rd one) is being eaten by a raven about 150m from the road east side.	-96.05506	65.086475			No	Not Exceeded	
Viewshed	2022-10-08 14:16		Caribou	16	Walking	E	300	116	East			-96.02061	65.080258				Not Exceeded	
Viewshed	2022-10-08 14:16		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-10-08 14:16		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-10-08 14:16		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-10-08 14:16		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-10-08 14:16		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-10-08 14:16		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-10-08 14:16		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-10-08 14:16		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-10-08 14:16		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-10-08 14:16		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-10-08 14:16		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-10-08 14:16		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-10-08 14:16		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-10-08 14:16		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-10-08 14:16		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-10-08 14:16		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-10-08 14:16		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-10-08 14:16		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-10-08 14:16		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-10-08 14:16		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-10-08 14:16		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-10-08 14:16		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-10-08 14:16		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-10-08 14:16		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-10-08 14:16		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-10-08 14:16		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-10-08 14:16		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-10-08 14:16		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-10-08 14:16		-	-			NA	156				-96.45207	65.262217					

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2022-10-08 14:16	-	-	-	-	-	NA	156	-	-	-	-96.45207	65.262217	-	-	-	-	-
Viewshed	2022-10-08 14:16	-	-	-	-	-	NA	156	-	-	-	-96.45207	65.262217	-	-	-	-	-
Viewshed	2022-10-08 14:16	-	-	-	-	-	NA	160-161	-	-	-	-96.41356	65.294293	-	-	-	-	-
Viewshed	2022-10-08 14:16	-	-	-	-	-	NA	160-161	-	-	-	-96.41356	65.294293	-	-	-	-	-
Viewshed	2022-10-08 14:16	-	-	-	-	-	NA	160-161	-	-	-	-96.41356	65.294293	-	-	-	-	-
Viewshed	2022-10-08 14:16	-	-	-	-	-	NA	166	-	-	-	-96.48819	65.325287	-	-	-	-	-
Viewshed	2022-10-08 14:16	-	-	-	-	-	NA	166	-	-	-	-96.48819	65.325287	-	-	-	-	-
Viewshed	2022-10-08 14:16	-	-	-	-	-	NA	166	-	-	-	-96.48819	65.325287	-	-	-	-	-
Viewshed	2022-10-08 14:16	-	-	-	-	-	NA	169	-	-	-	-96.53703	65.340029	-	-	-	-	-
Viewshed	2022-10-08 14:16	-	-	-	-	-	NA	169	-	-	-	-96.53703	65.340029	-	-	-	-	-
Viewshed	2022-10-08 14:16	-	-	-	-	-	NA	169	-	-	-	-96.53703	65.340029	-	-	-	-	-
Viewshed	2022-10-08 14:16	-	-	-	-	-	NA	176	-	-	-	-96.60379	65.38622	-	-	-	-	-
Viewshed	2022-10-08 14:16	-	-	-	-	-	NA	176	-	-	-	-96.60379	65.38622	-	-	-	-	-
Viewshed	2022-10-08 14:16	-	-	-	-	-	NA	176	-	-	-	-96.60379	65.38622	-	-	-	-	-
Incidental	2022-10-08 15:33	Yes	Muskox	6	Foraging	N/A	50	140	West, East	No	-	-96.29851	65.221968	-	-	No	Not Exceeded	-
Road	2022-10-09 8:40	Yes	Muskox	1	Foraging	N/A	90	152	West	No	-	-96.47617	65.241762	-	-	No	Not Exceeded	-
Road	2022-10-09 8:40	Yes	Arctic fox	1	Walking	E	0	152	East	Yes	-	-96.47617	65.241762	-	-	No	Not Exceeded	-
Road	2022-10-09 8:40	Yes	Muskox	12	Resting	N/A	120	140	East	No	-	-96.29851	65.221968	-	-	No	Not Exceeded	-
Road	2022-10-10 9:26	Yes	Muskox	12	Foraging	N/A	100	140	East	No	-	-96.29851	65.221968	-	-	No	Not Exceeded	-
Incidental	2022-10-13 16:58	Yes	Caribou	300	Feeding	Not Recorded	500	148	East	No	On top of the rise to the north side of the bridge km148. Notified dispatch of a herd close to the road, closed the road to all traffic. Escorted last road users past this area with beacons and strobes turned off at 10kmh	-96.42744	65.220477	-	-	No	Exceeded	Road closure, will escort following road users past slowly, turn off beacons and lights. Close road to all traffic until further notice
Road	2022-10-14 9:21	Yes	Muskox	1	Foraging	N/A	80	110	East	No	-	-96.04065	65.0414	-	-	No	Not Exceeded	-
Road	2022-10-14 9:21	Yes	Caribou	17	Walking	S	200	119	East	No	-	-96.06476	65.093211	-	-	No	Not Exceeded	-
Road	2022-10-14 9:21	Yes	Caribou	12	Walking	S	100	172	East	No	-	-96.58667	65.355041	-	-	No	Not Exceeded	-
Road	2022-10-14 9:21	Yes	Caribou	1	Foraging	N/A	30	179	East	No	-	-96.60247	65.359375	-	-	No	Not Exceeded	-
Road	2022-10-16 12:53	No	-	-	-	-	NA	-	-	-	-	NA	NA	-	-	-	-	-
Incidental	2022-10-16 15:56	Yes	Muskox	1	Walking	N	100	156	West	No	-	-96.45207	65.262217	-	-	No	Not Exceeded	-
Incidental	2022-10-16 16:00	Yes	Muskox	12	Feeding	N/A	250	154	East	No	-	-96.46296	65.254604	-	-	No	Not Exceeded	-
Road	2022-10-18 8:31	No	-	-	-	-	NA	-	-	-	-	NA	NA	-	-	-	-	-
Incidental	2022-10-19 9:55	Yes	Muskox	17	Foraging	N/A	50	156	East	No	-	-96.45207	65.262217	-	-	No	Exceeded	Speed restriction was put in place from the 156-157km
Incidental	2022-10-19 10:00	Yes	Muskox	3	Foraging	SE	100	141	East	No	-	-96.31809	65.223683	-	-	No	Not Exceeded	-
Road	2022-10-21 14:29	Yes	Muskox	2	Feeding	W	150	140	West	No	-	-96.29851	65.221968	-	-	No	Not Exceeded	-
Road	2022-10-21 14:29	Yes	Arctic fox	1	Running	E	0	155	West	Yes	-	-96.43417	65.267612	-	-	No	Not Exceeded	-
Road	2022-10-21 14:29	Yes	Muskox	17	Standing	N	250	162	West	No	-	-96.4168	65.311548	-	-	No	Exceeded	Speed Restriction of 30km/hr
Road	2022-10-22 8:45	Yes	Muskox	18	Feeding	N/A	750	163	East	No	-	-96.4304	65.317408	-	-	No	Exceeded	The env team returned northbound and the muskox were moved away from this area and no longer visible. No speed restriction initiated
Road	2022-10-22 8:45	Yes	Muskox	11	Feeding	N/A	250	140	East	No	-	-96.29851	65.221968	-	-	No	Not Exceeded	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	116	-	-	-	-96.02061	65.080258	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	116	-	-	-	-96.02061	65.080258	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	116	-	-	-	-96.02061	65.080258	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	118	-	-	-	-96.02061	65.080258	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	118	-	-	-	-96.05506	65.086475	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	118	-	-	-	-96.05506	65.086475	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	118	-	-	-	-96.05506	65.086475	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	121-122	-	-	-	-96.08638	65.10712	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	121-122	-	-	-	-96.08638	65.10712	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	121-122	-	-	-	-96.08638	65.10712	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	121-122	-	-	-	-96.08638	65.10712	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	128	-	-	-	-96.13583	65.161371	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	128	-	-	-	-96.13583	65.161371	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	128	-	-	-	-96.13583	65.161371	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	128	-	-	-	-96.13583	65.161371	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	133	-	-	-	-96.17538	65.199246	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	133	-	-	-	-96.17538	65.199246	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	133	-	-	-	-96.17538	65.199246	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	138	-	-	-	-96.26018	65.2238	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	138	-	-	-	-96.26018	65.2238	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	138	-	-	-	-96.26018	65.2238	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	138	-	-	-	-96.26018	65.2238	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	144	-	-	-	-96.35797	65.223666	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	144	-	-	-	-96.35797	65.223666	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	144	-	-	-	-96.35797	65.223666	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	144	-	-	-	-96.35797	65.223666	-	-	-	-	-

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	154	-	-	-	-96.46296	65.254604	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	154	-	-	-	-96.46296	65.254604	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	154	-	-	-	-96.46296	65.254604	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	154	-	-	-	-96.46296	65.254604	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	156	-	-	-	-96.45207	65.262217	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	156	-	-	-	-96.45207	65.262217	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	156	-	-	-	-96.45207	65.262217	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	156	-	-	-	-96.45207	65.262217	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	160-161	-	-	-	-96.41356	65.294293	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	160-161	-	-	-	-96.41356	65.294293	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	160-161	-	-	-	-96.41356	65.294293	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	166	-	-	-	-96.48819	65.325287	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	166	-	-	-	-96.48819	65.325287	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	166	-	-	-	-96.48819	65.325287	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	166	-	-	-	-96.48819	65.325287	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	169	-	-	-	-96.53703	65.340029	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	169	-	-	-	-96.53703	65.340029	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	169	-	-	-	-96.53703	65.340029	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	169	-	-	-	-96.53703	65.340029	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	176	-	-	-	-96.60379	65.38622	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	176	-	-	-	-96.60379	65.38622	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	176	-	-	-	-96.60379	65.38622	-	-	-	-	-
Viewshed	2022-10-22 13:25	-	-	-	-	-	NA	176	-	-	-	-96.60379	65.38622	-	-	-	-	-
Incidental	2022-10-22 14:20	Yes	Caribou	1	Dead	N/A	30	137	West	No	In the tundra near KM 137 . Was reported to CO in baker lake by ENV Coordo	-96.2415	65.219441	-	Project non-related	No	Not Exceeded	-
Incidental	2022-10-22 14:21	Yes	Wolf	4	Alert	N	200	137	West	No	Wolves were lingering near a fresh caribou carcass	-96.2415	65.219441	-	-	No	Not Exceeded	-
Incidental	2022-10-22 14:42	Yes	Muskox	1	Foraging	Not Recorded	500	141	East	No	-	-96.31809	65.223683	-	-	No	Not Exceeded	-
Incidental	2022-10-22 15:03	Yes	Arctic fox	1	Feeding	Not Recorded	0	150	North	No	The fox was on the road gnawing on a frozen substance on the road surface. Once I left the area I observed the fox return to the road to sniff and scratch at that same spot	-96.45008	65.230216	Successful deterrence	-	No	Not Exceeded	-
Incidental	2022-10-22 15:29	Yes	Caribou	3	Alert	Not Recorded	400	162	East	No	-	-96.4168	65.311548	-	-	No	Not Exceeded	-
Road	2022-10-23 9:23	Yes	Muskox	25	Feeding	N/A	1000	164	West	No	-	-96.44722	65.322562	-	-	No	Exceeded	Speed restriction put in place
Road	2022-10-23 9:23	Yes	Caribou	3	Foraging	N/A	300	163	East	No	-	-96.4304	65.317408	-	-	No	Not Exceeded	-
Road	2022-10-23 9:23	Yes	Arctic hare	1	Dead	N/A	0	158	Both	N/A	-	-96.40471	65.277758	-	Project related	No	Not Exceeded	-
Road	2022-10-23 9:23	Yes	Muskox	15	Feeding	N/A	50	140	East	No	-	-96.29851	65.221968	-	-	No	Exceeded	Yes, speed restriction from 140-141, 30km/h
Road	2022-10-23 9:23	Yes	Wolf	5	Trotting/running	N	700	140	East	No	-	-96.29851	65.221968	-	-	No	Not Exceeded	-
Road	2022-10-23 9:23	Yes	Caribou	3	Trotting/running	N	300	129	East	No	-	-96.14593	65.169019	-	-	No	Not Exceeded	-
Road	2022-10-23 9:23	Yes	Muskox	13	Feeding	N/A	1500	113	East	No	-	-95.99327	65.058803	-	-	No	Not Exceeded	-
Road	2022-10-23 9:23	Yes	Muskox	1	Feeding	N/A	50	112	East	No	-	-96.00217	65.051123	-	-	No	Not Exceeded	-
Road	2022-10-24 12:27	Yes	Arctic fox	1	Foraging	N/A	0	112	Both	N/A	-	-96.00217	65.051123	-	-	No	Not Exceeded	-
Road	2022-10-24 12:27	Yes	Muskox	12	Lying Down	W	1000	113	East	No	-	-95.99327	65.058803	-	-	No	Not Exceeded	-
Road	2022-10-24 12:27	Yes	Muskox	13	Lying Down	N/A	550	140	East	No	-	-96.29851	65.221968	-	-	No	Not Exceeded	-
Road	2022-10-25 9:15	Yes	Muskox	23	Lying Down	N/A	1200	166	West	No	-	-96.48819	65.325287	-	-	No	Exceeded	More than 500 m from the road. Did not put any speed restriction
Road	2022-10-25 9:15	Yes	Muskox	3	Feeding	N/A	100	156	West	No	-	-96.45207	65.262217	-	-	No	Not Exceeded	-
Road	2022-10-25 9:15	Yes	Muskox	5	Feeding	N/A	50	141	East	No	-	-96.31809	65.223683	-	-	No	Not Exceeded	-
Road	2022-10-25 9:15	Yes	Muskox	11	Feeding	N/A	600	140	East	No	-	-96.29851	65.221968	-	-	No	Not Exceeded	-
Incidental	2022-10-25 11:25	Yes	Muskox	13	Foraging	N/A	800	112	East	No	-	-96.00217	65.051123	-	-	No	Not Exceeded	-
Incidental	2022-10-25 12:06	Yes	Caribou	3	Trotting/running	N/A	200	151	West	No	One caribou was limping. Front leg seemed injured.	-96.46622	65.234469	-	-	No	Not Exceeded	-
Incidental	2022-10-25 12:36	Yes	Caribou	2	Walking	N/A	300	175	East	No	-	-96.60237	65.377259	-	-	No	Not Exceeded	-
Road	2022-10-26 8:15	Yes	Muskox	1	Lying Down	N/A	50	167	West	No	-	-96.5061	65.328371	-	-	No	Not Exceeded	-
Road	2022-10-26 8:15	Yes	Muskox	12	Lying Down	N/A	1000	159	East	No	-	-96.40886	65.286013	-	-	No	Not Exceeded	-
Road	2022-10-26 8:15	Yes	Muskox	3	Foraging	N/A	100	155	West	No	-	-96.43417	65.267612	-	-	No	Not Exceeded	-
Road	2022-10-26 8:15	Yes	Muskox	9	Foraging	N/A	250	140	East	No	-	-96.29851	65.221968	-	-	No	Not Exceeded	-
Road	2022-10-26 8:15	Yes	Muskox	1	Foraging	N/A	100	139	West	No	-	-96.27997	65.226857	-	-	No	Not Exceeded	-
Road	2022-10-26 8:15	Yes	Muskox	5	Foraging	N/A	200	114	East	No	-	-96.00424	65.066791	-	-	No	Not Exceeded	-
Road	2022-10-28 6:46	Yes	Muskox	3	Feeding	N/A	600	166	West	No	-	-96.48819	65.325287	-	-	No	Not Exceeded	-
Road	2022-10-28 6:46	Yes	Muskox	17	Foraging	N/A	50	156	Both	No	-	-96.45207	65.262217	-	-	No	Exceeded	Speed restriction of 30km/h between km 155-157 because of muskox close to the road
Road	2022-10-28 6:46	Yes	Arctic fox	1	Trotting/running	SW	0	119	Both	Yes	-	-96.06476	65.093211	-	-	No	Not Exceeded	-
Viewshed	2022-10-28 10:55	-	-	-	-	-	NA	116	-	-	-	-96.02061	65.080258	-	-	-	-	-
Viewshed	2022-10-28 10:55	-	-	-	-	-	NA	116	-	-	-	-96.02061	65.080258	-	-	-	-	-
Viewshed	2022-10-28 10:55	-	-	-	-	-	NA	116	-	-	-	-96.02061	65.080258	-	-	-	-	-
Viewshed	2022-10-28 10:55	-	-	-	-	-	NA	116	-	-	-	-96.02061	65.080258	-	-	-	-	-
Viewshed	2022-10-28 10:55	-	-	-	-	-	NA	118	-	-	-	-96.05506	65.086475	-	-	-	-	-
Viewshed	2022-10-28 10:55	-	-	-	-	-	NA	118	-	-	-	-96.05506	65.086475	-	-	-	-	-
Viewshed	2022-10-28 10:55	-	-	-	-	-	NA	118	-	-	-	-96.05506	65.086475	-	-	-	-	-
Viewshed	2022-10-28 10:55	-	-	-	-	-	NA	118	-	-	-	-96.05506	65.086475	-	-	-	-	-

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2022-10-28 10:55		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-10-28 10:55		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-10-28 10:55		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-10-28 10:55		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-10-28 10:55		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-10-28 10:55		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-10-28 10:55		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-10-28 10:55		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-10-28 10:55		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-10-28 10:55		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-10-28 10:55		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-10-28 10:55		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-10-28 10:55		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-10-28 10:55		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-10-28 10:55		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-10-28 10:55		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-10-28 10:55		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-10-28 10:55		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-10-28 10:55		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-10-28 10:55		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-10-28 10:55		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-10-28 10:55		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-10-28 10:55		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-10-28 10:55		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-10-28 10:55		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-10-28 10:55		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-10-28 10:55		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-10-28 10:55		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-10-28 10:55		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-10-28 10:55		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-10-28 10:55		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-10-28 10:55		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-10-28 10:55		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-10-28 10:55		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-10-28 10:55		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-10-28 10:55		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-10-28 10:55		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-10-28 10:55		-	-			NA	176				-96.60379	65.38622					
Road	2022-10-30 10:10	Yes	Muskox	3	Foraging	N/A	300	166	West	No		-96.48819	65.325287			No	Not Exceeded	
Road	2022-10-30 10:10	Yes	Muskox	17	Foraging	N/A	400	156	West	No		-96.45207	65.262217			No	Exceeded	30km/h speed restriction between km 155 and 157
Road	2022-10-30 10:10	Yes	Arctic fox	1	Trotting/running	S	100	125	West	No		-96.10792	65.139082			No	Not Exceeded	
Road	2022-10-30 10:10	Yes	Muskox	7	Foraging	N/A	700	115	East	No		-96.00905	65.071117			No	Not Exceeded	
Road	2022-10-30 10:10	Yes	Muskox	14	Lying Down	N/A	1500	114	East	No		-96.00424	65.066791			No	Exceeded	Notified dispatch. Speed restriction put in place.
Viewshed	2022-10-30 12:50		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-10-30 12:50		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-10-30 12:50		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-10-30 12:50		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-10-30 12:50		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-10-30 12:50		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-10-30 12:50		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-10-30 12:50		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-10-30 12:50		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-10-30 12:50		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-10-30 12:50		Crow	2	Flying	N	100	121-122	West			-96.08638	65.10712				Not Exceeded	
Viewshed	2022-10-30 12:50		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-10-30 12:50		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-10-30 12:50		Crow	1	Flying	N	5	128	West			-96.13583	65.161371				Not Exceeded	
Viewshed	2022-10-30 12:50		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-10-30 12:50		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-10-30 12:50		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-10-30 12:50		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-10-30 12:50		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-10-30 12:50		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-10-30 12:50		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-10-30 12:50		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-10-30 12:50		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-10-30 12:50		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-10-30 12:50		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-10-30 12:50		-	-			NA	144				-96.35797	65.223666					

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Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2022-10-30 12:50		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-10-30 12:50		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-10-30 12:50		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-10-30 12:50		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-10-30 12:50		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-10-30 12:50		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-10-30 12:50		Muskox	17	Lying Down	Not Recorded	650	156	West			-96.45207	65.262217				Exceeded	30km/h speed restriction between km 155 and 157
Viewshed	2022-10-30 12:50		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-10-30 12:50		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-10-30 12:50		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-10-30 12:50		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-10-30 12:50		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-10-30 12:50		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-10-30 12:50		Muskox	3	Lying Down	N/A	400	166	West			-96.48819	65.325287				Not Exceeded	
Viewshed	2022-10-30 12:50		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-10-30 12:50		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-10-30 12:50		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-10-30 12:50		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-10-30 12:50		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-10-30 12:50		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-10-30 12:50		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-10-30 12:50		-	-			NA	176				-96.60379	65.38622					
Road	2022-11-01 12:23	Yes	Muskox	17	Foraging	N/A	2000	112	East	No		-96.00217	65.051123			No	Exceeded	Group is more than 1.5 KM away
Road	2022-11-01 12:23	Yes	Muskox	10	Lying Down	N/A	400	152	West	No		-96.47617	65.241762			No	Not Exceeded	
Road	2022-11-01 12:23	Yes	Muskox	25	Feeding	N/A	5	153	Both	No		-96.47626	65.248229			No	Exceeded	Speed restriction put in place
Road	2022-11-01 12:23	Yes	Arctic fox	1	Walking	S	5	171	West	No		-96.5686	65.351995			No	Not Exceeded	
Incidental	2022-11-01 15:57	Yes	Muskox	16	Feeding	N/A	10	147	West	No	Speed restriction was put in place	-96.41835	65.227863			No	Exceeded	Speed restriction was put in place
Road	2022-11-03 8:54	Yes	Muskox	17	Foraging	N/A	600	152	West	No		-96.47617	65.241762			No	Exceeded	Far enough from the road no speed restriction needed
Road	2022-11-03 8:54	Yes	Muskox	3	Foraging	N/A	200	164	West	No		-96.44722	65.322562			No	Not Exceeded	
Incidental	2022-11-03 14:59	Yes	Muskox	13	Foraging	N/A	300	139	West	No		-96.27997	65.226857			No	Not Exceeded	
Incidental	2022-11-03 15:32	Yes	Muskox	3	Feeding	N/A	50	122	West	No		-96.09715	65.114773			No	Not Exceeded	
Incidental	2022-11-03 16:08	Yes	Muskox	11	Feeding	N/A	10	110	East	No		-96.04065	65.0414			No	Not Exceeded	
Road	2022-11-04 10:17	Yes	Muskox	3	Foraging	N/A	50	120	West	No		-96.0728	65.100208			No	Not Exceeded	
Road	2022-11-04 10:17	Yes	Muskox	15	Resting	N/A	5	139	Both	N/A		-96.27997	65.226857			No	Exceeded	Speed restriction 138-141
Road	2022-11-04 10:17	Yes	Muskox	21	Foraging	N/A	50	149	West	No		-96.44264	65.223273			No	Exceeded	Speed restriction 149-150
Road	2022-11-05 10:01	Yes	Muskox	12	Foraging	N/A	50	112	East	N/A		-96.00217	65.051123			No	Not Exceeded	
Road	2022-11-05 10:01	Yes	Muskox	22	Foraging	N/A	10	149	West	N/A		-96.44264	65.223273			No	Exceeded	Speed restriction 149 to 151
Road	2022-11-05 10:01	Yes	Muskox	3	Foraging	N/A	130	157	West	N/A		-96.41584	65.271231			No	Not Exceeded	
Road	2022-11-07 12:58	Yes	Muskox	3	Resting	N/A	100	156	East	No		-96.45207	65.262217			No	Not Exceeded	
Incidental	2022-11-07 16:27	Yes	Muskox	9	Walking	W	100	142	West	No		-96.3371	65.222192			No	Not Exceeded	
Road	2022-11-08 8:48	Yes	Muskox	3	Foraging	N/A	200	158	East	No		-96.40471	65.277758			No	Not Exceeded	
Road	2022-11-08 8:48	Yes	Muskox	22	Foraging	N/A	100	148	West	No		-96.42744	65.220477			No	Exceeded	Speed restriction of 30km/h was put in place
Viewshed	2022-11-08 12:51		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-11-08 12:51		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-11-08 12:51		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-11-08 12:51		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-11-08 12:51		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-11-08 12:51		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-11-08 12:51		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-11-08 12:51		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-11-08 12:51		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-11-08 12:51		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-11-08 12:51		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-11-08 12:51		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-11-08 12:51		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-11-08 12:51		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-11-08 12:51		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-11-08 12:51		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-11-08 12:51		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-11-08 12:51		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-11-08 12:51		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-11-08 12:51		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-11-08 12:51		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-11-08 12:51		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-11-08 12:51		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-11-08 12:51		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-11-08 12:51		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-11-08 12:51		Muskox	11	Lying Down	N/A	1000	144	West			-96.35797	65.223666				Not Exceeded	
Viewshed	2022-11-08 12:51		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-11-08 12:51		-	-			NA	154				-96.46296	65.254604					

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2022-11-08 12:51		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-11-08 12:51		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-11-08 12:51		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-11-08 12:51		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-11-08 12:51		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-11-08 12:51		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-11-08 12:51		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-11-08 12:51		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-11-08 12:51		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-11-08 12:51		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-11-08 12:51		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-11-08 12:51		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-11-08 12:51		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-11-08 12:51		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-11-08 12:51		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-11-08 12:51		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-11-08 12:51		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-11-08 12:51		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-11-08 12:51		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-11-08 12:51		-	-			NA	176				-96.60379	65.38622					
Road	2022-11-10 8:30	Yes	Muskox	3	Foraging	N/A	75	159	West	No	Coordinates are not good	-96.40886	65.286013			No	Not Exceeded	
Road	2022-11-10 8:30	Yes	Caribou	10	Foraging	N/A	200	154	East	No		-96.46296	65.254604			No	Not Exceeded	
Road	2022-11-10 8:30	Yes	Muskox	31	Foraging	N/A	100	143	West	No		-96.35797	65.223666			No	Exceeded	Speed restriction from km 142 to 144
Road	2022-11-10 8:30	Yes	Muskox	12	Foraging	N/A	800	110	East	No		-96.04065	65.0414			No	Not Exceeded	
Incidental	2022-11-11 10:04	Yes	Muskox	36	Foraging	N/A	150	145	West	No		-96.3769	65.224218			No	Exceeded	Speed restriction was implemented on November 10 - from km 142 to 144. Was changed on night shift because the group moved north. Speed restriction is now from 144 to 145.
Incidental	2022-11-11 10:04	Yes	Muskox	1	Foraging	N/A	100	148	West	No		-96.42744	65.220477			No	Not Exceeded	
Incidental	2022-11-11 10:04	Yes	Muskox	4	Lying Down	N/A	2000	159	West	No		-96.40886	65.286013			No	Not Exceeded	
Road	2022-11-12 9:00	Yes	Caribou	35	Walking	S	900	175	East	No		-96.60237	65.377259			No	Not Exceeded	
Road	2022-11-12 9:00	Yes	Muskox	21	Feeding	N/A	50	148	West	No		-96.42744	65.220477			No	Exceeded	Speed restriction put in place
Road	2022-11-12 9:00	Yes	Muskox	4	Feeding	N/A	1500	113	East	N/A		-95.99327	65.058803			No	Not Exceeded	
Road	2022-11-13 10:05	Yes	Muskox	6	Resting	N/A	1500	160	West	No		-96.41356	65.294293			No	Not Exceeded	
Road	2022-11-13 10:05	Yes	Caribou	2	Foraging	N/A	800	159	East	No		-96.40886	65.286013			No	Not Exceeded	
Road	2022-11-13 10:05	Yes	Muskox	1	Resting	N/A	100	153	West	No		-96.47626	65.248229			No	Not Exceeded	
Road	2022-11-13 10:05	Yes	Muskox	21	Foraging	N/A	75	148	West	No		-96.42744	65.220477			No	Exceeded	Speed restriction still in place from yesterday. KM148-149
Road	2022-11-13 10:05	Yes	Muskox	23	Foraging	N/A	1800	144	West	No		-96.39539	65.226135			No	Exceeded	They are more than 1.5 km away
Road	2022-11-13 10:05	Yes	Muskox	4	Resting	N/A	1000	122	West	No		-96.09715	65.114773			No	Not Exceeded	
Road	2022-11-13 10:05	Yes	Muskox	5	Foraging	N/A	1200	110	West	No		-96.04065	65.0414			No	Not Exceeded	
Road	2022-11-15 13:26	Yes	Caribou	2	Resting	N/A	100	157	West	No		-96.41584	65.271231			No	Not Exceeded	
Road	2022-11-15 13:26	Yes	Muskox	21	Resting	N/A	1600	148	East	No		-96.42744	65.220477			No	Exceeded	They are further than 1.5. Km from the road.
Road	2022-11-15 13:26	Yes	Muskox	38	Resting	N/A	500	145	East	No		-96.3769	65.224218			No	Exceeded	Speed restrictio from km 144 to 146.
Road	2022-11-16 6:42	Yes	Caribou	2	Feeding	N/A	200	157	West	No		-96.41584	65.271231			No	Not Exceeded	
Road	2022-11-16 6:42	Yes	Muskox	1	Feeding	N/A	300	156	West	No		-96.45207	65.262217			No	Not Exceeded	
Road	2022-11-16 6:42	Yes	Caribou	11	Alert	N/A	500	154	East	No		-96.46296	65.254604			No	Not Exceeded	
Road	2022-11-16 6:42	Yes	Caribou	2	Feeding	N/A	500	148	East	No		-96.42744	65.220477			No	Not Exceeded	
Road	2022-11-16 6:42	Yes	Muskox	37	Resting	N/A	200	145	West	No		-96.3769	65.224218			No	Exceeded	Speed restriction in place
Viewshed	2022-11-16 10:55		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-11-16 10:55		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-11-16 10:55		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-11-16 10:55		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-11-16 10:55		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-11-16 10:55		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-11-16 10:55		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-11-16 10:55		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-11-16 10:55		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-11-16 10:55		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-11-16 10:55		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-11-16 10:55		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-11-16 10:55		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-11-16 10:55		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-11-16 10:55		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-11-16 10:55		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-11-16 10:55		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-11-16 10:55		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-11-16 10:55		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-11-16 10:55		-	-			NA	144				-96.35797	65.223666					

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2022-11-16 10:55	-	-	-	-	-	NA	154	-	-	-	-96.46296	65.254604	-	-	-	-	-
Viewshed	2022-11-16 10:55	-	-	-	-	-	NA	154	-	-	-	-96.46296	65.254604	-	-	-	-	-
Viewshed	2022-11-16 10:55	-	-	-	-	-	NA	154	-	-	-	-96.46296	65.254604	-	-	-	-	-
Viewshed	2022-11-16 10:55	-	-	-	-	-	NA	154	-	-	-	-96.46296	65.254604	-	-	-	-	-
Viewshed	2022-11-16 10:55	-	-	-	-	-	NA	156	-	-	-	-96.45207	65.262217	-	-	-	-	-
Viewshed	2022-11-16 10:55	-	-	-	-	-	NA	156	-	-	-	-96.45207	65.262217	-	-	-	-	-
Viewshed	2022-11-16 10:55	-	-	-	-	-	NA	156	-	-	-	-96.45207	65.262217	-	-	-	-	-
Viewshed	2022-11-16 10:55	-	-	-	-	-	NA	156	-	-	-	-96.45207	65.262217	-	-	-	-	-
Viewshed	2022-11-16 10:55	-	-	-	-	-	NA	160-161	-	-	-	-96.41356	65.294293	-	-	-	-	-
Viewshed	2022-11-16 10:55	-	-	-	-	-	NA	160-161	-	-	-	-96.41356	65.294293	-	-	-	-	-
Viewshed	2022-11-16 10:55	-	-	-	-	-	NA	160-161	-	-	-	-96.41356	65.294293	-	-	-	-	-
Viewshed	2022-11-16 10:55	-	-	-	-	-	NA	166	-	-	-	-96.48819	65.325287	-	-	-	-	-
Viewshed	2022-11-16 10:55	-	-	-	-	-	NA	166	-	-	-	-96.48819	65.325287	-	-	-	-	-
Viewshed	2022-11-16 10:55	-	-	-	-	-	NA	166	-	-	-	-96.48819	65.325287	-	-	-	-	-
Viewshed	2022-11-16 10:55	-	-	-	-	-	NA	166	-	-	-	-96.48819	65.325287	-	-	-	-	-
Viewshed	2022-11-16 10:55	-	-	-	-	-	NA	169	-	-	-	-96.53703	65.340029	-	-	-	-	-
Viewshed	2022-11-16 10:55	-	-	-	-	-	NA	169	-	-	-	-96.53703	65.340029	-	-	-	-	-
Viewshed	2022-11-16 10:55	-	-	-	-	-	NA	169	-	-	-	-96.53703	65.340029	-	-	-	-	-
Viewshed	2022-11-16 10:55	-	-	-	-	-	NA	169	-	-	-	-96.53703	65.340029	-	-	-	-	-
Viewshed	2022-11-16 10:55	-	-	-	-	-	NA	118	-	-	-	-96.05506	65.086475	-	-	-	-	-
Viewshed	2022-11-16 10:55	-	-	-	-	-	NA	118	-	-	-	-96.05506	65.086475	-	-	-	-	-
Viewshed	2022-11-16 10:55	-	-	-	-	-	NA	118	-	-	-	-96.05506	65.086475	-	-	-	-	-
Viewshed	2022-11-16 10:55	-	-	-	-	-	NA	118	-	-	-	-96.05506	65.086475	-	-	-	-	-
Road	2022-11-17 13:45	Yes	Arctic fox	1	Walking	S	50	127	East	No	-	-96.12549	65.153813	-	-	No	Not Exceeded	-
Road	2022-11-17 13:45	Yes	Muskox	38	Lying Down	N/A	300	145	West	No	Not the good coordinates	-96.3769	65.224218	-	-	No	Exceeded	Speed restriction is the same as yesterday - km144-146
Road	2022-11-17 13:45	Yes	Caribou	2	Foraging	N/A	200	148	East	No	-	-96.42744	65.220477	-	-	No	Not Exceeded	-
Road	2022-11-17 13:45	Yes	Caribou	2	Foraging	N/A	800	158	West	No	-	-96.40471	65.277758	-	-	No	Not Exceeded	-
Road	2022-11-17 13:45	Yes	Muskox	7	Resting	N/A	1500	158	West	No	-	-96.40471	65.277758	-	-	No	Not Exceeded	-
Road	2022-11-17 13:45	Yes	Caribou	9	Resting	N/A	500	174	East	No	-	-96.60128	65.368315	-	-	No	Not Exceeded	-
Incidental	2022-11-18 15:25	Yes	Arctic fox	2	Feeding	N/A	0	123	North	No	Blind hill km 123. Foxes were scratching/eating an unknown substance from the road surface	-96.10441	65.122168	-	-	No	Not Exceeded	-
Incidental	2022-11-19 8:28	Yes	Arctic fox	1	Running	N	10	159	West	No	-	-96.40886	65.286013	-	-	No	Not Exceeded	-
Incidental	2022-11-19 8:28	Yes	Muskox	15	Feeding	Not Recorded	200	145	West	No	-	-96.3769	65.224218	-	-	not applicable	Exceeded	Speed restriction is in effect from km 144-146
Road	2022-11-19 13:06	Yes	Muskox	44	Lying Down	N/A	300	145	West	No	-	-96.3769	65.224218	-	-	No	Exceeded	Speed restriction from 144-146 at 30 km/h.
Road	2022-11-19 13:06	Yes	Caribou	1	Walking	N/A	400	148	East	No	-	-96.42744	65.220477	-	-	No	Not Exceeded	-
Road	2022-11-19 13:06	Yes	Caribou	8	Foraging	N/A	300	153	East	No	-	-96.47626	65.248229	-	-	No	Not Exceeded	-
Road	2022-11-19 13:06	Yes	Muskox	5	Lying Down	N/A	900	158	West	No	-	-96.40471	65.277758	-	-	No	Not Exceeded	-
Road	2022-11-20 9:08	Yes	Common raven	1	Flying	N	5	148	East	N/A	-	-96.42744	65.220477	-	-	No	Not Exceeded	-
Road	2022-11-20 9:08	Yes	Muskox	7	Feeding	N/A	50	158	West	N/A	Muskox adjacent to Km 158 bridge. Coordinates need to be adjusted, from km 163	-96.40471	65.277758	-	-	No	Not Exceeded	-
Road	2022-11-21 10:03	Yes	Muskox	1	Feeding	Not Recorded	150	162	East	No	-	-96.4168	65.311548	-	-	No	Not Exceeded	-
Road	2022-11-21 10:03	Yes	Muskox	7	Feeding	N/A	800	158	West	No	-	-96.40471	65.277758	-	-	No	Not Exceeded	-
Road	2022-11-21 10:03	Yes	Caribou	10	Alert	N	200	146	East	No	-	-96.39801	65.226268	-	-	No	Not Exceeded	-
Incidental	2022-11-21 13:09	Yes	Muskox	6	Resting	N/A	1200	114	East	No	-	-96.00424	65.066791	-	-	No	Not Exceeded	-
Incidental	2022-11-21 13:09	Yes	Arctic fox	1	Running	N/A	15	126	East	No	-	-96.11084	65.148182	-	-	No	Not Exceeded	-
Incidental	2022-11-21 13:09	Yes	Caribou	2	Foraging	N/A	1000	176	East	No	-	-96.60379	65.38622	-	-	No	Not Exceeded	-
Incidental	2022-11-21 13:09	Yes	Caribou	1	Alert	N/A	800	178	West	No	-	-96.6219	65.400857	-	-	No	Not Exceeded	-
Road	2022-11-23 8:28	Yes	Muskox	8	Resting	N/A	1500	158	West	No	-	-96.40471	65.277758	-	-	No	Not Exceeded	-
Road	2022-11-23 8:28	Yes	Caribou	2	Foraging	N/A	200	158	West	No	-	-96.40471	65.277758	-	-	No	Not Exceeded	-
Road	2022-11-23 8:28	Yes	Muskox	8	Foraging	N/A	300	144	Foraging	No	-	-96.37093	65.222778	-	-	No	Not Exceeded	-
Road	2022-11-23 8:28	Yes	Caribou	28	Foraging	N/A	1000	139	East	No	-	-96.27997	65.226857	-	-	No	Not Exceeded	-
Road	2022-11-23 8:28	Yes	Caribou	7	Foraging	N/A	500	121	East	No	-	-96.08638	65.10712	-	-	No	Not Exceeded	-
Road	2022-11-23 8:28	Yes	Muskox	5	Foraging	N/A	2000	121	West	No	-	-96.08638	65.10712	-	-	No	Not Exceeded	-
Road	2022-11-24 9:14	Yes	Muskox	3	Lying Down	N/A	500	159	West	No	-	-96.40886	65.286013	-	-	No	Not Exceeded	-
Viewshed	2022-11-24 13:05	-	-	-	-	-	NA	116	-	-	-	-96.02061	65.080258	-	-	-	-	-
Viewshed	2022-11-24 13:05	-	-	-	-	-	NA	116	-	-	-	-96.02061	65.080258	-	-	-	-	-
Viewshed	2022-11-24 13:05	-	-	-	-	-	NA	116	-	-	-	-96.02061	65.080258	-	-	-	-	-
Viewshed	2022-11-24 13:05	-	-	-	-	-	NA	116	-	-	-	-96.02061	65.080258	-	-	-	-	-
Viewshed	2022-11-24 13:05	-	-	-	-	-	NA	118	-	-	-	-96.05506	65.086475	-	-	-	-	-
Viewshed	2022-11-24 13:05	-	-	-	-	-	NA	118	-	-	-	-96.05506	65.086475	-	-	-	-	-
Viewshed	2022-11-24 13:05	-	-	-	-	-	NA	118	-	-	-	-96.05506	65.086475	-	-	-	-	-
Viewshed	2022-11-24 13:05	-	-	-	-	-	NA	121-122	-	-	-	-96.08638	65.10712	-	-	-	-	-
Viewshed	2022-11-24 13:05	-	-	-	-	-	NA	121-122	-	-	-	-96.08638	65.10712	-	-	-	-	-
Viewshed	2022-11-24 13:05	-	-	-	-	-	NA	121-122	-	-	-	-96.08638	65.10712	-	-	-	-	-
Viewshed	2022-11-24 13:05	-	-	-	-	-	NA	121-122	-	-	-	-96.08638	65.10712	-	-	-	-	-
Viewshed	2022-11-24 13:05	-	-	-	-	-	NA	128	-	-	-	-96.13583	65.161371	-	-	-	-	-
Viewshed	2022-11-24 13:05	-	-	-	-	-	NA	128	-	-	-	-96.13583	65.161371	-	-	-	-	-
Viewshed	2022-11-24 13:05	-	-	-	-	-	NA	128	-	-	-	-96.13583	65.161371	-	-	-	-	-
Viewshed	2022-11-24 13:05	-	-	-	-	-	NA	128	-	-	-	-96.13583	65.161371	-	-	-	-	-
Viewshed	2022-11-24 13:05	-	-	-	-	-	NA	128	-	-	-	-96.13583	65.161371	-	-	-	-	-
Viewshed	2022-11-24 13:05	-	-	-	-	-	NA	133	-	-	-	-96.17538	65.199246	-	-	-	-	-

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2022-11-24 13:05		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-11-24 13:05		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-11-24 13:05		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-11-24 13:05		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-11-24 13:05		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-11-24 13:05		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-11-24 13:05		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-11-24 13:05		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-11-24 13:05		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-11-24 13:05		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-11-24 13:05		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-11-24 13:05		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-11-24 13:05		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-11-24 13:05		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-11-24 13:05		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-11-24 13:05		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-11-24 13:05		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-11-24 13:05		Muskox	7	Foraging	Not Recorded	850	156	West			-96.45207	65.262217				Not Exceeded	
Viewshed	2022-11-24 13:05		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-11-24 13:05		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-11-24 13:05		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-11-24 13:05		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-11-24 13:05		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-11-24 13:05		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-11-24 13:05		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-11-24 13:05		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-11-24 13:05		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-11-24 13:05		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-11-24 13:05		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-11-24 13:05		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-11-24 13:05		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-11-24 13:05		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-11-24 13:05		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-11-24 13:05		-	-			NA	176				-96.60379	65.38622					
Road	2022-11-26 9:15	Yes	Caribou	1	Foraging	N/A	236	177	West	No		-96.60847	65.394344			No	Not Exceeded	
Road	2022-11-26 9:15	Yes	Arctic fox	1	Trotting/running	N	0	177	West	Yes		-96.60847	65.394344			No	Not Exceeded	
Road	2022-11-29 10:03	Yes	Muskox	5	Foraging	N/A	200	144	East	No		-96.07325	65.021362			No	Not Exceeded	
Road	2022-11-29 10:03	Yes	Muskox	7	Foraging	N/A	750	159	West	No		-96.40886	65.286013			No	Not Exceeded	
Road	2022-11-29 10:03	Yes	Wolverine	1	Trotting/running	E	100	173	East	No		-96.60297	65.359721			No	Not Exceeded	
Road	2022-12-03 9:27	Yes	Muskox	3	Foraging	N/A	30	142	East	No		-96.3371	65.222192			No	Not Exceeded	
Road	2022-12-03 9:27	Yes	Caribou	1	Foraging	N/A	0	178	East	No		-96.6219	65.400857			No	Not Exceeded	
Viewshed	2022-12-03 9:29		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-12-03 9:29		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-12-03 9:29		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-12-03 9:29		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-12-03 9:29		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-12-03 9:29		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-12-03 9:29		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-12-03 9:29		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-12-03 9:29		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-12-03 9:29		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-12-03 9:29		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-12-03 9:29		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-12-03 9:29		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-12-03 9:29		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-12-03 9:29		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-12-03 9:29		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-12-03 9:29		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-12-03 9:29		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-12-03 9:29		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-12-03 9:29		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-12-03 9:29		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-12-03 9:29		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-12-03 9:29		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-12-03 9:29		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-12-03 9:29		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-12-03 9:29		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-12-03 9:29		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-12-03 9:29		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-12-03 9:29		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-12-03 9:29		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-12-03 9:29		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-12-03 9:29		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-12-03 9:29		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-12-03 9:29		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-12-03 9:29		-	-			NA	156				-96.45207	65.262217					

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Viewshed	2022-12-03 9:29		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-12-03 9:29		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-12-03 9:29		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-12-03 9:29		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-12-03 9:29		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-12-03 9:29		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-12-03 9:29		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-12-03 9:29		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-12-03 9:29		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-12-03 9:29		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-12-03 9:29		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-12-03 9:29		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-12-03 9:29		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-12-03 9:29		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-12-03 9:29		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-12-03 9:29		-	-			NA	176				-96.60379	65.38622					
Road	2022-12-06 14:14	No					NA					NA	NA					
Incidental	2022-12-11 10:21	Yes	Muskox	3	Resting	N/A	400	163	West	No		-96.4304	65.317408			No	Not Exceeded	
Road	2022-12-13 12:23	Yes	Caribou	1	Feeding	N/A	1000	166	West	No		-96.48819	65.325287			No	Not Exceeded	
Road	2022-12-13 12:23	Yes	Muskox	5	Feeding	N/A	1000	164	West	No		-96.44722	65.322562			No	Not Exceeded	
Road	2022-12-15 10:07	Yes	Muskox	8	Foraging	N/A	1500	161	West	No		-96.41207	65.30324			No	Not Exceeded	
Road	2022-12-17 9:16	No					NA					NA	NA					
Viewshed	2022-12-17 11:01		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-12-17 11:01		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-12-17 11:01		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-12-17 11:01		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-12-17 11:01		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-12-17 11:01		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-12-17 11:01		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-12-17 11:01		-	-			NA	118				-96.05506	65.086475					
Viewshed	2022-12-17 11:01		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-12-17 11:01		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-12-17 11:01		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-12-17 11:01		-	-			NA	121-122				-96.08638	65.10712					
Viewshed	2022-12-17 11:01		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-12-17 11:01		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-12-17 11:01		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-12-17 11:01		-	-			NA	128				-96.13583	65.161371					
Viewshed	2022-12-17 11:01		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-12-17 11:01		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-12-17 11:01		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-12-17 11:01		-	-			NA	133				-96.17538	65.199246					
Viewshed	2022-12-17 11:01		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-12-17 11:01		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-12-17 11:01		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-12-17 11:01		-	-			NA	138				-96.26018	65.2238					
Viewshed	2022-12-17 11:01		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-12-17 11:01		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-12-17 11:01		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-12-17 11:01		-	-			NA	144				-96.35797	65.223666					
Viewshed	2022-12-17 11:01		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-12-17 11:01		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-12-17 11:01		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-12-17 11:01		-	-			NA	154				-96.46296	65.254604					
Viewshed	2022-12-17 11:01		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-12-17 11:01		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-12-17 11:01		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-12-17 11:01		-	-			NA	156				-96.45207	65.262217					
Viewshed	2022-12-17 11:01		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-12-17 11:01		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-12-17 11:01		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-12-17 11:01		-	-			NA	160-161				-96.41356	65.294293					
Viewshed	2022-12-17 11:01		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-12-17 11:01		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-12-17 11:01		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-12-17 11:01		-	-			NA	166				-96.48819	65.325287					
Viewshed	2022-12-17 11:01		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-12-17 11:01		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-12-17 11:01		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-12-17 11:01		-	-			NA	169				-96.53703	65.340029					
Viewshed	2022-12-17 11:01		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-12-17 11:01		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-12-17 11:01		-	-			NA	176				-96.60379	65.38622					
Viewshed	2022-12-17 11:01		-	-			NA	176				-96.60379	65.38622					
Incidental	2022-12-18 10:30	Yes	Caribou	6	Foraging	N/A	500	178	North	No		-96.6219	65.400857			No	Not Exceeded	
Road	2022-12-21 8:30	No					NA					NA	NA					
Viewshed	2022-12-21 12:43		-	-			NA	116				-96.02061	65.080258					
Viewshed	2022-12-21 12:43		-	-			NA	116				-96.02061	65.080258					

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation	
Viewshed	2022-12-21 12:43		-	-			NA	116				-96.02061	65.080258						
Viewshed	2022-12-21 12:43		-	-			NA	116				-96.02061	65.080258						
Viewshed	2022-12-21 12:43		-	-			NA	118				-96.05506	65.086475						
Viewshed	2022-12-21 12:43		-	-			NA	118				-96.05506	65.086475						
Viewshed	2022-12-21 12:43		-	-			NA	118				-96.05506	65.086475						
Viewshed	2022-12-21 12:43		-	-			NA	118				-96.05506	65.086475						
Viewshed	2022-12-21 12:43		-	-			NA	121-122				-96.08638	65.10712						
Viewshed	2022-12-21 12:43		-	-			NA	121-122				-96.08638	65.10712						
Viewshed	2022-12-21 12:43		-	-			NA	121-122				-96.08638	65.10712						
Viewshed	2022-12-21 12:43		-	-			NA	121-122				-96.08638	65.10712						
Viewshed	2022-12-21 12:43		-	-			NA	128				-96.13583	65.161371						
Viewshed	2022-12-21 12:43		-	-			NA	128				-96.13583	65.161371						
Viewshed	2022-12-21 12:43		-	-			NA	128				-96.13583	65.161371						
Viewshed	2022-12-21 12:43		-	-			NA	128				-96.13583	65.161371						
Viewshed	2022-12-21 12:43		-	-			NA	133				-96.17538	65.199246						
Viewshed	2022-12-21 12:43		-	-			NA	133				-96.17538	65.199246						
Viewshed	2022-12-21 12:43		-	-			NA	133				-96.17538	65.199246						
Viewshed	2022-12-21 12:43		-	-			NA	138				-96.26018	65.2238						
Viewshed	2022-12-21 12:43		-	-			NA	138				-96.26018	65.2238						
Viewshed	2022-12-21 12:43		-	-			NA	138				-96.26018	65.2238						
Viewshed	2022-12-21 12:43		-	-			NA	138				-96.26018	65.2238						
Viewshed	2022-12-21 12:43		-	-			NA	144				-96.35797	65.223666						
Viewshed	2022-12-21 12:43		-	-			NA	144				-96.35797	65.223666						
Viewshed	2022-12-21 12:43		-	-			NA	144				-96.35797	65.223666						
Viewshed	2022-12-21 12:43		-	-			NA	144				-96.35797	65.223666						
Viewshed	2022-12-21 12:43		-	-			NA	154				-96.46296	65.254604						
Viewshed	2022-12-21 12:43		-	-			NA	154				-96.46296	65.254604						
Viewshed	2022-12-21 12:43		-	-			NA	154				-96.46296	65.254604						
Viewshed	2022-12-21 12:43		-	-			NA	156				-96.45207	65.262217						
Viewshed	2022-12-21 12:43		-	-			NA	156				-96.45207	65.262217						
Viewshed	2022-12-21 12:43		-	-			NA	156				-96.45207	65.262217						
Viewshed	2022-12-21 12:43		-	-			NA	160-161				-96.41356	65.294293						
Viewshed	2022-12-21 12:43		-	-			NA	160-161				-96.41356	65.294293						
Viewshed	2022-12-21 12:43		-	-			NA	160-161				-96.41356	65.294293						
Viewshed	2022-12-21 12:43		-	-			NA	160-161				-96.41356	65.294293						
Viewshed	2022-12-21 12:43		-	-			NA	166				-96.48819	65.325287						
Viewshed	2022-12-21 12:43		-	-			NA	166				-96.48819	65.325287						
Viewshed	2022-12-21 12:43		-	-			NA	166				-96.48819	65.325287						
Viewshed	2022-12-21 12:43		-	-			NA	166				-96.48819	65.325287						
Viewshed	2022-12-21 12:43		-	-			NA	169				-96.53703	65.340029						
Viewshed	2022-12-21 12:43		-	-			NA	169				-96.53703	65.340029						
Viewshed	2022-12-21 12:43		-	-			NA	169				-96.53703	65.340029						
Viewshed	2022-12-21 12:43		-	-			NA	169				-96.53703	65.340029						
Viewshed	2022-12-21 12:43		-	-			NA	176				-96.60379	65.38622						
Viewshed	2022-12-21 12:43		-	-			NA	176				-96.60379	65.38622						
Viewshed	2022-12-21 12:43		-	-			NA	176				-96.60379	65.38622						
Road	2022-12-28 8:52	Yes	Muskox	23	Resting	N/A	100	149	West	No		-96.44264	65.223273				No	Exceeded	Speed restriction 148 to 149. They are at km148.5
Viewshed	2022-12-28 11:10		-	-			NA	176				-96.60379	65.38622						
Viewshed	2022-12-28 11:10		-	-			NA	176				-96.60379	65.38622						
Viewshed	2022-12-28 11:10		-	-			NA	176				-96.60379	65.38622						
Viewshed	2022-12-28 11:10		-	-			NA	176				-96.60379	65.38622						
Viewshed	2022-12-28 11:10		-	-			NA	169				-96.53703	65.340029						
Viewshed	2022-12-28 11:10		-	-			NA	169				-96.53703	65.340029						
Viewshed	2022-12-28 11:10		-	-			NA	169				-96.53703	65.340029						
Viewshed	2022-12-28 11:10		-	-			NA	169				-96.53703	65.340029						
Viewshed	2022-12-28 11:10		-	-			NA	166				-96.48819	65.325287						
Viewshed	2022-12-28 11:10		-	-			NA	166				-96.48819	65.325287						
Viewshed	2022-12-28 11:10		-	-			NA	166				-96.48819	65.325287						
Viewshed	2022-12-28 11:10		-	-			NA	166				-96.48819	65.325287						
Viewshed	2022-12-28 11:10		-	-			NA	160-161				-96.41356	65.294293						
Viewshed	2022-12-28 11:10		-	-			NA	160-161				-96.41356	65.294293						
Viewshed	2022-12-28 11:10		-	-			NA	160-161				-96.41356	65.294293						
Viewshed	2022-12-28 11:10		-	-			NA	160-161				-96.41356	65.294293						
Viewshed	2022-12-28 11:10		-	-			NA	156				-96.45207	65.262217						
Viewshed	2022-12-28 11:10		-	-			NA	156				-96.45207	65.262217						
Viewshed	2022-12-28 11:10		-	-			NA	156				-96.45207	65.262217						
Viewshed	2022-12-28 11:10		-	-			NA	154				-96.46296	65.254604						
Viewshed	2022-12-28 11:10		-	-			NA	154				-96.46296	65.254604						
Viewshed	2022-12-28 11:10		-	-			NA	154				-96.46296	65.254604						
Viewshed	2022-12-28 11:10		-	-			NA	154				-96.46296	65.254604						
Viewshed	2022-12-28 11:10		-	-			NA	144				-96.35797	65.223666						
Viewshed	2022-12-28 11:10		-	-			NA	144				-96.35797	65.223666						

Table A-2: Wildlife Observations along the Whale Tail Haul Road in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation	
Viewshed	2022-12-28 11:10		-	-			NA	144				-96.35797	65.223666						
Viewshed	2022-12-28 11:10		-	-			NA	144				-96.35797	65.223666						
Viewshed	2022-12-28 11:10		-	-			NA	138				-96.26018	65.2238						
Viewshed	2022-12-28 11:10		-	-			NA	138				-96.26018	65.2238						
Viewshed	2022-12-28 11:10		-	-			NA	138				-96.26018	65.2238						
Viewshed	2022-12-28 11:10		-	-			NA	138				-96.26018	65.2238						
Viewshed	2022-12-28 11:10		-	-			NA	133				-96.17538	65.199246						
Viewshed	2022-12-28 11:10		-	-			NA	133				-96.17538	65.199246						
Viewshed	2022-12-28 11:10		-	-			NA	133				-96.17538	65.199246						
Viewshed	2022-12-28 11:10		-	-			NA	128				-96.13583	65.161371						
Viewshed	2022-12-28 11:10		-	-			NA	128				-96.13583	65.161371						
Viewshed	2022-12-28 11:10		-	-			NA	128				-96.13583	65.161371						
Viewshed	2022-12-28 11:10		-	-			NA	128				-96.13583	65.161371						
Viewshed	2022-12-28 11:10		-	-			NA	121-122				-96.08638	65.10712						
Viewshed	2022-12-28 11:10		-	-			NA	121-122				-96.08638	65.10712						
Viewshed	2022-12-28 11:10		-	-			NA	121-122				-96.08638	65.10712						
Viewshed	2022-12-28 11:10		-	-			NA	121-122				-96.08638	65.10712						
Viewshed	44923.46528		-	-			NA	118				-96.05506	65.086475						
Viewshed	44923.46528		-	-			NA	118				-96.05506	65.086475						
Viewshed	44923.46528		-	-			NA	118				-96.05506	65.086475						
Viewshed	44923.46528		-	-			NA	116				-96.02061	65.080258						
Viewshed	44923.46528		-	-			NA	116				-96.02061	65.080258						
Viewshed	44923.46528		-	-			NA	116				-96.02061	65.080258						
Viewshed	44923.46528		-	-			NA	116				-96.02061	65.080258						

Table A-3: Wildlife Observations at Meadowbank Mine in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Mine & Pit	2022-01-01 13:15	Yes	Arctic fox	1	Alert	N/A	0		East	N/A	In the incinerator building	-96.0675	65.016111			Yes - Fox are living on site	Not Exceeded	
Incidental	2022-01-01 16:40	Yes	Wolverine	1	Walking	N	0					-96.0725	65.025	Successful deterrence		No	Not Exceeded	
Incidental	2022-01-09 11:57	Yes	Arctic fox	1	Running	W	NA		South		Red fox	-96.044503	65.041782			No	Not Exceeded	
Mine & Pit	2022-01-10 14:00	No					NA					NA	NA					
Incidental	2022-01-12 9:35	Yes	Red fox	1	Running	S	NA		South			-96.076667	65.039167			No	Not Exceeded	
Mine & Pit	2022-01-15 14:15	No					NA					NA	NA					
Incidental	2022-01-19 15:00	Yes	Wolverine	1	Feeding	N/A	NA				While coming back from AMQ, the environment team decided to stop at the tailing to see if the wolverine was there. Indeed he was observed at the bottom of the ramp where the sewage is dumped. Environment when to the office to get deterrents, but on arrival, the wolverine was gone.	-96.061111	65.031111	No		No	Not Exceeded	
Incidental	2022-01-19 15:12	Yes	Wolverine	1	Running	E	NA		South, North, West, East			-96.065	65.015556	Successful deterrence		No	Not Exceeded	
Mine & Pit	2022-01-20 14:20	Yes	Arctic hare	1	Alert	N/A	10		West	No	On the road near east dike where theres containers	-96.048333	65.010833			No	Not Exceeded	
Incidental	2022-01-21 8:30	Yes	Wolf	1	Lying Down		NA				While performing a wildlife patrol for the wolverine, an environment employee saw a wolf lying down at the tailing. When he approached the deterred him, the wolf went away and the employee lost sight of him.	-96.061111	65.031111	No		No	Not Exceeded	
Incidental	2022-01-27 8:50	Yes	Wolverine	1	Alert	S	NA		South		Reported by a worker - already gone when Env team arrived	-96.0675	65.016111			No	Not Exceeded	
Incidental	2022-01-28 14:15	Yes	Wolverine	1	Running	N/A	NA		North		Received a call from a worker and when the technician arrived on site the wolverine was nowhere to be seen	-96.066944	65.021944			No	Not Exceeded	
Incidental	2022-01-29 17:47	Yes	Wolverine	1	Running	N/A	NA		North		A worker called environment for a wolverine near stp. When the tech arrived the wolverine was nowhere to be seen	-96.066944	65.021944			No	Not Exceeded	
Mine & Pit	2022-01-30 9:57	No					NA					NA	NA					
Incidental	2022-01-31 13:05	Yes	Wolverine	1	Running	NE	NA		North		A worker called for a wolverine. The environment tech followed the traces from the environment building up to the coreshack. The traces was heading for the tundra. The wolverine was not seen.	-96.073611	65.021667			No	Not Exceeded	
Incidental	2022-02-03 7:00	Yes	Wolverine	1	Standing	N/A	0		South	N/A		-96.0675	65.016111	Successful deterrence		No	Not Exceeded	
Incidental	2022-02-04 7:05	Yes	Wolverine	1	Walking	N/A	0		North	N/A		-96.0675	65.016111	No		No	Not Exceeded	
Mine & Pit	2022-02-04 14:00	No					NA					NA	NA					
Incidental	2022-02-04 17:50	Yes	Wolverine	1	Trotting/running	E	0		East	N/A		-96.677016	65.399543	Successful deterrence		No	Not Exceeded	
Incidental	2022-02-05 0:00	Yes	Wolverine	1	Walking	N/A	0		South	N/A		-96.07	65.021389	No		No	Not Exceeded	
Incidental	2022-02-05 9:00	Yes	Wolverine	1	Walking	N/A	0		South	N/A		-96.0675	65.016111	No		No	Not Exceeded	
Incidental	2022-02-05 11:00	Yes	Wolverine	1	Walking	N	0		South	Yes		-96.081389	65.018333	No		No	Not Exceeded	
Incidental	2022-02-06 1:00	Yes	Wolverine	1	Walking	N/A	0		South	N/A		-96.002169	65.051123	No		No	Not Exceeded	
Incidental	2022-02-08 7:00	Yes	Wolverine	1	Walking	N	0		South	N/A		-96.07	65.021389	No		No	Not Exceeded	
Incidental	2022-02-12 7:30	Yes	Wolverine	1	Running	N	25		North	N/A	Core shack employee reported a wolverine running behind the core shack heading northwest. □ When environment team arrived on site, tracks of the wolverine were observed, but no sight of the animal.	-96.062778	65.014722	No		No	Not Exceeded	
Mine & Pit	2022-02-12 10:35	Yes	Red fox	1	Alert	N/A	0		South	No	Standing in landfarm	-96.057778	65.032778			No	Not Exceeded	
Incidental	2022-02-15 10:00	Yes	Caribou	1	Running		NA				Environment when at the area but did not see the wolverine.	-96.048889	65.029167	No		No	Not Exceeded	
Incidental	2022-02-16 9:00	Yes	Wolverine	1	Trotting/running	N	NA				Environment when at the area but did not see the wolverine.	-96.076667	65.039167	No		No	Not Exceeded	
Incidental	2022-02-17 8:00	Yes	Wolverine	1	Trotting/running	N	NA					-96.048889	65.029167	No		No	Not Exceeded	
Incidental	2022-02-18 7:30	Yes	Wolverine	1	Feeding	N/A	NA				The wolverine started running towards the landfill and desaperd in a field of bolder located south of the landfill.	-96.061111	65.031111	Successful deterrence		No	Not Exceeded	

Table A-3: Wildlife Observations at Meadowbank Mine in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation	
Mine & Pit	2022-02-19 15:08	No					NA					NA	NA						
Incidental	2022-02-20 6:30	Yes	Wolverine	1	Running	E	NA				Environment received a radio call that a wolverine was in front of their office. The environment went outside and the wolverine was on the road between the environment office main entrance doors and the stairs going to the main camp. The wolverine immediately started running behind the building towards the tundra and we lost sight in the darkness.	-96.073611	65.021667	No		No		Not Exceeded	
Incidental	2022-02-21 6:30	Yes	Wolverine	1	Running	N/A	0		North	N/A	The environment team arrived a few minutes later, but the wolverine was already gone.	-96.07	65.021389	Successful deterrence		No		Not Exceeded	
Incidental	2022-02-21 7:20	Yes	Wolverine	1	Lying Down	N/A	75		West	No	The environment team was doing a wildlife patrol when we came across this wolverine. He was a the same place as before e.i. on the tailings near landfarm/landfill.	-96.057778	65.032778	No		No		Not Exceeded	
Incidental	2022-02-21 9:50	Yes	Wolf	1	Trotting/running	S	0		North	No	I was on my way to the ST-8 for my daily sample and the wolf was on the road. It fled towards the landfill. I did not have the time to deter it since it fled immediately after seeing me.	-96.048333	65.010833	No		No		Not Exceeded	
Incidental	2022-02-21 10:30	Yes	Wolverine	1	Foraging	N/A	100		West	No		-96.054444	65.033333	Successful deterrence		No		Not Exceeded	
Incidental	2022-02-21 22:00	Yes	Wolverine	1	Trotting/running		NA				Environment received a phone call mentioning that a wolverine was observed running by the incinerator. Upon arrival, no wolverine was observed. Environment monitored around site and incinerator for a while, but no presence of the animal.	-96.0675	65.016111	No		No		Not Exceeded	
Incidental	2022-02-25 8:00	Yes	Wolf	1	Walking	Not Recorded	NA				Reported by radio, was already gone when Env. arrived.	-96.062778	65.014722	No		No		Not Exceeded	
Mine & Pit	2022-02-26 15:06	Yes	Arctic fox	1	Walking	W	0		West	No	Between tailings and airstrip	-96.061111	65.031111			No		Not Exceeded	
Incidental	2022-02-28 20:00	Yes	Wolverine	1	Walking	Not Recorded	NA				Reported by email	-96.073611	65.021667	No		No		Not Exceeded	
Other	2022-03-05 15:31	Yes	Arctic fox	3	Trotting/running	Not Recorded	NA			N/A		-96.066512	65.014006			No		Not Exceeded	
Incidental	2022-03-11 13:05	Yes	Wolverine	1	Running	E	NA		East			-96.069722	65.011667			Yes - Multiple sightings of wolverine at the same places		Not Exceeded	
Incidental	2022-03-11 14:28	Yes	Wolverine	1	Running	N	NA		North			-96.062778	65.014722			Yes - Seen multiple times in the same areas		Not Exceeded	
Incidental	2022-03-12 10:34	Yes	Wolverine	1	Running	N/A	NA		North		Tried to use deterrent but hid around Nova Camp.	-96.044503	65.041782			Yes - Multiple sightings in the same areas		Not Exceeded	
Mine & Pit	2022-03-12 13:41	No					NA					NA	NA						
Mine & Pit	2022-03-12 14:41	No					NA					NA	NA						
Incidental	2022-03-13 8:00	Yes	Wolverine	1	Running		NA				The environment team went to the assay lab a few minutes later, but the wolverine wasn't there. A site patrol was conducted, no sight of the animal.	-96.002169	65.051123	No		No		Not Exceeded	
Incidental	2022-03-14 9:00	Yes	Wolverine	1	Running		NA				The wolverine was reported running under the kitchen, accessing through a burrow where their red roll off bin is located. See photos in the server.	-96.07	65.021389	No		No		Not Exceeded	
Incidental	2022-03-15 8:00	Yes	Wolverine	1	Running		NA				Environment heard the call on the radio. Upon arrival, the wolverine was already gone. We took advantage of the fact that he was out to block the hole below the kitchen. See photos in the drive.	-96.048333	65.010833	No		No		Not Exceeded	
Incidental	2022-03-16 8:20	Yes	Wolverine	1	Feeding	N/A	0		East	No		-96.0675	65.016111	Deterrents did not succeed		No		Not Exceeded	
Mine & Pit	2022-03-18 14:48	Yes	Red fox	1	Feeding	N/A	0			No	Where we drop the sewage in the tailings south cell	-96.061111	65.031111			No		Not Exceeded	
Mine & Pit	2022-03-19 13:05	Yes	Caribou	12	Walking	W	700		West	No	On second portage lake near the fresh water barge	-96.081389	65.018333			No		Not Exceeded	
Mine & Pit	2022-03-20 13:30	No					NA					NA	NA						
Mine & Pit	2022-03-27 13:11	Yes	Wolverine	1	Running	N	100		North	Yes	Left landfill to wrsf	-96.054444	65.033333			No		Not Exceeded	
Mine & Pit	2022-03-27 13:11	Yes	Arctic fox	2	Foraging	N/A	0		North	No	Inside a seacan	-96.0675	65.016111			No		Not Exceeded	
Incidental	2022-03-29 2:30	Yes	Red fox	1	Feeding	N/A	5		South			-96.061111	65.031111	Successful deterrence		Yes - has been seen several times in the tailings area.		Not Exceeded	

Table A-3: Wildlife Observations at Meadowbank Mine in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2022-04-02 12:00	Yes	Wolverine	1	Feeding	NE	NA		East	Yes	Beside landfarm and south cell, where they dump the sewage	-96.057778	65.032778	Successful deterrence		No	Not Exceeded	
Mine & Pit	2022-04-02 16:28	Yes	Caribou	5	Walking	N	100		East	No	- East about 100M 5 caribou -	-96.003611	65.075			No	Not Exceeded	
Incidental	2022-04-04 13:18	Yes	Wolverine	1	Dead	N/A	NA				South cell where sewage truck is dumping	-96.061111	65.031111	Deterrents did not succeed	Project related	No	Not Exceeded	
Mine & Pit	2022-04-17 10:34	No					NA					NA	NA					
Mine & Pit	2022-04-19 13:39	Yes	Arctic hare	3	Standing	N/A	2		West	No		-96.048333	65.010833			No	Not Exceeded	
Incidental	2022-04-25 14:30	Yes	Wolf	1	Standing	NE	10		East	No		-96.003611	65.075	Successful deterrence		No	Not Exceeded	
Incidental	2022-04-30 5:45	Yes	Wolf	2	Walking	SE	100	Not Exceeded	East	No	walking from FWB to south-East	-96.081389	65.018333			No	Not Exceeded	
Mine & Pit	2022-04-30 14:03	No					NA					NA	NA					
Mine & Pit	2022-05-06 13:16	Yes	Caribou	5	Feeding	N/A	25		East	No		-96.0725	65.025			No	Not Exceeded	
Mine & Pit	2022-05-06 13:16	Yes	Caribou	5	Feeding	N/A	150		West	No		-96.003611	65.075			No	Not Exceeded	
Mine & Pit	2022-05-07 14:55	No					NA					NA	NA					
Mine & Pit	2022-05-12 14:25	Yes	Caribou	23	Feeding	N/A	25		East	No		-96.003611	65.075			No	Not Exceeded	
Mine & Pit	2022-05-14 15:23	Yes	Caribou	5	Feeding	N/A	50		West	No		-96.044503	65.041782			No	Not Exceeded	
Incidental	2022-05-18 5:30	Yes	Wolverine	1	Running	N/A	NA				Worker at nova camp encountered a wolverine when he was smoking just outside the entrance of nova camp.	-96.044503	65.041782			No	Not Exceeded	
Incidental	2022-05-21 7:23	Yes	Wolverine	1	Running	W	NA		South		Wolverine was at the south cell landfarm.	-96.061111	65.031111	Successful deterrence		No	Not Exceeded	
Incidental	2022-05-24 15:51	Yes	Caribou	25	Resting	N/A	NA		East			-96.076667	65.039167			No	Not Exceeded	
Mine & Pit	2022-05-25 7:17	Yes	Arctic hare	6	Foraging	N/A	75		East	No		-96.056944	65.005278			No	Not Exceeded	
Mine & Pit	2022-05-25 7:17	Yes	Arctic fox	1	Walking	N	0		South	No		-96.044503	65.041782			No	Not Exceeded	
Incidental	2022-05-25 9:49	Yes	Caribou	7	Feeding	N/A	NA		North			-96.0725	65.025			No	Not Exceeded	
Mine & Pit	2022-05-28 15:20	Yes	Other	1	Flying	N/A	10		West	No	Seagull.	-96.056944	65.005278			No	Not Exceeded	
Mine & Pit	2022-05-28 15:20	Yes	Other	12	Flying	N/A	0		West	N/A	Seagull.	-96.057778	65.032778			No	Not Exceeded	
Mine & Pit	2022-05-31 9:31	Yes	Arctic hare	2	Lying Down	N/A	10		West	No		-96.0725	65.025			No	Not Exceeded	
Mine & Pit	2022-05-31 9:31	Yes	Canada goose	2	Walking	N/A	50		East	No		-96.044503	65.041782			No	Not Exceeded	
Mine & Pit	2022-05-31 9:31	Yes	Arctic hare	1	Lying Down	N/A	1		West	No		-96.056944	65.005278			No	Not Exceeded	
Mine & Pit	2022-05-31 9:31	Yes	Arctic hare	1	Lying Down	N/A	0		East	No		-96.056944	65.005278			No	Not Exceeded	
Mine & Pit	2022-06-04 10:39	No					NA					NA	NA					
Mine & Pit	2022-06-11 12:40	Yes	Caribou	4	Feeding	Not Recorded	10		South,East	No	4 caribou near KM 106. 2 on the east side of the road and 2 on the west side	-96.081389	65.018333			No	Not Exceeded	
Incidental	2022-06-12 16:30	Yes	Caribou	4	Foraging	S	0				Four caribous were reported on the airstrip just before a plane departure. An environment employee went to deter them by clapping hands but caribous were not cooperating. Afterwards, the employee used the pick-up horn to make them move. This time, they went off the runway but stayed on the edge between the airstrip and Q23. They were still too close to the runway, so a second environment employee came to with deterrent gear. Two whistlers were fired and caribous started walking crossing the runway and move towards the freshwater barge.	-96.0725	65.025	Successful deterrence		No	Not Exceeded	
Mine & Pit	2022-06-14 13:01	Yes	Caribou	4	Alert	SW	0		West	Yes		-96.0725	65.025	Successful deterrence		No	Not Exceeded	
Mine & Pit	2022-06-14 13:01	Yes	Canada goose	11	Walking	N/A	50		East	No		-96.07	65.02			No	Not Exceeded	
Mine & Pit	2022-06-14 13:01	Yes	Ptarmigan	1	Walking	N/A	25		West	No		-96.081389	65.018333			No	Not Exceeded	
Mine & Pit	2022-06-18 13:10	Yes	Caribou	1	Lying Down	N/A	100		East	No		-96.0725	65.025			No	Not Exceeded	
Mine & Pit	2022-06-18 13:10	Yes	Muskox	2	Feeding	N/A	10		North	No		-96.076667	65.039167			No	Not Exceeded	
Mine & Pit	2022-06-18 13:10	Yes	Canada goose	19	Feeding	Not Recorded	10		South	No		-96.044503	65.041782			No	Not Exceeded	
Mine & Pit	2022-06-18 13:10	Yes	Canada goose	4	Feeding	N/A	50		East	N/A		-96.056944	65.005278			No	Not Exceeded	
Incidental	2022-06-22 17:31	Yes	Muskox	2	Feeding	S	NA		South		10 meters from airstrip, between AWAR and airstrip	-96.0725	65.025	Successful deterrence		No	Not Exceeded	
Mine & Pit	2022-06-25 16:39	No					NA					NA	NA					
Incidental	2022-06-30 14:00	Yes	Caribou	4	Feeding	N/A	NA		East		Along the fresh water barge road, not too far from the airstrip	-96.081389	65.018333			No	Not Exceeded	
Incidental	2022-06-30 14:30	Yes	Muskox	2	Feeding	N/A	NA		South			-96.044503	65.041782			No	Not Exceeded	
Incidental	2022-06-30 14:35	Yes	Muskox	2	Standing	N/A	NA		North			-96.044503	65.041782			No	Not Exceeded	
Incidental	2022-07-01 12:55	Yes	Caribou	4	Alert	E	NA				Communication will be end of the month	-96.0725	65.025	Successful deterrence		No	Not Exceeded	
Incidental	2022-07-01 17:23	Yes	Muskox	1	Feeding	N/A	NA					-96.0725	65.025			No	Not Exceeded	
Mine & Pit	2022-07-02 7:59	Yes	Caribou	2	Foraging	S	500		West	No		-96.003611	65.075			No	Not Exceeded	
Mine & Pit	2022-07-02 7:59	Yes	Caribou	1	Feeding	Not Recorded	25		West	No	Top of the hill behind sea can, near st-s-1	-96.048333	65.010833			No	Not Exceeded	
Mine & Pit	2022-07-02 7:59	Yes	Arctic hare	1	Alert	Not Recorded	0		West	Yes		-96.048333	65.010833			No	Not Exceeded	
Mine & Pit	2022-07-02 7:59	Yes	Muskox	2	Feeding	Not Recorded	200		East	No		-96.076667	65.039167			No	Not Exceeded	
Mine & Pit	2022-07-02 7:59	Yes	Arctic hare	1	Alert	E	10		East	No		-96.101111	65.046389			No	Not Exceeded	
Mine & Pit	2022-07-02 7:59	Yes	Muskox	1	Foraging	Not Recorded	5		East	No		-96.044503	65.041782			No	Not Exceeded	
Mine & Pit	2022-07-02 7:59	Yes	Muskox	2	Feeding	N/A	5		West	No		-96.0725	65.025			No	Not Exceeded	
Mine & Pit	2022-07-03 8:00	Yes	Caribou	1	Foraging	N/A	0		West	No		-96.073611	65.021667			No	Not Exceeded	
Mine & Pit	2022-07-03 8:00	Yes	Muskox	5	Resting	N/A	300		West	No		-96.101111	65.046389			No	Not Exceeded	
Mine & Pit	2022-07-03 8:00	Yes	Caribou	2	Resting	N/A	700		West	No		-96.061111	65.031111			No	Not Exceeded	

Table A-3: Wildlife Observations at Meadowbank Mine in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2022-07-03 21:00	Yes	Wolf	1	Walking	N	NA		East		Got a call from fountain tire. But seen it at the airstrip and chased it to the way and went in the tundra towards np2	-96.063889	65.015	Successful deterrence		No		Not Exceeded
Mine & Pit	2022-07-05 10:11	Yes	Muskox	4	Lying Down	N/A	50		East	No	Lake side end of the air strip, in tundra	-96.0725	65.025			No		Not Exceeded
Mine & Pit	2022-07-05 10:11	Yes	Muskox	2	Foraging	N/A	200		West	No		-96.044503	65.041782			No		Not Exceeded
Mine & Pit	2022-07-05 10:11	Yes	Muskox	1	Foraging	Not Recorded	40		West	No		-96.003611	65.075			No		Not Exceeded
Incidental	2022-07-06 15:06	Yes	Wolf	1	Walking	NE	NA		East			-96.044503	65.041782	Successful deterrence		No		Not Exceeded
Mine & Pit	2022-07-09 14:26	Yes	Caribou	2	Feeding	N/A	0			N/A	Down the ramp of pit A	-96.048889	65.029167	Successful deterrence		No		Not Exceeded
Mine & Pit	2022-07-11 9:31	Yes	Muskox	1	Alert	W	0		East	Yes		-96.0725	65.025	Successful deterrence		Yes - Been around since last week		Not Exceeded
Mine & Pit	2022-07-11 9:31	Yes	Caribou	1	Feeding	N/A	1		East	N/A	In between airport and nova camp in the ditch.	-96.044503	65.041782			Yes - Same caribou thats been on site for a while		Not Exceeded
Mine & Pit	2022-07-18 14:17	Yes	Muskox	1	Lying Down	N/A	10		North	No	1 muskox. Lying down	-96.0725	65.025			No		Not Exceeded
Mine & Pit	2022-07-18 14:17	Yes	Muskox	1	Lying Down	N/A	12		East	No	1 muskox lying down	-96.081389	65.018333			No		Not Exceeded
Mine & Pit	2022-07-18 14:17	Yes	Muskox	1	Lying Down	N/A	8		North	No	1 muskox lying down down the side of the road.	-96.003611	65.075			No		Not Exceeded
Mine & Pit	2022-07-18 14:17	Yes	Caribou	1	Walking	NE	0		North	N/A	1 caribous at ST-S-1 going up ramp to East Dyke	-96.048333	65.010833			No		Not Exceeded
Incidental	2022-07-21 13:00	Yes	Caribou	1	Lying Down	S	0		South	Yes	Somebody reported a caribou on the tailings south cell. Environment team went to push it away from the TSF.	-96.002169	65.051123	Successful deterrence		No		Not Exceeded
Incidental	2022-07-21 13:40	Yes	Caribou	1	Walking	SW	0		West	No	Walked towards the caribou for it to go in the tundra.	-96.002169	65.051123			No		Not Exceeded
Incidental	2022-07-23 0:00	Yes	Wolf	1	Walking	N/A	NA				Maintenance reported a wolf at the Iron pad	-96.002169	65.051123		Project non-related	No		Not Exceeded
Incidental	2022-07-23 9:15	Yes	Wolf	1	Trotting/running	N	0		North	Yes	Wolf was first spotted by the road going to Central dike sampling point.	-96.061111	65.031111	Successful deterrence		No		Not Exceeded
Mine & Pit	2022-07-23 16:00	Yes	Muskox	1	Resting	N/A	24		North	No	Muskox 25 meters north of the airstrip. On the east dike side.	-96.0725	65.025			No		Not Exceeded
Mine & Pit	2022-07-23 16:00	Yes	Muskox	1	Foraging	N/A	300		West	No		-96.003611	65.075			No		Not Exceeded
Incidental	2022-07-24 6:40	Yes	Muskox	2	Foraging	N/A	NA		North			-96.061111	65.031111			No		Not Exceeded
Incidental	2022-07-28 9:45	Yes	Muskox	2	Feeding	N/A	NA				Two Muskox between the airstrip and the AWAR	-96.0725	65.025	Successful deterrence		No		Not Exceeded
Incidental	2022-07-30 10:00	Yes	Wolf	1	Walking	SE	300		West	No		-96.081389	65.018333	Successful deterrence		No		Not Exceeded
Mine & Pit	2022-07-30 16:06	No					NA					NA	NA					
Incidental	2022-08-01 5:00	Yes	Wolf	1	Walking	SE	0				Wolf reported walking on the push back parking by a LHT driver to the dispatch.	-96.002169	65.051123			No		Not Exceeded
Incidental	2022-08-01 9:00	Yes	Wolf	10	Feeding	N/A	250				South cell, bottom of the ramp near the landfarm.	-96.061111	65.031111	Successful deterrence		No		Not Exceeded
Mine & Pit	2022-08-05 9:16	Yes	Muskox	1	Foraging	W	200		West	No		-96.101111	65.046389			No		Not Exceeded
Mine & Pit	2022-08-05 9:16	Yes	Sandhill crane	2	Walking	N/A	75			No		-96.081389	65.018333			No		Not Exceeded
Mine & Pit	2022-08-05 9:16	Yes	Caribou	1	Feeding	N/A	50		West	No		-96.081389	65.018333			No		Not Exceeded
Mine & Pit	2022-08-05 9:16	Yes	Canada goose	8	Resting	N/A	50		East	No		-96.081389	65.018333			No		Not Exceeded
Mine & Pit	2022-08-12 16:21	No					NA					NA	NA					
Mine & Pit	2022-08-17 15:36	Yes	Canada goose	13	Resting	N/A	20		West	No		-96.076667	65.039167			No		Not Exceeded
Mine & Pit	2022-08-17 15:36	Yes	Canada goose	23	Resting	N/A	25		West	No	Little bit further down the road north cell	-96.076667	65.039167			No		Not Exceeded
Mine & Pit	2022-08-19 13:58	No					NA					NA	NA					
Mine & Pit	2022-08-26 15:25	Yes	Caribou	5	Foraging	N/A	350		West	No		-96.07	65.02			No		Not Exceeded
Mine & Pit	2022-09-03 8:54	No					NA					NA	NA					
Mine & Pit	2022-09-12 8:27	Yes	Muskox	2	Feeding	Not Recorded	80		East	No		-96.003611	65.075			No		Not Exceeded
Mine & Pit	2022-09-12 8:27	Yes	Muskox	1	Feeding	Not Recorded	50		West	No	50m away	-96.003611	65.075			No		Not Exceeded
Mine & Pit	2022-10-01 15:28	No					NA					NA	NA					
Incidental	2022-10-02 16:45	Yes	Wolverine	1	Alert	N/A	NA		East			-96.044503	65.041782	Successful deterrence		No		Not Exceeded
Mine & Pit	2022-10-08 7:35	No					NA					NA	NA					
Incidental	2022-10-12 15:30	Yes	Wolverine	1	Walking	N/A	NA		South			-96.054444	65.033333	Successful deterrence		No		Not Exceeded
Mine & Pit	2022-10-16 10:00	No					NA					NA	NA					
Mine & Pit	2022-10-29 14:36	No					NA					NA	NA					
Mine & Pit	2022-11-05 15:21	No					NA					NA	NA					
Incidental	2022-11-10 5:20	Yes	Wolverine	1	Walking	N/A	NA		South		Mill sea-can segregation. Between mill and main camp.. Wolverine call from the mill (Robert) at 5:20am. Environment did a tour inspection and did not observed the wolverine.	-96.07	65.02			No		Not Exceeded
Incidental	2022-11-12 2:45	Yes	Wolverine	1	Walking	Not Recorded	NA		West		Site service coverall In and around Bus18. Environment team went to the location of Bus 18 at 6:30 am but the bus was gone. On the way to AMQ.	-96.044503	65.041782			No		Not Exceeded
Mine & Pit	2022-11-12 14:30	Yes	Arctic fox	1	Walking	N/A	25		South	No	Walking around the garbage bin.	-96.0675	65.016111			No		Not Exceeded
Mine & Pit	2022-11-12 14:30	Yes	Arctic hare	1	Feeding	N/A	100		North	No	Close to the AIR PM station (DF-1).	-96.069722	65.011667			No		Not Exceeded

Table A-3: Wildlife Observations at Meadowbank Mine in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Mine & Pit	2022-11-12 14:30	Yes	Arctic fox	1	Alert	Not Recorded	100		North	No	Lanfarm □	-96.054444	65.033333			No	Not Exceeded	
Incidental	2022-11-13 8:15	Yes	Wolverine	1	Walking	S	NA		South		Walking close to the HAZMAT seacan. Environment staff was notified. Upon arrival, the wolverine was gone. The technician patrolled the area, the wolverine was not observed, only fresh tracks.	-96.0675	65.016111			No	Not Exceeded	
Incidental	2022-11-14 6:30	Yes	Wolverine	1	Walking	S	NA		South		On top of the incinerator yellow bin. Environment staff received a call. Upon arrival, the wolverine was gone. Tracks were observed on the ground. Environment did patrolled around the area. No daily light at that time.	-96.0675	65.016111			No	Not Exceeded	
Mine & Pit	2022-11-20 9:13	Yes	Arctic fox	1	Alert	N/A	0		North	N/A	Incinerator □	-96.0675	65.016111			No	Not Exceeded	
Mine & Pit	2022-11-23 14:20	Yes	Arctic fox	1	Trotting/running	N/A	20		East	No	Behind the incinerator.	-96.0675	65.016111			No	Not Exceeded	
Mine & Pit	2022-11-25 10:30	Yes	Muskox	5	Standing	N/A	1500		East	No	East side of the road at vault □	-96.003611	65.075			No	Not Exceeded	
Mine & Pit	2022-11-25 10:30	Yes	Wolverine	1	Trotting/running	E	0		East	Yes	Crossing the road right before vault □	-96.003611	65.075			No	Not Exceeded	
Incidental	2022-12-09 17:17	Yes	Wolverine	1	Walking	N/A	NA		East		SS coverall.	-96.044503	65.041782	Successful deterrence		No	Not Exceeded	
Incidental	2022-12-12 10:04	Yes	Wolverine	1	Walking	Not Recorded	NA		West		Walking on the road between incinerator and tank farm □	-96.0675	65.016111			No	Not Exceeded	
Incidental	2022-12-13 7:40	Yes	Wolverine	1	Foraging	NW	NA		West		Near the C-Cans and went behind the building after shooting bangers.	-96.0675	65.016111	Successful deterrence		No	Not Exceeded	
Incidental	2022-12-14 16:38	Yes	Wolverine	1	Walking	N/A	NA		West		C-Cans row.	-96.0675	65.016111	Successful deterrence		Yes - Seeing it everyday since the 8th	Not Exceeded	
Mine & Pit	2022-12-17 13:06	Yes	Arctic fox	1	Walking	S	0		South	Yes	In front of Assay Lab. Crossed the road to go in the tundra in front of the Assay Lab.	-96.07	65.021389			No	Not Exceeded	
Incidental	2022-12-20 8:12	Yes	Wolverine	2	Hiding	N/A	NA		North		WRF.	-96.054444	65.033333	Successful deterrence		Yes - Been getting calls for them and seen them alot	Not Exceeded	
Mine & Pit	2022-12-23 14:19	Yes	Arctic fox	1	Alert	N/A	20		West	No		-96.0675	65.016111			No	Not Exceeded	
Mine & Pit	2022-12-24 13:45	No					NA					NA	NA					

Table A-4: Wildlife Observations at Whale Tail Mine in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Mine & Pit	2022-01-01 13:10	No					NA					NA	NA					
Mine & Pit	2022-01-08 15:07	No					NA					NA	NA					
Mine & Pit	2022-01-13 14:00	No					NA					NA	NA					
Mine & Pit	2022-01-15 22:50	Yes	Arctic fox	1	Trotting/running	N	0		North,South,East,West	Yes	Close to lake A49	-96.702296	65.403912			Yes - Hard to say, a lot of tolerant foxes on site.	Not Exceeded	
Mine & Pit	2022-01-23 11:20	Yes	Arctic fox	1	Foraging	N/A	0		East	No	Landfill	-96.727918	65.409337			No	Not Exceeded	
Blast	2022-01-23 11:20	None					NA					NA	NA				Not Exceeded	
Blast	2022-01-27 10:50	None					NA					NA	NA				Not Exceeded	
Mine & Pit	2022-01-29 11:15	Yes	Caribou	10	Resting	N/A	350		East,West	N/A	Pad K (near the entrance to the WTHR) ~km179	-96.705273	65.40389			No	Not Exceeded	
Blast	2022-01-29 11:30	Wildlife observed	Caribou	10	Feeding	Not recorded,N/A	NA		East			-96.666564	65.401795				Not Exceeded	
Blast	2022-01-31 11:30	None					NA					NA	NA				Not Exceeded	
Blast	2022-02-02 9:00	None					NA					NA	NA				Not Exceeded	
Blast	2022-02-03 11:52	None					NA					NA	NA				Not Exceeded	
Mine & Pit	2022-02-05 10:27	Yes	Arctic fox	2	Running	W	0		North	Yes	Running away from site into tundra	-96.697302	65.403718			No	Not Exceeded	
Blast	2022-02-05 11:41	None					NA					NA	NA				Not Exceeded	
Blast	2022-02-06 10:28	None					NA					NA	NA				Not Exceeded	
Blast	2022-02-07 14:59	None					NA					NA	NA				Not Exceeded	
Mine & Pit	2022-02-12 11:00	No					NA					NA	NA				Not Exceeded	
Blast	2022-02-12 11:04	None					NA					NA	NA				Not Exceeded	
Blast	2022-02-13 11:20	None					NA					NA	NA				Not Exceeded	
Blast	2022-02-14 11:20	None					NA					NA	NA				Not Exceeded	
Blast	2022-02-15 11:25	None					NA					NA	NA				Not Exceeded	
Incidental	2022-02-16 6:20	Yes	Caribou	5	Foraging	N/A	NA		South			-96.705273	65.40389			No	Not Exceeded	
Mine & Pit	2022-02-19 9:07	Yes	Arctic fox	2	Foraging	N/A	0		North	No	Landfill	-96.705273	65.40389			Yes - Foxes around camp stay around pretty much all winter	Not Exceeded	
Blast	2022-02-20 11:25	None					NA					NA	NA				Not Exceeded	
Blast	2022-02-21 11:30	None					NA					NA	NA				Not Exceeded	
Mine & Pit	2022-02-26 13:30	No					NA					NA	NA				Not Exceeded	
Blast	2022-02-27 10:58	None					NA					NA	NA				Not Exceeded	
Blast	2022-02-28 10:43	None					NA					NA	NA				Not Exceeded	
Incidental	2022-02-28 11:00	Yes	Arctic fox	1	Walking		NA					-96.697302	65.403718			No	Not Exceeded	
Incidental	2022-03-01 10:00	Yes	Arctic fox	1	Dead		NA					-96.705273	65.40389		Project related	No	Not Exceeded	
Incidental	2022-03-05 8:50	Yes	Caribou	15	Walking		NA					-96.733436	65.395284			No	Not Exceeded	
Blast	2022-03-06 9:55	None					NA					NA	NA				Not Exceeded	
Mine & Pit	2022-03-06 12:45	No					NA					NA	NA				Not Exceeded	
Blast	2022-03-07 9:30	None					NA					NA	NA				Not Exceeded	
Mine & Pit	2022-03-11 13:25	No					NA					NA	NA				Not Exceeded	
Blast	2022-03-12 9:30	None					NA					NA	NA				Not Exceeded	
Incidental	2022-03-15 19:30	Yes	Arctic fox	1	Dead	N/A	0		South	N/A	An AEM employee found a dead Arctic Fox that appears to have been struck by a vehicle at the northwest side of the AMQ Warehouse in the middle of the road. The employee called his supervisor who then contacted the Environmental personnel to come and assess the carcass. Upon investigating the location and the carcass, it appears that the fox was struck by a vehicle. The carcass was removed and kept frozen at AMQ until further notice of the conservation officer at Baker Lake. A general reminder to all operators of vehicles/equipment to be aware of wildlife presence around site.	-96.002169	65.051123	No	Project related	No	Not Exceeded	
Incidental	2022-03-18 8:30	Yes	Arctic hare	1	Dead	N/A	NA		East		The carcass was pick up has much as possible, but fox and raven ate a good part of it	-96.691475	65.414668		Project related	No	Not Exceeded	
Blast	2022-03-20 7:54	None					NA					NA	NA				Not Exceeded	
Mine & Pit	2022-03-20 9:39	Yes	Arctic fox	2	Foraging	N	0		East	No	Landfill	-96.705273	65.40389			Yes - Same two foxes that stay near the landfill. Always two, always the same place and same interaction between them (playful, stay near one another, etc)	Not Exceeded	
Incidental	2022-03-21 9:24	Yes	Arctic fox	1	Resting	N	NA		East		The fox was sleeping but aware of our presence in observing him, when we moved around it would open an eye and watch our movements. Just as we were preparing to place orange delineators around his chosen resting location another fox showed up, and within about 30 seconds of the second foxes presence the first fox got up and scurried off. No visible injuries on the first fox, no limp or gait observed either.	-96.686323	65.405069	Deterrents did not succeed		Yes - We often see the same foxes in and around this location	Not Exceeded	
Mine & Pit	2022-03-26 10:45	Yes	Arctic fox	1	Foraging	N/A	0		East	No	Landfill	-96.727918	65.409337			Yes - Same fox that slays around the landfill area	Not Exceeded	
Mine & Pit	2022-03-26 10:45	Yes	Arctic fox	2	Foraging	N/A	0		West	No	Main maintenance shop	-96.67311	65.400877			No	Not Exceeded	
Blast	2022-03-26 10:45	None					NA				Blasted at 12:35	NA	NA				Not Exceeded	
Mine & Pit	2022-03-27 9:39	Yes	Arctic fox	3	Foraging	N/A	0		East	No	Yellow bin UG offices - Foraging in UG bins that were not properly segregated	-96.679148	65.406237			No	Not Exceeded	
Blast	2022-03-27 11:40	None					NA					NA	NA				Not Exceeded	
Incidental	2022-03-27 13:00	Yes	Caribou	2	Alert	E	NA		West		During the deployment of DF-6, two caribou started to follow me at 100m of distance. They follow me up to the station then started grazing around.	-96.697302	65.403718			No	Not Exceeded	
Blast	2022-03-30 16:30	None					NA					NA	NA				Not Exceeded	
Blast	2022-03-31 16:50	None					NA					NA	NA				Not Exceeded	
Incidental	2022-03-31 19:30	Yes	Wolf	2	Walking	SW	NA		West			-96.705273	65.40389	Successful deterrence		No	Not Exceeded	

Table A-4: Wildlife Observations at Whale Tail Mine in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Mine & Pit	2022-04-01 16:50	No					NA					NA	NA					
Incidental	2022-04-02 11:59	Yes	Caribou	11	Resting	N/A	NA		East		Whale Tale dike, west side of lake, about 200 meters from the mine road.	-96.686172	65.395689			No	Not Exceeded	
Blast	2022-04-02 17:05	None					NA					NA	NA					Not Exceeded
Incidental	2022-04-03 14:30	Wildlife observed	Caribou	5	Foraging	S	NA		South			-96.422798	65.226915					Not Exceeded
Incidental	2022-04-04 16:15	Yes	Arctic fox	2	Feeding	N/A	NA		North		IVR new ring road, they were eating the carcass of the dead caribou reported on 2022-04-03	-96.691475	65.414668	Successful deterrence		No	Not Exceeded	
Incidental	2022-04-04 18:00	Yes	Caribou	1	Dead		100		West	N/A		-96.691475	65.414668		Project non-related	No	Not Exceeded	
Incidental	2022-04-08 8:22	Yes	Arctic fox	2	Feeding	N/A	NA		North		IVR new ring road on the west side	-96.691475	65.414668	Successful deterrence		No	Not Exceeded	
Mine & Pit	2022-04-09 16:18	No					NA					NA	NA					
Blast	2022-04-09 16:18	None					NA					NA	NA					Not Exceeded
Mine & Pit	2022-04-12 8:00	No					NA					NA	NA					
Blast	2022-04-15 17:48	Wildlife observed	Caribou	5	Lying Down	N/A	NA		South			-96.722254	65.398732					Not Exceeded
Mine & Pit	2022-04-16 14:23	Yes	Caribou	14	Foraging	N/A	300		West	No	Near the Npag waste dump	-96.733436	65.395284			No	Not Exceeded	
Blast	2022-04-16 17:44	Wildlife observed	Caribou	14	Lying Down	N/A	NA		West			-96.664993	65.402751					Not Exceeded
Mine & Pit	2022-04-18 17:35	No					NA					NA	NA					
Incidental	2022-04-19 14:05	Yes	Caribou	13	Resting	N/A	NA		East			-96.733436	65.395284			Yes - Same individuals are hanging around the area since a couple of days now. Same numbers and place, no stress about mine activities	Not Exceeded	
Mine & Pit	2022-04-19 15:00	Yes	Arctic fox	1	Foraging	E	0		West	Yes		-96.697302	65.403718			No	Not Exceeded	
Incidental	2022-04-19 17:38	Yes	Caribou	14	Feeding	Not Recorded	NA		North		Just north of Mammoth dyke. Behavior monitoring done for this group as well	-96.736909	65.399224			No	Not Exceeded	
Incidental	2022-04-20 16:05	Yes	Caribou	13	Foraging	N/A	NA		West		On the otherside of the lake	-96.736909	65.399224			Yes - Same group that we saw for almost 4 days now. Same numbers and general location. They are migrating east	Not Exceeded	
Mine & Pit	2022-04-21 11:10	Yes	Caribou	6	Feeding	Not Recorded	100		South	No	On the edge on WTSE, between batch plant and ABF Construction pad.100	-96.677967	65.396986			No	Not Exceeded	
Blast	2022-04-22 17:25	None					NA					NA	NA					Not Exceeded
Mine & Pit	2022-04-23 15:00	No					NA					NA	NA					
Mine & Pit	2022-04-24 13:44	Yes	Arctic fox	1	Alert	N/A	0		North	No		-96.705273	65.40389			No	Not Exceeded	
Blast	2022-04-24 17:57	Wildlife observed	Caribou	7	Foraging	Not recorded	NA		North			-96.73042	65.400664					Not Exceeded
Blast	2022-04-25 16:59	None					NA					NA	NA					Not Exceeded
Blast	2022-04-26 17:09	None					NA					NA	NA					Not Exceeded
Mine & Pit	2022-04-27 16:09	Yes	Caribou	11	Resting	N/A	150		West	No		-96.691475	65.414668			No	Not Exceeded	
Blast	2022-04-28 16:30	None					NA					NA	NA					Not Exceeded
Blast	2022-04-29 19:11	Wildlife observed	Caribou	18	Foraging	W	NA		North			-96.666538	65.401747					Not Exceeded
Blast	2022-04-30 17:25	Wildlife observed	Caribou	22	Foraging	N/A	NA	143				-96.66652	65.40176					Not Exceeded
Blast	2022-05-02 7:45	Wildlife observed	Caribou	17	Resting	N/A	NA		East			-96.666731	65.401409					Not Exceeded
Mine & Pit	2022-05-05 11:45	No					NA					NA	NA					
Blast	2022-05-05 17:35	Wildlife observed	Caribou	20	Resting	N/A	NA		South			-96.696415	65.39651					Not Exceeded
Other	2022-05-07 10:34	Yes	Caribou	12	Foraging	N/A	NA					-96.719063	65.399334			No	Not Exceeded	
Mine & Pit	2022-05-07 13:15	Yes	Caribou	10	Foraging	N/A	200		South	No	Dyno road, by the the TEMP NPAG pad.	-96.733436	65.395284			No	Not Exceeded	
Mine & Pit	2022-05-07 13:15	Yes	Caribou	10	Foraging	N/A	15		East	No	Near road 35, by the pad K and the IVR WRSF.	-96.705273	65.40389			No	Not Exceeded	
Blast	2022-05-07 17:35	Wildlife observed	Caribou	10	Foraging	N/A	NA		East			-96.678881	65.406438					Not Exceeded
Blast	2022-05-08 15:56	Wildlife observed	Caribou	25	Feeding	N/A	NA		North			-96.666633	65.401439					Not Exceeded
Mine & Pit	2022-05-12 9:59	Yes	Arctic fox	1	Trotting/running	NE	0		South	Yes		-96.705273	65.40389			No	Not Exceeded	
Mine & Pit	2022-05-12 9:59	Yes	Arctic fox	1	Trotting/running	W	0		East	Yes	Near the ivr ring road, where dewatering stores their pipes	-96.66098	65.416987			No	Not Exceeded	
Mine & Pit	2022-05-12 9:59	Yes	Caribou	18	Resting	N/A	20		East	No	Near weather tower	-96.673157	65.406198			No	Not Exceeded	
Mine & Pit	2022-05-14 9:15	Yes	Arctic fox	1	Trotting/running	E	0		East	Deflection		-96.705273	65.40389			No	Not Exceeded	
Mine & Pit	2022-05-14 9:15	Yes	Arctic fox	1	Trotting/running	W	25		North	No		-96.705273	65.40389			No	Not Exceeded	
Incidental	2022-05-18 13:50	Yes	Caribou	3	Resting	N/A	NA		East		In the tundra between the road and landfill	-96.691475	65.414668			No	Not Exceeded	
Blast	2022-05-19 16:59	None					NA					NA	NA					Not Exceeded
Blast	2022-05-20 17:00	None					NA				IVR West & WT Phase 3	NA	NA					Not Exceeded
Mine & Pit	2022-05-21 13:54	Yes	Greater white-fronted goose	1	Flying	SW	0		East	Yes		-96.691475	65.414668			No	Not Exceeded	
Mine & Pit	2022-05-21 13:54	Yes	Arctic fox	1	Alert	N/A	0		East	No		-96.705273	65.40389			No	Not Exceeded	
Mine & Pit	2022-05-21 13:54	Yes	Common raven	1	Flying	S	0		East	Yes		-96.705273	65.40389			No	Not Exceeded	
Mine & Pit	2022-05-21 13:54	Yes	Arctic fox	1	Walking	NE	15		East	No		-96.727918	65.409337			No	Not Exceeded	
Blast	2022-05-21 17:00	None					NA					NA	NA					Not Exceeded
Blast	2022-05-22 16:36	None					NA					NA	NA					Not Exceeded
Blast	2022-05-23 16:59	None					NA					NA	NA					Not Exceeded
Blast	2022-05-24 16:58	None					NA					NA	NA					Not Exceeded
Blast	2022-05-25 17:30	None					NA					NA	NA					Not Exceeded
Blast	2022-05-26 6:22	None					NA				Second blast is in IVR West	NA	NA					Not Exceeded
Blast	2022-05-27 12:48	None					NA					NA	NA					Not Exceeded
Mine & Pit	2022-05-28 14:00	No					NA					NA	NA					
Blast	2022-05-29 17:20	None					NA					NA	NA					Not Exceeded
Blast	2022-05-31 18:51	None					NA					NA	NA					Not Exceeded
Blast	2022-06-01 16:50	None					NA					NA	NA					Not Exceeded
Blast	2022-06-02 17:24	None					NA					NA	NA					Not Exceeded
Incidental	2022-06-03 7:29	Yes	Caribou	27	Foraging	N/A	NA		East		East of Dyno Road. between the channel and Dyno plant.	-96.733436	65.395284			No	Exceeded	Call over radio to inform of Speed Restriction
Mine & Pit	2022-06-04 9:30	Yes	Canada goose	2	Feeding	Not Recorded	10		West	No	They were swimming and feeding at the same time.	-96.688746	65.416918			No	Not Exceeded	
Blast	2022-06-04 16:48	None					NA					NA	NA					Not Exceeded
Blast	2022-06-04 16:58	None					NA					NA	NA					Not Exceeded
Blast	2022-06-05 17:05	None					NA					NA	NA					Not Exceeded

Table A-4: Wildlife Observations at Whale Tail Mine in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Blast	2022-06-06 16:56	None					NA					NA	NA				Not Exceeded	
Mine & Pit	2022-06-08 10:17	Yes	Other	60	Flying	S	0			No	Goose. Flying in the sky	-96.697302	65.403718			No	Not Exceeded	
Mine & Pit	2022-06-08 10:17	Yes	Arctic hare	1	Running	N	0		North	Yes		-96.705273	65.40389			No	Not Exceeded	
Blast	2022-06-09 16:52	None					NA					NA	NA				Not Exceeded	
Blast	2022-06-10 17:00	None					NA					NA	NA				Not Exceeded	
Mine & Pit	2022-06-11 15:28	Yes	Common raven	1	Flying	N	0		North	Yes		-96.705273	65.40389			No	Not Exceeded	
Blast	2022-06-12 16:30	None					NA					NA	NA				Not Exceeded	
Incidental	2022-06-14 11:40	Yes	Caribou	8	Lying Down	Not Recorded	NA		South		The caribou were located on the south side of Dyno road in an open field, about 500m east of the Dyno plant.	-96.733436	65.395284			No	Not Exceeded	
Incidental	2022-06-14 15:59	Yes	Caribou	10	Resting	Not Recorded	NA		South		The caribou were ~1km south of the main camp, on the eastern side of WTSE lake	-96.686172	65.395689			No	Not Exceeded	
Incidental	2022-06-14 16:05	Yes	Caribou	11	Resting	Not Recorded	NA		South		The caribou are resting at the base of the hill on the south side of main camp along the eastern shore of WTSE lake.	-96.686172	65.395689			No	Not Exceeded	
Incidental	2022-06-14 16:51	Yes	Caribou	5	Lying Down	Not Recorded	NA		South		The caribou were resting on east side of the camp	-96.697302	65.403718			No	Not Exceeded	
Blast	2022-06-14 17:37	Wildlife observed	Caribou	18	Foraging		NA		South			-96.665359	65.400635				Not Exceeded	
Mine & Pit	2022-06-15 13:37	No					NA					NA	NA					
Mine & Pit	2022-06-18 10:45	No					NA					NA	NA					
Blast	2022-06-18 16:45	None					NA				IVR 2 & WT Pit blast	NA	NA				Not Exceeded	
Blast	2022-06-21 7:50	None					NA					NA	NA				Not Exceeded	
Blast	2022-06-22 17:10	None					NA					NA	NA				Not Exceeded	
Mine & Pit	2022-06-25 9:30	No					NA					NA	NA					
Blast	2022-06-25 16:30	None					NA				IVR 2 & WT PIT PHASE 3	NA	NA				Not Exceeded	
Blast	2022-06-25 17:00	None					NA					NA	NA				Not Exceeded	
Blast	2022-06-26 17:00	None					NA					NA	NA				Not Exceeded	
Blast	2022-06-26 18:20	None					NA					NA	NA				Not Exceeded	
Blast	2022-06-28 17:00	None					NA					NA	NA				Not Exceeded	
Blast	2022-06-29 17:05	None					NA					NA	NA				Not Exceeded	
Blast	2022-07-01 17:15	None					NA					NA	NA				Not Exceeded	
Mine & Pit	2022-07-02 12:30	No					NA					NA	NA					
Blast	2022-07-02 16:00	None					NA					NA	NA				Not Exceeded	
Blast	2022-07-03 16:00	None					NA					NA	NA				Not Exceeded	
Blast	2022-07-06 16:43	None					NA					NA	NA				Not Exceeded	
Blast	2022-07-08 17:00	None					NA					NA	NA				Not Exceeded	
Blast	2022-07-08 17:04	None					NA					NA	NA				Not Exceeded	
Mine & Pit	2022-07-09 10:06	No					NA					NA	NA					
Blast	2022-07-09 17:00	None					NA					NA	NA				Not Exceeded	
Blast	2022-07-10 16:00	None					NA					NA	NA				Not Exceeded	
Mine & Pit	2022-07-13 9:12	No					NA					NA	NA					
Mine & Pit	2022-07-16 13:30	No					NA					NA	NA					
Blast	2022-07-20 17:13	None					NA					NA	NA				Not Exceeded	
Mine & Pit	2022-07-23 7:30	Yes	Caribou	1	Lying Down	N/A	0		South	Yes	First spotted near Sana Shop, then went to fuel farm. First seen by SS on Pad K. Had to chase it all the way to KM 177, then went back in the tundra.	-96.705273	65.40389			No	Not Exceeded	
Mine & Pit	2022-07-23 7:30	Yes	Crow	1	Alert	N/A	0		West	No		-96.669214	65.411909			No	Not Exceeded	
Mine & Pit	2022-07-23 7:30	Yes	Arctic hare	1	Running	S	0		South	No		-96.746986	65.384794			No	Not Exceeded	
Incidental	2022-07-23 8:45	Yes	Caribou	1	Walking	E	NA					-96.705273	65.40389			No	Not Exceeded	
Blast	2022-07-23 13:59	None					NA				None	NA	NA				Not Exceeded	
Incidental	2022-07-23 17:30	Yes	Caribou	1	Resting		NA				Report that the caribou fell from the top of the 0-3/4 pile down to a lower level. Env was called by aux supervisor. Env assessed the caribou from a distance. The caribou eventually stood up and walked into the tundra behind the WRSF	-96.66098	65.416987			No	Not Exceeded	
Blast	2022-07-24 16:55	None					NA				None	NA	NA				Not Exceeded	
Blast	2022-07-25 16:54	None					NA				None	NA	NA				Not Exceeded	
Mine & Pit	2022-07-28 15:40	Yes	Caribou	1	Running	W	0		West	Yes		-96.669214	65.411909			No	Not Exceeded	
Mine & Pit	2022-07-28 15:40	Yes	Caribou	1	Standing	N/A	50		East	No		-96.688746	65.416918			No	Not Exceeded	
Mine & Pit	2022-07-28 15:40	Yes	Caribou	1	Feeding	N	25		West	No		-96.691475	65.414668			No	Not Exceeded	
Mine & Pit	2022-07-28 15:40	Yes	Muskox	16	Resting	N/A	100		East	No	In tundra near Dyno explosives sea can	-96.746986	65.384794			No	Exceeded	They are more than 2km from operation traffic
Blast	2022-07-28 17:20	Wildlife observed	Caribou	1	Running		NA		North			-96.665879	65.402161				Not Exceeded	
Blast	2022-07-28 17:20	Wildlife observed	Muskox	16	Lying Down		NA		East			-96.665879	65.402161				Not Exceeded	
Blast	2022-07-29 16:51	None					NA					NA	NA				Not Exceeded	
Mine & Pit	2022-07-30 10:19	No					NA					NA	NA					
Incidental	2022-08-03 11:00	Yes	Caribou	2	Feeding	N/A	NA		West			-96.727918	65.409337			No	Not Exceeded	
Incidental	2022-08-03 13:12	Yes	Caribou	13	Feeding	N/A	NA		West			-96.669214	65.411909			No	Not Exceeded	
Incidental	2022-08-03 13:30	Yes	Caribou	1	Walking	N	NA		South			-96.688746	65.416918			No	Not Exceeded	
Blast	2022-08-03 16:44	Wildlife observed	Caribou	1	Feeding		NA		West			-96.666608	65.401489				Not Exceeded	
Blast	2022-08-03 16:44	Wildlife observed	Caribou	5	Alert		NA		West			-96.666608	65.401489				Not Exceeded	
Blast	2022-08-04 16:42	None					NA					NA	NA				Not Exceeded	
Incidental	2022-08-05 9:23	Yes	Caribou	1	Trotting/running	N	NA		North			-96.688746	65.416918			No	Not Exceeded	
Blast	2022-08-05 17:17	Wildlife observed	Caribou	1	Feeding		NA		South			-96.681423	65.403015				Not Exceeded	
Blast	2022-08-05 17:17	Wildlife observed	Caribou	1	Foraging		NA		North			-96.681423	65.403015				Not Exceeded	
Incidental	2022-08-05 17:48	Yes	Caribou	1	Alert	S	NA		North		across from the new fountain tire shop	-96.68064	65.404347			No	Not Exceeded	
Mine & Pit	2022-08-06 14:30	Yes	Caribou	3	Foraging	N/A	10		West	No	In the tundra between dyno plant and the mammoth dike	-96.733436	65.395284			No	Not Exceeded	
Blast	2022-08-06 16:30	Wildlife observed	Caribou	1	Foraging		NA		North			-96.666641	65.401733	Successful deterrence			Not Exceeded	
Blast	2022-08-07 16:38	Wildlife observed	Caribou	1	Foraging		NA		North			-96.666618	65.401428				Not Exceeded	
Blast	2022-08-08 17:09	Wildlife observed	Caribou	1	Feeding		NA		West			-96.666665	65.401367	Successful deterrence			Not Exceeded	
Blast	2022-08-08 17:09	Wildlife observed	Caribou	1	Feeding		NA		East			-96.666665	65.401367				Not Exceeded	
Blast	2022-08-09 15:41	Wildlife observed	Caribou	5	Standing		NA		West			-96.693378	65.414856	Successful deterrence			Not Exceeded	

Table A-4: Wildlife Observations at Whale Tail Mine in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Blast	2022-08-09 15:41	Wildlife observed	Canada goose	8	Lying Down		NA		West			-96.693378	65.414856					Not Exceeded
Mine & Pit	2022-08-13 13:46	Yes	Caribou	3	Foraging	N/A	300		East	No		-96.688746	65.416918			No		Not Exceeded
Mine & Pit	2022-08-13 13:46	Yes	Caribou	1	Foraging	N/A	75		East	No		-96.727918	65.409337			No		Not Exceeded
Mine & Pit	2022-08-13 13:46	Yes	Caribou	1	Standing	N/A	0		North	N/A		-96.705273	65.40389			No		Not Exceeded
Mine & Pit	2022-08-13 13:46	Yes	Caribou	2	Walking	N	50		East	No		-96.746986	65.384794			No		Not Exceeded
Blast	2022-08-13 17:00	Wildlife observed	Caribou	3	Foraging		NA		East			-96.666515	65.401428					Not Exceeded
Blast	2022-08-13 17:00	Wildlife observed	Caribou	3	Foraging		NA		East			-96.666515	65.401428					Not Exceeded
Blast	2022-08-16 16:21	Wildlife observed	Caribou	4	Foraging		NA		West			-96.675163	65.398987					Not Exceeded
Blast	2022-08-16 16:21	Wildlife observed	Caribou	1	Foraging		NA		West			-96.675163	65.398987					Not Exceeded
Blast	2022-08-17 17:07	Wildlife observed	Caribou	1	Foraging		NA		North			-96.66654	65.401794					Not Exceeded
Blast	2022-08-17 17:07	Wildlife observed	Caribou	3	Foraging		NA		North,South			-96.66654	65.401794					Not Exceeded
Blast	2022-08-18 17:15	Wildlife observed	Caribou	2	Foraging		NA		South		IVR2 and IVR	-96.695437	65.397522					Not Exceeded
Blast	2022-08-18 17:15	Wildlife observed	Caribou	1	Foraging		NA		East		IVR2 and IVR	-96.695437	65.397522					Not Exceeded
Incidental	2022-08-19 15:09	Yes	Caribou	2	Lying Down	N/A	NA		West			-96.68938	65.402256			No		Not Exceeded
Blast	2022-08-19 17:11	Wildlife observed	Caribou	1	Feeding		NA		East			-96.662098	65.403076					Not Exceeded
Mine & Pit	2022-08-20 10:36	Yes	Caribou	2	Walking	N/A	100		East	No		-96.68938	65.402256			No		Not Exceeded
Mine & Pit	2022-08-20 10:36	Yes	Canada goose	6	Not recorded	N/A	300		South	No		-96.68938	65.402256			No		Not Exceeded
Mine & Pit	2022-08-20 10:36	Yes	Duck	6	Not recorded	N/A	300		South	No		-96.68938	65.402256			No		Not Exceeded
Mine & Pit	2022-08-20 10:36	Yes	Caribou	5	Lying Down	N/A	200		West	No		-96.727918	65.409337			No		Not Exceeded
Mine & Pit	2022-08-20 10:36	Yes	Caribou	3	Feeding	N/A	200		West	No		-96.736909	65.399224			No		Not Exceeded
Mine & Pit	2022-08-20 10:36	Yes	Caribou	2	Feeding	N/A	100		East	No		-96.733436	65.395284			No		Not Exceeded
Mine & Pit	2022-08-20 10:36	Yes	Caribou	12	Trotting/running	SE	0		North	Yes		-96.705273	65.40389			No		Not Exceeded
Mine & Pit	2022-08-20 10:36	Yes	Caribou	3	Trotting/running	SE	300		West	No		-96.733436	65.395284			No		Not Exceeded
Mine & Pit	2022-08-20 10:36	Yes	Bald Eagle	1	Flying	SE	100		West	No		-96.733436	65.395284			No		Not Exceeded
Mine & Pit	2022-08-20 10:36	Yes	Caribou	4	Feeding	N/A	100		West	No		-96.733436	65.395284			No		Not Exceeded
Mine & Pit	2022-08-20 10:36	Yes	Caribou	4	Feeding	N/A	100		East	No		-96.705273	65.40389			No		Not Exceeded
Mine & Pit	2022-08-20 10:36	Yes	Caribou	2	Lying Down	N/A	100		West	No		-96.672434	65.399507			No		Not Exceeded
Mine & Pit	2022-08-20 10:36	Yes	Caribou	1	Feeding	N/A	100		West	No		-96.697302	65.403718			No		Not Exceeded
Blast	2022-08-21 17:00	Wildlife observed	Caribou	4	Foraging		NA		North		In IVR 2 and WT PHASE 2	12.492049	41.890202					Not Exceeded
Blast	2022-08-22 17:30	Wildlife observed	Caribou	2	Feeding		NA		East			-96.666549	65.401733					Not Exceeded
Blast	2022-08-23 17:25	Wildlife observed	Caribou	5	Foraging		NA		North		IVR2	-96.694589	65.417297					Not Exceeded
Blast	2022-08-23 17:25	Wildlife observed	Caribou	2	Foraging		NA		North		IVR2	-96.694589	65.417297					Not Exceeded
Blast	2022-08-24 16:55	Wildlife observed	Caribou	1	Feeding		NA		East			-96.666495	65.401428					Not Exceeded
Blast	2022-08-24 16:55	Wildlife observed	Caribou	1	Lying Down		NA		West			-96.666495	65.401428					Not Exceeded
Blast	2022-08-25 16:52	Wildlife observed	Caribou	4	Feeding		NA		West			-96.666367	65.401733					Not Exceeded
Blast	2022-08-25 16:52	Wildlife observed	Caribou	3	Feeding		NA		West			-96.666367	65.401733					Not Exceeded
Blast	2022-08-26 16:53	Wildlife observed	Caribou	1	Feeding		NA		North			-96.666614	65.401428					Not Exceeded
Blast	2022-08-26 16:53	Wildlife observed	Caribou	9	Feeding		NA		East,West			-96.666614	65.401428					Not Exceeded
Blast	2022-08-26 16:57	Wildlife observed	Caribou	1	Feeding		NA		South			-96.666386	65.401733					Not Exceeded
Blast	2022-08-26 16:57	Wildlife observed	Caribou	3	Lying Down		NA		East			-96.666386	65.401733					Not Exceeded
Mine & Pit	2022-08-27 14:39	Yes	Caribou	3	Feeding	N/A	500		East	No		-96.705273	65.40389			No		Not Exceeded
Mine & Pit	2022-08-27 14:39	Yes	Caribou	3	Feeding	N/A	25		East	No		-96.673157	65.406198			No		Not Exceeded
Mine & Pit	2022-08-27 14:39	Yes	Caribou	4	Walking	S	0		South	Yes		-96.68938	65.402256			No		Not Exceeded
Mine & Pit	2022-08-27 14:39	Yes	Caribou	1	Feeding	N/A	100		West	No		-96.733436	65.395284			No		Not Exceeded
Mine & Pit	2022-08-27 14:39	Yes	Caribou	6	Feeding	N/A	25		East	No		-96.727918	65.409337			No		Not Exceeded
Mine & Pit	2022-08-27 14:39	Yes	Caribou	3	Feeding	N/A	100		East	No		-96.727918	65.409337			No		Not Exceeded
Mine & Pit	2022-08-27 14:39	Yes	Caribou	3	Feeding	N/A	100		East	No		-96.727918	65.409337			No		Not Exceeded
Mine & Pit	2022-08-27 14:39	Yes	Caribou	2	Feeding	N/A	50		East	No		-96.727918	65.409337			No		Not Exceeded
Mine & Pit	2022-08-27 14:39	Yes	Arctic fox	1	Running	N/A	0		North	Yes		-96.688746	65.416918			No		Not Exceeded
Blast	2022-08-27 16:50	Wildlife observed	Caribou	3	Walking		NA		West			-96.682821	65.405151					Not Exceeded
Blast	2022-08-28 17:06	Wildlife observed	Caribou	1	Feeding		NA		West			-96.676823	65.399658					Not Exceeded
Blast	2022-08-28 17:06	Wildlife observed	Caribou	1	Feeding		NA		West			-96.676823	65.399658					Not Exceeded
Incidental	2022-08-30 15:43	Yes	Caribou	8	Foraging	E	NA		South		In the field south of main camp, near Orbit garage	-96.697302	65.403718			No		Not Exceeded
Incidental	2022-08-30 15:50	Yes	Canada goose	4	Resting	Not Recorded	NA		South			-96.68938	65.402256			No		Not Exceeded
Incidental	2022-08-30 15:56	Yes	Caribou	2	Feeding	Not Recorded	NA		South			-96.733436	65.395284			No		Not Exceeded
Incidental	2022-08-30 16:22	Yes	Caribou	5	Feeding	Not Recorded	NA		South		South side of WT WRSF, near WRSF dyke	-96.727918	65.409337			No		Not Exceeded
Incidental	2022-08-31 7:15	Yes	Caribou	8	Feeding	E	NA		South		In the tundra spot down fountain tire and FWTP	-96.677967	65.396986			No		Not Exceeded
Incidental	2022-08-31 7:40	Yes	Caribou	2	Feeding	E	NA		South		Between WRSF IVR and IVR attenuation pond	-96.673157	65.406198			No		Not Exceeded
Incidental	2022-08-31 7:45	Yes	Caribou	3	Walking	W	NA		South			-96.686172	65.395689			No		Not Exceeded
Incidental	2022-08-31 11:24	Yes	Caribou	1	Lying Down	N/A	NA		East		Superhighway waste dump small spot of tundra	-96.691475	65.414668			No		Not Exceeded
Incidental	2022-08-31 11:36	Yes	Caribou	5	Feeding	N/A	NA		East			-96.733436	65.395284			No		Not Exceeded
Blast	2022-08-31 17:13	Wildlife observed	Caribou	6	Foraging		NA		East			-96.680141	65.407104					Not Exceeded
Blast	2022-08-31 17:13	Wildlife observed	Caribou	1	Feeding		NA		East			-96.680141	65.407104					Not Exceeded
Blast	2022-09-02 17:24	Wildlife observed	Caribou	5	Resting		NA		North		Mass pattern	-96.666574	65.401428					Not Exceeded
Blast	2022-09-02 17:24	Wildlife observed	Caribou	3	Feeding		NA		North		Mass pattern	-96.666574	65.401428					Not Exceeded
Mine & Pit	2022-09-03 11:12	Yes	Caribou	1	Walking	S	0		North	Yes	In between IVR WRSF and UG shop, crossing the IVR att. Pond access road.	-96.673157	65.406198			No		Not Exceeded
Mine & Pit	2022-09-03 11:12	Yes	Caribou	3	Foraging	N/A	5		North	No		-96.669214	65.411909			No		Not Exceeded
Mine & Pit	2022-09-03 11:12	Yes	Caribou	3	Foraging	N/A	75		North	No		-96.691475	65.414668			No		Not Exceeded
Mine & Pit	2022-09-03 11:12	Yes	Caribou	3	Foraging	Not Recorded	2503		South	No		-96.733436	65.395284			No		Not Exceeded
Mine & Pit	2022-09-10 13:00	Yes	Caribou	4	Foraging	N/A	10		East,West	No	Between att. pond and maintenance	-96.673157	65.406198			No		Not Exceeded
Mine & Pit	2022-09-10 13:00	Yes	Arctic fox	1	Foraging	N/A	25		West	No	Between att. pond and maintenance	-96.673157	65.406198			No		Not Exceeded
Mine & Pit	2022-09-10 13:00	Yes	Caribou	5	Foraging	N/A	20		East	No	Seen on the 2022-09-10	-96.688746	65.416918			No		

Table A-4: Wildlife Observations at Whale Tail Mine in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Incidental	2022-09-23 13:28	Yes	Arctic fox	1	Milling	Not Recorded	NA		South		In between the main truck shop and Amq warehouse. The fox appears to have an injured front left paw, mostly moves around on 3 legs	-96.67311	65.400877			No	Not Exceeded	
Incidental	2022-09-23 15:15	Yes	Arctic fox	1	Trotting/running	Not Recorded	NA		South		Healthy winter fur, looks well fed.	-96.697302	65.403718			No	Not Exceeded	
Blast	2022-09-23 17:03	Wildlife observed	Caribou	4	Foraging		NA		East			-96.666565	65.401428				Not Exceeded	
Blast	2022-09-23 17:03	Wildlife observed	Muskox	1	Foraging		NA		South, West			-96.666565	65.401428				Not Exceeded	
Blast	2022-09-24 17:08	Wildlife observed	Caribou	4	Alert		NA		North			-96.666547	65.401428				Not Exceeded	
Blast	2022-09-24 17:08	Wildlife observed	Caribou	2	Trotting/running		NA		South			-96.666547	65.401428				Not Exceeded	
Mine & Pit	2022-09-25 11:00	Yes	Caribou	15	Foraging	N/A	200		West	No		-96.733436	65.395284			No	Not Exceeded	
Mine & Pit	2022-09-25 11:00	Yes	Caribou	1	Foraging	N/A	300		South	No		-96.705273	65.40389			No	Not Exceeded	
Blast	2022-09-26 16:41	Wildlife observed	Caribou	6	Foraging		NA		North			-96.666523	65.401672				Not Exceeded	
Blast	2022-09-26 16:41	Wildlife observed	Caribou	4	Lying Down		NA		South			-96.666523	65.401672				Not Exceeded	
Blast	2022-09-28 16:52	Wildlife observed	Caribou	6	Foraging		NA		South			-96.666168	65.402222				Not Exceeded	
Blast	2022-09-29 17:20	Wildlife observed	Caribou	7	Foraging		NA		South			-96.714792	65.412109				Not Exceeded	
Blast	2022-09-30 17:14	None					NA					NA	NA				Not Exceeded	
Mine & Pit	2022-10-01 11:22	Yes	Ptarmigan	2	Feeding	Not Recorded	7		North	No		-96.727918	65.409337			No	Not Exceeded	
Blast	2022-10-02 17:03	None					NA					NA	NA				Not Exceeded	
Blast	2022-10-04 17:00	Wildlife observed	Caribou	5	Feeding		NA		North			-96.666586	65.401489				Not Exceeded	
Blast	2022-10-05 17:00	None					NA					NA	NA				Not Exceeded	
Blast	2022-10-06 17:00	None					NA					NA	NA				Not Exceeded	
Blast	2022-10-06 17:01	None					NA					NA	NA				Not Exceeded	
Mine & Pit	2022-10-08 14:15	No					NA					NA	NA				Not Exceeded	
Blast	2022-10-08 17:00	None					NA				IVR2 and WT Phase 3	NA	NA				Not Exceeded	
Blast	2022-10-12 17:05	None					NA					NA	NA				Not Exceeded	
Blast	2022-10-13 17:00	None					NA					NA	NA				Not Exceeded	
Blast	2022-10-15 18:15	None					NA				Both IVR & WT P3	NA	NA				Not Exceeded	
Mine & Pit	2022-10-16 14:30	No					NA					NA	NA				Not Exceeded	
Blast	2022-10-16 18:15	None					NA					NA	NA				Not Exceeded	
Blast	2022-10-17 16:30	None					NA					NA	NA				Not Exceeded	
Blast	2022-10-18 16:17	None					NA					NA	NA				Not Exceeded	
Blast	2022-10-19 16:10	None					NA					NA	NA				Not Exceeded	
Blast	2022-10-20 16:18	None					NA					NA	NA				Not Exceeded	
Blast	2022-10-21 16:50	None					NA					NA	NA				Not Exceeded	
Mine & Pit	2022-10-22 10:45	No					NA					NA	NA				Not Exceeded	
Blast	2022-10-22 17:27	None					NA				WT and IVR	NA	NA				Not Exceeded	
Blast	2022-10-23 17:15	None					NA					NA	NA				Not Exceeded	
Blast	2022-10-24 16:46	None					NA				Mass blast and sump	NA	NA				Not Exceeded	
Blast	2022-10-26 16:18	None					NA					NA	NA				Not Exceeded	
Blast	2022-10-27 17:00	None					NA				Phase 1	NA	NA				Not Exceeded	
Blast	2022-10-28 16:30	None					NA					NA	NA				Not Exceeded	
Mine & Pit	2022-10-29 12:52	No					NA					NA	NA				Not Exceeded	
Blast	2022-10-30 16:17	None					NA					NA	NA				Not Exceeded	
Blast	2022-10-31 16:27	Wildlife observed	Arctic fox	1	Trotting/running		NA		West			-96.666998	65.401611				Not Exceeded	
Blast	2022-11-01 16:39	None					NA					NA	NA				Not Exceeded	
Blast	2022-11-02 16:38	None					NA					NA	NA				Not Exceeded	
Blast	2022-11-03 16:45	None					NA					NA	NA				Not Exceeded	
Blast	2022-11-04 16:46	None					NA				Blast also in phase 3	NA	NA				Not Exceeded	
Mine & Pit	2022-11-05 13:06	Yes	Arctic fox	1	Trotting/running	N	10			No		-96.679148	65.406237			No	Not Exceeded	
Mine & Pit	2022-11-05 13:06	Yes	Arctic fox	1	Trotting/running	E	0			Yes		-96.727918	65.409337			No	Not Exceeded	
Mine & Pit	2022-11-05 13:06	Yes	Caribou	1	Foraging	N/A	50		East	No		-96.733436	65.395284			No	Not Exceeded	
Blast	2022-11-05 16:32	None					NA					NA	NA				Not Exceeded	
Blast	2022-11-07 16:15	None					NA					NA	NA				Not Exceeded	
Incidental	2022-11-08 11:25	Yes	Arctic hare	1	Dead	N/A	NA				On Road 7 near entrance to IVR 2.	-96.708242	65.407475	Successful deterrence	Project related	No	Not Exceeded	
Blast	2022-11-08 16:10	None					NA				IVR 2 & Phase 3	NA	NA				Not Exceeded	
Blast	2022-11-09 16:38	Wildlife observed	Caribou	1	Foraging		NA					-96.736511	65.397663				Not Exceeded	
Mine & Pit	2022-11-10 15:05	Yes	Caribou	1	Foraging	N/A	50		North, East	No	Close to the Mammoth discharge.	-96.733436	65.395284			No	Not Exceeded	
Blast	2022-11-10 15:55	None					NA					NA	NA				Not Exceeded	
Blast	2022-11-11 15:50	None					NA					NA	NA				Not Exceeded	
Blast	2022-11-12 15:45	None					NA					NA	NA				Not Exceeded	
Blast	2022-11-13 15:40	None					NA					NA	NA				Not Exceeded	
Incidental	2022-11-14 10:35	Yes	Caribou	1	Foraging	N/A	NA		North, West		Close to the dyno plant.	-96.733436	65.395284			No	Not Exceeded	
Blast	2022-11-14 15:45	None					NA					NA	NA				Not Exceeded	
Blast	2022-11-15 15:35	None					NA					NA	NA				Not Exceeded	
Blast	2022-11-16 15:35	None					NA				In WT phase 3 and IVR 2	NA	NA				Not Exceeded	
Blast	2022-11-17 16:43	None					NA					NA	NA				Not Exceeded	
Blast	2022-11-18 15:25	None					NA				Blast in WT phase 3 and IVR2	NA	NA				Not Exceeded	
Blast	2022-11-19 14:55	None					NA				Ramp shot	NA	NA				Not Exceeded	
Mine & Pit	2022-11-19 15:30	Yes	Arctic fox	1	Trotting/running	N	0		North	No	Near the warehouse front entrance. Very healthy looking fox, thick coat.	-96.697302	65.403718			No	Not Exceeded	
Blast	2022-11-20 3:30	None					NA				Very bad visibility - high winds	NA	NA				Not Exceeded	
Incidental	2022-11-22 11:55	Yes	Wolverine	1	Walking	E	NA		East		Behind wing 26.	-96.697302	65.403718	Successful deterrence		No	Not Exceeded	
Blast	2022-11-23 14:55	None					NA				Preshear blast	NA	NA				Not Exceeded	
Blast	2022-11-24 15:23	None					NA				Mass blast	NA	NA				Not Exceeded	
Mine & Pit	2022-11-25 9:49	Yes	Arctic fox	1	Foraging	N/A	0		West	No	In front of the shop.	-96.679148	65.406237			No	Not Exceeded	
Mine & Pit	2022-11-25 9:49	Yes	Arctic fox	1	Trotting/running	S	25		East	No	Close to the intake.	-96.688746	65.416918			No	Not Exceeded	
Blast	2022-11-25 14:47	None					NA				Mass blast	NA	NA				Not Exceeded	
Blast	2022-11-26 14:30	None					NA				Mass blast	NA	NA				Not Exceeded	
Mine & Pit	2022-11-26 15:47	Yes	Arctic fox	2	Alert	Not Recorded	10		East	No	In/around the red general waste bin.	-96.679148	65.406237			No	Not Exceeded	
Mine & Pit	2022-11-26 15:47	Yes	Arctic fox	1	Walking	W	0		South	No		-96.708242	65.407475			No	Not Exceeded	
Blast	2022-11-27 14:38	None					NA				Mass blast	NA	NA				Not Exceeded	
Blast	2022-11-28 14:45	None					NA					NA	NA				Not Exceeded	
Blast	2022-11-28 15:17	None					NA					NA	NA				Not Exceeded	
Blast	2022-11-29 14:25	None					NA					NA	NA				Not Exceeded	
Mine & Pit	2022-11-30 10:54	Yes	Arctic fox	1	Walking	S	0		North	Yes	Orbit Garant area.	-96.672434	65.399507			No	Not Exceeded	

Table A-4: Wildlife Observations at Whale Tail Mine in 2022

Survey Type	Date/Time	Wildlife Observation	Species	Number	Behavior	Travel Direction	Distance	KM Marker	Side of Rd	Crossing	Observation Comments	x coord	y coord	Deterrence	Project Related Mortality	Tolerance	Group Threshold	Mitigation
Blast	2022-11-30 14:35	None					NA					NA	NA				Not Exceeded	
Mine & Pit	2022-12-01 10:15	Yes	Arctic fox	1	Walking	S	0		East	Yes	West of UG maintenance shop at the 4 stop road intersection.	-96.679148	65.406237			No	Not Exceeded	
Mine & Pit	2022-12-01 10:15	Yes	Arctic fox	2	Trotting/running	SW	0		West	Yes	Transit pad.	-96.705273	65.40389			No	Not Exceeded	
Blast	2022-12-01 15:15	None					NA					NA	NA				Not Exceeded	
Blast	2022-12-02 14:42	None					NA				Blast at phase 1 and phase 3	NA	NA				Not Exceeded	
Mine & Pit	2022-12-02 14:46	No					NA					NA	NA				Not Exceeded	
Blast	2022-12-03 14:52	None					NA					NA	NA				Not Exceeded	
Blast	2022-12-06 14:53	None					NA					NA	NA				Not Exceeded	
Blast	2022-12-07 14:40	None					NA					NA	NA				Not Exceeded	
Blast	2022-12-08 14:40	None					NA				Also IVR on road 3	NA	NA				Not Exceeded	
Mine & Pit	2022-12-08 23:00	No					NA					NA	NA				Not Exceeded	
Blast	2022-12-09 14:40	None					NA					NA	NA				Not Exceeded	
Blast	2022-12-10 14:30	None					NA					NA	NA				Not Exceeded	
Blast	2022-12-11 18:15	None					NA				WT phase 1 and 3, IVR.	NA	NA				Not Exceeded	
Incidental	2022-12-13 8:30	Yes	Arctic fox	1	Dead	N/A	NA		East		Near the intersection of WT phase 3 ramp and WT ring road.	-96.702296	65.403912		Project related	No	Not Exceeded	
Blast	2022-12-14 14:30	None					NA					NA	NA				Not Exceeded	
Blast	2022-12-16 16:05	None					NA				Mass blast	NA	NA				Not Exceeded	
Mine & Pit	2022-12-17 11:20	No					NA					NA	NA				Not Exceeded	
Blast	2022-12-18 14:07	None					NA				Mass blast	NA	NA				Not Exceeded	
Blast	2022-12-19 14:23	None					NA				Mass blast	NA	NA				Not Exceeded	
Blast	2022-12-20 16:12	None					NA					NA	NA				Not Exceeded	
Blast	2022-12-21 13:30	None					NA				Mass blast	NA	NA				Not Exceeded	
Blast	2022-12-22 14:11	None					NA				Mass blast	NA	NA				Not Exceeded	
Incidental	2022-12-23 11:01	Yes	Arctic fox	1	Trotting/running	S	NA		South		Intersection of rd 22 and WT ring rd.	-96.733436	65.395284			No	Not Exceeded	
Incidental	2022-12-23 11:01	Yes	Arctic fox	1	Trotting/running	W	NA		West		Pad K.	-96.705273	65.40389			No	Not Exceeded	
Blast	2022-12-23 15:05	None					NA				Ramp shot	NA	NA				Not Exceeded	
Mine & Pit	2022-12-24 13:25	Yes	Caribou	8	Foraging	N	250		East	No	North of IVR WRSF.	-96.669214	65.411909			No	Not Exceeded	
Mine & Pit	2022-12-24 13:25	Yes	Arctic fox	1	Alert	N	20		West	No	Pit washroom parking.	-96.705273	65.40389			No	Not Exceeded	
Blast	2022-12-24 14:17	None					NA				Mass blast	NA	NA				Not Exceeded	
Blast	2022-12-27 14:46	None					NA					NA	NA				Not Exceeded	
Incidental	2022-12-28 9:34	Yes	Arctic fox	2	Trotting/running	W	NA		South		Near the Environmental offices.	-96.697302	65.403718			No	Not Exceeded	
Mine & Pit	2022-12-29 13:45	Yes	Arctic fox	1	Foraging	N/A	0		East	No	Between the maintenance shop and warehouse.	-96.67311	65.400877			No	Not Exceeded	
Blast	2022-12-29 13:45	None					NA					NA	NA				Not Exceeded	
Mine & Pit	2022-12-30 13:19	Yes	Arctic fox	1	Running	N	0		North	Yes	HASMAT.	-96.697302	65.403718			No	Not Exceeded	
Mine & Pit	2022-12-30 13:19	Yes	Arctic fox	2	Running	E	0		West	Yes	Near UG office.	-96.697302	65.403718			No	Not Exceeded	
Blast	2022-12-30 13:20	None					NA					NA	NA				Not Exceeded	
Mine & Pit	2022-12-31 13:20	No					NA					NA	NA				Not Exceeded	
Blast	2022-12-31 14:46	None					NA					NA	NA				Not Exceeded	

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, 2022

Date	Closure Status	Closure Hours	Cause for Restriction	Wildlife Observed	Number of Individuals Observed	Distance from Road	Monitoring Method	Monitoring Conducted			Convoy	Reason For Re-opening
								Viewshed Surveys	Road Surveys	Collaring Data Reviewed		
2022-01-01	Closed (24 hour)	24	Weather	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-01-02	Closed (24 hour)	24	Caribou	Caribou	164	750	Survey	N/A	1	N	N	N/A
2022-01-03	Closed (24 hour)	24	Weather	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-01-04	Closed (24 hour)	24	Weather	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-01-05	Closed (< 24 hour)	12	Weather	Caribou	25	500	Survey	N/A	1	Y	N	Good weather condition
2022-01-06	Open	0	N/A	Caribou	9	Unknown	Survey	N/A	1	Y	N	N/A
2022-01-07	Speed Restriction	0	Caribou	Caribou	33	900	Survey	N/A	1	Y	N	N/A
2022-01-08	Speed Restriction	0	Caribou/Muskox	Muskox/Caribou	15 / 48	400 / 2000	Survey	N/A	1	N	N	Caribou more then 1.5km from Road
2022-01-09	Speed Restriction	0	Caribou	Caribou	10	1000	Survey	N/A	1	N	N	Groups of Caribou under GST
2022-01-10	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-01-11	Speed Restriction	0	Muskox	Muskox	24	30	Survey	N/A	1	Y	N	N/A
2022-01-12	Open	0	N/A	Caribou	16	100	Incidental	N/A	1	N	N	N/A
2022-01-13	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-01-14	Speed Restriction	0	Muskox	Muskox	15	710	Survey	N/A	1	Y	N	N/A
2022-01-15	Closed (24 hour)	24	Weather	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-01-16	Closed (24 hour)	24	Weather	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-01-17	Closed (24 hour)	24	Weather	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-01-18	Closed (24 hour)	24	Weather	N/A	N/A	N/A	N/A	N/A	0	Y	N	N/A
2022-01-19	Closed (< 24 hour)	11	Caribou	Caribou	64	350	Incidental	N/A	1	Y	N	Groups of caribou under GST
2022-01-20	Closed (24 hour)	24	Weather	N/A	N/A	N/A	N/A	N/A	0	Y	N	N/A
2022-01-21	Closed (24 hour)	24	Weather	N/A	N/A	N/A	N/A	N/A	0	Y	N	N/A
2022-01-22	Closed (24 hour)	24	Weather	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-01-23	Closed (24 hour)	24	Weather	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-01-24	Closed (24 hour)	24	Weather	N/A	N/A	N/A	N/A	N/A	0	Y	N	N/A
2022-01-25	Closed (< 24 hour)	5.5	Weather	N/A	N/A	N/A	N/A	N/A	0	Y	N	Good weather condition
2022-01-26	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	Y	N	N/A
2022-01-27	Speed Restriction	0	Caribou	Caribou	15	0	Survey	N/A	1	Y	N	N/A
2022-01-28	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	Y	N	N/A
2022-01-29	Speed Restriction	0	Caribou	Caribou	10	25	Incidental	N/A	0	N	N	N/A
2022-01-30	Speed Restriction	0	Caribou	Caribou	27	75	Survey	N/A	1	N	N	N/A
2022-01-31	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	Y	N	N/A
2022-02-01	Closed (24 hour)	24	Weather	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-02-02	Closed (24 hour)	24	Weather	N/A	10	20	HTO observation	N/A	0	N	N	N/A
2022-02-03	Speed Restriction	0	Caribou	Caribou	80	50	Survey	N/A	0	N	N	Good weather condition
2022-02-04	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-02-05	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	Y	N	N/A
2022-02-06	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-02-07	Speed Restriction	0	Caribou	Caribou	60	N/A	HTO observation	N/A	0	N	N	N/A
2022-02-08	Closed (< 24 hour)	12	Weather	N/A	N/A	N/A	N/A	N/A	0	N	N	Good weather condition
2022-02-09	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-02-10	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-02-11	Speed Restriction	0	Caribou	Caribou	100	0	Survey	N/A	1	N	N	N/A
2022-02-12	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-02-13	Speed Restriction	0	Caribou	Caribou	42	50	Survey	N/A	1	N	N	N/A
2022-02-14	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	Y	N	N/A
2022-02-15	Speed Restriction	0	Caribou	Caribou	10	0	Survey	N/A	1	Y	Y	N/A
2022-02-16	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	Y	N	N/A
2022-02-17	Open	0	N/A	Caribou	17	300	Survey	N/A	1	Y	N	N/A
2022-02-18	Open	0	N/A	Caribou	25	140	Survey	N/A	1	Y	N	N/A
2022-02-19	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-02-20	Closed (< 24 hour)	1	Weather	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-02-21	Closed (< 24 hour)	3	Weather	N/A	N/A	N/A	N/A	N/A	0	N	N	Good weather condition
2022-02-22	Open	0	N/A	Caribou	15	150	Survey	N/A	1	Y	N	N/A
2022-02-23	Open	0	N/A	Caribou	1	100	Incidental	N/A	0	Y	N	N/A
2022-02-24	Open	0	N/A	Caribou	9	100	HTO observation	N/A	0	Y	N	N/A
2022-02-25	Speed Restriction	0	Caribou	Caribou	47	100	HTO observation / Survey	N/A	1	Y	N	N/A
2022-02-26	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-02-27	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-02-28	Open	0	N/A	Caribou	9	300	HTO observation	N/A	0	Y	N	N/A
2022-03-01	Open	0	N/A	Caribou	6	75	Survey	N/A	1	Y	N	N/A
2022-03-02	Open	0	N/A	Caribou	9	150	HTO observation	N/A	0	Y	N	N/A
2022-03-03	Closed (< 24 hour)	15	Weather	N/A	N/A	N/A	N/A	N/A	0	N	N	Good weather condition
2022-03-04	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	0	N/A
2022-03-05	Speed Restriction	0	Caribou	Caribou	33	100	Survey	N/A	1	N	N	N/A
2022-03-06	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-03-07	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-03-08	Closed (< 24 hour)	17.45	Weather	N/A	N/A	N/A	N/A	N/A	0	Y	N	N/A
2022-03-09	Closed (< 24 hour)	10	Weather	Caribou	4	20	Survey	N/A	1	Y	N	Good weather condition
2022-03-10	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-03-11	Open	0	N/A	N	N/A	N/A	Survey	N/A	1	Y	N	N/A
2022-03-12	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-03-13	Closed (< 24 hour)	13	Maintenance	N/A	N/A	N/A	N/A	N/A	0	N	N	Bridge back in service
2022-03-14	Closed (< 24 hour)	13	Maintenance	N	N/A	N/A	Survey	N/A	1	Y	N	Bridge back in service
2022-03-15	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	Y	N	N/A
2022-03-16	Closed (< 24 hour)	9	Weather	N/A	N/A	N/A	N/A	N/A	0	Y	N	Good weather condition
2022-03-17	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	Y	N	N/A

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, 2022

Date	Closure Status	Closure Hours	Cause for Restriction	Wildlife Observed	Number of Individuals Observed	Distance from Road	Monitoring Method	Monitoring Conducted			Convoy	Reason For Re-opening
								Viewshed Surveys	Road Surveys	Collaring Data Reviewed		
2022-03-18	Open	0	N/A	Caribou	2	148	Survey	N/A	1	Y	N	N/A
2022-03-19	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-03-20	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-03-21	Closed (< 24 hour)	2.5	Weather	N/A	N/A	N/A	N/A	N/A	0	Y	N	N/A
2022-03-22	Closed (< 24 hour)	12	Weather	N/A	N/A	N/A	N/A	N/A	0	Y	N	N/A
2022-03-23	Closed (< 24 hour)	12	Weather	N/A	N/A	N/A	N/A	N/A	0	Y	N	N/A
2022-03-24	Closed (< 24 hour)	7	Weather	N	0	N/A	Survey	N/A	1	Y	N	Good weather condition
2022-03-25	Closed (< 24 hour)	12	Weather	N/A	N/A	N/A	N/A	N/A	0	Y	N	N/A
2022-03-26	Closed (< 24 hour)	12	Weather	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-03-27	Closed (< 24 hour)	5.5	Weather	N/A	N/A	N/A	N/A	N/A	0	N	N	Good weather condition
2022-03-28	Open	0	N/A	Caribou	5	582	Survey	N/A	1	Y	N	N/A
2022-03-29	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	Y	N	N/A
2022-03-30	Open	0	N/A	Caribou	9	857	Survey	N/A	1	Y	N	N/A
2022-03-31	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	Y	N	N/A
2022-04-01	Open	0	N/A	Caribou	9	999	Survey	N/A	0	Y	N	N/A
2022-04-02	Open	0	N/A	Caribou	8	100	Survey	N/A	0	Y	N	N/A
2022-04-03	Closed (< 24 hour)	9	Caribou	Caribou	250	500	Survey	N/A	1	Y	N	N/A
2022-04-04	Closed (24 hour)	24	Caribou	Caribou	347	10	HTO observation / Survey	N/A	1	Y	N	N/A
2022-04-05	Closed (< 24 hour)	18	Caribou	N	0	N/A	Survey	N/A	1	Y	N	No caribou observed
2022-04-06	Open	0	N/A	Caribou	17	450	Survey	N/A	1	Y	N	N/A
2022-04-07	Open	0	N/A	Caribou	16	700	Survey	N/A	1	Y	N	N/A
2022-04-08	Speed Restriction	0	Muskox	Muskox	9	100	Survey	N/A	1	N	N	
2022-04-09	Closed (< 24 hour)	7.5	Caribou	Caribou	70	500	Incidental	N/A	1	N	N	
2022-04-10	Closed (24 hour)	24	Weather	N	0	N/A	Survey	N/A	1	N	N	
2022-04-11	Closed (< 24 hour)	9.5	Weather	Muskox	10	700	Survey	N/A	1	N	N	No caribou observed on the 10th
2022-04-12	Open	0	N/A	N	0	N/A	Survey	N/A	1	N	N	
2022-04-13	Open	0	N/A	N	0	N/A	Survey	N/A	1	N	N	
2022-04-14	Closed (< 24 hour)	8.75	Caribou	Caribou	63	150	Survey	N/A	1	Y	N	
2022-04-15	Closed (< 24 hour)	14.5	Caribou	Caribou	69	22	Survey	N/A	1	N	Y	No more caribou on the way back
2022-04-16	Open	0	N/A	N	0	N/A	Survey	N/A	1	N	N	
2022-04-17	Open	0	N/A	Muskox	11	50	Incidental	N/A	1	N	N	
2022-04-18	Closed (< 24 hour)	9.75	Caribou	Caribou	134	200	Incidental	N/A	1	N	N	No Caribou observed in the morning
2022-04-19	Closed (< 24 hour)	21.25	Caribou	Caribou	123	400	Incidental	N/A	1	Y	Y	No Caribou observed in the morning
2022-04-20	Closed (< 24 hour)	22	Caribou	Caribou	82	500	HTO observation / Survey	N/A	1	Y	Y	No Caribou observed in the morning
2022-04-21	Closed (< 24 hour)	10.5	Caribou	Caribou	16	0	Survey	N/A	1	Y	N	Groups below GST
2022-04-22	Speed Restriction	0	Caribou	Caribou	12	3	Survey	N/A	1	N	N	
2022-04-23	Speed Restriction	0	Caribou	Caribou	12	800	Survey	N/A	1	N	N	N/A
2022-04-24	Open	0	N/A	Muskox	11	275	Survey	N/A	1	N	N	
2022-04-25	Speed Restriction	0	Muskox	Muskox	38	1000	Incidental	N/A	1	N	N	
2022-04-26	Speed Restriction	0	Muskox	Muskox	30	400	Incidental	N/A	1	N	N	
2022-04-27	Speed Restriction	0	Muskox	Muskox	20	1600	Survey	N/A	1	Y	N	
2022-04-28	Closed (< 24 hour)	13.75	Caribou	Caribou	98	500	Survey	N/A	1	Y	N	
2022-04-29	Closed (< 24 hour)	16.75	Caribou	Caribou	38	350	HTO observation / Survey	N/A	1	Y	N	
2022-04-30	Speed Restriction	0	Caribou	Caribou	20	N/A	Survey	N/A	1	Y	N	
2022-05-01	Open	0	N/A	Caribou	7	200	Survey	N/A	1	Y	N	
2022-05-02	Closed (< 24 hour)	4.5	Caribou	Caribou	50	500	Survey	N/A	1	Y	N	Groups walk away from the road, not seen on the PM assessment
2022-05-03	Open	0	N/A	Muskox	24	200	HTO Observation	N/A	1	Y	N	N/A
2022-05-04	Speed Restriction	0	Caribou	Caribou	21	0	Incidental	N/A	1	N	N	
2022-05-05	Speed Restriction	0	Caribou	Caribou	18	500	Incidental	N/A	1	Y	N	
2022-05-06	Closed (< 24 hour)	6.5	Weather	Caribou	27	350	Survey	N/A	1	N	N	
2022-05-07	Closed (< 24 hour)	6.75	Weather	Caribou	31	200	Survey	N/A	1	N	N	
2022-05-08	Closed (24 hour)	24	Weather	N	0	N/A	N/A	N/A	N/A	N	N	N/A
2022-05-09	Closed (24 hour)	24	Weather	N	0	N/A	N/A	N/A	Y	N	N	N/A
2022-05-10	Closed (24 hour)	24	Weather	Caribou	3	50	HTO observation / Survey	N/A	N/A	Y	N	N/A
2022-05-11	Open	0	N/A	Caribou	20	450	Survey	N/A	1	Y	N	
2022-05-12	Speed Restriction	0	Caribou	Caribou	15	25	HTO observation / Survey	N/A	1	Y	N	
2022-05-13	Speed Restriction	0	Caribou	Caribou	17	300	HTO observation / Survey	N/A	1	Y	N	
2022-05-14	Open	0	N/A	Caribou	9	500	Survey	N/A	1	N	N	
2022-05-15	Speed Restriction	0	Caribou	Caribou	5	80	Incidental	N/A	1	N	N	
2022-05-16	Speed Restriction	0	Caribou	Caribou	27	175	Survey	N/A	1	Y	N	
2022-05-17	Speed Restriction	0	Caribou	Caribou	7	200	HTO observation / Survey	N/A	1	Y	N	
2022-05-18	Open	0	N/A	Caribou	9	850	Incidental	N/A	1	Y	N	
2022-05-19	Speed Restriction	0	Caribou	Caribou	22	250	Survey	N/A	1	Y	N	
2022-05-20	Open	0	N/A	Caribou	4	100	HTO observation / Survey	N/A	1	Y	N	
2022-05-21	Open	0	N/A	Muskox	4	150	Incidental	N/A	1	N	N	
2022-05-22	Open	0	N/A	N	N/A	N/A	Survey	N/A	1	N	N	
2022-05-23	Open	0	N/A	Muskox	6	250	Survey	N/A	1	N	N	
2022-05-24	Open	0	N/A	Muskox	4	200	Incidental	N/A	1	N	N	
2022-05-25	Open	0	N/A	Muskox	2	75	Survey	N/A	1	N	N	
2022-05-26	Open	0	N/A	Caribou	18	100	HTO observation	N/A	1	N	N	
2022-05-27	Open	0	N/A	Caribou	40	400	HTO observation / Survey	N/A	1	N	N	
2022-05-28	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	
2022-05-29	Open	0	N/A	Caribou	12	200	Incidental	N/A	1	N	N	
2022-05-30	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	1	N	N	
2022-05-31	Open	0	N/A	Muskox	12	300	Survey	N/A	1	N	N	
2022-06-01	Open	0	N/A	Caribou	17	200	Survey	N/A	0	N	N	

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, 2022

Date	Closure Status	Closure Hours	Cause for Restriction	Wildlife Observed	Number of Individuals Observed	Distance from Road	Monitoring Method	Monitoring Conducted			Convoy	Reason For Re-opening
								Viewshed Surveys	Road Surveys	Collaring Data Reviewed		
2022-06-02	Open	0	N/A	Muskox	57	200	HTO observation	N/A	0	N	N	
2022-06-03	Speed Restriction	0	Muskox	Muskox	60	350	Survey	N/A	1	N	N	
2022-06-04	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	
2022-06-05	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	
2022-06-06	Open	0	N/A	Caribou	5	200	HTO observation	N/A	0	Y	N	
2022-06-07	Open	0	N/A	Caribou	2	200	HTO observation / Survey	N/A	1	Y	N	
2022-06-08	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	Y	N	
2022-06-09	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	Y	N	
2022-06-10	Open	0	N/A	Y	10	60	Survey	N/A	1	Y	N	
2022-06-11	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	
2022-06-12	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	
2022-06-13	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	Y	N	
2022-06-14	Speed Restriction	0	Muskox	Muskox	16	10	Survey	N/A	1	Y	N	
2022-06-15	Open	0	N/A	Caribou	5	0	Survey	N/A	1	Y	N	
2022-06-16	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	Y	N	
2022-06-17	Speed Restriction	0	Muskox	Muskox	22	150	Survey	N/A	1	Y	N	
2022-06-18	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	
2022-06-19	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	Y	N	
2022-06-20	Closed (24 hour)	24	Maintenance	Caribou	1	100	Incidental	N/A	0	N	N	
2022-06-21	Closed (< 24 hour)	18	Maintenance	N/A	N/A	N/A	N/A	N/A	0	N	N	
2022-06-22	Open	0	N/A	Caribou	4	500	HTO observation / Survey	N/A	1	Y	N	
2022-06-23	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	
2022-06-24	Open	0	N/A	Muskox	3	200	Survey	N/A	1	Y	N	
2022-06-25	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	
2022-06-26	Open	0	N/A	Muskox	2	150	Incidental	N/A	0	N	N	
2022-06-27	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	
2022-06-28	Open	0	N/A	Muskox	8	500	Survey	N/A	1	N	N	
2022-06-29	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	
2022-06-30	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	
2022-07-01	Speed Restriction	0	Muskox	Muskox	17	25	Incidental	N/A	1	N	N	
2022-07-02	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	
2022-07-03	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	
2022-07-04	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	Y	N	
2022-07-05	Open	0	N/A	Muskox	2	30	Survey	N/A	1	Y	N	
2022-07-06	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	Y	N	
2022-07-07	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	Y	N	
2022-07-08	Open	0	N/A	Muskox	3	150	Survey	N/A	1	Y	N	
2022-07-09	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	
2022-07-10	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	
2022-07-11	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	Y	N	
2022-07-12	Speed Restriction	0	Muskox	Muskox	25	0	Baker Lake Dispatch	N/A	1	Y	N	
2022-07-13	Speed Restriction	0	Muskox	Muskox	18	N/A	Baker Lake Dispatch	N/A	0	Y	N	
2022-07-14	Speed Restriction	0	Muskox	Muskox	18	100	Survey	N/A	1	Y	N	
2022-07-15	Speed Restriction	0	Muskox	Muskox	40	N/A	Incidental	N/A	0	Y	N	
2022-07-16	Speed Restriction	0	Muskox	Muskox	13	20	Survey	N/A	1	Y	N	
2022-07-17	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	Y	N	
2022-07-18	Speed Restriction	0	Muskox	Muskox	15	15	Incidental	N/A	1	Y	N	
2022-07-19	Open	0	N/A	Muskox	12	20	Survey	N/A	1	Y	N	
2022-07-20	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	Y	N	
2022-07-21	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	Y	N	
2022-07-22	Speed Restriction	0	Caribou	Caribou	1	0	Survey	N/A	1	Y	N	
2022-07-23	Speed Restriction	0	Muskox	Muskox	7	300	Incidental	N/A	1	Y	N	
2022-07-24	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	Y	N	
2022-07-25	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	
2022-07-26	Speed Restriction	0	Muskox	Muskox	15	300	Survey	N/A	1	Y	N	
2022-07-27	Open	0	N/A	Muskox	5	500	Survey	N/A	1	Y	N	
2022-07-28	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	Y	N	
2022-07-29	Open	0	N/A	Muskox	33	700	HTO observation	N/A	1	Y	N	
2022-07-30	Closed (< 24 hour)	11.5	Caribou	Caribou	320	10	HTO observation / Survey	N/A	1	N	Y	
2022-07-31	Closed (24 hour)	24	Caribou	Caribou	200	Not recorded	Incidental	N/A	1	N	Y	
2022-08-01	Closed (< 24 hour)	17.5	Caribou	Caribou	96	500	HTO observation / Survey	N/A	1	Y	N	The biggest number of caribou observed (96) is below the fall GST of 110.
2022-08-02	Speed Restriction	0	Muskox	Muskox/Caribou	15 Muskox/13 Caribou	170/700	Survey	N/A	1	Y	N	
2022-08-03	Open	0	N/A	Caribou	5	300	Survey	N/A	1	Y	N	
2022-08-04	Open	0	N/A	Caribou	3	250	Survey	N/A	1	Y	N	
2022-08-05	Speed Restriction	0	Caribou	Caribou	68	100	HTO observation / Survey	N/A	1	Y	N	
2022-08-06	Speed Restriction	0	Caribou	Muskox/Caribou	1 Caribou/31 muskox	0/1500	Survey	N/A	1	N	N	N/A
2022-08-07	Speed Restriction	0	Caribou	Caribou	22	1500	Survey	N/A	1	N	N	N/A
2022-08-08	Speed Restriction	0	Caribou	Caribou	1	80	Survey	N/A	1	Y	N	N/A
2022-08-09	Speed Restriction	0	Muskox	Muskox	1	100	Survey	N/A	1	Y	N	N/A
2022-08-10	Speed Restriction	0	Caribou	Caribou	2	30	Survey	N/A	1	Y	N	N/A
2022-08-11	Speed Restriction	0	Caribou	Caribou	83	600	HTO observation / Survey	N/A	1	Y	N	N/A
2022-08-12	Speed Restriction	0	Caribou	Caribou	60	100	HTO observation / Survey	N/A	1	Y	N	N/A
2022-08-13	Speed Restriction	0	Caribou	Caribou	13	300	Survey	N/A	1	N	N	N/A
2022-08-14	Speed Restriction	0	Caribou	Caribou	6	70	Incidental	N/A	1	N	N	N/A
2022-08-15	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	Y	N	N/A
2022-08-16	Open	0	N/A	Caribou	1	0	Incidental	N/A	1	Y	N	N/A

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, 2022

Date	Closure Status	Closure Hours	Cause for Restriction	Wildlife Observed	Number of Individuals Observed	Distance from Road	Monitoring Method	Monitoring Conducted			Convoy	Reason For Re-opening
								Viewshed Surveys	Road Surveys	Collaring Data Reviewed		
2022-08-17	Speed Restriction	0	Caribou	Caribou	3	200	Survey	N/A	1	Y	N	N/A
2022-08-18	Open	0	N/A	Caribou	5	10	HTO observation	N/A	0	Y	N	N/A
2022-08-19	Open	0	N/A	Muskox	2	250	Survey	N/A	1	Y	N	N/A
2022-08-20	Speed Restriction	0	Muskox	Muskox	32	250	Survey	N/A	1	Y	N	N/A
2022-08-21	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	Y	N	N/A
2022-08-22	Speed Restriction	0	Muskox	Muskox	20	40	HTO observation / Survey	N/A	1	Y	N	N/A
2022-08-23	Speed Restriction	0	Caribou	Caribou	1	120	Survey	N/A	1	N	N	N/A
2022-08-24	Speed Restriction	0	Caribou	Caribou	4	50	HTO Observation	N/A	0	Y	N	N/A
2022-08-25	Speed Restriction	0	Muskox	Muskox	29	100	Incidental	N/A	1	Y	N	N/A
2022-08-26	Speed Restriction	0	Muskox	Muskox	23	500	Survey	N/A	1	Y	N	N/A
2022-08-27	Open	0	N/A	Muskox	8	0	Survey	N/A	1	N	N	N/A
2022-08-28	Open	0	N/A	Caribou	5	300	Survey	N/A	1	N	N	N/A
2022-08-29	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	Y	N	N/A
2022-08-30	Speed Restriction	0	Caribou	Caribou	2	65	Incidental	N/A	1	Y	N	N/A
2022-08-31	Speed Restriction	0	Caribou	Caribou & Muskox	6 Caribou14 Muskox	550350	Survey / Incidental	N/A	1	Y	N	N/A
2022-09-01	Speed Restriction	0	Caribou/Muskox	Caribou & Muskox	4 Caribou8 Muskox	aribou 100mMuskox 500m	Survey / Incidental	N/A	1	Y	N	N/A
2022-09-02	Speed Restriction	0	Caribou	Caribou & Muskox	1 Caribou 17 Muskox	aribou 25m Muskox 200m	Survey	N/A	1	Y	N	N/A
2022-09-03	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-09-04	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-09-05	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-09-06	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	Y	Y	N	N/A
2022-09-07	Speed Restriction	0	Muskox	Muskox	15	120	Survey	N/A	1	Y	N	N/A
2022-09-08	Speed Restriction	0	Muskox	Muskox	3	8	Incidental	N/A	1	Y	N	N/A
2022-09-09	Open	0	N/A	Muskox	9	550	Survey	N/A	1	N	N	N/A
2022-09-10	Speed Restriction	0	Muskox	Muskox	13	100	Survey	N/A	1	N	N	N/A
2022-09-11	Speed Restriction	0	Muskox	Muskox	18	800	Survey	N/A	1	Y	N	N/A
2022-09-12	Speed Restriction	0	Caribou	Caribou	98	400	HTO observation	N/A	0	Y	N	N/A
2022-09-13	Speed Restriction	0	Caribou	Caribou	101	100	HTO observation	N/A	0	N	N	N/A
2022-09-14	Speed Restriction	0	Caribou	Caribou	45	50	HTO observation	N/A	0	Y	N	N/A
2022-09-15	Speed Restriction	0	Not Specified	N/A	N/A	N/A	N/A	N/A	0	Y	N	N/A
2022-09-16	Speed Restriction	0	Muskox	Muskox	36	590	HTO observation / Survey	N/A	1	Y	N	N/A
2022-09-17	Open	0	N/A	Caribou	2	400	Survey	N/A	1	Y	N	N/A
2022-09-18	Open	0	N/A	Caribou	30	700	Survey	N/A	1	Y	N	N/A
2022-09-19	Speed Restriction	0	Caribou	Caribou	3	350	Survey	N/A	1	Y	N	N/A
2022-09-20	Open	0	N/A	Caribou	6	105	HTO observation	N/A	1	Y	N	N/A
2022-09-21	Speed Restriction	0	Caribou	Caribou	60	1200	HTO observation / Survey	N/A	1	Y	N	N/A
2022-09-22	Closed (< 24 hour)	0	Cyanide Convoy	Muskox	20	300	Survey	N/A	1	Y	N	N/A
2022-09-23	Closed (< 24 hour)	0	Cyanide Convoy	0	N/A	N/A	N/A	N/A	1	Y	N	N/A
2022-09-24	Open	0	N/A	0	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-09-25	Closed (< 24 hour)	0	Cyanide Convoy	Caribou	40	1100	Survey	N/A	1	N	N	N/A
2022-09-26	Closed (< 24 hour)	0	Cyanide Convoy	0	N/A	N/A	N/A	N/A	0	Y	N	N/A
2022-09-27	Open	0	N/A	Muskox	2	50	Survey	N/A	1	N	N	N/A
2022-09-28	Open	0	N/A	Caribou	67	300	HTO observation	N/A	1	N	N	N/A
2022-09-29	Speed Restriction	0	Caribou	Caribou	14	1000	Incidental	N/A	1	Y	N	N/A
2022-09-30	Open	0	N/A	Caribou	7	1500	Incidental	N/A	1	Y	N	N/A
2022-10-01	Closed (< 24 hour)	11.7	Weather	Caribou	30	3000	Survey	N/A	1	N	N	Better temperatruie
2022-10-02	Open	0	N/A	Caribou	5	600	Incidental	N/A	1	N	N	N/A
2022-10-03	Closed (< 24 hour)	11.7	Caribou	Caribou	128	150	HTO observation / Survey	N/A	1	N	N	
2022-10-04	Closed (24 hour)	24	Caribou	Caribou	224	1000	HTO observation / Survey	N/A	1	N	N	
2022-10-05	Closed (24 hour)	24	Caribou	Caribou	250	50	HTO observation / Incidental	N/A	1	N	N	N/A
2022-10-06	Closed (24 hour)	24	Caribou	Caribou	169	40	HTO observation / Survey	N/A	1	N	Y	N/A
2022-10-07	Closed (24 hour)	24	Caribou	Caribou	260	1200	Survey	N/A	1	N	N	N/A
2022-10-08	Closed (24 hour)	24	Caribou	Caribou	294	160	Survey	N/A	1	N	N	N/A
2022-10-09	Closed (< 24 hour)	9.13	Caribou	Caribou	96	100	Survey	N/A	1	N	N	N/A
2022-10-10	Speed Restriction	0	Caribou	Caribou	33	400	Survey	N/A	1	Y	N	N/A
2022-10-11	Speed Restriction	0	Caribou	Caribou	8	160	HTO Observation / Survey	N/A	1	Y	N	N/A
2022-10-12	Open	0	N/A	Caribou	18	250	Survey	N/A	1	Y	N	N/A
2022-10-13	Restricted Traffic	0	Weather	Caribou	30	250	Survey	N/A	0.5	Y	N	N/A
2022-10-14	Restricted Traffic	0	Weather	Caribou	0	N/A	N/A	N/A	1	Y	N	N/A
2022-10-15	Closed (< 24 hour)	12	Weather	N/A	0	N/A	N/A	N/A	0	N	N	Close all day
2022-10-16	Closed (< 24 hour)	18	Caribou	Caribou	200	2	Survey	N/A	1	Y	N	N/A
2022-10-17	Closed (< 24 hour)	9	Weather	Muskox	12	300	Survey	N/A	1	Y	N	Caribou below GST
2022-10-18	Speed Restriction	0	Caribou	Caribou	100	150	HTO observation / Survey	N/A	1	Y	N	N/A
2022-10-19	Speed Restriction	0	Caribou	Caribou	62	300	HTO Observation	N/A	1	Y	N	N/A
2022-10-20	Closed (< 24 hour)	15.63	Weather	N/A	N/A	N/A	N/A	N/A	0	Y	N	N/A
2022-10-21	Closed (< 24 hour)	7.75	Caribou	Caribou	199	350	Survey	N/A	1	Y	N	Blizzard condition over
2022-10-22	Closed (< 24 hour)	8.25	Caribou	Caribou	250	190	Survey	N/A	1	Y	Y	Caribou below GST
2022-10-23	Closed (24 hour)	24	Caribou	Caribou	310	0	HTO observation / Survey	N/A	2	Y	Y	N/A
2022-10-24	Closed (< 24 hour)	14.5	Caribou	Caribou	12	400	HTO observation / Incidental	N/A	2	Y	Y	Caribou below GST
2022-10-25	Closed (< 24 hour)	11	Caribou	Caribou	9000	50	HTO Observation	N/A	1	Y	N	N/A
2022-10-26	Closed (24 hour)	24	Caribou	Caribou	4000	5	HTO Observation	N/A	0	Y	N	N/A
2022-10-27	Closed (24 hour)	24	Caribou	Caribou	420	0	Survey	N/A	1	Y	N	N/A
2022-10-28	Closed (24 hour)	24	Caribou	Caribou	220	284	Survey	N/A	1	Y	N	N/A
2022-10-29	Closed (24 hour)	24	Caribou	Caribou	165	300	Survey	N/A	1	Y	Y	N/A
2022-10-30	Closed (< 24 hour)	7	Caribou	Caribou	155	400	Survey	N/A	1	Y	N	Caribou below GST
2022-10-31	Open	0	N/A	N/A	0	N/A	Survey	N/A	1	Y	N	N/A

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, 2022

Date	Closure Status	Closure Hours	Cause for Restriction	Wildlife Observed	Number of Individuals Observed	Distance from Road	Monitoring Method	Monitoring Conducted			Convoy	Reason For Re-opening
								Viewshed Surveys	Road Surveys	Collaring Data Reviewed		
2022-11-01	Open	0	N/A	Caribou	50	300	HTO observation / Survey	N/A	1	Y	N	N/A
2022-11-02	Closed (< 24 hour)	14.5	Caribou	Caribou	338	0	HTO observation / Incidental	N/A	1	N	Y	N/A
2022-11-03	Closed (< 24 hour)	14	Caribou	Caribou	36	250	Survey	N/A	1	Y	Y	Under GST
2022-11-04	Speed Restriction	0	Muskox	Muskox	36	100	HTO observation / Survey	N/A	1	Y	N	
2022-11-05	Closed (< 24 hour)	7.5	Weather	Caribou	7	400	Survey	N/A	1	Y	N	N/A
2022-11-06	Closed (< 24 hour)	10.5	Weather	N/A	N/A	N/A	N/A	N/A	0	Y	N	N/A
2022-11-07	Closed (24 hour)	24	Weather	N/A	N/A	N/A	N/A	N/A	0	Y	N	N/A
2022-11-08	Closed (24 hour)	24	Caribou	Caribou	270	0	HTO observation / Survey	N/A	1	Y	Y	N/A
2022-11-09	Closed (< 24 hour)	15.75	Caribou	Caribou	103	300	HTO observation / Survey	N/A	1	Y	N	Caribou below GST
2022-11-10	Speed Restriction	0	Muskox	Muskox	66	200	HTO observation / Incidental	N/A	1	Y	Y	N/A
2022-11-11	Speed Restriction	0	Muskox	Muskox	43	500	Survey	N/A	1	Y	N	N/A
2022-11-12	Closed (< 24 hour)	12	Caribou	Caribou	350	800	Survey	N/A	1	Y	Y	N/A
2022-11-13	Closed (24 hour)	24	Caribou	Caribou	4000	0	Survey	N/A	1	Y	N	N/A
2022-11-14	Closed (24 hour)	24	Caribou	Caribou	500	100	HTO observation / Survey	N/A	1	Y	N	N/A
2022-11-15	Closed (24 hour)	24	Caribou	Caribou	300	100	Survey	N/A	1	Y	N	N/A
2022-11-16	Closed (24 hour)	24	Caribou	Caribou	3000	75	HTO observation / Survey	N/A	1	Y	N	N/A
2022-11-17	Closed (24 hour)	24	Caribou	Caribou	290	1000	HTO observation / Survey	N/A	1	Y	N	N/A
2022-11-18	Closed (24 hour)	24	Caribou	Caribou	3000	100	Survey	N/A	1	Y	N	N/A
2022-11-19	Closed (24 hour)	24	Caribou	Caribou	153	0	Survey	N/A	1	Y	N	N/A
2022-11-20	Closed (24 hour)	24	Caribou	Caribou	250	0	Survey	N/A	1	Y	N	N/A
2022-11-21	Closed (24 hour)	24	Caribou	Caribou	200	300	Survey	N/A	1	Y	N	N/A
2022-11-22	Closed (< 24 hour)	13.5	Caribou	Caribou	160	300	Incidental	N/A	1	Y	Y	No group above GST was observed.
2022-11-23	Open	0	N/A	Caribou	60	1000	Survey	N/A	1	Y	N	No group above GST was observed.
2022-11-24	Open	0	N/A	Caribou	12	300	Incidental	N/A	1	Y	N	No group above GST was observed.
2022-11-25	Open	0	N/A	Caribou	12	400	Incidental	N/A	1	Y	N	No group above GST was observed.
2022-11-26	Open	0	N/A	Caribou/Muskox	45	900	Incidental	N/A	1	Y	N	N/A
2022-11-27	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	1	Y	N	N/A
2022-11-28	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	1	Y	N	N/A
2022-11-29	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	1	N	N	N/A
2022-11-30	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	1	N	N	N/A
2022-12-01	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	1	N	N	N/A
2022-12-02	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	1	N	N	N/A
2022-12-03	Open	0	N/A	Muskox	6	1500	Survey	N/A	1	N	N	N/A
2022-12-04	Closed (< 24 hour)	2	Weather	Caribou	2	500	Survey	N/A	1	N	N	N/A
2022-12-05	Closed (24 hour)	24	Weather	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-12-06	Closed (< 24 hour)	10.5	Weather	N/A	N/A	N/A	N/A	N/A	1	N	N	Weather conditions improved
2022-12-07	Open	0	N/A	Muskox	45	2000	Incidental	N/A	1	N	N	N/A
2022-12-08	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-12-09	Closed (< 24 hour)	11	Weather	N/A	N/A	N/A	Survey	N/A	1	N	N	N/A
2022-12-10	Closed (< 24 hour)	11	Weather	N/A	N/A	N/A	N/A	N/A	0	N	N	Weather conditions improved
2022-12-11	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-12-12	Closed (< 24 hour)	3.83	Weather	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-12-13	Closed (< 24 hour)	7.83	Weather	N/A	N/A	N/A	N/A	N/A	0	Y	N	Weather conditions improved
2022-12-14	Closed (< 24 hour)	3.5	Weather	Muskox	59	1250	N/A	N/A	1	Y	N	Weather conditions improved
2022-12-15	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	Y	N	N/A
2022-12-16	Closed (< 24 hour)	3.33	Weather	N/A	N/A	N/A	N/A	N/A	0	Y	N	N/A
2022-12-17	Closed (< 24 hour)	10	Weather	N/A	N/A	N/A	N/A	N/A	0	Y	N	N/A
2022-12-18	Open	0	N/A	Muskox	59	970	Survey	N/A	1	Y	N	N/A
2022-12-19	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	Y	N	N/A
2022-12-20	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	Y	N	N/A
2022-12-21	Open	0	N/A	Muskox	59	1100	Survey	N/A	1	Y	N	N/A
2022-12-22	Open	0	N/A	Muskox	10	20	Incidental	N/A	0	Y	N	N/A
2022-12-23	Open	0	N/A	Muskox	6	700	Survey	N/A	1	N	N	N/A
2022-12-24	Closed (< 24 hour)	16.66	Weather	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-12-25	Closed (24 hour)	24	Weather	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-12-26	Closed (< 24 hour)	14.5	Weather	N/A	N/A	N/A	N/A	N/A	0	N	N	Better weather conditions
2022-12-27	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-12-28	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-12-29	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	1	N	N	N/A
2022-12-30	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A
2022-12-31	Open	0	N/A	N/A	N/A	N/A	N/A	N/A	0	N	N	N/A

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, 2022.

Date	Closure Status	Closure Hours	Cause for Restriction	Wildlife Observed	Number of Individuals Observed	Distance from Road	Monitoring Method	Monitoring Conducted			Convoy	Reason For Re-opening
								Viewshed Surveys	Road Surveys	Collaring Data Reviewed		
2022-01-01	Closed (< 24 hours)	9	Weather	N/A	N/A	N/A	N/A	0	0	N	N	Good weather
2022-01-02	Speed Restriction	0	Muskox	Muskox	12	99	Survey	0	1	Y	N	N/A
2022-01-03	Closed (24 hours)	24	Weather	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-01-04	Closed (< 24 hours)	13	Weather	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-01-05	Open	0	N/A	Caribou	8	300	Survey	1	1	Y	N	N/A
2022-01-06	Closed (< 24 hours)	4.5	Maintenance	N/A	N/A	N/A	N/A	0	0	N	N	Communication Restored
2022-01-07	Open	0	N/A	Caribou	5	250	Survey	1	1	Y	N	N/A
2022-01-08	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-01-09	Open	0	N/A	N	N/A	N/A	Survey	0	1	N	N	N/A
2022-01-10	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-01-11	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-01-12	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-01-13	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-01-14	Open	0	N/A	Muskox	4	125	Survey	0	1	N	N	N/A
2022-01-15	Closed (< 24 hours)	10	Weather	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-01-16	Closed (24 hours)	24	Weather	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-01-17	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	Weather conditions
2022-01-18	Closed (< 24 hours)	4	Weather	N	0	N/A	Survey	1	0	Y	N	N/A
2022-01-19	Closed (< 24 hours)	7	Weather	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-01-20	Closed (24 hours)	24	Weather	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-01-21	Closed (24 hours)	24	Weather	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-01-22	Closed (24 hours)	24	Weather	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-01-23	Closed (24 hours)	24	Weather	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-01-24	Closed (< 24 hours)	5.25	Weather	N/A	N/A	N/A	N/A	0	0	Y	N	Weather conditions
2022-01-25	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-01-26	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-01-27	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-01-28	Open	0	N/A	Muskox/Caribou	45209	750 / 200	Survey / Incidental	1	1	Y	N	N/A
2022-01-29	Speed Restriction	0	Muskox	Muskox	11	75	Incidental	0	0	N	N	N/A
2022-01-30	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-01-31	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-02-01	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-02-02	Open	0	N/A	Caribou	6	150	Survey	1	1	Y	N	N/A
2022-02-03	Speed Restriction	0	Caribou	Caribou	17	25	Incidental	0	0	Y	N	N/A
2022-02-04	Open	0	N/A	N	0	N/A	N/A	0	1	Y	N	N/A
2022-02-05	Restricted Traffic	0	Covid	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-02-06	Open	0	N/A	Muskox	4	500	Survey	0	1	N	N	N/A
2022-02-07	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-02-08	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-02-09	Open	0	N/A	Caribou	13	200	Survey	1	1	Y	N	N/A
2022-02-10	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-02-11	Open	0	N/A	Caribou	10	100	Survey	0	1	Y	N	N/A
2022-02-12	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-02-13	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-02-14	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-02-15	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-02-16	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-02-17	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-02-18	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-02-19	Closed (< 24 hours)	1	Visible Smoke	N/A	N/A	N/A	N/A	1	1	N	N	N/A
2022-02-20	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-02-21	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-02-22	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-02-23	Speed Restriction	0	Muskox	Muskox	46	1000	Survey	1	0	Y	N	N/A
2022-02-24	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-02-25	Closed (< 24 hours)	1	Visible Smoke	Caribou	8	100	Survey	0	1	Y	N	N/A
2022-02-26	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-02-27	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-02-28	Speed Restriction	0	Muskox	Muskox	50	1000	Incidental	0	0	Y	N	N/A
2022-03-01	Open	0	N/A	Muskox	7	650	Survey	1	1	Y	N	N/A
2022-03-02	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-03-03	Closed (< 24 hours)	9	Weather	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-03-04	Closed (< 24 hours)	3.3	Weather	Caribou	5	75	Survey	0	1	Y	N	N/A
2022-03-05	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-03-06	Open	0	N/A	Caribou	15	30	Incidental	0	0	Y	N	N/A
2022-03-07	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-03-08	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-03-09	Open	0	N/A	Caribou	4	500	Survey	0	1	Y	N	N/A
2022-03-10	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-03-11	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-03-12	Open	0	N/A	N/A	N/A	N/A	Viewsheds	0	0	Y	N	N/A
2022-03-13	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-03-14	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-03-15	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-03-16	Closed (< 24 hours)	0	Weather	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-03-17	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-03-18	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-03-19	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A

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, 2022.

Date	Closure Status	Closure Hours	Cause for Restriction	Wildlife Observed	Number of Individuals Observed	Distance from Road	Monitoring Method	Monitoring Conducted			Convoy	Reason For Re-opening
								Viewshed Surveys	Road Surveys	Collaring Data Reviewed		
2022-03-20	Open	0	N/A	Wolves	6	217	Survey	1	0	Y	N	N/A
2022-03-21	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-03-22	Closed (< 24 hours)	21	Weather	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-03-23	Closed (< 24 hours)	13	Weather	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-03-24	Closed (< 24 hours)	2	Weather	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-03-25	Closed (24 hours)	24	Weather	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-03-26	Closed (< 24 hours)	15	Weather	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-03-27	Closed (< 24 hours)	2	Muskox	Muskox	13	100	Incidental - Driver on the road	1	1	Y	N	N/A
2022-03-28	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-03-29	Open	0	N/A	N	0	N/A	Survey	0	1	Y	N	N/A
2022-03-30	Open	0	N/A	Caribou	9	500	Viewsheds	1	0	Y	N	N/A
2022-03-31	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-04-01	Open	0	N/A	Muskox	9	250	Survey	0	1	Y	N	N/A
2022-04-02	Closed (< 24 hours)	9	Caribou	Caribou	13	500	Survey	0	1	Y	N	N/A
2022-04-03	Closed (24 hours)	24	Caribou	Caribou	15	300	Survey	0	1	Y	N	N/A
2022-04-04	Closed (< 24 hours)	15.5	Caribou	Muskox	6	1000	Survey	0	1	Y	Y	Caribou groups below GST of 10
2022-04-05	Open	0	N/A	Caribou	10	200	Incidental	0	1	Y	N	N/A
2022-04-06	Closed (< 24 hours)	8	Caribou	Caribou	42	500	Incidental	1	1	Y	N	N/A
2022-04-07	Closed (< 24 hours)	11.5	Caribou	Caribou	25	700	Survey	0	1	Y	Y	Groups below GST
2022-04-08	Speed Restriction	0	Caribou	Caribou	22	400	Survey	0	1	N	N	Groups below GST
2022-04-09	Closed (< 24 hours)	9	Caribou	Caribou	110	1000	Incidental	1	1	N	N	N/A
2022-04-10	Closed (24 hours)	24	Caribou	Caribou	300	400	Incidental	0	1	N	Y	N/A
2022-04-11	Closed (24 hours)	24	Caribou	Caribou	80250	7002000	Survey	0	1	N	Y	N/A
2022-04-12	Closed (< 24 hours)	8.5	Caribou	Caribou	46	2000	Survey	1	1	N	N	N/A
2022-04-13	Speed Restriction	0	Caribou	Caribou	14	0	Incidental	0	1	N	N	N/A
2022-04-14	Closed (< 24 hours)	7.5	Caribou	Caribou	63	150	Survey	0	1	N	Y	N/A
2022-04-15	Closed (< 24 hours)	14.5	Caribou	Caribou	200	2000	Incidental	0	1	N	Y	N/A
2022-04-16	Closed (24 hours)	24	Caribou	Caribou	200	557	Survey	0	1	N	Y	N/A
2022-04-17	Closed (< 24 hours)	10.25	Caribou	Caribou	59	300	Incidental	0	1	N	Y	Groups below GST
2022-04-18	Speed Restriction	0	Caribou	N/A	25	1200	Incidental	0	1	N	N	N/A
2022-04-19	Speed Restriction	0	Caribou	Caribou	22	1500	Incidental	0	1	Y	N	N/A
2022-04-20	Closed (< 24 hours)	7.5	Caribou	Caribou	40	400	Incidental	1	1	N	N	N/A
2022-04-21	Closed (24 hours)	24	Caribou	Caribou	141	500	HTO Observation / Survey	0	2	N	Y	N/A
2022-04-22	Closed (24 hours)	24	Caribou	Caribou	254	150	Survey	0	1	N	Y	N/A
2022-04-23	Closed (24 hours)	24	Caribou	Caribou	120	300	Survey	0	1	Y	Y	N/A
2022-04-24	Closed (< 24 hours)	12	Caribou	Caribou	12	10	Survey	0	1	N	Y	Groups below GST
2022-04-25	Speed Restriction	0	Caribou	Caribou	33	1092	Viewsheds	1	1	N	N	N/A
2022-04-26	Closed (< 24 hours)	13	Caribou	Caribou	120	0	Survey	0	1	N	N	N/A
2022-04-27	Closed (< 24 hours)	16.25	Caribou	Caribou	47	500	HTO Observation / Survey	0	1	Y	Y	Groups below GST
2022-04-28	Closed (< 24 hours)	0.75	Caribou	Caribou	39	0	Survey	0	1	Y	N	Groups below GST
2022-04-29	Closed (< 24 hours)	0.5	Caribou	Caribou	18	50	Survey	1	1	Y	N	Groups below GST
2022-04-30	Speed Restriction	0	Caribou	Caribou	22	1500	Survey	0	1	Y	N	N/A
2022-05-01	Speed Restriction	0	Muskox	Muskox	16	300	Survey	0	1	Y	N	N/A
2022-05-02	Speed Restriction	0	Caribou	Caribou	18	300	Incidental	0	1	Y	N	N/A
2022-05-03	Closed (< 24 hours)	12.5	Caribou	Caribou	39	460	Survey	0	1	Y	N	N/A
2022-05-04	Speed Restriction	0	Caribou	Caribou	19	500	Incidental	1	1	N	N	Groups below GST
2022-05-05	Speed Restriction	0	Muskox	Muskox	20	50	Survey	1	1	Y	N	N/A
2022-05-06	Speed Restriction	0	Caribou	Caribou	33	600	Survey	0	1	N	N	N/A
2022-05-07	Speed Restriction	0	Caribou	Caribou	20	50	Survey	0	1	N	N	N/A
2022-05-08	Closed (< 24 hours)	19.1	Caribou	Caribou	40	30	Survey	0	1	N	N	N/A
2022-05-09	Closed (< 24 hours)	5	Weather	Muskox	10	890	Survey	0	1	Y	N	Road was reopened due to an improvement in weather conditions
2022-05-10	Speed Restriction	0	Caribou	Caribou	30	N/A	Dispatch	0	1	Y	N	N/A
2022-05-11	Open	0	N/A	Caribou	24	25	Survey	0	1	Y	N	N/A
2022-05-12	Speed Restriction	0	Caribou	N/A	5	150	Survey	0	1	Y	N	N/A
2022-05-13	Speed Restriction	0	Caribou	Caribou	14	100	Survey	0	1	Y	N	N/A
2022-05-14	Speed Restriction	0	Caribou	Caribou	8	100	Survey	0	1	N	N	N/A
2022-05-15	Speed Restriction	0	Caribou	Caribou	18	250	Survey	0	1	N	N	N/A
2022-05-16	Speed Restriction	0	Caribou	Caribou	12	251	Survey	0	1	Y	N	N/A
2022-05-17	Open	0	N/A	N/A	0	N/A	Survey	1	1	Y	N	N/A
2022-05-18	Speed Restriction	0	Caribou	Caribou	22	100	Survey	0	1	Y	N	N/A
2022-05-19	Speed Restriction	0	Caribou	Caribou	13	275	Survey	0	1	Y	N	N/A
2022-05-20	Open	0	N/A	Caribou	9	75	Survey	0	1	Y	N	N/A
2022-05-21	Speed Restriction	0	Caribou	Caribou	10	100	Survey	0	1	N	N	N/A
2022-05-22	Speed Restriction	0	Caribou	Caribou	6	100	Viewsheds	1	1	N	N	N/A
2022-05-23	Speed Restriction	0	Caribou	Caribou	26	75	Incidental	0	1	N	N	N/A
2022-05-24	Speed Restriction	0	Caribou	Caribou	25	100	Survey	0	1	N	N	N/A
2022-05-25	Speed Restriction	0	Caribou	Caribou	10	40	Survey	0	1	N	N	N/A
2022-05-26	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-05-27	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-05-28	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-05-29	Speed Restriction	0	Caribou	Caribou	7	100	Survey	0	1	N	N	N/A
2022-05-30	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-05-31	Open	0	N/A	Caribou	2	50	Survey	0	1	N	N	N/A
2022-06-01	Open	0	N/A	Caribou	16	200	HTO Observation	0	0	N	N	N/A
2022-06-02	Open	0	N/A	N/A	N/A	N/A	N/A	1	1	N	N	N/A
2022-06-03	Open	0	N/A	Caribou	16	500	Incidental	0	1	N	N	N/A
2022-06-04	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-06-05	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A

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, 2022.

Date	Closure Status	Closure Hours	Cause for Restriction	Wildlife Observed	Number of Individuals Observed	Distance from Road	Monitoring Method	Monitoring Conducted			Convoy	Reason For Re-opening
								Viewshed Surveys	Road Surveys	Collaring Data Reviewed		
2022-06-06	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-06-07	Open	0	N/A	Caribou/Muskox	66	311500	Survey	0	1	N	N	N/A
2022-06-08	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-06-09	Open	0	N/A	Muskox	11	100	Survey	1	1	N	N	N/A
2022-06-10	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-06-11	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-06-12	Open	0	N/A	Caribou	7	800	Survey	0	0	N	N	N/A
2022-06-13	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-06-14	Open	0	N/A	Caribou	8	564	Incidental	0	0	N	N	N/A
2022-06-15	Speed Restriction	0	Caribou	Caribou	31	750	Driver on the road	0	0	N	N	Caribou went away
2022-06-16	Speed Restriction	0	Muskox	Muskox/Caribou	1622	500500	Survey	1	0	N	N	N/A
2022-06-17	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-06-18	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-06-19	Open	0	N/A	N	N/A	N/A	N/A	0	1	N	N	N/A
2022-06-20	Closed (< 24 hours)	7.5	Weather	Muskox	2	300	Survey	0	0	N	N	N/A
2022-06-21	Closed (< 24 hours)	20.5	Weather	N/A	N/A	N/A	N/A	0	0	N	N	Weather conditions
2022-06-22	Speed Restriction	0	Muskox	Muskox	1	1	Survey	1	1	N	N	N/A
2022-06-23	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-06-24	Open	0	N/A	Muskox	2	250	Survey	0	1	N	N	N/A
2022-06-25	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-06-26	Open	0	N/A	Muskox	5	400	Incidental	0	0	N	N	N/A
2022-06-27	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-06-28	Open	0	N/A	Muskox	1	400	Survey	0	1	N	N	N/A
2022-06-29	Open	0	N/A	Muskox	1	5	Incidental	0	1	N	N	N/A
2022-06-30	Open	0	N/A	Muskox	1	300	Survey	1	0	N	N	N/A
2022-07-01	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-07-02	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-07-03	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-07-04	Open	0	N/A	Muskox	1	350	Survey	0	1	N	N	N/A
2022-07-05	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-07-06	Open	0	N/A	Muskox	7	100	Survey	0	1	N	N	N/A
2022-07-07	Open	0	N/A	Caribou	1	0	Incidental	0	0	N	N	N/A
2022-07-08	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-07-09	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-07-10	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-07-11	Open	0	N/A	Muskox	2	200	Survey	0	1	N	N	N/A
2022-07-12	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-07-13	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-07-14	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-07-15	Open	0	N/A	Muskox	5	80	Survey	1	1	N	N	N/A
2022-07-16	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-07-17	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-07-18	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-07-19	Open	0	N/A	Muskox	8	0	Survey	Y	Y	Y	N	N/A
2022-07-20	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-07-21	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-07-22	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-07-23	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-07-24	Speed Restriction	0	Muskox	Muskox	23	150	Survey	0	1	N	N	N/A
2022-07-25	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-07-26	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-07-27	Speed Restriction	0	Muskox	Muskox	14	100	Incidental	0	0	Y	N	N/A
2022-07-28	Speed Restriction	0	Muskox	Muskox	19	800	Survey	1	1	Y	N	N/A
2022-07-29	Open	0	N/A	N/A	0	N/A	Survey	0	1	Y	N	N/A
2022-07-30	Open	0	N/A	Muskox	13	100	Survey	0	1	Y	N	N/A
2022-07-31	Open	0	N/A	Wolf	1	0	Survey	1	1	N	N	N/A
2022-08-01	Open	0	N/A	Muskox	13	1500	Incidental	0	1	Y	N	N/A
2022-08-02	Open	0	N/A	Caribou	15	600	Incidental	0	1	Y	N	N/A
2022-08-03	Speed Restriction	0	Caribou	Caribou	11	300	Survey	1	1	Y	N	N/A
2022-08-04	Speed Restriction	0	Caribou	Caribou	6	150	Survey	0	1	Y	N	N/A
2022-08-05	Speed Restriction	0	Muskox	Muskox	2	50	Survey	0	1	Y	N	N/A
2022-08-06	Speed Restriction	0	Caribou	Caribou	2	40	Survey	0	1	N	N	N/A
2022-08-07	Speed Restriction	0	Muskox	Muskox	9	50	Survey	0	1	N	N	N/A
2022-08-08	Speed Restriction	0	Muskox	Muskox	10	300	Survey	1	1	N	N	N/A
2022-08-09	Speed Restriction	0	Caribou	Caribou	25	100	Survey	0	1	Y	N	N/A
2022-08-10	Closed (< 24 hours)	6.75	Caribou	Caribou	133	0	Survey	0	1	Y	Y	N/A
2022-08-11	Speed Restriction	0	Caribou	Caribou	34	0	Incidental	1	1	Y	N	N/A
2022-08-12	Speed Restriction	0	Caribou	Caribou	25	1000	Survey	0	1	Y	N	N/A
2022-08-13	Speed Restriction	0	Caribou/Muskox	Caribou/Muskox	11	60	Survey	0	1	N	N	N/A
2022-08-14	Speed Restriction	0	Caribou	Caribou	8	0	Survey	0	1	N	N	N/A
2022-08-15	Speed Restriction	0	Caribou	Caribou	5	150	Survey	0	1	Y	N	N/A
2022-08-16	Speed Restriction	0	Caribou	Caribou	8	5	Survey	0	1	Y	N	N/A
2022-08-17	Speed Restriction	0	Caribou	Caribou	12	600	Survey	0	1	N	N	N/A
2022-08-18	Speed Restriction	0	Caribou	Caribou	7	15	Survey	0	1	N	N	N/A
2022-08-19	Speed Restriction	0	Caribou	Caribou	15	50	Survey	1	1	N	N	N/A
2022-08-20	Speed Restriction	0	Caribou	Caribou	13	10	Survey	0	1	N	N	N/A
2022-08-21	Speed Restriction	0	Caribou	Caribou	18	200	Survey	0	1	N	N	N/A
2022-08-22	Speed Restriction	0	Caribou	Caribou	7	75	Survey	0	1	N	N	N/A

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, 2022.

Date	Closure Status	Closure Hours	Cause for Restriction	Wildlife Observed	Number of Individuals Observed	Distance from Road	Monitoring Method	Monitoring Conducted			Convoy	Reason For Re-opening
								Viewshed Surveys	Road Surveys	Collaring Data Reviewed		
2022-08-23	Speed Restriction	0	Caribou	Caribou	21	250	Survey	0	1	Y	N	N/A
2022-08-24	Speed Restriction	0	Caribou	Caribou	8	50	Survey	1	1	Y	N	N/A
2022-08-25	Open	0	N/A	Caribou	5	25	Survey	0	1	Y	N	N/A
2022-08-26	Open	0	N/A	Caribou	3	50	Survey	0	1	Y	N	N/A
2022-08-27	Open	0	N/A	Caribou	10	25	Survey	0	1	Y	N	N/A
2022-08-28	Speed Restriction	0	Caribou	Caribou	3	0	Survey	0	1	N	N	N/A
2022-08-29	Open	0	N/A	Caribou	10	300	Survey	0	1	N	N	N/A
2022-08-30	Speed Restriction	0	Muskox	Muskox	10	15	Survey	0	1	N	N	N/A
2022-08-31	Speed Restriction	0	Caribou	Caribou	10	250	Survey	1	1	Y	N	N/A
2022-09-01	Open	0	N/A	Muskox	10	124	Survey	0	1	Y	N	N/A
2022-09-02	Open	0	N/A	N	N/A	N/A	N/A	0	0	Y	N	N/A
2022-09-03	Open	0	N/A	N	N/A	N/A	N/A	0	0	N	N	N/A
2022-09-04	Open	0	N/A	N	N/A	N/A	N/A	0	0	N	N	N/A
2022-09-05	Speed Restriction	0	Muskox	Muskox	14	120	Survey	1	1	N	N	N/A
2022-09-06	Open	0	N/A	N	N/A	N/A	N/A	0	0	Y	N	N/A
2022-09-07	Speed Restriction	0	Caribou	Caribou	11	100	Survey	1	1	Y	N	N/A
2022-09-08	Open	0	N/A	N	N/A	N/A	N/A	0	0	Y	N	N/A
2022-09-09	Open	0	N/A	N	N/A	N/A	N/A	0	0	N	N	N/A
2022-09-10	Speed Restriction	0	Muskox	Muskox	20	10	Survey	0	1	Y	N	N/A
2022-09-11	Open	0	N/A	N	N/A	N/A	N/A	0	0	N	N	N/A
2022-09-12	Open	0	N/A	N	N/A	N/A	N/A	0	0	N	N	N/A
2022-09-13	Speed Restriction	0	Muskox	Muskox	40	50	Survey	0	1	Y	N	N/A
2022-09-14	Speed Restriction	0	Muskox	Muskox	30	100	Incidental	1	0	Y	N	N/A
2022-09-15	Open	0	N/A	N	N/A	N/A	N/A	0	0	N	N	N/A
2022-09-16	Open	0	N/A	N	N/A	N/A	N/A	0	0	0	0	N/A
2022-09-17	Speed Restriction	0	Muskox	Muskox	6	15	Survey	0	1	N	N	N/A
2022-09-18	Open	0	N/A	Muskox	8	375	Survey	0	0	0	0	N/A
2022-09-19	Open	0	N/A	N	N/A	N/A	N/A	0	0	0	0	N/A
2022-09-20	Open	0	N/A	N	N/A	N/A	N/A	0	0	0	0	N/A
2022-09-21	Speed Restriction	0	Caribou	Caribou	10	N/A	Driver on the road	0	1	Y	0	N/A
2022-09-22	Speed Restriction	0	Muskox	Muskox	27	100	Incidental	1	1	Y	0	N/A
2022-09-23	Open	0	N/A	N	N/A	N/A	N/A	0	0	Y	N	N/A
2022-09-24	Speed Restriction	0	Muskox	Muskox	21	220	Survey	1	1	N	N	N/A
2022-09-25	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-09-26	Speed Restriction	0	Muskox	Muskox	19	200	Survey	1	1	N	N	N/A
2022-09-27	Open	0	N/A	N	0	N/A	N/A	0	0	Y	N	N/A
2022-09-28	Open	0	N/A	Muskox	20	300	Survey	1	1	N	N	N/A
2022-09-29	Open	0	N/A	N	0	N/A	N/A	0	0	Y	N	N/A
2022-09-30	Speed Restriction	0	Muskox	Muskox	16	700	Survey	0	1	Y	N	N/A
2022-10-01	Closed (< 24 hours)	14.12	Weather	N/A	N/A	N/A	N/A	0	0	N	N	Better Temperature
2022-10-02	Closed (< 24 hours)	22.28	Weather	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-10-03	Closed (< 24 hours)	14.92	Weather	N/A	N/A	N/A	N/A	0	0	N	N	Better weather
2022-10-04	Speed Restriction	0	Muskox	Muskox	18	275	Survey	1	1	Y	N	N/A
2022-10-05	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-10-06	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-10-07	Closed (< 24 hours)	0.5	Caribou	Caribou	70	0	Survey	0	1	N	N	Far from the road
2022-10-08	Restricted Traffic	0	Weather	Caribou	10	100	Survey	1	1	N	N	
2022-10-09	Open	0	N/A	Muskox	12	120	Survey	0	1	N	N	
2022-10-10	Open	0	N/A	Muskox	12	100	Survey	0	1	N	N	
2022-10-11	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-10-12	Restricted Traffic	0	Weather	N/A	N/A	N/A	N/A	0	0	Y	N	
2022-10-13	Closed (< 24 hours)	3.42	Caribou	Caribou	300	500	Incidental	0	1	Y	N	Caribous successfully crossed the road and were at a safe distance
2022-10-14	Closed (< 24 hours)	12	Weather	Caribou	17	200	HTO Observation / Survey	0	1	N	N	
2022-10-15	Closed (< 24 hours)	12	Weather	N/A	N/A	N/A	N/A	0	0	N	N	
2022-10-16	Open	0	N/A	Muskox	12	250	Incidental	0	1	N	N	N/A
2022-10-17	Open	0	N/A	N/A	N/A	N/A	N/A	0	1	Y	N	N/A
2022-10-18	Closed (< 24 hours)	8	Weather	N/A	N/A	N/A	Survey	0	1	Y	N	Weather conditions
2022-10-19	Speed Restriction	0	Muskox	Muskox	17	50	Incidental	0	0	N	N	N/A
2022-10-20	Closed (< 24 hours)	20.78	Weather	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-10-21	Closed (< 24 hours)	3.92	Weather	Muskox	17	250	Survey					N/A
2022-10-22	Open	0	N/A	Muskox	18	750	Survey	1	1	Y	N	N/A
2022-10-23	Speed Restriction	0	Muskox	Muskox	25	1000	Survey	0	1	Y	N	N/A
2022-10-24	Speed Restriction	0	Muskox	Muskox	13	550	Survey	0	1	Y	N	N/A
2022-10-25	Open	0	N/A	Muskox	23	1200	Survey	0	1	Y	N	N/A
2022-10-26	Open	0	N/A	Muskox	12	1000	Survey	0	1	Y	N	N/A
2022-10-27	Closed (< 24 hours)	2.17	Weather	N/A	N/A	N/A	N/A	0	0	Y	N	Better conditions for light vehicles
2022-10-28	al Closure/Speed Restr	1.13	Weather/Muskox	Muskox	17	50	Survey	1	1	Y	N	Better conditions for light vehicles
2022-10-29	Closed (< 24 hours)	15.63	Weather	N/A	N/A	N/A	N/A	0	0	N	N	Better conditions for light vehicles
2022-10-30	Speed Restriction	0	Muskox	Muskox	17	400	Survey	1	1	N	N	N/A
2022-10-31	Restricted Traffic	0	Not Specified	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-11-01	al Closure/Speed Restr	2.82	Maintenance/Muskox	Muskox	25	5	Survey	0	1	Y	N	Equipment was moved
2022-11-02	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-11-03	Speed Restriction	0	Muskox	Muskox	17	600	Survey	0	1	Y	N	N/A
2022-11-04	Speed Restriction	0	Muskox	Muskox	21	50	Survey	0	1	Y	N	N/A
2022-11-05	al Closure/Speed Restr	0.68	Weather/Muskox	Muskox	22	10	Survey	1	1	Y	N	N/A
2022-11-06	Restricted Traffic	0	Weather	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-11-07	Restricted Traffic	0	Weather	Muskox	9	300	Incidental	0	1	Y	N	Weather conditions
2022-11-08	Speed Restriction	0	Muskox	Muskox	22	100	Survey	1	1	Y	N	

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, 2022.

Date	Closure Status	Closure Hours	Cause for Restriction	Wildlife Observed	Number of Individuals Observed	Distance from Road	Monitoring Method	Monitoring Conducted			Convoy	Reason For Re-opening
								Viewshed Surveys	Road Surveys	Collaring Data Reviewed		
2022-11-09	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	
2022-11-10	Speed Restriction	0	Muskox	Muskox	31	100	Survey	0	1	Y	N	
2022-11-11	Speed Restriction	0	Muskox	Muskox	36	150	Incidental	0	1	Y	N	
2022-11-12	Speed Restriction	0	Muskox	Muskox	35	900	Survey	0	1	Y	N	
2022-11-13	Speed Restriction	0	Muskox	Muskox	21	75	Survey	0	1	Y	N	
2022-11-14	Speed Restriction	0	Muskox	N/A	N/A	N/A	N/A	0	0	Y	N	
2022-11-15	Speed Restriction	0	Muskox	Muskox	38	500	Survey	0	1	Y	N	
2022-11-16	Speed Restriction	0	Muskox	Muskox	37	200	Survey	1	1	Y	N	
2022-11-17	Speed Restriction	0	Muskox	Muskox	38	300	Survey	0	1	Y	N	
2022-11-18	Speed Restriction	0	Muskox	N/A	N/A	N/A	Monitoring	1	0	Y	N	N/A
2022-11-19	Speed Restriction	0	Muskox	Muskox	44	300	Survey	0	1	Y	N	N/A
2022-11-20	Closed (< 24 hours)	7.33	Weather	Muskox	7	50	Survey	0	1	Y	N	N/A
2022-11-21	Closed (< 24 hours)	5.58	Weather	Caribou	10	200	Survey	0	1	Y	N	Better visibility
2022-11-22	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-11-23	Open	0	N/A	Caribou	28	1000	Survey	0	1	Y	N	N/A
2022-11-24	Open	0	N/A	Muskox	3	500	Survey	1	1	Y	N	N/A
2022-11-25	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-11-26	Open	0	N/A	Caribou	1	236	Survey	0	1	Y	N	N/A
2022-11-27	Closed (< 24 hours)	0	Weather	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-11-28	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-11-29	Open	0	N/A	Muskox	7	750	Survey	0	1	Y	N	N/A
2022-11-30	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-12-01	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-12-02	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-12-03	Open	0	N/A	Muskox/Caribou	3	30	Survey	1	1	Y	N	N/A
2022-12-04	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	N/A
2022-12-05	Closed (< 24 hours)	17.75	Weather	N/A	N/A	N/A	N/A	0	0	Y	N	Weather improved
2022-12-06	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	Y	N	
2022-12-07	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	
2022-12-08	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	
2022-12-09	Closed (< 24 hours)	8.45	Weather	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-12-10	Closed (< 24 hours)	5.25	Weather	N/A	N/A	N/A	N/A	0	0	N	N	Weather improved
2022-12-11	Open	0	N/A	Muskox	3	400	Incidental	0	0	N	N	N/A
2022-12-12	Closed (< 24 hours)	0	Weather	N/A	N/A	N/A	N/A	0	0	N	N	
2022-12-13	Closed (< 24 hours)	0	Weather	Muskox	5	1000	Survey	0	1	N	N	Weather improved
2022-12-14	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	
2022-12-15	Open	0	N/A	Muskox	8	1500	Survey	0	1	N	N	
2022-12-16	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	
2022-12-17	Open	0	N/A	N/A	N/A	N/A	Survey	0	1	N	N	N/A
2022-12-18	Open	0	N/A	Caribou	6	500	N/A	0	0	N	N	N/A
2022-12-19	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-12-20	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-12-21	Open	0	N/A	N/A	N/A	N/A	N/A	1	1	N	N	N/A
2022-12-22	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-12-23	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-12-24	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-12-25	Closed (< 24 hours)	19.75	Weather	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-12-26	Closed (24 hours)	24	Weather	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-12-27	Closed (< 24 hours)	4.5	Weather	N/A	N/A	N/A	N/A	0	0	N	N	Improved weather
2022-12-28	Open	0	N/A	Muskox	23	100	Survey	1	1	N	N	N/A
2022-12-29	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-12-30	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A
2022-12-31	Open	0	N/A	N/A	N/A	N/A	N/A	0	0	N	N	N/A

APPENDIX C

Wildlife Mortalities

Wildlife Incident Report Form

Date:	2022-02-03	Time:	12:20
Individuals involved:	Kathleen Newberry		
Species:	Arctic Hare		
Number, gender, age:	1 Hare, gender and age unknown		
Location (description):	KM 16		
Location (UTM):	Lat 64.450811 Lon -96.070719		
Digital photo numbers:	Arctic Hare KM16		
Describe the incident or accident that occurred. Was there a threat to wildlife or human safety? What was the situation that caused it?			
While performing a wildlife Survey on the AWAR, a technician found a dead Arctic Hare that appears to have been struck by a vehicle at km 16 in the middle of the road.			
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 picked up to avoid attracting scavengers near the road.			
What measures are recommended to prevent future occurrences?			
A general reminder to all operators of vehicles/equipment to be aware of wildlife presence along the road.			
Report prepared by:	Kathleen Newberry	Reviewed by:	Tom Thomson

Wildlife Incident Report Form

Date:	2022-03-01	Time:	10:00
Individuals involved:	Rowan Woodall		
Species:	Arctic Fox		
Number, gender, age:			
Location (description):	AMQ Metal Screening Pad		
Location (UTM):	14W 607348 7255755		
Digital photo numbers:	IMG_6300	IMG_6301	
Describe the incident or accident that occurred. Was there a threat to wildlife or human safety? What was the situation that caused it?			
<p>While removing snow at the construction site for the Metal Screening Pad at AMQ, workers noticed a fox carcass in the snow. The operator called his supervisor who then contacted the Environmental personnel to come and assess the carcass. Upon investigating the location of the carcass, it appears as though the fox was trapped under a pile of snow and a cement wall that was being constructed for the metal removal system.</p>			
Describe any use of wildlife deterrents: Describe any wildlife mortality:			
N/A			
Describe any communication with GN-DOE:			
<p>A phone call occurred on March 1st at approximately 13:00 with the conservation officer at Baker Lake to discuss disposal of the carcass.</p>			
What immediate measures were taken to reduce risk or harm?			
<p>The carcass was removed and brought to Meadowbank. The carcass will then be brought to Baker Lake at a later date.</p>			
What measures are recommended to prevent future occurrences?			
<p>A meeting is scheduled with the construction team to reinforce site wildlife standards.</p>			
Report prepared by:	Rowan Woodall	Reviewed by:	Samuel Tapp

IMG_6300



IMG_6301



Wildlife Incident Report Form

Date:	2022-03-15	Time:	7:30 PM
Individuals involved:	Kathleen Newberry		
	Philippe Bédard		
Species:	Arctic Fox		
Number, gender, age:	N/A		
Location (description):	North West of AMQ Warehouse		
Location (UTM):	14W 0607958 7255220		
Digital photo numbers:	Arctic fox (1)	Arctic fox (2)	
	Arctic fox (3)	Arctic fox (4)	
Describe the incident or accident that occurred. Was there a threat to wildlife or human safety? What was the situation that caused it?			
An AEM employee found a dead Arctic Fox that appears to have been struck by a vehicle at the northwest side of the AMQ Warehouse in the middle of the road. The employee called his supervisor who then contacted the Environmental personnel to come and assess the carcass. Upon investigating the location and the carcass, it appears that the fox was struck by a vehicle.			
Describe any use of wildlife deterrents: Describe any wildlife mortality:			
N/A			
Describe any communication with GN-DOE:			
Wildlife mortality report will be sent to GN-DOE Via Email			
What immediate measures were taken to reduce risk or harm?			
The carcass was removed and kept frozen at AMQ until further notice by the conservation officer at Baker Lake.			
What measures are recommended to prevent future occurrences?			
A general reminder to all operators of vehicles/equipment to be aware of wildlife presence around site.			
Report prepared by:	Kathleen Newberry	Reviewed by:	Louis Dubois









Wildlife Incident Report Form

Date:	2022-03-18	Time:	8:30	
Individuals involved:	Eric Leonard			
	Laurence Archambault			
	Félix Lessard-Juneau			
Species:	Arctic Hare			
Number, gender, age:	1, Unknown gender or age			
Location (description):	On road 7, near A47/Peanut Lake			
Location (UTM):	14W 0607030 7256054			
Digital photo numbers:	P1090498	P1090500	P1090502	P1090504
	P1090499	P1090501	P1090503	P1090505
Describe the incident or accident that occurred. Was there a threat to wildlife or human safety? What was the situation that caused it?				
Environment technicians received a call about a dead hare on road 7, near the IVR 2 pit. Upon arrival, the technicians saw that scavengers (fox, raven) have gotten into the carcass. Only the fur and bones were still in place.				
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 picked up to avoid attracting scavengers on the road.				
What measures are recommended to prevent future occurrences?				
A general reminder to all operators of vehicles/equipment to be aware of wildlife presence along the road.				
Report prepared by:	Laurence Archambault	Reviewed by:		

Wildlife Incident Report Form

Date:	2022-04-04	Time:	13:18
Individuals involved:	Nicolas Saucier		
Species:	Wolverine		
Number, gender, age:	1, Unknown gender or age		
Location (description):	South Cell Tailings Area		
Location (UTM):	14W 0638544 7215186		
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>Environment technicians received a call from MBK security at 12:30pm about a Wolverine moving North across the airstrip towards the South Cell tailing area. At 12:50pm Env. Technician went to patrol the area around the South Cell and Waste rock storage facility.</p>			
Describe any use of wildlife deterrents: Describe any wildlife mortality:			
<p>Use of deterrents and location of Wolverine observations was issued to GN DOE on March 19, 2022.</p> <p>Frequent reports/observations of the wolverine continued between March 19 and April 4, 2022.</p> <p>Two 12g slugs were used to dispatch the Wolverine.</p>			
Describe any communication with GN-DOE:			
<p>A phone call between AEM ENV and GN-DOE was completed on March 18, 2022. At the time ENV provided GN-DOE the wildlife report regarding our monitoring and deterring efforts related to the Wolverine observations.</p> <p>On March 21, 2022 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 will be brought to the GN office in Baker Lake on 2022-04-05.</p>			
What measures are recommended to prevent future occurrences?			
<p>A general reminder to all site personal regarding food waste, cigarette butts, proper waste segregation, closing sea ca doors, and ensuring work areas are clean to avoid attracting wildlife on site.</p>			
Report prepared by:	Nicolas Saucier	Reviewed by:	Tom Thomson

2022-04-04 Wolverine – South Cell Tailings Area



2022-04-04 Wolverine – South Cell Tailings Area



Wildlife Incident Report Form

Date:	2022/04/22	Time:	8:35
Individuals involved:	Olivier Gagnon		
Species:	Ptarmigan		
Number, gender, age:			
Location (description):	AWAR (near Km 40)		
Location (UTM):			
Digital photo numbers:	P1040126		
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 down the AWAR, the environmental department noticed a ptarmigan 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 ptarmigan was picked up and placed at the incinerator to avoid attracting scavengers near the road.			
What measures are recommended to prevent future occurrences?			
General reminder to every operator that there's wildlife presence around the road.			
Report prepared by:	Olivier Gagnon	Reviewed by:	



Wildlife Incident Report Form

Date:	2022/06/26	Time:	8:55
Individuals involved:	Rowan Woodall,	Kathleen Newberry	Sara Swiderski
Species:	Siksik		
Number, gender, age:	N/A		
Location (description):	WTHR (KM132)		
Location (UTM):	14W 0631980 7233576		
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 placed at the incinerator to avoid attracting scavengers near the road.			
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:	2022-07-23	Time:	1:52AM
Individuals involved:	Eric Haley	Kelli Gillard	
Species:	Arctic Hare		
Number, gender, age:	1		
Location (description):	WTHR KM 135		
Location (UTM):	14W 630557 7234657		
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>During the night shift operations along the WTHR the dispatch received a report of an animal carcass at the KM135 bridge. An environment department employee traveled to the bridge and confirmed the carcass was present and to identify the animal.</p>			
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 incinerator.			
What measures are recommended to prevent future occurrences?			
A reminder to all WTHR 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:	Rowan Woodall	Reviewed by:	

Wildlife Incident Report Form

Date:	2022-07-23	Time:	8:12
Individuals involved:	Rowan Woodall		
Species:	Arctic Hare		
Number, gender, age:	1, gender and age unknown		
Location (description):	WTHR KM 143		
Location (UTM):	14W 623289 7235827		
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 WTHR an environmental technician 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 incinerator.			
What measures are recommended to prevent future occurrences?			
A reminder to all WTHR 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:	Rowan Woodall	Reviewed by:	

Wildlife Incident Report Form

Date:	2022-08-02	Time:	20h10
Individuals involved:	Paul Niego	Derek Nateela	Tom Thomson
	Félix Tutannuaq		
Species:	Wolverine		
Number, gender, age:	1, female, young		
Location (description):	Bridge km 80		
Location (UTM):	14W 627282 7201434		
Digital photo numbers:	1		
Describe the incident or accident that occurred. Was there a threat to wildlife or human safety? What was the situation that caused it?			
<p>AFS Tanker 3 Paul Niego informed dispatch at around 20h00 that he ran over a wolverine on the bridge at km 80.</p> <p>There was no threat the wildlife of human safety.</p> <p>When the AFS driver saw the wolverine on the bridge, he did not have time to apply the brake.</p>			
Describe any use of wildlife deterrents: Describe any wildlife mortality:			
No deterrents were used.			
Describe any communication with GN-DOE:			
Wildlife Mortality report will be sent to the GN on august 3 rd via email.			
What immediate measures were taken to reduce risk or harm?			
AFS driver informed dispatch around 20h00. At 20h10, dispatch communicated with the environment coordinator how send an employee to remove the carcass. Meanwhile, the wolverine had died instantly, and the carcass was moved to the side of the road by the grader to allow free access to the road.			
What measures are recommended to prevent future occurrences?			
<p>The driver was already driving slowly, and no food waste was found near the accident.</p> <p>Maintaining good vigilance is the best measure to avoid another accident.</p>			
Report prepared by:	Louis Dubois	Reviewed by:	

Photo 1



Wildlife Incident Report Form

Date:	2022-09-05	Time:	8:00
Individuals involved:	Thomas Dahm (reported)	Jeff Dufour (Environment Tech)	Sylvain Singaqli (Environment Helper)
Species:	Arctic Hare		
Number, gender, age:	- 1 Hare, gender unknown, adult		
Location (description):	WTHR 121Km		
Location (UTM):	14 W 636977 7223313		
Digital photo numbers:	No pictures		
Describe the incident or accident that occurred. Was there a threat to wildlife or human safety? What was the situation that caused it?			
<p>During the day shift operations along the WTHR, a AEM employee reported to the environment department an animal carcass at KM121. An environment department employee traveled to the scene and confirmed the carcass was present and identify the arctic hare.</p>			
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 picked up by Environment Technician Jeff Dufour and Environment Helper Sylvain Singaqli shortly after being reported.			
What measures are recommended to prevent future occurrences?			
A reminder to all WTHR 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:	Jeff Dufour	Reviewed by:	Louis Dubois

Wildlife Incident Report Form

Date:	2022-10-23	Time:	12:30
Individuals involved:	Kathleen Newberry	Eric Thomson	
Species:	Arctic Hare		
Number, gender, age:	- 1 Hare, gender unknown, adult		
Location (description):	WTHR Km 158		
Location (UTM):	14 W 620586 7243676		
Digital photo numbers:	IMG_7590	IMG_7591	
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 WTHR an environmental technician 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 environment team was not able to collect the carcass because it was frozen to the ground.			
What measures are recommended to prevent future occurrences?			
A reminder to all WTHR 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:	2022-11-08	Time:	11:25
Individuals involved:	Rowan Woodall		
Species:	Arctic Hare		
Number, gender, age:	1 Hare, Gender unknown, likely and adult		
Location (description):	Road 7 in Amaruq, Near the Entrance to IVR 2 Pit		
Location (UTM):	14W 606679 7255934		
Digital photo numbers:	IMG_8057	IMG_8058	IMG_8064
Describe the incident or accident that occurred. Was there a threat to wildlife or human safety? What was the situation that caused it?			
At 11:15am the AMQ environmental team was notified that there were 3 foxes fighting over a dead animal in the middle of the road near IVR 2 Pit entrance. An environmental technician went to assess and determined that an arctic hare had been struck by a vehicle.			
Describe any use of wildlife deterrents: Describe any wildlife mortality:			
Bangers and Vehicle horn to deter scavengers.			
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 environmental technician chipped/scraped the carcass from the roadway to prevent other wildlife from being at risk. The environmental technician monitored the area for ~30 minutes to ensure the scavengers did not return.			
What measures are recommended to prevent future occurrences?			
A reminder to vehicles travelling around the pits to be aware of wildlife presence and slow down when an animal has been spotted or reported in the area.			
Report prepared by:	Rowan Woodall	Reviewed by:	

Wildlife Incident Report Form

Date:	2022-11-11	Time:	2:00 pm
Individuals involved:	Alex Blanchette		
Species:	Arctic Hare		
Number, gender, age:	1 Hare, Gender unknown, likely and adult		
Location (description):	AWAR km2		
Location (UTM):	N 64 19'47.2" W 095 58'08.5"		
Digital photo numbers:	Img_1	Img_2	Img_3
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 technician observed a carcass of an arctic hare along the road. The carcass appears to have been struck by a vehicle and was frozen on the ground.			
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?			
What was left from the corpse was frozen on the road and it was impossible for us to shovel it.			
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:	Alex Blanchette	Reviewed by:	

Wildlife Incident Report Form

Date:	2022-11-11	Time:	1:40 pm
Individuals involved:	Alex Blanchette		
Species:	Arctic Hare		
Number, gender, age:	1 Hare, Gender unknown, likely and adult		
Location (description):	AWAR km15		
Location (UTM):	N 64 27' 09.1" W 096 04' 29.4"		
Digital photo numbers:	Img_1	Img_2	Img_3
	Img_4	Img_5	
Describe the incident or accident that occurred. Was there a threat to wildlife or human safety? What was the situation that caused it?			
<p>At 1:40 pm the MBK environmental team came across what looks like the remains of an Arctic Hare in the middle of the road. It was possible to notice some little tracks of Arctic foxes around the carcass. An environmental technician took of the guts with a shovel and disposed it in a garbage bag, which is now at the incinerator.</p>			
Describe any use of wildlife deterrents: Describe any wildlife mortality:			
None			
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 incinerator.			
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:	Alex Blanchette	Reviewed by:	

Wildlife Incident Report Form

Date:	2022-12-13	Time:	8:30 am
Individuals involved:	Grader Operator	Kathleen Newberry	Rowan Woodall
Species:	Fox		
Number, gender, age:	1 Adult		
Location (description):	WT Ring Road		
Location (UTM):	14W 0606087 7255238		
Digital photo numbers:	2022-12-13 fox		
Describe the incident or accident that occurred. Was there a threat to wildlife or human safety? What was the situation that caused it?			
A grader operator spotted a dead fox on the intersection of Phase 3 Ramp and Whale Tail Ring Road. The auxiliary supervisor then picked it up and delivered the carcass to environment.			
Describe any use of wildlife deterrents: Describe any wildlife mortality:			
N/A			
Describe any communication with GN-DOE:			
A phone call at 10:05 with GN-DOE advising them of the fox mortality. A photograph of the carcass was sent to GN-DOE. GN-DOE authorized via email that the carcass could be incinerated on site.			
What immediate measures were taken to reduce risk or harm?			
Carcass was retrieved to avoid attracting predators to the area and will be brought to the incinerator at Meadowbank.			
What measures are recommended to prevent future occurrences?			
A reminder to vehicles traveling around the pits to be aware of wildlife presence and slow down when an animal has been spotted or reported in the area.			
Report prepared by:	Kathleen Newberry	Reviewed by:	Tom Thomson

Photo 1:



APPENDIX D

Exemption Permits



Agnico Eagle Mines Limited – Meadowbank Division
Suite 540
Baker Lake, NU
X0C 0A0

April 5, 2022

Re: Exemption Permit to remove/destroy a raven nest from fuel tank in at mine site near Baker Lake

Dear Sir,

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 at the site near Baker Lake. The reason for this request is that nest poses a risk to the proper maintenance of the fuel tank and could possibly be a fire hazard.

I authorize the removal/destruction of the nest and the eggs it contents by Agnico Eagle staff under the supervision of a Conservation Officer. If supervision by a Conservation Officer is not possible due to COVID-19 protocols this is understandable, and 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*.

Therefore:

- pursuant to section 72(1) of the *Wildlife Act* it is an offence to injure, molest or destroy a raven egg; and
- pursuant to section 72(2)(a) of the *Wildlife Act* it is an offence to injure, molest or destroy an occupied raven nest; and
- pursuant to Section 72(2)(b) of the *Wildlife Act* it is an offence to injure, molest or destroy an occupied raven nest.

APPENDIX E

Helicopter Flights

Flight types where low elevations are defined below. All of the flight types where low elevation flights are expected are related to slinging operations:

- Core: slinging of diamond drill core.
- DrillServ: slinging drilling equipment, additives, loads of drilling rods, etc.
- Floor: slinging large and heavy wooden floors used as a base to assemble the fly drill.
- Fuel: slinging 1000 L double walled fuel tanks.
- LocSling: material slinging operations without returning to the base, usually from one drill site to another.
- Move: moving the drill; slinging drill parts (engine, tower, hydraulic controls, etc.) from a drill site to a new one; often less than 1 km away from one another.
- NoRevenue: helicopter maintenance; most often around the airport base.
- Reposition: usually small (e.g., 100 m) moves to accommodate different aircraft at the airport fueling station.

Table E-1: Helicopter Flight Summary 2022

Season	Date	FltReportID	FltReportNo	Helicopter	Flight Type	Flight Type where Low Elevation Expected	Departure	Arrival	Time (hours)	Comment
Spring	2022-04-25	1866	710130	FLRH	CrewChg		18:56	19:05	0.2	
Spring	2022-04-25	1866	710130	FLRH	CrewChg		18:28	18:38	0.2	
Spring	2022-04-26	1868	710131	FLRH	CrewChg		6:13	6:35	0.4	
Spring	2022-04-26	1868	710131	FLRH	CrewChg		18:08	18:30	0.4	
Spring	2022-04-27	1869	710132	FLRH	CrewChg		6:07	6:27	0.3	
Spring	2022-04-27	1869	710132	FLRH	PaxLoc		7:13	7:28	0.3	
Spring	2022-04-27	1869	710132	FLRH	CrewChg		18:41	19:05	0.4	
Spring	2022-04-28	1870	710133	FLRH	CrewChg		18:27	18:48	0.4	
Spring	2022-04-28	1870	710133	FLRH	CrewChg		6:33	6:53	0.3	
Spring	2022-04-28	1870	710133	FLRH	Core	Yes	7:51	8:11	0.3	
Spring	2022-04-28	1870	710133	FLRH	PaxLoc		14:31	14:51	0.3	
Spring	2022-04-29	1871	710134	FLRH	CrewChg		18:12	18:40	0.5	
Spring	2022-04-29	1871	710134	FLRH	CrewChg		6:21	6:43	0.4	
Spring	2022-04-30	1872	710135	FLRH	CrewChg		18:19	18:47	0.5	
Spring	2022-04-30	1872	710135	FLRH	CrewChg		6:44	7:22	0.3	
Spring	2022-04-30	1872	710135	FLRH	Core	Yes	6:44	7:22	0.3	
Spring	2022-04-30	1872	710135	FLRH	LocSing	Yes	14:15	14:29	0.2	
Spring	2022-05-01	1873	710136	FLRH	CrewChg		18:18	18:44	0.4	
Spring	2022-05-02	1874	710137	FLRH	CrewChg		18:12	18:40	0.5	
Spring	2022-05-03	1875	710138	FLRH	PaxLoc		12:10	12:19	0.2	
Spring	2022-05-03	1875	710138	FLRH	LocSing	Yes	15:02	15:17	0.3	
Spring	2022-05-03	1875	710138	FLRH	PaxLoc		9:15	9:28	0.2	
Spring	2022-05-03	1875	710138	FLRH	CrewChg		6:16	6:25	0.2	
Spring	2022-05-03	1875	710138	FLRH	CrewChg		6:50	6:59	0.2	
Spring	2022-05-03	1875	710138	FLRH	CrewChg		18:00	18:28	0.5	
Spring	2022-05-04	1876	710139	FLRH	CrewChg		6:00	6:24	0.4	
Spring	2022-05-04	1876	710139	FLRH	CrewChg		18:15	18:36	0.4	
Spring	2022-05-05	1877	710140	FLRH	Reposition	Yes	18:01	18:06	0.1	
Spring	2022-05-05	1877	710140	FLRH	NoRevenu	Yes	10:37	10:49	0.2	
Spring	2022-05-05	1877	710140	FLRH	NoRevenu	Yes	11:09	11:15	0.1	
Spring	2022-05-05	1877	710140	FLRH	PaxLoc		11:41	11:47	0.1	
Spring	2022-05-05	1877	710140	FLRH	PaxLoc		12:19	13:25	0.3	
Spring	2022-05-05	1877	710140	FLRH	Floor	Yes	12:19	13:25	0.8	
Spring	2022-05-05	1877	710140	FLRH	Floor	Yes	13:48	15:35	0.4	
Spring	2022-05-05	1877	710140	FLRH	Move	Yes	13:48	15:35	1.2	
Spring	2022-05-05	1877	710140	FLRH	Core	Yes	13:48	15:35	0.2	
Spring	2022-05-05	1877	710140	FLRH	Move	Yes	16:07	17:38	1.5	
Spring	2022-05-05	1877	710140	FLRH	PaxLoc		17:46	17:55	0.2	
Spring	2022-05-06	1878	710141	FLRH	Move	Yes	9:27	9:39	0.2	icing conditions, back to the airport.
Spring	2022-05-07	1879	710142	FLRH	PaxLoc		13:30	13:35	0.1	
Spring	2022-05-07	1879	710142	FLRH	PaxLoc		13:45	13:50	0.1	
Spring	2022-05-08	1880	710143	FLRH	PaxLoc		12:18	13:50	0.3	
Spring	2022-05-08	1880	710143	FLRH	Move	Yes	14:24	16:20	1.9	
Spring	2022-05-08	1880	710143	FLRH	PaxLoc		18:20	18:30	0.2	
Spring	2022-05-08	1880	710143	FLRH	Move	Yes	16:36	17:26	0.8	
Spring	2022-05-08	1880	710143	FLRH	Move	Yes	12:18	13:50	1.2	
Spring	2022-05-08	1880	710143	FLRH	PaxLoc		11:29	11:35	0.1	
Spring	2022-05-08	1880	710143	FLRH	NoRevenu	Yes	11:20	11:25	0.1	
Spring	2022-05-08	1880	710143	FLRH	PaxLoc		17:58	18:11	0.1	
Spring	2022-05-08	1880	710143	FLRH	Move	Yes	17:58	18:11	0.1	
Spring	2022-05-10	1882	710145	FLRH	CrewChg		18:12	18:39	0.5	
Spring	2022-05-10	1882	710145	FLRH	CrewChg		6:01	6:06	0.1	
Spring	2022-05-11	1883	710146	FLRH	Floor	Yes	16:03	17:25	1	
Spring	2022-05-11	1883	710146	FLRH	CrewChg		6:28	6:58	0.5	
Spring	2022-05-11	1883	710146	FLRH	Reposition	Yes	7:11	7:15	0.1	
Spring	2022-05-11	1883	710146	FLRH	DrillServ	Yes	9:34	10:32	0.4	
Spring	2022-05-11	1883	710146	FLRH	Fuel	Yes	9:34	10:32	0.6	
Spring	2022-05-11	1883	710146	FLRH	PaxLoc		16:03	17:25	0.4	
Spring	2022-05-11	1883	710146	FLRH	CrewChg		18:11	18:30	0.3	
Spring	2022-05-11	1883	710146	FLRH	Reposition	Yes	15:45	15:50	0.1	
Spring	2022-05-12	1884	710147	FLRH	Reposition	Yes	16:09	16:20	0.2	
Spring	2022-05-12	1884	710147	FLRH	PaxLoc		13:17	13:28	0.2	
Spring	2022-05-12	1884	710147	FLRH	PaxLoc		13:59	14:08	0.2	
Spring	2022-05-12	1884	710147	FLRH	Move	Yes	16:48	17:50	1	
Spring	2022-05-12	1884	710147	FLRH	CrewChg		18:08	18:27	0.3	
Spring	2022-05-13	1885	710148	FLRH	CrewChg		18:10	18:36	0.4	
Spring	2022-05-13	1885	710148	FLRH	CrewChg		6:05	7:29	0.5	
Spring	2022-05-13	1885	710148	FLRH	Fuel	Yes	6:05	7:29	0.9	
Spring	2022-05-13	1885	710148	FLRH	Reposition	Yes	7:45	7:50	0.1	
Spring	2022-05-13	1885	710148	FLRH	DrillServ	Yes	17:04	17:28	0.4	
Spring	2022-05-14	1886	710149	FLRH	Reposition	Yes	13:31	13:41	0.2	
Spring	2022-05-14	1886	710149	FLRH	Core	Yes	7:04	7:20	0.3	
Spring	2022-05-14	1886	710149	FLRH	PaxLoc		8:03	8:33	0.5	
Spring	2022-05-14	1886	710149	FLRH	NoRevenu	Yes	10:00	10:05	0.1	
Spring	2022-05-14	1886	710149	FLRH	CrewChg		18:03	18:26	0.4	
Spring	2022-05-14	1886	710149	FLRH	PaxLoc		16:52	17:03	0.2	
Spring	2022-05-14	1886	710149	FLRH	DrillServ	Yes	11:50	13:07	0.4	
Spring	2022-05-14	1886	710149	FLRH	DrillServ	Yes	14:41	15:50	1.2	
Spring	2022-05-14	1886	710149	FLRH	Fuel	Yes	11:50	13:07	0.6	
Spring	2022-05-14	1886	710149	FLRH	CrewChg		6:18	6:46	0.5	
Spring	2022-05-14	1886	710149	FLRH	Floor	Yes	11:50	13:07	0.3	
Spring	2022-05-15	1887	710150	FLRH	CrewChg		18:10	18:29	0.3	
Spring	2022-05-15	1887	710150	FLRH	Fuel	Yes	14:58	15:50	0.5	
Spring	2022-05-15	1887	710150	FLRH	PaxLoc		16:11	16:22	0.2	
Spring	2022-05-15	1887	710150	FLRH	DrillServ	Yes	14:58	15:50	0.2	
Spring	2022-05-15	1887	710150	FLRH	Floor	Yes	14:58	15:50	0.2	
Spring	2022-05-15	1887	710150	FLRH	PaxLoc		13:56	14:06	0.2	
Spring	2022-05-15	1887	710150	FLRH	CrewChg		6:10	6:35	0.4	
Spring	2022-05-16	1888	710151	FLRH	Reposition	Yes	7:23	7:27	0.1	

Table E-1: Helicopter Flight Summary 2022

Season	Date	FltReportID	FltReportNo	Helicopter	Flight Type	Flight Type where Low Elevation Expected	Departure	Arrival	Time (hours)	Comment
Spring	2022-05-16	1888	710151	FLRH	Reposition	Yes	13:37	13:46	0.2	
Spring	2022-05-16	1888	710151	FLRH	Move	Yes	14:30	15:45	1.1	
Spring	2022-05-16	1888	710151	FLRH	PaxLoc		8:39	8:50	0.2	
Spring	2022-05-16	1888	710151	FLRH	Core	Yes	6:05	7:09	0.3	
Spring	2022-05-16	1888	710151	FLRH	Fuel	Yes	6:05	7:09	0.3	
Spring	2022-05-16	1888	710151	FLRH	CrewChg		6:05	7:09	0.5	
Spring	2022-05-16	1888	710151	FLRH	PaxLoc		9:02	9:11	0.2	
Spring	2022-05-16	1888	710151	FLRH	CrewChg		18:12	18:35	0.4	
Spring	2022-05-16	1888	710151	FLRH	Reposition	Yes	14:30	15:45	0.2	
Spring	2022-05-16	1888	710151	FLRH	Reposition	Yes	16:09	16:40	0.3	
Spring	2022-05-16	1888	710151	FLRH	Floor	Yes	16:09	16:40	0.2	
Spring	2022-05-17	1889	710152	FLRH	Fuel	Yes	6:12	7:05	0.5	
Spring	2022-05-17	1889	710152	FLRH	PaxLoc		14:02	15:36	0.1	
Spring	2022-05-17	1889	710152	FLRH	CrewChg		6:12	7:05	0.4	
Spring	2022-05-17	1889	710152	FLRH	Floor	Yes	14:02	15:36	0.8	
Spring	2022-05-17	1889	710152	FLRH	PaxLoc		13:45	13:53	0.1	
Spring	2022-05-17	1889	710152	FLRH	Reposition	Yes	14:02	15:36	0.2	
Spring	2022-05-17	1889	710152	FLRH	Reposition	Yes	7:20	7:25	0.1	
Spring	2022-05-17	1889	710152	FLRH	CrewChg		18:18	18:37	0.3	
Spring	2022-05-17	1889	710152	FLRH	Move	Yes	14:02	15:36	0.5	
Spring	2022-05-17	1889	710152	FLRH	Reposition	Yes	12:49	12:55	0.1	
Spring	2022-05-17	1889	710152	FLRH	Move	Yes	16:01	17:40	1.5	
Spring	2022-05-17	1889	710152	FLRH	Core	Yes	16:01	17:40	0.2	
Spring	2022-05-18	1891	34872	FLRH	Core	Yes	16:40	17:26	0.2	
Spring	2022-05-18	1891	34872	FLRH	CrewChg		18:07	18:27	0.3	
Spring	2022-05-18	1890	710153	FLRH	CrewChg		6:08	6:32	0.4	
Spring	2022-05-18	1890	710153	FLRH	Move	Yes	8:31	9:50	1.3	
Spring	2022-05-18	1891	34872	FLRH	PaxLoc		13:34	13:56	0.4	
Spring	2022-05-18	1891	34872	FLRH	Move	Yes	14:08	14:17	0.2	
Spring	2022-05-18	1891	34872	FLRH	Move	Yes	16:40	17:26	0.6	
Spring	2022-05-18	1891	34872	FLRH	PaxLoc		12:47	12:56	0.2	
Spring	2022-05-18	1890	710153	FLRH	Move	Yes	6:50	8:15	0.6	
Spring	2022-05-18	1890	710153	FLRH	Fuel	Yes	6:50	8:15	0.5	
Spring	2022-05-18	1890	710153	FLRH	Core	Yes	6:50	8:15	0.3	
Spring	2022-05-18	1891	34872	FLRH	Move	Yes	14:34	16:26	1.9	
Spring	2022-05-19	1892	34873	FLRH	PaxLoc		14:04	14:13	0.2	
Spring	2022-05-19	1892	34873	FLRH	Core	Yes	9:34	9:54	0.3	
Spring	2022-05-19	1892	34873	FLRH	Move	Yes	17:12	17:21	0.2	
Spring	2022-05-19	1892	34873	FLRH	CrewChg		18:33	18:55	0.4	
Spring	2022-05-19	1892	34873	FLRH	Move	Yes	15:36	16:38	1	
Spring	2022-05-20	1893	34874	FLRH	PaxLoc		9:59	10:08	0.2	
Spring	2022-05-20	1893	34874	FLRH	CrewChg		18:08	18:35	0.5	
Spring	2022-05-20	1893	34874	FLRH	Floor	Yes	16:20	17:12	0.4	
Spring	2022-05-20	1893	34874	FLRH	PaxLoc		16:20	17:12	0.5	
Spring	2022-05-20	1893	34874	FLRH	PaxLoc		15:04	15:15	0.2	
Spring	2022-05-20	1893	34874	FLRH	CrewChg		6:20	7:37	0.5	
Spring	2022-05-20	1893	34874	FLRH	PaxLoc		12:01	12:10	0.2	
Spring	2022-05-20	1893	34874	FLRH	Reposition	Yes	7:47	7:50	0.1	
Spring	2022-05-20	1893	34874	FLRH	Fuel	Yes	6:20	7:37	0.8	
Spring	2022-05-20	1893	34874	FLRH	DrillServ	Yes	13:56	14:45	0.8	
Spring	2022-05-21	1894	34875	FLRH	Fuel	Yes	14:56	15:17	0.4	
Spring	2022-05-21	1894	34875	FLRH	CrewChg		18:22	18:58	0.6	
Spring	2022-05-21	1894	34875	FLRH	Move	Yes	15:45	16:58	1.2	
Spring	2022-05-21	1894	34875	FLRH	Floor	Yes	12:52	14:41	1.8	
Spring	2022-05-21	1894	34875	FLRH	PaxLoc		10:56	11:05	0.2	
Spring	2022-05-21	1894	34875	FLRH	PaxLoc		10:21	10:30	0.2	
Spring	2022-05-21	1894	34875	FLRH	Fuel	Yes	6:56	8:17	1.1	
Spring	2022-05-21	1894	34875	FLRH	DrillServ	Yes	6:56	8:17	0.3	
Spring	2022-05-21	1894	34875	FLRH	CrewChg		6:13	6:39	0.4	
Spring	2022-05-21	1894	34875	FLRH	PaxLoc		17:19	17:29	0.2	
Spring	2022-05-22	1895	34876	FLRH	Fuel	Yes	6:53	7:31	0.6	
Spring	2022-05-22	1895	34876	FLRH	DrillServ	Yes	14:03	15:14	0.4	
Spring	2022-05-22	1895	34876	FLRH	CrewChg		18:13	19:02	0.8	
Spring	2022-05-22	1895	34876	FLRH	PaxLoc		17:13	17:59	0.2	
Spring	2022-05-22	1895	34876	FLRH	Move	Yes	17:13	17:59	0.6	
Spring	2022-05-22	1895	34876	FLRH	Move	Yes	16:17	17:06	0.8	
Spring	2022-05-22	1895	34876	FLRH	Floor	Yes	14:03	15:14	0.8	
Spring	2022-05-22	1895	34876	FLRH	Core	Yes	13:03	13:50	0.2	
Spring	2022-05-22	1895	34876	FLRH	PaxLoc		12:08	12:18	0.2	
Spring	2022-05-22	1895	34876	FLRH	CrewChg		6:06	6:40	0.6	
Spring	2022-05-22	1895	34876	FLRH	Fuel	Yes	13:03	13:50	0.6	
Spring	2022-05-23	1896	34877	FLRH	PaxLoc		11:28	11:37	0.2	
Spring	2022-05-23	1896	34877	FLRH	Core	Yes	10:58	11:17	0.3	
Spring	2022-05-23	1896	34877	FLRH	CrewChg		6:16	6:46	0.5	
Spring	2022-05-23	1896	34877	FLRH	Core	Yes	7:03	8:20	0.3	
Spring	2022-05-23	1896	34877	FLRH	DrillServ	Yes	7:03	8:20	0.3	
Spring	2022-05-23	1896	34877	FLRH	Fuel	Yes	7:03	8:20	0.7	
Spring	2022-05-23	1896	34877	FLRH	PaxLoc		13:56	14:12	0.3	
Spring	2022-05-23	1896	34877	FLRH	CrewChg		18:08	18:36	0.5	
Spring	2022-05-23	1896	34877	FLRH	Core	Yes	17:28	17:54	0.4	
Spring	2022-05-24	1898	34878	FLRH	DrillServ	Yes	6:58	8:30	0.4	
Spring	2022-05-24	1898	34878	FLRH	Core	Yes	6:58	8:30	0.3	
Spring	2022-05-24	1898	34878	FLRH	CrewChg		6:13	6:42	0.5	
Spring	2022-05-24	1898	34878	FLRH	Fuel	Yes	6:58	8:30	0.8	
Spring	2022-05-24	1898	34878	FLRH	CrewChg		18:10	18:38	0.5	
Spring	2022-05-24	1898	34878	FLRH	Core	Yes	17:27	17:46	0.3	
Spring	2022-05-24	1898	34878	FLRH	PaxLoc		10:00	11:09	0.2	
Spring	2022-05-24	1898	34878	FLRH	Floor	Yes	10:00	11:09	0.8	
Spring	2022-05-24	1898	34878	FLRH	DrillServ	Yes	10:00	11:09	0.2	

Table E-1: Helicopter Flight Summary 2022

Season	Date	FltReportID	FltReportNo	Helicopter	Flight Type	Flight Type where Low Elevation Expected	Departure	Arrival	Time (hours)	Comment
Spring	2022-05-24	1898	34878	FLRH	Reposition	Yes	12:40	12:45	0.1	
Spring	2022-05-24	1898	34878	FLRH	PaxLoc		12:52	13:14	0.4	
Spring	2022-05-25	1900	34879	FLRH	Core	Yes	6:59	7:17	0.3	
Spring	2022-05-25	1900	34879	FLRH	Move	Yes	10:32	10:54	0.4	
Spring	2022-05-25	1900	34879	FLRH	CrewChg		6:16	6:47	0.5	
Spring	2022-05-25	1900	34879	FLRH	Move	Yes	8:41	9:19	0.6	
Spring	2022-05-25	1900	34879	FLRH	Move	Yes	9:20	10:25	1.1	
Spring	2022-05-25	1900	34879	FLRH	PaxLoc		7:52	8:02	0.2	
Spring	2022-05-25	1900	34879	FLRH	Core	Yes	17:36	17:58	0.4	
Spring	2022-05-25	1900	34879	FLRH	Fuel	Yes	13:42	15:05	0.9	
Spring	2022-05-25	1900	34879	FLRH	CrewChg		6:08	6:42	0.6	
Spring	2022-05-25	1900	34879	FLRH	Move	Yes	10:55	11:20	0.4	
Spring	2022-05-25	1900	34879	FLRH	DrillServ	Yes	13:42	15:05	0.5	
Spring	2022-05-25	1900	34879	FLRH	PaxLoc		12:18	12:28	0.2	
Summer	2022-05-26	1901	34880	FLRH	Move	Yes	9:14	9:50	0.6	
Summer	2022-05-26	1902	271194	GLYF	PaxLoc		17:10	17:22	0.2	
Summer	2022-05-26	1901	34880	FLRH	Move	Yes	11:44	11:54	0.2	
Summer	2022-05-26	1901	34880	FLRH	Move	Yes	12:03	12:50	0.6	
Summer	2022-05-26	1901	34880	FLRH	PaxLoc		12:03	12:50	0.2	
Summer	2022-05-26	1902	271194	GLYF	Fuel	Yes	13:10	14:42	0.9	
Summer	2022-05-26	1901	34880	FLRH	Move	Yes	9:51	10:52	1	
Summer	2022-05-26	1901	34880	FLRH	Core	Yes	6:50	7:09	0.3	
Summer	2022-05-26	1902	271194	GLYF	DrillServ	Yes	13:10	14:42	0.6	
Summer	2022-05-26	1902	271194	GLYF	Core	Yes	17:36	17:57	0.4	
Summer	2022-05-26	1902	271194	GLYF	CrewChg		18:10	18:41	0.5	
Summer	2022-05-26	1902	271194	GLYF	Core	Yes	18:48	19:08	0.3	
Summer	2022-05-26	1901	34880	FLRH	CrewChg		6:08	6:39	0.5	
Summer	2022-05-26	1902	271194	GLYF	Floor	Yes	15:26	16:02	0.6	
Summer	2022-05-26	1901	34880	FLRH	PaxLoc		8:20	8:32	0.2	
Summer	2022-05-26	1902	271194	GLYF	Reposition	Yes	12:54	13:00	0.1	
Summer	2022-05-27	1903	34881	FLRH	Move	Yes	8:05	9:11	1.1	
Summer	2022-05-27	1905	686934	GLYF	Fuel	Yes	11:06	12:12	0.9	
Summer	2022-05-27	1903	34881	FLRH	Move	Yes	9:54	11:13	1.3	
Summer	2022-05-27	1903	34881	FLRH	Move	Yes	9:11	9:25	0.2	
Summer	2022-05-27	1903	34881	FLRH	Move	Yes	7:35	8:05	0.5	
Summer	2022-05-27	1903	34881	FLRH	Move	Yes	9:42	9:54	0.2	
Summer	2022-05-27	1905	686934	GLYF	Core	Yes	11:06	12:12	0.2	
Summer	2022-05-27	1905	686934	GLYF	CrewChg		18:10	18:39	0.5	
Summer	2022-05-27	1905	686934	GLYF	DrillServ	Yes	17:31	18:00	0.5	
Summer	2022-05-27	1905	686934	GLYF	DrillServ	Yes	12:37	13:17	0.7	
Summer	2022-05-27	1903	34881	FLRH	CrewChg		6:12	6:44	0.5	
Summer	2022-05-27	1903	34881	FLRH	Move	Yes	6:59	7:08	0.2	
Summer	2022-05-28	1906	686935	GLYF	Move	Yes	16:55	18:39	1.5	
Summer	2022-05-28	1906	686935	GLYF	CrewChg		6:09	7:01	0.7	
Summer	2022-05-28	1906	686935	GLYF	Core	Yes	16:55	18:39	0.2	
Summer	2022-05-28	1906	686935	GLYF	Core	Yes	6:09	7:01	0.2	
Summer	2022-05-28	1906	686935	GLYF	Move	Yes	16:02	16:14	0.2	
Summer	2022-05-28	1906	686935	GLYF	Floor	Yes	14:53	15:31	0.7	
Summer	2022-05-28	1906	686935	GLYF	Floor	Yes	13:17	14:09	0.7	
Summer	2022-05-28	1906	686935	GLYF	Reposition	Yes	9:02	9:07	0.1	
Summer	2022-05-28	1906	686935	GLYF	PaxLoc		12:17	12:28	0.2	
Summer	2022-05-28	1906	686935	GLYF	PaxLoc		13:17	14:09	0.2	
Summer	2022-05-28	1904	34882	FLRH	CrewChg		18:07	18:43	0.6	
Summer	2022-05-28	1904	34882	FLRH	Reposition	Yes	7:42	7:47	0.1	
Summer	2022-05-28	1906	686935	GLYF	PaxLoc		11:01	12:00	1	
Summer	2022-05-28	1906	686935	GLYF	PaxLoc		9:20	10:39	1.3	
Summer	2022-05-28	1904	34882	FLRH	PaxLoc		9:08	9:47	0.7	
Summer	2022-05-28	1904	34882	FLRH	PaxLoc		16:55	17:05	0.2	
Summer	2022-05-28	1904	34882	FLRH	PaxLoc		17:29	17:48	0.3	
Summer	2022-05-28	1904	34882	FLRH	PaxLoc		14:06	14:15	0.2	
Summer	2022-05-28	1904	34882	FLRH	PaxLoc		8:36	8:59	0.4	
Summer	2022-05-29	1907	961837	GLYF	Core	Yes	17:31	17:59	0.5	
Summer	2022-05-29	1907	961837	GLYF	CrewChg		18:08	18:38	0.5	
Summer	2022-05-29	1908	34883	FLRH	Fuel	Yes	14:13	15:23	0.8	
Summer	2022-05-29	1908	34883	FLRH	CrewChg		11:11	11:45	0.6	
Summer	2022-05-29	1908	34883	FLRH	PaxLoc		12:04	12:15	0.2	
Summer	2022-05-29	1908	34883	FLRH	Move	Yes	12:15	13:14	1	
Summer	2022-05-29	1908	34883	FLRH	DrillServ	Yes	14:13	15:23	0.4	
Summer	2022-05-29	1908	34883	FLRH	CrewChg		10:43	10:52	0.2	Bad weather, turn back.
Summer	2022-05-29	1908	34883	FLRH	DrillServ	Yes	13:14	14:00	0.8	
Summer	2022-05-29	1908	34883	FLRH	PaxLoc		15:36	17:56	2.3	
Summer	2022-05-29	1907	961837	GLYF	PaxLoc		16:40	16:59	0.3	
Summer	2022-05-29	1907	961837	GLYF	Reposition	Yes	12:00	12:07	0.1	
Summer	2022-05-29	1907	961837	GLYF	PaxLoc		13:10	13:35	0.4	
Summer	2022-05-30	1910	686937	GLYF	Core	Yes	7:27	8:35	0.2	
Summer	2022-05-30	1910	686937	GLYF	Floor	Yes	10:12	10:33	0.4	
Summer	2022-05-30	1910	686937	GLYF	DrillServ	Yes	7:27	8:35	0.5	
Summer	2022-05-30	1910	686937	GLYF	Fuel	Yes	7:27	8:35	0.4	
Summer	2022-05-30	1910	686937	GLYF	DrillServ	Yes	11:51	12:58	1.1	
Summer	2022-05-30	1910	686937	GLYF	CrewChg		18:05	18:31	0.4	
Summer	2022-05-30	1910	686937	GLYF	Fuel	Yes	6:39	7:17	0.6	
Summer	2022-05-30	1910	686937	GLYF	CrewChg		6:05	6:33	0.5	
Summer	2022-05-30	1910	686937	GLYF	PaxLoc		9:27	9:41	0.2	
Summer	2022-05-30	1910	686937	GLYF	PaxLoc		13:12	16:04	2.9	
Summer	2022-05-30	1909	34884	FLRH	PaxLoc		7:07	7:32	0.4	
Summer	2022-05-30	1909	34884	FLRH	Reposition	Yes	6:25	6:30	0.1	
Summer	2022-05-30	1909	34884	FLRH	PaxLoc		17:15	17:32	0.3	
Summer	2022-05-31	1913	601307	FLRH	Move	Yes	13:22	14:12	0.8	
Summer	2022-05-31	1913	601307	FLRH	PaxLoc		15:08	16:48	0.3	

Table E-1: Helicopter Flight Summary 2022

Season	Date	FltReportID	FltReportNo	Helicopter	Flight Type	Flight Type where Low Elevation Expected	Departure	Arrival	Time (hours)	Comment
Summer	2022-05-31	1913	601307	FLRH	Move	Yes	15:08	16:48	1.4	
Summer	2022-05-31	1913	601307	FLRH	Move	Yes	14:12	15:00	0.8	
Summer	2022-05-31	1913	601307	FLRH	Fuel	Yes	16:58	17:42	0.2	
Summer	2022-05-31	1913	601307	FLRH	Core	Yes	16:58	17:42	0.3	
Summer	2022-05-31	1913	601307	FLRH	CrewChg		6:06	6:35	0.5	
Summer	2022-05-31	1913	601307	FLRH	Core	Yes	6:52	7:34	0.7	
Summer	2022-05-31	1913	601307	FLRH	CrewChg		18:12	18:41	0.5	
Summer	2022-05-31	1913	601307	FLRH	PaxLoc		12:22	12:41	0.3	
Summer	2022-05-31	1913	601307	FLRH	DrillServ	Yes	16:58	17:42	0.2	
Summer	2022-05-31	1913	601307	FLRH	PaxLoc		9:11	11:29	2.3	
Summer	2022-05-31	1913	601307	FLRH	Reposition	Yes	8:48	8:51	0.1	
Summer	2022-05-31	1912	686938	GLYF	PaxLoc		7:56	8:18	0.4	
Summer	2022-05-31	1912	686938	GLYF	PaxLoc		16:06	16:27	0.4	
Summer	2022-06-01	1914	686939	GLYF	PaxLoc		17:27	17:40	0.2	
Summer	2022-06-01	1914	686939	GLYF	PaxLoc		16:56	17:04	0.1	
Summer	2022-06-01	1914	686939	GLYF	Floor	Yes	15:40	16:06	0.4	
Summer	2022-06-01	1914	686939	GLYF	DrillServ	Yes	6:56	8:34	1.2	
Summer	2022-06-01	1914	686939	GLYF	Floor	Yes	13:45	14:42	1	
Summer	2022-06-01	1914	686939	GLYF	CrewChg		6:03	6:31	0.5	
Summer	2022-06-01	1914	686939	GLYF	DrillServ	Yes	17:57	18:43	0.5	
Summer	2022-06-01	1914	686939	GLYF	Core	Yes	6:56	8:34	0.4	
Summer	2022-06-01	1914	686939	GLYF	Core	Yes	17:57	18:43	0.3	
Summer	2022-06-01	1915	34886	FLRH	Reposition	Yes	13:48	13:53	0.1	
Summer	2022-06-01	1915	34886	FLRH	CrewChg		18:01	18:29	0.5	
Summer	2022-06-01	1914	686939	GLYF	PaxLoc		8:59	10:35	1.6	
Summer	2022-06-01	1915	34886	FLRH	PaxLoc		13:21	13:42	0.4	
Summer	2022-06-01	1915	34886	FLRH	PaxLoc		12:50	13:00	0.2	
Summer	2022-06-01	1915	34886	FLRH	PaxLoc		7:50	7:59	0.2	
Summer	2022-06-01	1915	34886	FLRH	PaxLoc		7:00	7:19	0.3	
Summer	2022-06-02	1916	34887	FLRH	DrillServ	Yes	7:11	8:53	1.7	
Summer	2022-06-02	1916	34887	FLRH	CrewChg		18:16	18:38	0.4	
Summer	2022-06-02	1916	34887	FLRH	Reposition	Yes	9:00	9:05	0.1	
Summer	2022-06-02	1917	24748	GLYF	Core	Yes	6:50	7:31	0.7	
Summer	2022-06-02	1916	34887	FLRH	CrewChg		6:11	6:42	0.5	
Summer	2022-06-03	1919	686941	GLYF	DrillServ	Yes	9:16	10:51	0.4	
Summer	2022-06-03	1918	34888	FLRH	PaxLoc		13:09	13:19	0.2	
Summer	2022-06-03	1918	34888	FLRH	Move	Yes	17:00	18:30	1.5	
Summer	2022-06-03	1918	34888	FLRH	Move	Yes	15:10	16:53	1.7	
Summer	2022-06-03	1918	34888	FLRH	Move	Yes	13:51	15:02	1.2	
Summer	2022-06-03	1919	686941	GLYF	CrewChg		6:16	6:45	0.5	
Summer	2022-06-03	1919	686941	GLYF	PaxLoc		18:08	19:11	0.2	
Summer	2022-06-03	1919	686941	GLYF	Fuel	Yes	9:16	10:51	1	
Summer	2022-06-03	1919	686941	GLYF	Move	Yes	18:08	19:11	0.4	
Summer	2022-06-03	1919	686941	GLYF	Core	Yes	9:16	10:51	0.2	
Summer	2022-06-03	1918	34888	FLRH	Move	Yes	13:35	13:50	0.3	
Summer	2022-06-03	1918	34888	FLRH	PaxLoc		12:26	12:39	0.2	
Summer	2022-06-03	1919	686941	GLYF	Move	Yes	17:15	18:00	0.8	
Summer	2022-06-03	1919	686941	GLYF	DrillServ	Yes	11:01	11:35	0.6	
Summer	2022-06-03	1918	34888	FLRH	Reposition	Yes	18:43	18:48	0.1	
Summer	2022-06-03	1919	686941	GLYF	CrewChg		18:08	19:11	0.5	
Summer	2022-06-03	1918	34888	FLRH	PaxLoc		13:24	13:34	0.2	
Summer	2022-06-04	1920	34889	FLRH	PaxLoc		16:13	16:23	0.2	
Summer	2022-06-04	1921	686942	GLYF	Move	Yes	13:03	14:33	1.5	
Summer	2022-06-04	1921	686942	GLYF	Core	Yes	5:57	6:19	0.4	
Summer	2022-06-04	1920	34889	FLRH	CrewChg		18:09	18:36	0.5	
Summer	2022-06-04	1920	34889	FLRH	PaxLoc		15:44	15:54	0.2	
Summer	2022-06-04	1920	34889	FLRH	Move	Yes	13:46	15:26	1.5	
Summer	2022-06-04	1920	34889	FLRH	PaxLoc		13:46	15:26	0.2	
Summer	2022-06-04	1920	34889	FLRH	Move	Yes	12:53	13:22	0.5	
Summer	2022-06-04	1920	34889	FLRH	DrillServ	Yes	9:34	10:25	0.9	
Summer	2022-06-04	1920	34889	FLRH	CrewChg		6:10	6:39	0.5	
Summer	2022-06-04	1920	34889	FLRH	PaxLoc		11:43	12:03	0.3	
Summer	2022-06-04	1921	686942	GLYF	PaxLoc		8:05	9:39	1.6	
Summer	2022-06-04	1922	724024	GLYF	PaxLoc		15:33	18:39	3.1	
Summer	2022-06-04	1922	724024	GLYF	PaxLoc		18:44	19:00	0.3	
Summer	2022-06-05	1924	686943	GLYF	PaxLoc		14:47	16:29	0.2	
Summer	2022-06-05	1923	34890	FLRH	Move	Yes	14:55	15:29	0.6	
Summer	2022-06-05	1923	34890	FLRH	PaxLoc		14:34	14:55	0.4	
Summer	2022-06-05	1923	34890	FLRH	CrewChg		18:16	18:43	0.5	
Summer	2022-06-05	1924	686943	GLYF	Core	Yes	5:20	5:42	0.4	
Summer	2022-06-05	1924	686943	GLYF	CrewChg		6:16	6:43	0.5	
Summer	2022-06-05	1924	686943	GLYF	Fuel	Yes	10:47	11:31	0.7	
Summer	2022-06-05	1924	686943	GLYF	PaxLoc		11:54	12:22	0.5	
Summer	2022-06-05	1924	686943	GLYF	DrillServ	Yes	13:48	14:02	0.1	
Summer	2022-06-05	1924	686943	GLYF	DrillServ	Yes	14:47	16:29	1.5	
Summer	2022-06-05	1924	686943	GLYF	Reposition	Yes	16:45	16:52	0.1	
Summer	2022-06-05	1923	34890	FLRH	Move	Yes	15:50	16:17	0.5	
Summer	2022-06-05	1923	34890	FLRH	Move	Yes	17:23	17:47	0.4	
Summer	2022-06-05	1924	686943	GLYF	PaxLoc		13:48	14:02	0.1	
Summer	2022-06-05	1923	34890	FLRH	PaxLoc		13:34	13:56	0.4	
Summer	2022-06-05	1923	34890	FLRH	PaxLoc		8:28	8:57	0.5	
Summer	2022-06-05	1923	34890	FLRH	Reposition	Yes	8:09	8:12	0.1	
Summer	2022-06-05	1924	686943	GLYF	VIP		7:24	7:43	0.3	
Summer	2022-06-05	1924	686943	GLYF	VIP		7:50	8:10	0.3	
Summer	2022-06-06	1928	476263	FLRH	PaxLoc		21:30	21:52	0.4	
Summer	2022-06-06	1928	476263	FLRH	DrillServ	Yes	10:42	11:54	1.2	
Summer	2022-06-06	1928	476263	FLRH	PaxLoc		12:18	12:55	0.6	
Summer	2022-06-06	1928	476263	FLRH	PaxLoc		13:50	14:00	0.2	
Summer	2022-06-06	1928	476263	FLRH	Reposition	Yes	10:10	10:15	0.1	

Table E-1: Helicopter Flight Summary 2022

Season	Date	FltReportID	FltReportNo	Helicopter	Flight Type	Flight Type where Low Elevation Expected	Departure	Arrival	Time (hours)	Comment
Summer	2022-06-06	1928	476263	FLRH	Move	Yes	14:23	15:34	1.2	
Summer	2022-06-06	1928	476263	FLRH	PaxLoc		9:17	9:47	0.5	
Summer	2022-06-06	1928	476263	FLRH	DrillServ	Yes	17:09	17:30	0.2	
Summer	2022-06-06	1926	756559	GLYF	Move	Yes	15:12	16:30	1.3	
Summer	2022-06-06	1928	476263	FLRH	Move	Yes	15:43	16:22	0.7	
Summer	2022-06-06	1926	756559	GLYF	Reposition	Yes	16:43	16:50	0.1	
Summer	2022-06-06	1925	686944	GLYF	Core	Yes	6:08	6:52	0.3	
Summer	2022-06-06	1928	476263	FLRH	CrewChg		18:04	18:32	0.5	
Summer	2022-06-06	1925	686944	GLYF	CrewChg		6:08	6:52	0.4	
Summer	2022-06-06	1928	476263	FLRH	Core	Yes	17:09	17:30	0.2	
Summer	2022-06-06	1928	476263	FLRH	PaxLoc		16:37	16:52	0.3	
Summer	2022-06-06	1926	756559	GLYF	PaxLoc		14:02	14:49	0.8	
Summer	2022-06-07	1927	756560	GLYF	CrewChg		6:06	7:38	0.5	
Summer	2022-06-07	1927	756560	GLYF	Move	Yes	15:35	17:18	1.7	
Summer	2022-06-07	1929	476264	FLRH	Move	Yes	16:49	17:54	1.1	
Summer	2022-06-07	1929	476264	FLRH	Move	Yes	18:12	19:56	1.2	
Summer	2022-06-07	1927	756560	GLYF	Reposition	Yes	8:51	8:56	0.1	
Summer	2022-06-07	1927	756560	GLYF	Core	Yes	6:06	7:38	0.5	
Summer	2022-06-07	1927	756560	GLYF	PaxLoc		4:33	4:55	0.4	
Summer	2022-06-07	1929	476264	FLRH	CrewChg		18:12	19:56	0.5	
Summer	2022-06-07	1927	756560	GLYF	Fuel	Yes	6:06	7:38	0.5	
Summer	2022-06-07	1927	756560	GLYF	Reposition	Yes	17:26	17:31	0.1	
Summer	2022-06-07	1929	476264	FLRH	PaxLoc		13:50	14:02	0.2	
Summer	2022-06-07	1929	476264	FLRH	Move	Yes	16:08	16:35	0.5	
Summer	2022-06-07	1929	476264	FLRH	Move	Yes	20:10	21:32	1.4	
Summer	2022-06-07	1927	756560	GLYF	Wildlife		9:55	11:06	0.2	
Summer	2022-06-07	1927	756560	GLYF	PaxLoc		9:55	11:06	1	
Summer	2022-06-08	1930	476265	FLRH	CrewChg		18:09	18:24	0.3	
Summer	2022-06-08	1930	476265	FLRH	Move	Yes	14:19	16:02	1.7	
Summer	2022-06-08	1969	756561	GLYF	Core	Yes	5:33	5:55	0.4	
Summer	2022-06-08	1969	756561	GLYF	Move	Yes	14:50	16:10	1.2	
Summer	2022-06-08	1969	756561	GLYF	Fuel	Yes	6:02	6:50	0.5	
Summer	2022-06-08	1969	756561	GLYF	CrewChg		6:02	6:50	0.3	
Summer	2022-06-08	1930	476265	FLRH	PaxLoc		17:34	17:54	0.3	
Summer	2022-06-08	1969	756561	GLYF	PaxLoc		10:04	10:15	0.2	
Summer	2022-06-08	1969	756561	GLYF	Move	Yes	13:10	14:42	1.4	
Summer	2022-06-08	1969	756561	GLYF	PaxLoc		10:45	10:57	0.2	
Summer	2022-06-08	1969	756561	GLYF	Reposition	Yes	16:52	16:58	0.1	
Summer	2022-06-08	1969	756561	GLYF	PaxLoc		11:36	12:01	0.4	
Summer	2022-06-08	1969	756561	GLYF	Reposition	Yes	12:23	12:28	0.1	
Summer	2022-06-08	1969	756561	GLYF	PaxLoc		13:10	14:42	0.1	
Summer	2022-06-08	1969	756561	GLYF	PaxLoc		14:50	16:10	0.1	
Summer	2022-06-08	1930	476265	FLRH	PaxLoc		12:44	13:00	0.3	
Summer	2022-06-08	1930	476265	FLRH	PaxLoc		13:12	14:01	0.8	
Summer	2022-06-08	1930	476265	FLRH	Reposition	Yes	11:30	11:35	0.1	
Summer	2022-06-08	1930	476265	FLRH	PaxLoc		11:45	12:25	0.7	
Summer	2022-06-09	1933	476266	FLRH	DrillServ	Yes	19:08	20:18	1	
Summer	2022-06-09	1931	756562	GLYF	PaxLoc		14:37	14:55	0.3	
Summer	2022-06-09	1931	756562	GLYF	DrillServ	Yes	8:59	9:30	0.2	
Summer	2022-06-09	1931	756562	GLYF	PaxLoc		8:59	9:30	0.3	
Summer	2022-06-09	1931	756562	GLYF	DrillServ	Yes	7:38	8:29	0.5	
Summer	2022-06-09	1931	756562	GLYF	CrewChg		6:10	6:36	0.4	
Summer	2022-06-09	1933	476266	FLRH	Core	Yes	19:08	20:18	0.2	
Summer	2022-06-09	1931	756562	GLYF	Reposition	Yes	9:44	9:50	0.1	
Summer	2022-06-09	1931	756562	GLYF	PaxLoc		13:14	13:33	0.3	
Summer	2022-06-09	1933	476266	FLRH	CrewChg		18:07	18:31	0.4	
Summer	2022-06-09	1931	756562	GLYF	PaxLoc		7:38	8:29	0.4	
Summer	2022-06-09	1933	476266	FLRH	PaxLoc		13:55	15:08	1.2	
Summer	2022-06-09	1933	476266	FLRH	Reposition	Yes	11:45	11:50	0.1	
Summer	2022-06-09	1933	476266	FLRH	PaxLoc		12:33	12:50	0.3	
Summer	2022-06-09	1933	476266	FLRH	PaxLoc		13:15	13:35	0.3	
Summer	2022-06-10	1932	756563	GLYF	DrillServ	Yes	12:35	12:57	0.4	
Summer	2022-06-10	1934	476267	FLRH	Core	Yes	17:35	17:58	0.2	
Summer	2022-06-10	1932	756563	GLYF	Pax		14:33	14:55	0.4	
Summer	2022-06-10	1932	756563	GLYF	Reposition	Yes	13:38	13:43	0.1	
Summer	2022-06-10	1932	756563	GLYF	DrillServ	Yes	17:31	18:00	0.4	
Summer	2022-06-10	1932	756563	GLYF	Reposition	Yes	9:45	9:51	0.1	
Summer	2022-06-10	1932	756563	GLYF	CrewChg		6:10	7:02	0.4	
Summer	2022-06-10	1934	476267	FLRH	CrewChg		18:05	18:34	0.5	
Summer	2022-06-10	1934	476267	FLRH	PaxLoc		17:35	17:58	0.2	
Summer	2022-06-10	1934	476267	FLRH	Reposition	Yes	13:40	13:45	0.1	
Summer	2022-06-10	1934	476267	FLRH	Reposition	Yes	12:45	12:50	0.1	
Summer	2022-06-10	1932	756563	GLYF	DrillServ	Yes	6:10	7:02	0.5	
Summer	2022-06-11	1936	756564	GLYF	PaxLoc		8:34	8:44	0.2	
Summer	2022-06-11	1935	476268	FLRH	DrillServ	Yes	17:22	17:54	0.5	
Summer	2022-06-11	1936	756564	GLYF	PaxLoc		7:18	7:33	0.3	
Summer	2022-06-11	1936	756564	GLYF	PaxLoc		9:14	9:23	0.2	
Summer	2022-06-11	1936	756564	GLYF	PaxLoc		9:42	10:06	0.4	
Summer	2022-06-11	1935	476268	FLRH	Core	Yes	6:51	7:12	0.4	
Summer	2022-06-11	1936	756564	GLYF	PaxLoc		17:18	17:38	0.3	
Summer	2022-06-11	1935	476268	FLRH	CrewChg		6:12	6:36	0.4	
Summer	2022-06-11	1935	476268	FLRH	CrewChg		18:16	18:35	0.3	
Summer	2022-06-11	1935	476268	FLRH	PaxLoc		10:33	10:49	0.3	
Summer	2022-06-11	1935	476268	FLRH	PaxLoc		13:31	14:00	0.5	
Summer	2022-06-11	1935	476268	FLRH	PaxLoc		12:08	12:23	0.3	
Summer	2022-06-11	1935	476268	FLRH	PaxLoc		7:51	8:10	0.3	
Summer	2022-06-11	1935	476268	FLRH	PaxLoc		8:36	8:52	0.3	
Summer	2022-06-12	1937	756565	GLYF	PaxLoc		11:44	13:37	0.1	
Summer	2022-06-12	1937	756565	GLYF	Move	Yes	8:16	11:06	2	

Table E-1: Helicopter Flight Summary 2022

Season	Date	FltReportID	FltReportNo	Helicopter	Flight Type	Flight Type where Low Elevation Expected	Departure	Arrival	Time (hours)	Comment
Summer	2022-06-12	1937	756565	GLYF	Floor		11:44	13:37	0.6	
Summer	2022-06-12	1937	756565	GLYF	PaxLoc	Yes	16:41	16:55	0.2	
Summer	2022-06-12	1937	756565	GLYF	Floor	Yes	13:58	14:30	0.2	
Summer	2022-06-12	1937	756565	GLYF	Move	Yes	11:44	13:37	1.2	
Summer	2022-06-12	1937	756565	GLYF	PaxLoc		13:58	14:30	0.3	
Summer	2022-06-12	1940	476269	FLRH	Reposition	Yes	12:40	12:45	0.1	
Summer	2022-06-12	1937	756565	GLYF	PaxLoc		8:16	11:06	0.2	
Summer	2022-06-12	1940	476269	FLRH	DrillServ	Yes	8:44	9:02	0.3	
Summer	2022-06-12	1940	476269	FLRH	LocSng	Yes	17:16	17:31	0.3	
Summer	2022-06-12	1937	756565	GLYF	Floor	Yes	8:16	11:06	0.6	
Summer	2022-06-12	1940	476269	FLRH	Core	Yes	6:06	7:12	0.3	
Summer	2022-06-12	1940	476269	FLRH	DrillServ	Yes	6:06	7:12	0.4	
Summer	2022-06-12	1940	476269	FLRH	CrewChg		6:06	7:12	0.4	
Summer	2022-06-12	1940	476269	FLRH	CrewChg		18:08	18:28	0.3	
Summer	2022-06-12	1940	476269	FLRH	PaxLoc		12:02	12:25	0.4	
Summer	2022-06-12	1940	476269	FLRH	PaxLoc		11:22	11:47	0.4	
Summer	2022-06-12	1940	476269	FLRH	PaxLoc		7:28	7:46	0.3	
Summer	2022-06-12	1940	476269	FLRH	PaxLoc		8:19	8:40	0.4	
Summer	2022-06-12	1940	476269	FLRH	PaxLoc		10:51	11:09	0.3	
Summer	2022-06-12	1940	476269	FLRH	PaxLoc		16:06	16:21	0.3	
Summer	2022-06-13	1941	476270	FLRH	Move	Yes	7:00	7:26	0.3	
Summer	2022-06-13	1938	756566	GLYF	Move	Yes	10:51	12:30	1	
Summer	2022-06-13	1941	476270	FLRH	Reposition	Yes	18:03	18:08	0.1	
Summer	2022-06-13	1941	476270	FLRH	CrewChg		17:48	17:58	0.2	
Summer	2022-06-13	1941	476270	FLRH	Move	Yes	16:00	17:40	1.7	
Summer	2022-06-13	1941	476270	FLRH	Move	Yes	15:27	15:56	0.5	
Summer	2022-06-13	1941	476270	FLRH	Move	Yes	12:57	15:10	2.2	
Summer	2022-06-13	1941	476270	FLRH	Move	Yes	10:25	12:35	2.2	
Summer	2022-06-13	1941	476270	FLRH	Move	Yes	8:23	10:06	1.1	
Summer	2022-06-13	1941	476270	FLRH	PaxLoc		7:43	8:07	0.4	
Summer	2022-06-13	1941	476270	FLRH	CrewChg		6:07	6:41	0.6	
Summer	2022-06-13	1938	756566	GLYF	PaxLoc		16:43	16:55	0.2	
Summer	2022-06-13	1938	756566	GLYF	PaxLoc		17:24	17:36	0.2	
Summer	2022-06-13	1938	756566	GLYF	PaxLoc		10:51	12:30	0.7	
Summer	2022-06-13	1941	476270	FLRH	PaxLoc		8:23	10:06	0.3	
Summer	2022-06-13	1938	756566	GLYF	CrewChg		18:14	18:37	0.4	
Summer	2022-06-13	1941	476270	FLRH	PaxLoc		8:23	10:06	0.3	
Summer	2022-06-14	1939	756567	GLYF	CrewChg		18:10	18:32	0.4	
Summer	2022-06-14	1942	476271	FLRH	CrewChg		6:09	8:08	0.3	
Summer	2022-06-14	1942	476271	FLRH	Move	Yes	8:23	9:29	0.8	
Summer	2022-06-14	1939	756567	GLYF	DrillServ	Yes	11:18	11:30	0.2	
Summer	2022-06-14	1939	756567	GLYF	PaxLoc		13:19	13:28	0.2	
Summer	2022-06-14	1942	476271	FLRH	Move	Yes	6:09	8:08	1.7	
Summer	2022-06-14	1939	756567	GLYF	Core	Yes	16:54	17:09	0.3	
Summer	2022-06-14	1939	756567	GLYF	DrillServ	Yes	8:57	9:13	0.3	
Summer	2022-06-14	1942	476271	FLRH	Move	Yes	10:18	11:30	1.2	
Summer	2022-06-14	1942	476271	FLRH	PaxLoc		13:40	13:50	0.2	
Summer	2022-06-14	1942	476271	FLRH	PaxLoc		14:19	14:36	0.3	
Summer	2022-06-14	1939	756567	GLYF	CrewChg		6:10	6:33	0.4	
Summer	2022-06-14	1942	476271	FLRH	PaxLoc		16:27	17:09	0.4	
Summer	2022-06-14	1942	476271	FLRH	PaxLoc		15:31	15:40	0.2	
Summer	2022-06-14	1939	756567	GLYF	PaxLoc		14:05	14:16	0.2	
Summer	2022-06-14	1942	476271	FLRH	Reposition	Yes	12:55	13:00	0.1	
Summer	2022-06-14	1942	476271	FLRH	PaxLoc		11:53	12:05	0.2	
Summer	2022-06-14	1942	476271	FLRH	PaxLoc		9:55	10:05	0.2	
Summer	2022-06-14	1942	476271	FLRH	Reposition	Yes	17:47	17:50	0.1	
Summer	2022-06-14	1942	476271	FLRH	Reposition	Yes	17:40	17:45	0.1	
Summer	2022-06-14	1942	476271	FLRH	PaxLoc		16:27	17:09	0.3	
Summer	2022-06-14	1942	476271	FLRH	PaxLoc		8:23	9:29	0.3	
Summer	2022-06-15	1944	476272	FLRH	PaxLoc		15:20	15:30	0.2	
Summer	2022-06-15	1944	476272	FLRH	PaxLoc		13:08	13:36	0.5	
Summer	2022-06-15	1944	476272	FLRH	PaxLoc		15:45	16:06	0.4	
Summer	2022-06-15	1943	756568	GLYF	Fuel	Yes	14:15	14:40	0.2	
Summer	2022-06-15	1943	756568	GLYF	CrewChg		6:18	6:42	0.4	
Summer	2022-06-15	1943	756568	GLYF	PaxLoc		17:05	17:15	0.2	
Summer	2022-06-15	1943	756568	GLYF	PaxLoc		16:30	16:40	0.2	
Summer	2022-06-15	1943	756568	GLYF	CrewChg		18:04	18:28	0.4	
Summer	2022-06-15	1943	756568	GLYF	Core	Yes	14:15	14:40	0.2	
Summer	2022-06-15	1944	476272	FLRH	PaxLoc		16:47	17:22	0.6	
Summer	2022-06-15	1944	476272	FLRH	PaxLoc		18:16	18:52	0.6	
Summer	2022-06-15	1944	476272	FLRH	NoRevenu	Yes	13:41	13:46	0.1	
Summer	2022-06-15	1944	476272	FLRH	NoRevenu	Yes	14:26	14:32	0.1	
Summer	2022-06-15	1944	476272	FLRH	Reposition	Yes	8:47	8:50	0.1	
Summer	2022-06-15	1944	476272	FLRH	Reposition	Yes	9:33	9:38	0.1	
Summer	2022-06-16	1949	756569	GLYF	DrillServ	Yes	12:26	12:56	0.5	
Summer	2022-06-16	1949	756569	GLYF	CrewChg		17:58	18:22	0.4	
Summer	2022-06-16	1949	756569	GLYF	Fuel	Yes	17:18	17:52	0.2	
Summer	2022-06-16	1949	756569	GLYF	Core	Yes	17:18	17:52	0.2	
Summer	2022-06-16	1949	756569	GLYF	DrillServ	Yes	13:46	14:40	0.9	
Summer	2022-06-16	1949	756569	GLYF	DrillServ	Yes	17:18	17:52	0.2	
Summer	2022-06-16	1949	756569	GLYF	Core	Yes	6:57	7:31	0.1	
Summer	2022-06-16	1949	756569	GLYF	Fuel	Yes	6:57	7:31	0.4	
Summer	2022-06-16	1949	756569	GLYF	DrillServ	Yes	6:57	7:31	0.1	
Summer	2022-06-16	1949	756569	GLYF	CrewChg		6:08	6:32	0.4	
Summer	2022-06-16	1947	476273	FLRH	PaxLoc		7:57	8:19	0.4	
Summer	2022-06-16	1947	476273	FLRH	PaxLoc		16:00	16:18	0.3	
Summer	2022-06-17	1950	476274	FLRH	DrillServ	Yes	7:41	8:00	0.3	
Summer	2022-06-17	1951	756570	GLYF	DrillServ	Yes	7:01	7:56	0.3	
Summer	2022-06-17	1951	756570	GLYF	DrillServ	Yes	13:45	17:41	0.1	

Table E-1: Helicopter Flight Summary 2022

Season	Date	FltReportID	FltReportNo	Helicopter	Flight Type	Flight Type where Low Elevation Expected	Departure	Arrival	Time (hours)	Comment
Summer	2022-06-17	1951	756570	GLYF	Fuel		7:01	7:56	0.5	
Summer	2022-06-17	1951	756570	GLYF	PaxLoc	Yes	13:45	17:41	0.2	
Summer	2022-06-17	1951	756570	GLYF	CrewChg		18:05	18:20	0.3	
Summer	2022-06-17	1951	756570	GLYF	Core	Yes	7:01	7:56	0.1	
Summer	2022-06-17	1951	756570	GLYF	DrillServ	Yes	11:42	12:07	0.4	
Summer	2022-06-17	1951	756570	GLYF	CrewChg		6:09	6:36	0.5	
Summer	2022-06-17	1951	756570	GLYF	Move	Yes	13:45	17:41	3.1	
Summer	2022-06-17	1951	756570	GLYF	PaxLoc		8:46	9:23	0.3	
Summer	2022-06-17	1951	756570	GLYF	LocSIng	Yes	13:45	17:41	0.3	
Summer	2022-06-17	1951	756570	GLYF	PaxLoc		13:45	17:41	0.2	
Summer	2022-06-17	1951	756570	GLYF	LocSIng	Yes	8:46	9:23	0.3	
Summer	2022-06-17	1951	756570	GLYF	PaxLoc		10:48	11:04	0.3	
Summer	2022-06-17	1950	476274	FLRH	PaxLoc		15:54	16:15	0.4	
Summer	2022-06-17	1950	476274	FLRH	PaxLoc		8:36	8:55	0.3	
Summer	2022-06-18	1953	756571	GLYF	DrillServ	Yes	13:04	15:01	0.5	
Summer	2022-06-18	1953	756571	GLYF	CrewChg		18:23	18:40	0.3	
Summer	2022-06-18	1953	756571	GLYF	Move	Yes	15:19	17:24	1	
Summer	2022-06-18	1953	756571	GLYF	DrillServ	Yes	15:19	17:24	0.2	
Summer	2022-06-18	1953	756571	GLYF	Move	Yes	13:04	15:01	1.3	
Summer	2022-06-18	1953	756571	GLYF	PaxLoc		13:04	15:01	0.2	
Summer	2022-06-18	1953	756571	GLYF	PaxLoc		12:29	12:40	0.2	
Summer	2022-06-18	1953	756571	GLYF	PaxLoc		8:58	10:40	0.3	
Summer	2022-06-18	1953	756571	GLYF	Move	Yes	8:58	10:40	1.4	
Summer	2022-06-18	1953	756571	GLYF	Core	Yes	6:06	6:39	0.2	
Summer	2022-06-18	1953	756571	GLYF	CrewChg		6:06	6:39	0.4	
Summer	2022-06-18	1953	756571	GLYF	PaxLoc		15:19	17:24	0.1	
Summer	2022-06-18	1953	756571	GLYF	PaxLoc		15:19	17:24	0.4	
Summer	2022-06-18	1953	756571	GLYF	LocSIng	Yes	15:19	17:24	0.4	
Summer	2022-06-18	1953	756571	GLYF	LocSIng	Yes	7:58	8:32	0.3	
Summer	2022-06-18	1953	756571	GLYF	PaxLoc		7:58	8:32	0.3	
Summer	2022-06-19	1958	756572	GLYF	Fuel	Yes	6:15	7:23	0.4	
Summer	2022-06-19	1958	756572	GLYF	CrewChg		6:15	7:23	0.4	
Summer	2022-06-19	1958	756572	GLYF	Core	Yes	6:15	7:23	0.1	
Summer	2022-06-19	1958	756572	GLYF	CrewChg		18:15	18:38	0.4	
Summer	2022-06-19	1958	756572	GLYF	DrillServ	Yes	6:15	7:23	0.2	
Summer	2022-06-19	1958	756572	GLYF	DrillServ	Yes	17:11	17:28	0.1	
Summer	2022-06-19	1958	756572	GLYF	Core	Yes	17:11	17:28	0.2	
Summer	2022-06-19	1958	756572	GLYF	PaxLoc		8:36	8:50	0.2	
Summer	2022-06-19	1958	756572	GLYF	PaxLoc		13:01	13:19	0.3	
Summer	2022-06-19	1954	476276	FLRH	PaxLoc		15:41	16:02	0.4	
Summer	2022-06-19	1954	476276	FLRH	PaxLoc		7:26	7:47	0.3	
Summer	2022-06-20	1960	756573	GLYF	Core	Yes	17:04	18:35	0.2	
Summer	2022-06-20	1960	756573	GLYF	Floor	Yes	11:35	12:27	0.6	
Summer	2022-06-20	1960	756573	GLYF	DrillServ	Yes	17:04	18:35	0.4	
Summer	2022-06-20	1960	756573	GLYF	Fuel	Yes	9:44	10:48	0.3	
Summer	2022-06-20	1960	756573	GLYF	Fuel	Yes	17:04	18:35	0.5	
Summer	2022-06-20	1960	756573	GLYF	PaxLoc		11:35	12:27	0.3	
Summer	2022-06-20	1960	756573	GLYF	DrillServ	Yes	9:44	10:48	0.1	
Summer	2022-06-20	1960	756573	GLYF	Core	Yes	9:44	10:48	0.2	
Summer	2022-06-20	1960	756573	GLYF	CrewChg		6:14	6:39	0.4	
Summer	2022-06-20	1960	756573	GLYF	CrewChg		17:04	18:35	0.4	
Summer	2022-06-20	1960	756573	GLYF	PaxLoc		9:44	10:48	0.5	
Summer	2022-06-20	1959	476277	FLRH	PaxLoc		7:41	8:02	0.4	
Summer	2022-06-20	1959	476277	FLRH	PaxLoc		15:14	15:32	0.3	
Summer	2022-06-21	1962	756574	GLYF	Medevac		0:55	1:16	0.4	
Summer	2022-06-21	1962	756574	GLYF	Medevac		0:22	0:46	0.4	
Summer	2022-06-21	1962	756574	GLYF	Core	Yes	12:06	13:01	0.2	
Summer	2022-06-21	1962	756574	GLYF	Fuel	Yes	12:06	13:01	0.4	
Summer	2022-06-21	1962	756574	GLYF	DrillServ	Yes	12:06	13:01	0.3	
Summer	2022-06-21	1962	756574	GLYF	PaxLoc		15:24	15:33	0.2	
Summer	2022-06-21	1962	756574	GLYF	PaxLoc		16:06	17:36	0.6	
Summer	2022-06-21	1962	756574	GLYF	Floor	Yes	16:06	17:36	0.7	
Summer	2022-06-21	1962	756574	GLYF	Core	Yes	16:06	17:36	0.2	
Summer	2022-06-21	1962	756574	GLYF	CrewChg		18:12	18:33	0.4	
Summer	2022-06-21	1962	756574	GLYF	Medevac		0:02	0:11	0.2	
Summer	2022-06-22	1964	756575	GLYF	PaxLoc		13:24	16:45	0.4	
Summer	2022-06-22	1964	756575	GLYF	CrewChg		6:10	6:56	0.3	
Summer	2022-06-22	1964	756575	GLYF	Core	Yes	6:10	6:56	0.1	
Summer	2022-06-22	1964	756575	GLYF	Fuel	Yes	6:10	6:56	0.2	
Summer	2022-06-22	1964	756575	GLYF	DrillServ	Yes	6:10	6:56	0.2	
Summer	2022-06-22	1964	756575	GLYF	PaxLoc		8:15	8:28	0.2	
Summer	2022-06-22	1964	756575	GLYF	PaxLoc		8:57	9:09	0.2	
Summer	2022-06-22	1964	756575	GLYF	DrillServ	Yes	13:24	16:45	0.3	
Summer	2022-06-22	1964	756575	GLYF	Move	Yes	13:24	16:45	2.7	
Summer	2022-06-22	1964	756575	GLYF	CrewChg		18:15	18:31	0.3	
Summer	2022-06-22	1964	756575	GLYF	DrillServ	Yes	12:28	12:39	0.2	
Summer	2022-06-22	1963	476279	FLRH	PaxLoc		8:17	8:36	0.3	
Summer	2022-06-22	1963	476279	FLRH	PaxLoc		17:05	17:15	0.2	
Summer	2022-06-22	1963	476279	FLRH	PaxLoc		12:10	12:20	0.2	
Summer	2022-06-22	1963	476279	FLRH	Reposition	Yes	7:20	7:25	0.1	
Summer	2022-06-22	1963	476279	FLRH	PaxLoc		10:30	10:40	0.2	
Summer	2022-06-22	1963	476279	FLRH	PaxLoc		15:25	15:43	0.3	
Summer	2022-06-22	1963	476279	FLRH	Reposition	Yes	17:23	17:28	0.1	
Summer	2022-06-23	1967	756576	GLYF	Core	Yes	15:54	16:15	0.2	
Summer	2022-06-23	1967	756576	GLYF	DrillServ	Yes	15:54	16:15	0.2	
Summer	2022-06-23	1967	756576	GLYF	PaxLoc		14:15	14:24	0.2	
Summer	2022-06-23	1967	756576	GLYF	PaxLoc		13:44	13:55	0.2	
Summer	2022-06-23	1967	756576	GLYF	PaxLoc		12:57	13:09	0.2	
Summer	2022-06-23	1967	756576	GLYF	PaxLoc		10:35	10:51	0.3	

Table E-1: Helicopter Flight Summary 2022

Season	Date	FltReportID	FltReportNo	Helicopter	Flight Type	Flight Type where Low Elevation Expected	Departure	Arrival	Time (hours)	Comment
Summer	2022-06-23	1967	756576	GLYF	Fuel	Yes	6:12	7:00	0.2	
Summer	2022-06-23	1967	756576	GLYF	Core	Yes	6:12	7:00	0.2	
Summer	2022-06-23	1967	756576	GLYF	CrewChg		6:12	7:00	0.4	
Summer	2022-06-23	1967	756576	GLYF	CrewChg		18:25	18:47	0.4	
Summer	2022-06-23	1965	476280	FLRH	PaxLoc		14:54	15:09	0.3	
Summer	2022-06-23	1965	476280	FLRH	PaxLoc		11:30	11:40	0.2	
Summer	2022-06-23	1965	476280	FLRH	PaxLoc		7:50	8:00	0.2	
Summer	2022-06-23	1965	476280	FLRH	Reposition	Yes	17:35	17:41	0.1	
Summer	2022-06-23	1965	476280	FLRH	PaxLoc		15:48	17:20	1.5	
Summer	2022-06-24	1968	756577	GLYF	Core	Yes	15:20	16:12	0.2	
Summer	2022-06-24	1968	756577	GLYF	CrewChg		18:11	18:35	0.4	
Summer	2022-06-24	1968	756577	GLYF	DrillServ	Yes	15:20	16:12	0.6	
Summer	2022-06-24	1968	756577	GLYF	PaxLoc		16:24	16:33	0.2	
Summer	2022-06-24	1968	756577	GLYF	PaxLoc		14:43	14:53	0.2	
Summer	2022-06-24	1968	756577	GLYF	CrewChg		6:30	6:54	0.4	
Summer	2022-06-24	1968	756577	GLYF	PaxLoc		15:20	16:12	0.1	
Summer	2022-06-24	1966	476281	FLRH	PaxLoc		16:36	16:46	0.2	
Summer	2022-06-24	1966	476281	FLRH	PaxLoc		16:52	17:02	0.2	
Summer	2022-06-24	1966	476281	FLRH	PaxLoc		12:06	12:16	0.2	
Summer	2022-06-24	1966	476281	FLRH	PaxLoc		17:15	17:25	0.2	
Summer	2022-06-24	1966	476281	FLRH	PaxLoc		8:15	8:25	0.2	
Summer	2022-06-25	1946	756578	GLYF	PaxLoc		12:46	13:02	0.3	
Summer	2022-06-25	1946	756578	GLYF	Floor	Yes	9:42	11:46	1.3	
Summer	2022-06-25	1946	756578	GLYF	Core	Yes	17:08	17:36	0.1	
Summer	2022-06-25	1946	756578	GLYF	PaxLoc		17:08	17:36	0.2	
Summer	2022-06-25	1946	756578	GLYF	DrillServ	Yes	17:08	17:36	0.2	
Summer	2022-06-25	1946	756578	GLYF	PaxLoc		16:48	17:00	0.2	
Summer	2022-06-25	1946	756578	GLYF	PaxLoc		14:04	14:13	0.2	
Summer	2022-06-25	1946	756578	GLYF	CrewChg		6:28	7:22	0.3	
Summer	2022-06-25	1946	756578	GLYF	PaxLoc		9:42	11:46	0.8	
Summer	2022-06-25	1946	756578	GLYF	CrewChg		18:20	18:43	0.4	
Summer	2022-06-25	1946	756578	GLYF	Fuel	Yes	6:28	7:22	0.4	
Summer	2022-06-25	1946	756578	GLYF	Core	Yes	6:28	7:22	0.2	
Summer	2022-06-25	1970	476282	FLRH	Move	Yes	10:27	11:31	0.8	
Summer	2022-06-25	1946	756578	GLYF	PaxLoc		13:31	13:46	0.3	
Summer	2022-06-25	1970	476282	FLRH	PaxLoc		13:16	13:26	0.2	
Summer	2022-06-25	1970	476282	FLRH	PaxLoc		16:13	16:23	0.2	
Summer	2022-06-25	1970	476282	FLRH	PaxLoc		13:44	13:54	0.2	
Summer	2022-06-25	1970	476282	FLRH	PaxLoc		17:00	17:25	0.4	
Summer	2022-06-25	1970	476282	FLRH	Reposition	Yes	18:05	18:10	0.1	
Summer	2022-06-25	1970	476282	FLRH	PaxLoc		15:05	15:15	0.2	
Summer	2022-06-25	1970	476282	FLRH	PaxLoc		12:06	12:21	0.3	
Summer	2022-06-25	1970	476282	FLRH	PaxLoc		7:50	8:26	0.6	
Summer	2022-06-25	1970	476282	FLRH	PaxLoc		10:27	11:31	0.3	
Summer	2022-06-26	2015	756579	GLYF	CrewChg		6:13	7:13	0.4	
Summer	2022-06-26	2015	756579	GLYF	Core	Yes	6:13	7:13	0.2	
Summer	2022-06-26	2015	756579	GLYF	Fuel	Yes	6:13	7:13	0.4	
Summer	2022-06-26	2015	756579	GLYF	PaxLoc		7:57	8:20	0.4	
Summer	2022-06-26	2015	756579	GLYF	PaxLoc		9:54	10:08	0.2	
Summer	2022-06-26	2015	756579	GLYF	PaxLoc		10:41	10:55	0.2	
Summer	2022-06-26	2015	756579	GLYF	PaxLoc		14:45	14:58	0.2	
Summer	2022-06-26	2015	756579	GLYF	Move	Yes	16:02	18:52	2.1	
Summer	2022-06-26	2015	756579	GLYF	PaxLoc		16:02	18:52	0.4	
Summer	2022-06-26	2015	756579	GLYF	CrewChg		16:02	18:52	0.3	
Summer	2022-06-26	1971	476283	FLRH	Move	Yes	16:06	17:11	0.7	
Summer	2022-06-26	1971	476283	FLRH	PaxLoc		15:40	15:50	0.2	
Summer	2022-06-26	1971	476283	FLRH	Reposition	Yes	17:20	17:25	0.1	
Summer	2022-06-26	1971	476283	FLRH	PaxLoc		16:06	17:11	0.4	
Summer	2022-06-26	1971	476283	FLRH	PaxLoc		8:05	8:35	0.5	
Summer	2022-06-26	1971	476283	FLRH	PaxLoc		9:38	9:48	0.2	
Summer	2022-06-26	1971	476283	FLRH	PaxLoc		10:42	10:52	0.2	
Summer	2022-06-26	1971	476283	FLRH	PaxLoc		11:31	11:41	0.2	
Summer	2022-06-26	1971	476283	FLRH	PaxLoc		12:58	13:10	0.2	
Summer	2022-06-26	1971	476283	FLRH	PaxLoc		13:47	13:57	0.2	
Summer	2022-06-26	1971	476283	FLRH	PaxLoc		14:56	15:06	0.2	
Summer	2022-06-27	1973	686965	GLYF	PaxLoc		15:57	16:07	0.2	
Summer	2022-06-27	1973	686965	GLYF	PaxLoc		13:28	13:38	0.2	
Summer	2022-06-27	1973	686965	GLYF	Fuel	Yes	16:57	17:37	0.4	
Summer	2022-06-27	1973	686965	GLYF	Core	Yes	16:57	17:37	0.2	
Summer	2022-06-27	1973	686965	GLYF	PaxLoc		16:57	17:37	0.1	
Summer	2022-06-27	1974	756580	GLYF	Core	Yes	7:02	7:27	0.2	
Summer	2022-06-27	1973	686965	GLYF	Pax		11:35	11:59	0.4	
Summer	2022-06-27	1974	756580	GLYF	CrewChg		6:22	6:48	0.4	
Summer	2022-06-27	1973	686965	GLYF	PaxLoc		14:16	14:25	0.2	
Summer	2022-06-27	1974	756580	GLYF	Pax		9:36	9:56	0.3	
Summer	2022-06-27	1974	756580	GLYF	Fuel	Yes	7:02	7:27	0.2	
Summer	2022-06-27	1973	686965	GLYF	CrewChg		18:06	18:30	0.4	
Summer	2022-06-27	1972	476284	FLRH	PaxLoc		7:51	8:14	0.4	
Summer	2022-06-27	1972	476284	FLRH	PaxLoc		9:05	9:15	0.2	
Summer	2022-06-27	1972	476284	FLRH	PaxLoc		10:08	10:18	0.2	
Summer	2022-06-27	1972	476284	FLRH	PaxLoc		11:13	11:23	0.2	
Summer	2022-06-27	1972	476284	FLRH	PaxLoc		17:18	17:22	0.1	
Summer	2022-06-27	1972	476284	FLRH	PaxLoc		16:52	17:10	0.3	
Summer	2022-06-27	1972	476284	FLRH	PaxLoc		15:57	16:07	0.2	
Summer	2022-06-27	1972	476284	FLRH	PaxLoc		14:58	15:08	0.2	
Summer	2022-06-27	1972	476284	FLRH	PaxLoc		13:46	13:56	0.2	
Summer	2022-06-27	1972	476284	FLRH	PaxLoc		12:00	12:10	0.2	
Summer	2022-06-28	1976	686966	GLYF	Core	Yes	8:13	9:29	0.2	
Summer	2022-06-28	1976	686966	GLYF	Fuel	Yes	8:13	9:29	0.4	

Table E-1: Helicopter Flight Summary 2022

Season	Date	FltReportID	FltReportNo	Helicopter	Flight Type	Flight Type where Low Elevation Expected	Departure	Arrival	Time (hours)	Comment
Summer	2022-06-28	1976	686966	GLYF	CrewChg		6:20	6:38	0.3	
Summer	2022-06-28	1976	686966	GLYF	CrewChg		18:11	18:31	0.3	
Summer	2022-06-28	1976	686966	GLYF	PaxLoc		14:29	14:38	0.2	
Summer	2022-06-28	1976	686966	GLYF	PaxLoc		15:31	15:40	0.2	
Summer	2022-06-28	1976	686966	GLYF	DrillServ	Yes	8:13	9:29	0.7	
Summer	2022-06-28	1976	686966	GLYF	Core	Yes	16:59	17:34	0.1	
Summer	2022-06-28	1976	686966	GLYF	Fuel	Yes	16:59	17:34	0.3	
Summer	2022-06-28	1976	686966	GLYF	DrillServ	Yes	16:59	17:34	0.2	
Summer	2022-06-28	1975	476285	FLRH	PaxLoc		14:37	14:52	0.3	
Summer	2022-06-28	1975	476285	FLRH	PaxLoc		8:06	8:16	0.2	
Summer	2022-06-28	1975	476285	FLRH	PaxLoc		9:18	9:28	0.2	
Summer	2022-06-28	1975	476285	FLRH	PaxLoc		10:05	10:15	0.2	
Summer	2022-06-28	1975	476285	FLRH	PaxLoc		13:06	13:16	0.2	
Summer	2022-06-28	1975	476285	FLRH	PaxLoc		10:58	11:08	0.2	
Summer	2022-06-29	1978	686967	GLYF	Fuel	Yes	16:12	17:01	0.3	
Summer	2022-06-29	1978	686967	GLYF	Fuel	Yes	6:10	6:52	0.2	
Summer	2022-06-29	1978	686967	GLYF	DrillServ	Yes	16:12	17:01	0.5	
Summer	2022-06-29	1978	686967	GLYF	CrewChg		18:10	18:30	0.3	
Summer	2022-06-29	1978	686967	GLYF	CrewChg		6:10	6:52	0.3	
Summer	2022-06-29	1978	686967	GLYF	Core	Yes	6:10	6:52	0.2	
Summer	2022-06-29	1977	476286	FLRH	PaxLoc		15:55	16:05	0.2	
Summer	2022-06-29	1977	476286	FLRH	PaxLoc		14:23	14:33	0.2	
Summer	2022-06-29	1977	476286	FLRH	PaxLoc		13:54	14:05	0.2	
Summer	2022-06-29	1977	476286	FLRH	PaxLoc		10:13	10:23	0.2	
Summer	2022-06-29	1977	476286	FLRH	PaxLoc		8:00	8:11	0.2	
Summer	2022-06-29	1977	476286	FLRH	PaxLoc		12:42	13:23	0.7	
Summer	2022-06-30	1980	686968	GLYF	CrewChg		18:03	18:24	0.4	
Summer	2022-06-30	1980	686968	GLYF	LocSing	Yes	13:14	14:11	1	
Summer	2022-06-30	1980	686968	GLYF	PaxLoc		14:26	14:45	0.1	
Summer	2022-06-30	1980	686968	GLYF	PaxLoc		7:55	8:13	0.3	
Summer	2022-06-30	1980	686968	GLYF	DrillServ	Yes	14:26	14:45	0.2	
Summer	2022-06-30	1980	686968	GLYF	CrewChg		6:08	6:26	0.3	
Summer	2022-06-30	1979	476287	FLRH	Reposition	Yes	17:00	17:10	0.1	
Summer	2022-06-30	1979	476287	FLRH	PaxLoc		15:00	15:10	0.2	
Summer	2022-06-30	1979	476287	FLRH	PaxLoc		8:03	8:37	0.6	
Summer	2022-06-30	1979	476287	FLRH	PaxLoc		9:10	9:30	0.3	
Summer	2022-06-30	1979	476287	FLRH	PaxLoc		9:45	9:55	0.2	
Summer	2022-06-30	1979	476287	FLRH	PaxLoc		10:30	10:40	0.2	
Summer	2022-06-30	1979	476287	FLRH	PaxLoc		10:54	11:05	0.2	
Summer	2022-06-30	1979	476287	FLRH	PaxLoc		13:10	13:20	0.2	
Summer	2022-06-30	1979	476287	FLRH	PaxLoc		14:10	14:20	0.2	
Summer	2022-06-30	1979	476287	FLRH	PaxLoc		16:23	16:44	0.4	
Summer	2022-06-30	1980	686968	GLYF	PaxLoc		17:02	17:18	0.3	
Summer	2022-06-30	1980	686968	GLYF	PaxLoc		16:18	16:30	0.2	
Summer	2022-07-01	1981	686969	GLYF	Core	Yes	6:03	7:23	0.2	
Summer	2022-07-01	1981	686969	GLYF	Fuel	Yes	6:03	7:23	0.3	
Summer	2022-07-01	1981	686969	GLYF	DrillServ	Yes	6:03	7:23	0.5	
Summer	2022-07-01	1981	686969	GLYF	Fuel	Yes	17:00	17:39	0.2	
Summer	2022-07-01	1981	686969	GLYF	Core	Yes	17:00	17:39	0.1	
Summer	2022-07-01	1981	686969	GLYF	CrewChg		18:00	18:17	0.3	
Summer	2022-07-01	1981	686969	GLYF	CrewChg		6:03	7:23	0.3	
Summer	2022-07-01	1981	686969	GLYF	Ferry		17:00	17:39	0.4	
Summer	2022-07-01	1981	686969	GLYF	PaxLoc		9:27	9:40	0.2	
Summer	2022-07-01	1981	686969	GLYF	PaxLoc		16:51	16:59	0.1	
Summer	2022-07-01	1981	686969	GLYF	PaxLoc		16:15	16:25	0.2	
Summer	2022-07-01	1981	686969	GLYF	PaxLoc		14:40	14:48	0.1	
Summer	2022-07-01	1981	686969	GLYF	PaxLoc		12:02	12:13	0.2	
Summer	2022-07-01	1981	686969	GLYF	PaxLoc		8:40	8:59	0.3	
Summer	2022-07-02	1982	686970	GLYF	DrillServ	Yes	6:09	6:59	0.2	
Summer	2022-07-02	1982	686970	GLYF	CrewChg		18:04	18:24	0.3	
Summer	2022-07-02	1982	686970	GLYF	CrewChg		6:09	6:59	0.3	
Summer	2022-07-02	1982	686970	GLYF	Core	Yes	6:09	6:59	0.1	
Summer	2022-07-02	1982	686970	GLYF	PaxLoc		8:33	8:42	0.2	
Summer	2022-07-02	1982	686970	GLYF	PaxLoc		9:32	9:40	0.1	
Summer	2022-07-02	1982	686970	GLYF	PaxLoc		9:48	9:57	0.2	
Summer	2022-07-02	1982	686970	GLYF	PaxLoc		11:07	11:16	0.2	
Summer	2022-07-02	1982	686970	GLYF	PaxLoc		12:44	13:22	0.3	
Summer	2022-07-02	1982	686970	GLYF	PaxLoc		14:00	14:23	0.2	
Summer	2022-07-02	1982	686970	GLYF	Fuel	Yes	6:09	6:59	0.2	
Summer	2022-07-02	1982	686970	GLYF	PaxLoc		12:44	13:22	0.3	
Summer	2022-07-02	1982	686970	GLYF	Ferry		11:22	11:42	0.3	
Summer	2022-07-02	1982	686970	GLYF	Ferry		14:00	14:23	0.2	
Summer	2022-07-02	1982	686970	GLYF	Reposition	Yes	15:42	15:50	0.1	
Summer	2022-07-02	1982	686970	GLYF	PaxLoc		17:10	17:37	0.5	
Summer	2022-07-02	1982	686970	GLYF	PaxLoc		11:42	11:52	0.2	
Summer	2022-07-03	1983	686971	GLYF	Fuel	Yes	17:32	18:27	0.4	
Summer	2022-07-03	1983	686971	GLYF	CrewChg		17:32	18:27	0.3	
Summer	2022-07-03	1983	686971	GLYF	DrillServ	Yes	6:07	7:07	0.6	
Summer	2022-07-03	1983	686971	GLYF	Core	Yes	17:32	18:27	0.2	
Summer	2022-07-03	1983	686971	GLYF	CrewChg		6:07	7:07	0.4	
Summer	2022-07-03	1983	686971	GLYF	Ferry		9:05	9:34	0.3	
Summer	2022-07-03	1983	686971	GLYF	Ferry		16:55	17:28	0.3	
Summer	2022-07-03	1999	710199	FLRH	NoRevenu	Yes	17:15	17:28	0.2	
Summer	2022-07-03	1999	710199	FLRH	NoRevenu	Yes	15:15	15:25	0.2	
Summer	2022-07-03	1983	686971	GLYF	PaxLoc		9:05	9:34	0.2	
Summer	2022-07-03	1983	686971	GLYF	PaxLoc		16:55	17:28	0.3	
Summer	2022-07-04	1984	686972	GLYF	CrewChg		18:04	18:25	0.4	
Summer	2022-07-04	1984	686972	GLYF	Move	Yes	14:59	17:23	1.7	
Summer	2022-07-04	1984	686972	GLYF	PaxLoc		14:59	17:23	0.3	

Table E-1: Helicopter Flight Summary 2022

Season	Date	FltReportID	FltReportNo	Helicopter	Flight Type	Flight Type where Low Elevation Expected	Departure	Arrival	Time (hours)	Comment
Summer	2022-07-04	1984	686972	GLYF	Fuel	Yes	14:59	17:23	0.2	
Summer	2022-07-04	1984	686972	GLYF	Core	Yes	14:59	17:23	0.2	
Summer	2022-07-04	1984	686972	GLYF	Move	Yes	13:19	14:49	1.2	
Summer	2022-07-04	1984	686972	GLYF	PaxLoc		13:19	14:49	0.3	
Summer	2022-07-04	1984	686972	GLYF	DrillServ	Yes	6:01	6:43	0.2	
Summer	2022-07-04	1984	686972	GLYF	Core	Yes	6:01	6:43	0.2	
Summer	2022-07-04	1984	686972	GLYF	CrewChg		6:01	6:43	0.3	
Summer	2022-07-04	1998	710200	FLRH	PaxLoc		16:14	16:23	0.2	
Summer	2022-07-04	1998	710200	FLRH	PaxLoc		15:17	15:21	0.1	
Summer	2022-07-04	1998	710200	FLRH	PaxLoc		16:50	16:57	0.1	
Summer	2022-07-04	1998	710200	FLRH	PaxLoc		13:15	13:20	0.1	
Summer	2022-07-04	1998	710200	FLRH	PaxLoc		8:07	8:16	0.2	
Summer	2022-07-04	1998	710200	FLRH	PaxLoc		14:13	14:18	0.1	
Summer	2022-07-04	1998	710200	FLRH	PaxLoc		14:47	14:54	0.1	
Summer	2022-07-04	1998	710200	FLRH	PaxLoc		12:15	12:23	0.1	
Summer	2022-07-04	1984	686972	GLYF	PaxLoc		11:19	11:30	0.2	
Summer	2022-07-04	1984	686972	GLYF	PaxLoc		11:36	11:53	0.3	
Summer	2022-07-04	1998	710200	FLRH	PaxLoc		7:12	7:41	0.4	
Summer	2022-07-04	1998	710200	FLRH	LocSing	Yes	7:12	7:41	0.1	
Summer	2022-07-05	1985	686973	GLYF	Move	Yes	10:57	11:55	1	
Summer	2022-07-05	1985	686973	GLYF	Core	Yes	17:04	17:26	0.2	
Summer	2022-07-05	1985	686973	GLYF	CrewChg		17:59	18:18	0.3	
Summer	2022-07-05	1985	686973	GLYF	Fuel	Yes	17:04	17:26	0.2	
Summer	2022-07-05	1985	686973	GLYF	Move	Yes	8:40	10:50	1.8	
Summer	2022-07-05	1985	686973	GLYF	PaxLoc		8:40	10:50	0.4	
Summer	2022-07-05	1985	686973	GLYF	Fuel	Yes	6:02	6:40	0.2	
Summer	2022-07-05	1985	686973	GLYF	Core	Yes	6:02	6:40	0.1	
Summer	2022-07-05	1985	686973	GLYF	CrewChg		6:02	6:40	0.3	
Summer	2022-07-05	1997	710201	FLRH	PaxLoc		8:04	8:11	0.1	
Summer	2022-07-05	1997	710201	FLRH	PaxLoc		15:03	15:17	0.2	
Summer	2022-07-05	1985	686973	GLYF	PaxLoc		16:38	16:46	0.1	
Summer	2022-07-05	1985	686973	GLYF	PaxLoc		13:36	13:48	0.2	
Summer	2022-07-05	1997	710201	FLRH	PaxLoc		10:46	10:59	0.2	
Summer	2022-07-05	1985	686973	GLYF	PaxLoc		14:21	14:31	0.2	
Summer	2022-07-05	1985	686973	GLYF	PaxLoc		16:19	16:29	0.2	
Summer	2022-07-05	1997	710201	FLRH	PaxLoc		18:16	18:27	0.2	
Summer	2022-07-05	1997	710201	FLRH	PaxLoc		17:08	17:21	0.2	
Summer	2022-07-05	1997	710201	FLRH	LocSing	Yes	16:16	16:24	0.1	
Summer	2022-07-05	1997	710201	FLRH	PaxLoc		15:42	15:58	0.3	
Summer	2022-07-06	1996	710202	FLRH	PaxLoc		9:04	9:29	0.4	
Summer	2022-07-06	1986	686974	GLYF	PaxLoc		9:03	9:31	0.5	
Summer	2022-07-06	1986	686974	GLYF	PaxLoc		16:16	16:40	0.4	
Summer	2022-07-06	1986	686974	GLYF	Ferry		6:59	7:20	0.4	
Summer	2022-07-06	1986	686974	GLYF	PaxLoc		17:10	17:30	0.3	
Summer	2022-07-06	1996	710202	FLRH	Reposition	Yes	17:30	17:36	0.1	
Summer	2022-07-06	1996	710202	FLRH	PaxLoc		16:18	16:37	0.3	
Summer	2022-07-06	1986	686974	GLYF	Core	Yes	18:15	18:47	0.1	
Summer	2022-07-06	1986	686974	GLYF	DrillServ	Yes	18:15	18:47	0.2	
Summer	2022-07-06	1986	686974	GLYF	CrewChg		18:15	18:47	0.2	
Summer	2022-07-06	1986	686974	GLYF	CrewChg		5:48	6:04	0.3	
Summer	2022-07-06	1996	710202	FLRH	PaxLoc		6:53	7:12	0.3	
Summer	2022-07-07	1987	686975	GLYF	PaxLoc		14:27	14:34	0.1	
Summer	2022-07-07	1987	686975	GLYF	CrewChg		18:05	18:15	0.2	
Summer	2022-07-07	1987	686975	GLYF	CrewChg		5:51	6:04	0.2	
Summer	2022-07-07	1987	686975	GLYF	PaxLoc		8:57	9:40	0.3	
Summer	2022-07-07	1987	686975	GLYF	DrillServ	Yes	8:57	9:40	0.4	
Summer	2022-07-07	1987	686975	GLYF	PaxLoc		14:48	17:43	0.4	
Summer	2022-07-07	1987	686975	GLYF	Move	Yes	14:48	17:43	2.5	
Summer	2022-07-07	1995	710203	FLRH	PaxLoc		13:09	13:30	0.3	
Summer	2022-07-07	1995	710203	FLRH	PaxLoc		8:13	9:06	0.5	
Summer	2022-07-07	1995	710203	FLRH	PaxLoc		15:41	16:14	0.6	
Summer	2022-07-07	1995	710203	FLRH	PaxLoc		14:14	14:30	0.3	
Summer	2022-07-07	1995	710203	FLRH	PaxLoc		12:29	12:49	0.3	
Summer	2022-07-07	1995	710203	FLRH	PaxLoc		16:26	17:08	0.4	
Summer	2022-07-07	1995	710203	FLRH	PaxLoc		13:09	13:30	0.1	
Summer	2022-07-07	1995	710203	FLRH	PaxLoc		10:57	11:09	0.2	
Summer	2022-07-07	1995	710203	FLRH	PaxLoc		10:03	10:19	0.3	
Summer	2022-07-07	1995	710203	FLRH	PaxLoc		9:24	9:41	0.3	
Summer	2022-07-07	1995	710203	FLRH	PaxLoc		16:26	17:08	0.3	
Summer	2022-07-07	1995	710203	FLRH	PaxLoc		8:13	9:06	0.4	
Summer	2022-07-07	1987	686975	GLYF	PaxLoc		11:59	12:36	0.6	
Summer	2022-07-08	1988	686976	GLYF	CrewChg		18:09	18:44	0.6	
Summer	2022-07-08	1988	686976	GLYF	Fuel	Yes	6:07	6:46	0.2	
Summer	2022-07-08	1988	686976	GLYF	Floor	Yes	14:17	15:27	1.2	
Summer	2022-07-08	1988	686976	GLYF	Core	Yes	6:07	6:46	0.2	
Summer	2022-07-08	1988	686976	GLYF	PaxLoc		11:15	12:48	0.3	
Summer	2022-07-08	1988	686976	GLYF	Move	Yes	11:15	12:48	1.3	
Summer	2022-07-08	1988	686976	GLYF	PaxLoc		12:57	13:57	0.1	
Summer	2022-07-08	1988	686976	GLYF	Move	Yes	12:57	13:57	0.9	
Summer	2022-07-08	1988	686976	GLYF	PaxLoc		15:40	17:03	0.3	
Summer	2022-07-08	1988	686976	GLYF	Floor	Yes	15:40	17:03	1.1	
Summer	2022-07-08	1988	686976	GLYF	CrewChg		6:07	6:46	0.3	
Summer	2022-07-08	1988	686976	GLYF	PaxLoc		7:27	7:35	0.1	
Summer	2022-07-08	1988	686976	GLYF	PaxLoc		8:17	8:25	0.1	
Summer	2022-07-08	1994	710204	FLRH	PaxLoc		13:59	15:20	1.4	
Summer	2022-07-08	1994	710204	FLRH	PaxLoc		7:58	8:27	0.5	
Summer	2022-07-08	1994	710204	FLRH	PaxLoc		9:30	10:02	0.2	
Summer	2022-07-08	1994	710204	FLRH	PaxLoc		9:30	10:02	0.3	
Summer	2022-07-08	1994	710204	FLRH	PaxLoc		16:00	16:19	0.3	

Table E-1: Helicopter Flight Summary 2022

Season	Date	FltReportID	FltReportNo	Helicopter	Flight Type	Flight Type where Low Elevation Expected	Departure	Arrival	Time (hours)	Comment
Summer	2022-07-09	2010	686977	GLYF	PaxLoc		8:58	9:26	0.5	
Summer	2022-07-09	2010	686977	GLYF	Fuel	Yes	6:00	7:06	0.2	
Summer	2022-07-09	2010	686977	GLYF	CrewChg		18:22	18:48	0.4	
Summer	2022-07-09	2010	686977	GLYF	PaxLoc		9:32	11:40	0.2	
Summer	2022-07-09	2010	686977	GLYF	CrewChg		6:00	7:06	0.5	
Summer	2022-07-09	2010	686977	GLYF	Core	Yes	6:00	7:06	0.2	
Summer	2022-07-09	2010	686977	GLYF	DrillServ	Yes	6:00	7:06	0.2	
Summer	2022-07-09	2010	686977	GLYF	Floor	Yes	9:32	11:40	1.9	
Summer	2022-07-09	2010	686977	GLYF	PaxLoc		13:41	14:07	0.4	
Summer	2022-07-09	2010	686977	GLYF	PaxLoc		15:47	16:07	0.3	
Summer	2022-07-09	2010	686977	GLYF	PaxLoc		16:28	17:05	0.4	
Summer	2022-07-09	1992	710205	FLRH	Reposition	Yes	12:43	13:01	0.1	
Summer	2022-07-09	2010	686977	GLYF	PaxLoc		16:28	17:05	0.2	
Summer	2022-07-09	2010	686977	GLYF	PaxLoc		14:48	14:58	0.2	
Summer	2022-07-09	1992	710205	FLRH	PaxLoc		13:13	13:21	0.1	
Summer	2022-07-09	1992	710205	FLRH	Reposition	Yes	10:29	10:42	0.1	
Summer	2022-07-09	1992	710205	FLRH	PaxLoc		10:07	10:15	0.1	
Summer	2022-07-09	1992	710205	FLRH	PaxLoc		12:43	13:01	0.2	
Summer	2022-07-09	1992	710205	FLRH	PaxLoc		11:36	11:54	0.3	
Summer	2022-07-09	1992	710205	FLRH	PaxLoc		7:10	7:29	0.3	
Summer	2022-07-09	1992	710205	FLRH	PaxLoc		7:51	8:08	0.3	
Summer	2022-07-09	1992	710205	FLRH	Reposition	Yes	10:29	10:42	0.1	
Summer	2022-07-09	1992	710205	FLRH	PaxLoc		15:26	15:46	0.3	
Summer	2022-07-10	1991	710206	FLRH	Floor	Yes	13:38	15:11	0.6	
Summer	2022-07-10	2009	686978	GLYF	Move	Yes	7:44	10:41	3	
Summer	2022-07-10	2009	686978	GLYF	CrewChg		6:24	7:19	0.4	
Summer	2022-07-10	1991	710206	FLRH	Move	Yes	13:38	15:11	0.7	
Summer	2022-07-10	1991	710206	FLRH	Move	Yes	12:07	13:18	1.2	
Summer	2022-07-10	1991	710206	FLRH	Move	Yes	10:23	11:57	1.6	
Summer	2022-07-10	1991	710206	FLRH	Move	Yes	8:25	10:12	1.8	
Summer	2022-07-10	1991	710206	FLRH	PaxLoc		13:38	15:11	0.3	
Summer	2022-07-10	2009	686978	GLYF	PaxLoc		10:50	12:27	0.2	
Summer	2022-07-10	1991	710206	FLRH	Reposition	Yes	7:55	8:12	0.3	
Summer	2022-07-10	2009	686978	GLYF	CrewChg		18:18	19:18	1	
Summer	2022-07-10	2009	686978	GLYF	PaxLoc		12:36	15:44	0.3	
Summer	2022-07-10	2009	686978	GLYF	Floor	Yes	12:36	15:44	1.2	
Summer	2022-07-10	2009	686978	GLYF	Move	Yes	12:36	15:44	1.6	
Summer	2022-07-10	2009	686978	GLYF	DrillServ	Yes	6:24	7:19	0.2	
Summer	2022-07-10	2009	686978	GLYF	Move	Yes	10:50	12:27	1.4	
Summer	2022-07-10	2009	686978	GLYF	PaxLoc		6:24	7:19	0.3	
Summer	2022-07-10	1991	710206	FLRH	PaxLoc		7:11	7:32	0.4	
Summer	2022-07-10	1991	710206	FLRH	PaxLoc		16:31	16:52	0.4	
Summer	2022-07-10	1991	710206	FLRH	PaxLoc		15:23	15:48	0.3	
Summer	2022-07-11	2008	686979	GLYF	CrewChg		6:02	6:35	0.6	
Summer	2022-07-11	2008	686979	GLYF	DrillServ	Yes	8:45	9:23	0.6	
Summer	2022-07-11	2008	686979	GLYF	Wildlife		9:52	10:24	0.4	
Summer	2022-07-11	2008	686979	GLYF	PaxLoc		11:27	11:59	0.1	
Summer	2022-07-11	2008	686979	GLYF	CrewChg		18:11	18:43	0.5	
Summer	2022-07-11	2008	686979	GLYF	PaxLoc		11:27	11:59	0.4	
Summer	2022-07-11	2008	686979	GLYF	PaxLoc		9:52	10:24	0.1	
Summer	2022-07-11	1990	710207	FLRH	PaxLoc		8:04	8:09	0.1	
Summer	2022-07-11	1990	710207	FLRH	PaxLoc		9:56	10:28	0.2	
Summer	2022-07-11	1990	710207	FLRH	PaxLoc		7:06	7:11	0.1	
Summer	2022-07-11	1990	710207	FLRH	PaxLoc		11:16	11:35	0.3	
Summer	2022-07-11	1990	710207	FLRH	PaxLoc		7:29	7:36	0.1	
Summer	2022-07-11	1990	710207	FLRH	LocSng	Yes	9:05	9:13	0.1	
Summer	2022-07-11	1990	710207	FLRH	PaxLoc		9:27	9:38	0.2	
Summer	2022-07-11	1990	710207	FLRH	PaxLoc		15:58	16:17	0.3	
Summer	2022-07-11	1990	710207	FLRH	PaxLoc		9:56	10:28	0.3	
Summer	2022-07-12	2006	756595	GLYF	PaxLoc		11:26	11:48	0.4	
Summer	2022-07-12	2007	686980	GLYF	Fuel	Yes	6:04	7:37	0.3	
Summer	2022-07-12	2006	756595	GLYF	Core	Yes	12:37	13:12	0.2	
Summer	2022-07-12	2007	686980	GLYF	Ferry		8:59	9:19	0.3	
Summer	2022-07-12	2007	686980	GLYF	PaxLoc		6:04	7:37	0.3	
Summer	2022-07-12	2006	756595	GLYF	DrillServ	Yes	12:37	13:12	0.4	
Summer	2022-07-12	2007	686980	GLYF	DrillServ	Yes	6:04	7:37	0.3	
Summer	2022-07-12	2007	686980	GLYF	DrillServ	Yes	6:04	7:37	0.2	
Summer	2022-07-12	2007	686980	GLYF	CrewChg		6:04	7:37	0.5	
Summer	2022-07-12	2006	756595	GLYF	DrillServ	Yes	17:25	17:50	0.4	
Summer	2022-07-12	2006	756595	GLYF	CrewChg		18:24	18:54	0.5	
Summer	2022-07-12	2011	710208	FLRH	PaxLoc		16:28	16:52	0.3	
Summer	2022-07-12	2011	710208	FLRH	PaxLoc		6:51	7:10	0.3	
Summer	2022-07-12	2011	710208	FLRH	PaxLoc		7:24	7:43	0.3	
Summer	2022-07-12	2011	710208	FLRH	PaxLoc		17:30	17:46	0.3	
Summer	2022-07-12	2011	710208	FLRH	PaxLoc		9:14	9:26	0.2	
Summer	2022-07-12	2011	710208	FLRH	PaxLoc		11:14	11:29	0.3	
Summer	2022-07-12	2011	710208	FLRH	PaxLoc		16:28	16:52	0.1	
Summer	2022-07-13	2005	756596	GLYF	PaxLoc		10:00	10:22	0.4	
Summer	2022-07-13	2012	710209	FLRH	PaxLoc		17:56	18:18	0.4	
Summer	2022-07-13	2005	756596	GLYF	VIP		13:22	13:51	0.5	
Summer	2022-07-13	2005	756596	GLYF	CrewChg		18:05	18:39	0.6	
Summer	2022-07-13	2005	756596	GLYF	PaxLoc		16:49	17:12	0.4	
Summer	2022-07-13	2005	756596	GLYF	Core	Yes	6:08	7:39	0.6	
Summer	2022-07-13	2005	756596	GLYF	Fuel	Yes	6:08	7:39	0.4	
Summer	2022-07-13	2005	756596	GLYF	CrewChg		6:08	7:39	0.5	
Summer	2022-07-13	2012	710209	FLRH	PaxLoc		16:33	17:10	0.6	
Summer	2022-07-13	2012	710209	FLRH	PaxLoc		7:08	7:24	0.3	
Summer	2022-07-13	2012	710209	FLRH	PaxLoc		15:51	15:58	0.1	
Summer	2022-07-13	2012	710209	FLRH	PaxLoc		13:15	13:24	0.2	

Table E-1: Helicopter Flight Summary 2022

Season	Date	FltReportID	FltReportNo	Helicopter	Flight Type	Flight Type where Low Elevation Expected	Departure	Arrival	Time (hours)	Comment
Summer	2022-07-13	2012	710209	FLRH	PaxLoc		10:37	10:52	0.3	
Summer	2022-07-13	2012	710209	FLRH	PaxLoc		7:44	7:59	0.3	
Summer	2022-07-13	2012	710209	FLRH	PaxLoc		14:51	15:00	0.2	
Summer	2022-07-13	2012	710209	FLRH	PaxLoc		13:49	13:58	0.2	
Summer	2022-07-14	2004	756597	GLYF	DrillServ	Yes	9:53	10:23	0.5	
Summer	2022-07-14	2004	756597	GLYF	CrewChg		6:39	8:34	0.6	
Summer	2022-07-14	2004	756597	GLYF	Fuel	Yes	6:39	8:34	0.8	
Summer	2022-07-14	2004	756597	GLYF	DrillServ	Yes	13:45	14:41	0.9	
Summer	2022-07-14	2004	756597	GLYF	CrewChg		17:53	18:32	0.7	
Summer	2022-07-14	2004	756597	GLYF	Core	Yes	6:39	8:34	0.5	
Summer	2022-07-14	2013	710210	FLRH	LocSng	Yes	7:13	7:59	0.1	
Summer	2022-07-14	2013	710210	FLRH	Reposition	Yes	13:23	13:32	0.2	
Summer	2022-07-14	2013	710210	FLRH	PaxLoc		13:38	13:48	0.2	
Summer	2022-07-14	2013	710210	FLRH	PaxLoc		7:13	7:59	0.4	
Summer	2022-07-14	2013	710210	FLRH	PaxLoc		14:47	15:03	0.3	
Summer	2022-07-14	2013	710210	FLRH	PaxLoc		12:43	12:52	0.2	
Summer	2022-07-14	2013	710210	FLRH	Reposition	Yes	8:13	8:18	0.1	
Summer	2022-07-14	2013	710210	FLRH	PaxLoc		7:13	7:59	0.3	
Summer	2022-07-15	2014	756598	GLYF	Floor	Yes	11:31	12:41	0.5	
Summer	2022-07-15	2014	756598	GLYF	Move	Yes	9:03	11:06	1.6	
Summer	2022-07-15	2014	756598	GLYF	CrewChg		5:55	6:32	0.6	
Summer	2022-07-15	2014	756598	GLYF	DrillServ	Yes	7:17	8:11	0.1	
Summer	2022-07-15	2014	756598	GLYF	Fuel	Yes	7:17	8:11	0.8	
Summer	2022-07-15	2014	756598	GLYF	PaxLoc		8:24	8:36	0.2	
Summer	2022-07-15	2014	756598	GLYF	PaxLoc		9:03	11:06	0.3	
Summer	2022-07-15	2014	756598	GLYF	DrillServ	Yes	9:03	11:06	0.2	
Summer	2022-07-15	2014	756598	GLYF	DrillServ	Yes	11:31	12:41	0.4	
Summer	2022-07-15	2014	756598	GLYF	Move	Yes	11:31	12:41	0.3	
Summer	2022-07-15	2014	756598	GLYF	PaxLoc		14:12	14:33	0.4	
Summer	2022-07-15	2014	756598	GLYF	CrewChg		17:55	18:30	0.6	
Summer	2022-07-15	2014	756598	GLYF	Fuel	Yes	16:55	17:24	0.5	
Summer	2022-07-15	2003	710211	FLRH	PaxLoc		11:03	11:20	0.3	
Summer	2022-07-15	2003	710211	FLRH	PaxLoc		6:56	7:29	0.3	
Summer	2022-07-15	2003	710211	FLRH	PaxLoc		16:06	16:20	0.2	
Summer	2022-07-15	2003	710211	FLRH	PaxLoc		6:56	7:29	0.3	
Summer	2022-07-15	2003	710211	FLRH	Reposition	Yes	8:43	8:51	0.1	
Summer	2022-07-15	2003	710211	FLRH	PaxLoc		15:44	15:58	0.2	
Summer	2022-07-15	2003	710211	FLRH	PaxLoc		10:05	10:18	0.2	
Summer	2022-07-16	2016	756599	GLYF	Core	Yes	6:03	8:13	0.5	
Summer	2022-07-16	2016	756599	GLYF	Core	Yes	17:10	17:39	0.5	
Summer	2022-07-16	2016	756599	GLYF	PaxLoc		16:12	16:28	0.3	
Summer	2022-07-16	2016	756599	GLYF	PaxLoc		15:26	15:45	0.3	
Summer	2022-07-16	2016	756599	GLYF	CrewChg		17:54	18:33	0.7	
Summer	2022-07-16	2016	756599	GLYF	Fuel	Yes	6:03	8:13	0.5	
Summer	2022-07-16	2016	756599	GLYF	DrillServ	Yes	6:03	8:13	0.4	
Summer	2022-07-16	2016	756599	GLYF	CrewChg		6:03	8:13	0.8	
Summer	2022-07-16	2002	710212	FLRH	PaxLoc		7:09	7:48	0.7	
Summer	2022-07-16	2002	710212	FLRH	PaxLoc		9:20	9:42	0.4	
Summer	2022-07-16	2002	710212	FLRH	PaxLoc		17:04	17:18	0.2	
Summer	2022-07-16	2002	710212	FLRH	PaxLoc		15:28	15:44	0.3	
Summer	2022-07-16	2002	710212	FLRH	PaxLoc		10:12	10:30	0.3	
Summer	2022-07-16	2002	710212	FLRH	PaxLoc		8:38	8:50	0.2	
Summer	2022-07-16	2016	756599	GLYF	PaxLoc		9:19	9:35	0.3	
Summer	2022-07-16	2016	756599	GLYF	PaxLoc		11:16	11:27	0.2	
Summer	2022-07-17	2017	756600	GLYF	PaxLoc		7:23	7:36	0.2	
Summer	2022-07-17	2017	756600	GLYF	Core	Yes	8:00	9:53	0.2	
Summer	2022-07-17	2017	756600	GLYF	DrillServ	Yes	8:00	9:53	0.1	
Summer	2022-07-17	2017	756600	GLYF	Floor	Yes	8:00	9:53	0.2	
Summer	2022-07-17	2017	756600	GLYF	CrewChg		6:00	7:04	0.6	
Summer	2022-07-17	2017	756600	GLYF	CrewChg		18:12	18:47	0.6	
Summer	2022-07-17	2017	756600	GLYF	Floor	Yes	10:19	10:47	0.5	
Summer	2022-07-17	2017	756600	GLYF	PaxLoc		11:47	11:59	0.2	
Summer	2022-07-17	2017	756600	GLYF	Fuel	Yes	6:00	7:04	0.5	
Summer	2022-07-17	2017	756600	GLYF	PaxLoc		12:15	12:29	0.2	
Summer	2022-07-17	2017	756600	GLYF	Move	Yes	8:00	9:53	1.4	
Summer	2022-07-17	2017	756600	GLYF	DrillServ	Yes	14:33	15:17	0.5	
Summer	2022-07-17	2017	756600	GLYF	Core	Yes	17:03	17:43	0.5	
Summer	2022-07-17	2017	756600	GLYF	PaxLoc		17:03	17:43	0.2	
Summer	2022-07-17	2017	756600	GLYF	PaxLoc		14:33	15:17	0.2	
Summer	2022-07-17	2017	756600	GLYF	PaxLoc		14:15	14:25	0.2	
Summer	2022-07-17	2017	756600	GLYF	PaxLoc		13:57	14:08	0.2	
Summer	2022-07-17	2020	710213	FLRH	LocSng	Yes	12:42	13:03	0.4	
Summer	2022-07-17	2020	710213	FLRH	PaxLoc		15:07	15:13	0.1	
Summer	2022-07-17	2020	710213	FLRH	Reposition	Yes	12:21	12:27	0.1	
Summer	2022-07-17	2020	710213	FLRH	PaxLoc		13:08	13:23	0.2	
Summer	2022-07-17	2020	710213	FLRH	Reposition	Yes	14:34	14:56	0.1	
Summer	2022-07-17	2020	710213	FLRH	PaxLoc		12:05	12:11	0.1	
Summer	2022-07-17	2020	710213	FLRH	PaxLoc		9:49	10:23	0.3	
Summer	2022-07-17	2020	710213	FLRH	PaxLoc		16:15	16:41	0.2	
Summer	2022-07-17	2020	710213	FLRH	PaxLoc		15:30	15:50	0.2	
Summer	2022-07-17	2020	710213	FLRH	Reposition	Yes	13:08	13:23	0.1	
Summer	2022-07-17	2020	710213	FLRH	PaxLoc		9:49	10:23	0.3	
Summer	2022-07-17	2020	710213	FLRH	PaxLoc		10:43	11:08	0.4	
Summer	2022-07-17	2020	710213	FLRH	PaxLoc		15:30	15:50	0.1	
Summer	2022-07-17	2020	710213	FLRH	PaxLoc		16:15	16:41	0.2	
Summer	2022-07-17	2020	710213	FLRH	PaxLoc		14:34	14:56	0.3	
Summer	2022-07-17	2020	710213	FLRH	PaxLoc		16:56	17:12	0.3	
Summer	2022-07-18	2018	756601	GLYF	PaxLoc		10:25	10:46	0.4	
Summer	2022-07-18	2018	756601	GLYF	PaxLoc		9:56	10:10	0.2	

Table E-1: Helicopter Flight Summary 2022

Season	Date	FltReportID	FltReportNo	Helicopter	Flight Type	Flight Type where Low Elevation Expected	Departure	Arrival	Time (hours)	Comment
Summer	2022-07-18	2018	756601	GLYF	DrillServ	Yes	16:56	17:43	0.4	
Summer	2022-07-18	2018	756601	GLYF	Core	Yes	16:56	17:43	0.4	
Summer	2022-07-18	2018	756601	GLYF	DrillServ	Yes	11:28	13:00	1.3	
Summer	2022-07-18	2018	756601	GLYF	CrewChg		17:56	18:55	0.6	
Summer	2022-07-18	2018	756601	GLYF	DrillServ	Yes	17:56	18:55	0.4	
Summer	2022-07-18	2018	756601	GLYF	CrewChg		5:58	7:58	0.6	
Summer	2022-07-18	2018	756601	GLYF	Core	Yes	5:58	7:58	0.3	
Summer	2022-07-18	2018	756601	GLYF	Fuel	Yes	5:58	7:58	1.1	
Summer	2022-07-18	2018	756601	GLYF	PaxLoc		13:18	13:40	0.4	
Summer	2022-07-18	2018	756601	GLYF	PaxLoc		8:08	8:29	0.4	
Summer	2022-07-18	2018	756601	GLYF	PaxLoc		11:28	13:00	0.2	
Summer	2022-07-18	2018	756601	GLYF	PaxLoc		14:27	14:45	0.3	
Summer	2022-07-18	2021	710214	FLRH	PaxLoc		6:43	7:12	0.3	
Summer	2022-07-18	2021	710214	FLRH	PaxLoc		12:23	12:44	0.2	
Summer	2022-07-18	2021	710214	FLRH	PaxLoc		13:17	13:21	0.1	
Summer	2022-07-18	2021	710214	FLRH	PaxLoc		14:04	14:21	0.2	
Summer	2022-07-18	2021	710214	FLRH	PaxLoc		10:55	11:08	0.2	
Summer	2022-07-18	2021	710214	FLRH	PaxLoc		12:23	12:44	0.2	
Summer	2022-07-18	2021	710214	FLRH	PaxLoc		16:34	16:49	0.3	
Summer	2022-07-18	2021	710214	FLRH	PaxLoc		6:43	7:12	0.2	
Summer	2022-07-18	2021	710214	FLRH	PaxLoc		14:47	15:01	0.2	
Summer	2022-07-18	2021	710214	FLRH	PaxLoc		14:04	14:21	0.1	
Summer	2022-07-18	2021	710214	FLRH	PaxLoc		9:02	9:20	0.3	
Summer	2022-07-19	2019	756602	GLYF	Core	Yes	15:57	16:43	0.4	
Summer	2022-07-19	2019	756602	GLYF	CrewChg		5:57	7:49	0.6	
Summer	2022-07-19	2019	756602	GLYF	CrewChg		17:36	18:12	0.6	
Summer	2022-07-19	2019	756602	GLYF	PaxLoc		15:57	16:43	0.4	
Summer	2022-07-19	2019	756602	GLYF	DrillServ	Yes	13:56	14:31	0.6	
Summer	2022-07-19	2019	756602	GLYF	PaxLoc		9:56	10:40	0.3	
Summer	2022-07-19	2019	756602	GLYF	DrillServ	Yes	9:56	10:40	0.4	
Summer	2022-07-19	2019	756602	GLYF	Fuel	Yes	8:15	8:44	0.5	
Summer	2022-07-19	2019	756602	GLYF	Fuel	Yes	5:57	7:49	1.2	
Summer	2022-07-19	2019	756602	GLYF	DrillServ	Yes	5:57	7:49	0.1	
Summer	2022-07-19	2022	710215	FLRH	PaxLoc		12:18	12:25	0.1	
Summer	2022-07-19	2022	710215	FLRH	PaxLoc		10:01	10:09	0.1	
Summer	2022-07-19	2022	710215	FLRH	PaxLoc		11:16	11:37	0.1	
Summer	2022-07-19	2022	710215	FLRH	PaxLoc		7:07	7:35	0.3	
Summer	2022-07-19	2022	710215	FLRH	PaxLoc		11:16	11:37	0.3	
Summer	2022-07-19	2022	710215	FLRH	PaxLoc		14:44	15:05	0.4	
Summer	2022-07-19	2022	710215	FLRH	PaxLoc		16:24	16:50	0.2	
Summer	2022-07-19	2022	710215	FLRH	PaxLoc		16:24	16:50	0.2	
Summer	2022-07-19	2022	710215	FLRH	NoRevenu	Yes	10:28	10:36	0.1	
Summer	2022-07-20	2024	756603	GLYF	PaxLoc		7:51	9:19	0.5	
Summer	2022-07-20	2024	756603	GLYF	Move	Yes	14:56	15:44	0.5	
Summer	2022-07-20	2024	756603	GLYF	PaxLoc		12:20	13:03	0.3	
Summer	2022-07-20	2024	756603	GLYF	PaxLoc		13:34	13:48	0.2	
Summer	2022-07-20	2024	756603	GLYF	PaxLoc		14:17	14:34	0.3	
Summer	2022-07-20	2024	756603	GLYF	PaxLoc		14:56	15:44	0.1	
Summer	2022-07-20	2024	756603	GLYF	DrillServ	Yes	14:56	15:44	0.2	
Summer	2022-07-20	2024	756603	GLYF	DrillServ	Yes	12:20	13:03	0.4	
Summer	2022-07-20	2024	756603	GLYF	PaxLoc		15:57	18:23	0.2	
Summer	2022-07-20	2024	756603	GLYF	Fuel	Yes	7:51	9:19	0.3	
Summer	2022-07-20	2024	756603	GLYF	CrewChg		15:57	18:23	0.5	
Summer	2022-07-20	2024	756603	GLYF	DrillServ	Yes	7:51	9:19	0.7	
Summer	2022-07-20	2024	756603	GLYF	Core	Yes	5:40	6:38	0.5	
Summer	2022-07-20	2024	756603	GLYF	Fuel	Yes	15:57	18:23	0.2	
Summer	2022-07-20	2024	756603	GLYF	CrewChg		5:40	6:38	0.5	
Summer	2022-07-20	2024	756603	GLYF	Move	Yes	15:57	18:23	1	
Summer	2022-07-20	2024	756603	GLYF	DrillServ	Yes	15:57	18:23	0.5	
Summer	2022-07-20	2023	710216	FLRH	PaxLoc		9:55	10:10	0.1	
Summer	2022-07-20	2023	710216	FLRH	PaxLoc		10:21	10:40	0.2	
Summer	2022-07-20	2023	710216	FLRH	Wildlife		11:28	12:00	0.2	
Summer	2022-07-20	2023	710216	FLRH	Wildlife		13:30	13:58	0.2	
Summer	2022-07-20	2023	710216	FLRH	PaxLoc		14:23	14:31	0.1	
Summer	2022-07-20	2023	710216	FLRH	PaxLoc		14:43	14:58	0.3	
Summer	2022-07-20	2023	710216	FLRH	PaxLoc		16:26	16:45	0.3	
Summer	2022-07-20	2023	710216	FLRH	PaxLoc		6:44	7:00	0.3	
Summer	2022-07-20	2023	710216	FLRH	PaxLoc		7:19	7:34	0.3	
Summer	2022-07-20	2023	710216	FLRH	PaxLoc		9:55	10:10	0.2	
Summer	2022-07-20	2023	710216	FLRH	LocSng	Yes	15:14	15:41	0.2	
Summer	2022-07-20	2023	710216	FLRH	PaxLoc		15:14	15:41	0.3	
Summer	2022-07-20	2023	710216	FLRH	PaxLoc		13:30	13:58	0.3	
Summer	2022-07-20	2023	710216	FLRH	PaxLoc		11:28	12:00	0.3	
Summer	2022-07-20	2023	710216	FLRH	PaxLoc		10:21	10:40	0.1	
Summer	2022-07-21	2026	756604	GLYF	PaxLoc		12:36	13:17	0.2	
Summer	2022-07-21	2026	756604	GLYF	CrewChg		5:58	6:34	0.6	
Summer	2022-07-21	2026	756604	GLYF	PaxLoc		7:03	7:16	0.2	
Summer	2022-07-21	2026	756604	GLYF	PaxLoc		8:13	9:03	0.2	
Summer	2022-07-21	2026	756604	GLYF	Fuel	Yes	8:13	9:03	0.6	
Summer	2022-07-21	2026	756604	GLYF	DrillServ	Yes	9:23	10:52	0.3	
Summer	2022-07-21	2026	756604	GLYF	Move	Yes	9:23	10:52	1.2	
Summer	2022-07-21	2026	756604	GLYF	Fuel	Yes	11:12	12:18	0.3	
Summer	2022-07-21	2026	756604	GLYF	DrillServ	Yes	11:12	12:18	0.4	
Summer	2022-07-21	2026	756604	GLYF	Move	Yes	12:36	13:17	0.4	
Summer	2022-07-21	2026	756604	GLYF	Move	Yes	12:36	13:17	0.1	
Summer	2022-07-21	2026	756604	GLYF	DrillServ	Yes	14:00	14:12	0.2	
Summer	2022-07-21	2026	756604	GLYF	DrillServ	Yes	15:26	15:49	0.4	
Summer	2022-07-21	2026	756604	GLYF	Core	Yes	16:38	17:12	0.5	

Table E-1: Helicopter Flight Summary 2022

Season	Date	FltReportID	FltReportNo	Helicopter	Flight Type	Flight Type where Low Elevation Expected	Departure	Arrival	Time (hours)	Comment
Summer	2022-07-21	2026	756604	GLYF	CrewChg		17:53	18:36	0.7	
Summer	2022-07-21	2026	756604	GLYF	Move	Yes	11:12	12:18	0.4	
Summer	2022-07-21	2026	756604	GLYF	PaxLoc		16:38	17:12	0.1	
Summer	2022-07-21	2026	756604	GLYF	PaxLoc		14:31	14:44	0.2	
Summer	2022-07-21	2026	756604	GLYF	PaxLoc		17:23	17:32	0.2	
Summer	2022-07-21	2025	710217	FLRH	PaxLoc		10:53	10:59	0.1	
Summer	2022-07-21	2025	710217	FLRH	PaxLoc		14:56	15:11	0.3	
Summer	2022-07-21	2025	710217	FLRH	PaxLoc		16:34	17:11	0.3	
Summer	2022-07-21	2025	710217	FLRH	PaxLoc		14:01	14:34	0.6	
Summer	2022-07-21	2025	710217	FLRH	PaxLoc		15:37	15:48	0.2	
Summer	2022-07-21	2025	710217	FLRH	PaxLoc		16:34	17:11	0.1	
Summer	2022-07-21	2025	710217	FLRH	PaxLoc		6:44	7:10	0.1	
Summer	2022-07-21	2025	710217	FLRH	PaxLoc		6:44	7:10	0.3	
Summer	2022-07-21	2025	710217	FLRH	PaxLoc		16:34	17:11	0.2	
Summer	2022-07-21	2025	710217	FLRH	PaxLoc		8:10	8:21	0.2	
Summer	2022-07-22	2032	756605	GLYF	CrewChg		5:59	6:33	0.6	
Summer	2022-07-22	2032	756605	GLYF	DrillServ	Yes	7:18	8:47	0.4	
Summer	2022-07-22	2032	756605	GLYF	Fuel	Yes	7:18	8:47	1.1	
Summer	2022-07-22	2032	756605	GLYF	PaxLoc		10:01	10:14	0.2	
Summer	2022-07-22	2032	756605	GLYF	DrillServ	Yes	11:34	11:53	0.2	
Summer	2022-07-22	2032	756605	GLYF	PaxLoc		14:32	15:01	0.5	
Summer	2022-07-22	2032	756605	GLYF	PaxLoc		11:34	11:53	0.1	
Summer	2022-07-22	2032	756605	GLYF	PaxLoc		17:01	17:13	0.2	
Summer	2022-07-22	2032	756605	GLYF	PaxLoc		11:57	12:20	0.4	
Summer	2022-07-22	2032	756605	GLYF	Core	Yes	17:18	17:35	0.3	
Summer	2022-07-22	2032	756605	GLYF	CrewChg		17:48	18:25	0.6	
Summer	2022-07-22	2032	756605	GLYF	PaxLoc		14:09	14:18	0.2	
Summer	2022-07-22	2032	756605	GLYF	PaxLoc		13:55	14:04	0.2	
Summer	2022-07-22	2032	756605	GLYF	Reposition	Yes	11:18	11:27	0.2	
Summer	2022-07-22	2032	756605	GLYF	PaxLoc		11:03	11:13	0.2	
Summer	2022-07-22	2032	756605	GLYF	PaxLoc		10:35	10:47	0.2	
Summer	2022-07-22	2030	710218	FLRH	PaxLoc		15:55	16:40	0.1	
Summer	2022-07-22	2030	710218	FLRH	PaxLoc		6:46	7:03	0.3	
Summer	2022-07-22	2030	710218	FLRH	PaxLoc		15:55	16:40	0.3	
Summer	2022-07-22	2030	710218	FLRH	PaxLoc		12:51	13:03	0.2	
Summer	2022-07-22	2030	710218	FLRH	PaxLoc		9:20	9:39	0.3	
Summer	2022-07-22	2030	710218	FLRH	LocSing	Yes	7:23	8:11	0.2	
Summer	2022-07-22	2030	710218	FLRH	PaxLoc		7:23	8:11	0.6	
Summer	2022-07-22	2030	710218	FLRH	PaxLoc		8:27	8:47	0.3	
Summer	2022-07-22	2030	710218	FLRH	PaxLoc		15:55	16:40	0.4	
Summer	2022-07-23	2034	756606	GLYF	DrillServ	Yes	5:54	7:17	0.4	
Summer	2022-07-23	2034	756606	GLYF	Core	Yes	10:30	11:23	0.3	
Summer	2022-07-23	2034	756606	GLYF	DrillServ	Yes	10:30	11:23	0.6	
Summer	2022-07-23	2034	756606	GLYF	PaxLoc		9:22	9:34	0.2	
Summer	2022-07-23	2034	756606	GLYF	CrewChg		17:54	18:58	0.6	
Summer	2022-07-23	2034	756606	GLYF	Fuel	Yes	5:54	7:17	0.4	
Summer	2022-07-23	2034	756606	GLYF	CrewChg		5:54	7:17	0.6	
Summer	2022-07-23	2034	756606	GLYF	PaxLoc		10:05	10:16	0.2	
Summer	2022-07-23	2034	756606	GLYF	DrillServ	Yes	17:54	18:58	0.3	
Summer	2022-07-23	2034	756606	GLYF	Core	Yes	17:54	18:58	0.2	
Summer	2022-07-23	2034	756606	GLYF	DrillServ	Yes	15:39	16:34	0.5	
Summer	2022-07-23	2034	756606	GLYF	PaxLoc		15:39	16:34	0.2	
Summer	2022-07-23	2034	756606	GLYF	PaxLoc		12:58	13:16	0.3	
Summer	2022-07-23	2034	756606	GLYF	PaxLoc		15:39	16:34	0.2	
Summer	2022-07-23	2033	710219	FLRH	PaxLoc		12:10	12:35	0.2	
Summer	2022-07-23	2033	710219	FLRH	Reposition	Yes	12:10	12:35	0.2	
Summer	2022-07-23	2033	710219	FLRH	PaxLoc		16:10	16:47	0.2	
Summer	2022-07-23	2033	710219	FLRH	PaxLoc		6:56	7:04	0.1	
Summer	2022-07-23	2033	710219	FLRH	PaxLoc		16:10	16:47	0.2	
Summer	2022-07-23	2033	710219	FLRH	PaxLoc		12:46	12:54	0.1	
Summer	2022-07-23	2033	710219	FLRH	PaxLoc		13:37	13:57	0.2	
Summer	2022-07-23	2033	710219	FLRH	LocSing	Yes	13:37	13:57	0.1	
Summer	2022-07-23	2033	710219	FLRH	PaxLoc		7:16	7:28	0.2	
Summer	2022-07-23	2033	710219	FLRH	LocSing	Yes	7:42	7:51	0.2	
Summer	2022-07-23	2033	710219	FLRH	PaxLoc		16:10	16:47	0.2	
Summer	2022-07-23	2033	710219	FLRH	PaxLoc		9:24	9:36	0.2	
Summer	2022-07-24	2036	756607	GLYF	PaxLoc		16:20	16:40	0.3	
Summer	2022-07-24	2036	756607	GLYF	PaxLoc		13:37	13:54	0.3	
Summer	2022-07-24	2036	756607	GLYF	DrillServ	Yes	8:22	9:14	0.6	
Summer	2022-07-24	2036	756607	GLYF	Core	Yes	8:22	9:14	0.3	
Summer	2022-07-24	2036	756607	GLYF	DrillServ	Yes	5:51	8:03	0.8	
Summer	2022-07-24	2036	756607	GLYF	Fuel	Yes	5:51	8:03	0.8	
Summer	2022-07-24	2036	756607	GLYF	Core	Yes	15:49	16:10	0.4	
Summer	2022-07-24	2036	756607	GLYF	Floor	Yes	16:47	17:10	0.4	
Summer	2022-07-24	2036	756607	GLYF	PaxLoc		17:22	17:34	0.2	
Summer	2022-07-24	2036	756607	GLYF	CrewChg		17:51	18:26	0.6	
Summer	2022-07-24	2036	756607	GLYF	Floor	Yes	14:03	14:38	0.6	
Summer	2022-07-24	2036	756607	GLYF	CrewChg		5:51	8:03	0.6	
Summer	2022-07-24	2035	710220	FLRH	PaxLoc		6:48	7:00	0.2	
Summer	2022-07-24	2035	710220	FLRH	PaxLoc		13:40	13:57	0.3	
Summer	2022-07-24	2035	710220	FLRH	PaxLoc		16:38	16:48	0.2	
Summer	2022-07-24	2035	710220	FLRH	LocSing	Yes	15:14	16:06	0.2	
Summer	2022-07-24	2035	710220	FLRH	PaxLoc		7:20	7:31	0.2	
Summer	2022-07-24	2035	710220	FLRH	PaxLoc		15:14	16:06	0.3	
Summer	2022-07-24	2035	710220	FLRH	PaxLoc		15:14	16:06	0.4	
Summer	2022-07-24	2035	710220	FLRH	PaxLoc		11:31	11:48	0.3	
Summer	2022-07-25	2039	756608	GLYF	Fuel	Yes	6:02	7:33	0.4	
Summer	2022-07-25	2039	756608	GLYF	CrewChg		17:55	18:53	0.6	
Summer	2022-07-25	2039	756608	GLYF	CrewChg		6:02	7:33	0.6	

Table E-1: Helicopter Flight Summary 2022

Season	Date	FltReportID	FltReportNo	Helicopter	Flight Type	Flight Type where Low Elevation Expected	Departure	Arrival	Time (hours)	Comment
Summer	2022-07-25	2039	756608	GLYF	PaxLoc		17:55	18:53	0.4	
Summer	2022-07-25	2039	756608	GLYF	Core	Yes	6:02	7:33	0.3	
Summer	2022-07-25	2039	756608	GLYF	Move	Yes	15:46	17:45	1.4	
Summer	2022-07-25	2039	756608	GLYF	DrillServ	Yes	15:46	17:45	0.6	
Summer	2022-07-25	2039	756608	GLYF	Move	Yes	14:04	15:32	1.1	
Summer	2022-07-25	2039	756608	GLYF	PaxLoc		14:04	15:32	0.1	
Summer	2022-07-25	2039	756608	GLYF	DrillServ	Yes	13:29	13:45	0.3	
Summer	2022-07-25	2039	756608	GLYF	PaxLoc		11:18	11:41	0.4	
Summer	2022-07-25	2039	756608	GLYF	DrillServ	Yes	7:49	9:40	1.1	
Summer	2022-07-25	2039	756608	GLYF	Fuel	Yes	7:49	9:40	0.8	
Summer	2022-07-25	2039	756608	GLYF	DrillServ	Yes	6:02	7:33	0.2	
Summer	2022-07-25	2039	756608	GLYF	DrillServ	Yes	14:04	15:32	0.3	
Summer	2022-07-25	2037	34940	FLRH	PaxLoc		11:25	11:46	0.4	
Summer	2022-07-25	2037	34940	FLRH	PaxLoc		15:57	16:32	0.2	
Summer	2022-07-25	2038	710221	FLRH	PaxLoc		6:45	6:55	0.2	
Summer	2022-07-25	2038	710221	FLRH	PaxLoc		9:07	9:19	0.2	
Summer	2022-07-25	2038	710221	FLRH	Reposition	Yes	9:39	9:49	0.2	
Summer	2022-07-25	2037	34940	FLRH	PaxLoc		15:57	16:32	0.4	
Summer	2022-07-26	2041	756609	GLYF	PaxLoc		7:30	8:06	0.3	
Summer	2022-07-26	2041	756609	GLYF	CrewChg		18:01	18:35	0.6	
Summer	2022-07-26	2041	756609	GLYF	PaxLoc		13:57	14:10	0.2	
Summer	2022-07-26	2041	756609	GLYF	DrillServ	Yes	10:54	11:53	0.2	
Summer	2022-07-26	2041	756609	GLYF	Move	Yes	10:54	11:53	0.8	
Summer	2022-07-26	2041	756609	GLYF	Move	Yes	9:47	10:33	0.8	
Summer	2022-07-26	2041	756609	GLYF	CrewChg		5:52	6:26	0.6	
Summer	2022-07-26	2041	756609	GLYF	DrillServ	Yes	8:18	8:46	0.5	
Summer	2022-07-26	2041	756609	GLYF	DrillServ	Yes	7:30	8:06	0.3	
Summer	2022-07-26	2041	756609	GLYF	PaxLoc		9:00	9:11	0.2	
Summer	2022-07-26	2040	34941	FLRH	PaxLoc		9:37	10:03	0.2	
Summer	2022-07-26	2040	34941	FLRH	PaxLoc		6:46	6:56	0.2	
Summer	2022-07-26	2040	34941	FLRH	PaxLoc		12:07	12:25	0.3	
Summer	2022-07-26	2040	34941	FLRH	PaxLoc		15:53	16:31	0.2	
Summer	2022-07-26	2040	34941	FLRH	PaxLoc		15:53	16:31	0.4	
Summer	2022-07-26	2040	34941	FLRH	PaxLoc		9:37	10:03	0.2	
Summer	2022-07-27	2043	756610	GLYF	CrewChg		17:53	18:21	0.5	
Summer	2022-07-27	2043	756610	GLYF	Fuel	Yes	5:58	7:04	0.2	
Summer	2022-07-27	2043	756610	GLYF	Core	Yes	5:58	7:04	0.3	
Summer	2022-07-27	2043	756610	GLYF	Medevac		7:35	7:47	0.2	
Summer	2022-07-27	2043	756610	GLYF	Medevac		7:56	8:07	0.2	
Summer	2022-07-27	2043	756610	GLYF	DrillServ	Yes	11:03	11:59	0.7	
Summer	2022-07-27	2043	756610	GLYF	Fuel	Yes	11:03	11:59	0.2	
Summer	2022-07-27	2043	756610	GLYF	DrillServ	Yes	14:04	15:10	1.1	
Summer	2022-07-27	2043	756610	GLYF	CrewChg		5:58	7:04	0.6	
Summer	2022-07-27	2043	756610	GLYF	DrillServ	Yes	12:34	13:50	1.3	
Summer	2022-07-27	2042	34942	FLRH	PaxLoc		14:07	14:16	0.2	
Summer	2022-07-27	2042	34942	FLRH	PaxLoc		13:15	13:24	0.2	
Summer	2022-07-27	2042	34942	FLRH	PaxLoc		15:52	16:13	0.4	
Summer	2022-07-27	2042	34942	FLRH	Reposition	Yes	9:51	9:55	0.1	
Summer	2022-07-27	2042	34942	FLRH	PaxLoc		9:26	9:42	0.3	
Summer	2022-07-28	2045	756611	GLYF	PaxLoc		11:41	12:53	0.2	
Summer	2022-07-28	2045	756611	GLYF	PaxLoc		16:56	17:25	0.5	
Summer	2022-07-28	2045	756611	GLYF	PaxLoc		14:52	15:18	0.4	
Summer	2022-07-28	2045	756611	GLYF	Floor	Yes	11:41	12:53	0.5	
Summer	2022-07-28	2045	756611	GLYF	DrillServ	Yes	11:41	12:53	0.2	
Summer	2022-07-28	2045	756611	GLYF	CrewChg		17:58	18:29	0.5	
Summer	2022-07-28	2045	756611	GLYF	Floor	Yes	9:59	10:30	0.5	
Summer	2022-07-28	2045	756611	GLYF	PaxLoc		8:35	8:48	0.2	
Summer	2022-07-28	2045	756611	GLYF	Fuel	Yes	6:05	7:04	0.5	
Summer	2022-07-28	2045	756611	GLYF	CrewChg		6:05	7:04	0.5	
Summer	2022-07-28	2045	756611	GLYF	Core	Yes	11:41	12:53	0.3	
Summer	2022-07-28	2044	34943	FLRH	PaxLoc		15:53	16:17	0.4	
Summer	2022-07-28	2044	34943	FLRH	PaxLoc		8:26	8:45	0.3	
Summer	2022-07-28	2044	34943	FLRH	Reposition	Yes	16:28	16:31	0.1	
Summer	2022-07-29	2047	756612	GLYF	PaxLoc		7:26	7:38	0.2	
Summer	2022-07-29	2047	756612	GLYF	PaxLoc		11:23	11:35	0.2	
Summer	2022-07-29	2047	756612	GLYF	Move	Yes	10:34	11:13	0.7	
Summer	2022-07-29	2047	756612	GLYF	DrillServ	Yes	10:07	10:29	0.1	
Summer	2022-07-29	2047	756612	GLYF	Fuel	Yes	10:07	10:29	0.3	
Summer	2022-07-29	2047	756612	GLYF	Move	Yes	7:55	9:45	1.1	
Summer	2022-07-29	2047	756612	GLYF	Core	Yes	7:55	9:45	0.2	
Summer	2022-07-29	2047	756612	GLYF	DrillServ	Yes	7:55	9:45	0.5	
Summer	2022-07-29	2047	756612	GLYF	DrillServ	Yes	6:05	7:08	0.5	
Summer	2022-07-29	2047	756612	GLYF	CrewChg		6:05	7:08	0.6	
Summer	2022-07-29	2046	34944	FLRH	CrewChg		18:01	18:34	0.6	
Summer	2022-07-29	2046	34944	FLRH	Fuel	Yes	16:27	16:52	0.2	
Summer	2022-07-29	2046	34944	FLRH	DrillServ	Yes	16:27	16:52	0.2	
Summer	2022-07-29	2046	34944	FLRH	PaxLoc		15:52	16:01	0.2	
Summer	2022-07-29	2046	34944	FLRH	Pax		12:41	13:00	0.3	
Summer	2022-07-29	2046	34944	FLRH	PaxLoc		14:08	14:20	0.2	
Summer	2022-07-29	2047	756612	GLYF	Pax		13:17	13:35	0.3	
Summer	2022-07-29	2047	756612	GLYF	PaxLoc		15:34	17:00	1.4	
Summer	2022-07-29	2046	34944	FLRH	PaxLoc		10:42	10:58	0.3	
Summer	2022-07-30	2048	34945	FLRH	DrillServ	Yes	16:01	17:09	0.5	
Summer	2022-07-30	2048	34945	FLRH	CrewChg		17:57	18:50	0.6	
Summer	2022-07-30	2048	34945	FLRH	DrillServ	Yes	17:57	18:50	0.3	
Summer	2022-07-30	2048	34945	FLRH	Fuel	Yes	16:01	17:09	0.4	
Summer	2022-07-30	2048	34945	FLRH	Floor	Yes	13:05	14:55	1.6	
Summer	2022-07-30	2048	34945	FLRH	CrewChg		5:53	6:27	0.6	
Summer	2022-07-30	2048	34945	FLRH	PaxLoc		13:05	14:55	0.2	

Table E-1: Helicopter Flight Summary 2022

Season	Date	FltReportID	FltReportNo	Helicopter	Flight Type	Flight Type where Low Elevation Expected	Departure	Arrival	Time (hours)	Comment
Summer	2022-07-30	2048	34945	FLRH	Core	Yes	16:01	17:09	0.2	
Summer	2022-07-31	2049	34946	FLRH	DrillServ	Yes	10:43	11:51	0.4	
Summer	2022-07-31	2049	34946	FLRH	CrewChg		17:55	18:28	0.6	
Summer	2022-07-31	2049	34946	FLRH	PaxLoc		14:42	15:29	0.4	
Summer	2022-07-31	2049	34946	FLRH	Core	Yes	14:42	15:29	0.2	
Summer	2022-07-31	2049	34946	FLRH	DrillServ	Yes	14:42	15:29	0.2	
Summer	2022-07-31	2049	34946	FLRH	Fuel	Yes	12:07	12:53	0.5	
Summer	2022-07-31	2049	34946	FLRH	Fuel	Yes	10:43	11:51	0.7	
Summer	2022-07-31	2049	34946	FLRH	PaxLoc		9:22	9:31	0.2	
Summer	2022-07-31	2049	34946	FLRH	PaxLoc		8:49	9:00	0.2	
Summer	2022-07-31	2049	34946	FLRH	Move	Yes	8:13	8:34	0.4	
Summer	2022-07-31	2049	34946	FLRH	PaxLoc		7:04	7:16	0.2	
Summer	2022-07-31	2049	34946	FLRH	CrewChg		5:59	6:36	0.6	
Summer	2022-07-31	2049	34946	FLRH	DrillServ	Yes	12:07	12:53	0.3	
Summer	2022-08-01	2072	756615	GLYF	LocSling	Yes	9:22	10:09	0.8	
Summer	2022-08-01	2072	756615	GLYF	PaxLoc		7:46	8:53	1.1	
Summer	2022-08-01	2072	756615	GLYF	LocSling	Yes	10:26	12:42	2	
Summer	2022-08-01	2072	756615	GLYF	LocSling	Yes	13:04	13:53	0.8	
Summer	2022-08-01	2072	756615	GLYF	LocSling	Yes	14:33	15:27	0.9	
Summer	2022-08-01	2072	756615	GLYF	PaxLoc		15:50	17:11	1.4	
Summer	2022-08-01	2052	34947	FLRH	Core	Yes	14:18	15:31	0.2	
Summer	2022-08-01	2052	34947	FLRH	Fuel	Yes	14:18	15:31	0.7	
Summer	2022-08-01	2052	34947	FLRH	CrewChg		18:02	18:37	0.6	
Summer	2022-08-01	2052	34947	FLRH	Fuel	Yes	11:53	12:18	0.2	
Summer	2022-08-01	2052	34947	FLRH	DrillServ	Yes	11:53	12:18	0.2	
Summer	2022-08-01	2052	34947	FLRH	CrewChg		6:03	6:38	0.6	
Summer	2022-08-01	2052	34947	FLRH	DrillServ	Yes	14:18	15:31	0.3	
Summer	2022-08-01	2072	756615	GLYF	PaxLoc		6:55	7:17	0.4	
Summer	2022-08-02	2073	687001	GLYF	PaxLoc		17:17	17:57	0.7	
Summer	2022-08-02	2073	687001	GLYF	PaxLoc		15:58	16:38	0.7	
Summer	2022-08-02	2053	34948	FLRH	DrillServ	Yes	10:56	11:23	0.1	
Summer	2022-08-02	2053	34948	FLRH	Fuel	Yes	10:56	11:23	0.4	
Summer	2022-08-02	2053	34948	FLRH	PaxLoc		15:05	15:15	0.2	
Summer	2022-08-02	2053	34948	FLRH	PaxLoc		16:15	16:26	0.2	
Summer	2022-08-02	2053	34948	FLRH	DrillServ	Yes	17:06	17:30	0.4	
Summer	2022-08-02	2053	34948	FLRH	CrewChg		17:59	19:14	0.9	
Summer	2022-08-02	2053	34948	FLRH	Fuel	Yes	17:59	19:14	0.4	
Summer	2022-08-02	2053	34948	FLRH	CrewChg		6:06	6:38	0.5	
Summer	2022-08-03	2054	34949	FLRH	CrewChg		5:54	6:14	0.3	
Summer	2022-08-03	2054	34949	FLRH	Floor	Yes	17:48	19:05	0.6	
Summer	2022-08-03	2054	34949	FLRH	CrewChg		17:48	19:05	0.3	
Summer	2022-08-03	2054	34949	FLRH	DrillServ	Yes	17:48	19:05	0.4	
Summer	2022-08-03	2054	34949	FLRH	PaxLoc		14:33	14:51	0.3	
Summer	2022-08-03	2054	34949	FLRH	PaxLoc		13:45	13:57	0.2	
Summer	2022-08-03	2054	34949	FLRH	PaxLoc		8:40	8:58	0.3	
Summer	2022-08-03	2054	34949	FLRH	PaxLoc		9:37	9:47	0.2	
Summer	2022-08-04	2055	34950	FLRH	CrewChg		5:46	6:09	0.4	
Summer	2022-08-04	2055	34950	FLRH	Fuel	Yes	7:32	8:37	0.3	
Summer	2022-08-04	2055	34950	FLRH	DrillServ	Yes	7:32	8:37	0.8	
Summer	2022-08-04	2055	34950	FLRH	CrewChg		17:51	18:15	0.4	
Summer	2022-08-04	2055	34950	FLRH	Fuel	Yes	8:49	9:50	0.7	
Summer	2022-08-04	2055	34950	FLRH	DrillServ	Yes	8:49	9:50	0.3	
Summer	2022-08-05	2056	34951	FLRH	Core	Yes	13:11	13:36	0.2	
Summer	2022-08-05	2056	34951	FLRH	CrewChg		17:24	18:17	0.5	
Summer	2022-08-05	2056	34951	FLRH	DrillServ	Yes	17:24	18:17	0.4	
Summer	2022-08-05	2056	34951	FLRH	PaxLoc		15:29	15:46	0.3	
Summer	2022-08-05	2056	34951	FLRH	DrillServ	Yes	6:45	7:09	0.4	
Summer	2022-08-05	2056	34951	FLRH	CrewChg		5:49	6:15	0.4	
Summer	2022-08-05	2056	34951	FLRH	PaxLoc		13:11	13:36	0.2	
Summer	2022-08-06	2057	34952	FLRH	Core	Yes	17:13	17:34	0.4	
Summer	2022-08-06	2057	34952	FLRH	CrewChg		17:56	18:31	0.6	
Summer	2022-08-06	2057	34952	FLRH	PaxLoc		16:05	16:23	0.3	
Summer	2022-08-06	2057	34952	FLRH	PaxLoc		11:09	11:26	0.3	
Summer	2022-08-06	2057	34952	FLRH	DrillServ	Yes	10:11	10:23	0.2	
Summer	2022-08-06	2057	34952	FLRH	PaxLoc		9:20	9:29	0.2	
Summer	2022-08-06	2057	34952	FLRH	Core	Yes	6:56	7:21	0.2	
Summer	2022-08-06	2057	34952	FLRH	DrillServ	Yes	6:56	7:21	0.2	
Summer	2022-08-06	2057	34952	FLRH	CrewChg		5:49	6:14	0.4	
Summer	2022-08-06	2057	34952	FLRH	PaxLoc		8:44	8:54	0.2	
Summer	2022-08-07	2059	34953	FLRH	PaxLoc		14:47	14:58	0.2	
Summer	2022-08-07	2059	34953	FLRH	Fuel	Yes	10:52	11:43	0.3	
Summer	2022-08-07	2059	34953	FLRH	DrillServ	Yes	10:52	11:43	0.3	
Summer	2022-08-07	2059	34953	FLRH	Move	Yes	9:54	10:35	0.5	
Summer	2022-08-07	2059	34953	FLRH	PaxLoc		9:54	10:35	0.2	
Summer	2022-08-07	2059	34953	FLRH	Move	Yes	9:08	9:43	0.6	
Summer	2022-08-07	2059	34953	FLRH	Move	Yes	8:04	8:49	0.8	
Summer	2022-08-07	2059	34953	FLRH	PaxLoc		7:25	7:39	0.2	
Summer	2022-08-07	2059	34953	FLRH	Core	Yes	5:50	6:41	0.2	
Summer	2022-08-07	2059	34953	FLRH	DrillServ	Yes	5:50	6:41	0.2	
Summer	2022-08-07	2059	34953	FLRH	DrillServ	Yes	17:31	18:27	0.4	
Summer	2022-08-07	2059	34953	FLRH	PaxLoc		14:08	14:19	0.2	
Summer	2022-08-07	2059	34953	FLRH	CrewChg		17:31	18:27	0.5	
Summer	2022-08-07	2059	34953	FLRH	Move	Yes	10:52	11:43	0.3	
Summer	2022-08-07	2059	34953	FLRH	CrewChg		5:50	6:41	0.5	
Summer	2022-08-08	2060	34954	FLRH	DrillServ	Yes	17:07	17:30	0.4	
Summer	2022-08-08	2060	34954	FLRH	PaxLoc		9:03	9:17	0.2	
Summer	2022-08-08	2060	34954	FLRH	CrewChg		5:47	6:15	0.5	
Summer	2022-08-08	2060	34954	FLRH	PaxLoc		7:54	8:03	0.2	
Summer	2022-08-08	2058	687007	GLYF	CrewChg		17:49	18:18	0.5	

Table E-1: Helicopter Flight Summary 2022

Season	Date	FltReportID	FltReportNo	Helicopter	Flight Type	Flight Type where Low Elevation Expected	Departure	Arrival	Time (hours)	Comment
Summer	2022-08-08	2058	687007	GLYF	PaxLoc		10:59	11:13	0.2	
Summer	2022-08-08	2058	687007	GLYF	PaxLoc		10:29	10:41	0.2	
Summer	2022-08-08	2058	687007	GLYF	Ferry		6:45	8:25	1.7	
Summer	2022-08-09	2062	687008	GLYF	CrewChg		17:57	18:15	0.3	
Summer	2022-08-09	2062	687008	GLYF	Move	Yes	11:43	13:06	1.4	
Summer	2022-08-09	2061	34955	FLRH	Move	Yes	12:56	14:46	1.5	
Summer	2022-08-09	2061	34955	FLRH	PaxLoc		15:03	16:29	0.3	
Summer	2022-08-09	2061	34955	FLRH	PaxLoc		16:43	16:52	0.2	
Summer	2022-08-09	2061	34955	FLRH	CrewChg		17:57	18:21	0.4	
Summer	2022-08-09	2062	687008	GLYF	CrewChg		5:48	6:19	0.5	
Summer	2022-08-09	2062	687008	GLYF	PaxLoc		7:28	7:37	0.2	
Summer	2022-08-09	2062	687008	GLYF	PaxLoc		8:02	8:41	0.2	
Summer	2022-08-09	2062	687008	GLYF	Move	Yes	8:02	8:41	0.5	
Summer	2022-08-09	2061	34955	FLRH	PaxLoc		12:56	14:46	0.3	
Summer	2022-08-09	2062	687008	GLYF	Move	Yes	10:42	11:08	0.4	
Summer	2022-08-09	2061	34955	FLRH	Move	Yes	15:03	16:29	1.1	
Summer	2022-08-09	2062	687008	GLYF	Move	Yes	13:17	14:34	1.3	
Summer	2022-08-09	2062	687008	GLYF	Move	Yes	14:42	16:16	1.6	
Summer	2022-08-09	2062	687008	GLYF	Move	Yes	16:27	16:40	0.2	
Summer	2022-08-09	2062	687008	GLYF	Fuel	Yes	17:01	17:28	0.5	
Summer	2022-08-09	2062	687008	GLYF	Move	Yes	9:13	10:24	1.2	
Summer	2022-08-09	2061	34955	FLRH	Move	Yes	8:00	8:21	0.4	
Summer	2022-08-09	2061	34955	FLRH	Fuel	Yes	17:14	17:36	0.4	
Summer	2022-08-09	2061	34955	FLRH	Move	Yes	11:35	12:39	1	
Summer	2022-08-09	2061	34955	FLRH	PaxLoc		7:26	7:35	0.2	
Summer	2022-08-09	2061	34955	FLRH	Move	Yes	8:35	9:58	1.4	
Summer	2022-08-09	2061	34955	FLRH	PaxLoc		10:15	11:08	0.1	
Summer	2022-08-09	2061	34955	FLRH	Move	Yes	10:15	11:08	0.8	
Summer	2022-08-09	2061	34955	FLRH	PaxLoc		11:35	12:39	0.1	
Summer	2022-08-10	2064	687009	GLYF	CrewChg		17:47	18:10	0.4	
Summer	2022-08-10	2064	687009	GLYF	DrillServ	Yes	5:50	6:41	0.2	
Summer	2022-08-10	2064	687009	GLYF	CrewChg		5:50	6:41	0.3	
Summer	2022-08-10	2063	34956	FLRH	PaxLoc		14:04	14:24	0.1	
Summer	2022-08-10	2063	34956	FLRH	DrillServ	Yes	5:49	6:44	0.1	
Summer	2022-08-10	2063	34956	FLRH	PaxLoc		15:41	15:53	0.2	
Summer	2022-08-10	2063	34956	FLRH	PaxLoc		14:04	14:24	0.2	
Summer	2022-08-10	2063	34956	FLRH	Core	Yes	5:49	6:44	0.3	
Summer	2022-08-10	2063	34956	FLRH	CrewChg		5:49	6:44	0.5	
Summer	2022-08-10	2064	687009	GLYF	Fuel	Yes	5:50	6:41	0.4	
Summer	2022-08-10	2063	34956	FLRH	CrewChg		17:49	18:14	0.4	
Summer	2022-08-10	2064	687009	GLYF	PaxLoc		14:40	15:00	0.3	
Summer	2022-08-10	2064	687009	GLYF	Reposition	Yes	14:18	14:25	0.1	
Summer	2022-08-10	2064	687009	GLYF	PaxLoc		11:15	11:35	0.3	
Summer	2022-08-11	2067	687010	GLYF	Core	Yes	16:18	17:27	0.1	
Summer	2022-08-11	2065	34957	FLRH	CrewChg		16:42	18:14	0.2	
Summer	2022-08-11	2067	687010	GLYF	CrewChg		5:50	6:24	0.4	
Summer	2022-08-11	2067	687010	GLYF	DrillServ	Yes	11:48	12:18	0.5	
Summer	2022-08-11	2067	687010	GLYF	Core	Yes	5:50	6:24	0.2	
Summer	2022-08-11	2065	34957	FLRH	CrewChg		16:42	18:14	0.3	
Summer	2022-08-11	2065	34957	FLRH	Core	Yes	5:48	6:38	0.4	
Summer	2022-08-11	2067	687010	GLYF	Move	Yes	16:18	17:27	1.1	
Summer	2022-08-11	2065	34957	FLRH	Move	Yes	16:42	18:14	1	
Summer	2022-08-11	2067	687010	GLYF	Move	Yes	13:37	16:02	2.4	
Summer	2022-08-11	2065	34957	FLRH	Move	Yes	13:26	14:06	0.7	
Summer	2022-08-11	2065	34957	FLRH	Move	Yes	14:24	16:28	2.1	
Summer	2022-08-11	2065	34957	FLRH	CrewChg		5:48	6:38	0.4	
Summer	2022-08-12	2066	34958	FLRH	CrewChg		5:43	6:02	0.3	
Summer	2022-08-12	2066	34958	FLRH	Floor	Yes	14:44	15:13	0.4	
Summer	2022-08-12	2066	34958	FLRH	CrewChg		17:47	18:04	0.3	
Summer	2022-08-12	2068	687011	GLYF	Core	Yes	6:50	7:50	0.1	
Summer	2022-08-12	2066	34958	FLRH	Core	Yes	14:44	15:13	0.1	
Summer	2022-08-12	2068	687011	GLYF	Move	Yes	10:15	12:01	1.8	
Summer	2022-08-12	2068	687011	GLYF	Move	Yes	6:50	7:50	0.9	
Summer	2022-08-12	2068	687011	GLYF	Ferry		12:18	12:35	0.3	
Summer	2022-08-12	2066	34958	FLRH	Move	Yes	9:07	11:10	2.1	
Summer	2022-08-12	2066	34958	FLRH	Move	Yes	11:19	11:59	0.4	
Summer	2022-08-12	2066	34958	FLRH	Move	Yes	7:09	8:52	1.7	
Summer	2022-08-12	2068	687011	GLYF	PaxLoc		8:05	10:03	0.4	
Summer	2022-08-12	2068	687011	GLYF	Move	Yes	8:05	10:03	1.6	
Summer	2022-08-12	2066	34958	FLRH	PaxLoc		6:45	6:59	0.2	
Summer	2022-08-12	2066	34958	FLRH	PaxLoc		11:19	11:59	0.3	
Summer	2022-08-12	2068	687011	GLYF	PaxLoc		13:57	14:10	0.2	
Summer	2022-08-12	2068	687011	GLYF	PaxLoc		16:41	16:51	0.2	
Summer	2022-08-13	2103	34959	FLRH	CrewChg		17:45	18:06	0.4	
Summer	2022-08-13	2103	34959	FLRH	Floor	Yes	14:21	15:04	0.5	
Summer	2022-08-13	2103	34959	FLRH	DrillServ	Yes	14:21	15:04	0.2	
Summer	2022-08-13	2103	34959	FLRH	Move	Yes	8:50	9:45	0.9	
Summer	2022-08-13	2103	34959	FLRH	Move	Yes	7:36	8:28	0.9	
Summer	2022-08-13	2103	34959	FLRH	Move	Yes	7:05	7:14	0.2	
Summer	2022-08-13	2103	34959	FLRH	CrewChg		5:49	5:59	0.2	
Summer	2022-08-13	2103	34959	FLRH	PaxLoc		10:26	10:40	0.2	
Summer	2022-08-13	2103	34959	FLRH	LocSing	Yes	10:54	11:05	0.2	
Summer	2022-08-13	2103	34959	FLRH	LocSing	Yes	11:17	11:27	0.2	
Summer	2022-08-13	2103	34959	FLRH	PaxLoc		11:50	12:02	0.2	
Summer	2022-08-14	2104	34960	FLRH	Fuel	Yes	17:08	17:28	0.2	
Summer	2022-08-14	2104	34960	FLRH	Fuel	Yes	5:52	6:32	0.2	
Summer	2022-08-14	2104	34960	FLRH	Core	Yes	17:08	17:28	0.1	
Summer	2022-08-14	2104	34960	FLRH	CrewChg		17:47	18:03	0.3	
Summer	2022-08-14	2104	34960	FLRH	CrewChg		5:52	6:32	0.3	

Table E-1: Helicopter Flight Summary 2022

Season	Date	FltReportID	FltReportNo	Helicopter	Flight Type	Flight Type where Low Elevation Expected	Departure	Arrival	Time (hours)	Comment
Summer	2022-08-14	2104	34960	FLRH	Core		5:52	6:32	0.2	
Summer	2022-08-14	2069	687013	GLYF	PaxLoc	Yes	7:00	7:08	0.1	
Summer	2022-08-14	2069	687013	GLYF	PaxLoc		13:43	15:50	2.1	
Summer	2022-08-14	2069	687013	GLYF	PaxLoc		10:48	11:51	1.1	
Summer	2022-08-14	2069	687013	GLYF	PaxLoc		8:31	10:30	1.8	
Summer	2022-08-14	2069	687013	GLYF	PaxLoc		16:29	16:50	0.4	
Summer	2022-08-14	2069	687013	GLYF	LocSing	Yes	12:20	12:38	0.3	
Summer	2022-08-14	2070	687014	GLYF	PaxLoc		16:38	16:47	0.2	
Summer	2022-08-14	2070	687014	GLYF	PaxLoc		16:17	16:27	0.2	
Summer	2022-08-14	2070	687014	GLYF	PaxLoc		9:00	9:10	0.2	
Summer	2022-08-14	2069	687013	GLYF	PaxLoc		16:59	17:25	0.4	
Summer	2022-08-14	2069	687013	GLYF	PaxLoc		8:31	10:30	0.2	
Summer	2022-08-14	2070	687014	FLRH	PaxLoc		7:53	8:04	0.2	
Summer	2022-08-15	2105	34961	FLRH	CrewChg		17:48	18:06	0.3	
Summer	2022-08-15	2105	34961	FLRH	Core	Yes	17:12	17:22	0.2	
Summer	2022-08-15	2105	34961	FLRH	CrewChg		5:53	6:12	0.3	
Summer	2022-08-16	2106	34962	FLRH	Move	Yes	13:46	13:56	0.2	
Summer	2022-08-16	2106	34962	FLRH	Core	Yes	5:50	6:21	0.2	
Summer	2022-08-16	2106	34962	FLRH	CrewChg		5:50	6:21	0.3	
Summer	2022-08-16	2106	34962	FLRH	Move	Yes	15:48	15:57	0.2	
Summer	2022-08-16	2106	34962	FLRH	Move	Yes	16:43	17:22	0.7	
Summer	2022-08-16	2106	34962	FLRH	Move	Yes	17:33	18:26	0.6	
Summer	2022-08-16	2106	34962	FLRH	CrewChg		17:33	18:26	0.3	
Summer	2022-08-16	2074	756630	GLYF	DrillServ	Yes	17:42	18:10	0.5	
Summer	2022-08-16	2074	756630	GLYF	PaxLoc		15:38	16:05	0.5	
Summer	2022-08-16	2074	756630	GLYF	PaxLoc		16:18	16:36	0.3	
Summer	2022-08-16	2074	756630	GLYF	PaxLoc		16:45	17:06	0.4	
Summer	2022-08-17	2107	34363	FLRH	Core	Yes	17:24	17:36	0.1	
Summer	2022-08-17	2107	34363	FLRH	CrewChg		17:46	18:04	0.3	
Summer	2022-08-17	2107	34363	FLRH	DrillServ	Yes	17:24	17:36	0.1	
Summer	2022-08-17	2107	34363	FLRH	CrewChg		5:48	6:09	0.4	
Summer	2022-08-17	2075	756631	GLYF	Reposition	Yes	7:24	7:30	0.1	
Summer	2022-08-17	2075	756631	GLYF	PaxLoc		10:03	10:16	0.2	
Summer	2022-08-17	2075	756631	GLYF	Reposition	Yes	18:31	18:35	0.1	
Summer	2022-08-17	2107	34363	FLRH	Move	Yes	8:28	8:44	0.3	
Summer	2022-08-17	2107	34363	FLRH	Move	Yes	10:55	12:59	2.1	
Summer	2022-08-17	2075	756631	GLYF	Move	Yes	12:41	15:06	2.4	
Summer	2022-08-17	2107	34363	FLRH	Reposition	Yes	10:08	10:11	0.1	
Summer	2022-08-17	2075	756631	GLYF	Move	Yes	15:13	16:35	0.8	
Summer	2022-08-17	2075	756631	GLYF	PaxLoc		10:48	12:30	0.3	
Summer	2022-08-17	2075	756631	GLYF	CrewChg		17:54	18:22	0.5	
Summer	2022-08-17	2107	34363	FLRH	PaxLoc		15:36	16:03	0.5	
Summer	2022-08-17	2107	34363	FLRH	Move	Yes	13:10	15:20	2.2	
Summer	2022-08-17	2075	756631	GLYF	Move	Yes	10:48	12:30	1.4	
Summer	2022-08-17	2075	756631	GLYF	PaxLoc		7:50	8:19	0.5	
Summer	2022-08-17	2075	756631	GLYF	PaxLoc		15:13	16:35	0.6	
Summer	2022-08-18	2108	34964	FLRH	DrillServ	Yes	13:42	14:04	0.4	
Summer	2022-08-18	2108	34964	FLRH	Floor	Yes	14:17	14:42	0.4	
Summer	2022-08-18	2108	34964	FLRH	Move	Yes	17:02	18:09	0.5	
Summer	2022-08-18	2108	34964	FLRH	Move	Yes	15:57	16:50	0.9	
Summer	2022-08-18	2108	34964	FLRH	CrewChg		5:53	6:04	0.2	
Summer	2022-08-18	2076	756632	GLYF	Reposition	Yes	7:16	7:21	0.1	
Summer	2022-08-18	2076	756632	GLYF	PaxLoc		9:55	10:13	0.3	
Summer	2022-08-18	2076	756632	GLYF	PaxLoc		8:26	8:38	0.2	
Summer	2022-08-18	2076	756632	GLYF	PaxLoc		11:33	12:01	0.4	
Summer	2022-08-18	2076	756632	GLYF	PaxLoc		15:47	15:58	0.2	
Summer	2022-08-18	2076	756632	GLYF	DrillServ	Yes	17:20	17:45	0.4	
Summer	2022-08-18	2076	756632	GLYF	CrewChg		17:52	18:18	0.4	
Summer	2022-08-18	2076	756632	GLYF	CrewChg		6:06	6:32	0.4	
Summer	2022-08-18	2076	756632	GLYF	DrillServ	Yes	11:33	12:01	0.1	
Summer	2022-08-18	2108	34964	FLRH	PaxLoc		18:20	18:29	0.2	
Summer	2022-08-18	2108	34964	FLRH	PaxLoc		9:35	10:03	0.2	
Summer	2022-08-18	2108	34964	FLRH	LocSing	Yes	17:02	18:09	0.3	
Summer	2022-08-18	2108	34964	FLRH	PaxLoc		9:01	9:17	0.3	
Summer	2022-08-18	2108	34964	FLRH	PaxLoc		17:02	18:09	0.3	
Summer	2022-08-18	2076	756632	GLYF	PaxLoc		7:34	8:04	0.5	
Summer	2022-08-18	2076	756632	GLYF	PaxLoc		16:30	17:10	0.7	
Summer	2022-08-19	2078	476337	FLRH	CrewChg		17:17	17:58	0.3	
Summer	2022-08-19	2078	476337	FLRH	Reposition	Yes	12:40	13:00	0.3	
Summer	2022-08-19	2077	34965	FLRH	CrewChg		6:06	6:16	0.2	
Summer	2022-08-19	2077	34965	FLRH	DrillServ	Yes	9:55	10:27	0.2	
Summer	2022-08-19	2078	476337	FLRH	Reposition	Yes	12:16	12:20	0.1	
Summer	2022-08-19	2079	756633	GLYF	CrewChg		17:54	18:23	0.5	
Summer	2022-08-19	2079	756633	GLYF	Core	Yes	15:30	16:48	0.2	
Summer	2022-08-19	2079	756633	GLYF	Fuel	Yes	15:30	16:48	0.4	
Summer	2022-08-19	2079	756633	GLYF	PaxLoc		13:31	14:01	0.5	
Summer	2022-08-19	2079	756633	GLYF	PaxLoc		9:17	11:25	0.3	
Summer	2022-08-19	2079	756633	GLYF	Floor	Yes	9:17	11:25	1.3	
Summer	2022-08-19	2079	756633	GLYF	DrillServ	Yes	9:17	11:25	0.5	
Summer	2022-08-19	2079	756633	GLYF	CrewChg		5:56	6:23	0.5	
Summer	2022-08-19	2077	34965	FLRH	DrillServ	Yes	9:55	10:27	0.3	
Summer	2022-08-19	2077	34965	FLRH	PaxLoc		9:10	9:31	0.4	
Summer	2022-08-19	2077	34965	FLRH	PaxLoc		8:48	9:03	0.3	
Summer	2022-08-19	2078	476337	FLRH	PaxLoc		14:07	14:19	0.2	
Summer	2022-08-19	2078	476337	FLRH	PaxLoc		15:21	15:31	0.2	
Summer	2022-08-19	2078	476337	FLRH	PaxLoc		17:17	17:58	0.4	
Summer	2022-08-19	2078	476337	FLRH	LocSing	Yes	18:32	18:48	0.3	
Summer	2022-08-19	2078	476337	FLRH	PaxLoc		18:54	19:13	0.3	
Summer	2022-08-19	2077	34965	FLRH	PaxLoc		7:23	7:40	0.3	

Table E-1: Helicopter Flight Summary 2022

Season	Date	FltReportID	FltReportNo	Helicopter	Flight Type	Flight Type where Low Elevation Expected	Departure	Arrival	Time (hours)	Comment
Summer	2022-08-19	2078	476337	FLRH	LocSng		18:06	18:25	0.3	
Summer	2022-08-19	2079	756633	GLYF	PaxLoc	Yes	12:09	12:51	0.7	
Summer	2022-08-19	2079	756633	GLYF	PaxLoc		14:31	15:17	0.8	
Summer	2022-08-19	2079	756633	GLYF	PaxLoc		8:17	8:46	0.5	
Summer	2022-08-19	2079	756633	GLYF	PaxLoc		15:30	16:48	0.7	
Summer	2022-08-20	2080	476338	FLRH	CrewChg		5:48	6:03	0.3	
Summer	2022-08-20	2080	476338	FLRH	Move	Yes	10:14	11:04	0.8	
Summer	2022-08-20	2080	476338	FLRH	DrillServ	Yes	16:44	17:10	0.4	
Summer	2022-08-20	2080	476338	FLRH	CrewChg		17:46	18:11	0.4	
Summer	2022-08-20	2081	756634	GLYF	CrewChg		17:48	18:16	0.5	
Summer	2022-08-20	2081	756634	GLYF	CrewChg		6:05	6:35	0.5	
Summer	2022-08-20	2081	756634	GLYF	PaxLoc		10:32	11:00	0.5	
Summer	2022-08-20	2080	476338	FLRH	PaxLoc		7:54	8:03	0.2	
Summer	2022-08-20	2080	476338	FLRH	PaxLoc		14:28	14:51	0.4	
Summer	2022-08-20	2080	476338	FLRH	PaxLoc		7:28	7:39	0.2	
Summer	2022-08-20	2081	756634	GLYF	PaxLoc		9:04	9:26	0.4	
Summer	2022-08-20	2081	756634	GLYF	PaxLoc		15:56	16:53	1	
Summer	2022-08-21	2082	476339	FLRH	Move	Yes	17:05	18:16	0.9	
Summer	2022-08-21	2082	476339	FLRH	CrewChg		5:52	6:11	0.3	
Summer	2022-08-21	2082	476339	FLRH	Core	Yes	10:15	10:30	0.3	
Summer	2022-08-21	2082	476339	FLRH	Floor	Yes	14:01	14:16	0.3	
Summer	2022-08-21	2082	476339	FLRH	Move	Yes	15:47	16:48	1	
Summer	2022-08-21	2082	476339	FLRH	CrewChg		17:05	18:16	0.3	
Summer	2022-08-21	2082	476339	FLRH	PaxLoc		15:20	15:30	0.2	
Summer	2022-08-21	2083	756635	GLYF	Reposition	Yes	8:50	8:56	0.1	
Summer	2022-08-21	2083	756635	GLYF	CrewChg		18:19	18:53	0.6	
Summer	2022-08-21	2083	756635	GLYF	PaxLoc		14:37	14:49	0.2	
Summer	2022-08-21	2083	756635	GLYF	PaxLoc		13:48	14:04	0.3	
Summer	2022-08-21	2083	756635	GLYF	DrillServ	Yes	9:05	10:52	1.2	
Summer	2022-08-21	2083	756635	GLYF	Core	Yes	6:06	6:58	0.4	
Summer	2022-08-21	2083	756635	GLYF	CrewChg		6:06	6:58	0.5	
Summer	2022-08-21	2083	756635	GLYF	Fuel	Yes	9:05	10:52	0.6	
Summer	2022-08-21	2083	756635	GLYF	PaxLoc		15:55	16:25	0.5	
Summer	2022-08-21	2083	756635	GLYF	PaxLoc		11:09	11:32	0.4	
Summer	2022-08-22	2084	476340	FLRH	CrewChg		17:38	17:56	0.3	
Summer	2022-08-22	2084	476340	FLRH	CrewChg		5:50	6:12	0.4	
Summer	2022-08-22	2084	476340	FLRH	DrillServ	Yes	16:11	16:38	0.5	
Summer	2022-08-22	2084	476340	FLRH	Floor	Yes	11:02	12:00	1	
Summer	2022-08-22	2085	756636	GLYF	DrillServ	Yes	17:52	18:54	0.6	
Summer	2022-08-22	2085	756636	GLYF	Core	Yes	6:10	7:01	0.4	
Summer	2022-08-22	2085	756636	GLYF	Reposition	Yes	9:30	9:35	0.1	
Summer	2022-08-22	2085	756636	GLYF	PaxLoc		12:29	12:47	0.3	
Summer	2022-08-22	2085	756636	GLYF	PaxLoc		14:05	14:15	0.2	
Summer	2022-08-22	2085	756636	GLYF	Fuel	Yes	8:28	9:23	0.6	
Summer	2022-08-22	2085	756636	GLYF	CrewChg		17:52	18:54	0.4	
Summer	2022-08-22	2085	756636	GLYF	CrewChg		6:10	7:01	0.5	
Summer	2022-08-22	2085	756636	GLYF	PaxLoc		14:45	14:55	0.2	
Summer	2022-08-22	2084	476340	FLRH	PaxLoc		8:07	8:24	0.3	
Summer	2022-08-22	2084	476340	FLRH	PaxLoc		14:36	14:46	0.2	
Summer	2022-08-22	2085	756636	GLYF	PaxLoc		16:00	16:27	0.5	
Summer	2022-08-22	2085	756636	GLYF	PaxLoc		8:28	9:23	0.3	
Summer	2022-08-23	2091	476341	FLRH	CrewChg		5:58	6:18	0.3	
Summer	2022-08-23	2091	476341	FLRH	Reposition	Yes	14:27	14:32	0.1	
Summer	2022-08-23	2086	756637	GLYF	CrewChg		6:06	6:52	0.4	
Summer	2022-08-23	2086	756637	GLYF	DrillServ	Yes	13:16	15:51	0.4	
Summer	2022-08-23	2086	756637	GLYF	Move	Yes	13:16	15:51	2	
Summer	2022-08-23	2086	756637	GLYF	PaxLoc		12:18	12:34	0.3	
Summer	2022-08-23	2086	756637	GLYF	CrewChg		17:47	18:17	0.5	
Summer	2022-08-23	2086	756637	GLYF	PaxLoc		13:16	15:51	0.2	
Summer	2022-08-23	2086	756637	GLYF	Core	Yes	6:06	6:52	0.4	
Summer	2022-08-23	2086	756637	GLYF	DrillServ	Yes	10:18	10:39	0.4	
Summer	2022-08-23	2091	476341	FLRH	PaxLoc		8:33	8:43	0.2	
Summer	2022-08-23	2086	756637	GLYF	PaxLoc		8:59	9:23	0.4	
Summer	2022-08-23	2086	756637	GLYF	PaxLoc		16:08	16:39	0.5	
Summer	2022-08-24	2087	476342	FLRH	CrewChg		17:42	18:01	0.3	
Summer	2022-08-24	2087	476342	FLRH	DrillServ	Yes	14:18	15:22	1.1	
Summer	2022-08-24	2088	756638	GLYF	CrewChg		18:03	18:22	0.3	
Summer	2022-08-24	2088	756638	GLYF	PaxLoc		11:02	11:18	0.3	
Summer	2022-08-24	2088	756638	GLYF	Fuel	Yes	11:33	13:19	0.6	
Summer	2022-08-24	2088	756638	GLYF	DrillServ	Yes	11:33	13:19	0.6	
Summer	2022-08-24	2088	756638	GLYF	PaxLoc		13:26	13:35	0.2	
Summer	2022-08-24	2088	756638	GLYF	Core	Yes	11:33	13:19	0.4	
Summer	2022-08-24	2088	756638	GLYF	PaxLoc		11:33	13:19	0.2	
Summer	2022-08-24	2088	756638	GLYF	CrewChg		5:55	6:19	0.4	
Summer	2022-08-24	2088	756638	GLYF	Reposition	Yes	10:09	10:14	0.1	
Summer	2022-08-24	2088	756638	GLYF	Fuel	Yes	13:44	15:21	0.2	
Summer	2022-08-24	2088	756638	GLYF	Core	Yes	13:44	15:21	0.1	
Summer	2022-08-24	2088	756638	GLYF	PaxLoc		7:56	8:20	0.4	
Summer	2022-08-24	2088	756638	GLYF	PaxLoc		13:44	15:21	1.3	
Summer	2022-08-25	2089	476343	FLRH	DrillServ	Yes	16:09	16:43	0.6	
Summer	2022-08-25	2089	476343	FLRH	CrewChg		6:01	6:20	0.3	
Summer	2022-08-25	2089	476343	FLRH	CrewChg		17:45	18:00	0.3	
Summer	2022-08-25	2089	476343	FLRH	PaxLoc		10:07	11:00	0.2	
Summer	2022-08-25	2089	476343	FLRH	Core	Yes	10:07	11:00	0.2	
Summer	2022-08-25	2089	476343	FLRH	Move	Yes	10:07	11:00	0.5	
Summer	2022-08-25	2089	476343	FLRH	Move	Yes	8:43	9:54	1.2	
Summer	2022-08-25	2089	476343	FLRH	PaxLoc		8:15	8:25	0.2	
Summer	2022-08-25	2090	756639	GLYF	Core	Yes	6:00	6:52	0.4	
Summer	2022-08-25	2090	756639	GLYF	CrewChg		17:55	18:16	0.4	

Table E-1: Helicopter Flight Summary 2022

Season	Date	FltReportID	FltReportNo	Helicopter	Flight Type	Flight Type where Low Elevation Expected	Departure	Arrival	Time (hours)	Comment
Summer	2022-08-25	2090	756639	GLYF	Floor		10:37	11:06	0.5	
Summer	2022-08-25	2090	756639	GLYF	CrewChg	Yes	6:00	6:52	0.5	
Summer	2022-08-25	2090	756639	GLYF	PaxLoc		12:38	12:49	0.2	
Summer	2022-08-25	2089	476343	FLRH	PaxLoc		15:12	15:22	0.2	
Summer	2022-08-25	2089	476343	FLRH	PaxLoc		15:40	15:50	0.2	
Summer	2022-08-25	2090	756639	GLYF	PaxLoc		9:37	9:56	0.3	
Summer	2022-08-25	2090	756639	GLYF	PaxLoc		10:10	10:28	0.3	
Summer	2022-08-25	2090	756639	GLYF	PaxLoc		15:10	15:50	0.7	
Summer	2022-08-25	2090	756639	GLYF	Reposition	Yes	16:40	16:45	0.1	
Summer	2022-08-26	2092	476344	FLRH	DrillServ	Yes	15:55	16:38	0.7	
Summer	2022-08-26	2092	476344	FLRH	CrewChg		5:48	6:05	0.3	
Summer	2022-08-26	2092	476344	FLRH	CrewChg		17:53	18:08	0.3	
Summer	2022-08-26	2071	756640	GLYF	Fuel	Yes	5:56	7:30	0.8	
Summer	2022-08-26	2071	756640	GLYF	CrewChg		17:58	18:19	0.4	
Summer	2022-08-26	2071	756640	GLYF	Core	Yes	5:56	7:30	0.4	
Summer	2022-08-26	2071	756640	GLYF	CrewChg		5:56	7:30	0.4	
Summer	2022-08-26	2071	756640	GLYF	PaxLoc		9:22	9:44	0.4	
Summer	2022-08-26	2071	756640	GLYF	PaxLoc		15:55	16:39	0.7	
Summer	2022-08-27	2093	476345	FLRH	Move	Yes	15:20	16:53	1.6	
Summer	2022-08-27	2093	476345	FLRH	CrewChg		17:55	18:10	0.3	
Summer	2022-08-27	2093	476345	FLRH	CrewChg		6:10	6:25	0.3	
Summer	2022-08-27	2094	756641	GLYF	PaxLoc		14:33	14:47	0.2	
Summer	2022-08-27	2094	756641	GLYF	Reposition	Yes	7:34	7:40	0.1	
Summer	2022-08-27	2094	756641	GLYF	Fuel	Yes	5:57	7:24	0.6	
Summer	2022-08-27	2094	756641	GLYF	Core	Yes	5:57	7:24	0.4	
Summer	2022-08-27	2094	756641	GLYF	CrewChg		18:09	18:30	0.4	
Summer	2022-08-27	2094	756641	GLYF	CrewChg		5:57	7:24	0.5	
Summer	2022-08-27	2094	756641	GLYF	PaxLoc		8:16	8:50	0.6	
Summer	2022-08-27	2094	756641	GLYF	PaxLoc		15:23	16:21	1	
Summer	2022-08-28	2095	476346	FLRH	Move	Yes	13:00	13:30	0.5	
Summer	2022-08-28	2095	476346	FLRH	Move	Yes	11:04	12:45	1.7	
Summer	2022-08-28	2095	476346	FLRH	Move	Yes	8:52	10:48	1.9	
Summer	2022-08-28	2095	476346	FLRH	Move	Yes	7:38	8:38	1	
Summer	2022-08-28	2095	476346	FLRH	PaxLoc		7:19	7:30	0.2	
Summer	2022-08-28	2095	476346	FLRH	PaxLoc		6:33	6:43	0.2	
Summer	2022-08-28	2095	476346	FLRH	CrewChg		5:54	6:15	0.4	
Summer	2022-08-28	2096	756642	GLYF	Reposition	Yes	18:56	19:01	0.1	
Summer	2022-08-28	2095	476346	FLRH	PaxLoc		15:59	16:41	0.7	
Summer	2022-08-28	2095	476346	FLRH	Reposition	Yes	18:00	18:05	0.1	
Summer	2022-08-28	2096	756642	GLYF	CrewChg		6:04	6:56	0.5	
Summer	2022-08-28	2096	756642	GLYF	Core	Yes	6:04	6:56	0.4	
Summer	2022-08-28	2096	756642	GLYF	Fuel	Yes	13:10	13:51	0.3	
Summer	2022-08-28	2096	756642	GLYF	DrillServ	Yes	13:10	13:51	0.4	
Summer	2022-08-28	2096	756642	GLYF	CrewChg		18:01	18:28	0.5	
Summer	2022-08-28	2095	476346	FLRH	PaxLoc		13:48	13:58	0.2	
Summer	2022-08-28	2095	476346	FLRH	PaxLoc		14:10	14:20	0.2	
Summer	2022-08-29	2097	402957	FLRH	PaxLoc		13:06	15:27	0.1	
Summer	2022-08-29	2097	402957	FLRH	CrewChg		6:10	7:17	0.5	
Summer	2022-08-29	2097	402957	FLRH	CrewChg		18:14	18:37	0.4	
Summer	2022-08-29	2097	402957	FLRH	DrillServ	Yes	13:06	15:27	0.7	
Summer	2022-08-29	2097	402957	FLRH	Reposition	Yes	9:23	9:28	0.1	
Summer	2022-08-29	2097	402957	FLRH	DrillServ	Yes	6:10	7:17	0.2	
Summer	2022-08-29	2097	402957	FLRH	Fuel	Yes	15:39	16:35	0.4	
Summer	2022-08-29	2097	402957	FLRH	Core	Yes	6:10	7:17	0.4	
Summer	2022-08-29	2097	402957	FLRH	PaxLoc		12:23	12:38	0.3	
Summer	2022-08-29	2097	402957	FLRH	Move	Yes	13:06	15:27	1.6	
Summer	2022-08-29	2097	402957	FLRH	PaxLoc		15:39	16:35	0.5	
Summer	2022-08-29	2097	402957	FLRH	PaxLoc		8:51	9:12	0.4	
Summer	2022-08-30	2098	402958	FLRH	CrewChg		6:10	6:39	0.5	
Summer	2022-08-30	2098	402958	FLRH	LocSling	Yes	8:58	9:30	0.5	
Summer	2022-08-30	2098	402958	FLRH	PaxLoc		9:52	10:10	0.3	
Summer	2022-08-30	2098	402958	FLRH	Fuel	Yes	16:11	16:51	0.4	
Summer	2022-08-30	2098	402958	FLRH	Core	Yes	16:11	16:51	0.3	
Summer	2022-08-30	2098	402958	FLRH	CrewChg		17:58	18:24	0.4	
Summer	2022-08-30	2098	402958	FLRH	Reposition	Yes	7:28	7:33	0.1	
Summer	2022-08-30	2098	402958	FLRH	PaxLoc		8:33	8:42	0.2	
Summer	2022-08-30	2098	402958	FLRH	Ferry		7:43	8:16	0.6	
Summer	2022-08-31	2099	402959	FLRH	CrewChg		5:57	6:17	0.3	
Summer	2022-08-31	2099	402959	FLRH	CrewChg		12:33	12:52	0.3	
Summer	2022-08-31	2099	402959	FLRH	CrewChg		17:54	18:19	0.4	
Summer	2022-08-31	2099	402959	FLRH	Reposition	Yes	16:40	16:46	0.1	
Summer	2022-08-31	2099	402959	FLRH	PaxLoc		8:10	8:50	0.7	
Summer	2022-08-31	2099	402959	FLRH	Reposition	Yes	9:01	9:06	0.1	
Summer	2022-08-31	2099	402959	FLRH	PaxLoc		15:50	16:35	0.8	
Summer	2022-09-01	2100	402960	FLRH	DrillServ	Yes	7:17	8:33	0.8	
Summer	2022-09-01	2100	402960	FLRH	CrewChg		6:02	7:00	0.4	
Summer	2022-09-01	2100	402960	FLRH	Fuel	Yes	7:17	8:33	0.3	
Summer	2022-09-01	2100	402960	FLRH	PaxLoc		7:17	8:33	0.2	
Summer	2022-09-01	2100	402960	FLRH	Fuel	Yes	8:49	9:38	0.2	
Summer	2022-09-01	2100	402960	FLRH	DrillServ	Yes	8:49	9:38	0.4	
Summer	2022-09-01	2100	402960	FLRH	PaxLoc		8:49	9:38	0.2	
Summer	2022-09-01	2100	402960	FLRH	PaxLoc		17:10	18:27	0.5	
Summer	2022-09-01	2100	402960	FLRH	DrillServ	Yes	17:10	18:27	0.5	
Summer	2022-09-01	2100	402960	FLRH	CrewChg		17:10	18:27	0.3	
Summer	2022-09-01	2100	402960	FLRH	CrewChg		18:34	18:45	0.2	
Summer	2022-09-01	2100	402960	FLRH	Reposition	Yes	18:52	18:58	0.1	
Summer	2022-09-01	2100	402960	FLRH	PaxLoc		6:02	7:00	0.2	
Summer	2022-09-01	2100	402960	FLRH	Core	Yes	6:02	7:00	0.4	
Summer	2022-09-01	2100	402960	FLRH	PaxLoc		10:40	11:05	0.4	

Table E-1: Helicopter Flight Summary 2022

Season	Date	FltReportID	FltReportNo	Helicopter	Flight Type	Flight Type where Low Elevation Expected	Departure	Arrival	Time (hours)	Comment
Summer	2022-09-01	2100	402960	FLRH	PaxLoc		9:50	10:15	0.4	
Summer	2022-09-02	2101	402961	FLRH	CrewChg		18:08	18:33	0.4	
Summer	2022-09-02	2101	402961	FLRH	CrewChg		6:33	7:21	0.4	
Summer	2022-09-02	2101	402961	FLRH	Fuel	Yes	7:43	8:10	0.4	
Summer	2022-09-02	2101	402961	FLRH	Reposition	Yes	9:43	9:48	0.1	
Summer	2022-09-02	2101	402961	FLRH	PaxLoc		10:05	10:21	0.3	
Summer	2022-09-02	2101	402961	FLRH	PaxLoc		11:22	12:05	0.1	
Summer	2022-09-02	2101	402961	FLRH	Floor	Yes	11:22	12:05	0.6	
Summer	2022-09-02	2101	402961	FLRH	PaxLoc		12:34	12:43	0.2	
Summer	2022-09-02	2101	402961	FLRH	PaxLoc		16:00	16:47	0.3	
Summer	2022-09-02	2101	402961	FLRH	Reposition	Yes	18:42	18:47	0.1	
Summer	2022-09-02	2101	402961	FLRH	DrillServ	Yes	12:54	13:06	0.2	
Summer	2022-09-02	2101	402961	FLRH	PaxLoc		16:00	16:47	0.5	
Summer	2022-09-02	2101	402961	FLRH	PaxLoc		17:06	17:32	0.4	
Summer	2022-09-02	2101	402961	FLRH	Medevac		15:09	15:29	0.3	
Summer	2022-09-02	2101	402961	FLRH	Medevac		14:07	14:29	0.4	
Summer	2022-09-03	2102	402962	FLRH	CrewChg		17:11	18:20	0.5	
Summer	2022-09-03	2102	402962	FLRH	PaxLoc		16:51	17:06	0.3	
Summer	2022-09-03	2102	402962	FLRH	CrewChg		6:05	6:52	0.4	
Summer	2022-09-03	2102	402962	FLRH	Core	Yes	6:05	6:52	0.4	
Summer	2022-09-03	2102	402962	FLRH	PaxLoc		10:53	11:07	0.2	
Summer	2022-09-03	2102	402962	FLRH	PaxLoc		11:45	13:28	0.2	
Summer	2022-09-03	2102	402962	FLRH	DrillServ	Yes	11:45	13:28	0.2	
Summer	2022-09-03	2102	402962	FLRH	Move	Yes	11:45	13:28	1.1	
Summer	2022-09-03	2102	402962	FLRH	Fuel	Yes	11:45	13:28	0.2	
Summer	2022-09-03	2102	402962	FLRH	DrillServ	Yes	13:41	15:47	0.1	
Summer	2022-09-03	2102	402962	FLRH	Move	Yes	15:53	16:43	0.4	
Summer	2022-09-03	2102	402962	FLRH	PaxLoc		15:53	16:43	0.1	
Summer	2022-09-03	2102	402962	FLRH	Move	Yes	13:41	15:47	1.9	
Summer	2022-09-03	2102	402962	FLRH	DrillServ	Yes	15:53	16:43	0.3	
Summer	2022-09-03	2102	402962	FLRH	Fuel	Yes	13:41	15:47	0.1	
Summer	2022-09-03	2102	402962	FLRH	PaxLoc		17:11	18:20	0.7	
Summer	2022-09-03	2102	402962	FLRH	PaxLoc		9:02	9:41	0.7	
Summer	2022-09-04	2111	402963	FLRH			10:35	11:16	NA	
Summer	2022-09-04	2111	402963	FLRH	PaxLoc		12:47	13:21	0.6	
Summer	2022-09-04	2111	402963	FLRH	Fuel	Yes	6:06	7:30	0.6	
Summer	2022-09-04	2111	402963	FLRH	PaxLoc		14:42	15:23	0.7	
Summer	2022-09-04	2111	402963	FLRH	Core	Yes	6:06	7:30	0.4	
Summer	2022-09-04	2111	402963	FLRH	PaxLoc		10:35	11:16	0.7	
Summer	2022-09-04	2111	402963	FLRH	CrewChg		18:07	18:33	0.4	
Summer	2022-09-04	2111	402963	FLRH	PaxLoc		16:55	17:17	0.4	
Summer	2022-09-04	2111	402963	FLRH	Floor	Yes	15:30	16:46	1.3	
Summer	2022-09-04	2111	402963	FLRH	CrewChg		6:06	7:30	0.4	
Summer	2022-09-04	2111	402963	FLRH	Reposition	Yes	18:43	18:48	0.1	
Summer	2022-09-05	2114	402964	FLRH	CrewChg		17:34	18:24	0.4	
Summer	2022-09-05	2114	402964	FLRH	Fuel	Yes	6:07	7:31	0.3	
Summer	2022-09-05	2114	402964	FLRH	CrewChg		6:07	7:31	0.4	
Summer	2022-09-05	2114	402964	FLRH	DrillServ	Yes	6:07	7:31	0.3	
Summer	2022-09-05	2114	402964	FLRH	Core	Yes	6:07	7:31	0.4	
Summer	2022-09-05	2114	402964	FLRH	Core	Yes	17:34	18:24	0.4	
Summer	2022-09-05	2114	402964	FLRH	PaxLoc		13:48	14:01	0.2	
Summer	2022-09-05	2114	402964	FLRH	PaxLoc		14:26	14:39	0.12	
Summer	2022-09-05	2114	402964	FLRH	PaxLoc		15:33	16:01	0.5	
Summer	2022-09-05	2114	402964	FLRH	PaxLoc		9:36	9:45	0.2	
Summer	2022-09-05	2114	402964	FLRH	PaxLoc		14:50	15:03	0.2	
Summer	2022-09-05	2114	402964	FLRH	PaxLoc		9:53	10:05	0.2	
Summer	2022-09-05	2114	402964	FLRH	PaxLoc		11:55	12:05	0.2	
Summer	2022-09-05	2114	402964	FLRH	PaxLoc		12:15	12:31	0.3	
Summer	2022-09-05	2114	402964	FLRH	PaxLoc		13:10	13:19	0.2	
Summer	2022-09-05	2114	402964	FLRH	Ferry		8:34	8:52	0.3	
Summer	2022-09-06	2115	402965	FLRH	Move	Yes	18:00	19:17	0.9	
Summer	2022-09-06	2115	402965	FLRH	PaxLoc		13:38	14:05	0.5	
Summer	2022-09-06	2115	402965	FLRH	PaxLoc		14:52	15:07	0.3	
Summer	2022-09-06	2115	402965	FLRH	PaxLoc		15:25	16:21	0.3	
Summer	2022-09-06	2115	402965	FLRH	Move	Yes	15:25	16:21	0.6	
Summer	2022-09-06	2115	402965	FLRH	CrewChg		16:31	17:53	0.2	
Summer	2022-09-06	2115	402965	FLRH	Move	Yes	16:31	17:53	1.2	
Summer	2022-09-06	2115	402965	FLRH	CrewChg		18:00	19:17	0.2	
Summer	2022-09-06	2115	402965	FLRH	CrewChg		6:19	6:57	0.6	
Summer	2022-09-06	2115	402965	FLRH	PaxLoc		18:00	19:17	0.2	
Summer	2022-09-07	2116	402966	FLRH	Reposition	Yes	8:53	8:57	0.1	
Summer	2022-09-07	2116	402966	FLRH	Move	Yes	6:19	7:12	0.5	
Summer	2022-09-07	2116	402966	FLRH	PaxLoc		7:25	8:47	0.2	
Summer	2022-09-07	2116	402966	FLRH	Move	Yes	7:25	8:47	1.2	
Summer	2022-09-07	2117	980847	FLRH	Move	Yes	11:01	13:23	2.4	
Summer	2022-09-07	2117	980847	FLRH	Move	Yes	16:00	17:15	1.3	
Summer	2022-09-07	2117	980847	FLRH	CrewChg		18:04	18:34	0.5	
Summer	2022-09-07	2116	402966	FLRH	CrewChg		6:19	7:12	0.4	
Summer	2022-09-07	2117	980847	FLRH	Move	Yes	13:34	15:52	2.3	
Summer	2022-09-08	2120	980848	FLRH	CrewChg		18:00	18:30	0.5	
Summer	2022-09-08	2120	980848	FLRH	Core	Yes	8:40	9:07	0.5	
Summer	2022-09-08	2120	980848	FLRH	CrewChg		6:10	6:40	0.5	
Summer	2022-09-09	2118	980849	FLRH	DrillServ	Yes	13:24	15:50	0.3	
Summer	2022-09-09	2118	980849	FLRH	CrewChg		18:06	18:32	0.4	
Summer	2022-09-09	2118	980849	FLRH	PaxLoc		16:42	17:06	0.4	
Summer	2022-09-09	2118	980849	FLRH	Floor	Yes	16:02	16:23	0.4	
Summer	2022-09-09	2118	980849	FLRH	Floor	Yes	13:24	15:50	1.2	
Summer	2022-09-09	2118	980849	FLRH	Core	Yes	13:24	15:50	0.3	
Summer	2022-09-09	2118	980849	FLRH	Fuel	Yes	13:24	15:50	0.6	

Table E-1: Helicopter Flight Summary 2022

Season	Date	FltReportID	FltReportNo	Helicopter	Flight Type	Flight Type where Low Elevation Expected	Departure	Arrival	Time (hours)	Comment
Summer	2022-09-09	2118	980849	FLRH	Reposition		12:45	12:52	0.1	
Summer	2022-09-09	2118	980849	FLRH	CrewChg	Yes	6:19	6:53	0.6	
Summer	2022-09-10	2119	980850	FLRH	CrewChg		6:24	6:56	0.5	
Summer	2022-09-10	2119	980850	FLRH	DrillServ	Yes	17:54	18:48	0.4	
Summer	2022-09-10	2119	980850	FLRH	Fuel	Yes	7:02	8:29	0.7	
Summer	2022-09-10	2119	980850	FLRH	DrillServ	Yes	7:02	8:29	0.4	
Summer	2022-09-10	2119	980850	FLRH	Core	Yes	7:02	8:29	0.4	
Summer	2022-09-10	2119	980850	FLRH	CrewChg		17:54	18:48	0.5	
Summer	2022-09-10	2119	980850	FLRH	PaxLoc		17:17	17:35	0.2	
Summer	2022-09-10	2119	980850	FLRH	PaxLoc		16:05	16:14	0.2	
Summer	2022-09-10	2119	980850	FLRH	PaxLoc		14:25	14:59	0.3	
Summer	2022-09-10	2119	980850	FLRH	PaxLoc		17:17	17:35	0.1	
Summer	2022-09-10	2119	980850	FLRH	PaxLoc		14:25	14:59	0.3	
Summer	2022-09-11	2121	980851	FLRH	Core	Yes	17:22	18:16	0.1	
Summer	2022-09-11	2121	980851	FLRH	CrewChg		6:49	7:18	0.5	
Summer	2022-09-11	2121	980851	FLRH	CrewChg		18:28	18:52	0.4	
Summer	2022-09-11	2121	980851	FLRH	Fuel	Yes	17:22	18:16	0.3	
Summer	2022-09-11	2121	980851	FLRH	Core	Yes	11:01	12:45	0.2	
Summer	2022-09-11	2121	980851	FLRH	Fuel	Yes	11:01	12:45	0.2	
Summer	2022-09-11	2121	980851	FLRH	DrillServ	Yes	11:01	12:45	1.3	
Summer	2022-09-11	2121	980851	FLRH	DrillServ	Yes	17:22	18:16	0.3	
Summer	2022-09-11	2121	980851	FLRH	DrillServ	Yes	13:06	13:54	1.3	
Summer	2022-09-11	2121	980851	FLRH	PaxLoc		19:25	19:45	0.3	
Summer	2022-09-11	2121	980851	FLRH	PaxLoc		13:06	13:54	0.4	
Summer	2022-09-11	2121	980851	FLRH	PaxLoc		14:17	14:32	0.3	
Summer	2022-09-11	2121	980851	FLRH	PaxLoc		15:43	15:59	0.3	
Summer	2022-09-11	2121	980851	FLRH	PaxLoc		7:44	8:21	0.6	
Summer	2022-09-11	2121	980851	FLRH	PaxLoc		16:43	17:03	0.1	
Summer	2022-09-11	2121	980851	FLRH	PaxLoc		8:58	9:22	0.4	
Summer	2022-09-11	2121	980851	FLRH	PaxLoc		14:41	15:04	0.4	
Summer	2022-09-11	2121	980851	FLRH	PaxLoc		16:43	17:03	0.2	
Summer	2022-09-11	2121	980851	FLRH	PaxLoc		17:22	18:16	0.2	
Summer	2022-09-12	2122	980852	FLRH	Move	Yes	16:08	17:39	1.4	
Summer	2022-09-12	2122	980852	FLRH	Move	Yes	17:46	19:09	1	
Summer	2022-09-12	2122	980852	FLRH	PaxLoc		15:29	15:41	0.2	
Summer	2022-09-12	2122	980852	FLRH	Fuel	Yes	7:30	8:56	0.2	
Summer	2022-09-12	2122	980852	FLRH	CrewChg		17:46	19:09	0.4	
Summer	2022-09-12	2122	980852	FLRH	Core	Yes	7:30	8:56	0.2	
Summer	2022-09-12	2122	980852	FLRH	CrewChg		6:29	7:00	0.5	
Summer	2022-09-12	2122	980852	FLRH	DrillServ	Yes	7:30	8:56	0.7	
Summer	2022-09-12	2122	980852	FLRH	PaxLoc		7:30	8:56	0.3	
Summer	2022-09-12	2122	980852	FLRH	PaxLoc		9:10	9:20	0.2	
Summer	2022-09-12	2122	980852	FLRH	PaxLoc		10:38	10:54	0.3	
Summer	2022-09-12	2122	980852	FLRH	PaxLoc		10:11	10:20	0.2	
Summer	2022-09-12	2122	980852	FLRH	PaxLoc		13:57	14:06	0.2	
Summer	2022-09-12	2122	980852	FLRH	PaxLoc		13:01	13:29	0.5	
Summer	2022-09-12	2122	980852	FLRH	PaxLoc		11:10	11:31	0.4	
Summer	2022-09-12	2122	980852	FLRH	PaxLoc		14:59	15:20	0.4	
Summer	2022-09-14	2124	980854	FLRH	DrillServ	Yes	13:36	13:45	0.2	
Summer	2022-09-14	2124	980854	FLRH	DrillServ	Yes	12:11	13:26	0.3	
Summer	2022-09-14	2124	980854	FLRH	CrewChg		18:51	19:18	0.5	
Summer	2022-09-14	2124	980854	FLRH	Fuel	Yes	12:11	13:26	1	
Summer	2022-09-14	2124	980854	FLRH	PaxLoc		14:16	14:27	0.2	
Summer	2022-09-14	2124	980854	FLRH	PaxLoc		14:40	14:50	0.2	
Summer	2022-09-14	2124	980854	FLRH	PaxLoc		17:25	17:35	0.2	
Summer	2022-09-14	2124	980854	FLRH	PaxLoc		17:01	17:10	0.2	
Summer	2022-09-15	2125	980855	FLRH	Core	Yes	17:30	18:21	0.2	
Summer	2022-09-15	2125	980855	FLRH	Floor	Yes	17:30	18:21	0.3	
Summer	2022-09-15	2125	980855	FLRH	CrewChg		18:29	18:57	0.5	
Summer	2022-09-15	2125	980855	FLRH	DrillServ	Yes	17:30	18:21	0.4	
Summer	2022-09-15	2125	980855	FLRH	CrewChg		6:47	7:11	0.4	
Summer	2022-09-15	2125	980855	FLRH	Fuel	Yes	16:43	17:10	0.5	
Summer	2022-09-15	2125	980855	FLRH	Core	Yes	8:01	8:59	0.3	
Summer	2022-09-15	2125	980855	FLRH	Fuel	Yes	8:01	8:59	0.3	
Summer	2022-09-15	2125	980855	FLRH	DrillServ	Yes	8:01	8:59	0.4	
Summer	2022-09-15	2125	980855	FLRH	PaxLoc		11:24	11:35	0.2	
Summer	2022-09-15	2125	980855	FLRH	PaxLoc		12:58	13:07	0.2	
Summer	2022-09-15	2125	980855	FLRH	PaxLoc		12:28	12:39	0.2	
Summer	2022-09-15	2125	980855	FLRH	PaxLoc		11:50	12:08	0.3	
Summer	2022-09-15	2125	980855	FLRH	PaxLoc		10:50	10:59	0.2	
Summer	2022-09-15	2125	980855	FLRH	PaxLoc		16:12	16:32	0.3	
Summer	2022-09-15	2125	980855	FLRH	PaxLoc		9:33	10:17	0.7	
Summer	2022-09-16	2126	980856	FLRH	PaxLoc		12:07	12:22	0.3	
Summer	2022-09-16	2126	980856	FLRH	Floor	Yes	10:39	11:22	0.5	
Summer	2022-09-16	2126	980856	FLRH	PaxLoc		10:39	11:22	0.2	
Summer	2022-09-16	2126	980856	FLRH	DrillServ	Yes	16:35	17:25	0.2	
Summer	2022-09-16	2126	980856	FLRH	DrillServ	Yes	9:37	10:25	0.4	Fog.
Summer	2022-09-16	2126	980856	FLRH	Fuel	Yes	16:35	17:25	0.4	
Summer	2022-09-16	2126	980856	FLRH	Fuel	Yes	9:37	10:25	0.4	Fog.
Summer	2022-09-16	2126	980856	FLRH	Reposition	Yes	18:15	18:21	0.1	
Summer	2022-09-16	2126	980856	FLRH	CrewChg		7:32	8:02	0.5	Foggy.
Summer	2022-09-16	2126	980856	FLRH	Core	Yes	16:35	17:25	0.2	
Summer	2022-09-16	2126	980856	FLRH	Ferry		12:32	12:52	0.3	
Summer	2022-09-16	2126	980856	FLRH	PaxLoc		13:16	13:33	0.3	
Summer	2022-09-16	2126	980856	FLRH	PaxLoc		14:51	15:08	0.3	
Summer	2022-09-16	2126	980856	FLRH	Ferry		15:51	16:32	0.7	
Summer	2022-09-16	2126	980856	FLRH	PaxLoc		15:28	15:35	0.1	
Summer	2022-09-17	2127	980857	FLRH	Core	Yes	16:15	16:52	0.4	
Summer	2022-09-17	2127	980857	FLRH	CrewChg		6:37	7:02	0.4	

Table E-1: Helicopter Flight Summary 2022

Season	Date	FltReportID	FltReportNo	Helicopter	Flight Type	Flight Type where Low Elevation Expected	Departure	Arrival	Time (hours)	Comment
Summer	2022-09-17	2127	980857	FLRH	DrillServ	Yes	16:15	16:52	0.2	
Summer	2022-09-17	2127	980857	FLRH	CrewChg		18:32	19:01	0.5	
Summer	2022-09-18	2128	980858	FLRH	CrewChg		6:37	7:05	0.5	
Summer	2022-09-18	2128	980858	FLRH	PaxLoc		8:12	8:32	0.3	
Summer	2022-09-18	2128	980858	FLRH	Move	Yes	12:04	13:11	1	
Summer	2022-09-18	2128	980858	FLRH	CrewChg		18:22	18:48	0.4	
Summer	2022-09-18	2128	980858	FLRH	PaxLoc		12:04	13:11	0.1	
Summer	2022-09-18	2128	980858	FLRH	Fuel	Yes	13:20	14:04	0.7	
Summer	2022-09-18	2128	980858	FLRH	Move	Yes	8:59	10:27	1.5	
Summer	2022-09-19	2129	980859	FLRH	CrewChg		6:58	7:26	0.5	
Summer	2022-09-19	2129	980859	FLRH	Fuel	Yes	17:06	17:51	0.4	
Summer	2022-09-19	2129	980859	FLRH	CrewChg		18:27	18:54	0.5	
Summer	2022-09-19	2129	980859	FLRH	DrillServ	Yes	12:27	12:55	0.5	
Summer	2022-09-19	2129	980859	FLRH	DrillServ	Yes	17:06	17:51	0.4	
Summer	2022-09-20	2130	402979	FLRH	CrewChg		18:25	18:54	0.5	
Summer	2022-09-20	2131	980860	FLRH	CrewChg		6:40	7:28	0.4	
Summer	2022-09-20	2131	980860	FLRH	Core	Yes	6:40	7:28	0.4	
Summer	2022-09-20	2130	402979	FLRH	Fuel	Yes	17:08	17:54	0.8	
Summer	2022-09-21	2132	402980	FLRH	DrillServ	Yes	13:48	14:41	0.9	
Summer	2022-09-21	2132	402980	FLRH	DrillServ	Yes	19:32	20:03	0.3	
Summer	2022-09-21	2132	402980	FLRH	PaxLoc		19:32	20:03	0.2	
Summer	2022-09-21	2132	402980	FLRH	CrewChg		18:30	18:57	0.5	
Summer	2022-09-21	2132	402980	FLRH	Fuel	Yes	16:15	16:50	0.3	
Summer	2022-09-21	2132	402980	FLRH	PaxLoc		16:15	16:50	0.3	
Summer	2022-09-21	2132	402980	FLRH	PaxLoc		15:00	15:41	0.3	
Summer	2022-09-21	2132	402980	FLRH	Core	Yes	6:37	7:29	0.4	
Summer	2022-09-21	2132	402980	FLRH	CrewChg		6:37	7:29	0.5	
Summer	2022-09-21	2132	402980	FLRH	Floor	Yes	15:00	15:41	0.4	
Fall	2022-09-22	2133	402981	FLRH	Fuel	Yes	15:41	17:30	0.4	
Fall	2022-09-22	2133	402981	FLRH	Core	Yes	6:50	7:43	0.4	
Fall	2022-09-22	2133	402981	FLRH	Core	Yes	15:41	17:30	0.2	
Fall	2022-09-22	2133	402981	FLRH	DrillServ	Yes	15:41	17:30	1.2	
Fall	2022-09-22	2133	402981	FLRH	CrewChg		18:31	18:54	0.4	
Fall	2022-09-22	2133	402981	FLRH	Reposition	Yes	19:24	19:29	0.1	
Fall	2022-09-22	2133	402981	FLRH	CrewChg		6:50	7:43	0.5	
Fall	2022-09-23	2134	402982	FLRH	DrillServ	Yes	16:43	18:06	0.8	
Fall	2022-09-23	2134	402982	FLRH	CrewChg		7:01	7:29	0.5	
Fall	2022-09-23	2134	402982	FLRH	PaxLoc		8:12	8:28	0.3	
Fall	2022-09-23	2134	402982	FLRH	Move	Yes	8:55	10:47	1.9	
Fall	2022-09-23	2134	402982	FLRH	Move	Yes	11:07	11:45	0.4	
Fall	2022-09-23	2134	402982	FLRH	PaxLoc		11:07	11:45	0.2	
Fall	2022-09-23	2134	402982	FLRH	PaxLoc		16:43	18:06	0.2	
Fall	2022-09-23	2134	402982	FLRH	Fuel	Yes	16:43	18:06	0.4	
Fall	2022-09-23	2134	402982	FLRH	CrewChg		18:58	19:22	0.4	
Fall	2022-09-23	2134	402982	FLRH	PaxLoc		14:25	14:34	0.2	
Fall	2022-09-23	2134	402982	FLRH	PaxLoc		14:39	15:14	0.6	
Fall	2022-09-23	2134	402982	FLRH	PaxLoc		14:01	14:11	0.2	
Fall	2022-09-23	2134	402982	FLRH	PaxLoc		13:16	13:35	0.3	
Fall	2022-09-24	2135	402983	FLRH	Reposition	Yes	9:23	9:27	0.1	
Fall	2022-09-24	2135	402983	FLRH	DrillServ	Yes	9:58	10:58	1	
Fall	2022-09-24	2135	402983	FLRH	CrewChg		7:11	7:58	0.4	
Fall	2022-09-24	2135	402983	FLRH	DrillServ	Yes	11:42	12:23	0.4	
Fall	2022-09-24	2135	402983	FLRH	Fuel	Yes	11:42	12:23	0.3	
Fall	2022-09-24	2135	402983	FLRH	CrewChg		18:50	19:17	0.5	
Fall	2022-09-24	2135	402983	FLRH	Core	Yes	7:11	7:58	0.4	
Fall	2022-09-25	2136	402984	FLRH	DrillServ	Yes	7:09	8:38	0.3	
Fall	2022-09-25	2136	402984	FLRH	CrewChg		7:09	8:38	0.5	
Fall	2022-09-25	2136	402984	FLRH	Fuel	Yes	7:09	8:38	0.3	
Fall	2022-09-25	2136	402984	FLRH	Floor	Yes	10:34	11:04	0.4	
Fall	2022-09-25	2136	402984	FLRH	PaxLoc		10:08	10:20	0.2	
Fall	2022-09-25	2136	402984	FLRH	PaxLoc		10:34	11:04	0.1	
Fall	2022-09-25	2136	402984	FLRH	PaxLoc		11:43	12:46	0.4	
Fall	2022-09-25	2136	402984	FLRH	Fuel	Yes	11:43	12:46	0.3	
Fall	2022-09-25	2136	402984	FLRH	CrewChg		18:55	19:24	0.5	
Fall	2022-09-25	2136	402984	FLRH	Core	Yes	7:09	8:38	0.4	
Fall	2022-09-25	2136	402984	FLRH	DrillServ	Yes	11:43	12:46	0.4	
Fall	2022-09-26	2137	402985	FLRH	Move	Yes	14:05	16:07	1.8	
Fall	2022-09-26	2137	402985	FLRH	CrewChg		18:57	19:18	0.4	
Fall	2022-09-26	2137	402985	FLRH	Fuel	Yes	16:52	18:24	0.4	
Fall	2022-09-26	2137	402985	FLRH	PaxLoc		16:52	18:24	0.4	
Fall	2022-09-26	2137	402985	FLRH	PaxLoc		14:05	16:07	0.2	
Fall	2022-09-26	2137	402985	FLRH	PaxLoc		13:20	13:34	0.2	
Fall	2022-09-26	2137	402985	FLRH	Core	Yes	7:07	7:54	0.4	
Fall	2022-09-26	2137	402985	FLRH	CrewChg		7:07	7:54	0.4	
Fall	2022-09-26	2137	402985	FLRH	Move	Yes	16:52	18:24	0.7	
Fall	2022-09-27	2138	402986	FLRH	CrewChg		7:11	7:34	0.4	
Fall	2022-09-27	2138	402986	FLRH	CrewChg		18:56	19:25	0.5	
Fall	2022-09-27	2138	402986	FLRH	DrillServ	Yes	16:13	17:13	0.6	
Fall	2022-09-27	2138	402986	FLRH	Fuel	Yes	16:13	17:13	0.4	
Fall	2022-09-27	2138	402986	FLRH	PaxLoc		14:40	14:57	0.3	
Fall	2022-09-27	2138	402986	FLRH	PaxLoc		13:10	13:27	0.3	
Fall	2022-09-28	2139	402987	FLRH	CrewChg		8:35	9:10	0.6	
Fall	2022-09-28	2139	402987	FLRH	PaxLoc		14:27	15:33	0.5	
Fall	2022-09-28	2139	402987	FLRH	Fuel	Yes	14:27	15:33	0.3	
Fall	2022-09-28	2139	402987	FLRH	DrillServ	Yes	14:27	15:33	0.3	
Fall	2022-09-28	2139	402987	FLRH	CrewChg		18:53	19:19	0.4	
Fall	2022-09-28	2139	402987	FLRH	PaxLoc		17:22	17:44	0.4	
Fall	2022-09-29	2140	402988	FLRH	Reposition	Yes	7:31	9:06	0.1	
Fall	2022-09-29	2140	402988	FLRH	CrewChg		7:31	9:06	0.5	

Table E-1: Helicopter Flight Summary 2022

Season	Date	FltReportID	FltReportNo	Helicopter	Flight Type	Flight Type where Low Elevation Expected	Departure	Arrival	Time (hours)	Comment
Fall	2022-09-29	2140	402988	FLRH	DrillServ	Yes	7:31	9:06	0.5	
Fall	2022-09-29	2140	402988	FLRH	Core	Yes	17:01	17:27	0.4	
Fall	2022-09-29	2140	402988	FLRH	CrewChg		18:40	19:20	0.6	
Fall	2022-09-29	2140	402988	FLRH	Reposition	Yes	18:40	19:20	0.1	
Fall	2022-09-29	2140	402988	FLRH	Fuel	Yes	7:31	9:06	0.5	
Fall	2022-09-30	2142	957194	GJTI	Reposition	Yes	17:46	17:52	0.1	
Fall	2022-09-30	2142	957194	GJTI	PaxLoc		16:22	17:26	0.2	
Fall	2022-09-30	2142	957194	GJTI	CrewChg		18:39	19:13	0.6	
Fall	2022-09-30	2142	957194	GJTI	Core	Yes	16:22	17:26	0.4	
Fall	2022-09-30	2142	957194	GJTI	DrillServ	Yes	16:22	17:26	0.5	
Fall	2022-09-30	2141	402989	FLRH	CrewChg		7:39	8:09	0.5	
Fall	2022-09-30	2142	957194	GJTI	Reposition	Yes	12:03	12:09	0.1	
Fall	2022-09-30	2142	957194	GJTI	PaxLoc		13:56	15:11	0.2	
Fall	2022-09-30	2142	957194	GJTI	Fuel	Yes	13:56	15:11	1.1	
Fall	2022-10-01	2143	957195	GJTI	Move	Yes	9:06	10:54	0.7	
Fall	2022-10-01	2143	957195	GJTI	Move	Yes	17:00	18:54	1.2	
Fall	2022-10-01	2143	957195	GJTI	CrewChg		17:00	18:54	0.3	
Fall	2022-10-01	2143	957195	GJTI	PaxLoc		17:00	18:54	0.4	
Fall	2022-10-01	2143	957195	GJTI	Move	Yes	13:58	16:39	2.7	
Fall	2022-10-01	2143	957195	GJTI	Move	Yes	11:14	13:34	1	
Fall	2022-10-01	2143	957195	GJTI	Floor	Yes	11:14	13:34	0.9	
Fall	2022-10-01	2143	957195	GJTI	Floor	Yes	9:06	10:54	0.7	
Fall	2022-10-01	2143	957195	GJTI	PaxLoc		9:06	10:54	0.4	
Fall	2022-10-01	2143	957195	GJTI	PaxLoc		8:28	8:39	0.2	
Fall	2022-10-01	2143	957195	GJTI	CrewChg		7:38	8:07	0.5	
Fall	2022-10-01	2143	957195	GJTI	PaxLoc		11:14	13:34	0.4	
Fall	2022-10-02	2144	957196	GJTI	CrewChg		8:24	8:35	0.2	
Fall	2022-10-02	2144	957196	GJTI	PaxLoc		13:33	15:45	0.8	Bad weather.
Fall	2022-10-02	2144	957196	GJTI	DrillServ	Yes	13:33	15:45	1.4	Bad weather.
Fall	2022-10-03	2145	957197	GJTI	Floor	Yes	14:14	16:35	1.1	Wind.
Fall	2022-10-03	2145	957197	GJTI	CrewChg		16:51	19:02	0.3	
Fall	2022-10-03	2145	957197	GJTI	Fuel	Yes	16:51	19:02	0.4	
Fall	2022-10-03	2145	957197	GJTI	Move	Yes	16:51	19:02	1.2	
Fall	2022-10-03	2145	957197	GJTI	PaxLoc		16:51	19:02	0.3	
Fall	2022-10-03	2145	957197	GJTI	PaxLoc		14:14	16:35	0.2	Wind.
Fall	2022-10-03	2145	957197	GJTI	Reposition	Yes	13:28	13:34	0.1	
Fall	2022-10-03	2145	957197	GJTI	Move	Yes	8:19	10:48	1.9	Bad weather - wind.
Fall	2022-10-03	2145	957197	GJTI	Move	Yes	14:14	16:35	1.1	Wind.
Fall	2022-10-03	2145	957197	GJTI	CrewChg		8:19	10:48	0.2	
Fall	2022-10-03	2145	957197	GJTI	PaxLoc		8:19	10:48	0.4	
Fall	2022-10-04	2146	957198	GJTI	PaxLoc		9:22	9:40	0.3	
Fall	2022-10-04	2146	957198	GJTI	CrewChg		18:33	18:49	0.3	
Fall	2022-10-04	2146	957198	GJTI	PaxLoc		12:01	12:15	0.2	
Fall	2022-10-04	2146	957198	GJTI	PaxLoc		11:46	11:55	0.2	
Fall	2022-10-04	2146	957198	GJTI	PaxLoc		10:23	10:42	0.3	
Fall	2022-10-04	2146	957198	GJTI	CrewChg		7:41	8:06	0.4	
Fall	2022-10-04	2146	957198	GJTI	PaxLoc		11:00	11:09	0.2	
Fall	2022-10-05	2148	957199	GJTI	Floor	Yes	15:06	15:37	0.5	
Fall	2022-10-05	2148	957199	GJTI	Core	Yes	16:34	17:58	0.2	
Fall	2022-10-05	2148	957199	GJTI	DrillServ	Yes	16:34	17:58	0.3	
Fall	2022-10-05	2148	957199	GJTI	CrewChg		18:37	19:02	0.4	
Fall	2022-10-05	2148	957199	GJTI	PaxLoc		16:34	17:58	0.4	
Fall	2022-10-05	2148	957199	GJTI	Reposition	Yes	14:05	14:11	0.1	
Fall	2022-10-05	2148	957199	GJTI	CrewChg		7:41	8:01	0.3	
Fall	2022-10-05	2148	957199	GJTI	Fuel	Yes	16:34	17:58	0.5	
Fall	2022-10-06	2149	957200	GJTI	CrewChg		7:35	7:58	0.4	
Fall	2022-10-06	2149	957200	GJTI	PaxLoc		8:56	9:26	0.5	
Fall	2022-10-06	2149	957200	GJTI	Reposition	Yes	9:33	9:38	0.1	
Fall	2022-10-06	2149	957200	GJTI	PaxLoc		9:46	10:08	0.4	
Fall	2022-10-06	2150	578635	GJTI	Move	Yes	13:34	13:47	0.2	
Fall	2022-10-06	2150	578635	GJTI	Move	Yes	14:10	15:38	1.5	
Fall	2022-10-06	2150	578635	GJTI	Move	Yes	16:03	17:14	1.2	
Fall	2022-10-06	2150	578635	GJTI	CrewChg		18:30	18:54	0.4	
Fall	2022-10-07	2152	578636	GJTI	Fuel	Yes	9:32	10:18	0.2	
Fall	2022-10-07	2152	578636	GJTI	CrewChg		7:32	7:54	0.4	
Fall	2022-10-07	2152	578636	GJTI	CrewChg		18:22	18:43	0.4	
Fall	2022-10-07	2152	578636	GJTI	DrillServ	Yes	9:32	10:18	0.6	
Fall	2022-10-08	2155	578637	GJTI	CrewChg		18:09	18:32	0.4	
Fall	2022-10-08	2155	578637	GJTI	CrewChg		7:31	8:00	0.5	
Fall	2022-10-08	2155	578637	GJTI	DrillServ	Yes	9:14	10:20	0.7	
Fall	2022-10-08	2155	578637	GJTI	Fuel	Yes	9:14	10:20	0.4	
Fall	2022-10-09	2156	578638	GJTI	PaxLoc		15:02	15:31	0.5	
Fall	2022-10-09	2156	578638	GJTI	PaxLoc		13:21	13:59	0.6	
Fall	2022-10-09	2156	578638	GJTI	DrillServ	Yes	15:42	16:40	0.4	
Fall	2022-10-09	2156	578638	GJTI	Core	Yes	17:58	18:31	0.2	
Fall	2022-10-09	2156	578638	GJTI	CrewChg		17:58	18:31	0.4	
Fall	2022-10-09	2156	578638	GJTI	Ferry		12:45	13:09	0.4	
Fall	2022-10-09	2156	578638	GJTI	PaxLoc		11:44	11:54	0.2	
Fall	2022-10-09	2156	578638	GJTI	Floor	Yes	10:01	11:34	0.6	
Fall	2022-10-09	2156	578638	GJTI	Core	Yes	10:01	11:34	0.4	
Fall	2022-10-09	2156	578638	GJTI	Fuel	Yes	10:01	11:34	0.4	
Fall	2022-10-09	2156	578638	GJTI	PaxLoc		15:42	16:40	0.6	
Fall	2022-10-09	2156	578638	GJTI	CrewChg		7:32	8:01	0.5	
Fall	2022-10-09	2156	578638	GJTI	PaxLoc		10:01	11:34	0.2	
Fall	2022-10-10	2157	578639	GJTI	Core	Yes	17:01	18:42	0.1	
Fall	2022-10-10	2157	578639	GJTI	CrewChg		7:33	7:57	0.4	
Fall	2022-10-10	2157	578639	GJTI	Reposition	Yes	8:05	8:09	0.1	
Fall	2022-10-10	2157	578639	GJTI	Move	Yes	14:20	14:28	0.1	
Fall	2022-10-10	2157	578639	GJTI	Move	Yes	15:14	16:53	1.7	

Table E-1: Helicopter Flight Summary 2022

Season	Date	FltReportID	FltReportNo	Helicopter	Flight Type	Flight Type where Low Elevation Expected	Departure	Arrival	Time (hours)	Comment
Fall	2022-10-10	2157	578639	GJTI	Move	Yes	17:01	18:42	1.2	
Fall	2022-10-10	2157	578639	GJTI	CrewChg		17:01	18:42	0.4	
Fall	2022-10-11	2158	578640	GJTI	Reposition	Yes	12:41	12:48	0.1	
Fall	2022-10-11	2158	578640	GJTI	CrewChg		7:47	8:11	0.4	
Fall	2022-10-11	2158	578640	GJTI	Move	Yes	14:30	14:38	0.1	
Fall	2022-10-11	2158	578640	GJTI	Mbag		11:27	12:21	0.1	
Fall	2022-10-11	2158	578640	GJTI	DrillServ	Yes	11:27	12:21	0.3	
Fall	2022-10-11	2158	578640	GJTI	Floor	Yes	11:27	12:21	0.5	
Fall	2022-10-11	2158	578640	GJTI	Floor	Yes	9:41	11:08	0.5	
Fall	2022-10-11	2158	578640	GJTI	Fuel	Yes	9:41	11:08	0.5	
Fall	2022-10-11	2158	578640	GJTI	PaxLoc		9:41	11:08	0.1	
Fall	2022-10-11	2158	578640	GJTI	Move	Yes	9:41	11:08	0.4	
Fall	2022-10-11	2158	578640	GJTI	Move	Yes	15:11	15:32	0.4	
Fall	2022-10-13	2160	578642	GJTI	Floor	Yes	11:45	12:52	0.3	
Fall	2022-10-13	2160	578642	GJTI	Floor	Yes	13:31	14:12	0.7	
Fall	2022-10-13	2160	578642	GJTI	Fuel	Yes	11:45	12:52	0.5	
Fall	2022-10-13	2160	578642	GJTI	Core	Yes	11:45	12:52	0.3	
Fall	2022-10-16	2163	578645	GJTI	Move	Yes	10:40	10:48	0.1	
Fall	2022-10-16	2163	578645	GJTI	Move	Yes	13:39	15:22	1.7	
Fall	2022-10-16	2163	578645	GJTI	Floor	Yes	9:42	10:30	0.8	
Fall	2022-10-16	2163	578645	GJTI	Move	Yes	10:56	13:22	2.4	

APPENDIX F

Hunter Harvest Study



MEADOWBANK COMPLEX MINE

2022 HUNTER HARVEST STUDY AND CREEL SURVEY SUMMARY REPORT

10 MARCH 2023 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 2022. The 2022 study included 59 participants of which 55 reported harvesting Caribou (*Rangifer tarandus*). Given an estimated 300 to 350 active hunters in the Hamlet of Baker Lake, the HHS represents from 11 to 13% of hunters in the community. With a total reported Caribou harvest of 766 in 2022, the total Caribou harvest in Baker Lake is estimated to range from 4,256 to 4,788 Caribou. This estimate is likely high because the current study attracted some of the more successful hunters (e.g., Baker Lake Hunters and Trappers Organization members) in the community.

Compared to the average across other years, Caribou in 2022 were harvested at the same percentage within 5 km of the All-Weather Access Road (i.e., 39%) and at a lower percentage (70%) within the Regional Study Area (RSA). Harvest levels in 2022 near mining facilities were well within threshold levels established during the impact assessment (i.e., Caribou harvest levels within the RSA).

Eighteen (18) Muskox (*Ovibos moschatus*) and 25 Wolverine (*Gulo gulo*) were harvested in 2022, which is higher than in 2021. A total of 92 Wolves (*Canis lupus*) were reported as being harvested in 2022, which is considerably higher than the 26 reported in 2021. Arctic Fox (*Vulpes lagopus*), Red Fox (*Vulpes vulpes*), Grizzly Bear (*Ursus arctos*), Ermine (*Mustela richardsonii*), and American Marten (*Martes americana*) were also harvested. Several bird species were harvested in 2022 with the most common species being Canada Goose (*Branta canadensis*).

For the first time in the HHS, Beluga (*Huso huso*), Bearded Seal (*Erignathus barbatus*), Harp Seal (*Pagophilus groenlandicus*), and Ringed Seal (*Pusa hispida*), were reported as being harvested by Baker Lake hunters but all were harvested well beyond the RSA (e.g., Christopher Island at the east end of Baker Lake).

Lake Trout (*Salvelinus namaycush*) and Arctic Char (*Salvelinus alpinus*) were the most common species caught by fisherman and were reported at considerably higher numbers than in 2021.

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 2021.

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 2022 and continues into 2023.

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 Qaujimajatuqangit 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 (see **Appendix A** for 2022 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 2022, October 2022, and February 2023) by the harvest study coordinator. During the February 2023 interviews, remaining data from 2022 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 2022 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 (collectively termed 'hunter' for the remainder of this memo), 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 more comparable to the comprehensive 5-year Nunavut Wildlife Harvest Study (NWMB 2005) 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 2005). 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 2021) fluctuated between 34 and 43% of reported harvest within 5 km of the AWAR, and between 64 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 685 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 (647 animals) and 2020 (652) were higher than the in 2021, when a total of 513 Caribou were harvested. If an average of approximately 10% of all Baker Lake hunters actively participated in the study (5% estimated for 2014), extrapolation of historical HHS values suggests approximately 3,000 to 6,000 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 2005). 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 (2005) and HHS results (2007 to 2015 and 2019 to 2021), highest Caribou harvests have occurred in September and October, with a second smaller peak in March and April. 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 low in 2021. 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 a maximum of 15 animals in 2010 to one (1) animal in 2015; however, in 2019 and 2020, reported Wolverine harvests were at an all-time high of 18 and 22 individuals, respectively.

SECTION 6 • 2022 HUNTER HARVEST STUDY RESULTS

6.1 NUMBER OF HUNTERS

The HHS included 59 participants by the end of 2022, which is higher than the 55 participants in 2021 and lower than the 64 participating in 2020. Higher numbers in 2022 are because of several new younger participants that are replacing older hunters that “don’t hunt anymore”. Of the 2022 participants, Caribou harvest data had been collected from 55 participants, which is considerably higher than the 39 hunters reporting Caribou harvests in 2021 and the highest number since the HHS began.

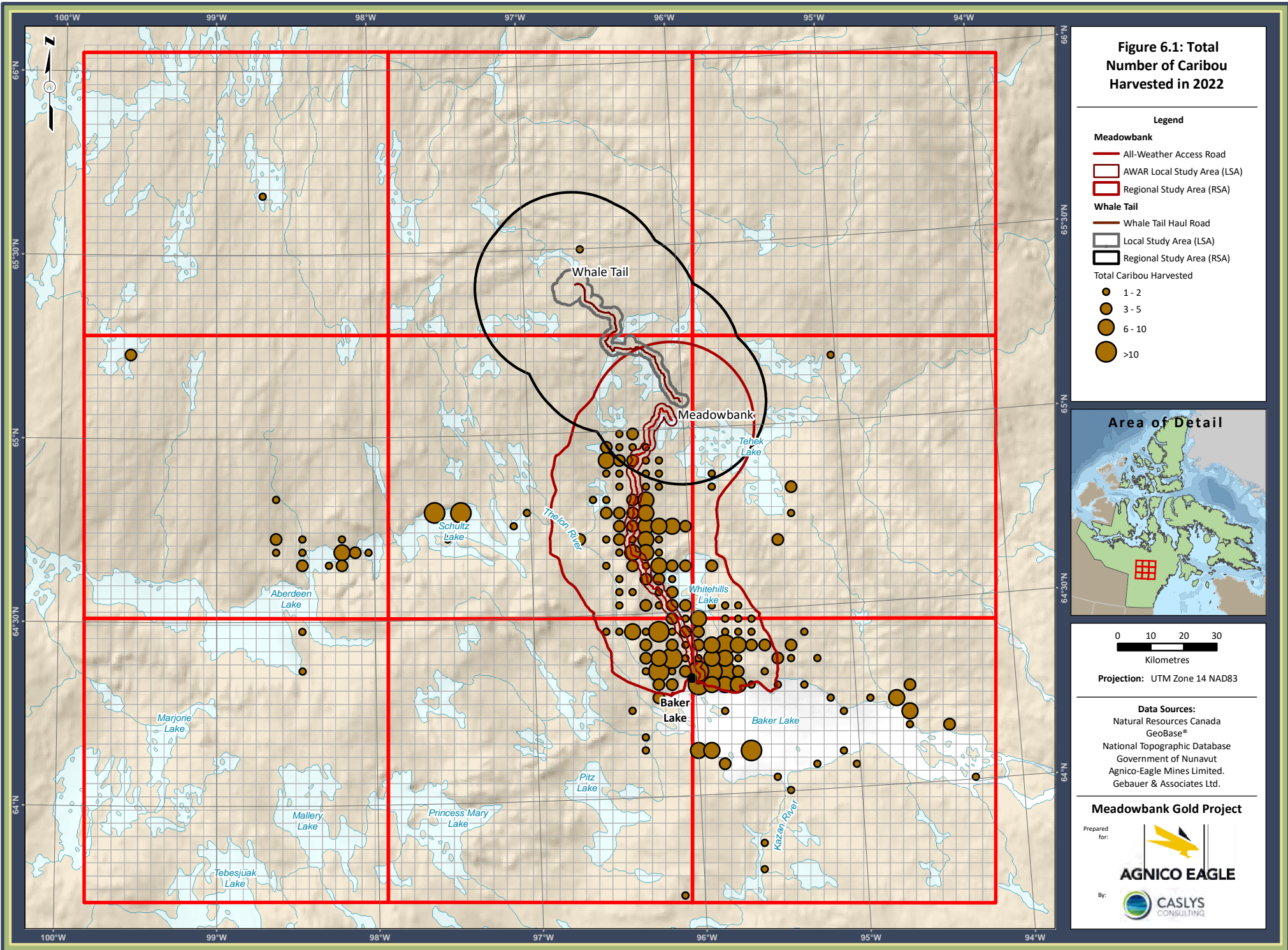
Based on the previous discussion of total numbers of hunters in the Hamlet of Baker Lake (**Section 5 Historical Results**), there were 389 potential hunters within the Baker Lake community in 2008. The number is comparable to the comprehensive 5-year Nunavut Wildlife Harvest Study (NWMB 2005) in which 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 55 hunters reporting Caribou harvest in 2022 conservatively represent from 16 to 18% 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. Limited harvests were reported along the Thelon River system to Aberdeen Lake, and along the northeastern and southwestern shores of Baker 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 2005). 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 2021) fluctuated between 34 and 54% of reported harvest within 5 km of the AWAR, and between 64 and 85% within the Meadowbank RSA. The 2022 HHS data indicated that 39% of reported harvest occurred within 5 km of the AWAR, and 70% 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 2022



Legend

Meadowbank

- All-Weather Access Road
- AWAR Local Study Area (LSA)
- Regional Study Area (RSA)

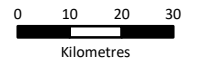
Whale Tail

- 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:



By:



2022 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 2022 [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
Average (2007 to 2021)	29 (79%)	6.2	39	24	76
Average (2007 to 2022)	31 (80%)	6.2	39	24	75

In 2022, no Caribou were harvested within 5 km of the WTHR, which compares to no reported harvest during the NWMB harvest study 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 34 harvests were reported in 2022, which is just above the average across the first 12 years of the study but lower than reported harvests in 2021 (48), 2019 (85), 2015 (53), and 2011 (103 Caribou). 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.

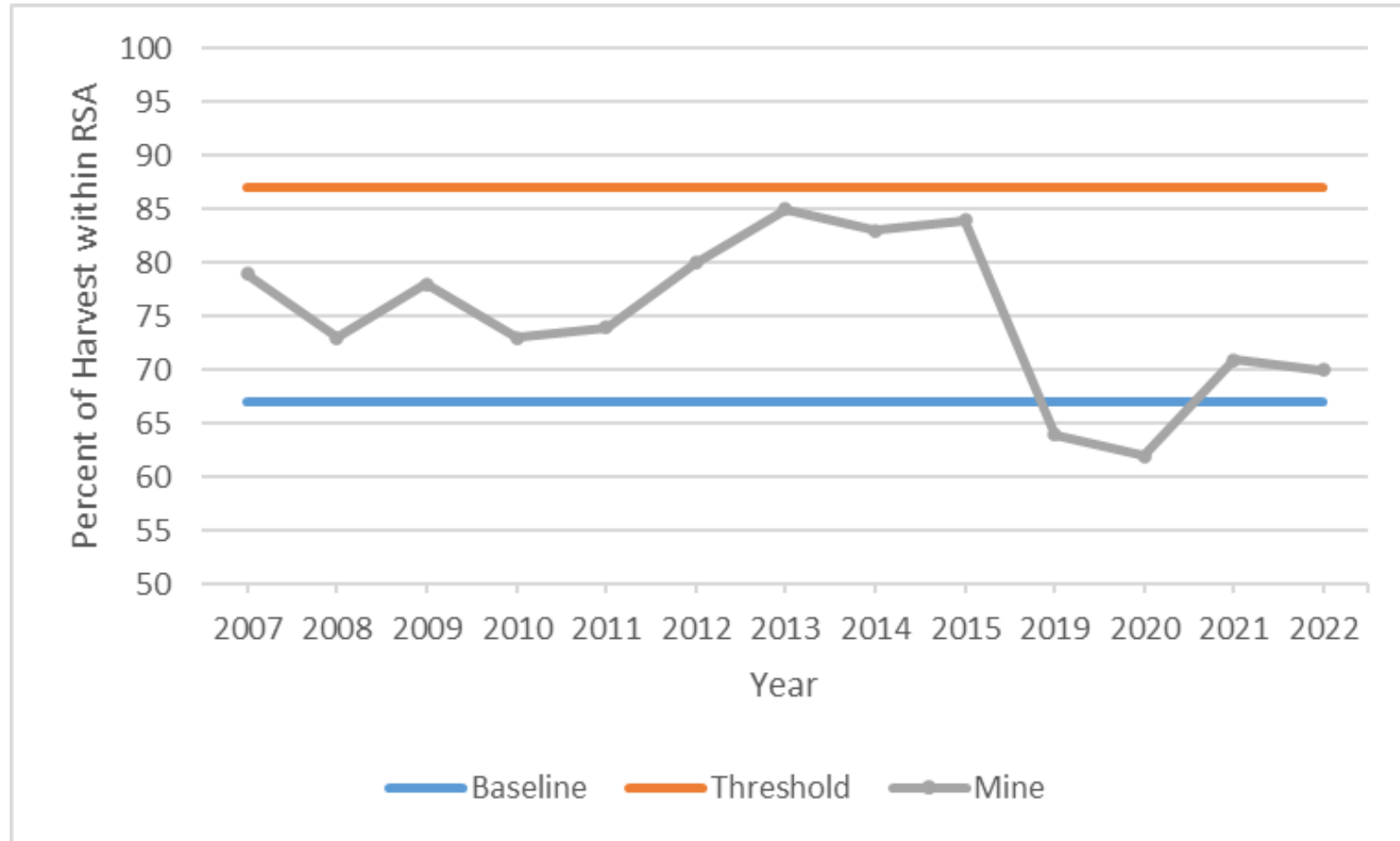


Figure 6.2: Percent of Caribou Harvest within the Meadowbank RSA from 2007 to 2015 (Years 1 to 9), and 2019 to 2022 (Years 10 to 13) Compared to Baseline and Threshold Levels.

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 2022 [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
Average (2007 to 2021)	0.83	0.75	32.67
Average (2007 to 2022)	0.77	0.69	32.77

6.3 MAGNITUDE OF HUNTING

In 2022, a total of 766 Caribou were reported as being harvested by 55 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 reported as being harvested are the highest since the HHS was initiated. Given that the 55 hunters represent an estimated 16 to 18% of the Baker Lake hunting community (see **Section 6.1**), the total estimated number of Caribou harvested in 2022 in the Baker Lake community ranged from 4,256 to 4,788 animals, which is slightly higher than in 2021 (i.e., range of 3,946 to 4,664 animals). This estimate is very likely conservative (i.e., high) since the Baker Lake HHS targeted known hunters in the community with some known to be particularly successful.

2022 HUNTER HARVEST STUDY SUMMARY

Table 6.3: Hunter Caribou Harvest Statistics from the NWMB (2005) Study and Baker Lake HHS (2007 to 2015; 2019 to 2022), 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
Total #	241	349	568	478	453	329	281	599	1010	1218	474	497	6,497
Average	20.1	26.8	43.7	36.8	34.8	25.3	21.6	46.1	77.7	93.7	36.5	38.2	499.8
% of Total	3.7%	5.4%	8.7%	7.4%	7.0%	5.1%	4.3%	9.2%	15.5%	18.7%	7.3%	7.6%	100.0%

2022 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 (2005) and inclusive Baker Lake HHS results (2007 to 2015; 2019 to 2022), highest Caribou harvests have occurred in September and October, with a second smaller peak in March and April (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 2022 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, overall Caribou hunting in the Meadowbank RSA was generally low with hunting occurring primarily in the Whitehills Lake area, along the Thelon River, and at the southwestern end of Baker Lake (**Figure 6.6a**). Within the Whale Tail RSA, only one Caribou was harvested at the south end of Tehek 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, near the Hamlet of Baker Lake, along the Thelon River to Aberdeen Lake, and around Baker Lake (**Figure 6.6b**). One Caribou was reported as being harvested north of the Whale Tail mine site and many 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**). Caribou were not reported as being harvested along the WTHR in fall 2022 (**Figure 6.6c**). In winter, fewer Caribou were hunted along the AWAR (**Figure 6.6d**) and successful hunters were those that travelled further afield by snowmobile (e.g., along the Thelon River to Aberdeen Lake and the south side of Baker Lake).

6.5 OTHER WILDLIFE SPECIES

There were 18 reported harvests for Muskox in 2022, which is considerably higher than the two (2) reported harvests in 2021. Muskox harvests were generally located east of the AWAR and within the Meadowbank RSA (**Figure 6.7**). Wolverines (total of 25 in 2022) were hunted in the Whitehills Lake area, along the Thelon River to Schulz and Aberdeen lakes, and at the southwestern end of Baker Lake (see **Figure 6.8**). Wolves (total of 92 in 2022; considerably higher than the 26 reported in 2021 and comparable to the 88 reported in 2020) were either harvested close to Baker Lake, in the Whitehills Lake area, or near Aberdeen Lake area (**Figure 6.8**). In 2022, the presence of the AWAR may have had some influence on participant hunting patterns for Wolf.

Arctic Fox (total of 36 in 2022; compared to 5 in 2021 and 11 in 2020) was primarily trapped in the vicinity of the Hamlet of Baker Lake, while Red Fox (1 individual) was harvested near the Hamlet of Baker Lake (**Figure 6.7**). Two (2) Grizzly Bears were taken in 2022: one east of the AWAR and north of Whitehills Lake, and the other at the southwestern end of Baker Lake (**Figure 6.7**). Other rare mammal species reported as being harvested were Ermine (*Mustela richardsonii*; 2 individuals) and American Marten (*Martes americana*; 1 individual), all of which were harvested near or within the Hamlet of Baker Lake.

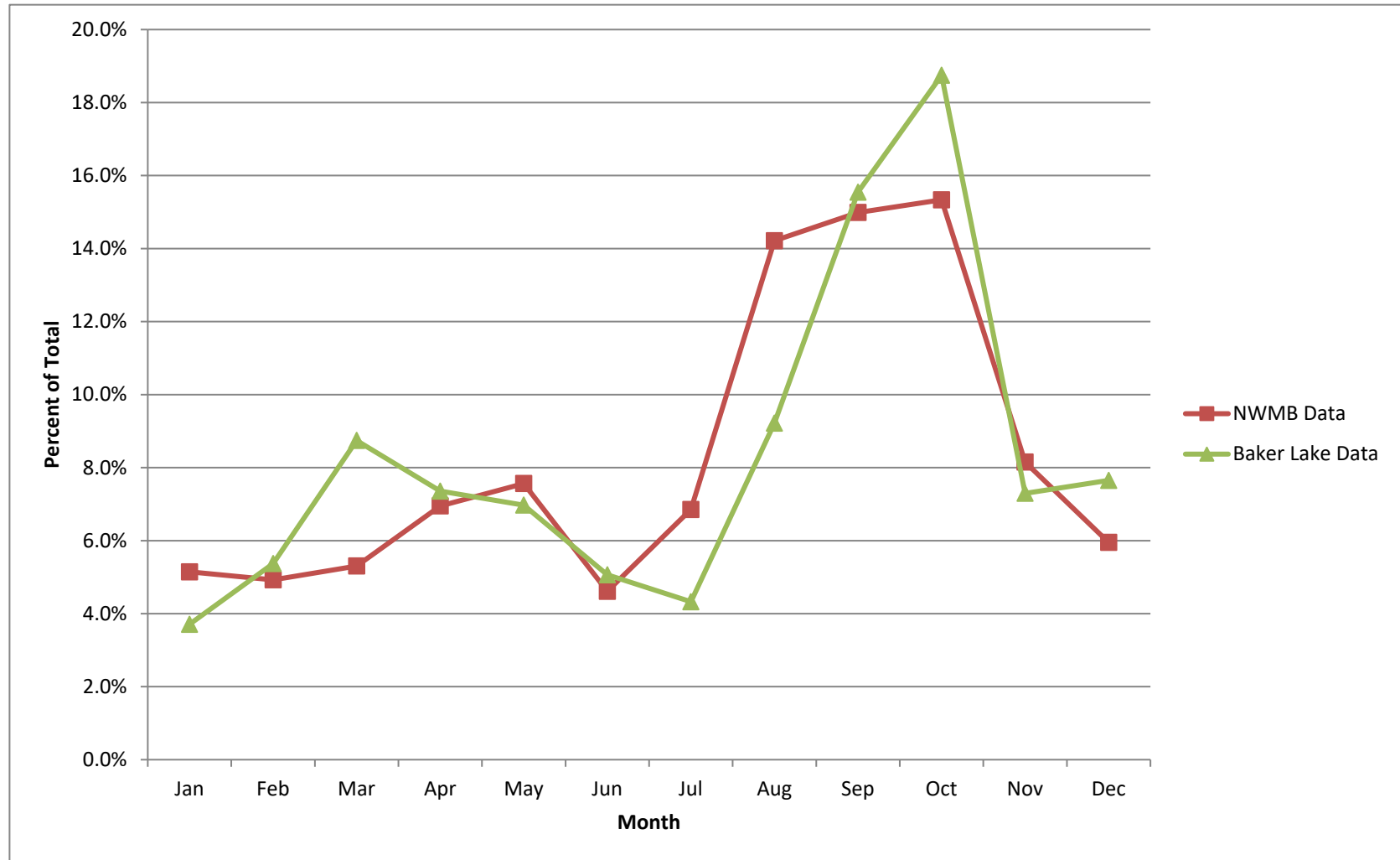


Figure 6.3: Seasonal Trends in Caribou Harvest from the Baker Lake HHS (2007 to 2015; 2019 to 2022) and the NWMB Study (1996 to 2001).

2022 HUNTER HARVEST STUDY SUMMARY

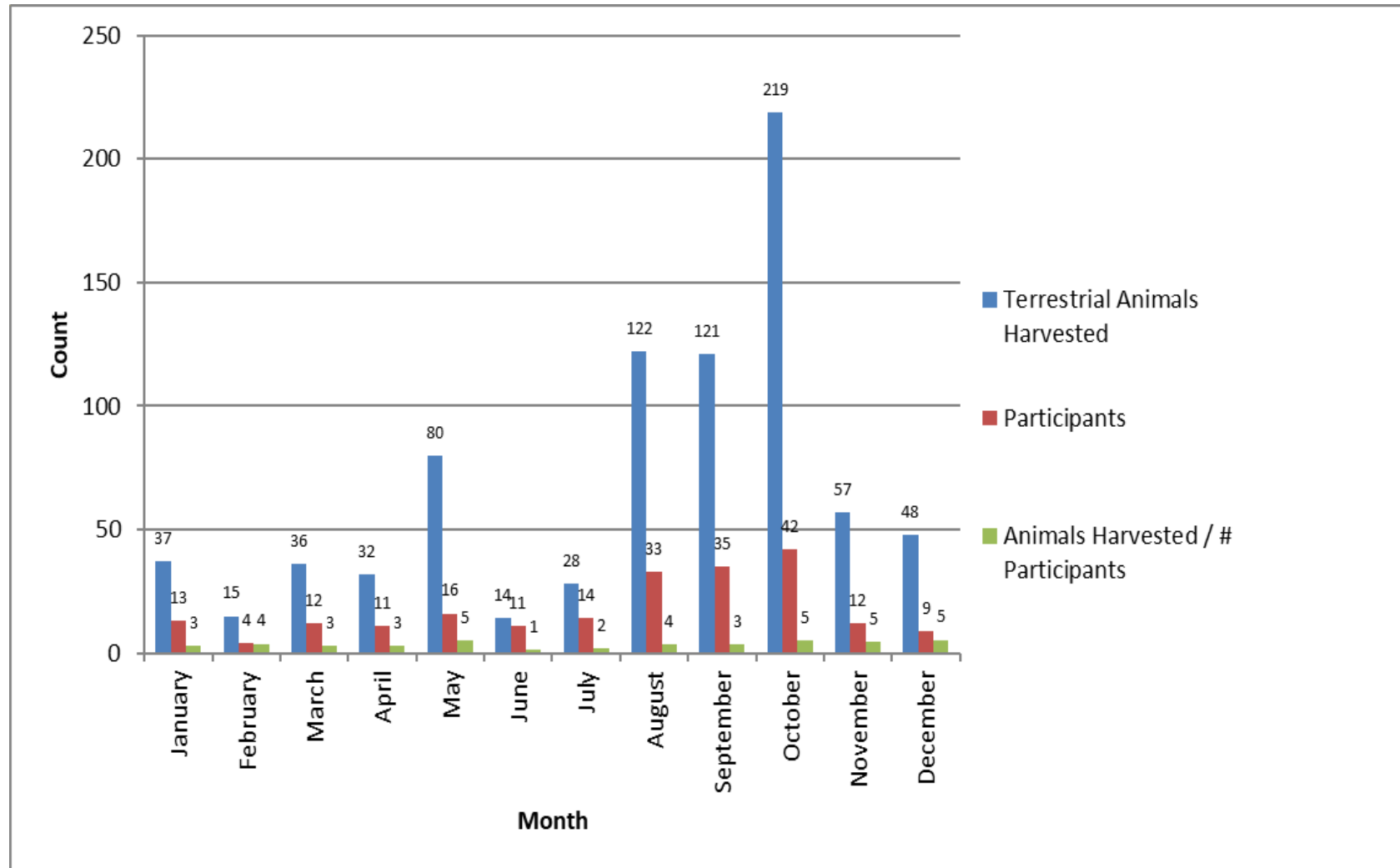


Figure 6.4: Terrestrial Animals Harvested per Month and by Participant in 2022.

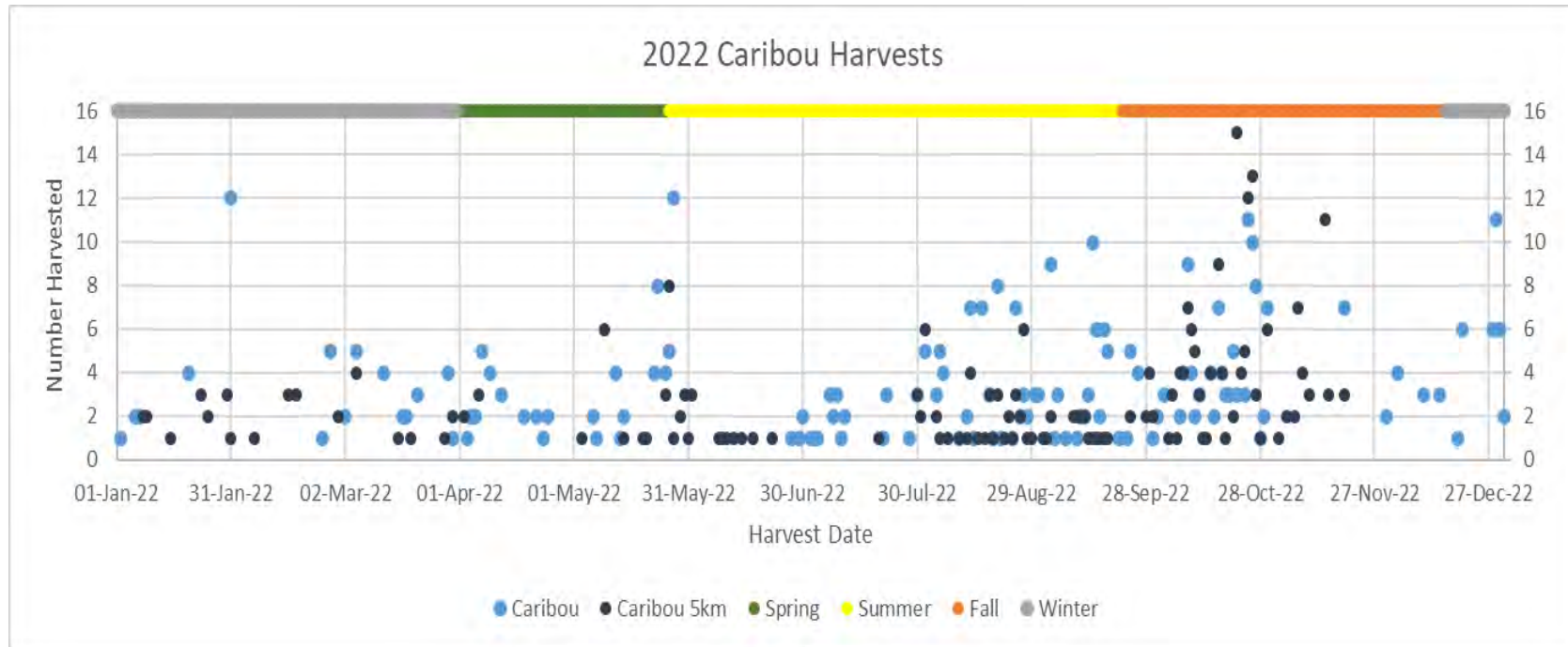





Figure 6.5: Number of Caribou harvested in each Caribou Season and Proximity to Access Roads in 2022.




Figure 6.6a: Total Number of Caribou Harvested Spring 2022 (Apr 1 - May 25)

Legend

Meadowbank

-  All-Weather Access Road
-  AWAR Local Study Area (LSA)
-  Regional Study Area (RSA)

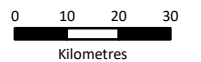
Whale Tail

-  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:



By:

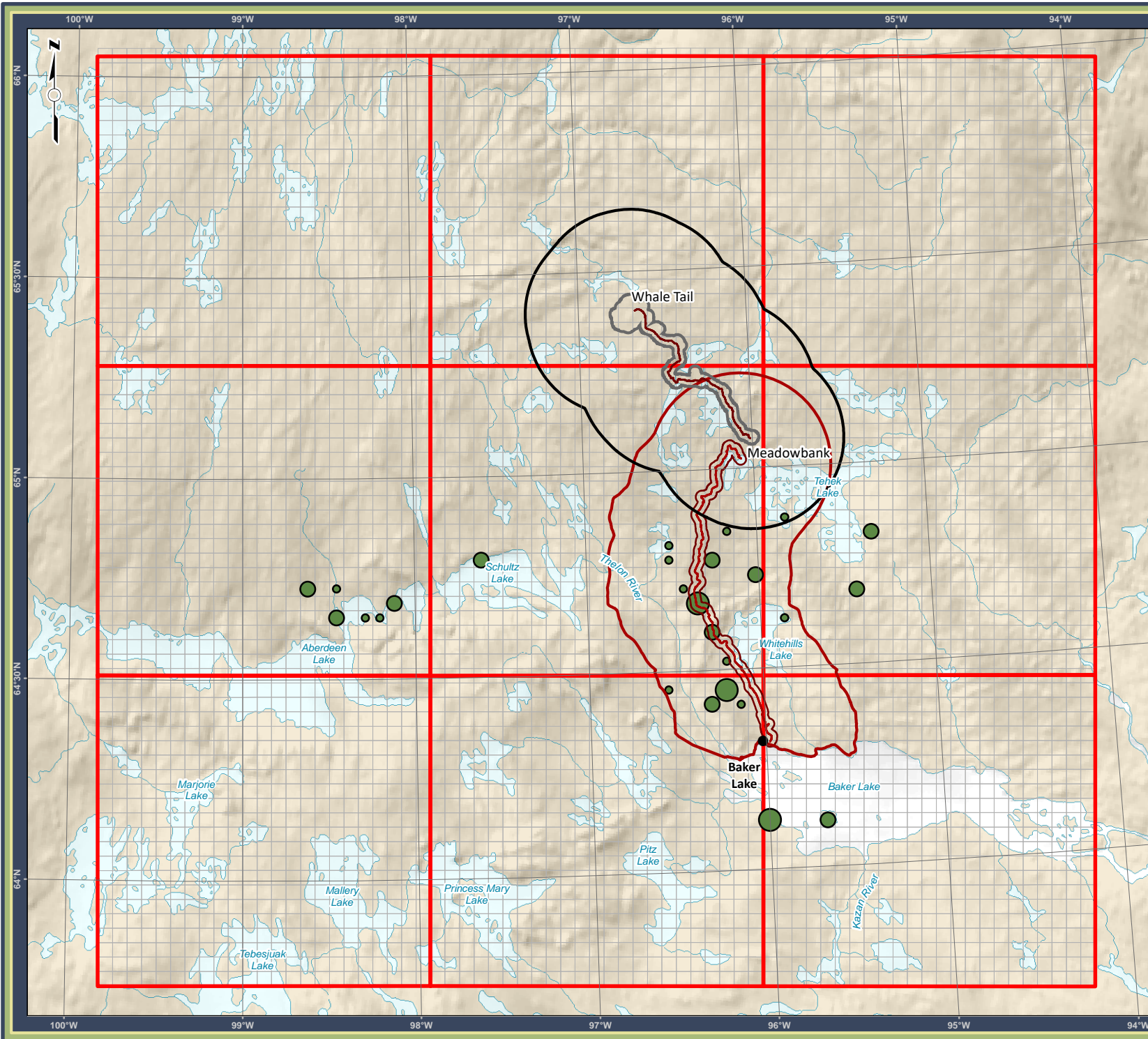
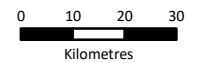


Figure 6.6b: Total Number of Caribou Harvested Summer 2022 (May 26 - Sep 21)

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**
- 0 - 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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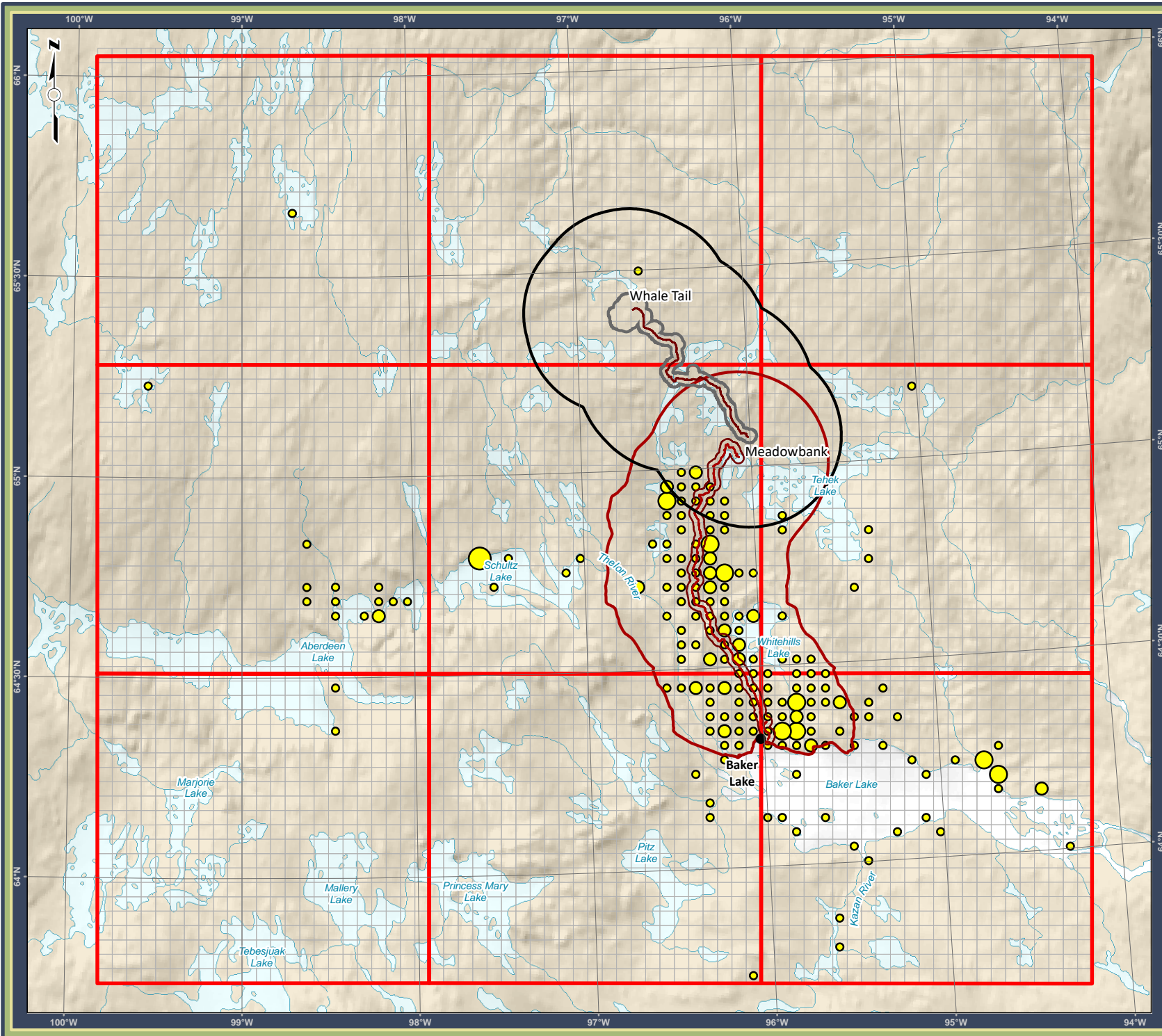
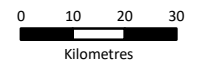
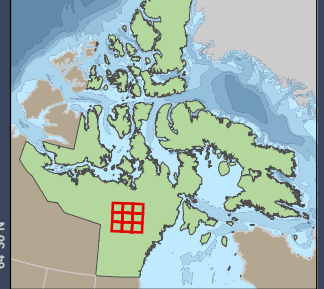


Figure 6.6c: Total Number of Caribou Harvested Fall 2022 (Sep 22 - Dec 15)

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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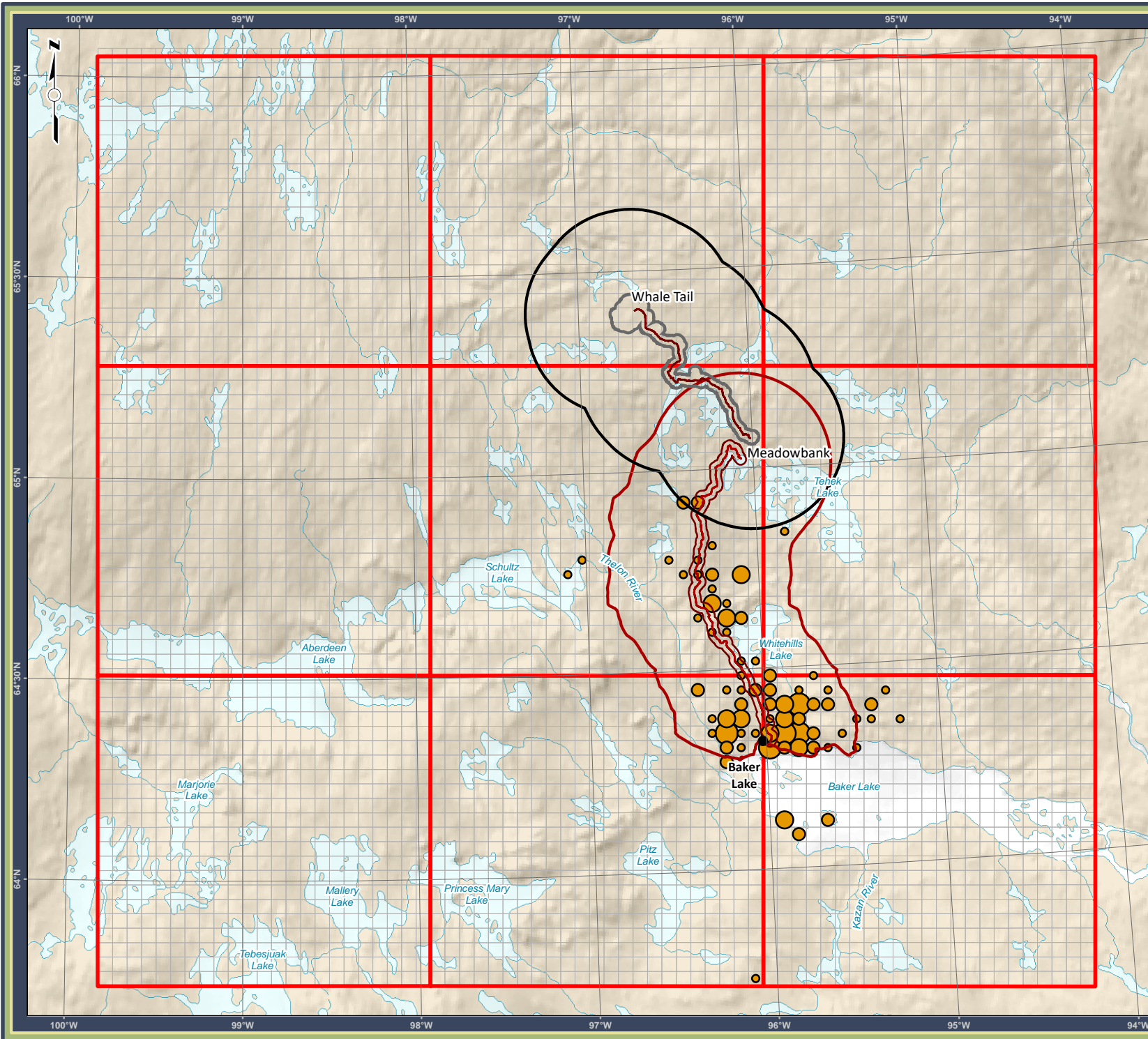


Figure 6.6d: Total Number of Caribou Harvested Winter 2022 (Dec 16 - Mar 31)

Legend

Meadowbank

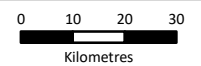
- All-Weather Access Road
- AWAR Local Study Area (LSA)
- Regional Study Area (RSA)

Whale Tail

- Whale Tail Haul Road
- Local Study Area (LSA)
- Regional Study Area (RSA)

Total Caribou Harvested

- 1 - 2
- 3 - 5
- 6 - 10
- >10



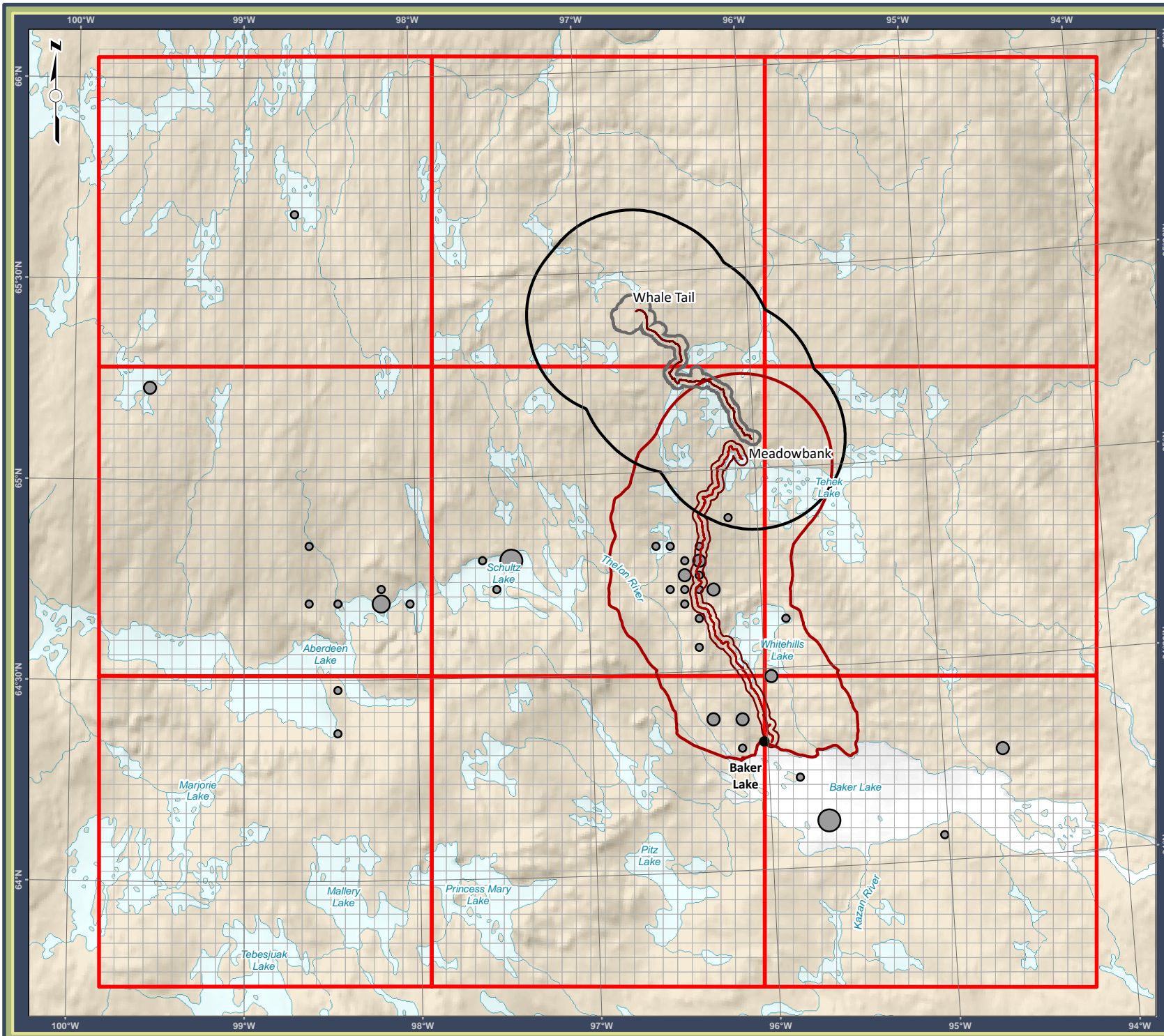
Projection: UTM Zone 14 NAD83

Data Sources:
 Natural Resources Canada
 GeoBase®
 National Topographic Database
 Government of Nunavut
 Agnico-Eagle Mines Limited,
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By:



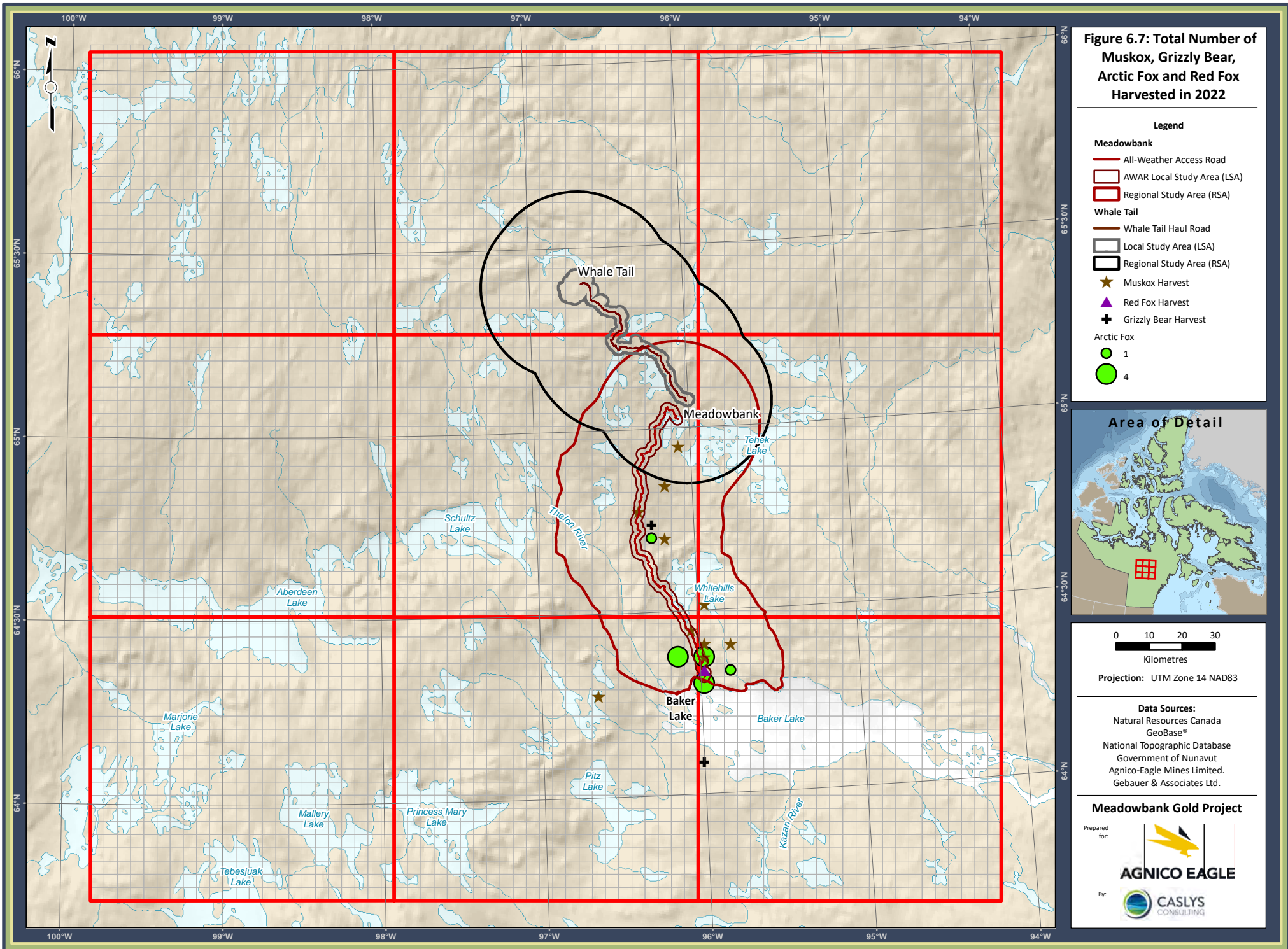
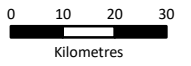


Figure 6.7: Total Number of Muskox, Grizzly Bear, Arctic Fox and Red Fox Harvested in 2022

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)
- Harvests**
 - Muskox Harvest
 - Red Fox Harvest
 - Grizzly Bear Harvest
- Arctic Fox**
 - 1
 - 4



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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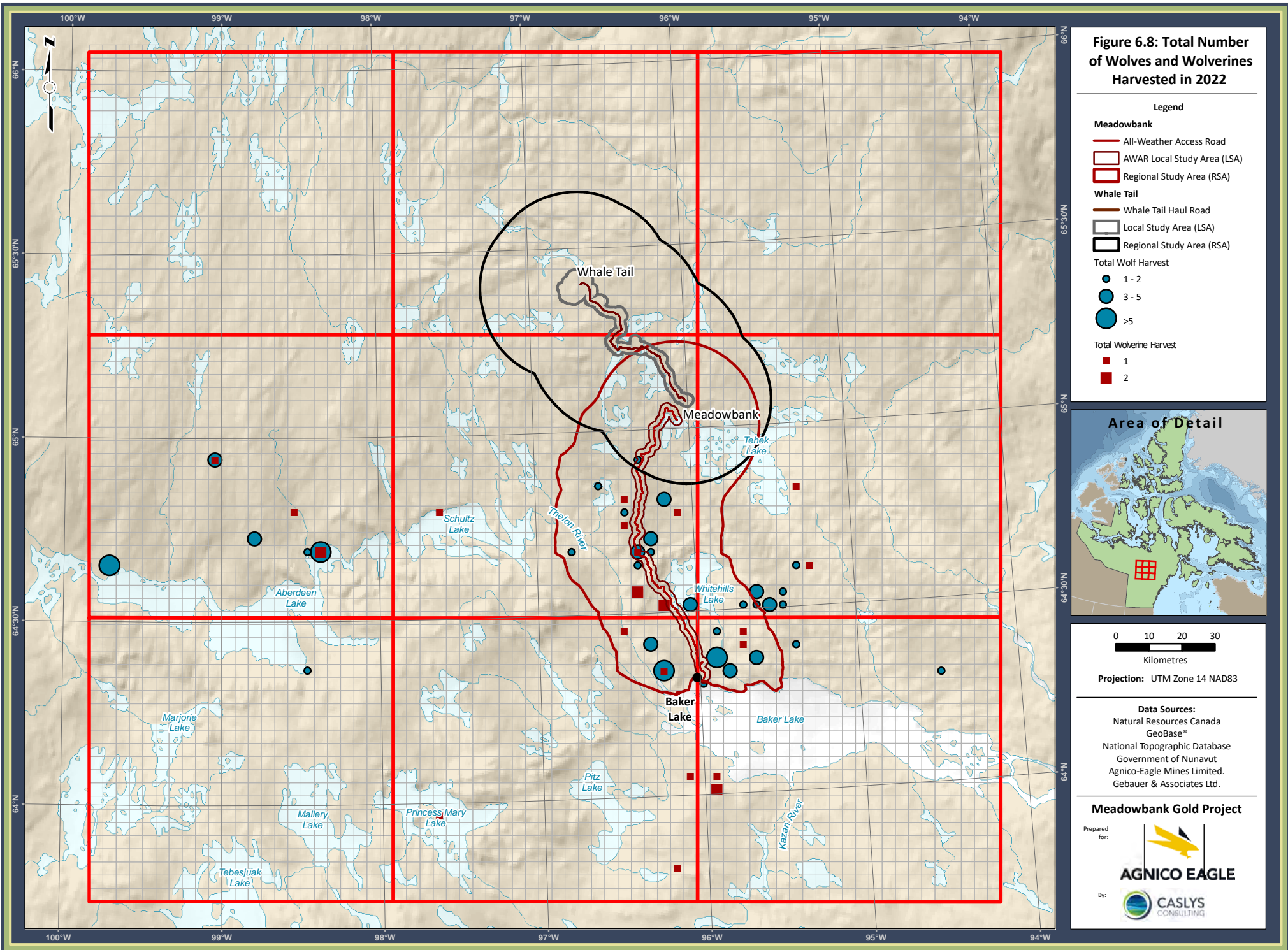
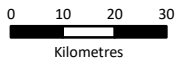


Figure 6.8: Total Number of Wolves and Wolverines Harvested in 2022

- 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,
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Bird species reported as being harvested in 2022 included Canada Goose (*Branta canadensis*; 48 individuals), gull species (*Larus* sp.; 8 individuals), ptarmigan sp. (*Lagopus* sp.; 25 individuals), Sandhill Crane (*Grus canadensis*; 2 individuals), Snow Goose (*Anser caerulescens*; 1 individual), and Tundra Swan (*Cygnus columbianus*; 3 individuals). Birds were reported as being collected primarily around the Hamlet of Baker Lake and along the southeast shore of Baker Lake (**Figure 6.9**).

For the first time in the HHS, Beluga (*Huso huso*; 2 individuals) and several seal species, including Bearded Seal (*Erignathus barbatus*; 2 individuals), Harp Seal (*Pagophilus groenlandicus*; 2 individuals), and Ringed Seal (*Pusa hispida*; 4 individuals), were reported as being harvested by Baker Lake hunters in 2022 but these were all outside the Meadowbank RSA (e.g., Christopher Island at the east end of Baker Lake).

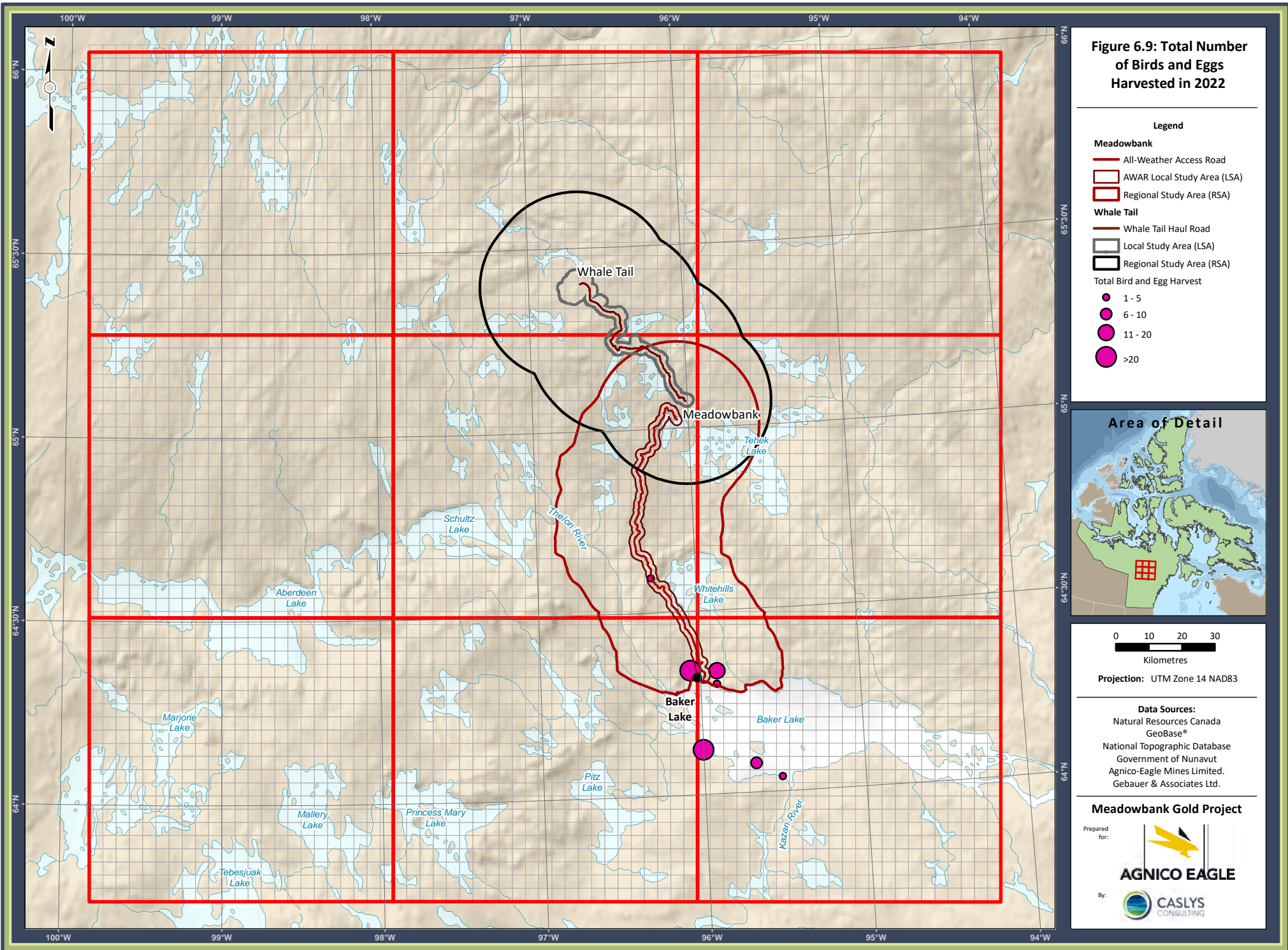
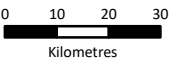


Figure 6.9: Total Number of Birds and Eggs Harvested in 2022

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 and Egg 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 • 2022 CREEL SURVEY RESULTS

7.1 NUMBER OF FISHERMEN

The number of fishermen reporting successful fishing trips in 2022 was 30, which is higher than the average of 23 fisherman from 2007 to 2015 and 2019 to 2021 (12 years), and the highest number of fisherman reporting success since 2012. The highest numbers of fisherman reporting success in 2022 were in May and June period (see **Table 7.1**) (see **Section 7.4 Magnitude of Fishing**).

Table 7.1: Number of Fisherman in the Baker Lake 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
Total	14	11	36	88	138	146	93	42	15	44	47	21	695

7.2 COMPOSITION OF CATCH

The most common fish species captured, Lake Trout, represented 72% of the total catch in 2022, which was higher than in 2020 and 2021 (67% in both years) and higher than the average of 55% from 2007 to 2015 and 2019 to 2021 (see **Table 7.2**). Arctic Char, which were caught at the highest numbers since records began (i.e., 202 fish), represented 16% of the total catch (see **Table 7.2**). Lake Whitefish were captured in relatively low numbers in 2022.

Table 7.2: Total Number of Fish Caught between 2007 and 2015, and 2019 to 2022.

Species	2022	2021	2020	2019	2015	2014	2013	2012	2011	2010	2009	2008	2007	Total
Arctic Char	202	54	75	89	41	22	96	24	113	103	117	24	3	632
Arctic Grayling	1	1			29			1	1	3	1			35
Lake Trout	894	481	219	900	370	353	490	1,014	1,710	860	525	825	210	7,257
Lake Whitefish	147	184	32	1,573	1,386	651	50	471	460	326	51	192		5,160
Unidentified		1	2	119										119
Total	1,244	721	328	2,681	1,826	1,026	636	1,510	2,284	1,292	694	1,041	213	13,203

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 along the lower AWAR (see **Figure 7.1**). Note that the Whale Tail study area is excluded from **Figure 7.1** because no fishing occurred in this area. Some fishing occurred along the Thelon River system and associated lakes (**Figure 7.1**) during the summer when these areas can be accessed by boat. 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.

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**; Note – high average numbers in January are due to two fishermen catching 477 fish). In 2022, the most captured fish species, in order of abundance, were Lake Trout, Arctic Char, Lake Whitefish, and Arctic Grayling (see **Table 7.2**). Higher numbers of Lake Trout and Arctic Char were reported as being caught in 2022 compared to 2021, which is either due to higher abundance and/or increased effort.

7.5 SEASONAL TIMING OF FISHING

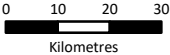
In 2022, fishing periods with the most active fisherman was May and June (see **Table 7.1**). The periods with the most fish caught included the summer months (especially May and June), which reflects the high number of Lake Trout caught by fisherman heading out on the land after ice melt, and November (**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 Harvested in 2022

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 Harvested**
 -  1 - 5
 -  6 - 15
 -  16 - 25
 -  >25

Area of Detail



Projection: UTM Zone 14 NAD83

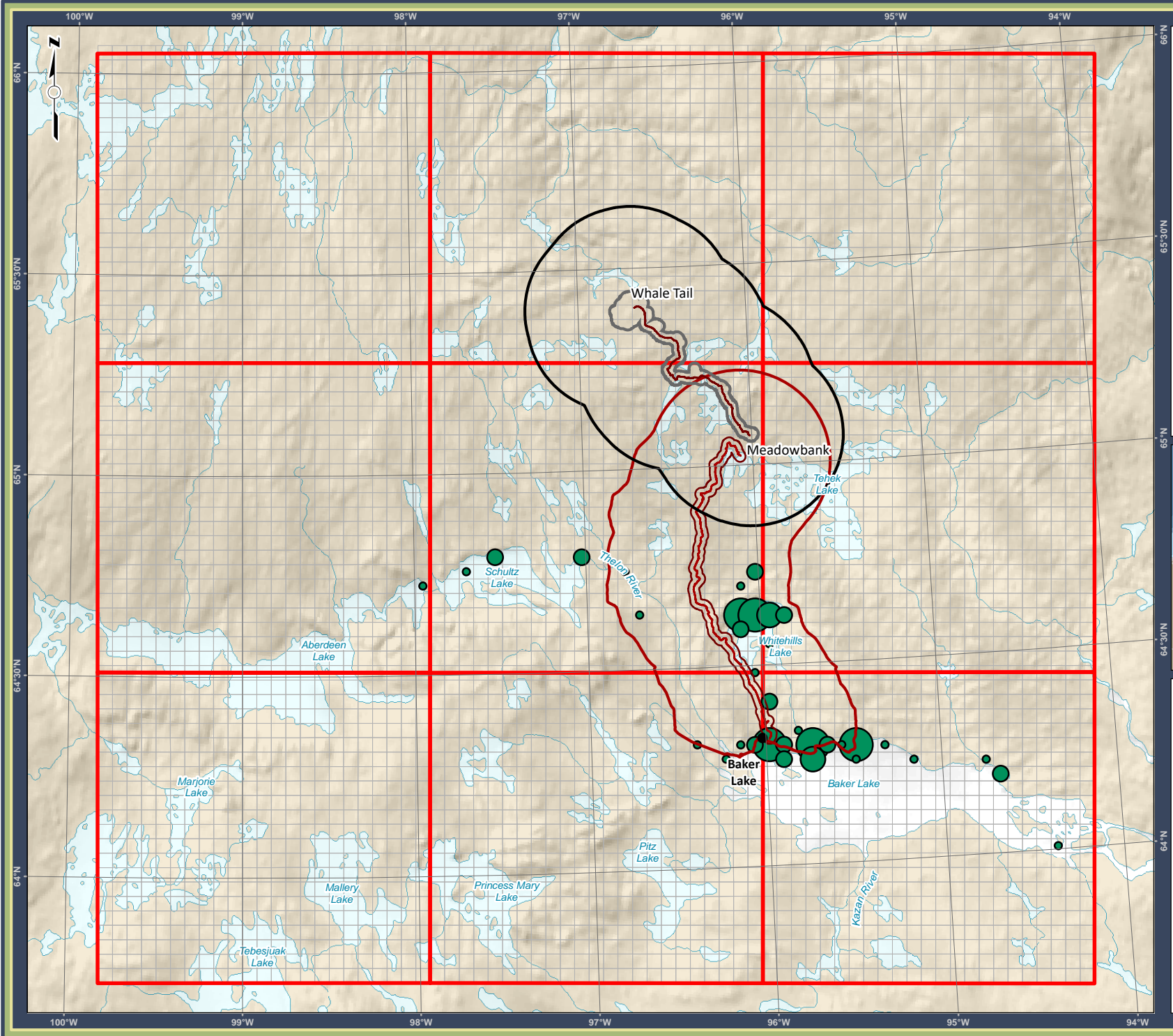
Data Sources:
 Natural Resources Canada
 GeoBase®
 National Topographic Database
 Government of Nunavut
 Agnico-Eagle Mines Limited,
 Gebauer & Associates Ltd.

Meadowbank Gold Project

Prepared for:



By:

2022 HUNTER HARVEST STUDY SUMMARY

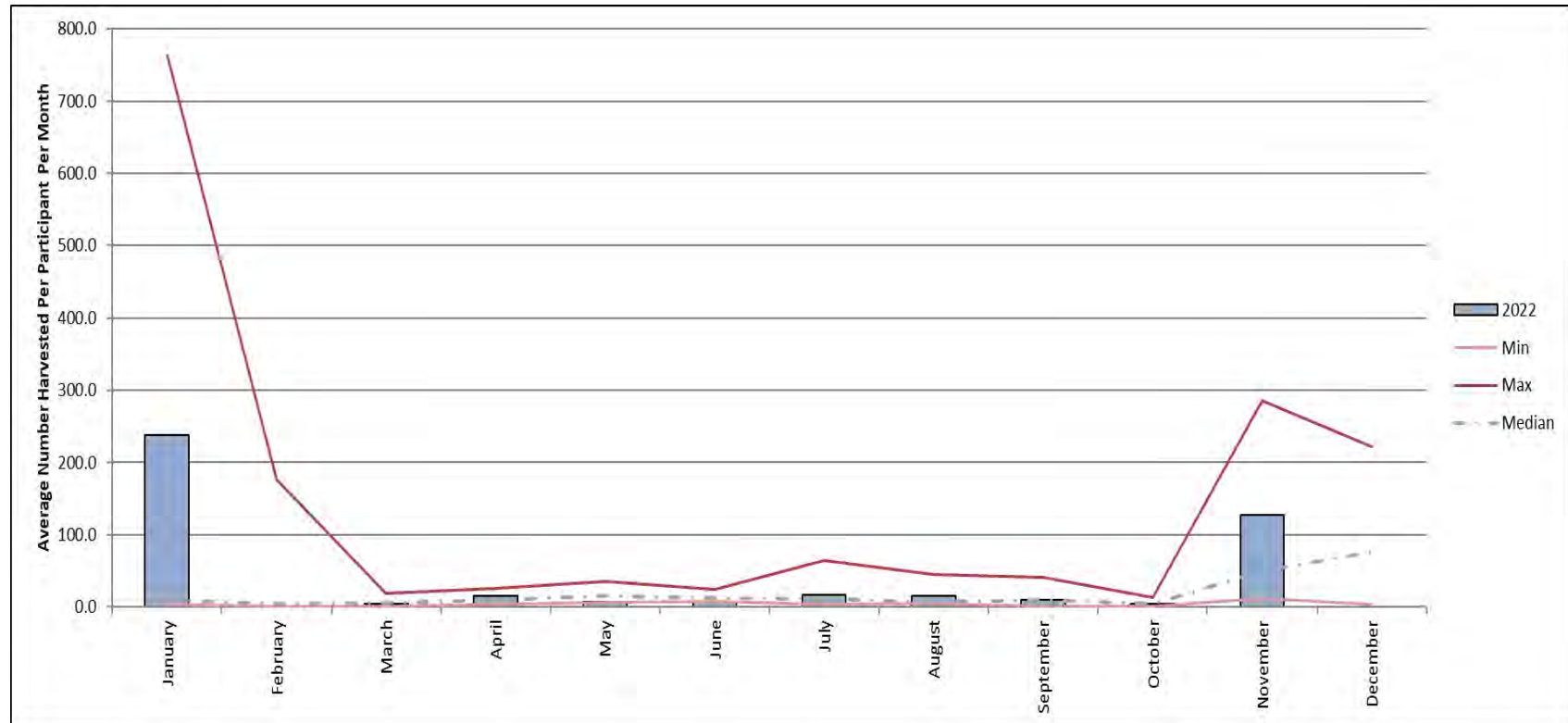


Figure 7.2: Average Number of Fish Caught per Participant in 2022 and the Minimum and Maximum Range from 2007 to 2015 and 2019 to 2021.

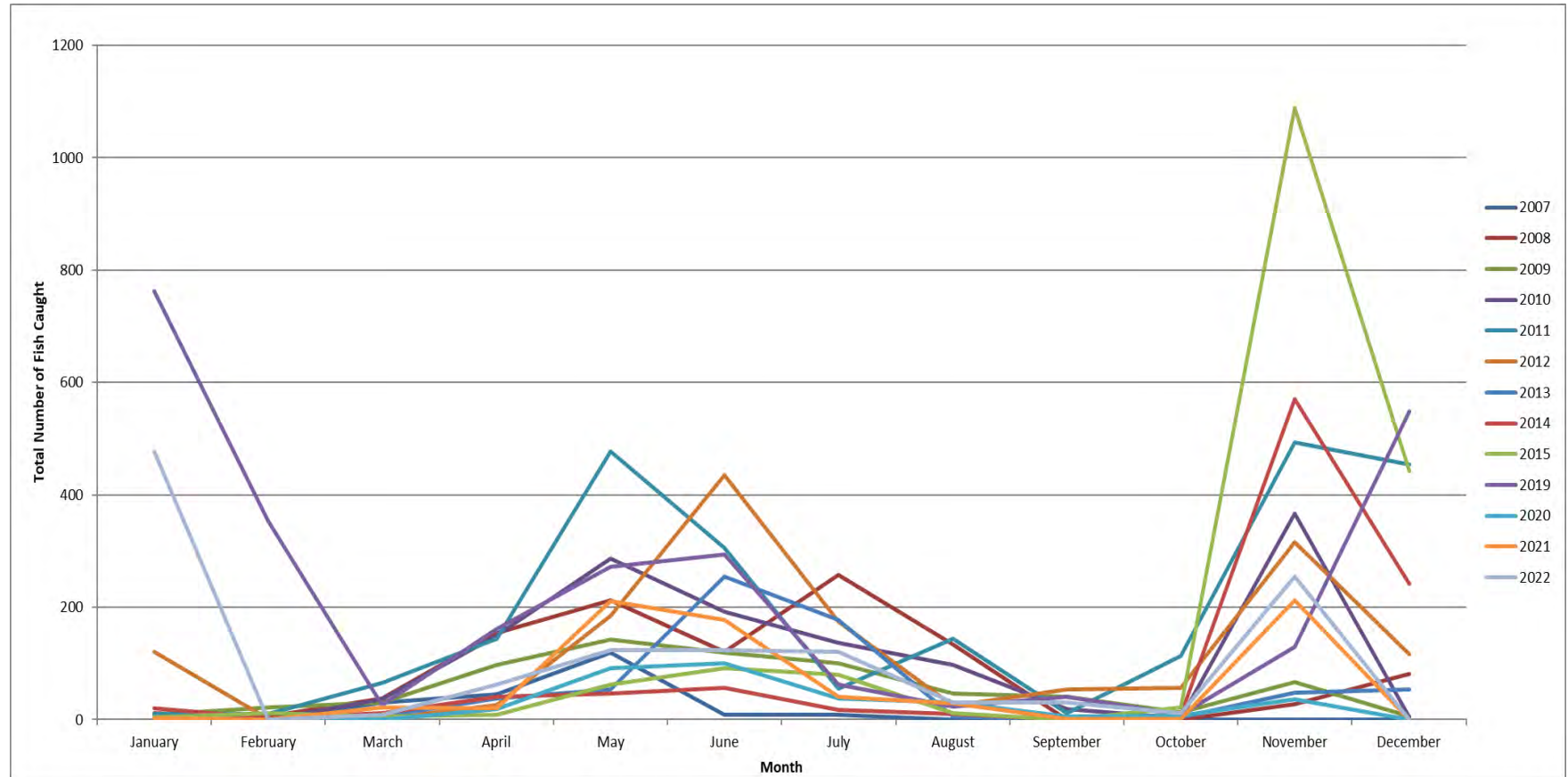


Figure 7.3: Seasonal Trends in Fishing in the Baker Lake Area from 2007 to 2015, and 2019 to 2022.

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 2022 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 2022.

Table 8.1: Accuracy of Impact Predictions – 2022 Baker Lake HHS

Potential Effect	Threshold	RSA 20% Threshold Exceeded (2022)	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 (70% of harvest in RSA in 2022 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	HHS Creel Survey
Whale Tail Haul Road (WTHR)				
Hunting by Baker Lake Residents	No change in harvest	NO (No harvests recorded within 5 km of the WTHR; harvests within the WTHR RSA were lower than some other years, 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 2023 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.

APPENDIX A

2022 Hunter Harvest Calendar



Aurora Borealis

Kiligvak Tookoome



Winter Sun

Dylan White







Ready for Winter

Joan Killulark



Successful Catch

Riley Lachance



Watching for Danger

Dylan White







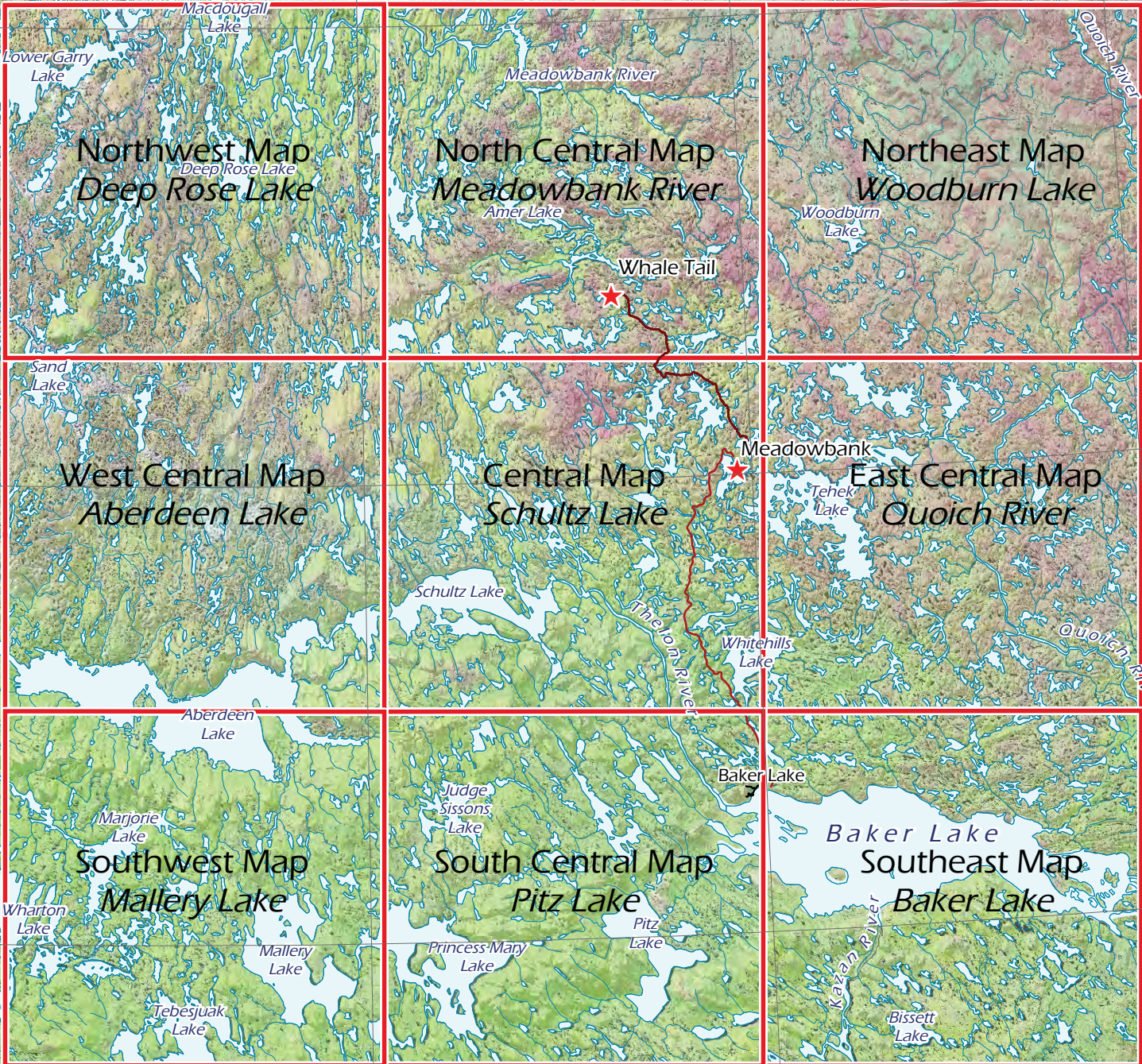
Golden Sunset

Kiligvak Tookoome





KEY MAP



*Baker Lake
Harvest Study*

*Northwest Map
Deep Rose 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

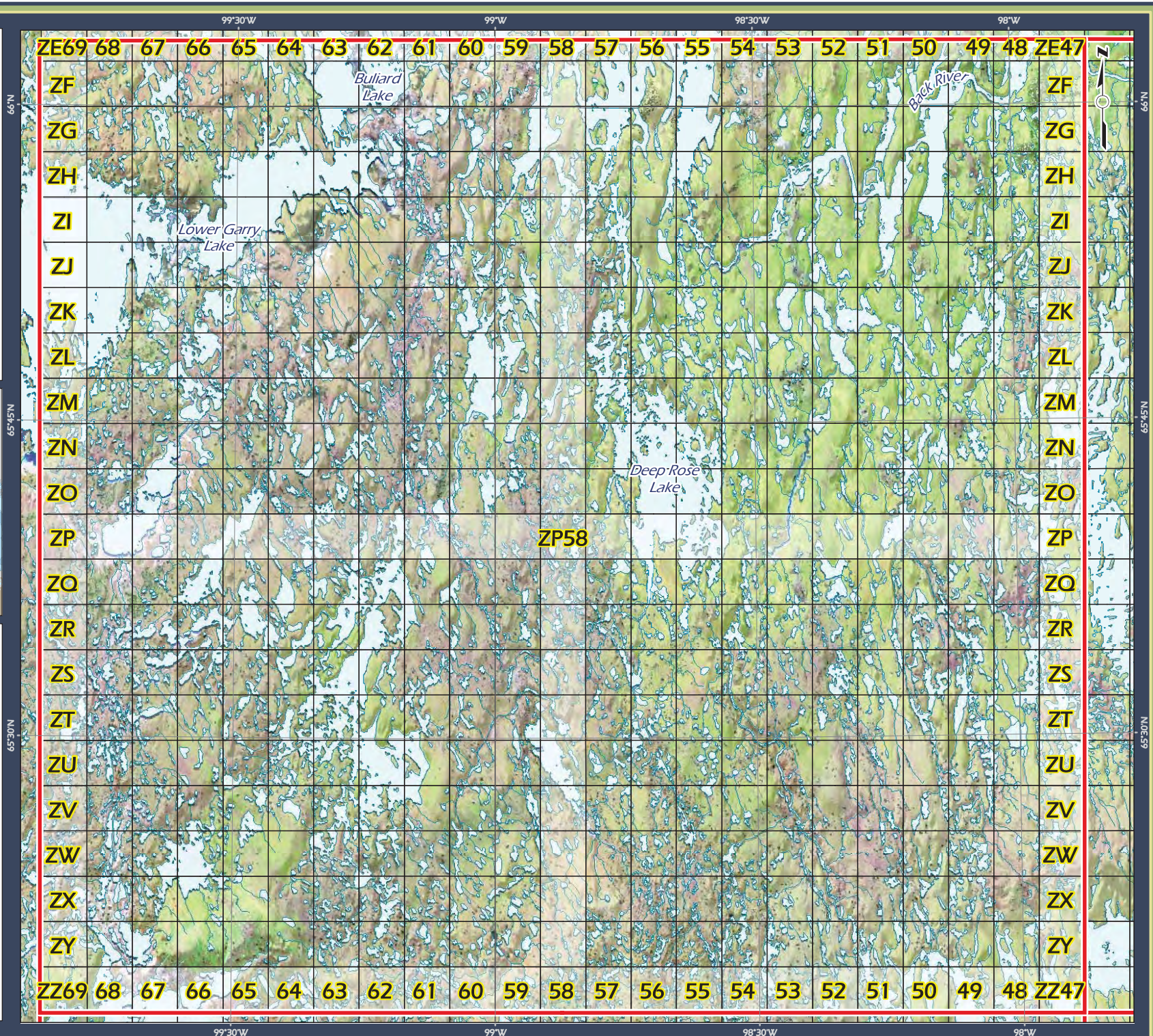
Data Sources:

Natural Resources Canada
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National Topographic Database
Government of Nunavut
Agnico-Eagle Mines Inc.
Caslys Consulting Ltd.

Prepared for:



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

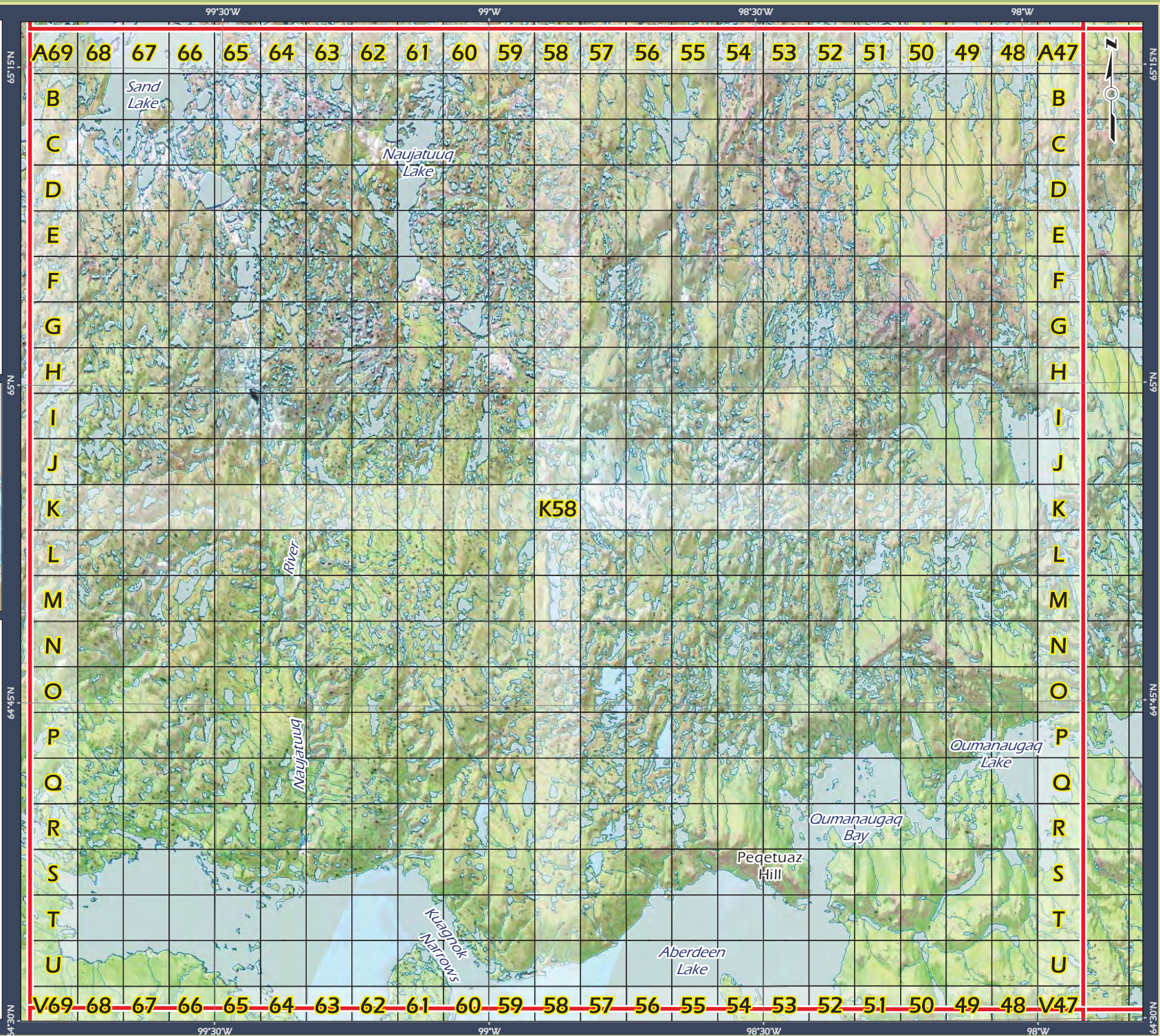
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*Baker Lake
Harvest Study*

*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:

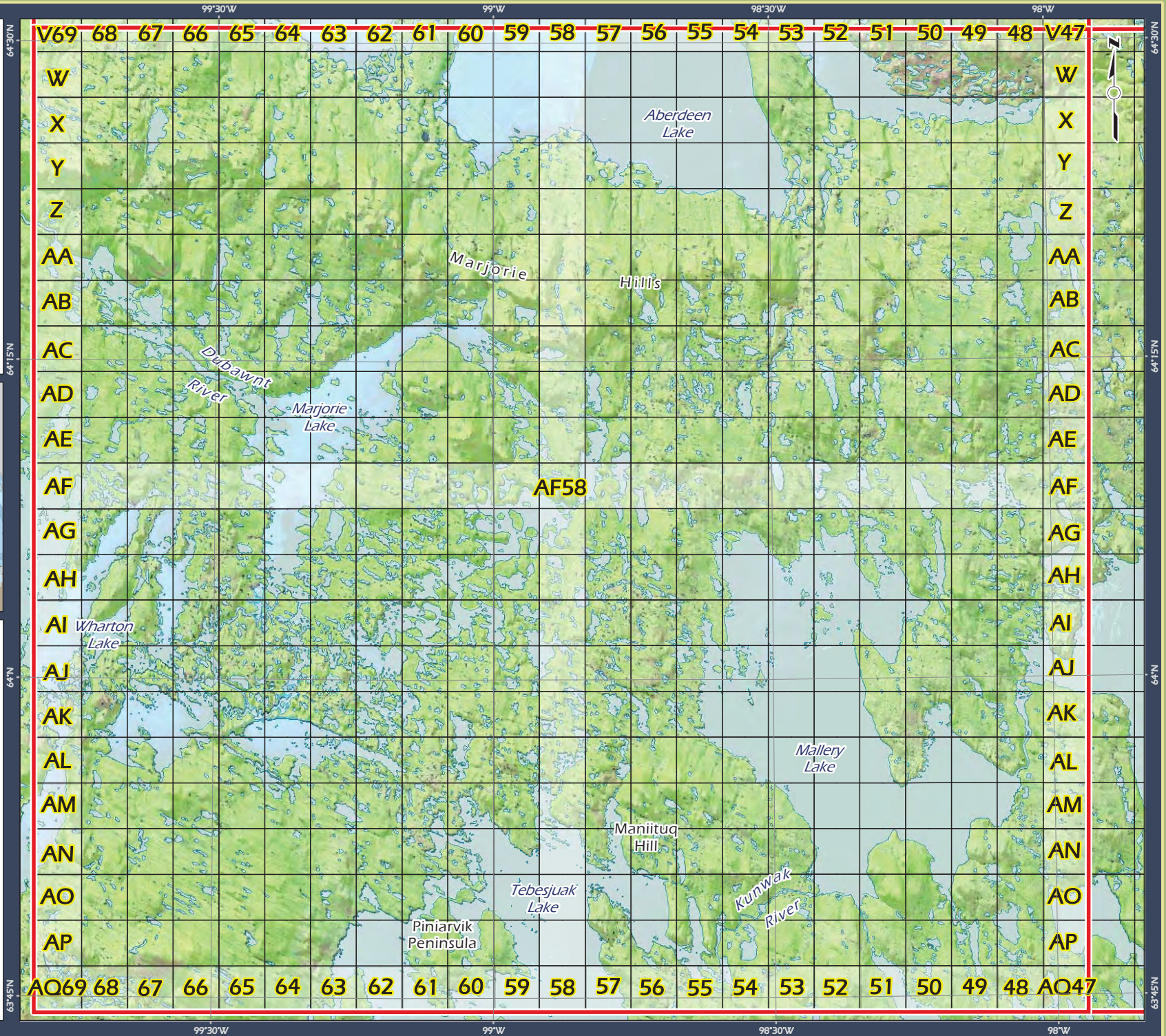
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Nunavut ENVIRONMENTAL CONSULTING LTD

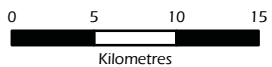


Baker Lake
Harvest Study

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:

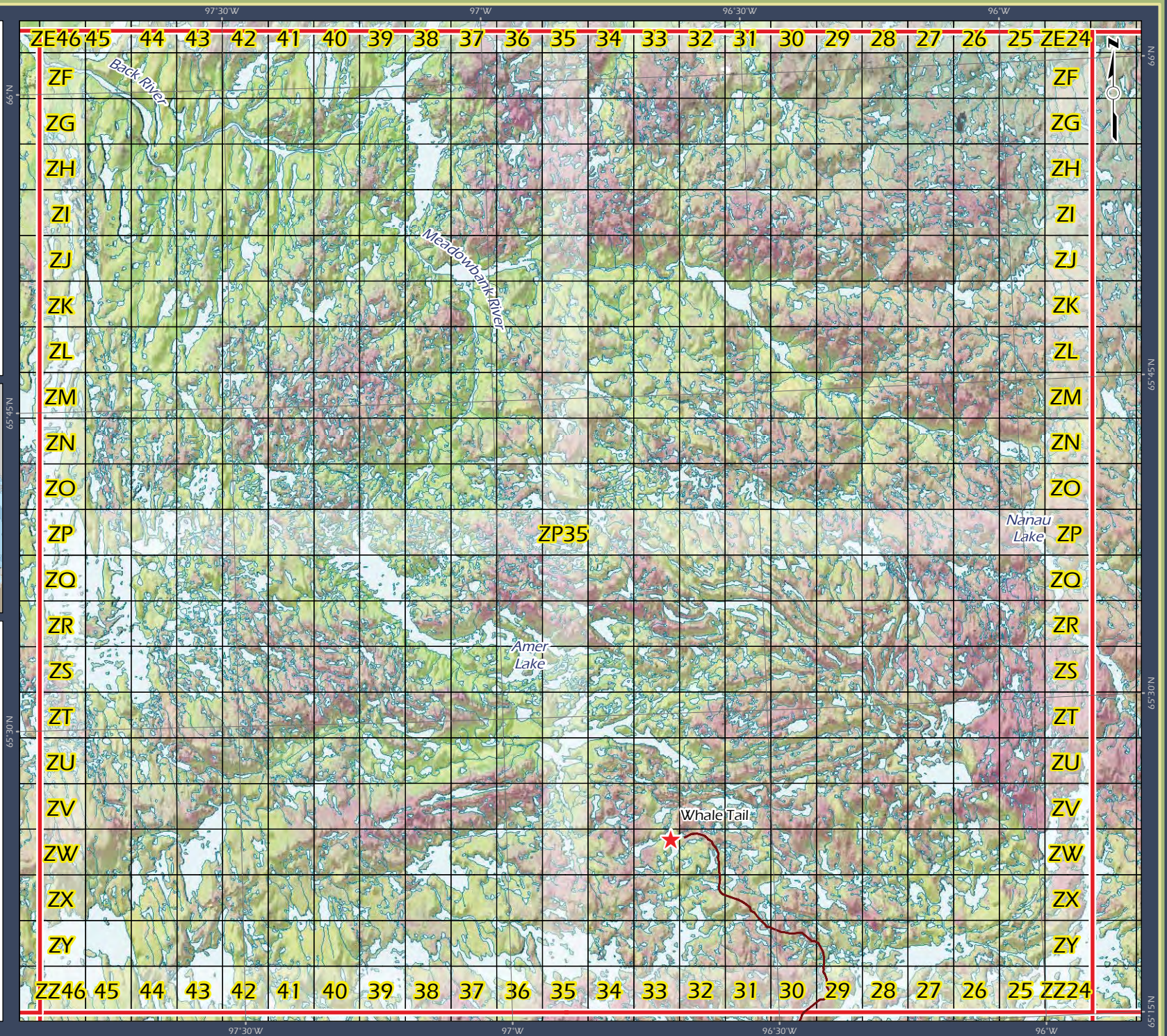
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Nunavut ENVIRONMENTAL CONSULTING LTD



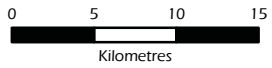
Baker Lake Harvest Study

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



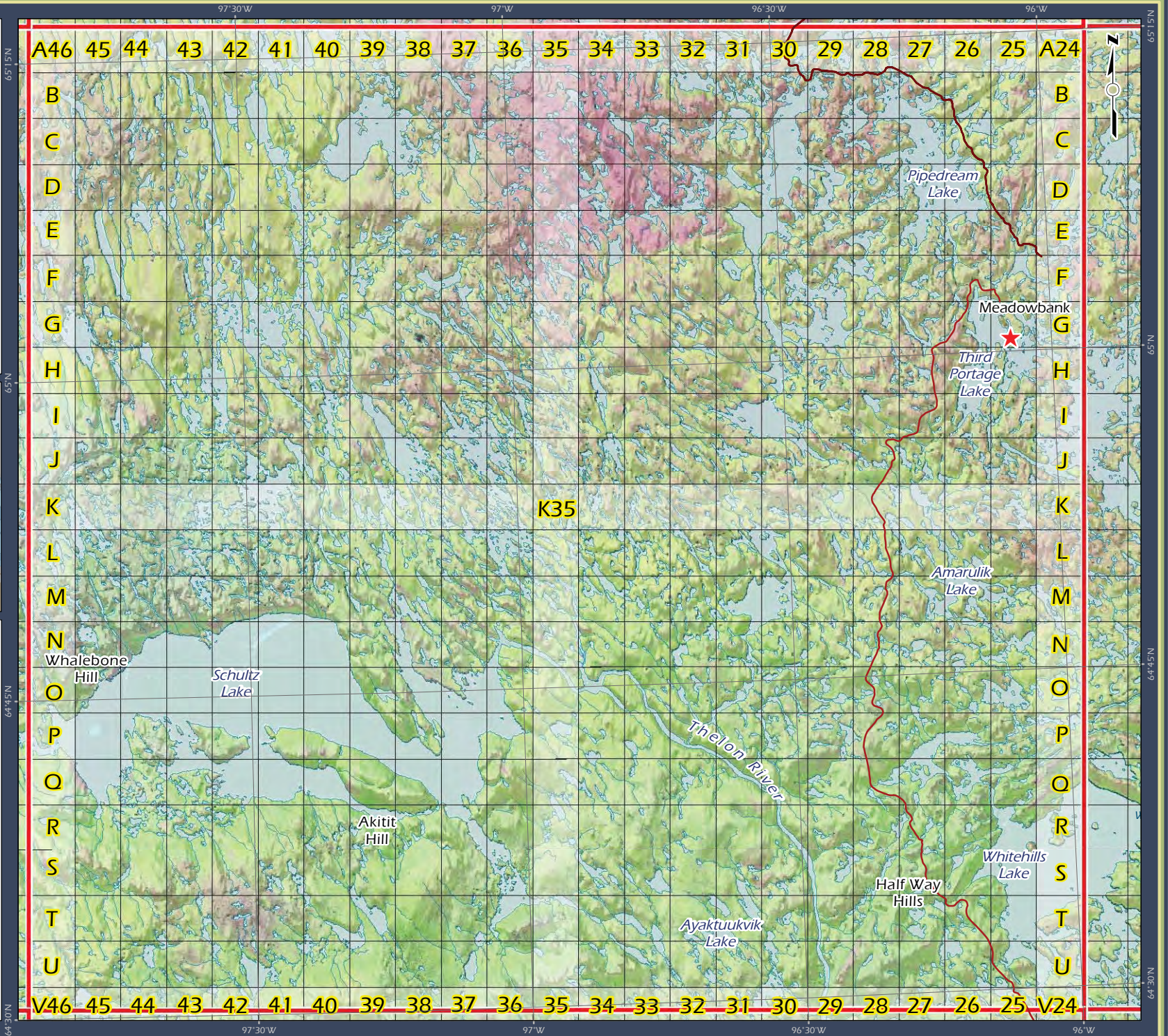
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 Caslys Consulting Ltd.

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

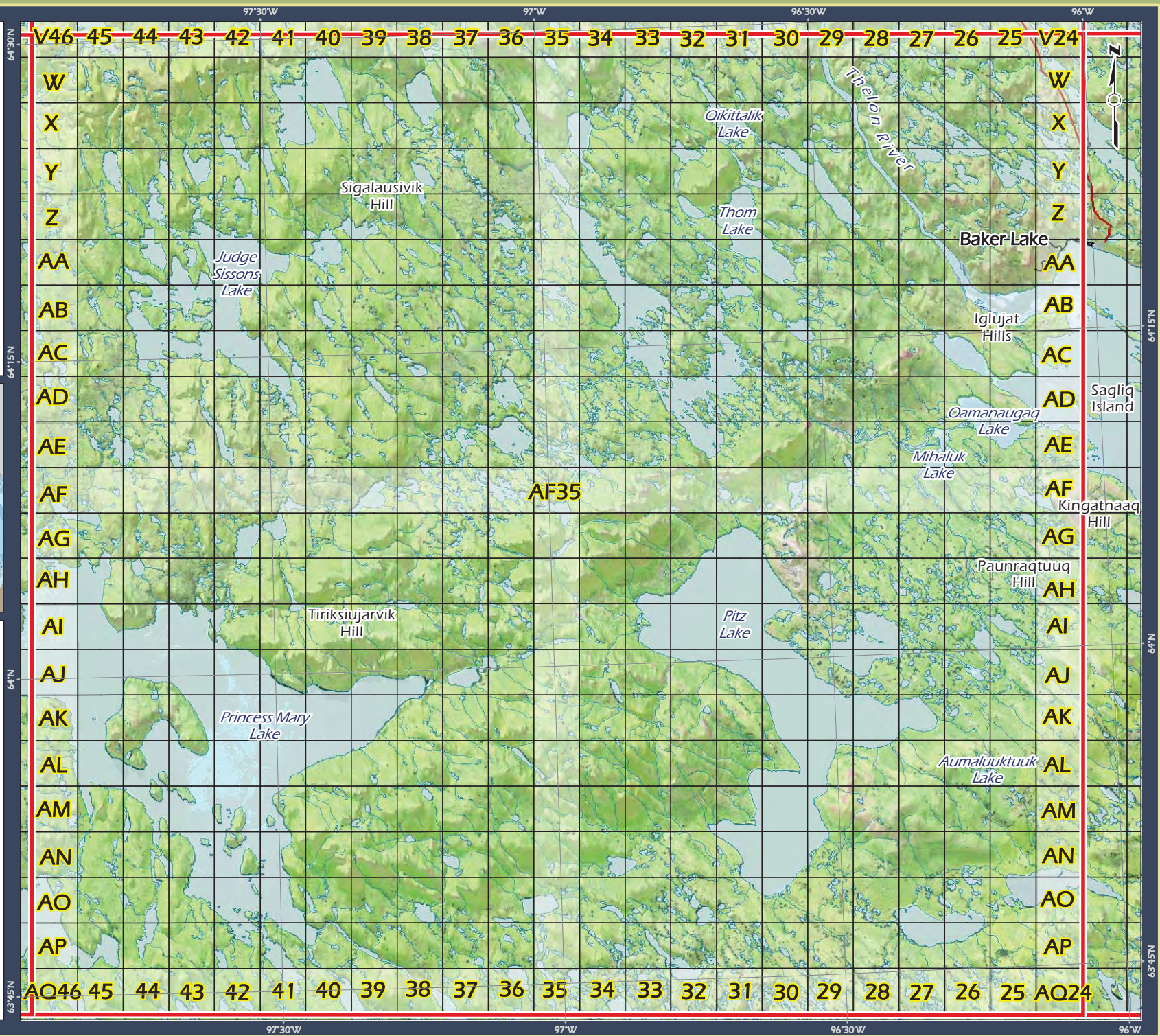
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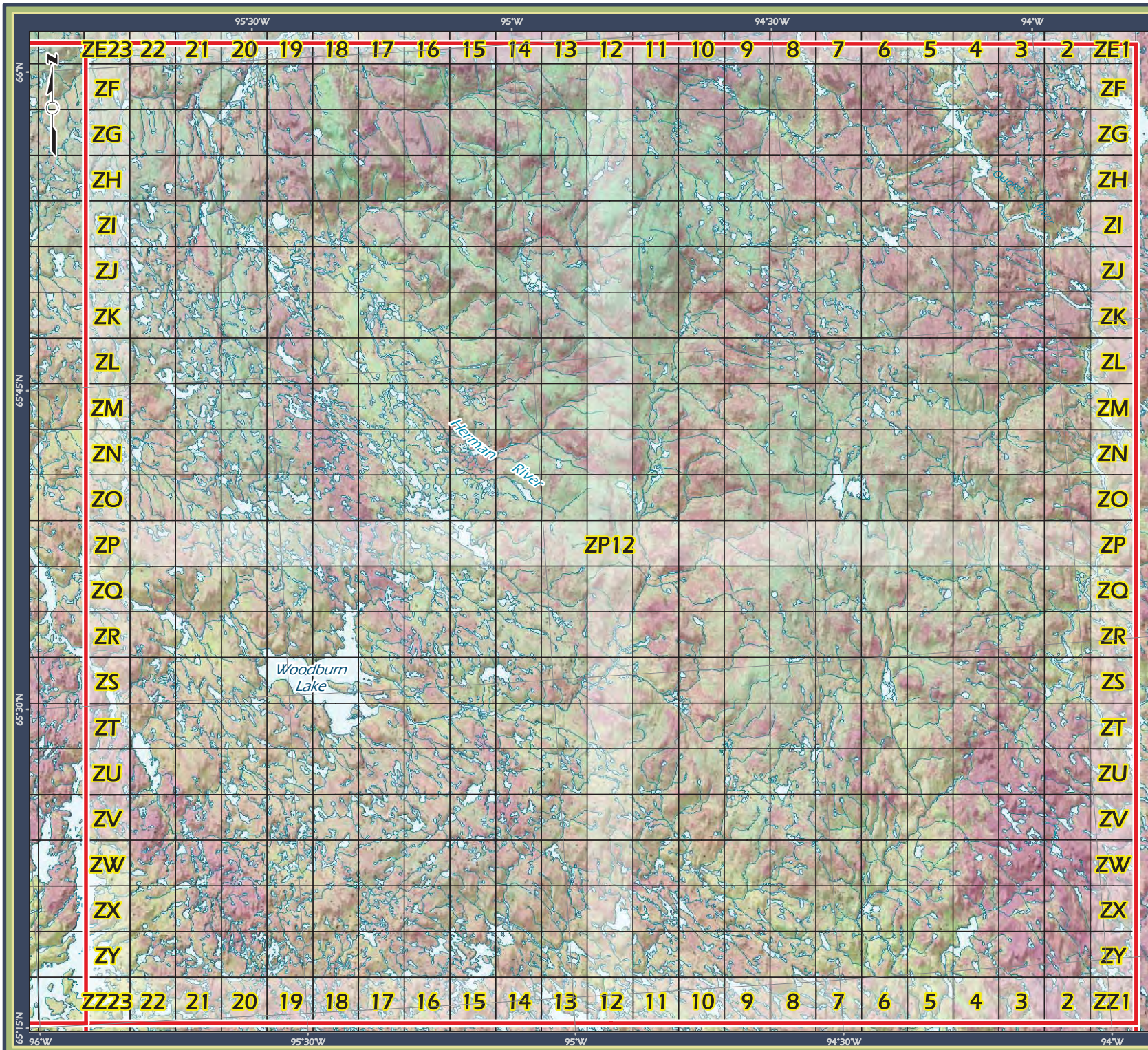
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Prepared for:



By:



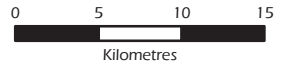


*Baker Lake
Harvest Study*

*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

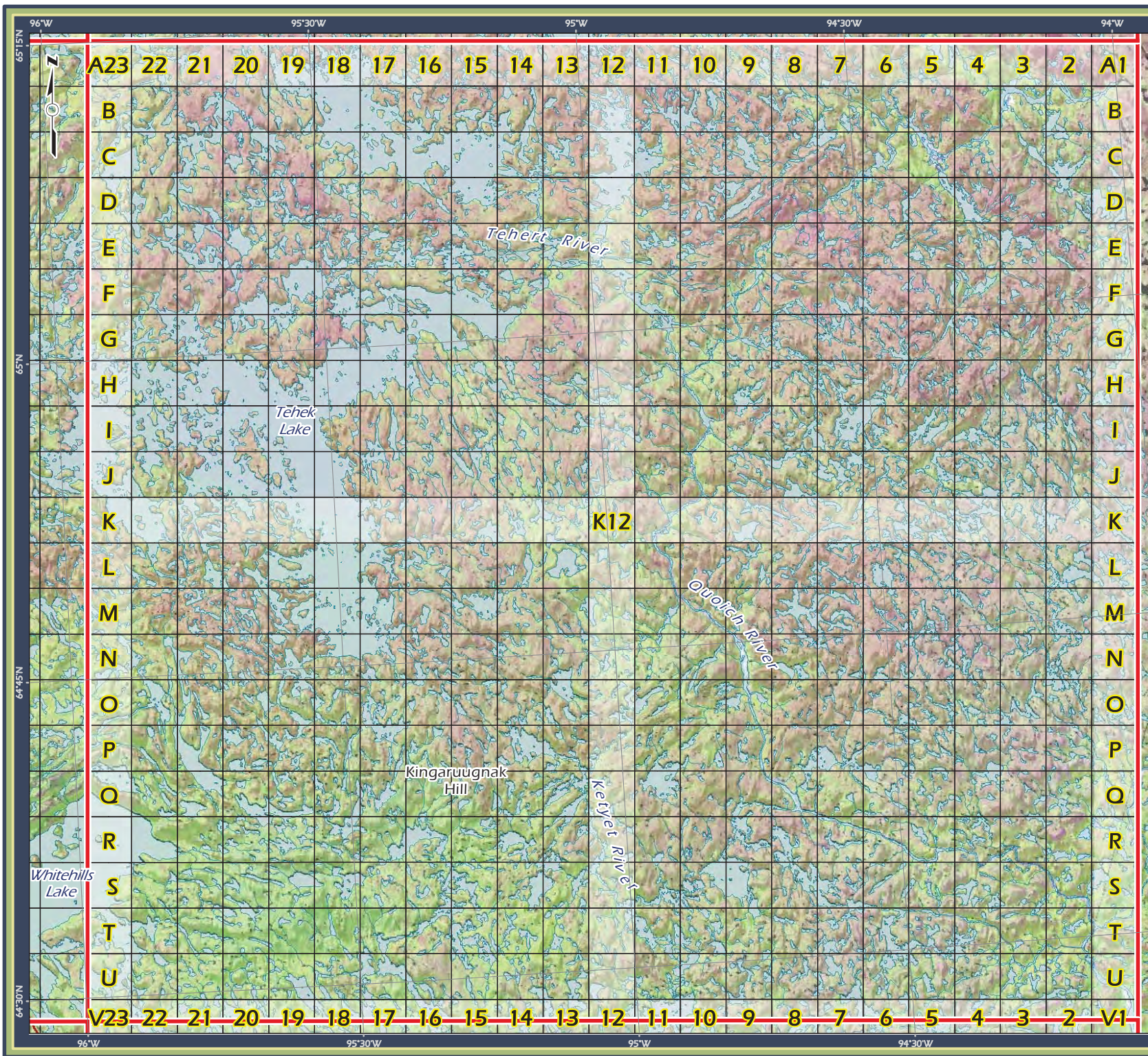
Data Sources:
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Prepared for:



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:
 Natural Resources Canada
 GeoBase®
 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 G

Arctic Raptors Report



ARCTIC RAPTORS

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Background

The purpose of the raptor monitoring program from 2015 – 2019 focused on searching for nesting sites located near to, and far from proposed or existing infrastructure. Monitoring of raptors is 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 nesting site-specific management plans for nests within 1.5km of project infrastructure, including minimum “no disturbance” buffers.
- In the event of deterrence or removal of a nest, Agnico must contact the Government of Nunavut (GN) and secure the required permits (see Project Certificate No. 008 Condition 36).

The GN provided additional feedback from information provided in 2018 Annual Report, as follows:

- the current monitoring does not have the power to detect and mitigate Project-related effects on raptor nesting success.
- the study design does 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).

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 nest on cliffs and rocky outcrops, but also nest on hilltops, river canyons, rock scree, 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 Igloolik, 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.

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 2021-2022 (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 2022 involved two helicopter surveys (28 May – 03 June, 12 – 17 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. Survey effort from 2015-2022 for raptors breeding in the vicinity of the Meadowbank/Whale Tail complex.

Year	2015		2016		2017		2018		2019		2020		2021		2022	
Survey	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
End	30/05	—	20/05	23/07	30/05	—	—	—	15/06	—	—	—	30/05	08/08	03/06	17/08
Hours	12	—	10	10	12	—	—	—	10	—	—	—	12	12	11.7	12.4

Mapping

Shapefiles for the AWAR, Haul Road, and project footprints 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 2022 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 and 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 2022. 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 eight-year period, three surveys were conducted during brood rearing (July 2016 August 2019, and August 2022). 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, regardless of the potential for alternative nesting sites within nesting territories).

Results

Mapping

Across eight different 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 - 2022. Of the 144 locations surveyed (Figure 1), nesting raptors have been detected at 87 nesting sites (Table 10). Peregrine falcons have been documented at 71 nesting sites, rough-legged hawks at 30 nesting sites and gyrfalcons have been documented at ten nesting sites.

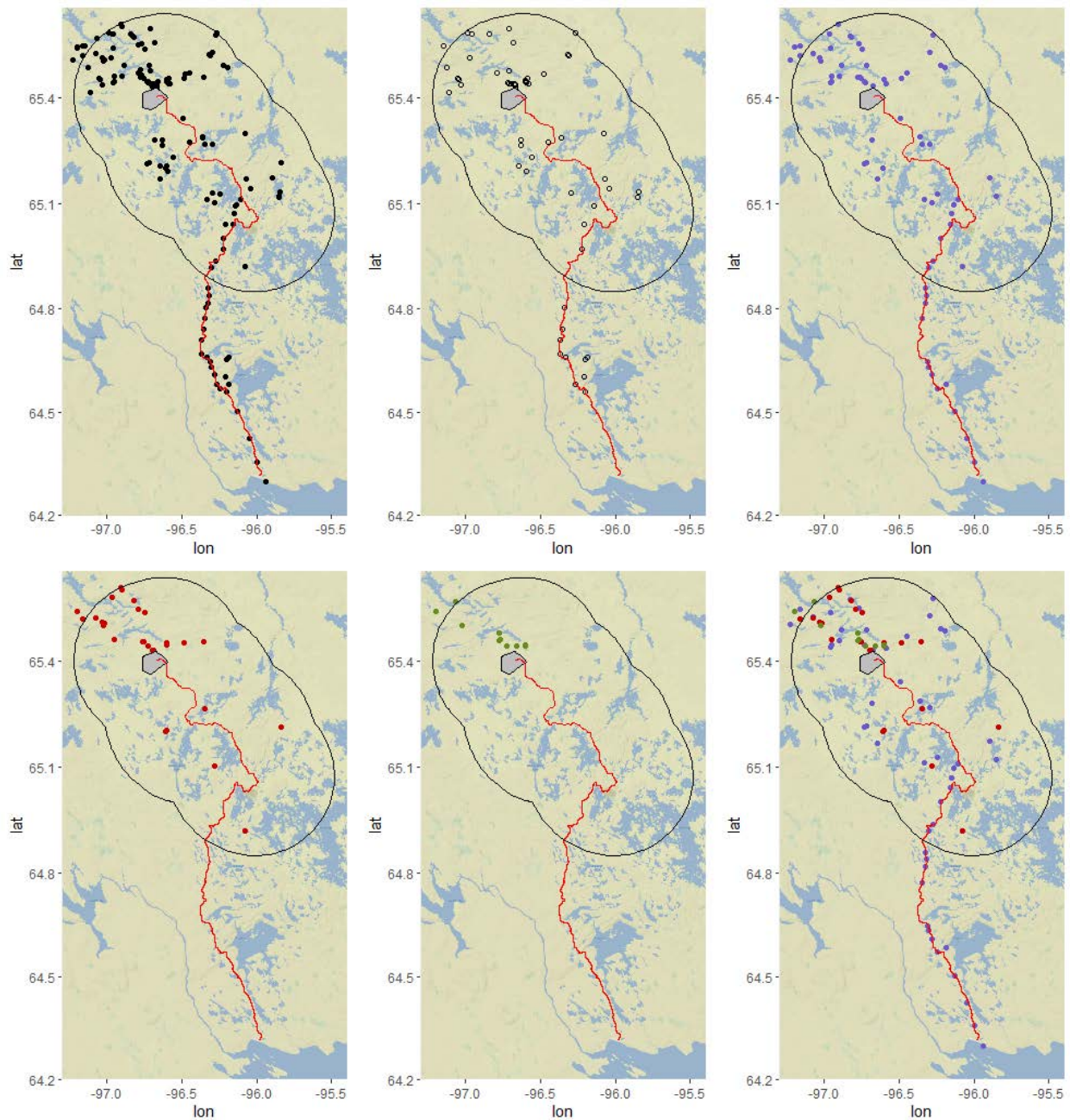


Figure 4. All cliffs surveyed (n=144; top L), cliffs with no record of occupancy (n= 57; top C), PEFA nesting sites (n = 71; top R), RLHA nesting sites (n=30; bottom L), GYRF nesting sites (n=10; bottom C), and all recorded nesting sites combined (bottom R) for the period 2015 – 2022 in the vicinity of the Meadowbank/Whale Tail complex

Distance to Disturbance

Mean distance from known occupied nesting sites to project infrastructure was 8.99 km (SD=7.87 km, range = 0 – 24.68 km). Eighteen nesting sites fell within 1.5 km of the AWAR Road, Haul Road, or Whale Tail Mine footprint and are considered candidates for development of a site-specific management plans. Seventeen of the 18 nesting sites within 1.5 km of the footprint have been occupied by peregrine falcons, and one nesting site has been occupied by rough-legged hawks. Fourteen of the 17 peregrine falcon nesting sites were in rock quarries excavated for road building and maintenance, and three were located on natural cliffs. The single rough-legged hawk nesting site located with 1.5 km of the project footprint was located on a natural cliff. There were no gyrfalcon nesting sites detected within 1.5 km of the project footprint. Fifteen 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 top occupancy model included colonization and extinction effects of distance to disturbance, and a year effect for detection. However, the delta AIC for the second-ranked null model was 1.82, strongly suggesting that the effect size of distance to disturbance was not important (Table 3). Using the null model, trend in occupancy (Figure 5) was $\lambda = 0.98$ (SE=0.04). The minimum and maximum number of nesting sites sampled in any year was 15 (2018) and 71 (2022), respectively (Table 5). The minimum and maximum number of breeding pairs detected was 8 (2020) and 36 (2022), respectively (Table 5).

Table 3. Model selection based on AIC score for peregrine falcons.

Model structure	Model #	Parameters	AIC score	delta AIC	AICwt	Cumltvwt
-.d2d.d2d.year	m1	13	780.05	0	0.713	0.71
-.-.-.year	m0	11	781.87	1.82	0.287	1
-.year.year.year	m2	23	794.72	14,67	5E-04	1

Table 4. Parameter estimates (null model; log odds scale) for peregrine falcon initial occupancy (psi) colonization (gamma) and extinction (epsilon), and a year effect for detection (rho).

	psi(Int)	col(Int)	ext(Int)	p(Int)	p(2016)	p(2017)	p(2018)	p(2019)	p(2020)	p(2021)	p(2022)
estimate	0.80	-0.87	-0.82	0.58	1.07	8.96	1.39	1.65	2.01	-0.38	0.21
SE	0.55	0.20	0.20	0.58	0.68	1.13	0.98	1.24	1.24	0.70	0.66

Table 5. Count of PEFA nesting sites sampled, detected, colonized, extinct, static, and common from 2015 - 2022 for birds breeding in the vicinity of the Meadowbank/Whale Tail complex.

year	sampled	detected	colonized	extinct	static	common
2015	55	29	NA	NA	NA	NA
2016	58	32	8	9	34	51
2017	66	31	4	9	45	58
2018	15	9	2	3	10	15
2019	66	28	1	5	9	15
2020	16	8	4	2	10	16
2021	69	25	3	2	11	16
2022	71	36	19	10	40	69

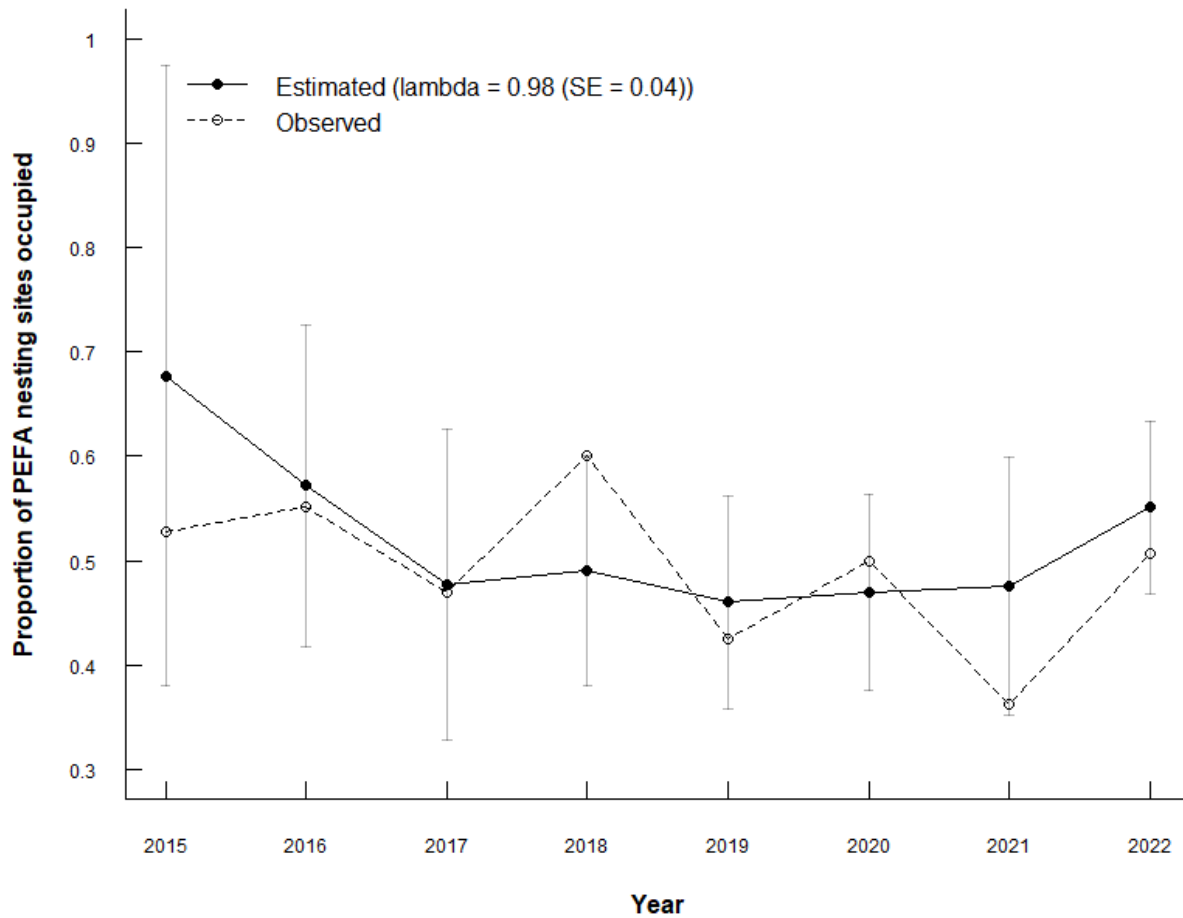


Figure 5. Proportion of PEFA nesting sites occupied from 2015 – 2022 in the vicinity of the Meadowbank/Whale Tail complex. The proportion observed (open circles with dashed lines) are point estimates, and do not account for detection error. The proportion estimated (closed circles with solid lines) accounts for detection error and includes standard error bars. $\lambda = 0.98 \pm 0.04$

Rough-legged Hawks

The null model was ranked first among the candidates for rough-legged hawk occupancy (Table 6). Trend in occupancy (Figure 6) calculated as average rate of change at the population level was $\lambda = 1.08$ (SE=0.17), 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 29 (2022), 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	Cumltvwt
-.-.year	m0	11	271.54	0	0.760	0.76
-.d2d.d2d.year	m1	13	273.83	2.29	0.240	1.00
-.year.year.year	m2	23	290.18	18.64	0.000	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(Int)	col(Int)	ext(Int)	p(Int)	p(2016)	p(2017)	p(2018)	p(2019)	p(2020)	p(2021)	p(2022)
estimate	-1.13	-0.10	-0.66	2.10	-1.30	6.73	0.00	-2.33	0.00	-2.43	-3.03
SE	2.21	0.40	0.45	15.00	14.93	73.54	92.65	15.08	92.65	15.07	15.06

Table 8. Count of rough-legged hawk nesting sites sampled, detected, colonized, extinct, static, and common from 2015 - 2022 for birds breeding in the vicinity of the Meadowbank/Whale Tail complex.

year	sampled	detected	colonized	extinct	static	common
2015	19	4	NA	NA	NA	NA
2016	25	12	5	1	13	19
2017	27	16	6	4	15	25
2018	0	0	0	0	0	0
2019	27	7	0	0	0	0
2020	0	0	0	0	0	0
2021	28	10	0	0	0	0
2022	29	7	3	7	18	28

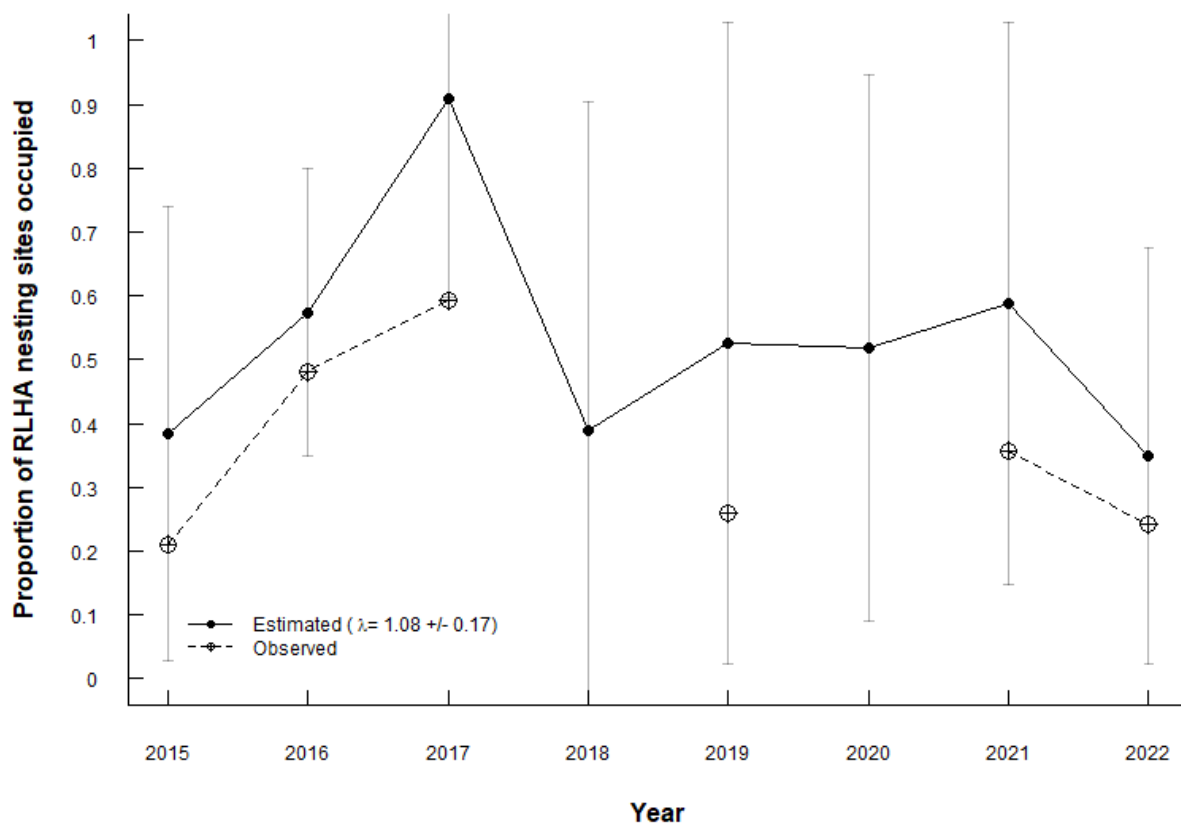


Figure 6. Proportion of RLHA nesting sites occupied from 2015 – 2022 in the vicinity of the Meadowbank/Whale Tail complex. The proportion observed (open circles with dashed lines) are point estimates without error bars, and do not account for detection error. The proportion estimated (closed circles with solid lines) accounts for detection error and includes standard error bars. $\lambda = 1.08 \pm 0.17$

Gyrfalcons

The null model was ranked first among the candidates for gyrfalcon occupancy (Table 9). Trend in occupancy (Figure 7) calculated as average rate of change at the population level was λ 1.12 (SE=0.21), 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 10 (2022), respectively (Table 11). The minimum and maximum number of breeding pairs detected was 0 (2018 and 2020) and 5 (2022), 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	11	108.09	0.00	0.77	0.77
-.d2d.d2d.year	m1	13	110.56	2.47	0.23	1.00
-.year.year.year	m2	23	125.24	17.15	0.00	1.00

Table 10. Parameter estimates (null model; log odds scale) for gyrfalcon initial occupancy (psi) colonization (gamma) and extinction (epsilon), and a year effect for detection (rho).

	psi(Int)	col(Int)	ext(Int)	p(Int)	p(2016)	p(2017)	p(2018)	p(2019)	p(2020)	p(2021)	p(2022)
estimate	-1.13	-0.10	-0.66	2.10	-1.30	6.73	0.00	-2.33	0.00	-2.43	-3.03
SE	2.21	0.40	0.45	15.00	14.93	73.54	92.65	15.08	92.65	15.07	15.06

Table 11. Count of gyrfalcon nesting sites sampled, detected, colonized, extinct, static, and common from 2015 - 2022 for birds breeding in the vicinity of the Meadowbank/Whale Tail complex.

year	sampled	detected	colonized	extinct	static	common
2015	7	4	NA	NA	NA	NA
2016	8	2	1	3	3	7
2017	7	2	1	1	5	7
2018	0	0	0	0	0	0
2019	8	2	0	0	0	0
2020	0	0	0	0	0	0
2021	9	5	0	0	0	0
2022	10	4	1	3	5	9

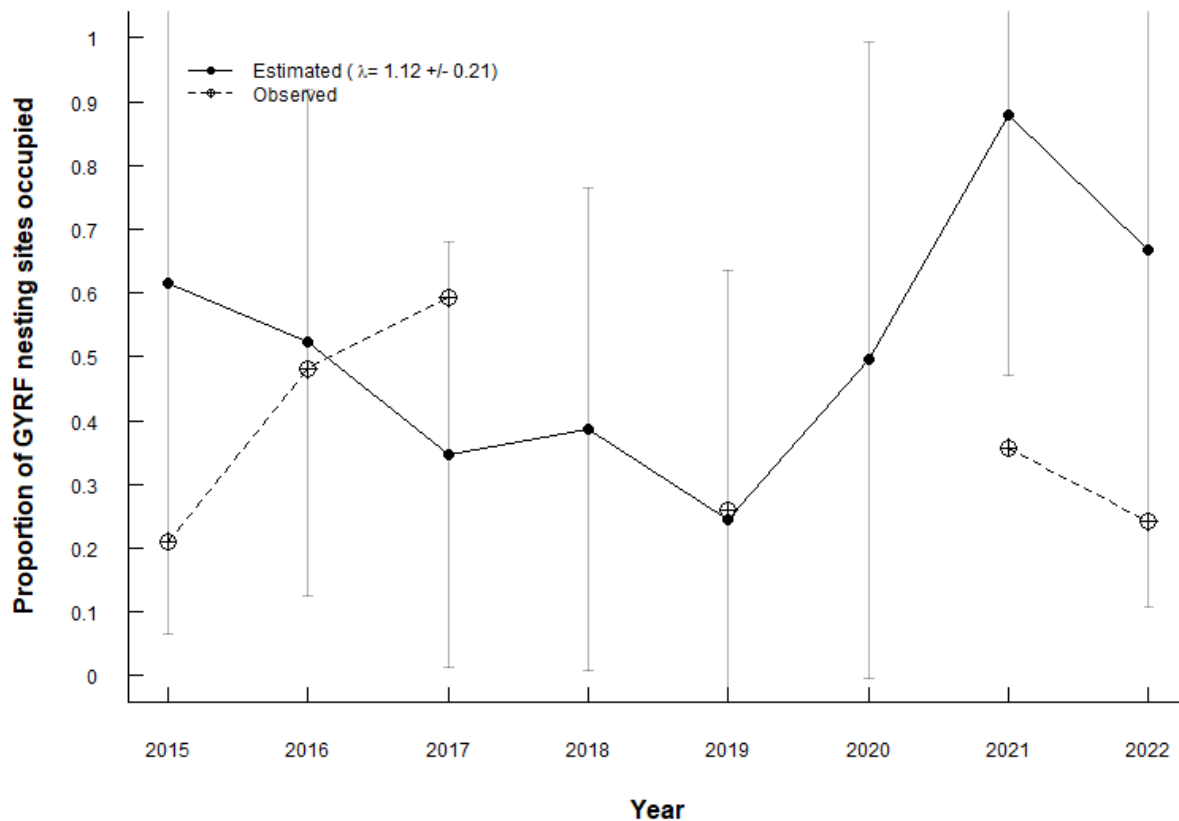


Figure 7. Proportion of gyrfalcon nesting sites occupied from 2015 – 2022 in the vicinity of the Meadowbank/Whale Tail complex. The proportion observed (open circles with dashed lines) are point estimates without error bars, and do not account for detection error. The proportion estimated (closed circles with solid lines) accounts for detection error and includes standard error bars. Lambda = 1.12±0.21

Reproductive Success

Table 12. Estimates of reproductive success for peregrine falcons, rough-legged hawks, and gyrfalcons detected in 2016 and 2021 - 2022 in the vicinity of the Meadowbank/Whale Tail complex. Values are reported as the number of young hatched from a single nesting attempt by a pair of birds, 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	2016	2021	2022	2016	2021	2022
Count of occupied sites	32	25	32 ¹	12	10	7	2	5	4
Count of nestlings	9	9	37	20	11	6	4	6	0
Productivity (apparent)	0.28	0.36	1.16	1.67	1.1	0.86	2.00	1.2	0*

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 eight 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 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 5). There is no evidence for project-related related disturbance effects for peregrine falcons, rough-legged hawk occupancy, and gyrfalcons.

In 2022, there was no deterrence done for quarries along the AWAR, WTHR and mine sites, except for Quarry 22, which has become regularly occupied nesting territories. 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. To fulfill the requirement to develop management and response plans, Agnico Eagle shall update the TEMP in 2023 to include the following: 1) for roadside quarries where work is planned, deterrents will be placed in the quarries in early May prior to arrival on territory; 2) for roadside quarries where no work is planned, regular monitoring shall be conducted to determine occupancy status; 3) for dormant quarries, nesting raptors shall be monitored regularly throughout the breeding season to determine reproductive status (signage shall be placed to identify the presence of breeding raptors and will include a no stopping zone for vehicular traffic). 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 2023, two specific sites visits are scheduled and will contribute to meeting NIRB Project Certificate Term and Condition.

Table 13. Geographic coordinates (decimal degrees), distance to disturbance (Km) for known nesting sites surveyed between 2015 and 2022. Nesting sites that require management plans are identified.

NSID	Quarry	minD2D	Plan
4	NA	4.72	N
6	NA	3.30	N
9	NA	4.01	N
11	NA	3.57	N
14	NA	2.49	N
16	NA	2.74	N
17	NA	2.89	N
21	NA	16.49	N
23	NA	14.49	N
24	NA	14.41	N
25	NA	17.27	N
26	NA	17.67	N
27	NA	21.59	N
28	NA	22.34	N
31	NA	9.28	N
34	Q21	2.27	N
38	NA	20.87	N
39	NA	19.68	N
41	NA	24.30	N
42	NA	0.49	Y
44	Q19	0.06	Y
45	Q18	0.10	Y
46	NA	1.64	N
49	NA	2.68	N
51	NA	2.60	N
52	NA	1.66	N
54	NA	8.47	N
55	NA	9.35	N
58	NA	0.66	Y
61	NA	10.45	N
62	NA	6.26	N
63	NA	10.64	N
64	NA	10.90	N
65	NA	7.01	N
67	NA	7.37	N
68	NA	11.65	N
69	NA	9.60	N
71	NA	7.19	N
73	NA	4.73	N
74	NA	4.31	N
75	NA	4.44	N
77	NA	1.98	N
78	NA	7.66	N
79	NA	12.88	N
83	NA	24.05	N

85	NA	15.66	N
86	NA	15.91	N
87	NA	16.55	N
88	NA	16.77	N
89	NA	18.98	N
90	NA	19.13	N
91	NA	10.27	N
92	NA	20.10	N
93	NA	3.42	N
94	NA	10.48	N
95	NA	22.06	N
97	NA	20.65	N
99	NA	12.63	N
100	NA	7.36	N
107	NA	12.44	N
108	NA	24.67	N
109	NA	24.69	N
117	NA	9.56	N
121	NA	23.83	N
123	NA	8.21	N
126	NA	0.75	Y
127	NA	22.19	N
128	NA	10.27	N
130	Q22	0.18	Y
132	Q17	0.00	Y
133	Q16	0.06	Y
134	Q15	0.07	Y
136	Q13	0.00	Y
140	Q9	0.08	Y
141	Q8	0.03	Y
142	Q7	0.01	Y
144	Q5	0.00	Y
146	Q3	0.01	Y
147	Q2	0.60	Y
148	Q1	0.02	Y
149	NA	2.93	N
150	NA	7.84	N
152	NA	1.53	N
156	NA	0.06	Y
157	NA	5.13	N
158	NA	14.90	N

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APPENDIX H

Meadowbank Bird Surveys Report



MEADOWBANK COMPLEX

2022 BREEDING BIRD SURVEYS AND PRISM PLOTS SUMMARY REPORT

15 FEBRUARY 2023

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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 project; 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 All-Weather Access Road (AWAR), was established to determine potential effects of the Meadowbank Mine project. 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 supports 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 CWS over 10 years (2021 to 2031), and to complete Breeding Bird Survey (BBS) routes along the AWAR and the Whale Tail Haul Road (WTHR) opportunistically when qualified individuals are on site. At a minimum, these BBS routes will be conducted every three (3) years during the operations, closure, and post-closure phases of the project. PRISM and BBS were scheduled to restart in 2022.

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 will be surveyed and a minimum of 12 PRISM plots will be surveyed at the Meadowbank and Whale Tail sites (i.e., Meadowbank Complex).

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 the BBS and PRISM surveys;
- 3) Summarize results of the 2022 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 Canadian Wildlife Service (CWS). These methods are coordinated by the United State 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 AWAR (Route 62049) and 40 km along the WTHR (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 (see **Appendix I** for details). 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 will be conducted between 15 and 30 June 2023, the prime bird breeding season. Details on BBS survey protocols are provided in **Appendix II**.

Valid stop descriptions of each stop along both routes will also be 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 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 and 12 plots are proposed to be surveyed in 2023. The remaining 32 plots will likely be surveyed in 2024 or other years prior to the expected 2031 closure date, although the option exists to survey more or all remaining plots each year.

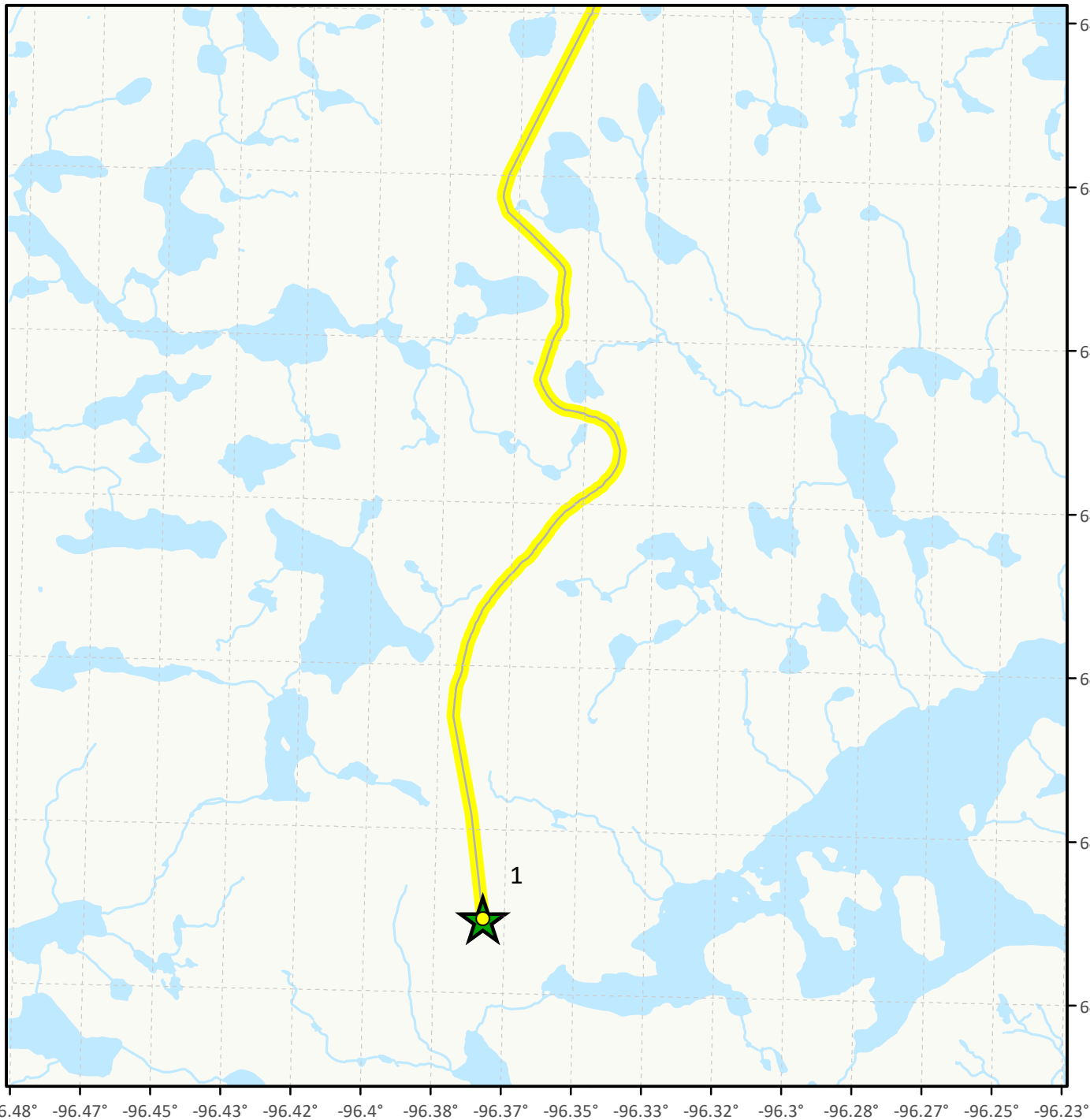
In 2022, the four (4), 300x400 plots were surveyed by a team of two field qualified personnel that transected the site every 25 m (team members were spaced 25 m apart and used geolocation to orient along transect lines). The purpose of the surveys was to document all birds (i.e., absolute abundance) 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 will be 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)

Route - Parcours: 62-049 MEADOWBANK MINE





Start time - Heure de départ: 0330




STOPS ARE ONLY SHOWN FOR ROUTES THAT HAVE BEEN GPSed or otherwise identified. If no stops are showing, please submit your GPS coordinates ASAP.

SEULS LES ARRÊTS QUI ONT ÉTÉ LOCALISÉS PAR GPS OU AUTREMENT IDENTIFIÉS SONT INDIQUÉS. Si aucun arrêt n'est affiché, SVP envoyer vos coordonnées dès que possible.

Legend - Légende

-  Start - Départ
-  End - Fin
-  Route - Parcours
-  Stop - Arrêt

0 0.8 1.6 2.4 3.2
 Km

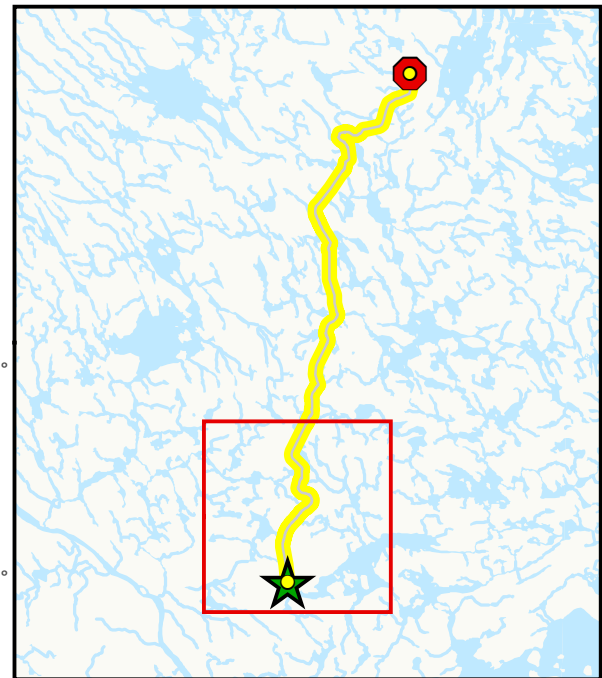
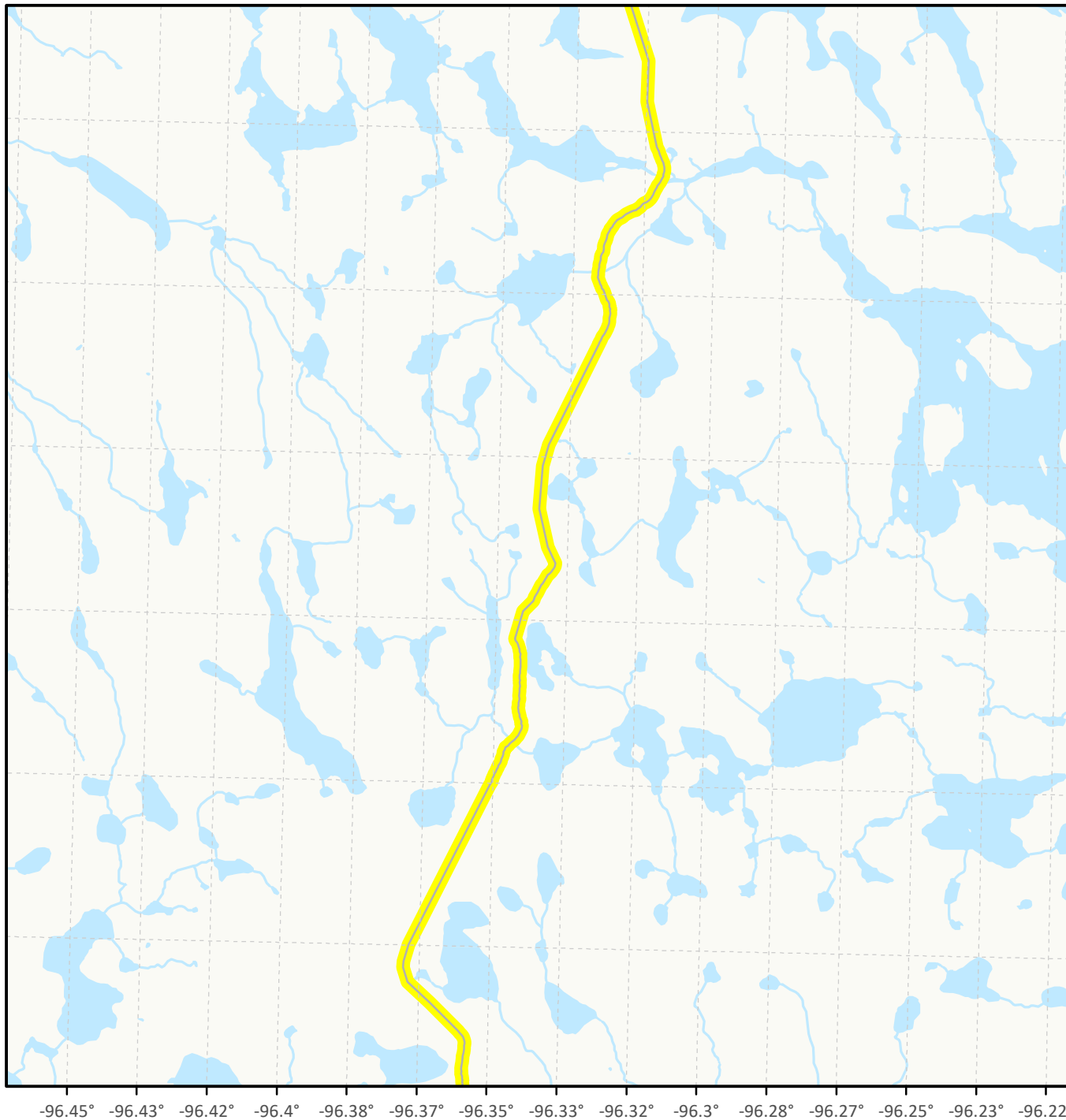


Figure 3.1: Location of the Breeding Bird Survey (BBS) Route Along the Meadowbank All-Weather Access Road (AWAR)

Route - Parcours: 62-049 MEADOWBANK MINE





Start time - Heure de départ: 0330




STOPS ARE ONLY SHOWN FOR ROUTES THAT HAVE BEEN GPSed or otherwise identified. If no stops are showing, please submit your GPS coordinates ASAP.

SEULS LES ARRÊTS QUI ONT ÉTÉ LOCALISÉS PAR GPS OU AUTREMENT IDENTIFIÉS SONT INDIQUÉS. Si aucun arrêt n'est affiché, SVP envoyer vos coordonnées dès que possible.

Legend - Légende

-  Start - Départ
-  End - Fin
-  Route - Parcours
-  Stop - Arrêt

0 0.8 1.6 2.4 3.2
 Km

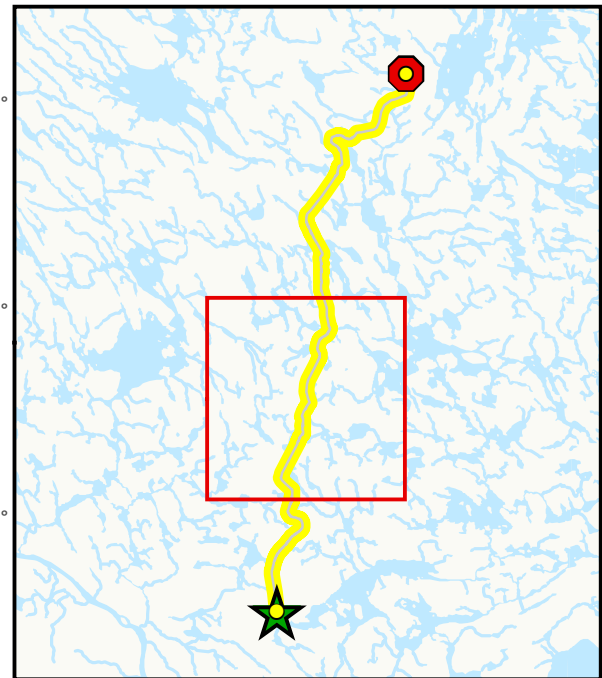
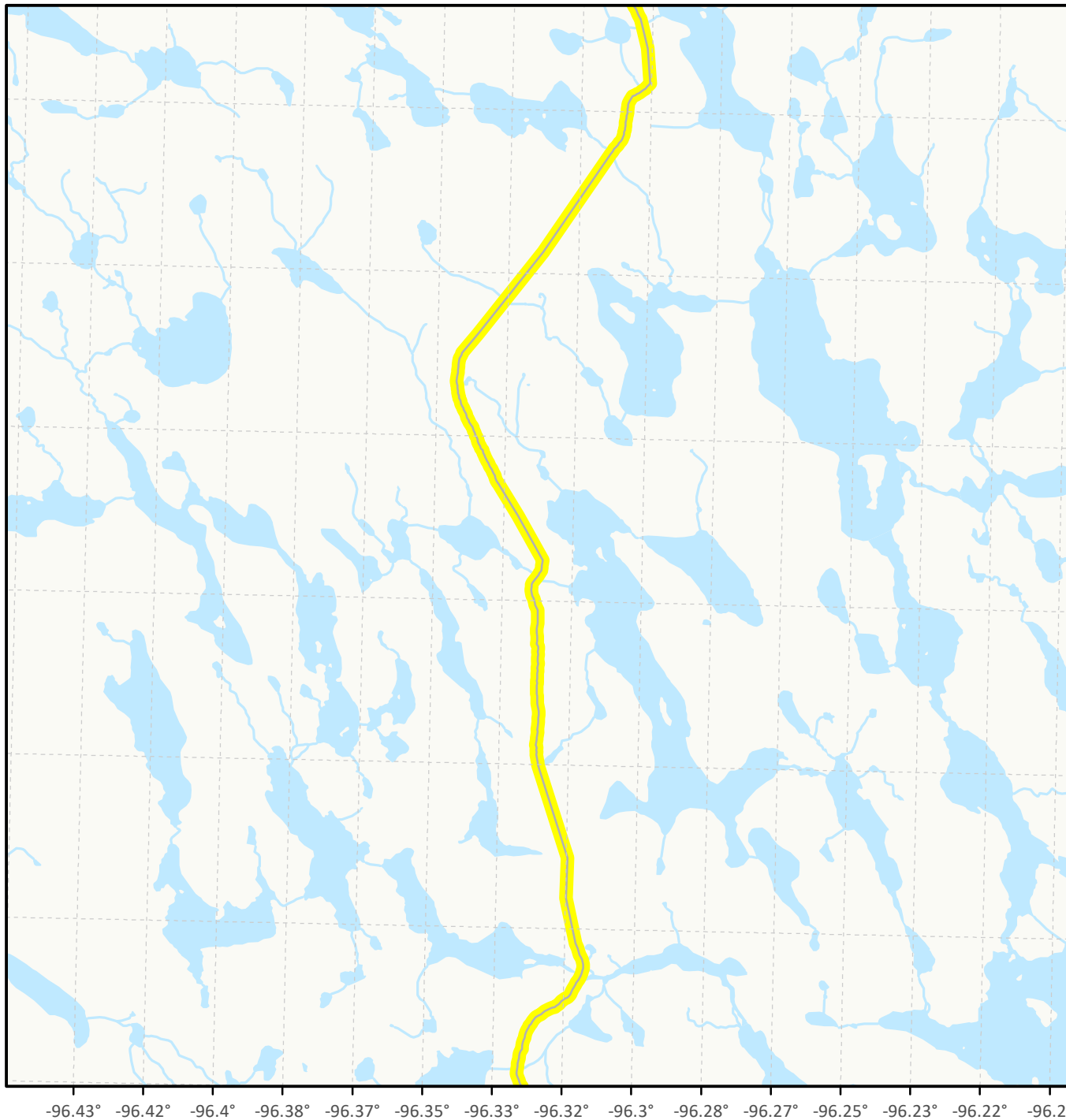


Figure 3.1: Location of the Breeding Bird Survey (BBS) Route Along the Meadowbank All-Weather Access Road (AWAR)

Route - Parcours: 62-049 MEADOWBANK MINE





Start time - Heure de départ: 0330




STOPS ARE ONLY SHOWN FOR ROUTES THAT HAVE BEEN GPSed or otherwise identified. If no stops are showing, please submit your GPS coordinates ASAP.

SEULS LES ARRÊTS QUI ONT ÉTÉ LOCALISÉS PAR GPS OU AUTREMENT IDENTIFIÉS SONT INDICÉS. Si aucun arrêt n'est affiché, SVP envoyer vos coordonnées dès que possible.

Legend - Légende

-  Start - Départ
-  End - Fin
-  Route - Parcours
-  Stop - Arrêt

0 0.8 1.6 2.4 3.2
 Km

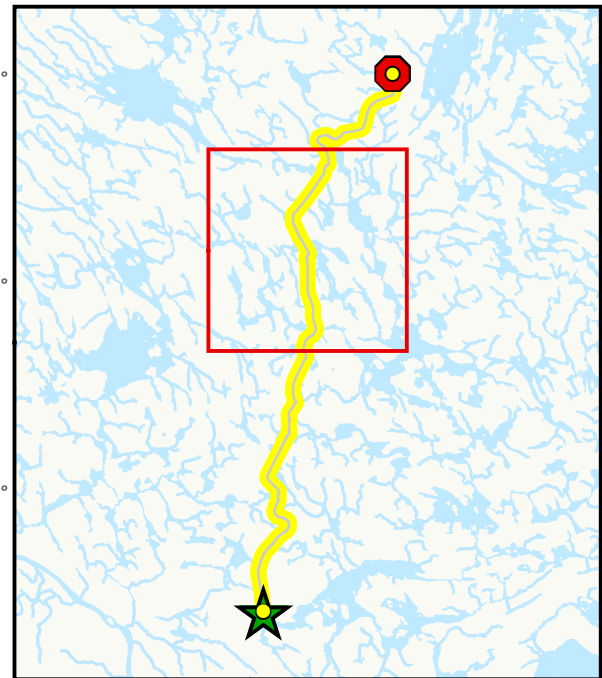


Figure 3.1: Location of the Breeding Bird Survey (BBS) Route Along the Meadowbank All-Weather Access Road (AWAR)

Route - Parcours: 62-049 MEADOWBANK MINE





Start time - Heure de départ: 0330




STOPS ARE ONLY SHOWN FOR ROUTES THAT HAVE BEEN GPSed or otherwise identified. If no stops are showing, please submit your GPS coordinates ASAP.

SEULS LES ARRÊTS QUI ONT ÉTÉ LOCALISÉS PAR GPS OU AUTREMENT IDENTIFIÉS SONT INDIQUÉS. Si aucun arrêt n'est affiché, SVP envoyer vos coordonnées dès que possible.

Legend - Légende

-  Start - Départ
-  End - Fin
-  Route - Parcours
-  Stop - Arrêt

0 0.8 1.6 2.4 3.2
 Km

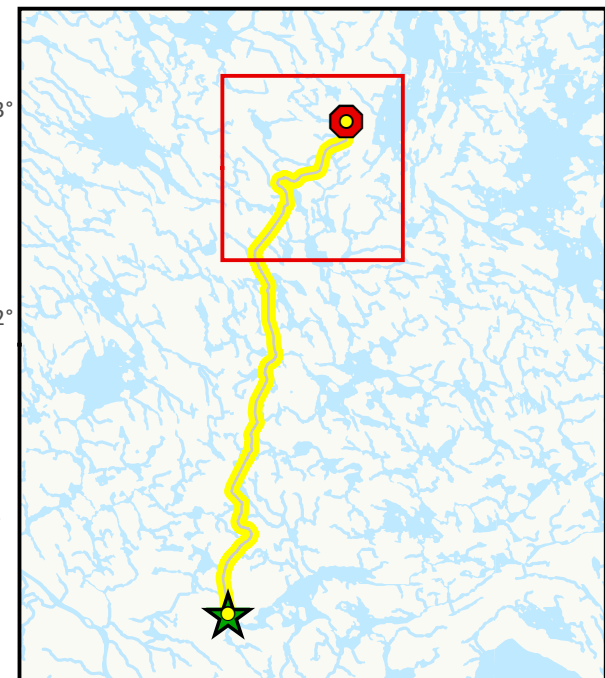
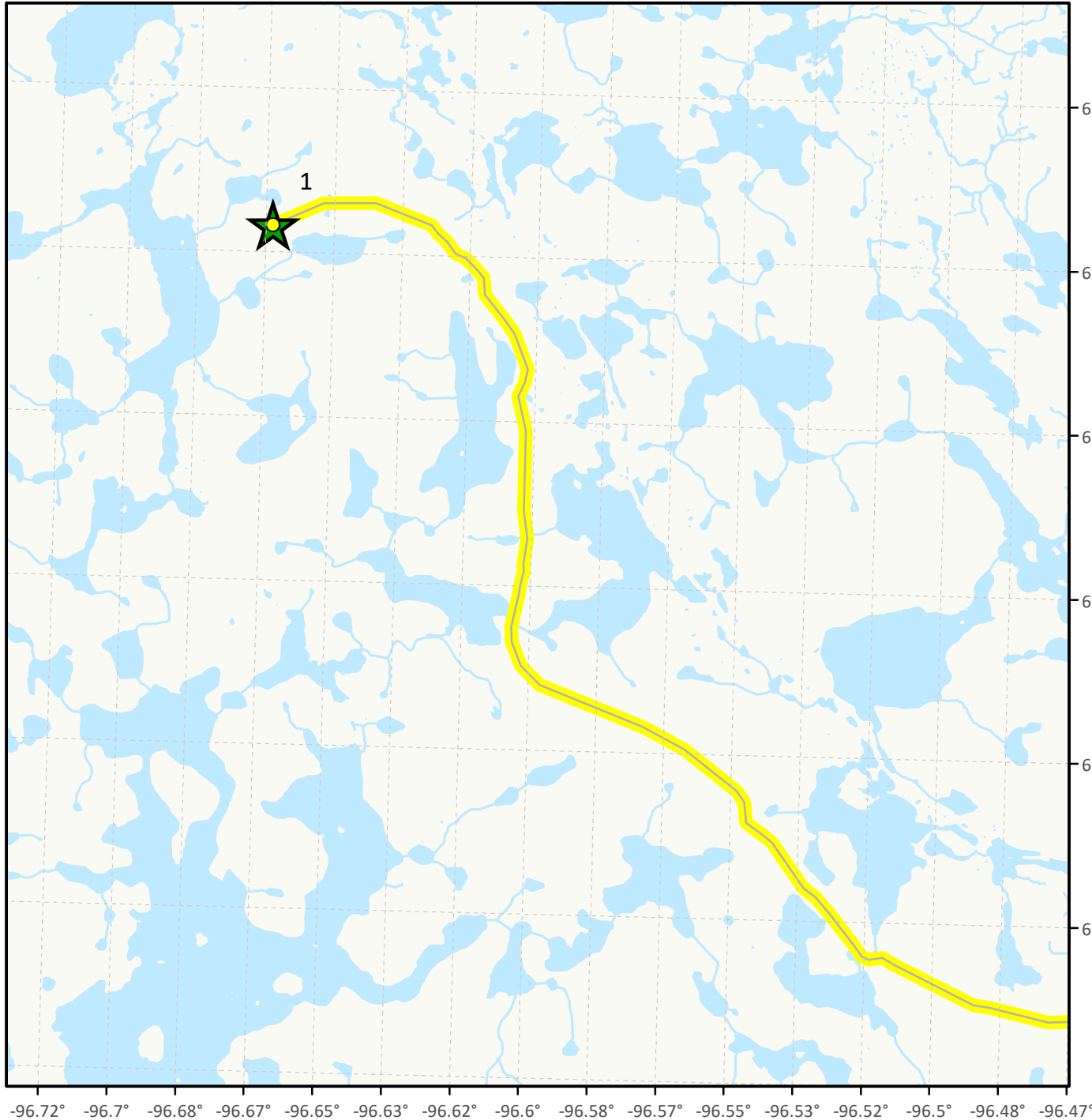


Figure 3.2: Location of the Breeding Bird Survey (BBS) Route Along the Whale Tail Haul Road (WTHR)

Route - Parcours: 62-091 WHALE TAIL MINE

Start time - Heure de départ: 0330

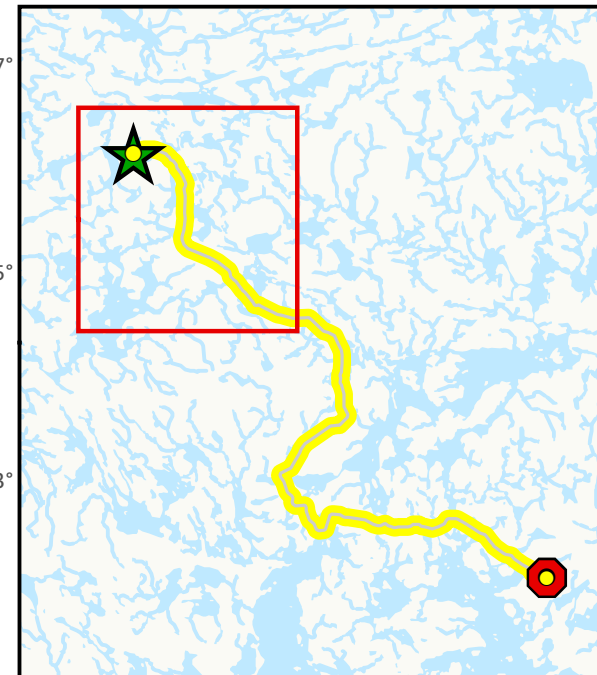
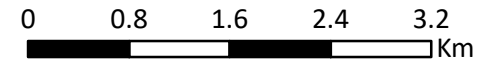


STOPS ARE ONLY SHOWN FOR ROUTES THAT HAVE BEEN GPSed or otherwise identified. If no stops are showing, please submit your GPS coordinates ASAP.

SEULS LES ARRÊTS QUI ONT ÉTÉ LOCALISÉS PAR GPS OU AUTREMENT IDENTIFIÉS SONT INDIQUÉS. Si aucun arrêt n'est affiché, SVP envoyer vos coordonnées dès que possible.

Legend - Légende

-  Start - Départ
-  End - Fin
-  Route - Parcours
-  Stop - Arrêt



-96.72° -96.7° -96.68° -96.67° -96.65° -96.63° -96.62° -96.6° -96.58° -96.57° -96.55° -96.53° -96.52° -96.5° -96.48° -96.47°

65.42°

65.4°

65.38°

65.37°

65.35°

65.33°

Figure 3.2: Location of the Breeding Bird Survey (BBS) Route Along the Whale Tail Haul Road (WTHR)

Route - Parcours: 62-091 WHALE TAIL MINE





Start time - Heure de départ: 0330




STOPS ARE ONLY SHOWN FOR ROUTES THAT HAVE BEEN GPSed or otherwise identified. If no stops are showing, please submit your GPS coordinates ASAP.

SEULS LES ARRÊTS QUI ONT ÉTÉ LOCALISÉS PAR GPS OU AUTREMENT IDENTIFIÉS SONT INDICÉS. Si aucun arrêt n'est affiché, SVP envoyer vos coordonnées dès que possible.

Legend - Légende

-  Start - Départ
-  End - Fin
-  Route - Parcours
-  Stop - Arrêt

0 0.8 1.6 2.4 3.2
 Km

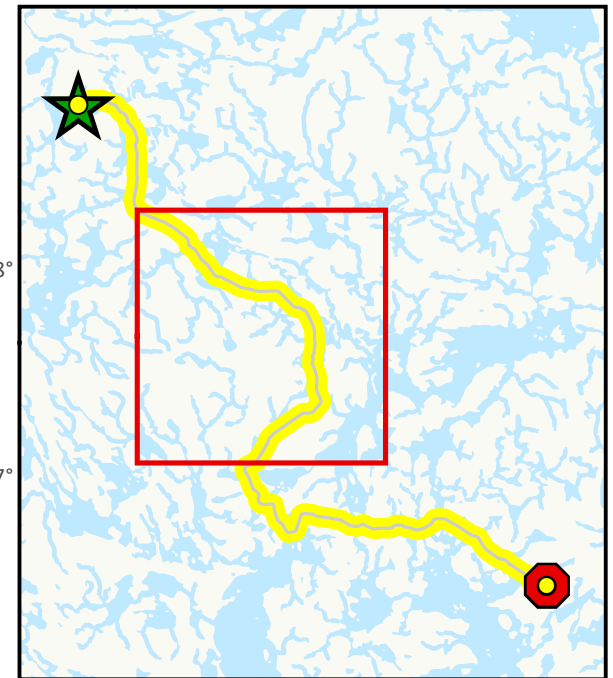
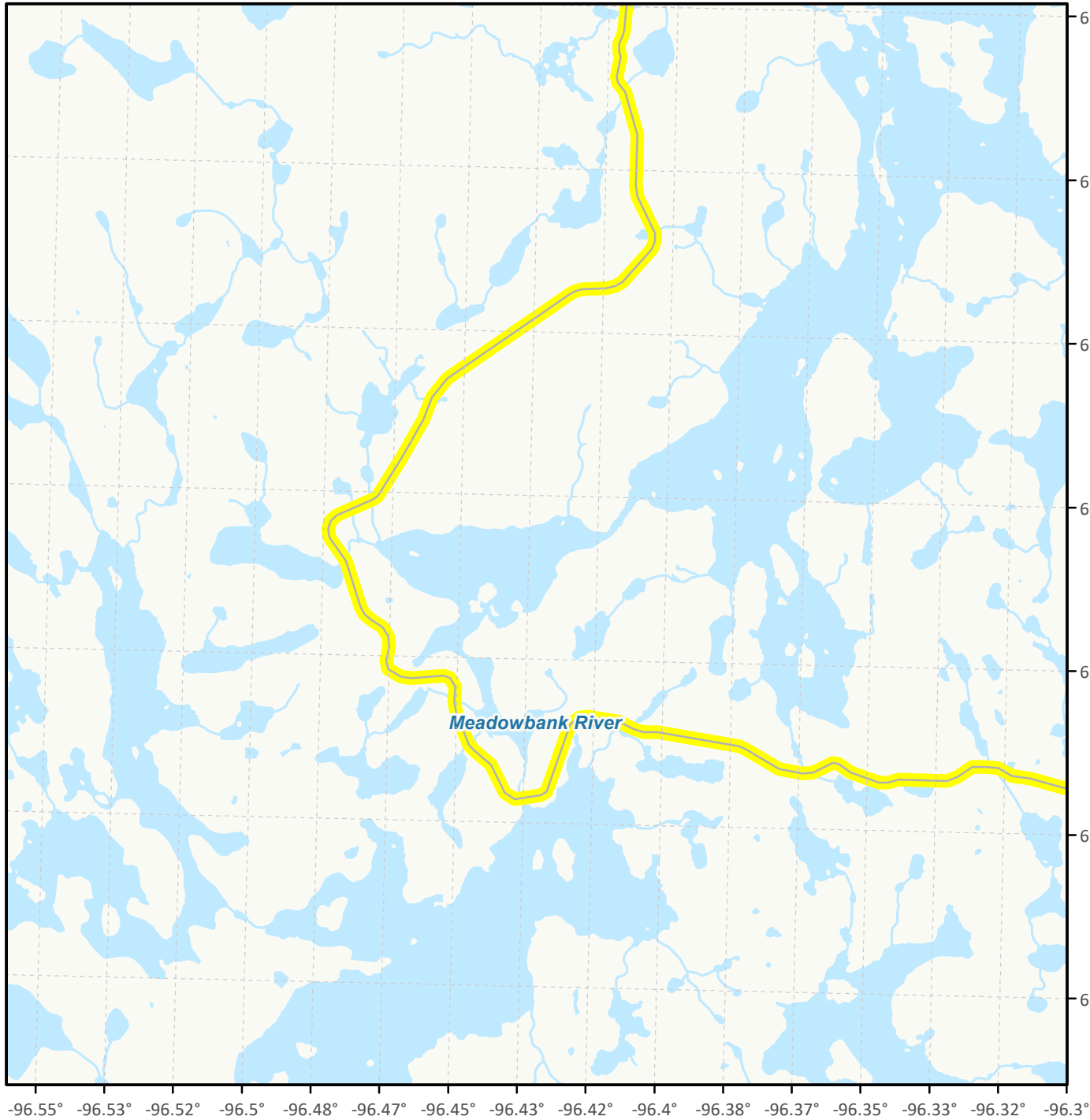


Figure 3.2: Location of the Breeding Bird Survey (BBS) Route Along the Whale Tail Haul Road (WTHR)

Route - Parcours: 62-091 WHALE TAIL MINE





Start time - Heure de départ: 0330




STOPS ARE ONLY SHOWN FOR ROUTES THAT HAVE BEEN GPSed or otherwise identified. If no stops are showing, please submit your GPS coordinates ASAP.

SEULS LES ARRÊTS QUI ONT ÉTÉ LOCALISÉS PAR GPS OU AUTREMENT IDENTIFIÉS SONT INDIQUÉS. Si aucun arrêt n'est affiché, SVP envoyer vos coordonnées dès que possible.

Legend - Légende

-  Start - Départ
-  End - Fin
-  Route - Parcours
-  Stop - Arrêt

0 0.8 1.6 2.4 3.2
 Km

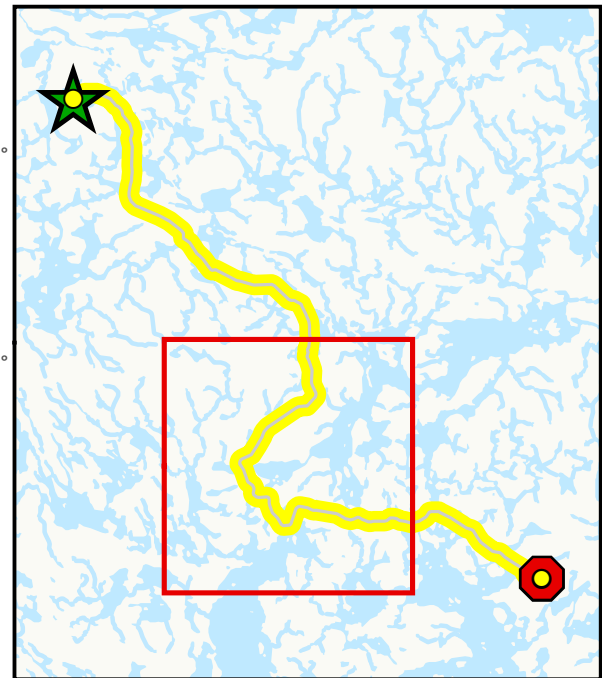


Figure 3.2: Location of the Breeding Bird Survey (BBS) Route Along the Whale Tail Haul Road (WTHR)

Route - Parcours: 62-091 WHALE TAIL MINE

Start time - Heure de départ: 0330



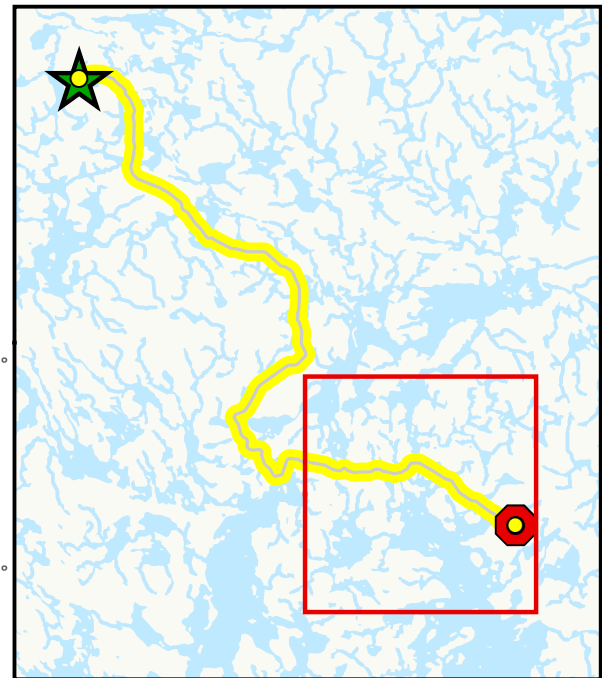
STOPS ARE ONLY SHOWN FOR ROUTES THAT HAVE BEEN GPSed or otherwise identified. If no stops are showing, please submit your GPS coordinates ASAP.

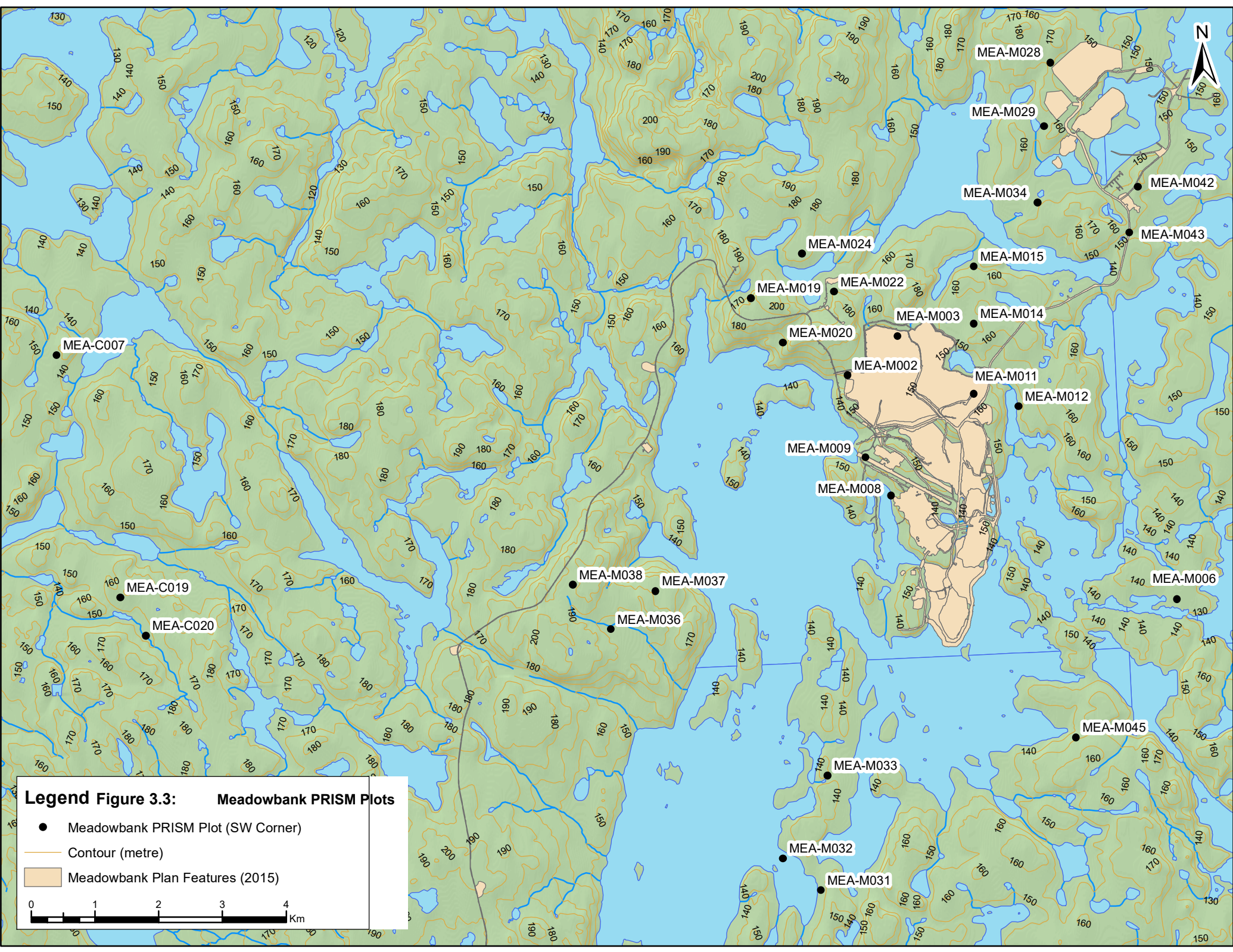
SEULS LES ARRÊTS QUI ONT ÉTÉ LOCALISÉS PAR GPS OU AUTREMENT IDENTIFIÉS SONT INDIQUÉS. Si aucun arrêt n'est affiché, SVP envoyer vos coordonnées dès que possible.

Legend - Légende

- ★ Start - Départ
- End - Fin
- Route - Parcours
- Stop - Arrêt

0 0.8 1.6 2.4 3.2 Km





Legend Figure 3.3: Meadowbank PRISM Plots

- Meadowbank PRISM Plot (SW Corner)
- Contour (metre)
- Meadowbank Plan Features (2015)

0 1 2 3 4 Km

MEA-C007

MEA-C019

MEA-C020

MEA-M038

MEA-M037

MEA-M036

MEA-M009

MEA-M008

MEA-M002

MEA-M019

MEA-M020

MEA-M024

MEA-M022

MEA-M014

MEA-M011

MEA-M012

MEA-M015

MEA-M034

MEA-M043

MEA-M006

MEA-M045

MEA-M033

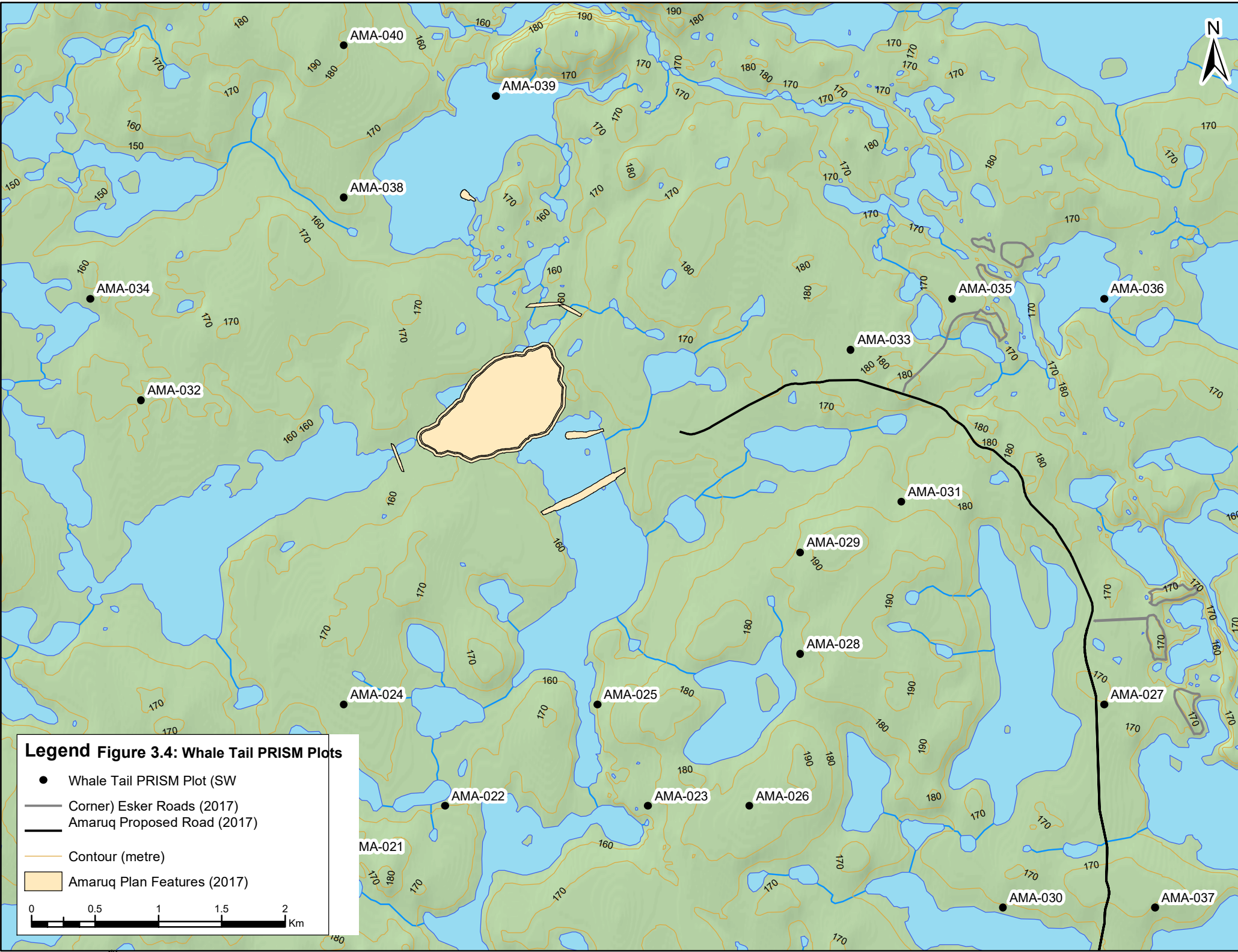
MEA-M032

MEA-M031

MEA-M028

MEA-M029

MEA-M042



Legend Figure 3.4: Whale Tail PRISM Plots

- Whale Tail PRISM Plot (SW)
- Corner) Esker Roads (2017)
- Amaruq Proposed Road (2017)
- Contour (metre)
- Amaruq Plan Features (2017)

0 0,5 1 1,5 2 Km

SECTION 4 • 2022 BIRD SURVEY RESULTS

4.1 BREEDING BIRD SURVEYS (BBS)

Due to a non-work-related medical issue with one of the field biologists, only establishment of BBS route stops (i.e., 50 stops per route) along the Meadowbank AWAR (62049) and WTHR (62091) routes was conducted (see **Table 4.1** for timing of route establishment, **Figures 3.1** and **3.2** for general BBS locations, and **Appendix I** for station descriptions and coordinates).

Table 4.1: Breeding Bird Survey (BBS) 2022 Fieldwork Dates for Meadowbank All-Weather Access Road (AWAR) and Whale Tail Haul Road (WTHR) Routes.

Date 2022	Weather	Observers	Fieldwork Type
June 15	10° C, 40% cloud cover, fresh breeze BF4	Lars Qaqqaq Dylan White	BBS route station establishment for the Meadowbank (62049) and Whale Tail (62091) routes

4.2 PRISM PLOTS

Given the limited field time in 2022 due to a field biologist's medical issue, only four (4) PRISM plots were surveyed in 2022: MEA-M008, MEA-M024, MEA-M032, and MEA-M033 (see **Table 4.2** for timing).

Table 4.2: Meadowbank and Whale Tail PRISM Plot 2022 Fieldwork Dates.

Date 2022	Weather	Obs.	Fieldwork Type
June 14	20° C, 20% cloud cover, gentle breeze BF 2	Lars Qaqqaq Dylan White	PRISM Plots: MEA-M008, MEA-M032, and MEA-M033
June 16	14° C, 50% cloud cover, fresh breeze BF 4	Lars Qaqqaq Dylan White	PRISM Plot: MEA-M024

Seventeen (17) bird and five (5) mammal species were observed during 2022 PRISM plot surveys (**Table 4.3**). Nine (9) of these (5 birds and 4 mammals) were observed incidentally while traveling between plot sampling locations (**Table 4.3**), while the other species were observed while surveying PRISM plots. Species numbers, behaviours and other details have been recorded in the PRISM plot data spreadsheets as per the templates provided by CWS and will be provided to ECCC by March 31, 2023.

Table 4.3: Wildlife Species Observed Incidentally and on Meadowbank and Whale Tail PRISM Plots in 2022.

Common Name	Scientific Name	2022 Observation				
		PRISM PLOTS (MEA-)				Incidental
		M008	M024	M032	M033	
BIRDS						
American Pipit	<i>Anthus rubescens</i>	X	X			
Bald Eagle	<i>Haliaeetus leucocephalus</i>					X
Canada Goose	<i>Branta canadensis</i>		X			
Common Raven	<i>Corvus corax</i>					X
Herring Gull	<i>Larus argentatus</i>					X
Hoary Redpoll	<i>Acanthis hornemanni</i>			X	X	
Horned Lark	<i>Eremophila alpestris</i>	X	X	X	X	
Lapland Longspur	<i>Calcarius lapponicus</i>	X	X	X	X	
Least Sandpiper	<i>Calidris minutilla</i>	X				
Peregrine Falcon	<i>Falco peregrinus</i>					X
Ptarmigan Species	<i>Lagopus sp.</i>				X	
Redpoll Species	<i>Acanthis sp.</i>		X			
Rock Ptarmigan	<i>Lagopus muta</i>			X		
Sandhill Crane	<i>Grus canadensis</i>		X	X		
Savannah Sparrow	<i>Passerculus sandwichensis</i>		X	X	X	
Semipalmated Plover	<i>Charadrius semipalmatus</i>					X
Semipalmated Sandpiper	<i>Calidris pusilla</i>		X	X	X	
Willow Ptarmigan	<i>Lagopus lagopus</i>			X		
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>	X			X	
MAMMALS						
Arctic Fox	<i>Vulpes lagopus</i>					X
Arctic Ground Squirrel	<i>Urocitellus parryii</i>					X
Arctic Hare	<i>Lepus arcticus</i>					X
Barren-ground Caribou	<i>Rangifer tarandus ssp. groenlandicus</i>		X	X		
Muskox	<i>Ovibos moschatus</i>					X

SECTION 5 • RECOMMENDATIONS

In 2023, a minimum of 12 PRISM plots should be surveyed at Meadowbank and Whale Tail Sites between June 15 and 30, 2023, and both BBS routes (Meadowbank AWAR and WTHR) should be surveyed during this June period.

As well in 2023, corner photos need to be taken for all PRISM plots including the four (4) plots conducted in 2022: MEA-M008, MEA-M024, MEA-M032, and MEA-M033.

SECTION 6 • LITERATURE CITED

Rausch, J., and Clyde, N. 2022. The Arctic PRISM Survey Details – For Agnico Eagle Crews to Meadowbank/Amaruq (part of Arctic PRISM Region 6.2).

APPENDIX I

Breeding Bird Survey (BBS) Station Description and Coordinates for the Meadowbank All-Weather Access Road (AWAR) and the Whale Tail Haul Road (WTHR) Routes

BBS STOP DESCRIPTIONS

Meadowbank Mine Route, Nunavut - 62049

Date collected: 06 September 2022

Printed Date: 13 February 2023

Directions to Start: km 49/50 Top of hill, pull off 2 old fuel drums present, overlooking lake valley. Cardinal directions in stop descriptions are based on the road heading generally northbound. In other words, if directly left of road direction, the descriptions here will always say "west" even if it is not true compass west. Road direction should be considered the "N" compass arrow relative to the stop descriptions.

Stop	Description
01	km 49/50 Top of hill, pull off 2 old fuel drums present, overlooking lake valley
02	Just after km 50, top of small rise pull out on the east, gravelly terrain nearby
03	On wide squarish pull-off, ~100 m before km 51, slight rocky rise to the east
04	On wide, rocky, squarish pull-off before top of hill, roundish boulder about 40 m east, rocky hillside to the east
05	Pull off just before and directly facing. Blind hill 53 sign. Squarish bay of lake to the west
06	Pull off at top of hill before, and overlooking, quarry to the N. Small pond to the west
07	Just past km 54 on pull off. Several discrete, somewhat circular rocky patches to the E
08	About 200 m before km 55 at somewhat sunken pull-out on slight rise. Reddish boulders E of pull-out
09	Park km 55. On road opposite a pull out (W). Small pond to the east
10	On pull out about 300 m past km 56 just before road turns to the right/E. Small rise directly east with small lake beyond
11	Pull out beside km 57. Rocky terrain adjacent in all directions
12	Pull out just before top of hill. valley to the east with pond and raised mound beyond. Stop is before quarry
13	On the road across from sunken pull out W. Large view of flat tundra pan to the east with large and small lake
14	On the road opposite a small pull off. Past km 59. Broad view of tundra pan with lakes to E, heath tundra hill to the west
15	On the road at the top of a slight rise, lakes visible to the E and W. No pull offs are adjacent
16	Past km 61 at sunken pull off with light boulder. 20km/h speed limit sign just visible >200 m ahead
17	First pull off past bridge gravelly ridge ahead, large lake to east, pond to west
18	Pull off just past km 63 lake nearby to E and another just visible to the west
19	Pull off just past km 64 at blind hill 65 sign. Broad heath and graminoid to the E and W. Hill to the N
20	Pull off on table land after (i.e. N) of blind hill 65. Lake nearby to the east. Rockpile on near shore of lake to the E
21	At sunken pull off at km 66 (just past), pond to the west, broad heath to the east
22	At pull out just over a small rise and just before km 67. Mound and lake to east, land rises to the west
23	Pull off just past quarry (which is just behind and to the west), large lake to NW lake to NE
24	Large pull off just past small pond (S of point, east of road), large lake visible to west. Lake visible to east
25	Pull off past km 69 and large bridge over large watercourse. Watercourse valley hill to N

26	Pull off just before quarry. Wetland/pond to the east, rocky ridges around quarry to the west ~100 m past km 70
27	Broad view of valley with lake to the west. Heath tundra rise with rocky bands to east.
28	On Road ~150 m before km 72 at top of a small rise. Long lake visible to west isolated rocky mound to the east
29	On road shoulder at top of hill next to sign "Quarry" and a wooden table was there in 2022. Line of reddish rock at quarry's crest with lake beyond
30	Pull out just before bridge, wetland watercourse connecting lakes west and east
31	Pull off just before slight rise broad views to east and west lakes both sides
32	On shoulder where road is wider, past km 75. Boulders to the east broad views all directions
33	On road directly at km 76. Pond to ENE. Broad views all directions
34	On road at height of land. About 50 m before km 77, rocky ridge extends perpendicular to east
35	Pull off with graminoid patches W and rock patches E. Broad views
36	Large pull off at dust collection site (i.e. wooden stands perpendicular to road). Large lake with island to the ESE, between km 78 and 79
37	Large pull off before bridge. Past km 79 Many boulders in all directions.
38	On road directly opposite entrance to quarry. Pond to N
39	Small sunken pull off just before km 81. Large lake to E, lake to west
40	Pull out heath tundra on all sides. graminoids and pond to ENE. Road jobs right in ~250 m
41	On road at culvery part way through large bend in road. Graminoid lowlands running perpendicular from culvert past km 82
42	On road shoulder just before bridge over watercourse
43	On shoulder just before rocky mound (blind spot for traffic) where road turns to the right. Heath tundra to east and west
44	Pull off at top of rise between km 84 and 85 small lake to the east
45	Pull off at top of blind hill 86 between km 85 and 86. Valley with several lakes visible to the WSW
46	At N end of long pull off past km 86. Small ponds ahead on both sides of road
47	Pull off in the midst of rocky terrain. Pary way up climb of hill
48	Pull off just before km 88 nearly at top of climb up heath tundra hill
49	Pull off with small pond just east. Rocky slopes and quarry to the N
50	Pull off just north of quarry past km 89. Meadobank waste piles visible to the NE, lake to west, large lake to east

Stop Coordinates

Route and Stop Coordinates Information

State :	62-Nunavut	Route Name :	MEADOWBANK MINE
Route Number :	049	Method :	Mapping software
Year Collected:	2021	Spheroid :	GRS80
Datum :	NAD83	Reason for Entry :	unknown
Coordinate type :	Decimal Degrees		

Stops	Latitude	Longitude	Precision (meters)	Position Verified by Obsv
1	64.6730860	-96.3713990	3	
2	64.6799680	-96.3731430	3	
3	64.6869340	-96.3760550	3	
4	64.6940400	-96.3793110	3	
5	64.7007070	-96.3775540	3	
6	64.7069360	-96.3718300	3	
7	64.7128460	-96.3587850	3	
8	64.7178550	-96.3476710	3	
9	64.7128460	-96.3587850	3	
10	64.7266850	-96.3559010	3	
11	64.7331670	-96.3578520	3	
12	64.7401290	-96.3559950	3	
13	64.7448980	-96.3656400	3	
14	64.7509280	-96.3689840	3	
15	64.7601460	-96.3581590	3	
16	64.7663880	-96.3506910	3	
17	64.7722930	-96.3435050	3	
18	64.7803360	-96.3448600	3	
19	64.7878580	-96.3381830	3	
20	64.7967780	-96.3404200	3	
21	64.8049930	-96.3343430	3	
22	64.8114540	-96.3271300	3	
23	64.8176880	-96.3267650	3	
24	64.8248150	-96.3211450	3	
25	64.8299960	-96.3126800	3	
26	64.8375090	-96.3165290	3	
27	64.8449120	-96.3197150	3	
28	64.8523630	-96.3236160	3	
29	64.8599950	-96.3245880	3	
30	64.8688070	-96.3257810	3	
31	64.8745780	-96.3291350	3	
32	64.8809160	-96.3375690	3	
33	64.8877930	-96.3455300	3	
34	64.8946550	-96.3396100	3	
35	64.9005970	-96.3294860	3	
36	64.9062040	-96.3196870	3	
37	64.9123670	-96.3099340	3	
38	64.9183340	-96.3047240	3	
39	64.9243460	-96.3015170	3	
40	64.9299360	-96.3097170	3	
41	64.9347970	-96.3119390	3	
42	64.9345830	-96.2985810	3	
43	64.9353950	-96.2854800	3	
44	64.9381980	-96.2678560	3	
45	64.9435970	-96.2542820	3	
46	64.9507430	-96.2498430	3	
47	64.9551920	-96.2354880	3	
48	64.9579210	-96.2209460	3	
49	64.9652960	-96.2181880	3	
50	64.9716410	-96.2213660	3	

BBS STOP DESCRIPTIONS

Whale Tail Mine Route, Nunavut - 62091

Date collected: 06 September 2022

Printed Date: 13 February 2023

Directions to Start: Pull off at km 179 facing southbound along Amaruq Rd. All cardinal directions are given in the following descriptions based on the road being generally southbound. In some cases W of road (i.e. right) may be point N, however it is still described as W or right in all cases. In other words, use the southbound direction of the road as a "S" arrow.

Stop	Description
01	Pull off at km 179 facing southbound along Amaruq Rd
02	Pull off (there are two, use 2nd/southern of the two) rock field W, rock and heath E
03	Pull off part way up the hill after km 178, pond to ESE, esker visible to W
04	Shoulder directly across from pull off just before km 176, lake visible ahead to NW
05	Shoulder near lake edge to the E. Esker saddle and lakes to the W
06	Shoulder at sunken pull off, small lakes/ponds to W. Sand of Quarry visible beyond
07	Last pull off on right side of road before km 174, large stunning esker and lake to the W, heath plateau and lake E
08	Pull off up the rise but still ~150 m shy of km 173, surrounded by rocky uplands small lake SE
09	Shoulder directly at culvert before hill. Rocky watercourse connects lakes to W and E
10	Shoulder directly at culvert partway up hill rocky heath E, eskers and lakes W
11	Pull off past culvert surrounded by rock uplands esker and lakes visible at WSW
12	First pull off after km 170 rocky pond to NW rocky uplands all around
13	last pull off on the right before km 169 large esker and lake to the NW, rocky uplands to the E
14	Shoulder at culvert with rocky hill to the E. Wet graminoid to the NE, 200 m before km 168
15	Shoulder/soft pull off just before quarry. Lake visible W and lake is close to E
16	Shoulder in lowland near rocky flats with watercourse. Lake visible to E and W
17	Pull off past km 166 and quarry at top of rise surrounded by rocky uplands all sides, esker to W
18	Pull off with orange markers with pull off on opposite side. Rocky flats with wet graminoid E, rocky hills W with lake and esker beyond
19	Shoulder with pull off adjacent. Rocky uplands on all sides, lake ahead to NE valley with lake to E
20	Pull off just before km 163, small lake to E, Rocky uplands W
21	Pull off just at, and just past, km 162. Rd bends to the right ahead pond to WSW
22	Large pull off with small pond NE nearby. Rocky uplands all around esker quarry SW
23	Shoulder / on road with pull off on opposite site. 25 m before 160 bridge sign, ~150 m before bridge. Watercourse and pond wrapping from E to NW
24	Pull off near top of the first of a series of climbs. Pull out w orange markers. Large lake to W, lake to SE
25	Shoulder / on road with pull off directly opposites. Rocky uplands. Mid-slope, past bridge, lake past rocky ridge to E

26	Soft/sunken pull off past road-turns-right sign. Rocky uplands lakes visible in valley beyond to E
27	Soft and sunken pull off with lake to SE and large lake to the W. Rocky uplands
28	Pull off , rd turns left and over hill ahead. Extensive rocky uplands, lakes distant to E
29	Pull off past blind hill 155, with orange markers and large boulder. Rolling, rocky uplands all directions lake to N
30	Pull off on rise before larger hill, pond directly W, with lake to NE, rocky hill to E
31	Shoulder after km 153 lakes to SE, E and NE, Rocky uplands to W
32	Shoulder at km 152 marker (directly before this sign), valley with lake to west, small lake E, pond near by east
33	Shoulder just past km 151, just before road-turns-left sign. Valleys with lakes to E and SW
34	Shoulder directly before km 150. Rocky hill to the E and rise to large lake to W
35	Shoulder directly beside road-turns-right sign. rocky upland and large lake to W
36	Pull off with lake to NNE. large lake at W, rocky uplands
37	Shoulder just before first flag after brief road separation. Large bridge is ~400 m NNW rocky hill both E and W
38	Shoulder directly before km 147 lakes to E, Meadowbank River visible to W
39	Shoulder directly opposite pull off with wet rocky gully to the E, road continues up and to the right ahead
40	Pull off directly in front of the quarry access road (i.e. block it), lake downhill to W quarry to E
41	Shoulder nearby but not quite at low point on saddle between lakes E and W. Both sides clearly visible from stop location
42	Pull off mid-slope with lakes at NE, N and W. Rocky uplands throughout
43	Shoulder directly opposite pull off just before blind hill 143 sign, lake to E and more distant to SW
44	Shoulder directly opposite pull off, past km 142, at low point on road, before a climb, lake nearby to E
45	Shoulder just before bridge with watercourse connecting lake W to lake ENE via rocky gully
46	Shoulder with no pull offs adjacent. Perpendicular to west hits a pile of boulders on quarry crest, rocky plateau E, lake ENE
47	Sunken pull off with graminoid tundra E and W, rocky heath NE and N
48	Shoulder opposite a pull off past lake bridge, before blind hill 138, lake to E and W
49	Shoulder opposite pull off on top of blind hill 138, lake on E rocky uplands W
50	Shoulder directly beside road-turns-left sign. Lake nearby to E, rocky hill W with pond/watercourse to NW

Stop Coordinates

Route and Stop Coordinates Information

State :	62-Nunavut	Route Name :	WHALE TAIL MINE
Route Number :	091	Method :	Mapping software
Year Collected:	2021	Spheroid :	GRS80
Datum :	NAD83	Reason for Entry :	unknown
Coordinate type :	Decimal Degrees		

Stops	Latitude	Longitude	Precision (meters)	Position Verified by Obsv
1	65.4027523	-96.6602590	3	
2	65.4051420	-96.6426090	3	
3	65.4022640	-96.6250950	3	
4	65.3966510	-96.6129820	3	
5	65.3919240	-96.6052930	3	
6	65.3843550	-96.6035080	3	
7	65.3772360	-96.6024140	3	
8	65.3700410	-96.6016070	3	
9	65.3626840	-96.6041060	3	
10	65.3570740	-96.5979510	3	
11	65.3544710	-96.5833730	3	
12	65.3513400	-96.5656640	3	
13	65.3472120	-96.5513410	3	
14	65.3416340	-96.5401250	3	
15	65.3359860	-96.5290480	3	
16	65.3297810	-96.5159020	3	
17	65.3272840	-96.5006060	3	
18	65.3245970	-96.4804770	3	
19	65.3238810	-96.4656170	3	
20	65.3228120	-96.4480210	3	
21	65.3173370	-96.4306630	3	
22	65.3126530	-96.4182370	3	
23	65.3045330	-96.4122490	3	
24	65.2967260	-96.4135520	3	
25	65.2888660	-96.4102040	3	
26	65.2819960	-96.4090760	3	
27	65.2751720	-96.4053720	3	
28	65.2711890	-96.4202130	3	
29	65.2649950	-96.4429140	3	
30	65.2603580	-96.4564130	3	
31	65.2538250	-96.4640470	3	
32	65.2484010	-96.4757050	3	
33	65.2409660	-96.4756660	3	
34	65.2341210	-96.4664080	3	
35	65.2315360	-96.4547540	3	
36	65.2261210	-96.4382830	3	
37	65.2208500	-96.4387930	3	
38	65.2209880	-96.4268840	3	
39	65.2274450	-96.4211830	3	
40	65.2263540	-96.4026710	3	
41	65.2254290	-96.3855550	3	
42	65.2227840	-96.3708370	3	
43	65.2225490	-96.3528860	3	
44	65.2220880	-96.3359200	3	
45	65.2234020	-96.3209360	3	
46	65.2219530	-96.3056970	3	
47	65.2237200	-96.2896170	3	
48	65.2266930	-96.2742450	3	
49	65.2246850	-96.2640720	3	
50	65.2205400	-96.2480450	3	

APPENDIX II

Breeding Bird Survey (BBS) Protocols



North American Breeding Bird Survey Instructions and Safety Guidelines

Strict adherence to the rules is essential for proper analysis of results. Please read all instructions and safety guidelines prior to conducting your survey.

BBS Requirements

It is very important **that the observer should know the songs, calls, and visual identification of all species** likely to be encountered. It is advisable, even for experienced observers, to learn the less common species. You can register with [NatureInstruct's Dendroica](#), an interactive website designed to help improve bird identification skills by sight and sound. Also, since identification by songs and calls is required, acute hearing is extremely important. An observer with hearing loss should not be running Breeding Bird Surveys. All new observers must complete the [BBS online methodology training module](#) before conducting their survey.

Scouting Your Route

Much time can be lost due to closed roads, washed out bridges, and wrong turns. The importance of familiarization with the 50 stops and the proper turns before the day of the run cannot be over-emphasized. A scouting trip can save time and frustration, especially for first-time observers or observers starting new routes. Scouting trips are an excellent time to mark stops on the map, record stop descriptions, and/or record stop coordinates. First-time observers should also conduct a test run to get familiar with the BBS protocol and data forms. If the route is far away, try 10 or 20 practice stops somewhere close to home.

When to Run Routes

In Canada, the acceptable dates for running routes are between 28 May and 7 July. In more southern areas, it is preferable to run routes in early or mid-June. In general, it is best to keep the date of your survey as similar as possible between years.

Starting Your Route

Begin at the marked start point on the map (stop number 1). **Do not reverse the route** even if the end is closer to home. At the official starting time, which is pre-printed on the data cover sheet, begin counting birds at the marked starting point. The official start time is always 30 minutes before sunrise. Keep in mind that daylight savings time is often in effect, and local papers and TV stations often give incorrect sunrise data. If you want to confirm your official start time, please contact the national office (BBS@ec.gc.ca). Be at the start point early so that you can get set up (e.g., record weather data and actual start time).

Stop Locations

Stops are generally located at 0.8 km (800 m or ½ mile) intervals. Unfortunately, car odometers vary. The most important issue concerning stops is that **all 50 stops should be made in exactly the same location from year to year.**

If you are running an unmarked route for the first time (i.e., no stops marked on the map and/or stop descriptions available), the best approach is to drive 0.8 km (800 m or ½ mile) between every stop. Important: please make a list of stop descriptions and mark their locations using a GPS unit, so that your stops can be duplicated in the future.

If you have a route map with stops marked on it or a list of stop descriptions available, use those stops regardless of what your odometer says unless the marked stops are entirely unreasonable. If this is the case, please contact the national office (BBS@ec.gc.ca). If a route problem arises, see [Route Problems](#).

It is important that a clear written stop description and accurate GPS coordinates exist for each stop. Please enter or edit your stop descriptions [online](#), ensuring that you update your stop descriptions as ever they change (see [Stop Descriptions](#)). Please collect GPS coordinates and enter them [online](#) (see [Stop Coordinates](#)).

Stop Descriptions

If your route has outdated stop descriptions or does not have any at all, please document them and/or ensure they are up-to-date. Not all subsequent BBS observers on your route will have a GPS unit, so even if exact GPS coordinates are available, stop descriptions should have enough detail that a new observer is able to find the same stop using the written descriptions. Stop descriptions should be updated as necessary whenever major landmarks change along the route. You can enter stop descriptions [online](#) or return hard copies in the mail.

Stop Coordinates

If you are able, please obtain GPS coordinates in **decimal degrees using NAD83** (e.g., 49.1234, -79.12345) for all 50 of your stops. If you are already familiar with your GPS unit, it only takes a few seconds to capture each GPS point so this can usually be done at the same time you run your BBS route (especially if you have an assistant along). However, if you are not familiar with your GPS unit, please do **not** let it interfere with your bird counts. Record the GPS points during your scouting trip instead. **Remember: these GPS points can be collected outside the breeding season as well.** You can enter stop coordinates [online](#) or return hard copies in the mail.

For those of you who would like to collect GPS information but do not own a GPS unit, Environment Canada has several units to lend. Please contact the national BBS office (BBS@ec.gc.ca) or your [regional coordinator](#) for help.

Counting Birds

One and only one observer should count birds. Counting should be done from outside the car but from a stationary point. Every bird seen within 400 m by the one observer, or heard from any location, should be counted during the three minutes at each stop. Do not exceed three minutes even if you are sure a certain “good bird” is there and not calling -- it will probably be recorded some other year, and valid negative data are as important as positive in this survey. Do not stay less or more than three min. **Absolutely no method of coaxing birds should be used** under any circumstances during the three-minute counting periods. This means no “pishing,” tape playbacks or any other method. It is crucial that all surveys be done consistently, because the goal of the survey is to establish a comparison index not an actual count or census. Birds seen between stops or before and after the three minutes or on scouting runs should not be counted, but may be noted in the margin. Such birds are of some interest, but do not spend extra time pursuing them, **as it is important to finish within the time limit**, which should be 4 to 5 hours; bird activity changes drastically after this time. Do

not wait to record birds after the three minutes have been completed; always record as you hear or see the birds. Waiting leads to errors of omission and significantly delays the completion of the survey.

Which Birds to Count

Count every individual (except dependent young including downy chicks of waterbirds and shorebirds) of all species seen or heard during each three-minute period. Estimate flocks too large to count in the brief time they are seen. Do not use check marks even for abundant species; always provide a count. No one will detect all birds within hearing or seeing distance. Hundreds of birds could be present, but not all will be active during each three-minute count. You must not try to guess how many you are missing. **Report only those birds actually seen or heard during the prescribed three-minute stops.** Be careful not to count any individuals known or strongly suspected to have been counted at a previous stop. Any bird known to be a non-breeder (late migrant, injured bird, or summer vagrant) should be included, **but marked on the data sheet as a non-breeder (Mig).** Easily identifiable subspecies of birds, such as Northern Flicker (yellow- vs. red-shafted), Dark-Eyed Junco (Slate-coloured, Oregon, etc.), and Yellow-rumped Warbler (Myrtle vs. Audubon's) should be identified whenever possible. Species recorded that are not already listed on the forms should be added at the bottom. **There is no need to fill in AOU numbers;** we will do that for you. **Any species unusual to the area, whether it appears on the form or not, should be supported by including some details of the observation.**

Counting Vehicles

At the bottom of the field sheets, record the number of vehicles that pass by during each three-minute stop. Treat all motorized vehicles equally; motorcycles, cars, buses, trucks, semi-tractor trailers, etc., each count as one vehicle if they pass by the point while the count is in progress. Count only those vehicles that are on the road where the count is taking place. Do not count vehicles passing by on nearby thoroughfares even if their noise is interfering with your ability to detect birds. If a stop is located at an intersection, count the vehicles traversing both roads during the count. **It is useful if the assistant can count and record the number of vehicles, thereby freeing up the observer to concentrate on the birds. We suggest using a mechanical hand-counter or tallying device to count vehicles.** If a stop is on a heavily traveled road, it is acceptable to estimate the number of vehicles that passed by during the three-minute stop, since counting birds is the primary objective of the survey. In addition, if you feel counting vehicles distracts too much of your attention from the bird survey, forego this step and indicate on the cover sheet that you did not count vehicles.

Excessive Noise

At the bottom of each field sheet there are five bubbles, one bubble for each stop. Fill in a circle completely if you feel constant excessive noise, other than that produced by counted vehicles, is significantly interfering with your ability to hear birds at that stop. Possible sources of excessive noise include, but are not limited to: lawn mowers, oil well pumps, trains, planes, tractors, vehicles on nearby roads, numerous barking dogs, and rushing river water. Do not fill in the circle if the disturbance is temporary (lasts < 45 seconds) or if you are able to temporarily suspend the count until the offending noise has ceased or moved on.

Acceptable Weather

To be comparable, routes must be run under satisfactory weather conditions: good visibility, little or no precipitation, light winds. Occasional light drizzle or a very brief shower may not affect bird activity but fog, steady drizzle, or prolonged rain should be avoided. Except in those prairie provinces where winds normally exceed Beaufort 3 (13-19 km/h; 8-12 mph), counts should preferably be made on mornings when the wind is less than 13 km/h (8 mph) and not done if the wind exceeds 19 km/h (12 mph). If you can walk faster than the

wind is blowing, wind conditions are very satisfactory. See [Wind Speed Codes](#) and [Sky Condition Codes](#) for more information.

Wind Speed Codes

Enter Beaufort Numbers on the cover sheet, as well as every 10 stops or if there is a marked change in conditions. Do not use mph or km/h.

Beaufort code	Indicators of Wind Speed	Wind speed km/h	Wind speed mph
0	Smoke rises vertically	< 2	< 1
1	Wind direction shown by smoke drift	2 - 5	1 - 3
2	Wind felt on face; leaves rustle	6 - 12	4 - 7
3	Leaves, small twigs in constant motion; light flag extended	13 - 19	8 - 12
4	Raises dust and loose paper; small branches are moved	20 - 29	13 - 18
5	Small trees in leaf sway; crested wavelets on inland waters	30 - 38	30 - 38

Sky Condition Codes

Enter these Weather Bureau code numbers on cover sheet, as well as every 10 stops or if there is a marked change in conditions.

Sky condition code	Indicators of sky condition
0	Clear or a few clouds
1	Partly cloudy (scattered) or variable sky
2	Cloudy (broken) or overcast
4	Fog or smoke
5	Drizzle
7	Snow
8	Showers

Route Problems

Scouting your route beforehand should eliminate most last-minute adjustments. If any problems arise, **notify the national office** (BBS@ec.gc.ca) as soon as possible. If it is not possible to scout a route and a problem arises while running it, remember that it is most important to use the **same stops in the same order as in previous years**. If a detour is necessary, go around and resume on the other side of the obstruction, attempting to preserve as many stops as possible. **Do not make new stops** along the detour unless necessitated by inaccessible sections of road or if detouring around will take in excess of an hour.

There are numerous local traffic regulations dealing with the proper and safe parking of vehicles along roadsides. Please observe these regulations while conducting your Breeding Bird Survey. Remember to use caution in selecting an appropriate stopping place, and when getting in and out of your vehicle. If a stop is in a dangerous location, it is acceptable to move it as much as 160 m (or 0.1 miles) forward or backward, or to put it on a side road. If this does not resolve the safety problem, skip the stop and contact the national office (BBS@ec.gc.ca). **Never stop at a location you consider to be dangerous in any way.** Counting may be extended

by 1 minute at stops with excessive traffic noise. This should be restricted to only a few stops; if many stops have excessive traffic, notify the national office. In some cases, a replacement route will have to be developed.

BBS Cover Sheet

Always complete and mail in the cover sheet of the field sheet form regardless of whether you are planning to enter your data online or planning to mail it in. Be sure to **furnish all the summary information requested on cover sheet**; including date, time and weather data. Please enter only one number or letter per block (start the date and starting time entries with a "0"). Please print plainly with a dark pencil or pen, but not a felt-tip marker, because all information must be scanned. The observer refers to the name indicated at the bottom of the sheet, not the driver or the recorder. Two people should not observe together and take turns putting each other's name in the observer block from year to year. Before submitting the cover sheet, always verify the address indicated on the front and answer the questions listed by filling in the bubble corresponding to the correct response (Y= Yes and N = No). When updating the address, always use CAPITAL letters and place one character per box. If surveying multiple routes, it is only necessary to update the address on one cover sheet.

Submit Data Online

Please submit your data [online](#). Note that you will still need to mail in your cover sheet (See [BBS Cover Sheet](#)) and your original data sheets (i.e. those used in the field) to Environment Canada's Canadian Wildlife Service BBS office using the postage-paid return envelope after you have entered your data.

Submit Data by Mail

Observers without internet access can mail completed data forms to the Canadian BBS office using the postage-paid return envelopes. If you choose to mail your completed data forms to the BBS office for entry, remember that all data must either be recorded directly to the scan forms in the field or transcribed to the scan forms from your own field sheets. You must submit your data using **Arabic numerals** (i.e., 1, 2, 3, ..., 15, 16, etc.). Print **firmly** with **dark** pencil or ink pen, write legibly, avoiding contact with edges of entry boxes. Do not obscure or mar the black cornerstones or identification boxes at the top left corner of the pages. **Do not use a felt-tip pen**; the ink is not waterproof so it smudges, washes out easily and makes corrections difficult. There is no need to fill in missing AOU numbers or staple the data sheets together. **Missing species may be written in lower case letters and abbreviated.**

If using any other method to record individuals (hash marks, dots, etc.), please use your own data sheets (or make a photocopy of the scan form for use in the field) then transfer the species data to the scan form using Arabic numerals before sending it in. Please double-check the transfer of data; we have found that many observers inadvertently omit information when transferring. For this and other reasons, always send **both sets of data sheets** to our office. Also, keep a photocopy of the original data sheets for your records; you will need the photocopy to check against the results we will send you at the end of the year and as insurance against lost mail.

Dictating Observations to a Tape Recorder

It is risky to record data by dictating observations to a tape recorder because the data can easily be lost by one sort of malfunction or another. Transferring the taped data is tedious and also subject to error. Another problem is that the tape is technically the original field sheet and it would be unreasonable for people to send us tapes. If you must use a tape recorder, indicate this on the assistant line and please be careful. With practice, an observer can easily count and record birds on the field sheet alone.

All Forms Must be Completed and Returned by August 31

Please use the provided pre-paid, pre-addressed envelope to return your **car sign, field sheets** (representing 50 stops), **cover sheet, route map** and **stop descriptions** each year. Please keep a copy of your bird data so that you can check the computer printout that will be sent at a later date. If you cannot run your route, please return the packet as soon as possible. **If you cannot cover your route during the prescribed period, please inform the [Provincial/Territorial Coordinator](#) or the national office (BBS@ec.gc.ca) as soon as possible.**

Processing Results

Upon receipt of the forms, the cover and field sheets are checked for completion and addresses are checked. Data from the cover and field sheets are then scanned into the computer and run through a computer edit program. A link to your data will be emailed to you for verification. Data are then posted to the [BBS website](#).

Income Tax Deduction

It is not possible for Environment Canada's Canadian Wildlife Service to reimburse expenses or to issue tax receipts for participation in the BBS. However, out-of-pocket expenses for running a BBS route can be treated as a charitable donation through the non-governmental organization **Bird Studies Canada (BSC)** and participants can thereby receive income tax receipts. Please note: this system provides **a tax receipt only** and is not a reimbursement of expenses. Participants submit a record of their expenses along with a cheque, **payable to Bird Studies Canada**, of an amount equaling the expenses. BSC then treats the cheque as a donation and issues the participant a tax receipt. Along with the tax receipt BSC sends the participant a cheque equaling the amount of the donation. Cost of motels, campgrounds, meals, mileage, etc., involved with the scouting and running of official Breeding Bird Survey routes can be included in these costs. For details, see the **BSC Volunteer Support Form** enclosed in your package. Please return your completed Volunteer Support Form **to the Canadian BBS office by October 15** each year. We will process the request and then forward it to Bird Studies Canada.

Equipment Checklist

- Clipboard
- Pencils (dark, soft lead)
- Gasoline
- Hand counter or mechanical tally device
- Binoculars
- Thermometer
- Flashlight
- Watch with second hand (or timer)
- Data forms and/or field sheets
- Route Map & Stop Descriptions
- GPS unit

Breeding Bird Survey Safety Guidelines

We hope that your Breeding Bird Survey is filled with beautiful sunrises, breathtaking wildlife sightings, and wonderful birdsong. However, you may also have less pleasant experiences on your route. Hazardous route conditions, car breakdowns, bears or other potentially dangerous wildlife (including humans!), mosquito bites, dehydration, sun overexposure, and sleep deprivation are all possible along your BBS route. In order to reduce the risk of these incidents, we ask that you and your assistant familiarize yourselves with the suggested safety precautions outlined below.

Personal health

- Wear sun and insect protection, including sun block, insect repellent, hat, and protective clothing.
- Be aware of West Nile virus precautions. Get more information on the [use of insect repellents](#).
- Bring drinking water and food. In the event of a delay, you will be much more comfortable after a snack and a drink!
- Be aware of your own personal limits. Postpone the survey if you are feeling unwell or are under the effects of medication or other substances which could impair your judgment.

Car safety

- Ensure that your car is in safe working condition and your gas tank is full before you leave home for your route.

Traffic hazards

- Abide by all traffic regulations and laws.
- Be especially aware of and alert to oncoming traffic while you are doing your point count. Keep to the side of the road, and step off the road if a car is approaching.
- Wear a fluorescent safety vest (one is provided to each new participant).
- Assess pullover areas for safety at each stop. Look for traffic hazards, wild animals, and suspicious-looking persons. If you feel that it is not safe to pull over, you can either move 160 m (or 0.1 miles) forward, backward, or on an available side road, or skip the stop altogether.
- It's an early start! Get a good night's sleep, and do not drive if you are feeling drowsy.

Road conditions

- Do **not** continue your route if road conditions are hazardous (e.g., washed out road, fallen trees blocking the path). Halt the survey and, if possible, try again on a later date.
- If it is unlikely that conditions will change during the season (e.g., bridge washed out, road consistently unmaintained or closed, traffic consistently too heavy), [contact your national or provincial coordinator for advice](#).

Emergency contact

- Be sure to let someone else know your departure and arrival times, your route, and the location of your overnight accommodation if you are going to your route vicinity the night before your survey.
- Bring a cell phone for emergencies, but remember that more remote routes may not be within range of your cell phone service.
- Consider bringing an assistant. In the event of an emergency, two heads are better than one. As a fringe benefit, with your encouragement, an assistant may become a future BBS participant.

Respect all private property and laws.

APPENDIX I

Caribou Behaviour Monitoring



Meadowbank Gold Mine

Caribou Behaviour Study, 2022

March 2023

Project No.: 0656774-01

March 2023

Meadowbank Gold Mine

Caribou Behaviour Study, 2022

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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 Project) 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 Project area, regularly crossing through the Project 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 Project on caribou. The Agnico Eagle Terrestrial Ecosystem Management Plan (TEMP; 2019) includes behaviour monitoring for caribou.

Behaviour monitoring was conducted in 2020, 2021, and 2022. 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 Qaujijamajatuqangit (IQ), Traditional Knowledge (TK) and western science applications to mitigation and monitoring programs for the Meadowbank Mine, including on caribou movement in the project area. Following the discussion of the caribou behaviour survey results in 2020 and 2021, 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 2022 data collection process and analysis.

Field surveys were conducted primarily during spring and fall migration 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.

The behaviour monitoring data from 2022 were combined with data from 2020 and 2021, and all results outlined in this report use all three years, unless otherwise stated. The key findings from the 2022 program were similar to 2020 and 2021, and included:

- The standard monitoring protocols adapted from the GNWT ENR worked well at the Project site.
- 104 surveys were conducted in 2022, compared to 134 in 2021 and 116 in 2020; 63 surveys occurred during spring migration from March to May, 18 occurred during calving and summer from June to August, and 23 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. Only five groups larger than 100 individuals were recorded within 100 m of the road at the start of the survey, two in 2021 and three in 2022.
- Caribou group size was not linked to response behaviour or walking behaviour in statistical analyses.
- Statistical analysis indicated that there is a trend for caribou at greater distance from the road (>1,000 m) to have a lower proportion of response behaviours (alert and running) than caribou within 100 m of the road.

- Approximately 54% 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 one or two sampling intervals (i.e., three or six 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, however, disturbances did not statistically affect the proportion of caribou walking.
- Surveyors conducted nine special 90-minute surveys during convoys in 2022 and nine in 2021, to assess whether the response to convoys was similar to that of other vehicles. Caribou responded similarly to convoys but possibly for longer than for other vehicles. More convoy surveys are needed to analyse the data statistically.
- During periods when large groups of caribou are present, the AWAR and Haul Roads 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, possibly due to it having less explanatory power than the other variables included.
- 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 Terrestrial Ecosystem Management Plan (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 disturbances did not have a detectable effect on caribou behaviour after three to six minutes post-disturbance, suggesting that caribou behaviour returns to baseline relatively quickly following a disturbance. The updates applied to the survey protocol in 2021 and 2022 used feedback from the first year of data and analysis, and were helpful in improving the overall quality and accuracy of the data. Interestingly, even with these changes, the trends in the results were highly consistent between the three years of data. This increases the confidence that trends are repeatable year to year.

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ACRONYMS AND ABBREVIATIONS

Agnico Eagle	Agnico Eagle Mines Ltd.
AIC	Akaike information criterion
ATV	All-terrain vehicle
AWAR	Meadowbank Mine All Weather Access Road
CIRNAC	Crown-Indigenous Relations and Northern Affairs Canada
COSEWIC	Committee on the Status of Endangered Wildlife in 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 Project	Meadowbank Gold Mine
TEMP	Meadowbank Mine Terrestrial Ecosystem Management Plan
WTHR	Whale Tail Haul Road

1. PROJECT OVERVIEW

The Agnico Eagle Mines Ltd. (Agnico Eagle) Meadowbank Gold Mine (the Project), located in the Kivalliq Region of Nunavut (Figure 1-1), received a Project Certificate (#004) from the Nunavut Impact Review Board (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 CIRNAC Land Lease, and the Kivalliq Inuit Association (KivIA) Production Lease, allowed development of five gold deposits in the 11 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 All-Weather Access Road (AWAR), Whale Tail Haul Road (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 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 in 2020, 2021, and 2022 at the Meadowbank Gold Mine, AWAR, and WTHR to monitor for potential Project 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 Project to have a Terrestrial Ecosystem Management Plan (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 Division TEMP (Agnico Eagle 2019) is designed to meet this condition. The TEMP includes a survey program for caribou that records caribou behaviour in response to various disturbances.

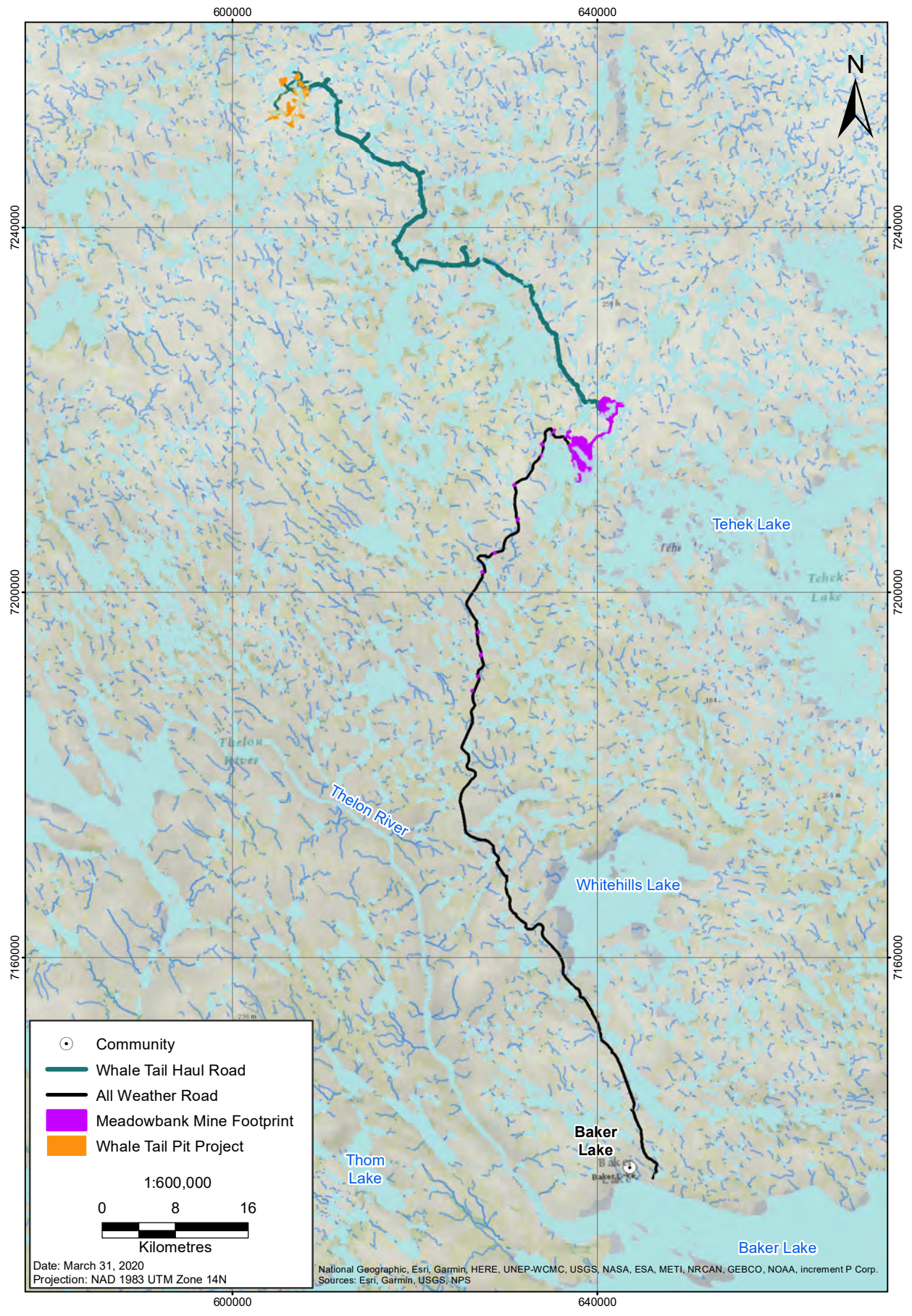


Figure 1-1: Location of Meadowbank Gold Mine and Whale Tail Pit Project

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 change with distance from the mine, and to document caribou response to stressors.

The detailed objectives of the 2022 study were:

1. To conduct a study using behaviour survey methodology at the Project site to estimate how the roads and other site infrastructure may contribute to the effects of the Project 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 Project Area: Lorillard, Wager Bay, Qamanirjuaq, Beverly, and Ahiak. Primarily, caribou from Lorillard herd interact with the Project, and smaller numbers of caribou from the Ahiak and Wager Bay herds interact with the Project. 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 2022 (GN DOE 2022). 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 the Project 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 Project, 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 Qaujimagatuqangit (IQ), Traditional Knowledge (TK) and western science applications to mitigation and monitoring programs for the Meadowbank Mine, including on caribou movement in the project area. Members of the group include the Government of Nunavut (GN) and the Kivalliq Inuit Association (KivIA) and the Baker Lake Hunters and Trappers Association (HTO). Following the 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 2022 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 Project 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 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. 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 mainly during the spring migration when the largest number of caribou pass through the Project area but were also conducted opportunistically during summer and fall migration.

A reconnaissance survey was first conducted to identify where caribou groups were located. Where multiple groups were observed, surveyors chose which group to sample using a random number table, 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 (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 three 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 a different program, developed in collaboration with the TAG. 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. These are explored visually in the results, but were not analysed in a separate statistical analysis due to the small sample size.

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 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. 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. 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. To reiterate, each survey consisted of 11 observations: Minute zero plus 10 three-minute time intervals, totalling one 30-minute survey. Three dependent variables were tested:

1. The first dependent variable tested was the proportion of response behaviours in each time interval, modelled using a binomial distribution.
2. The second dependent variable tested was the proportion of walking and response behaviours behaviour in each time interval, modelled using a binomial distribution.
3. A third dependent variable was developed to track the number of minutes it took caribou to return to background behavior levels every time there was a disturbance. In order 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 with the level observed in the interval before the disturbance ($\pm 5\%$). This variable, called “duration of response”, was assessed for each survey and modelled with a normal distribution.

The three 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 a binary variable identifying 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. 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.

A random effect was included for survey ID, because the three-minute intervals within each 30-minute survey are interrelated.

Because the proportion of responding caribou in a given interval is potentially linked to the conditions in the intervals before, two additional binary variables were added identifying whether a disturbance occurred in the interval prior, and whether a disturbance occurred two intervals prior. This accommodation for a six minute “lag” was sufficient for most disturbance events, which typically did not result in a response longer than three minutes. Lastly, the survey ID was added as a random effect to account for general behavioural differences between groups of caribou surveyed.

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’.

6. RESULTS AND DISCUSSION

6.1 Caribou Distribution relative to the Project

During spring migration in the three years surveyed (2020-2022), caribou GPS collar locations were provided to Agnico Eagle. These data indicated when caribou were approaching the Project site. Viewsheds or road surveys were conducted as required by Agnico Eagle environment technicians 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.

6.2 Caribou Behaviour Field Surveys

In total, 104 behaviour surveys were conducted in 2022 when groups of caribou were near the Project (Table 6.2-1), including 63 surveys in spring migration, 18 surveys in calving and summer, 23 surveys in fall migration, and one in winter. This is compared to the 134 total surveys completed in 2021, including 114 surveys in spring migration, 15 surveys in calving and summer, and five surveys in fall migration. In 2020, there were 116 total surveys completed, including 71 surveys in spring migration, 31 surveys in calving and summer, and 14 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.

Overall, the survey methodology worked well for the Project location and circumstances, and the survey results were generally consistent between years. All reported results use the combined data from 2020 to 2022, unless otherwise stated. General observations on survey methodology and results included:

- Surveys were well distributed across a range of group sizes (Table 6.2-1). 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 354 surveys, more than half recorded at least one disturbance during the survey (Table 6.2-1). 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. Mine traffic was suspended for both roads during periods when groups of caribou were near the road.
- In total, 57% of disturbances were from heavy vehicles (including haul trucks, tractor trailers, fuel trucks, and graders), 33% were from light trucks, 5% were from ATVs, 3% were from blasts, and 2% 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 two years of data to be analysed together.

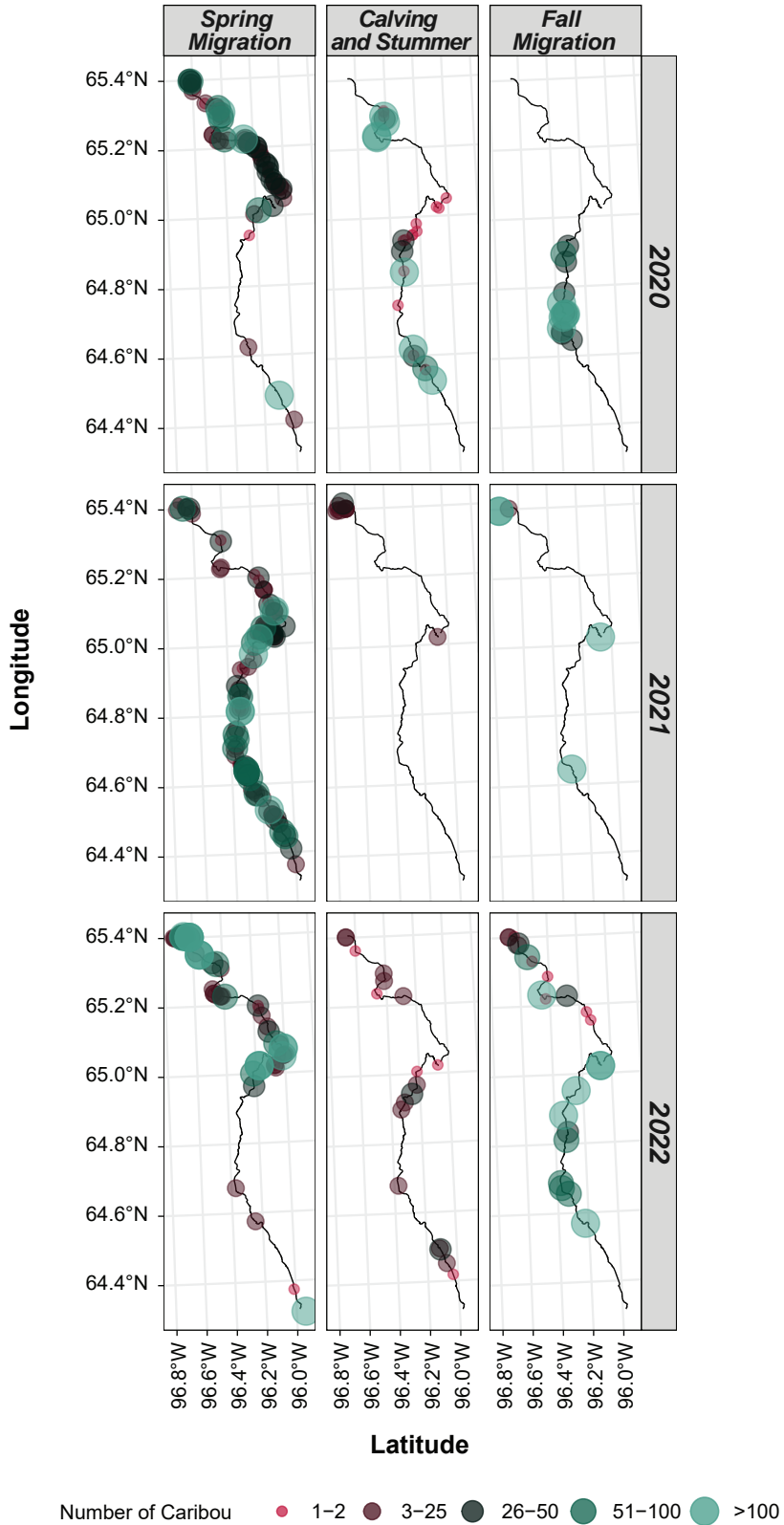


Figure 6.1-1: Locations of Behaviour Surveys by Date

- 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.
- 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, and in 7% of surveys in 2022. This occurred primarily in small groups of less than 25 individuals. In total, 11 crossings occurred during road closures, three during speed restrictions, and four 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 Project infrastructure (Table 6.2-2). 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 Project infrastructure, respectively. In summer and fall of 2021 the opposite trend was true (Table 6.2-2). This inconsistency may reflect the smaller sample size in the later seasons in 2021.

Table 6.2-1: Meadowbank Complex Caribou Behaviour Surveys Data Summary, 2020 to 2022

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
1-2	67	28	15	1	23	15	0	16	10	1
3-25	142	35	22	1	63	35	2	44	28	3
26-50	60	28	13	2	21	9	0	11	4	0
51-100	38	9	5	0	17	9	0	12	3	1
>100	47	16	13	1	10	6	4	21	5	2
Total	354	116	68	5	134	74	6	104	50	7

Notes:

Grey shading is used to visually group survey years.

Table 6.2-2: Summary of Spatial Distribution of Surveys

Season	Surveys of Caribou on East Side of the Project Infrastructure 2020	Surveys of Caribou on West Side of the Project Infrastructure 2020	Surveys of Caribou on East Side of the Project Infrastructure 2021	Surveys of Caribou on West Side of the Project Infrastructure 2021	Surveys of Caribou on East Side of the Project Infrastructure 2022	Surveys of Caribou on West Side of the Project Infrastructure 2022
Spring Migration	12	46	23	89	13	47
Calving/ Summer	11	7	3	12	15	12
Fall Migration	10	3	1	4	16	6
Total	33	56	27	105	45	56

Notes:

Side of the road data was not recorded in 27 surveys in 2020. It was recorded in all surveys in 2021.

The “upstream” side of the road is based on the dominant direction of travel and is indicated with grey shading.

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. Finally, the results of the 18 convoy surveys conducted in 2021 and 2022 are explored in Section 6.3.8.

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. 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.

In 2021 and 2022, 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 five groups larger than 100 individuals were recorded within 100 m of the road at the start of the survey, 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).

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.

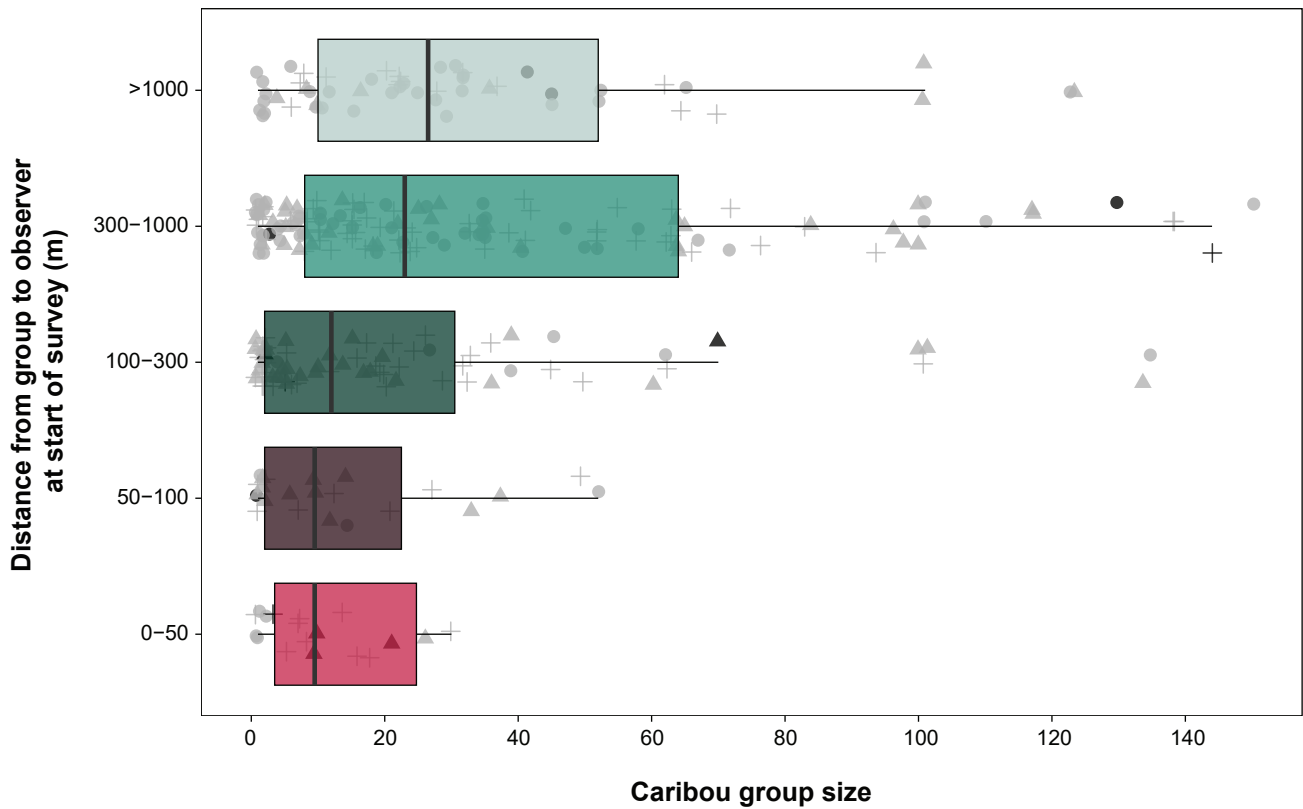
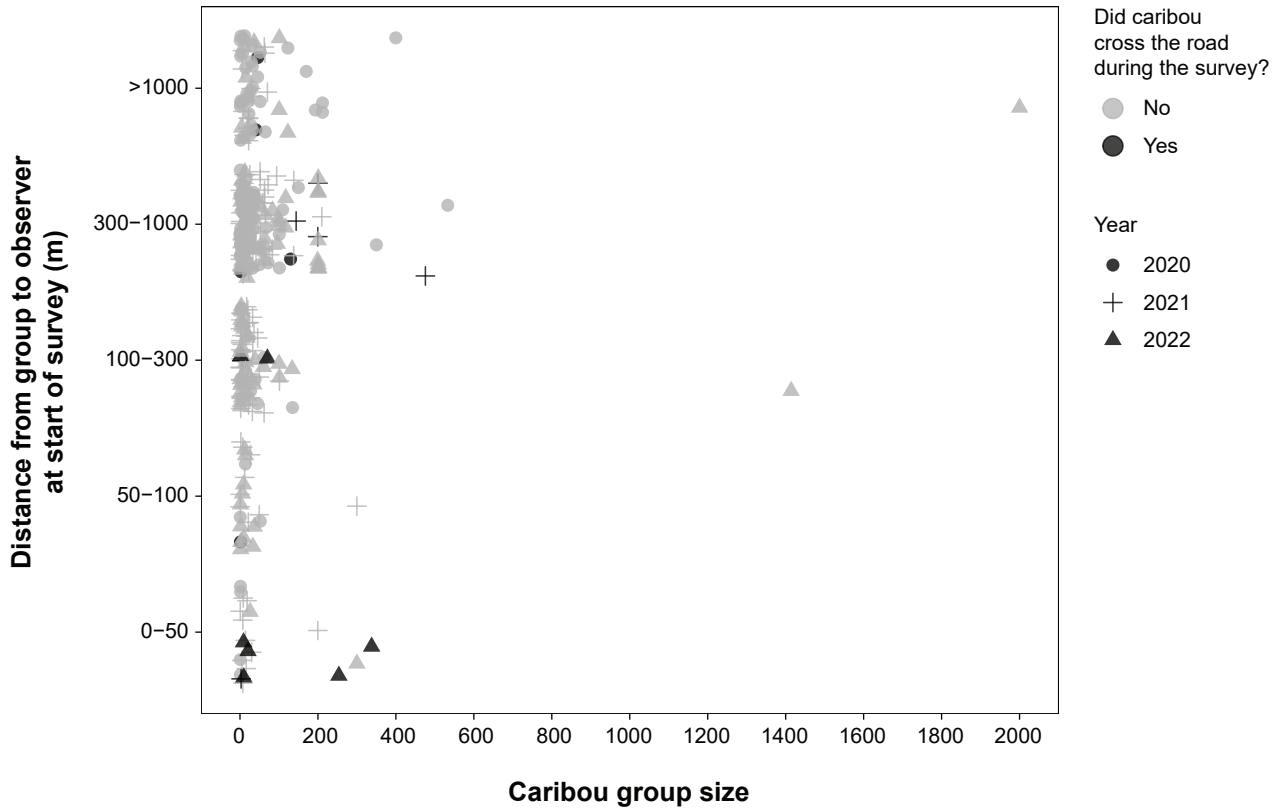


Figure 6.3-1: Caribou Group Size versus Distance from the Caribou to the Road

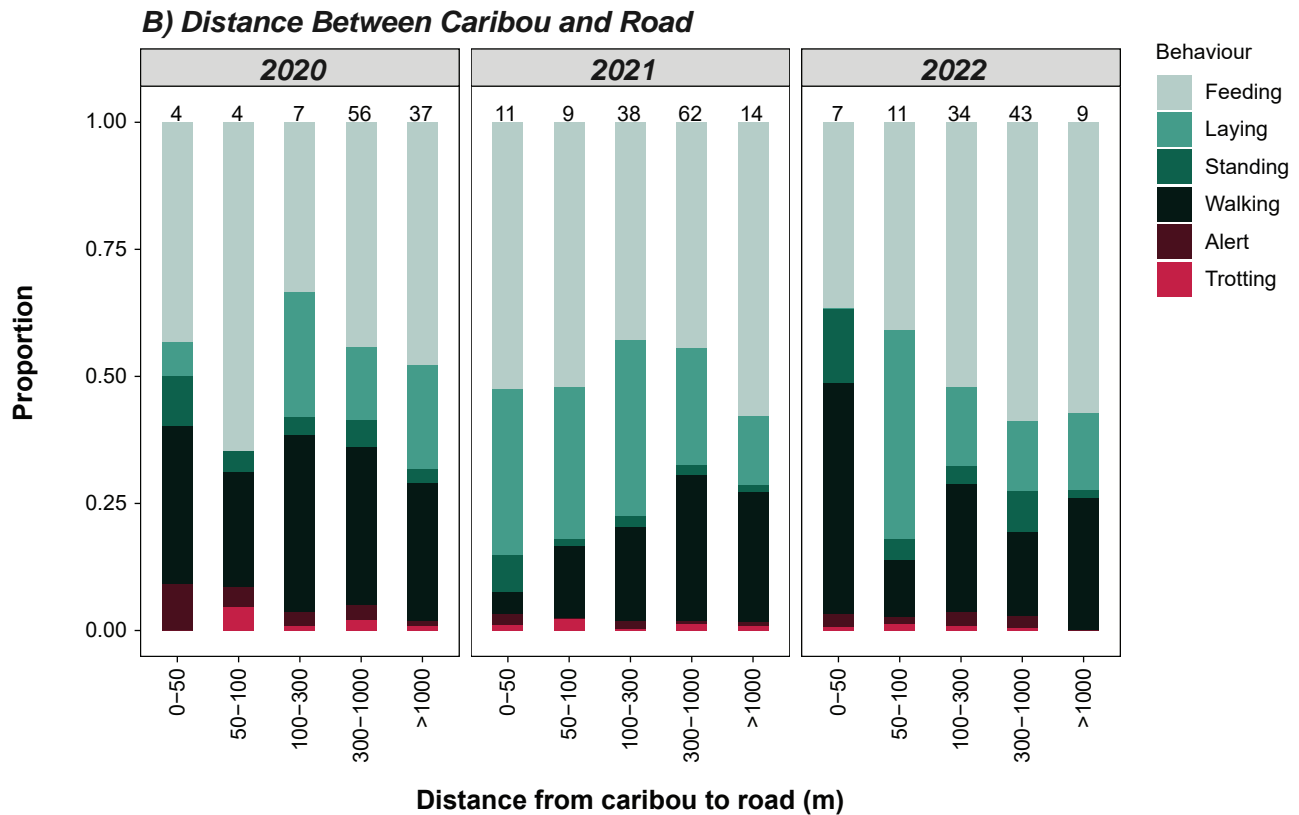
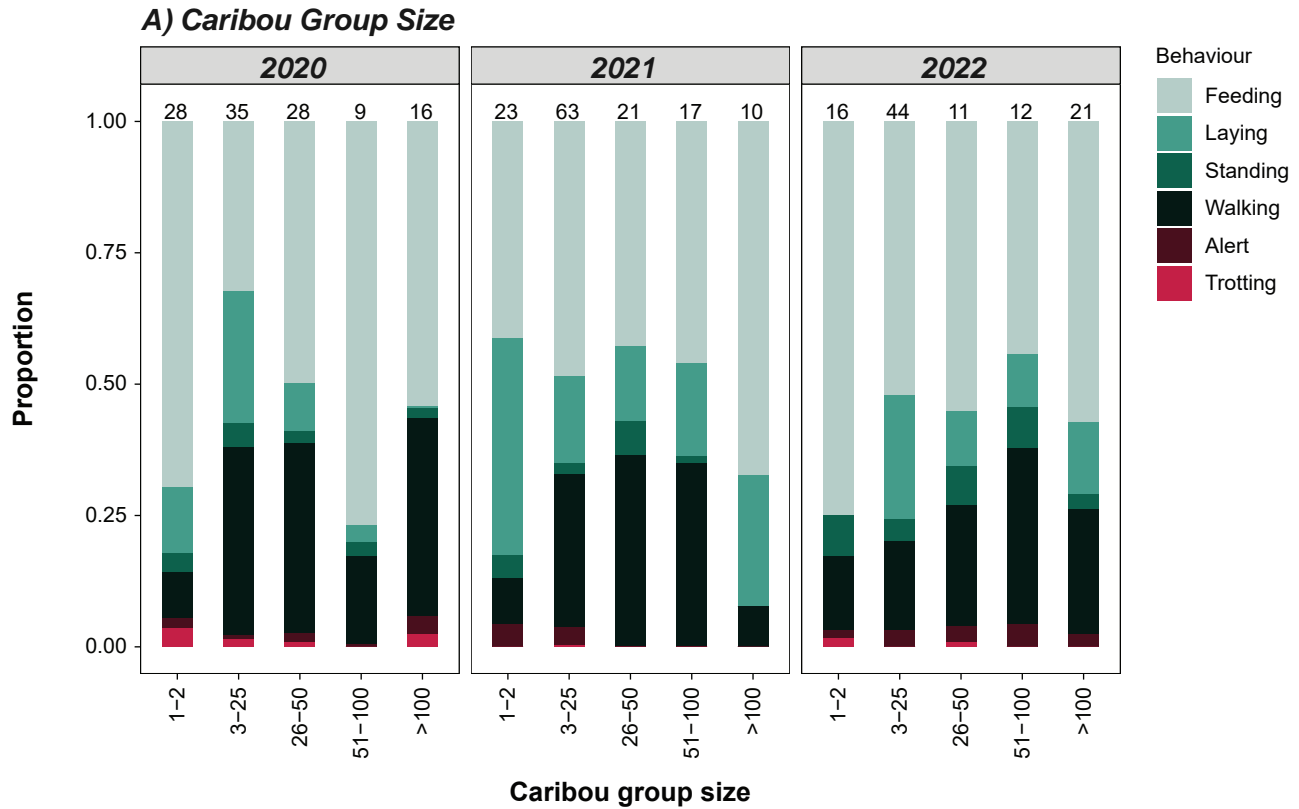


Figure 6.3-2: Average Proportion of Each Behaviour Type Observed

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 (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.

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 11% 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 Project 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. This is explored further in the statistical analysis.

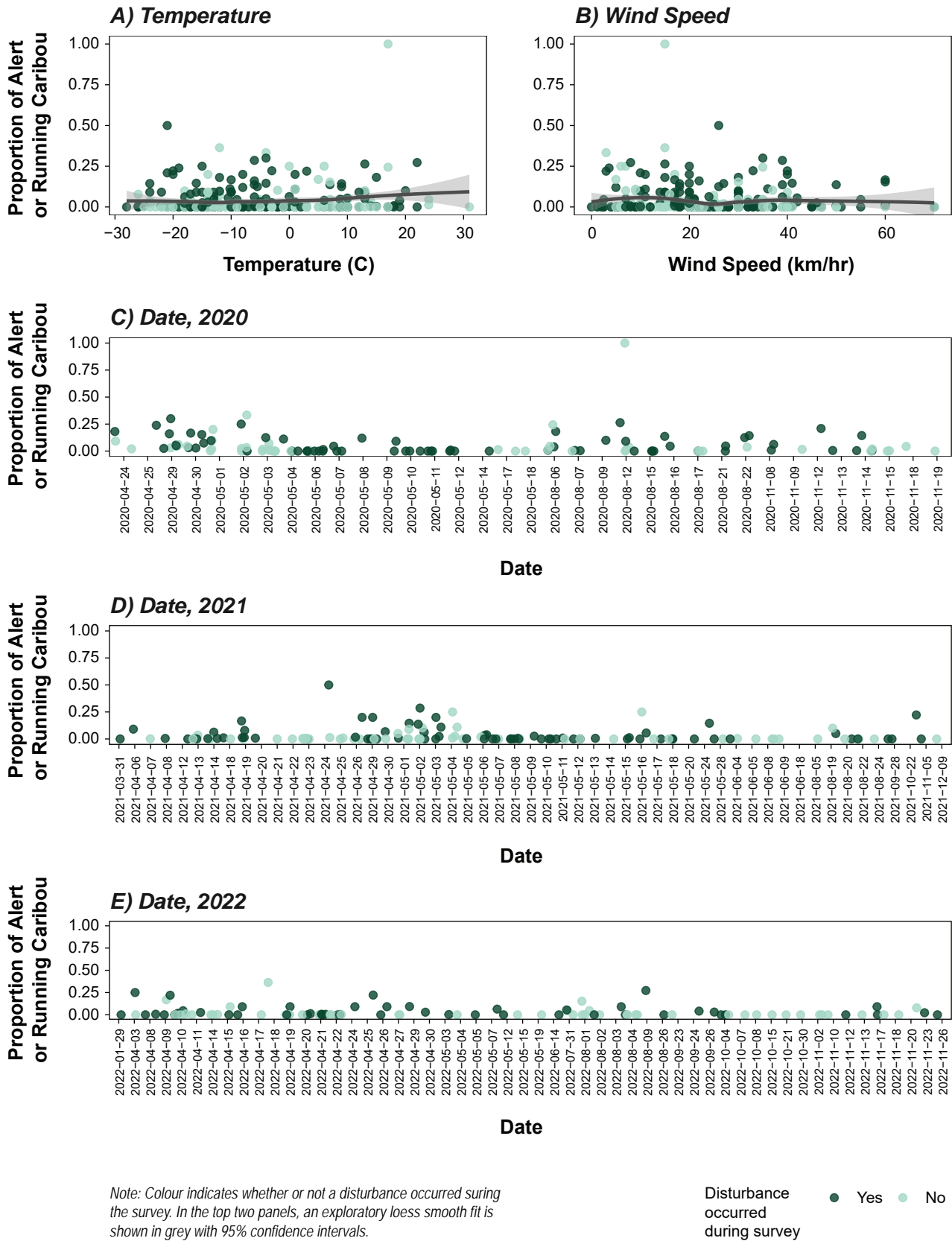


Figure 6.3-3: Proportion of Alert or Running Caribou by Temperature, Wind Speed and Date

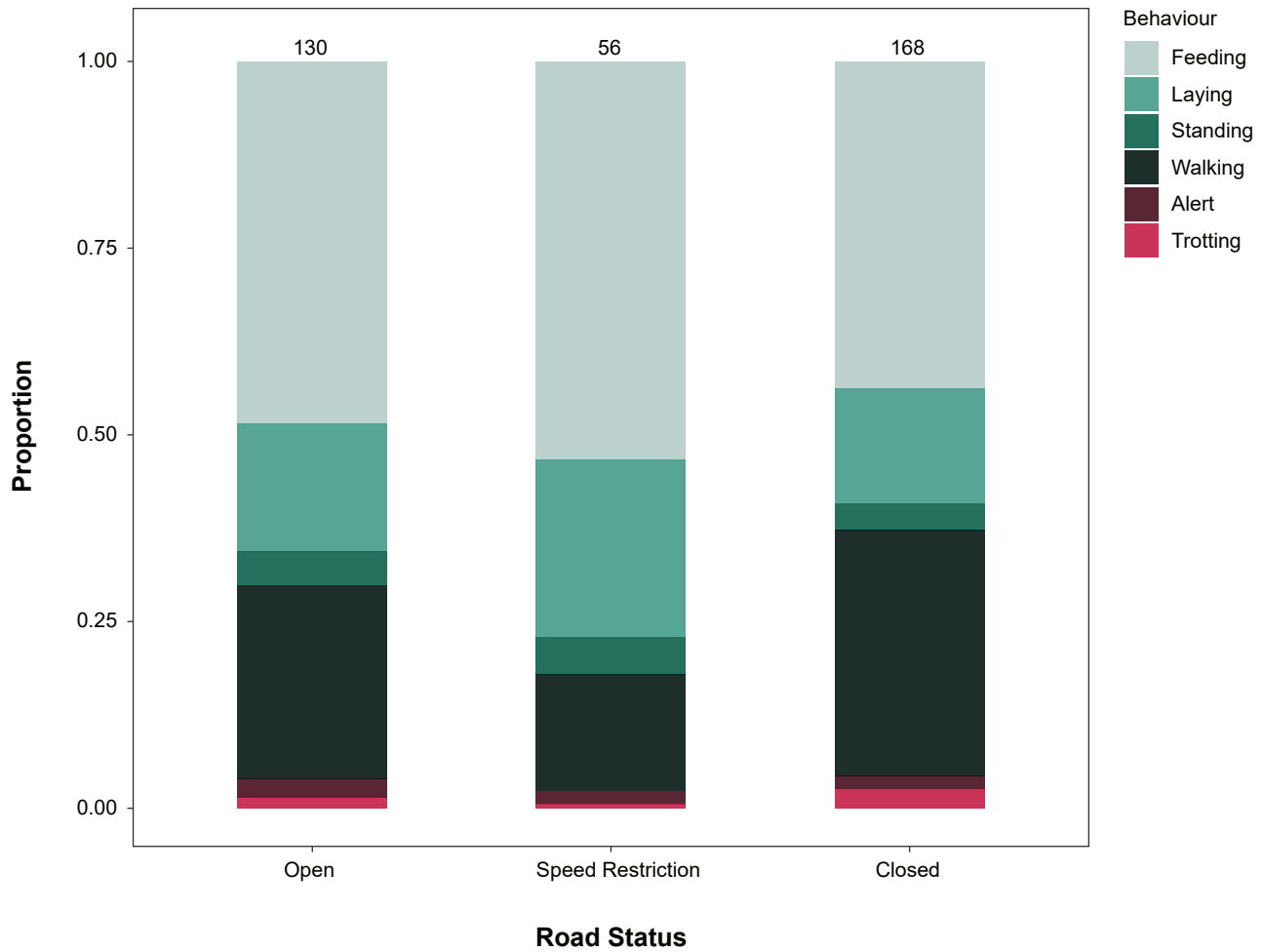


Figure 6.3-4: Average Proportion of Each Behaviour Type by Road Status

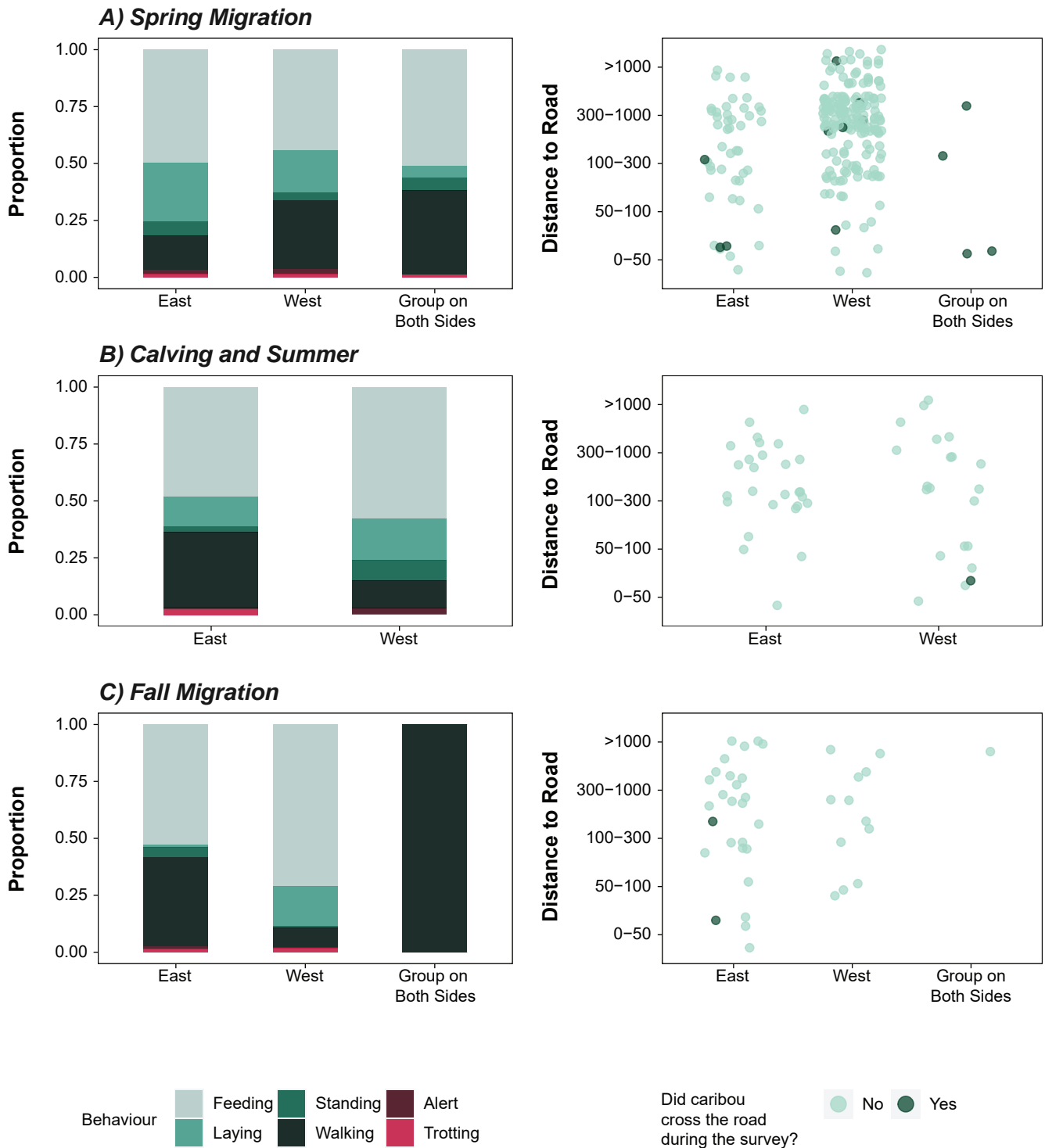


Figure 6.3-5: Average Proportion of Each Behaviour Type Observed on East and West Side of Road

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.

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 washed out 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 Convoy Surveys

The results of the 90-minute convoy surveys from 2022 are shown in Figure 6.3-8 and from 2021 in Figure 6.3-9. The response behaviours of "alert" and "trotting or running" are combined to create the total proportion of responding caribou in each time interval and plotted over time within the 90-minute survey in dark green. The proportion of walking behaviour in each time interval is plotted in light green. Surveyors were not always able to keep track of a group of caribou for the entire 90 minute duration, so the start and end time of the survey is denoted by vertical grey bars. The time interval in which the convoy passed closest to the caribou group is denoted by a vertical red bar. Missing data within the survey indicates that the caribou were out of sight for those time intervals.

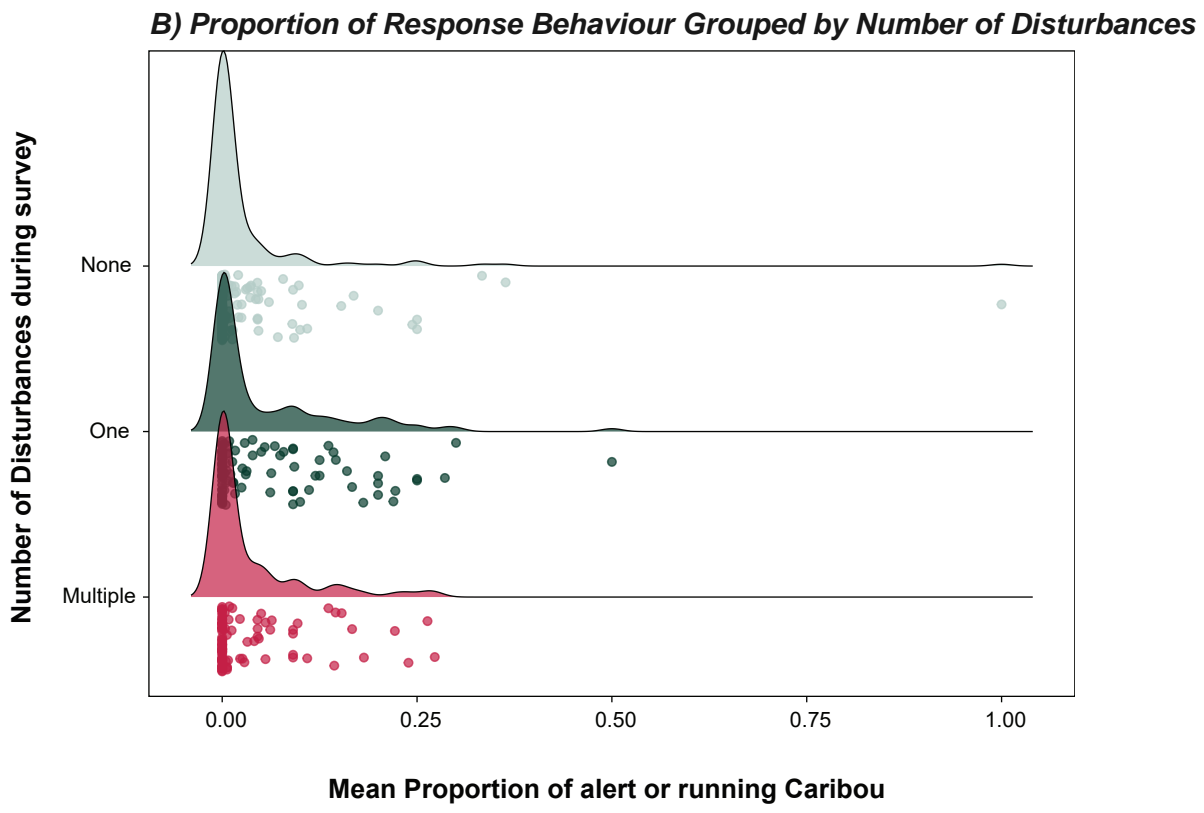
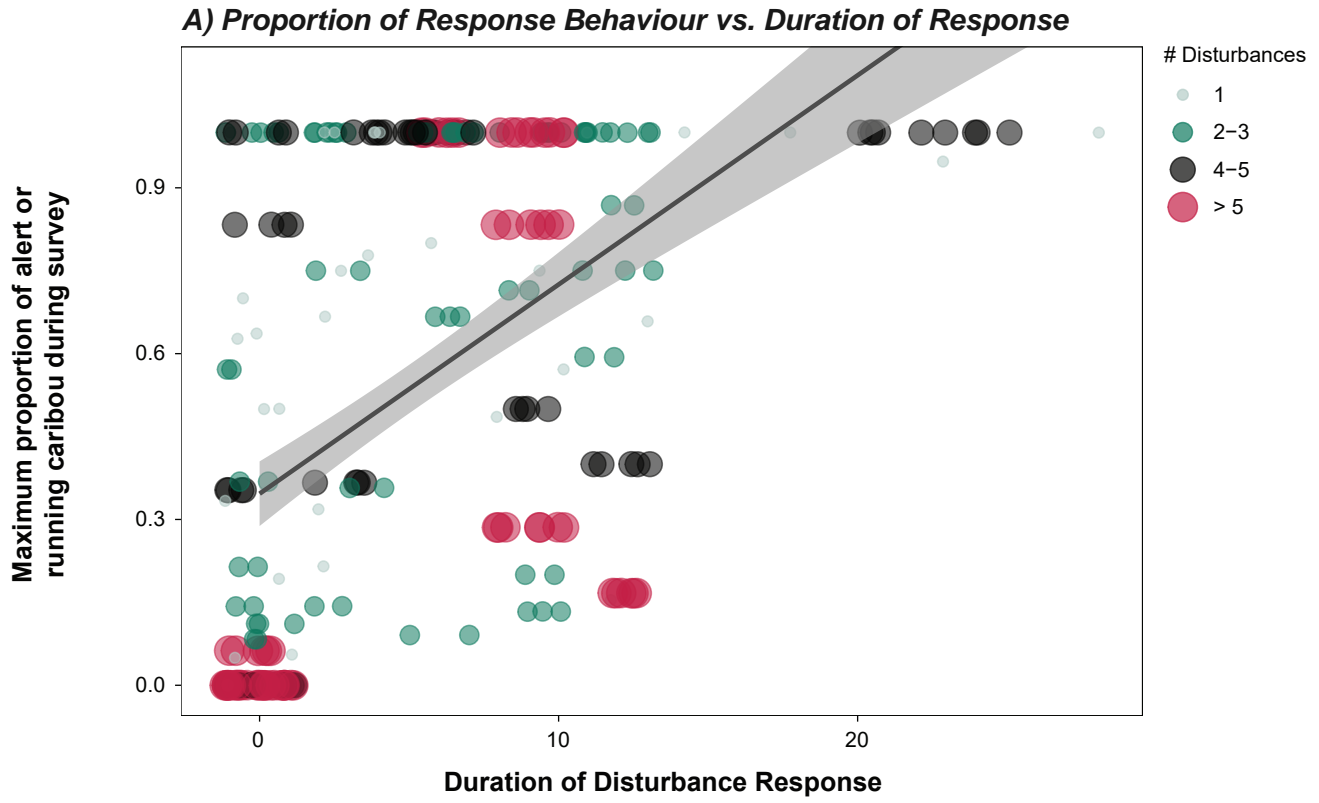
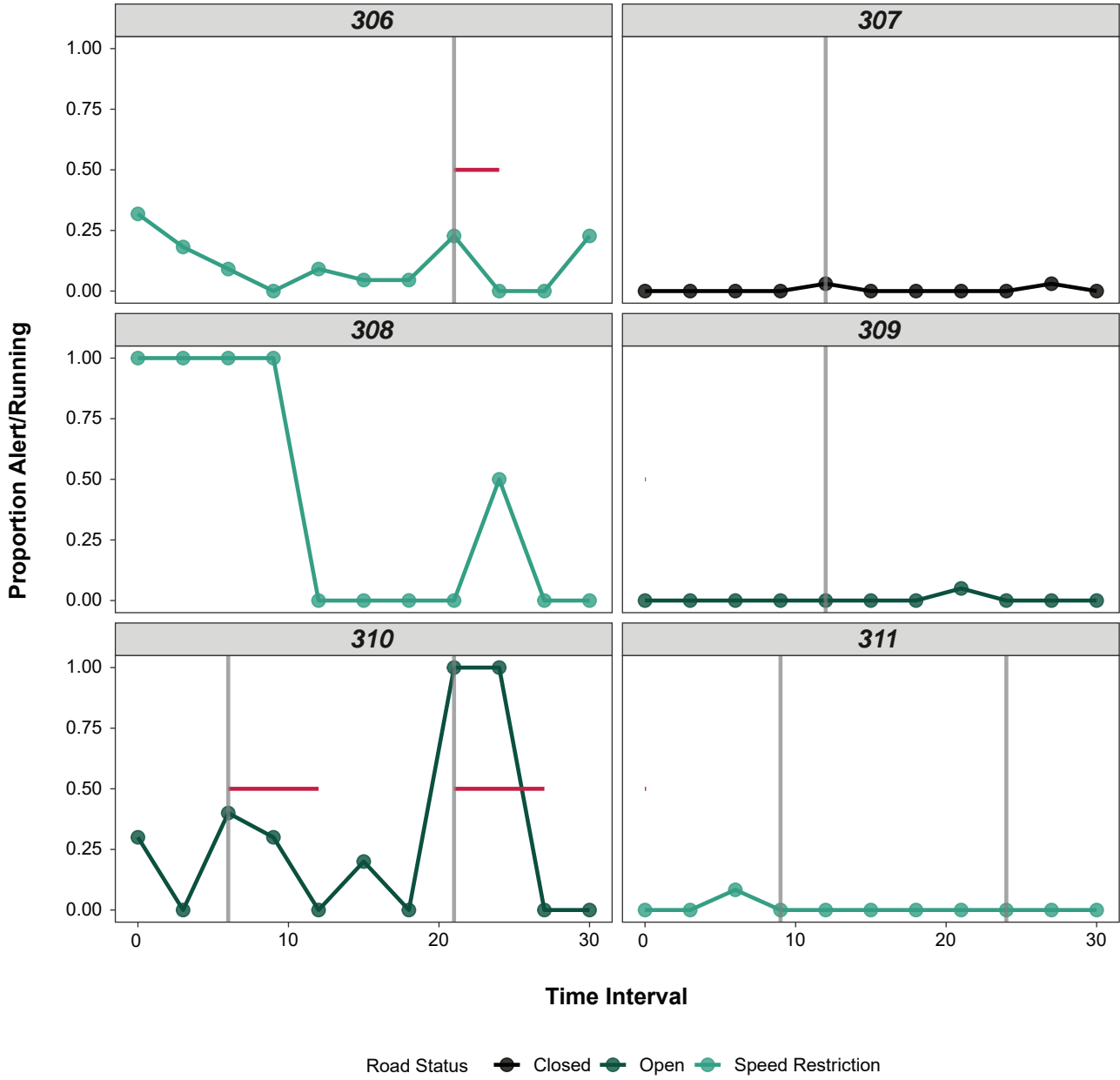


Figure 6.3-6: Comparison of Response Behaviours by Number of Disturbances



Note: See Appendix C for all surveys from 2020, 2021, and 2022.

Figure 6.3-7: Proportion of Response Behaviour during Each Survey – Example Subset

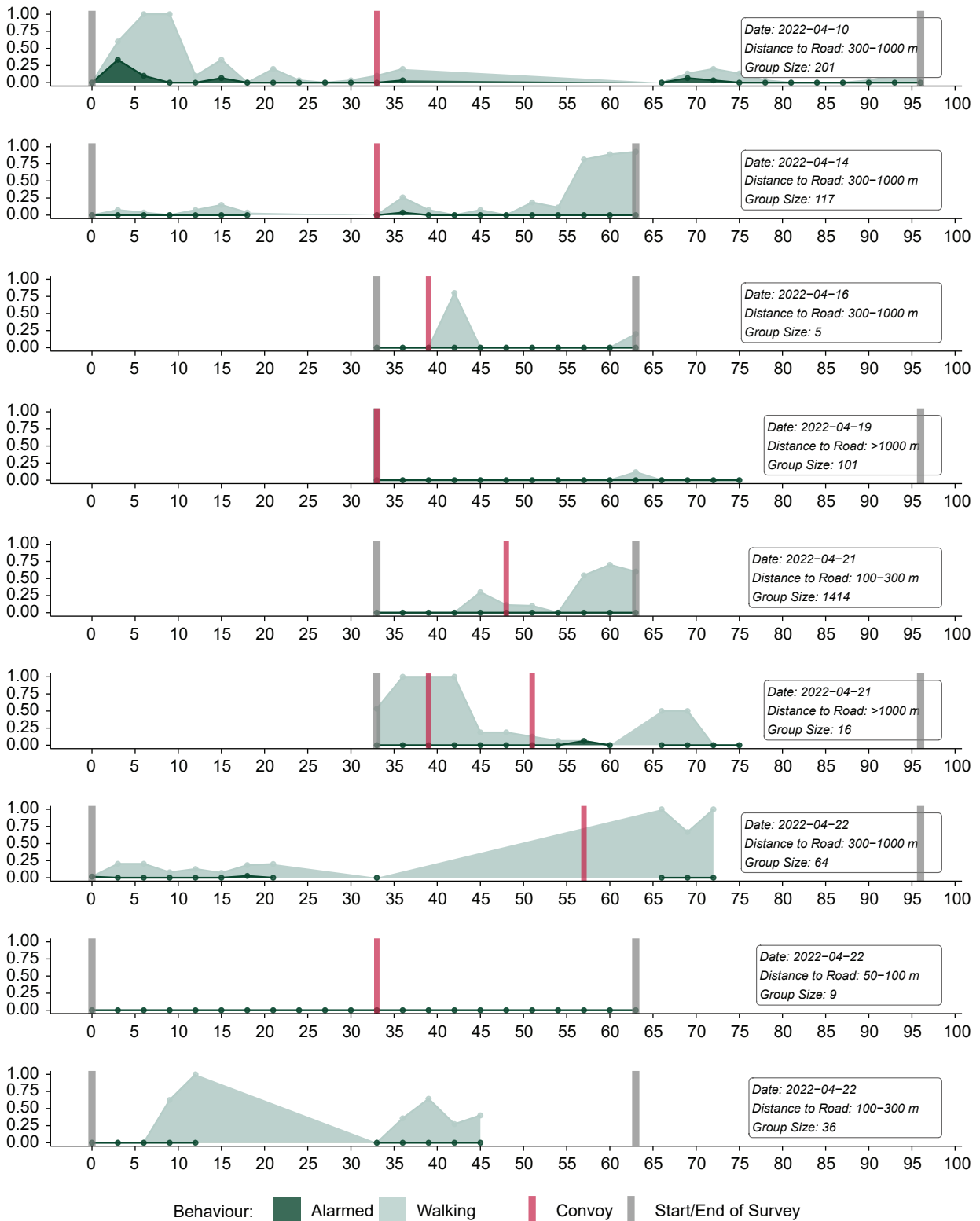


Figure 6.3-8: Proportion of Alert, Running and Walking Caribou during 90-minute Convoy Surveys, 2022

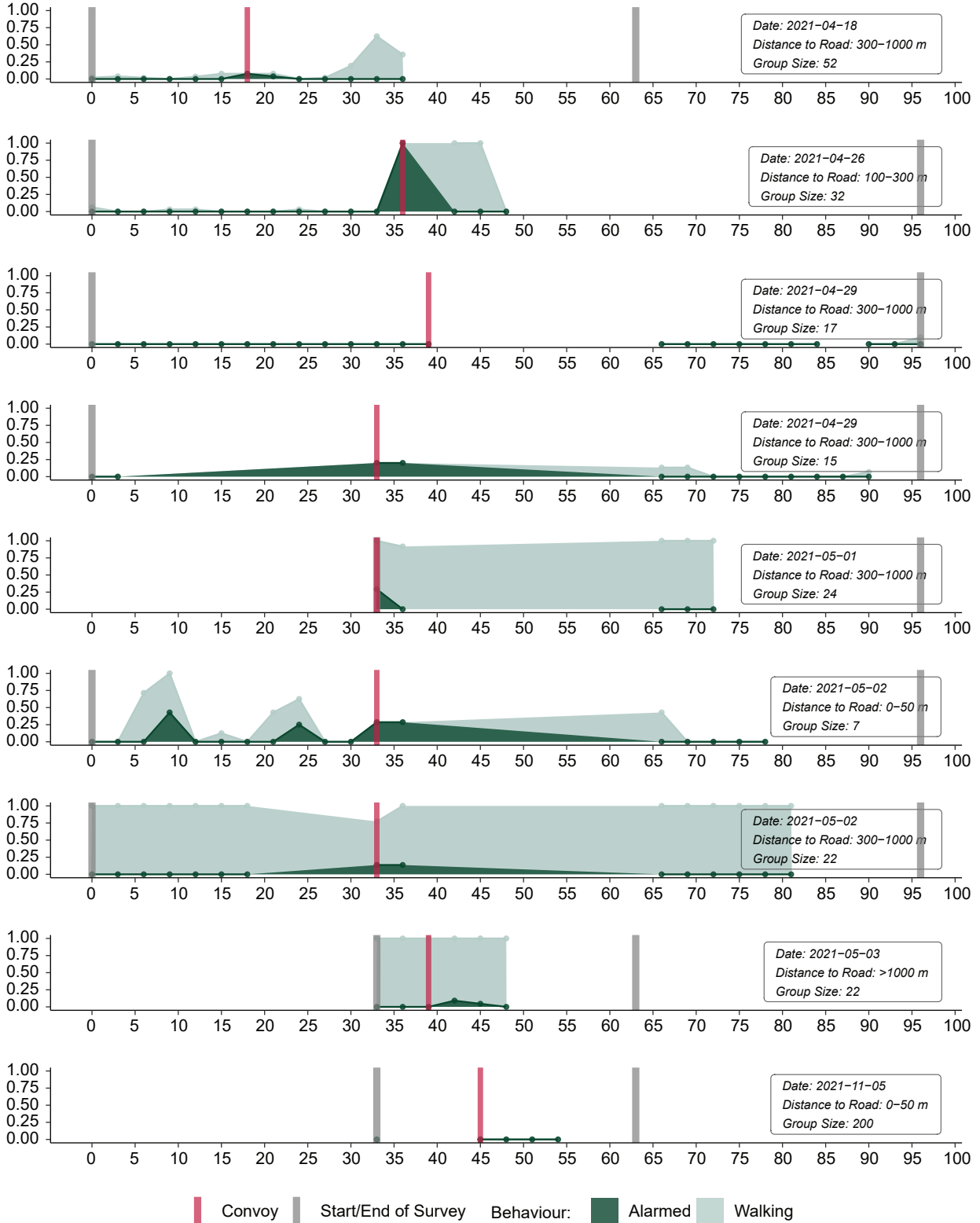


Figure 6.3-9: Proportion of Alert, Running and Walking Caribou during 90-minute Convoy Surveys, 2021

The results indicate that in 2021 the passing convoy typically resulted in a spike of response behaviours, consistent with the results seen for other vehicle types (see Figure 6.3-7). The proportion of responding caribou appeared to return to a baseline amount within 15 minutes, but the result was variable. This may indicate a slightly longer duration of response than with other vehicle types. In 2022, convoys rarely resulted in response behaviours, but did result in an apparent increase in walking.

Overall, the proportion of walking caribou appeared to increase following the convoy in some cases, but in cases where the caribou were walking before the disturbance occurred, the proportion of walking caribou *decreased* following the convoy. This may indicate that walking is more variable as a response behaviour than alert or trotting behaviour.

6.3.9 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.

Of the 41 surveys with this information, 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 not significant ($p=0.237$), indicating that group size was not statistically associated with distance from the road. As a result, it was determined to be acceptable to model both variables together.

Initial model results suggested that group size was not a good predictor for response behaviour, regardless of how models were parameterized. In addition, a potential issue was identified that smaller groups of caribou would naturally have greater variability in values, and this could bias the results. For example, a group of two caribou is far more likely to have 100% of caribou responding to a disturbance than a group of 50 caribou. As a result, it was deemed necessary to include group size in models as an “offset”, which is a statistical term for a variable that is used to denote the exposure period. It is typically used for situations where some surveys are longer than others, but in this case can be applied to the problem of unequal sample size. All final models presented here use an offset for group size.

All models included survey ID as a random effect because the time intervals within each survey are not independent from each other. The final models had many parameters and with the addition of the random effect 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 (such as wind speed) were dropped from the final model sets. An optimizer was also added to the model to run many iterations of the model, increasing the likelihood of convergence.

Three response (dependent) variables were tested in three separate model sets: proportion of response behaviour (alert or running), proportion of walking and response behaviour, and duration of response following a disturbance.

The estimates and significance levels for the best-fitting model that used response behaviour as the dependent variable are presented in Table 6.4-1, for the best-fitting model that used walking behaviour as the dependent variable in Table 6.4-2, and for the best-fitting model that used duration of response as the response variable in Table 6.4-3.

Table 6.4-1: Summary of Model Coefficients and Significance Levels for Response Behaviour Model

Variable	Estimate	Standard Error	P-value	Significant
(Intercept)	-9.03	0.64	0.000	***
Distance from caribou to observer location (300-1000 m)	-0.05	0.66	0.940	
Distance from caribou to observer location (100-300 m)	0.31	0.75	0.684	
Distance from caribou to observer location (50-100 m)	1.77	0.73	0.016	*
Distance from caribou to observer location (0-50 m)	0.74	0.88	0.399	
Disturbance during interval (Yes)	1.86	0.41	0.000	***
Disturbance one interval prior (Yes)	0.64	0.47	0.172	
Disturbance two intervals prior (Yes)	-0.39	0.60	0.514	
Temperature (°C)	0.88	0.18	0.000	***
Road Status (Closed)	0.66	0.41	0.109	

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

Variable	Estimate	Standard Error	P-value	Significant
(Intercept)	-4.52	0.83	0.000	***
Distance from caribou to observer location (300-1000 m)	0.03	0.58	0.965	
Distance from caribou to observer location (100-300 m)	-0.29	0.66	0.657	
Distance from caribou to observer location (50-100 m)	0.00	0.86	0.995	
Distance from caribou to observer location (0-50 m)	-0.57	0.96	0.554	
Disturbance during interval (Yes)	0.07	0.26	0.777	
Disturbance one interval prior (Yes)	0.26	0.25	0.295	

Variable	Estimate	Standard Error	P-value	Significant
Disturbance two intervals prior (Yes)	0.06	0.25	0.799	
Temperature (°C)	0.99	0.29	0.001	***
Road Status (Closed)	-0.46	0.41	0.263	
Season (Calving and Summer)	0.20	1.02	0.843	
Season (Fall Migration)	0.85	0.84	0.307	
Side of Road (West)	0.23	0.64	0.719	
Interaction (Calving and Summer * West)	-1.43	1.20	0.233	
Interaction (Fall Migration * West)	-3.05	1.44	0.034	*

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	Estimate	Standard Error	P-value	Significant
(Intercept)	3.84	2.50	0.128	
Distance from caribou to observer location (300-1000 m)	3.00	2.79	0.285	
Distance from caribou to observer location (100-300 m)	0.87	2.22	0.696	
Distance from caribou to observer location (50-100 m)	2.19	1.99	0.275	
Distance from caribou to observer location (0-50 m)	2.23	2.33	0.342	
Caribou group size	0.00	0.00	0.668	
Temperature (°C)	0.06	0.08	0.467	
Road Status (Closed)	-2.39	1.29	0.068	.
Season (Calving and Summer)	1.43	2.94	0.628	
Season (Fall Migration)	1.65	2.25	0.464	
Side of Road (West)	2.04	1.41	0.152	
Interaction (Calving and Summer * West)	-2.64	3.47	0.448	
Interaction (Fall Migration * West)	-2.90	3.41	0.397	

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.

The statistics presented include the variable estimate, which can be interpreted as the expected effect on the dependent variable as the independent variable increases. For example, in Table 6.4-1 the positive estimate for temperature suggests that as the temperature increases, the proportion of caribou with response behaviours also increases. However, estimates should always be considered in tandem with the standard error; if the standard error is larger than the estimate, the estimate is meaningless.

The p-value statistic indicates whether the model is a “statistically significant” predictor of the dependent variable, regardless of how large the estimate is. 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 the results occurred by chance. A statistically significant result provides support for an underlying effect, but should always be taken with a grain of salt, as some effects can obscure others. To minimize the risk, variables are tested for correlation, but there are always limits when a system is complex. For example, warmer temperatures are observed at the end of spring migration, which is also when convoys are occurring, which may explain the higher proportion of response behaviours in warmer temperatures.

6.4.2 Effect of Distance to Infrastructure

The results suggest that there is a differential effect of distance to the road on response behaviour, as caribou were less likely to be exhibiting response behaviours further from the road (Table 6.4-1). The effect was only significant for caribou within 50-100 m (estimate: 1.77 ± 0.73 , p-value = 0.016), meaning caribou within 100 m of the road are significantly more likely to exhibit response behaviours than caribou more than 1,000 m away. In the response model, no other distance categories were significantly different from the base category of >1,000 m from the road. The effect of distance was not significant for any distance category in the walking model or duration of response model (Tables 6.4-2 and 6.4-3), which suggests that a link between distance to road and response could not be detected in these models. For the duration of response model this may be explained by the smaller sample size.

6.4.3 Effect of Disturbances

The occurrence of disturbances resulted in a statistically significant increase in the proportion of response behaviour (Table 6.4-1; estimate: 0.07 ± 0.26 , p-value = 0.001), but was not important for the proportion of walking behaviour (Table 6.4-2). This may be because the amount of variability in caribou walking is much higher than caribou alert or running. Caribou are more likely to be walking as both a baseline behaviour and a response behaviour, and therefore the effect of disturbances is more difficult to detect in the modelling process. Of note is that the occurrence of disturbances in the interval before and two intervals before was never a significant predictor of behaviour, regardless of model set and how models were parameterized. This may indicate that disturbances tend to only affect behaviour in the 3-minute interval during which they occurred.

6.4.4 Effect of Road Closure Status

Interestingly, road closure status was not a significantly important predictor of behaviour (Tables 6.4-1 to 6.4-3). The models suggest that caribou respond similarly to disturbances regardless of whether the road is open or closed (see Figure 6.3-4). The average proportion of response behaviours was 3% both when the road was open and when the road was closed. 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.

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 or the duration of response models, but they were important predictors in models that included walking as a response (Table 6.4-2). Model results indicate that caribou are walking less on the west side of the road in fall migration than in spring migration (estimate: -3.05 ± 1.44 , p-value = 0.03). 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. In this study, similar numbers of surveys were conducted on the upstream and downstream sides of the road (See Table 6.2-2).

However, an analysis conducted by the GN on the 2019 road survey data from Agnico Eagle found 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 fall would allow for greater confidence in these results.

6.4.6 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 three to 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.

The proportion of caribou responding when walking was included was not linked to disturbances, which suggests that walking is not a consistent response behaviour. 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 remarkably similar to results from previous years, suggesting that the effects are stable year to year. When years of data collection are analysed independently (unreported here for brevity), the same factors are significant with similar magnitudes of effect. 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.

7. SUMMARY

The behaviour monitoring data from 2022 were combined with data from 2021 and 2020, 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 three 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.
- 104 surveys were conducted in 2022, compared to 134 in 2021 and 116 in 2020; 63 surveys occurred during spring migration from March to May; 18 occurred during calving and summer from June to August; and 23 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. Only five groups larger than 100 individuals were recorded within 100 m of the road at the start of the survey, two in 2021 and three in 2022.
- Caribou group size was not linked to response behaviour or walking behaviour in statistical analyses.
- Statistical analysis indicated that there is a trend for caribou at greater distance from the road (>1,000 m) to have a lower proportion of response behaviours (alert and running) than caribou within 100 m of the road.
- Approximately 54% 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 one or two sampling intervals (i.e., three or six 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, however, disturbances did not statistically affect the proportion of caribou walking.
- Surveyors conducted special 90-minute surveys during convoys to assess whether the response to convoys was similar to that of other vehicles. Caribou responded similarly to convoys but possibly for longer than for other vehicles. More convoy surveys are needed to analyse the data statistically.
- During periods when large groups of caribou are present, the AWAR and Haul Roads 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, possibly due to it having less explanatory power than the other variables included.
- 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 Terrestrial Ecosystem Management Plan (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 disturbances did not have a detectable effect on caribou behaviour after three to six minutes post-disturbance, suggesting that caribou behaviour returns to baseline relatively quickly following a disturbance. The updates applied to the survey protocol in 2021 and 2022 used feedback from the first year of data and analysis, which were helpful in improving the overall quality and accuracy of the data. Interestingly, even with these changes, the trends in the results were highly consistent between the three 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.

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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: Caribou Behaviour Monitoring Data Sheet

Survey ID	Date	Time Start	Time End	Observers	Waypoint	Longitude	Latitude	Reconnaissance Survey	Project Tolerant Info	Road Name and Distance Marker	Distance from Caribou to Observer Location (m)	Distance from Caribou to Road (if different)	Bearing	Is Group East or West of Survey?	Did the Group Cross the Road during the Survey?	Estimated Size (for larger group)	Caribou Group Size (exact count or estimate)	Size of Subset (Surveyed)	Dominant Group Sex	Temperature (°C)	Wind Speed (km/h)	Wind Direction	Days since Last Snow or Wind Event
251	29-Jan-22	11:30	13:00	Laurence Archambault and Rowan Woodall	-	-96.66656352	65.40179525	No	No	Amaruq KM NA	100-300	N/A	30	East	No	3 to 25	10	10	Mixed group	-28	40	SW	0
252	03-Apr-22	14:30	14:30	Rowan Woodall, Kathleen Newberry	-	-96.42279832	65.22691481	No	No	Amaruq KM NA	300-1000	N/A	200	West	NA	3 to 25	5	5	Mixed group	-15	20	NW	2
253	03-Apr-22	14:30	14:30	Rowan Woodall, Kathleen Newberry	-	-96.42279832	65.22691481	No	No	Amaruq KM NA	300-1000	N/A	200	West	NA	3 to 25	5	5	Mixed group	-15	20	NW	2
254	08-Apr-22	9:41	10:13	Rowan Woodall and Kathleen Newberry	-	-96.41099866	65.22742551	Yes	No	Haul Road KM 147	100-300	N/A	150	West	No	3 to 25	5	5	Mixed group	-8	8	NW	0
255	08-Apr-22	14:35	15:09	Rowan Woodall, Kathleen Newberry	-	-96.64636867	65.40520371	No	No	Haul Road KM 179	100-300	N/A	10	West	No	3 to 25	15	15	Mixed group	-6	8	NW	0
256	09-Apr-22	9:12	9:54	Derek	-	-96.21807032	64.96501827	Yes	No	AWAR KM 88	300-1000	N/A	290	West	No	26-50	27	27	Mixed group	5	5	S	1
257	09-Apr-22	11:48	12:18	Rowan Woodall and Kathleen Newberry	-	-96.05441453	65.0850301	No	No	Haul Road KM 118	300-1000	N/A	345	West	No	51-100	100	21	Mixed group	-8	23	SE	0
258	09-Apr-22	12:58	13:30	Derek Nateela	-	-96.24825645	64.57509425	Yes	No	AWAR KM 35	300-1000	N/A	240	West	No	3 to 25	7	7	Mostly females	3	3	S	1
259	10-Apr-22	6:19	6:50	Kathleen Newberry	-	-96.39080148	65.2258375	No	No	Haul Road KM 144	100-300	N/A	190	West	No	51-100	60	60	Mixed group	-5	20	NE	0
260	10-Apr-22	7:57	8:37	Kathleen Newberry	-	-96.55598517	65.34892665	No	No	Haul Road KM 167	300-1000	N/A	30	West	No	>100	-	30	Mixed group	-13	21	NE	0
261	10-Apr-22	8:55	8:55	Kathleen Newberry	-	-96.55598822	65.3489138	No	No	Haul Road KM 170	300-1000	N/A	180	West	NA	>100	-	30	Mixed group	-5	20	NW	0
262	10-Apr-22	9:02	9:45	Kathleen Newberry	-	-96.55599925	65.34888885	Yes	No	Haul Road KM 170	300-1000	N/A	180	West	No	>100	-	30	Mixed group	-13	20	NW	0
263	10-Apr-22	16:50	18:15	Rowan Woodall	-	-96.62162428	65.40070639	No	No	Haul Road KM 177	300-1000	N/A	260	West	No	>100	-	20	Mixed group	-18	22	NE	0
264	10-Apr-22	16:50	18:15	Rowan Woodall	-	-96.62162428	65.40070639	No	No	Haul Road KM 177	300-1000	N/A	260	West	No	>100	-	20	Mixed group	-18	22	NE	0
265	10-Apr-22	16:50	18:15	Rowan Woodall	-	-96.62162428	65.40070639	No	No	Haul Road KM 177	300-1000	N/A	260	West	No	>100	-	20	Mixed group	-18	22	NE	0
266	11-Apr-22	12:03	9:36	Derek	-	-96.62130363	65.4004251	No	No	Haul Road KM 170	300-1000	N/A	180	West	No	>100	-	350	Mixed group	-12	40	N	1
267	11-Apr-22	17:01	18:19	Eric Leonard / Kathleen Newberry	-	-96.64805819	65.40517327	No	No	Haul Road KM 179	300-1000	N/A	300	West	No	3 to 25	8	8	Mixed group	-15	46	N	0
268	14-Apr-22	10:42	11:15	OlivierJean & Jean-Francois Dufour	-	-96.58105519	65.35406488	Yes	No	Haul Road KM 170	100-300	N/A	210	West	No	3 to 25	17	17	Mixed group	-16	20	NW	4
269	14-Apr-22	12:13	13:23	OlivierJean & Jean-Francois Dufour	-	-96.00818333	65.07064323	Yes	No	Haul Road KM 115	300-1000	N/A	270	West	No	>100	117	27	Mixed group	-16	20	W	5
270	14-Apr-22	16:51	13:56	OlivierJean & Jean-Francois Dufour	-	-96.00815872	65.07064774	Yes	No	Haul Road KM 115	300-1000	N/A	270	West	No	>100	117	27	Mixed group	-16	20	NW	5
271	15-Apr-22	9:29	10:16	Felix Quessy Savard Olivier Gagnon	-	-96.61996667	65.40013333	Yes	No	Haul Road KM 175	300-1000	N/A	0	West	No	26-50	35	35	Mixed group	-14	20	NW	2
272	15-Apr-22	17:48	18:30	Eric Leonard	-	-96.72225442	65.39873212	No	No	Amaruq KM NA	100-300	N/A	350	East	No	3 to 25	5	5	Mixed group	-15	24	NW	5
273	16-Apr-22	10:07	10:41	Eric Leonard	-	-96.45447958	65.23166853	No	No	Haul Road KM 149	300-1000	N/A	10	East	No	3 to 25	5	5	Mixed group	-26	18	NW	5
274	16-Apr-22	17:44	18:28	Laurence Archambault	-	-96.66499301	65.40275111	No	No	Amaruq KM NA	50-100	N/A	15	West	No	3 to 25	14	14	Mixed group	-24	18	NW	0
275	17-Apr-22	12:39	13:10	Sylvain singahti Olivier Gagnon	-	-95.99750195	65.05240395	No	No	Haul Road KM 114	300-1000	N/A	90	East	No	3 to 25	12	12	Mixed group	-15	30	NW	5
276	18-Apr-22	14:09	14:57	Sylvain Singahti	-	-95.93920505	64.30977479	No	No	AWAR KM 95	100-300	N/A	0	West	No	>100	134	130	Mixed group	-12	15	NW	1
277	19-Apr-22	8:02	8:34	OJ OG	-	-96.16722208	65.19602827	Yes	No	Haul Road KM 154	100-300	N/A	40	West	No	1 to 2	2	2	Mostly males	-10	14	N	7

Appendix B: Caribou Behaviour Monitoring Data Sheet

Survey ID	Date	Time Start	Time End	Weather Observations	Road Open or Closed	Road Height	Road Side Width	Structures Present	Feeding_0	Lying Down_0	Standing_0	Walking_0	Alert_0	Trotting/Running_0	Feeding_3	Lying Down_3	Standing_3	Walking_3	Alert_3	Trotting/Running_3	Feeding_6	Lying Down_6	Standing_6	Walking_6	Alert_6	Trotting/Running_6	Feeding_9	Lying Down_9	Standing_9	Walking_9	Alert_9	Trotting/Running_9	Feeding_12	Lying Down_12	Standing_12	Walking_12	Alert_12	Trotting/Running_12		
251	29-Jan-22	11:30	13:00	Precipitation: None	Open	100	2000	NA	0	10	0	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0	0	
252	03-Apr-22	14:30	14:30	Precipitation: 0	Open	100	400	Electrical panel, 5kv line, Nag pile	4	0	0	0	0	0	4	0	1	0	0	0	5	0	0	0	0	0	5	0	0	0	0	0	4	0	1	0	0	0	0	
253	03-Apr-22	14:30	14:30	Precipitation: 0	Open	100	400	Electrical panel, 5kv line, Nag pile	3	0	0	0	1	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
254	08-Apr-22	9:41	10:13	Precipitation: None	Open	200	400	None	5	0	0	0	0	0	5	0	0	0	0	0	5	0	0	0	0	0	5	0	0	0	0	0	5	0	0	0	0	0	0	
255	08-Apr-22	14:35	15:09	Precipitation: 0 Foggy	Open	200	500	Flags	13	2	0	0	0	0	13	2	0	0	0	0	12	2	0	1	0	0	11	3	0	1	0	0	11	4	0	0	0	0	0	
256	09-Apr-22	9:12	9:54	Precipitation: Snowing Snowing	Open	100	1000	No	0	1	26	26	27	0	0	0	27	27	27	0	0	0	27	27	27	0	20	0	27	27	27	0	37	5	4	33	15	4		
257	09-Apr-22	11:48	12:18	Precipitation: Light snow	Open	200	400	None	20	0	0	0	0	0	20	0	0	0	0	0	19	0	0	1	0	0	18	0	0	2	0	0	10	0	0	10	0	0	0	
258	09-Apr-22	12:58	13:30	Precipitation: White Snowing	Open	0	1200	No	0	7	0	0	7	0	0	0	7	0	7	0	7	0	7	7	7	0	7	0	0	7	7	0	0	0	0	7	7	0	0	
259	10-Apr-22	6:19	6:50	Precipitation: 0	Closed	100	600	None	50	1	6	3	0	0	52	1	4	3	0	0	44	6	3	7	0	0	46	7	3	4	0	0	50	7	1	2	0	0		
260	10-Apr-22	7:57	8:37	Precipitation: 0	Closed	200	400	None	30	0	0	0	0	0	12	0	0	8	10	0	0	0	0	27	3	0	0	0	0	30	0	0	27	0	0	3	0	0	0	
261	10-Apr-22	8:55	8:55	Precipitation: Light snow Light snow	Closed	100	500	LHT parked	27	0	0	3	0	0	23	0	1	5	1	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
262	10-Apr-22	9:02	9:45	Precipitation: Light snow Light snow	Closed	100	500	LHT parked	30	0	0	0	0	0	26	0	0	2	2	0	24	0	0	5	1	0	26	0	0	4	0	0	23	6	0	1	0	0	0	
263	10-Apr-22	16:50	18:15	Precipitation: Yes, light snow	Closed	100	400	NA	16	4	0	0	0	0	16	4	0	0	0	0	16	4	0	0	0	0	16	4	0	0	0	0	16	4	0	0	0	0	0	
264	10-Apr-22	16:50	18:15	Precipitation: Yes, light snow	Closed	100	400	NA	7	13	0	0	0	0	6	13	1	0	0	0	7	13	0	0	0	0	4	16	0	0	0	0	0	20	0	0	0	0	0	
265	10-Apr-22	16:50	18:15	Precipitation: Yes, light snow	Closed	100	400	NA	7	13	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
266	11-Apr-22	12:03	9:36	Precipitation: 0 Nada	Closed	0	2000	Nada	11	19	11	0	0	0	3	19	7	1	0	0	6	19	5	2	0	0	8	20	8	2	0	0	5	25	5	2	0	0		
267	11-Apr-22	17:01	18:19	Precipitation: None Gusting wind, blowing snow	Closed	200	1000	NA	3	3	0	0	0	0	3	3	0	0	0	0	14	0	0	0	0	0	11	0	3	0	0	0	11	0	1	1	0	0	0	
268	14-Apr-22	10:42	11:15	Precipitation: 0	Closed	0	1000	None	13	0	1	1	0	0	12	0	0	3	0	0	8	0	0	7	0	0	14	0	0	2	0	0	16	0	0	0	0	0	0	
269	14-Apr-22	12:13	13:23	Precipitation: 0	Closed	0	1500	Vault garage	27	0	0	0	0	0	25	0	0	2	0	0	26	0	0	1	0	0	27	0	0	0	0	0	25	0	0	2	0	0	0	
270	14-Apr-22	16:51	13:56	Precipitation: 0	Closed	0	1500	Vault garage	27	0	0	0	0	0	20	0	0	6	1	0	25	0	0	2	0	0	27	0	0	0	0	0	24	0	1	2	0	0	0	
271	15-Apr-22	9:29	10:16	Precipitation: 0 Sunny	Closed	100	1500	NA	0	0	0	35	0	0	0	0	0	0	0	0	35	35	0	0	0	0	35	0	0	0	0	0	35	0	0	0	0	0	0	
272	15-Apr-22	17:48	18:30	Precipitation: 0 Sunny & clear	Open	21000	1000	No	1	3	1	0	0	0	2	3	0	0	0	0	2	3	0	0	0	0	2	3	0	0	0	0	2	3	0	0	0	0	0	
273	16-Apr-22	10:07	10:41	Precipitation: 0 Sunny & clear	Closed	300	1000	No	0	5	0	0	0	0	0	5	0	0	0	0	0	5	0	0	0	0	0	1	0	4	0	0	0	1	4	0	0	0	0	
274	16-Apr-22	17:44	18:28	Precipitation: None Sunny	Open	0	2000	Dyno plant	0	14	0	0	0	0	0	14	0	0	0	0	0	14	0	0	0	0	0	14	0	0	0	0	0	14	0	0	0	0	0	0
275	17-Apr-22	12:39	13:10	Precipitation: Snow	Open	300	1000	NA	12	0	0	0	0	0	12	0	0	0	0	0	12	0	0	0	0	0	12	0	0	0	0	0	12	0	0	0	0	0	0	
276	18-Apr-22	14:09	14:57	Precipitation: Clear Sunny	Closed	200	3000	0	52	39	0	43	134	0	51	0	34	49	134	0	51	0	34	49	134	0	133	0	0	1	134	0	134	0	0	0	134	0	0	
277	19-Apr-22	8:02	8:34	Precipitation: 0	Open	0	1500	None	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	1	1	0	0	0	0	0		

Appendix B: Caribou Behaviour Monitoring Data Sheet

Survey ID	Date	Time Start	Time End	Disturbance 15	Disturbance 18	Disturbance 21	Disturbance 24	Disturbance 27	Disturbance 30	Survey Type
251	29-Jan-22	11:30	13:00	NA	NA	NA	Heavy Equipment	Heavy Equipment	NA	07- During the blast, Behavior
252	03-Apr-22	14:30	14:30	NA	NA	NA	NA	NA	NA	03- Pre-disturbance, Behavior
253	03-Apr-22	14:30	14:30	NA	NA	NA	NA	NA	NA	07- During the blast, Behavior
254	08-Apr-22	9:41	10:13	Heavy Equipment	NA	NA	NA	Heavy Equipment	Heavy Equipment	01- Behavior
255	08-Apr-22	14:35	15:09	NA	NA	NA	NA	NA	Heavy Equipment	01- Behavior
256	09-Apr-22	9:12	9:54	NA	NA	NA	NA	NA	NA	01- Behavior
257	09-Apr-22	11:48	12:18	NA	NA	NA	NA	NA	NA	01- Behavior
258	09-Apr-22	12:58	13:30	NA	NA	NA	NA	NA	NA	01- Behavior
259	10-Apr-22	6:19	6:50	NA	NA	NA	NA	NA	NA	01- Behavior
260	10-Apr-22	7:57	8:37	Maintenance Vehicle	Maintenance Vehicle	Maintenance Vehicle	Maintenance Vehicle	Maintenance Vehicle	Maintenance Vehicle	03- Pre-disturbance, Behavior
261	10-Apr-22	8:55	8:55	NA	NA	NA	NA	NA	NA	05- During the convoy, Behavior
262	10-Apr-22	9:02	9:45	NA	NA	NA	NA	NA	NA	09-Post-disturbance, Behavior
263	10-Apr-22	16:50	18:15	NA	NA	NA	NA	NA	NA	03- Pre-disturbance, Behavior
264	10-Apr-22	16:50	18:15	NA	Blast	NA	NA	NA	NA	07- During the blast, Behavior
265	10-Apr-22	16:50	18:15	NA	NA	NA	NA	NA	NA	09-Post-disturbance, Behavior
266	11-Apr-22	12:03	9:36	NA	NA	NA	NA	NA	NA	03- Pre-disturbance, Behavior
267	11-Apr-22	17:01	18:19	NA	NA	Blast	NA	NA	NA	03- Pre-disturbance, Behavior
268	14-Apr-22	10:42	11:15	NA	NA	NA	NA	NA	NA	01- Behavior
269	14-Apr-22	12:13	13:23	NA	NA	NA	NA	NA	NA	01- Behavior
270	14-Apr-22	16:51	13:56	NA	NA	NA	NA	NA	NA	05- During the convoy, Behavior
271	15-Apr-22	9:29	10:16	NA	NA	NA	NA	NA	NA	01- Behavior
272	15-Apr-22	17:48	18:30	Blast	NA	NA	Light Truck	NA	NA	03- Pre-disturbance, Behavior
273	16-Apr-22	10:07	10:41	NA	NA	NA	NA	NA	NA	03- Pre-disturbance, Behavior
274	16-Apr-22	17:44	18:28	NA	NA	NA	Blast	NA	NA	03- Pre-disturbance, Behavior
275	17-Apr-22	12:39	13:10	NA	NA	NA	NA	NA	NA	01- Behavior
276	18-Apr-22	14:09	14:57	NA	NA	NA	NA	NA	NA	01- Behavior
277	19-Apr-22	8:02	8:34	Heavy Equipment	NA	NA	Heavy Equipment	Heavy Equipment	NA	01- Behavior

Appendix B: Caribou Behaviour Monitoring Data Sheet

Survey ID	Date	Time Start	Time End	Observers	Waypoint	Longitude	Latitude	Reconnaissance Survey	Project Tolerant Info	Road Name and Distance Marker	Distance from Caribou to Observer Location (m)	Distance from Caribou to Road (if different)	Bearing	Is Group East or West of Survey?	Did the Group Cross the Road during the Survey?	Estimated Size (for larger group)	Caribou Group Size (exact count or estimate)	Size of Subset (Surveyed)	Dominant Group Sex	Temperature (°C)	Wind Speed (km/h)	Wind Direction	Days since Last Snow or Wind Event
278	19-Apr-22	12:55	13:32	Sylvain, Felix Quessy	-	-96.1775229	65.0229587	No	No	AWAR KM 93	>1000	N/A	350	West	No	>100	123	123	Mixed group	-14	4	SW	5
279	19-Apr-22	16:23	17:00	Olivier Jean & Louis Dubois	-	-96.1775229	65.0229587	Yes	No	AWAR KM 93	>1000	N/A	0	West	No	>100	-	27	Mixed group	-19	14	NW	7
280	19-Apr-22	17:00	17:12	Olivier Jean & Louis Dubois	-	-96.1775229	65.0229587	Yes	No	AWAR KM 93	>1000	N/A	0	West	No	>100	-	27	Mixed group	-19	14	NW	7
281	19-Apr-22	17:01	17:38	Eric Leonard	-	-96.71779491	65.39996374	No	No	Amaruq KM NA	300-1000	N/A	300	East	No	3 to 25	14	2	Mixed group	-17	0	SW	0
282	20-Apr-22	12:38	13:10	Eric Leonard	-	-96.46698867	65.23545963	No	No	Haul Road KM 150	300-1000	N/A	0	East	No	3 to 25	9	9	Mixed group	-18	12	SE	5
283	20-Apr-22	15:13	15:45	Olivier Gagnon	-	-96.2218667	65.00080517	Yes	No	AWAR KM 93	300-1000	N/A	70	East	No	51-100	84	84	Mixed group	-10	23	NW	0
284	20-Apr-22	15:45	16:18	Felix Quessy Olivier Jean	-	-96.16783321	65.19605901	Yes	No	Haul Road KM 112	300-1000	N/A	90	West	No	26-50	40	5	Mixed group	-21	20	NW	1
285	21-Apr-22	8:44	9:48	Eric Leonard	-	-96.66024895	65.40331874	Yes	No	Haul Road KM 179	100-300	N/A	280	West	No	>100	1414	14	Mixed group	-26	15	NW	10
286	21-Apr-22	8:54	9:24	Olivier Gagnon Jean-François dufour	-	-96.16213528	65.18777647	Yes	No	Haul Road KM 130	100-300	N/A	70	East	Yes	1 to 2	2	2	Mostly females	-10	15	NW	1
287	21-Apr-22	9:43	10:30	Olivier Gagnon Jean-François Dufour	-	-96.14534518	65.16726192	Yes	No	Haul Road KM 128	>1000	N/A	230	West	No	3 to 25	16	14	Mixed group	-15	20	NW	1
288	21-Apr-22	10:29	10:59	Olivier Gagnon	-	-96.10862188	65.13459033	No	No	Haul Road KM 125	300-1000	N/A	230	West	No	3 to 25	22	22	Mixed group	-10	20	NW	1
289	21-Apr-22	11:05	11:36	Laurence Archambault and Kevin Martee	-	-96.03030695	65.08290752	Yes	No	Haul Road KM 116	300-1000	N/A	350	West	No	3 to 25	18	18	Mixed group	-25	25	NW	0
290	22-Apr-22	9:08	9:35	Laurence Archambault	-	-96.6666292	65.40146278	Yes	No	Haul Road KM 176	300-1000	N/A	280	West	No	51-100	64	64	Mixed group	-21	6	W	3
291	22-Apr-22	9:08	9:35	Laurence Archambault	-	-96.6666292	65.40146278	Yes	No	Haul Road KM 176	300-1000	N/A	280	West	No	51-100	64	64	Mixed group	-21	6	W	3
292	22-Apr-22	9:08	9:35	Laurence Archambault	-	-96.6666292	65.40146278	Yes	No	Haul Road KM 176	300-1000	N/A	280	West	No	51-100	64	64	Mixed group	-21	6	W	3
293	22-Apr-22	11:07	11:48	SS - JFD	-	-96.01874685	65.04848845	No	No	Haul Road KM 111	0-50	N/A	140	Both	Yes	>100	254	21	Mixed group	-19	30	NE	1
294	22-Apr-22	12:24	12:58	Olivier Gagnon	-	-96.37124923	64.67301787	Yes	No	AWAR KM 50	100-300	N/A	140	East	No	3 to 25	12	12	Mixed group	-10	30	NW	2
295	22-Apr-22	12:54	13:28	Sylvain Singahti - Jeff Dufour	-	-96.01030432	65.05025773	Yes	No	Haul Road KM 111	50-100	N/A	130	East	No	3 to 25	9	9	Mixed group	-18	20	NW	1
296	22-Apr-22	13:13	13:42	Laurence Archambault	-	-96.46933344	65.32378424	No	No	Haul Road KM 163	100-300	N/A	270	West	No	26-50	36	36	Mixed group	17	6	W	3
297	22-Apr-22	13:29	14:00	Sylvain Singahti - Jeff Dufour	-	-96.0108904	65.0500978	Yes	No	Haul Road KM 111	50-100	N/A	140	East	No	3 to 25	10	10	Mixed group	-18	20	NW	1
298	22-Apr-22	14:16	14:30	Laurence Archambault	-	-96.41310714	65.30780425	No	No	Haul Road KM 163	100-300	N/A	280	West	No	3 to 25	14	14	Mixed group	-24	6	W	3
299	24-Apr-22	17:57	18:39	Eric Leonard	-	-96.73041957	65.40066369	No	NA	Amaruq KM NA	300-1000	N/A	0	West	No	3 to 25	7	7	Mixed group	-22	20	NW	9
300	25-Apr-22	17:20	11:12	Derek	-	-96.47426557	65.24868438	No	No	Haul Road KM 152	0-50	N/A	50	East	Yes	3 to 25	9	9	Mostly females	-20	40	N	1
301	26-Apr-22	9:10	9:10	Rowan Woodall and Kevin Martee	-	-96.4426762	65.32069197	No	No	Haul Road KM 163	300-1000	N/A	330	West	NA	51-100	98	23	Mixed group	-10	7	NW	9
302	26-Apr-22	14:30	15:18	Felix Quessy Sylvain	-	-96.03198672	65.04550132	No	No	Haul Road KM 111	300-1000	N/A	0	West	No	1 to 2	2	2	Mixed group	-10	15	NW	5
303	27-Apr-22	6:17	6:50	Rowan Woodall	-	-96.46796033	65.23631017	No	No	Haul Road KM 151	0-50	N/A	120	Both	Yes	3 to 25	10	10	Mixed group	-10	15	NW	10
304	27-Apr-22	16:42	17:18	Alex Blanchette	-	-96.10247426	65.11987074	Yes	No	Haul Road KM 125	>1000	N/A	0	West	No	26-50	36	36	Mixed group	-3	15	NE	7

Appendix B: Caribou Behaviour Monitoring Data Sheet

Survey ID	Date	Time Start	Time End	Weather Observations	Road Open or Closed	Road Height	Road Side Width	Structures Present	Feeding_0	Lying Down_0	Standing_0	Walking_0	Alert_0	Trotting/Running_0	Feeding_3	Lying Down_3	Standing_3	Walking_3	Alert_3	Trotting/Running_3	Feeding_6	Lying Down_6	Standing_6	Walking_6	Alert_6	Trotting/Running_6	Feeding_9	Lying Down_9	Standing_9	Walking_9	Alert_9	Trotting/Running_9	Feeding_12	Lying Down_12	Standing_12	Walking_12	Alert_12	Trotting/Running_12	
278	19-Apr-22	12:55	13:32	Precipitation: 0 Sunny	Closed	800	1000	No	80	0	23	20	0	0	100	0	0	23	0	0	100	0	23	0	0	0	123	0	0	0	0	0	123	0	0	0	0	0	0
279	19-Apr-22	16:23	17:00	Precipitation: 0	Closed	0	1500	None	17	10	0	0	0	0	17	10	0	0	0	0	17	10	0	0	0	0	15	6	0	0	0	0	20	0	0	0	0	0	0
280	19-Apr-22	17:00	17:12	Precipitation: 0	Closed	0	1500	None	14	0	0	0	0	0	14	0	0	0	0	0	2	0	0	0	0	0	7	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA
281	19-Apr-22	17:01	17:38	Precipitation: 0 Overcast	NA	0	1000	Surface drill nearby	12	0	0	1	0	0	12	0	0	2	0	0	14	0	0	0	0	0	14	0	0	0	0	0	12	0	1	1	0	0	0
282	20-Apr-22	12:38	13:10	Precipitation: 0 Overcast	Open	300	1000	None	7	0	0	0	0	0	2	0	4	0	0	0	4	0	1	0	0	0	NA	NA	NA	NA	NA	NA	1	0	0	8	0	0	
283	20-Apr-22	15:13	15:45	Precipitation: Snow	Open	300	800	NA	42	10	30	0	0	0	60	0	24	0	0	0	42	20	22	0	0	0	60	10	14	0	0	0	84	0	0	0	0	0	
284	20-Apr-22	15:45	16:18	Precipitation: 0 Sunny	Open	200	1600	No	5	0	0	2	0	0	6	0	0	1	0	0	5	0	2	0	0	0	6	0	0	1	0	0	7	0	0	0	0	0	
285	21-Apr-22	8:44	9:48	Precipitation: 0 Overcast, foggy	Closed	300	1000	No	13	1	0	0	0	0	8	2	0	0	0	0	7	2	0	0	0	0	6	1	0	0	0	0	6	1	0	3	0	0	
286	21-Apr-22	8:54	9:24	Precipitation: Snow	Closed	200	1500	NA	0	0	0	2	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	
287	21-Apr-22	9:43	10:30	Precipitation: Snow	Closed	100	1600	NA	7	0	0	8	0	0	0	0	0	16	0	0	0	0	0	16	0	0	0	0	0	16	0	0	13	0	0	3	0	0	
288	21-Apr-22	10:29	10:59	Precipitation: Snow	Closed	200	1600	NA	11	0	0	11	0	0	11	0	0	11	0	0	1	0	2	0	0	0	16	0	0	0	0	0	NA	NA	NA	NA	NA	NA	
289	21-Apr-22	11:05	11:36	Precipitation: 0 Sunny	Closed	100	2000	None	7	0	0	10	1	0	10	0	2	6	0	0	1	0	0	3	0	0	5	0	0	3	0	0	12	0	2	0	0	0	
290	22-Apr-22	9:08	9:35	Precipitation: 0 Sunny	Closed	0	2000	None	25	34	4	0	1	0	45	6	0	13	0	0	30	21	0	13	0	0	25	22	0	4	0	0	13	28	0	6	0	0	
291	22-Apr-22	9:08	9:35	Precipitation: 0 Sunny	Closed	0	2000	None	30	34	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
292	22-Apr-22	9:08	9:35	Precipitation: 0 Sunny	Closed	0	2000	None	0	0	0	67	0	0	5	0	0	10	0	0	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
293	22-Apr-22	11:07	11:48	Precipitation: None Sunny	Closed	200	2000	None	9	0	0	12	0	0	21	0	0	0	0	0	21	0	0	0	0	0	21	0	0	0	0	0	21	0	0	0	0	0	
294	22-Apr-22	12:24	12:58	Precipitation: 0	Open	200	1000	NA	0	12	0	0	0	0	0	12	0	0	0	0	0	12	0	0	0	0	0	12	0	0	0	0	0	12	0	0	0	0	
295	22-Apr-22	12:54	13:28	Precipitation: 0 Sunny	Closed	400	2500	None	0	8	2	0	0	0	0	7	3	0	0	0	0	9	1	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0	
296	22-Apr-22	13:13	13:42	Precipitation: 0 Sunny	Closed	0	2000	No	34	1	4	0	0	0	24	10	5	0	0	0	34	5	0	0	0	0	1	5	0	10	0	0	0	0	0	16	0	0	
297	22-Apr-22	13:29	14:00	Precipitation: 0 Sunny	Closed	300	2500	None	0	9	1	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0	
298	22-Apr-22	14:16	14:30	Precipitation: 0	Closed	0	2000	None	14	0	0	0	0	0	9	0	0	5	0	0	5	0	0	9	0	0	8	0	0	3	0	0	6	0	0	4	0	0	
299	24-Apr-22	17:57	18:39	Precipitation: 0	Open	0	0	NA	7	0	0	0	0	0	7	0	0	0	0	0	7	0	0	0	0	0	7	0	0	0	0	7	0	0	0	0	0		
300	25-Apr-22	17:20	11:12	Precipitation: 0 Nada	Closed	100	1500	Nada	0	0	9	9	9	0	3	0	9	1	2	0	9	0	9	1	0	0	9	0	9	0	0	9	0	9	9	0	0		
301	26-Apr-22	9:10	9:10	Precipitation: None	Open	100	400	NA	0	0	0	25	0	0	20	0	0	5	0	0	25	0	0	0	0	0	19	0	0	0	0	0	10	0	0	0	0		
302	26-Apr-22	14:30	15:18	Precipitation: 0 Sunny	Closed	100	3000	No	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	2	0	0	0	0		
303	27-Apr-22	6:17	6:50	Precipitation: 0	Closed	200	400	None	6	0	0	4	0	0	0	0	3	7	0	0	0	0	10	0	0	0	0	0	7	3	0	0	0	0	8	2	0	0	
304	27-Apr-22	16:42	17:18	Precipitation: None	Closed	100	1500	NA	36	0	0	0	0	0	36	0	0	0	0	0	36	0	0	0	0	0	0	0	0	36	0	0	0	0	36	0	0		

Appendix B: Caribou Behaviour Monitoring Data Sheet

Survey ID	Date	Time Start	Time End	Feeding_15	Lying Down_15	Standing_15	Walking_15	Alert_15	Trotting/Running_15	Feeding_18	Lying Down_18	Standing_18	Walking_18	Alert_18	Trotting/Running_18	Feeding_21	Lying Down_21	Standing_21	Walking_21	Alert_21	Trotting/Running_21	Feeding_24	Lying Down_24	Standing_24	Walking_24	Alert_24	Trotting/Running_24	Feeding_27	Lying Down_27	Standing_27	Walking_27	Alert_27	Trotting/Running_27	Feeding_30	Lying Down_30	Standing_30	Walking_30	Alert_30	Trotting/Running_30	Disturbance 0	Disturbance 3	Disturbance 6	Disturbance 9	Disturbance 12	
278	19-Apr-22	12:55	13:32	103	16	0	4	0	0	103	16	0	4	0	0	100	16	0	7	0	0	113	0	10	0	0	0	123	0	0	0	0	0	63	0	60	0	0	0	NA	NA	NA	NA	NA	
279	19-Apr-22	16:23	17:00	17	0	0	0	0	0	15	3	0	0	0	0	14	6	0	0	0	0	14	4	0	0	0	0	15	2	0	0	0	0	15	0	0	2	0	0	NA	NA	NA	NA	NA	
280	19-Apr-22	17:00	17:12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
281	19-Apr-22	17:01	17:38	12	0	2	0	0	0	12	0	0	21	0	0	8	0	0	6	0	0	10	0	0	4	0	0	13	0	0	1	0	0	12	0	1	1	0	0	NA	NA	NA	NA	NA	
282	20-Apr-22	12:38	13:10	3	0	0	6	0	0	7	0	0	2	0	0	9	0	0	0	0	0	9	0	0	0	0	0	9	0	0	0	0	0	9	0	0	0	0	0	Heavy Equipment	NA	NA	NA	Light Truck	
283	20-Apr-22	15:13	15:45	42	0	42	0	0	0	40	15	24	5	0	0	84	0	0	0	0	0	24	0	60	0	0	0	34	0	50	0	0	0	84	0	0	0	0	0	NA	NA	NA	NA	NA	
284	20-Apr-22	15:45	16:18	7	0	0	0	0	0	6	0	0	0	1	0	3	0	0	3	0	0	3	0	0	4	0	0	7	0	0	0	0	0	5	0	0	2	0	0	NA	NA	NA	NA	NA	
285	21-Apr-22	8:44	9:48	7	1	0	1	0	0	9	0	0	1	0	0	9	0	1	0	0	0	5	0	0	6	0	0	3	0	0	7	0	0	4	0	0	6	0	0	NA	NA	NA	NA	NA	
286	21-Apr-22	8:54	9:24	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	NA	NA	NA	NA	NA	
287	21-Apr-22	9:43	10:30	13	0	0	3	0	0	14	0	0	2	0	0	15	0	0	1	0	0	15	0	0	0	1	0	16	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	Convoy	NA	NA		
288	21-Apr-22	10:29	10:59	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Heavy Equipment				
289	21-Apr-22	11:05	11:36	12	0	1	4	0	0	14	0	0	0	0	0	16	0	1	0	0	0	16	0	1	0	0	12	0	0	0	0	0	17	4	0	0	0	0	NA	Light Truck	NA	NA	NA		
290	22-Apr-22	9:08	9:35	7	33	0	3	0	0	5	26	0	6	1	0	7	13	0	5	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
291	22-Apr-22	9:08	9:35	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
292	22-Apr-22	9:08	9:35	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
293	22-Apr-22	11:07	11:48	24	0	0	0	0	0	24	0	0	0	0	0	24	0	0	0	0	0	24	0	0	0	0	0	24	0	0	0	0	0	24	0	0	0	0	0	NA	Convoy	Convoy	NA	NA	
294	22-Apr-22	12:24	12:58	0	12	0	0	0	0	12	0	0	0	0	0	0	12	0	0	0	0	0	12	0	0	0	0	0	12	0	0	0	0	0	12	0	0	0	0	0	NA	NA	NA	NA	NA
295	22-Apr-22	12:54	13:28	0	10	0	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0	0	NA	NA	NA	NA	NA
296	22-Apr-22	13:13	13:42	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
297	22-Apr-22	13:29	14:00	0	10	0	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0	0	Convoy	NA	NA	NA	NA
298	22-Apr-22	14:16	14:30	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
299	24-Apr-22	17:57	18:39	6	0	0	0	1	0	4	0	0	0	3	0	6	0	0	1	0	0	0	0	0	7	0	0	0	0	0	4	3	0	0	0	7	0	0	0	0	NA	NA	NA	NA	NA
300	25-Apr-22	17:20	11:12	0	0	9	9	9	0	0	0	9	9	9	0	0	0	9	9	9	9	9	0	9	0	9	0	9	0	9	0	0	0	0	0	9	9	9	7	NA	NA	NA	NA	NA	
301	26-Apr-22	9:10	9:10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Heavy Equipment	NA	NA	
302	26-Apr-22	14:30	15:18	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	NA	NA	NA	NA	NA	
303	27-Apr-22	6:17	6:50	0	0	0	10	0	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0	NA	NA	NA	NA	NA
304	27-Apr-22	16:42	17:18	26	0	0	10	0	0	33	3	0	0	0	0	33	3	0	0	0	0	32	4	0	0	0	0	36	0	0	0	0	0	36	0	0	0	0	0	NA	NA	NA	NA	NA	

Appendix B: Caribou Behaviour Monitoring Data Sheet

Survey ID	Date	Time Start	Time End	Disturbance 15	Disturbance 18	Disturbance 21	Disturbance 24	Disturbance 27	Disturbance 30	Survey Type
278	19-Apr-22	12:55	13:32	NA	NA	NA	NA	NA	NA	01- Behavior
279	19-Apr-22	16:23	17:00	NA	NA	NA	NA	NA	NA	05- During the convoy, Behavior
280	19-Apr-22	17:00	17:12	NA	NA	NA	NA	NA	NA	09-Post-disturbance, Behavior
281	19-Apr-22	17:01	17:38	NA	NA	Heavy Equipment	NA	NA	NA	01- Behavior
282	20-Apr-22	12:38	13:10	NA	NA	Heavy Equipment	NA	NA	NA	01- Behavior
283	20-Apr-22	15:13	15:45	NA	NA	NA	NA	NA	NA	01- Behavior
284	20-Apr-22	15:45	16:18	NA	Heavy Equipment	NA	NA	NA	NA	01- Behavior
285	21-Apr-22	8:44	9:48	Convoy	NA	NA	NA	NA	NA	05- During the convoy, Behavior
286	21-Apr-22	8:54	9:24	NA	NA	NA	NA	NA	NA	01- Behavior
287	21-Apr-22	9:43	10:30	NA	Convoy	NA	NA	NA	NA	05- During the convoy, Behavior
288	21-Apr-22	10:29	10:59	NA	NA	NA	NA	NA	NA	05- During the convoy, Behavior
289	21-Apr-22	11:05	11:36	NA	NA	NA	NA	NA	NA	01- Behavior
290	22-Apr-22	9:08	9:35	NA	NA	NA	NA	NA	NA	03- Pre-disturbance, Behavior
291	22-Apr-22	9:08	9:35	NA	NA	NA	Convoy	NA	NA	05- During the convoy, Behavior
292	22-Apr-22	9:08	9:35	NA	NA	NA	NA	NA	NA	09-Post-disturbance, Behavior
293	22-Apr-22	11:07	11:48	NA	NA	NA	NA	NA	NA	01- Behavior
294	22-Apr-22	12:24	12:58	NA	NA	NA	NA	NA	NA	01- Behavior
295	22-Apr-22	12:54	13:28	NA	NA	NA	NA	NA	NA	05- During the convoy, Behavior
296	22-Apr-22	13:13	13:42	NA	NA	NA	NA	NA	NA	03- Pre-disturbance, Behavior
297	22-Apr-22	13:29	14:00	NA	NA	NA	NA	NA	NA	05- During the convoy, Behavior
298	22-Apr-22	14:16	14:30	NA	NA	NA	NA	NA	NA	03- Pre-disturbance, Behavior
299	24-Apr-22	17:57	18:39	NA	Blast	NA	NA	NA	NA	03- Pre-disturbance, Behavior
300	25-Apr-22	17:20	11:12	NA	NA	NA	Heavy Equipment	Convoy	NA	01- Behavior
301	26-Apr-22	9:10	9:10	NA	NA	NA	NA	NA	NA	01- Behavior
302	26-Apr-22	14:30	15:18	NA	NA	Aircraft	NA	NA	NA	01- Behavior
303	27-Apr-22	6:17	6:50	NA	NA	NA	NA	NA	NA	01- Behavior
304	27-Apr-22	16:42	17:18	NA	NA	NA	NA	NA	NA	01- Behavior

Appendix B: Caribou Behaviour Monitoring Data Sheet

Survey ID	Date	Time Start	Time End	Observers	Waypoint	Longitude	Latitude	Reconnaissance Survey	Project Tolerant Info	Road Name and Distance Marker	Distance from Caribou to Observer Location (m)	Distance from Caribou to Road (if different)	Bearing	Is Group East or West of Survey?	Did the Group Cross the Road during the Survey?	Estimated Size (for larger group)	Caribou Group Size (exact count or estimate)	Size of Subset (Surveyed)	Dominant Group Sex	Temperature (°C)	Wind Speed (km/h)	Wind Direction	Days since Last Snow or Wind Event
305	29-Apr-22	10:41	11:18	Derek, Nicolas	-	-96.01128518	64.37485252	No	No	AWAR KM 6	100-300	N/A	270	West	No	1 to 2	2	2	Mixed group	-10	30	N	1
306	30-Apr-22	17:25	18:30	Rowan Woodall	-	-96.6665196	65.40176043	No	No	Amaruq KM 143	100-300	N/A	0	West	No	3 to 25	22	22	Mixed group	-14	30	N	2
307	03-May-22	17:45	18:30	Rowan Woodall, Kathleen Newberry	-	-96.66657043	65.40144073	No	No	Haul Road KM 179	50-100	N/A	150	West	No	26-50	33	33	Mixed group	-6	10	SE	5
308	04-May-22	15:52	16:34	Alex	-	-96.07110259	65.02313573	Yes	No	Meadowbank KM NA	0-50	N/A	340	East	Yes	3 to 25	21	2	Mixed group	-5	15	NW	4
309	05-May-22	17:35	18:26	Eric Leonard	-	-96.69641467	65.3965103	No	No	Amaruq KM NA	100-300	N/A	350	West	No	3 to 25	20	20	Mixed group	-10	40	SE	0
310	07-May-22	17:35	18:15	Kathleen Newberry	-	-96.67888128	65.4064376	No	No	Amaruq KM NA	100-300	N/A	150	East	No	3 to 25	10	10	Mostly females	0	30	NW	0
311	12-May-22	13:53	14:29	Louis Dubois - Jeff Dufour	-	-96.07045145	65.02217493	No	No	AWAR KM 104	50-100	N/A	180	West	No	3 to 25	12	12	Mixed group	-2	20	NW	1
312	15-May-22	8:23	8:58	NB JL	-	-96.06439261	65.01537464	Yes	No	Haul Road KM 110	100-300	N/A	180	West	No	3 to 25	18	2	Mixed group	3	15	NW	5
313	19-May-22	15:23	20:56	Jeff Dufour	-	-96.07320868	65.02135715	Yes	No	AWAR KM 102	100-300	N/A	270	West	No	1 to 2	2	2	Mixed group	-1	40	N	4
314	14-Jun-22	17:37	18:23	Eric Leonard	-	-96.66535915	65.40063477	No	No	Amaruq KM NA	300-1000	N/A	0	West	No	3 to 25	19	19	Mixed group	22	26	W	13
315	31-Jul-22	14:33	15:10	JL NB	-	-96.21997249	64.9685522	No	No	AWAR KM 89	>1000	N/A	300	East	No	3 to 25	10	10	Mixed group	8	40	NW	0
316	31-Jul-22	15:17	15:56	Nadine Blatter Nadine Lachance	-	-96.25471629	64.94287273	Yes	No	AWAR KM 83	100-300	N/A	180	East	No	26-50	39	11	Mixed group	10	35	NW	0
317	31-Jul-22	16:08	16:34	Alex Blanchette	-	-96.37312945	64.67993164	Yes	No	AWAR KM 52	300-1000	N/A	90	East	No	3 to 25	25	10	Mixed group	10	20	E	0
318	01-Aug-22	13:44	13:44	Derek	-	-96.07187382	64.45126741	Yes	No	AWAR KM 20	100-300	N/A	250	West	NA	3 to 25	4	4	Mostly males	7	30	NW	1
319	01-Aug-22	14:02	14:32	Derek	-	-96.11026198	64.49172435	Yes	No	AWAR KM 22	50-100	N/A	150	East	No	26-50	37	37	Mixed group	7	30	NW	1
320	01-Aug-22	14:48	15:24	Jeff Dufour	-	-96.07127169	65.02307129	No	No	AWAR KM 94	100-300	N/A	250	West	No	1 to 2	2	2	Mixed group	6	50	NW	1
321	01-Aug-22	15:27	15:56	Jeff Dufour	-	-96.21503702	65.00689697	No	No	AWAR KM 93	50-100	N/A	100	East	No	1 to 2	1	2	Mostly males	6	50	NW	1
322	02-Aug-22	11:02	11:36	NB DN	-	-96.28574723	65.22579001	Yes	No	Haul Road KM 139	300-1000	N/A	300	East	No	3 to 25	5	5	Mostly males	10	35	N	0
323	02-Aug-22	17:21	17:39	Jeff Dufour	-	-96.11446368	64.49468994	No	No	AWAR KM 20	100-300	N/A	90	East	No	3 to 25	7	7	Mixed group	9	26	N	1
324	03-Aug-22	11:24	11:54	Jeff Dufour	-	-96.03292981	64.41809082	No	No	AWAR KM 12	50-100	N/A	85	East	No	1 to 2	2	2	Mixed group	12	17	N	1
325	04-Aug-22	10:30	10:48	JL NB	-	-96.41428886	65.29302979	No	No	Haul Road KM 159	100-300	N/A	270	East	No	3 to 25	3	3	Mixed group	10	26	NW	0
326	04-Aug-22	11:03	11:16	JL NB	-	-96.41397755	65.27142334	No	No	Haul Road KM 150	>1000	N/A	310	East	No	3 to 25	8	8	Mixed group	10	26	NW	0
327	04-Aug-22	11:23	11:31	Jeff Dufour	-	-96.30641191	64.91906738	No	No	AWAR KM 79	100-300	N/A	90	East	No	3 to 25	5	5	Mixed group	9	26	NW	1
328	04-Aug-22	11:33	12:04	JL	-	-96.46695149	65.2355957	No	No	Haul Road KM 140	100-300	N/A	310	East	No	1 to 2	1	3	Mixed group	10	26	NW	0
329	04-Aug-22	13:01	13:16	Jeff Dufour	-	-96.3323938	64.89910889	No	No	AWAR KM 32	100-300	N/A	100	East	No	3 to 25	5	5	Mixed group	13	26	NW	0
330	09-Aug-22	11:34	12:18	Jaden Vieveen Sylvain Singaḡti	-	-96.60400718	65.36114502	Yes	No	Haul Road KM 171	100-300	N/A	0	East	No	1 to 2	1	1	Mostly males	22	8	S	7
331	26-Aug-22	16:57	18:18	Eric Leonard	-	-96.66638557	65.4017334	No	No	Amaruq KM NA	300-1000	N/A	0	East	No	3 to 25	3	3	Mostly males	10	4	NE	4

Appendix B: Caribou Behaviour Monitoring Data Sheet

Survey ID	Date	Time Start	Time End	Weather Observations	Road Open or Closed	Road Height	Road Side Width	Structures Present	Feeding_0	Lying Down_0	Standing_0	Walking_0	Alert_0	Trotting/Running_0	Feeding_3	Lying Down_3	Standing_3	Walking_3	Alert_3	Trotting/Running_3	Feeding_6	Lying Down_6	Standing_6	Walking_6	Alert_6	Trotting/Running_6	Feeding_9	Lying Down_9	Standing_9	Walking_9	Alert_9	Trotting/Running_9	Feeding_12	Lying Down_12	Standing_12	Walking_12	Alert_12	Trotting/Running_12		
305	29-Apr-22	10:41	11:18	Precipitation: Nada Nada	Open	0	800	Nada	0	0	2	2	2	2	0	0	2	2	2	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
306	30-Apr-22	17:25	18:30	Precipitation: None	Open	200	600	IVR WRSF	15	0	0	7	0	0	18	0	0	4	0	0	20	0	0	2	0	0	0	22	0	0	0	0	0	0	20	0	0	2	0	0
307	03-May-22	17:45	18:30	Precipitation: 0	Closed	200	700	Pad K on East side of road	0	32	1	0	0	0	1	31	1	0	0	0	1	32	0	0	0	0	2	30	1	0	0	0	1	30	1	0	1	0		
308	04-May-22	15:52	16:34	Precipitation: None Few	Closed	100	1200	Airport	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	
309	05-May-22	17:35	18:26	Precipitation: 0 Windy, poor visibility	Open	100	1000	Vent raise storage pile nearby	5	15	0	0	0	0	14	6	0	0	0	0	14	6	0	0	0	0	12	8	0	0	0	0	12	8	0	0	0	0		
310	07-May-22	17:35	18:15	Precipitation: In the morning	Open	300	1000	IVR WRSF, IVR att. Pond, IVR dike, Road 35, PAD K, Fuel farm.	7	0	0	3	0	0	10	0	0	0	0	0	5	0	1	4	0	0	7	0	0	3	0	0	10	0	0	0	0	0		
311	12-May-22	13:53	14:29	Precipitation: None Cloudy	Open	200	2000	None	12	0	0	0	0	0	8	0	0	0	0	0	11	0	0	1	0	0	12	0	0	0	0	0	9	1	0	0	0	0		
312	15-May-22	8:23	8:58	Precipitation: 0 Sunny	Open	0	800	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0		
313	19-May-22	15:23	20:56	Precipitation: 0	Open	300	2000	NA	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0		
314	14-Jun-22	17:37	18:23	Precipitation: 0 Sun and cloud	Open	0	1000	No	0	7	5	6	0	0	0	7	5	7	0	0	0	8	6	5	0	0	0	9	8	2	0	0	0	9	9	1	0	0		
315	31-Jul-22	14:33	15:10	Precipitation: 0 Windy and cloudy	Closed	100	700	NA	0	8	2	0	0	0	0	9	1	0	0	0	0	10	0	0	0	0	2	8	0	0	0	0	3	7	0	0	0	0		
316	31-Jul-22	15:17	15:56	Precipitation: 0 Cloudy and windy	Closed	-100	600	0	11	0	0	0	0	0	8	0	0	3	0	0	11	0	0	0	0	0	11	0	0	0	0	0	11	0	0	0	0	0		
317	31-Jul-22	16:08	16:34	Precipitation: Light rain	Closed	500	1000	NA	10	0	0	0	0	0	10	0	0	0	0	0	7	0	0	3	0	0	2	0	0	2	0	6	0	0	0	10	0	0		
318	01-Aug-22	13:44	13:44	Precipitation: Rain	Closed	100	1200	Zero	4	0	4	4	4	0	4	0	4	4	0	0	4	0	4	4	0	0	0	0	4	4	0	0	0	0	4	4	4	0	0	
319	01-Aug-22	14:02	14:32	Precipitation: Rain Rain windy	Closed	100	1200	Zero	15	6	24	24	0	7	24	6	24	24	4	6	27	3	27	27	4	3	27	3	27	27	0	0	6	0	30	30	2	1	0	
320	01-Aug-22	14:48	15:24	Precipitation: Light rain	Closed	100	1500	NA	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0		
321	01-Aug-22	15:27	15:56	Precipitation: Light rain	Closed	200	1500	NA	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0		
322	02-Aug-22	11:02	11:36	Precipitation: 10% Cloudy and rainy	Open	100	600	0	0	5	0	0	0	0	0	5	0	0	0	0	0	5	0	0	0	0	0	5	0	0	0	0	0	5	0	0	0	0		
323	02-Aug-22	17:21	17:39	Precipitation: Light rain	Open	400	1500	NA	0	0	0	7	0	0	0	0	0	7	0	0	7	0	0	0	0	0	2	0	0	5	0	0	7	0	0	0	0	0		
324	03-Aug-22	11:24	11:54	Precipitation: Periods of light rain	Open	100	1500	NA	2	0	0	0	0	0	2	0	0	0	0	0	1	0	0	1	0	0	2	0	0	0	0	0	2	0	0	4	0	0		
325	04-Aug-22	10:30	10:48	Precipitation: Small rain during the survey Rainy	Open	200	800	NA	3	0	0	0	0	0	2	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0		
326	04-Aug-22	11:03	11:16	Precipitation: Rainy On and off rain	Open	100	700	NA	7	0	0	1	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	8	0	0	NA	NA	NA	NA	NA	NA	
327	04-Aug-22	11:23	11:31	Precipitation: Light rain intermitant	Open	200	1500	NA	0	0	0	5	0	0	0	0	0	5	0	0	0	0	0	5	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	
328	04-Aug-22	11:33	12:04	Precipitation: Rainy	Open	300	600	NA	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0		
329	04-Aug-22	13:01	13:16	Precipitation: None	Open	200	1500	NA	4	0	0	1	0	0	4	0	0	1	0	0	0	0	0	5	0	0	2	0	0	1	0	0	2	0	0	0	0	0		
330	09-Aug-22	11:34	12:18	Precipitation: Sunny Sunny	Open	200	2500	Long haul truck	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
331	26-Aug-22	16:57	18:18	Precipitation: 0 Clear skies	Open	200	500	Seaman's	3	0	0	0	0	0	3	0	0	0	0	0	3	0	0	0	0	0	2	0	1	0	0	0	3	0	0	0	0	0		

Appendix B: Caribou Behaviour Monitoring Data Sheet

Survey ID	Date	Time Start	Time End	Feeding_15	Lying Down_15	Standing_15	Walking_15	Alert_15	Trotting/Running_15	Feeding_18	Lying Down_18	Standing_18	Walking_18	Alert_18	Trotting/Running_18	Feeding_21	Lying Down_21	Standing_21	Walking_21	Alert_21	Trotting/Running_21	Feeding_24	Lying Down_24	Standing_24	Walking_24	Alert_24	Trotting/Running_24	Feeding_27	Lying Down_27	Standing_27	Walking_27	Alert_27	Trotting/Running_27	Feeding_30	Lying Down_30	Standing_30	Walking_30	Alert_30	Trotting/Running_30	Disturbance 0	Disturbance 3	Disturbance 6	Disturbance 9	Disturbance 12				
305	29-Apr-22	10:41	11:18	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Light Truck	NA	NA	NA	NA			
306	30-Apr-22	17:25	18:30	21	0	0	1	0	0	21	0	0	0	1	0	16	1	0	0	5	0	21	1	0	0	0	0	21	1	0	0	0	0	16	1	0	4	1	0	0	NA	NA	NA	NA	NA			
307	03-May-22	17:45	18:30	4	29	0	0	0	0	7	26	0	0	0	0	6	27	0	0	0	0	6	27	0	0	0	0	5	27	0	1	0	0	6	27	0	0	0	0	0	NA	NA	NA	NA	Blast			
308	04-May-22	15:52	16:34	0	0	2	0	0	0	2	0	0	0	0	0	1	0	1	0	0	0	0	0	1	1	0	0	1	0	1	0	0	0	2	0	0	0	0	0	0	NA	NA	NA	NA	NA			
309	05-May-22	17:35	18:26	13	7	0	0	0	0	15	5	0	0	0	0	15	4	0	1	0	0	14	6	0	0	0	0	14	6	0	0	0	0	16	4	0	0	0	0	0	NA	NA	NA	NA	Blast			
310	07-May-22	17:35	18:15	8	0	0	0	2	0	5	0	0	0	0	0	0	0	0	5	5	0	0	0	0	10	0	0	10	0	0	0	0	0	10	0	0	0	0	0	0	NA	NA	Heavy Equipment	NA	NA			
311	12-May-22	13:53	14:29	7	2	0	0	0	0	2	5	0	0	0	0	2	5	0	0	0	0	3	5	0	0	0	0	3	6	0	0	0	0	0	8	0	0	0	0	0	NA	NA	NA	Aircraft	NA			
312	15-May-22	8:23	8:58	2	0	0	0	0	0	1	0	1	0	0	0	1	0	0	1	0	0	0	0	0	2	0	0	1	0	0	1	0	0	2	0	0	0	0	0	0	NA	NA	NA	NA	NA			
313	19-May-22	15:23	20:56	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	3	0	0	0	0	0	3	0	0	0	0	0	0	NA	NA	NA	NA	NA			
314	14-Jun-22	17:37	18:23	0	9	10	0	0	0	0	9	10	0	0	0	0	9	10	0	0	0	0	9	10	0	0	0	0	9	10	0	0	0	0	9	10	0	0	0	0	NA	NA	NA	NA	NA			
315	31-Jul-22	14:33	15:10	2	8	0	0	0	0	4	6	0	0	0	0	2	8	0	0	0	0	0	5	0	3	0	0	3	5	0	0	0	0	3	5	0	0	0	0	0	NA	NA	NA	NA	NA			
316	31-Jul-22	15:17	15:56	11	0	0	0	0	0	8	0	0	3	0	0	10	0	0	1	0	0	11	0	0	0	0	11	0	0	0	0	0	1	0	0	0	0	1	0	NA	NA	NA	NA	NA				
317	31-Jul-22	16:08	16:34	10	0	0	0	0	0	10	0	0	0	0	0	7	0	0	3	0	0	9	0	0	1	0	0	5	0	0	5	0	0	5	0	3	2	0	0	0	NA	NA	NA	NA	Heavy Equipment			
318	01-Aug-22	13:44	13:44	0	0	4	4	4	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA					
319	01-Aug-22	14:02	14:32	10	0	19	19	2	4	19	0	19	0	0	0	19	0	19	3	0	1	19	0	19	19	0	0	19	1	18	18	0	0	19	0	19	18	2	1	0	NA	NA	NA	NA	NA			
320	01-Aug-22	14:48	15:24	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	
321	01-Aug-22	15:27	15:56	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	
322	02-Aug-22	11:02	11:36	0	5	0	0	0	0	0	5	0	0	0	0	0	5	0	0	0	0	0	5	0	0	0	0	5	0	0	0	0	0	5	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	
323	02-Aug-22	17:21	17:39	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Aircraft	NA	NA	NA	NA	
324	03-Aug-22	11:24	11:54	0	0	0	6	0	0	2	0	0	4	0	0	6	0	0	0	0	0	0	0	0	0	0	3	3	0	0	3	0	0	0	0	0	0	3	0	0	0	NA	NA	NA	Convoy	Heavy Equipment		
325	04-Aug-22	10:30	10:48	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Heavy Equipment	NA	NA	NA	NA
326	04-Aug-22	11:03	11:16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
327	04-Aug-22	11:23	11:31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
328	04-Aug-22	11:33	12:04	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	NA	NA	NA	NA	NA		
329	04-Aug-22	13:01	13:16	1	0	0	1	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
330	09-Aug-22	11:34	12:18	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	Heavy Equipment	NA	NA	NA	NA	NA	
331	26-Aug-22	16:57	18:18	3	0	0	0	0	0	3	0	0	0	0	0	3	0	0	0	0	0	1	1	0	1	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	NA	Heavy Equipment	NA	NA	NA	NA	NA	

Appendix B: Caribou Behaviour Monitoring Data Sheet

Survey ID	Date	Time Start	Time End	Disturbance 15	Disturbance 18	Disturbance 21	Disturbance 24	Disturbance 27	Disturbance 30	Survey Type
305	29-Apr-22	10:41	11:18	NA	NA	NA	NA	NA	NA	01- Behavior
306	30-Apr-22	17:25	18:30	NA	NA	Blast	NA	NA	NA	03- Pre-disturbance, Behavior
307	03-May-22	17:45	18:30	NA	NA	NA	NA	NA	NA	03- Pre-disturbance, Behavior
308	04-May-22	15:52	16:34	NA	NA	NA	NA	NA	NA	01- Behavior
309	05-May-22	17:35	18:26	NA	NA	NA	NA	NA	NA	03- Pre-disturbance, Behavior
310	07-May-22	17:35	18:15	NA	NA	Blast	NA	NA	NA	03- Pre-disturbance, Behavior
311	12-May-22	13:53	14:29	NA	NA	NA	Light Truck	NA	NA	01- Behavior
312	15-May-22	8:23	8:58	NA	NA	NA	NA	NA	NA	01- Behavior
313	19-May-22	15:23	20:56	NA	NA	NA	NA	NA	NA	01- Behavior
314	14-Jun-22	17:37	18:23	Blast	Aircraft	NA	NA	NA	NA	03- Pre-disturbance, Behavior
315	31-Jul-22	14:33	15:10	NA	NA	NA	NA	NA	NA	01- Behavior
316	31-Jul-22	15:17	15:56	NA	NA	NA	NA	NA	NA	01- Behavior
317	31-Jul-22	16:08	16:34	NA	NA	NA	NA	NA	NA	01- Behavior
318	01-Aug-22	13:44	13:44	NA	NA	NA	NA	NA	NA	01- Behavior
319	01-Aug-22	14:02	14:32	NA	NA	NA	NA	NA	NA	01- Behavior
320	01-Aug-22	14:48	15:24	NA	NA	NA	NA	NA	NA	01- Behavior
321	01-Aug-22	15:27	15:56	NA	NA	NA	NA	NA	NA	01- Behavior
322	02-Aug-22	11:02	11:36	NA	NA	NA	NA	NA	NA	01- Behavior
323	02-Aug-22	17:21	17:39	NA	NA	NA	NA	NA	NA	01- Behavior
324	03-Aug-22	11:24	11:54	NA	NA	NA	NA	NA	NA	01- Behavior
325	04-Aug-22	10:30	10:48	NA	NA	NA	NA	NA	NA	01- Behavior
326	04-Aug-22	11:03	11:16	NA	NA	NA	NA	NA	NA	01- Behavior
327	04-Aug-22	11:23	11:31	NA	NA	NA	NA	NA	NA	01- Behavior
328	04-Aug-22	11:33	12:04	NA	NA	NA	NA	NA	NA	01- Behavior
329	04-Aug-22	13:01	13:16	NA	NA	NA	NA	NA	NA	01- Behavior
330	09-Aug-22	11:34	12:18	Heavy Equipment	NA	NA	Heavy Equipment	NA	Convoy	01- Behavior
331	26-Aug-22	16:57	18:18	Blast	NA	Aircraft	NA	NA	NA	03- Pre-disturbance, Behavior

Appendix B: Caribou Behaviour Monitoring Data Sheet

Survey ID	Date	Time Start	Time End	Observers	Waypoint	Longitude	Latitude	Reconnaissance Survey	Project Tolerant Info	Road Name and Distance Marker	Distance from Caribou to Observer Location (m)	Distance from Caribou to Road (if different)	Bearing	Is Group East or West of Survey?	Did the Group Cross the Road during the Survey?	Estimated Size (for larger group)	Caribou Group Size (exact count or estimate)	Size of Subset (Surveyed)	Dominant Group Sex	Temperature (°C)	Wind Speed (km/h)	Wind Direction	Days since Last Snow or Wind Event
332	23-Sep-22	17:03	17:03	Kathleen Newberry	-	-96.66656473	65.40142822	No	No	Amaruq KM NA	>1000	N/A	220	West	NA	3 to 25	4	4	Mostly males	3	40	SE	0
333	24-Sep-22	13:33	14:10	Louis D. Kristel B.	-	-96.60239446	65.37713623	No	No	Haul Road KM 174	100-300	N/A	50	West	No	3 to 25	5	5	Mixed group	6	17	NE	1
334	26-Sep-22	16:41	18:20	Eric Thomson	-	-96.66652281	65.40167236	No	No	Amaruq KM NA	50-100	N/A	70	East	No	3 to 25	6	6	Mixed group	1	17	NW	0
335	04-Oct-22	11:23	11:44	Laurence Archambault and Kevin Martee	-	-96.15263675	65.17785645	No	No	Haul Road KM 130	50-100	N/A	100	West	No	1 to 2	2	2	Mostly males	-1	45	NW	0
336	04-Oct-22	11:50	12:22	Laurence Archambault and Kevin Martee	-	-96.12624195	65.15405273	No	No	Haul Road KM 127	300-1000	N/A	100	West	No	1 to 2	1	1	Mostly males	-1	45	NW	0
337	04-Oct-22	13:17	13:53	Sylvain Singaqt, Felix Quessy Savard	-	-96.31526122	64.83380127	Yes	No	AWAR KM 70	0-50	N/A	0	East	No	26-50	26	26	Mixed group	-1	40	NW	1
338	07-Oct-22	15:11	15:40	Alex B. Keven M.	-	-96.54359678	65.34234619	No	No	Haul Road KM 170	100-300	N/A	60	East	Yes	51-100	70	50	Mixed group	-3	50	W	1
339	08-Oct-22	16:23	16:42	Alex B and Kevin M	-	-96.51214547	65.32971191	No	No	Haul Road KM 166	100-300	N/A	90	East	No	1 to 2	1	1	Mostly males	10	20	NW	1
340	15-Oct-22	6:24	16:20	Alex Blanchette	-	-96.45447958	65.23166853	No	No	Haul Road KM 149	0-50	N/A	270	East	No	>100	300	50	Mixed group	-3	30	N	1
341	21-Oct-22	16:36	17:15	Derek Nateela	-	-96.07329015	65.02130127	Yes	No	AWAR KM 41	300-1000	N/A	40	East	No	>100	199	60	Mixed group	-3	20	NW	1
342	30-Oct-22	11:04	11:37	Felix Quessy Savard	-	-96.0733803	65.02130127	No	No	AWAR KM 59	100-300	N/A	90	East	No	>100	-	60	Mixed group	-16	5	NW	1
343	02-Nov-22	11:31	14:57	Alex B	-	-96.24680327	64.95233154	Yes	No	AWAR KM 87	300-1000	N/A	270	East	No	>100	-	26	Mixed group	-20	20	E	3
344	02-Nov-22	14:36	15:12	Sylvain Singaqt	-	-96.33951885	64.88262939	Yes	Yes	AWAR KM 81	0-50	N/A	0	East	Yes	>100	338	338	Mixed group	-18	20	NW	1
345	10-Nov-22	14:38	15:03	Alex Blanchette	-	-96.37631797	64.68786621	No	No	AWAR KM 51	300-1000	N/A	270	East	No	51-100	65	51	Mixed group	-25	20	NE	5
346	12-Nov-22	9:25	9:48	Rowan Woodall and Kathleen Newberry	-	-96.60230621	65.38238525	No	No	Haul Road KM 176	300-1000	N/A	60	East	No	26-50	35	10	Mixed group	-16	30	SW	0
347	13-Nov-22	12:41	13:22	Alex and Guillaume	-	-96.22280262	64.56903076	Yes	No	AWAR KM 32	>1000	N/A	0	Both	No	>100	2000	51	Mixed group	-9	30	NW	1
348	17-Nov-22	10:20	10:53	Kathleen Newberry	-	-96.40893205	65.28430176	No	Yes	Haul Road KM 158	50-100	N/A	250	West	No	1 to 2	2	2	Mostly males	-17	20	NW	1
349	17-Nov-22	11:10	11:40	Kathleen Newberry	-	-96.42852262	65.2199707	No	Yes	Haul Road KM 147	300-1000	N/A	140	East	No	1 to 2	2	2	Mostly males	-16	20	NW	1
350	17-Nov-22	14:07	14:44	Eric Thomson	-	-96.37146238	64.67333984	Yes	No	AWAR KM 48	100-300	N/A	0	East	No	51-100	100	50	Mixed group	-16	20	NE	0
351	18-Nov-22	13:32	14:03	Eric Thomson	-	-96.32609672	64.65606689	Yes	No	AWAR KM 49	300-1000	N/A	0	East	No	51-100	100	5	Mixed group	-22	36	NW	0
352	20-Nov-22	10:25	10:51	Derek	-	-96.3273194	64.8112793	No	No	AWAR KM 66	300-1000	N/A	45	East	No	51-100	96	96	Mostly females	-26	16	NE	1
353	23-Nov-22	9:26	9:43	Eric Leonard, Kathleen Newberry	-	-96.28306214	65.22668457	No	No	Haul Road KM 139	300-1000	N/A	60	East	No	26-50	28	28	Mixed group	-18	20	E	2
354	26-Nov-22	9:20	9:53	Laurence Archambault and Kevin Martee	-	-96.62858355	65.40332031	No	No	Haul Road KM 177	100-300	N/A	270	West	No	1 to 2	1	1	Juveniles	-15	18	NW	0

Appendix B: Caribou Behaviour Monitoring Data Sheet

Survey ID	Date	Time Start	Time End	Weather Observations	Road Open or Closed	Road Height	Road Side Width	Structures Present	Feeding_0	Lying Down_0	Standing_0	Walking_0	Alert_0	Trotting/Running_0	Feeding_3	Lying Down_3	Standing_3	Walking_3	Alert_3	Trotting/Running_3	Feeding_6	Lying Down_6	Standing_6	Walking_6	Alert_6	Trotting/Running_6	Feeding_9	Lying Down_9	Standing_9	Walking_9	Alert_9	Trotting/Running_9	Feeding_12	Lying Down_12	Standing_12	Walking_12	Alert_12	Trotting/Running_12		
332	23-Sep-22	17:03	17:03	Precipitation: None	Open	300	1500	Berm	4	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
333	24-Sep-22	13:33	14:10	Precipitation: None	Open	100	1400	Flag	4	0	1	0	0	0	3	2	0	0	1	0	3	3	0	0	1	0	1	4	0	1	1	0	3	4	0	0	0	0	0	
334	26-Sep-22	16:41	18:20	Precipitation: 0 Overcast	Open	200	1000	0	3	0	0	3	0	0	3	0	0	1	1	1	6	0	0	0	0	0	5	0	0	1	0	0	6	0	0	0	0	0		
335	04-Oct-22	11:23	11:44	Precipitation: 0 Cloudy	Open	200	1500	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	
336	04-Oct-22	11:50	12:22	Precipitation: 0 Cloudy	Open	100	1500	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	
337	04-Oct-22	13:17	13:53	Precipitation: Windy Cloudy, windy	Closed	100	700	O	10	0	0	16	0	0	20	0	0	6	0	0	26	0	0	0	0	0	49	0	0	0	0	0	39	0	0	10	0	0	0	
338	07-Oct-22	15:11	15:40	Precipitation: None Overcast	Open	200	1500	NA	13	0	0	12	0	0	0	0	0	25	0	0	0	0	0	25	0	0	0	0	0	25	0	0	0	0	0	25	0	0	0	
339	08-Oct-22	16:23	16:42	Precipitation: Light rain Fog	Closed	200	1000	NA	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	
340	15-Oct-22	6:24	16:20	Precipitation: 0	Closed	200	1000	NA	0	0	0	50	0	0	0	0	0	50	0	0	0	0	50	0	0	0	0	0	50	0	0	0	0	0	0	50	0	0	0	
341	21-Oct-22	16:36	17:15	Precipitation: Cloudy	Closed	200	1200	No	40	10	10	0	0	0	45	8	7	0	0	0	8	2	27	23	0	0	1	0	59	59	0	0	0	0	60	60	0	0	0	
342	30-Oct-22	11:04	11:37	Precipitation: 0 Cloudy	Open	2000	700	No	0	0	0	60	0	0	0	0	5	55	0	0	0	0	60	0	0	0	0	60	0	0	0	0	0	0	0	60	0	0	0	
343	02-Nov-22	11:31	14:57	Precipitation: None Overcast	Closed	200	700	No	22	4	0	0	0	0	22	4	0	0	0	0	26	0	0	0	0	0	19	0	0	7	0	0	12	0	0	13	0	0	0	
344	02-Nov-22	14:36	15:12	Precipitation: Clear Sunny with a bit of clouds	Closed	100	3000	0	0	0	0	338	0	0	0	0	0	338	0	0	0	0	0	338	0	0	0	0	0	338	0	0	0	0	1	337	0	0	0	
345	10-Nov-22	14:38	15:03	Precipitation: None	Open	0	1000	NA	51	0	0	0	0	0	43	0	8	0	0	0	51	0	0	0	0	0	37	0	8	6	0	0	46	0	0	5	0	0	0	
346	12-Nov-22	9:25	9:48	Precipitation: None	Open	100	500	NA	10	0	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0	0	10	0	0	0	0	0	35	0	0	0	0	0	0	
347	13-Nov-22	12:41	13:22	Precipitation: None	Closed	100	800	Road	0	0	0	51	0	0	0	0	0	51	0	0	0	0	51	0	0	0	0	0	51	0	0	0	0	0	0	0	51	0	0	0
348	17-Nov-22	10:20	10:53	Precipitation: 0	Open	200	700	None	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	
349	17-Nov-22	11:10	11:40	Precipitation: 0	Open	100	800	No	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	
350	17-Nov-22	14:07	14:44	Precipitation: 0 N/A	Closed	300	1000	No	0	0	0	50	0	0	0	0	0	50	0	0	0	0	50	0	0	0	0	0	50	0	0	0	0	0	0	0	50	0	0	0
351	18-Nov-22	13:32	14:03	Precipitation: 0	Closed	0	1000	0	3	0	2	0	0	0	2	0	3	0	0	0	4	0	1	0	0	0	5	0	0	0	0	0	5	0	0	0	0	0	0	
352	20-Nov-22	10:25	10:51	Precipitation: Shitty Shitty	Closed	0	1200	Nada	0	0	0	96	96	0	0	0	0	96	0	0	0	0	96	0	0	0	0	0	96	0	0	0	0	0	0	0	88	0	8	0
353	23-Nov-22	9:26	9:43	Precipitation: 0	Open	200	800	Bridge	26	2	1	0	0	0	25	2	0	2	0	0	25	4	0	0	0	0	25	4	0	0	0	0	21	4	0	0	4	0	0	
354	26-Nov-22	9:20	9:53	Precipitation: None Cloudy	Open	100	2000	Tire stop near	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	

Appendix B: Caribou Behaviour Monitoring Data Sheet

Survey ID	Date	Time Start	Time End	Feeding_15	Lying Down_15	Standing_15	Walking_15	Alert_15	Trotting/Running_15	Feeding_18	Lying Down_18	Standing_18	Walking_18	Alert_18	Trotting/Running_18	Feeding_21	Lying Down_21	Standing_21	Walking_21	Alert_21	Trotting/Running_21	Feeding_24	Lying Down_24	Standing_24	Walking_24	Alert_24	Trotting/Running_24	Feeding_27	Lying Down_27	Standing_27	Walking_27	Alert_27	Trotting/Running_27	Feeding_30	Lying Down_30	Standing_30	Walking_30	Alert_30	Trotting/Running_30	Disturbance 0	Disturbance 3	Disturbance 6	Disturbance 9	Disturbance 12			
332	23-Sep-22	17:03	17:03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
333	24-Sep-22	13:33	14:10	2	5	0	0	0	0	1	6	0	0	0	0	1	6	0	0	0	0	1	6	0	0	0	0	1	6	0	0	0	0	0	7	0	0	0	0	NA	Heavy Equipment	Heavy Equipment	Heavy Equipment	NA			
334	26-Sep-22	16:41	18:20	6	0	0	0	0	0	6	0	0	0	0	0	6	0	0	0	0	0	6	0	0	0	0	0	6	0	0	0	0	0	6	0	0	0	0	0	NA	NA	NA	NA	NA			
335	04-Oct-22	11:23	11:44	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			
336	04-Oct-22	11:50	12:22	0	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	Light Truck	NA	NA	NA	Heavy Equipment			
337	04-Oct-22	13:17	13:53	47	0	0	2	0	0	49	0	0	0	0	0	49	0	0	0	0	0	47	0	0	2	0	0	43	0	0	6	0	0	45	4	0	0	0	0	NA	NA	NA	NA	NA			
338	07-Oct-22	15:11	15:40	0	0	0	25	0	0	0	0	0	25	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			
339	08-Oct-22	16:23	16:42	0	0	0	1	0	0	0	0	0	1	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
340	15-Oct-22	6:24	16:20	0	0	0	50	0	0	0	0	0	50	0	0	0	0	0	50	0	0	34	0	11	5	0	0	35	0	15	0	0	0	40	0	10	0	0	0	NA	NA	NA	NA	NA			
341	21-Oct-22	16:36	17:15	50	0	10	10	0	0	0	0	60	0	0	0	60	0	60	0	0	0	60	0	60	0	0	0	60	0	60	0	0	0	60	0	60	0	0	0	NA	NA	NA	NA	NA			
342	30-Oct-22	11:04	11:37	0	0	0	60	0	0	0	0	0	40	0	0	0	0	0	20	0	0	0	0	0	60	0	0	0	0	0	60	0	0	0	0	0	60	0	0	0	NA	NA	NA	NA	NA		
343	02-Nov-22	11:31	14:57	0	0	0	26	0	0	26	0	0	0	0	0	26	0	0	0	0	0	26	0	0	0	0	0	26	0	0	0	0	0	26	0	0	0	0	0	NA	NA	NA	NA	NA			
344	02-Nov-22	14:36	15:12	0	0	0	338	0	0	0	0	0	338	0	0	0	0	0	0	0	338	0	0	0	0	0	338	0	0	0	0	0	0	0	0	338	0	0	0	0	NA	NA	NA	NA	NA		
345	10-Nov-22	14:38	15:03	42	0	7	2	0	0	0	0	0	17	0	0	0	0	3	22	0	0	40	0	0	11	0	0	11	0	0	40	0	0	6	0	0	45	0	0	NA	NA	NA	NA	NA			
346	12-Nov-22	9:25	9:48	35	0	0	0	0	0	33	0	0	2	0	0	0	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Heavy Equipment	Heavy Equipment	NA	Heavy Equipment
347	13-Nov-22	12:41	13:22	0	0	0	51	0	0	0	0	0	51	0	0	0	0	0	0	0	0	0	0	0	51	0	0	0	0	0	51	0	0	0	0	0	51	0	0	NA	NA	NA	NA	NA			
348	17-Nov-22	10:20	10:53	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	NA	Heavy Equipment	Heavy Equipment	NA	NA			
349	17-Nov-22	11:10	11:40	0	0	0	0	1	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	NA	Heavy Equipment	NA	NA	Heavy Equipment			
350	17-Nov-22	14:07	14:44	0	0	0	50	0	0	0	0	0	50	0	0	0	0	0	0	0	0	0	0	50	0	0	15	0	5	30	0	0	17	0	8	25	0	0	NA	NA	NA	NA	NA				
351	18-Nov-22	13:32	14:03	3	0	2	0	0	0	1	0	0	4	0	0	0	0	0	0	5	0	0	0	2	3	0	0	1	0	3	1	0	0	5	0	0	0	0	0	NA	NA	NA	NA	NA			
352	20-Nov-22	10:25	10:51	0	0	2	90	0	4	0	0	0	96	0	0	0	0	0	0	96	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
353	23-Nov-22	9:26	9:43	0	0	0	29	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Light Truck		
354	26-Nov-22	9:20	9:53	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	Heavy Equipment	Heavy Equipment	Heavy Equipment	NA	Heavy Equipment			

Appendix B: Caribou Behaviour Monitoring Data Sheet

Survey ID	Date	Time Start	Time End	Disturbance 15	Disturbance 18	Disturbance 21	Disturbance 24	Disturbance 27	Disturbance 30	Survey Type
332	23-Sep-22	17:03	17:03	NA	NA	NA	NA	NA	NA	01- Behavior
333	24-Sep-22	13:33	14:10	Heavy Equipment	Heavy Equipment	Heavy Equipment	NA	NA	Heavy Equipment	01- Behavior
334	26-Sep-22	16:41	18:20	NA	Blast	NA	NA	NA	NA	03- Pre-disturbance, Behavior
335	04-Oct-22	11:23	11:44	NA	NA	NA	NA	NA	NA	01- Behavior
336	04-Oct-22	11:50	12:22	Heavy Equipment	NA	NA	NA	NA	NA	01- Behavior
337	04-Oct-22	13:17	13:53	NA	NA	NA	NA	NA	NA	01- Behavior
338	07-Oct-22	15:11	15:40	NA	NA	NA	NA	NA	NA	01- Behavior
339	08-Oct-22	16:23	16:42	NA	NA	NA	NA	NA	NA	01- Behavior
340	15-Oct-22	6:24	16:20	NA	NA	NA	NA	NA	NA	01- Behavior
341	21-Oct-22	16:36	17:15	NA	NA	NA	NA	NA	NA	01- Behavior
342	30-Oct-22	11:04	11:37	NA	NA	NA	NA	NA	NA	01- Behavior
343	02-Nov-22	11:31	14:57	NA	NA	NA	NA	NA	NA	01- Behavior
344	02-Nov-22	14:36	15:12	NA	NA	NA	NA	NA	NA	01- Behavior
345	10-Nov-22	14:38	15:03	NA	NA	NA	NA	NA	NA	01- Behavior
346	12-Nov-22	9:25	9:48	Heavy Equipment	NA	NA	NA	NA	NA	01- Behavior
347	13-Nov-22	12:41	13:22	NA	NA	NA	NA	NA	NA	01- Behavior
348	17-Nov-22	10:20	10:53	NA	Light Truck	Heavy Equipment	Heavy Equipment	Light Truck	NA	01- Behavior
349	17-Nov-22	11:10	11:40	NA	NA	NA	Light Truck	Heavy Equipment	NA	01- Behavior
350	17-Nov-22	14:07	14:44	NA	NA	NA	NA	NA	NA	01- Behavior
351	18-Nov-22	13:32	14:03	NA	NA	NA	NA	NA	NA	01- Behavior
352	20-Nov-22	10:25	10:51	NA	NA	NA	NA	NA	NA	01- Behavior
353	23-Nov-22	9:26	9:43	NA	NA	NA	NA	NA	NA	01- Behavior
354	26-Nov-22	9:20	9:53	NA	Heavy Equipment	Heavy Equipment	Tanker	Heavy Equipment	NA	01- Behavior

APPENDIX C PROPORTION OF RESPONSE BEHAVIOUR DURING EACH SURVEY

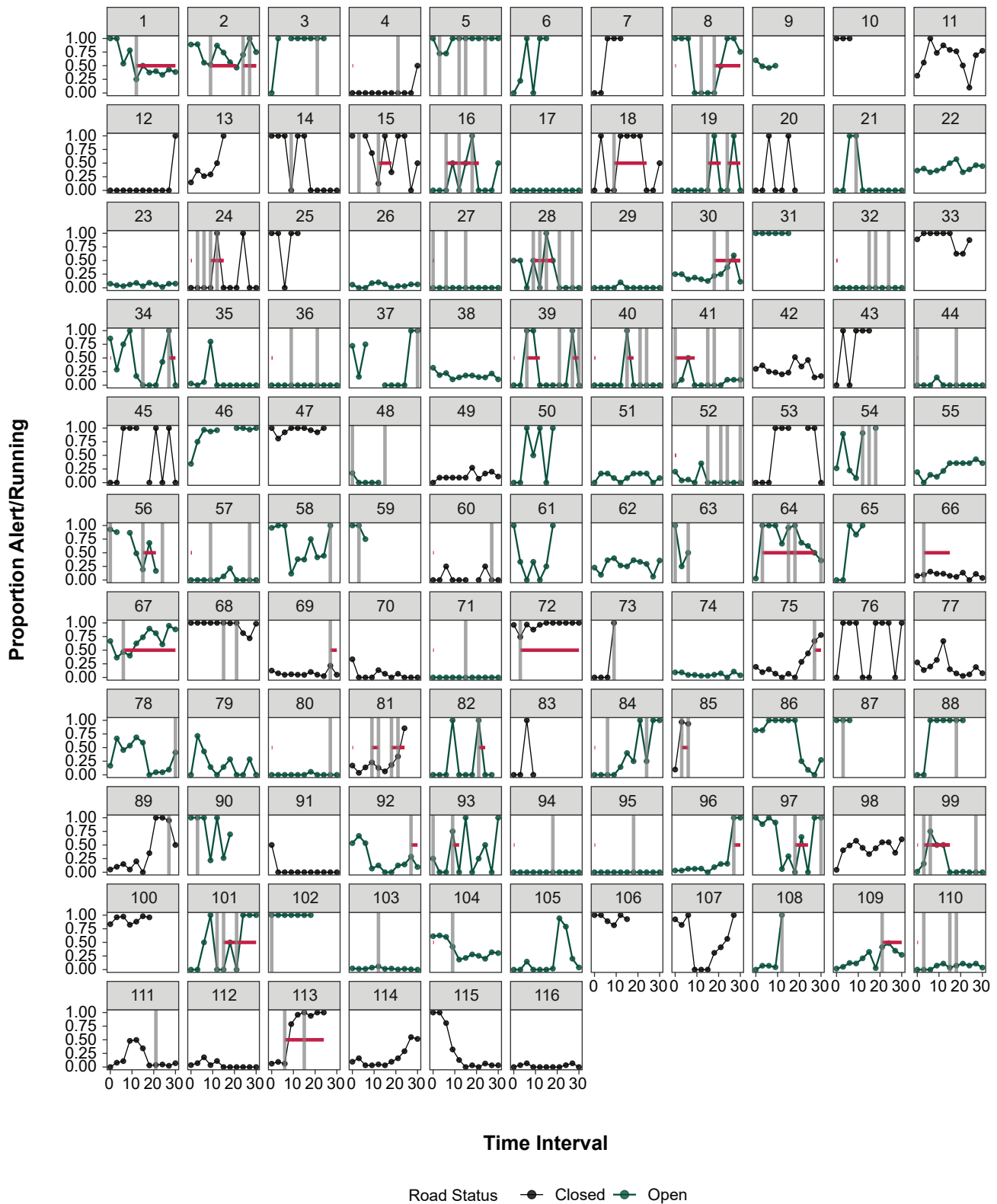


Figure C-1: Proportion of Response Behaviour during Each Survey – 2020

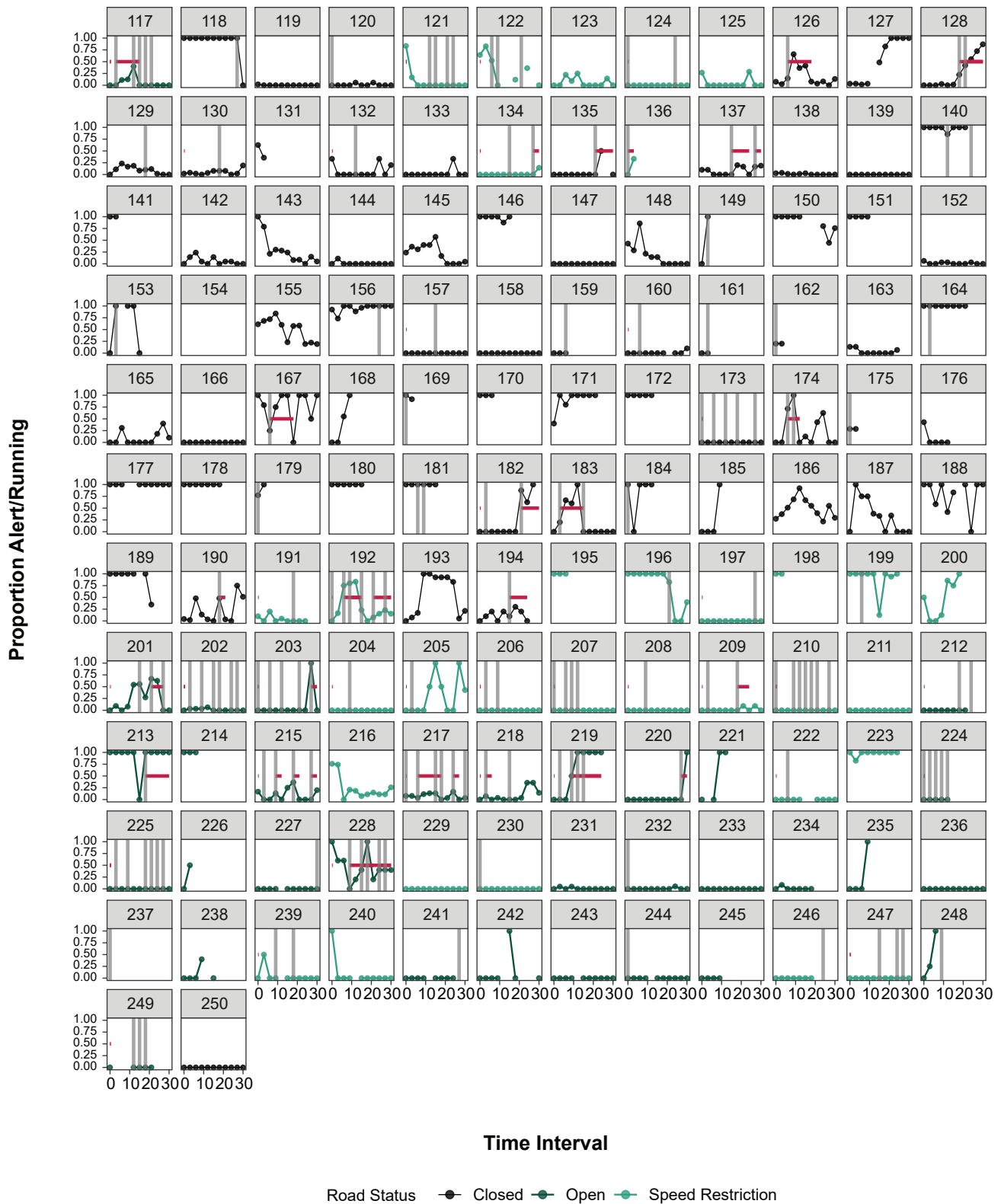


Figure C-2: Proportion of Response Behaviour during Each Survey – 2021

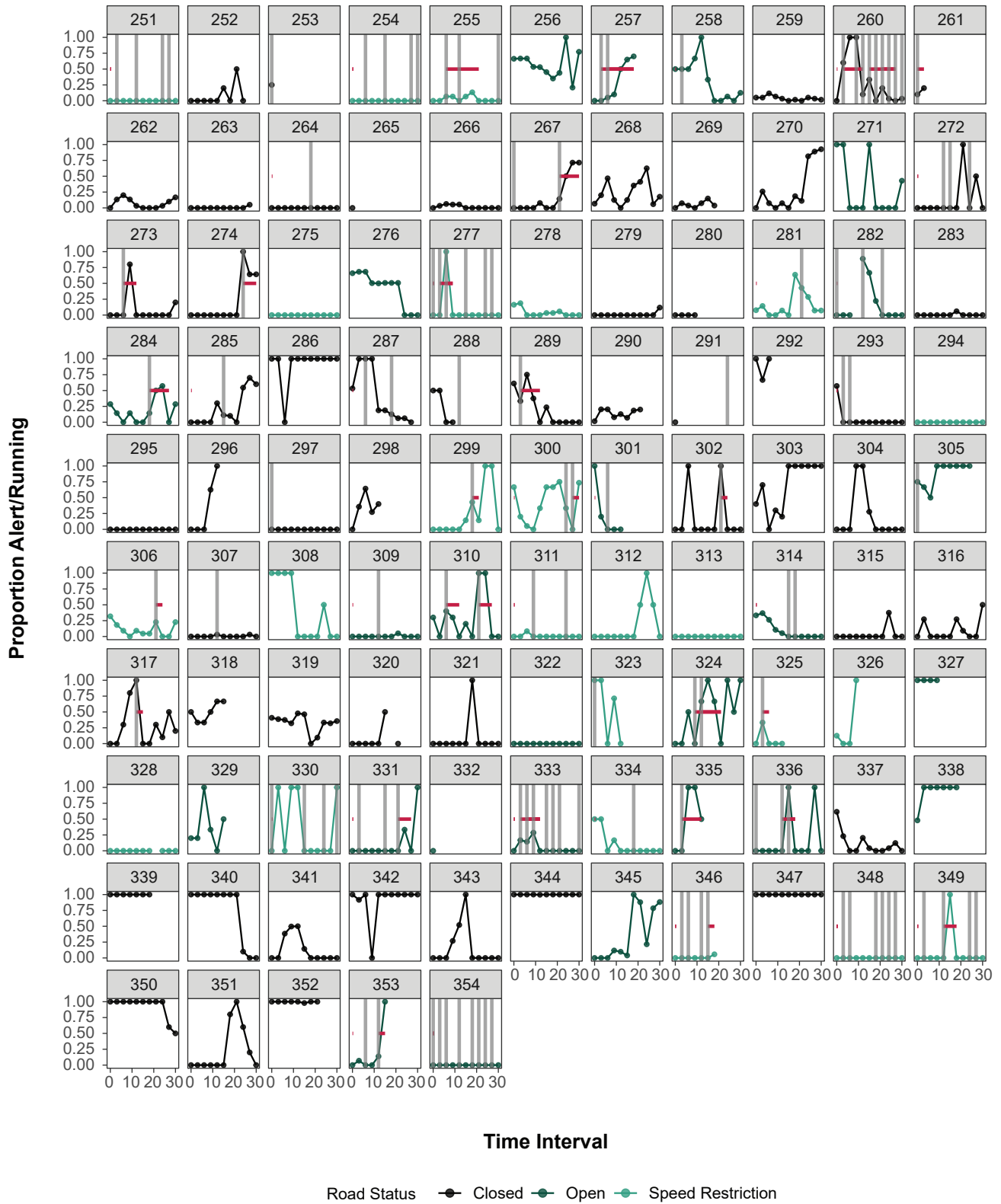


Figure C-3: Proportion of Response Behaviour during Each Survey – 2022

ERM has over 160 offices across the following countries and territories worldwide

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