Lynn Lake Gold Project: Wildlife Monitoring and Management Plan

Version 0

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Document History

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Revision History

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Revision #	Date	Summary of Changes	Author

Approvals

This document requires the following approvals:

Name	Company Title	Date	Signature

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Acronyms and Abbreviations

Alamos	Alamos Gold Inc.
ATV	All-terrain vehicle
CEAA, 2012	*Canadian Environmental Assessment Act, 2012*
cm	centimetre
EIS	Environmental Impact Statement
EMMP	Environmental Management and Monitoring Program
FSP	Fish Salvage Plan
GPS	Global Positioning System
km	kilometre
km/h	kilometres per hour
LAA	Local Assessment Area
m	metre
m^2	metres squared
MB CDC	Manitoba Conservation Data Centre
MECC	Manitoba Environment and Climate Change (formerly Manitoba Environment, Climate and Parks, formerly Manitoba Conservation and Climate)
NRIF	Manitoba Department of Natural Resources and Indigenous Futures
PDA	Project Development Area
the Project	Lynn Lake Gold Project
QA/QC	Quality Assurance/Quality Control
RAA	Regional Assessment Area
RGMPs	Responsible Gold Mining Principles
SAR	Species at risk

SARA	*Species at Risk Act*
SOCC	Species of conservation concern
Stantec	Stantec Consulting Ltd.
SWMMP	Surface Water Monitoring and Management Plan
TMF	Tailings Management Facility
UTM	Universal Transverse Mercator
WMMP	Wildlife Monitoring and Management Plan
°C	degrees Celsius

Glossary

Adaptive Management	The process of using the findings from ongoing monitoring to continually improve mitigation strategies and procedures to further lessen effects on selected valued component.
Furbearer	A mammal whose fur is generally valued commercially and listed under Division 2, Schedule A of *The Wildlife Act* (Manitoba).
Local Assessment Area (LAA)	Includes components of the Project Development Area (see below) plus a 1-km (kilometre) buffer surrounding each component.
Mitigation	A planned activity or process that reduces the severity of a potential effect on a selected valued component.
Monitoring	A planned activity used to evaluate the progress or effectiveness of mitigation measures and verify environmental assessment predictions.
Project Development Area (PDA)	The immediate area in which Project activities and components may occur plus a 30-metre (m) buffer.
Regional Assessment Area (RAA)	Includes the Project Development Area, Local Assessment Area, and an approximate 12-km buffer around components of the Project Development Area.
Valued Component	An element of the environment around a proposed development that holds natural, economic, social, or cultural importance which was assessed as part of the environmental assessment process.

1.0 INTRODUCTION

The following presents the Wildlife Monitoring and Management Plan ('WMMP' or 'the Plan'), which considers the pre-construction, construction, operation, and decommissioning/closure phases of the Lynn Lake Gold Project ('LLGP' or 'the Project') and the mitigation, management, and monitoring of potential Project-related effects on wildlife habitat, mortality, and health. It is one component of the overall Environmental Management and Monitoring Program (EMMP) for the Project.

For clarity, the term "follow-up programs" as stated in the federal Decision Statement refers to "management and monitoring programs" as outlined in the provincial Environment Act Licences. Both terms are used interchangeably but refer to the same monitoring activities that extend over the life of mine through all phases.

1.1 PURPOSE

Chapter 12 of the LLGP Environmental Impact Statement (EIS; Assessment of Potential Effects on Wildlife and Wildlife Habitat) identified potential interactions with wildlife habitat, mortality risk, and health during the pre-construction, construction, operation, decommissioning/closure, and post-closure phases of the Project (Stantec 2020a). The purpose of this WMMP is to specify the mitigation measures and monitoring (follow-up) activities intended to reduce potential adverse effects on wildlife and wildlife habitat; verify the accuracy of EIS predictions and effectiveness of implemented mitigation measures; and outline compliance monitoring for verification of practices or procedures used to meet legislated requirements.

1.2 OBJECTIVES

As part of Alamos Gold Inc.'s (Alamos') approach to environmental management, the company sets, implements, and maintains documented environmental objectives that consider the Project's environmental risks and compliance obligations. These obligations are aligned with the Project's Environmental Policy and are communicated to employees, contractors, and interested parties, regularly monitored, and updated as appropriate.

Alamos' overarching environmental objective is to avoid adverse effects, where technologically and economically feasible, and mitigate adverse effects that are unavoidable. In support of this environmental objective, the objectives of the WMMP are to:

- Outline the follow-up and monitoring activities that will be implemented to verify EIS predictions.
- Reduce the potential for Project-related effects on wildlife and wildlife habitat by evaluating the effectiveness of mitigation measures.
- Provide adaptive management strategies to change or augment mitigation measures for wildlife and wildlife habitat, where required.

The objectives of the WMMP will be met using management and monitoring commitments from the EIS (Stantec 2020a) and additional input from federal and provincial regulators, Indigenous Nations, and stakeholders. The management and monitoring criteria reflect measurable and meaningful parameters to meet the above objectives.

1.3 RELATIONSHIP TO OTHER MANAGEMENT PLANS

The WMMP is intended as a general guide to protect wildlife and wildlife habitat during the lifetime of the Project. Other plans, such as the Aquatic Effects Monitoring Program (AEMP), Surface Water Monitoring and Management Plan (SWMMP), Vegetation and Weed Management Plan (VWMP), Explosives Management Plan (ExMP), and Closure Plans (respectively for the MacLellan and Gordon sites) work in concert with measures associated with wildlife management and mitigation in this plan.

1.4 REGULATORY CONTEXT

The Project EIS was submitted to the Impact Assessment Agency of Canada (formerly the Canadian Environmental Assessment Agency) pursuant to the *Canadian Environmental Assessment Act* (CEAA), *2012* (CEAA, 2012), and to Manitoba Environment and Climate Change (MECC; formerly Manitoba Environment, Climate and Parks and formerly Manitoba Conservation and Climate) as an Environment Act Proposal pursuant to *The Environment Act* of Manitoba. The relevant federal and provincial regulatory requirements related to wildlife management and monitoring are outlined below.

It is noted that this specific document will be subject to regular review in relation to data received through the Provincial Collaring Program (i.e., movement of boreal woodland caribou) and it is anticipated that Alamos and Natural Resources and Indigenous Futures (NRIF) will regularly collaborate in regard to this Plan and the protection of wildlife in relation to the Project.

1.4.1 Federal Regulatory Requirements

Canadian Environmental Assessment Act

Monitoring and follow-up are required under the CEAA, 2012 to determine the effectiveness of measures taken to mitigate potential adverse environmental effects, and to verify the accuracy of predictions of the environmental assessment of a project (Canadian Environmental Assessment Agency 2012).

Migratory Birds Convention Act

The *Migratory Birds Convention Act* provides protection for migratory birds, nests, and eggs. Protection is afforded to all native bird species expected to occur in the Regional Assessment Area (RAA) except American white pelican (*Pelecanus erythrorhynchos*), double-crested cormorant (*Phalacrocorax auritus*), upland gamebirds, raptors, belted kingfisher (*Megaceryle alcyon*), owls, corvids, and icterid blackbirds, which are protected under provincial legislation (Section 1.4.2).

Species at Risk Act

The *Species at Risk Act* (SARA) provides protection for species at risk (SAR) in Canada listed under Schedule 1 of the Act. The legislation provides a framework to facilitate recovery of species listed as threatened, endangered, or extirpated and to prevent species listed as special concern from becoming threatened or endangered. The SARA provides protection for both SAR and their critical habitat by prohibiting: 1) the killing, harming, or harassing of endangered or threatened SAR (sections 32 and 36 of the SARA); and 2) the destruction of critical habitat of an endangered or threatened SAR (sections 58, 60, and 61 of the SARA; Government of Canada 2002a).

1.4.2 Provincial Regulatory Requirements

The Wildlife Act

The Wildlife Act (Government of Manitoba 2021a) provides general provisions for regulating activities relating to the take and trade of wild animals in Manitoba. A wild animal is defined as “an animal or bird of a species or type listed in Schedule A or declared by the regulations to be a wild animal,” and includes select amphibian, reptile, and mammal species and most bird species (including those not protected under the *Migratory Birds Convention Act*) known to exist in Manitoba (Government of Manitoba 2021a).

The Endangered Species and Ecosystems Act

The Endangered Species and Ecosystems Act (Government of Manitoba 2021b) provides protection to threatened and endangered ecosystems and plant and animal SAR in Manitoba. The Act facilitates the management and development of recovery strategies for threatened, endangered, and extirpated or extinct species to prevent further declines and promote recovery. Listed species are those that “are of ecological, educational, aesthetic, historical, medical, recreational and scientific value to Manitoba and the residents of Manitoba” (Government of Manitoba 2024).

1.4.3 Corporate or Other Policies

As a member of the World Gold Council, Alamos is a proud supporter of the Responsible Gold Mining Principles (the RGMPs). The 10 RGMPs provide a framework that sets expectations for consumers, investors, and the downstream gold supply chain as to what constitutes responsible gold mining, addressing key environmental, social, and governance issues for the gold mining sector. They are designed to provide confidence to governments, investors, employees and contractors, communities, supply chain partners, and civil society that gold has been produced responsibly. Since the release of the RGMPs in September 2019, Alamos has implemented and aligned to the framework and obtained external assurance to provide further confidence that the gold produced by Alamos is responsibly mined. In 2023, Alamos communicated its progress on implementing the RGMPs through Alamos’ 2022 RGMP Progress Report which received independent audit/assurance from EEM EHS Management Inc. (Alamos 2023). The 2022 RGMP Progress Report reflects Alamos’ third year reporting under the RGMP. Alamos will continue to implement the RGMPs through 2024 and beyond. The RGMPs are only applicable to operating mines. The Lynn Lake Gold Project will be incorporated as it transitions through construction into operation.

Working with its members, the World Gold Council has set out RGMPs to address key environmental, social, and governance issues for the gold mining sector.

For Alamos, sustainability encompasses excellence in health and safety, environmental management, community engagement, security, and human rights. Alamos' Sustainability Policy outlines Alamos' commitment to build, operate, and close mines in a manner that supports its sustainability vision and promotes the Alamos core values of Safety, Teamwork, Environmental Sustainability, Integrity, and Commitment. The Policy is a key element of the Alamos Sustainability Framework and is supported by Corporate Sustainability Standards that guide site procedures and practices.

The Corporate Sustainability Standard applicable to the WMMP includes Biodiversity & Land Use. Standards that may be applicable to the WMMP include:

- Environmental Monitoring
- Hazard Identification & Risk Management
- Incident Classification, Investigation & Reporting

These policies are described in Table 1-1.

Alamos' standards are regularly updated to reflect the latest developments. For the most current and up-to-date standards, please refer to the online (internal) version.

Table 1-1 Corporate Sustainability Standards

Corporate Standard	Requirement
Environmental Monitoring (CSS-ENV-10.1)	Sites shall develop and implement an environmental monitoring program. The site's environmental monitoring program will be documented as to list of points monitored, coordinates of points monitored, description of points (including the reason for monitoring (e.g., regulatory compliance, baseline, trend analysis, etc.), frequency of monitoring, anticipated duration of monitoring (e.g., the life of the mine), and parameters monitored. The monitoring program will be of sufficient scope to allow for the timely identification of potential environmental impacts prior to their migration offsite. Sites will regularly review their monitoring programs and update for and changes at the mine site as required. At a minimum, the program will meet all environmental regulatory requirements.
Environmental Monitoring (CSS-ENV-10.2)	Compliance monitoring data will be subject to Quality Assurance/Quality Control (QA/QC) verification. Sample results that do not meet QA/QC guidelines will be disregarded and sample collection repeated. Sites must use reliable and accredited labs.
Environmental Monitoring (CSS-ENV-10.3)	Monitoring data will be stored in an electronic database.
Environmental Monitoring (CSS-ENV-10.4)	When compliance monitoring results indicate exceedances of permit or regulatory requirements, or significant deviation from previous results, the results will be reconfirmed with the person or company that did the analysis, and a confirmatory monitoring or sample will be taken immediately if the result is reconfirmed. Sites will also follow any permit-specific or jurisdictional requirements.

Corporate Standard	Requirement
Environmental Monitoring (CSS-ENV-10.5)	Monitoring data will be reviewed at least quarterly by the responsible manager to identify trends that may indicate potential for future exceedances of permit conditions or applicable standards, and potential risk. The site General Manager will be formally notified of any exceedances and emerging compliance issues. Refer to CSS-GOV-08 Incident Reporting Standard for any moderate, major, or catastrophic incidents.
Environmental Monitoring (CSS-ENV-10.6)	Sites will assess the need for a monitoring program involving external stakeholders.
Hazard Identification & Risk Management (CSS-GOV-2.1)	All Alamos locations shall maintain systems to identify, prevent and/or manage sustainability risks that face its operations and those which its activities may pose to others. This includes but is not limited to hazards and risks related to the: • Health and Safety of our workforce and communities, • Environmental impacts of our activities (local and downstream), • Societal and community impacts, and • Security and protection of people and property.
Hazard Identification & Risk Management (CSS-GOV-2.2)	Site Managers are responsible to ensure that appropriate resources, both internal and external, are available to identify, quantify, manage, and report sustainability hazards and risks. Assessments shall consider all site activities including: • Contractor works, • Regulatory requirements • Permit or licence requirements, • Alamos Sustainability Standards requirements, and • Other site-specific requirements.
Hazard Identification & Risk Management (CSS-GOV-2.3)	Sites shall maintain a risk registry of all site risks. The risk registry will be updated at least quarterly or when major changes/incidents occur. Clear responsibility and authority for implementing, managing, reporting, and coordinating updates to the risk registry shall be designated to a specific employee(s).
Hazard Identification & Risk Management (CSS-GOV-2.4)	All corporate, site and task-level risks shall be assessed against the Alamos Risk Matrix, including likelihood and consequence assessments. See Appendix 1 for Risk Matrix See Appendix 2 for Likelihood Assessment See Appendix 3 for Consequence Assessment
Hazard Identification & Risk Management (CSS-GOV-2.5)	Sites shall apply the hierarchy of controls considering (in order of priority): 1. Elimination – Remove the hazard 2. Substitution – Replace the hazard 3. Engineering control – physically control or isolate the hazard (e.g., dikes, guarding, interlocks) 4. Administrative control – control response/avoidance of hazard (e.g., training, procedures, reducing employee exposure to hazards, signage) 5. PPE or Mitigation – Protect people (personal protective equipment) or the environment (spill kits) from the hazard. This is the last line of defense. 6. Extreme and high risks that exist after controls have been applied should go through a formal review with the Site Manager.

Corporate Standard	Requirement
Hazard Identification & Risk Management (CSS-GOV-2.6)	Sites shall ensure effective communication of risks and controls to the workforce based on the nature of the activity and related risk. The nature of communication may change based on the risk frequency and consequence. For example, communication may include induction training, refresher training, policies, procedures and/or signage.
Hazard Identification & Risk Management (CSS-GOV-2.7)	For each identified risk, management shall assess and manage the risk appropriately with consideration to the risk rating. See Appendix 1 Risk Matrix Notifications. In considering risk mitigation, management must evaluate the cost of controls versus the benefit derived and ensure the resultant control framework is effective.
Hazard Identification & Risk Management (CSS-GOV-2.9)	The Alamos Executive and Internal Audit Director shall review and verify enterprise risks on a quarterly basis.
Incident Classification, Investigation & Reporting (CSS-GOV-8.3)	The Corporate Sustainability Team shall maintain an Incident Alert email group user list comprised of, at a minimum: • Alamos Executive and Management, • Country Managers, • General Managers; and • Project Managers.
Incident Classification, Investigation & Reporting (CSS-GOV-8.6)	The Corporate Sustainability Team shall provide a report on significant incidents on a quarterly basis to senior management and the Technical & Sustainability Committee of the Board.
Incident Classification, Investigation & Reporting (CSS-GOV-8.7)	Corporate Sustainability and Risk Management teams shall annually review and revise the Alamos Risk Assessment Consequence Table (Attachment 2) to ensure thresholds are consistent with the Alamos Enterprise Risk Management system.
Biodiversity & Land Use (CSS-ENV-7.1)	Prior to any new surface disturbance, notification must be given to the Environmental departments to obtain authorization, and any required jurisdictional or land access permits secured before any work is started.
Biodiversity & Land Use (CSS-ENV-7.2)	Prior to any surface disturbance, sites will evaluate risks of potential impacts to sensitive resources, including: • Cultural resources • Traditional knowledge or historical community use • Territorial lands • Historical or archeological features • Threatened or endangered wildlife and vegetation species • Sensitive areas • Sensitive habitats • Wetlands If risks are identified, a Biodiversity and Land Use Management Plan will be developed, implemented and maintained in order to avoid, minimize, mitigate or offset disturbance.
Biodiversity & Land Use (CSS-ENV-7.3)	Sensitive resources discovered during site activities will be reported to site management and the proper authorities. Impacts to these sensitive resources and any unauthorized collection is prohibited during project construction, operation, and closure.
Biodiversity & Land Use (CSS-ENV-7.6)	Sites will control the influence of introduced plants, animals and pathogens, particularly invasive plant species, weeds, feral predators, and plant and animal diseases.

Corporate Standard	Requirement
Biodiversity & Land Use (CSS-ENV-7.7)	Sites will manage any buffer zones or other areas not required for mining and associated activity so as to limit disturbance and conserve or increase biodiversity.
Biodiversity & Land Use (CSS-ENV-7.8)	When required by regulation, permit, external commitments, or when potentially significant biodiversity and land use risks and obligations are identified, sites will develop, formalize, and implement a Biodiversity and Land Use Management Plan.

1.4.4 Approval Related Requirements

The conditions relating to wildlife and wildlife habitat laid out in the federal Decision Statement issued under CEAA, 2012, provincial Environment Act Licence No. 3390 (Gordon), and provincial Environment Act Licence No. 3391 (MacLellan) are outlined in Table 1-2.

Table 1-2 Approval Related Requirements

Licence	Condition	Corresponding WMMP Section
CEAA, 2012	2.1 The Proponent shall ensure that its actions in meeting the conditions set out in this Decision Statement during all phases of the Designated Project are considered in a careful and precautionary manner, promote sustainable development, are informed by the best information and knowledge available at the time the Proponent takes action, including policies, guidelines and directives and community and Indigenous knowledge, are based on methods and models that are recognized by standard-setting bodies, are undertaken by qualified individuals, and have applied the best available economically and technically feasible technologies.	All
CEAA, 2012	2.2 The Proponent shall ensure that its actions in meeting the conditions set out in the Decision Statement are taken in a way that is consistent with any applicable recovery strategy and action plans for listed species at risk.	3.0
CEAA, 2012	2.5 The Proponent shall, where a follow-up program is a requirement of a condition set out in this Decision Statement, determine, as part of the development of each follow-up program and in consultation with Indigenous groups and any other parties being consulted during the development, the following information, unless otherwise specified in the condition: 2.5.1 the methodology, location, frequency, timing and duration of monitoring associated with the follow-up program;	4.1.1, 4.1.2, 4.2.1, 4.2.2, 4.2.3, 4.2.4, 4.2.5, 4.3.1
CEAA, 2012	2.5.2 the scope, content and frequency of reporting of the results of the follow-up program to the parties consulted for the development of the follow-up program; 2.5.3 the minimum frequency at which the follow-up program must be reviewed and, if necessary, updated;	6.0
CEAA, 2012	2.5.4 the levels of environmental change relative to baseline that would require the Proponent to implement modified or additional mitigation measure(s), including instances where the Proponent may require Designated Project activities causing the environmental change to be stopped;	4.0, 5.1
CEAA, 2012	2.5.5 the technically and economically feasible mitigation measures to be implemented by the Proponent if monitoring conducted as part of the follow-up program shows that the levels of environmental change referred to in condition 2.5.4 have been reached or exceeded; and	3.0, 4.0, 5.1
CEAA, 2012	2.5.6 the specific and measurable end points that must be achieved before the follow-up program can end. Those end points should indicate that the accuracy of the environmental assessment has been verified and/or that the mitigation measures are effective.	4.4

Table 1-2 Approval Related Requirements

Licence	Condition	Corresponding WMMP Section
CEAA, 2012	2.6 The Proponent shall update the information determined for each follow-up program pursuant to condition 2.5 during the implementation of each follow-up program, at the minimum frequency determined pursuant to condition 2.5.3 and in consultation with Indigenous groups and any other parties being consulted during the development of each follow-up program.	6.0
CEAA, 2012	2.7 The Proponent shall provide details of the follow-up programs referred to in conditions 3.12, 3.13, 3.14, 3.15, 4.5, 4.6, 6.3, 6.4, 6.5, 9.3, 10.5 and 12.2, including the information determined for each follow-up program pursuant to condition 2.5, to the Agency and to Indigenous groups and any other parties being consulted during the development of each follow-up program prior to the implementation of each follow-up program. The Proponent shall also provide any update made pursuant to condition 2.6 to the Agency and to Indigenous groups and any other parties being consulted during the development of each follow-up program within 30 days of the follow-up program being updated.	6.0
CEAA, 2012	2.8 The Proponent shall, where a follow-up program is a requirement of a condition set out in this Decision Statement: 2.8.1 implement the follow-up program according to the information determined pursuant to condition 2.5; 2.8.2 conduct monitoring and analysis to verify the accuracy of the environmental assessment as it pertains to the particular condition and/or to determine the effectiveness of any mitigation measure; 2.8.3 determine whether modified or additional mitigation measure(s) are required based on the monitoring and analysis undertaken pursuant to condition 2.8.2; 2.8.4 if modified or additional mitigation measure(s) are required pursuant to condition 2.8.3, develop and implement these mitigation measure(s) as soon as feasible and monitor them pursuant to condition 2.8.2. The Proponent shall notify the Agency in writing within 48 hours of any modified or additional mitigation measure being implemented. If the Proponent implements any additional or modified mitigation measure not previously submitted to the Agency pursuant to condition 2.5, the Proponent shall submit a detailed description of the measure(s) to the Agency within 7 days of their implementation; and 2.8.5 report all results of the follow-up program to the Agency no later than March 31 following each reporting year during which the follow-up program is implemented and, subject to information determined pursuant to 2.5.2, to the parties being consulted during the development of the follow-up program.	4.0, 5.0, 6.0

Table 1-2 Approval Related Requirements

Licence	Condition	Corresponding WMMP Section
CEAA, 2012	2.9 Where consultation with Indigenous groups is a requirement of a follow-up program, the Proponent shall discuss the follow-up program with each group and shall determine, in consultation with each group, opportunities for their participation in the implementation of the follow-up program, including the conduct of monitoring, the analysis and reporting of follow-up results and the determination of whether modified or additional mitigation measure(s) are required, as set out in condition 2.8, and opportunities for training to support participation in monitoring. The Proponent shall permit the participation of any interested Indigenous group in the identified follow-up program and training.	6.0
CEAA, 2012	2.10 The Proponent shall prepare an annual report for each reporting year that sets out: 2.10.1 the activities undertaken by the Proponent to comply with each of the conditions set out in this Decision Statement; 2.10.2 how the Proponent complied with condition 2.1; 2.10.3 for conditions set out in this Decision Statement for which consultation is a requirement, how the Proponent considered any views and information that the Proponent received during or as a result of the consultation, and the resources provided to support their participation in consultation activities; 2.10.4 the information referred to in conditions 2.5 and 2.8 for each follow-up program; 2.10.5 a summary of the available results of the follow-up program requirements identified in conditions 3.12, 3.13, 3.14, 3.15, 4.5, 4.6, 6.3, 6.4, 6.5, 9.3, 10.5 and 12.2; 2.10.6 for any plan that is a requirement of a condition set out in this Decision Statement, any update(s) to the plan that have been made during the reporting year; and 2.10.7 any modified or additional mitigation measure implemented or proposed to be implemented by the Proponent, as determined pursuant to condition 2.8.	6.0
CEAA, 2012	2.11 The Proponent shall submit to the Agency the annual report referred to in condition 2.10, including a plain language executive summary in both official languages, no later than March 31 following the reporting year to which the annual report applies.	6.0
CEAA, 2012	2.12 The first reporting year for which the Proponent shall prepare an annual report pursuant to condition 2.10 shall start on the day the Minister of the Environment issues the Decision Statement pursuant to subsection 54 (1) of the *Canadian Environmental Assessment Act, 2012*.	6.0

Table 1-2 Approval Related Requirements

Licence	Condition	Corresponding WMMP Section
CEAA, 2012	4.1 The Proponent shall carry out the Designated Project in a manner that protects migratory birds and avoids injuring, killing or harassing migratory birds or destroying, taking or disturbing their eggs, or damaging, destroying, removing or disturbing their nests, taking into account Environment and Climate Change Canada's *Guidelines to avoid harm to migratory birds*.	3.0, 4.2.1
CEAA, 2012	4.2 The Proponent shall mitigate distribution line strikes of migratory birds within the Project development areas. In doing so, the Proponent shall: 4.2.1 identify high-risk locations for avian distribution line strikes prior to construction in consultation with a qualified individual; 4.2.2 route new distribution lines away from high-risk locations identified pursuant condition 4.2.1; and 4.2.3 increase distribution line visibility to migratory birds at high-risk locations identified pursuant to condition 4.2.1, from the beginning of construction until distribution lines are decommissioned, taking into account the Avian Power Line Interaction Committee's *Suggested Practices for Avian Protection on Power Lines.*	3.0
CEAA, 2012	4.3 The Proponent shall control lighting during all phases of the Designated Project, including aiming lighting downwards at nighttime and selecting lighting that avoids attracting insects, to mitigate adverse effects on migratory birds, while meeting health and safety requirements for Designated Project employees and contractors.	3.0
CEAA, 2012	4.4 The Proponent shall develop, in consultation with Indigenous groups and relevant authorities and taking into account Environment and Climate Change Canada's *Guide for Developing Beneficial Management Practices for Migratory Bird Conservation*, and implement, from the beginning of operation, measures to prevent migratory birds from using Designated Project infrastructure where contact water is stored or conveyed, including the tailings management facility and contact water collection management ponds. In doing so, the Proponent shall: 4.4.1 install deterrents near Designated Project infrastructure where contact water is stored or conveyed, including the tailings management facility and contact water collection ponds; and 4.4.2 maintain deterrents installed pursuant to condition 4.4.1 until such time that Designated Project infrastructure where contact water is stored or conveyed, including the tailings management facility and contact water collection ponds, have been reclaimed pursuant to conditions 3.10.5 and 5.7.	3.0

Table 1-2 Approval Related Requirements

Licence	Condition	Corresponding WMMP Section
CEAA, 2012	4.5 The Proponent shall develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a follow-up program to verify the accuracy of the environmental assessment and to determine the effectiveness of all mitigation measures to avoid harm to migratory birds, their eggs and nests, including the mitigation measures used to comply with conditions 4.1 through 4.3. The Proponent shall implement the follow-up program during all phases of the Designated Project.	4.0
CEAA, 2012	4.6 The Proponent shall develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a follow-up program to verify the accuracy of the environmental assessment and to determine the effectiveness of mitigation measures implemented pursuant to condition 4.4. In doing so, the Proponent shall: 4.6.1 monitor, from the beginning of operation until such time that the tailings management facility and contact water collection ponds have been reclaimed, migratory birds usage of Designated Project infrastructure where contact water is stored or conveyed pursuant to condition 4.4; and 4.6.2 develop, in consultation with Indigenous groups and relevant authorities, and implement modified or additional mitigation measures, including deterrents, if the results of the monitoring conducted pursuant to condition 4.6.1 demonstrate migratory bird usage of Designated Project infrastructure where contact water is stored or conveyed. These measures shall be implemented until such time that the tailings management facility and contact water collection ponds have been reclaimed, and results of water quality monitoring for these structures conducted pursuant to condition 3.12.2 show that water quality objectives established in consultation with Indigenous groups and relevant authorities, taking into account an ecological risk-based approach, are met.	4.3.1
CEAA, 2012	10.1 The Proponent shall conduct, prior to construction and in consultation with Indigenous groups and relevant authorities, pre-construction surveys within the Project development areas to identify woodland caribou (*Rangifer tarandus caribou*) calving and calf-rearing habitat.	4.1.1
CEAA, 2012	10.2 The Proponent shall monitor, during all phases of the Designated Project, woodland caribou (*Rangifer tarandus caribou*) usage of the Project development areas, and provide monitoring results to Indigenous groups, Environment and Climate Change Canada, Manitoba Environment, Climate and Parks and any other relevant authorities.	4.2.4

Table 1-2 Approval Related Requirements

Licence	Condition	Corresponding WMMP Section
CEAA, 2012	10.3 The Proponent shall participate, during construction and operation and at the request of Manitoba Environment, Climate and Parks or any other relevant authorities responsible for these initiatives, in regional initiatives related to the management of adverse effects on woodland caribou (*Rangifer tarandus caribou*). Regional initiatives in which the Proponent shall participate include: 10.3.1 habitat restoration initiatives, including a collaring program, conducted as part of the Provincial Caribou Recovery Strategy led by Manitoba Natural Resources and Northern Development, or any equivalent future initiative as determined by Manitoba Natural Resources and Northern Development.	4.2.4
CEAA, 2012	10.4 The Proponent shall develop and implement, during all phases of the Designated Project and in consultation with Indigenous groups, Environment and Climate Change Canada and any other relevant authorities, measures to mitigate adverse effects from the Designated Project on woodland caribou (*Rangifer tarandus caribou*) and its habitat, taking into account calving and calf rearing habitat identified pursuant to condition 10.1, results from monitoring woodland caribou (*Rangifer tarandus caribou*) usage of the Project development areas pursuant to condition 10.2, and available results from any regional initiatives in which the Proponent participates pursuant to condition 10.3. The Proponent shall submit these measures to the Agency prior to implementation, and the measures shall include: 10.4.1 conducting site clearing activities outside of the woodland caribou (*Rangifer tarandus caribou*) calving and calf-rearing period (May 1 to June 30), unless otherwise authorized by relevant authorities;	3.0, 4.1.1, 4.2.4
CEAA, 2012	10.4.2 giving preference to avoiding the destruction or alteration of habitat over minimizing the destruction or alteration of habitat, to minimizing the destruction or alteration of habitat over restoring altered or destroyed habitat on-site, and to restoring altered or destroyed habitat on-site over offsetting for habitat that must be removed as a result of Designated Project activities; and 10.4.3 as part of progressive reclamation referred to in condition 5.7, removing and reclaiming all linear features when they are no longer required for the Designated Project, to impede woodland caribou (*Rangifer tarandus caribou*) predator access to linear features in the Project development areas, including the distribution line right of way, and any access roads identified in consultation with Indigenous groups and relevant authorities as no longer being used for other purposes.	3.0
CEAA, 2012	10.5 The Proponent shall develop, prior to construction and in consultation with Indigenous groups and relevant authorities, a follow-up program to verify the accuracy of the environmental assessment and determine the effectiveness of all mitigation measures related to adverse effects from the Designated Project on habitat, health and survival for woodland caribou (*Rangifer tarandus caribou*), including the mitigation measures used to comply with conditions 10.1 to 10.4. The Proponent shall implement the follow-up program during all phases of the Designated Project.	4.0

Table 1-2 Approval Related Requirements

Licence	Condition	Corresponding WMMP Section
Environment Act Licence No. 3390 (Gordon)	18. The licensee shall, prior to construction of the development: a) prepare and submit to the Director of Wildlife for approval, a Wildlife Monitoring and Management Plan and implement the plan in accordance with the Director of Wildlife's approval.	All
Environment Act Licence No. 3390 (Gordon)	27. The licensee shall not remove, destroy or disturb species unless otherwise authorized pursuant to Manitoba Regulation 25/98, respecting Threatened, Endangered and Extirpated Species, or any future amendment thereof, and pursuant to the federal *Species at Risk Act*.	3.0
Environment Act Licence No. 3391 (MacLellan)	18. The licensee shall, prior to construction of the development: a) prepare and submit to the Director of Wildlife for approval, a Wildlife Monitoring and Management Plan and implement the plan in accordance with the Director of Wildlife's approval.	All
Environment Act Licence No. 3391 (MacLellan)	20. The licensee shall, in addition to the Wildlife Monitoring and Management Plan specified in clause 18 of this licence a) prior to construction of the development, enter into a collaborative collaring project and associated contribution agreement with Manitoba Natural Resources and Northern Development for the purpose of developing a monitoring, assessment and mitigation plan for caribou, for approval by the Director of Wildlife; and b) within five years of the date of this license, in collaboration with the Environmental Advisory Committee, assess the data collected per clause 20 a) of this licence incorporating Traditional Knowledge. If required, prepare an action plan for caribou habitat management and submit it to the Director of Wildlife for approval.	4.2.4
Environment Act Licence No. 3391 (MacLellan)	28. The licensee shall not remove, destroy or disturb species unless otherwise authorized pursuant to Manitoba Regulation 25/98, respecting Threatened, Endangered and Extirpated Species, or any future amendment thereof, and pursuant to the federal *Species at Risk Act*.	3.0

2.0 ENVIRONMENTAL SETTING

The following sections briefly describe the existing environmental setting as it pertains to wildlife and wildlife habitat, and potential Project effects on wildlife and wildlife habitat.

2.1 EXISTING ENVIRONMENTAL SETTING

The Project (Appendix B, Map B-1) is situated in the Boreal Shield Ecozone, Churchill River Upland Ecoregion, and Reindeer Lake Ecodistrict (Smith et al. 1998), in a mosaic of coniferous forest interspersed with wetlands, lakes, rivers, and exposed bedrock. The RAA (Appendix B, Map B-2) is relatively undisturbed by human activity, but forest fires are a large-scale natural disturbance in the RAA.

Several SAR and species of conservation concern (SOCC) are expected to occur in the RAA (Appendix A, Table A-1) and there is potential critical habitat for the population of boreal woodland caribou in the western portion of the RAA.

The following sections describe the Project residual effects on wildlife and wildlife habitat and include changes in habitat, mortality risk, and wildlife health. With mitigation and environmental protection measures, the residual environmental effects on wildlife and wildlife habitat were predicted to be not significant (Stantec 2020a).

2.2 PROJECT RESIDUAL EFFECTS

2.2.1 Change in Habitat

Residual effects on wildlife habitat during the construction phase relate to the direct loss or alteration of habitat within the Local Assessment Area (LAA). Species that occupy disturbed and rocky habitats, such as common nighthawk (*Chordeiles minor*), are most likely to be affected by the alteration of developed land, whereas other birds, furbearers, and moose (*Alces alces*) are most likely to be affected following the loss of terrestrial and wetland habitats. An indirect loss or alteration of wildlife habitat is also expected through sensory disturbance (i.e., noise, light), edge effects, and altered wetland function that can result in habitat avoidance and reduced habitat effectiveness for wildlife including migratory birds, SAR and SOCC, moose, and furbearers, in areas adjacent to the Project Development Area (PDA).

During the operation phase, residual effects on wildlife habitat relate to the indirect loss or alteration of wildlife habitat through sensory disturbance resulting in habitat avoidance and reduced habitat effectiveness for wildlife in areas adjacent to the PDA, as described above for the construction phase. Chronic (e.g., heavy machinery operation, ore processing) and occasional (i.e., blasting) sensory disturbance during mining operation will terminate following completion of the operation phase. Increased traffic volumes associated with the Project may increase the existing level of indirect effects on wildlife (i.e., avoidance) along Provincial Road 391 and the Gordon site access road, but effects are not expected to extend far beyond the PDA. The effects of sensory disturbance on wildlife are expected to be similar to

those during the construction phase. Wildlife occupying the LAA are already subject to some degree of altered habitat effectiveness, and it is expected that sensory disturbance from the Project will temporarily increase the degree of altered habitat effectiveness, causing some wildlife species to potentially avoid portions of the LAA or relocate to undisturbed areas.

During the decommissioning/closure phase, potential Project-related effects on habitat change, both direct and indirect, are expected to be positive, except the removal of mine infrastructure that may adversely affect species such as barn swallow (*Hirundo rustica*) that rely on anthropogenic structures for nesting.

With the implementation of proposed mitigation measures, the overall magnitude of effect on wildlife habitat is anticipated to be low in the construction and operation phases, resulting in a <10% and <5% change in wildlife habitat and SAR and SOCC habitat in the LAA, respectively.

2.2.2 Change in Mortality Risk

Residual effects on wildlife mortality risk largely relate to site preparation activities during the construction phase, including vegetation clearing and earthworks. During construction, there is potential for increased mortality risk to small mammals and amphibians due to their limited mobility, risks to overwintering amphibians and mammals, and increased risk of vehicle-related wildlife mortality.

During operation, effects on wildlife mortality risk largely relate to the transportation of ore to on-site stockpiles and to the mill at the MacLellan site and other Project-related traffic. Increased mortality risk due to traffic is anticipated to be short-term as the Gordon site will only be operational for six years. An increase in mortality risk is also possible due to trapping problem beavers (*Castor canadensis*) at water control structures if required, potential increase in drowning at the tailings management facility (TMF) at the MacLellan site, potential for bird collisions with towers and guy wires, and human-wildlife conflicts from animals attracted to waste piles at the site (e.g., black bear [*Ursus americanus*]).

During the decommissioning/closure phase, residual effects are expected to be similar to those described above for the construction phase. The closure phase and post-closure activities are expected to have more enduring effects, primarily relating to the indirect mortality of wildlife prey species resulting from increased access to the site by predators such as gray wolves (*Canis lupus*) and humans. Because no new linear features or access to the site will be created, residual effects are expected to be low in magnitude.

With the implementation of proposed mitigation measures, the overall magnitude of effect on wildlife, including SAR and SOCC, is expected to be low.

2.2.3 Change in Health

Residual effects on wildlife health during the construction phase are associated with air emissions (i.e., combustion products, rock dust) from Project activities (e.g., vehicular traffic). With the implementation of the proposed mitigation measures, the residual effect on wildlife health resulting from fugitive dust escaping into the environment is expected to be low in magnitude.

During operation, residual effects on wildlife health are expected to increase because air emissions will be continuous, and some heavy metals contained in rock dust persist in the environment and are potentially toxic to wildlife. With the implementation of mitigation measures (e.g., dust control), the residual effects of Project operation on wildlife health at the Gordon site are expected to be low in magnitude. At the MacLellan site, similar effects are anticipated with the addition of ore milling and processing during operation and the TMF, which may create additional residual effects on wildlife health. These additional effects are associated with site water management ponds (i.e., collection ponds), chemical contamination of the environment from the TMF, and an increase in air emissions (i.e., rock dust) from the mill and processing plant. Based on results from the ecological risk assessment, the overall magnitude of effect on wildlife health is anticipated to be negligible to low at both sites.

During decommissioning/closure, residual effects on wildlife, including SAR and SOCC, are expected to be similar to those described above during the construction and operation phases.

3.0 MITIGATION AND MANAGEMENT MEASURES

Mitigation measures for wildlife and wildlife habitat that will be monitored through the implementation of the WMMP are summarized in Sections 3.1 to 3.3. Mitigation and management measures have been prepared in accordance with federal and provincial legislation and guidelines, applicable recovery strategy and action plans for SARA-listed SAR, and corporate policies and procedures for the protection of human health and the environment (including SAR).

3.1 CONSTRUCTION

Wildlife and wildlife habitat mitigation measures for the construction phase are identified in Table 3-1.

Table 3-1 Mitigation Measures for Wildlife and Wildlife Habitat During Construction

Potential Effects	Mitigation Measures
Change in Habitat	• Retain wildlife habitat trees (dead or dying trees with cavities) where safe and technically feasible to do so. • Schedule vegetation clearing, demolition of existing buildings and infrastructure, site preparation activities, and blasting (to the extent practicable, or carry out appropriate mitigation [see below]) outside of the following time periods: – The breeding period for migratory birds May 5 to August 15 in Zone C7 [ECCC 2023a]). If activities that could result in risk of harm to migratory birds cannot be avoided during the breeding period, Alamos will follow methods outlined in the Avian Mitigation Plan (Section 4.2.1). – The breeding period for resident birds such as owls (February 15 to July 15). If activities that could result in risk of harm to nesting owls cannot be avoided during the breeding period, Alamos will follow methods outlined in the Avian Mitigation Plan (Section 4.2.1). – Vegetation clearing will occur outside the calving and calf-rearing period for boreal woodland caribou (May 1 to June 30) unless otherwise authorized by relevant authorities. – The calving and calf-rearing period for boreal woodland caribou (May 1 to June 30). If activities that could result in risk of disturbance to boreal woodland caribou cannot be avoided during the calving and calf-rearing period, Alamos will make sure that caribou are not present within the LAA or the PDA through monitoring described in the Woodland Caribou Protection Plan (Section 4.2.4, Table 4-1). If caribou are detected within the LAA or the PDA during the calving or calf-rearing period when activities that could result in risk of disturbance cannot be avoided, Alamos will contact NRIF to discuss adaptive management strategies to reduce Project disturbance. – The core maternity roosting period for bats is May 1 to August 31 [Barclay 1982, 1984; Fenton and Barclay 1980]). If habitat tree removal or general tree clearing is required during the bat maternity roosting period, a Qualified Biologist will review the trees to determine occupancy before removal. This measure will also reduce the risk to other species that use trees for denning or shelter (e.g., American marten [*Martes americana*]). If a tree to be removed is identified as an occupied bat roosting tree, Alamos will contact NRIF to discuss adaptive management strategies to reduce Project disturbance.

Potential Effects	Mitigation Measures
Change in Habitat (cont'd)	• Adhere to the provincial recommended development setback and timing restriction guidelines for birds (MB CDC 2024) and the Project-specific activity restriction guidelines (Appendix A, Table A-2), including for bird species (e.g., raptors) that breed outside of the breeding period for migratory birds. • Complete pre-construction surveys for stick nests. • Give preference to avoiding the destruction or alteration of boreal woodland caribou habitat over minimizing the destruction or alteration of habitat, to minimizing the destruction or alteration of habitat over restoring altered or destroyed habitat on-site, and to restoring altered or destroyed habitat on-site over offsetting for habitat that must be removed for Project activities. • Acquire all necessary licenses/approvals/permits prior to the commencement of construction. Conditions as presented on permits, approvals, licenses, certificates, construction drawings and Project-specific management plans will be reviewed prior to commencing construction. Inconsistencies between permit conditions and contract documents will be addressed prior to the commencement of construction. If conflicting mitigation measures are identified, the most stringent will be followed and documented. • Distribute the WMMP as part of the EMMP to Project staff and responsible construction personnel prior to construction. Should updates be required, the Health, Safety, and Environment Manager will distribute the revised EMMP, as necessary. • Provide the Contractor and relevant Project staff with results of pre-construction surveys to identify known locations of environmentally sensitive features (e.g., stick nests). • Use down-lighting, a technique of directing night lighting downward, to reduce light effects on wildlife adjacent to the PDA. • Select lighting that avoids attracting insects (e.g., yellow-hued LEDs), to mitigate adverse effects on migratory birds. • Maintain a 30-metre (m) naturally vegetated buffer around wetlands, waterbodies, and watercourses. • Restrict unauthorized access to habitat adjacent to the PDA. • Use existing roads and trails where possible. • Provide low areas in the ploughed snowbanks of access and on-site roads, where practical, to facilitate wildlife movements across and out of road corridors. Guidance from the Fish and Wildlife Branch of the Department of NRIF, recommends that snowbanks should not exceed 0.5 m in height, OR openings at least 10 m wide should be left between snowbanks at least once every 200 m on both sides of a road. • A qualified biologist or designate will flag environmentally sensitive features (e.g., seeps and springs, mineral licks, dens, roosts, stick nests) encountered during construction and if features are identified as active (occupied) will contact NRIF for guidance on additional mitigation measures (e.g., setback distances [Appendix A, Table A-2]). • Maintain vegetation cover along the boundaries of high activity areas (e.g., access road rights-of-way) to reduce sensory (noise and visual) disturbance.

Potential Effects	Mitigation Measures
Change in Mortality Risk	• Retain wildlife habitat trees (dead or dying trees with cavities) where safe and technically feasible to do so. • Schedule vegetation clearing, demolition of existing buildings and infrastructure, site preparation activities, and blasting (to the extent practicable, or carry out appropriate mitigation [see below]) outside of the following time periods: – The breeding period for migratory birds May 5 to August 15 in Zone C7 [ECCC 2023a]). If activities that could result in risk of harm to migratory birds cannot be avoided during the breeding period, Alamos will follow methods outlined in the Avian Mitigation Plan (Section 4.2.1). – The breeding period for resident birds such as owls (February 15 to July 15). If activities that could result in risk of harm to nesting owls cannot be avoided during the breeding period, Alamos will follow methods outlined in the Avian Mitigation Plan (Section 4.2.1). – Vegetation clearing will occur outside the calving and calf-rearing period for boreal woodland caribou (May 1 to June 30) unless otherwise authorized by relevant authorities. – The calving and calf-rearing period for boreal woodland caribou (May 1 to June 30). If activities that could result in risk of disturbance to boreal woodland caribou cannot be avoided during the calving and calf-rearing period, Alamos will make sure that caribou are not present within the LAA or the PDA through monitoring described in the Boreal Woodland Caribou Protection Plan (Section 4.2.4, Table 4-1). If caribou are detected within the LAA or the PDA during the calving or calf-rearing period when activities that could result in risk of disturbance cannot be avoided, Alamos will contact NRIF to discuss adaptive management strategies to reduce Project disturbance. – The core maternity roosting period for bats is May 1 to August 31 [Barclay 1982, 1984; Fenton and Barclay 1980]). If habitat tree removal or general tree clearing is required during the bat maternity roosting period, a Qualified Biologist will review the trees to determine occupancy before removal. This measure will also reduce the risk to other species that use trees for denning or shelter (e.g., American marten [*Martes americana*]). If a tree to be removed is identified as an occupied bat roosting tree, Alamos will contact NRIF to discuss adaptive management strategies to reduce Project disturbance. • Adhere to the provincial recommended development setback and timing restriction guidelines for birds (MB CDC 2024) and the Project-specific activity restriction guidelines (Appendix A, Table A-2), including for bird species (e.g., raptors) that breed outside of the breeding period for migratory birds. • Install reflective markers on the distribution line in areas with elevated bird collision risk (i.e., Dot Lake and Keewatin River crossing). This measure enhances line visibility, reducing the risk of bird strikes. • Implement site orientation for all Alamos staff and on-site contractors that includes wildlife-related topics (e.g., wildlife awareness training). • Report the discovery of nests or other animal dwellings (e.g., lodges, dens) to Alamos, and appropriate action or follow-up will be guided by the setback distances and activity restrictions outlined in Appendix A, Table A-2. Report any active features to the Fish and Wildlife Branch of the NRIF for direction on follow-up actions. • Reduce travel speeds, use multi-passenger vehicles, install signs to increase awareness, and clear roadside vegetation to maintain line of site to reduce the chance for wildlife collisions both on-site and between sites. • Report sightings, encounters and human-wildlife conflicts to Alamos using the form provided in Appendix C, Form C-1. Appropriate action or follow-up will be guided by the Fish and Wildlife Branch of NRIF. Human-wildlife conflicts will be reported to the Lynn Lake district office for Conservation Officer guidance on conflict management.

Potential Effects	Mitigation Measures
Change in Mortality Risk (cont'd)	• Follow best management practices for general site housekeeping to reduce wildlife attraction (e.g., food and chemical storage, prompt removal of roadkill) and install bear-proof bins and/or electrical fencing, as necessary. • Prohibit feeding, harassing, or hunting wildlife by Project personnel; individuals violating this policy will face disciplinary action. • Manage vegetation around collection ponds and the TMF and install deterrents (e.g., fencing, netting, bird/bat deterrents) to deter wildlife; consider additional mitigation measures (e.g., bird control radar systems) if monitoring identifies concerns regarding wildlife use of these areas. • A qualified biologist or designate will flag environmentally sensitive features (e.g., seeps and springs, mineral licks, dens, roosts, stick nests) encountered during construction and if features are identified as active (occupied), contact NRIF for guidance on additional mitigation measures (e.g., setback distances [Appendix A, Table A-2]). • Follow best management practices for open pit dewatering; rescue and relocate amphibians prior to dewatering; install amphibian exclusion screens on intake pumps.
Change in Health	• Control fugitive dust emissions from roads, material handling, and storage areas/stockpiles through measures such as: application of dust suppressants (e.g., water); use of surfactants (as a contingency); dust sweeping; gravel application; truck wheel washing stations; and enclosure of dust sources (Volume 3, Chapter 23, Section 23.5.7 of the EIS; Stantec 2020a). • Develop and implement administrative controls, including a vehicle idling policy, to reduce emissions from vehicles and mobile equipment. • Adhere to applicable Transport Canada emission requirements for new mobile equipment on-site. • Use perimeter berms and runoff and contact-water collection ditches around the overburden storage areas, ore stockpiles, and mine rock storage areas to collect overland flow and seepage, intercept groundwater flow, and divert non-contact water away from Project components. • Store fuel in approved above-ground storage tanks equipped with secondary containment systems in accordance with federal and provincial regulation and standards. • Treat effluent from sewage treatment plant and water management facilities to levels that will meet applicable federal and provincial guidelines of toxicity. • Use dust suppressants (e.g., water) in situations that have increased potential to generate dust. • Conduct effective and timely equipment maintenance to keep mining vehicles and equipment in good working condition. • Dispose of and handle waste oils, fuels, and hazardous waste as recommended by the suppliers and/or manufacturers in compliance with federal, provincial, and municipal regulations. Dispose of and handle waste oils, fuels, and hazardous waste as recommended by the suppliers and/or manufacturers in compliance.

3.2 OPERATION

Wildlife and wildlife habitat mitigation measures for the operation phase are identified in Table 3-2.

Table 3-2 Mitigation Measures for Wildlife and Wildlife Habitat During Operation

Potential Effects	Mitigation Measures
Change in Habitat	• Schedule vegetation clearing, demolition of existing buildings and infrastructure, site preparation activities, and blasting (to the extent practicable, or carry out appropriate mitigation [see below]) outside of the following time periods: – The breeding period for migratory birds (May 5 to August 15 in Zone C7 [ECCC 2023a]). If activities that could result in risk of harm to migratory birds cannot be avoided during the breeding period, Alamos will follow methods outlined in the Avian Mitigation Plan (Section 4.2.1). – The breeding period for resident birds such as owls (February 15 to July 15). If activities that could result in risk of harm to nesting owls cannot be avoided during the breeding period, Alamos will follow methods outlined in the Avian Mitigation Plan (Section 4.2.1). – Vegetation clearing will occur outside the calving and calf-rearing period for boreal woodland caribou (May 1 to June 30) unless otherwise authorized by relevant authorities. – The calving and calf-rearing period for boreal woodland caribou (May 1 to June 30). If activities that could result in risk of disturbance to boreal woodland caribou cannot be avoided during the calving and calf-rearing period, Alamos will make sure that caribou are not present within the LAA or the PDA through monitoring described in the Boreal Woodland Caribou Protection Plan (Section 4.2.4, Table 4-1). If caribou are detected within the LAA or the PDA during the calving or calf-rearing period when activities that could result in risk of disturbance cannot be avoided, Alamos will contact NRIF to discuss adaptive management strategies to reduce Project disturbance. – The core maternity roosting period for bats (May 1 to August 31 [Barclay 1982, 1984; Fenton and Barclay 1980]). If habitat tree removal or general tree clearing is required during the bat maternity roosting period, a Qualified Biologist will review the trees to determine occupancy before removal. This measure will also reduce the risk to other species that use trees for denning or shelter (e.g., American marten [*Martes americana*]). If a tree to be removed is identified as an occupied bat roosting tree, Alamos will contact NRIF to discuss adaptive management strategies to reduce Project disturbance. • Adhere to the provincial recommended development setback and timing restriction guidelines for birds (MB CDC 2024) and the Project-specific activity restriction guidelines (Appendix A, Table A-2), including for bird species (e.g., raptors) that breed outside of the breeding period for migratory birds. • Complete pre-disturbance wildlife surveys for environmentally sensitive features (e.g., raptor nests). • Restrict unauthorized access to habitat adjacent to the PDA. • Use existing roads and trails where possible. • Provide low areas in the ploughed snowbanks of access and on-site roads, where practical, to facilitate wildlife movements across and out of road corridors. Guidance from the Fish and Wildlife Branch of the Department of NRIF, recommends that snowbanks should not exceed 0.5 m in height, OR openings at least 10 m wide should be left between snowbanks at least once every 200 m on both sides of a road.

Potential Effects	Mitigation Measures
Change in Habitat (cont'd)	• A qualified biologist or designate will flag environmentally sensitive features (e.g., seeps and springs, mineral licks, dens, roosts, stick nests) encountered during construction and if features are identified as active (occupied), contact NRIF for guidance on additional mitigation measures (e.g., setback distances [Appendix A, Table A-2]). • Maintain vegetation cover along the boundaries of access road rights-of-way to reduce sensory (noise and visual) disturbance.
Change in Mortality Risk	• Use a closed circuit for cyanide use and cyanide destruction in the processing plant (via Air/SO2 oxidation and precipitation of metals) to maintain cyanide concentrations below guidelines for the TMF prior to release of the slurry for storage in the TMF (Volume 1, Chapter 2 of the EIS; Stantec 2020a). • Implement site orientation for all Alamos staff and on-site contractors that includes wildlife-related topics (e.g., wildlife awareness training). • Manage vegetation around collection ponds and the TMF and maintain deterrents (e.g., fencing, netting, bird/bat deterrents) to deter wildlife; consider additional mitigation measures (e.g., bird control radar systems) if monitoring identifies concerns regarding wildlife use of these areas. • Report the discovery of nests or other animal dwellings (e.g., lodges, dens) to Alamos. Appropriate action will be guided by the setback distances and activity restrictions outlined in Appendix A, Table A-2. Report any active features to the Fish and Wildlife Branch of NRIF for direction on follow-up actions. • Reduce travel speeds, use multi-passenger vehicles, install signs to increase awareness, and clear roadside vegetation to maintain line of site to reduce the chance for wildlife collisions both on-site and between sites. • Report sightings, encounters and human-wildlife conflicts to Alamos using the form provided in Appendix C, Form C-1. Appropriate action or follow-up will be guided by the Fish and Wildlife Branch of NRIF. Human-wildlife conflicts will be reported to the Lynn Lake district office for Conservation Officer guidance on conflict management. • Follow best management practices for general site housekeeping to reduce wildlife attraction (e.g., food and chemical storage, prompt removal of roadkill). • Personnel will not feed, harass, or hunt wildlife while working on the Project and individuals violating this policy will face disciplinary action. • Use a closed-circuit water management system for process water and water that has come into contact with the TMF.
Change in Health	• Control fugitive dust emissions from roads, material handling, and storage areas/stockpiles through measures such as: application of dust suppressants (e.g., water); use of surfactants (as a contingency); dust sweeping; gravel application; truck wheel washing stations; and enclosure of dust sources (Volume 3, Chapter 23, Section 23.5.7 of the EIS; Stantec 2020a). • Enclose mill feed storage areas and use dust collection/control systems (e.g., baghouse or equivalent and protective covers) at crushing plant to reduce potential dust emissions during ore transfer and crushing activities. • Use high efficiency wet scrubbers (or equivalent) to control emissions from Project facilities, where feasible. • Collect and treat (as required) surplus contact water such that effluent meets applicable federal and provincial regulatory requirements, including the authorized limits of deleterious substances specified in Schedule 4 of the *Metal and Diamond Mining Effluent Regulations* (amended; Government of Canada 2002b) prior to discharge into the environment (Volume 3, Chapter 23, Section 23.5.5 of the EIS; Stantec 2020a).

Potential Effects	Mitigation Measures
Change in Health (cont'd)	• Manage vegetation around collection ponds and the TMF and maintain deterrents (e.g., fencing, netting, bird/bat deterrents) to deter wildlife; consider additional mitigation measures (e.g., bird control radar systems) if monitoring identifies concerns regarding wildlife use of these areas. • Use a closed circuit for cyanide use and cyanide destruction in the processing plant (via Air/SO_2 oxidation and precipitation of metals) to reduce cyanide concentrations in tailings slurry prior to release of the slurry for storage in the TMF (Volume 1, Chapter 2 of the EIS; Stantec 2020a). • Develop and implement administrative controls, including a no idling policy, to reduce emissions from vehicles and mobile equipment. • Adhere to applicable Transport Canada emission requirements for new mobile equipment on-site. • Store fuel in approved above-ground storage tanks equipped with secondary containment systems in accordance with federal and provincial regulation and standards. • Conduct effective and timely equipment maintenance to keep mining vehicles and equipment in good working condition. • Dispose of and handle waste oils, fuels, and hazardous waste as recommended by the suppliers and/or manufacturers in compliance with federal, provincial, and municipal regulations. Prior to transportation off-site for disposal, all these materials will be stored in such a manner as to be inaccessible to wildlife. • Use a closed-circuit water management system for process water and water that has come into contact with the TMF.

3.3 DECOMMISSIONING/CLOSURE

Wildlife and wildlife habitat mitigation measures for the decommissioning/closure phase are identified in Table 3-3.

Table 3-3 Mitigation Measures for Wildlife and Wildlife Habitat During Decommissioning/Closure

Potential Effects	Mitigation Measures[1]
Change in Habitat	• Implement reclamation plans that involve decommissioning and revegetating access trails/roads and the distribution line right-of-way, which will occur as soon as practical after the termination of operation as prescribed in the Closure Plan and Vegetation and Weed Management Plan. • Establish soil cover over the mine rock in the TMF to promote revegetation with grasses. Due to soft ground conditions, these efforts may have to be carried out during the winter with light-weight equipment. • Regrade the slope on the mine rock storage areas to allow placement of cover material on the slopes and support revegetation. • Revegetate other disturbed ground based on local needs, but adjacent vegetation communities will likely blend in with these efforts in the long term. These areas include the plant sites, ore stockpile area, the overburden storage areas, and other areas that are disturbed as part of operation.

Table 3-3 Mitigation Measures for Wildlife and Wildlife Habitat During Decommissioning/Closure

Potential Effects	Mitigation Measures[1]
Change in Mortality Risk	• Restrict site access during post-closure. • Implement measures to control access on mine access roads during decommissioning/closure phase (e.g., gates).
Change in Wildlife Health	• Adhere to federal and provincial regulatory requirements, including the authorized limits of deleterious substances specified in Schedule 4 of the *Metal and Diamond Mining Effluent Regulations* (amended; Government of Canada 2002), prior to discharging water into the environment (Volume 3, Chapter 23, Section 23.5.5 of the EIS; Stantec 2020a).
Note: [1] Further detail on mitigation measures can be found in the Closure Plan.	

4.0 MONITORING ACTIVITIES

Monitoring (follow-up) is the continuation of observation, measurement, or assessment of environmental conditions at and surrounding the Project, its components, or activities. Two types of monitoring are typically undertaken for environmental assessments: environmental monitoring to verify the accuracy of predictions and effectiveness of implemented mitigation measures, and compliance monitoring for verification of practices or procedures to meet legislated requirements. Components to be monitored have been determined based on regulatory instrument requirements as per legislation, environmental importance, sensitivity and vulnerability, and licence requirements.

The WMMP describes the location, methods (e.g., parameters to be measured), applicable regulatory instruments, and schedule for monitoring activities. Engagement of Indigenous Nations in monitoring will be incorporated into the monitoring plans where appropriate and applicable.

Monitoring activities to confirm the effectiveness of the mitigation measures (described in Section 3.0) for adverse impacts to migratory birds and boreal woodland caribou will be conducted during all phases of the Project. The detailed monitoring programs listed below were developed as part of the EIS and through information requests received on the EIS. Additional monitoring requirements that were identified as part of Project approval and permitting have also been incorporated.

The specific and measurable end points for concluding the monitoring program will be set to confirm the accuracy of the environmental assessment and the effectiveness of mitigation measures. These end points will be achieved either at permanent closure or earlier if it can be demonstrated that there are no further impacts warranting continued monitoring.

4.1 PRE-CONSTRUCTION

4.1.1 Caribou Calving and Calf-Rearing Habitat

4.1.1.1 Rationale

Boreal woodland caribou is a federally listed SAR (Appendix A, Table A-1) and is an important species to Indigenous Nations. The Project is in the Province of Manitoba's boreal woodland caribou Kamuchawie Management Unit (Manitoba Boreal Woodland Caribou Management Committee 2015), but baseline survey data, provincial survey data, and traditional and local knowledge suggest that boreal woodland caribou are unlikely to interact with the Project (Stantec 2020a). However, further studies identified boreal woodland caribou at the southwestern edge of the RAA in spring 2019 (Stantec 2020b) and in areas 8–12 kilometres (km) northwest of the MacLellan site near Goldsand Lake (Government of Manitoba unpubl. data 2022; Stantec unpubl. data 2023). Although there is no evidence to suggest caribou are occupying the PDA, surveys for boreal woodland caribou were conducted in this area prior to Project construction. Boreal woodland caribou data collection within this Management Unit is ongoing, and as more data is gathered,

the certainty regarding potential interactions will increase. If data indicates Project interactions with boreal woodland caribou, the WMMP will be amended to account for this change.

4.1.1.2 Objectives

The objectives of the caribou calving and calf-rearing habitat surveys were to:

- Identify and map potential boreal woodland caribou calving and calf-rearing habitat within the PDA.
- Identify signs of caribou activity, if any, in the potential calving and calf-rearing habitat areas identified in the PDA.

4.1.1.3 Measurable Parameter

The measurable parameter for boreal woodland caribou calving and calf-rearing habitat monitoring is the presence or non-detection of boreal woodland caribou in the PDA.

4.1.1.4 Methods

To examine whether potential calving and calf-rearing habitat in the PDA is occupied by boreal woodland caribou, two biologists systematically searched areas of the Gordon and MacLellan sites that met criteria set out by ECCC (2020) for signs of caribou activity (fecal pellets and tracks) from May 31 to June 2, 2024. Starting from an access feature (road or trail), transects were established through the habitat patches. All caribou pellets encountered along the transect within a belt approximately 1 m to either side were recorded as “new” or “old.” New pellets, deposited during the most recent winter, are typically shiny and may be greenish inside. Old pellets may be cracked, weathered, mouldy, or deteriorated. All signs of caribou activity, whether recent or not, were recorded. A Global Positioning System (GPS) waypoint was marked with a hand-held unit at each pellet group encountered. Signs of predator (e.g., black bear and gray wolf) and alternative prey (e.g., moose) activity was also recorded. Survey locations were accessed by road or by helicopter.

4.1.1.5 Frequency

The caribou calving and calf-rearing habitat survey was completed once, in the year before Project construction begins.

4.1.1.6 Results

No sign of caribou was observed in the PDA. Signs of moose and black bear were observed at the Gordon and MacLellan sites (Appendix B, Map B-3 and Map B-4). Canada lynx (*Lynx canadensis*) scat was found at the Gordon site and a gray wolf track was found at the MacLellan site.

4.1.2 Stick Nest Monitoring

4.1.2.1 Rationale

Vegetation clearing and site preparation activities can result in disturbance to birds of prey (eagles, hawks, osprey, falcons, and owls) and ravens during the breeding season (February 15 to July 15; Appendix A, Table A-2). Pre-construction stick nest surveys were completed in spring 2022, 2023, and 2024 to provide information on the relative abundance and distribution of new or undocumented raptor or raven nests in the LAA. Because the number of stick nests and their occupancy changes over time, the survey was repeated ahead of Project construction.

4.1.2.2 Objective

The objective of the pre-construction stick nest monitoring surveys was to identify and protect new or previously undocumented stick nests in the LAA. The distribution and occupancy of stick nests and their setback distance (up to 1 km) will be used to inform clearing and construction mitigation.

4.1.2.3 Methods

A helicopter-based aerial transect survey was flown over the Gordon and MacLellan site LAAs to locate new or undocumented raptor nests, if any, and to provide an update on the status of bald eagle (*Haliaeetus leucocephalus*) nests previously identified in the MacLellan LAA along the Keewatin River. Using standardized aerial raptor nest survey protocols (British Columbia Ministry of Sustainable Resource Management Environment Inventory Branch 2001), parallel transects spaced 400 m apart were flown along a previously mapped route at a constant speed of approximately 100 kilometres per hour (km/h) and 100 m above ground level (or higher when a nest was encountered) during suitable weather (i.e., clear visibility, wind ≤20 km/h, and precipitation not exceeding a light, intermittent drizzle). A shoreline survey along major lakes and rivers in the LAA (e.g., Keewatin River) was completed to target areas where raptor nests are more likely to occur.

4.1.2.4 Frequency

The aerial survey for raptor nests was completed in spring 2022, 2023, and 2024 during the breeding season (March 15 to July 15; Appendix A, Table A-2) before Project construction begins.

4.1.2.5 Results

Raptor nests and associated setback distances from spring 2024 surveys are depicted in Appendix B, Map B-5 and Map B-6, including an active osprey (*Pandion haliaetus*) and common raven (*Corvus corax*) nest No stick nests were observed in the PDA. For stick nests identified in the LAA:

Action: Apply the recommended setback distance to active nests and apply activity restriction guidelines as necessary (Appendix A, Table A-2).

Action: Report nest locations to NRIF and implement additional or amended mitigation measures as necessary.

4.2 CONSTRUCTION

4.2.1 Avian Mitigation Plan

4.2.1.1 Rationale

Vegetation clearing and site preparation activities can pose risks to migratory birds and their nests that may result in disturbance or accidental injury or death in contravention of the federal *Migratory Birds Convention Act (*Government of Canada 1994*)*. Birds are particularly vulnerable to disturbance during the breeding bird period when they mate, lay eggs, and care for their young.

The mitigation and management measures committed to in Section 3.0 emphasize avoidance of the breeding bird period (Zone C7, May 5 to August 15; ECCC 2023a) as the preferred way to reduce the risk of harm to migratory birds and their nests. However, if Project activities that could result in harm cannot be avoided, the Avian Mitigation Plan provides guidance for reducing the risk to migratory birds and their nests. The Avian Mitigation Plan also provides guidance for protecting nesting activity that may occur outside of the Zone C7 breeding period for species such as raptors, which generally breed from February 15 (e.g., owls) to July 15 (Appendix A, Table A-2). Active migratory bird nests found outside of the Zone C7 breeding period are also protected under the *Migratory Birds Convention Act*. The nests and eggs of most species, including raptors, not protected under the federal legislation are protected under *The Wildlife Act* of Manitoba.

The nest cavities of pileated woodpecker (*Drycopus pileatus*) are protected year-round, whether or not they are occupied. Pileated woodpecker nest cavities may not be removed, destroyed, damaged, or disturbed unless they are unoccupied by a migratory bird for 36 months, at which point they are deemed abandoned (ECCC 2023b). Pileated woodpecker nesting habitat is predominantly deciduous-dominated mixedwood (Berger 2018), which is sparse in the LAA (Stantec 2020a). The species is unlikely to occur in the PDA as the PDA is at the edge of pileated woodpecker range (Bull and Jackson 2020), there is little suitable habitat within, and none were observed during baseline surveys (Stantec 2020a). However, Project personnel will be required to complete pre-construction wildlife feature awareness training that includes a review of ECCC's (2023c) *Pileated Woodpecker Cavity Identification Guide* (Section 4.2.8).

4.2.1.2 Objective

The objective of the Avian Mitigation Plan is to provide measures to identify and protect active bird nests (including SAR and SOCC, migratory birds, and raptors) in the event that vegetation clearing is required during the breeding seasons for migratory birds and raptors.

4.2.1.3 Measurable Parameter

The measurable parameters are active bird nests in the PDA or within the maximum associated setback distance (Appendix A, Table A-2) outside the PDA.

4.2.1.4 Methods

Raptors and Other Resident Birds

Surveys for raptor nests, including stick nests used by other resident birds (e.g., common raven) were completed as part of the pre-construction monitoring activities (Section 4.1.2). During construction, an annual helicopter-based aerial transect survey will be conducted in the Gordon and MacLellan site LAA during the resident bird breeding period. The survey objective is to locate any new or undocumented stick nests and to update the status of the common raven (*Corvus corax*) nest previously identified in the MacLellan LAA and the osprey (*Pandion haliaetus*) nest in the Gordon LAA. Survey methods will follow those described in Section 4.1.2.3. If continued monitoring of an active stick nest is required, ground-based access will be established, and monitoring will occur on foot to reduce potential disturbance of the nest.

Project personnel will be required to complete pre-construction wildlife feature awareness training to understand how to identify wildlife habitat trees (dead or dying trees with cavities) having potential to support other nesting birds including pileated woodpecker and owls. Habitat trees will be flagged with a 30 m buffer when they are encountered and a Qualified Biologist or an environment department member directed by a Qualified Biologist will assess flagged trees for nest presence.

Pre-disturbance Migratory Bird Survey

Pre-disturbance surveys will be directed by a Qualified Biologist and be undertaken by either a Qualified Biologist or appropriate resource specialist familiar with:

- Bird species occurring in the RAA.
- Habitat types used by nesting bird species in the RAA.
- Where bird species nest (e.g., ground, shrub, canopy, cavity).
- Undertaking point count and non-intrusive nesting surveys, including how to detect evidence of nesting through behaviors (i.e., visual and audible) exhibited by breeding birds.

If a resource specialist is used, they will be supervised by a Qualified Biologist.

Pre-disturbance surveys will include a passive point count survey and/or non-intrusive nesting survey. Generally, a combination of the methods is recommended for vegetation clearing that will affect a relatively large area (e.g., facility development, road allowance). For relatively small areas (e.g., construction staging areas) or for surveys of infrastructure and equipment, a non-intrusive nesting survey is more effective than a passive point count survey.

Passive Point Count Survey

When used, passive point count surveys will be completed throughout the affected area and in adjacent habitats. The adjacent habitat areas, where access is permitted, will be:

- 30 m from the affected area where the habitat is forested.
- 50 m from the affected area where the habitat is open (e.g., cleared, cultivated, shrubby, or naturally open).
- 100 m from the affected area where the habitat is a wetland.

Passive point count survey methods for locating nests are similar to the breeding bird survey methods described below, with two key differences:

- Point-count areas will overlap to improve detection probability of nesting birds. An appropriate degree of overlap between point counts will be determined on a case-by-case basis based on potential species and habitat being searched.
- Multiple observations of the same bird will be recorded when the individual moves within the count area, and the same bird can be recorded more than once within or among point count areas. Multiple detections of the same individual in a relatively small spatial area may indicate that a nest is nearby.

The passive point count survey follows standardized breeding bird survey protocols (Bibby et al. 2000; Canadian Wildlife Service 2007; Ralph et al. 1993) as follows:

- Point-count surveys will be completed by a single observer (Qualified Biologist or resource specialist); however, for safety considerations travelling as a pair is recommended.
- Surveys will begin at sunrise and continue for no more than 5 hours or until 1000 hours, whichever is earlier.
- Surveys will be delayed or suspended if the temperature is below 0 degrees Celsius (°C), wind is above 20 km/h, visibility (due to fog) is less than 50 m, or precipitation is heavier than a light, intermittent drizzle.
- Surveys will be 10 minutes long and survey effort will be concentrated on a 100 m radius (or smaller) around the point of observation.
- General data recorded at each point count location will include name(s) of surveyor(s), date, start and end times, Universal Transverse Mercator (UTM) coordinates (obtained with a hand-held GPS unit), unique point count location identifier, weather (temperature, wind, precipitation, cloud cover), noise level, and habitat photos.
- For each bird observation the following data will be recorded: the sex and age (if known), detection type (i.e., visual, auditory, or both), evidence of nesting activity, and estimated distance and compass direction to each observation.

Non-intrusive Nesting Survey

- Non-intrusive nesting surveys will be completed on foot from sunrise to 1800 hours, although birds are most active from sunrise to approximately 1000 hours.
- Nest surveys will be discontinued during inclement weather (see Passive Point Count Survey for criteria).
- Multiple parallel transects spaced approximately 10 m apart will typically be used, although transect spacing may be narrowed and meandering depending on vegetation type and density.
- Observers will walk slowly along the transect, scanning from ground level to the tree canopy. Ground-level searches, including areas with minimal or no ground cover, will be emphasized to account for ground-nesting species such as the common nighthawk.

Documenting of Nests

Nesting can be determined through the discovery of an actual nest or through bird behavior that suggests an active nest is nearby (e.g., acting strangely or aggressively, agitated vocalization, carrying food). Evidence of nesting activity and professional judgment are sufficient to recommend mitigation, even if a nest is not found. If a nest or suspected nest is found the following will be implemented:

- The location of the nest will be recorded with a hand-held GPS unit.
- The location of the nest or suspected nest will be marked with flagging tape attached to a tree or other landmark several metres away from the nest. UTM coordinates of the nest, species (if known) or type of bird (e.g., songbird, waterfowl), date, and distance and bearing from the flag to the nest will be recorded on the flagging tape. The nest tree/shrub will not be marked, and no marker will be placed at the nest site.
- A suitable setback that will define a buffer for the nest will be established. The setback will generally be at least 30 m for most bird species and settings, although larger or smaller setbacks may be appropriate (e.g., depending on the species' tolerance to human activity). Setback guidance for species and species groups in Canada is provided in Appendix A, Table A-2.
- Once the bird species is identified, an appropriately sized setback will be set up around the nest location.
- Flagging tape or appropriate signage will be used to clearly mark the perimeter of the setback around the nest.
- Each nest observation will be entered into a standardized data form (Appendix C, Form C-2), recording the date, UTM coordinates, species, and nest stage (e.g., nest building, eggs, hatchling, fledgling); photos will be taken and actions taken (e.g., flagging) and further recommended action(s) will be documented.
- Nest searches will be continued until the potentially affected area has been adequately searched.

Known active nests will not be revisited for monitoring because this can increase the likelihood of abandonment or predation. If monitoring is required, it will be done from a distance where nests can be observed without causing disturbance. This approach generally applies only for nests that are conspicuous such as for certain raptors, cavity nesting species, and species that are visible in open settings.

It is recommended that pre-disturbance surveys be completed no more than seven days prior to the commencement of Project activities that could adversely affect migratory birds or their nests. Project activities should commence within 24–48 hours of a pre-clearing nest survey to prevent new nests from becoming established. If Project activities have not started within seven days of pre-clearing nest surveys, the surveys will be repeated to determine whether new nests have been established within the survey area.

All nest survey mitigation measures and results from nest searches and surveys will be recorded, thoroughly documented, and communicated in a timely matter to Alamos. Additional communication with NRIF may be required for direction on follow-up actions.

A Bird Nesting Data Collection Form (Appendix C, Form C-2) will be completed daily during pre-clearing nest surveys. General survey data reported on the form include general details on weather, location, and personnel involved. The form also includes nest-specific information such as species, photographs, and other details on mitigation. GPS tracks will be recorded and submitted with the Bird Nesting Data Collection Form at the end of each day.

4.2.1.5 Frequency

Pre-disturbance surveys for birds will occur as required during the breeding period (May 5 to August 15; ECCC 2023a) throughout the Project construction phase. Aerial stick nest monitoring will occur annually during construction during the resident breeding bird period. At any time that clearing occurs after February 15 but before May 5 (the start of the Zone C7 migratory bird breeding period), active nests in habitat trees will be identified and buffered to protect active raptor nests (e.g., owl nests) as outlined in Section 4.1.2.4.

4.2.1.6 Setbacks and Restricted Activity Periods for Nests

Provincial development setback and timing restrictions (MB CDC 2024) will be adhered to. The smallest recommended nest setback is 30 m, and only under certain circumstances would this be reduced following approval by federal or provincial authorities. Such circumstances may include low-intensity activities (e.g., foot traffic), birds nesting in previously disturbed areas where they may be accustomed to human activity, or where topography (e.g., cliff face) or dense vegetation provides an adequate visual and noise screen. Setback distances (Appendix A, Table A-2) will be increased for activities that have a greater potential for disturbance and/or for species that are more sensitive to disturbance. Examples of low-, medium-, and high-intensity activities (MB CDC 2024) include:

- Low intensity: foot traffic, occasional, infrequent, or short-term small vehicle (e.g., <1 ton) or all-terrain vehicle (ATV) use, checking and maintaining surface or groundwater wells.

- Medium intensity: trucks >1 ton (e.g., tractors and haul trucks), regular, frequent, or long-term small vehicle (e.g., <1 ton) or ATV use, commercial generator operation.
- High intensity: vegetation clearing, mulching, blasting, excavation activities, road construction, drill rigs, infrastructure construction.

In addition to the use of setbacks, a nest-specific restricted activity period will be implemented to define the temporal extent of avoiding Project activities near active nests. Where the contents of the nest are visible, an estimate of the nest completion date at the time of discovery can be reasonably estimated based on knowledge of typical clutch size, egg-laying schedule, incubation period, and fledging period for a given species. For suspected nests, an estimate to completion will be based on the breeding schedule of the species, the time of year, and the behavior observed (e.g., copulation, carrying nest material, carrying food, begging/vocalizing young) as a means for determining where the species is in the breeding cycle.

The setback will remain in effect for the entire restricted activity period and once expired, two options will be considered:

1. If the key nesting period is still applicable, another pre-disturbance nest survey will be undertaken if Project activities with the potential to adversely affect nesting birds are planned. This should include confirming that the previously discovered nest (or suspected nest) for which the setback was established is no longer active. Traditionally used nests, such as raptor stick nests, are considered active until unoccupied for three consecutive years (MB CDC 2024). The ranges of two bird species whose nests are protected year-round under Schedule 1 of the *Migratory Birds Regulations, 2022* overlap the LAA. Great blue heron (*Ardea gerodias*) nests cannot be disturbed until they have been inactive for 24 months and pileated woodpecker nests cannot be disturbed until they have been inactive for 36 months. Neither of these species is known to nest in the LAA.
2. If the key nesting period has expired, a follow-up survey is recommended for confirmation that the nesting cycle is complete, unless enough days have passed that it would be impossible for the nest to be active. A licence or permit from the Director of Wildlife is required to remove raptor nests during vegetation clearing under *The Wildlife Act*.

4.2.1.7 Decision Trigger/Threshold for Action

If a bird nest is identified in the PDA or LAA:

- *Action: If the nest is active, apply the recommended setback distance and apply activity restriction guidelines as necessary (Appendix A, Table A-2).*
- *Action: Report nest locations to NRIF and implement additional or amended mitigation measures as necessary.*

4.2.2 Barn Swallow

Barn swallow is a migratory bird that builds cup-shaped nests on human-made structures, typically on horizontal or vertical surfaces under protective ledges (ECCC 2019). It is listed as Threatened under the federal *Species at Risk Act* and is protected under the federal *Migratory Birds Convention Act, 1994*. The risk of disturbing nesting barn swallow is greatest during the general breeding period from early May to late August (OMNRF 2017), when 6 to 26 days are required for nest building (COSEWIC 2021). To avoid harm to bank swallow nests, eggs, or residences (occupied nests), the following practices should be adopted:

- Keep doors and windows closed and cover all holes or openings more than 2.5 centimetres (cm); if frequent access to a building is required, install curtains on the doors
- Install exclusionary netting ahead of the breeding season to prevent nesting in work areas
- Install corner slope exclusion products on the exterior surfaces of buildings to prevent access to the 90-degree angle required for nest construction
- Monitor barriers at least weekly before the breeding season and every three days during the breeding season to verify that they are still in place; repair as necessary
- Monitor Project infrastructure and parked or inactive equipment regularly (daily to every five days) for bank swallow nests

If barn swallow establish nests on Project equipment or infrastructure:

- Halt the use of equipment until the birds have departed
- Create a buffer of 50 to 100 m around nests, depending on the level of Project disturbance (MCDC 2021), until the birds have departed.

4.2.3 Bank Swallow

Bank swallow is a migratory bird that nests in stockpiles of soil and sand, gravel pits, and sandy banks of waterbodies. It is listed as Threatened under the federal *Species at Risk Act* and is protected under the federal *Migratory Birds Convention Act, 1994*. The species burrows in vertical banks more than 2 metres (m) high with slopes of at least 70 degrees. The risk of disturbing nesting bank swallow is greatest during the general breeding period from mid-April to late August. To avoid harm to bank swallow nests, eggs, or residences (occupied burrows), the following practices should be adopted.

Before the general breeding period:

- Contour dirt/aggregate piles to have a slope of less than 70 degrees, to reduce their attractiveness as bank swallow nesting areas

- If there is evidence of previous nesting by bank swallows in areas planned to be disturbed by the Project, and contouring isn't possible, install scaring devices to deter the re-establishment of nesting colonies
- If a nesting site must be excavated, create alternate nesting habitat outside of the disturbance area. Slopes should be greater than 70 degrees to attract nesting bank swallow

During the general breeding period:

- Flatten newly created vertical faces at the end of each workday to deter bank swallow burrowing overnight
- Survey inactive dirt/aggregate piles for bank swallow burrows before resuming work

If bank swallow colonizes an active work area:

- Stop work until the end of the breeding season and birds have departed
- Create a buffer of 50, 150, or 300 m around nesting colonies, depending on the level of Project disturbance , until the birds have departed
- Do not use scaring devices on an established colony.

4.2.4 Boreal Woodland Caribou Monitoring

4.2.4.1 Rationale

Boreal woodland caribou is a federally listed SAR (Appendix A, Table A-1) and is an important species to Indigenous Nations. The Project is in the Province of Manitoba's boreal woodland caribou Kamuchawie Management Unit (Manitoba Boreal Woodland Caribou Management Committee 2015), but baseline survey data, provincial survey data, and traditional and local knowledge suggest that boreal woodland caribou are unlikely to interact with the Project (Stantec 2020a). However, recognizing that range use may change over time, Alamos has committed to monitoring for boreal woodland caribou during the Project construction, operation, and decommissioning/ closure phases, which will help address future uncertainty while informing mitigation measures and adaptive management, as necessary. Information (e.g., species, abundance, age, sex) on moose, wolves, furbearers (e.g., wolverine), and other wildlife species in the RAA will also be collected through the remote camera study.

Boreal woodland caribou data collection within this Management Unit is ongoing, and as more data is gathered, the certainty regarding potential interactions will increase. If data indicates Project interactions with boreal woodland caribou within the LAA, the WMMP will be amended to account for this change.

4.2.4.2 Objectives

The objectives of boreal woodland caribou monitoring are to:

- Assess the presence/absence of boreal woodland caribou in the LAA and RAA using data from collared individuals and the Project remote camera study that will be used to administer the Boreal Woodland Caribou Protection Plan (see Table 4-1).
- Support caribou management and conservation within the Kamuchawie Management Unit, by promoting the conservation of critical seasonal areas such as calving habitat within the RAA.

4.2.4.3 Measurable Parameter

The measurable parameter for boreal woodland caribou monitoring is the presence/absence of boreal woodland caribou and boreal woodland caribou calving habitats in the LAA and RAA.

4.2.4.4 Methods

Collaring Study

Alamos will support NRIF in the ongoing provincial collaring program once the collaborative collaring Project Contribution Agreement is signed. NRIF deployed an initial 10 GPS collars in 2023, and another 10 GPS collars in 2024. Collaring adult females will provide information on habitats used during the calving season, when the species is particularly susceptible to disturbance. Alamos expects to receive calving habitat identification results from NRIF once analysis is completed. If calving habitat patches are identified as existing within Alamos' RAA, Alamos will collaborate with NRIF to identify appropriate mitigation measures (as required) to protect boreal caribou calving habitat throughout the construction and operation phases. In addition to providing year-round herd distribution information, collaring data may be used to estimate other population parameters of interest to NRIF that further support management and conservation of the species.

If observations and/or data indicate boreal woodland caribou have entered the LAA, adaptive protection measures outlined in Table 4-1 will be triggered. The monitoring of collar data will be carried out as needed throughout the year by Alamos. During boreal caribou calving and calf-rearing seasons, Alamos commits to adaptive protection measures outlined in Table 4-1 that are trigged by boreal woodland caribou occurring in the LAA. During the calving and calf-rearing season, Alamos will verify current collaring data on a weekly basis to make sure that no collared animals have entered the LAA (and if collared animals are detected, the mitigation outlined in Table 4-1 applies).

Remote Camera Study

The remote camera study began in 2015 using 16 Reconyx™ Hyperfire™ PC900 (Reconyx 2017) cameras deployed in the LAA and expanded in 2017 to the RAA using 32 cameras in a randomly stratified design. Cameras were placed along the edges of clearings, waterbodies, and established game trails to increase the likelihood of boreal woodland caribou detection. Prior to construction, cameras have been redistributed to increase monitoring coverage in areas most likely to contain boreal woodland caribou (i.e., west and north of the MacLellan site). Two additional cameras were deployed in 2024 west of the MacLellan site to further increase the likelihood of boreal woodland caribou detection (Appendix B, Map B-7).

Monitoring surveys will follow a standardized operating procedure for both remote camera deployment and data analysis. Cameras will be at least 500 m apart to maintain independent sampling and will be installed at roughly breast height (1.2 m) to optimize the range of the sensors and to allow for snow depth during the winter months. Vegetation will be cleared from the line-of-sight for each camera during installation and during subsequent maintenance and data download visits (i.e., every three months).

Photographs will be transferred to a central database and analyzed using photo analysis software (e.g., Reconyx MapView Professional™; Reconyx 2017). Each photograph will be analyzed individually. If wildlife is identified as the cause of the trigger, a unique event will be created. Wildlife (e.g., boreal woodland caribou, moose, wolves, furbearers such as wolverine) captured in each event will be classified by species, number, age, and sex, if possible. A new event will begin with a change in wildlife species or a gap of one hour between events with no photos. Three photos will be classified per wildlife event. The length of each event will be determined by calculating the time between the first and last observation of an animal passing a camera. For each event, a single photo will be classified as the best representation of the event attributes (i.e., species, abundance, age, sex). Photos that are triggered by environmental conditions (e.g., wind, vegetation, shadows) will be analyzed but not classified as an event unless an animal is present. The species and number of events will be summarized for each camera location and treatment.

4.2.4.5 Frequency

The collaring study that was initiated by NRIF in 2023 will be a multi-year program that will be led by the province. Alamos will contribute to the long-term program upon signing the collaborative collaring Project Contribution Agreement with NRIF. Alamos will actively monitor for collared boreal woodland caribou occurrence within the LAA during the calving and calf-rearing season (May 1 to June 30) by assessing proximity of collared animals to the LAA with current collar data on a weekly basis.

The remote camera study will be continuous during the construction, operation, and decommissioning/ closure phases of the Project (see Section 4.5). Camera data will be downloaded and reviewed for the presence of caribou every three months.

4.2.4.6 Decision Trigger/Threshold for Action

Decision triggers and thresholds for action have been incorporated into the Boreal Woodland Caribou Protection Plan (Table 4-1), which provides a tiered mitigation and monitoring strategy that includes temporal (i.e., when the species is most likely to occur near the Project) and spatial (i.e., distance from the Project) considerations. Adaptive management will occur, as data collection is ongoing. Data from Project activities will be collected and conjointly analyzed with boreal caribou collaring data as it becomes available. If results indicate that Project activities are causing negative impacts to boreal caribou, effective mitigation methods will be applied. Project activities that will be formally recorded include blasting events. The log of blasting events will be included in annual reporting submitted to NRIF. Such data on blasting events may be used by Alamos or NRIF to shed light on potential sensory impacts to caribou and guide adaptive management as needed.

Table 4-1 Boreal Woodland Caribou Protection Plan

Protection Level	Protection Measures
Level 1: Normal Operation	***Timing***: year-round within the RAA
	Action: standard Project-specific mitigation • Report incidental boreal woodland caribou observations to NRIF. • The calving and calf-rearing period for boreal woodland caribou May 1 to June 30. If activities that could result in risk of disturbance to boreal woodland caribou cannot be avoided during the calving and calf-rearing period, Alamos will make sure that caribou are not present within the LAA or the PDA through monitoring described in Section 4.2.4. Activities that could result in risk of disturbance to boreal woodland caribou include but are not limited to: vegetation clearing, demolition of existing buildings and infrastructure, site preparation activities, and blasting. If caribou are detected within the LAA or the PDA during the calving or calf-rearing period when construction activities cannot be avoided, Alamos will contact NRIF to discuss adaptive management strategies to reduce Project disturbance and/or postpone activities as required.
	Monitoring: routine boreal woodland caribou monitoring (see Sections 4.2 and 4.3) with remote camera studies and regular monitoring (following receipt of notifications[1]) of collaring data from the Province
Level 2: Site Notification	***Timing***: any time when boreal woodland caribou are within 1 km of the Project (the LAA) between July 1 and April 30 (i.e., outside the calving and calf-rearing period)
	Action: • Report boreal woodland caribou observations/detections immediately (i.e., as soon as practical) to NRIF. • Provide notification to on-site staff regarding the potential presence of boreal woodland caribou to discuss potential need for adaptive management. • Contact NRIF and discuss the need for adaptive management strategies to reduce Project disturbance. • Commence activities in preparation for Level 3 protection measures.
	Monitoring: Implement an aerial survey or situation-specific survey program to evaluate the distribution and abundance of boreal woodland caribou in the LAA. Continue with routine monitoring with remote camera studies and obtain collaring data from the Province.

[1] Upon implementation of the Collaring Program Agreement with NRIF, Alamos should have live access to the collaring data, which will alter Alamos' review frequency ability. At that time, this Plan and the frequency will be adjusted accordingly.

Protection Level	Protection Measures
Level 3: Site Alert	***Timing***: any time when boreal woodland caribou are within 1 km of the Project (the LAA) between May 1 and June 30 (i.e., during the calving and calf-rearing period) or anytime of the year when boreal woodland caribou are within the PDA.
	Action: • Contact NRIF immediately and report observations/detections and discuss the need for adaptive management strategies to reduce Project disturbance. Management strategies may include limiting high-noise activities (e.g., blasting), limiting nighttime lighting in non-critical areas, restricting access to sensitive areas associated with boreal woodland caribou locations in the LAA or the PDA and providing additional worker training and awareness.
	Monitoring: Implement an aerial survey or situation-specific survey program to evaluate the distribution and abundance of boreal woodland caribou in the LAA or PDA. Surveys will be tailored to environmental and situational conditions, with a focus on minimizing disturbance and behavioral impact on boreal woodland caribou. Examples include conducting aerial track surveys in a grid pattern across the LAA, which is most effective during periods of snow cover. When snow cover is absent, tracking becomes more challenging, requiring reliance on aerial observations. Thermal or infrared imaging may be considered in these conditions if economically feasible. Other monitoring methods will be considered as required. Continue with routine monitoring with remote camera studies and obtain collaring data from the Province.

4.2.5 Mortality Reporting

4.2.5.1 Rationale

The Project has the potential to increase wildlife mortality risk through site preparation activities (e.g., vegetation clearing, dewatering) and traffic-related mortality. Alamos will provide all on-site staff and/or contractors with a mandatory orientation that includes wildlife-related topics (e.g., wildlife awareness training). All staff will report wildlife mortality events and additional mitigation will be considered in locations or at times of the year where mortality risk is elevated.

4.2.5.2 Objective

The objective of mortality monitoring is to evaluate the effectiveness of mitigation measures and to implement additional mitigation measures through the adaptive management framework if an increase in mortality rate is observed.

4.2.5.3 Measurable Parameters

Measurable parameters for mortality monitoring are wildlife mortality events or wildlife incidents, such as habituated black bears, associated with Project construction or operation.

4.2.5.4 Methods

Mortality monitoring will be implemented using a self-reporting program operated by Alamos. When wildlife mortality events occur or are discovered, or wildlife incidents occur, the information will be reported to Alamos using the Wildlife Incident Report Form (Appendix C, Form C-1).

4.2.5.5 Frequency

Annual and monthly mortality reporting to NRIF will occur throughout the Project construction, operation, and decommissioning/closure phases. See Table 4-2 in the following section and the schedule in Section 4.5 for more information.

4.2.5.6 Decision Trigger/ Threshold for Action

Table 4-2 below presents the decision trigger/threshold for action for reporting.

Table 4-2 Mortality Reporting

Mortality Type	Reporting	Frequency
Ungulate (1 or more) or large bird die-off (5 or more medium or large birds (e.g., corvids, waterfowl, raptors), 20 or more small birds (e.g., shorebirds, passerines)).	Wildlife Incident Report Form C-1	Communicate to Lynn Lake conservation district office as soon as operationally feasible.
Large mammals (e.g., wolf, bear) – any number	Wildlife Incident Report Form C-1	Communicate to Northeast region wildlife biologist monthly. Also include any ungulate or large bird die-offs that were communicated to district office within that month.
All other wildlife - any number (e.g., small mammals, single bird collisions).	Wildlife Incident Report Form C-1	Provide summary of all wildlife mortalities related to Project activities in annual report submitted to Northeast region wildlife biologist.

4.2.6 Beaver Management and Monitoring

4.2.6.1 Rationale

Beavers can have a substantial ecological influence by creating wetlands, inundating terrestrial habitats with water, increasing the extent and duration of surface flooding, and maintaining high water tables during high and low flow periods (Westbrook et al. 2006).

The current Project planning and design process calls for the regulation of lake levels below a certain level to prevent flooding of the open pits via groundwater and/or surface water infiltration. Since beavers have the potential to alter surface water in the PDA and LAA, Project interactions with beaver will be monitored and mitigated to prevent beaver-related changes in surface water hydrology from negatively impacting Project activities.

During the construction and operation phases, annual surface water flow is expected to change in some waterbodies at the Gordon site. Beaver activity could affect the Gordon site as this species has established multiple dams along Farley Creek and along the diversion channel between Gordon and Farley lakes. No locations at the MacLellan site have been identified as a flood risk due to beaver activity although beaver dams have been observed along an unnamed tributary between East Pond and the Keewatin River. Beaver activity could also affect collection ditches at both sites.

4.2.6.2 Objective

Beaver management and monitoring aims to maintain suitable mine operating conditions in the LAA during Project construction and operation. Monitoring beaver activity will help to manage and regulate the effects of beaver activity on the surface hydrology of Gordon Lake and Farley Lake, retain important fish habitat, and reduce Project-related beaver mortality risk.

4.2.6.3 Methods

Beaver Management

Beaver will be managed by removing dams and installing deceivers or flexible pond levelers (pipe and fencing) in areas where beaver dams are known to impede stream flows required for Project construction and/or operation (e.g., Gordon diversion channel, Farley Creek). Partial dam removal for non-lethal device installation will be attempted first, with full removal only if non-lethal measures fail. When constructed and installed properly, deceivers or flexible pond levelers can be a relatively low maintenance way of maintaining flow without harming beaver. Beaver deceivers will be constructed and installed in the late summer, prior to the watercourse receiving Project water.

Alamos will obtain an authorization from the province (i.e., Conservation Officer at the local Lynn Lake district office), to remove beaver dams in the PDA or LAA prior to deceiver installation. Once authorized, dams will be removed by hand or by mechanical means (the use of explosives and heavy equipment will be avoided where possible). Beaver dam removal will follow measures for dam removal on Crown Lands as described in *The Manitoba Guide for Beaver Dam and Lodge Removal* (Government of Manitoba 2021), apart from beaver removal, which will only be carried out if deceivers or levelers fail to maintain water flow. Measures described include the following (Government of Manitoba 2021):

- Beaver dam or lodge removal must be authorized by the province before any removal activities may commence. Request authorization from a Conservation Officer at the local district office.
- The authorization holder is typically subjected to the following conditions:
  - The only items that may be removed are material used to construct the dam or lodge, any food cache, and any associated debris that has accumulated against the dam or lodge.
  - If multiple beaver dams are to be destroyed or removed, the downstream dam must be destroyed or removed first.
  - The destruction or removal of a beaver dam must not result in water flow exceeding the downstream channel capacity (bank-full capacity).
  - Additional authorization from the Director of Fish and Wildlife Branch is required for dam removal in a wildlife refuge, special conservation area or wildlife management area.
  - If the use of explosives is authorized, individual detonations of more than one kilogram must not be used.

  - Dam management activities on fish-bearing waters require compliance with federal *Fisheries Act* regulations.
- Other considerations:
  - Additional authorization from the Director of Parks is required for dam removal in an ecological reserve or provincial park.
  - A Crown Land Work Permit may also be required if heavy equipment or explosives will be used.

Beaver Monitoring

A pre-construction survey for beaver dams and lodges was completed in late May 2022. Areas identified for future beaver dam management and monitoring include Farley Creek, the Gordon diversion channel, and collection ditches at the Gordon and MacLellan sites (Appendix B, Maps B-8 and B-9). Additionally, the unnamed watercourse from East Pond to an unnamed tributary of Keewatin River outside of the PDA may require dam management and monitoring due to the presence of two dams and one beaver lodge. An aerial survey will be completed once each fall during the construction, operation, and decommissioning/closure phases to identify the location and abundance of beaver dams and lodges in these watercourses and any other watercourse receiving Project water in the LAA (Volume 1, Chapter 10, Section 10.9.1.2 of the EIS; Stantec 2020a).

Additionally, Alamos will monitor water levels and flows at the outlets of Farley Lake and Swede Lake and in the diversion channel between Gordon Lake and Farley Lake as part of the SWMMP. If unexplained changes in water levels occur, investigations will be carried out to understand if beaver dams are the cause.

4.2.6.4 Frequency

Aerial surveys for beaver dams and lodges will be repeated each fall during the Project construction, operation, and decommissioning/closure phases. Monitoring water levels on Farley Lake, Swede Lake, and in the Gordon diversion channel will be a continuous activity occurring throughout the construction, operation, and decommissioning/closure phases.

4.2.6.5 Decision Trigger/Threshold for Management Action

Monitoring completed as part of the WMMP and/or the SWMMP may identify new sites requiring beaver deceivers, or the need for additional beaver dam management measures at locations where deceivers have been installed.

If beaver activity is determined to be the cause of undesirable water level changes beyond the criteria outlined in the SWMMP the following actions will be taken:

- *Action: Alamos will install non-lethal flow device systems such as beaver deceivers or flexible pond leveler pipes to deter beaver damming activity and preserve water flow. These methods are shown to be a more durable, cost-effective, and ethical method to reduce beaver flooding than trapping (Boyles and Savitzky 2008; Simon 2006).*

- *Action: Trapping beavers may be considered if non-lethal methods have proven ineffective in certain locations. Trapping will be coordinated with, and/or outsourced to, local trappers and will follow the conditions outlined above.*
- *Action: Alamos will provide NRIF with an annual report indicating any preventative or reparative actions taken.*

4.2.7 Amphibian Relocation

4.2.7.1 Rationale

Existing open pits will be dewatered during construction. In response to issues and concerns raised by Mathias Colomb Cree Nation outlined in the *Response to Mathias Colomb Cree Nation Traditional Land and Resource Use Information Including Mitigation Table* (included in Federal IR Responses Round 1, Package 3), Alamos committed to rescuing and relocating amphibians prior to dewatering. Amphibian relocation will be undertaken in conjunction with fish salvages in Wendy pit, East pit and the existing water management infrastructure at the Gordon site (see the Fish Salvage Plan [FSP]), the only locations where dewatering is proposed.

4.2.7.2 Objective

The objective of amphibian relocation is to safely remove and relocate as many amphibians as possible prior to dewatering of potential habitat.

4.2.7.3 Methods

Baseline field studies for amphibians included surveys of wetlands with grassy margins and slow-moving water; larger waterbodies suspected of bearing fish were not surveyed because they are avoided by frogs due to predation risk. Boreal chorus frog (*Pseudacris maculata*) and wood frog (*Lithobates sylvaticus*), which are known to occur in the LAA, breed in shallow, vegetated wetlands and forage and overwinter on land (Canadian Herpetological Society 2023). Northern leopard frog (*Lithobates pipiens*), a SAR, is at the northern limit of its range in the RAA. There are no recent records of its presence in the LAA, and it was not detected during baseline field studies. It breeds in shallow, open wetlands, forages on land, and overwinters in well-oxygenated waterbodies that do not freeze to the bottom (COSEWIC 2009). The areas to be dewatered do not appear to be suitable frog habitat; however, if encountered during fish salvages (FSP Section 3.1.1), amphibians will be captured where possible and relocated with methods described by Randall et al. (2018) and summarized as follows. Alamos will obtain a scientific collection permit prior to any amphibian salvage.

- Frogs captured by hand or with dip nets during fish salvage will be moved to food-grade plastic storage containers. The holding containers will be ventilated with 0.5-centimetre (cm) holes in their sides and lids (created from the inside out to prevent sharp edges from injuring animals). Moist, but not wet, substrate such as moss, a damp sponge, or unbleached paper towel will be placed in each container, which will hold a single frog. Holding containers will be used once or will be disinfected between uses.

Containers will be of a size that prevents frogs from jumping within and no objects other than moist substrate will be included to prevent injury.

- Handling and hygiene protocols are critical to protect amphibians from diseases like chytrid fungus (*Batrachochytrium dendrobatidis*) and ranavirus, which are significant threats to their populations. Field equipment will be sterilized before and after use, and field staff must have clean, chemical-free hands (free from sunscreen or insecticides) before handling amphibians. Disposable, non-powdered vinyl or nitrile gloves should be worn to avoid the toxicity associated with latex gloves, with gloves changed between captures to prevent cross-contamination. If gloves are unavailable, bare hands may be used, but they should be rinsed in water natural to the animals' habitat. When in doubt, staff should follow the precautionary principle, maintaining the highest cleanliness standards for the health and safety of amphibians.
- Holding containers will be temporarily stored in a cool, shaded area to prevent heat stress. Containers will be packed flat, and care will be taken not to block ventilation holes if they are stacked. Containers will be transported in a climate-controlled vehicle and cushioned with towels, paper, etc. to prevent movement. Frogs will be relocated to release sites daily during fish salvages. If relocating tadpoles, gradual acclimatization to the new water temperature will be allowed to prevent shock or stunning, mixing small amounts of the site water until temperatures match.

Release sites should:

- Be within 350 m of the source site to reduce risk of disease transmission among waterbodies, or
- Be within seasonal migration distance (1,500 m) of the source site, and
- Lack predatory fish, and
- Be known to support frog populations.

Selecting release sites for amphibians requires not only meeting these criteria but also ensuring habitat quality is equal to or better than the original salvage site. Sites must be chosen outside the impacted area to serve as a safe refuge. Waterbodies where frogs were detected during baseline field studies will be selected as relocation sites where possible, and the number and species of relocated frogs will be recorded.

4.2.7.4 Frequency

Amphibian relocation will be undertaken opportunistically with fish salvages (see the FSP). At the Gordon site, fish salvages will begin and conclude during the open water season in the first year of mine construction. The open pits can be salvaged at any time because they do not require additional isolation. The existing water management infrastructure will be salvaged when the ditch connecting the collection pond to Gordon Lake is isolated.

4.2.7.5 Decision Trigger/Threshold for Action

There are no decision triggers or thresholds for action for amphibian relocation.

4.2.8 Training

Project personnel involved in vegetation clearing will be required to complete pre-construction wildlife feature awareness training that includes:

- Reviewing materials identifying different types of wildlife features that may be encountered in the PDA and actions or processes to follow if encountered
- Reviewing Environment and Climate Change Canada's (2023c) *Pileated Woodpecker Cavity Identification Guide*
- Wildlife awareness training

A professional biologist will develop training materials to be appended to the WMMP (Appendix D).

4.3 OPERATION

The monitoring programs initiated during the construction phase (Section 4.0) will continue and additional monitoring for wildlife and the TMF will commence during the operation phase.

4.3.1 Wildlife and Tailings Management Facility Monitoring

4.3.1.1 Rationale

Wildlife could interact with the TMF where chemicals of potential concern may exist. While vegetation will be managed around collection ponds, there is potential for wildlife to congregate at or on these ponds, particularly birds during the migration seasons. Depending on the concentration of these chemicals and the duration of exposure, there is a risk for the TMF to lead to increased wildlife mortality risk. Section 3.2 includes mitigation measures specific to wildlife interactions with collection ponds and the TMF to address uncertainty regarding the effects of the TMF on wildlife mortality risk and health.

4.3.1.2 Objective

The objective of monitoring wildlife relative to the TMF is to address Project effects and mitigation measures specific to wildlife interactions (including migratory birds, SAR and SOCC, amphibians, and mammals) at or within collection ponds and the TMF.

4.3.1.3 Methods

Wildlife and TMF mitigation activities will include managing vegetation around and installing and maintaining deterrents (e.g., fencing, netting, bird/bat deterrents) at collection ponds and the TMF to discourage their use by wildlife. Alamos will follow best management practices for drainage control; dewatering; control of site runoff and seepage; contact-water collection, storage, and reuse; tailings management; water management facilities for collection and treatment; maintenance of drainage patterns and works;

progressive rehabilitation to address infiltration and evapotranspiration capacity; and open pit filling at closure (see the SWMMP).

Alamos will conduct regular monitoring of surface water quantity and quality in near-field, far-field, and reference sites at both sites including pit lake water, TMF sediment pond, and receiving waterbodies and watercourses upstream and downstream of discharge flows. Change in surface water quality will be compared with the *Metal and Diamond Mining Effluent Regulations* (amended; Government of Canada 2002b) and Environmental Effects Monitoring regulatory requirements (see the SWMMP).

Lake level and stream flow monitoring will occur at regular intervals and will be compared with baseline conditions in accordance with regulatory requirements for chemicals of potential concern.

Measures to prevent migratory birds from using the TMF and collection ponds will be developed by engaging with Indigenous Nations and relevant authorities and considering ECCC's (2023d) *Guide for Developing Beneficial Management Practices for Migratory Bird Conservation*. When mitigation measures have been selected, a plan will be developed to monitor the effectiveness of wildlife deterrents.

Data gathered from these monitoring initiatives will be used to assess the effectiveness of mitigation measures for wildlife with regard to the TMF and collection ponds and to determine if adaptive management will be triggered (Section 5.0) to further protect wildlife from exposure to chemicals of potential concern.

4.3.1.4 Frequency

Surface water quantity and quality monitoring, including at the TMF, will be ongoing throughout operation, and continue through the decommissioning, closure, and post-closure phases of the Project as part of the SWMMP. The efficacy of wildlife deterrents at the TMF and collection ponds will be monitored throughout Project operation, until they are reclaimed. See the schedule in Section 4.5 for more information.

4.3.1.5 Decision Trigger / Threshold for Action

If unexpected use of the TMF or collection ponds by wildlife is observed as part of monitoring the following will apply:

Action: Alamos will consider implementing additional mitigation measures (e.g., bird control radar systems) if monitoring identifies concerns regarding wildlife use of these Project components as part of the adaptive management process (Section 5.0).

If there is a change beyond the regulatory guidelines for surface water quality or change in baseline surface water flow, the following will apply:

- *Action: Conduct monitoring for effects on wildlife health at these locations.*
- *Action: Investigate the cause of the deterioration and identify existing and/or new mitigation measures to be implemented to address it.*

4.4 DECOMMISSIONING/CLOSURE/POST-CLOSURE

The monitoring programs initiated during the construction phase (Section 4.2) are anticipated to continue through the decommissioning/closure phase and to end once the post-closure phase begins. Water quality and quantity monitoring initiated during the operation phase (Section 4.3) will continue through decommissioning/closure and post-closure. Wildlife deterrent monitoring at the TMF and collection ponds will conclude when the facilities are reclaimed. Decommissioning and closure activities require rehabilitation of mine infrastructure including buildings, access roads, open pits, and the TMF. The primary objectives of rehabilitation and closure activities are to establish Project sites that have:

- Been stabilized physically, chemically, and biologically, to encourage terrestrial and aquatic repopulation.
- Reasonable paths for surface drainage.
- Discharge water that meets effluent surface water and groundwater quality criteria.
- Revegetated areas of ground disturbance, where practical.
- Self-sustaining vegetative covers over select mine waste (tailings and mine rock), where practical.

These activities are expected to allow wildlife to reestablish in the PDA and LAA. After closure activities have been completed, a new monitoring program will be carried out to verify that the closure objectives and criteria have been met, to verify the accuracy of the environmental assessment and /or the effectiveness of mitigation measures, and to confirm that the Project can proceed to final close out status (Permanent Closure).

4.5 SCHEDULE

The proposed schedule for WMMP activities is presented in Table 4-3.

Table 4-3 Proposed Schedule for Wildlife Mitigation and Monitoring Activities

Key Mitigation or Monitoring Activity	Project Phase					
	Pre-Construction	**Construction**		**Operation[1]**	**Decommissioning/ Closure**	**Post-Closure**
	Year -3	**Year -2**	**Year -1**	**Year 1–Year 14**	**Year 15–Year 20**	**Year 21–Year 31**
Boreal Woodland Caribou calving and calf-rearing field survey (PDA)	√					
Raptor Nest Monitoring	√	√	√			
Pre-Disturbance Survey (Avian)		√ *(if required)*	√ *(if required)*	√ *(if required)*	√ *(if required)*	
Boreal Woodland Caribou Remote Camera Study	√	√	√	√	√	
Provincial Boreal Woodland Caribou Collar Program Participation	*As defined in the woodland caribou collaring contribution agreement with the Province of Manitoba*					
Wildlife Mortality Reporting		√	√	√	√	
Beaver Management and Monitoring	√ *(surveys completed 2022)*	√	√	√	√	
Wildlife and Tailings Management Facility Monitoring				√	√	

Note:
[1] Operational lifespan of Gordon site Year 1 to Year 6 and MacLellan site Year 1 to Year 14.

5.0 ADAPTIVE MANAGEMENT

Adaptive management is a planned process for responding to uncertainty or to an unanticipated or underestimated project effect. Information learned from monitoring actual project effects is applied and compared to predicted effects. Where a variance between the actual and predicted effects occurs, a determination is made as to whether modifications or other actions are necessary to revise the existing mitigation measures. As part of this commitment, technically and economically feasible mitigation measures will be implemented if monitoring indicates that specified levels of environmental change have been reached or exceeded. Feasibility and implementation decisions will be made based on the circumstances and considerations at the time.

Results from monitoring will be used through an adaptive management process to adjust mitigation measures and to modify plans on an ongoing basis, if required.

Adaptive management will be used to identify, assess the environmental significance of, and as appropriate, respond to an effect of the Project on wildlife and wildlife habitat beyond that predicted in the EIS. Important aspects of the adaptive management framework for wildlife and wildlife habitat are as follows:

- Risk narrative: description of the component and potential environmental effect and/or conditions that implementation of the adaptive management plan will limit (i.e., potential effects described in Section 2.2).
- Monitoring component: monitoring location and physical parameters to be monitored and assessed.
- Trigger: a specific threshold that initiates action when exceeded to allow timely and informative responses to be initiated before higher potential impact effects are observed.
- Response actions: describe the actions to be implemented should a threshold be crossed.
- Reporting and review: a plan to report Project-related threshold exceedances to the appropriate regulatory authorities, Indigenous Nations, and stakeholders.

Should unforeseen circumstances arise (e.g., observations of previously undetected SAR), NRIF will be consulted and additional or amended mitigation measures will be considered.

5.1 THRESHOLDS FOR ADAPTIVE MANAGEMENT

Thresholds for adaptive management for each of the monitoring and management components included in the WMMP have been provided in Section 4.0 and are summarized in Table 5-1. If none of the thresholds are exceeded, no further action is required, and monitoring results will be documented in the annual report (see Section 6.0). If modified or additional mitigation measures are required (e.g., as a result of shared data from the caribou collaring program), the proper agency will be notified, a detailed description of the measures will be developed and provided, and results will be reported as described in Table 1-2.

Table 5-1 Thresholds for Adaptive Management

Activity	Decision Trigger/Threshold	Action
Raptor nest monitoring	Raptor nest identified in the LAA	• If the nest is active, apply the recommended setback distance and apply activity restriction guidelines as necessary • Report nest locations to NRIF and implement additional or amended mitigation measures as necessary
Avian mitigation plan	Bird nest identified in the LAA	• If the nest is active, apply the recommended setback distance and apply activity restriction guidelines as necessary • Report nest locations to NRIF and implement additional or amended mitigation measures as necessary
Woodland caribou monitoring	Woodland caribou presence confirmed in the LAA	• Between May 1 and June 30 (i.e., during the calving and calf-rearing period) or anytime of the year when woodland caribou are within the PDA, vegetation clearing, demolition, and site preparation activities will be postponed until July 1 or until monitoring confirms caribou have left the LAA or PDA. NRIF will be contacted to discuss the need for adaptive management strategies to reduce Project disturbance. Management strategies may include limiting high-noise activities, limiting nighttime lighting in non-critical areas, restricting access to sensitive areas associated with woodland caribou locations in the LAA or the PDA and providing additional worker training and awareness. Temporary mine shutdown will be considered if mine-related adverse behavior is detected in woodland caribou that are calving or rearing calves within the LAA or within the PDA at any time of the year. Woodland caribou observations will be reported to NRIF, and monitoring will include aerial surveys and tracking using remote cameras and collaring data from the Province. • Between July 1 and April 30 (i.e., outside the calving and calf-rearing period), observations will be reported to NRIF, and on-site staff will receive regular notifications regarding potential caribou presence. NRIF will be contacted to discuss the need for adaptive management strategies to reduce Project disturbance. Preparation for Level 3 (see Table 4-1) protection measures will begin as necessary. Monitoring will include aerial surveys and continued tracking through remote camera studies and collaring data from the Province.
Mortality reporting	Mortality of any SAR or SOCC	• Follow reporting actions outlined in Section 4.2.5.6.

Activity	Decision Trigger/Threshold	Action
Beaver management	Beaver activity determined to be the cause of undesirable water level changes beyond the criteria outlined in the SWMMP	• Install non-lethal flow device to deter beaver damming activity and preserve water flow. • Remove dams and/or trap beavers if non-lethal methods are ineffective. • Report preventative or reparative actions taken to NRIF.
Wildlife and TMF monitoring	Unexpected use of the TMF by wildlife	• Implement additional mitigation measures (e.g., bird control radar systems) if monitoring identified concerns
	Change beyond regulatory guidelines for surface water quality	• Conduct monitoring for effects on wildlife health at these locations • Investigate the cause of the deterioration and identify existing and/or new mitigation measures to be implemented

6.0 REPORTING

Alamos will develop an annual monitoring report summarizing the wildlife monitoring activities and results, which will be shared with interested Indigenous Nations, stakeholders, and relevant regulatory bodies. The annual reporting will detail how monitoring complies with the approval-related requirements outlined in Section 1.4.4 and will include observations of previously unidentified SAR, SOCC, and species of importance to Indigenous Nations, decision thresholds/triggers reached during that year, adaptive management actions taken, additional mitigation measures implemented or proposed, and a review of the monitoring programs including updates, if necessary. To comply with approval-related requirements, annual reports will include a plain language executive summary in both official languages and will be submitted no later than March 31 following the reporting year to which the annual report applies. The first year for which an annual report will be prepared will be the year in which the federal Minister of the Environment issued the Decision Statement (i.e., 2023).

In addition to the wildlife monitoring activities, water quality monitoring results will be reported in Surface Water Quality Monitoring Reports and the results will be reviewed and used to evaluate the need for additional wildlife mitigation and/or monitoring.

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Appendix A Tables

Table A-1 Wildlife Species at Risk and Species of Conservation Concern with Potential to Occur in the Regional Assessment Area[1]

Common Name	Scientific Name	SARA[2]	COSEWIC[3]	MB ESEA[4]	MB CDC[5]	Observed in the General Project Area by Tetra Tech (2013)	Observed During Project-specific Baseline and Pre-construction Studies (2015–2019)
Mammals							
Little brown myotis	*Myotis lucifugus*	Endangered	Endangered	Endangered	S2N, S5B	--	√
Northern myotis	*Myotis septentrionalis*	Endangered	Endangered	Endangered	S3S4N, S4B	--	--
Eastern red bat	*Lasiurus borealis*	No Status*	Endangered	No Status	S3B	--	√
Hoary bat	*Lasiurus cinereus*	No Status*	Endangered	No Status	S3B	--	√
Silver-haired bat	*Lasionycteris noctivagans*	No Status*	Endangered	No Status	S3S4B	--	--
Wolverine	*Gulo gulo*	Special Concern	Special Concern	No Status	S3S4	--	√
Barren-ground caribou	*Rangifer tarandus groenlandicus*	No Status*	Threatened	No Status	S5N	--	--
Woodland caribou	*Rangifer tarandus caribou*	Threatened	Threatened	Threatened	S2S3	--	√
Birds							
Trumpeter swan	*Cygnus buccinator*	No Status	No Status	Endangered	S2B	√	--
Horned grebe	*Podiceps auritus*	Special Concern	Special Concern	No Status	S3B	--	--
Common nighthawk	*Chordeiles minor*	Special Concern	Special Concern	Threatened	S2S3B	--	√
Lesser yellowlegs	*Tringa flavipes*	No Status*	Threatened	No Status	S4B	--	--
Yellow rail	*Coturnicops noveboracensis*	Special Concern	Special Concern	No Status	S3B	--	--
Short-eared owl	*Asio flammeus*	Special Concern*	Threatened	Threatened	S2S3B	--	--
Olive-sided flycatcher	*Contopus cooperi*	Threatened*	Special Concern	Threatened	S2S3B	√	√
Bank swallow	*Riparia riparia*	Threatened	Threatened	No Status	S4B	--	--
Barn swallow	*Hirundo rustica*	Threatened*	Special Concern	No Status	S4B	√	√
Evening grosbeak	*Coccothraustes vespertinus*	Special Concern	Special Concern	No Status	S2S3	--	--

Common Name	Scientific Name	SARA[2]	COSEWIC[3]	MB ESEA[4]	MB CDC[5]	Observed in the General Project Area by Tetra Tech (2013)	Observed During Project-specific Baseline and Pre-construction Studies (2015–2019)
Rusty blackbird	*Euphagus carolinus*	Special Concern	Special Concern	No Status	SpecialS3S4B, S2N	√	--
Buff-breasted sandpiper	*Calidris subruficollis*	Special Concern	Special Concern	No Status	S1S2M	--	--
Amphibians							
Northern leopard frog	*Lithobates pipiens*	Special Concern	Special Concern	No Status	S4	--	--
Insects							
Yellow-banded bumble bee	*Bombus terricola*	Special Concern	Special Concern	No Status	S3S5	--	√
Transverse lady beetle	*Coccinella transversoguttata*	Special Concern	Special Concern	No Status	S3S5	--	--

Notes:
[1] Based on habitat availability and range overlap with the Project (Carey et al. 2003; Government of Canada 2023; Manitoba Breeding Bird Atlas 2021).
[2] Species listed under Schedule 1 of the *Species at Risk Act* (Government of Canada 2024); '*' indicated species under consideration for status change.
[3] Species assessed by the Committee on the Status of Endangered Wildlife in Canada (Government of Canada 2024).
[4] Wildlife species at risk in Manitoba listed under *The Endangered Species and Ecosystems Act* (Government of Manitoba 2021b).
[5] Manitoba Conservation Data Centre (MB CDC 2024); ranks are:
S = Province-wide status.
1 = Very rare throughout its range or in the province (5 or fewer occurrences, or very few remaining individuals). May be especially vulnerable to extirpation.
2 = Rare throughout its range or in the province (6 to 20 occurrences). May be vulnerable to extirpation.
3 = Uncommon throughout its range or in the province (21 to 100 occurrences).
4 = Widespread, abundant, and apparently secure throughout its range or in the province, with many occurrences, but the element is of long-term concern (>100 occurrences).
5 = Demonstrably widespread, abundant, and secure throughout its range or in the province, and essentially impossible to eradicate under present conditions.
S#S# = Range of uncertainty about the exact rarity of the species.
B = Breeding status of a migratory species.
N = Non-breeding status of a migratory species.

Table A-2 Setback Distances and Activity Restrictions for Wildlife Features in the LAA

Species[1] Common Name	Scientific Name	Key Wildlife Feature	Restricted Activity Period(s)	Recommended Setback Distance by Disturbance Category (m)[2]		
				Low	Medium	High
Mammals						
Black bear[a]	*Ursus americanus*	Active den	Year round	150	150	150
Little brown myotis[b,c]	*Myotis lucifugus*	Active roost site	Year round	100	500	500
Northern myotis[b,c]	*Myotis septentrionalis*	Active roost site	Year round	100	500	500
Wolverine[d]	*Gulo gulo*	Active den	Year round	100	250	500
Mineral lick[a]	-	Mineral lick	Year round	120	120	120
Denning species (e.g., red fox, coyote, gray wolf, American marten, fisher, least weasel)[a]	-	Active den	Year round	50	50	50
Birds						
American white pelican	*Pelecanus erythrorhynchos*	Nesting colony	April 1–August 31	500	750	1000
Bald eagle	*Haliaeetus leucocephalus*	Active or traditional nest site	March 15–July 15	250	500	1000
Bank swallow	*Riparia riparia*	Nesting colony	May 15–July 31	50	150	300
Barn swallow	*Hirundo rustica*	Nest site	May 15–Sept. 30	50	100	100
Boreal owl	*Aegolius funereus*	Nest Site	March 1–July 15	250	500	1000
Common nighthawk	*Chordeiles minor*	Nest site	May 1–August 31	100	200	300
Double-crested cormorant	*Phalacrocorax auritus*	Nesting colony	April 1–August 31	400	500	750
Evening grosbeak	*Coccothraustes vespertinus*	Nest site	May 1–August 15	200	300	450
Golden eagle	*Aquila chrysaetos*	Active or traditional nest site	March 15–July 15	500	750	1000
Great gray owl	*Strix nebulosa*	Active or traditional nest site	Feb. 15–July 15	250	500	1000
Grebes	-	Nesting colony	May 15–July 15	100	200	400
Gulls/terns	-	Nesting colony	May 1–July 15	400	500	750
Herons	-	Nesting colony	April 1–August 31	400	500	750

Species[1] Common Name	Scientific Name	Key Wildlife Feature	Restricted Activity Period(s)	Recommended Setback Distance by Disturbance Category (m)[2]		
				Low	Medium	High
Horned grebe	*Podiceps auritus*	Nest site	May 1–Sept. 15	100	200	400
Northern hawk owl	*Surnia ulula*	Nest Site	Feb. 15–July 15	250	500	1,000
Olive-sided flycatcher	*Contopus cooperi*	Nest site	May 1–August 31	50	150	300
Osprey[b]	*Pandion haliaetus*	Nest site	May 1–August 15	500	1,000	1,000
Raptor nests (not bald eagle)[e]	-	Nest site	Year round	100	100	100
Rusty blackbird	*Euphagus carolinus*	Nest site	May 1–July 31	50	150	300
Sharp-tailed grouse[3]	*Tympanuchus phasianellus*	Lek	March 15–May 15	200	500	1,000
Short-eared owl	*Asio flammeus*	Nest site	April 15–Sept. 15	200	300	500
Trumpeter swan	*Cygnus buccinator*	Nest site	April 1–July 31	500	750	1,000
Yellow rail	*Coturnicops noveboracensis*	Nest site	May 1–July 15	100	150	350
Waterfowl	-	Nest site	May 1–August 20	100	100	100
Other bird species not listed above or by the species at risk registries	-	Nest site	May 1–August 20	30	30	30
Amphibians and Reptiles						
Northern leopard frog[b]	*Lithobates pipiens*	Breeding and overwintering habitat	Year round	10	200	500

Notes:

[1] Recommended setback distances and restricted activity periods are derived from Manitoba Conservation Data Centre's *Recommended Development Setback Distances and Restricted Activity Periods for Birds by Wildlife Feature Type* (MB CDC 2024) unless otherwise specified.

[a] Manitoba Hydro's Manitoba-Minnesota Transmission Project Construction Environmental Protection Plan (MB Hydro 2019).

[b] Saskatchewan Ministry of Environment's Saskatchewan Activity Restriction Guidelines for Sensitive Species (Saskatchewan Ministry of Environment 2017).

[c] Core maternity roost period for bats (Fenton and Barclay 1980; Barclay 1982; Barclay 1984).

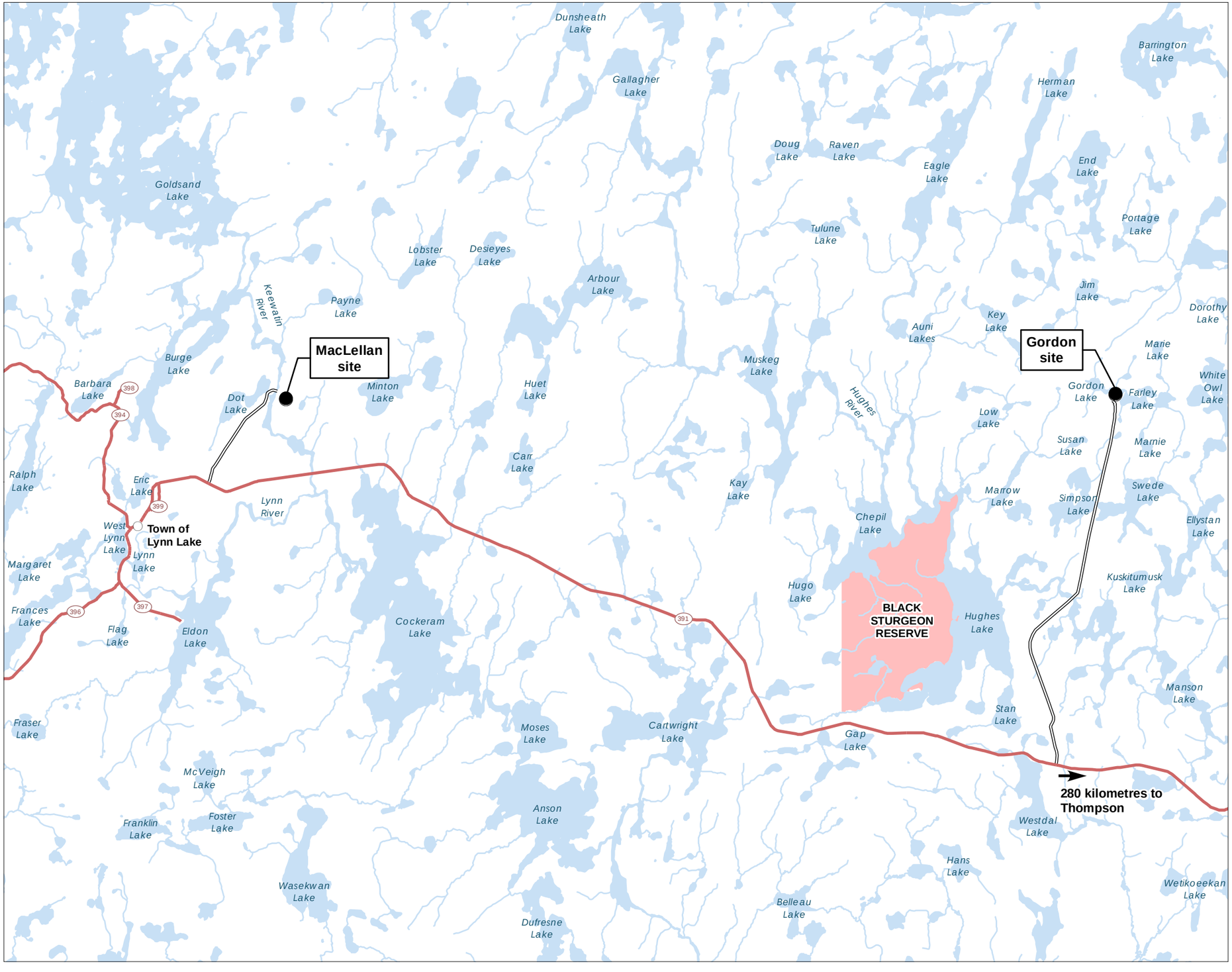
[d] Environment Canada's Petroleum Industry Activity Guidelines for Wildlife Species at Risk in the Prairie and Northern Region (Government of Canada 2009).

[e] Manitoba's Forest Management Guidelines for Terrestrial Buffers (Government of Manitoba 2017).

[2] Low: foot traffic, occasional/infrequent/short-term small vehicle (<1 ton) or ATV use; medium: trucks>1 ton, regular/frequent/long-term small vehicle (<1 ton) or ATV use; High: road, distribution line, or outlet channel construction, forest harvest, rock crushing, asphalt batching, quarry, or gravel pit operation.

[3] Low disturbance category for sharp-tailed grouse considered as foot traffic only, all other activities (i.e., occasional/infrequent/short-term small vehicle (<1 ton) or ATV use considered medium disturbance.

Appendix B Maps



Stantec

Landbase

- Existing Access Road
- Highway
- Watercourse
- Waterbody
- First Nation Reserve

N

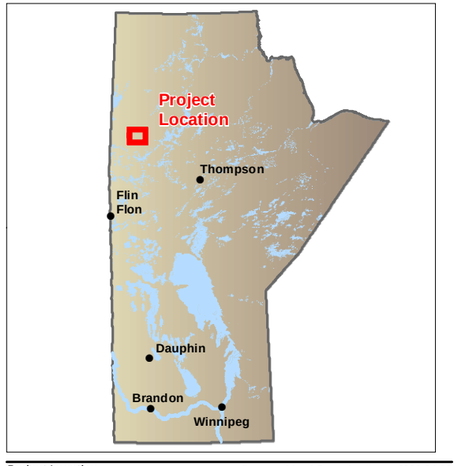
0 2.5 5 Kilometres

(At original document size of 11x17)
1:150,000

Notes

1. Coordinate System: NAD 1983 UTM Zone 14N

2. Base Data Sources: Government of Manitoba and Government of Canada



Project Location
Lynn Lake, Manitoba

Prepared by ACampigotto on 2020-04-02
Technical Review by ASomers on 2020-04-02
Senior GIS Review by GKroupa on 2020-04-02

Client/Project 111473008

ALAMOS GOLD INC.
Lynn Lake Gold Project

Map No.

B-1

Title

General Project Area

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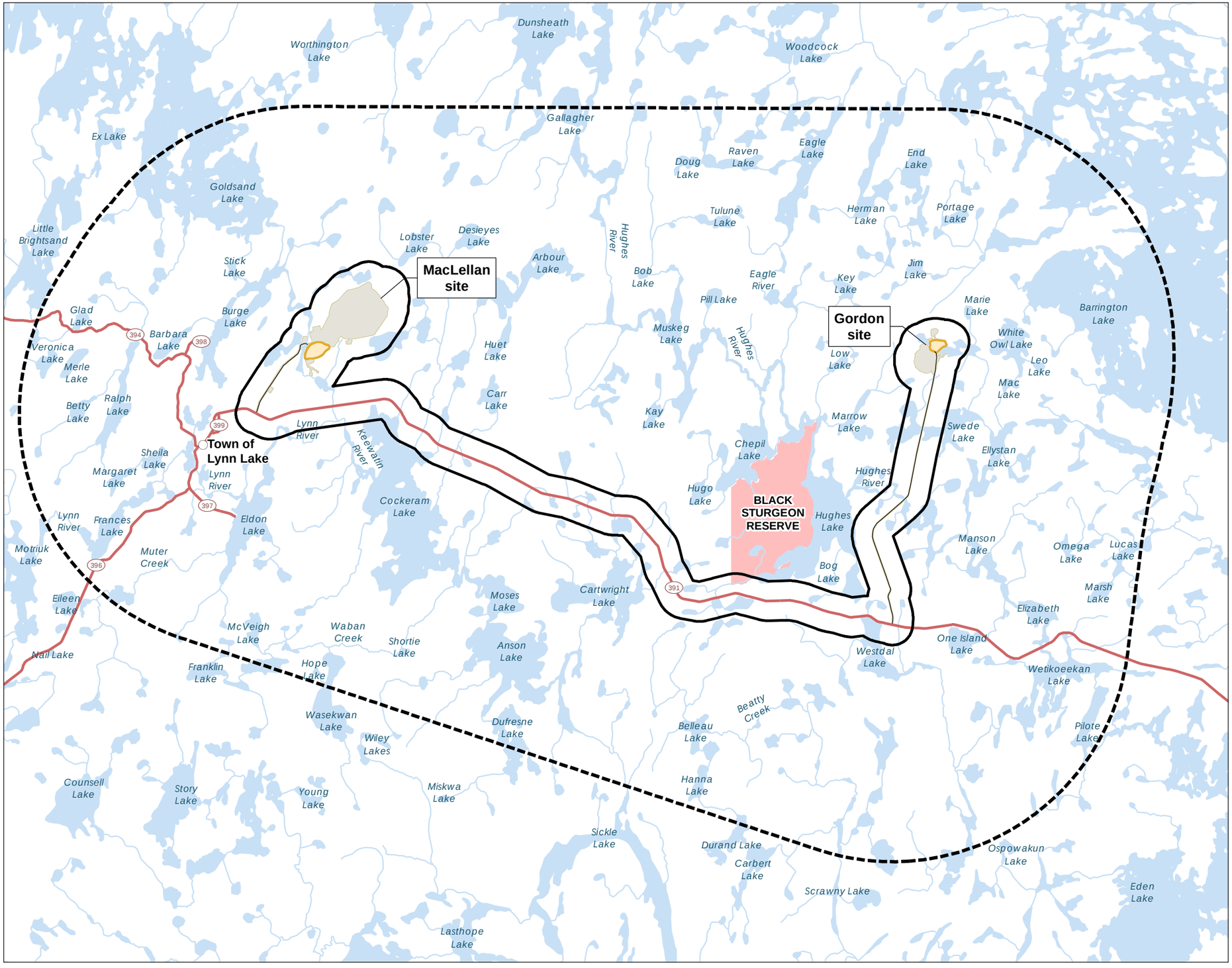

Stantec

Project Infrastructure
- Proposed Open Pit
- Project Development Area

Study Area
- Wildlife and Wildlife Habitat Local Assessment Area (LAA)
- Wildlife and Wildlife Habitat Regional Assessment Area (RAA)

Landbase
- Existing Access Road
- Highway
- Watercourse
- Waterbody
- First Nation Reserve

N

0 2.5 5 Kilometres

(At original document size of 11x17)
1:200,000

Notes
1. Coordinate System: NAD 1983 UTM Zone 14N
2. Base Data Sources: Government of Manitoba and Government of Canada

Project Location
Lynn Lake, Manitoba

Prepared by ACampigotto on 2023-11-01
Technical Review by AAmbrose on 2023-11-01

Client/Project
111473054
ALAMOS GOLD INC.
Lynn Lake Gold Project

Map No.
B-2

Title
Wildlife and Wildlife Habitat Assessment Areas

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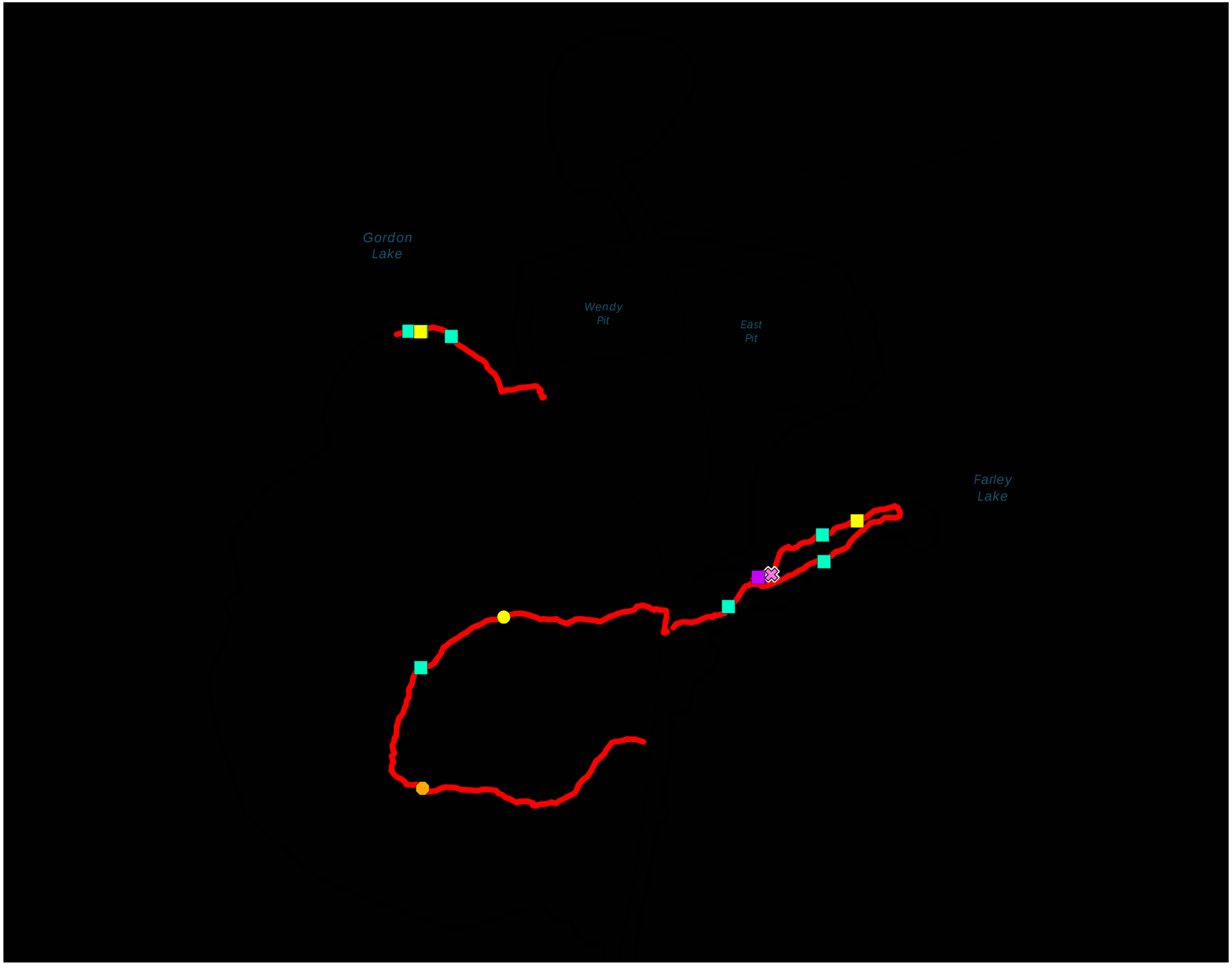


Stantec

Project Infrastructure

- Project Development Area (PDA)

Survey Results

- Black Bear Browse
- Black Bear Scat
- Canada Lynx Scat
- Game Trail
- Terrestrial and Arboreal Lichen
- Moose Scat
- Survey Transects

Potential caribou calving and post-calving habitat

Upland

- Conifer Dense
- Conifer Open
- Conifer Sparse

Wetland

- Bog Shrubby
- Bog Treed
- Swamp Shrubby
- Swamp Treed

Landbase

- Existing Access Road
- Watercourse
- Waterbody

N

0 100 200 Metres

(At original document size of 11x17)
1:10,000

Notes

1. Coordinate System: NAD 1983 UTM Zone 14N
2. Base Data Sources: Government of Manitoba and Government of Canada.

Project Location
Lynn Lake, Manitoba

Prepared by ACampigotto on 2024-12-04
Technical Review by CMoszynski on 2024-12-04

Client/Project
ALAMOS GOLD INC.
Lynn Lake Gold Project

111473076

Map No.
B-3

Title
Mammal Signs - Gordon site

G:\GIS Project Folder\111473008_LGP_EA\admin\data\mxd\SANTEC\20230808_Caribou_Survey_Transects\MapB-3_WILDLIFE_CaribouSurvey_Gordon_20241204.mxd Revised: 2024-12-04 By: ACampigotto

Stantec

Project Infrastructure

- Project Development Area (PDA)

Survey Results

- Black Bear Browse
- Black Bear Scat
- Black Bear Track
- Gray Wolf Den
- Gray Wolf Track
- Terrestrial Lichen
- Moose Scat
- Moose Track
- Unknown Carnivore
- Survey Transects

Potential caribou calving and post-calving habitat

Upland

- Conifer Dense
- Conifer Open
- Conifer Sparse

Wetland

- Bog Shrubby
- Bog Treed
- Swamp Shrubby
- Swamp Treed

Landbase

- Existing Access Road
- Watercourse
- Waterbody

N

0 0.5 1 Kilometres

(At original document size of 11x17)
1:25,000

Notes

1. Coordinate System: NAD 1983 UTM Zone 14N
2. Base Data Sources: Government of Manitoba and Government of Canada.

Project Location
Lynn Lake, Manitoba

Prepared by ACampigotto on 2024-12-04
Technical Review by CMoszynski on 2024-12-04

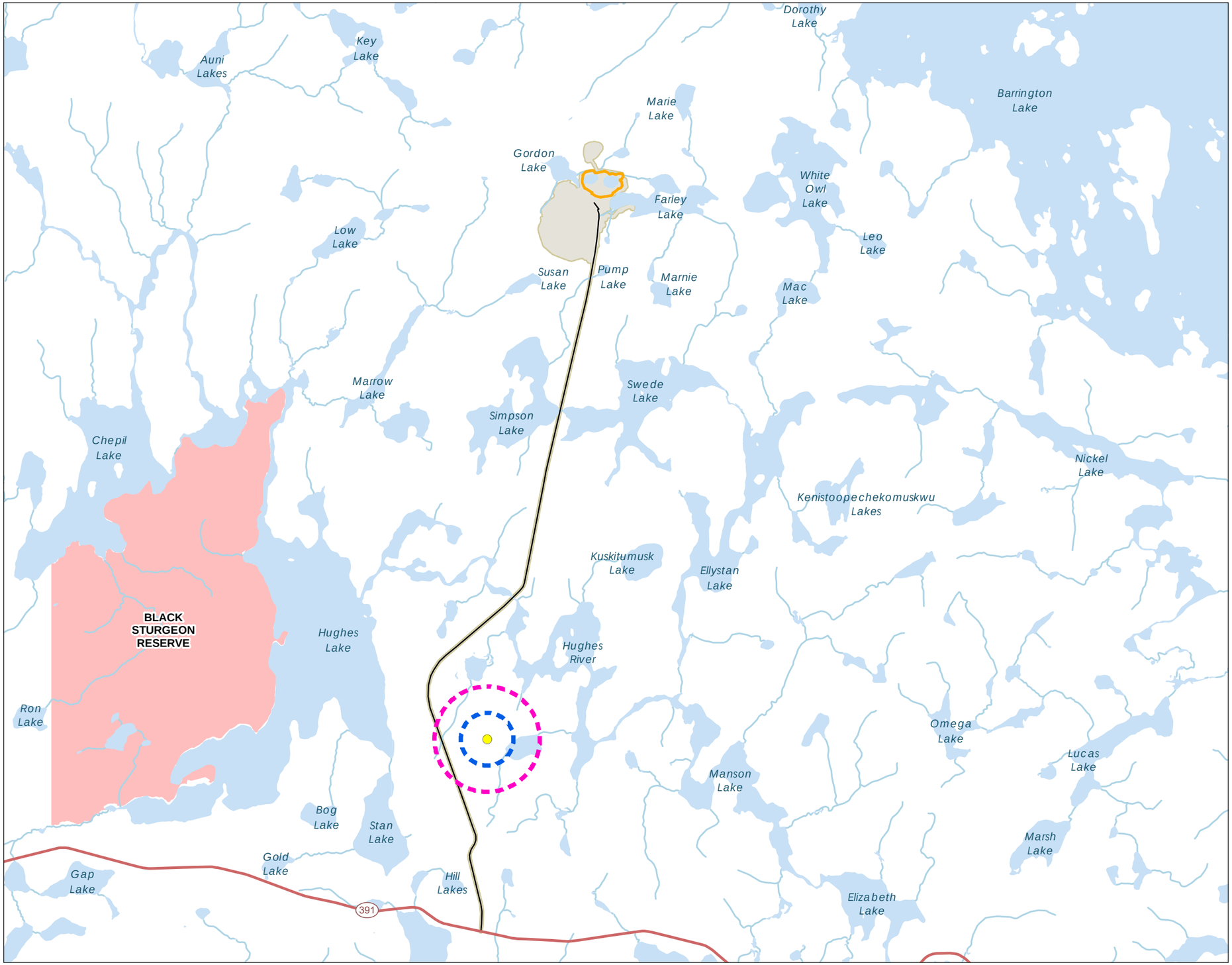
Client/Project
ALAMOS GOLD INC.
Lynn Lake Gold Project

111473076

Map No.
B-4

Title
Mammal Signs - MacLellan site

G:_GIS Project Folder\111473008 (LGP-EA)\admin\data_w\STANTEC\20230808 Caribou Survey Transects\MapB-4 WLD-PE Caribousurvey MacLellan 20241204.mxd Revised: 2024-12-04 By: ACampigotto



Stantec

Survey Results

- Active Osprey Nest
- 500 m – Medium Disturbance Category
- 1000 m – High Disturbance Category

Project Infrastructure

- Proposed Open Pit
- Project Development Area

Landbase

- Existing Access
- Highway
- Watercourse
- Waterbody
- First Nation Reserve

N

0 1 2 Kilometres
(At original document size of 11x17)
1:75,000

Notes
1. Coordinate System: NAD 1983 UTM Zone 14N
2. Base Data Sources: Government of Manitoba and Government of Canada.

Project Location
Lynn Lake, Manitoba

Prepared by ACampigotto on 2024-12-04
Technical Review by CMoszynski on 2024-12-04

Client/Project
ALAMOS GOLD INC.
Lynn Lake Gold Project

111473076

Map No.
B-5

Title
Raptor Nest Setback Distances - Gordon site

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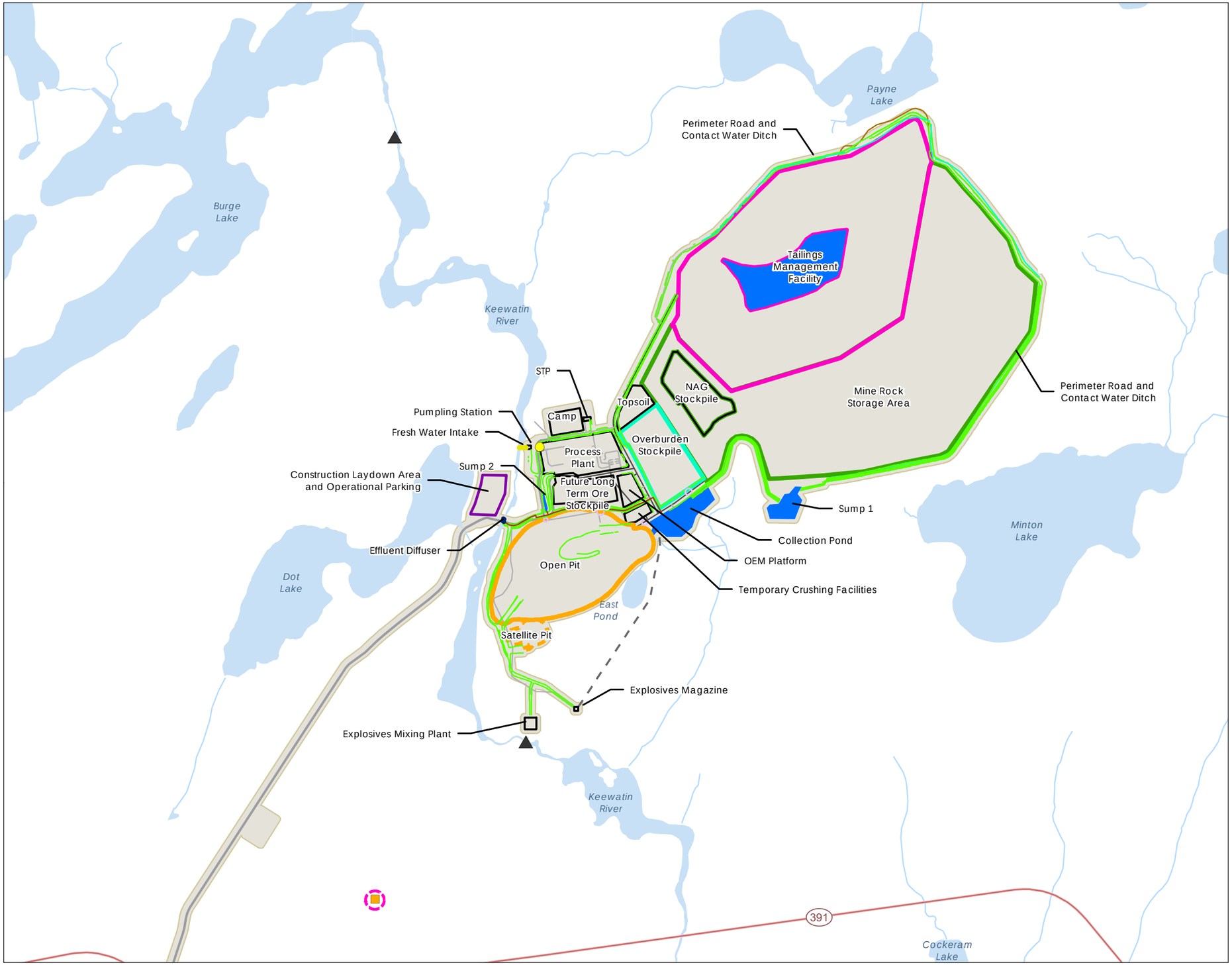

Stantec

Survey Results

- Active Common Raven Nest
- Inactive Nest
- 30 m – Disturbance Setback

Project Infrastructure

- Communication Tower
- Culvert
- Ditching
- Corridor / Access Road
- Collection Pond Discharge
- Fresh Water Intake
- Effluent Diffuser
- Mine Rock Storage Area
- Overburden Stockpile
- Tailings Management Facility
- Open Pit
- Satellite Pit
- Collection Pond/Sumps
- Other Infrastructure
- Construction Laydown Area
- Project Development Area

Landbase

- Highway
- Existing Access Road
- Watercourse
- Waterbody

N

0 0.5 1 Kilometres
(At original document size of 11x17)
1:30,000

Notes
1. Coordinate System: NAD 1983 UTM Zone 14N
2. Base Data Sources: Government of Manitoba and Government of Canada.
3. Project Infrastructure features provided by QPit and Ausenco.

Project Location
Lynn Lake, Manitoba

Prepared by ACampigotto on 2024-12-04
Technical Review by CMoszynski on 2024-12-04

Client/Project
ALAMOS GOLD INC.
Lynn Lake Gold Project

111473076

Map No.
B-6

Title
Raptor Nest Setback Distances - MacLellan site

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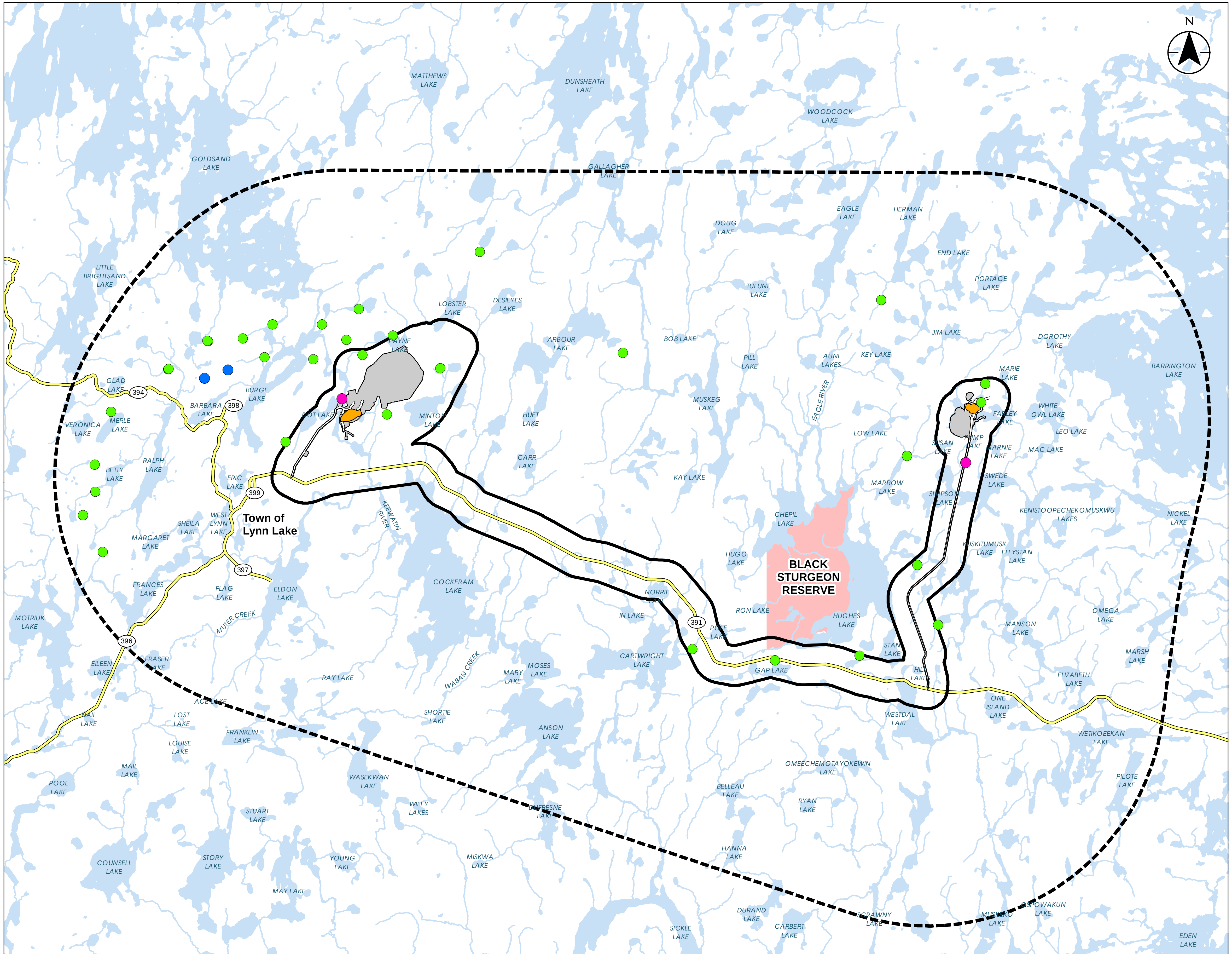

Stantec

Project Infrastructure

- Proposed Open Pit
- Project Development Area

Camera Survey Locations

- New Camera Location
- Repositioned Camera Location
- Existing Camera Location

Study Area

- Local Study Area
- Regional Study Area

Landbase

- Access Road
- Provincial Road
- Watercourse
- Waterbody
- First Nation Reserve

0 4 8 Kilometres

1:200,000 (At original document size of 11x17)

Notes
1. Coordinate System: NAD 1983 UTM Zone 14N
2. Base features provided by the Government of Manitoba and the Government of Canada.

Project Location: MacLellan and Gordon, Lynn Lake, Manitoba — 111473076

Prepared by ACampigotto on 2024-12-05
Technical Review by CMoszynski on 2024-12-05

Client/Project
ALAMOS GOLD INC.
Lynn Lake Gold Project
2024 Services

Map No.
B-7

Title
Mammal Camera Trap Locations - 2024

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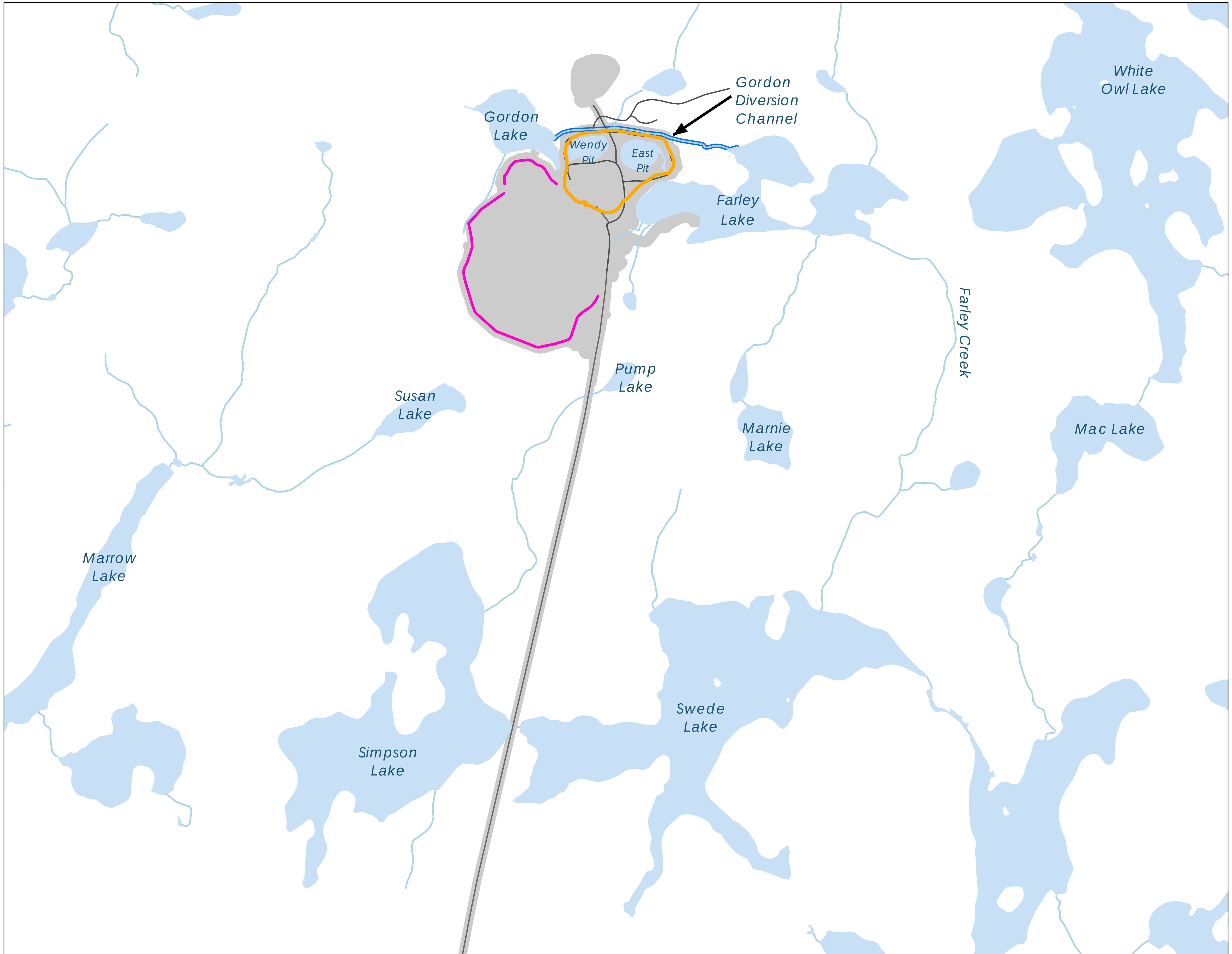

Stantec

Project Infrastructure

- Proposed Open Pit
- Project Development Area

Project Infrastructure that Could be Affected by Beaver Activity

- Collection Ditch
- Diversion Channel

Landbase

- Existing Access Road
- Watercourse
- Waterbody

N

0 370 740 Metres

(At original document size of 11x17)
1:30,000

Notes

1. Coordinate System: NAD 1983 UTM Zone 14N
2. Base Data Sources: Government of Manitoba and Government of Canada.
3. NOA Project Infrastructure features provided by Worley via Alamos.

Project Location
Lynn Lake,
Manitoba

Prepared by ACampigotto on 2024-12-04
Technical Review by CMoszynski on 2024-12-04

Client/Project 111473076

ALAMOS GOLD INC.
Lynn Lake Gold Project

Map No.

B-8

Title

Project Areas that Could Be Affected by Beaver Activity - Gordon site

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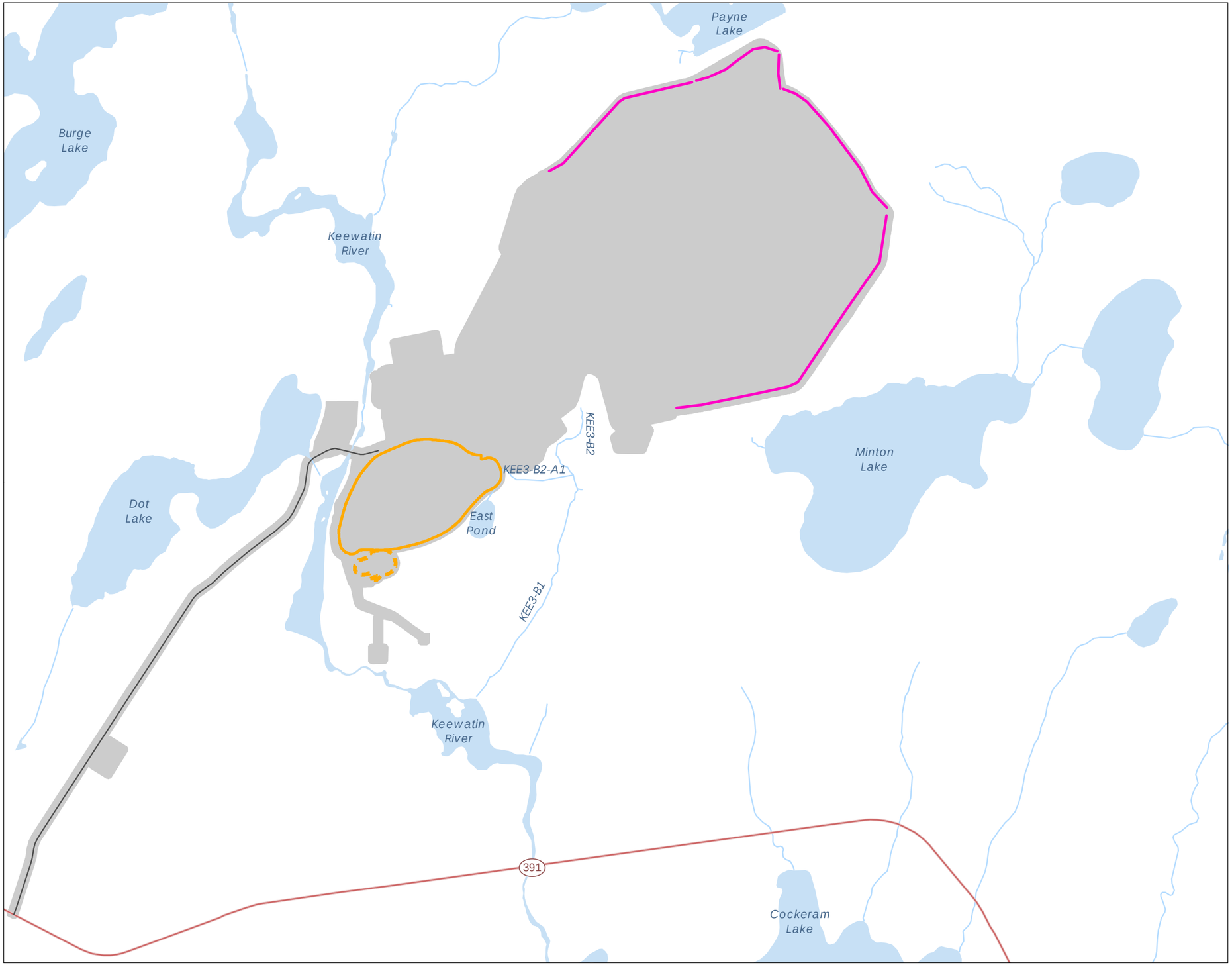

Stantec

Project Infrastructure
- Proposed Open Pit
- Proposed Satellite Pit
- Project Development Area

Project Infrastructure that Could be Affected by Beaver Activity
- Collection Ditch

Landbase
- Highway
- Existing Access Road
- Watercourse
- Waterbody

N

0 0.5 1 Kilometres
(At original document size of 11x17)
1:30,000

Notes
1. Coordinate System: NAD 1983 UTM Zone 14N
2. Base Data Sources: Government of Manitoba and Government of Canada.
3. Project Infrastructure features provided by QPit and Ausenco.

Project Location
Lynn Lake, Manitoba

Prepared by ACampigotto on 2024-12-04
Technical Review by CMoszynski on 2024-12-04

Client/Project
ALAMOS GOLD INC.
Lynn Lake Gold Project

111473076

Map No.
B-9

Title
Project Areas that Could Be Affected by Beaver Activity - MacLellan site

G:_GIS Project Folder\111473008_LGP_EA\Rs\Wildlife\Mapfiles\B-9_WILDLIFE_BeaverActivity_MacLellan_20241204.mxd Revised: 2024-12-05 By: ACampigotto

Appendix C Forms

Form C-1 Wildlife Incident Report

ALAMOS GOLD INC

Reset Questionnaire

LYNN LAKE GOLD PROJECT

Wildlife Incident Report Form

Part A Employee Details

Full Name	Personal Phone Number
Company Name	Company Phone Number
Supervisor Name	Supervisor Phone Number

Part B Incident Details

Date of Incident:	Time of Incident: HH MM AM
Date Reported to Supervisor:	

Location of Incident (coordinates if possible):

Description of Incident Location:

Weather Conditions:				
Visibility (*Check all that apply.*)	☐	dawn/dusk	☐	rain
	☐	nighttime	☐	snow
	☐	fog		

Wildlife Species Involved: No. of Wildlife Individuals Involved:

Wildlife Involved is ◯ Dead, ◯ Injured, or ◯ Unknown

Vehicle-related Mortality ◯ *Provide details in Part C*

Other Means of Mortality ◯ *Skip to Part D*

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ALAMOS GOLD INC.

LYNN LAKE GOLD PROJECT

Wildlife Incident Report Form

Part C Vehicle Details *Complete as required.*

Vehicle ID or License Plate

Vehicle Make & Model

Part D Detailed Incident Description

Circumstances of the incident and any contributing factors related to people, equipment, materials, environment, and processes:

Part E Corrective Actions

Immediate corrective action(s) taken:

Additional remarks:

Completed by:

Name

Signature

Date Incident Report Submitted:

Form C-2 Bird Nesting Data Collection

LLGP Bird Nest Data Collection Form (DRAFT) (start sheet(s) for each new location)

Name(s): Date:

Location and general description of area to be surveyed:

Habitat (photo # and description):	Temperature:	Wind	Noise	Precipitation	Cloud Cover	Additional Comments:
		Calm Light Air Light Breeze Gentle Breeze	None Low Moderate High	None Haze/ Fog Drizzle Rain	0 - 25% 25-50% 50-75% 75-100%	

GPS Tracks should be recorded by each member on the survey and submitted with the daily reports.

Observation	Time	UTM Zone	Easting	Northing	Species	Status of Nest/Parents	Mitigation Applied	GPS Photo	Comments
(Nest/Territory)	HH:MM:SS	14	#######	########	(if not able to identify provide written description of nest site and surroundings)	Status (under construction/# eggs/# hatchlings) Parents (incubating/feeding)	(flagging an appropriate setback, alerting appropriate environmental professional or authority)	(Photo #)	Any comments regarding the observation or site

Appendix D Training Documents

Stantec

Alamos Gold Inc.

Lynn Lake Gold Project

Sensitive Wildlife and Wildlife Feature Awareness Training

Awareness Training Objectives

1. Avoid or reduce disturbance to sensitive wildlife and wildlife features during LLGP construction through education.
2. Identify the SAR and sensitive wildlife habitat features that may be encountered on site.
3. Outline required mitigation measures during construction.

Wildlife and Wildlife Feature Protection Plans

- LLGP Wildlife Monitoring and Mitigation Plan
- Avian Mitigation Plan
- Boreal Woodland Caribou Protection Plan

Sensitive Wildlife and Wildlife Features

- Species at Risk
- Migratory Birds and their Nests
  - Barn Swallow
  - Bank Swallow
  - Pileated Woodpecker Cavities
- Stick Nests
- Habitat Trees
- Mammal Dens
- Mineral Licks or Seeps
- Bat Hibernacula
- Boreal Woodland Caribou
- General Wildlife Encounter Protocol

Wildlife Use of LLGP

Many wildlife species use the MacLellan and Gordon sites, including some species at risk (SAR):

- Boreal woodland caribou
- Moose
- Black bear
- Gray wolf
- Lynx
- Wolverine
- Furbearers and small mammals
- Raptors
- Songbirds
- Waterfowl
- Other birds (e.g., grouse, ptarmigan)
- Frogs and toads
- Insects













What are Species at Risk?

- Species protected under federal or provincial laws
  - Provincial: Manitoba *The Endangered Species and Ecosystems Act* (ESEA)
  - Federal: *Species at Risk Act*, 2002 (SARA)

- Species designated as ***threatened*** or ***endangered*** are protected: "no person shall kill, harm, harass, capture, or take an individual" and "no person shall damage or destroy the residence of one or more individuals"
- Species designated as ***special concern*** are protected: federal authorities must "identify adverse effects of the project on listed wildlife species […] and ensure that measures are taken to avoid or lessen adverse effects"

SARA Permit Conditions

Currently Not Applicable to the Lynn Lake Gold Project

- A SARA permit was issued under Section 73 for the Project (SARA-X-####-####)
- Species protected under the SARA permit:
  - TBD

When a SARA permit is issued for a project there are a few species likely to be impacted by the Project that are specifically protected by the permit. We will discuss each species in more detail when a permit is received.

Migratory Birds and Their Nests

- Most native bird species in Canada are designated as migratory birds and protected under the federal *Migratory Birds Convention Act* (MBCA).

- Migratory birds may nest in trees, shrubs, on the ground (bare ground or vegetated), and/or on buildings/structures.

Migratory Bird Nest Mitigation

Alamos Action

- Activities that may result in destruction, disturbance, or harm to the nests, eggs, or young should be scheduled outside of the breeding bird period (May 5 to August 15).
- If limited vegetation clearing and/or building demolition/construction needs to occur within the breeding bird season, the areas in question must be surveyed by a Qualified Biologist or designate.

Contractor Action

- If a nest is located between May 5 and August 15, **STOP WORK AND DO NOT DISTURB**. Notify a Qualified Biologist or designate and a specific buffer will be delineated within which no vegetation clearing or construction activities will be allowed while the nest is active.
- Once the nest is determined to be inactive (e.g., the young have fledged the nest) by a Qualified Biologist or designate, and provided that the nest is not protected year-round as a residence under SARA or the MBR, clearing and other activities in the area may proceed.

Barn Swallow

Barn swallow is a migratory bird listed as *threatened* under SARA and protected under the MBCA.

As a SAR, barn swallow nests are protected from May 1 to August 31.

Physical Description

- Glossy steel-blue back and upper wings, rusty-red forehead and throat, broad blue breast band, tawny underbelly.
- Adult males have long tail feathers that form a distinctive fork.

Nest Description

- Distinctive cup shaped nest made of mud, grass, and stems.
- Nests are typically found on human-made structures such as eaves, beams, under bridges, and culverts.

Barn Swallow Nest Mitigation

Alamos Action

To avoid harm to bank swallow nests, eggs, or residences (occupied nests), the following practices should be adopted:

- Keep doors and windows closed and cover all holes or openings more than 2.5 cm; if frequent access to a building is required, install curtains on the doors
- Install exclusionary netting ahead of the breeding season to prevent nesting in work areas
- Install corner slope exclusion products on the exterior surfaces of buildings to prevent access to the 90-degree angle required for nest construction
- Monitor barriers at least weekly before the breeding season and every three days during the breeding season to verify that they are still in place; repair as necessary

If barn swallow establish nests on Project equipment or infrastructure:

- Halt the use of equipment until the birds have departed
- Create a buffer of 50 to 100 m around nests, depending on the level of Project disturbance, until the birds have departed

Contractor Action

- Keep doors and windows closed
- Monitor Project infrastructure and parked or inactive equipment regularly (daily to every five days) for bank swallow nests
- If a suspected barn swallow nest is located, **STOP WORK AND DO NOT DISTURB**. Notify a Qualified Biologist or designate and a specific buffer will be delineated within which no vegetation clearing or construction activities will be allowed while the nest is active.

Bank Swallow

Bank swallow is a migratory bird listed as *threatened* under SARA and protected under the MBCA.

As a SAR, bank swallow nests are protected from the date when adults are first seen entering or leaving the burrow to the date when a bird is last seen at the burrow.

Physical Description

- A small swallow, with a brown back and white underparts.
- A notable feature is the dark brown band across the chest.

Nest Description

- Build nests in colonies ranging from a few nesting pairs to several thousand.
- Dig burrows into vertical banks of sand, dirt, or gravel, often near water.
- Burrows are small, round holes in near-vertical banks,

Bank Swallow Nest Mitigation

Alamos Action

Before the general breeding period:

- Contour dirt/aggregate piles to have a slope of less than 70 degrees, to reduce their attractiveness as bank swallow nesting areas.
- If there is evidence of previous nesting by bank swallows in areas planned to be disturbed by the Project, and contouring isn't possible, install scaring devices to deter the re-establishment of nesting colonies.
- If an inactive nesting site must be excavated, create alternate nesting habitat outside of the disturbance area. Slopes should be greater than 70 degrees to attract nesting bank swallow.

During the general breeding period:

- Flatten newly created vertical faces at the end of each workday to deter bank swallow burrowing overnight.
- Survey inactive dirt/aggregate piles for bank swallow burrows before resuming work.

If bank swallow colonizes an active work area:

- Stop work until the end of the breeding season and birds have departed.
- Create a buffer of 50, 150, or 300 m around nesting colonies, depending on the level of Project disturbance, until the birds have departed.
- Do not use scaring devices on an established colony.

Contractor Action

- Visually inspect dirt/aggregate piles for bank swallow burrows before starting work.
- If a suspected bank swallow nest is located, **STOP WORK AND DO NOT DISTURB**. Notify a Qualified Biologist or designate and a specific buffer will be delineated within which no vegetation clearing or construction activities will be allowed while the nest is active.

Pileated Woodpecker Cavities

Nesting cavities may not be removed, destroyed, damaged, or disturbed for a minimum 36 months following confirmation that nest has been abandoned.

Nesting Cavity

- Typically, in large (>40 cm diameter) solid trees with heart rot
- Nesting trees normally contain only one entrance hole
- Entrances are circular or oval, approximately 12 cm x 9 cm
- Edges and surfaces are smooth
- Entrance appears dark because it leads to a cavity

Figure 1. Pileated woodpecker nesting cavities

Pileated Woodpecker Cavity Identification Guide (ECCC 2023)

https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/pileated-woodpecker-cavity-identification-guide.html

Pileated Woodpecker Cavities

Roosting Cavity

- Trees are often dead or hollow and have numerous entrance holes (2 to >10)
- Entrance holes may be closely spaced together
- Entrances are usually oval shaped and can be varying sizes
- Entrance appears dark because it leads to a cavity

Figure 2. Pileated woodpecker roosting cavities

Pileated Woodpecker Cavity Identification Guide (ECCC 2023)

https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/pileated-woodpecker-cavity-identification-guide.html

Pileated Woodpecker Cavities

Feeding Cavity

- Typically forage in large diameter (>25 cm diameter) decaying trees and woody debris
- Feeding cavities are shallow, irregular in shape, with rough edges and surfaces
- Entrance appears lighter in colour because they do not lead to deep cavities

Figure 3. Pileated woodpecker feeding cavities

Pileated Woodpecker Cavity Identification Guide (ECCC 2023)

https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/pileated-woodpecker-cavity-identification-guide.html

Pileated Woodpecker Cavity Summary

Summary of key differences among cavity types

Characteristics	Cavity type: nesting	Cavity type: roosting	Cavity type: feeding
Number of holes	1	> 1	> 1
Edge texture	smooth	smooth	rough
Hole shape	round or teardrop	oval	irregular
Hole size	~12 cm high ~9 cm wide	7.5 – 10 cm wide 10 – 12.5 cm high	variable
Cavity depth	0.75 m	4.3 m	0.05 to 0.2 m
Tree type	solid, with heart rot	hollow	dead and decaying

Pileated Woodpecker Cavity Identification Guide (ECCC 2023)

https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/pileated-woodpecker-cavity-identification-guide.html

Pileated Woodpecker Nest Cavity Mitigation

Contractor Action

- If a suspected pileated woodpecker **NEST** cavity is located at **ANY TIME OF YEAR**, **STOP WORK AND DO NOT DISTURB**. Notify a Qualified Biologist or designate and a specific buffer will be delineated within which no vegetation clearing or construction activities will be allowed.

Stick Nests

Some species that use stick nests can nest as early as February 15 (e.g., owls).

Bald Eagle

- Bald eagle nests range in size from 1.0 m to 3.5 m in diameter and 0.5 m to 2.5 m deep.
- Typically built of large sticks in the upper third of a large tree.
- Usually within 100 m of water but can be up to 2 km away from a waterbody.
- Old nests can be used by other species (e.g., common raven, osprey)

Common Raven

- Common raven nests are smaller, typically a bulky basket of smaller sticks and twigs.

Bald eagle

Common raven

Stick Nest Mitigation

Alamos Action

Schedule vegetation clearing, demolition of existing buildings and infrastructure, and site preparation activities outside of the following time periods:

- The breeding period for migratory birds (May 5 to August 15). If activities that could result in risk of harm to raptors and other stick nest nesting birds cannot be avoided during the breeding period, Alamos will follow methods outlined in the Avian Mitigation Plan.
- The breeding period for resident birds such as owls (February 15 to July 15). If activities that could result in risk of harm to nesting owls cannot be avoided during the breeding period, Alamos will follow methods outlined in the Avian Mitigation Plan.

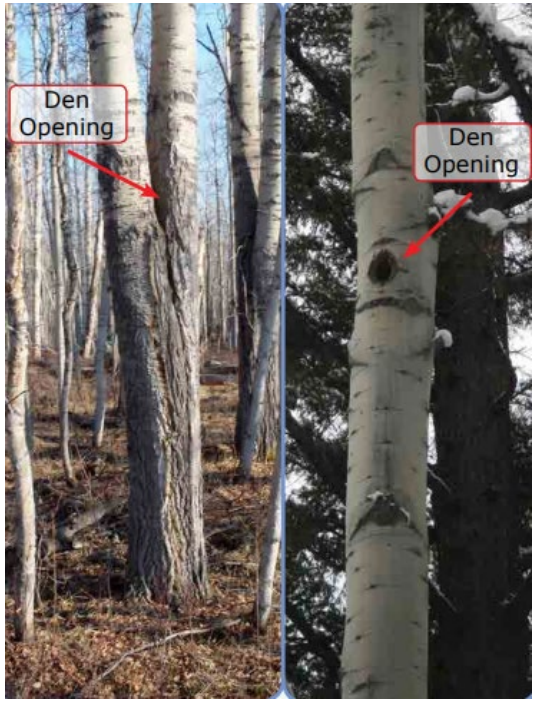
Contractor Action

- If a stick nest is located, **STOP WORK AND DO NOT DISTURB**. Notify a Qualified Biologist or designate and a specific buffer will be delineated within which no vegetation clearing or construction activities will be allowed while the nest is active.
- Any observations of owls should be **IMMEDIATELY** reported to a Qualified Biologist or designate.

Habitat Trees

Important habitat for cavity nesting birds such as woodpeckers, owls, some waterfowl, and cavity denning mammals such as American marten and fisher.

- Dead or dying trees with woodpecker or natural cavities.
- Typically, large deciduous trees with a minimum diameter of 40 cm.



Habitat Tree Mitigation

Alamos Action

•Retain wildlife habitat trees where safe and technically feasible to do so.

Contractor Action

• If a suspected habitat tree is located at **ANY TIME OF YEAR**, **STOP WORK AND DO NOT DISTURB**. Notify a Qualified Biologist or designate and a specific buffer will be delineated within which no vegetation clearing or construction activities will be allowed.

•Any observations of owls should be **IMMEDIATELY** reported to a Qualified Biologist or Environmental Monitor.

Mammal Dens

Black bear

- Hollow logs and trees
- Rock crevices
- Root masses
- Dug out holes in slopes
- Diameter of the den entrance can vary between 40 cm and 70 cm

Gray wolf

- Dug-out burrows in sandy or soft soil
- Hollow logs or tree roots
- Abandoned burrows of other animals
- Diameter of the den entrance can vary between 40 cm and 60 cm
- Dens often have multiple entrances

Black bear

Gray wolf

Mammal Dens

Wolverine

- Snow tunnels and caves
- Rock piles
- Fallen trees and wood piles
- Beaver lodges
- Diameter of the den entrance can vary between 20 cm to 30 cm

Red fox

- Earthen banks in sandy soft soil
- Dense vegetation and hollow logs
- Multiple entrances to a den with an entrance diameter of 15 cm to 20 cm

Lynx

- Rocky outcrops or under rock ledges
- Hollowed-out trees
- Diameter of the den entrance can vary between 20 cm to 30 cm

Wolverine

Red fox

Lynx

Mammal Den Mitigation

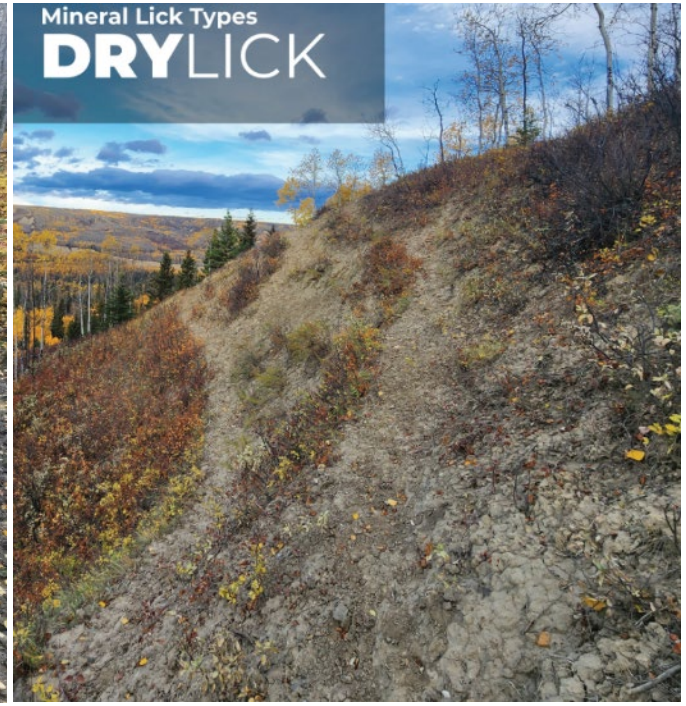
Contractor Action

- If a suspected den is located, **STOP WORK AND DO NOT DISTURB**. Notify a Qualified Biologist or designate and a specific buffer will be delineated within which no vegetation clearing or construction activities will be allowed.

LYNN LAKE GOLD PROJECT

Mineral Lick or Seeps

- A mineral lick is a naturally occurring place where animals can go to lick essential mineral nutrients from a deposit of salts and other minerals.
- Mineral licks can be identified by well-established game trails leading to a lick, trampling, and excavation.
- Mineral licks can be wet or dry.



Mineral Lick or Seep Mitigation

Alamos Action

- Retain mineral licks or seeps where safe and technically feasible to do so.

Contractor Action

- If a potential mineral lick is located, **STOP WORK AND DO NOT DISTURB**. Notify a Qualified Biologist or designate and a specific buffer will be delineated within which no vegetation clearing or construction activities will be allowed.

Bat Hibernacula and Roosts

Bat Roosts

- Female bats aggregate in colonies to rear their young
- Roosts may be found in rock crevices, trees, or buildings

Bat Hibernacula

- Caves
- Mine shafts

Bat Hibernacula and Roosting Mitigation

Alamos Action

•The core maternity roosting period for bats is May 1 to August 31. If habitat tree removal or general tree clearing is required during the bat maternity roosting period, a Qualified Biologist or designate will inspect the trees to determine occupancy before removal. This measure will also reduce the risk to other species that use trees for denning or shelter (e.g., American marten)

Contractor Action

• There are no known bat hibernacula in the MacLellan or Gordon sites.

• However, if a suspected hibernaculum (e.g., cave, deep rock crevice) is discovered, **STOP WORK AND DO NOT DISTURB.** Notify a Qualified Biologist or designate.

Boreal Woodland Caribou

- Listed as *threatened* under SARA.
- Boreal woodland caribou near the Project are part of the Kamuchawie Management Unit.
- Closest caribou observation is 3 km northwest of the MacLellan Project Development Area; however, most caribou have been observed >9 km west of MacLellan.

Boreal Woodland Caribou Mitigation

Alamos Action

•Vegetation clearing will occur outside the calving and calf-rearing period for boreal woodland caribou (May 1 to June 30) unless otherwise authorized by relevant authorities.

• If boreal woodland caribou are found to be calving or calf-rearing within 1 km of the MacLellan or Gordon sites between May 1 to June 30, demolition of existing buildings and infrastructure and site preparation activities will be postponed until July 1 or until monitoring indicates that caribou have left the area, as outlined in the Boreal Woodland Caribou Protection Plan.

Contractor Action

• All observations of boreal woodland caribou should be **IMMEDIATELY** reported to a Qualified Biologist or designate.

General Wildlife Encounter Protocol

If sensitive wildlife or wildlife features are observed at the MacLellan or Gordon sites:

- Report the sighting to a Qualified Biologist or designate.
- Report sightings, encounters, and human-wildlife conflicts using the “LLGP Wildlife Incident Report Form.”

If wildlife is injured or killed during construction activities, it should be **IMMEDIATELY** reported to a Qualified Biologist or designate.

General Wildlife Encounter Mitigations

Alamos Action

- Install down-lighting to reduce light effects on wildlife and select lighting that avoids attracting insects.
- Maintain roadside vegetation and line-of-site for vehicles to reduce the potential for vehicle-wildlife collisions.
- Provide low areas in ploughed snowbanks to facilitate wildlife movement out of road corridors.

Contractor Action

- Use existing trails and roads where possible.
- Reduce travel speeds and drive according to road and ground conditions.
- **DO NOT** feed, harass, or hunt wildlife.
- Maintain a clean and orderly work and camp space to reduce wildlife attractants.
- Dispose of garbage and foodstuffs in designated disposals and wildlife-proof bins.

Stantec

Thank you