



**Lynn Lake Gold Project:  
Noise and Vibration  
Management &  
Monitoring Plan**

Version 0

January 30, 2025

**LYNN LAKE GOLD PROJECT:  
NOISE AND VIBRATION MANAGEMENT & MONITORING PLAN**

## Document History

### Document Location

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### Revision History

Effective Date:	Date of Last Revision:
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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**

%HA	percent highly annoyed
AER	Alberta Energy Regulator
Alamos	Alamos Gold Inc.
ANSI	American National Standards Institute
BCER	British Columbia Oil and Gas Commission
CEAA 2012	<i>Canadian Environmental Assessment Act, 2012</i>
dB or dBL or dBZ	linear (unweighted) decibel sound level
dBA	a-weighted decibel sound level
dBC	c-weighted decibel sound level
EA	Environmental Assessment
EIS	Environmental Impact Statement
EMMP	Environmental Management and Monitoring Program
FTA	Federal Transit Administration
Hz	Hertz
ID	identification
in/s	inch per second
ISO	International Standard Organization
km	kilometres
L <sub>d</sub>	daytime equivalent sound level
L <sub>dn</sub>	day-night average sound level
L <sub>eq</sub>	equivalent sound level
LFN	Low Frequency Noise
L <sub>n</sub>	nighttime equivalent sound level

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m	metre
mm/s	millimeters per second
MECC	Manitoba Environment and Climate Change
MECP	Ontario Ministry of Environment, Conservation and Parks
ms	milliseconds
MNL	mitigation noise level
NVMP	Noise and Vibration Management and Monitoring Plan
PDA	Project Development Area
PPV	peak particle velocity
PR	Provincial Road
RGMPs	Responsible Gold Mining Principles
rms	root mean square
s	second
the Project	Lynn Lake Gold Project
UTM	Universal Transverse Mercator
VdB	vibration velocity in decibel scale
WHO	World Health Organization

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## **Glossary**

Air Overpressure	Air overpressure is measured in decibels (dBL). Air overpressure is the additional pressure above normal atmospheric pressure that is generated from a blast. Air overpressure often feels like a gust of wind by a receptor because a confined blast will generally result in inaudible air overpressure. Air overpressure and sound are different phenomena although both are measured in the units of decibels. An event with an air overpressure value of 115 dBL, which may be inaudible due to the low frequency content, is entirely different from a sound event with the level of 115 dBL. The usual rating terms associated with community noise standards are based on A-weighted noise (dBA), an adjustment scale that accounts for the human ear sensitivity to different frequencies (i.e., less at lower frequencies). This A-weighted noise criteria does not apply to air overpressure.
Ambient Sound Level	The pre-project background noise or vibration level, which is often used interchangeably with “existing noise” in this manual.
Background Sound Level (i.e., Baseline)	It includes noise from all sources other than the sound of interest (i.e., sound from other industrial noise not being measured, transportation sources, animals, and nature)
Bands (octave, 1/3 octave)	A series of electronic filters separate sound into discrete frequency bands, making it possible to know how sound energy is distributed as a function of frequency. Each octave band has a centre frequency that is double the centre frequency of the octave band preceding it
Daytime	The hours from 7:00 am to 10:00 pm
day-night Sound Level ( $L_{dn}$ )	An equivalent continuous sound level taken over 24 hours, with the night-time (10 p.m. to 7 a.m.) contributions adjusted by +10 dB. (This is a type of rating level because of the night-time adjustments.) The night-time adjustment (or addition of 10 dB to the night-time period) is used to account for the expected increased annoyance due to noise-induced sleep disturbance and the increased residential population at night relative to daytime, by a factor of 2–3. US EPA 1974 suggests that in quiet areas, the night-time levels naturally drop by about 10 dB and this level of adjustment has been used with success in the U.S.
dB/dBL/dBZ - Decibel	A logarithmic unit associated with sound pressure levels and sound power levels

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dB(A) - Decibel, A-Weighted	A logarithmic unit where the recorded sound has been filtered using the A frequency weighting scale. A-weighting somewhat mimics the response of the human ear to sounds at different frequencies. A-weighted sound pressure levels are denoted by the suffix 'A' (i.e., dB(A)), and the term pressure is normally omitted from the description (i.e., sound level or noise level)
Decibel Addition	<p>In acoustics, due to the logarithmic nature of the decibel scale, the addition of two or more sound pressure levels (denoted as SPL<sub>1</sub>, SPL<sub>2</sub>, ... SPL<sub>n</sub>) is done as follows:</p> $SPL_1 + SPL_2 + \dots + SPL_n = 10 \log (10 (SPL_1/10) + 10(SPL_2/10) + \dots + 10(SPL_n/10))$ <p>As an example:</p> $50 \text{ dB} + 50 \text{ dB} = 53 \text{ dB}$
Energy Equivalent Sound Level (Leq)	<p>An energy-average sound level taken over a specified period of time. It represents the average sound pressure encountered for the period. The time period is often added as a suffix to the label (e.g., Leq (24) for the 24-hour equivalent sound level). Leq is usually A-weighted. A Leq value expressed in dB(A) is a good, single value descriptor of the annoyance of noise. Here is a list of Leq used in this assessment:</p> <ul style="list-style-type: none"><li>• Leq,1hr Hourly equivalent sound level</li><li>• L<sub>d</sub> Daytime period equivalent sound level (15 hours, 7:00 AM to 10:00 PM)</li><li>• L<sub>n</sub> Nighttime period equivalent sound level (9 hours, 10:00 PM to 7:00 AM)</li><li>• L<sub>dn</sub> day-night sound level (also see definitions for day-night Sound Level)</li></ul>
Frequency	Number of cycles per unit of time. In acoustics, frequency is expressed in hertz (Hz), i.e. cycles per second
Ground Vibration	Ground vibration is an oscillatory motion, which can be measured in terms of displacement, velocity or acceleration. Because of the oscillatory nature of vibration, the average of the motion descriptors (i.e., displacement, velocity or acceleration) is zero. The ground vibration level in this assessment is defined in terms of peak particle velocity (PPV) and is measured in millimeters per second (mm/s), representing the highest instantaneous positive or negative peak of the vibration signal.

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Hertz (Hz)	Unit of measurement of frequency, numerically equal to cycles per second
Low Frequency Noise (LFN)	Noise in the low frequency range, 20 Hz up to 200 Hz. Health Canada guidance indicates that sounds in the 16, 31.5 and 63-Hz octave bands greater than 70 dB may result in noise-induced rattles; LFN can be associated with the introduction of noticeable vibrations and rattles in some structures
Nighttime	The hours from 10:00 PM to 7:00 AM
Noise	Unwanted sound
Noise Level	Same as Sound Level, except applied to unwanted sounds
Sound	A dynamic (fluctuating) pressure
Sound Pressure Level (SPL)	The logarithmic ratio of the root mean square (rms) sound pressure to the sound pressure at the threshold of hearing. The sound pressure level is defined by equation below where P is the RMS pressure due to a sound and P <sub>0</sub> is the reference pressure. P <sub>0</sub> is usually taken as 2.0 × 10 <sup>-5</sup> Pascals.  $\text{SPL (dB)} = 20 \log(P_{\text{RMS}}/P_0)$
Sound Power Level (PWL)	The logarithmic ratio of the instantaneous sound power of a noise source to that of the reference power. The sound power level is defined by equation below where W is the sound power of the source in watts, and W <sub>0</sub> is the reference power of 10 <sup>-12</sup> watts  $\text{PWL (dB)} = 10 \log(W/W_0)$
Spectrum	The description of a sound wave's resolution into its components of frequency and amplitude
Transmission Loss	The ratio of the sound energy striking an outside wall relative to the transmitted sound energy inside the wall, expressed in decibels.

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Tonal Components	Often industrial facilities exhibit tonal components. Examples of tonal components are transformer hum, sirens, and piping noise. The test for the presence of tonal components consists of two parts (as per tonality prescribed in AUC Rule 012). The first part must demonstrate that the sound pressure level of any one of the slow-response, A-weighted, 1/3-octave bands between 20 and 16 kHz is 10 dBA or more than the sound pressure level of at least one of the adjacent bands within two 1/3-octave bandwidths. In addition, there must be a minimum of a 5 dBA drop from the band containing the tone within 2 bandwidths on the opposite side. The second part is that the tonal component must be a pronounced peak clearly obvious within the spectrum
VdB – Decibel, Vibration Velocity	Vibration Velocity Level (VdB) Ten times the common logarithm of the ratio of the square of the amplitude of the rms vibration velocity to the square of the amplitude of the reference RMS vibration velocity. The reference velocity in the United States is one micro-inch per second. Abbreviated as VdB.
Vibration	An oscillation wherein the quantity is a parameter that defines the motion of a mechanical system.
Nighttime	The hours from 10:00 PM to 7:00 AM
Noise	Unwanted sound
Noise Level	Same as Sound Level, except applied to unwanted sounds

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## **1.0 INTRODUCTION**

The following presents the Noise and Vibration Management and Monitoring Plan ('NVMP' or 'the Plan'), which is based on the latest Project design update and considers the construction, operation, and decommissioning/ closure phases of the Lynn Lake Gold Project ('LLGP' or 'the Project') and the mitigation, management, and monitoring of Project-related effects causing noise and vibration.

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 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**

The NVMP is a component of the overall Environmental Management and Monitoring Program (EMMP) for the Project. The purpose of the NVMP is to outline mitigation measures and monitoring programs intended to limit effects of noise and vibration on sensitive receptors. This NVMP describes:

- Mitigation measures to reduce noise and vibration effects.
- A program to monitor noise and vibration effects associated with Project activities.
- A complaint mechanism to address noise and vibration issues for nearby communities.

Further, this NVMP describes how Alamos Gold Inc. (Alamos) will:

- Track noise and vibration effects from the Project and implement action plans as needed.
- Maintain compliance with applicable regulatory requirements, conditions, and guidelines.

Verify the noise and vibration predictions made during the environmental assessment (EA).

### **1.2 OBJECTIVE**

As part of the 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 Alamos' Environmental Policy and are communicated to employees, contractors, and interested parties, regularly monitored, and updated as appropriate.

Alamos' overarching environmental objective is to avert adverse effects, where technologically and economically feasible, and mitigate adverse effects that are unavoidable.

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In support of Alamos' overarching environmental objective and to provide a basis for continual improvement of environmental performance, Alamos has established the following performance objectives for the management of noise and vibration that consider the Project's interactions and compliance obligations:

- Reduce adverse environmental effects through implementation of mitigation measures, monitoring, and adaptive management.
- Meet or exceed noise and vibration regulatory requirements.
- Resolve noise and vibration issues through a complaint investigation process.
- Verify Project-related noise and vibration compliance as committed to in the EA.

## 1.3 RELATIONSHIP TO OTHER MANAGEMENT PLANS

Relevant management plans within the EMMP that contribute to the mitigation, management, or monitoring of noise and vibration, include the following:

- Environmental Effects Monitoring Plan
- Operation Environmental Management Program
- Explosives Management Plan
- Blasting Management Plan.

## 1.4 REGULATORY CONTEXT

The Project Environmental Impact Statement (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*, 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 GHG management and monitoring are outlined below.

### 1.4.1 Federal Regulatory Requirements

#### 1.4.1.1 Noise

Health Canada's Guidance for Evaluating Human Health Effects in Impact Assessments: NOISE 2023 (Health Canada Noise Guidance) provides noise targets for annoyance, sleep disturbance, and low-frequency noise effects. Health Canada's approach to noise assessment is based on several international standards and technical publications. This document and the technical standards and publications it references can be used as guidance for assessments.

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## Community Annoyance

The Health Canada Noise Guidance uses daytime or nighttime equivalent sound levels ( $L_d$  and  $L_n$ , respectively), adjusted day-night average sound levels ( $L_{dn}$ ), and percent highly annoyed (%HA) to quantify noise effects for activities with a duration of more than 12 months. The daytime sound level ( $L_d$ ) is a 15-hour time average over the daytime period from 7:00 AM to 10:00 PM. The nighttime sound level ( $L_n$ ) is a 9-hour time average over the nighttime period from 10:00 PM to 7:00 AM. The adjusted day-night average sound level ( $L_{dn}$ ) is a 24-hour time-averaged  $L_{eq}$ , with a 10-dB penalty applied to nighttime hours and adjustments made for certain characteristics of sound such as tonality or impulsiveness.

Based on the Health Canada Noise Guidance, the noise target for the highest change in %HA is 6.5%. Impulsive and tonal characteristics of source noise are accounted for in the %HA calculations because their presence can increase annoyance. If the change in %HA is exceeded, effects are considered to be of concern and may require mitigation.

For activities with a duration of less than 12 months, the Health Canada Noise Guidance considers the mitigation noise level (MNL) to assess noise effects. The MNL was used as a target for reducing noise annoyance effects related to short-term construction activities such as pile driving. If the noise effects from the activities exceed the MNL, the implementation of mitigation measures is recommended to reduce the effect. The MNL of 47 dBA ( $L_{dn}$ ) for a quiet suburban or rural community is applicable.

## Sleep Disturbance

The Health Canada Noise Guidance references the guidelines and recommendations of the World Health Organization (WHO) for community noise (WHO 1999) and Night Noise Guidelines for Europe regarding sleep disturbance (WHO 2009). The WHO guideline recommends a target for sleep disturbance as being an indoor sound level of no more than 30 dBA  $L_{eq}$  for continuous noise during the sleep period (WHO 1999). The Health Canada Noise Guidance recommends that an outdoor-to-indoor transmission loss with windows at least partially open is 15 dBA and fully closed windows are assumed to reduce outdoor sound levels by approximately 27 dBA. The corresponding outdoor sound level targets for sleep disturbance are 45 dBA and 57 dBA for partially open windows and fully closed windows, respectively.

More recently, the WHO (2009) has published nighttime noise guidelines that are intended to protect the public, including the most vulnerable groups, from adverse health effects associated with sleep disturbance due to nighttime noise. The recommended annual average is 40 dBA  $L_n$  to be considered outdoors.

The Health Canada Noise Guidance recommends the assessment of noise impacts such as sleep disturbance on off-duty workers residing in or near the Project area, with consideration of mitigation measures in the design of living quarters for workers to limit noise. As a result, the temporary and permanent work camps have been included as noise sensitive receptors in the context of sleep disturbance effects.

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## Low-Frequency Noise

Sounds with strong Low-Frequency Noise (LFN) content such as combustion exhaust of a gas turbine may result in noise-induced rattles within buildings, resulting in greater annoyance. The Health Canada Noise Guidance recommends that the energy sum of the linear sound levels in the 16, 31.5 and 63-Hertz (Hz) octave bands not exceed 70 dBL.

### 1.4.1.2 Vibration

Vibration effects include ground vibration and air overpressure.

Federally, the Health Canada Noise Guidance only provides threshold for air overpressure effect. The guidance recommends that little or no public annoyance is expected to result from any number of daytime sonic booms per day if their measured or predicted peak value is below  $125 - 10 \log N$  (dBL) where N is number of blasts per day. For one blast per day, the limit is 125 dBL. At receptors inside the Project Development Area (PDA), such as the permanent work camp at the MacLellan site, the Health Canada overpressure target of 125 dBL will be used.

For non-blast-related construction activities, there is no federal construction vibration guidance available for remote locations or smaller population centers.

## 1.4.2 Provincial Regulatory Requirements

The Guidelines for Sound Pollution of the Province of Manitoba provides environmental sound level objectives for the assessment of noise in the outdoor environment. The highest desirable level for residential areas is 55 dBA during the daytime (7:00 AM to 10:00 PM) and 45 dBA during the nighttime (10:00 PM to 7:00 AM).

Manitoba does not have provincial guidelines for vibration. Provincially, the Ontario Ministry of Environment, Conservation, and Parks (MECP) provides guidance on blast-related vibration which is referenced herein in absence of Manitoba guidance. The MECP Guidelines on Information Required for the Assessment of Blasting Noise and Vibration (MECP 1985) guidance recommends the following vibration targets:

- Standard targets - ground vibration of 12.5 millimetres per second (mm/s) and air overpressure of 128 dBL.
- Cautionary targets - ground vibration of 10 mm/s and air overpressure of 120 dBL.

The cautionary targets of 10 mm/s and 120 dBL are the most conservative blast-related vibration targets in this assessment. These targets will be applied to all receptors outside the PDA.

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## 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 ten 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. Following 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. One of the key principles is Water, Energy and Climate Change.

Alamos has a series of guiding corporate sustainability standards (Table 1-1), including:

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

Those corporate policies that may be applicable specifically to the NVMP include:

- Air Quality, Noise & Vibration Management
- Biodiversity & Land Use.

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

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**Table 1-1 Corporate Sustainability Standards**

<b>Corporate Policy</b>	<b>Requirement</b>
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 from 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.
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 from 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: <ul style="list-style-type: none"> <li>• Health and Safety of our workforce and communities,</li> <li>• Environmental impacts of our activities (local and downstream),</li> <li>• Societal and community impacts, and</li> <li>• Security and protection of people and property.</li> </ul>
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: <ul style="list-style-type: none"> <li>• Contractor works,</li> <li>• Regulatory requirements</li> <li>• Permit or license requirements,</li> <li>• Alamos Sustainability Standards requirements, and</li> <li>• Other site-specific requirements.</li> </ul>

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<b>Corporate Policy</b>	<b>Requirement</b>
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.
Hazard Identification & Risk Management (CSS-GOV-2.5)	Sites shall apply the hierarchy of controls considering (in order of priority): <ol style="list-style-type: none"> <li>1. Elimination – Remove the hazard</li> <li>2. Substitution – Replace the hazard</li> <li>3. Engineering control – physically control or isolate the hazard (e.g. dikes, guarding, interlocks)</li> <li>4. Administrative control – control response/avoidance of hazard (e.g. training, procedures, reducing employee exposure to hazards, signage)</li> <li>5. PPE or Mitigation – Protect people (personal protective equipment) or the environment (spill kits) from the hazard. This is the last line of defense.</li> </ol> Extreme and high risks that exist after controls have been applied should go through a formal review with the Site Manager.
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. 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: <ul style="list-style-type: none"> <li>• Alamos Executive and Management,</li> <li>• Country Managers,</li> <li>• General Managers; and</li> <li>• Project Managers.</li> </ul>
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 to ensure thresholds are consistent with the Alamos Enterprise Risk Management system.
Air Quality, Noise & Vibration Management (CSS-ENV-1.1)	Before any new project is developed, baseline air quality, noise, and where appropriate, noise monitoring at and in the vicinity of the site shall be undertaken to establish background levels.

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Corporate Policy	Requirement
Air Quality, Noise & Vibration Management (CSS-ENV-1.3)	Sites will develop and implement a formal Air Quality Monitoring & Control Plan (AQMP) and include a noise monitoring and control plan. The AQMP is to be informed by baseline information, regulatory requirements and any predictive atmospheric dispersion modelling that is available.
Air Quality, Noise & Vibration Management (CSS-ENV-1.4)	Sites will develop and implement preventive maintenance programs for relevant equipment to ensure emissions are controlled for all fixed sources of air and noise emissions.
Air Quality, Noise & Vibration Management (CSS-ENV-1.6)	Noise emissions shall be managed to ensure compliance with local regulatory requirements.
Air Quality, Noise & Vibration Management (CSS-ENV-1.7)	Sites shall utilize appropriate techniques to maintain vibration at receptors to acceptable levels to ensure compliance with local regulatory requirements.
Biodiversity & Land Use (CSS-ENV-7.5)	Sites will minimize ecosystem disturbance to only what is essential for safe efficient operation (including vegetation clearance, soil disturbance, noise, vibration and artificial lighting).

Additionally, as published codes and guidance for non-blast-related vibration levels are limited, the United State Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (FTA 2018) is referenced for the ground-borne vibration target. Structural damage targets for ground-borne vibration are expressed in terms of peak particle velocity (PPV) levels in inch per second (in/s) or mm/s. The structural damage target at a residential building due to ground-borne vibration effect is the PPV of 0.2 in/s or 5 mm/s for non-engineered timber and masonry buildings. The annoyance target for frequent ground-borne vibration is 72 VdB (Vibration Velocity in Decibel Scale). Annoyance targets for ground-borne vibration are expressed in terms of rms velocity levels in VdB.

**1.4.4 Approval Related Requirements**

The conditions relating to noise and vibration laid out in the federal Decision Statement issued under the *Canadian Environmental Assessment Act (CEAA), 2012*, provincial Environment Act Licence No. 3390 (Gordon), and provincial Environment Act Licence No. 3391 (MacLellan) are outlined below (Table 1-2).

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**Table 1-2 Approval Related Requirements**

Licence	Condition	Corresponding NVMP Section
CEAA, 2012	<p>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:</p> <p>2.5.1 the methodology, location, frequency, timing and duration of monitoring associated with the follow-up program;</p> <p>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;</p> <p>2.5.3 the minimum frequency at which the follow-up program must be reviewed and, if necessary, updated;</p> <p>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;</p> <p>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</p> <p>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.</p>	All sections
CEAA, 2012	<p>6.2 The Proponent shall implement measures, during all phases of the Designated Project, to avoid exceedances of the thresholds for noise and vibration, identified in Health Canada’s Guidance for Evaluating Human Health Impacts in Environmental Assessment: Noise at sensitive receptors identified in the human health and ecological risk assessment in Volume 5 of the Environmental Impact Statement. In doing so, the Proponent shall: develop, prior to construction, a protocol for receiving and addressing feedback related to the exposure to noise and vibration generated by the Designated Project. The Proponent shall provide the protocol to the Agency and Indigenous groups prior to construction, and make the protocol publicly available online. As part of the protocol, the Proponent shall:</p> <p>6.2.1.1 identify how a person may provide feedback, how the Proponent will handle the feedback received, including ranking and responding to feedback received according to the anticipated level of impacts, and how the Proponent may implement modified or additional mitigation measures(s) and/or follow-up requirement(s) in response to the feedback received;</p> <p>6.2.1.2 record any feedback received as soon as feasible, no later than 48 hours after receiving the feedback; and</p> <p>6.2.1.3 implement, as soon as technically feasible, any modified or additional mitigation measure and/or follow-up requirement that the Proponent deems necessary to respond to the feedback received.</p>	Section 3.0 Sections 4.1 and 5.1

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Licence	Condition	Corresponding NVMP Section
CEAA, 2012 (cont'd)	<p>6.5 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 mitigation measures as it pertains to noise and vibration from the Designated Project on the health of Indigenous peoples. The Proponent shall implement the follow-up program during all phases of the Designated Project. As part of the follow-up program, the Proponent shall:</p> <p style="padding-left: 40px;">6.5.1 monitor noise and vibration levels at receptors identified in Volume 1 Chapter 7 Tables 7-7 to 7-10 of the Environmental Impact Statement, and at any other human receptors identified in consultation with Indigenous groups.</p>	
Environment Act Licence No. 3390 (Gordon)	48. The licensee shall not cause or permit a noise nuisance to be created as a result of the construction, operation or alteration of the development, and shall take such steps as the director may specify to eliminate or mitigate a noise nuisance.	Section 3.0 Sections 5.1 and 5.2
Environment Act Licence No. 3391 (MacLellan)	58. The licensee shall not cause or permit a noise nuisance to be created as a result of the construction, operation or alteration of the development, and shall take such steps as the director may specify to eliminate or mitigate a noise nuisance.	Section 3.0 Sections 5.1 and 5.2

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## **2.0 ENVIRONMENTAL SETTING**

The Gordon site is located approximately 55 kilometres (km) east of Lynn Lake, Manitoba, and the MacLellan site is located approximately 9 km northeast of Lynn Lake. Lynn Lake is located approximately 820 km northwest of Winnipeg. The Gordon and MacLellan sites are both located in remote areas.

An understanding of the baseline noise environment within the Project area is required to assess the potential effects of noise resulting from the Project. A baseline noise field survey (the baseline survey) in the Project area was conducted in 2015. The purpose of the baseline survey was to quantify the sound levels at noise-sensitive receptors that were close to the Project area to establish baseline conditions against which potential Project effects could be evaluated in the EA.

The baseline survey included three monitoring locations that represent different acoustic environments within the Local Assessment Area. Location NM1 was within a cottage area along the Burge Lake shoreline inside Burge Lake Provincial Park, representative of a rural area with local residential and lakeside recreational activities. Location NM2 was representative of a remote area with very little human activity. The dominant noise sources observed during the baseline survey included wildlife, birds, insects, occasional aircraft flyovers, vegetation rustling, and wind noise. Location NM3 was within the Marcel Colomb First Nation's Black Sturgeon Reserve lands residential area, representative of a sparsely populated area with frequent noise events from the residential activity, children, domestic animals, birds, and insects.

The results at the three monitoring locations (NM1, NM2, and NM3) were used to represent the existing sound level within the PDA and at some of the receptors. The baseline sound level at the recreation lot, youth camp, and park vacation home near Burge Lake are represented by the monitoring results from NM1. The PDA, Indigenous Nations' traplines, trapping areas, and fishing camps, trapper cabin, remote cottages, and recreation lot are all in a remote area. The baseline sound level at these locations is represented by the monitoring results from NM2. Receptor locations within the Black Sturgeon Reserve lands are represented by monitoring results from NM3. Baseline sound levels at receptors located in the community of Lynn Lake were based on levels advised in the Health Canada Noise Guidance for quiet rural communities (i.e., population density of 28 per square km).

In contrast to audible noise, the background environmental ground-borne vibration levels in an outdoor rural area without local human activities is typically below the threshold of human perception (FTA 2018). The typical threshold of human perception of ground vibration is 0.5 mm/s PPV (ISEE 2011); however, the perceptibility threshold varies from person to person. In an urban and suburban environment, a person may be subjected to a wide range of vibration effects depending on the location, time of the day, proximity to day-to-day vibration sources (e.g., vehicle, train, construction activities). In rural and remote areas, vibration effects are uncommon. The background vibration velocity level in residences is usually 50 VdB or lower, and the threshold of perception for humans is approximately 65 VdB (FTA 2018).

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The PDA, monitoring locations, noise receptors, and vibration receptors are presented in Map 1 and Map 2 (Appendix C) for the Gordon site and MacLellan site, respectively. Receptors identification (ID) 76 and ID 73 are located approximately 1,420 metres (m) and 2,125 m from the Gordon site mine pit, respectively. These are the two closest receptors to the Gordon site mine pit. Receptor ID 86 is located approximately 2,350 m from the MacLellan site mine pit; this is the closest receptor to the MacLellan site. Within the PDA, the permanent work camp is approximately 750 m from the MacLellan site mine pit.

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### **3.0 MITIGATION AND MANAGEMENT MEASURES**

The mitigation measures listed below were developed as part of the EIS.

#### **3.1 NOISE**

The sources of noise emissions during Project construction and operation are typical for an open pit mine and gold ore processing. Emissions from decommissioning/closure will be similar to those from construction, but lower in magnitude. Project construction phase (including pre-production) noise emissions are summarized as follows:

- Stationary equipment (i.e., pumps and motors) operating at 100% capacity continuously during a 24-hour period
- Mobile equipment operating 10 hours (6 hours daytime and 4 hours nighttime) during a 24-hour period.
- Pre-production mobile equipment operating 20 hours (12.5 hours daytime and 7.5 hours nighttime) during a 24-hour period.
- Project-related road traffic along the haul roads, access road and Provincial Road (PR) 391.

Project operation phase noise emissions are summarized as follows:

- Stationary equipment (i.e., crushers) operating at 100% capacity continuously during a 24-hour period
- Mobile equipment operating 20 hours (12.5 hours daytime and 7.5 hours nighttime) during a 24-hour period.
- Project-related road traffic along the haul roads, access road and PR 391.
- Blasting effects are addressed in the Vibration section.

Mitigation measures will be implemented as needed to reduce potential noise effects during construction and operation. The mitigation measures are applicable to both the Gordon and MacLellan sites and include the following:

- Where possible, large stationary machinery (i.e., crushers) will be located inside buildings.
- Fully enclosed conveyor will be used between buildings in the processing plant.
- Large transportation trucks will be used to reduce the number of trips.
- Mobile equipment will have exhaust mufflers.
- Work camp building walls and roof will include noise-insulated panels.
- Work camp building will include an air conditioning system such that double pane windows and insulated doors can be closed during the summer season.
- Heavy fleet will reduce idling when not operating, where practical.

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The operational sound levels listed in the Noise and Vibration Impact Assessment Technical Modelling Report (Volume 5, Appendix C) and Lynn Lake Gold Project – Noise and Vibration Impact Assessment Update memo (Stantec 2024) are the estimated equipment sound power levels used in the acoustic modelling; it is assumed that these acoustical specifications are achievable by the suppliers. If the sound power level cannot be achieved, additional mitigation measures may be required.

## 3.2 VIBRATION

The sources of vibration during Project construction and operation are typical for an open pit mine and gold ore processing, and include the following:

- Ground-borne vibration from construction equipment and piling.
- Ground-borne vibration and air overpressure caused by open pit blasting during operation.
- Ground-borne vibration and air overpressure caused by borrow sources (i.e., south of Minton Lake) and MacLellan starter pit (i.e., right in center of MacLellan pit) blasting during construction.

Vibration during decommissioning/closure will be similar to those during construction, but lower in magnitude.

Mitigation will be achieved by blast design related to quantities of explosives, blast hole locations and time delays between blasts. The mitigation measures that apply to both the Gordon and MacLellan sites are summarized as follows:

- Maximum explosive charges do not exceed 230 kilogram (kg) per time delay.
- Only one hole/delay will be fired in the blast.
- Minimum time delay between holes in blasts will not be less than 8 milliseconds (ms).

The two closest receptors to the Gordon site are receptors ID 76 and 73 (trapping sites). There is no recent trapping or hunting in this area. Both receptors are typically not stationary. Even if the trapline is active, the trapper would only be at the identified location for a very short period checking traps. If the time of trapline checking is known at these receptors, specific mitigation measures may not be required. If receptor ID 76 and 73 are active during potential blast activities, specific mitigation measures are as follows:

- Blast charges are limited to 43 kg when blasting activities is closest to receptor ID 76 (1,420 m), ID 73 (2,125 m), and ID 77 (2,255 m).
- The reduced blast charge of 43 kg can be increased if monitoring results indicate air overpressure level below 120 dBL at ID 76 due to the following:
  - distance between the blast and the closest receptor ID 76 is more than 1,420 m (distance based on receptor location to open pit boundary).
  - increased depth at the pit.

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- The amount of blast charge increase can be estimate from the regression curve between overpressure measured at different distance.
- Engagement with Marcel Colomb First Nation to discuss the potential for a seasonal mitigation approach, which relaxes the reduced blast charge of 43 kg during off-season period when trapping activities at the receptor ID 76 are not expected.

The specific mitigation measures for the permanent work camp within the MacLellan site are as follows:

- Blast charges are limited to 85 kg initially when blasting activities are closest to the permanent work camp
- The reduced blast charge of 85 kg can be increased if monitoring results indicate that the air overpressure level is below 125 dBL at the permanent work camp due to the following:
  - the distance between the permanent work camp and the blasting location is more than 750 m.
  - increased depth at the pit.
- Blasting will be scheduled during shift change (e.g., less workers sleeping and more local activities) to reduce potential annoyance at the permanent work camp.

No mitigation measures are included for the ground vibration from heavy equipment during the construction and operation phases. The vibration effects that may exceed the annoyance target is local (i.e., less than 280 m for impact pile driving). Any potential sensitive receptors are located at a sufficient distance that annoyance effects due to the equipment vibration effect is unlikely.

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## **4.0 MONITORING**

Monitoring 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 implemented mitigation measures; and compliance monitoring for verification of practices or procedures to meet legislated requirements. Monitoring will be carried out for noise and vibration using environmental indicators and measurable parameters identified in the EIS. Components to be monitored have been determined based on regulatory instrument requirements as per legislation, environmental importance, sensitivity and vulnerability, and license requirements. The specific and measurable end points for concluding the monitoring program will be set to verify 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.

The monitoring programs listed below were developed as part of the EIS. Additional monitoring requirements identified as part of the Project approval and permitting have also been incorporated.

### **4.1 NOISE**

Long-term continuous noise monitoring will be implemented to determine the noise effects of the Project. The monitoring results will be used to compare the Project noise effect with the targets presented in Section 1.4. The following sections discuss the method, equipment, location, site observation, analysis, schedule, and evaluation for the noise monitoring program.

It is noted that the specified equipment in Section 4.1.2 below has temperature-operating restrictions that may affect its use in winter given the location of the Project (e.g., equipment will not continuously operate at extreme cold temperatures) and monitoring will need to be adjusted accordingly (e.g., the capture of spot measurements only).

#### **4.1.1 Method**

Long-term continuous noise monitoring programs will be implemented for the Project. The long-term noise monitoring can be performed using dedicated sound level meters to obtain the noise data at selected locations. A continuous noise monitoring time period of minimum one day at each location defined in Section 4.1.3 will be conducted. The monitoring will be conducted during Project construction and operation phases.

Variability in seasonal and meteorological conditions and local activities affects the sound level at all the measurement locations. Longer monitoring periods (monthly or annually) with the implementation of a permanent monitoring station provides a larger statistical sample; however, the multiple days program is considered sufficient for an evaluation of the acoustic environment at the monitoring locations.

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The following data will be logged during the noise monitoring at all selected locations:

- Continuous equivalent sound levels in A-weighted decibel (dBA), C-weighted decibel (dBC), and linear (unweighted) decibel (dB) in one third octave bands
- Logging period is recommended to range from one minute to one hour
- Hourly statistical sound levels (i.e., L1, L10, L50, L90)

In addition to long-term continuous noise monitoring, short-term (i.e., few minutes to less than one hour) noise measurements can be conducted to quantify noise emission levels from various operating equipment. These measurements can provide information to validate the estimated equipment sound power levels used in the acoustic modelling; it is assumed that these acoustical specifications are achievable by the suppliers. If the sound power level cannot be achieved, additional field measurements may be required. A trained technician directed by a qualified acoustic practitioner is recommended to conduct noise data gathering. Further diagnostic analysis and studies will be conducted by a qualified acoustic practitioner.

Construction activities are expected to begin in February 2025. During the month of February and March, a sound level meter may not operate properly in low temperature (e.g., -20 C or below) during the nighttime period. Accordingly, for the monthly construction phase monitoring during winter months (i.e., February and March in 2025), short-term measurement for a continuous period of one to two hours can be conducted at the selected monitoring locations ID 76, ID 77, ID 93, ID 85, ID 86, and worker camp (see Section 4.1.3 for details) during construction activities. In addition to the selected monitoring locations, a second sound level meter may be deployed at a location near the construction site to measure noise level where construction activities is loud. This location should be at least 15 m from the noisiest construction activity at the same direction of the selected monitoring location (see Section 4.1.3 for details). The 15 m measurement should be conducted during the same type of construction activity (e.g., clearing, drilling, grading, or piling activity) for comparison to representative measurements conducted at further locations. This measurement provides construction noise effect correlation between locations at further distance and a closer location (i.e., 15 m) where the signal or noise level is strong and measurable. It is possible that under certain conditions (e.g., upwind, low noise emission level), construction noise effect may not be measurable at further distance away.

### 4.1.2 Equipment

This section provides the noise monitoring program instruments and specifications required for the NVMP. The following monitoring equipment is required:

- Sound levels meters
- Field calibrator
- Weather stations or weather meters.

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**4.1.2.1 Sound Level Meter and Field Calibrator**

High precision Type 1 integrating sound level meters capable of recording the sound pressure levels in dBA with different time period settings are recommended to assess the spectra characteristic of noise sources (i.e., tonality, LFN, sound pressure levels at the one-third octave band). In addition, audible recording capability is recommended to identify non-representative events for data analysis. Battery powered units to complete automated (unattended) noise monitoring.

Sound level meters should be capable of recording equivalent sound level ( $L_{eq}$ ) and statistical sound level ( $L_n$ ) with different time period settings. Sound level meters must have been calibrated in the last two years by an independent accredited laboratory. A copy of the calibration certificates will be appended to the monitoring report. The sound level meter microphone should be equipped with a windscreen with minimum 70 mm diameter.

Field calibrators meeting American National Standards Institute (ANSI) S1.40-2006 regulations are to be used to calibrate sound level meters immediately before and after each measurement series and after any change in equipment conditions (e.g., cable replacement). Field calibrators with current recertification status is required. The field calibrator must have been lab-calibrated within the last 12 months. If discrepancy in calibration level exceeds +/- 1 dB during the measurement period, the measurement data should not be used.

Alamos is procuring permanent sound level meters for long-term use. For the months of February and March 2025 during the early construction phase, two rental sound level meters will be deployed before the permanent equipment is purchased.

**4.1.2.2 Weather Station or Meter**

The Manitoba Guidelines for Sound Pollution does not prescribe representative weather condition for sound surveys. Health Canada 2023 indicates that sound is not to be measured in the presence of precipitation and when the wind speed exceeds 14 km/hour (3.9 m/s). Other provincial noise guidelines such as Alberta Energy Regulator (AER) Directive 038: Noise Control (AER 2024) and British Columbia Energy Regulator (BCER) Noise Control Best Practice Guideline (BCER 2024) consider wind speeds higher than 15 km/hour (4.17 m/s) and rain precipitation as non-representative weather conditions. Ambient temperatures must also be within the manufacturer's tolerances for instrument operation. In addition, International Standard Organization (ISO) 1996-2 specifies a set of weather conditions for sound measurements; therefore, weather data should be collected near the monitoring locations. A portable weather station or meter is required to record wind speed, wind direction, temperature, and humidity data in the vicinity of the noise monitoring station. In addition, the weather data recorded from other meteorological weather stations can be used as reference (i.e., snow or rain precipitation).

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### 4.1.3 Location

The noise monitoring program will be implemented at multiple locations to measure the noise levels during pre-construction, construction, operation, and closure. The following monitoring locations for the Gordon site are recommended:

- Potential Indigenous receptor location (ID 76)
- Potential Indigenous receptor location (ID 77)
- Black Sturgeon Reserve lands (ID 93)
- Two alternative locations along the PDA boundary (i.e., north and west directions) can be considered if the locations above (ID 76, ID 77, and ID 93) are not showing a predicted impact.

The following monitoring locations for the MacLellan site are recommended:

- Potential Indigenous receptor location (ID 85)
- Potential Indigenous receptor location (ID 86)
- Permanent worker camp
- Two alternative locations can be considered if the locations above (ID 85 and 86) are not showing a predicted impact. One location is along the open pit boundary in the west direction and the second location is along north-west of the Tailings Management Facility.

Potential Indigenous receptor locations (e.g., ID 76, ID 77, ID 85, and ID 86) may not have trapping or hunting activities on a yearly basis. In addition, these receptors are typically not stationary. Even if the trapline is active, the trapper would only be at the identified location for a very short period checking traps. If the Indigenous receptors are not in use (e.g., long-term or overnight occupancy), the monitoring location could be removed or adjusted accordingly.

If accessibility to the selected monitoring locations (ID 76, ID 77, ID 93, ID 85, ID 86, and worker camp) is an issue during early construction phase (e.g., February and March 2025), the noise level at these further locations can be extrapolated from the measurements at 15 m away from the construction activity by noise modelling. A detail log and observation of the construction activities will be required to correlate the measurement results with the type of activities.

If the construction activities are more than 3 km from the selected location (ID 76, ID 77, ID 93, ID 85, ID 86, and worker camp), monitoring at that location is not necessary because the noise effect is likely to be negligible. For example, ID 93 is in the Black Sturgeon Reserve at more than 3 km from most early phase construction activities. Monitoring at this location in February and March 2025 during the early construction phase is not necessary.

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### **4.1.4 Site Observation**

To analyze noise monitoring results, the following information will be recorded during the monitoring periods:

- Field personnel's name
- Monitoring location in Universal Transverse Mercator (UTM) coordinates
- Sound level meter and microphone model and serial number
- Monitoring duration
- Start and end time and date
- On-site calibration results
- Geographic features of the surrounding area
- Meteorology conditions, including cloud cover, temperature, humidity, wind speed and direction
- Description of acoustic environment (i.e., busy road, birds, local activities)
- Photos or videos of the monitoring setup and surrounding area.

### **4.1.5 Schedule**

The noise monitoring frequency for each location during each phase is summarized in Table 4-1. As previously noted, the specified equipment in Section 4.1.2 above has temperature-operating restrictions that may affect its use in winter given the location of the Project (e.g., equipment will not continuously operate at extreme cold temperatures) and monitoring will need to be adjusted accordingly (e.g., the capture of spot measurements only).

One noise monitoring event is recommended before construction to quantify the latest baseline sound level at the receptors. During construction, monthly monitoring is recommended because the activity level will vary during different construction phases. Noise effects during the initial operation years are expected to be less than the peak years, and quarterly monitoring frequency is recommended. During Gordon site Year 3 and MacLellan site Year 5, noise effects are expected to be the highest due to the total mine production tonnage, quantity and type of noise emitting equipment. Therefore, the monitoring frequency is increased to monthly. If the initial monthly results indicate noise impact is negligible and the noise emitting equipment is not expected to increase, the frequency can be reduced to quarterly. During Gordon site Year 4 and MacLellan site Year 6 (e.g., year after peak year), the monitoring frequency will be reduced to quarterly. If the results indicate noise impact is negligible, the monitoring frequency will be revised to annually from that point forward. The frequency of monitoring in the remaining operation years will be annually.

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**Table 4-1 Noise Monitoring Schedule**

Monitoring Activity	Location	Frequency			
		Pre-Construction	Construction	Operation	Closure
Gordon site - Noise	Receptor ID 76	Once	Monthly	<ul style="list-style-type: none"> <li>• Quarterly (Year 1)</li> <li>• Monthly or quarterly (Year 3)</li> <li>• Quarterly or reduced to annually (Year 4)</li> <li>• Annually (remaining years)</li> </ul>	Quarterly or reduced to annually (during Active Closure only)
	Receptor ID 77	Once			
	Receptor ID 93	Once			
	Alternative locations (if applicable)	Once			
MacLellan site - Noise	Receptor ID 85	Once	Monthly	<ul style="list-style-type: none"> <li>• Quarterly (Year 1)</li> <li>• Monthly or quarterly (Year 5)</li> <li>• Quarterly or reduced to annually (Year 6)</li> <li>• Annually (remaining years)</li> </ul>	Quarterly or reduced to annually (during Active Closure only)
	Receptor ID 86	Once			
	Permanent Worker Camp	--	Monthly	<ul style="list-style-type: none"> <li>• Quarterly (Year 1)</li> <li>• Monthly or quarterly (Year 5)</li> <li>• Quarterly or reduced to annually (Year 6)</li> <li>• Annually (remaining years)</li> </ul>	
Note: “—” not applicable					

**4.1.6 Analysis and Evaluation**

For long-term measurement results, measured equivalent sound level data at the monitoring locations will be analyzed to determine daytime and nighttime equivalent sound levels (i.e.,  $L_d$  and  $L_n$ ). In addition to the daytime and nighttime equivalent sound levels, the increase in %HA parameter will be calculated for comparison to the Health Canada noise guideline.

Invalid or abnormal data not typical of an average ambient sound level will be extracted from the measurement. Audio sound recordings collected during the monitoring period will be reviewed to track and identify changes in measured noise levels and filter out unrepresentative events. Data that are not representative of normal site activity (e.g., human and animal interference with the microphone, technician activities) or measured outside acceptable weather conditions (i.e., rain and wind speed exceed 14 km/hour) will be filtered from the data set prior to the calculation of any averages or other statistics.

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The monitoring results during pre-construction, construction, operation, and closure phases will be compared to the prediction results in the EIS for validation purposes. If the construction, operation, and closure phases measurement results are above or at the thresholds at the receptors, adaptive management will be initiated to manage the noise effect. If the measurement results are below the thresholds, some mitigation requirements may be adapted or relaxed.

## 4.2 VIBRATION

Vibration monitoring stations will be implemented to determine the vibration effects from blasting during the construction and operation phase. The monitoring results will be used to compare the Project vibration effect with the targets presented in Section 1.4. The following sections discuss the method, equipment, location, schedule, site observation, analysis, and evaluation for the vibration monitoring program.

### 4.2.1 Method

During construction activities, monitoring will occur as required with blasting activity, but during operation blasting events will occur on a regular basis (i.e., daily). Long-term vibration monitoring stations will be used for the Project. Dedicated instrumentation that measures ground vibration and air blast overpressure will be installed at the locations defined in Section 4.2.3. The instruments will be set up with pre-set trigger levels that measure automatically during a blast event. The ground vibration amplitude in three orthogonal directions (i.e., longitudinal, transverse and vertical) and the corresponding frequencies will be recorded. Similarly, the air blast overpressure amplitude and the corresponding frequency will be recorded.

### 4.2.2 Equipment

Four channel seismographs should be used to record ground vibrations and air blast overpressure. Three channels will be used to measure ground vibration in three orthogonal directions (i.e., longitudinal, transverse and vertical). The vibration transducers should log the time histories of the waveforms as PPV in mm/s. The fourth channel will measure the air blast overpressure in dBL. The air blast microphone should have a flat (linear) response from 2 to 200 Hz.

The seismograph units should be kept in protective housings for long-term protection against weather, animals, and sabotage. The units should be calibrated within the last two years by the manufacturer or an independent accredited laboratory. The units are battery powered for automated unattended monitoring. The microphones should have wind shields to reduce false triggers from gusts of wind, nearby mining activities, and vehicle traffic. The ground vibration transducer trigger level (i.e., 3 mm/s) and air blast overpressure trigger levels (i.e., 110 dBL) should be set up such that the settings are not too sensitive and the extraneous events such as vehicle traffic and/or wind gusts do not trigger the measurements. Excessive false triggers will result in recordings that take up memory space available for data storage when the blast event occurs.

Air blast overpressure disturbances travel at approximately 335 m/s. To capture the full air blast overpressure waveform, the recording duration time should be long enough to capture the entire event.

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### 4.2.3 Location

During the construction phase, monitoring locations will be selected based on proximity from the blast site. During the operation phase, a monitoring program will be implemented at multiple locations to measure the ground vibration and air blast overpressure levels during blast activities from the mine pit. The following monitoring locations for the Gordon site are recommended:

- Potential Indigenous receptor location (ID 76) approximately 1.4 km from the Gordon open pit
- North shore of Hughes Lake or Black Sturgeon Residence Reserve (ID 93)
- One location along the PDA boundary closest to the blast activities; this location will vary as blasting in the pit progress during the production years.
- One alternative location along the open pit boundary (i.e., north direction) can be considered if the receptor ID 76 is not showing a predicted impact.
- Location along the diversion channel for potential ground vibration effect on fish.

Three monitoring locations for the MacLellan site are recommended:

- Potential Indigenous receptor location (ID 86) approximately 2.4 km from the MacLellan open pit
- Permanent work camp located approximately 750 m from the MacLellan open pit
- One location along the PDA boundary closest to the blast activities

Potential Indigenous receptor locations (e.g., ID 76 and ID 86) may not have trapping or hunting activities on a yearly basis. In addition, these receptors are typically not stationary. Even if the trapline is active, the trapper would only be at the identified location for a very short period checking traps. If the Indigenous receptors are not in use (e.g., long-term or overnight occupancy), the monitoring location could be removed or adjusted accordingly (e.g., to the next closest receptor ID 73 for Gordon and ID 82 for MacLellan).

### 4.2.4 Blast Record

Accurate records with the blast design detail, weather conditions and the vibration results are essential to verify compliance, improve future blast designs, and for legal protection against erroneous or false blast damage claims. Table 4-2 lists the recommended seismograph setup and weather information to record for each blast. Other information such as blast design information will be collected from the blast log as prescribed in the Blast Management and Monitoring Plan (BMMP). The blast record will be completed by the blaster in charge.

**LYNN LAKE GOLD PROJECT:  
NOISE AND VIBRATION MANAGEMENT & MONITORING PLAN**

Monitoring  
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**Table 4-2 Blast Record Summary Sample**

Information Required	Descriptions
Seismograph setup	<ul style="list-style-type: none"> <li>• Location (UTM)</li> <li>• Operator name</li> <li>• Serial number</li> <li>• Date seismograph last calibrated</li> <li>• Ground vibration trigger level (mm/s)</li> <li>• Air blast trigger level (dBL)</li> <li>• Distance from blast</li> </ul>
Seismograph measurements	<ul style="list-style-type: none"> <li>• Radial amplitude (mm/s) and frequency (Hz)</li> <li>• Vertical amplitude (mm/s) and frequency (Hz)</li> <li>• Transverse amplitude (mm/s) and frequency (Hz)</li> <li>• Air blast level (dBL) and frequency (Hz)</li> </ul>
Weather	<ul style="list-style-type: none"> <li>• Temperature</li> <li>• Wind speed (km/hour)</li> <li>• Wind direction</li> <li>• Sky condition (i.e., clear, cloudy, raining, etc.)</li> </ul>

**4.2.5 Schedule**

The vibration monitoring frequency for each location during the operation phase is summarized in Table 4-3.

At the Gordon site, weekly monitoring is recommended during the first month of production blasting with the highest blast charge production day and when blast is closest to receptor ID 76. The monitoring frequency can be reduced to monthly if the four-week average of weekly results are below threshold presented in Section 1.4.

The closest receptor to the Gordon site is receptor ID 76. There is no recent trapping or hunting in this area. The receptor ID 76 is typically not stationary. Even if the trapline is active, the trapper would only be at the identified location for a very short period checking traps. If the occupancy is known at ID 76, avoidance of blast activities may be possible and therefore specific mitigation measures may not be required.

At the MacLellan site, weekly monitoring is recommended during the first month of production blasting with the highest blast charge production day and when blast is closest to receptor ID 86 and permanent worker camp. The monitoring frequency can be reduced to monthly if the four-week average of weekly results is below the threshold presented in Section 1.4. If the occupancy is known at ID 86, avoidance of blast activities may be possible and therefore specific mitigation measures may not be required.

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NOISE AND VIBRATION MANAGEMENT & MONITORING PLAN**

Monitoring  
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**Table 4-3 Vibration Monitoring Schedule**

Monitoring Activity	Location	Frequency	
		Construction <sup>b</sup>	Operation
Gordon site Open Pit Blasting – Ground Vibration and Air Overpressure	Receptor ID 76	Per blast event	<ul style="list-style-type: none"> <li>• Weekly</li> <li>• Monthly (4-week average of weekly results is below threshold)</li> </ul>
	North shore of Hughes Lake or Black Sturgeon Residence Reserve (ID 93)	Per blast event	
	PDA boundary <sup>a</sup>	Per blast event	
	Alternative locations (if applicable)	Per blast event	
	Along diversion channel	Per blast event	
MacLellan site Open Pit Blasting – Ground Vibration and Air Overpressure	Receptor ID 86	Per blast event	<ul style="list-style-type: none"> <li>• Weekly</li> <li>• Monthly (4-week average of weekly results is below threshold)</li> </ul>
	Permanent Worker Camp	--	
	PDA boundary <sup>a</sup>	Per blast event	
Notes:			
<sup>a</sup> One location along the PDA boundary closest to the blast activities			
<sup>b</sup> Initial test blast or pre-production blast			
“--” Not applicable			

**4.2.6 Analysis and Evaluation**

Measurement data can be downloaded manually from individual seismograph unit or accessed remotely via wireless modems. The seismograph operators must be thoroughly familiar with programming the seismographs. A comparison of the measurement results and the applicable limits will determine if the thresholds are met. If there is an exceedance issue, the measurement results can be correlated with blast information (Table 5-2) and other historical information (i.e., previous blast data and measurement results) to determine the root causes.

The monitoring results during test-blast and production blast will be compared to the prediction results in the EIS for validation purposes. If the measurement results are above the prediction values and the thresholds at the receptors (Section 4.1), adaptive management will be initiated to manage the noise effect.

**LYNN LAKE GOLD PROJECT:  
NOISE AND VIBRATION MANAGEMENT & MONITORING PLAN**

Adaptive Management  
January 30, 2025

## 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 with 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, Alamos implement technically and economically feasible mitigation measures 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.

### 5.1 THRESHOLDS FOR ADAPTIVE MANAGEMENT

The thresholds for adaptive management of noise and vibration effects are based on the results of monitoring and are summarized in Table 5-1. These thresholds are set as the trigger for adaptive management to avoid exceedance of the applicable provincial and federal thresholds.

**Table 5-1 Summary of Noise and Vibration Thresholds**

Effects	Guideline or Guidance	Thresholds	Location	
Noise	Guidelines for Sound Pollution (Province of Manitoba n.d.)	Noise level exceeding 55 dBA ( $L_d$ ) and 45 dBA ( $L_n$ )	Residential receptor and traditional land use receptor (with overnight occupancy) outside PDA	
	Health Canada (2023)	Operation noise and construction activities longer than 12 months:		
		• Change in %HA exceeding 6.5%		
		• Project noise exceeding 75 dBA ( $L_{dn}$ )		
		Construction Noise activities less than 12 months: MNL exceeding 47 dBA ( $L_{dn}$ )		
		LFN effect: Sum of the linear sound levels in the 16, 31.5 and 63-Hz octave bands at a receptor location not exceeding 70 dBL		
Sleep disturbance: Outdoor nighttime annual sound level of 40 dBA ( $L_n$ , 1 year)	Off-duty workers in work camp			
Sleep disturbance: Indoor sound level exceeding 30 dBA				

**LYNN LAKE GOLD PROJECT:  
NOISE AND VIBRATION MANAGEMENT & MONITORING PLAN**

Adaptive Management  
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<b>Effects</b>	<b>Guideline or Guidance</b>	<b>Thresholds</b>	<b>Location</b>
Vibration	MECP 1985	Ground vibration exceeding 10 mm/s Air overpressure exceeding 120 dBL	Residential receptor outside PDA
	Health Canada 2023	Air overpressure exceeding 125 dBL	Off-duty workers in workcamp

Adaptive management for noise and vibration will be used to address the following:

- Noise and vibration threshold levels are exceeded
- Continual improvement or reduction of noise and vibration effect from construction and operation activities.
- Potential changes to new regulatory requirements, revised objectives, or updated best practices or technology.

## **5.2 CORRECTIVE ACTION**

The adaptive management plan includes corrective action when the noise and vibration effects exceed or are below the thresholds listed in Table 5-1. Corrective action will be required to reduce the effects when the thresholds are exceeded. In cases when the effects are consistently below the thresholds, some mitigation measures can be adjusted accordingly (e.g., relaxation of blast charge reduction). Mitigation and management measures presented in Sections 3.1 and 3.2 will be the primary corrective actions that should be considered. In addition, any potential noise or vibration exceedance should be investigated whether it is correlated with any complaint incident. Post corrective action monitoring will be required to validate if the corrective action is effective and further actions or enhancements may be required.

**LYNN LAKE GOLD PROJECT:  
NOISE AND VIBRATION MANAGEMENT & MONITORING PLAN**

Reporting  
January 30, 2025

## **6.0 REPORTING**

Reports from monitoring programs will be submitted annually to regulatory authorities and shared with interested Indigenous Nations and stakeholders.

The Noise and Vibration Monitoring Report will provide an annual summary of the noise and vibration monitoring program activities. The report can follow the template format presented in Appendix A.

Records from monitoring program activities are maintained, retained and stored in accordance with the EMMP standards. Records associated with noise and vibration related activities include:

- Training and competency records such as training logs, copies of certifications, and education (as required)
- Contractor/supplier communications regarding noise and vibration management
- Maintain annual calibration records for sound level meters, field calibrators, and seismograph units
- Formal communications records (particularly for regulatory communications)
- Monitoring data and records as identified in the NVMP, Sections 4.1 and 4.2
- Noise or vibration complaints from the community (i.e., complaint investigation forms, telephone records, and community liaison meetings)
- Non-conformities, corrective and preventive actions related to noise and vibration.

Records will be stored in either hardcopy and/or electronic formats and maintained in such a way that they are readily retrievable and protected against damage, deterioration, or loss.

## **6.1 NOISE AND VIBRATION COMPLAINTS**

Appendix B provides a sample Noise Complaint Investigation Form (BCER 2024), Vibration Complaint Investigation Form, and events log sample form. Information requests in these forms provide the framework for noise compliant investigation.

During all Project phases, noise or vibration complaints from the community will be addressed in a timely manner. Complaints can be received formally or informally, following LLGP's Feedback Protocol that is posted on the LLGP's website: <https://lynnlake.alamosgold.com/> (Appendix D). A formal complaint will include correspondence, phone calls, online submissions on the LLGP's website, or emails sent to Alamos specifying a concern, making a claim or otherwise critical of the company's actions. Informal complaints will include issues or concerns expressed verbally to Alamos employees, as well as concerns raised by individuals through social media, including Facebook, X (formerly Twitter) and other online platforms. Complaints will be accepted anonymously, although Alamos notes that responses will only be provided to individuals who provide contact information.

**LYNN LAKE GOLD PROJECT:  
NOISE AND VIBRATION MANAGEMENT & MONITORING PLAN**

Reporting  
January 30, 2025

In every instance, the receipt of a formal or informal complaint will require the employee who receives it to deliver it promptly to the Community Relations Manager.

The Community Relations department or its delegates will oversee that complaints from the public are properly addressed. The Community Relations Manager will begin and oversee a process that consists of the following steps:

- Acknowledgement and Logging
- Initial Assessment and Risk Rating
- Investigating the Feedback
- Implementing Mitigation Measures
- Communicating Outcomes
- Follow-up and Monitoring, as required
- Escalation Process, if necessary

**LYNN LAKE GOLD PROJECT:  
NOISE AND VIBRATION MANAGEMENT & MONITORING PLAN**

References  
January 30, 2025

## **7.0 REFERENCES**

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## **Appendix A    Noise and Vibraton Monitoring Report Template – Table of Contents**

**LYNN LAKE GOLD PROJECT:  
NOISE AND VIBRATION MANAGEMENT & MONITORING PLAN**

Appendix A Noise and Vibration Monitoring Report Template – Table of Contents  
January 30, 2025

## **Noise and Vibration Monitoring Report Template – Table of Contents**

### **A.1 INTRODUCTION**

### **A.2 METHOD**

- Noise
- Vibration

### **A.3 MONITORING RESULTS**

- Noise
- Vibration

### **A.4 COMPARISON WITH EA RESULTS AND TARGETS**

### **A.5 SUMMARY**

### **A.6 ACTION PLAN**

## **Appendix B Noise and Vibration Complaint Forms**

**LYNN LAKE GOLD PROJECT:  
NOISE AND VIBRATION MANAGEMENT & MONITORING PLAN**

Appendix B Noise and Vibration Complaint Forms  
January 30, 2025

**B.1 NOISE COMPLAINT INVESTIGATION FORM**

Date (D/M/Y): Resident: Licensee representative: Legal location: Address: Telephone:
<b>NOISE CHARACTERIZATION</b>
6. Identify the quality and characteristics of the noise: 7. Distance to source (m): 8. When is noise a problem (day/night)? 9. Pitch (high/low): 10. Where is noise most annoying (inside/outside)? 11. Is there a noticeable tone? Describe: 12. Is noise steady/intermittent/pulsating? Describe: 13. Is noise heard and/or a vibration felt? Describe: 14. What is noise comparable to? 15. Other comments:
<b>WEATHER CONDITIONS</b>
16. Identify the weather conditions under which the noise is most noticeable: 17. Temperature: 18. Direction wind is coming from: 19. Wind speed (km/h): 20. Cloud cover: 21. Precipitation: 22. Ground cover between dwelling and facility (snow, water, grass, crop, trees, ice, etc.): 23. Other comments:
<b>REPRESENTATIVE CONDITIONS</b>
From the above, identify the conditions that should exist as closely as possible during a comprehensive sound survey.

**LYNN LAKE GOLD PROJECT:  
NOISE AND VIBRATION MANAGEMENT & MONITORING PLAN**

Appendix B Noise and Vibration Complaint Forms  
January 30, 2025

**B.2 VIBRATION COMPLAINT INVESTIGATION FORM**

Date (D/M/Y): Resident: Licensee representative: Legal location: Address: Telephone:
<b>VIBRATION CHARACTERIZATION</b>
Source(s) of the noise/vibration (at least one box must be checked): <ul style="list-style-type: none"><li>- Blasting <input type="checkbox"/></li><li>- Piling <input type="checkbox"/></li><li>- Passing trucks <input type="checkbox"/></li><li>- Construction activities <input type="checkbox"/></li><li>- Other <input type="checkbox"/> (please specify _____)</li></ul>
<b>TIME AND FREQUENCY</b>
Time of when vibration occurs: <ul style="list-style-type: none"><li>- Morning <input type="checkbox"/></li><li>- Daytime <input type="checkbox"/></li><li>- Nighttime <input type="checkbox"/></li></ul> Duration of typical vibration episode: <ul style="list-style-type: none"><li>- Minutes <input type="checkbox"/></li><li>- Hours <input type="checkbox"/></li></ul> Frequency of the vibration episodes: <ul style="list-style-type: none"><li>- Daily <input type="checkbox"/> (_____ times per day)</li><li>- Weekly <input type="checkbox"/></li></ul> Length of time vibration has posed a problem: <ul style="list-style-type: none"><li>- Weeks <input type="checkbox"/></li><li>- Months <input type="checkbox"/></li><li>- Years <input type="checkbox"/></li></ul>

**LYNN LAKE GOLD PROJECT:  
NOISE AND VIBRATION MANAGEMENT & MONITORING PLAN**

Appendix B Noise and Vibration Complaint Forms  
January 30, 2025

OTHER INFORMATION	
1.	Have you kept a record (log) of the frequency and duration of the vibration episodes? – Yes <input type="checkbox"/> – No <input type="checkbox"/> (If yes, please attach the record to this form)
2.	Approximate distance between the residences impacted and the source of vibration: – metres <input type="checkbox"/> – kilometres <input type="checkbox"/> – unknown <input type="checkbox"/>
3.	Is this a new or an older development? – New <input type="checkbox"/> – Old <input type="checkbox"/> (____ years)
4.	Length of time you have resided in current location: _____ years
5.	Zoning of area: – Residential <input type="checkbox"/> – Commercial <input type="checkbox"/> – Industrial <input type="checkbox"/> – Other: <input type="checkbox"/> _____ (please specify)
6.	Describe the impact of the vibration effect (i.e., impacts to humans, damage to property):
7.	Describe the location of the source of vibration (street name; landmark; community; railway yard or road crossing):
8.	Describe the solution(s) that you propose to reduce the vibration:
9.	Provide any other information you wish Alamos to consider:

**LYNN LAKE GOLD PROJECT:  
NOISE AND VIBRATION MANAGEMENT & MONITORING PLAN**

Appendix B Noise and Vibration Complaint Forms  
January 30, 2025

**B.3 Noise and Vibration Event Log**

Resident:

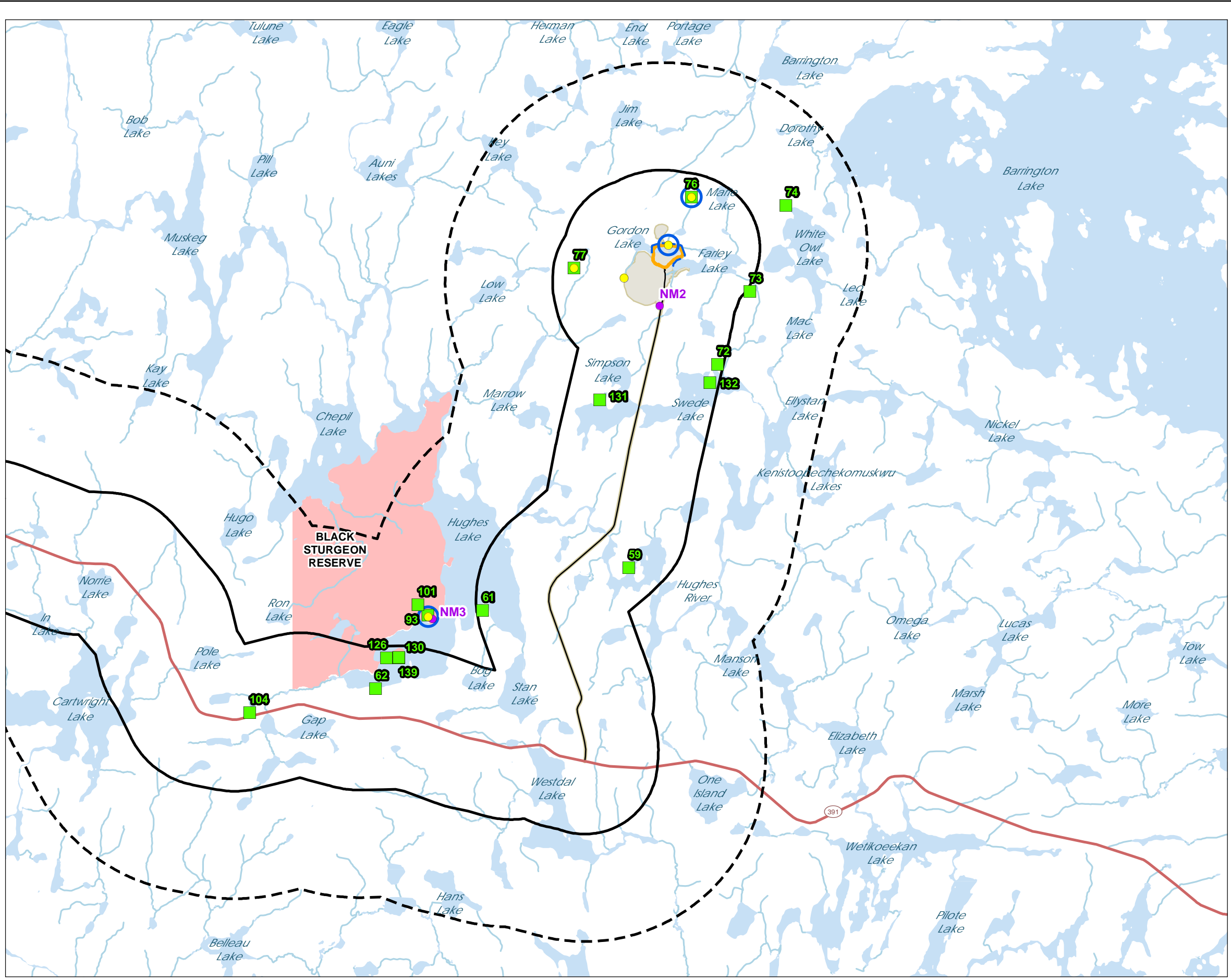
Telephone:

List any details related to the sound from the industrial facility that is annoying you.

Date (D/M/Y)	Time a.m./p.m.	Noise and Vibration Characteristics	Weather Conditions	Ground Cover	Receptor Location

## **Appendix C Maps**

G:\\_GIS\_Projects\Folder\111473076\_EA\RA\Noise\Map\_1\_Noise\_and\_Vibration\_MonitoringPlan\_Gordon\_20241001.mxd Revised: 2024-10-02 By: ACampigotto



**Project Infrastructure**

- Proposed Open Pit
- Project Development Area

**Study Area**

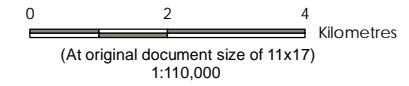
- Noise and Vibration Local Assessment Area (LAA)
- Noise and Vibration Regional Assessment Area (RAA)

**Locations**

- Noise Monitoring Location
- NVMP Noise Monitoring Location
- NVMP Vibration Monitoring Location
- Vibration Monitoring Location along PDA boundary closest to blast activities - varying over time
- Receptor Location

**Landbase**

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



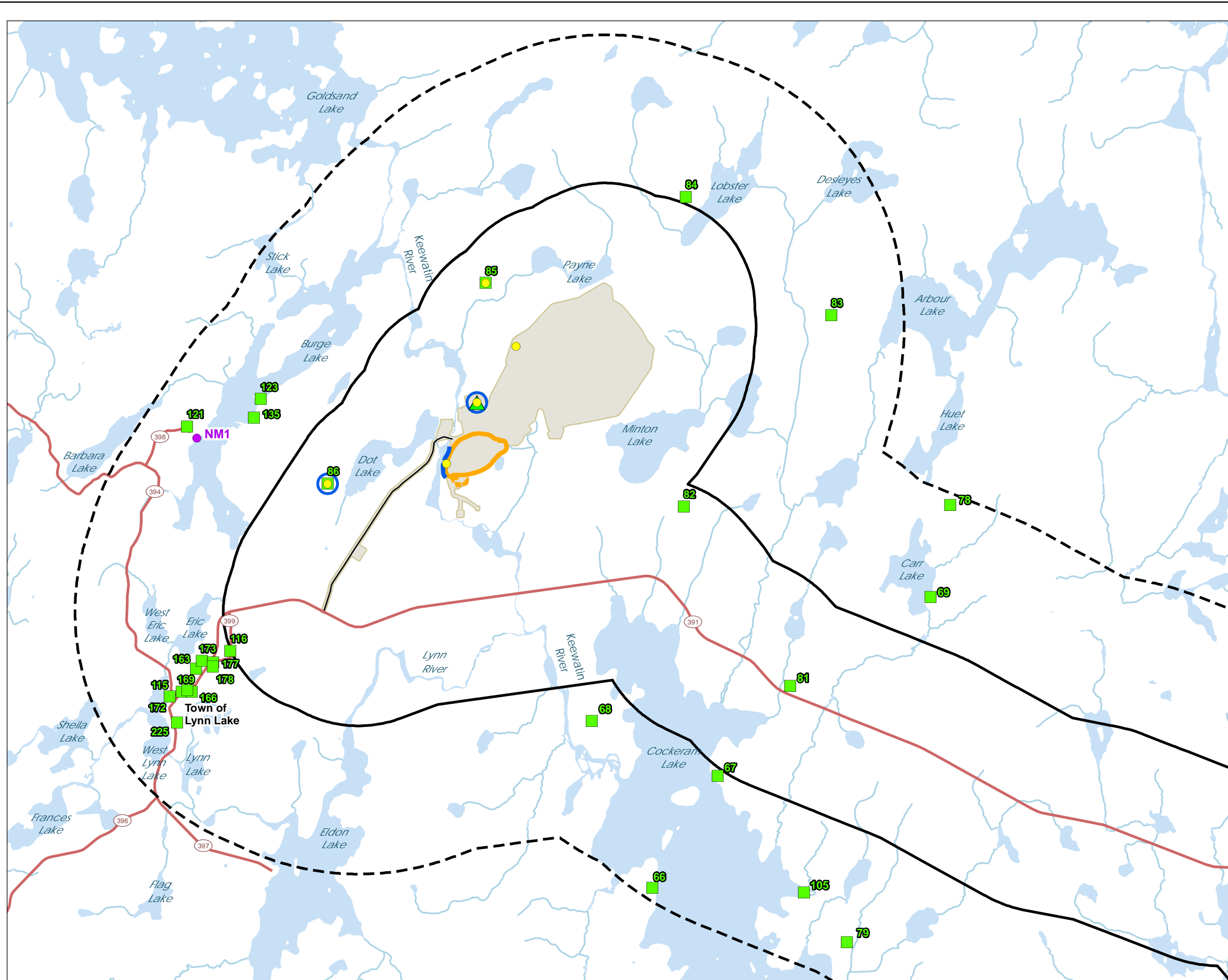
**Notes**  
 1. Coordinate System: NAD 1983 UTM Zone 14N  
 2. Base Data Sources: Government of Manitoba and Government of Canada.

**Project Location**  
 Lynn Lake, Manitoba  
 Prepared by ACampigotto on 2024-10-01  
 Technical Review by JChui on 2024-10-01

**Client/Project**  
 ALAMOS GOLD INC.  
 Lynn Lake Gold Project  
 111473076

**Map No.**  
 1

**Title**  
 Noise and Vibration Management Plan - Gordon



**Project Infrastructure**

- Proposed Open Pit
- Satellite Pit
- Project Development Area

**Study Area**

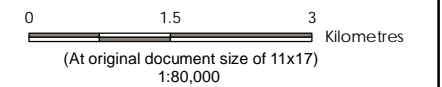
- Noise and Vibration Local Assessment Area (LAA)
- Noise and Vibration Regional Assessment Area (RAA)

**Locations**

- Noise Monitoring Location
- NVMP Noise Monitoring Location
- NVMP Vibration Monitoring Location
- Vibration Monitoring Location along PDA boundary closest to blast activities - varying over time
- Receptor Location
- Worker Camp

**Landbase**

- Existing Access Road
- Highway
- Watercourse
- Waterbody



**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 2024-10-01  
Technical Review by JChui on 2024-10-01

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

111473076

**Map No.**

2

**Title**

**Noise and Vibration Management Plan -  
MacLellan**

## **Appendix D Feedback Protocol**



ALAMOS GOLD INC.

**Lynn Lake Gold Project:  
Feedback Protocol**

Version 0

October 31, 2024



## Introduction

Alamos Gold Inc. (“Alamos”) values open communication with all stakeholders and encourages feedback on any concerns or observations related to the Lynn Lake Gold Project (“LLGP”). Whether the feedback is related to noise, vibration, environmental impacts, or any other aspect of our activities, we are committed to addressing it promptly and transparently.

## Purpose and Scope

This Feedback Protocol outlines how the LLGP receives, handles, and addresses external feedback related to our activities. The Protocol aims to ensure that all stakeholders, including Indigenous Nation members, community members of Lynn Lake, and other stakeholders including the general public, can provide feedback easily and transparently, and that concerns are addressed in a timely and effective manner.

This Protocol further fulfills the conditional requirement 6.2 of the Federal Decision Statement related to noise and vibration levels generated by the LLGP.

## Feedback Submission Mechanisms

### Online Submission:

- Feedback can be submitted using the LLGP [Community Feedback Form](https://lynnlake.alamosgold.com/contact/community-feedback-form/) (<https://lynnlake.alamosgold.com/contact/community-feedback-form/>), accessible via the Lynn Lake Gold Project website (<https://lynnlake.alamosgold.com/>).

### Written Feedback:

- Feedback can be submitted in writing to the following address:  
Alamos Gold Inc: Lynn Lake Gold Project  
PO Box 580  
Lynn Lake, MB  
R0B 0W0

### By Phone:

- Feedback can be provided by phone, by calling our Administration Office at 204-356-2647. Staff will collect information using the printable Community Feedback Form (Appendix A).

## Feedback Handling Procedure

Upon receiving feedback, the following steps will be followed:

### 1. Acknowledgement and Logging

- All feedback will be acknowledged within 48-hours of receipt, either via email or phone call. If email or phone are not available, other arrangements will be made to provide feedback as appropriate.
- Feedback will be logged in the Feedback Register, which will track details including the date of receipt, the feedback source (Indigenous Nation member, community member, contractor, employee, etc.), and the type of concern (e.g., air quality, noise, vibration).

### 2. Initial Assessment and Risk Rating

- Each feedback instance will be assessed based on potential impact, using a risk rating scale:

- **Insignificant:** Minimal impact on sensitive receptors that can be resolved within 1-3 days.
- **Minor:** Noticeable but minor impact, not exceeding regulatory thresholds.
- **Moderate:** Substantial impact that is reportable to regulatory authorities but can be resolved with reasonable efforts.
- **Major/Catastrophic:** Exceeds thresholds (non-compliance) with severe impacts on biophysical environment, stakeholders or socioeconomics requiring urgent mitigation (not possible or very difficult to resolve and remediate).
- The assessment will determine the level of urgency and response required.

### 3. Response and Mitigation Measures

- **Investigating the Feedback**
  - The LLGP team will investigate all feedback raised by conducting interviews, inspections, reviewing monitoring data, and any other relevant procedures deemed necessary pending the nature of the feedback.
- **Implementing Mitigation Measures**
  - If feedback and our investigation indicate that thresholds may be exceeded or have a significant impact on sensitive receptors, additional mitigation measures will be implemented as per the specific Management and Monitoring Plan. Where possible, additional mitigation measures will be reviewed with relevant stakeholders prior to implementation to ensure proposed actions are agreed to.
    - Examples of mitigation measures for noise and vibration feedback may include adjusting operational practices, installing additional sound barriers, or reducing vibration through technical adjustments.

### 4. Communicating Outcomes

- The results of the investigation and any modifications or additional mitigation measures will be communicated to the individual who submitted the feedback.
- Feedback providers will be informed of corrective actions or required mitigations if necessary.

## Follow-up and Monitoring

### Recording Follow-up Actions

- Any follow-up actions, including modified or additional mitigation measures, will be recorded in the Feedback Register.
- The effectiveness of these measures will be monitored to ensure compliance with regulatory thresholds e.g., Health Canada's thresholds for noise and vibration.

### Continuous Feedback Loop

- Alamos will review trends in feedback to identify recurring concerns and refine management strategies as part of continuous improvement efforts.

## Escalation Process

### Internal Escalation

If a complaint or grievance remains unresolved or if a more severe impact is identified, the feedback will be escalated to senior management for additional review and action.

**External Escalation**

In cases where internal resolution is not possible, external mediation may be sought to resolve the grievance.

**Public Availability**

This protocol, as part of the Noise and Vibration Management Plan, is available on the LLGP website (<https://lynnlake.alamosgold.com/>). It will be updated periodically to reflect any changes in project operations or community concerns.

**Feedback Register Tracking**

Alamos will maintain an active Feedback Register that tracks all feedback including noise and vibration-related feedback. This register will be reviewed monthly to ensure all feedback is addressed in a timely manner.

## **Appendix A – Community Feedback Form**

# Community Feedback Form

<b>Type of Feedback*</b>	
<input type="checkbox"/> Comment	<input type="checkbox"/> Complaint
<input type="checkbox"/> Recommendation	<input type="checkbox"/> Donation or Sponsorship
	<input type="checkbox"/> Inquiry
	<input type="checkbox"/> Other _____
<b>Feedback Category</b>	
<input type="checkbox"/> Community	<input type="checkbox"/> Environment
<input type="checkbox"/> Health & Safety	<input type="checkbox"/> Operations
<input type="checkbox"/> Projects	<input type="checkbox"/> Security
	<input type="checkbox"/> Finance
	<input type="checkbox"/> Procurement
	<input type="checkbox"/> Other _____
First Name*	Last Name*
Title	Company
Telephone*	Mobile
Street Address	
City	Province
Postal Code	Country
Email*	
Preferred method of contact	
Feedback*	
Date Received	Receiver (Alamos Employee)

At minimum, items marked by \* must be completed to allow for follow-up by the Company.