

McPhillamys Gold Project

#12 Noise and vibration impacts

The McPhillamys Gold Project is designed to meet the very high standards set down by NSW Government legislation and environment protection laws.

Measuring and understanding the potential noise impacts

In order to understand the potential noise impacts of the project, independent noise specialists conducted baseline noise assessments around the project site and the proposed water supply pipeline.

The key focus for these assessments was to understand the potential impact on nearby residences in Kings Plains.

Noise modelling was then carried out to assess the potential noise impacts associated with the mine development at nearby residences.

The modelling starts with taking the baseline noise data (the existing noise levels in the area). Noise measures for site activities, plant and equipment, ground type, noise barriers, buildings and weather information are then added in to calculations that model different scenarios.

Mitigation measures

The McPhillamys Project Environmental Impact Statement identified a number of houses in Kings Plains which could experience some noise impacts during construction and operations.

As a result, changes were made to the project design, in order to reduce the noise impacts for neighbours.

Regis has been working with neighbours and landholders to agree on the best ways to manage noise impacts.

Individual plans are being developed with 20 property owners to mitigate the impacts.

The agreed mitigation measures will be paid for by Regis. Double glazing, insulation and air-conditioning are examples of ways that houses can be modified to lessen noise impacts.

Ongoing noise and vibration impacts

During construction and operations, every effort will be made to minimize noise impacts. Our approach to this will be guided by environment protection laws and standards will be set out in management plans well ahead of work commencing.

Design and layout of the site is an important part of noise management. The processing plant and mine infrastructure areas will be located away from residences and will also be screened by existing landforms.

Amenity bunds are another way to address noise and visual impacts. Amenity bunds are specially constructed embankments used to either screen a site from view, or reduce noise emissions.

Two amenity bunds will be constructed. These will form noise and visual barriers between the mine development and the Kings Plains settlement.

Noise suppression will be installed on major mobile equipment as well as on other machinery where required. Waste rock dumping will also consider noise impacts during construction and operations.

Monitoring noise

Regis will install a noise monitoring system to measure and report noise levels during construction and mining operations. This will enable proactive management of operations to ensure that the relevant noise criteria are met.

All mitigation measures will be set out in Noise Management Plans (NMP) which will be prepared for both the construction and operational phases of the project.

Vibration levels

There are a number of ways to limit vibrations from blasting at the site, including limiting the size of each blast.

No exceedances of air blast overpressure (the high energy impulse noise created by blasting) and ground vibration criteria are predicted to occur at nearby residences or heritage areas.

Understanding noise

Noise impacts can depend on a number of things, including:

- the actual noise level and frequency (eg high pitched or not);
- how it is perceived by the person affected; and
- weather conditions.

Some people have more sensitive hearing than others so it can vary from person to person. What one person considers audible or loud may not be the same as the next person.

Measuring noise

Noise is measured in decibels: the higher the decibel, the louder the noise. The chart below shows the level of decibels for common types of noise.

Where to go for more information

For more information on noise, how it is measured, managed and monitored, visit the NSW Environment Protection Authority (EPA) website:

<https://www.epa.nsw.gov.au/your-environment/noise>

How loud is that? Common sounds and noise levels

Below:

The table below shows some common sounds and their typical noise levels. Source: Table 2A Noise and Vibration Impact Assessment Report. Muller Acoustic Consulting. McPhillamys Gold Project EIS Appendix L.

140 dBA	Threshold of pain
130 dBA	Jet engine
120 dBA	Hydraulic hammer
110 dBA	Chainsaw
100 dBA	Industrial workshop
90 dBA	Lawnmower (operator position)
80 dBA	Heavy traffic (footpath)
70 dBA	Elevated speech
60 dBA	Typical conversation
40 dBA	Ambient suburban environment
30 dBA	Ambient rural environment
20 dBA	Inside bedroom—windows closed
0 dBA	Threshold of hearing

McPhillamys operations will generally be in this range for the properties closest to the mine.