

9.7 Amenity - Noise

9.7.1 EPA Objective

The ESD requires Cameco to address noise impacts as part of its assessment of the key environmental factor 'human health'. The EPA's objective with regards to human health is:

- To ensure that human health is not adversely affected.

9.7.2 Relevant Legislation and Policy

The Project is subject to the requirements of the Environmental Protection (Noise) Regulations 1997 (Noise Regulations). The assigned levels of acceptable noise exposure are specified under Regulation 8, according to the type of premises receiving the noise. The Noise Regulations define all premises, other than commercial or industrial premises, as 'noise sensitive premises'. As mining and processing at the Project would be a 24 hour per day operation, noise received at neighbouring noise sensitive premises from the mining and processing plant would need to comply with the assigned L_{A10} noise level of 35 dB(A) for the night period.

Additionally, the Noise Regulations require that noise received at noise sensitive premises be free of annoying characteristics including tonality, modulation and impulsiveness. If the annoying characteristic cannot be practically removed and noise received at the premises is deemed to contain an annoying characteristic, then an adjustment needs to be made to the calculated level of noise received at that premises by adding 5 dB(A) where tonality or modulation is present or adding 10 dB(A) where impulsiveness is present.

Noise emissions from mining equipment and processing plants are normally tonal in nature. Given the distance from the Project to the neighbouring noise sensitive premises, it is likely that the tonal nature of the noise received at these premises would be masked by the natural background noise level, and the +5 dB(A) penalty for a tonal component would not be applied. However, to be conservative it has been assumed that noise received at the neighbouring noise sensitive premises would contain a tonal characteristic and the 5 dB(A) penalty would be applied to the calculated level of noise received at a premises.

The EPA released Environmental Assessment Guideline No. 13 for consideration of environmental impacts from noise in September 2014 (EPA, 2014). This guideline outlines how the EPA considers the impacts from noise emissions. The EPA expects project proponents to:

- use best practice noise management, for all noise forms, to minimise impacts on human health and amenity;
- achieve compliance with the requirements of the Environmental Protection (Noise) Regulations 1997 or State Planning Policy 5.4 (SPP 5.4) Road and Rail Transport Noise and Freight Considerations in Land Use Planning where applicable, and other accepted standards; and
- address their contribution to cumulative noise emissions.

9.7.3 Studies and Investigations

An Environmental Noise Assessment was undertaken for BHP Billiton, and reviewed for Cameco's Project (Herring Storer Acoustics, 2011a; Appendix K1). The objectives of this study were to:

- Determine, by modelling, noise propagation from the mining operations.
- Assess the predicted noise levels received at the closest noise sensitive premises, for compliance with the Environmental Protection (Noise) Regulations 1997.
- If exceedances are predicted, investigate possible noise control options that will reduce noise emissions to achieve compliance with the regulations.

An assessment of noise along the transport route was also undertaken by the BHP Billiton and reviewed for Cameco's Project (Herring Storer Acoustics, 2011b; Appendix K2).

These studies indicated that due to the remoteness of the site, the potential noise impacts from the original project were negligible (Section 9.7.5). Review of the results for Cameco's Project indicated noise impacts from the amended Project were expected to be similar to those assessed for BHP Billiton. For this reason, noise modelling was not redone for Cameco's Project.

9.7.4 Existing Environment

The Project is located in a remote area on the Yeelirrie pastoral station. Surrounding pastoral leases include Ululla station, Yuono Downs, Kaluwiri, Yakabindie and Albion Downs (Figure 7-2).

The closest noise sensitive premises is the Yeelirrie homestead, located approximately 14 km south east of the proposed mine. Ululla homestead is located approximately 30 km to the north west of the proposed mine.

The proposed transport route for product from site is along the Albion Downs-Yeelirrie Road, then to the Port of Adelaide in South Australia via the Goldfields Highway and the Eyre Highway. In Western Australia the transport route would pass through Leonora, Menzies, Kalgoorlie, Kambalda, Norseman and Border Village. Transport of construction and mining equipment, workforce and major commodities is likely to be required from Port Hedland, Geraldton, Perth and Kalgoorlie.

9.7.5 Potential Impacts and Management

9.7.5.1 Impacts from Mining and Processing

The following section presents the results of the modelling of the BHP Billiton proposal as presented by Herring Storer Acoustics (2011a, 2011b). A review of the current Project indicates the results are expected to be similar.

At the Yeelirrie homestead, the noise received from mining and processing has been calculated to be 8 dB(A). If calculated noise levels were increased by 5 dB(A) to account for tonality, then the assessable noise level would be 13 dB(A); this complies with the assigned noise night-time L_{A10} level at sensitive premises of 35 dB(A).

Although not required to comply with the requirements of the Environmental Protection (Noise) Regulations 1997, noise received at the proposed accommodation camp (approximately 15 km south east of the mine) has been calculated at 8 dB(A), or 13 dB(A) if tonality is taken into account. This complies with the assigned night-time noise level of 35 dB(A).

Modelling of noise likely to be received at the Ululla homestead shows an assessable noise level of 0 dB(A).

As noise emissions will comply with the Noise Regulations, no additional noise controls will be required. Cameco will, however, minimise noise emissions from the Project by operating and maintaining equipment and machinery in accordance with manufacturers' requirements.

9.7.5.2 Impacts from Transport

An assessment of noise impacts from the anticipated number of vehicle movements was undertaken for the BHP Billiton proposal and reviewed for the Project.

Given the anticipated number of vehicle movements, it is expected that overall traffic movements on the Goldfields Highway could increase by around 9%. This is expected to result in an increase in the level of noise received at residences located along the transport route of 0.4 dB(A). This increase in noise would be considered negligible and therefore, noise emissions from vehicle movements to and from site are not required to be assessed in detail in accordance with SPP5.4.

Whilst no additional noise controls will be required to comply with SPP5.4, Cameco will require its transport contractors to regularly maintain and operate vehicles in accordance with manufacturers' requirements to minimise noise emissions.

9.7.5.3 Summary of Management Measures

General - Avoid and Minimise

- Cameco will minimise noise emissions from the Project by operating and maintaining equipment in accordance with manufactures requirements.
- Cameco will require its transport contractors to regularly maintain and operate vehicles in accordance with manufacturers requirements to minimise noise emissions.

9.7.6 Commitments

Cameco commits to;

- Complying with the Environmental Protection (Noise) Regulations 1997.

9.7.7 Outcomes

Taking into account the Project design and proposed management measures to be implemented, Cameco believes that the Proposal will meet the EPA's objective with regards to Amenity (Noise)