15 NOISE

15.1 INTRODUCTION

This chapter outlines potential noise issues associated with the construction and operation of the proposed western coal seam methane (CSM) water supply pipeline (the proposed pipeline). Due to minimal noise emissions associated with the operation of the pipeline along its route, any likely impacts will occur during the construction phase and will be temporary in nature. For this reason a qualitative noise assessment has been carried out.

15.2 METHODOLOGY OF ASSESSMENT

15.2.1 ENVIRONMENTAL PROTECTION (NOISE) POLICY 1997

The Environmental Protection (Noise) Policy 1997 (EPP (Noise)) provides guidance in achieving the object of the *Environmental Protection Act 1994* (EP Act) by identifying (Section 10) the environmental values to be enhanced or protected as follows:

a) The wellbeing of the community or a part of the community, including its social and economic amenity.

b) The wellbeing of an individual, including the individual's opportunity to have sleep, relaxation and conversation without unreasonable interference from intrusive noise.

Section 319 of the EP Act places a general environmental duty on the Wandoan Joint Venture (WJV) to ensure that it does not carry out any activity that causes, or is likely to cause, environmental harm unless the WJV takes all reasonable and practical measures to prevent or minimise the harm.

Section 11 of the EPP (Noise) policy also provides a numerical value to determine an acoustic quality objective as follows:

1. The "acoustic quality objective" is the objective of achieving an ambient level of L_{Aeq} 55 dBA or less for most of Queensland's population living in residential areas.
2. It is intended that the acoustic quality objective be achieved as part of progressively achieving the object of this policy over the long term.
3. It is not intended that, in achieving the acoustic quality objective, any part of the existing acoustic environment be allowed to significantly deteriorate.

For subsection (1), the ambient level in a residential area is measured over 24 hours as the long-term L_{Aeq} outside a dwelling in the area.

There are no specific limits or guidelines specified in the EPP (Noise) which relate to noise generated from construction activities. The Environmental Protection Regulation 1998 (EPA Regulation) provides that it is an offence to carry out building works on a building site in a way that makes or causes audible noise from the building work on a Sunday or a public holiday at any time, or on a Saturday or business day before 6:30 am or after 6:30 pm. Given the rural locality and distance of any sensitive receptors from the proposed pipeline's operational areas, it is expected that construction works will meet the general

environmental duty as outlined in section 319 of the EP Act and the provisions of the EPA Regulation.

To ensure best practice, management processes will be implemented throughout the construction phase to help ensure that the EPP (Noise) acoustic objective of $L_{Aeq,\ 24hr}$ 55 dBA is satisfied.

15.2.2 HOW THE STUDY WAS CONDUCTED AND INFORMATION OBTAINED

This assessment was conducted as a qualitative desktop assessment based on the information provided in Chapter 5 Project Construction and Chapter 6 Project Operations. As no specific criteria are outlined in the environmental protection documentation for noise emissions from construction activities, a qualitative assessment has been carried out for construction noise, based on typical pipeline construction activities.

Operational noise emissions will only be associated with the pump station, and again, only a qualitative assessment has been undertaken.

15.2.3 LIMITATIONS

Equipment selection and site layout relating to the pump station have not been established. Once this information is determined, the design of the acoustic enclosure for the pump station can be undertaken. The construction phase of the development is assumed to be based on typical pipeline construction methods and equipment.

15.3 EXISTING ENVIRONMENT

15.3.1 BACKGROUND DATA

A background noise survey has not been carried in the vicinity of any sensitive receivers (see 15.3.2 below) due to the minimal noise impacts from the operation of the proposed pipeline. It can be assumed that due to the very rural nature of the land through which the pipeline passes, intermittent and minimal high noise activities occur in the area. The noise levels are likely to be similar to those measured at Wodonga (shown in Table 15-1) as part of the noise survey carried out for the MLA assessment of this Project (described in more detail in Volume 1 of the EIS).

Table 15-1: Noise Logging Results from survey carried out near Wandoan

Time	N2 Wodonga	
	Average L_{eq}(dBA)	RBL (dBA)
Day	45	25
Evening	47	35
Night	38	19

15.3.2 SENSITIVE RECEPTORS

Sensitive receptors consist of locations at which specific noise levels from the Project will need to be have to be met, and can range from residential dwellings, commercial properties, industrial developments as well as community buildings and facilities. Sensitive receptors are sparsely located along the route of the proposed pipeline (refer Figure 15-1-V3.3). Note that figures/documents with numbering ending in V3.3, for example, refer to figures/documents contained in Volume 3, Book 3 of the EIS. The closest identified dwelling from aerial photography was located approximately 600 m (receptor W-8) away from the pipeline with the remaining receptors being separated by at least a 1 km buffer zone. No receptors were identified within 3 km of the pump station.

15.4 DESCRIPTION OF PROPOSED DEVELOPMENT

The proposed pipeline involves the construction and operation of a water pipeline from a reverse osmosis plant at Spring Gully to the Wandoan Coal Project mine infrastructure area (MIA). Typical machinery used for pipeline construction and installation will involve a wheel trencher and excavator, hydraulic rock breaking equipment (if hard rock is encountered), pipe delivery trucks, multiple tractors fitted with side cranes would be used to lift and move the pipe string over the trench and lower the pipe into position and, bedding sand deliveries. The construction period is estimated at approximately nine months with construction activities in the vicinity of sensitive receptors not expected to exceed seven working days.

The reverse osmosis plant will be the responsibility of the water supply proponent to construct and operate, while the operation of the inlet water pump station and pipeline and will be the responsibility of the WJV.

Pumping is expected to occur around 20 hr/day. The pumps will be powered by gas powered motors of between 375 kW and 600 kW.

Further details on the construction methodology are provided in Chapter 5 Project Construction.

15.5 POTENTIAL IMPACTS

15.5.1 CONSTRUCTION

The natural noise environment will be most impacted during the construction phase of the pipeline.

Table 15-2 outlines typical noise levels for the equipment to be used during the pipeline construction based on AS 2438–1981 Guide to noise control on construction, maintenance and demolition sites, as well as indicative noise levels. It should be noted that these are worst case noise levels with the equipment operating at full power, which is a conservative scenario.

Table 15-2: Construction equipment typical noise levels

Equipment to be used	Sound Power Level (dBA)	Sound Pressure Level (dBA)	
		600 m	1,000 m
Tracked dozer	118	54	50
Excavator	112	48	44
Dump truck	107	43	39
Pipelayer*	118	54	50
Generator (welding)	110	46	42
Rockbreaker	120	56	52
Compressor	95	31	27
Truck	107	43	39

* Pipelayer noise levels assumed to be same as for equivalent size tracked dozer, due to similar equipment layout, construction and operation

The expected impact on the sensitive receptors is to be minor and temporary with the construction activities within 1 km of each sensitive receptor not expected to exceed seven working days based on the construction schedule of the pipeline.

15.5.2 OPERATIONS

Noise emissions emitted from the operation of the proposed pipeline will be limited to those generated from the pump station at the beginning of the pipeline. The pipeline itself will be placed underground, which will eliminate any audible noise from water flow.

Other noise associated with the operation will be due to inspection and maintenance of the infrastructure at intermittent times through the life of the Project. This will concentrate predominantly around the pump station unless repairs are required to the pipeline itself where activities will occur in the access easement along the pipeline route. The potential noise associated with these activities is expected to be minimal.

15.6 MITIGATION MEASURES

15.6.1 CONSTRUCTION

A Noise Management Plan will be developed as part of the Project's Construction Management Plan. The plan will include:

- permission will be sought from the administering authority to conduct construction activities during all hours. However if noise monitoring indicates that Project construction activities will or are likely to cause audible noise at a sensitive receptor, relevant Project construction activities will not be undertaken during the following hours (as per Section 6W of Environmental Protection Regulation 1998):
  - on a Sunday or Public holiday at any time
  - on a Saturday or business day before 6:30 am or after 6:30 pm

- recommendations given in AS 2438 “Guide to noise control on construction, maintenance and demolition sites”, 1981 will be evaluated and implemented where applicable
- all machinery on site will be maintained regularly and in good working order to minimise noise generation
- a community consultation program will be undertaken.

15.6.2 OPERATIONS

Once detailed design of the pump station located at the Spring Gully Reverse Osmosis plant (beginning of the pipeline) has been carried out, a suitable acoustic enclosure will be designed to attenuate excessive noise emissions from the site based on equipment specifications and location of closest receiver. However due to the isolation of the pump station from sensitive receivers it is unlikely that significant attenuation measures will be required for the enclosure, as these will be driven by occupational health and safety requirements (L_{Aeq} 85 dBA at 1 m, based on Workplace Health and Safety Regulation 2008). No other noise sources will be audible from this development.

15.7 RESIDUAL IMPACTS

Residual noise impacts due to the pipeline development are likely to be very minimal, with only the immediate area surrounding the pump station having any potential change to the noise environment. Easement access along the pipeline route and maintenance required with pump station equipment are the only other potential noise impacts from the development during its operation. These activities are likely to only have small and short term noise emission associated with them.

15.8 REFERENCES

AS 2438 “Guide to noise control on construction, maintenance and demolition sites”, 1981.

Environmental Protection Act 1994, Queensland Parliamentary Counsel Government.

Environmental Protection (Noise) Policy 1997, Queensland Parliamentary Counsel Government.

Environmental Protection Regulation 1998, Queensland Parliamentary Counsel Government.

Workplace Health and Safety Regulation 2008, Queensland Government Department of Employment and Industrial Relation.