

# DURALIE COAL MINE

## Noise Management Plan

## DURALIE COAL MINE NOISE MANAGEMENT PLAN



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All	NMP-R06-A	Revised to address recommendations from Independent Environmental Audit 2017.	DP&E	09-05-2018
All	NMP-R07-A	Updates to reflect current status of DCM and mine closure planning.	EPA, DPIE	TBC

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# 1 INTRODUCTION

## 1.1 DURALIE COAL MINE

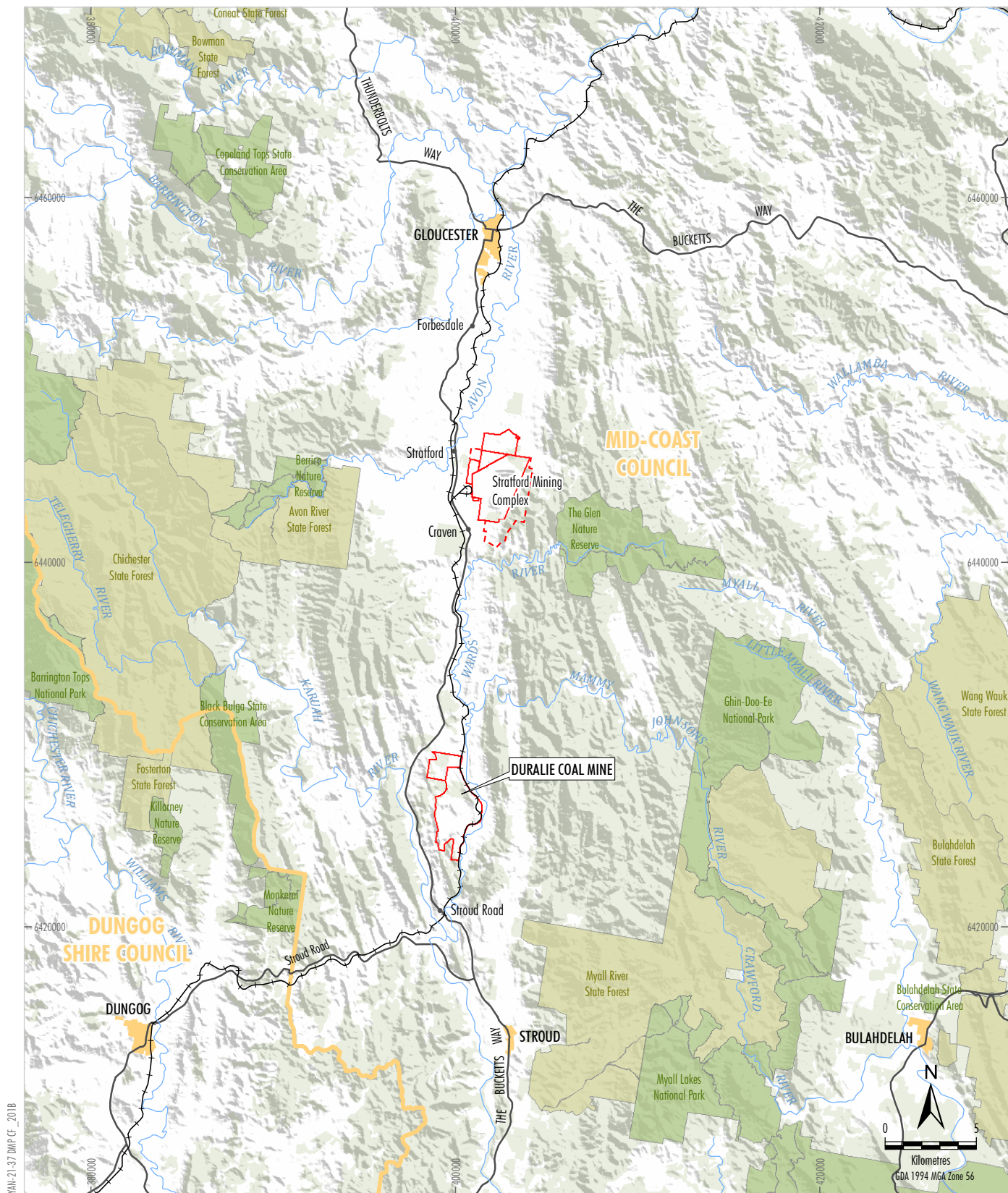
The Duralie Coal Mine (DCM) is an existing mine situated approximately 35 kilometres (km) south of Gloucester in the Gloucester Valley, New South Wales (NSW) (Figure 1). Duralie Coal Pty Ltd (DCPL) (a wholly owned subsidiary of Yancoal Australia Limited) owns and operates the DCM. The NSW Minister for Urban Affairs and Planning granted Development Consent for the DCM in August 1997 and coal production commenced in 2003.

The Duralie Extension Project (DEP) involves the extension and continuation of mine operations at the DCM. DCPL was granted approval for the DEP under section 75J of the NSW *Environmental Planning and Assessment Act, 1979* (EP&A Act) on 26 November 2010 (NSW Project Approval [08\_0203]) and under sections 130 and 133 of the Commonwealth *Environment Protection and Biodiversity Conservation Act, 1999* (EPBC Act) on 22 December 2010 (Commonwealth Approval [EPBC 2010/5396]). On 10 November 2011, the NSW Project Approval (08\_0203) was amended by Order of The Land and Environment Court of NSW. On 1 November 2012, the NSW Project Approval (08\_0203) was modified to reflect approval of the Duralie Rail Hours Modification. On the 5 December 2014, NSW Project Approval (08\_0203) was modified to reflect approval of the Duralie Open Pit Modification. A copy of the consolidated NSW Project Approval (08\_0203) and the Commonwealth Approval (EPBC 2010/5396) is available on the DCPL website (<http://www.duralie.coal.com.au>).

The main activities associated with the approved DEP (as modified) include:

- continued development of open cut mining operations at the DCM to facilitate a total run-of-mine (ROM) coal production rate of up to approximately 3 million tonnes per annum (Mtpa), including:
  - extension of the existing approved open pit in the Weismantel Seam to the north-west (i.e. Weismantel Extension open pit) within Mining Lease (ML) 1427 and ML 1646; and
  - open cut mining operations in the Clareval Seam (i.e. Clareval open pit) within ML 1427 and ML 1646;
- ongoing exploration activities within existing exploration tenements;
- progressive backfilling of the open pits with waste rock as mining develops, and continued and expanded placement of waste rock in out-of-pit waste rock emplacements;
- increased ROM coal rail transport movements on the North Coast Railway between the DCM and the Stratford Mining Complex (SMC) in line with increased ROM coal production;
- continued disposal of excess water through irrigation (including development of new irrigation areas within the existing ML 1427 and ML 1646) (refer below regarding status of irrigation at the DCM);
- construction of Auxiliary Dam No.2 to relative level (RL) 100 metres (m) to provide significant 2,900 megalitres of on-site storage capacity to manage excess water on-site;
- progressive development of dewatering bores, pumps, dams, irrigation infrastructure and other water management equipment and structures;
- development of new haul roads and internal roads;
- upgrade of existing surface facilities and supporting infrastructure as required in line with increased ROM coal production;
- continued development of soil stockpiles, laydown areas and gravel/borrow pits;
- establishment of permanent Coal Shaft Creek alignment adjacent to the existing DCM mining area;
- ongoing surface monitoring and rehabilitation; and
- other associated minor infrastructure, plant, equipment and activities.





- LEGEND**
- Mining Lease Boundary
  - NSW State Forest
  - National Park, Nature Reserve or State Conservation Area
  - Local Government Area Boundary
- Source: Geoscience Australia (2006);  
NSW Department of Planning & Environment (2017)


**DURALIE COAL**  
 Part of the Yancoal Australia Group

**DURALIE COAL MINE**  
 Regional Location

**Figure 1**

The activities associated with the approved Duralie Open Pit Modification include:

- an increase in the maximum depth of the Clareval open pit;
- a minor increase in the extent of surface development of the DCM of approximately 2.5 hectares, resulting from:
  - a reduction in low wall angles of the Clareval open pit and the removal of a pillar between the Clareval and Weismantel open pits to improve geotechnical stability; and
  - associated relocation of the up-catchment diversion to the west of the Clareval open pit;
- revision of mining sequence (i.e. progression of mining the Clareval and Weismantel open pits); and
- an increase in height of the waste rock emplacement (i.e. the backfilled open pit) from approximately 110 m Australian Height Datum (AHD) to approximately 135 m AHD.

The general arrangement of the DCM, showing modifications, is provided in Figure 2.

### ***Current Status of the DCM***

Condition 5, Schedule 2 of Project Approval (08\_0203) authorises mining operations to be carried at the DCM until 31 December 2021.

Operations at the DCM now reflect the transition towards mine closure:

- **Clareval Open Pit:** mining of the Clareval Open Pit has now been completed, and dewatering of the pit has ceased. Partial backfilling with waste rock mined from the Weismantel Open Pit has commenced, along with shaping of the pit area to its final landform design. Mining of the Clareval Open Pit was finalised to a shallower depth than the maximum approved depth as modelled in 2014 DCM Open Pit Modification.
- **Weismantel Open Pit:** mining of the Weismantel Open Pit will continue until 31 December 2021, however, will also not occur to the maximum approved depth as modelled in 2014 DCM Open Pit Modification. Progressive backfilling of completed areas of the Weismantel Open Pit has been undertaken.
- **DCM Water Management System Changes:**
  - Following the cessation of mining of the Clareval Open Pit (now final void) and the Clareval void becoming available as a water storage, Weismantel Open Pit dewatering is now preferentially transferred to the Clareval void and not stored within the Main Water Dam. As a result, all irrigation activities for the purpose of reducing the total site water inventory at the DCM have now ceased and the DCM's Irrigation Area irrigation system has been decommissioned and removed.
  - Decommissioning of other redundant water management structures has also commenced. Consistent with the approved DCM final landform design, Auxiliary Dam No. 1 has been dewatered, decommissioned and rehabilitated.
- **Vegetation Clearance:** No new disturbance areas (within approved surface disturbance areas) are proposed.
- **Closure Planning:** The DCM's Mine Closure Planning Program includes technical assessments and works that will be undertaken and implemented as the DCM progresses towards and commences the mine closure phase.
  - DCPL is progressively completing components of the Mine Closure Planning Program, with the various technical assessments currently being completed based on the refined final landform design. The outcomes from these reviews and Mine Closure Planning Program technical assessments and works will be incorporated into a DCM Closure Plan.







### ***DCM Activities after Cessation of Mining Operations***

On 31 December 2021, mining operations and ROM coal rail transport from the DCM will cease. As a result, noise generated from mining activities and ROM coal rail transport will also cease. DCPL will then undertake bulk rehabilitation earthworks to rehabilitate the site in accordance with the DCM's Rehabilitation Management Plan. These earthworks may involve some blasting activities to achieve the final landform design and geotechnical safety requirements. These earthworks are anticipated to occur during 2022 and 2023. Once bulk rehabilitation earthworks are complete, blasting activities at the DCM will cease; all major fleet will be removed from site and the mine's workforce reduced to support post-closure monitoring and maintenance activities.

After the cessation of key noise generating activities (i.e. mining operations, rail movements and bulk rehabilitation earthworks), the requirement for noise controls, management measures and noise monitoring would cease and the requirement for this Noise Management Plan would become redundant as the potential impact pathway no longer exists.

Following the completion of bulk rehabilitation earthworks, DCPL would seek the NSW Department of Planning, Industry and Environment's (DPIE's) agreement and approval of the redundancy of this Noise Management Plan and associated conditions in the Project Approval.

## **1.2 PURPOSE AND SCOPE**

This Noise Management Plan (NMP) has been prepared by DCPL in accordance with Condition 7, Schedule 3 of Project Approval (08\_0203).

This revision of the NMP has been prepared by DCPL to:

- describe the current status of operations at the DCM and anticipated site activities during the mine closure phase;
- describe changes to key noise generating activities and noise management at the DCM that have occurred as a result of the transition towards mine closure or are anticipated to occur following the cessation of mining operations and into the mine closure phase; and
- include administrative updates to contemporise the plan.

## **1.3 STRUCTURE OF THE NMP**

The remainder of the NMP is structured as follows:

Section 2:	Outlines the statutory requirements applicable to the NMP.
Section 3:	Describes key noise generating activities.
Section 4:	Details the noise criteria and performance indicators that will be used to assess the DCM.
Section 5:	Provides detailed baseline data.
Section 6:	Describes noise management measures.
Section 7:	Describes the noise monitoring program.
Section 8:	Provides a Contingency Plan to manage any unpredicted impacts and their consequences.
Section 9:	Describes the annual review and improvement of environmental performance process.
Section 10:	Describes the management and reporting of incidents, complaints, non-compliances and exceedances.
Section 11:	Lists the references cited.

## 2 STATUTORY REQUIREMENTS

DCPL's statutory obligations are contained in:

- (i) the conditions of the NSW Project Approval (08\_0203) (as modified);
- (ii) the conditions of the Commonwealth Approval (EPBC 2010/5396);
- (iii) licences and permits, including conditions attached to mining leases (Section 2.2); and
- (iv) other relevant legislation (as provided in Section 2.3 of this document).

Obligations relevant to this NMP are described below.

### 2.1 EP&A ACT PROJECT APPROVAL

The conditions of NSW Project Approval (08\_0203) relevant to the NMP are described below in Section 2.1.1. A comprehensive list of all conditions in NSW Project Approval (08\_0203) relevant to noise management, and a description of where they are referenced in this NMP, is provided in Appendix A.

#### 2.1.1 Noise Management Plan Requirements

Condition 7, Schedule 3 of NSW Project Approval (08\_0203) requires the preparation of a NMP for the DCM. The requirements of Condition 7 and where they are addressed in this NMP are provided in Table 1.

**Table 1**  
**Noise Management Plan Requirements**

Noise Management Plan Requirements	NMP Section
7. <i>The Proponent shall prepare and implement a Noise Management Plan for the project to the satisfaction of the Secretary. This plan must:</i>	Section 7
<i>(a) be prepared in consultation with EPA, and submitted to the Secretary for approval within 3 months of the date of this approval, unless otherwise agreed by the Secretary;</i>	Section 2.1.3
<i>(b) describe the noise mitigation measures that would be implemented to ensure compliance with conditions 2-6 of Schedule 3 of this approval, including:</i>	Section 6
<ul style="list-style-type: none"> <li>• <i>a real-time noise management system that employs both reactive and proactive mitigation measures;</i></li> </ul>	Section 7.3
<ul style="list-style-type: none"> <li>• <i>a detailed program for the replacement or attenuation of existing plant on site; and</i></li> </ul>	Section 6.2.2
<ul style="list-style-type: none"> <li>• <i>the specific measures that would be implemented to minimise the rail noise impacts of the project, and in particular:</i> <ul style="list-style-type: none"> <li>– <i>the braking and train horn impacts of the project; and</i></li> <li>– <i>the use of the shuttle train during the approved night-time hours; and</i></li> </ul> </li> </ul>	Section 6.2.3
<ul style="list-style-type: none"> <li>• <i>the construction of earth bund walls around evaporative fan units located on the waste rock emplacement area; and:</i></li> </ul>	Section 6.2.2
<i>(c) include a noise monitoring program that:</i>	
<ul style="list-style-type: none"> <li>• <i>uses a combination of real-time and supplementary attended monitoring measures to evaluate the performance of the project;</i></li> </ul>	Sections 7.2 and 7.3
<ul style="list-style-type: none"> <li>• <i>includes a program to evaluate the effectiveness of the noise mitigation measures referred to in 7(b) above;</i></li> </ul>	Section 7.7
<ul style="list-style-type: none"> <li>• <i>includes a protocol for determining exceedances of the relevant conditions of this approval; and</i></li> </ul>	Section 7.3.4
<ul style="list-style-type: none"> <li>• <i>includes a program to monitor the actual sound power levels of the plant on site, compare it with the benchmark levels used in the EA, and evaluate the effectiveness of any attenuation.</i></li> </ul>	Section 7.5
<i>Note: The effectiveness of the Noise Management Plan is to be reviewed and audited in accordance with the requirements in Schedule 5. Following this review and audit, the plan is to be revised to ensure it remains up to date (see Condition 4 of Schedule 5).</i>	Section 9.2

## 2.1.2 Management Plan Requirements

Condition 2, Schedule 5 of NSW Project Approval (08\_0203) outlines the requirements for management plans, which are applicable to the preparation of the NMP. Table 2 presents these requirements and indicates where they are addressed within this NMP.

**Table 2**  
**Management Plan Requirements**

Management Plan Requirements	NMP Section
<p>2. <i>The Proponent shall ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include:</i></p> <p>a) <i>detailed baseline data;</i></p> <p>b) <i>a description of:</i></p> <ul style="list-style-type: none"> <li><i>the relevant statutory requirements (including any relevant approval, licence or lease conditions);</i></li> <li><i>any relevant limits or performance measures/criteria;</i></li> <li><i>the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures;</i></li> </ul> <p>c) <i>a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;</i></p> <p>d) <i>a program to monitor and report on the:</i></p> <ul style="list-style-type: none"> <li><i>impacts and environmental performance of the project;</i></li> <li><i>effectiveness of any management measures (see (c) above);</i></li> </ul> <p>e) <i>a contingency plan to manage any unpredicted impacts and their consequences;</i></p> <p>f) <i>a program to investigate and implement ways to improve the environmental performance of the project over time;</i></p> <p>g) <i>a protocol for managing and reporting any:</i></p> <ul style="list-style-type: none"> <li><i>incidents;</i></li> <li><i>complaints;</i></li> <li><i>non-compliances with statutory requirements; and</i></li> <li><i>exceedences of the impact assessment criteria and/or performance criteria; and</i></li> </ul> <p>h) <i>a protocol for periodic review of the plan.</i></p> <p><i>Note: The Secretary may waive some of these requirements if they are unnecessary or unwarranted.</i></p>	<p>Section 5</p> <p>Section 2 and Appendix A</p> <p>Section 4 and Appendix A</p> <p>Section 6</p> <p>Section 7</p> <p>Section 8</p> <p>Section 9</p> <p>Section 10</p> <p>Section 9</p>

## 2.1.3 Consultation

In accordance with Condition 7(a), Schedule 3 of NSW Project Approval (08\_0203), the NMP is to be prepared in consultation with the NSW Environment Protection Authority (EPA). This revised NMP has been provided to the EPA for comment. The EPA requested the NMP include a statement that consultation will be undertaken with the EPA prior to the rationalisation of noise monitoring during the mine closure phase and that DCPL will submit a variation to EPL 11701 to reflect any agreed changes to the monitoring program. The EPA's correspondence is included in the Record of Consultation provided in Appendix B. DCPL has included this commitment in Section 7 of this NMP. The revision status of this NMP is provided on the title page of this plan.

## 2.2 LICENCES, PERMITS AND LEASES

In addition to the NSW Project Approval (08\_0203) and Commonwealth Approval (EPBC 2010/5396), all activities at DCM will be conducted in accordance with a number of licences, permits and leases which have been issued for the DCM.

Key licences, permits and leases pertaining to the DCM include:



- ML 1427 issued under Part 5 of the NSW *Mining Act, 1992* and approved by the NSW Minister for Mineral Resources in April 1998.
- ML 1646 issued under Part 5 of the NSW *Mining Act, 1992* and approved by the NSW Minister for Primary Industries in January 2011.
- Environment Protection Licence (EPL) 11701 issued under Part 3 of the NSW *Protection of the Environment Operations Act, 1997* (PoEO Act) by the EPA in September 2002 (as modified by subsequent licence variations).
- Mining Operations Plan (or Rehabilitation Management Plan) approved by the NSW Resources Regulator.
- Mining and occupational health and safety related approvals granted by NSW Resources Regulator and SafeWork NSW.
- Water Access Licence (WAL) 41518 for extraction of groundwater from the DCM open cut pits issued by the DPIE-Water (originally granted 22 September 2002 under former Groundwater Licence 20BL168404).

## **2.3 OTHER LEGISLATION**

DCPL will operate the DCM consistent with NSW Project Approval (08\_0203), Commonwealth Approval (EPBC 2010/5396), the relevant leases, licences and permits and any other legislation that is applicable to an approved Part 3A Project under the EP&A Act.

Relevant legislation that may be applicable to the DCM is described in the DCM Environmental Management Strategy.

## **2.4 RAIL TRANSPORT**

Trains transporting coal from the DCM will travel on the North Coast Railway (Figure 1), which is controlled and operated by the Australian Rail Track Corporation (ARTC). Noise emissions from the railway are regulated via the ARTC's EPL (No. 3142).

DCPL notes that the ARTC's EPL 3142 received a variation which amended conditions relating to the operation of rolling stock. Previously only the rail infrastructure operator (ARTC) was required to hold an EPL. The variation requires the Rolling Stock Operators to also hold an EPL for the operation of rolling stock. Accordingly, noise emissions from rolling stock will also be regulated under Pacific National Pty Ltd's EPL 21364.

### 3 KEY NOISE GENERATING ACTIVITIES

#### 3.1 CONSTRUCTION

Construction activities associated with the approved DCM have been completed. Construction noise from the Duralie Extension Project was associated with the mobile equipment required for the development of new haul and internal roads and earth bunds.

#### 3.2 MINE OPERATION

The key noise generating activities/equipment from the operation of the DCM is as follows:

- drills;
- blasting;
- excavators;
- haul trucks;
- dozers;
- mobile fleet;
- evaporative fan installations
- rotary breaker; and
- rail loading facilities.

The approved hours of operation for these activities are shown in Table 3.

**Table 3**  
**Hours of Operation for Mining Phases**

Phase	Hours of operation
Blasting	9am – 5pm <sup>1</sup>
Mining operations	24 hours
Evaporative fan operations	24 hours
Dispatching shuttle trains	6am – 10pm <sup>2</sup>
Receiving shuttle trains	6am – midnight <sup>2</sup>

<sup>1</sup> No blasting is allowed on Sundays, public holidays, or at any other time without the written approval of the Secretary, in accordance with Condition 9, Schedule 3 of the NSW Project Approval.

<sup>2</sup> In accordance with Condition 8, Schedule 2 of the NSW Project Approval.

<sup>3</sup> Although the above operations are approved for each of their individual applicable periods, the activities will only be utilised as required during the specified periods.

In accordance with Condition 5, Schedule 2 of NSW Project Approval (08\_0203) mining operations at the DCM will cease on 31 December 2021. As defined in NSW Project Approval (08\_0203), mining operations includes the removal of overburden and the extraction, processing, handling, storage and transportation of coal.

Following the cessation of mining operations on 31 December 2021, activities at the DCM will primarily involve bulk reshaping, rehabilitation activities and post-closure monitoring and maintenance activities. A description of the proposed bulk rehabilitation earthwork activities is provided in Section 3.4.

### 3.3 RAIL TRANSPORT

The DCM is approved to produce up to 3 Mtpa of ROM coal that is transported by a dedicated 2,500 tonne (t) shuttle train to the SMC located some 20 km to the north. The approved hours of operation of the Duralie shuttle train are between 6.00 am and midnight (i.e. 18 hours). In exceptional circumstances, the Duralie shuttle train may operate on the North Coast Railway between midnight and 1.00 am in accordance with Condition 8, Schedule 2 of the NSW Project Approval (08\_0203). Within 12 hours of operating shuttle trains on the North Coast railway between midnight and 1 am in exceptional circumstances, DCPL will provide a detailed explanation of the exceptional circumstances on the DCPL website in accordance with Condition 8A, Schedule 2 of the NSW Project Approval.

Up to 10 train movements per day will be directly associated with DCM operations. These trains will generate pass-by noise at receivers in close proximity to the railway line.

As stated in Section 2.4, trains transporting coal from the DCM will travel on the North Coal Railway which is controlled and operated by the ARTC via EPL 3142). Noise limit requirements for the locomotives are regulated under the relevant Rolling Stock Operator, Pacific National Pty Ltd, via EPL 21364.

In accordance with Condition 5, Schedule 3 of the NSW Project Approval, the DCM will continue to only use locomotives that are approved to operate on the NSW rail network, in accordance with the noise limits in the ARTC's EPL (No. 3142) (Section 4.1.3).

As described in Sections 1.1 and 3.2, ROM coal rail transport from the DCM will cease on 31 December 2021.

### 3.4 BULK REHABILITATION EARTHWORKS

Following the completion of mining operations on 31 December 2021, DCPL will undertake bulk rehabilitation earthworks to facilitate rehabilitation of the site and achieve the final landform design.

These activities would involve infrastructure decommissioning and demolition, bulk waste rock rehandle, final landform shaping (which may include infrequent blasting to achieve the final landform design and geotechnical safety requirements), soil movements from soil stockpiles and placement on rehabilitation areas and revegetation activities.

Key noise generating activities/equipment associated with this phase include:

- infrastructure decommissioning and demolition activities;
- bulk waste rock rehandling including use of excavators, trucks and dozers;
- final landform shaping activities (which may include infrequent blasting to achieve the final landform design and geotechnical safety requirements) including use of excavators and dozers; and
- landform rehabilitation activities including soil movements from soil stockpiles and placement on rehabilitation areas and revegetation activities.

Once bulk rehabilitation earthworks are complete, the key noise generating activities and blasting activities at the DCM will cease; all major fleet will be removed from site and the mine's workforce reduced to support post-closure monitoring and maintenance activities.



## **4 NOISE CRITERIA AND PERFORMANCE INDICATORS**

### **4.1 PROJECT APPROVAL CONDITIONS**

#### **4.1.1 Noise Criteria and Noise Acquisition Criteria**

Noise criteria and noise acquisition criteria are provided in Conditions 2 and 3, Schedule 3 of the NSW Project Approval (08\_0203), respectively (Appendix A). A copy of NSW Project Approval (08\_0203) is available on the DCM website (<http://www.duraliecoal.com.au>).

Condition 2(b), Schedule 4 of the NSW Project Approval (08\_0203) describes the requirement for notifying landowners that they have the right to request acquisition of their land subject to Condition 3, Schedule 3 of the NSW Project Approval (08\_0203).

#### **4.1.2 Additional Noise Mitigation Measures**

In addition to the noise criteria and noise acquisition criteria from Condition 4, Schedule 3 of the NSW Project Approval (08\_0203) lists the additional noise mitigation requirements (Appendix A).

Condition 1(b), Schedule 4 of the NSW Project Approval (08\_0203) describes the requirement for notifying the owners of land listed in Conditions 4(b) and 4(c), Schedule 3 of the NSW Project Approval that they are entitled to ask for additional noise mitigation measures to be implemented at their residence in accordance with Condition 4, Schedule 3 of the NSW Project Approval (08\_0203).

In addition, Condition 1A, Schedule 4 of the NSW Project Approval (08\_0203) describes the requirement for a Consultation Plan for the implementation of additional noise mitigation measures at the residences listed in Condition 4(c), Schedule 3 of the NSW Project Approval (08\_0203).

#### **4.1.3 Rail Noise**

Condition 5, Schedule 3 of the NSW Project Approval (08\_0203) details the requirements to manage rail noise (Appendix A).

#### **4.1.4 Operating Conditions**

The noise-related operating conditions required under the NSW Project Approval (08\_0203) are detailed in Condition 6, Schedule 3 (Appendix A).

### **4.2 ENVIRONMENT PROTECTION LICENCE CONDITIONS**

#### **4.2.1 Mine Operations**

The operational noise limits for the DCM are contained in DCPL's EPL 11701 and are consistent with the NSW Project Approval (08\_0203) (refer Section 4.1.1).

#### **4.2.2 Rail Transport**

Condition 5, Schedule 3 of the NSW Project Approval (08\_0203) makes specific reference to locomotive noise limits in the ARTC's EPL (Section 4.1.3).

The ARTC's EPL (No. 3142) includes requirements for the control and minimisation of noise impacts from the operation of rolling stock and management of rail infrastructure. ARTC's requirements include minimisation of noise impacts from track maintenance and construction activities, from locomotive idling and horn usage and from braking, bunching and stretching of rolling stock.

As described in Section 2.4, Rolling Stock Operators are now also required to hold an EPL for reducing noise (and air quality) impacts from the operation of rolling stock on any Licenced Rail Network. Accordingly, noise limit requirements for locomotives are now regulated under Pacific National Pty Ltd's EPL 21364 in addition to requirements for noise minimisation from rolling stock. Pacific National Pty Ltd's EPL 21364 requirements relevant to noise limits for locomotives are outlined below.

### L3.5 Limits for Noise

<b>Operating Condition</b>	<b>Location of Measurement</b>	<b>Noise Limit</b>
<i>Low idle with air compressor, all cooling fans and air conditioning operating at maximum load occurring at low idle</i>	<i>Stationary 15 metre contour, except end positions (front and rear)</i>	<i>70 dB LAFMax, 30 seconds 85dB LZFMax, 30 seconds (Microphone height: 1.5 Metres Above)</i>
<i>All other throttle settings under self load with air compressor, all cooling fans and air conditioning operating</i>	<i>Stationary 15 metre contour, except end positions (front and rear)</i>	<i>87 dB LAFMax, 30 seconds 95 dB LZFMax, 30 seconds (Microphone height: 1.5 Metres Above)</i>

Pacific National Pty Ltd's EPL 21364 also includes tonality limits and requirements for noise testing methods.

## 4.3 RAIL MITIGATION MEASURES

A notification requirement with respect to an 85 dBA maximum pass-by rail traffic noise criteria is set out in Condition 2(c), Schedule 4 of the NSW Project Approval (08\_0203) (Appendix A). Additionally, a requirement for mitigation is set out in Condition 4(e), Schedule 3 upon receiving a written request from the owner of the relevant residence. This criterion is generally consistent with the 85 A-weighted decibels (dBA) maximum pass-by noise (95th percentile) rail noise assessment trigger levels described in the Rail Infrastructure Noise Guideline (RING) (EPA, 2013).

The maximum pass-by noise trigger level does not comprise a compliance limit for the DCM in either the NSW Project Approval (08\_0203) or EPL 11701. However, for the purposes of satisfying the requirements of Condition 4(e), Schedule 3 of the NSW Project Approval, in accordance with the RING DCPL will apply a noise goal criteria of  $L_{Amax}$  85 dBA (95<sup>th</sup> percentile [or 5% exceedance]) and apply façade correction (i.e. assessment/calculation would be undertaken at 1 m in front of the relevant building) to determine any relevant notification requirements.

Additional cumulative rail noise assessment trigger levels for rail traffic-generating developments are described in Appendix 2 of the RING for daytime [ $L_{Aeq,15hour}$  65 dB(A)] and night-time [ $L_{Aeq,9hour}$  60 dB(A)], however, these do not comprise a compliance limit for the DCM in either the NSW Project Approval (08\_0203) or EPL 11701.

## **5 BASELINE DATA**

### **5.1 BACKGROUND NOISE**

A detailed description of background noise is provided in the *Duralie Open Pit Modification Noise and Blasting Impact Assessment* (SLR, 2014) which is available on the DCPL website ([www.duraliecoal.com.au](http://www.duraliecoal.com.au)).

### **5.2 METEOROLOGICAL MONITORING**

A detailed description of baseline meteorology is provided in the *Duralie Open Pit Modification Noise and Blasting Impact Assessment* (SLR, 2014) which is available on the DCPL website ([www.duraliecoal.com.au](http://www.duraliecoal.com.au)).

DCPL has installed appropriate equipment to measure both weather conditions and temperature lapse rates in accordance with Condition 24, Schedule 3 of the NSW Project Approval (08\_0203). The DCM weather station is configured to continuously record meteorological parameters such as temperature, wind speed, wind direction, sigma-theta, and rainfall. In accordance with Condition M5.1 of EPL 11701, temperature lapse rates will be continuously measured over a minimum vertical height interval of 50 m. This will be achieved through the installation of two 10 m towers, located in positions with an elevation differential greater than 50 m. This equipment has been supplied and installed by a suitably qualified supplier.

### **5.3 RAIL NOISE MONITORING**

Field measured intrusive and maximum (i.e. average and 5% exceedance noise levels) for the existing passenger, general freight, DCM and SMC train pass-bys at 12 m offset from the North Coast Railway are provided in the *Duralie Extension Project Noise and Blasting Impact Assessment* (Heggies, 2010) which is available on the DCPL website ([www.duraliecoal.com.au](http://www.duraliecoal.com.au)).



## 6 NOISE MANAGEMENT MEASURES

DCPL will continue to implement noise controls to reduce noise from any equipment or vehicles used during rehabilitation of the DCM to attenuate noise emissions.

Following the cessation of key noise generating activities associated with bulk rehabilitation earthworks, the requirements for noise controls and mitigation measures would become redundant as the potential impact pathway would no longer exist. DCPL will, at that stage, seek the DPIE's agreement and approval of the redundancy of this NMP and associated conditions in the Project Approval.

DCPL will continue to implement measures to ensure noise from the DCM is managed to approved levels:

- ensuring best management practices are implemented and reviewed;
- implementing noise controls to reduce noise from the source and attenuate noise transmission; and
- if necessary, implementing measures to control noise at receivers following a review of monitoring data.

The effectiveness of noise management measures at the DCM will be assessed through real-time and attended noise monitoring (refer to Section 7 of this NMP).

### 6.1 BEST MANAGEMENT PRACTICE

The following best practice noise management measures will continue to be implemented at the DCM (DCPL, 2007):

- An awareness and understanding of noise issues will be included in site inductions for all staff, contractors and visitors to the DCM.
- An awareness of exceedance of noise criteria at the real time noise monitor will be included in pre-shift meeting to help reduce occurrence of noise criteria exceedances at private residences.
- The use of significant noise generating equipment simultaneously will be avoided wherever possible.
- The noisiest activities will be scheduled where practicable to the least sensitive times of the day.
- Weather conditions will be monitored (as per Section 7.4) and where adverse conditions are experienced or predicted, operational changes will be made to avoid or reduce noise impacts.
- All machinery and plant used on site, as well as conveyor belt drives, dedicated locomotives and rolling stock, will be maintained regularly to minimise noise generation<sup>1</sup>.
- Train horns will not be permitted as a means of communication by the drivers of trains during coal loading activities.
- Train Horns are to be sounded briefly under the DSN 60/14 directive issued by Pacific National and adopted by the ARTC on the 22 September 2014. The sounding of the horn is part of the crossing safety procedure but the "Horn type and duration of use will still be at the driver's discretion for any perceived risks".
- Waste rock will be strategically placed to provide acoustic barriers, wherever practicable.

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<sup>1</sup> This will be implemented in accordance with Schedule 2, Condition 13 of the DCM Project Approval, which relates to the operation of plant and equipment.

- The volume of reversing sirens and start-up alarms will be reduced to the minimum practicable level (while still complying with coal mine safety regulations) and the least intrusive reversing alarms will be used.
- Low noise mobile and fixed plant equipment will be used where practically achievable.
- Noise monitoring will include a combination of real-time and attended monitoring of mine-generated noise, as well as a program to monitor the SWLs of the plant on site.
- Operation of a meteorological station to aid noise mitigation measures and the identification of noise enhancing conditions will be continued (refer to Section 7.4).
- An awareness of industry developments will be maintained in relation to noise mitigation engineering for individual plant items in order to assess inherent cost and practicality.
- An awareness of industry developments will be maintained in relation to predictive noise mitigation management.
- In addition to the measures above, the DCM shuttle train wagons and locomotives have been replaced and DCPL has implemented contractual arrangements with the Train Operator regarding locomotive noise performance (Section 6.2.3).

## **6.2 SOURCE AND TRANSMISSION NOISE CONTROLS**

### **6.2.1 Implemented Mitigation Measures for Mining Operations**

The following measures to control at-source noise have been implemented at the DCM (DCPL, 2007):

- Utilisation of low noise mobile equipment and fixed plant where practically and economically achievable.
- Placing waste materials to the east of the open pit in order to provide an acoustic barrier.
- Maintaining equipment at or below manufacturer's acoustic specifications.
- Positioning the primary crushing station within an earthen cutting.
- Orientation of the bay opening of the heavy vehicle maintenance facility away from the nearest receivers.
- Directing trucks with tray body exhausts to lower their trays before moving off when tipping on the waste dump at night.
- Directing the ROM loader to reverse to the west from the bin and away from receivers along Johnsons Creek Road to minimise directional noise emissions (e.g. reversing alarm, engine noise).

### **6.2.2 Additional Mitigation Measures for Mining Operations**

DCPL has implemented reasonable and feasible on-site noise controls at the DCM, including the attenuation of mobile plant (e.g. for haul trucks). For the Modification, DCPL would also construct earth bund walls up to 10 m above ground elevation on the southern and western sides of the evaporator units operating on the waste rock emplacement, and newer model evaporator units would be attenuated. The noise management measures described above were included in the noise modelling conducted for the Modification (Appendix A of the *Duralie Open Pit modification Environmental Assessment*).

### **Additional Noise Management Measures**

The DEP Statement of Commitments includes noise management measures additional to those described above. The noise modelling conducted for the Modification did not include these additional noise management measures and, notwithstanding, a reduction in approved noise levels was predicted for the Modification. The maximum predicted operational noise levels presented in Table 4-1 (of the *Duralie Open Pit modification Environmental Assessment*) demonstrate these additional noise management measures are no longer required and, therefore, are not proposed to be adopted for the remainder of the DCM mine life. In particular, this is because mobile plant operated approximately 60 m deeper in the Clareval open pit up in comparison to the DEP noise modelling scenario (Year 5 of the DEP) that typically resulted in maximum predicted noise levels at surrounding residences. The depth of the open pit attenuates noise from this mobile plant (e.g. excavators, dozers and haul trucks) in comparison to the DEP noise model predictions. The existing real-time noise monitoring, investigation triggers and associated management measures described in this NMP were continued for the Modification to achieve compliance with Project Approval noise limits.

As shown in Section 7.5, the operational mobile fleet at the DCM was reduced from 2016 to 2019. Additionally, all un-attenuated CAT789 haul trucks would be removed from service.

#### **6.2.3 Duralie Shuttle Train Operations**

Coal transport from the DCM will cease after 31 December 2021 and as such the management measures to minimise noise from rail shuttles will no longer be required. This section outlines a range of measures that DCPL and the rail contractor will continue to employ until ROM coal rail transport ceases, in order to minimise noise generation from the shuttle train (i.e. at the source).

With respect to mitigating noise from rail traffic-generating developments, the RING (Appendix 2) indicates:

*For a traffic-generating development like a coal mine, the proponent would not have control over the public rail infrastructure. Consequently they would have limited opportunities to implement mitigation, such as noise barriers. In such cases, control of noise and vibration at the source is the most effective means of mitigation....*

Section 3.5.1.1 of the RING also indicates that keeping rail vehicles well maintained is important and this should be given high priority in any mitigation strategy. The RING also indicates that other sources that should be given high priority are those with annoying characteristics, including brake squeal. In addition, the RING advocates scheduling noisy operations at the least sensitive times, employing 'quiet' practices when operating equipment, and educating staff on the need to avoid unnecessary noise.

#### **GL Class Locomotives (or Equivalent)**

DCPL requires that the locomotives provided by the Train Operator be GL Class (or equivalent noise performance), and that the Train Operator only uses locomotives on the shuttle that are approved to operate on the NSW rail network in accordance with the noise limits in the ARTC's EPL (No. 3142) as per Condition 5, Schedule 3 of the NSW Project Approval (08\_0203).

As described in Sections 2.4 and 3.3, noise emissions from locomotives and rolling stock are now regulated under Pacific National Pty Ltd's (the Train Operator's) EPL 21364. Accordingly, Pacific National Pty Ltd's EPL 21364 requires that only locomotives that are in a class of locomotive listed on the Locomotive Class Register on the EPA's website can operate on a Licensed Rail Network.



***Minimisation of Duralie Shuttle Train Operations during the Night***

The approved hours of operation of the Duralie shuttle train are between 6.00 am and midnight, and in exceptional circumstances, the Duralie shuttle train may operate on the North Coast Railway between midnight and 1.00 am in accordance with Condition 8, Schedule 2 of the NSW Project Approval. As required by Condition 8A, Schedule 2 of the NSW Project Approval, within 12 hours of operating shuttle trains on the North Coast railway between midnight and 1am in exceptional circumstances, DCPL will provide a detailed explanation of the exceptional circumstances on the DCPL website.

DCPL will only use the hours necessary to transport ROM coal from the DCM to the SMC.

To minimise rail movements during the night-time (10.00 pm to 7.00 am) DCPL will preferentially use daytime and evening hours to transport ROM coal from the DCM to the SMC. It is noted that under the RING the first hour of approved operations (i.e. between 6.00 am to 7.00 am) is defined as night-time, however, DCPL will preferentially dispatch trains from the DCM during 6.00 am to 7.00 am in order to reduce the required rail movements between the approved hours of 10.00 pm to 1.00 am, as this period (10.00 pm to 1.00 am) of the night-time is considered to be more sensitive from a potential noise impact perspective than 6.00 am to 7.00 am (i.e. the morning).

***Minimisation of Potential Noise from Shuttle Train Braking and Horns***

The Duralie shuttle train operators use brakes and horns as required for safety in accordance with relevant operator protocols. Notwithstanding, the use of brakes and horns has the potential to generate potential noise impacts and will be minimised where practical.

Noise from the bunching and stretching of rail wagons can arise where braking is not co-ordinated between two locomotives on a train. Drivers of the Duralie shuttle train locomotives will reduce the potential noise impacts by coordinating activities via radio to best operate the Duralie Shuttle.

The shuttle locomotive crews operating procedures mandate the standard use of the town horn (as opposed to country horn) where practicable (i.e. the country horn will be used where necessary for safety) to minimise potential noise impacts from the use of horns.

Train horn usage is now regulated under Pacific National Pty Ltd's EPL 21364, which includes requirements for all locomotives to be fitted with both a low noise level horn (town horn) and a high noise level horn (country horn) in accordance with Assets Standard Authority RSU 350 for locomotives.

***Shuttle Maintenance***

Locomotives on the Duralie shuttle train are inspected weekly, and the wagons have a standard maintenance inspection monthly (including review of braking equipment, wheel condition, door condition, bump stops and general maintenance requirements). In addition, an extensive (two day) maintenance inspection of the wagons is undertaken annually. Any identified maintenance issues from these inspections are either rectified at the time of inspection, or scheduled for timely rectification via a corrective action plan.

Additionally, maintenance requirements for locomotives are included within Pacific National Pty Ltd's EPL 21364 and track maintenance requirements are included within ARTC's EPL 3142.

***Rail Haulage Audit***

In accordance with Condition 9A, Schedule 5 of the NSW Project Approval, requires DCPL to commission a Rail Haulage Audit by the end of 2013, and with every Independent Environmental Audit thereafter (unless the Secretary directs otherwise), to determine whether all reasonable and feasible measures are being implemented to minimise:

- Noise impacts from the Duralie shuttle train;
- The use of the Duralie shuttle train during approved night-time hours; and
- The dispatch of trains from the DCM between 9.25 pm and 1.00 am the following day.

The 2013 Rail Haulage Audit (Wilkinson Murray, 2013) has been completed and the report along with responses to the recommendations, are available on the Duralie coal website ([www.duraliecoal.com.au](http://www.duraliecoal.com.au)).

**6.3 RECEIVER NOISE CONTROL**

DCPL will implement reasonable and feasible mitigation measures at noise-affected receivers as listed in Table 2 of Schedule 3 Environmental Performance Conditions of the Duralie Extension Project Approval 08\_0203, such as enhanced glazing, insulation and/or air conditioning. The implementation of these measures will be undertaken in accordance with the requirements and criteria specified in Condition 4, Schedule 3 of the NSW Project Approval (08\_0203).

In addition, and in accordance with Condition 1A, Schedule 4 of the NSW Project Approval, DCPL has prepared a Consultation Plan for the implementation of additional noise mitigation measures at the residences listed in Condition 4(c), Schedule 3 of the NSW Project Approval and will implement additional mitigation measures at these residences as required by Condition 4, Schedule 3 of the NSW Project Approval (08\_0203).

The method for validation of potential DCM maximum pass-by rail traffic noise that would trigger notification requirements in accordance with Condition 4(e), Schedule 3 of the NSW Project Approval (08\_0203) are described in Section 7.6.

## 7 NOISE MONITORING PROGRAM

Following the cessation of key noise generating activities associated with bulk rehabilitation earthworks, the requirements for noise controls, mitigation measures and noise monitoring would become redundant as the potential impact pathway would no longer exist. Prior to rationalisation or complete cessation of the noise monitoring program, DCPL will consult with the EPA and DPIE regarding the proposed changes to the monitoring program. DCPL would then seek to vary EPL 11701 and NMP to reflect the changes agreed with the EPA and DPIE. Following cessation of the noise monitoring program, DCPL would also seek the DPIE's agreement and approval of the redundancy of this NMP, including the noise monitoring program, and associated conditions in the Project Approval.

### 7.1 GENERAL REQUIREMENTS

As per the requirements of the NSW Project Approval (08\_0203), the DCM noise monitoring program will comprise both attended and real-time noise monitoring (Sections 7.2 and 7.3, respectively).

The results of attended monitoring will be used to assess compliance with relevant noise impact assessment criteria (Section 4.1.1). Real-time monitoring will be used as a management tool to assist DCPL to take pre-emptive management actions to avoid potential non-compliances.

Meteorological monitoring will also be conducted (Section 7.4), as well as annual assessments of equipment and plant SWLs (Section 7.5).

The scale of operations at the DCM was expected to reduce during the later years of the project (i.e. 2018-2019) as described in the *Duralie Open Pit Modification Noise and Blasting Impact Assessment*. This includes ceasing of operations during the evening and night-time periods. Noise monitoring would only be undertaken at times when operations are occurring at the DCM as described in the following sections.

As the DCM transitions to mine closure, noise monitoring program components (as described in Sections 7.2 to 7.6) would cease in a staged manner, as follows:

- real-time noise monitoring would cease following the cessation of evening and night-time operations;
- rail noise monitoring would cease once ROM coal rail movements cease on 31 December 2021; and
- attended noise monitoring and Sound Power Level monitoring would cease following the cessation of bulk rehabilitation earthworks (anticipated by end 2023).

Prior to any changes to the noise monitoring program, DCPL will consult with the EPA and DPIE regarding the proposed changes, and would seek a variation to EPL 11701 and the NMP to reflect the changes agreed with the EPA and DPIE.

### 7.2 ATTENDED NOISE MONITORING

#### 7.2.1 Purpose

The main aim of attended noise monitoring is to determine compliance with the NSW Project Approval (08\_0203) noise criteria (refer to Section 4.1.1). Results from attended noise monitoring will also be used to verify data collected from real-time noise monitoring.

As described above, attended noise monitoring would cease following the completion of bulk rehabilitation earthworks and the cessation of the key noise generating activities, in consultation with the EPA and the DPIE in accordance with Condition 7, Schedule 3 of Project Approval (08\_0203).

### **7.2.2 Monitoring Locations**

The quarterly attended noise monitoring program will be conducted at the following locations (refer to Figure 3 for monitoring locations):

- NM1;
- NM4;
- NM5; and
- NM6.

These monitoring locations have been chosen as they are representative of receivers located in the north, west and south directions from the DCM. Due to topographic shielding to the east associated with Buckley's Range, and that mine areas are located to the north-west, no noise monitoring sites are proposed in this direction (consistent with consultation undertaken with the EPA in June 2011).

Attended noise monitoring may also be undertaken at additional locations on a needs basis as determined by DCPL (i.e. following ongoing noise complaints).

### **7.2.3 Methodology**

The attended noise monitoring will continue to be conducted on a quarterly basis, in accordance with Australian Standard (AS) 1055:2018 *Acoustics – Description and Measurement of Environmental Noise* and the Noise Policy for Industry (NPI) (EPA, 2017) until the cessation of bulk rehabilitation earthworks (anticipated by end 2023).

In accordance with Condition 3 (b), Schedule 5 of the NSW Project Approval (08\_0203), the results of the attended noise monitoring will be compared with the NSW Project Approval noise criteria (refer to Section 4.1.1).

#### ***Timing***

During operational times attended noise monitoring will be conducted for 15 minute periods during the day, evening and night, in accordance with the NPI (EPA, 2017). Day is defined as between 7.00 am and 6.00 pm, evening is described as being between 6.00 pm and 10.00 pm and night is between 10.00 pm and 7.00 am.

Noise monitoring would only be undertaken at times when operations or rehabilitation earthworks are occurring at the DCM. If no operations have occurred during either the day, evening or night in the preceding quarter then attended monitoring would not be undertaken for the corresponding period, i.e. if there have been no evening or night operations then no monitoring would be undertaken at these times,

#### ***Measurement***

Acoustic instrumentation used in attended monitoring will comply with AS IEC 61672.1-2004 *Electroacoustics - Sound Level Meters Specifications* and carry current *National Association of Testing Authorities* or manufacturer calibration certificates. Instrument calibration will be conducted before and after each survey, with the variation in calibrated levels not to exceed  $\pm 0.5$  dBA.



The intrusive noise level ( $L_{Aeq[15\text{minute}]}$ ) contribution from DCM operation activities will be quantified over a 15 minute measurement period. In addition, the overall levels of ambient noise (i.e.  $L_{Amax}$ ,  $L_{A1}$ ,  $L_{Amin}$ ,  $L_{Aeq}$  and  $L_{Ceq}$ ) over the 15 minute period will be quantified and characterised.

In accordance with EPL requirements, noise monitoring will be conducted at the most noise-affected point on or within the residential boundary, or at the most affected point within 30 m of the dwelling, where the dwelling is more than 30 m from the boundary, unless a request by the property owner is made to conduct monitoring at an alternative location on the property which is satisfactory to DCPL and onsite acoustician.

Modifying factors (as described the NPI (EPA, 2017)) will be used where applicable. Tonality and low frequency will be assessed by analysis of the measured  $L_{Aeq}$  spectrum.

### ***Recording***

The following information will be recorded for each monitoring survey:

- operator's name;
- locations of attended or unattended noise instruments;
- recording intervals;
- meteorological conditions for each measurement location (as collected by a hand held meter) and also a combination of graphs and tables presenting the weather conditions for the entire survey period;
- statistical noise level descriptors together with notes identifying the principal noise sources;
- project operating conditions including train loading times together with mobile and ancillary equipment operation and predominant location; and
- instrument calibration details.

### ***Reporting***

The quarterly monitoring reports will be made publicly available on the DCPL website in accordance with Condition 10 (a), Schedule 5 of the NSW Project Approval. A summary of all monitoring results for each year will be reported in the DCPL Annual Review at the end of that year, in accordance with Condition 3, Schedule 5 of the NSW Project Approval (08\_0203).

#### **7.2.4 Compliance Assessment Protocol**

As discussed in Section 7.2.1, the results of attended noise monitoring will be compared against the relevant noise criteria (Section 4.1.1). The comparison will be undertaken following the exclusion of data where meteorological conditions (e.g. presence of high wind speeds above 3m/s) or temperature inversion conditions identified to cause noise enhancements in the Duralie Coal Mine area, in accordance with the NPI (EPA, 2017) and DCM site specific Temperature Inversion Condition Limits), as well as observations of non-mine noise by the person undertaking the attended noise monitoring program.

In the event of an exceedance of the noise criteria, an assessment will be conducted to determine:

- The timing of the exceedance.
- The location of the exceedance.



- The exclusion of non-mine related noise and noise from non-DCM mining activities (e.g. can the exceedance be attributed directly to the DCM). This will include consideration of:
  - the methods and type of equipment being used at the DCM at the time of the exceedance and proximity to the locations at which the exceedance was recorded;
  - the location of non-DCM mining activities or agricultural activities and proximity to the locations at which the exceedance was recorded; and
  - the meteorological conditions at the time of the exceedance, including confirmation that meteorological conditions are relevant in accordance with the NPI (EPA, 2017) and the noise criteria apply.

If the above assessment determines that an exceedance is due to DCM-related noise during relevant meteorological conditions, then management strategies detailed in Sections 8 and 9 to help prevent recurrence will be implemented in an effort to reduce noise levels below the NSW Project Approval (08\_0203) noise criteria.

Exceedances of the noise criteria will be determined in consideration of the NPfl (EPA, 2017).

For the purposes of this NMP, the monitored noise level is the attended noise monitoring results at the locations listed in Section 7.2.2.

Any relevant incidences will be reported to the Secretary and any other relevant agencies as soon as practicable after DCPL becomes aware of the incident occurring, in accordance with Condition 6, Schedule 5 of the NSW Project Approval (08\_0203).

## **7.3 REAL-TIME NOISE MONITORING**

### **7.3.1 Purpose**

Real-time noise monitoring will be used as a noise management tool, and will not be used to assess compliance with Duralie Coal applicable noise criteria. This will involve the use of noise investigation triggers (i.e. performance indicators) for ongoing performance assessment and will assist in the implementation of pre-emptive management actions to avoid potential non-compliances.

As described in Section 7.1, real-time noise monitoring would cease following cessation of evening and night-time operations. Prior to cessation of the real-time noise monitoring program, DCPL will consult with the EPA and DPIE regarding the proposed changes to the monitoring program. Following cessation of the monitoring program, the requirement for real-time noise monitoring and the noise investigation triggers (Section 7.3.4) and noise response protocol (Section 7.3.5) would become redundant.

### **7.3.2 Monitoring Location**

The real-time monitoring unit has been installed by a qualified expert and is located to the north of the DCM (Figure 3). This location is on mine-owned property, and as such, DCPL will ensure that the following is managed appropriately:

- occupational health and safety requirements; security of the monitoring equipment; and
- access to the monitoring equipment for installation, maintenance and calibration of the RTNM.

### **7.3.3 Methodology**

The real-time noise monitoring equipment will have the following capabilities:

- Recording of 15 minute statistical noise data.
- Continuous recording of real-time audio files.
- Recording of meteorological monitoring data (including wind speed, direction, temperature, humidity and rainfall).
- Production of daily reports, including:
  - 15 minute statistical data ( $L_{A10}$ ,  $L_{A90}$ );
  - $L_{Aeq(15minute)}$  and  $L_{Aeq(period)}$  noise levels;
  - $L_{Aeq(15minute)}$  in 1/3 octave;
  - $L_{Aeq(15minute)}$  in the 12.5 to 630 Hertz range; and
  - wind direction, wind speed, temperature, humidity and rainfall.

The real-time monitor will record noise levels during the evening and night-time periods, on days when operations are occurring at the DCM. This time period has been chosen as there are generally too many other extraneous, non-mine generated noise sources outside this time period. If no operations are occurring during either the evening or night-time periods then real-time monitoring would not be undertaken for the corresponding period.

A graphical summary of the previous 24 hours of noise levels will be emailed to mine staff on a daily basis. The continuous recording will also include an audio function which allows the monitor to record audio of the noise signal. This audio information can be downloaded so the listener can determine whether the noise source is mine-related. There are numerous other potential noise sources apart from mine noise, such as wind, traffic, machinery, animals and general non-mining anthropogenic activities, etc which may influence noise monitoring results.

Noise data will be processed to exclude data recorded during meteorological conditions that are not relevant to the noise criteria in accordance with the NPfl (EPA, 2017) (Section 5). The meteorological station and the temperature lapse rate monitoring instrument (Section 7.4) will be used to determine these conditions, with the meteorological data recorded by the real-time noise monitors used as a back-up.

#### **7.3.4 Noise Investigation Triggers**

Noise investigation trigger thresholds will be set at 42 dBA between the hours of 7.00 pm and 7.00 am. This time period has been chosen as there are generally too many other extraneous, non-mine generated noise sources outside this time period that would result in regular false triggering of the alarms. Real-time monitoring and triggering of alarms would only be active when operations are occurring at the DCM.

The noise investigation trigger threshold allows for proactive noise management, despite being above the night-time noise criteria for privately-owned residences specified in the NSW Project Approval, which are between 35 dBA and 40 dBA (as detailed in Section 4.1.1 of this NMP). The results of noise modelling show that the night-time noise level would be up to approximately 47 dBA at the real-time noise monitoring location. Therefore, if noise at the monitoring location reaches the trigger threshold of 42 dBA, it is likely that noise at privately-owned receivers to the north of the DCM will not be exceeding the noise criteria.

If noise at the real-time monitoring location exceeds the trigger threshold, an SMS or radio message will be sent to the on-site DCPL Environment and Community Superintendent (or delegate). The protocol for responding to situations where the triggers are exceeded is described below in Section 7.3.5.

### **7.3.5 Noise Monitoring Response Protocol**

The implementation of the real-time noise monitoring protocol will be the responsibility of the DCPL Environment and Community Superintendent (or delegate).

#### ***Response to Noise Investigation Triggers***

The protocol for responding to the noise triggers will include:

- An SMS or radio message will be sent to the on-site DCPL Environment and Community Superintendent (or delegate) notifying them of the Noise trigger level and following a valid level trigger the Open Cut Examiner (OCE) will act immediately implementing the Noise mitigations measures in order of priority as listed below:
  - 1 Shut down evaporative fans
  - 2 Relocate or cease use of trucks
  - 3 Relocate or cease use of hammer drill
  - 4 Restrict dozers in reverse to first gear in exposed areas,
  - 5 Relocate or cease dozer works in exposed or elevated areas,
  - 6 Relocate or cease any at surface or elevated ancillary works e.g. topsoil recovery
  - 7 Relocate truck dumping and associated dozer to an alternate lower dump
  - 8 Relocate most elevated digger and associated fleet to lower alternate dig area
  - 9 Commence shutting production equipment down starting with most elevated fleet
  - 10 Cease operations
- Each additional noise control and management measure that will be implemented to minimise noise emissions will be co-ordinated by Environment and Community Superintendent (or delegate) in consultation with the Open Cut Examiner, based on the results of initial noise reduction measures.
- Implementation of the noise control and management measures chosen in the management strategy process. The Open Cut Examiner will be responsible for the timely implementation of the selected measures.
- Management strategies for noise investigation triggers will be recorded by DCPL personnel. The records will include details of the investigation, the type of response and the real-time noise monitor's response (i.e. whether the management strategy results in a discernible reduction of noise as indicated by the real-time monitor).

### **7.4 METEOROLOGICAL MONITORING AND FORECASTING**

Meteorological data will continue to be collected by a weather station at the DCM until the surrender of the DCM's EPL.

In addition, DCPL has installed appropriate equipment to measure temperature lapse rates in accordance with Condition 24, Schedule 3 of the NSW Project Approval. In accordance with Condition M5.1 of EPL 11701, temperature lapse rates will be continuously measured over a minimum vertical height interval of 50 m. This will be achieved through the installation of two 10 m towers, located in positions with an elevation differential greater than 50 m, as shown on Figure 3. This equipment has been supplied and installed by a suitably qualified supplier.

## 7.5 SOUND POWER LEVEL MONITORING

Sound power level (SWL) monitoring of mobile plant and equipment will continue to be conducted annually at the DCM, in accordance with Condition 7(c), Schedule 3 of the NSW Project Approval (08\_0203), until the completion of bulk rehabilitation earthworks. At this point, all major fleet, plant and equipment will be removed from the DCM and as such the requirement for SWL monitoring will be redundant.

Until cessation of monitoring, all mobile plant will be tested except where certain plant is not available at the time of testing due to breakdown, maintenance or access issues. Sound power level monitoring will be presented as both A-weighted to capture the human perception of noise and linear scale (Z-weighted) to capture noise potentially propagating to long distance receivers.

The results of SWL monitoring will be compared against the SWLs used in the *Duralie Open Pit Modification Environmental Assessment* (Table 4) to assess the effectiveness of the attenuation measures described in Section 6.2.2 of this NMP. Where monitoring indicates that the SWL of a piece of plant and/or equipment exceeds the SWLs used in the *Duralie Open Pit Modification Environmental Assessment* (Table 4), the monitoring result will be verified in conjunction with the attended monitoring and real-time noise monitoring results, and if necessary, the relevant plant and/or equipment will be maintained to rectify the SWL or operational controls adopted. The outcomes of mobile plant testing will be provided in the Annual Review.

**Table 4**  
**DCM Equipment Fleet SWL Targets**

Equipment Description	Modification Year 2015 Up to 3.0 Mtpa		Modification Year 2016-2019 Up to 2.5 Mtpa		Dynamic SWL per item	
	Number of Items	SWL (dB re 1pW)	Number of Items	SWL (dB re 1pW)	SWL (dBA)	SWL (dBL)
Drills	3	120	2	118	115	120
Excavator Liebherr R9400 (350T)	2	124	2	124	121	127
Excavator R9250 Ex2500 (250t)	1	119	-	-	-	-
Low Noise Excavator PC1600 (160t)	1	117	1 <sup>2</sup>	117	-	-
Standard Haul Truck (Cat789)	1	122	1 <sup>1</sup>	122	-	-
Low Noise Haul truck (Cat785XQ)	11	125	8	124	115	129
Dozer (CatD10)	2	125 <sup>3</sup>	1	122 <sup>3</sup>	121	124
Low Noise Dozer (Cat D10XQ)	2	119 <sup>3</sup>	1	119 <sup>3</sup>	119	122
Loaders	1	113	1	113	113	123
Graders	1	113	1	113	113	123
Low Noise Grader	1	110	1	110	-	-
Water Cart	2	121	2	121	118	128
Evaporators (45Kw)	2	122	2	122	N/A	N/A
Evaporators (55Kw)	2	122	2	122	N/A	N/A
Attenuated Evaporators (75Kw)	2	118	2	118	N/A	N/A
Pumps	6	118	6	118	N/A	N/A
Rotary Breaker	1	113	1	113	N/A	N/A
Coal Prep Plant	0	-	0	-	-	-
Rail Loadout Bin	1	110	1	110	-	-
Locomotive	2	114	2	114	N/A	N/A
Total SWL	-	133	-	132		

Note 1: Un-attenuated Cat789 remove from service in 2017.

Note 2: Removed from service.

Note 3: Dozers limited to 2<sup>nd</sup> Gear operation.

## 7.6 RAIL NOISE MONITORING

As described in Section 7.1, ROM coal rail transport from the DCM will cease on 31 December 2021, after which the requirement for rail noise monitoring will be redundant.

Until ROM coal rail movements cease on 31 December 2021, rail noise monitoring would continue to be undertaken quarterly at existing locations TN1 (Craven) and evaluation of DCM shuttle train maximum rail pass-by noise will also be augmented by quarterly rail noise monitoring at 2 locations in the village of Wards River (TN2 - Wards River Village North and TN3 – Wards River Village South). These two monitoring locations will be located at a residential receptor on the west side of Bucketts Way between Receptors R13 and R25 and are representative of maximum rail pass-by noise levels received at residences in close proximity to the railway line at either end of Wards River Village (Figure 3).

Monitoring would be conducted on a quarterly basis and would include attended train passby measurements at each location. Monitoring at these locations would be undertaken against the RING cumulative day and night rail noise trigger levels for rail traffic generating developments as outlined in Section 4.3, however, this will be undertaken for general information purposes only (i.e. these triggers are not DCM compliance requirements).

For the purpose of compliance with the NSW Project Approval (08\_0203), the key requirement is for notification of relevant private receivers adjacent to the rail line, where Project (DCM) maximum rail pass-by noise is above the 85 dBA criteria provided in Condition 4 (e), Schedule 3.

As described in Section 4.3, DCPL will apply the RING criteria of  $L_{Amax}$  85 dBA (95<sup>th</sup> percentile [or 5% exceedance]) with façade correction to determine any relevant maximum rail pass-by noise notification requirements.

As described in the RING, noise from individual trains can vary due to a number of reasons, and it will not be practical to conduct extended periods of rail noise monitoring to establish statistically valid data sets to determine maximum rail pass-by noise 5% exceedance levels every quarter.

Therefore, extended attended maximum rail pass-by noise validation monitoring will only be undertaken in the event of the noise levels are either measured to exceed the  $L_{Amax}$  85 dBA criteria during the quarterly noise monitoring program. This validation monitoring would be conducted for an extended period (e.g. minimum 10 days) at a minimum of three representative receivers (TN1, TN2 & TN3 or an additional location) adjacent to the rail corridor to establish a statistically valid dataset to determine current daytime, night-time and 24-hour maximum rail pass-by noise 50% and 5% exceedance levels from the Duralie shuttle train. This dataset would then be used to validate the measured quarterly noise levels which exceeded the pass-by 5% exceedance noise levels at the residential receivers, and would provide a range of measured maximum rail pass-by noise levels that occur at present, as a benchmark for comparison with the results of subsequent quarterly rail noise monitoring.

Where an exceedance of the  $L_{Amax}$  85 dBA (95<sup>th</sup> percentile [or 5% exceedance]) criteria is measured during this validation process at private receivers based on the statistically validated rail noise monitoring, DCPL will satisfy the associated notification requirements of Condition 2 (c), Schedule 4 (i.e. notify the relevant owner in writing that they are entitled to ask for additional noise mitigation measures to be installed at their residence).

If applicable, DCPL will subsequently implement associated additional noise mitigation measures as specified in Condition 4, Schedule 3 of the NSW Project Approval (08\_0203). Following the cessation of rail movements, the additional noise mitigation measure requirements would also become redundant.

## 7.7 MONITORING PROGRAM EVALUATION

The following monitoring program evaluation process will only be applicable to when noise monitoring is undertaken. As such, once the key noise generating activities cease and the noise monitoring program ceases, the monitoring program evaluation process outlined below will be redundant.

In accordance with Condition 7(c), Schedule 3 of the NSW Project Approval (08\_0203), DCPL will implement a program to evaluate the effectiveness of the noise management and mitigation measures described in Section 6.2. The effectiveness of the noise management and mitigation measures will be evaluated through a comparison of the monitoring results with the noise criteria and performance indicators described in Section 4.

Section 9 describes DCPL's requirement for the preparation of an Annual Review in accordance with Condition 3, Schedule 5 of the NSW Project Approval (08\_0203). The Annual Review is required to include a comprehensive review of the monitoring data, identification of any exceedances of criteria and identification of trends in the monitoring data.

The program evaluating the effectiveness of noise management and mitigation measures will be conducted as a component of the analysis required to fulfil the reporting requirements of the Annual Review, with the effectiveness of noise management and mitigation measures also reported in the Annual Review.

In addition to the above, Condition 9A, Schedule 5 of the NSW Project Approval (08\_0203) requires DCPL to commission a Rail Haulage Audit by the end of 2013, and with every Independent Environmental Audit thereafter (unless the Secretary directs otherwise), to review existing rail haulage operations and determine whether all reasonable and feasible measures are being implemented to minimise potential noise impacts from the rail haulage operations. As such, the effectiveness of rail noise management and mitigation measures were conducted as a component of the Rail Haulage Audit (Wilkinson Murray, 2013). The 2013 Rail Haulage Audit has been completed and the report along with responses to the recommendations are available on the Duralie coal website ([www.duraliecoal.com.au](http://www.duraliecoal.com.au)). Rail Haulage audits were subsequently completed in 2017 and 2020.



## 8 CONTINGENCY PLAN

In the event that a noise criterion detailed in Section 4 is considered to have been exceeded, as per the Protocol described in Section 7.2.4, DCPL will implement the following Contingency Plan:

- The Environmental Officer will report the exceedance to the General Manager within 24 hours of assessment completion.
- DCPL will report the exceedance of the noise criteria to the EPA and the DPIE as soon as practicable (i.e. within 7 days).
- DCPL will identify an appropriate course of action with respect to the identified impact(s), in consultation with specialists and the EPA, as necessary. For example, contingency measures such as, but not limited to, those described in Section 8.1 of this NMP.
- DCPL will, on request, submit the proposed course of action to the DPIE for approval.
- DCPL will implement the approved course of action to the satisfaction of the DPIE.

The Contingency Plan above will be redundant upon the cessation of the noise monitoring program (following the completion of bulk rehabilitation earthworks at the DCM).

### 8.1 POTENTIAL CONTINGENCY MEASURES

Potential contingency measures will be reviewed during revisions of this NMP. Key potential contingency measures to be implemented (following the exceedance of noise criteria and completion of compliance assessment protocol as described in Section 7.2.4) may include the following:

- DCPL will notify affected landholders and tenants of the exceedance within 2 weeks in accordance with Condition 2, Schedule 4 and provide them with quarterly noise monitoring results, until the results show that the DCM is complying with the noise criteria.
- DCPL will complete a SWL review and remodel the noise emissions for examination of potential additional noise controls, and implement additional reasonable and feasible at source noise controls in addition to those described in Section 6.2 of this NMP and will implement reasonable and feasible at-receiver noise controls in accordance with Condition 4, Schedule 3 of the NSW Project Approval (08\_0203).
- DCPL will acquire affected properties on request in accordance with Conditions 1 and 3, Schedule 3 of the NSW Project Approval (08\_0203).

With respect to rail noise, where a validated exceedance of the 85 dBA (5% exceedance) maximum pass-by rail traffic noise criteria has been identified (Section 4.3) due to the DCM and the notification has been made in accordance with the requirements of Condition 2 (c), Schedule 4. DCPL will, on request, implement reasonable and feasible at-receiver noise controls in accordance with Condition 4, Schedule 3 of the NSW Project Approval (08\_0203).

The requirement for contingency measures as outlined above will also be redundant upon the cessation of the noise monitoring program (following the completion of bulk rehabilitation earthworks at the DCM).

## **9 ANNUAL REVIEW AND IMPROVEMENT OF NOISE MANAGEMENT PLAN**

### **9.1 ANNUAL REVIEW**

In accordance with Condition 3, Schedule 5 of the NSW Project Approval (08\_0203), DCPL will prepare an Annual Review of the environmental performance of the DCM by the end of December each year. The Annual Review will be made publicly available on the DCPL website, in accordance with Condition 10, Schedule 5 of the NSW Project Approval (08\_0203).

The Annual Review will specifically address the following aspects of Condition 3, Schedule 5, which are directly relevant to noise management:

- include a comprehensive review of the monitoring results and complaints records for the DCM over the past year, including a comparison of these results against the:
  - relevant statutory requirements, limits or performance measures/criteria;
  - monitoring results of previous years; and
  - relevant predictions in the Environmental Approval;
- identify any exceedance of criteria over the last year, and describe what actions were (or are being) taken to ensure compliance;
- identify any trends in the monitoring data over the life of the DCM;
- identify any discrepancies between the predicted and actual impacts of the DCM, and analyse the potential cause of any significant discrepancies; and
- describe what measures will be implemented over the next year to improve the environmental performance of the DCM.

In addition to the above, and in accordance with Condition 7(c), Schedule 3 of the NSW Project Approval (08\_0203), the Annual Review will also describe the effectiveness of noise mitigation and management measures at the DCM.

### **9.2 NOISE MANAGEMENT PLAN REVIEW**

In accordance with Condition 4, Schedule 5 of the NSW Project Approval, this NMP will be reviewed, and if necessary revised to the satisfaction of the Secretary of the DPIE within three months of:

- the submission of an Annual Review, in accordance with Condition 3, Schedule 5 of Project Approval (08\_0203);
- the submission of an incident report, in accordance with Condition 6, Schedule 5 of Project Approval (08\_0203);
- the submission of an independent environmental audit, in accordance with Condition 8, Schedule 5 of Project Approval (08\_0203);
- any modification to the conditions of the NSW Project Approval (08\_0203) (unless the conditions require otherwise); or
- prior to the commencement of clearing in proposed in the *Duralie Open Pit Modification Environmental Assessment* (DCPL, 2014) (i.e. EA [Mod 2]).

The revision status of this NMP is indicated on the title page of each copy.

In addition, the NMP will be revised to the satisfaction of the Secretary of the DPIE if necessary, to ensure the plan is updated on a regular basis and to incorporate any recommended measures to improve environmental performance.

This NMP will be made publicly available on the DCPL website, in accordance with Condition 10, Schedule 5 of the NSW Project Approval (08\_0203). A hard copy will also be kept at the DCM.

## 10 REPORTING PROTOCOLS

In accordance with Condition 2(g), Schedule 5 of the NSW Project Approval (08\_0203), DCPL has developed protocols for managing and reporting the following:

- incidents;
- complaints;
- non-compliances with statutory requirements; and
- exceedances of the impact assessment criteria and/or performance criteria.

The management of incidents is described in the DCM Pollution Incident Response Management Plan (PIRMP). The management of complaints and non-compliances is described in detail in the DCM Environmental Management Strategy. The management of exceedances of performance criteria relevant to blasting is detailed in Sections 7 and 8 of this NMP. The DCM PIRMP and Environmental Management Strategy are available on the DCM's website.

## 11 REFERENCES

Duralie Coal Pty Ltd (2007) *Duralie Coal Mine Noise Monitoring Program*.

Duralie Coal Pty Ltd (2014) *Duralie Open Pit Modification Environmental Assessment*.

Environment Protection Authority (2013) *Rail Infrastructure Noise Guidelines*.

Environment Protection Authority (2017) *Noise Policy for Industry*.

Heggies (2010) *Duralie Extension Project – Noise and Blasting Impact Assessment*, Report 10-6173-R2, dated 25 January 2010.

SLR (2014) *Duralie Modification Noise and Blast Assessment*, dated 9 July 2014.

Wilkinson Murray (2013) *Duralie Coal Mine Rail Haulage Noise Audit*.

## **APPENDIX A**

### **SUMMARY OF NSW PROJECT APPROVAL CONDITIONS RELEVANT TO NOISE MANAGEMENT**

**Table A-1**  
**Summary of NSW Project Approval (08\_0203) Conditions Relevant to Noise Management**

Schedule	Section	Condition	Description	Section of NMP																																																																										
3 Environmental Performance Conditions	Noise Criteria	2	<p><i>Except for the land referred to in Table 1 [Table 1: Land subject to acquisition upon request], the Proponent shall ensure that the noise generated by the project does not exceed the criteria in Table 2 at any residence on privately-owned land or on more than 25 percent of any privately-owned land.</i></p> <p><i>Table 2: Noise criteria dB(A)</i></p> <table> <tr> <th rowspan="2">Location</th><th>Day</th><th>Evening</th><th colspan="2">Night</th></tr> <tr> <th>L<sub>Aeq</sub>(15 minute)</th><th>L<sub>Aeq</sub>(15 minute)</th><th>L<sub>Aeq</sub>(15 minute)</th><th>L<sub>Aeq</sub>(1 minute)</th></tr> <tr> <td>172 – Lyall</td><td>35</td><td>39</td><td>40</td><td>45</td></tr> <tr> <td>126 – Hamann Pixalu PL</td><td>35</td><td>35</td><td>39</td><td>45</td></tr> <tr> <td>123 – Oleksiuk &amp; Carmody</td><td></td><td></td><td></td><td></td></tr> <tr> <td>173 – Trigg &amp; Holland</td><td>35</td><td>36</td><td>37</td><td>45</td></tr> <tr> <td>116 – Weismantel</td><td></td><td></td><td></td><td></td></tr> <tr> <td>127 – Fisher-Webster</td><td>35</td><td>35</td><td>37</td><td>45</td></tr> <tr> <td>131 (1) – Relton</td><td></td><td></td><td></td><td></td></tr> <tr> <td>180 (1) – Thompson</td><td>35</td><td>36</td><td>36</td><td>45</td></tr> <tr> <td>95 – Smith &amp; Ransley</td><td>35</td><td>35</td><td>36</td><td>45</td></tr> <tr> <td>144 – Wielgosinski</td><td></td><td></td><td></td><td></td></tr> <tr> <td>169 – Williams</td><td>35</td><td>36</td><td>35</td><td>45</td></tr> <tr> <td>177 – Thompson</td><td></td><td></td><td></td><td></td></tr> <tr> <td>All other privately-owned land</td><td>35</td><td>35</td><td>35</td><td>45</td></tr> </table> <p>Notes:</p> <ul style="list-style-type: none"> <li>To identify the locations referred to in Table 2, see the figure in Appendix 3; and</li> <li>Noise generated by the project is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy.</li> </ul> <p><i>However, these criteria do not apply if the Proponent has a written agreement with the relevant landowner to exceed the criteria, and the Proponent has advised the Department in writing of the terms of this agreement.</i></p>	Location	Day	Evening	Night		L <sub>Aeq</sub> (15 minute)	L <sub>Aeq</sub> (15 minute)	L <sub>Aeq</sub> (15 minute)	L <sub>Aeq</sub> (1 minute)	172 – Lyall	35	39	40	45	126 – Hamann Pixalu PL	35	35	39	45	123 – Oleksiuk & Carmody					173 – Trigg & Holland	35	36	37	45	116 – Weismantel					127 – Fisher-Webster	35	35	37	45	131 (1) – Relton					180 (1) – Thompson	35	36	36	45	95 – Smith & Ransley	35	35	36	45	144 – Wielgosinski					169 – Williams	35	36	35	45	177 – Thompson					All other privately-owned land	35	35	35	45	4.1.1
Location	Day	Evening	Night																																																																											
	L <sub>Aeq</sub> (15 minute)	L <sub>Aeq</sub> (15 minute)	L <sub>Aeq</sub> (15 minute)	L <sub>Aeq</sub> (1 minute)																																																																										
172 – Lyall	35	39	40	45																																																																										
126 – Hamann Pixalu PL	35	35	39	45																																																																										
123 – Oleksiuk & Carmody																																																																														
173 – Trigg & Holland	35	36	37	45																																																																										
116 – Weismantel																																																																														
127 – Fisher-Webster	35	35	37	45																																																																										
131 (1) – Relton																																																																														
180 (1) – Thompson	35	36	36	45																																																																										
95 – Smith & Ransley	35	35	36	45																																																																										
144 – Wielgosinski																																																																														
169 – Williams	35	36	35	45																																																																										
177 – Thompson																																																																														
All other privately-owned land	35	35	35	45																																																																										



**Table A-1 (Continued)**  
**Summary of NSW Project Approval (08\_0203) Conditions Relevant to Noise Management**

Schedule	Section	Condition	Description	Section of NMP								
3 Environmental Performance Conditions	Noise Acquisition Criteria	3	<p><i>If the noise generated by the project exceeds the criteria in Table 3 at any residence on privately-owned land or on more than 25 percent of any privately-owned land, then upon receiving a written request for acquisition from the landowner, the Proponent shall acquire the land in accordance with the procedures in Conditions 5 - 6 of Schedule 4.</i></p> <p><i>Table 3: Noise Acquisition Criteria dB(A) <math>L_{Aeq}(15 \text{ min})</math></i></p> <table><tr><th>Location</th><th>Day</th><th>Evening</th><th>Night</th></tr><tr><td>All privately-owned land</td><td>40</td><td>40</td><td>40</td></tr></table> <p>Notes:</p> <ul style="list-style-type: none"><li>Noise generated by the project is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy; and</li><li>For this condition to apply, the exceedances of the criteria must be systemic.</li></ul>	Location	Day	Evening	Night	All privately-owned land	40	40	40	4.1.1
	Location	Day	Evening	Night								
	All privately-owned land	40	40	40								
	Additional Noise Mitigation Measures	4	<p>Upon receiving a written request from the owner of any residence:</p> <p>(a) on the land listed in Table 1 [Table 1: Land subject to acquisition upon request];</p> <p>(b) on the land listed as 123, 126, and 175 on the figure in Appendix 3;</p> <p>(c) on the land listed as R2, R4-12 on the figure in Appendix 3;</p> <p>(d) on privately-owned land where subsequent noise monitoring shows that the noise generated by the project is greater than or equal to <math>L_{Aeq}(15 \text{ min})</math> 38 dB(A); or</p> <p>(e) on privately owned land between the Stratford and Duralie mines where the maximum passby rail traffic noise from the Project exceeds 85dB(A),</p> <p>the Proponent shall implement additional noise mitigation measures (such as double glazing, insulation, and/or air conditioning) at the residence in consultation with the owner. These measures must be reasonable and feasible.</p> <p>If within 3 months of receiving this request from the owner, the Proponent and the owner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution.</p>	4.1.2 and 6.3								
Rail Noise	5	<p>By the end of December 2011, or as otherwise agreed by the Secretary, the Proponent shall only receive or dispatch locomotives on/off site that are approved to operate on the NSW rail network in accordance with the noise limits in ARTC's EPL (No. 3142).</p>	6.2									
Operating Conditions	6	<p>The Proponent shall:</p> <p>(a) implement best practice noise management, including all reasonable and feasible noise mitigation measures to minimise the operational, low frequency and rail noise generated by the project; and</p> <p>(b) regularly assess the real-time noise monitoring and meteorological forecasting data and relocate, modify, and/or stop operations on site to ensure compliance with the relevant conditions of this approval,</p> <p>to the satisfaction of the Secretary.</p>	6 7									

**Table A-1 (Continued)**  
**Summary of NSW Project Approval (08\_0203) Conditions Relevant to Noise Management**

Schedule	Section	Condition	Description	Section of NMP
3 Environmental Performance Conditions	Noise Management Plan	7	<i>The Proponent shall prepare and implement a Noise Management Plan for the project to the satisfaction of the Secretary. This plan must:</i>	
			<i>(a) be prepared in consultation with EPA, and submitted to the Secretary for approval within 3 months of the date of this approval, unless otherwise agreed by the Secretary;</i>	2.1.3
			<i>(b) describe the noise mitigation measures that would be implemented to ensure compliance with conditions 2-6 of Schedule 3 of this approval, including:</i>	6
			<ul style="list-style-type: none"> <li><i>a real-time noise management system that employs both reactive and proactive mitigation measures;</i></li> </ul>	7.3
			<ul style="list-style-type: none"> <li><i>a detailed program for the replacement or attenuation of existing plant on site; and</i></li> </ul>	6.2.2
			<ul style="list-style-type: none"> <li><i>the specific measures that would be implemented to minimise the rail noise impacts of the project, and in particular:</i> <ul style="list-style-type: none"> <li><i>the braking and train horn impacts of the project;</i></li> <li><i>the use of the shuttle train during the approved night-time hours; and</i></li> </ul> </li> <li><i>the construction of earth bund walls around evaporative fan units located on the waste rock emplacement area; and</i></li> </ul>	6.2.3  6.2.2
			<i>(c) include a noise monitoring program that:</i>	7.2 and 7.3
	Meteorological Monitoring	24	<ul style="list-style-type: none"> <li><i>uses a combination of real-time and supplementary attended monitoring measures to evaluate the performance of the project;</i></li> </ul>	7.7
			<ul style="list-style-type: none"> <li><i>includes a program to evaluate the effectiveness of the noise mitigation measures referred to in 7(b) above;</i></li> </ul>	7.2.4
			<ul style="list-style-type: none"> <li><i>includes a protocol for determining exceedances of the relevant conditions of this approval; and</i></li> </ul>	7.5
			<ul style="list-style-type: none"> <li><i>includes a program to monitor the actual sound power levels of the plant on site, compare it with the benchmark levels used in the EA, and evaluate the effectiveness of any attenuation.</i></li> </ul>	9.2
			<i>Note: The effectiveness of the Noise Management Plan is to be reviewed and audited in accordance with the requirements in Schedule 5. Following this review and audit, the plan is to be revised to ensure it remains up to date (see Condition 4 of Schedule 5).</i>	
			<i>During the life of the development, the Proponent shall ensure that there is a suitable meteorological station operating in the vicinity that:</i>	7.4
			<i>(a) complies with the requirements in Approved Methods for Sampling of Air Pollutants in New South Wales guideline; and</i>	
			<i>(b) is capable of continuous real-time measurement of temperature lapse rate in accordance with the NSW Industrial Noise Policy.</i>	

**Table A-1 (Continued)**  
**Summary of NSW Project Approval Conditions Relevant to Noise Management**

Schedule	Section	Condition	Description	Section of NMP
4 Additional Procedures	Notification of Landowners	1	<p><i>Within 1 month of the date of this approval, the Proponent shall notify in writing the owners of:</i></p> <ul style="list-style-type: none"> <li><i>a) the land listed in Table 1 in Condition 1 of Schedule 3 that they have the right (under Condition 1 of Schedule 3) to require the Proponent to acquire their land at any stage during the project;</i></li> <li><i>b) any residence on the land listed in Table 1 in Condition 1 or in Condition 4(b) or (c) of Schedule 3 that they are entitled (under Condition 4 of Schedule 3) to ask for additional noise mitigation measures to be implemented at their residence at any stage during the project;</i></li> <li><i>c) any privately-owned land within 2 kilometres of the approved open cut mining pit on site that they are entitled (under Condition 11 of Schedule 3) to ask for an inspection to establish the baseline condition of any buildings or structures on their land, or to have a previous inspection report updated;</i></li> <li><i>d) any residence on the land listed as 125(1) and 125(2) on the figure in Appendix 3 that they are entitled (under Condition 21 of Schedule 3) to ask for additional dust mitigation measures to be implemented at their residence at any stage during the project; and</i></li> <li><i>e) the owner the land listed as 125(1), 125(2), and 116 on the figure in Appendix 3 or any residence on privately-owned land which has (or would have) significant direct views of the mining operations on site, that they are entitled (under Condition 50 of Schedule 3) to ask for additional visual mitigation measures to be implemented on their land at any stage during the project.</i></li> </ul>	<p>8.1</p> <p>4.1.2</p> <p>Not relevant to NMP</p> <p>Not relevant to NMP</p> <p>Not relevant to NMP</p>
		1A	<p><i>Within 1 month of the approval of the first modification to the conditions of this approval, the Proponent shall prepare a Consultation Plan for the implementation of additional noise mitigation measures at the residences listed in Condition 4(c) of Schedule 3. This plan must provide for:</i></p> <ul style="list-style-type: none"> <li><i>a) notifying the land owners of these residences that they are entitled to ask for additional noise mitigation measures to be implemented at their residence at any stage during the project;</i></li> <li><i>b) explaining the sorts of mitigation measures that could be implemented to these residences;</i></li> <li><i>c) following up the initial notification of these owners with detailed discussions about the potential implementation of suitable mitigation measures;</i></li> <li><i>d) explaining to these land owners that they have the right to refer the matter to the Secretary for resolution if there is a dispute about what measures should be implemented or the implementation of any agreed measures.</i></li> </ul> <p><i>The Plan is to be made publicly available on the Proponent's website and the plan shall be implemented to the satisfaction of the Secretary.</i></p>	6.3

**Table A-1 (Continued)**  
**Summary of NSW Project Approval Conditions Relevant to Noise Management**

Schedule	Section	Condition	Description	Section of NMP
4 Additional Procedures (continued)	Notification of Landowners (continued)	2	<i>Within 2 weeks of obtaining monitoring results showing:</i>	
			<i>a) an exceedence of the relevant criteria in any condition in Schedule 3, the Proponent shall notify the affected landowner and tenants in writing of the exceedence, and provide monitoring results to each of these parties until the project is complying with the relevant criteria again;</i>	8.1
			<i>b) an exceedence of the relevant noise acquisition criteria in Condition 3 of Schedule 3, the Proponent shall notify the relevant owner in writing that they have the right (under Condition 3 of Schedule 3) to require the proponent to acquire their land;</i>	4.1.1
			<i>c) an exceedence of the relevant noise mitigation criteria in Condition 4(d) or (e) of Schedule 3, the Proponent shall notify the relevant owner in writing that they are entitled (under Condition 4 of Schedule 3) to ask for additional noise mitigation measures to be installed at their residence;</i>	7.6
			<i>d) an exceedence of the relevant air quality criteria in Schedule 3, the Proponent shall send the affected landowners and tenants (including the tenants of any mine-owned land) a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time); and an</i>	Not relevant to NMP
			<i>e) exceedence of the relevant air quality criteria in Condition 20 of Schedule 3, the Proponent shall notify the relevant owner in writing that they have the right (under Condition 20 of Schedule 3) to require the Proponent to acquire their land; and</i>	Not relevant to NMP
			<i>f) an exceedence of the relevant dust mitigation criteria in Condition 21 of Schedule 3, the Proponent shall notify the relevant owner in writing that they are entitled (under Condition 21 of Schedule 3) to ask for additional dust mitigation measures to be implemented at their residence.</i>	Not relevant to NMP

## **APPENDIX B**

### **RECORD OF CONSULTATION WITH EPA**



DOC21/837830-02; EF13/2892

Planning and Assessment Division  
Department of Planning, Industry and Environment  
Locked Bag 5022  
PARRAMATTA NSW 2124

Attention: The Planning Officer

07 October 2021

**EPA Submission on Post Approval Planning Advice Request PAE-28660473**

Dear Sir/Madam,

Thank you for the request for advice for Post Approval Consultation (PAE-28660473), requesting a review by the NSW Environment Protection Authority (EPA) of the updated Noise Management Plan and supporting Appendices, dated September 2021. The document has been updated in accordance with Condition 7, Schedule 3 of the Duralie Coal Mine (DCM) Project Approval (MP08\_0203).

The EPA understands that operations at the DCM now reflect the transition towards mine closure. The updated Noise Management Plan (NMP) has been amended by Duralie Coal Pty Ltd (DCPL) to reflect the current stage of operations and to describe anticipated mine closure activities and blast management at the DCM for the mine closure and rehabilitation phase.

Key changes as a result of mine closure include:

- Weismantel Open Pit - mining of the Weismantel Open Pit will continue until 31 December 2021, however, will not occur to the maximum approved depth as modelled in the 2014 DCM Open Pit Modification. Progressive backfilling of the Weismantel Open Pit has been undertaken.
- Water Management System Changes - following the cessation of mining of the Clareval Open Pit (now final void) and the Clareval void becoming available as a water storage, Weismantel Open Pit dewatering is now preferentially transferred to the Clareval void and not stored within the Main Water Dam. As a result, all irrigation activities for the purpose of reducing the total site water inventory at the DCM have now ceased and the DCM's Irrigation Area irrigation system has been decommissioned and removed.
- Decommissioning of other redundant water management structures has also commenced. Consistent with the approved DCM Mining Operations Plan and Rehabilitation Management Plan, Auxiliary Dam No. 1 has been dewatered, decommissioned and rehabilitated.
- No new disturbance areas are proposed.
- Following the completion of mining operations on 31 December 2021, bulk rehabilitation earthworks will be undertaken during 2022 and 2023. This may involve some infrequent blasting activities to achieve the final landform design and satisfy geotechnical requirements.
- Once bulk rehabilitation earthworks are complete, blasting activities at the DCM will cease.

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The EPA has reviewed the documentation and has the following comments and recommendations:

## **1. Matters to be addressed post approval**

### **a. Licence Variation May Be Required**

The EPA notes that the updated NMP does not propose any amendments that will have an immediate impact upon the noise monitoring undertaken in accordance with EPL 11701.

DCPL advise that on 31 December 2021, mining operations and ROM coal rail transport from the DCM will cease. As a result, noise generated from mining activities and ROM coal rail transport will also cease. DCPL will then undertake bulk rehabilitation earthworks to rehabilitate the site in accordance with the DCM's Rehabilitation Management Plan. These earthworks may involve some blasting activities to achieve the final landform design and geotechnical safety requirements. These earthworks are anticipated to occur during 2022 and 2023.

Once bulk rehabilitation earthworks are complete, blasting activities at the DCM will cease; all major fleet will be removed from site and the mine's workforce reduced to support post-closure monitoring and maintenance activities.

DCPL propose that as the DCM transitions to mine closure, noise monitoring program components would cease in a staged manner, as follows:

- real-time noise monitoring would cease following the cessation of evening and night-time operations;
- rail noise monitoring would cease once ROM coal rail movements cease on 31 December 2021; and
- attended noise monitoring and Sound Power Level monitoring would cease following the cessation of bulk rehabilitation earthworks (anticipated by end 2023).

The EPA acknowledges that there will likely be a reduction in noise emissions as a result of the cessation of activities at the premises and subsequent ongoing rehabilitation. A review of the noise monitoring being undertaken is therefore considered reasonable. The EPA advises that the review of noise monitoring will need to be considerate of current noise emissions at the time and must be undertaken in consultation with the EPA.

DCPL is reminded of its ongoing responsibility to manage noise emissions in accordance with EPL 11701.

**Recommendation:** The EPA recommends that upon determination of PAE-28660473, and prior to reducing the noise monitoring undertaken at the premises, that consultation is undertaken with the EPA regarding review of the noise monitoring and variation of EPL 11701 to reflect any agreed changes.

This concludes the EPA's submission on the proposal.

If you have any questions about this request, please contact Emma Coombs on (02) 4908 6831 or via email at [EPA.Northopsregional@epa.nsw.gov.au](mailto:EPA.Northopsregional@epa.nsw.gov.au).

Yours sincerely

**ROB HUGHES**  
**Unit Head – Regulatory Operations Regional North**  
**Environment Protection Authority**