CADIA HOLDINGS PTY LIMITED

BLAYNEY DEWATERING FACILITY

ENVIRONMENTAL ASSESSMENT

CADIA HOLDINGS PTY LTD

AUGUST 2010
Project No. NEC-10-78
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1 INTRODUCTION

The Cadia Valley Operations are located approximately 25 kilometres (km) south-west of Orange, in the Central Tablelands of New South Wales (NSW) (Figure 1). Cadia Holdings Pty Limited (CHPL) is the owner and operator of the Cadia Valley Operations. CHPL is a wholly owned subsidiary of Newcrest Mining Limited (Newcrest).

Project Approval (PA) for the Cadia East Project (the Project) was granted by the NSW Minister for Planning under Part 3A of the *Environmental Planning and Assessment Act, 1979* (EP&A Act) on 6 January 2010 (PA 06_0295). The PA integrates all of the components of the Cadia Valley Operations (as described in Schedule 1 of the PA) including the Cadia East underground mine, the Cadia Hill open cut mine, the Ridgeway underground mine, the Blayney and CVO Dewatering Facilities, and ancillary infrastructure. These integrated operations are herein referred to as the Cadia Valley Operations.

The Blayney Dewatering Facility Modification (the Modification) relates to a temporary upgrade of the Blayney Dewatering Facility and extension of its operational life of approximately two years (i.e. until Year 5 of the Project).

1.1 OVERVIEW OF THE EXISTING BLAYNEY DEWATERING FACILITY

Approximately 24 million tonnes per annum (Mtpa) of ore is mined at the Cadia Valley Operations. Mineral concentrate containing gold and copper is pumped approximately 30 km from the Cadia Valley Operations to the nearby town of Blayney, where it is dewatered and then loaded onto trains for transport to Port Kembla on the eastern seaboard. Figure 1 shows the pipeline between the Cadia Valley Operations and Blayney. Figure 2 shows the location of the Blayney Dewatering Facility.

The function of the Blayney Dewatering Facility is to dewater product concentrate produced at the Cadia Valley Operations and to facilitate the transport of the product to market.

The Project includes a new dewatering facility (the CVO Dewatering Facility). This facility is scheduled to be constructed during Years 2 and 3 of the Project, with the Blayney Dewatering Facility retained to provide standby processing capacity during Years 4 to 7 of the Project.

Cadia East is described in full in the Cadia East Project Environmental Assessment (the Cadia East EA) (CHPL, 2009a).

1.2 PENDING CADIA HILL UNDERGROUND MODIFICATION

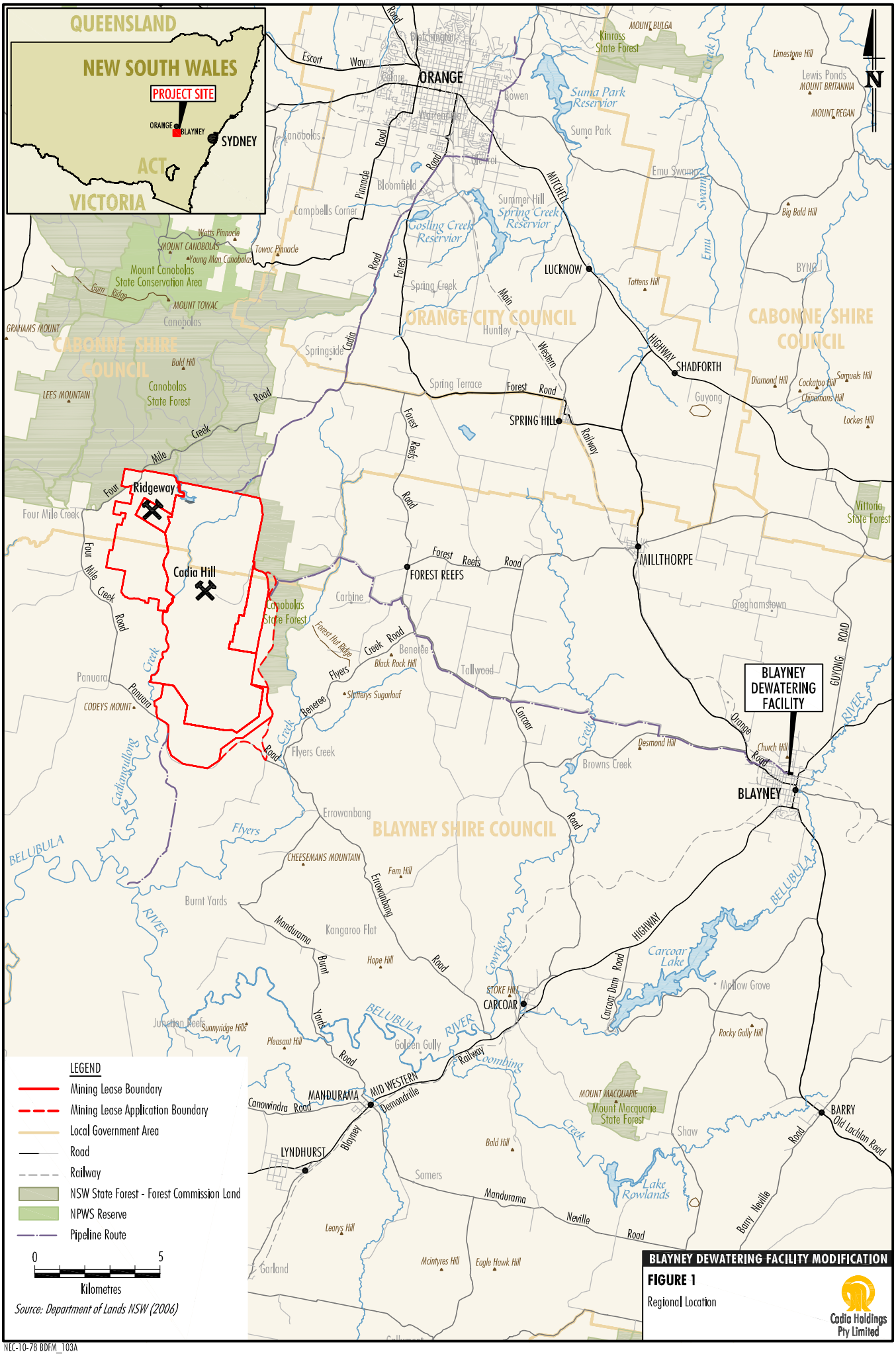
In July 2010, CHPL sought a modification to the PA under Section 75W of the EP&A Act for a new underground decline and ventilation infrastructure within the Cadia Hill open pit.

Determination of this modification is currently pending.

1.3 OVERVIEW OF THE BLAYNEY DEWATERING FACILITY MODIFICATION

The new CVO Dewatering Facility was assessed and approved as part of the Project (PA 06-0295) in January 2010. This facility was to be constructed during Years 2 and 3 of the Project, with the Blayney Dewatering Facility retained to provide standby processing capacity during Years 4 to 7 of the Project.

Following a review of Project feasibility in early 2010, it is now proposed to delay the construction of the CVO Dewatering Facility until approximately Year 4 of the Project and instead upgrade the Blayney Dewatering Facility to facilitate a temporary increase in capacity of the facility.



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The Modification would result in an extension of the life of the Blayney Dewatering Facility of approximately two years (until Year 5 of the Project).

Approval is sought from the Minister for Planning under Section 75W of the EP&A Act for the Modification.

1.4 CONSULTATION FOR THE MODIFICATION

CHPL provided a briefing to the Department of Planning (DoP) on 22 July 2010 regarding the Modification. The DoP advised that Section 75W of the EP&A Act is likely to be the appropriate avenue for assessment of the Modification.

CHPL has also consulted with the Blayney Shire Council (BSC) in regard to the Modification; BSC raised no particular issue of concern.

It is anticipated that consultation with the stakeholders in Blayney would occur through the exhibition of this Environmental Assessment (EA). Stakeholders would have the opportunity to comment on the EA during the exhibition period.

1.5 DOCUMENT STRUCTURE

This EA is structured as follows:

Section 1	Provides an introduction to the proposed Modification and the purpose of this EA, describes the structure of this EA and provides a summary of the consultation undertaken.
Section 2	Describes the approved Blayney Dewatering Facility and the proposed Modification.
Section 3	Outlines the relevant statutory provisions and provides a justification for the proposed Modification.
Section 4	Details the environmental assessment for the proposed Modification.
Section 5	Describes the changes to the existing rehabilitation concepts that would be necessary for the Modification.
Section 6	Provides a conclusion to this EA.
Section 7	Lists documents and reports referenced in this document.

2 DESCRIPTION OF THE BLAYNEY DEWATERING FACILITY AND THE PROPOSED MODIFICATION

2.1 OVERVIEW OF THE APPROVED OPERATIONS

The Blayney Dewatering Facility commenced operations in 1998, processing the slurried concentrate produced by the Cadia Hill Mine.

Currently the gold/copper concentrate slurry is pumped via a buried concentrate pipeline to the Blayney Dewatering Facility, where it is dewatered, stockpiled and transported to market as outlined in Sections 2.1.1 and 2.1.2. The current throughput capacity of the Blayney Dewatering Facility is approximately 220,000 tonnes per annum (tpa).

The new CVO Dewatering Facility was assessed and approved as part of the PA (06-0295). This facility was approved to be constructed during Years 2 and 3 of the Project, with the Blayney Dewatering Facility retained to provide standby processing capacity during Years 4 to 7 of the Project.

2.1.1 Concentrate Dewatering

Concentrate is discharged from the concentrate pipeline into a distribution box from where the slurry is discharged to one of two agitated storage tanks or to a clarifier feed box if required. The storage tanks provide sufficient storage capacity to provide approximately 48 hours residence time prior to filtration.

From the storage tanks, the concentrate slurry is pumped to a vertical plate pressure filter press, housed in a purpose built, metal clad building. The filter press produces dewatered concentrate with a residual moisture content of approximately 11%. Dewatered concentrate is discharged onto a stockpile (located wholly within the dewatering facility building).

Water extracted from the concentrate slurry is pumped to the return water pond prior to being pumped back to the Cadia Valley Operations.

2.1.2 Concentrate Load-out

A front-end loader (FEL) is used to load dewatered concentrate from the stockpile into containers for rail transport. This activity is conducted within the building, adjacent to the opening on the eastern side. The containers are approximately 6.5 metres (m) long, 2.6 m wide and 1.8 m high and have a carrying capacity of approximately 26 tonnes (t) of mineral concentrate.

A container forklift transfers the full containers from the load-out area to hardstand areas in readiness for loading onto a train. The full containers are loaded onto train wagons via the container forklift with two containers per wagon.

2.1.3 Hours of Operation

The Blayney Dewatering Facility operates 24 hours per day over two 12 hour shifts, seven days per week. Container filling and train loading operations are undertaken between the hours of 7.00 am and 7.00 pm, up to seven days per week.

2.2 DESCRIPTION OF THE PROPOSED MODIFICATION

Following a review of Project feasibility, CHPL proposes to delay the construction of the CVO Dewatering Facility until approximately Year 4 of the Project. In order to facilitate a temporary increase in throughput capacity, CHPL proposes modify the existing Blayney Dewatering Facility and increase its operational life until approximately Year 5 of the Project.

2.2.1 Modification Construction

Construction activities associated with the modified Blayney Dewatering Facility include the installation of the following items (Figure 3):

- an additional filter on the mezzanine level of the existing building;
- an additional sump pump and air receiver outside of the building; and
- an additional compressor within the compressor house.

It is envisaged that these construction activities associated with the Modification would be undertaken using two 50 t cranes. The above construction activities would occur on the existing hardstand.

Construction activities would potentially include the use of an external lay-down area to the north of the Blayney Dewatering Facility (Figure 2) for temporary storage and assembly of equipment. If required, this area would be accessed using public roads (Hill and Gerty Streets).

2.2.2 Modification Operations

The Modification would include:

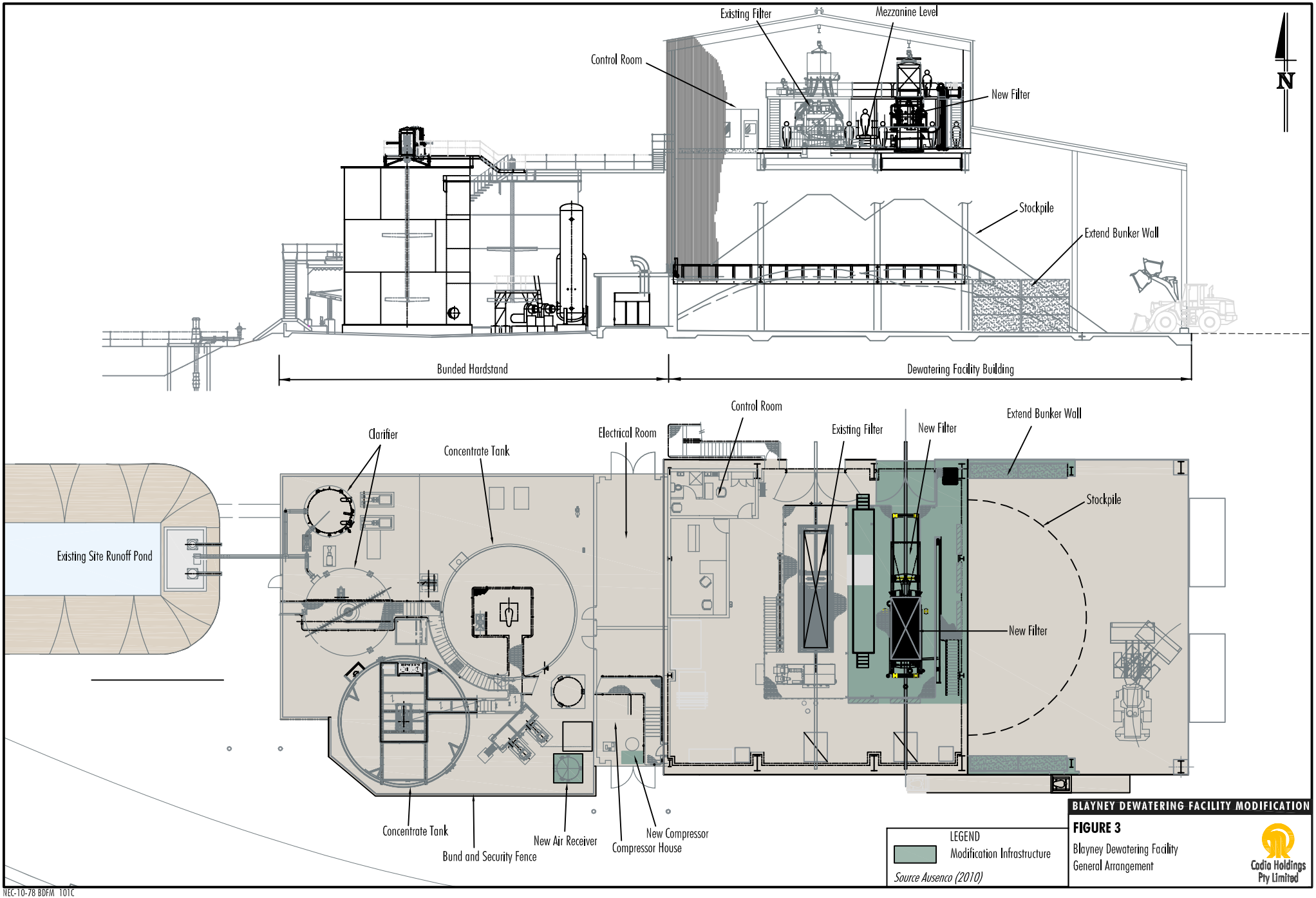
- an increase of throughput capacity from 220,000 tpa to approximately 300,000 tpa; and
- an increase in train movements reporting to the Blayney Dewatering Facility from approximately three trains per week to approximately five trains per week during the existing approved train loading hours.

Approximately six full-time staff are employed at the Blayney Dewatering Facility. No additional staff are required for the operation of the expanded facility.

The hours of operation for the modified Blayney Dewatering Facility would remain unchanged from those currently approved. Dewatering would continue to take place 24 hours per day, seven days per week with container and train loading activities being conducted between 7.00 am to 7.00 pm, seven days per week.

The new filter press would operate in parallel with the existing filter press, with concentrate stockpiling and container loading continuing to operate within the building.

Mobile equipment comprising of a FEL and forklift would continue to be restricted to operating between the hours of 7.00 am to 7.00 pm seven days per week. No additional mobile equipment would be required as part of the modification.



BLAYNEY DEWATERING FACILITY MODIFICATION

FIGURE 3

Blayney Dewatering Facility
General Arrangement

Cadia Holdings Pty Limited

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3 STATUTORY CONTEXT AND MODIFICATION JUSTIFICATION

3.1 STATUTORY CONTEXT

3.1.1 Environmental Planning and Assessment Act 1979

The Project was approved under Part 3A of the EP&A Act by the Minister for Planning (the Minister) on 6 January 2010 (Application Number 06_0295).

As outlined in Section 1.3, CHPL has consulted with the DoP with regard to seeking the necessary approvals for the Modification and based on this consultation, this EA has been prepared under Section 75W of the EP&A Act.

Section 75W of the EP&A Act states:

75W Modification of Minister's approval

(1) In this section:

***Minister's approval** means an approval to carry out a project under this Part, and includes an approval of a concept plan.*

***modification of approval** means changing the terms of a Minister's approval, including:*

(a) revoking or varying a condition of the approval or imposing an additional condition of the approval, and

(b) changing the terms of any determination made by the Minister under Division 3 in connection with the approval.

(2) The proponent may request the Minister to modify the Minister's approval for a project. The Minister's approval for a modification is not required if the project as modified will be consistent with the existing approval under this Part.

(3) The request for the Minister's approval is to be lodged with the Director-General. The Director-General may notify the proponent of environmental assessment requirements with respect to the proposed modification that the proponent must comply with before the matter will be considered by the Minister.

(4) The Minister may modify the approval (with or without conditions) or disapprove of the modification.

….

3.1.2 General Statutory Requirements

The Cadia Valley Operations are located within the Blayney Shire and Cabonne Shire Local Government Areas (LGAs). A full description of the statutory context of the Cadia Valley Operations is provided in Attachment 3 of the Cadia East EA.

The Blayney Dewatering Facility is located wholly within the Blayney Shire LGA. Presented below is an overview of the statutory requirements relevant to the Modification, consistent with Attachment 3 of the Cadia East EA.

Blayney Shire

Clause 9(3) of the Blayney LEP provides:

> *Except as otherwise provided by this plan, the Council must not grant consent to the carrying out of development on land to which this plan applies unless the Council is of the opinion that the carrying out of the development is consistent with the objectives of the zone within which the development is proposed to be carried out.*

While not obliged to do so, the Minister may, pursuant to section 75J(3), take into account the zone objectives of any land on which the Modification is proposed to be developed, unless it can be established that some or all of the relevant zone objectives are inconsistent with clauses in the *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries)* (Mining State Environment Protection Policy [SEPP]) and therefore overridden.

The lands relevant to the Modification are zoned Village or Urban Zone 2(v). The following provides the zone objectives of land zoned Village or Urban Zone 2(v) in the Blayney LGA:

Zone No 2(v) (Village or Urban Zone)

> *To promote development in existing towns and villages in a manner which is compatible with their urban function.*

The Modification is considered to be generally consistent with the above zone objectives, because it would involve the temporary upgrade of the Blayney Dewatering Facility, which is located in a recognised industrial precinct, would continue the employment of the workforce associated with the facility, and as described in Section 4, management and mitigation measures would be implemented, to minimise the potential impacts of the Modification on other land uses and the environment.

State Environmental Planning Policy (Major Projects) 2005

As outlined above, the Project was approved under Part 3A of the EP&A Act by the NSW Minister for Planning in January 2010.

State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007

The Mining SEPP, which commenced on 16 February 2007, regularises the various environmental planning instruments that previously controlled mining activities.

Clause 5(3) of the Mining SEPP gives it primacy where there is an inconsistency between the provisions of the Mining SEPP and the provisions of any other environmental planning instrument (except the *State Environmental Planning Policy (Major Projects) 2005* [Major Projects SEPP], *State Environmental Planning Policy No. 14 [Coastal Wetlands]* and *State Environmental Planning Policy No. 26 [Littoral Rainforest]*).

- ***Clause 2***

Clause 2 sets out the aims of the Mining SEPP as follows:

> *(a) to provide for the proper management and development of mineral, petroleum and extractive material resources for the purpose of promoting the social and economic welfare of the State, and*
>
> *(b) to facilitate the orderly and economic use and development of land containing mineral, petroleum and extractive material resources, and*

(c) to establish appropriate planning controls to encourage ecologically sustainable development through the environmental assessment, and sustainable management, of development of mineral, petroleum and extractive material resources.

- ***Clause 8***

Clause 8 of the Mining SEPP provides:

8 Determination of permissibility under local environmental plans

(1) If a local environmental plan provides that development for the purposes of mining, petroleum production or extractive industry may be carried out on land with development consent if provisions of the plan are satisfied:

(a) development for that purpose may be carried out on that land with development consent without those provisions having to be satisfied, and

(b) those provisions have no effect in determining whether or not development for that purpose may be carried out on that land or on the determination of a development application for consent to carry out development for that purpose on that land.

(2) Without limiting subclause (1), if a local environmental plan provides that development for the purposes of mining, petroleum production or extractive industry may be carried out on land with development consent if the consent authority is satisfied as to certain matters specified in the plan, development for that purpose may be carried out on that land with development consent without the consent authority having to be satisfied as to those specified matters.

State Environmental Planning Policy No. 33 (Hazardous and Offensive Development)

Clause 13 of SEPP 33 requires the consent authority, in considering a Development Application for a potentially hazardous or a potentially offensive industry, to take into account:

(c) in the case of development for the purpose of a potentially hazardous industry—a preliminary hazard analysis prepared by or on behalf of the applicant, and

(d) any feasible alternatives to the carrying out of the development and the reasons for choosing the development the subject of the application (including any feasible alternatives for the location of the development and the reasons for choosing the location the subject of the application)…

A Preliminary Hazard Analysis (PHA) was conducted for the Cadia East EA in accordance with SEPP 33 to evaluate the potential hazards associated with Cadia East, including the Blayney Dewatering Facility. The Modification does not significantly alter the consequences or likelihood of a hazardous event occurring at the Blayney Dewatering Facility, as the operational activities on-site would be generally unchanged.

State Environmental Planning Policy No. 55 (Remediation of Land)

SEPP 55 aims to provide a State-wide planning approach to the remediation of contaminated land. Under SEPP 55, planning authorities are required to consider the potential for contamination to adversely affect the suitability of the site for its proposed use.

A consent authority must consider the following under clause 7(1):

(a) whether the land is contaminated, and

(b) if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and

(c) if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose.

Further, under clause 7(2), before determining an application for consent to carry out development that would involve a change of use of land, the consent authority must consider a report specifying the findings of a preliminary investigation of the land concerned, carried out in accordance with the contaminated land planning guidelines.

No change of use is proposed and no preliminary land contamination investigation is required.

Environment Protection and Biodiversity Conservation Act, 1999

The objective of the Commonwealth *Environment Protection and Biodiversity Conservation Act, 1999* (EPBC Act) is to provide for the protection of those aspects of the environment that are of *national environmental significance.* Proposals that are likely to have a significant impact on a matter of environmental significance are defined as a *controlled action* under the EPBC Act. Proposals that are, or may be, a controlled action are required to be referred to the Commonwealth Minister for the Environment to determine whether or not the action is a controlled action.

The Modification involves a minor change to the Blayney Dewatering Facility and does not involve any additional clearing of vegetation. Therefore, the Modification is not likely to have a significant impact on any protected matters listed under the EPBC Act. It has therefore not been referred to the Commonwealth Minister for the Environment for consideration under the EPBC Act, as no "controlled action" is proposed.

3.2 MODIFICATION JUSTIFICATION

The Cadia East EA describes that a new dewatering facility (CVO Dewatering Facility) would be constructed during Years 2 and 3 of the Project. In parallel with the development and regulatory assessment of the EA in late 2009/early 2010, Newcrest was completing a feasibility study for the Project. As part of the final review of the feasibility study, a number of measures were identified to reduce the capital cost of the Project. These measures included temporarily increasing the capacity of the Blayney Dewatering Facility, and delaying the construction of the CVO Dewatering Facility. This would have the effect of delaying the capital expenditure for the CVO Dewatering Facility to Year 4 of the operational budget.

The Modification is considered to be justified on economic and environmental grounds as:

- A review of the Project feasibility indicated that the Project capital cost could be reduced by delaying the construction of the CVO Dewatering Facility until Year 4 of the Project, and temporarily upgrade the Blayney Dewatering Facility.
- The proposed temporary upgrade to the Blayney Dewatering Facility is considered to be minor and is located within the footprint of the existing building and hardstand area.
- Noise mitigation measures to be implemented for the Modification would reduce noise emissions from the facility to below current levels.
- Other potential environmental impacts are considered negligible.

4 ENVIRONMENTAL ASSESSMENT

4.1 NOISE

Wilkinson Murray Pty Ltd (Wilkinson Murray) (Appendix A) has conducted and assessment of existing noise levels and potential impacts associated with the Modification.

4.1.1 Existing Environment

Background

The existing Blayney Dewatering Facility is located in a recognised industrial precinct, adjacent to the Linfox export facility (Figure 2). The existing acoustic environment is dominated by operational noise from both the Blayney Dewatering Facility and the Linfox export facility (Appendix A). In addition, freight and passenger trains operate on the Main Western Railway immediately adjacent to the facility up to 24 hours a day. The Linfox export facility operations include the loading and unloading of containers on trains and also trucks for deliveries and transportation. Prominent noise sources from the industrial precinct are from loading and unloading of forklift containers, train noise, truck noise and plant noise.

Operational Noise Performance

Regular attended and unattended noise monitoring of noise from the facility has been conducted by Wilkinson Murray Pty Ltd, and previously by Heggies Australia Pty Ltd and Richard Heggie Associates Pty Ltd. A summary of the results from August 2002 to September 2009 recorded at the designated noise monitoring locations surrounding the Blayney Dewatering Facility (Figure 2) is provided in Appendix A. Operational noise levels recorded during this period indicated that compliance with the relevant criteria was achieved on most occasions (Appendix A).

Exceptions to the above monitoring record include exceedances of the criteria recorded at four of the five monitoring locations during the daytime period, 85 Carcoar Street (L1), Railway Lane (L2), Blayney Primary School (L4) and the Blayney Pre-school (L5) (Figure 2). Noise levels of up to 4 decibels (dBA) above day and night-time criteria were recorded during 2002 to 2009. Daytime noise levels were mainly attributed to activities such as loading of freight containers and subsequent loading of the train. Night-time noise levels were mainly attributed to a constant noise emanating from the concentrate tank (Appendix A).

During September 2009, non compliance was recorded at 85 Carcoar Street (L1) and the Blayney Pre-school (L5) (Figure 2). Noise levels of up to 7 dBA above night-time criteria were recorded. During this monitoring period, a trial of a filtration aid pump was in operation and aural observations indicated that there was a constant noise emanating from the return water pump (Appendix A).

The filtration air pump trial has been discontinued and follow-up monitoring conducted in 2010 confirmed that the return water pump noise is no longer significant, indicating that abnormal operating conditions existed during the September 2009 survey (Appendix A).

Noise monitoring conducted for the Blayney Dewatering Facility has also noted that noise levels from the Linfox export facility fluctuate depending on the type of activity occurring on the site, with levels of up to 83 dBA ($LA_{(max)}$) being recorded during train loading activities.

Complaints

CHPL maintains a complaints register as part of its environmental management and stakeholder relations initiatives. Since the commencement of operations in 1998, only one community complaint relating to noise from the Blayney Dewatering Facility has been received (22 March 2006). The complaint was in relation to daytime noise generated by a large vacuum used for the cleaning of the site runoff pond. Work ceased within 30 minutes of the complaint and resumed later with an alternative pump generating significantly less noise.

4.1.2 Potential Impacts

Construction Noise

The construction of the Blayney Dewatering Facility Modification would be for a short duration of up to approximately six weeks, and would take place from 7.00 am to 6.00 pm Monday to Friday and 8.00 am to 1.00 pm on Saturdays (i.e. the standard construction hours in the *Interim Construction Noise Guideline* (ICNG) [DECCW, 2009]). The ICNG stipulate a construction noise management level and a highly affected noise level (Appendix A).

The plant that would primarily be involved in the construction activities would be two 50 t cranes, which would only be used over limited periods for the duration of works to place new plant and equipment in place (i.e. predominantly the installation of the new filter).

The potential use of the external lay-down area (Figure 2) is not anticipated to be a significant source of noise and is located remote from residential receivers (Appendix A).

Wilkinson Murray modelled noise from daytime construction activities. Modelling results indicate that noise levels are below the construction noise management level at all sensitive receivers with the exception of L5 (Figure 2). Predicted noise levels are below the highly affected noise level at all receivers (Appendix A).

Wilkinson Murray recommends that potentially-affected residents be informed that construction activities are to take place, and the expected duration of those activities. Where possible, the concurrent use of two cranes would be minimised.

Existing Operational Noise

Noise modelling was undertaken by Wilkinson Murray using the Environmental Noise Model. Appendix A describes the model set-up and adverse meteorological conditions modelled. Modelling scenarios included:

- daytime/evening operations without any loading activities (i.e. train or container loading);
- daytime/evening operations including loading activities;
- daytime/evening operations including loading activities and the presence of a train; and
- night-time operations (without loading).

The above scenarios were modelled for both the existing and modified Blayney Dewatering Facility.

The existing scenario modelling results provided in Appendix A indicate that noise criteria are currently exceeded on occasions at the monitoring locations listed in the Cadia East PA. The noise model also indicates that other receivers in Blayney are predicted to exceed the criteria, particularly during adverse weather conditions. Of the 237 receivers modelled, 142 were predicted to exceed the criteria during daytime operations and 139 receivers were predicted to exceed the night-time criteria, during adverse meteorological conditions. Conversely, only one receiver was predicted to exceed the criteria during daytime calm meteorological conditions (with no loading activities) (Appendix A).

Modification Noise Mitigation Measures

As discussed in Section 4.1.1, the existing Blayney Dewatering Facility is located within a recognised industrial precinct in Blayney and has been operating for an extended period. Notwithstanding, due to the exceedances predicted for the existing facility (as above), CHPL has investigated noise mitigation measures for the Modification.

In accordance with the Industrial Noise Policy (Environment Protection Authority, 2000), Wilkinson Murray conducted an investigation of feasible and reasonable noise mitigation measures. A number of iterative steps were undertaken to develop noise mitigation measures for the Modification (Appendix A). As a result of the investigation the following noise mitigation measures would be adopted for the Modification:

- Installation of a cover on the concentrate tanks, reducing noise associated with the agitator and movement of the liquid concentrate within the tank by 7 dBA.
- Reduction of noise from the forklift by 3 dBA. This can be achieved by replacing the existing forklift with a quieter model.
- Some panels of cladding on the existing building have been removed for access purposes. Cladding of existing building would be augmented for the Modification to fully enclose the container loading area to the north and south. This would provide shielding of the FEL loading activities to the receivers north and south of the facility.

Modification Operational Noise

The modelling results associated with the Modification scenario (including the aforementioned mitigation measures) indicate that an increased number of receivers are predicted to achieve the noise criteria (i.e. when compared with the existing scenario), particularly at night-time. Approximately 28 receivers during the day/evening periods and 105 receivers at night-time achieve the criteria due to the implementation of the mitigation measures described above (Appendix A). Some 116 receivers during the day and 34 receivers at night remain predicted exceedances under the Modification, under worst-case meteorological conditions.

A comparison of noise predictions for the existing and modified Blayney Dewatering Facility shows that whilst noise from the existing facility exceeds relevant criteria under worst-case meteorological conditions, the number of exceedances would be significantly reduced with the Modification, particularly at night-time when people are generally more sensitive to noise.

Summary and Discussion

In summary, the changes to the acoustic environment as a result of the Modification would be:

- The facility would operate for approximately two additional years (until Year 5 of the Project).
- Train loading would be undertaken up to five times per week, increasing from the existing three trains per week. This would mean that weekly loading hours would increase from approximately 18 hours to approximately 30 hours per week. Loading would continue to be conducted between the hours of 7.00 am to 7.00 pm and only one train would be loaded in any one day.
- Daytime noise levels during loading activities would be marginally lower than the existing noise levels. This is primarily due to the adoption of the quieter container forklift.
- Night-time noise levels would be moderately lower in comparison with the existing noise levels. This is because of the covers to be installed on the concentrate tanks, which are currently the major noise source at night-time. The covers are expected to reduce the tank noise which includes the agitator and noise from the movement of concentrate within the tank.

Whilst further mitigation may be possible, it is likely that these measures would have a high capital cost. In addition, and as stated in Section 4.1.1, the existing Blayney Dewatering Facility is located in a recognised industrial precinct, adjacent to the Linfox export facility. In addition, freight and passenger trains operate on the Main Western Railway immediately adjacent to the facility up to 24 hours a day. The Linfox export facility uses two large container forklifts and a large container loader. Anecdotal evidence indicates that these activities sometimes occur in the evenings and early mornings (i.e. not necessarily daytime only). Any major noise mitigation works would not be commensurate with the existing industrial setting of the facility.

4.1.3 Monitoring and Management Measures

Noise monitoring is conducted in accordance with the Noise Monitoring Program (CHPL, 2010). This Program stipulates that directional unattended monitoring would be undertaken at three locations (Locations 1, 4 and 5) (Figure 2). The Noise Monitoring Program also provides noise management protocols for dealing with complaints and exceedances of criteria.

It is envisaged that monitoring and management of the Modification would continue to be undertaken in accordance with the Noise Monitoring Program (CHPL, 2010).

Prior to the commencement of construction, CHPL would inform potentially-affected residences activities of the upcoming construction activities. Where possible, the concurrent use of two cranes would be minimised during construction activities.

4.2 AIR QUALITY

Dust generation from the Modification would continue to be negligible due to the moisture content of the material being handled, the enclosed nature of the facility and the use of enclosed shipping containers for product transport.

The modified dewatering plant, concentrate stockpile and container filling operations would continue to remain enclosed to effectively eliminate the potential for dust emissions to the surrounding environment.

The northern and southern sides of the container filing area are cladded (with the exception of access and container loading areas) to reduce the potential for dust on the floor of the loading shed to become windborne. Any dust on the floor of the loading shed is regularly swept and/or hosed into the sump, with any concentrate spilt during container loading activities being retrieved via the sump pumps in the eastern end of the filling area.

A FEL would continue to be used to transport concentrate from inside the dewatering facility to enclosed shipping containers outside of the enclosure on the hardstand area.

4.3 OTHER ENVIRONMENTAL ISSUES

4.3.1 Visual Amenity

The Blayney Dewatering Facility is located within an industrial landscape setting immediately west of the Linfox export facility.

The components of the Modification would be installed within the footprint of the existing building and hardstand area (Figure 3).

Given the industrial landscape setting of the facility and the limited changes to the visual setting due to the Modification, the potential visual impact of the Modification would be negligible.

4.3.2 Surface Water

Currently all runoff generated from the Blayney Dewatering Facility reports to the stormwater collection pond. This runoff is then combined with the return water from the dewatering facility (which includes dewatered concentrate water and treated BSC sewage effluent) and returned to Cadia Valley Operations. The proposed Modification would not alter this water management regime.

The current hardstand area has been constructed in accordance with the hydrological and engineering specifications of the BSC (CHPL, 2009b). The proposed Modification would result in a minor extension of the existing bunded area (Figure 3). Therefore, the Modification would not increase the potential for downstream effects on water resources.

Notwithstanding, the surface water monitoring programme outlined in the Blayney Dewatering Facility Environmental Management Plan (CHPL, 2009b) would continue as part of the Modification.

4.3.3 Flora and Fauna

The Blayney Dewatering Facility is located within an industrial area devoid of any vegetation with the exception of small, isolated patches of introduced grasses and trees.

The potential use of the external lay-down area, which is located in a cleared area to the north of the Blayney Dewatering Facility, would not involve any vegetation clearance or surface disturbance.

Given that no additional surface disturbance is required, no impacts on flora and fauna are anticipated.

4.3.4 Heritage

Potential impacts on heritage (Aboriginal and European) items are negligible as there is no additional disturbance area associated with the Modification.

4.3.5 Land Use and Socio-economics

The Blayney Dewatering Facility is currently located in an industrial area. The proposed Modification would continue to conform to the existing land use of the area.

Approximately six full-time staff are employed at the currently approved Blayney Dewater Facility. The Modification would not alter the number of full-time staff required, therefore the Modification would not significantly change (increase or decrease) the socio-economic effect of the facility.

4.3.6 Transport

The Modification would not alter the method used to transport the gold/copper concentrate from the Cadia Valley Operations to the Blayney Dewatering Facility (i.e. the concentrate would continue to be transported to the Blayney Dewatering Facility via a concentrate pipeline). The dewatered concentrate would continue to be transported via rail to Port Kembla on the eastern seaboard

The site would continue to be accessed in accordance with Schedule 3, Condition 46 of the PA (06-0295).

The proposed Modification would not generate any additional significant impacts to the local road network, residents and other road users.

4.3.7 Chemical and Hazardous Substance Management/Contaminated Land

In accordance with SEPP 33, a preliminary risk assessment was undertaken for the construction and operation of the existing Blayney Dewatering Facility. The assessment contained a number of measures to mitigate any potential land contamination impacts associated with the gold/copper concentrate. These measures were adopted in the design of the existing Blayney Dewatering Facility and would continue for the Modification.

5 DECOMMISSIONING

The Modification would increase the life of the Blayney Dewatering Facility until approximately Year 5 of the Project. Decommissioning/closure concepts are described in the Cadia East EA and are provided below.

The modified Blayney Dewatering Facility would be decommissioned when considered to be redundant by Newcrest. The decommissioning process would involve the removal of tanks, pumps, plant and infrastructure. Concentrate and dewatering lines would be flushed with clean water, capped and left *in-situ*. However, consideration would first be given to their possible use within a regional water management scheme, if applicable.

Following the removal of infrastructure, attempts may be made to sell the site to another industrial user who can make use of the concrete pad and shed. If such a user is not identified, the building would be demolished and the concentrate pad left in place. The decision would be made in consultation with the regulatory authorities and stakeholders. A final land contamination assessment would be undertaken and amelioration measures implemented if required.

6 CONCLUSION

The Project feasibility study was reviewed to identify opportunities to reduce the capital cost of the Project. Following this review, it is now proposed to delay construction of the CVO Dewatering Facility until Year 4 of the Project and temporarily increase the capacity of the existing Blayney Dewatering Facility. This proposal would increase the life of the existing facility by approximately two years.

The Blayney Dewatering Facility is located in a recognised industrial precinct, adjacent to the Linfox export facility. Routine noise monitoring has noted occasional exceedances of noise criteria. However, noise complaints are very infrequent, with only one complaint recorded over the life of the facility.

Noise modelling of the existing Blayney Dewatering Facility indicated that exceedances of the noise criteria occur, particularly under adverse meteorological conditions. However with the implementation of mitigation measures (i.e. installation of covers on the concentrate tanks and the use of a quieter fork lift) the Modification would result in a reduction in predicted noise levels, particularly at night-time.

The environmental review concluded that minimal impacts are predicted with respect to all other environmental aspects.

7 REFERENCES

Cadia Holdings Pty Limited (2009a) *Cadia East Project Environmental Assessment.*

Cadia Holdings Pty Limited (2009b) *Blayney Dewatering Facility Environmental Management Plan.*

Cadia Holdings Pty Limited (2010) *Noise Monitoring Program.*

Department of Environment and Climate Change (2009) *Interim Construction Noise Guideline.*

Department of Urban Affairs and Planning and Environmental Protection Agency (1998) *Managing Land Contamination – Planning Guidelines SEPP 55 – Remediation of Land.*

Environment Protection Authority (2000) *Industrial Noise Policy.*

APPENDIX A

NOISE IMPACT ASSESSMENT

BLAYNEY DEWATERING FACILITY MODIFICATION

NOISE IMPACT ASSESSMENT

ACOUSTICS AND AIR

REPORT NO. 06325-BD
VERSION B

WILKINSON MURRAY

BLAYNEY DEWATERING FACILITY MODIFICATION

NOISE IMPACT ASSESSMENT

REPORT NO. 06325-BD
VERSION B

AUGUST 2010

PREPARED FOR

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1 INTRODUCTION

Cadia Holdings Pty Limited (CHPL) proposes to modify the existing Blayney Dewatering Facility, which is located in the town of Blayney, New South Wales (NSW). The function of the Blayney Dewatering Facility is to dewater the product concentrate produced at Cadia Valley Operations and to facilitate the transportation of this product to market.

A new dewatering facility (the CVO Dewatering Facility) was assessed and approved as part of the Cadia East Project (the Project) (Project Approval 06-0295). This facility was to be constructed approximately 2.5 km east of Blayney during Years 2 and 3 of the Project, with the Blayney Dewatering Facility retained to provide standby processing capacity during Years 4 to 7 of the Project.

Following a review of Project feasibility, it is now proposed to delay the construction of the CVO Dewatering Facility until approximately Year 4 of the Project and instead upgrade the Blayney Dewatering Facility to facilitate a temporary increase in capacity of the facility (the Modification). The modified Blayney Dewatering Facility would be decommissioned following the commissioning of the CVO Dewatering Facility, scheduled to occur in Year 5 of the Project.

Potential noise impacts from the modified Blayney Dewatering Facility have been assessed in accordance with the existing Project Approval conditions, the Department of Environment, Climate Change and Water's (DECCW) *NSW Industrial Noise Policy* (*INP*) (NSW Environment Protection Authority [EPA], 2000) and DECCW's *Interim Construction Noise Guidelines*.

2 DESCRIPTION OF EXISTING/APPROVED BLAYNEY DEWATERING FACILITY AND THE PROPOSED MODIFICATION

The following sub-sections describe the existing Blayney Dewatering Facility and the proposed Modification.

2.1 Existing Blayney Dewatering Facility

The location of the Blayney Dewatering Facility is shown in Figure 2-1. A summary description of the existing facility is provided below.

2.1.1 Concentrate Dewatering

Product concentrate is pumped as a slurry some 30 km from the Cadia Valley Operations to the Blayney Dewatering Facility via the concentrate pipeline.

The concentrate is discharged from the concentrate pipeline into a distribution box from where the slurry is discharged to one of two agitated storage tanks or to a clarifier feed box, if required. The storage tanks provide sufficient storage capacity to provide approximately 48 hours residence time prior to filtration.

From the storage tanks, the concentrate slurry is pumped to a vertical plate pressure filter press housed in a purpose built, metal clad building. The filter press produces dewatered concentrate with a residual moisture content of approximately 11%. Dewatered concentrate is discharged onto a stockpile (located wholly within the dewatering facility building).

Water extracted from the concentrate slurry is pumped to the return water pond prior to being pumped back to the Cadia Valley Operations.

2.1.2 Concentrate Load-out

A front-end loader is used to load dewatered concentrate from the stockpile into containers for rail transport. This activity is conducted within the building, adjacent to the opening on the eastern side. The containers are approximately 6.5 m long, 2.6 m wide and 1.8 m high, and have a carrying capacity of approximately 26 t of mineral concentrate.

A container forklift transfers the full containers from the load-out area to hardstand areas in readiness for loading onto a train. The full containers are loaded onto train wagons via the container forklift, with two containers per wagon.

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2.1.3 Hours of Operation

The Blayney Dewatering Facility operates 24 hours per day over two 12 hour shifts, seven days per week. Container filling and train loading operations are undertaken between the hours of 7:00am and 7.00pm, up to 7 days per week.

2.2 Blayney Dewatering Facility Modification

2.2.1 Modification Overview

The upgraded Blayney Dewatering Facility modification would include:

- the installation of an additional filter press on the mezzanine level of the existing dewatering facility building;
- the installation of an additional sump pump and air receiver outside of the building;
- an increase in the life of operations until approximately Year 5 of the Project (i.e. approximately two year increase);
- a temporary increase of throughput capacity from 220,000 tpa to approximately 300,000 tpa; and
- an increase in train movements reporting to the Blayney Dewatering Facility from approximately three trains per week to approximately five trains per week during the existing approved train loading hours.

2.2.2 Modification Construction

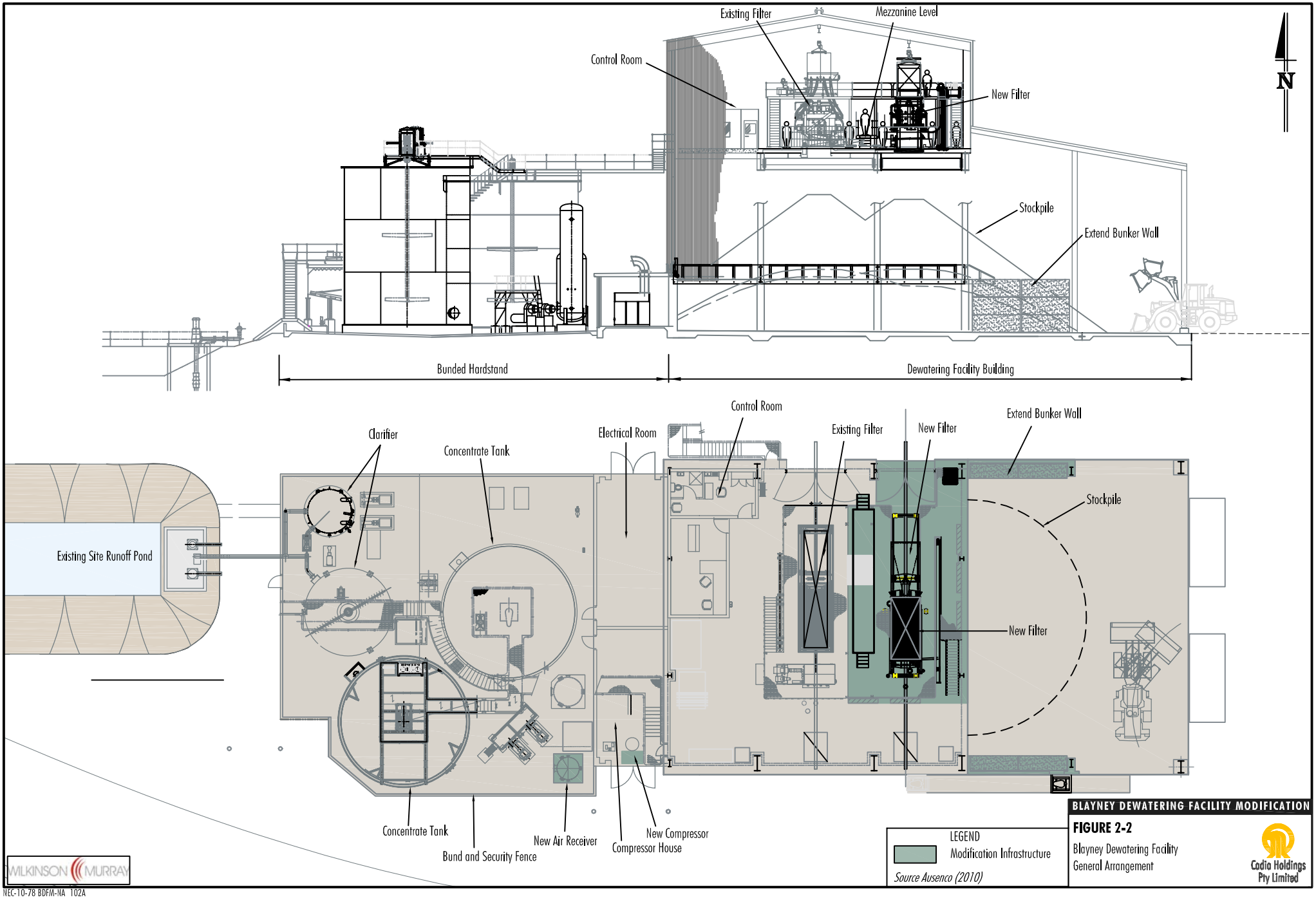
The general arrangement of the proposed Blayney Dewatering Facility Modification is shown in Figure 2-2. Construction activities associated with the proposal would include:

- installation of a new 'Jord' filter press on the mezzanine level, adjacent to the existing filter press;
- installation of an additional air receiver and sump pump outside of the building; and
- installation of a new compressor within the compressor house.

It is envisaged that these construction activities would be undertaken using up to two 50t cranes. Construction activities would potentially include the use of an external lay-down area to the north of the Blayney Dewatering Facility (Figure 2-1) for temporary storage and assembly of equipment.

2.2.3 Modification Operations

The modified Blayney Dewatering Facility would continue to operate as per the current facility. The new filter press would operate in parallel with the existing filter. There would be no change to the method of operation described in Section 2.1.



BLAYNEY DEWATERING FACILITY MODIFICATION

FIGURE 2-2

Blayney Dewatering Facility
General Arrangement

Cadia Holdings Pty Limited

MLKINSON MURRAY

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2.2.4 Operating and Construction Hours

A summary of the operating hours for the existing and modified Blayney Dewatering Facility is provided in Table 2-1 below (i.e. there would be no change to existing operational hours for the Modification), along with the proposed construction hours.

Table 2-1 Summary of Operating and Construction Hours

	Component	Hours
Operations	Train Loading	7.00am to 7.00pm
	Container Loading	7.00am to 7.00pm
	Dewatering of concentrate	24 hours a day
Construction	Installation of new filter	Monday to Friday 7am to 6pm
	Installation and upgrade of external plant	Saturday 8am to 1pm No work on Sundays or public holidays

2.2.5 Workforce

Approximately six full-time staff are employed at the Blayney Dewatering Facility. No additional staff are required for the operation of the expanded facility.

3 EXISTING NOISE AND METEOROLOGICAL ENVIRONMENT

3.1 Existing Noise Environment

The existing Blayney Dewatering Facility is located in a recognised industrial precinct, adjacent to the Linfox Linehaul loading facility (formerly FCL). The existing acoustic environment is dominated by operational noise from both the Blayney Dewatering Facility and the Linfox loading facility. Additionally, the Main Western Railway passes immediately adjacent to the facility and is subject to noise from large freight trains. The FCL loading facility operations include the loading and unloading of containers on trains and also truck loading and unloading. Prominent noise sources from the industrial precinct are from loading and unloading of containers using forklifts, train noise, truck noise and plant noise.

3.2 Meteorological Environment for Noise Assessment Purposes

No meteorological data are recorded within or in the vicinity of Blayney. Data were previously recorded by the Bureau of Meteorology at the Blayney Post Office; however this site was closed in 1992.

The DECCW's *INP* generally directs the use of a single set of adverse meteorological data to use in the assessment of noise impacts. However, for noise modelling of the Blayney Dewatering Facility, Wilkinson Murray has adopted a more rigorous approach where noise levels at receivers are calculated under a varied set of worst case meteorological conditions. As there is no weather station within or in the vicinity of Blayney, adverse meteorological conditions used in the modelling include wind speeds of 3 m/s during day/evening operations (from eight different directions i.e. 45 degree increments starting from the north) and a 3 degrees per 100 m temperature inversion with 1.5 m/s drainage flow during night operations.

3.3 Complaints Summary

CHPL maintains a complaints register as part of its environmental management and stakeholder relations initiatives. Since the commencement of operations, only one community complaint relating to noise from the Blayney Dewatering Facility has been received (22 March 2006). The complaint was in relation to daytime noise generated by a large vacuum used for the cleaning of the site runoff pond. Work ceased within 30 minutes of the complaint and resumed later with an alternative pump generating significantly less noise.

4 NOISE IMPACT ASSESSMENT

4.1 Operational Noise Criteria

Schedule 3, Condition 2 of the Cadia East Project Approval contains the noise impact assessment criteria relevant to the Blayney Dewatering Facility. These criteria are provided in Table 4-1 below.

Table 4-1 - Noise Impact Assessment Criteria (dBA $L_{Aeq, 15min}$)

Location	Day	Evening	Night	Night ($L_{A1, 1min}$)
Location 3	53	53	43	53
Locations 1, 2 and 5	48	48	38	48
Location 4	43	43	35	45

The locations referred to in Table 4-1 are shown in Figure 4-1. Figure 4-1 also shows the various locations included in the noise monitoring conducted on 18 June 2010 for the Blayney Dewatering Facility Modification. For the purposes of this assessment, the criteria at the locations referred to in the Project Approval have been extrapolated to surrounding receivers, and compliance with the criteria has been determined on this basis.

4.2 Compliance Noise Monitoring Summary

Regular attended and unattended noise monitoring from the facility has been conducted by Wilkinson Murray Pty Ltd, and previously by Heggies Australia Pty Ltd and Richard Heggie Associates Pty Ltd. Figure 4-1 shows the designated noise monitoring locations surrounding the Blayney Dewatering Facility. A summary of the results from August 2002 to September 2009 is provided in Appendix B.

Operational noise levels recorded during this period indicated that compliance with the criteria in Table 4-1 was achieved on most occasions.

Exceedances of the criteria were recorded at four of the monitoring locations during the daytime period, 85 Carcoar Street (L1), Railway Lane (L2), Blayney Primary School (L4) and the Blayney Pre-school (L5) (Figure 4-1). Noise levels of up to 4 dBA above day and night-time criteria were recorded on occasions between 2002 and 2009. Day time noise levels were mainly attributed to activities such as loading of freight containers and loading of train.

Night-time noise levels were mainly attributed to a constant noise emanating from the concentrate tank (Appendix B). Exceedances of night-time noise levels of up to 4 dBA were also recorded on occasions.

During September 2009, exceedance of the criteria was recorded at 85 Carcoar Street (L1) and the Blayney Pre-school (L5). Noise levels of up to 7 dBA above night-time criteria were recorded. During this monitoring period, a trial of a filtration aid pump was in operation and aural observations indicated that there was a constant noise emanating from the return water pump (Wilkinson Murray, 2009, Report 07031-R1C Version A).

The filtration aid pump trial was subsequently discontinued. In addition, monitoring conducted since the September 2009 survey has indicated that noise from the return water pumps is not significant.

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Linfox Facility Contributions to Noise Environment

Regular attended noise monitoring at the five locations in the vicinity of the Blayney Dewatering Facility since 2002 has indicated that noise emissions arising from activities at the Linfox facility make it particularly difficult to distinguish the noise contribution from the Blayney Dewatering Facility in isolation. Although the aim of the regular attended noise monitoring is to record the emissions level from the Blayney Dewatering Facility, noise levels of Linfox activities have been noted on occasions. A summary of the noise levels noted from the Linfox facility is presented in Table 4-2.

Table 4-2 Summary of Noted Linfox Noise Levels

Location	Item	L_{Amax}, dBA
1	Forklift	45-55
	Train	68-79
	Operations	33-49
	Loaders	46-54
	Truck	38-55
	Train Loading	52-56
2	Forklift	50-58
	Train	59-83
	Operations	55-64
	Loaders	47-69
	Truck	47-63
	Train Loading	72
	Movement	50-72
	Workers	55-65
	Horn	70
3	Forklift	33-57
	Operations	54-63
	Loaders	30-62
	Truck	45-58
	Train Loading	58-72
	Reversing Alarm	43-50
4	Forklift	42-48
	Operations	45-55
	Loaders	42-50
5	Forklift	42-58
	Operations	55-63
	Loaders	45-65
	Truck	44-60
	Train Loading	53-64

The above noise levels indicate that whilst noise levels fluctuate during the day at nearby receivers, the Linfox facility is a significant contributor to noise levels in the vicinity of the Blayney Dewatering Facility.

4.3 Consideration of Amenity Criteria

The noise criteria contained in the Project Approval conditions are in terms of the $L_{Aeq,15min}$ noise level from the Blayney Dewatering Facility alone. In this respect they are consistent with criteria derived from the "intrusiveness" criterion as defined in the *INP*. However, the *INP* also defines an "amenity" criterion, which controls the cumulative noise from all industrial sources.

The amenity criterion sets an upper limit to control the total L_{Aeq} noise level from all industrial sources over day, evening and night periods. In this case, the surrounding receivers are in an area which would likely be classified as "Suburban" under the INP, and the relevant recommended acceptable amenity criteria for $L_{Aeq,period}$ are 55, 45 and 40 dBA for daytime, evening and night-time periods respectively.

The amenity criteria apply cumulatively to all industrial sources in the area, and as noted in Section 4.2 the adjacent Linfox facility creates significant noise at some residences potentially affected by the Blayney Dewatering Facility.

However, it should be noted that the Facility would have a limited life-span – until Year 5 of the Cadia East Project – and hence would not have a detrimental impact on the long-term noise amenity of the area. For this reason, noise assessment in this report is based on the existing criteria in Table 4-1 only.

4.4 Assessment Methodology

The *INP* states that intrusive and amenity criteria have been selected to protect at least 90% of the population living in the vicinity of the industrial noise sources from the adverse effects of noise for at least 90% of the time (EPA, 2000). Provided the criteria in the *INP* are achieved, it is unlikely that most people would consider the resultant noise levels excessive.

In those cases where the project specific noise assessment criteria are not achieved, it does not automatically follow that all people exposed to the noise would find the noise unacceptable. In subjective terms, exceedances of the project specific noise assessment criteria can be generally described as follows:

- negligible noise level increase <1 dBA (not noticeable by all people);
- marginal noise level increase 1 dBA to 2 dBA (not noticeable by most people);
- moderate noise level increase 3 dBA to 5 dBA (not noticeable by some people but may be noticeable by others); or
- appreciable noise level increase > 5 dBA (noticeable by most people).

In view of the above, Table 4-3 presents the methodology for assessing noise levels which may exceed the *INP* project-specific noise assessment criteria.

Table 4-3 Project Noise Impact Assessment Methodology

Assessment Criteria	Project Specific Criteria	Noise Management Zone		Noise Affectation Zone
		Marginal	Moderate	
Intrusive $L_{Aeq(15\ minute)}$	Table 4-1	1 to 2 dBA above Project specific criteria	3 to 5 dBA above Project specific criteria	> 5 dBA above Project specific criteria

4.5 Construction Noise

The construction of the Blayney Dewatering Facility Modification would be for a duration of up to approximately six weeks, and would take place from 7.00am to 6.00pm Monday to Friday and 8.00am to 1.00pm on Saturdays (i.e. the standard construction hours in the *Interim Construction Noise Guideline* [DECCW, 2009]).

The Interim Construction Noise guideline nominates a 'noise management level' of the Rating Background Level (RBL) plus 10 decibels (dB). Typically, the operational noise criteria adopted are RBL plus 5 dB based on the intrusiveness criteria. Therefore, the relationship between construction noise criteria and operational noise criteria is that construction noise criteria are typically 5 dB above the operational noise criteria. In the absence of the RBL, the construction noise criteria for day time periods are taken to be 5 dB above the operational noise criteria. In addition the Interim Construction Noise Guideline also nominates a highly noise affected level which represents the point above which there may be strong community reaction to noise. For this assessment the construction noise criteria adopted are presented in Table 4-4.

Table 4-4 – Construction Noise Assessment Criteria (dBA $L_{Aeq, 15min}$)

Location	Day Time Noise Management Level	Highly Affected Noise Level
Location 3	58	75
Locations 1, 2 and 5	53	75
Location 4	48	75

5 NOISE IMPACT ASSESSMENT

5.1 Construction Noise

The plant that would primarily be involved in the construction activities would be two 50 t cranes, which would only be used over limited periods for the duration of works to place new plant and equipment in place (i.e. predominantly the installation of the new filter). The potential use of the external lay-down area (Figure 2-1) is not anticipated to be a significant source of noise and is located remote from residential receivers.

In order to conservatively assess noise impacts at sensitive receivers, the construction scenario assumes a worst case of two 50 t cranes at 105 dBA sound power level each, operating concurrently for a 15 minute period.

Calculated $L_{Aeq(15\ minute)}$ noise levels at each residence assessed for the construction scenario are outlined in Table 5-1, and compared with the construction noise management levels

Table 5-1 Predicted Daytime Construction Noise Levels

Location[1]	Calculated $L_{Aeq(15\ minute)}$ Noise Level (dBA)	Noise Management Level $L_{Aeq(15\ minute)}$ (dBA)	Highly Affected Noise Level $L_{Aeq(15\ minute)}$ (dBA)
Location 1	53	53	75
Location 2	53	53	
Location 3	49	58	
Location 4	46	48	
Location 5	61	53	

[1] Refer to Figure 4-1.

Predicted noise from daytime construction activities is below the construction noise management level at all sensitive receivers with the exception of Location 5. The level of exceedance at that receiver during the worst-case scenario is predicted to be 8 dBA. Predicted noise levels are below the 'highly affected noise level' at all receivers.

It is recommended that potentially-affected residents be informed that construction activities are to take place, and the expected duration of those activities. Where possible, the concurrent use of two cranes should be minimised.

5.2 Noise Modelling Methodology

5.2.1 Noise Modelling Procedures

Operational noise levels at sensitive receivers were calculated using the Environmental Noise Model (ENM). This model has been endorsed by the DECCW for environmental noise assessment. ENM takes account of the location of noise sensitive receivers and surrounding terrain. In addition, the model takes into account noise attenuation due to geometric spreading of sound over distance, atmospheric absorption, shielding, and the effect of acoustically soft ground. It can also be used to predict noise levels under various meteorological conditions, defined by a combination of temperature gradient, wind speed and wind direction. A summary of the inputs used in noise modelling is shown in Table 5-2.

Table 5-2 Noise Modelling Inputs

Modelling Inputs	Source of Data
Sensitive Receivers	From surveys undertaken locally and aerial photography
Topography	Contours and local topography at receivers
Noise Source Levels	From regularly monitoring data and attended measurements of existing plant at the Blayney Dewatering Facility. For the new filter, manufacturers' noise performance data has been used.
Meteorological data	Worst case conditions d53etailed in Section 3.2

Plants that operate in the same vicinity for long periods, such as a locomotive idling and all infrastructure items, were modelled as point sources. Items involved in transport of materials such as the forklift and the front-end loader were modelled with source points at 10 m intervals along their respective routes. The effective sound power level for each source point was assigned based on the number of items of plant using the route and the number of source points.

It should be noted that the calculations described above rely on predictions produced by the ENM model. This model is based on simple assumed vertical profiles of temperature and wind speed, and does not accurately model more complex situations. However, recent validation of measured noise levels from similar operations has shown good correlation with predicted noise levels as a 10^{th} percentile exceedance level and calibration of the model for the Blayney Dewatering Facility was also undertaken (Section 5.2).

A list of the modelled sound power levels is provided below.

- Container forklift – 107 dBA.
- Locomotive – 108 dBA (locomotive wagons and containers included in the model to provide a partial barrier).
- Front-end loader (with attenuation provided by building) – 100 dBA.
- Concentrate tank – 99.3 dBA.
- Filter (with attenuation provided by building – existing 87 dBA, modification 92 dBA).
- Two filter feed pumps (90 dBA each).
- Compressor house – 81 dBA.
- Sump Pump – 76 dBA.

5.2.2 Assessment Scenarios

Calculations were undertaken under a variety of meteorological conditions using the methodology described in Section 3.2. Noise levels were calculated for four distinct scenarios:

- daytime/evening operations without any loading activities (i.e. train or container loading);
- daytime/evening operations including loading activities;
- daytime/evening operations including loading activities and the presence of a train; and
- night-time operations (without loading).

The above scenarios were modelled for both the existing (Section 5.3) and modified Blayney Dewatering Facility (Section 5.5).

5.3 Calibration of Noise Model

The predictions for the existing scenario were compared to the five locations listed in the Project Approval and were found to be within the range of typical levels from the regular attended monitoring. In addition, measurements of the Blayney Dewatering Facility with no loading activities were conducted at two locations (Figure 4-1) on 18 June 2010. Comparison with the model predicted results under "still isothermal" (S.I.) conditions (i.e. calm meteorological conditions - no wind and no temperature inversion) and the measurement results is presented in Table 5-3.

Table 5-3 Comparison of Measured Levels and Predicted Levels

Location[1]	Measured L_{Aeq}, dBA	Predicted L_{Aeq}, dBA
Measurement Location 1	48	48
Measurement Location 2	47	47

[1] Refer to Figure 4-1.

Comparison shows that the predicted levels and measured levels are the same under S.I. conditions. The above comparison shows that the model is accurately predicting noise emissions and, therefore, no calibration has been incorporated into the model.

5.4 Noise Impact Assessment – Existing Blayney Dewatering Facility

The scenarios detailed in Section 5.1.2 were modelled using the procedures outlined in Section 5.1.1. The $L_{Aeq(15\ minute)}$ intrusive noise levels were calculated for each of the identified 237 sensitive receivers surrounding the facility. In all cases, calculations were performed both for worst-case meteorological conditions and for S.I. conditions.

The full suite of noise modelling results for the existing facility is presented as Appendix C. A summary of the noise modelling results is outlined in Tables 5-4 and 5-5

Table 5-4 Existing Scenario - Predicted Levels At Project Approval Noise Monitoring Locations (dBA)

Location[1]	Receiver No.	Criteria Day/ Night	Daytime/Evening						Night-time	
			No Loading		Loading		Loading with Train		S.I.	Inversion
			S.I.	Wind	S.I.	Wind	S.I.	Wind		
1	29	48/38	41	44	**50**	**53**	**51**	**53**	**41**	**44**
2	71	48/38	34	38	**51**	**53**	**50**	**52**	34	37
3	98	53/43	39	42	49	52	49	52	39	42
4	171	43/35	37	41	**47**	**52**	**47**	**52**	**37**	**41**
5	59	48/38	47	49	**59**	**60**	**59**	**60**	**47**	**49**

[1] Refer to Figure 4-1.

Note: Bold text denotes exceedance.

Where: Daytime 7:00am – 6:00pm
Evening 6:00pm – 10:00pm
Night-time 10:00pm – 7:00am

Table 5-5 Existing Scenario – Comparison of monitoring results against Criteria for All Receivers (number of receivers)

Comparison with Assessment Criteria		Number of Receivers							
		Daytime/Evening No Loading		Daytime/Evening Loading		Daytime/Evening Loading + Train		Night-time	
		S.I.	Wind	S.I.	Wind	S.I.	Wind	S.I.	Inversion
OK	≤ Criteria	236	235	181	95	185	99	180	98
Marginal	+ 1-2 dBA	1	1	22	56	20	61	25	60
Moderate	+ 3-5 dBA	0	1	17	59	15	49	21	49
Noise Affected	> 5 dBA	0	0	17	27	17	28	11	30

Where: Daytime 7:00am – 6:00pm
Evening 6:00pm – 10:00pm
Night-time 10:00pm – 7:00am

The existing scenario modelling results indicate that noise criteria are currently exceeded on occasions at the monitoring locations listed in the Cadia East Project Approval. The noise model also indicates that other receivers in Blayney are predicted to exceed the criteria, particularly during adverse weather conditions. Of the 237 receivers modelled, up to 142 were predicted to exceed the criteria during daytime operations and 139 receivers were predicted to exceed the night-time criteria, during adverse weather conditions. Conversely, only one receiver was predicted to exceed the daytime criteria during S.I. conditions without loading activities.

It should be noted that from review of noise modelling results, some of the predicted exceedances are located on the margins of the extent of the modelled receivers. For example, receivers modelled along Raphael Street (Figure 4-1) are predicted to exceed noise criteria on occasions.
Although the number of receivers included in noise modelling is considered to be appropriate for this assessment (237), if additional receivers were included in the noise model, it is likely that additional exceedances would be predicted under adverse weather conditions.

5.5 Modification Mitigation Measures

As discussed in Section 3.1, the existing Blayney Dewatering Facility is located within a recognised industrial precinct in Blayney and has been operating for an extended period. Notwithstanding, because of the exceedances predicted for the existing facility (Section 5.3), CHPL has invested noise mitigation measures for the modification.

The *INP* includes a discussion of the application of noise mitigation to existing industrial facilities (EPA, 2000). Relevant extracts (Chapter 10) are provided below (EPA, 2000).

> *Many existing industrial sources were designed for higher noise emission levels than the criteria outlined in this policy. In other cases industries may have been in existence before neighbouring noise-sensitive developments and even before noise control legislation was introduced. The range of mitigation measures available for these sites may be either extremely limited or costly.*

Applications for extensions to existing premises often provide an opportunity to redress issues that relate to the whole site. The need for reduced noise from existing sites must be weighed against the wider economic, social and environmental considerations. Where noise emissions from the site exceed the project-specific noise levels, the regulatory authorities and the noise-source manager need to negotiate achievable noise limits for the site. The project-specific noise levels should not be applied as mandatory noise limits. The project-specific noise levels supply the initial target levels and drive the process of assessing all feasible and reasonable control measures. Achievable noise limits result from applying all feasible and reasonable noise control measures. For sites with limited mitigation measures the achievable noise limits may sometimes be above the project-specific noise levels.

In many instances the site will be required to reduce its noise emissions progressively to achieve the specified noise limits by specified dates. This will require noise to be managed as an integral part of site upgrades. However, the development of formal operating practices to reduce noise generation often need not be linked to site upgrades, and where feasible these operating practices should be applied at the earliest opportunity. The measures required to achieve the noise limits would usually be set out in a noise reduction program, with mitigation measures staged over time. The noise reduction program would typically be attached as a licence condition. Efforts should be aimed at achieving a reduction in noise in a manner that provides the greatest benefit to residents without undue impact on the existing business. This may be accomplished by prioritizing the various noise-control measures.

In general accordance with the *INP*, CHPL should implement feasible and reasonable noise mitigation measures at the upgraded Blayney Dewatering Facility.

Wilkinson Murray conducted an investigation of feasible and reasonable noise mitigation measures. A number of iterative steps were undertaken, including:

1. Preliminary noise modelling of scenarios representative of the maximum noise emissions from the existing Blayney Dewatering Facility and the Modification to identify the potential for noise exceedances.
2. On-site noise measurements undertaken on 18 June 2010 to calibrate the model and to identify potential noise mitigation measures. These measurements determined that the concentrate tanks are the highest continuous noise source and the forklift is the highest noise source during loading operations.
3. Evaluation of noise management and mitigation measures to assess their relative effectiveness.
4. Review of the effectiveness of these measures and assessment of their feasibility by CHPL.
5. Adoption of the following noise mitigation measures for the Modification:
    - Installation of a cover on the concentrate tanks, reducing noise associated with the agitator and movement of the liquid concentrate within the tank by 7 dBA.
    - Reduction of noise from the forklift by 3 dBA. This can be achieved by replacing the existing forklift with a quieter model.

- Some panels of cladding on the existing building have been previously removed for access purposes. Cladding of existing building would be augmented for the Modification to fully enclose the container loading area to the north and south. This would provide shielding of the FEL loading activities to the receivers north and south of the Facility.

5.6 Modified Blayney Dewatering Facility Noise Modelling Results

The modified Blayney Dewatering Facility was modelled using the same methodology as for the existing facility. The key changes to the model were:

- The filter sound power level was increased from 87 dBA to 92 dBA to reflect the installation of the new filter.
- An additional sump pump was included.
- The noise mitigation measures described in Section 5.4 were included.

The results of this scenario are provided in Appendix D and summarised in Table 5-6 and Table 5-7.

Table 5-6 Modification Scenario - Predicted Levels At Project Approval Assessment Locations (dBA)

Location[1]	Receiver No.	Criteria Day/Night	Daytime/Evening						Night-time	
			No Loading		Loading		Loading with Train		S.I.	Inversion
			S.I.	Wind	S.I.	Wind	S.I.	Wind		
1	29	48/38	36	39	**50**	**53**	**50**	**53**	36	**39**
2	71	48/38	34	36	**50**	**51**	**49**	**51**	34	36
3	98	53/43	35	38	46	49	46	49	35	37
4	171	43/35	33	36	**46**	**51**	**46**	**50**	33	**36**
5	59	48/38	43	45	**58**	**59**	**58**	**59**	**43**	**45**

[1] Refer to Figure 4-1.

Note: Bold text denotes exceedance.

Where: Daytime 7:00am – 6:00pm
Evening 6:00pm – 10:00pm
Night-time 10:00pm – 7:00am

Table 5-7 Modification Scenario – Comparison of Modelling Results Against Criteria for All Receivers

Comparison with Assessment Criteria		Number of Receivers							
		Daytime/Evening – No Loading		Daytime/Evening Loading		Daytime/Evening Loading + Train		Night-Time	
		S.I.	Wind	S.I.	Wind	S.I.	Wind	S.I.	Inversion
OK	≤ Criteria	237	237	189	121	192	127	221	203
Marginal	+ 1-2 dBA	0	0	18	56	16	54	10	18
Moderate	+ 3-5 dBA	0	0	14	36	17	32	5	12
Noise Affected	> 5 dBA	0	0	16	24	12	24	1	4

Where: Daytime 7:00am – 6:00pm
Evening 6:00pm – 10:00pm
Night-time 10:00pm – 7:00am

5.7 Modification Noise Modelling Results Summary and Discussion

The Modification scenario modelling results indicate that an increased number of receivers are predicted to achieve the noise criteria (i.e. when compared with the existing scenario), particularly at night-time. Approximately 28 receivers during the day/evening periods and 105 receivers at night-time achieve the criteria because of the implementation of the mitigation measures described in Section 5.4.

Comparison of noise predictions for the existing and modified Blayney Dewatering Facility shows that whilst noise from the existing facility exceeds relevant criteria under worst-case meteorological conditions, the number of exceedances would be significantly reduced under the proposed Modification, particularly at night-time when people are generally more sensitive to noise.

Whilst further mitigation may be possible, it is likely that these measures would have a high capital cost. In addition, and as noted above, the existing Blayney Dewatering Facility is located in a recognised industrial precinct, adjacent to the Linfox loading facility. The Linfox loading facility uses two large container forklifts and a large container loader. Anecdotal evidence indicates that these activities sometimes occur in the evenings and early mornings (i.e. they are not necessarily constrained to daytime only). In addition, freight and passenger trains operate on the Main Western Railway immediately adjacent to the facility up to 24 hours a day. Any major noise mitigation works at the Blayney Dewatering Facility would not be commensurate with the existing industrial setting of the facility.

In summary, the changes to the acoustic environment as a result of the Modification would be:

- The facility would be operated for approximately two more years (until Year 5 of the Project).
- Train loading would be undertaken up to five times per week, increasing from the existing three trains per week. Therefore, weekly loading hours would increase from approximately 18 hours to approximately 30 hours per week. Loading would continue to be conducted between the hours of 7am to 7pm and only one train would be loaded in any one day.
- Daytime noise levels during loading activities would be marginally lower than the existing noise levels. This is primarily due to the adoption of the quieter container forklift.

- Night-time noise levels would be moderately lower in comparison with the existing noise levels. This is because of the covers to be installed on the concentrate tanks, which are currently the major noise source at night-time. The covers are expected to reduce the tank noise which includes the agitator and noise from the movement of concentrate within the tank.

5.8 General Noise Monitoring and Management Measures

Noise monitoring is conducted in accordance with the Noise Monitoring Program (Newcrest, 2010). This Program stipulates that directional unattended monitoring will be undertaken at three locations (Sites 1, 4 and 5) (Figure 4-1). It is envisaged that monitoring would continue to be undertaken in accordance with the Noise Monitoring Program for the Modification.

6 RAIL NOISE

The current rail movement frequency associated with the facility along the Main Western Railway is approximately three per week. With the Modification this would increase to approximately five per week. The Project includes rail movements of up to six per week as described (and assessed) in the Project EA. This constitutes a negligible increase in daily rail noise along the Main Western Railway compared with noise from existing rail movements

7 CONCLUSIONS

Noise impacts from the proposed Blayney Dewatering Facility have been assessed in accordance with the existing Project Approval conditions, and appropriate environmental standards, notably the *INP* and DECC *Interim Construction Noise Guidelines*. The major conclusions of this assessment are as follows.

Existing Noise Environment

- The Blayney Dewatering Facility is located in a recognised industrial precinct, adjacent to the Linfox Linehaul loading facility. Freight and passenger trains operate on the Main Western Railway immediately adjacent to the facility up to 24 hours a day.
- The main East West National Railway Line passes directly through the facility and is subject to noise from large freight trains.
- Noise monitoring has noted that the noise levels fluctuate throughout the day due to the loading/unloading activities at the Blayney Dewatering and Linfox facilities.
- Very few complaints are currently received by CHPL in relation to noise at the Blayney Dewatering Facility (i.e. only one complaint has been recorded to date).

Construction

- Predicted noise from daytime construction activities is below the construction noise management level at all sensitive receivers with the exception of Location 5. The level of exceedance at that receiver during the worst-case scenario is predicted to be 8 dBA. Predicted noise levels are below the 'highly affected noise level' at all receivers.
- It is recommended that potentially-affected residents be informed that construction activities are to take place, and the expected duration of those activities. Where possible, the concurrent use of two cranes should be minimised.

Existing Operational Noise

- Modelling undertaken of the existing scenario indicates that noise criteria are currently exceeded on occasions at the monitoring locations listed in the Cadia East Project Approval.
- Noise modelling also indicates that other receivers in Blayney are also predicted to exceed the criteria, particularly during adverse weather conditions. 142 of the 237 receivers modelled were predicted to exceed the criteria during daytime operations and 139 receivers were predicted to exceed the night-time criteria, during adverse meteorological conditions.

Modification Operational Noise

- The facility would operate for an additional two years under the Modification.
- The *INP* requires the implementation of feasible and reasonable noise mitigation measures.
- The following mitigation measures would be incorporated in the Modification:
    - covers on the concentrate tanks, to reduce noise associated with this source by 7 dBA;
    - reduction of noise from the forklift by 3 dBA, by replacing the existing forklift with a quieter model; and
    - additional cladding of the building.

These mitigation measures result in an increased number of receivers achieving the noise criteria, particularly at night-time.

- Approximately 23 receivers during the day/evening periods and 111 receivers at night-time achieve the criteria because of the mitigation measures.
- Therefore, whilst noise from the existing facility exceeds relevant criteria under worst-case conditions, the number of exceedances would be significantly reduced by the Modification, particularly at night-time when people are generally more sensitive to noise.
- Whilst further mitigation may be possible, it is likely that these measures would have a high capital cost and would not be commensurate with the existing industrial setting.

Version	Status	Date	Prepared by	Checked by
A	Draft	2 August, 2010	W Chan	R Bullen
B	Final	13 August, 2010	W Chan	R Bullen

APPENDIX A

GLOSSARY OF TERMS

GLOSSARY

Most environments are affected by environmental noise which continuously varies, largely as a result of road traffic. To describe the overall noise environment, a number of noise descriptors have been developed and these involve statistical and other analysis of the varying noise over sampling periods, typically taken as 15 minutes. These descriptors, which are demonstrated in the graph overleaf, are here defined.

Maximum Noise Level (L_{Amax}) – The maximum noise level over a sample period is the maximum level, measured on fast response, during the sample period.

L_{A1} – The L_{A1} level is the noise level which is exceeded for 1% of the sample period. During the sample period, the noise level is below the L_{A1} level for 99% of the time.

L_{A10} – The L_{A10} level is the noise level which is exceeded for 10% of the sample period. During the sample period, the noise level is below the L_{A10} level for 90% of the time. The L_{A10} is a common noise descriptor for environmental noise and road traffic noise.

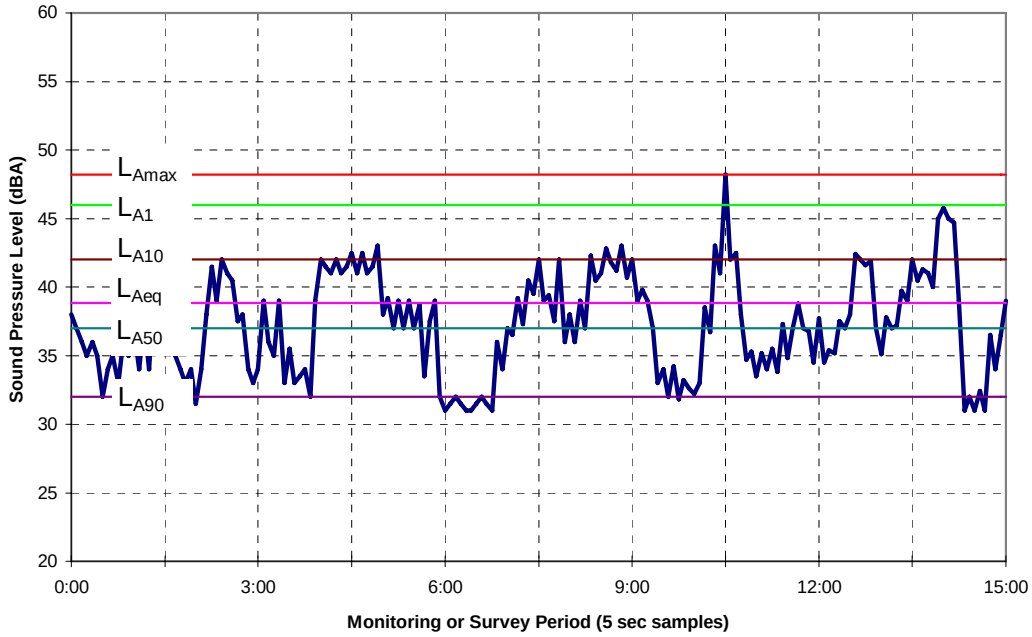
L_{Aeq} – The equivalent continuous sound level (L_{Aeq}) is the energy average of the varying noise over the sample period and is equivalent to the level of a constant noise which contains the same energy as the varying noise environment. This measure is also a common measure of environmental noise and road traffic noise.

L_{A50} – The L_{A50} level is the noise level which is exceeded for 50% of the sample period. During the sample period, the noise level is below the L_{A50} level for 50% of the time.

L_{A90} – The L_{A90} level is the noise level which is exceeded for 90% of the sample period. During the sample period, the noise level is below the L_{A90} level for 10% of the time. This measure is commonly referred to as the background noise level.

ABL – The Assessment Background Level is the single figure background level representing each assessment period (daytime, evening and night-time) for each day. It is determined by calculating the 10^{th} percentile (lowest 10^{th} percent) background level (L_{A90}) for each period.

RBL – The Rating Background Level for each period is the median value of the ABL values for the period over all of the days measured. There is therefore an RBL value for each period – daytime, evening and night-time.


60
55
50
45
40
35
30
25
20
Sound Pressure Level (dBA)
LAmax
LA1
LA10
LAeq
LA50
LA90
0:00
3:00
6:00
9:00
12:00
15:00
Monitoring or Survey Period (5 sec samples)

APPENDIX B

SUMMARY OF NOISE MONITORING RESULTS 2002 - 2009

Table B1 – Summary of Annual/Biannual Noise Monitoring Data – 2002 to 2009

Report Date	Title	Author	Monitoring Location		Period	Level of Exceedance (dBA)	Source of Emission
August 2002	Mine Noise Emission Monitoring Programme Cadia Hill Gold Mine, Ridgeway Gold Mine and Blayney Dewatering Plant Operation Year End June 2002	Richard Heggies Associates	L1	85 Doust Street	Day	1	Loading containers and locomotive/plant.
					Evening	-	-
					Night	2	Agitator gearbox and filter press.
			L2	Railway Lane	Day	-	-
					Evening	-	-
					Night	-	-
			L3	Hill Street	Day	-	-
					Evening	-	-
					Night	-	
			L4	Primary School	Day	-	-
					Evening	-	-
					Night	1	Agitator gearbox and filter press.
			L5	Pre-school	Day	1	Loading containers.
					Evening	-	-
					Night	1	Agitator gearbox and filter press.
August 2003	Mine Noise Emission Monitoring Programme Cadia Hill Gold Mine, Ridgeway Gold Mine and Blayney Dewatering Plant Operations Year End June 2003	Richard Heggies Associates	L1	85 Doust Street	Day	-	-
					Evening	-	-
					Night	-	-
			L2	Railway Lane	Day	-	-
					Evening	-	-
					Night	-	-
			L3	Hill Street	Day	-	-
					Evening	-	-
					Night	-	-
			L4	Primary School	Day	-	-
					Evening	-	-
					Night	-	-
			L5	Pre-school	Day	4	Agitator gearbox, trains and forklift.
					Evening	-	-
					Night	-	-

Table B1 (Continued) – Summary of Annual/Biannual Noise Monitoring Data – 2002 to 2009

Report Date	Title	Author	Monitoring Location		Period	Level of Exceedance (dBA)	Source of Emission
August 2004	Mine Noise Emissions Monitoring Programme Cadia Hill Gold Mine, Ridgeway Gold Mine and Blayney Dewatering Plant Operations Year End June 2004	Richard Heggies Associates	L1	85 Doust Street	Day	-	-
					Evening	-	-
					Night	-	-
			L2	Railway Lane	Day	-	-
					Evening	-	-
					Night	-	-
			L3	Hill Street	Day	-	-
					Evening	-	-
					Night	-	-
			L4	Primary School	Day	-	-
					Evening	-	-
					Night	-	-
			L5	Pre-school	Day	-	-
					Evening	-	-
					Night	-	-
June 2005	Mine Noise Emissions Monitoring Programme Cadia Hill Gold Mine, Ridgeway Gold Mine and Blayney Dewatering Plant OperationsYear End June 2005	Heggies Australia	L1	85 Doust Street	Day	-	-
					Evening	-	-
					Night	2 - 3	Mine pump.
			L2	Railway Lane	Day	-	-
					Evening	-	-
					Night	-	-
			L3	Hill Street	Day	-	-
					Evening	-	-
					Night	-	-
			L4	Primary School	Day	-	-
					Evening	-	-
					Night	1 - 3	Mine pump and Dropping Concentrate.
			L5	Pre-school	Day	-	-
					Evening	-	-
					Night	2 - 3	Mine pump and Dropping Concentrate.

Table B1 (Continued) – Summary of Annual/Biannual Noise Monitoring Data – 2002 to 2009

Report Date	Title	Author	Monitoring Location		Period	Level of Exceedance (dBA)	Source of Emission
August 2006	Mine Noise Emissions Monitoring Programme Cadia Hill Gold Mine, Ridgeway Gold Mine and Blayney Concentrate Dewatering Plan Operations Year End June 2006	Heggies Australia	L1	85 Doust Street	Day	-	-
					Evening	-	-
					Night	1 - 2	Noise emitting from the agitator.
			L2	Railway Lane	Day	-	-
					Evening	-	-
					Night	-	
			L3	Hill Street	Day	-	-
					Evening	-	-
					Night	-	
			L4	Primary School	Day	-	-
					Evening	-	-
					Night	2	Noise emitting from the agitator.
			L5	Pre-school	Day	2	Train loading activities.
					Evening	-	-
					Night	3	Noise emitting from the agitator.
June 2007	Cadia Valley Operational Noise Monitoring	Wilkinson Murray	L1	85 Doust Street	Day	-	-
					Evening	-	-
					Night	2 - 3	A splashing noise emanating from the concentrate tank.
			L2	Railway Lane	Day	4	Prolonged loading of concentrate into containers.
					Evening	-	-
					Night	2	A splashing noise emanating from the concentrate tank.
			L3	Hill Street	Day	-	-
					Evening	-	-
					Night	-	-
			L4	Primary School	Day	3 - 4	Prolonged loading of concentrate into containers.
					Evening	-	-
					Night	-	-
			L5	Pre-school	Day	-	-
					Evening	-	-
					Night	1 - 3	Vibratory concentrate filter and the dropping of concentrate from the vibratory filter onto the concentrate stockpile.

Table B1 (Continued) – Summary of Annual/Biannual Noise Monitoring Data – 2002 to 2009

Report Date	Title	Author	Monitoring Location		Period	Level of Exceedance (dBA)	Source of Emission
July 2007	Cadia Valley Operational Noise Monitoring	Wilkinson Murray	L1	85 Doust Street	Day	-	-
					Evening	-	-
					Night	-	-
			L2	Railway Lane	Day	-	-
					Evening	-	-
					Night	-	-
			L3	Hill Street	Day	-	-
					Evening	-	-
					Night	-	-
			L4	Primary School	Day	-	-
					Evening	-	-
					Night	-	-
			L5	Pre-school	Day	-	-
					Evening	-	-
					Night	1 - 2	Noise constantly emanating from the concentrate tank.
January 2008	Cadia Valley Operational Noise Monitoring	Wilkinson Murray	L1	85 Doust Street	Day	-	-
					Evening	-	-
					Night	-	-
			L2	Railway Lane	Day	-	-
					Evening	-	-
					Night	-	-
			L3	Hill Street	Day	-	-
					Evening	-	-
					Night	-	-
			L4	Primary School	Day	-	-
					Evening	-	-
					Night	-	-
			L5	Pre-school	Day	-	-
					Evening	-	-
					Night	1	Noise constantly emanating from the concentrate tank.

Table B1 (Continued) – Summary of Annual/Biannual Noise Monitoring Data – 2002 to 2009

Report Date	Title	Author	Monitoring Location		Period	Level of Exceedance (dBA)	Source of Emission
May 2008	Cadia Valley Operational Noise Monitoring	Wilkinson Murray	L1	85 Doust Street	Day	-	-
					Evening	-	-
					Night	2	Noise constantly emanating from the concentrate tank.
			L2	Railway Lane	Day	-	-
					Evening	-	-
					Night	1	Noise constantly emanating from the concentrate tank.
			L3	Hill Street	Day	-	-
					Evening	-	-
					Night	-	-
			L4	Primary School	Day	-	-
					Evening	-	-
					Night	-	-
			L5	Pre-school	Day	-	-
					Evening	-	-
					Night	2	Noise constantly emanating from the concentrate tank.
September 2008	Cadia Valley Operational Noise Monitoring	Wilkinson Murray	L1	85 Doust Street	Day	-	-
					Evening	-	-
					Night	3 - 4	Concentrate Tank.
			L2	Railway Lane	Day	-	-
					Evening	-	-
					Night	-	-
			L3	Hill Street	Day	-	-
					Evening	-	-
					Night	-	-
			L4	Primary School	Day	-	-
					Evening	-	-
					Night	2	Concentrate Tank.
			L5	Pre-school	Day	-	-
					Evening	-	-
					Night	3	Concentrate Tank.

Table B1 (Continued) – Summary of Annual/Biannual Noise Monitoring Data – 2002 to 2009

Report Date	Title	Author	Monitoring Location		Period	Level of Exceedance (dBA)	Source of Emission
December 2008	Cadia Valley Operational Noise Monitoring	Wilkinson Murray	L1	85 Doust Street	Day	-	-
					Evening	-	-
					Night	3 - 4	Constant noise emanating from the concentrate tank.
			L2	Railway Lane	Day	-	-
					Evening	-	-
					Night	-	-
			L3	Hill Street	Day	-	-
					Evening	-	-
					Night	-	-
			L4	Primary School	Day	-	-
					Evening	-	-
					Night	-	-
			L5	Pre-school	Day	-	-
					Evening	-	-
					Night	3 - 4	Constant noise emanating from the concentrate tank.
May 2009	Cadia Valley Operational Noise Monitoring	Wilkinson Murray	L1	85 Doust Street	Day	-	-
					Evening	-	-
					Night	-	-
			L2	Railway Lane	Day	-	-
					Evening	-	-
					Night	-	-
			L3	Hill Street	Day	-	-
					Evening	-	-
					Night	-	-
			L4	Primary School	Day	-	-
					Evening	-	-
					Night	-	-
			L5	Pre-school	Day	-	-
					Evening	-	-
					Night	-	-

Table B1 (Continued) – Summary of Annual/Biannual Noise Monitoring Data – 2002 to 2009

Report Date	Title	Author	Monitoring Location		Period	Level of Exceedance (dBA)	Source of Emission
June 2009	Cadia Valley Operational Noise Monitoring	Wilkinson Murray	L1	85 Doust Street	Day	-	-
					Evening	-	-
					Night	1	Dewatering plant constantly audible.
			L2	Railway Lane	Day	-	-
					Evening	-	-
					Night	-	-
			L3	Hill Street	Day	-	-
					Evening	-	-
					Night	-	-
			L4	Primary School	Day	-	-
					Evening	-	-
					Night	-	-
			L5	Pre-school	Day	-	-
					Evening	-	-
					Night	4	Dewatering plant constantly audible.
September 2009	Cadia Valley Operational Noise Monitoring	Wilkinson Murray	L1	85 Doust Street	Day	-	-
					Evening	-	-
					Night	5 - 6	Return water pump.
			L2	Railway Lane	Day	-	-
					Evening	-	-
					Night	-	-
			L3	Hill Street	Day	-	-
					Evening	-	-
					Night	-	-
			L4	Primary School	Day	-	-
					Evening	-	-
					Night	-	-
			L5	Pre-school	Day	-	-
					Evening	-	-
					Night	6 - 7	Return water pump.

APPENDIX C

NOISE MODELLING RESULTS – EXISTING BLAYNEY DEWATERING FACILITY

Table C1 – Existing Scenario - Modelled Results for all Receivers

RECEIVER	RECEIVER OF INTEREST	EXISTING SCENARIO														CRITERIA	
		Daytime/Evening - No Loading				Daytime/Evening Loading				Daytime/Evening Loading + Train				Night-time		dB(A) LAeq (15min)	
		S.I.		Wind		S.I.		Wind		S.I.		Wind		S.I.		Inversion		Day/Evening	Night
1		34	OK	40	OK	45	OK	49	Marginal	46	OK	49	Marginal	34	OK	40	Marginal	48	38
2		37	OK	41	OK	45	OK	49	Marginal	46	OK	49	Marginal	37	OK	40	Marginal	48	38
3		35	OK	41	OK	41	OK	46	OK	42	OK	46	OK	35	OK	41	Moderate	48	38
4		38	OK	41	OK	47	OK	50	Marginal	47	OK	50	Marginal	38	OK	41	Moderate	48	38
5		38	OK	42	OK	43	OK	47	OK	43	OK	47	OK	38	OK	41	Moderate	48	38
6		39	OK	42	OK	47	OK	50	Marginal	47	OK	50	Marginal	39	Marginal	42	Moderate	48	38
7		37	OK	41	OK	45	OK	48	OK	45	OK	48	OK	37	OK	40	Marginal	48	38
8		37	OK	41	OK	45	OK	49	Marginal	46	OK	49	Marginal	37	OK	40	Marginal	48	38
9		37	OK	41	OK	46	OK	49	Marginal	46	OK	49	Marginal	37	OK	40	Marginal	48	38
10		36	OK	40	OK	46	OK	50	Marginal	46	OK	50	Marginal	36	OK	40	Marginal	48	38
11		36	OK	40	OK	46	OK	50	Marginal	46	OK	50	Marginal	36	OK	40	Marginal	48	38
12		36	OK	40	OK	46	OK	50	Marginal	46	OK	50	Marginal	36	OK	40	Marginal	48	38
13		36	OK	40	OK	45	OK	48	OK	45	OK	48	OK	36	OK	40	Marginal	48	38
14		36	OK	40	OK	45	OK	48	OK	45	OK	48	OK	36	OK	40	Marginal	48	38
15		36	OK	40	OK	44	OK	47	OK	44	OK	47	OK	36	OK	39	Marginal	48	38
16		36	OK	40	OK	45	OK	48	OK	45	OK	48	OK	36	OK	40	Marginal	48	38
17		37	OK	40	OK	46	OK	49	Marginal	46	OK	49	Marginal	37	OK	40	Marginal	48	38
18		37	OK	41	OK	46	OK	49	Marginal	46	OK	49	Marginal	37	OK	41	Moderate	48	38
19		37	OK	41	OK	46	OK	49	Marginal	46	OK	49	Marginal	37	OK	41	Moderate	48	38
20		38	OK	41	OK	47	OK	50	Marginal	47	OK	50	Marginal	38	OK	41	Moderate	48	38
21		38	OK	41	OK	48	OK	52	Moderate	48	OK	52	Moderate	38	OK	41	Moderate	48	38
22		38	OK	42	OK	47	OK	50	Marginal	47	OK	50	Marginal	38	OK	42	Moderate	48	38
23		40	OK	43	OK	48	OK	51	Moderate	48	OK	51	Moderate	40	Marginal	42	Moderate	48	38
24		40	OK	43	OK	45	OK	48	OK	45	OK	49	Marginal	40	Marginal	42	Moderate	48	38
25		40	OK	43	OK	48	OK	51	Moderate	49	Marginal	52	Moderate	40	Marginal	43	Moderate	48	38
26		40	OK	43	OK	49	Marginal	52	Moderate	49	Marginal	52	Moderate	40	Marginal	43	Moderate	48	38
27		40	OK	43	OK	49	Marginal	52	Moderate	49	Marginal	52	Moderate	40	Marginal	43	Moderate	48	38
28		40	OK	43	OK	49	Marginal	52	Moderate	50	Marginal	52	Moderate	40	Marginal	43	Moderate	48	38
29		41	OK	44	OK	50	Marginal	53	Moderate	51	Moderate	53	Moderate	41	Moderate	44	Noise Affected	48	38
30		42	OK	45	OK	51	Moderate	53	Moderate	51	Moderate	54	Noise Affected	42	Moderate	44	Noise Affected	48	38
31		41	OK	44	OK	50	Marginal	53	Moderate	50	Marginal	53	Moderate	41	Moderate	44	Noise Affected	48	38
32		40	OK	43	OK	50	Marginal	53	Moderate	50	Marginal	53	Moderate	40	Marginal	43	Moderate	48	38
33		39	OK	42	OK	48	OK	50	Marginal	48	OK	50	Marginal	39	Marginal	41	Moderate	48	38
34		38	OK	41	OK	46	OK	48	OK	46	OK	48	OK	38	OK	41	Moderate	48	38
35		42	OK	44	OK	51	Moderate	54	Noise Affected	51	Moderate	54	Noise Affected	42	Moderate	44	Noise Affected	48	38
36		40	OK	43	OK	50	Marginal	52	Moderate	50	Marginal	52	Moderate	40	Marginal	43	Moderate	48	38
37		40	OK	42	OK	49	Marginal	51	Moderate	49	Marginal	51	Moderate	40	Marginal	42	Moderate	48	38
38		38	OK	42	OK	47	OK	50	Marginal	47	OK	50	Marginal	38	OK	41	Moderate	48	38
39		41	OK	44	OK	50	Marginal	52	Moderate	50	Marginal	52	Moderate	41	Moderate	43	Moderate	48	38
40		39	OK	42	OK	48	OK	51	Moderate	48	OK	51	Moderate	39	Marginal	42	Moderate	48	38
41		39	OK	42	OK	49	Marginal	52	Moderate	49	Marginal	52	Moderate	39	Marginal	42	Moderate	48	38
42		42	OK	44	OK	51	Moderate	53	Moderate	51	Moderate	53	Moderate	42	Moderate	44	Noise Affected	48	38
43		41	OK	44	OK	51	Moderate	53	Moderate	51	Moderate	53	Moderate	41	Moderate	44	Noise Affected	48	38
44		40	OK	43	OK	49	Marginal	53	Moderate	49	Marginal	53	Moderate	40	Marginal	42	Moderate	48	38
45		45	OK	47	OK	55	Noise Affected	57	Noise Affected	55	Noise Affected	57	Noise Affected	45	Noise Affected	47	Noise Affected	48	38
46		44	OK	47	OK	54	Noise Affected	56	Noise Affected	54	Noise Affected	56	Noise Affected	44	Noise Affected	46	Noise Affected	48	38
47		43	OK	46	OK	53	Moderate	55	Noise Affected	53	Moderate	55	Noise Affected	43	Moderate	45	Noise Affected	48	38

Table C1 (Continued) – Existing Scenario - Modelled Results for all Receivers

RECEIVER	RECEIVER OF INTEREST	EXISTING SCENARIO														CRITERIA	
		Daytime/Evening - No Loading				Daytime/Evening Loading				Daytime/Evening Loading + Train				Night-time				dB(A) LAeq (15min)	
		S.I.		Wind		S.I.		Wind		S.I.		Wind		S.I.		Inversion		Day/Evening	Night
48		42	OK	45	OK	52	Moderate	54	Noise Affected	52	Moderate	54	Noise Affected	42	Moderate	45	Noise Affected	48	38
49		42	OK	44	OK	52	Moderate	54	Noise Affected	52	Moderate	54	Noise Affected	42	Moderate	44	Noise Affected	48	38
50		41	OK	44	OK	51	Moderate	54	Noise Affected	51	Moderate	54	Noise Affected	41	Moderate	44	Noise Affected	48	38
51		40	OK	43	OK	50	Marginal	53	Moderate	50	Marginal	53	Moderate	40	Marginal	43	Moderate	48	38
52		49	Marginal	51	Moderate	61	Noise Affected	62	Noise Affected	61	Noise Affected	62	Noise Affected	49	Noise Affected	51	Noise Affected	48	38
53		46	OK	48	OK	57	Noise Affected	59	Noise Affected	57	Noise Affected	59	Noise Affected	46	Noise Affected	48	Noise Affected	48	38
54		44	OK	46	OK	54	Noise Affected	56	Noise Affected	54	Noise Affected	56	Noise Affected	44	Noise Affected	46	Noise Affected	48	38
55		42	OK	45	OK	53	Moderate	55	Noise Affected	53	Moderate	55	Noise Affected	42	Moderate	45	Noise Affected	48	38
56		46	OK	48	OK	58	Noise Affected	59	Noise Affected	58	Noise Affected	59	Noise Affected	46	Noise Affected	48	Noise Affected	48	38
57		45	OK	47	OK	56	Noise Affected	57	Noise Affected	56	Noise Affected	57	Noise Affected	45	Noise Affected	47	Noise Affected	48	38
58		43	OK	45	OK	53	Moderate	55	Noise Affected	53	Moderate	54	Noise Affected	43	Moderate	45	Noise Affected	48	38
59		47	OK	49	Marginal	59	Noise Affected	60	Noise Affected	59	Noise Affected	60	Noise Affected	47	Noise Affected	49	Noise Affected	48	38
60		45	OK	47	OK	57	Noise Affected	59	Noise Affected	56	Noise Affected	58	Noise Affected	45	Noise Affected	47	Noise Affected	48	38
61		44	OK	46	OK	56	Noise Affected	58	Noise Affected	56	Noise Affected	58	Noise Affected	44	Noise Affected	46	Noise Affected	48	38
62		43	OK	45	OK	55	Noise Affected	57	Noise Affected	54	Noise Affected	57	Noise Affected	43	Moderate	45	Noise Affected	48	38
63		43	OK	46	OK	55	Noise Affected	57	Noise Affected	54	Noise Affected	56	Noise Affected	43	Moderate	45	Noise Affected	48	38
64		46	OK	48	OK	58	Noise Affected	59	Noise Affected	57	Noise Affected	59	Noise Affected	46	Noise Affected	48	Noise Affected	48	38
65		43	OK	45	OK	54	Noise Affected	57	Noise Affected	54	Noise Affected	57	Noise Affected	43	Moderate	45	Noise Affected	48	38
66		43	OK	46	OK	55	Noise Affected	57	Noise Affected	55	Noise Affected	56	Noise Affected	43	Moderate	46	Noise Affected	48	38
67		39	OK	41	OK	59	Noise Affected	60	Noise Affected	58	Noise Affected	59	Noise Affected	39	Marginal	41	Moderate	48	38
68		42	OK	45	OK	53	Moderate	55	Noise Affected	53	Moderate	55	Noise Affected	42	Moderate	45	Noise Affected	48	38
69		41	OK	44	OK	52	Moderate	54	Noise Affected	52	Moderate	54	Noise Affected	41	Moderate	44	Noise Affected	48	38
70		38	OK	41	OK	59	Noise Affected	60	Noise Affected	59	Noise Affected	60	Noise Affected	38	OK	41	Moderate	48	38
71		34	OK	38	OK	51	Moderate	53	Moderate	50	Marginal	52	Moderate	34	OK	37	OK	48	38
72		34	OK	37	OK	50	Marginal	52	Moderate	49	Marginal	51	Moderate	34	OK	37	OK	48	38
73		33	OK	37	OK	49	Marginal	51	Moderate	48	OK	50	Marginal	33	OK	36	OK	48	38
74		40	OK	43	OK	51	Moderate	52	Moderate	50	Marginal	52	Moderate	40	Marginal	43	Moderate	48	38
75		40	OK	43	OK	51	Moderate	53	Moderate	50	Marginal	52	Moderate	40	Marginal	43	Moderate	48	38
76		32	OK	36	OK	49	Marginal	51	Moderate	49	Marginal	51	Moderate	32	OK	36	OK	48	38
77		32	OK	36	OK	49	Marginal	51	Moderate	48	OK	50	Marginal	32	OK	36	OK	48	38
78		31	OK	35	OK	49	Marginal	52	Moderate	48	OK	52	Moderate	31	OK	35	OK	48	38
79		31	OK	35	OK	49	Marginal	53	Moderate	49	Marginal	52	Moderate	31	OK	35	OK	48	38
80		31	OK	35	OK	46	OK	48	OK	45	OK	47	OK	31	OK	35	OK	48	38
81		30	OK	35	OK	49	Marginal	52	Moderate	48	OK	51	Moderate	30	OK	34	OK	48	38
82		29	OK	34	OK	43	OK	45	OK	42	OK	45	OK	29	OK	34	OK	48	38
83		29	OK	34	OK	47	OK	51	Moderate	46	OK	50	Marginal	29	OK	33	OK	48	38
84		29	OK	35	OK	47	OK	51	Moderate	46	OK	50	Marginal	29	OK	34	OK	48	38
85		30	OK	35	OK	47	OK	51	Moderate	47	OK	50	Marginal	30	OK	34	OK	48	38
86		30	OK	35	OK	48	OK	51	Moderate	47	OK	50	Marginal	30	OK	35	OK	48	38
87		31	OK	35	OK	48	OK	51	Moderate	47	OK	50	Marginal	31	OK	35	OK	48	38
88		31	OK	35	OK	49	Marginal	52	Moderate	48	OK	51	Moderate	31	OK	35	OK	48	38
89		28	OK	33	OK	39	OK	42	OK	39	OK	42	OK	28	OK	33	OK	48	38
90		28	OK	33	OK	39	OK	42	OK	39	OK	42	OK	28	OK	33	OK	48	38
91		28	OK	33	OK	40	OK	43	OK	40	OK	43	OK	28	OK	33	OK	48	38
92		28	OK	33	OK	40	OK	43	OK	39	OK	42	OK	28	OK	33	OK	48	38
93		27	OK	33	OK	37	OK	46	OK	38	OK	46	OK	27	OK	32	OK	48	38
94		27	OK	33	OK	38	OK	42	OK	38	OK	42	OK	27	OK	32	OK	48	38

Table C1 (Continued) – Existing Scenario - Modelled Results for all Receivers

RECEIVER	RECEIVER OF INTEREST	EXISTING SCENARIO														CRITERIA	
		Daytime/Evening - No Loading				Daytime/Evening Loading				Daytime/Evening Loading + Train				Night-time			
		S.I.		Wind		S.I.		Wind		S.I.		Wind		S.I.		Inversion		dB(A) LAeq (15min)	
																		Day/Evening	Night
95		27	OK	33	OK	38	OK	42	OK	38	OK	42	OK	27	OK	32	OK	48	38
96		34	OK	38	OK	42	OK	46	OK	42	OK	46	OK	34	OK	38	OK	53	43
97		46	OK	48	OK	55	Marginal	57	Moderate	55	Marginal	57	Moderate	46	Moderate	48	Moderate	53	43
98		39	OK	42	OK	49	OK	52	OK	49	OK	52	OK	39	OK	42	OK	53	43
99		31	OK	35	OK	48	OK	50	OK	48	OK	51	OK	31	OK	35	OK	53	43
100		25	OK	30	OK	33	OK	38	OK	33	OK	38	OK	25	OK	30	OK	53	43
101		25	OK	30	OK	32	OK	38	OK	33	OK	38	OK	25	OK	29	OK	53	43
102		32	OK	36	OK	47	OK	50	OK	47	OK	50	OK	32	OK	35	OK	53	43
103		26	OK	31	OK	37	OK	45	OK	38	OK	45	OK	26	OK	31	OK	53	43
104	St Joseph's Central School	29	OK	34	OK	43	OK	47	OK	44	OK	47	OK	29	OK	33	OK	53	43
105		29	OK	34	OK	41	OK	43	OK	41	OK	44	OK	29	OK	34	OK	53	43
106		36	OK	39	OK	44	OK	47	OK	44	OK	47	OK	36	OK	39	Marginal	48	38
107		34	OK	39	OK	43	OK	47	OK	43	OK	47	OK	34	OK	38	OK	48	38
108		34	OK	39	OK	43	OK	47	OK	43	OK	47	OK	34	OK	38	OK	48	38
109		34	OK	38	OK	42	OK	46	OK	42	OK	46	OK	34	OK	38	OK	48	38
110		36	OK	40	OK	44	OK	47	OK	44	OK	47	OK	36	OK	40	Marginal	48	38
111		36	OK	40	OK	43	OK	47	OK	43	OK	47	OK	36	OK	40	Marginal	48	38
112		35	OK	40	OK	44	OK	48	OK	44	OK	48	OK	35	OK	39	Marginal	48	38
113		35	OK	39	OK	44	OK	48	OK	44	OK	48	OK	35	OK	39	Marginal	48	38
114		35	OK	39	OK	43	OK	47	OK	43	OK	47	OK	35	OK	39	Marginal	48	38
115		34	OK	39	OK	43	OK	47	OK	43	OK	47	OK	34	OK	38	OK	48	38
116		34	OK	39	OK	42	OK	48	OK	42	OK	48	OK	34	OK	38	OK	48	38
117		37	OK	41	OK	45	OK	49	Marginal	45	OK	48	OK	37	OK	41	Moderate	48	38
118		37	OK	40	OK	46	OK	50	Marginal	45	OK	50	Marginal	37	OK	40	Marginal	48	38
119		36	OK	40	OK	45	OK	49	Marginal	45	OK	49	Marginal	36	OK	40	Marginal	48	38
120		36	OK	40	OK	45	OK	49	Marginal	45	OK	49	Marginal	36	OK	40	Marginal	48	38
121		36	OK	40	OK	45	OK	48	OK	44	OK	48	OK	36	OK	40	Marginal	48	38
122		35	OK	40	OK	43	OK	49	Marginal	43	OK	49	Marginal	35	OK	39	Marginal	48	38
123		35	OK	39	OK	43	OK	49	Marginal	43	OK	49	Marginal	35	OK	39	Marginal	48	38
124		34	OK	39	OK	44	OK	49	Marginal	43	OK	49	Marginal	34	OK	39	Marginal	48	38
125		38	OK	41	OK	46	OK	50	Marginal	46	OK	50	Marginal	38	OK	41	Moderate	48	38
126		38	OK	41	OK	47	OK	51	Moderate	47	OK	51	Moderate	38	OK	41	Moderate	48	38
127		37	OK	41	OK	44	OK	51	Moderate	44	OK	51	Moderate	37	OK	40	Marginal	48	38
128		36	OK	40	OK	45	OK	50	Marginal	45	OK	50	Marginal	36	OK	40	Marginal	48	38
129		35	OK	40	OK	45	OK	50	Marginal	45	OK	50	Marginal	35	OK	39	Marginal	48	38
130		35	OK	40	OK	44	OK	50	Marginal	44	OK	50	Marginal	35	OK	39	Marginal	48	38
131		34	OK	39	OK	44	OK	50	Marginal	43	OK	49	Marginal	34	OK	39	Marginal	48	38
132		37	OK	41	OK	46	OK	52	Moderate	46	OK	52	Moderate	37	OK	41	Moderate	48	38
133		37	OK	41	OK	46	OK	51	Moderate	46	OK	51	Moderate	37	OK	40	Marginal	48	38
134		36	OK	41	OK	46	OK	51	Moderate	45	OK	51	Moderate	36	OK	40	Marginal	48	38
136		36	OK	40	OK	45	OK	51	Moderate	45	OK	51	Moderate	36	OK	40	Marginal	48	38
137		36	OK	40	OK	45	OK	51	Moderate	45	OK	51	Moderate	36	OK	40	Marginal	48	38
138		35	OK	40	OK	44	OK	50	Marginal	44	OK	50	Marginal	35	OK	39	Marginal	48	38
139		38	OK	42	OK	48	OK	52	Moderate	48	OK	51	Moderate	38	OK	41	Moderate	48	38
140		39	OK	43	OK	48	OK	53	Moderate	48	OK	53	Moderate	39	Marginal	42	Moderate	48	38
141		38	OK	41	OK	47	OK	52	Moderate	47	OK	52	Moderate	38	OK	41	Moderate	48	38

Table C1 (Continued) – Existing Scenario - Modelled Results for all Receivers

RECEIVER	RECEIVER OF INTEREST	EXISTING SCENARIO														CRITERIA	
		Daytime/Evening - No Loading				Daytime/Evening Loading				Daytime/Evening Loading + Train				Night-time				dB(A) LAeq (15min)	
		S.I.		Wind		S.I.		Wind		S.I.		Wind		S.I.		Inversion		Day/Evening	Night
142		37	OK	41	OK	46	OK	52	Moderate	46	OK	51	Moderate	37	OK	40	Marginal	48	38
143		36	OK	40	OK	45	OK	51	Moderate	45	OK	51	Moderate	36	OK	40	Marginal	48	38
144		36	OK	40	OK	44	OK	51	Moderate	44	OK	51	Moderate	36	OK	39	Marginal	48	38
145		35	OK	39	OK	44	OK	50	Marginal	43	OK	50	Marginal	35	OK	39	Marginal	48	38
146		34	OK	39	OK	43	OK	50	Marginal	43	OK	49	Marginal	34	OK	39	Marginal	48	38
147		34	OK	39	OK	43	OK	50	Marginal	43	OK	49	Marginal	34	OK	38	OK	48	38
148		35	OK	39	OK	43	OK	47	OK	43	OK	47	OK	35	OK	39	Marginal	48	38
149		40	OK	43	OK	47	OK	52	Moderate	47	OK	52	Moderate	40	Marginal	43	Moderate	48	38
150		39	OK	42	OK	48	OK	51	Moderate	48	OK	51	Moderate	39	Marginal	42	Moderate	48	38
151		38	OK	42	OK	47	OK	51	Moderate	47	OK	50	Marginal	38	OK	41	Moderate	48	38
152		38	OK	41	OK	46	OK	50	Marginal	46	OK	50	Marginal	38	OK	41	Moderate	48	38
153		37	OK	40	OK	46	OK	49	Marginal	46	OK	49	Marginal	37	OK	40	Marginal	48	38
154		36	OK	40	OK	44	OK	50	Marginal	44	OK	50	Marginal	36	OK	40	Marginal	48	38
155		36	OK	40	OK	44	OK	50	Marginal	44	OK	50	Marginal	36	OK	39	Marginal	48	38
156		35	OK	39	OK	43	OK	49	Marginal	43	OK	49	Marginal	35	OK	39	Marginal	48	38
157		35	OK	39	OK	43	OK	49	Marginal	43	OK	49	Marginal	35	OK	39	Marginal	48	38
158		40	OK	43	OK	50	Marginal	52	Moderate	50	Marginal	52	Moderate	40	Marginal	43	Moderate	48	38
159		40	OK	43	OK	48	OK	53	Moderate	48	OK	52	Moderate	40	Marginal	43	Moderate	48	38
160		41	OK	44	OK	51	Moderate	53	Moderate	51	Moderate	53	Moderate	41	Moderate	43	Moderate	48	38
161		39	OK	42	OK	48	OK	51	Moderate	48	OK	51	Moderate	39	Marginal	42	Moderate	48	38
162		38	OK	42	OK	47	OK	50	Marginal	47	OK	50	Marginal	38	OK	42	Moderate	48	38
163		38	OK	41	OK	46	OK	49	Marginal	46	OK	49	Marginal	38	OK	41	Moderate	48	38
164		37	OK	41	OK	46	OK	49	Marginal	46	OK	49	Marginal	37	OK	41	Moderate	48	38
165		37	OK	40	OK	45	OK	48	OK	45	OK	48	OK	37	OK	40	Marginal	48	38
166		36	OK	40	OK	44	OK	48	OK	44	OK	48	OK	36	OK	40	Marginal	48	38
167		36	OK	40	OK	44	OK	48	OK	44	OK	48	OK	36	OK	39	Marginal	48	38
168		35	OK	40	OK	44	OK	47	OK	43	OK	47	OK	35	OK	39	Marginal	48	38
169		35	OK	39	OK	43	OK	47	OK	43	OK	47	OK	35	OK	39	Marginal	48	38
170		35	OK	40	OK	43	OK	47	OK	43	OK	47	OK	35	OK	39	Marginal	48	38
171	Blayney Public School	37	OK	41	OK	47	Moderate	52	Noise Affected	47	Moderate	52	Noise Affected	37	Marginal	41	Noise Affected	43	35
172		36	OK	40	OK	48	OK	51	Moderate	47	OK	51	Moderate	36	OK	40	Marginal	48	38
173		29	OK	35	OK	45	OK	48	OK	44	OK	48	OK	29	OK	34	OK	48	38
174		29	OK	35	OK	47	OK	50	Marginal	46	OK	49	Marginal	29	OK	34	OK	48	38
175	Blayney High School	31	OK	37	OK	38	OK	47	Moderate	38	OK	46	Moderate	31	OK	37	Marginal	43	35
176		36	OK	40	OK	47	OK	50	Marginal	46	OK	50	Marginal	36	OK	39	Marginal	48	38
177		36	OK	40	OK	47	OK	50	Marginal	46	OK	49	Marginal	36	OK	39	Marginal	48	38
178		35	OK	40	OK	46	OK	49	Marginal	45	OK	49	Marginal	35	OK	39	Marginal	48	38
179		34	OK	39	OK	46	OK	50	Marginal	45	OK	50	Marginal	34	OK	39	Marginal	48	38
180		34	OK	39	OK	44	OK	49	Marginal	43	OK	49	Marginal	34	OK	38	OK	48	38
181		34	OK	39	OK	43	OK	49	Marginal	42	OK	49	Marginal	34	OK	39	Marginal	48	38
182		34	OK	38	OK	43	OK	49	Marginal	42	OK	49	Marginal	34	OK	38	OK	48	38
183		33	OK	38	OK	43	OK	49	Marginal	42	OK	48	OK	33	OK	38	OK	48	38
184		33	OK	38	OK	43	OK	49	Marginal	42	OK	48	OK	33	OK	38	OK	48	38
185		33	OK	38	OK	44	OK	49	Marginal	43	OK	48	OK	33	OK	37	OK	48	38
186		33	OK	38	OK	44	OK	49	Marginal	43	OK	48	OK	33	OK	37	OK	48	38

Table C1 (Continued) – Existing Scenario - Modelled Results for all Receivers

RECEIVER	RECEIVER OF INTEREST	EXISTING SCENARIO														CRITERIA	
		Daytime/Evening - No Loading				Daytime/Evening Loading				Daytime/Evening Loading + Train				Night-time		dB(A) LAeq (15min)	
		S.I.		Wind		S.I.		Wind		S.I.		Wind		S.I.		Inversion		Day/Evening	Night
187		33	OK	38	OK	40	OK	48	OK	40	OK	48	OK	33	OK	38	OK	48	38
188		33	OK	39	OK	43	OK	48	OK	43	OK	48	OK	33	OK	38	OK	48	38
189		29	OK	34	OK	44	OK	47	OK	43	OK	46	OK	29	OK	34	OK	48	38
190		32	OK	38	OK	40	OK	48	OK	39	OK	47	OK	32	OK	37	OK	48	38
191		32	OK	37	OK	39	OK	48	OK	39	OK	47	OK	32	OK	37	OK	48	38
192		31	OK	37	OK	41	OK	47	OK	41	OK	46	OK	31	OK	37	OK	48	38
193		26	OK	33	OK	42	OK	47	OK	40	OK	46	OK	26	OK	32	OK	48	38
194		28	OK	34	OK	44	OK	47	OK	43	OK	47	OK	28	OK	33	OK	48	38
195		27	OK	33	OK	43	OK	47	OK	42	OK	46	OK	27	OK	32	OK	48	38
196		27	OK	33	OK	43	OK	47	OK	42	OK	46	OK	27	OK	32	OK	48	38
197		27	OK	33	OK	43	OK	47	OK	42	OK	46	OK	27	OK	32	OK	48	38
198		27	OK	33	OK	43	OK	47	OK	42	OK	47	OK	27	OK	32	OK	48	38
199		29	OK	34	OK	46	OK	50	Marginal	45	OK	49	Marginal	29	OK	34	OK	48	38
200		27	OK	33	OK	40	OK	43	OK	39	OK	43	OK	27	OK	32	OK	48	38
201		27	OK	33	OK	45	OK	49	Marginal	44	OK	49	Marginal	27	OK	33	OK	48	38
202		28	OK	34	OK	42	OK	46	OK	42	OK	45	OK	28	OK	33	OK	48	38
203		28	OK	34	OK	46	OK	51	Moderate	46	OK	50	Marginal	28	OK	33	OK	48	38
204		29	OK	34	OK	46	OK	50	Marginal	45	OK	49	Marginal	29	OK	33	OK	48	38
205	Anglican Church Diocese of Blayney	25	OK	32	OK	39	OK	47	OK	38	OK	46	OK	25	OK	31	OK	48	38
206		24	OK	31	OK	39	OK	46	OK	39	OK	46	OK	24	OK	30	OK	48	38
207		26	OK	32	OK	41	OK	45	OK	40	OK	44	OK	26	OK	32	OK	48	38
208		26	OK	32	OK	41	OK	45	OK	40	OK	45	OK	26	OK	32	OK	48	38
209		26	OK	32	OK	37	OK	44	OK	37	OK	44	OK	26	OK	31	OK	48	38
210		26	OK	32	OK	37	OK	44	OK	37	OK	44	OK	26	OK	32	OK	48	38
211	Abundant Life Church	26	OK	33	OK	38	OK	42	OK	38	OK	42	OK	26	OK	32	OK	48	38
212		26	OK	33	OK	38	OK	43	OK	38	OK	43	OK	26	OK	32	OK	48	38
213		26	OK	32	OK	43	OK	48	OK	42	OK	47	OK	26	OK	32	OK	48	38
214		26	OK	33	OK	43	OK	48	OK	42	OK	47	OK	26	OK	32	OK	48	38
215		26	OK	33	OK	43	OK	48	OK	42	OK	47	OK	26	OK	32	OK	48	38
216		26	OK	33	OK	43	OK	48	OK	43	OK	47	OK	26	OK	32	OK	48	38
217		26	OK	32	OK	35	OK	39	OK	35	OK	39	OK	26	OK	32	OK	48	38
218		25	OK	32	OK	35	OK	39	OK	34	OK	38	OK	25	OK	31	OK	48	38
219		26	OK	32	OK	38	OK	42	OK	38	OK	42	OK	26	OK	32	OK	48	38
220		26	OK	32	OK	36	OK	41	OK	37	OK	41	OK	26	OK	31	OK	48	38
221		25	OK	32	OK	37	OK	41	OK	37	OK	41	OK	25	OK	31	OK	48	38
222		27	OK	34	OK	39	OK	42	OK	39	OK	42	OK	27	OK	33	OK	53	43
223		27	OK	33	OK	37	OK	43	OK	36	OK	43	OK	27	OK	32	OK	53	43
224		26	OK	33	OK	42	OK	48	OK	43	OK	48	OK	26	OK	32	OK	53	43
225		25	OK	33	OK	34	OK	38	OK	34	OK	38	OK	25	OK	32	OK	53	43
226	St Joseph's Central School	18	OK	23	OK	27	OK	32	OK	27	OK	32	OK	18	OK	22	OK	53	43
227		15	OK	21	OK	26	OK	31	OK	26	OK	31	OK	15	OK	21	OK	53	43
228		15	OK	22	OK	24	OK	30	OK	24	OK	31	OK	15	OK	21	OK	53	43

Table C1 (Continued) – Existing Scenario - Modelled Results for all Receivers

RECEIVER	RECEIVER OF INTEREST	EXISTING SCENARIO														CRITERIA	
		Daytime/Evening - No Loading				Daytime/Evening Loading				Daytime/Evening Loading + Train				Night-time				dB(A) LAeq (15min)	
		S.I.		Wind		S.I.		Wind		S.I.		Wind		S.I.		Inversion		Day/Evening	Night
229		15	OK	21	OK	24	OK	30	OK	24	OK	30	OK	15	OK	20	OK	53	43
230		14	OK	20	OK	24	OK	29	OK	24	OK	29	OK	14	OK	19	OK	53	43
231		14	OK	20	OK	24	OK	29	OK	25	OK	30	OK	14	OK	19	OK	53	43
232		15	OK	20	OK	26	OK	31	OK	26	OK	31	OK	15	OK	20	OK	53	43
233		17	OK	22	OK	26	OK	31	OK	26	OK	31	OK	17	OK	22	OK	53	43
234	St. James Catholic Church	25	OK	31	OK	36	OK	44	OK	36	OK	44	OK	25	OK	30	OK	53	43
235		34	OK	40	OK	45	OK	49	OK	45	OK	49	OK	34	OK	39	OK	53	43
236		28	OK	33	OK	39	OK	45	OK	40	OK	46	OK	28	OK	32	OK	53	43
197a		27	OK	33	OK	43	OK	47	OK	42	OK	46	OK	27	OK	32	OK	48	38
200a		27	OK	33	OK	41	OK	44	OK	40	OK	44	OK	27	OK	32	OK	48	38

APPENDIX D

NOISE MODELLING RESULTS – MODIFIED BLAYNEY DEWATERING FACILITY

Table D1 – Modification Scenario - Modelled Results for all Receivers

RECEIVER	RECEIVER OF INTEREST	MODIFICATION SCENARIO																CRITERIA	
		Daytime/Evening - No Loading				Daytime/Evening Loading				Daytime/Evening Loading + Train				Night				dB(A) LAeq (15min)	
		No Wind		Wind		No Wind		Wind		No Wind		Wind		No Wind		Wind		Day	Night
1		30	OK	35	OK	45	OK	49	Marginal	45	OK	49	Marginal	30	OK	35	OK	48	38
2		32	OK	36	OK	45	OK	48	OK	45	OK	49	Marginal	32	OK	36	OK	48	38
3		31	OK	36	OK	41	OK	45	OK	41	OK	45	OK	31	OK	36	OK	48	38
4		33	OK	36	OK	46	OK	50	Marginal	46	OK	50	Marginal	33	OK	36	OK	48	38
5		33	OK	37	OK	42	OK	46	OK	42	OK	46	OK	33	OK	36	OK	48	38
6		34	OK	37	OK	46	OK	49	Marginal	46	OK	49	Marginal	34	OK	37	OK	48	38
7		32	OK	36	OK	45	OK	48	OK	45	OK	48	OK	32	OK	36	OK	48	38
8		32	OK	36	OK	45	OK	48	OK	45	OK	48	OK	32	OK	36	OK	48	38
9		32	OK	36	OK	45	OK	48	OK	45	OK	48	OK	32	OK	36	OK	48	38
10		32	OK	36	OK	46	OK	50	Marginal	45	OK	49	Marginal	32	OK	35	OK	48	38
11		32	OK	36	OK	46	OK	49	Marginal	45	OK	49	Marginal	32	OK	35	OK	48	38
12		32	OK	36	OK	46	OK	49	Marginal	45	OK	49	Marginal	32	OK	35	OK	48	38
13		32	OK	35	OK	44	OK	47	OK	44	OK	47	OK	32	OK	35	OK	48	38
14		31	OK	35	OK	44	OK	47	OK	44	OK	47	OK	31	OK	35	OK	48	38
15		31	OK	35	OK	43	OK	46	OK	43	OK	46	OK	31	OK	34	OK	48	38
16		31	OK	35	OK	44	OK	47	OK	44	OK	47	OK	31	OK	35	OK	48	38
17		32	OK	35	OK	45	OK	48	OK	45	OK	48	OK	32	OK	35	OK	48	38
18		32	OK	36	OK	45	OK	48	OK	45	OK	48	OK	32	OK	36	OK	48	38
19		33	OK	36	OK	46	OK	49	Marginal	46	OK	49	Marginal	33	OK	36	OK	48	38
20		33	OK	36	OK	46	OK	49	Marginal	46	OK	49	Marginal	33	OK	36	OK	48	38
21		33	OK	37	OK	47	OK	51	Moderate	47	OK	51	Moderate	33	OK	36	OK	48	38
22		34	OK	37	OK	47	OK	50	Marginal	47	OK	50	Marginal	34	OK	37	OK	48	38
23		35	OK	38	OK	48	OK	51	Moderate	48	OK	51	Moderate	35	OK	37	OK	48	38
24		35	OK	38	OK	45	OK	47	OK	44	OK	48	OK	35	OK	37	OK	48	38
25		35	OK	38	OK	48	OK	51	Moderate	48	OK	51	Moderate	35	OK	38	OK	48	38
26		35	OK	38	OK	49	Marginal	51	Moderate	48	OK	51	Moderate	35	OK	38	OK	48	38
27		36	OK	39	OK	49	Marginal	51	Moderate	49	Marginal	51	Moderate	36	OK	38	OK	48	38
28		36	OK	38	OK	49	Marginal	52	Moderate	49	Marginal	52	Moderate	36	OK	38	OK	48	38
29		36	OK	39	OK	50	Marginal	53	Moderate	50	Marginal	53	Moderate	36	OK	39	Marginal	48	38
30		37	OK	40	OK	51	Moderate	53	Moderate	51	Moderate	53	Moderate	37	OK	40	Marginal	48	38
31		37	OK	39	OK	50	Marginal	52	Moderate	50	Marginal	53	Moderate	37	OK	39	Marginal	48	38
32		36	OK	39	OK	50	Marginal	52	Moderate	49	Marginal	52	Moderate	36	OK	38	OK	48	38
33		34	OK	37	OK	47	OK	50	Marginal	47	OK	50	Marginal	34	OK	36	OK	48	38
34		33	OK	36	OK	45	OK	48	OK	45	OK	48	OK	33	OK	36	OK	48	38
35		37	OK	40	OK	51	Moderate	53	Moderate	51	Moderate	53	Moderate	37	OK	39	Marginal	48	38
36		36	OK	38	OK	49	Marginal	51	Moderate	49	Marginal	51	Moderate	36	OK	38	OK	48	38
37		35	OK	38	OK	48	OK	50	Marginal	48	OK	50	Marginal	35	OK	37	OK	48	38
38		33	OK	37	OK	47	OK	49	Marginal	46	OK	49	Marginal	33	OK	36	OK	48	38
39		36	OK	39	OK	50	Marginal	52	Moderate	50	Marginal	52	Moderate	36	OK	39	Marginal	48	38
40		34	OK	37	OK	48	OK	50	Marginal	48	OK	50	Marginal	34	OK	37	OK	48	38
41		34	OK	37	OK	48	OK	51	Moderate	48	OK	51	Moderate	34	OK	37	OK	48	38
42		37	OK	39	OK	51	Moderate	53	Moderate	51	Moderate	53	Moderate	37	OK	39	Marginal	48	38
43		37	OK	39	OK	51	Moderate	53	Moderate	50	Marginal	53	Moderate	37	OK	39	Marginal	48	38
44		35	OK	38	OK	49	Marginal	52	Moderate	49	Marginal	52	Moderate	35	OK	38	OK	48	38
45		40	OK	43	OK	55	Noise Affected	57	Noise Affected	54	Noise Affected	57	Noise Affected	40	Marginal	42	Moderate	48	38
46		39	OK	42	OK	54	Noise Affected	56	Noise Affected	53	Moderate	56	Noise Affected	39	Marginal	41	Moderate	48	38

Table D1 (Continued) – Modification Scenario - Modelled Results for all Receivers

RECEIVER	RECEIVER OF INTEREST	MODIFICATION SCENARIO														CRITERIA	
		Daytime/Evening – No Loading				Daytime/Evening Loading				Daytime/Evening Loading + Train				Night				dB(A) LAeq (15min)	
		No Wind		Wind		No Wind		Wind		No Wind		Wind		No Wind		Wind		Day	Night
47		39	OK	41	OK	53	Moderate	55	Noise Affected	53	Moderate	55	Noise Affected	39	Marginal	41	Moderate	48	38
48		38	OK	40	OK	52	Moderate	54	Noise Affected	52	Moderate	54	Noise Affected	38	OK	40	Marginal	48	38
49		37	OK	39	OK	51	Moderate	54	Noise Affected	51	Moderate	54	Noise Affected	37	OK	39	Marginal	48	38
50		37	OK	39	OK	51	Moderate	53	Moderate	51	Moderate	54	Noise Affected	37	OK	39	Marginal	48	38
51		35	OK	38	OK	50	Marginal	52	Moderate	50	Marginal	52	Moderate	35	OK	38	OK	48	38
52		44	OK	46	OK	60	Noise Affected	61	Noise Affected	60	Noise Affected	61	Noise Affected	44	Noise Affected	46	Noise Affected	48	38
53		42	OK	44	OK	57	Noise Affected	58	Noise Affected	57	Noise Affected	58	Noise Affected	42	Moderate	43	Moderate	48	38
54		39	OK	41	OK	54	Noise Affected	55	Noise Affected	54	Noise Affected	55	Noise Affected	39	Marginal	41	Moderate	48	38
55		38	OK	40	OK	53	Moderate	55	Noise Affected	53	Moderate	55	Noise Affected	38	OK	40	Marginal	48	38
56		42	OK	44	OK	57	Noise Affected	59	Noise Affected	57	Noise Affected	59	Noise Affected	42	Moderate	44	Noise Affected	48	38
57		40	OK	42	OK	55	Noise Affected	57	Noise Affected	55	Noise Affected	57	Noise Affected	40	Marginal	42	Moderate	48	38
58		38	OK	40	OK	52	Moderate	54	Noise Affected	52	Moderate	54	Noise Affected	38	OK	40	Marginal	48	38
59		43	OK	45	OK	58	Noise Affected	59	Noise Affected	58	Noise Affected	59	Noise Affected	43	Moderate	45	Noise Affected	48	38
60		41	OK	43	OK	56	Noise Affected	58	Noise Affected	55	Noise Affected	57	Noise Affected	41	Moderate	42	Moderate	48	38
61		40	OK	42	OK	55	Noise Affected	57	Noise Affected	54	Noise Affected	57	Noise Affected	40	Marginal	42	Moderate	48	38
62		39	OK	41	OK	54	Noise Affected	56	Noise Affected	53	Moderate	56	Noise Affected	39	Marginal	41	Moderate	48	38
63		39	OK	41	OK	54	Noise Affected	55	Noise Affected	53	Moderate	55	Noise Affected	39	Marginal	41	Moderate	48	38
64		42	OK	44	OK	57	Noise Affected	58	Noise Affected	56	Noise Affected	58	Noise Affected	42	Moderate	44	Noise Affected	48	38
65		38	OK	41	OK	53	Moderate	55	Noise Affected	53	Moderate	55	Noise Affected	38	OK	40	Marginal	48	38
66		39	OK	41	OK	54	Noise Affected	55	Noise Affected	53	Moderate	55	Noise Affected	39	Marginal	41	Moderate	48	38
67		39	OK	41	OK	57	Noise Affected	58	Noise Affected	56	Noise Affected	58	Noise Affected	39	Marginal	41	Moderate	48	38
68		38	OK	40	OK	52	Moderate	54	Noise Affected	52	Moderate	53	Moderate	38	OK	40	Marginal	48	38
69		37	OK	39	OK	51	Moderate	53	Moderate	51	Moderate	52	Moderate	37	OK	39	Marginal	48	38
70		38	OK	41	OK	58	Noise Affected	58	Noise Affected	57	Noise Affected	58	Noise Affected	38	OK	40	Marginal	48	38
71		34	OK	36	OK	50	Marginal	51	Moderate	49	Marginal	51	Moderate	34	OK	36	OK	48	38
72		33	OK	36	OK	49	Marginal	50	Marginal	48	OK	50	Marginal	33	OK	36	OK	48	38
73		33	OK	36	OK	48	OK	50	Marginal	47	OK	49	Marginal	33	OK	35	OK	48	38
74		36	OK	38	OK	49	Marginal	51	Moderate	49	Marginal	51	Moderate	36	OK	38	OK	48	38
75		36	OK	39	OK	50	Marginal	51	Moderate	49	Marginal	51	Moderate	36	OK	38	OK	48	38
76		32	OK	35	OK	49	Marginal	50	Marginal	48	OK	50	Marginal	32	OK	35	OK	48	38
77		32	OK	36	OK	48	OK	50	Marginal	47	OK	49	Marginal	32	OK	35	OK	48	38
78		31	OK	34	OK	48	OK	51	Moderate	47	OK	50	Marginal	31	OK	34	OK	48	38
79		31	OK	34	OK	48	OK	51	Moderate	47	OK	51	Moderate	31	OK	34	OK	48	38
80		31	OK	34	OK	45	OK	47	OK	45	OK	47	OK	31	OK	34	OK	48	38
81		30	OK	33	OK	47	OK	51	Moderate	47	OK	50	Marginal	30	OK	33	OK	48	38
82		29	OK	33	OK	42	OK	44	OK	41	OK	44	OK	29	OK	32	OK	48	38
83		29	OK	32	OK	46	OK	50	Marginal	45	OK	49	Marginal	29	OK	32	OK	48	38
84		29	OK	33	OK	45	OK	49	Marginal	45	OK	48	OK	29	OK	33	OK	48	38
85		30	OK	33	OK	46	OK	49	Marginal	45	OK	49	Marginal	30	OK	33	OK	48	38
86		30	OK	34	OK	46	OK	50	Marginal	46	OK	49	Marginal	30	OK	33	OK	48	38
87		30	OK	34	OK	47	OK	50	Marginal	46	OK	49	Marginal	30	OK	33	OK	48	38
88		31	OK	34	OK	47	OK	50	Marginal	47	OK	50	Marginal	31	OK	34	OK	48	38
89		28	OK	32	OK	39	OK	42	OK	39	OK	42	OK	28	OK	31	OK	48	38
90		27	OK	32	OK	39	OK	41	OK	39	OK	41	OK	27	OK	31	OK	48	38
91		27	OK	31	OK	40	OK	43	OK	40	OK	43	OK	27	OK	31	OK	48	38
92		27	OK	31	OK	39	OK	42	OK	39	OK	42	OK	27	OK	31	OK	48	38

Table D1 (Continued) – Modification Scenario - Modelled Results for all Receivers

RECEIVER	RECEIVER OF INTEREST	MODIFICATION SCENARIO														CRITERIA	
		Daytime/Evening – No Loading				Daytime/Evening Loading				Daytime/Evening Loading + Train				Night		dB(A) LAeq (15min)	
		No Wind		Wind		No Wind		Wind		No Wind		Wind		No Wind		Wind		Day	Night
93		27	OK	32	OK	37	OK	45	OK	37	OK	46	OK	27	OK	31	OK	48	38
94		26	OK	31	OK	38	OK	41	OK	38	OK	41	OK	26	OK	30	OK	48	38
95		26	OK	31	OK	38	OK	41	OK	38	OK	41	OK	26	OK	30	OK	48	38
96		30	OK	34	OK	41	OK	45	OK	41	OK	45	OK	30	OK	34	OK	53	43
97		41	OK	44	OK	54	Marginal	56	Moderate	54	Marginal	56	Moderate	41	OK	43	OK	53	43
98		35	OK	38	OK	46	OK	49	OK	46	OK	49	OK	35	OK	37	OK	53	43
99		31	OK	34	OK	45	OK	48	OK	45	OK	48	OK	31	OK	34	OK	53	43
100		22	OK	27	OK	31	OK	36	OK	31	OK	36	OK	22	OK	27	OK	53	43
101		22	OK	27	OK	31	OK	36	OK	31	OK	36	OK	22	OK	27	OK	53	43
102		30	OK	34	OK	45	OK	48	OK	45	OK	48	OK	30	OK	33	OK	53	43
103		27	OK	30	OK	36	OK	43	OK	36	OK	43	OK	27	OK	29	OK	53	43
104	St Joseph's Central School	27	OK	32	OK	41	OK	45	OK	41	OK	45	OK	27	OK	31	OK	53	43
105		29	OK	33	OK	36	OK	39	OK	36	OK	39	OK	29	OK	33	OK	53	43
106		31	OK	35	OK	43	OK	46	OK	43	OK	46	OK	31	OK	34	OK	48	38
107		29	OK	34	OK	43	OK	46	OK	43	OK	46	OK	29	OK	33	OK	48	38
108		29	OK	34	OK	42	OK	46	OK	42	OK	46	OK	29	OK	33	OK	48	38
109		29	OK	34	OK	42	OK	45	OK	42	OK	45	OK	29	OK	33	OK	48	38
110		32	OK	35	OK	43	OK	46	OK	43	OK	46	OK	32	OK	35	OK	48	38
111		31	OK	35	OK	43	OK	46	OK	43	OK	46	OK	31	OK	35	OK	48	38
112		30	OK	35	OK	44	OK	47	OK	44	OK	47	OK	30	OK	34	OK	48	38
113		30	OK	34	OK	43	OK	47	OK	43	OK	47	OK	30	OK	34	OK	48	38
114		30	OK	34	OK	43	OK	46	OK	43	OK	46	OK	30	OK	34	OK	48	38
115		29	OK	34	OK	42	OK	46	OK	42	OK	46	OK	29	OK	33	OK	48	38
116		29	OK	34	OK	41	OK	48	OK	41	OK	48	OK	29	OK	33	OK	48	38
117		32	OK	36	OK	45	OK	47	OK	45	OK	47	OK	32	OK	36	OK	48	38
118		32	OK	35	OK	45	OK	49	Marginal	45	OK	48	OK	32	OK	35	OK	48	38
119		31	OK	35	OK	45	OK	48	OK	45	OK	48	OK	31	OK	35	OK	48	38
120		31	OK	35	OK	44	OK	48	OK	44	OK	48	OK	31	OK	35	OK	48	38
121		31	OK	35	OK	44	OK	47	OK	44	OK	47	OK	31	OK	35	OK	48	38
122		31	OK	35	OK	43	OK	48	OK	43	OK	49	Marginal	31	OK	34	OK	48	38
123		30	OK	35	OK	42	OK	48	OK	42	OK	48	OK	30	OK	34	OK	48	38
124		30	OK	34	OK	43	OK	49	Marginal	43	OK	48	OK	30	OK	34	OK	48	38
125		32	OK	36	OK	46	OK	49	Marginal	46	OK	49	Marginal	32	OK	36	OK	48	38
126		33	OK	37	OK	47	OK	50	Marginal	47	OK	49	Marginal	33	OK	36	OK	48	38
127		32	OK	36	OK	44	OK	50	Marginal	44	OK	50	Marginal	32	OK	35	OK	48	38
128		31	OK	35	OK	44	OK	49	Marginal	44	OK	50	Marginal	31	OK	35	OK	48	38
129		31	OK	35	OK	44	OK	49	Marginal	44	OK	49	Marginal	31	OK	35	OK	48	38
130		30	OK	35	OK	44	OK	49	Marginal	44	OK	49	Marginal	30	OK	34	OK	48	38
131		30	OK	34	OK	43	OK	49	Marginal	43	OK	49	Marginal	30	OK	34	OK	48	38
132		32	OK	36	OK	45	OK	51	Moderate	45	OK	51	Moderate	32	OK	36	OK	48	38
133		32	OK	36	OK	45	OK	50	Marginal	45	OK	50	Marginal	32	OK	36	OK	48	38
134		32	OK	36	OK	45	OK	50	Marginal	45	OK	50	Marginal	32	OK	35	OK	48	38
136		32	OK	36	OK	45	OK	50	Marginal	45	OK	50	Marginal	32	OK	35	OK	48	38
137		31	OK	35	OK	44	OK	50	Marginal	44	OK	50	Marginal	31	OK	35	OK	48	38
138		30	OK	35	OK	43	OK	49	Marginal	43	OK	49	Marginal	30	OK	34	OK	48	38

Table D1 (Continued) – Modification Scenario - Modelled Results for all Receivers

RECEIVER	RECEIVER OF INTEREST	MODIFICATION SCENARIO																CRITERIA	
		Daytime/Evening – No Loading				Daytime/Evening Loading				Daytime/Evening Loading + Train				Night				dB(A) LAeq (15min)	
		No Wind		Wind		No Wind		Wind		No Wind		Wind		No Wind		Wind		Day	Night
139		34	OK	37	OK	47	OK	50	Marginal	47	OK	50	Marginal	34	OK	36	OK	48	38
140		34	OK	38	OK	47	OK	52	Moderate	47	OK	52	Moderate	34	OK	38	OK	48	38
141		33	OK	37	OK	46	OK	51	Moderate	46	OK	51	Moderate	33	OK	36	OK	48	38
142		32	OK	36	OK	45	OK	51	Moderate	45	OK	50	Marginal	32	OK	36	OK	48	38
143		32	OK	36	OK	44	OK	50	Marginal	44	OK	50	Marginal	32	OK	35	OK	48	38
144		31	OK	35	OK	44	OK	50	Marginal	44	OK	50	Marginal	31	OK	35	OK	48	38
145		30	OK	34	OK	43	OK	49	Marginal	43	OK	49	Marginal	30	OK	34	OK	48	38
146		30	OK	34	OK	42	OK	49	Marginal	42	OK	49	Marginal	30	OK	34	OK	48	38
147		29	OK	34	OK	42	OK	49	Marginal	42	OK	48	OK	29	OK	34	OK	48	38
148		30	OK	34	OK	42	OK	46	OK	42	OK	46	OK	30	OK	34	OK	48	38
149		35	OK	38	OK	46	OK	51	Moderate	46	OK	51	Moderate	35	OK	38	OK	48	38
150		34	OK	37	OK	47	OK	50	Marginal	47	OK	50	Marginal	34	OK	37	OK	48	38
151		33	OK	37	OK	46	OK	49	Marginal	46	OK	49	Marginal	33	OK	37	OK	48	38
152		33	OK	36	OK	46	OK	49	Marginal	46	OK	49	Marginal	33	OK	36	OK	48	38
153		32	OK	36	OK	45	OK	48	OK	45	OK	48	OK	32	OK	35	OK	48	38
154		31	OK	35	OK	44	OK	50	Marginal	44	OK	49	Marginal	31	OK	35	OK	48	38
155		31	OK	35	OK	43	OK	49	Marginal	43	OK	49	Marginal	31	OK	35	OK	48	38
156		30	OK	34	OK	42	OK	48	OK	42	OK	48	OK	30	OK	34	OK	48	38
157		30	OK	34	OK	42	OK	49	Marginal	42	OK	48	OK	30	OK	34	OK	48	38
158		35	OK	38	OK	49	Marginal	51	Moderate	49	Marginal	51	Moderate	35	OK	38	OK	48	38
159		36	OK	39	OK	47	OK	52	Moderate	47	OK	51	Moderate	36	OK	38	OK	48	38
160		36	OK	39	OK	50	Marginal	53	Moderate	50	Marginal	53	Moderate	36	OK	39	Marginal	48	38
161		34	OK	37	OK	48	OK	50	Marginal	48	OK	50	Marginal	34	OK	37	OK	48	38
162		34	OK	37	OK	47	OK	49	Marginal	47	OK	49	Marginal	34	OK	37	OK	48	38
163		33	OK	36	OK	46	OK	48	OK	46	OK	48	OK	33	OK	36	OK	48	38
164		32	OK	36	OK	45	OK	48	OK	45	OK	47	OK	32	OK	35	OK	48	38
165		32	OK	36	OK	44	OK	47	OK	44	OK	47	OK	32	OK	35	OK	48	38
166		31	OK	35	OK	44	OK	46	OK	44	OK	46	OK	31	OK	35	OK	48	38
167		31	OK	35	OK	43	OK	46	OK	43	OK	46	OK	31	OK	34	OK	48	38
168		30	OK	35	OK	43	OK	46	OK	43	OK	46	OK	30	OK	34	OK	48	38
169		30	OK	34	OK	42	OK	45	OK	42	OK	45	OK	30	OK	34	OK	48	38
170		30	OK	35	OK	42	OK	45	OK	42	OK	45	OK	30	OK	34	OK	48	38
171	Blayney Public School	33	OK	36	OK	46	Moderate	51	Noise Affected	46	Moderate	50	Noise Affected	33	OK	36	Marginal	43	35
172		32	OK	36	OK	47	OK	50	Marginal	47	OK	50	Marginal	32	OK	35	OK	48	38
173		29	OK	33	OK	44	OK	47	OK	44	OK	46	OK	29	OK	33	OK	48	38
174		29	OK	33	OK	45	OK	49	Marginal	45	OK	48	OK	29	OK	33	OK	48	38
175	Blayney High School	27	OK	32	OK	37	OK	46	Moderate	37	OK	45	Marginal	27	OK	32	OK	43	35
176		31	OK	36	OK	46	OK	49	Marginal	46	OK	48	OK	31	OK	35	OK	48	38
177		31	OK	35	OK	45	OK	48	OK	45	OK	48	OK	31	OK	35	OK	48	38
178		31	OK	35	OK	45	OK	48	OK	45	OK	47	OK	31	OK	35	OK	48	38
179		30	OK	35	OK	45	OK	49	Marginal	45	OK	48	OK	30	OK	34	OK	48	38
180		30	OK	34	OK	42	OK	48	OK	42	OK	48	OK	30	OK	34	OK	48	38
181		29	OK	34	OK	41	OK	48	OK	41	OK	48	OK	29	OK	33	OK	48	38
182		29	OK	34	OK	41	OK	48	OK	41	OK	47	OK	29	OK	33	OK	48	38

Table D1 (Continued) – Modification Scenario - Modelled Results for all Receivers

RECEIVER	RECEIVER OF INTEREST	MODIFICATION SCENARIO														CRITERIA	
		Daytime/Evening – No Loading				Daytime/Evening Loading				Daytime/Evening Loading + Train				Night		dB(A) LAeq (15min)	
		No Wind		Wind		No Wind		Wind		No Wind		Wind		No Wind		Wind		Day	Night
183		29	OK	34	OK	41	OK	48	OK	41	OK	47	OK	29	OK	33	OK	48	38
184		29	OK	34	OK	41	OK	48	OK	41	OK	47	OK	29	OK	33	OK	48	38
185		28	OK	33	OK	43	OK	47	OK	43	OK	47	OK	28	OK	33	OK	48	38
186		28	OK	33	OK	43	OK	47	OK	43	OK	47	OK	28	OK	33	OK	48	38
187		29	OK	34	OK	39	OK	47	OK	39	OK	47	OK	29	OK	33	OK	48	38
188		29	OK	34	OK	42	OK	47	OK	42	OK	47	OK	29	OK	34	OK	48	38
189		28	OK	33	OK	43	OK	46	OK	43	OK	45	OK	28	OK	32	OK	48	38
190		28	OK	33	OK	38	OK	46	OK	38	OK	46	OK	28	OK	33	OK	48	38
191		28	OK	33	OK	37	OK	46	OK	37	OK	46	OK	28	OK	33	OK	48	38
192		27	OK	33	OK	39	OK	45	OK	39	OK	44	OK	27	OK	32	OK	48	38
193		26	OK	31	OK	40	OK	45	OK	40	OK	44	OK	26	OK	31	OK	48	38
194		27	OK	32	OK	42	OK	46	OK	42	OK	45	OK	27	OK	32	OK	48	38
195		26	OK	31	OK	41	OK	46	OK	41	OK	45	OK	26	OK	31	OK	48	38
196		26	OK	31	OK	41	OK	45	OK	41	OK	44	OK	26	OK	30	OK	48	38
197		26	OK	31	OK	41	OK	45	OK	41	OK	44	OK	26	OK	30	OK	48	38
198		26	OK	31	OK	42	OK	45	OK	42	OK	45	OK	26	OK	30	OK	48	38
199		28	OK	33	OK	44	OK	48	OK	44	OK	48	OK	28	OK	32	OK	48	38
200		26	OK	31	OK	39	OK	43	OK	39	OK	43	OK	26	OK	31	OK	48	38
201		27	OK	31	OK	44	OK	48	OK	44	OK	48	OK	27	OK	31	OK	48	38
202		28	OK	32	OK	41	OK	45	OK	41	OK	45	OK	28	OK	32	OK	48	38
203		28	OK	32	OK	45	OK	49	Marginal	45	OK	49	Marginal	28	OK	31	OK	48	38
204		28	OK	32	OK	45	OK	48	OK	45	OK	48	OK	28	OK	32	OK	48	38
205	Anglican Church Diocese of Blayney	24	OK	30	OK	37	OK	45	OK	37	OK	45	OK	24	OK	30	OK	48	38
206		23	OK	29	OK	38	OK	45	OK	38	OK	45	OK	23	OK	28	OK	48	38
207		24	OK	30	OK	39	OK	43	OK	39	OK	43	OK	24	OK	29	OK	48	38
208		25	OK	30	OK	39	OK	43	OK	39	OK	43	OK	25	OK	29	OK	48	38
209		25	OK	30	OK	36	OK	43	OK	36	OK	43	OK	25	OK	29	OK	48	38
210		25	OK	30	OK	36	OK	44	OK	36	OK	43	OK	25	OK	30	OK	48	38
211	Abundant Life Church	26	OK	31	OK	38	OK	42	OK	38	OK	42	OK	26	OK	30	OK	48	38
212		25	OK	31	OK	38	OK	42	OK	38	OK	42	OK	25	OK	30	OK	48	38
213		25	OK	30	OK	42	OK	47	OK	42	OK	46	OK	25	OK	30	OK	48	38
214		26	OK	31	OK	42	OK	47	OK	42	OK	46	OK	26	OK	30	OK	48	38
215		26	OK	31	OK	42	OK	46	OK	42	OK	46	OK	26	OK	30	OK	48	38
216		26	OK	31	OK	42	OK	46	OK	42	OK	46	OK	26	OK	30	OK	48	38
217		25	OK	30	OK	35	OK	38	OK	35	OK	38	OK	25	OK	30	OK	48	38
218		24	OK	30	OK	34	OK	38	OK	34	OK	37	OK	24	OK	29	OK	48	38
219		25	OK	31	OK	38	OK	41	OK	38	OK	41	OK	25	OK	30	OK	48	38
220		25	OK	30	OK	37	OK	40	OK	37	OK	40	OK	25	OK	29	OK	48	38
221		24	OK	31	OK	37	OK	40	OK	37	OK	40	OK	24	OK	30	OK	48	38
222		27	OK	31	OK	38	OK	41	OK	38	OK	41	OK	27	OK	31	OK	53	43
223		27	OK	32	OK	36	OK	42	OK	36	OK	42	OK	27	OK	32	OK	53	43
224		24	OK	29	OK	41	OK	47	OK	41	OK	47	OK	24	OK	29	OK	53	43
225		25	OK	31	OK	33	OK	37	OK	33	OK	37	OK	25	OK	30	OK	53	43

Table D1 (Continued) – Modification Scenario - Modelled Results for all Receivers

RECEIVER	RECEIVER OF INTEREST	MODIFICATION SCENARIO																CRITERIA	
		Daytime/Evening – No Loading				Daytime/Evening Loading				Daytime/Evening Loading + Train				Night				dB(A) LAeq (15min)	
		No Wind		Wind		No Wind		Wind		No Wind		Wind		No Wind		Wind		Day	Night
226	St Joseph's Central School	15	OK	19	OK	26	OK	31	OK	26	OK	31	OK	15	OK	19	OK	53	43
227		13	OK	19	OK	25	OK	29	OK	24	OK	30	OK	13	OK	18	OK	53	43
228		13	OK	19	OK	23	OK	29	OK	23	OK	29	OK	13	OK	18	OK	53	43
229		13	OK	18	OK	23	OK	29	OK	23	OK	29	OK	13	OK	17	OK	53	43
230		12	OK	17	OK	23	OK	28	OK	23	OK	28	OK	12	OK	16	OK	53	43
231		12	OK	17	OK	24	OK	28	OK	23	OK	28	OK	12	OK	16	OK	53	43
232		14	OK	17	OK	25	OK	29	OK	25	OK	29	OK	14	OK	16	OK	53	43
233		14	OK	19	OK	25	OK	30	OK	25	OK	30	OK	14	OK	19	OK	53	43
234	St. James Catholic Church	24	OK	29	OK	34	OK	42	OK	33	OK	42	OK	24	OK	29	OK	53	43
235		31	OK	35	OK	43	OK	48	OK	42	OK	48	OK	31	OK	34	OK	53	43
236		26	OK	31	OK	38	OK	43	OK	37	OK	43	OK	26	OK	30	OK	53	43
197a		26	OK	31	OK	41	OK	45	OK	41	OK	44	OK	26	OK	30	OK	48	38
200a		26	OK	31	OK	40	OK	43	OK	40	OK	43	OK	26	OK	31	OK	48	38