



NOISE MANAGEMENT PLAN
CONCRETE BATCHING PLANT
NORTH MACLEAN

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

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Prepared for:
Nucrush Group

Prepared by:
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12 June 2025

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1.0 INTRODUCTION

1.1 Purpose of this Noise Management Plan

This Noise Management Plan (NMP) applies to the proposed concrete batching plant to be located at 916-944 Greenbank Road, North Maclean. This Noise Management Plan (NMP) is to be used as a reference document by all persons concerned with the activities and operations of the site.

1.2 Objective

The objective of the NMP is to manage all operations associated with the use to ensure proper action is taken to minimise the potential for adverse noise amenity impacts on surrounding sensitive land uses.

1.3 How to Use This Management Plan

To simplify implementation of this NMP, it has been prepared in a standard format that nominates the following principles that need to be addressed:

Objective

State the objective(s) that are to be achieved;

Performance Criteria

Describe the criteria against which the level of achievement of the stated objective will be measured;

Tasks/Actions

Describe the steps to be taken to achieve the objective, including education, operational, management, and monitoring procedures.

Responsible Person

Assign responsibility for carrying out each task/action to a relevant person;

Reporting and Review

Describe the required reporting and review arrangements (including auditing) for each task; and

Corrective Actions

Describe what will be done if the stated objectives/targets are not being met or maintained, including whom is responsible for taking the required actions.

1.4 Responsible Person

The Production Manager is responsible for the initial and ongoing implementation, conduct, reporting and documentation of all aspects of the NMP, and is recorded below. The Production Manager may delegate the responsibility for implementing some, or all of the NMP, to other designated staff. The responsible person and persons having delegated authority for implementation and recording shall be recorded in the NMP Records, along with the date of appointment. The names of all such delegated responsible persons shall be kept up to date and current at all times.

Primary Responsible Person	
Position:	Production Manager
Phone Number:	tba
Email Address:	tba

1.5 Implementation

The NMP shall be implemented and applied continuously during all operations related to the site use. The NMP requires the responsible persons, including delegated responsible persons, to take specific actions in a timely manner to fulfil the objective of the NMP. The actions, frequency, timing and person responsible will be identified in the relevant sections of the NMP.

1.6 Document Review

This NMP is to be reviewed within twelve (12) months of implementation to ensure consistency with the uses of the site. Subsequent annual reviews shall be undertaken to ensure the document remains relevant and current. Each review shall be formally documented, signed by the Responsible Person, and included in the NMP Records.

Minutes of each review shall be recorded, noting the date, the items reviewed against the objective of the NMP, including any reported non-compliances with the requirements of the NMP. Reviews will also consider the results of routine site performance reviews conducted, noise complaint records and responses. The minutes will record the name of the Responsible Person conducting the review, and the review date.

A copy of the review shall be filed in the NMP Records and shall be provided for inspection, if requested.

1.7 Document Currency

The currency of all copies of the NMP shall be checked annually to ensure that the current version of the document is available to all staff and obsolete versions are removed to avoid errors and confusion.

1.8 Records

All records required to be kept by this NMP shall be retained on the premises for a period of at least three years. Records shall be kept in the form of annual summaries after that period.

Records are to include:

- Responsible Person name and contact details.
- Results of Document Reviews and any updated NMPs.
- Any changes to site practices that may affect noise levels.
- Training of staff.
- Noise Monitoring
- Noise complaints register, and the actions taken.

2.0 SITE INFORMATION

2.1 Site Description

The Concrete batching plant is to be located on part of land at 916-944 Greenbank Road, North Maclean. The property had real description of Lot 2 on SP267252 and comprises of total area of 25,310m².

The Mount Lindesay Highway is located to the east of the subject land.

The subject site is included within the Priority Development Area.

2.2 Site Operations

The proposed concrete batching plant is a new use on the land with equipment and facilities associated with the proposed concrete batching plant including, but are not limited to, the following:

- Front end loader;
- Bulk aggregate storage;
- Cement and fly ash silos;
- Batching point beneath silos (partial enclosure)
- Slump stand area (2 stands);
- Water storage tanks and treatment;
- Bunded truck wash-out facilities; and
- Batch office.

The proposal is to operate the plant as required on a 24 hour basis with management of concurrent operations as necessary to maintain compliance with noise criteria at sensitive receptors (residences). Operations are proposed a 24 hours Monday to Saturday and 7am to 10pm on Sundays.

The proposed concrete batching plant will incorporate modern design measures to control noise emissions, specifically:

- Acoustic barrier provisions to part of the southern and eastern boundaries of the development site;
- Acoustic barrier provision adjacent the slump stands;
- Aggregate and sand storage in above ground concrete walled bunkers which provide acoustic screening; and
- Agitator truck loading (batching) is to be undertaken within a partially enclosed tunnel structure beneath the overhead silos.

2.3 Noise Sources

The operation of a Concrete Batching Plant on the site will include the following primary noise sources:

- Loading Agitator Truck at Batching Point
- Agitator Trucks at Slump Stands
- Agitator Truck at Washout Pit
- Agitator Truck Manoeuvring on site
- Aggregate & Sand Truck Manoeuvring and Unloading
- Cement & Flyash Truck Manoeuvring and Unloading
- Front-End-Loader operation
- Bag Filter Fans on overhead silos
- Compressors, electric motors and pumps
- Reversing alarms on trucks and front end loaders
- Alarms and Sirens
- Radios and public address systems
- Pneumatic valve air releases
- Impact noise – metal on metal

This Noise Management Plan provides guidance to the operators and staff to minimise and manage noise from the site operations.

Specifically this NMP addresses:

- Ongoing noise management to minimise site noise to achieve compliance with regulatory noise standards.
- Implementation and maintaining physical noise control measures (ie noise barriers)
- Ongoing staff induction and training in use of the NMP and noise reduction/minimisation practices at the facility, particularly during the evening and night periods.
- Noise monitoring at the site and community (residential areas) in response to valid complaints, as required, to identify noise sources that may require mitigation as part of the general environmental duty of the operator.
- Implementation of a formal Complaints Receipt and Handling Procedure.

3.0 NOISE MANAGEMENT PLANS

3.1 Objective

To minimise noise emissions from the site using appropriate management methods to comply with regulatory noise guidelines and minimise impacts at sensitive receptors.

3.2 Performance Criteria

3.2.1 Site Generated Noise

Shall not cause Environmental Nuisance nor Environmental Harm as defined in the Environmental Protection Act 1994 and the Environmental Protection (Noise) Policy 2019.

Shall comply with the following noise limits derived as part of the Noise Impact Assessment (MWA June 2025) (see **Attachment 2**) at all noise sensitive receptors (residences).

Table 1: Adopted Noise Limits at Sensitive Receptors (Dwellings) Receptors R1 to R2 - $L_{Aeq,adj,T}$ dB(A)

Period	Continuous Noise Background LA90 dB(A)	Non-steady Sound $L_{Aeq,T}$ – dB(A)	Non-steady Sound L_{Amax} – dB(A)
Monday to Saturday			
4am to 7am	47	47	60
7am to 6pm	47	52	-
6pm to 10pm	47	52	-
10pm to 7am	41	41	60
Sunday			
4am to 7am	41	41	60
7am to 6pm	46	51	-
6pm to 10pm	45	50	-
10pm to 7am	40	40	60

Table 2: Adopted Noise Limits at Sensitive Receptors (Dwellings) Receptors R3 to R9 - $L_{Aeq,adj,T}$ dB(A)

Period	Continuous Noise Background LA_{90} dB(A)	Non-steady Sound $L_{Aeq,T}$ - dB(A)	Non-steady Sound L_{Amax} - dB(A)
Monday to Saturday			
4am to 7am	47	47	60
7am to 6pm	48	53	-
6pm to 10pm	46	51	-
10pm to 7am	41	41	60
Sunday			
4am to 7am	40	40	60
7am to 6pm	45	50	-
6pm to 10pm	44	49	-
10pm to 7am	39	39	60

Receptor locations are provided below:



3.3 Tasks/Actions

3.3.1 Mobile Plant Noise

ACTIVITY	Mobile Plant Noise (Trucks, front end loaders)
Elements	
	Noise emissions from mobile plant operation on the site resulting at noise sensitive receptors around the site.
Objective	
	To comply with the Performance Criteria stated in Section 3.2.1
Performance Indicators	
	No substantiated noise complaints from surrounding residents.
Tasks/Actions	
	• Truck and front end loader operators are to avoid excessive engine revving. When trucks and front and loaders are not operating, they will be switched off where practical. • Use of horns is to be avoided at night and only to be used in accordance with site safety and statutory regulations. • Use of broadband reversing alarms, specifically to front end loader. • Impose and set a site speed limit and erect signage. • Regular toolbox meetings will be held with personnel to identify and implement continuous improvement ideas and processes. • Trucks and Front End Loaders are to be maintained regularly to be in a good standard of mechanical condition and fitted with effective exhaust mufflers and appropriate reversing alarms. • Maintain noise barriers to working areas • Maintain noise barriers to Slump Stands • Maintain partial enclosure and auto entry door to agitator loading area.
Frequency/Deadline	
	Tasks/Actions are to be implemented and remain ongoing.
Responsible Person	
	The Responsible Person shall be responsible for the implementation of the tasks/actions and the timely response to any noise complaints.
Reporting/Review	

	• Regular audits shall be conducted by designated staff members to ensure that noise minimisation practices continue to be implemented. • Records (written/electronic) are to be kept of actions required/implemented to improve upon noise minimisation measures
Corrective Actions	
	• If excessive noise from mobile plant is identified, implement appropriate change to work practices or maintenance of mobile to reduce operational noise. • Investigate use of permanent or temporary noise barriers to screen activity areas from noise sensitive receptors.

3.3.2 Plant and Equipment Noise

ACTIVITY	Fixed Plant
Elements	
	Noise emissions associated with fixed mechanical plant and equipment at the site resulting at sensitive receptors around the site.
Objective	
	To comply with the Performance Criteria stated in Section 3.2.1
Performance Indicators	
	No substantiated noise complaints from surrounding residents.
Tasks/Actions	
	• Install acoustic screens and enclosures as necessary • Maintain on-site mechanical plant and equipment in good working order to minimise noise generation and to maintain compliance with Section 3.2.1. • Conduct regular (weekly) inspections of major plant when operating to identify any excessive noise that may be an indication of wear and tear or failure and rectify as soon as practical.
Frequency/Deadline	
	Tasks/Actions are to be implemented and remain ongoing.
Responsible Person	
	The Responsible Person shall be responsible for the implementation of the tasks/actions and the timely response to any noise complaints.
Reporting/Review	
	• Regular audits shall be conducted by designated staff members to ensure that noise minimisation practices continue to be implemented. • Records (written/electronic) are to be kept of actions required/implemented to improve upon noise minimisation measures
Corrective Actions	
	• If excessive noise from mechanical plant and equipment is identified, implement appropriate maintenance of equipment to reduce operational noise or construct noise enclosures/barriers or relocate equipment away from noise sensitive receivers.

4.0 NOISE MONITORING

The operation of the site from commencement of operations shall be assessed by an appropriately qualified noise consultant as when and required within 12 months of commencement of operation of the plant after commissioning. Thereafter noise consultant attendance will only be if requested by the operator.

The noise assessment shall include:

- Inspection of the operation of site and measurement of noise from primary noise sources to be recorded in a register of site noise testing.
- Conducting noise measurements from locations within the surrounding community to verify noise from site operations and for comparison to previous monitoring results as a means of assessing the effectiveness of noise mitigation under the Noise Management Plan.
- Preparation of a Noise Monitoring Report to summarise the noise testing undertaken and to identify any changes/upgrades to noise management and mitigation as part of the Noise Management Plan.

The ongoing operation of the facility will include weekly inspection of the site and surrounding area by Nucrush Staff for the purpose of observing noise from site operations and to assist in identifying the necessity for noise reduction actions.

The results of the weekly inspections shall be kept on file.

5.0 TRAINING

Training of site staff will require a multi-faceted approach to training so that the objective of the NMP may be achieved by the collaboration and co-operation of all personnel involved in the site operations and management of the operations.

5.1 Site Personnel

Training must be conducted for staff who have responsibility for maintaining and operating fixed plant and equipment and mobile plant on the site in respect to the objectives and meaning of the NMP.

Toolbox discussions will be held with the responsible staff at regular intervals to review the noise minimisation practices and to identify possible improvements to internal policies and procedures.

6.0 COMPLAINT MANAGEMENT

6.1 Complaint Management Procedure

1. A complaint phone number and email address shall be available via Website and/or site signage. If the phone is not attended an automatic answering service shall be provided for daytime and out-of-hours messages. The Complaint Phone number is: **tba**
2. The phone number, phone and email messages will be directed to the Responsible Person and will be checked for messages each day.
3. All details regarding a complaint shall be recorded on the standard complaint form **(example provided in Attachment 1)** and be filed in the Complaints Section of the NMP Records..
4. The Responsible Person will investigate the subject matter of the complaint by:
 - a) identifying the date, time and location(s) where the alleged matter occurred.
 - b) interviewing the complainant (if required) to gain further particulars about the matter.
 - c) interviewing the relevant staff members working at the time to determine site activities, as appropriate.
 - d) reviewing available and relevant evidence including site logs and any site CCTV footage.
 - e) determining an appropriate response and timing. Responses could include mitigation of noise levels (as necessary), modification of site operations (as applicable), initiation of routine reviews to further verify improvements or modifications to site operations, or no action at all.
 - f) communication of the response to the complainant.
 - g) communication with all relevant staff that a complaint has been received, the nature and subject matter of the complaint, the response decided by the Responsible Person and any advice regarding implications for implementation or modification of the NMP for future site operations.
5. The Responsible Person may seek professional independent advice to assist with item 5(e) above and to determine appropriate mitigation approaches, as required.
6. The Responsible Person shall implement any actions in the response related to operations of the site, or any actions related to amendment of the NMP, as required.
7. The Responsible Person shall document the complaint investigation, relevant evidence and then recommended responses as a report in the Complaints Section of the NMP Records.

8. The timing of the complaint investigation and implementing response actions is very important in minimising any potential adverse amenity impacts from the complaint management process. The timing schedule for the complaint recording, investigation and implementation of the response process is outlined in the table below:

Procedure to be undertaken by Responsible Person/s	By When
Complaint received by Responsible Person or delegated Responsible Person	Available contact point 24 hours per day – telephone/email
Person receiving the complaint raises complaint/inquiry form noting details of the complaint and the complainant as requested on the form.	Within 24 hours of receipt of complaint
Responsible person or delegated person investigates the complaint in accordance with Item 4 (a to c) above, determine cause, and assess the event as being: - one off; - potential continuing event; or - requiring a high-level response i.e. immediate action.	As soon as possible but within 5 days of receipt of complaint
If applicable, available evidence will be reviewed by the Responsible Person, and an independent consultant, if required. Responsible Person will assess the severity of the complaint matter and will determine an appropriate response.	As soon as possible but within 5 days of receipt of complaint
Responsible person contacts complainant and advises outcome of investigation.	Within 10 days of receipt of complaint.
Responsible Person implements response actions, and prepares a Complaint Investigation Report which shall be filed in Complaint Management Section of the NMP Records	Within 14 days of receipt of complaint
Responsible Person initiates routine reviews of site noise levels and other relevant operational matters to confirm the response action to the complaint was effective in obviating the subject of the complaint, as appropriate to the nature of the complaint.	Within 3 months of receipt of the complaint

ATTACHMENT 1
Complaint and Incident Record

Use the electronic Incident Reporting Module as first option. If the form is used it must be logged into the Incident Reporting Module by the direct Supervisor or Manager

Who is completing this form?									
Submitted by:						Date Submitted			
Site:									
Report Type:		Breakdowns		Damage to Property & Goods		Legal & Regulatory			
	Observation	Corrective Action		Customer Complaint		Hazard			
	Site Visit	Environmental Issue		Improvement		Public Complaint			
	Stock Unavailable	Non-conformance		Preventative Action		Other			

Describe what is the hazard or other issue?	
<i>Additional information required for Public Complaints</i>	
Person reporting the complaint	
Address and phone number	

Immediate actions - describe

Further actions required - describe

Root cause analysis - cause of problem/issue

Actions required			
What		Who is responsible	By When
1			
2			
3			
4			

Person submitting Form	Name	Signature
Manager/Supervisor receiving Form	Name	Signature

ATTACHMENT 2

MWA Environmental Noise Assessment Report
June 2025



UPDATED

NOISE ASSESSMENT

PROPOSED CONCRETE BATCHING PLANT

**916-944 GREENBANK ROAD,
NORTH MACLEAN**

Prepared for:
Nucrush Group
c/- Pentral Fultum

Prepared by:
MWA Environmental

12 June 2025

DOCUMENT CONTROL SHEET

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Job Name: North Maclean

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Greenbank Road, North Maclean

Principal Author: Mr Elton Singh

Client: Nucrush Group c/- Pentral Fultum

Client Contact: Mr Adrian Rex

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1.0 INTRODUCTION

1.1 PURPOSE OF REPORT

This report has been prepared by MWA Environmental for Nucrush Pty Ltd ('the Applicant') in support of a Priority Development Area (PDA) Development Application for a Material Change of Use to establish a concrete batching plant and other industrial uses on the subject site at 916-944 Greenbank Road, North Maclean.

The application was submitted to Economic Development Queensland (EDQ) as the delegate for the Minister for Economic Development Queensland (MEDQ) for PDA Development Applications in the Greater Flagstone Priority Development Area (GFPDA). Upon review of the noise report, EDQ issued a Further Issues letter, Ref: DEV2024/1583 dated 25 February 2025. Item 13 of the further issues was related to acoustic matters as follows:

Acoustic

13. Provide an addendum noise impact assessment report outlining a robust assessment of potential noise emissions from the proposed concrete batching plant, would be required to demonstrate that the proposed development will not adversely affect the existing residential noise amenity at nearby dwellings. Where applicable, the report would provide detail on all required noise mitigation measures needed to achieve compliance with the appropriate noise limits including:
 - a. Additional noise monitoring should be conducted to determine the background noise level associated with the most affected noise sensitive receivers, taking particular consideration to avoid capturing noise from existing operations at the development site, and an appropriate (representative) level of road traffic noise from Mount Lindesay Highway.
 - b. These additional background noise levels should be analysed appropriately to determine which appropriate noise criteria should be adopted for the assessment (i.e. AQO from EPP Noise Policy 2019 or LPS 2015). All details of the background noise calculation methods should be provided within the updated report.
 - c. Further justification of why the shoulder period has a duration of 4:00am – 7:00am should be provided within the report.
 - d. Additional information should be provided relating to the proposed noise modelling methodology, such as the SoundPLAN software parameters that were used, including but not limited to ground absorption, reflection order used, receiver heights, noise source heights, etc., as well how the batching point enclosure noise sources have been developed.

The report addresses the issues raised in the further issues letter and the potential impact of noise emissions from the proposed concrete batching plant on surrounding sensitive uses. Individual responses to the Further Issues are provided in *Section 1.5* of this report.

The assessment has been based upon ambient noise monitoring and detailed computer noise modelling and provides recommendations for measures to mitigate potential noise impacts at surrounding sensitive uses as required.

1.2 SITE DESCRIPTION

The Concrete batching plant is to be located on part of land at 916-944 Greenbank Road, North Maclean. The property had real description of Lot 2 on SP267252 and comprises of total area of 25,310m².

The Mount Lindesay Highway is located to the east of the subject land.

The subject site is included within the Priority Development Area.

The location of the subject site and surrounding land uses is shown on **Figure 1**.

On the basis of this updated assessment the proposed concrete batching plant is designed to operate 24 hours Monday to Saturday and 7am to 10pm on Sundays, as required, to provide concrete and to allow delivery of raw materials outside of peak traffic periods as necessary.

1.3 SURROUNDING LAND USES

The current land use zoning of the subject site and surrounding land uses is included as **Figure 2**.

Surrounding land uses comprise:

To the North:	Unformed Scott Lane to the north with large land in the PDA zone. Nearest existing dwelling is located to the northwest of the development area.
To the East:	Mount Lindesay Highway located to the east with nearest residential uses in Rural Residential zoned land further east of the highway.
To the South:	Existing service station with recent approval for further food and drink outlets located to the south in land in the PDA zone.
To the West:	Existing industry uses within the same overall land with Greenbank Road further to the west.

Nine (9) sensitive receptors (residential dwellings) have been nominated for the purposes of this assessment and are shown on **Figure 3**.

1.4 DESCRIPTION OF PROPOSAL

The concrete batching plant is proposed to be developed on the eastern portion of the subject site, with the balance of the subject site proposed for future industry use. Equipment and facilities associated with the proposed concrete batching plant include, but are not limited to, the following:

- Front end loader;
- Bulk aggregate storage;
- Cement and fly ash silos;
- Batching point beneath silos
- Slump stand area (2 stands);
- Water storage tanks;
- Bunded truck wash-out facilities; and
- Batch office.

The proposed concrete batching plant will incorporate modern design measures to control noise emissions, specifically:

- Acoustic barrier provisions to the southern, northwestern and eastern boundaries of the development site;
- The agitator truck loading (batching) is to be undertaken within a enclosed tunnel structure beneath the overhead silos.

The primary function of a concrete batching plant is the mixing of raw materials (sand/aggregates, cementitious materials, admixtures, additives and water) to manufacture concrete. This mixing of raw materials (termed 'batching') is the primary (noise, odour and air (dust) emitting) aspect of the use. This aspect is undertaken indoors, within a structure that is enclosed by walls and is roofed. The batching plant enclosure has solid side walls, a roof and fast acting door, which encloses an agitator truck during the batching process. The batching plant structure effectively contains noise and includes dust filters and water sprays to effectively control and contain odour and air emissions.

The proposed development plans are included in **Attachment 1**.

1.5 RESPONSES TO FURTHER ISSUES

MWA Environmental has prepared individual responses to the items raised in the further issues below.

Item 1. Land Use

North Maclean is intended for a limited range of commercial and trade retail activities which are supporting small scale industry and services within the local area (Section 3.3.4 Employment opportunities of the Development Scheme). Guideline 10 – Industry and business areas states that ‘a limited range of other uses may also be acceptable in Industry and business areas where it can be demonstrated that the use: supports or otherwise has a clear nexus with the primary uses within the area provides a service to the workforce within the area will not prejudice the establishment or operation of the primary uses within the area.

Demonstrate how the concrete batching plant will align with the intention of the North Maclean Industry and business areas in accordance with the Guideline 10 – Industry and business areas and is a Medium Impact Industry rather than a High Impact Industry land use.

Note: Under the Logan Planning Scheme 2015 "concrete batching and producing concrete products" is classified as a High Impact Industry. If the proposed use were defined under the Logan Planning Scheme, it would be considered prohibited development within the development scheme.

Response

Having regard to Guideline 10 – Industry and Business Areas it is relevant to noise that the Section Environment and Safety states:

Development must preserve environmental quality and community safety.

	Industry and business areas
Emissions	Emissions (including air, water and soil pollutants, noise, vibration, heat, light, radioactivity and electromagnetic radiation) and hazards must be managed in accordance with: » the Environmental Protection (Air) Policy 2008 » the Environmental Protection (Noise) Policy 2008 » the Dangerous Goods Safety Management Act 2001 and the Dangerous Goods Safety Management Regulation 2001.

Of relevance is that noise emissions must be managed in accordance with the Environmental Protection (Noise) Policy 2008. The assessment provided in this noise impact assessment report adopts noise criteria which are more restrictive than those of the Environmental Protection (Noise) Policy 2008 and by complying with these criteria, as demonstrated in this report, achieves the Guideline Emissions outcome above.

The proposed development will preserve environmental quality because noise emissions from the proposed use will not result in adverse health or amenity impacts at surrounding sensitive and uses with the noise control measures (barriers and enclosures) and operational management measures proposed.

The use, in meeting these noise criteria, suitably contains noise such that the use fits within the definition of Medium Impact Industry of the PDA Scheme because:

1. primary aspects, including the mixing of raw materials to produce concrete, are undertaken indoors within an enclosure forming part of the modern, purpose-designed concrete batching plant, thereby reducing the potential for noise emissions; and
2. while it will generate offsite noise, the resultant noise emissions will be effectively controlled or contained to achieve compliance with regulatory noise criteria (i.e. does not exceed the criteria at sensitive uses) which protects the amenity of offsite non-industrial uses including residential uses.

Item 13(a)

Additional noise monitoring should be conducted to determine the background noise level associated with the most affected noise sensitive receivers, taking particular consideration to avoid capturing noise from existing operations at the development site, and an appropriate (representative) level of road traffic noise from Mount Lindesay Highway.

Response

Additional noise monitoring was undertaken from 24 April to 28 April 2025 at a location further setback from Mount Lindesay Highway. It is noted that the subject site is now vacant with no noise generated from the site. *Section 2.1* of this report provides the noise monitoring data and *Section 2.2* with the revised noise criteria separating Monday to Saturday and Sunday limits.

Item 13(b)

These additional background noise levels should be analysed appropriately to determine which appropriate noise criteria should be adopted for the assessment (i.e. AQO from EPP Noise Policy 2019 or LPS 2015). All details of the background noise calculation methods should be provided within the updated report.

Response

Based upon a meeting with EDQ it was agreed that the noise limits applied in the submitted noise report are appropriate with further noise monitoring to refine the applicable noise limits to nearest receptors to the west along Greenbank Road as well as Sunday noise limits which are now included in *Section 2.2*.

Item 13(c)

Further justification of why the shoulder period has a duration of 4:00am – 7:00am should be provided within the report.

Response

As anticipated for this site in proximity to the Mount Lindesay Highway, the background noise levels are predominantly affected by road traffic noise, notably elevated from the early morning (from 4am) through to the evening period (up to 10pm).

Given these characteristics of the ambient acoustic environment at this locality varying noise amenity criteria across the concrete batching plant operating hours was warranted.

Item 13(d)

Additional information should be provided relating to the proposed noise modelling methodology, such as the SoundPLAN software parameters that were used, including but not limited to ground absorption, reflection order used, receiver heights, noise source heights, etc., as well how the batching point enclosure noise sources have been developed.

Response

Detailed noise propagation calculations from SoundPLAN are provided in Attachment 5 of this report and include the details requested in respect to model parameters.

Item i.

Outline the maximum sound power levels of all the noise sources.

Response

Table 7 of this report has been updated to provide the maximum sound power levels of all noise sources used in the modelling.

Item ii.

Separate the background noise levels (LA90) recorded on Sunday from those of other days and derive separate noise limits for Sunday. Also, demonstrate that the predicted noise levels comply with the noise limits derived for Sunday.

Response

Sections 2.1 and 2.2 has been updated to provide the Sunday background noise levels for both noise monitoring locations. On the basis of the separated noise levels for Sundays the recommended operating hours for Sundays have been reduced to 7am to 10pm only rather than the previous 24 hours. Operating periods Monday to Saturday remain compliant for 24 hour operation.

Item iii.

Demonstrate that the predicted noise levels at the northeastern boundary of the lot located at 921-953 Greenbank Road North Maclean comply with the Council's noise limits.

Response

As per the meeting with EDQ, response to this item is not required as noise predictions are at a sensitive receptor location.

Item iv.

Amend Figure 5 of the acoustic report to show the locations of all the proposed and modelled acoustic barriers/walls.

Response

Figure 5 has been updated to illustrate the recommended acoustic barriers and to highlight the proposed 2.4 metre high aggregate bunk walls, which were included in the noise assessment and modelling as acoustic structures. These bunk walls are constructed from blockwork or concrete, which possess high acoustic performance and contribute to noise attenuation.

It is standard practice to include proposed solid structures such as walls and buildings with high acoustic properties in noise modelling. This approach allows for an accurate assessment of both their noise attenuation capabilities as well as potential noise reflections resulting from these structures.

Item v.

The applicant requested to confirm that this proposal on the lot located at 4761-4773 Mount Lindesay Highway North Maclean is not involved for any of the sensitive land use listed in the Environmental Protection (Noise) Policy 2019.

Response

As per meeting with EDQ, response to this item is not required as this land is with the PDA area and designated for future industrial use.

2.0 NOISE IMPACT ASSESSMENT

2.1 AMBIENT NOISE LEVELS

Site inspections reveal that the dominant noise influence at the subject site and on surrounding land uses is road traffic on Mount Lindesay Highway and Greenbank Road with some noise influence from the industrial and commercial use on the site and surrounding lands.

To enable an assessment of the existing noise at the subject site, noise measurements have been undertaken using noise dataloggers placed north of the proposed development area over a 7 day period from 2 to 9 October 2024 and again from 24 to 28 April 2025.

The noise datalogger locations are shown on **Figure 4**.

The noise dataloggers used was a Rion NL42 with NATA calibration for Data Location 1 ('**ND 1**') and Norsonic NOR139 for Datalogger Location 2 ('**ND 2**'), programmed to provide statistical analysis results based on 15 minute sampling periods. The datalogger was pre-calibrated to 94 dB at 1kHz using a Bruel & Kjaer Sound Level Calibrator, Type 4231. Weather conditions during the monitoring period were generally fine with major rainfall recorded in the afternoon of 8 October 2024 and 24 April 2025 which affected the noise datalogger and subsequent recorded data. Therefore, the recorded noise data affected by the rainfall was not used in this assessment.

The results of the datalogger noise monitoring are provided in **Table 1** and **Table 2**. The recorded noise levels are presented as statistical components, which are described as:

- L_{max} : The maximum noise level recorded during the measurement period.
- L_{10} : Noise level exceeded for 10 percent of the measurement period, referred to as the averaged maximum sound pressure level.
- L_{90} : Noise level exceeded for 90 percent of the measurement period. AS1055-2018¹ notes that the L_{90} is described as the background sound pressure level.
- L_{eq} : An "average" measurement, and as per AS1055-2018 defined as the value of the sound pressure level of a continuous steady sound state, that within a measurement period, has the same mean square sound pressure as a sound under consideration whose level varies with time.

¹ Australian Standard AS 1055-2018 *Acoustics – Description and measurement of environmental noise*

Table 1: Recorded Range of Ambient Noise Levels – dB(A)
Datalogger Location 1 (ND 1)
2 to 8 October 2024

PARAMETER	PERIOD	RECORDED NOISE LEVELS - dB(A)		
		MINIMUM	MAXIMUM	AVERAGE
L_{max}	Daytime (7am-6pm)	57.2	81.6	68.0
	Evening (6pm-10pm)	52.7	78.8	62.8
	Nighttime (10pm-7am)	48.4	79.4	61.7
L₁₀	Daytime (7am-6pm)	50.7	62.2	55.1
	Evening (6pm-10pm)	47.5	57.6	53.2
	Nighttime (10pm-7am)	42.5	59.3	50.7
L₉₀	Daytime (7am-6pm)	42.8	52.9	48.2
	Evening (6pm-10pm)	38.8	51.1	45.9
	Nighttime (10pm-7am)	30.4	54.5	40.8
L_{eq}	Daytime (7am-6pm)	48.3	58.2	53.0
	Evening (6pm-10pm)	45.2	55.8	50.7
	Nighttime (10pm-7am)	38.5	57.7	47.7

Table 2: Recorded Range of Ambient Noise Levels – dB(A)
Datalogger Location 2 (ND 2)
24 to 28 April 2025

PARAMETER	PERIOD	RECORDED NOISE LEVELS - dB(A)		
		MINIMUM	MAXIMUM	AVERAGE
L_{max}	Daytime (7am-6pm)	60.6	87.1	69.3
	Evening (6pm-10pm)	58.9	74.5	65.8
	Nighttime (10pm-7am)	53.8	77.1	63.8
L₁₀	Daytime (7am-6pm)	54.2	60.1	56.2
	Evening (6pm-10pm)	51.8	56.7	53.6
	Nighttime (10pm-7am)	43.0	59.5	50.2
L₉₀	Daytime (7am-6pm)	43.2	51.8	46.5
	Evening (6pm-10pm)	41.8	51.5	46.7
	Nighttime (10pm-7am)	32.3	51.0	40.6
L_{eq}	Daytime (7am-6pm)	50.7	59.1	53.8
	Evening (6pm-10pm)	48.6	55.5	51.5
	Nighttime (10pm-7am)	41.1	56.5	47.8

The datalogger recorded noise levels are included as graphical traces of noise level versus time for the statistical noise level descriptors **L_{max}**, **L₁₀**, **L₉₀** and **L_{eq}** as **Attachment 2**.

As anticipated for this site in proximity to the Mount Lindesay Highway, the background noise levels are predominantly affected by road traffic noise, notably elevated from the early morning (from 4am) through to the evening period (up to 10pm).

Given these characteristics of the ambient acoustic environment at this locality varying noise amenity criteria across the concrete batching plant operating hours are warranted.

The measured average L_{A90} background noise levels varying across the day, evening and night periods are summarised in **Table 3** below for Monday to Saturday and **Table 4** for Sunday.

**Table 3: Relevant Average Background Noise Levels – dB(A)
Monday to Saturday**

PERIOD	MEASURED L_{A90} dB(A)	
	DATALOGGER LOCATION 1	DATALOGGER LOCATION 2
4am to 7am	47	48* [47]
7am to 6pm	48	47
6pm to 10pm	46	47
10pm to 7am	41	41

* Measured 48 dB(A) adopted 47dB(A)

**Table 4: Relevant Average Background Noise Levels – dB(A)
Sunday**

PERIOD	MEASURED L_{A90} dB(A)	
	DATALOGGER LOCATION 1	DATALOGGER LOCATION 2
4am to 7am	40	41
7am to 6pm	45	46
6pm to 10pm	44	45
10pm to 7am	39	40

2.2 RELEVANT NOISE CRITERIA

The assessment addresses the potential noise amenity impacts of the concrete batching plant at surrounding sensitive uses (dwellings) against the *Logan Planning Scheme 2015* noise criteria for the protection of residential amenity.

The relevant noise criteria for the protection of residential amenity which have been applied at the existing surrounding dwellings in the Rural Residential zone are as per Table 3.2.1.1 (below) of *Planning Scheme Policy 3.2.1 – Noise emission and noise immission standards*.

Table 3.2.1.1—Noise emission standards for the protection of residential amenity

Noise level at the boundary of premises			
Noise type	Time period	Monday to Saturday	Sunday and public holidays
Non-steady sound*	Day 7:00am – 6:00pm	$L_{Aeq,adj,T} \leq L_{A90} \text{ plus } 5 \text{ dB(A)}$	$L_{Aeq,adj,T} \leq L_{A90} \text{ plus } 5 \text{ dB(A)}$
	Evening 6:00pm to 10:00pm	$L_{Aeq,adj,T} \leq L_{A90} \text{ plus } 5 \text{ dB(A)}$	$L_{Aeq,adj,T} \leq L_{A90} \text{ plus } 5 \text{ dB(A)}$
	Night 10:00 – 7:00am	$L_{Aeq,adj,T} \leq L_{A90} \text{ plus } 0 \text{ dB(A)}$ and $L_{Amax} \leq 60\text{dB(A)}$	$L_{Aeq,adj,T} \leq L_{A90} \text{ plus } 0 \text{ dB(A)}$ and $L_{Amax} \leq 60\text{dB(A)}$
Continuous noise*	Anytime	$L_{A90,T} \text{ plus } 0\text{dB(A)}$	$L_{A90,T} \text{ plus } 0\text{dB(A)}$

Editor's note—* as defined in AS1055.1-1997 Acoustics –Description and measurement of environmental noise

Note—Adjustments for tonality and impulsiveness to be included in accordance with AS1055.1-1997 Acoustics— Description and measurement of environmental noise.

Based upon assessment conducted for existing concrete batching plant, continuous noise (measured as L_{A90}) was measured to be more than 5 dB(A) below the overall L_{Aeq} whilst the plant was operating. This dictates that the L_{Aeq} criteria for overall 'non-steady sound' are more constraining than the 'continuous noise' criteria. On this basis, the detailed technical assessment has assessed the overall 'non-steady sound' noise criteria for the proposed development.

As noted in **Section 2.1**, the ambient background noise levels at the locality vary significantly across the early morning, day, evening and night periods due to the Mount Lindesay Highway diurnal traffic variations. It is appropriate to consider varying noise amenity criteria scheme across the plant operating hours and for receptor locations at varying setback from the highway.

Receptors R1 and R2 are grouped to consider the derived noise limits based on measured noise from Datalogger location 2 with the remaining receptors (R3 to R9) using measured noise from Datalogger location 1.

Table 5 presents the adopted noise limits for each period of the day at the sensitive receptors (existing dwellings) for Monday to Sunday for Receptors R1 to R2.

**Table 5: Adopted Noise Limits at Sensitive Receptors (Dwellings)
Receptors R1 to R2 - $L_{Aeq,adj,T}$ dB(A)**

Period	Continuous Noise Background LA90 dB(A)	Non-steady Sound $L_{Aeq,T}$ - dB(A)	Non-steady Sound L_{Amax} - dB(A)
Monday to Saturday			
4am to 7am	47	47	60
7am to 6pm	47	52	-
6pm to 10pm	47	52	-
10pm to 7am	41	41	60
Sunday			
4am to 7am	41	41	60
7am to 6pm	46	51	-
6pm to 10pm	45	50	-
10pm to 7am	40	40	60

Table 6 presents the adopted noise limits for each period of the day at the sensitive receptors (existing dwellings) for Monday to Sunday for Receptors R3 to R9.

**Table 6: Adopted Noise Limits at Sensitive Receptors (Dwellings)
Receptors R3 to R9 - $L_{Aeq,adj,T}$ dB(A)**

Period	Continuous Noise Background LA_{90} dB(A)	Non-steady Sound $L_{Aeq,T} - \text{dB(A)}$	Non-steady Sound $L_{Amax} - \text{dB(A)}$
Monday to Saturday			
4am to 7am	47	47	60
7am to 6pm	48	53	-
6pm to 10pm	46	51	-
10pm to 7am	41	41	60
Sunday			
4am to 7am	40	40	60
7am to 6pm	45	50	-
6pm to 10pm	44	49	-
10pm to 7am	39	39	60

2.3 NOISE MODELLING

2.3.1 METHODOLOGY

To enable assessment of noise from the proposed concrete batching plant a detailed noise model has been established using the SoundPLAN 9.0 software applying the ISO9613 standard. This model is an accepted regulatory model that allows input of site-specific terrain data, source noise data as sound power level spectra and structural features.

The noise modelling undertaken considered meteorological conditions as per the methodology of the ISO9613 standard, with a temperature of 10 degrees Celsius and 70% humidity, a temperature inversion and the following wind conditions as per the adverse meteorological assumptions of ISO9613:

Downwind propagation conditions for the method specified in this part of ISO 9613 are as specified in 5.4.3.3 of ISO 1996-2:1987, namely

- *Wind direction within an angle of $\pm 45^\circ$ of the direction connecting the centre of the dominant sound source and the centre of the specified receiver region, with the wind blowing from source to receiver, and*

-
- *Wind speed between approximately 1m/s and 5m/s, measured at a height of 3m to 11m above the ground.*

As such, given the above meteorological assumptions, it is considered that the results of the noise modelling represent the resultant noise levels of the plant operations during typical noise propagation enhancing meteorological conditions.

The SoundPLAN model has been setup to represent noise emissions from the plant based upon detailed characterisation of:

- On-site and surrounding topography using 1 metre contour data;
- Representation of design finished surface levels for the proposed site prepared by Westera Partners, Preliminary Earthworks Plan, G24-062-PC05
- On-site buildings and structures associated with the development;
- Front-end loader operations at the raw materials area;
- Agitator and raw material delivery truck routes through the site;
- Agitator truck operation at the loading (batching) point, slump stands and washout pits; and
- Receptor locations representative of the nearest sensitive uses (existing dwellings). Receptors heights are 1.5m above ground level.
- Foliage (trees) was modelled on properties to the north of the subject site at average height of 6 metres.

The model was established over an area of approximately 1 km x 1.5 km centred on the subject land.

The model layout and the source locations are shown on the drawings included in **Attachment 3**.

2.3.2 NOISE MITIGATION MEASURES

The proposed development will incorporate specific noise mitigation features that reduce potential noise impacts at the surrounding residential dwellings.

The following noise mitigation measures have been determined appropriate to comply with the relevant noise criteria at the surrounding sensitive receptors (existing dwellings):

- **Hours of Operation – Monday to Saturday 24 hours and Sunday 7am to 10pm.**

- **Construct an acoustic barrier 2.6m to 3.7m high along the southern boundary of the site** (refer **Figure 5**). The acoustic barrier is to be constructed to the specified heights above the finished pad level of adjacent area. The acoustic barrier should be constructed gap-free and of materials achieving a minimum surface density of 12.5kg/m².
- **Construct an acoustic barrier 1.8 high along the north-western boundary of the site** (refer **Figure 5**). The acoustic barrier is to be constructed to the specified heights above the finished pad level of adjacent area. The acoustic barrier should be constructed gap-free and of materials achieving a minimum surface density of 12.5kg/m².
- **Construct acoustic barriers 4.0m high along the southern side of the slumping bays** (refer **Figure 5**). The acoustic barriers are to be constructed to the specified heights above the finished pad level. The acoustic barrier should be constructed gap-free and of materials achieving a minimum surface density of 12.5kg/m².
- **The agitator truck loading (batching) is to be undertaken within a tunnel structure comprising solid side walls and a fast acting door on the entry side** with the following specifications for acoustic performance:
 - Solid side walls using materials achieving a minimum Rw 28 (e.g. sheet metal / EPS sandwich panels)
 - Solid roof using materials achieving a minimum Rw 28 (e.g. sheet metal / EPS sandwich panels)
 - Fast acting door achieving a minimum Rw 21 (e.g. 4kg/m² Sonic Curtain doors) is to be fitted to the truck entry point and must remain closed when a truck within the bay.
 - Construction detailing is to ensure minimal gaps (less than 1% leakage) in the enclosed tunnel structure.
- **Cement or flyash tanker or raw material deliveries can occur 24/7 but are not to occur between 10pm and 4am concurrent with concrete batching operations.**

2.3.3 SOURCE NOISE DATA

Sound power data has been derived based upon measurements conducted by MWA Environmental at other comparable concrete batching plants including noise from batching points.

The noise modelling has represented noise emissions based upon a peak operational period, which was reported by Pentral Fultum in the '*Nucon North MacLean (Greenbank) Concrete Plant User Requirements Statement*' Revision C August 2024. The report advised the peak operational rate would be

approximately 14 concrete agitator loads per hour which will be reduced by 50 percent for the evening period and to 25% for the night-time period (10pm to 4am).

The sources represented in the SoundPLAN 9.0 model were as per the following **Table 7**.

Table 7: Noise Sources Used in SoundPLAN 9.0 Modelling

MODELLED NOISE SOURCE	MODELLED SOURCE TYPE + SOURCE HEIGHT	ACTIVITY RATE PROFILE	L _{Aeq,T} SOUND POWER LEVEL–dB(A)	L _{Amax} SOUND POWER LEVEL–dB(A)
Loading Agitator Truck at Batching Point	Point Source 2.0m AGL	Peak 14 loads per hour 4am to 6pm	112	112
Agitator Truck at Slump Stand	Point Source 2.0m AGL	7 loads per hour 6pm to 10pm	110	116
Agitator Truck at Washout Pit	Point Source 2.0m AGL	4 loads per hour 10pm to 4am	103	110
Agitator Truck Manoeuvring	Line Source 2.5m AGL	Peak 14 loads per hour 4am to 6pm	75 per metre	106
		7 loads per hour 6pm to 10pm	72 per metre	
		4 loads per hour 10pm to 4am	69 per metre	
Aggregate & Sand Truck Manoeuvring	Line Source 2.5m AGL	Peak 8 loads per hour 7am to 6pm	73 per metre	106
		4 loads per hour 6pm to 7am	70 per metre	
Cement & Flyash Truck Manoeuvring	Line Source 2.5m AGL	1 load per hour	67 per metre	106
Cement & Flyash Truck Delivery	Point Source 1.0m AGL	40 minutes	109	110
Front-End-Loader at Raw Materials Area	Area Source 2.0m AGL	100% 7am to 6pm 50% 6pm to 7am	103	106
Bag Filter Fan x4	Point Source 28m AGL	Continuous 24hr/7day	84	84

The SoundPLAN 9.0 model layout of the plant and noise sources is shown in the 3D perspectives **Plate 1** and **Plate 2** below.

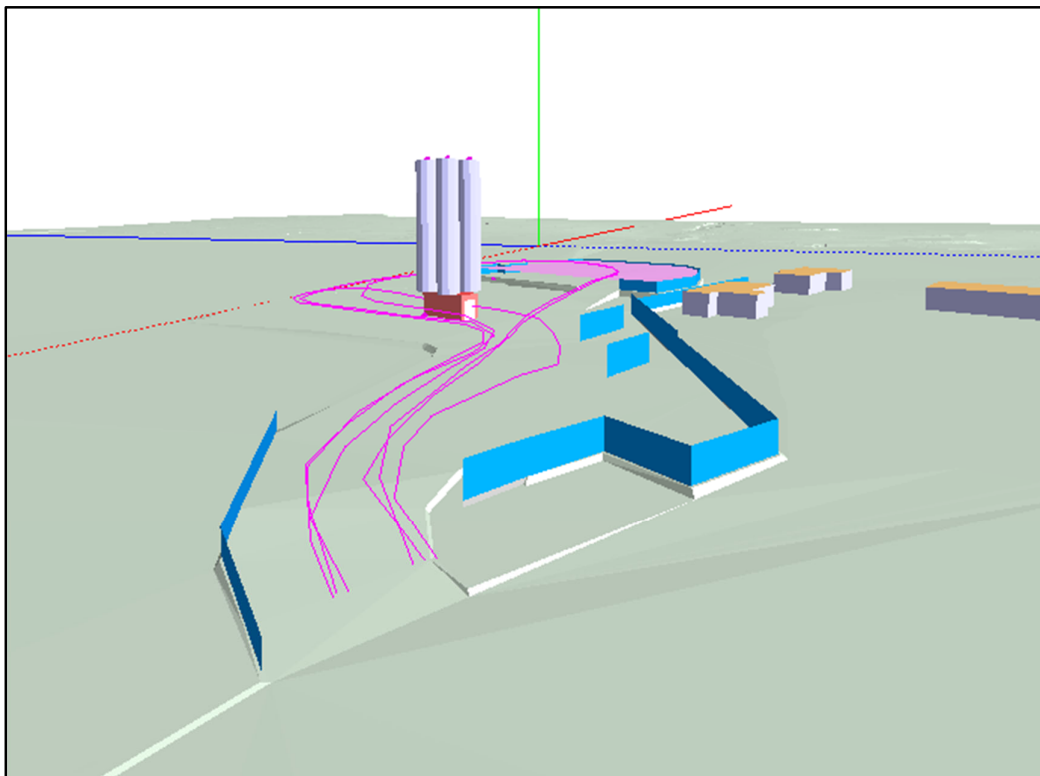


Plate 1: SoundPLAN Model Layout Perspective from West

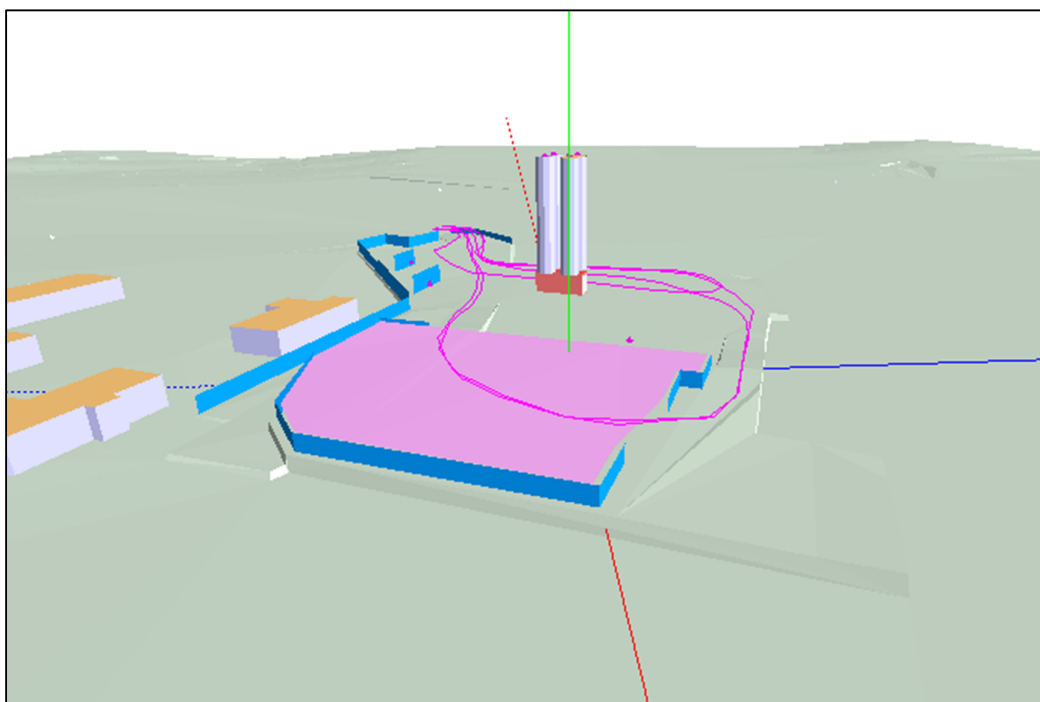


Plate 2: SoundPLAN Model Layout Perspective from East

The source layout is shown on the drawings included in **Attachment 3**.

2.3.4 NOISE MODELLING RESULTS

The results of the SoundPLAN 9.0 modelling are summarised in the following **Table 8** at the nearest sensitive receptor locations (refer **Figure 3**). **This scenario includes concrete production but does not include bulk powder and aggregate deliveries occurring in the 10pm to 4am time period with Sunday hours of operation as 7am to 10pm only.**

Table 8: Predicted Noise Levels at Sensitive Receptors – Concrete Production
No Bulk Powder or Aggregate Materials Delivered, 10pm to 4am
– dB(A)

RECEPTOR (refer Figure 3)	PREDICTED NOISE LEVEL - dB(A)			
	L _{Aeq,T} 4am to 7am	L _{Aeq,T} 7am to 10pm	L _{Aeq,T} 10pm to 4am	L _{max} 10pm to 7am
R1	45	46	39	50
R2	47	48	40	51
Noise Criteria Mon-Sat	47	52/52	41	60
Noise Criteria Sunday	-	51/50	-	-
R3	47	48	41	52
R4	45	46	39	49
R5	44	45	39	49
R6	41	42	37	45
R7	43	44	39	48
R8	40	41	36	45
R9	42	42	37	48
Noise Criteria Mon-Sat/ Sun	47	53/51	41	60
Noise Criteria Sunday	-	50/49	-	-

The results of the SoundPLAN 9.0 modelling are provided in **Attachment 4** as contours of predicted resultant noise levels on an aerial photograph base showing the locations of the surrounding sensitive receptors (refer **Figure 3**).

The detailed results of the SoundPLAN 9.0 propagation modelling are provided in **Attachment 5**.

The predictions demonstrate that noise emissions from the proposed development can comply with the relevant noise amenity criteria at sensitive receptors (existing residential dwellings).

A further night-time scenario was considered for the 10pm to 4am time period where bulk powder or aggregate materials are delivered to the site but not at the same time as concrete production is occurring. The results of this scenario are provided in **Table 9** below:

Table 9: Predicted Noise Levels at Sensitive Receptors
Bulk Powder or Aggregate Materials Delivered, 10pm to 4am
– dB(A) (No concrete production)

RECEPTOR (refer Figure 3)	PREDICTED NOISE LEVEL - dB(A)	
	L _{Aeq,T} 10pm to 4am	L _{max} 10pm to 4am
R1	34	43
R2	41	51
R3	40	52
R4	33	49
R5	32	48
R6	31	41
R7	36	48
R8	32	44
R9	26	41
Noise Criteria Mon - Sat	41	60

The above demonstrates that delivery of bulk powders or aggregates within the 10pm to 4am period can occur provided that concrete production is not occurring at the same time. This allows flexibility to the operator for import of raw materials in the 10pm to 4am period and will be readily managed by site staff to ensure compliance with noise limits is maintained at all times and the ability to operate 24 hours Monday to Saturday and 7am to 10pm Sundays for concrete production with appropriate scheduling of delivery of raw materials.

3.0 CONCLUSION

This report has been prepared by MWA Environmental for Nucrush Pty Ltd ('the Applicant') in support of a Priority Development Area (PDA) Development Application for a Material Change of Use to establish a concrete batching plant and other industrial uses on the subject site at 916-944 Greenbank Road, North Maclean.

The application was submitted to Economic Development Queensland (EDQ) as the delegate for the Minister for Economic Development Queensland (MEDQ) for PDA Development Applications in the Greater Flagstone Priority Development Area (GFPDA). Upon review of the noise report, EDQ issued a Further Issues letter, Ref: DEV2024/1583 dated 25 February 2025. Item 13 of the further issues was related to acoustic matters which have been addressed in this updated noise report.

Individual responses to the Further Issues are provided in *Section 1.5* of this report.

The report addresses the potential impact of noise emissions from the proposed concrete batching plant on surrounding sensitive uses. The assessment has been based upon ambient noise monitoring and detailed computer noise modelling and provides recommendations for measures to mitigate potential noise impacts at surrounding sensitive uses as required.

The following noise mitigation measures have been determined appropriate to comply with the relevant noise criteria at the surrounding sensitive receptors (existing dwellings):

- **Hours of Operation – Monday to Saturday 24 hours and Sunday 7am to 10pm.**
- **Construct an acoustic barrier 2.6m to 3.7m high along the southern boundary of the site** (refer **Figure 5**). The acoustic barrier is to be constructed to the specified heights above the finished pad level of adjacent area. The acoustic barrier should be constructed gap-free and of materials achieving a minimum surface density of 12.5kg/m².
- **Construct an acoustic barrier 1.8 high along the north-western boundary of the site** (refer **Figure 5**). The acoustic barrier is to be constructed to the specified heights above the finished pad level of adjacent area. The acoustic barrier should be constructed gap-free and of materials achieving a minimum surface density of 12.5kg/m².
- **Construct acoustic barriers 4.0m high along the southern side of the slumping bays** (refer **Figure 5**). The acoustic barriers are to be constructed to the specified heights above the finished pad level. The acoustic barrier should be constructed gap-free and of materials achieving a minimum surface density of 12.5kg/m².

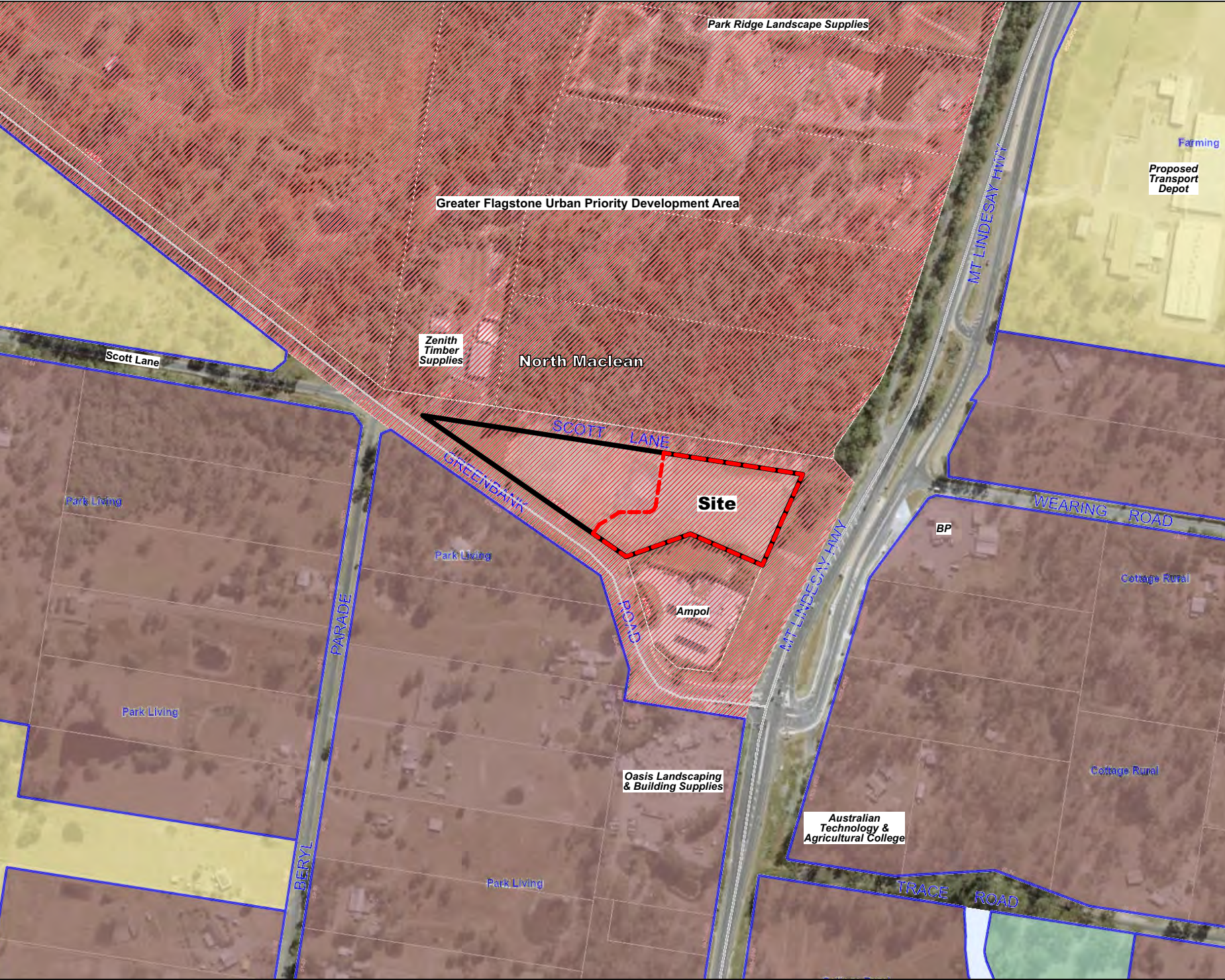
-
- **The agitator truck loading (batching) is to be undertaken within a tunnel structure comprising solid side walls and a fast acting door on the entry side** with the following specifications for acoustic performance:
 - Solid side walls using materials achieving a minimum Rw 28 (e.g. sheet metal / EPS sandwich panels)
 - Solid roof using materials achieving a minimum Rw 28 (e.g. sheet metal / EPS sandwich panels)
 - Fast acting door achieving a minimum Rw 21 (e.g. 4kg/m² Sonic Curtain doors) is to be fitted to the truck entry point and must remain closed when a truck within the bay.
 - Construction detailing is to ensure minimal gaps (less than 1% leakage) in the enclosed tunnel structure.
 - **Cement or flyash tanker or raw material deliveries are not to occur between 10pm and 4am concurrent with concrete production occurring.**

The results of the detailed noise assessment demonstrate that noise emissions from the proposed concrete batching plant can comply with the relevant noise amenity criteria at sensitive receptors (existing residential dwellings).

Operation of the plant in accordance with a suitable Noise Management Plan which reflects the above operational measures and noise control structures is considered an appropriate outcome to protect residential acoustic amenity.

MWA Environmental
12 June 2025

FIGURES



LEGEND

- DEVELOPMENT AREA
- PROPERTY BOUNDARY

LOGAN PLANNING SCHEME 2015 ZONES

- PRIORITY DEVELOPMENT AREA
- RURAL RESIDENTIAL
- RURAL
- RECREATION AND OPEN SPACE

DRAWING REFERENCE

LOGAN CITY COUNCIL PLANNING SCHEME 2015, INTERACTIVE MAPPING, ZONING MAP.

0 50 100 150m

CLIENT

NUCRUSH GROUP

PROJECT

NOISE IMPACT ASSESSMENT

PROPOSED CONCRETE BATCHING PLANT

916-944 GREENBANK ROAD

NORTH MACLEAN QLD

TITLE

ZONING MAP

JOB	NORTH MACLEAN	FIGURE 2
JOB NO.	23135	
DATE	09/05/25	
SCALE	1:5000 (A4)	
REV.		23135-2

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ABN 94 010 833 084



LEGEND

- DEVELOPMENT AREA
- PROPERTY BOUNDARY
- R1-R9** SENSITIVE RECEPTOR LOCATIONS (R1-R9)

DRAWING REFERENCE
© THE STATE OF QUEENSLAND
(DEPARTMENT OF RESOURCES)
QLDGLOBE.

0 25 50 75 100m

CLIENT
NUCRUSH GROUP

PROJECT
NOISE IMPACT ASSESSMENT
PROPOSED CONCRETE BATCHING PLANT
916-944 GREENBANK ROAD
NORTH MACLEAN QLD

TITLE
SENSITIVE RECEPTOR LOCATIONS

JOB	NORTH MACLEAN	FIGURE 3
JOB NO.	23135	
DATE	09/05/25	
SCALE	1:3000 (A4)	
REV.		23135-3

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LEGEND

- DEVELOPMENT AREA
- PROPERTY BOUNDARY
- ND2** NOISE DATALOGGER LOCATIONS (ND1-ND2)

DRAWING REFERENCE
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(DEPARTMENT OF RESOURCES)
QLDGLOBE.

0 25 50 75 100m

N

CLIENT
NUCRUSH GROUP

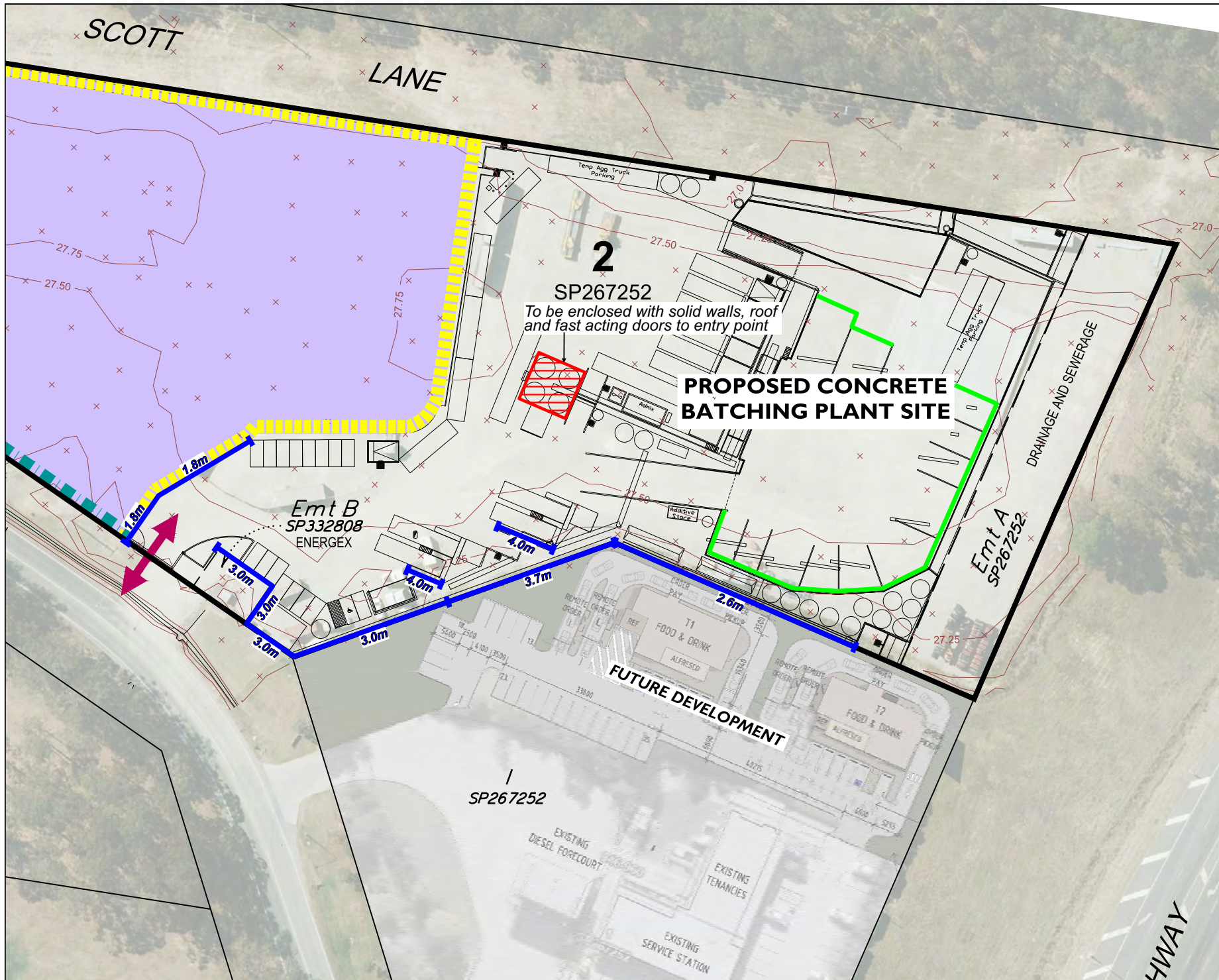
PROJECT
NOISE IMPACT ASSESSMENT
PROPOSED CONCRETE BATCHING PLANT
916-944 GREENBANK ROAD
NORTH MACLEAN QLD

TITLE
NOISE MONITORING LOCATIONS

JOB	NORTH MACLEAN	FIGURE 4
JOB NO.	23135	
DATE	09/05/25	
SCALE	1:3000 (A4)	
REV.		23135-4

mwa
ENVIRONMENTAL

Max Winders & Associates Pty Ltd t/as MWA Environmental
Level 7, 241 Adelaide St, Brisbane, QLD 4001
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ABN 94 010 833 084



LEGEND

4.0m

BARRIER HEIGHT ABOVE FINISHED SURFACE LEVEL

ACOUSTIC BARRIER

BIN WALL

DRAWING REFERENCE

RPS, SITE PLAN - ALL STAGES

LOT 2 ON SP267252, PLAN REFERENCE

AU015412-POD-4A, 7 MAY 2025.

CLIENT

NUCRUSH GROUP

PROJECT

NOISE IMPACT ASSESSMENT

PROPOSED CONCRETE BATCHING PLANT

916-944 GREENBANK ROAD

NORTH MACLEAN QLD

TITLE

ACOUSTIC BARRIER LOCATIONS

JOB	NORTH MACLEAN	FIGURE 5
JOB NO.	23135	
DATE	09/05/25	
SCALE	1:1000 (A4)	
REV.		DWG NUMBER
		23135-5

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ATTACHMENT 1

Development Plans

DESIGN CRITERIA

- Development is to be in accordance with the provision of the Industry and Business Area -PDA Guideline No. 10 (May 2015 version), except for the following provisions:
- A. All advertising devices are to be in accordance with Logan City Council's Planning Scheme.
 - B. End of trip facilities are to be provided within all tenancies as per Guideline 10 - Industry and business areas.
 - C. All refuse storage areas, materials, plant areas and services will be suitably screened to all boundaries.
 - D. Buildings are shaped, designed and finished so that the maximum length of unvaried or unarticulated (blank) wall does not exceed 20 metres (unless facing a side or rear property boundary).
 - E. Roofing materials are pre coloured and non-reflective.
 - F. Glazing treatment must use non-reflective materials/products.
 - G. Where buildings face the public realm areas, including streets, parks and walkways, significant overlooking and surveillance opportunities must be incorporated with positive CPTED practice. Where public use walkways are incorporated between or within sites, the buildings must front activated zones to these walkways in accordance with positive CPTED practice.
 - H. All service areas, plant and air conditioning plant is to be screened, integrated into the building, or located on the roof with screening.
 - I. Maximum 75% site cover may be achieved, as per *Guideline 10 - Industry and business areas*, for the Low Impact Industry, Service Industry and Warehouse land uses site, independent of the maximum site cover of 75% for the concrete batching plant site:
 - J. Greenbank Road and Scott Lane frontage:
 - Building development along the Scott Lane must be setback a minimum of 2.0 metres;
 - Any building located within 3.0m of Greenbank Road must include an articulated facade and a minimum of 2 colours (which may contain glazing).
 - K. Zero setbacks to side and rear boundaries will be permitted subject to sight lines and other constraints affecting adjoining development.
 - L. Bicycle parking will be provided at the rate of one space per five car parking spaces.
 - M. Landscaping:-
 - Preference is to be given to utilising plant species that are native and endemic to the area and are low maintenance species.
 - All street frontages, not developed as Built to Boundary buildings will require a 2.0m minimum width landscape strip, except at vehicular and pedestrian access points.
 - N. Car parking:-
 - Car parking will be provided in accordance with Table 1.
 - Service vehicles must enter and leave the Site in a forward direction.
 - Where an onsite refuse collection area is provided, access and manoeuvring areas are designed and provided to enable access by a refuse collection vehicle based on the Design Service Vehicle in Austroads/Standards Australia HB72 Design Vehicles and Turning Path Templates.
 - All premises are identified by the provision of a street number in a prominent location, preferably near the site entry, i.e. on the kerb or letterbox or by signage on the building or site.
 - O. Clear and safe pedestrian movement must be maintained throughout the site.
 - P. For non-built form outcomes on the site, land uses must adhere to points A, C, H, N, and O.

DEVELOPMENT STANDARDS

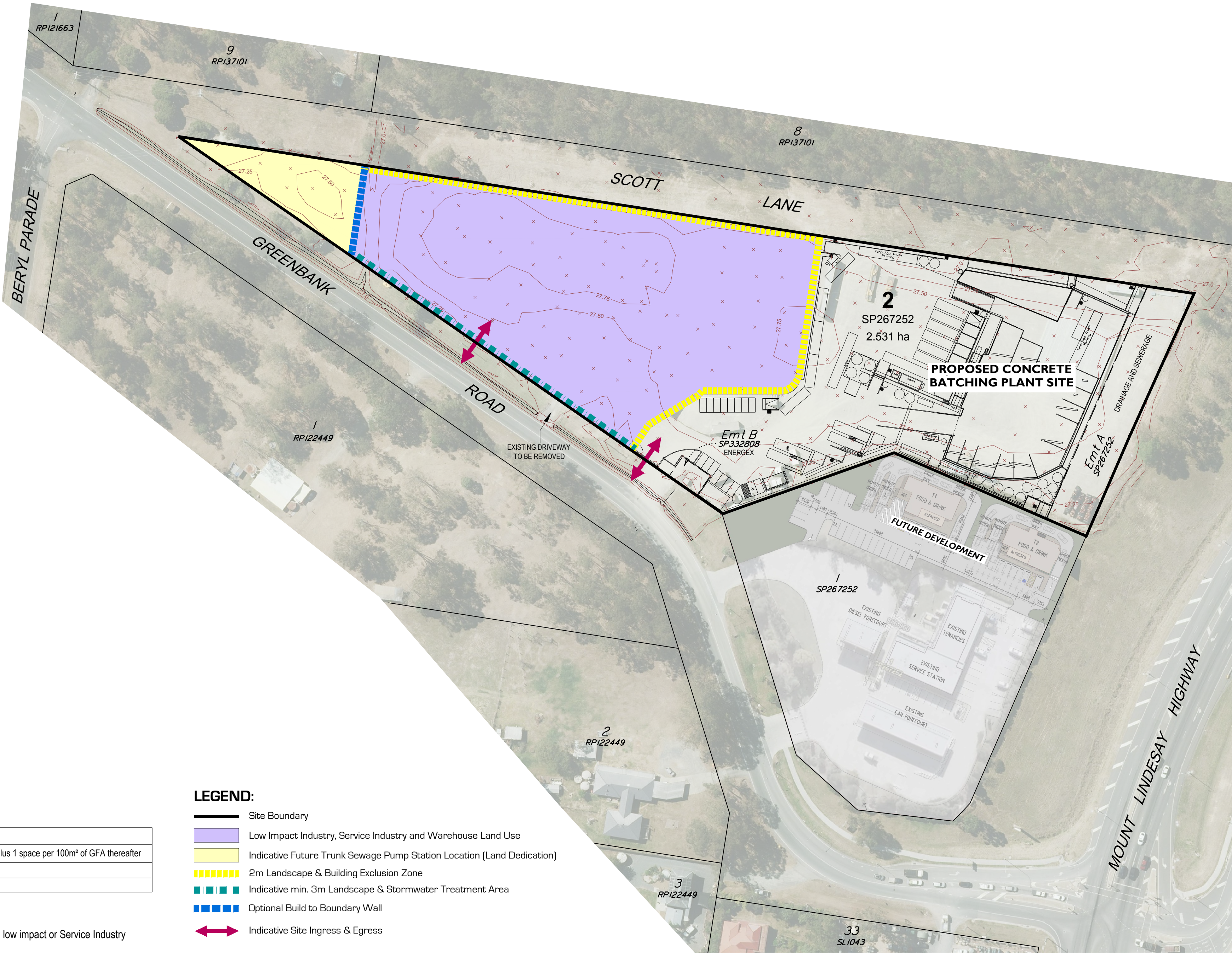
All engineering works are to comply with the PDA Guideline No. 13 Engineering Standards, dated September 2017.
Driveway construction is to be in accordance with Council standards.

TABLE 1

Approved Uses *	Car Parking Rate
Low Impact Industry #	1 space per 50m² of GFA up to 500m²; plus 1 space per 100m² of GFA thereafter
Service Industry	1 space per 25m² of GFA
Warehouse	1 space per 100m² of GFA

NOTE:

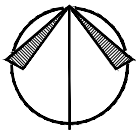
Includes ancillary shop for the sale of goods directly associated with a low impact or Service Industry



LEGEND:

- Site Boundary
- Low Impact Industry, Service Industry and Warehouse Land Use
- Indicative Future Trunk Sewage Pump Station Location (Land Dedication)
- 2m Landscape & Building Exclusion Zone
- Indicative min. 3m Landscape & Stormwater Treatment Area
- Optional Build to Boundary Wall
- Indicative Site Ingress & Egress

PLAN REF: AU015412-POD-4a
DATE: 7 MAY 2025
CLIENT: NERANG PASTORAL CO. PTY LTD
DRAWN: BJB
SCALE (A2): 1:1000
SHEET: 2 of 2



SITE PLAN - ALL STAGES

Lot 2 on SP267252
916 - 944 GREENBANK ROAD, NORTH MACLEAN



RPS AAP Consulting Pty Ltd
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ABN 97 117 883 173
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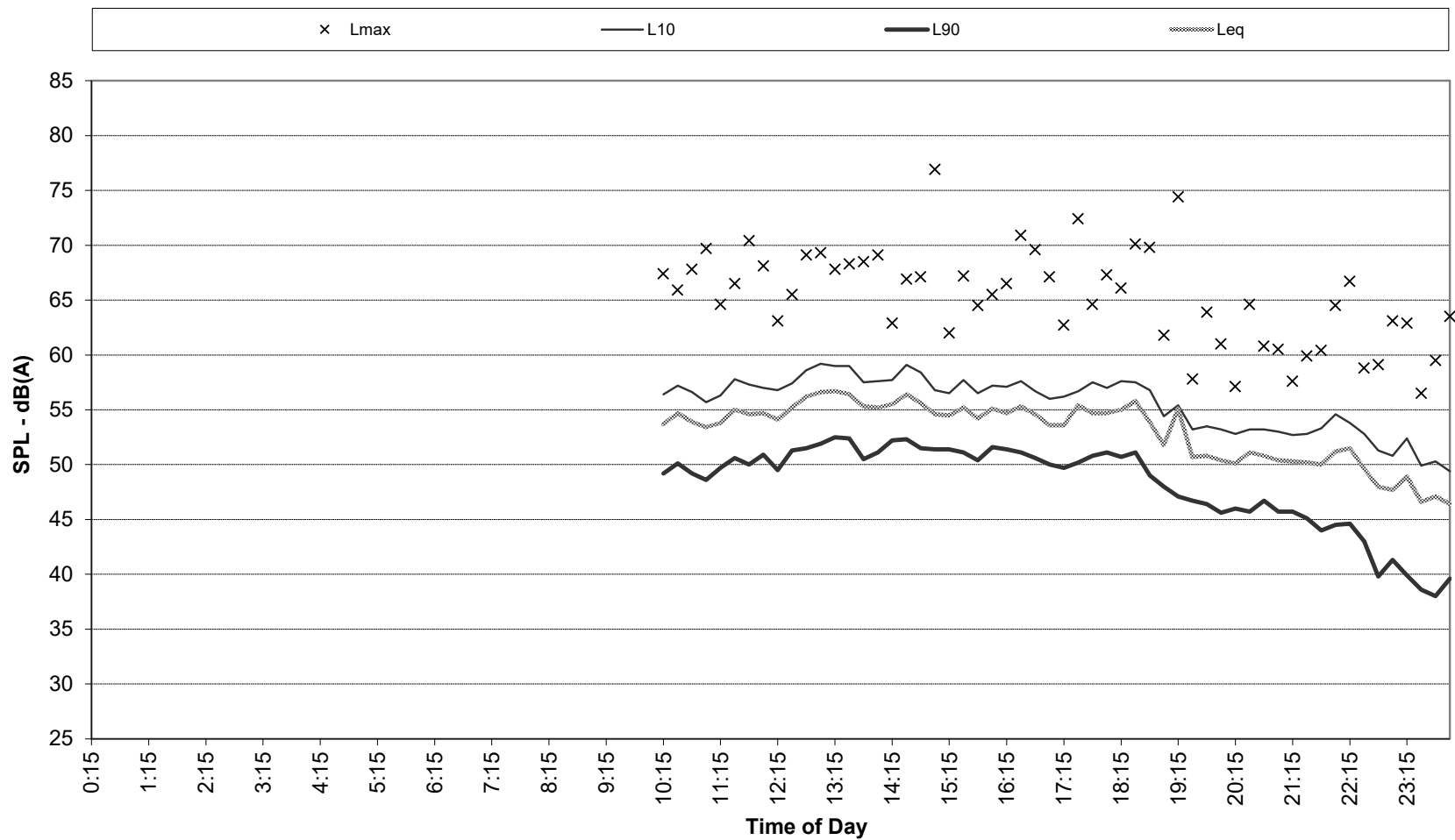
A TETRA TECH COMPANY



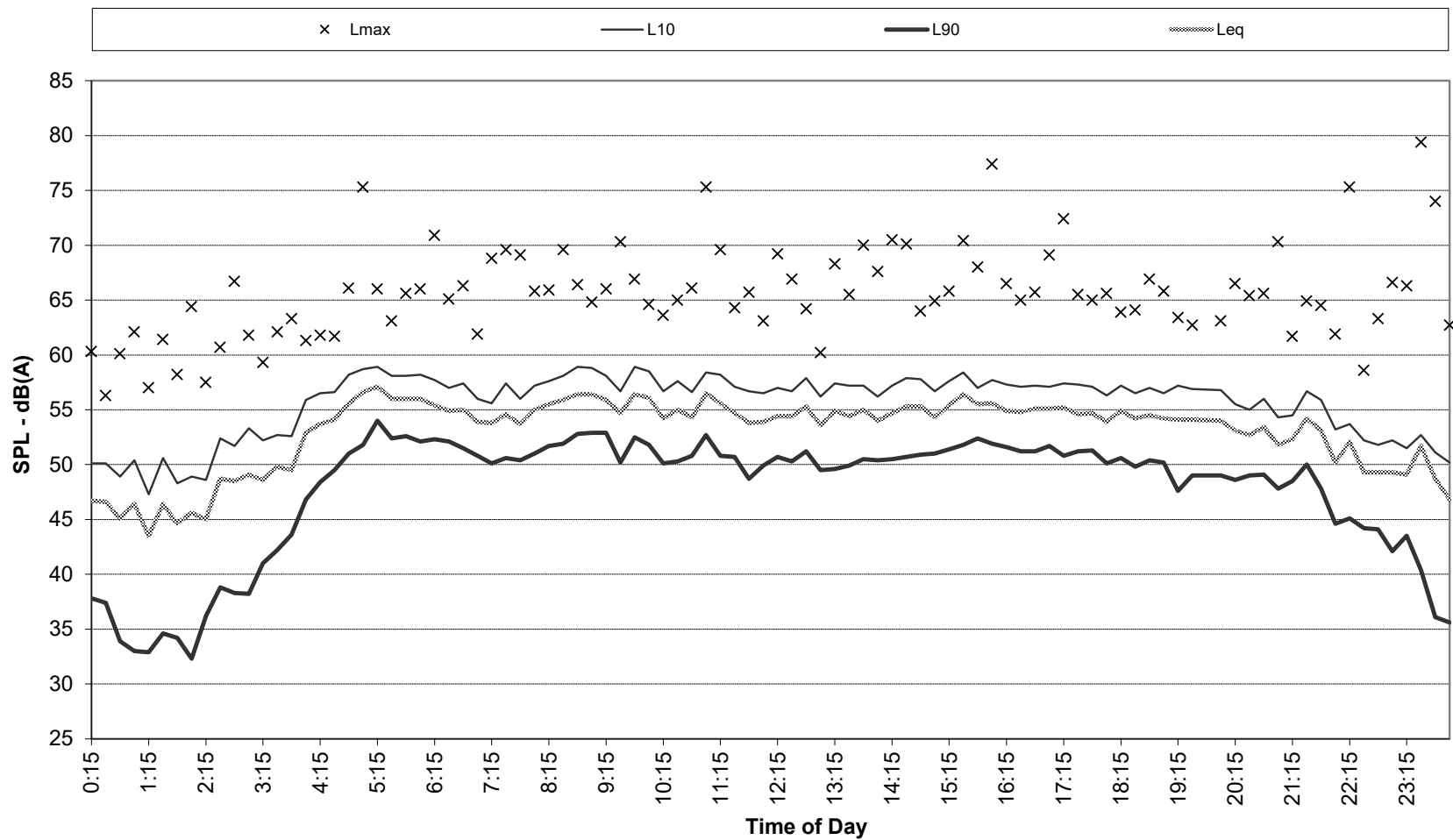
ATTACHMENT 2

Noise Datalogger Charts

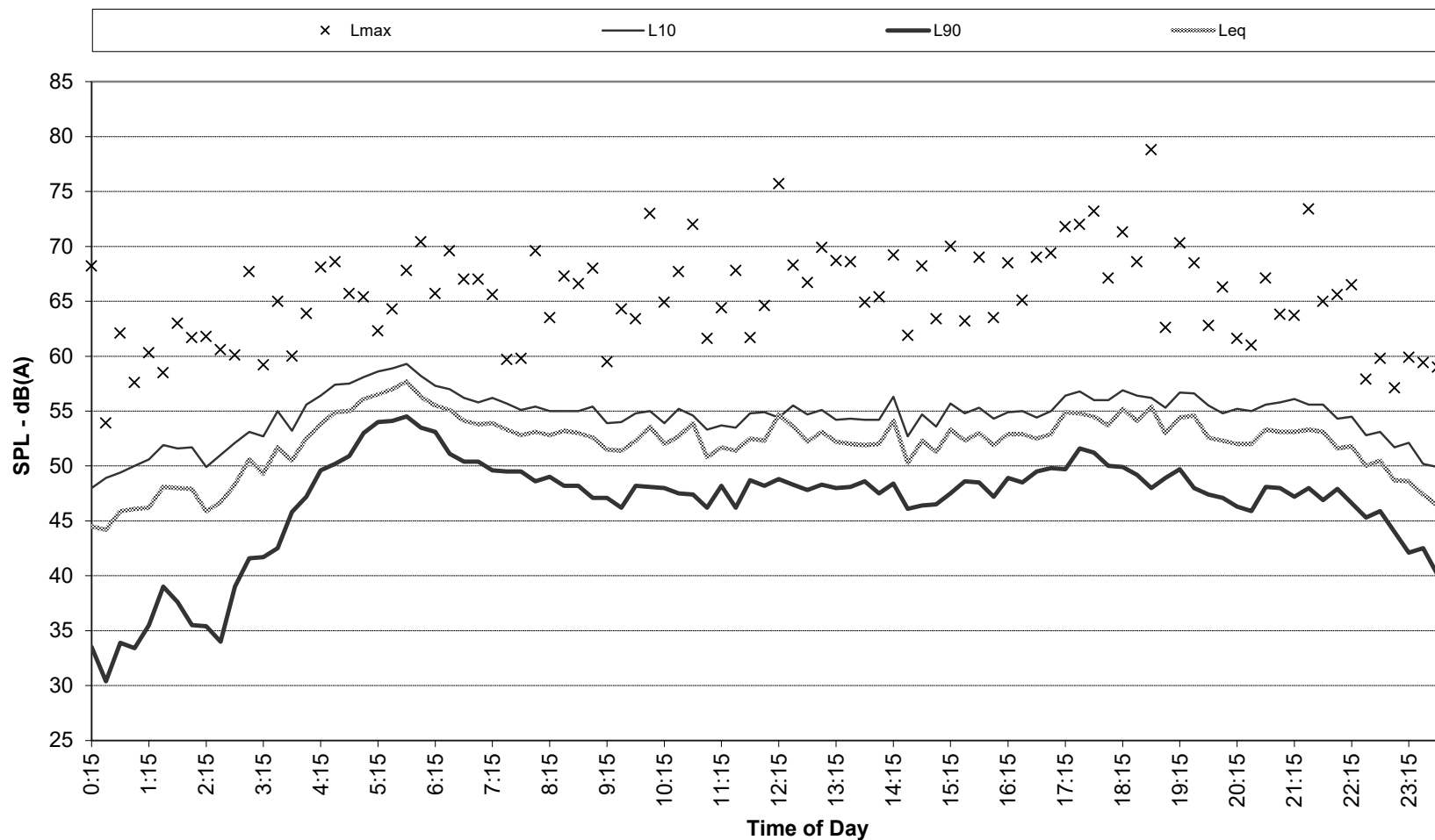
Recorded Statistical Noise Levels for North Maclean 23135 - Greenbank Road - 02-Oct-2024 - Wednesday



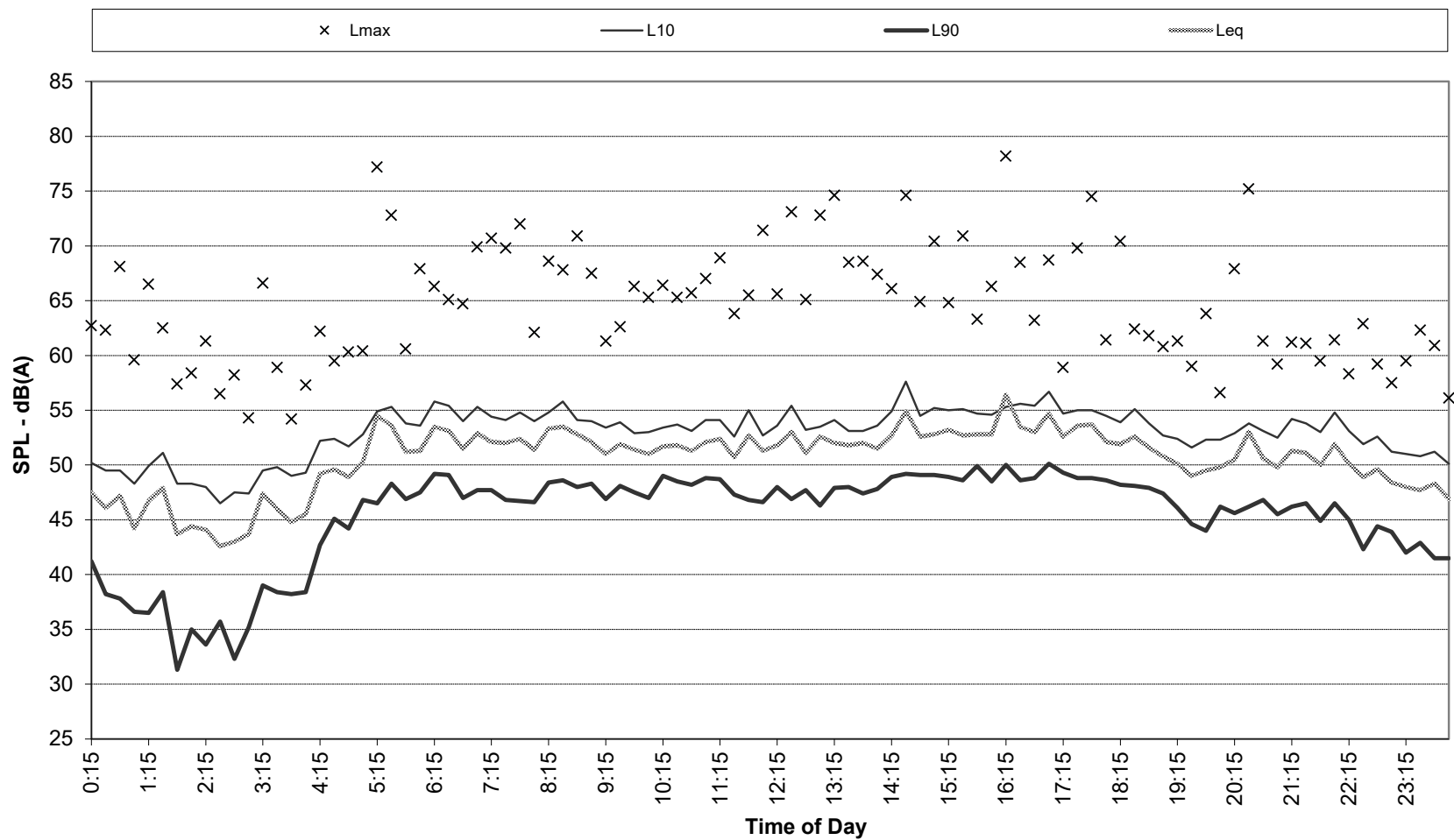
Recorded Statistical Noise Levels for North Maclean 23135 - Greenbank Road - 03-Oct-2024 - Thursday



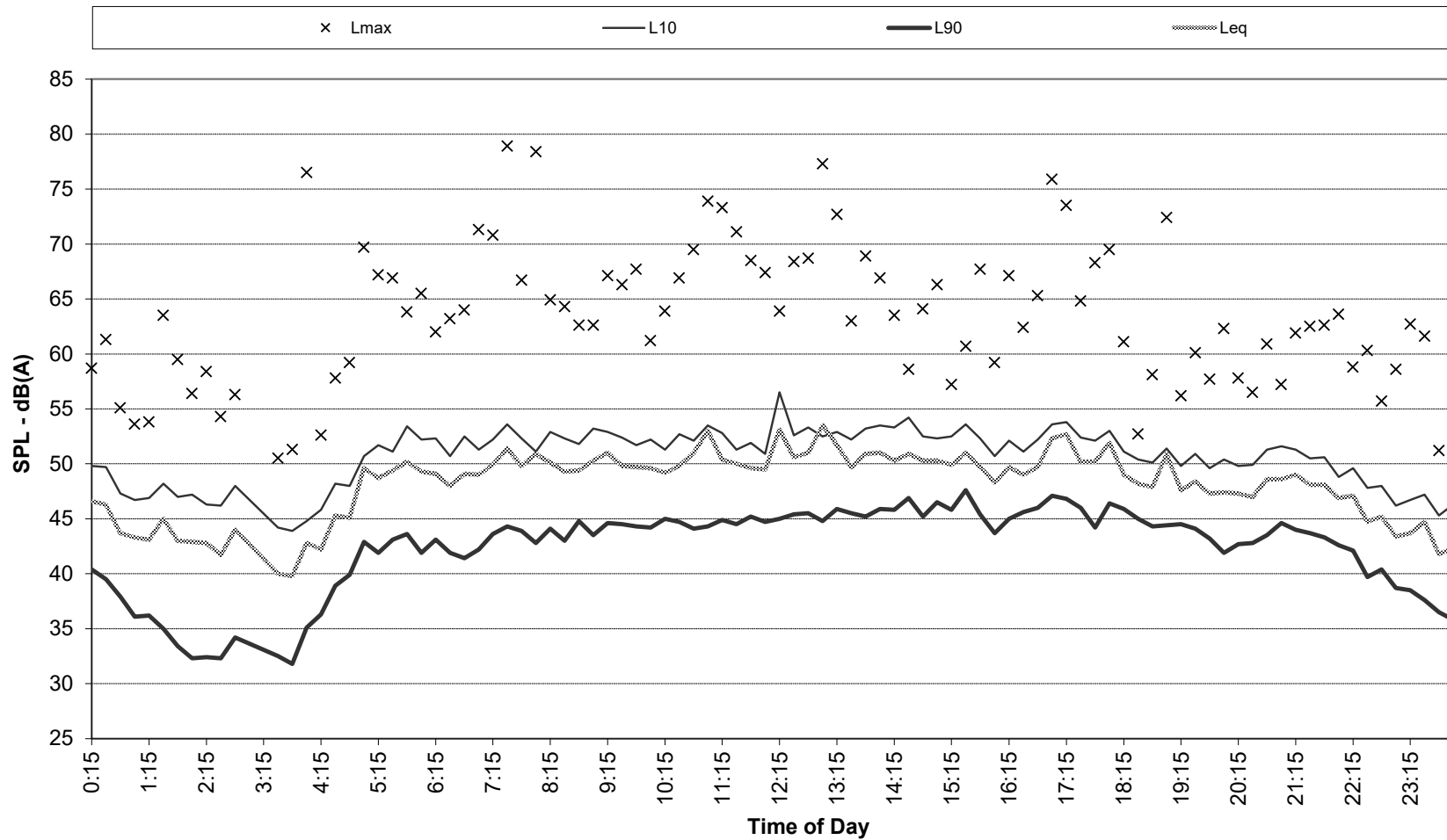
Recorded Statistical Noise Levels for North Maclean 23135 - Greenbank Road - 04-Oct-2024 - Friday



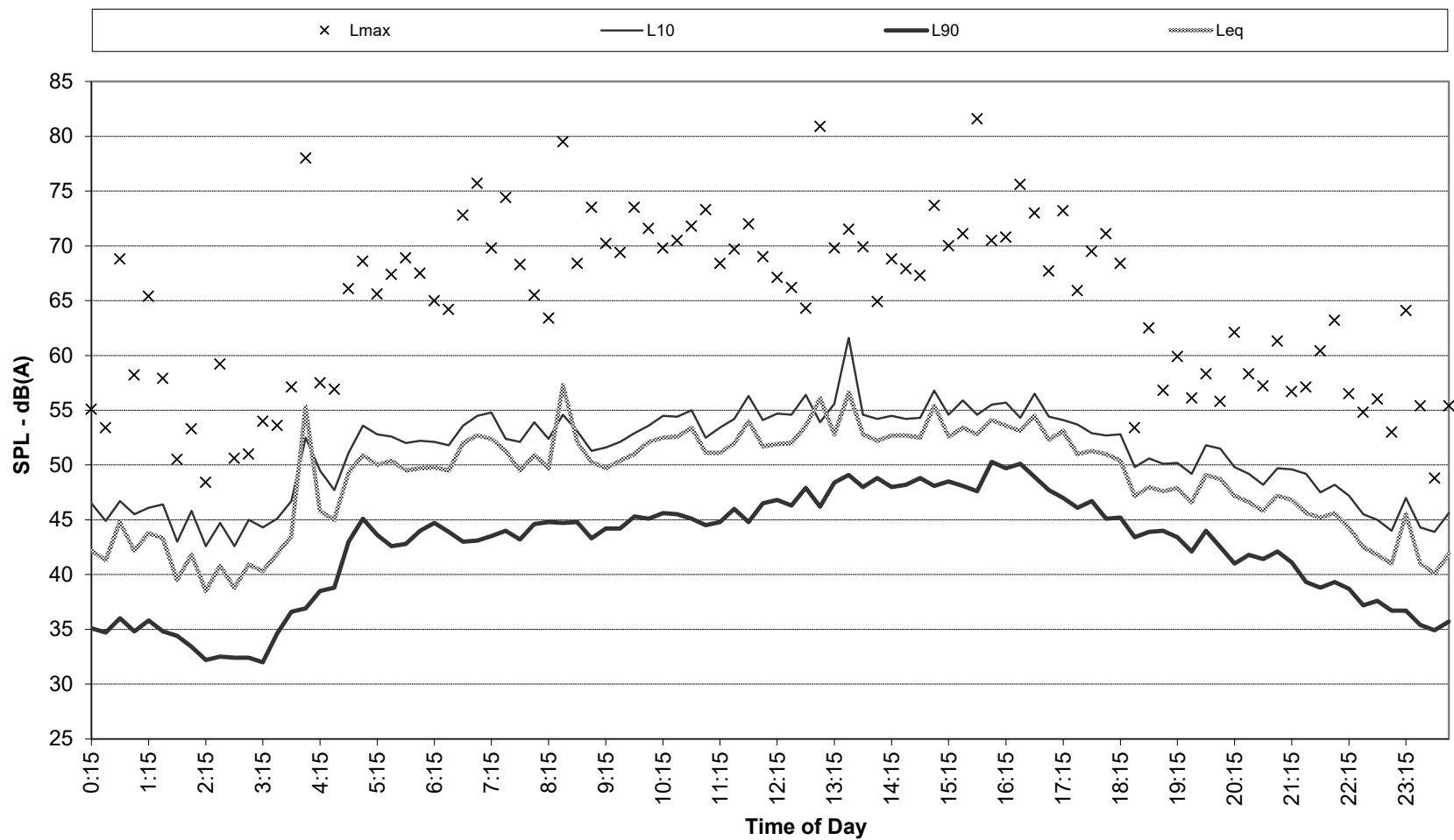
Recorded Statistical Noise Levels for North Maclean 23135 - Greenbank Road - 05-Oct-2024 - Saturday



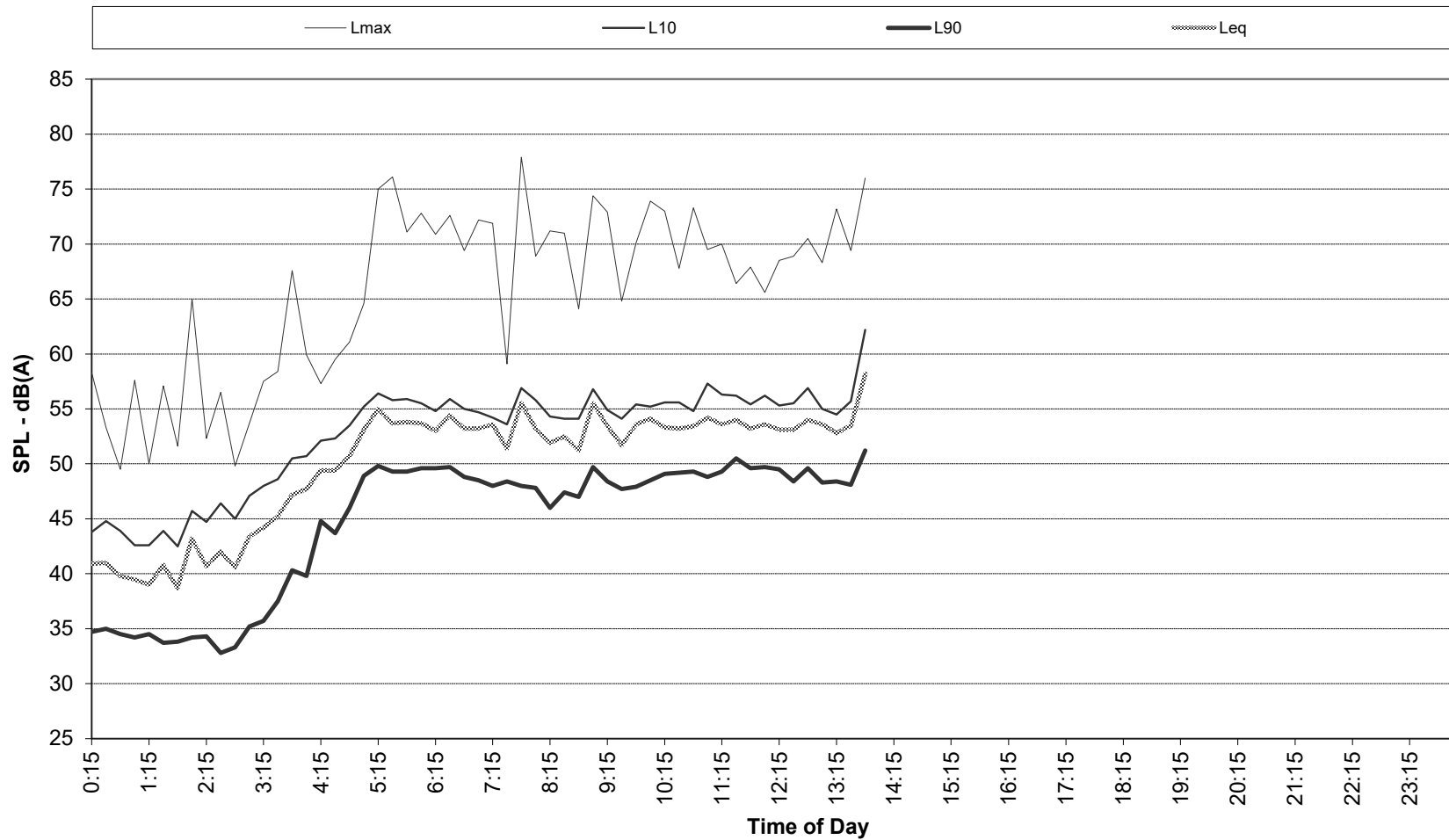
Recorded Statistical Noise Levels for North Maclean 23135 - Greenbank Road - 06-Oct-2024 - Sunday



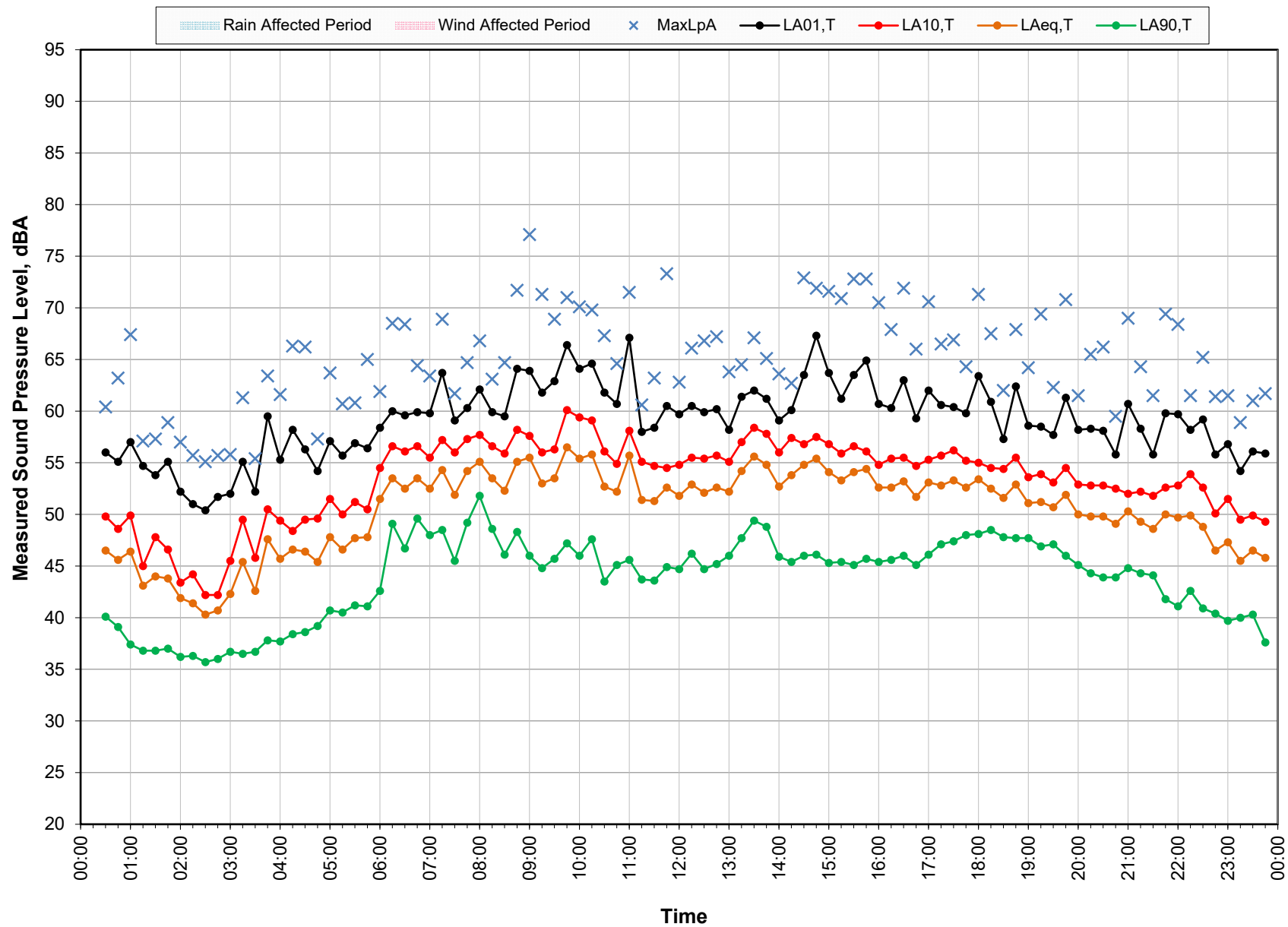
Recorded Statistical Noise Levels for North Maclean 23135 - Greenbank Road - 07-Oct-2024 - Monday



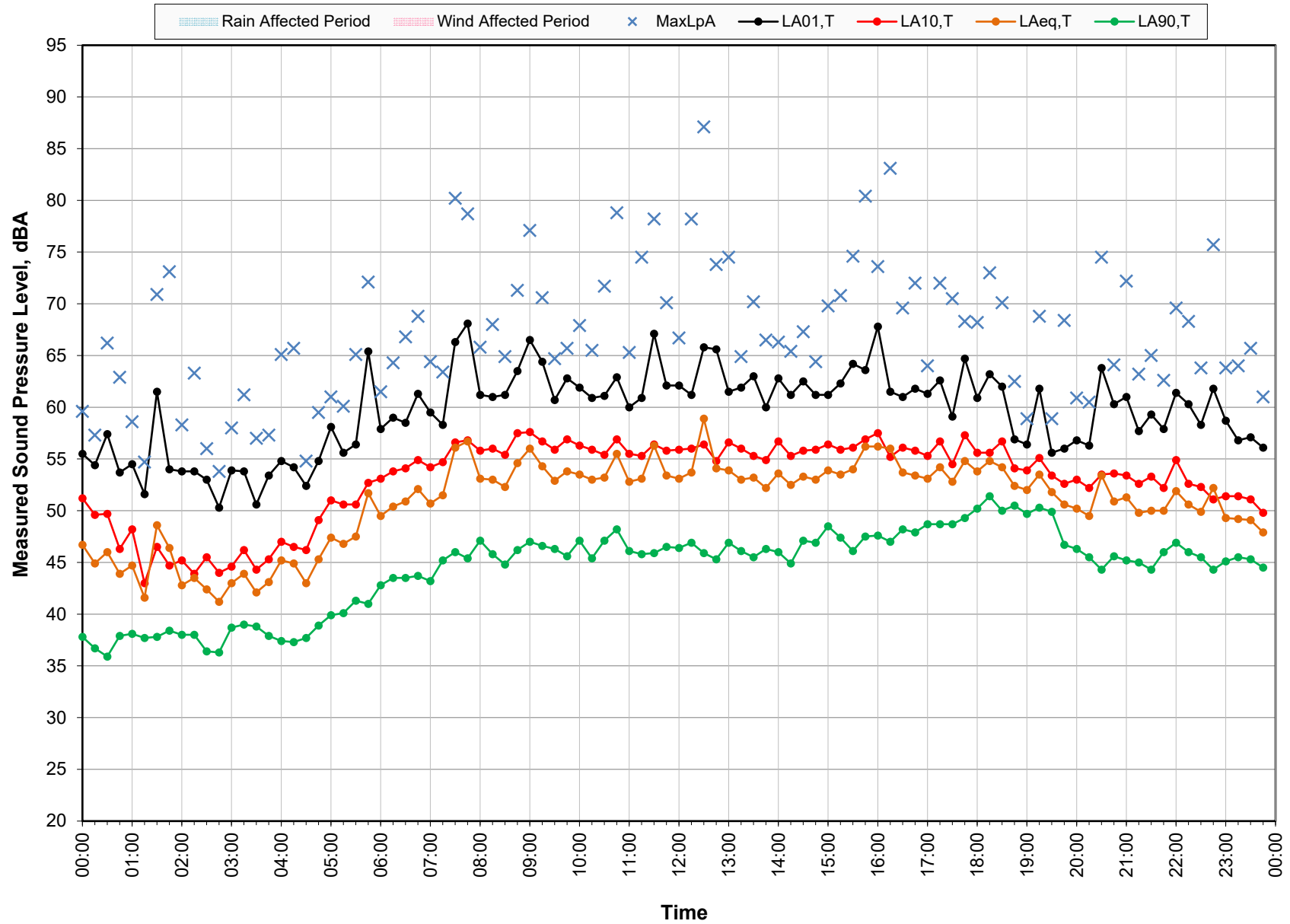
Recorded Statistical Noise Levels for North Maclean 23135 - Greenbank Road - 08-Oct-2024 - Tuesday



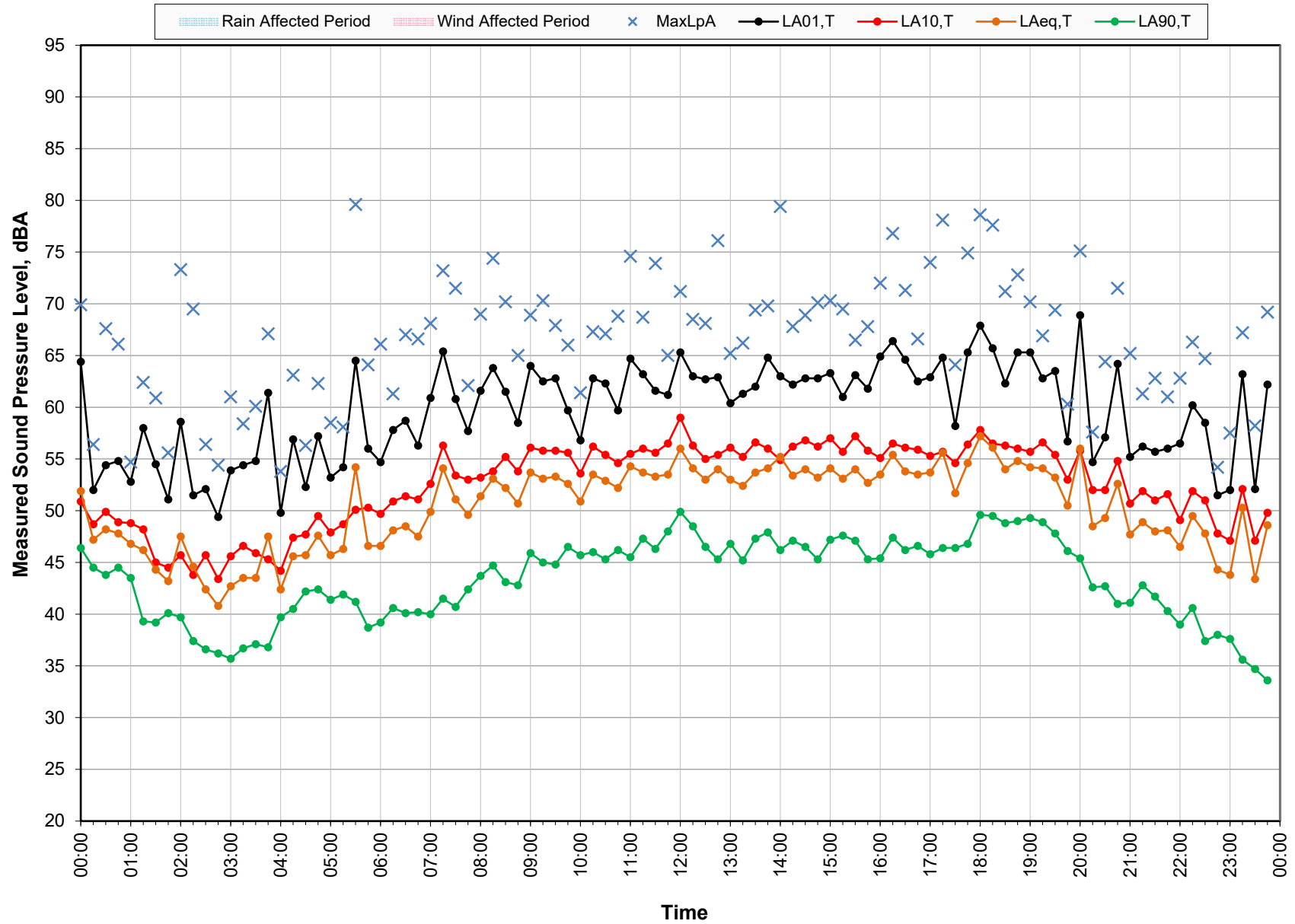
23135 North Maclean - Statistical Noise Levels at Greenbank Road - Friday, 25/04/2025



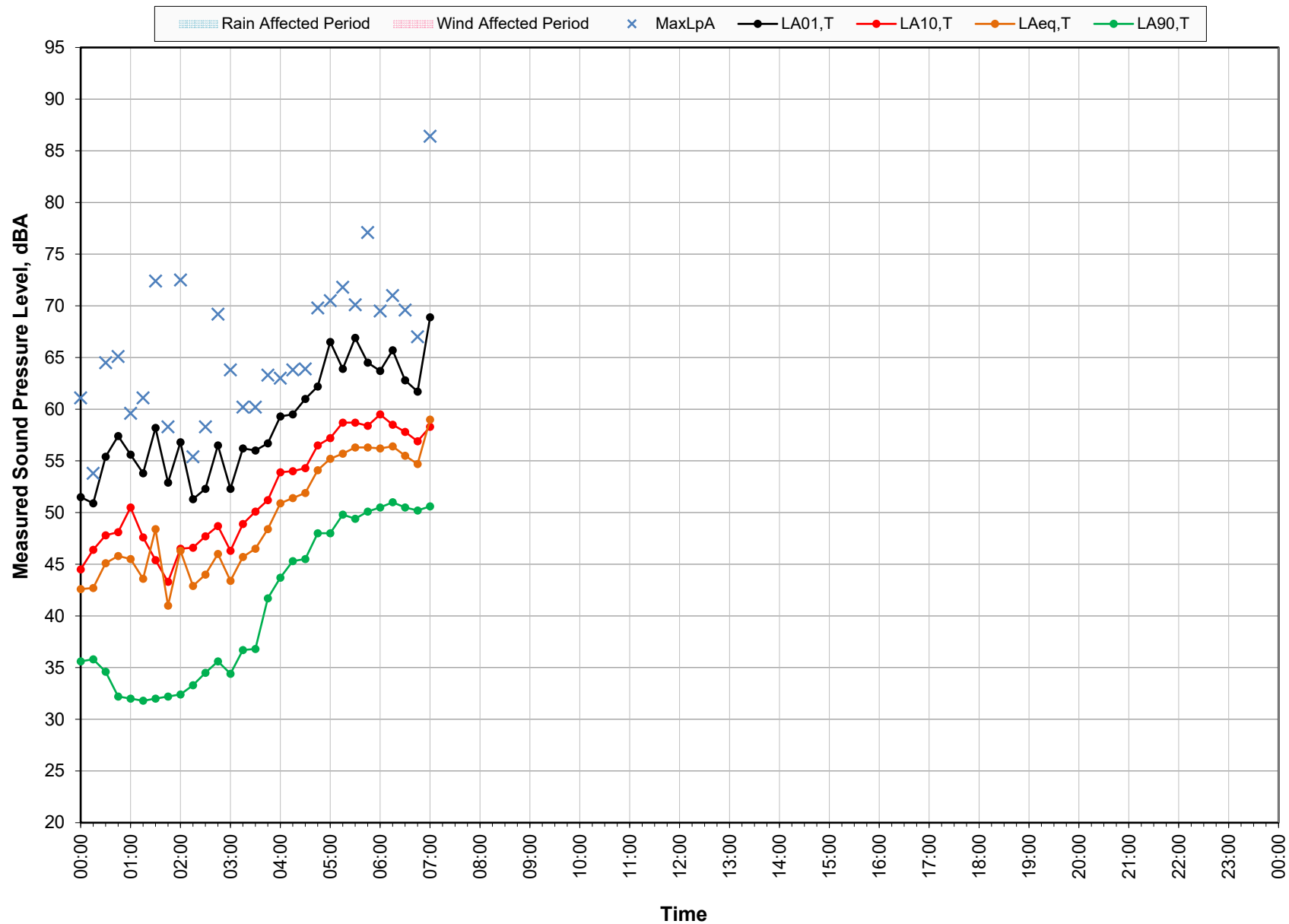
23135 North Maclean - Statistical Noise Levels at Greenbank Road - Saturday, 26/04/2025



23135 North Maclean - Statistical Noise Levels at Greenbank Road - Sunday, 27/04/2025



23135 North Maclean - Statistical Noise Levels at Greenbank Road - Monday, 28/04/2025



ATTACHMENT 3

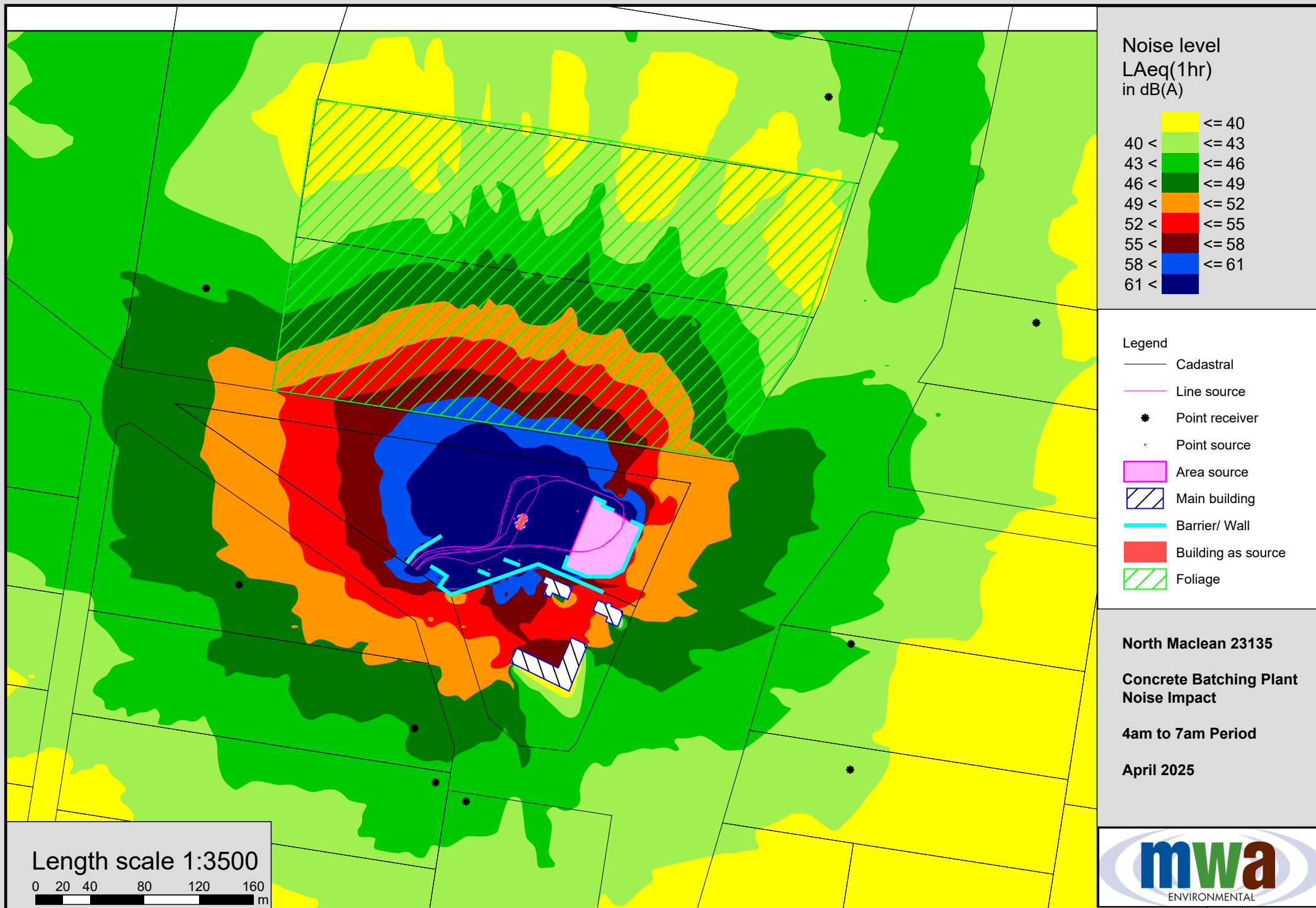
SoundPLAN 9.0

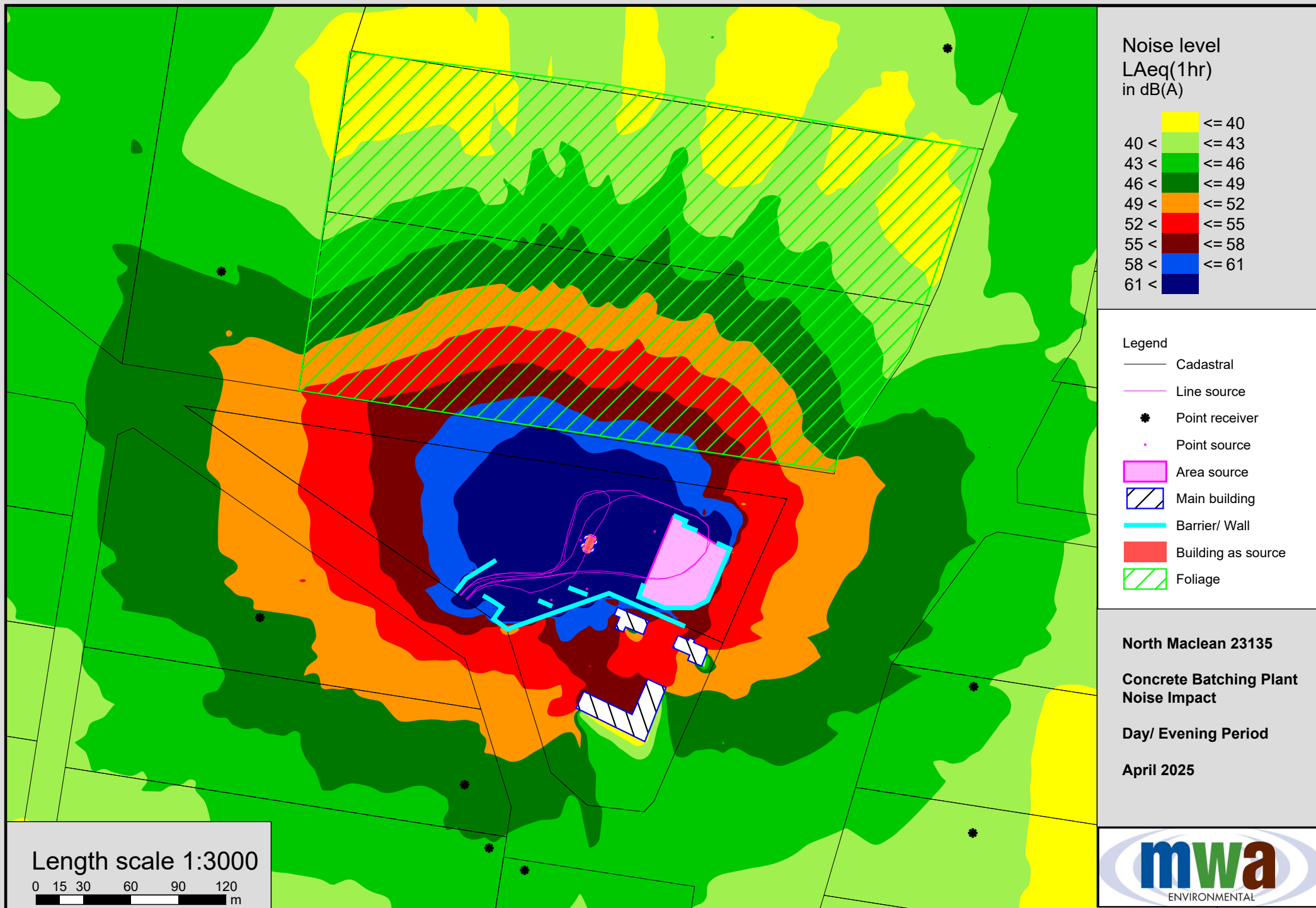
Model Layout Plans

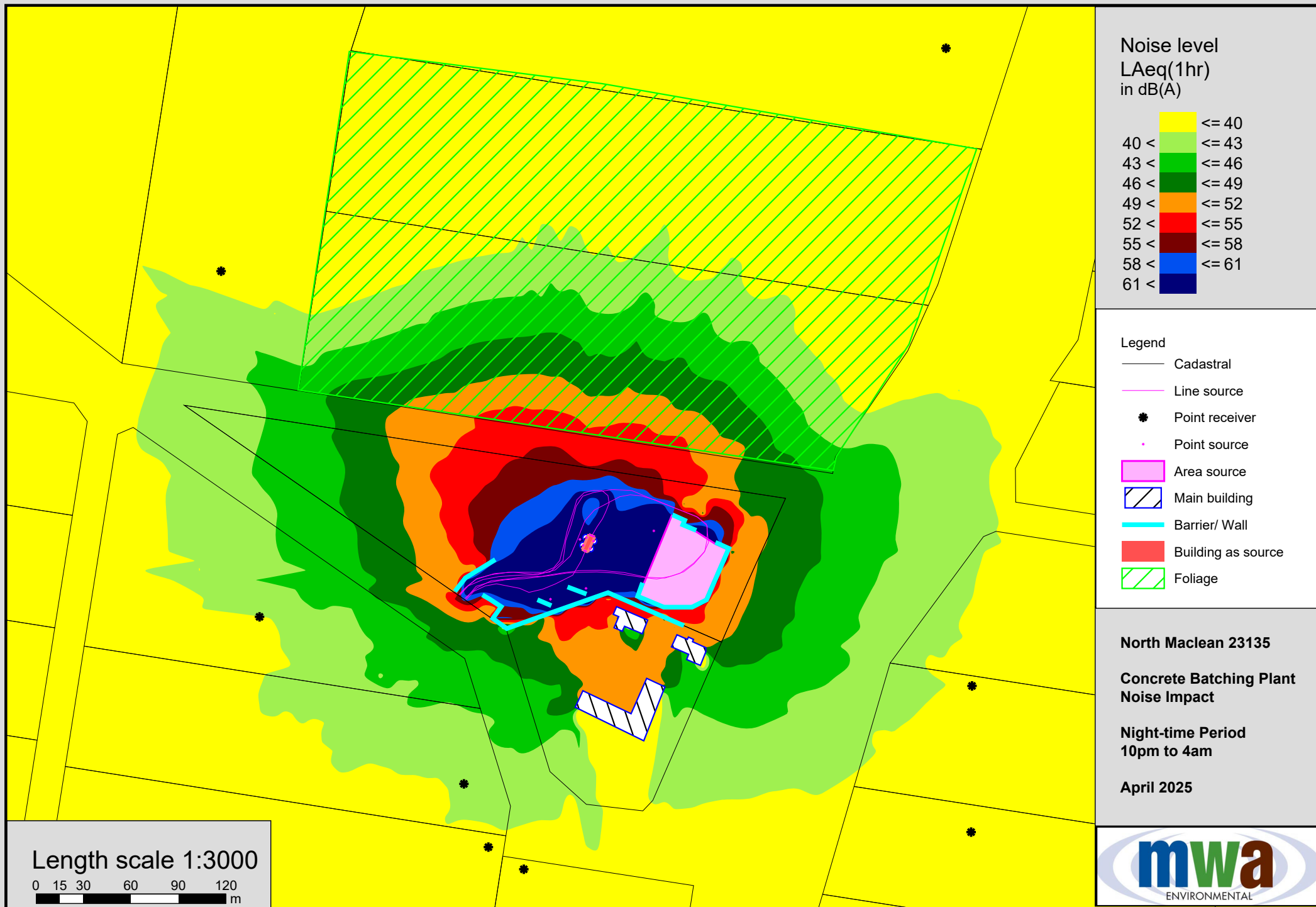
ATTACHMENT 4

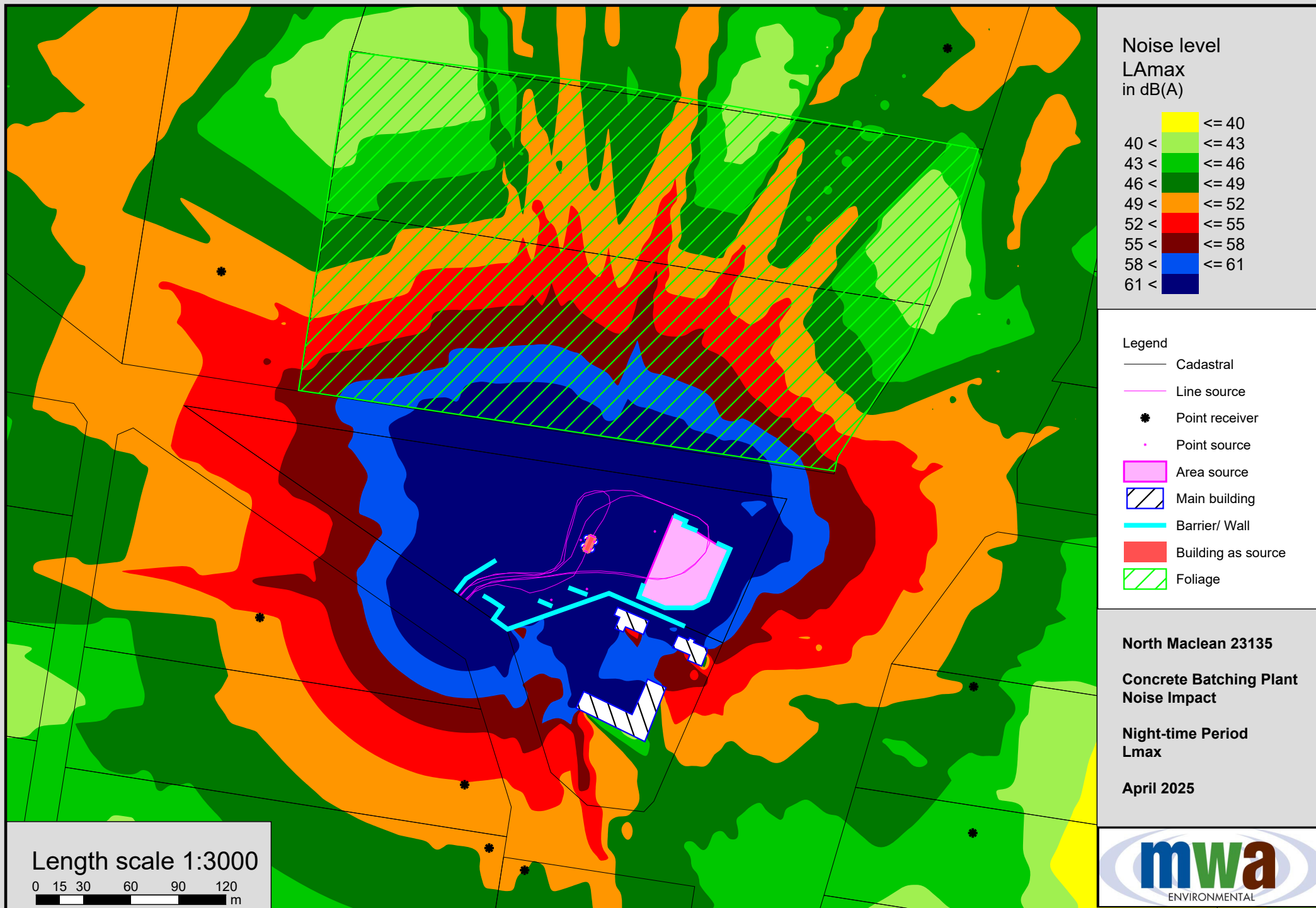
SoundPLAN 9.0

Noise Contour Plots









ATTACHMENT 5

SoundPLAN 9.0

Detailed Predicted Noise Levels

North Maclean 23135

Mean propagation Leq - Concrete Plant_Open Slumping_SP Calculation

10

Legend

Source		Source name
Source type		Type of source (point, line, area)
Time slice		Name of time slice
Li	dB(A)	Level inside
Rw	dB	Rated transmission loss
L'w	dB(A)	Sound power level per m, m²
Lw	dB(A)	Sound power level per unit
I or A	m,m²	Size of source (length or area)
KI	dB	Correction for source impulsiveness
KT	dB	Correction for source tonality
DO	dB	Correction for propagation in limited spacial angle
S	m	Distance source - receiver
Adiv	dB	Mean attenuation due to geometrical spreading
Agr	dB	Mean attenuation due to ground effect
Abar	dB	Mean attenuation due to screening
Aatm	dB	Mean attenuation due to air absorption
ADI	dB	Mean directivity correction
dLrefl	dB(A)	Level increase due to reflections
Ls	dB(A)	Unassessed sound pressure level at receiver $L_s = L_w + DO + ADI + Adiv + Agr + Abar + Aatm + Afol_site_house + Awind + dLrefl$
Cmet	dB	Meteorological correction
dLw	dB	Correction due to source operation time
ZR	dB	Correction for rest periods
Lr	dB(A)	Assessed level of time slice

North Maclean 23135

Mean propagation Leq - Concrete Plant_Open Slumping_SP Calculation

10

Source	Source type	Time slice	Li dB(A)	Rw dB	L'w dB(A)	Lw dB(A)	l or A m,m²	Kl dB	KT dB	DO dB	S m	Adiv dB	Agr dB	Abar dB	Aatm dB	ADI dB	dLrefl dB(A)	Ls dB(A)	Cmet dB	dLw dB	ZR dB	Lr dB(A)
Receiver R1	FI GF	LAeq 4am-7 45 dB(A)	LAeq day 46 dB(A)	LAeq night 39 dB(A)	Lmax 50 dB(A)																	
Agg and Sand Trucks	Line	LAeq day			72.9	98.7	378.6	0.0	0.0	0	290.07	-60.2	-0.8	-0.2	-2.4	0.0	0.3	31.6	0.0	0.0	0.0	31.6
Agg and Sand Trucks	Line	LAeq night			72.9	98.7	378.6	0.0	0.0	0	290.07	-60.2	-0.8	-0.2	-2.4	0.0	0.3	31.6	0.0			
Agg and Sand Trucks	Line	LAeq 4am-7			72.9	98.7	378.6	0.0	0.0	0	290.07	-60.2	-0.8	-0.2	-2.4	0.0	0.3	31.6	0.0	-3.0	0.0	28.6
Agitator Trucks	Line	LAeq day			75.4	97.5	161.0	0.0	0.0	0	270.55	-59.6	-0.8	0.0	-2.2	0.0	0.3	31.3	0.0	0.0	0.0	31.3
Agitator Trucks	Line	LAeq night			75.4	97.5	161.0	0.0	0.0	0	270.55	-59.6	-0.8	0.0	-2.2	0.0	0.3	31.3	0.0	-6.0	0.0	25.3
Agitator Trucks	Line	LAeq 4am-7			75.4	97.5	161.0	0.0	0.0	0	270.55	-59.6	-0.8	0.0	-2.2	0.0	0.3	31.3	0.0	0.0	0.0	31.3
Agitator Trucks	Line	LAeq day			75.4	95.0	90.3	0.0	0.0	0	276.51	-59.8	-0.8	-0.7	-2.4	0.0	0.3	29.0	0.0	0.0	0.0	29.0
Agitator Trucks	Line	LAeq night			75.4	95.0	90.3	0.0	0.0	0	276.51	-59.8	-0.8	-0.7	-2.4	0.0	0.3	29.0	0.0	-6.0	0.0	23.0
Agitator Trucks	Line	LAeq 4am-7			75.4	95.0	90.3	0.0	0.0	0	276.51	-59.8	-0.8	-0.7	-2.4	0.0	0.3	29.0	0.0	0.0	0.0	29.0
Batch Tunnel A_OptB-Batch Tunnel E	Area	LAeq day	90.3	28.0	62.8	79.5	47.2	0.0	0.0	3	290.45	-60.3	-2.1	-14.3	-0.7	0.0	0.0	3.6	0.0	0.0	0.0	3.6
Batch Tunnel A_OptB-Batch Tunnel E	Area	LAeq night	90.3	28.0	62.8	79.5	47.2	0.0	0.0	3	290.45	-60.3	-2.1	-14.3	-0.7	0.0	0.0	3.6	0.0	-6.0	0.0	-2.4
Batch Tunnel A_OptB-Batch Tunnel E	Area	LAeq 4am-7	90.3	28.0	62.8	79.5	47.2	0.0	0.0	3	290.45	-60.3	-2.1	-14.3	-0.7	0.0	0.0	3.6	0.0	0.0	0.0	3.6
Batch Tunnel A_OptB-Batch Tunnel N	Area	LAeq day	86.0	28.0	58.3	63.8	3.6	0.0	0.0	3	287.39	-60.2	-1.7	0.0	-1.0	0.0	0.0	-0.7	0.0	0.0	0.0	-0.7
Batch Tunnel A_OptB-Batch Tunnel N	Area	LAeq night	86.0	28.0	58.3	63.8	3.6	0.0	0.0	3	287.39	-60.2	-1.7	0.0	-1.0	0.0	0.0	-0.7	0.0	-6.0	0.0	-6.7
Batch Tunnel A_OptB-Batch Tunnel N	Area	LAeq 4am-7	86.0	28.0	58.3	63.8	3.6	0.0	0.0	3	287.39	-60.2	-1.7	0.0	-1.0	0.0	0.0	-0.7	0.0	0.0	0.0	-0.7
Batch Tunnel A_OptB-Batch Tunnel N Door	Area	LAeq day	88.9	21.0	65.2	76.9	14.8	0.0	0.0	3	287.40	-60.2	-4.4	0.0	-1.1	0.0	0.0	10.8	0.0	0.0	0.0	10.8
Batch Tunnel A_OptB-Batch Tunnel N Door	Area	LAeq night	88.9	21.0	65.2	76.9	14.8	0.0	0.0	3	287.40	-60.2	-4.4	0.0	-1.1	0.0	0.0	10.8	0.0	-6.0	0.0	4.8
Batch Tunnel A_OptB-Batch Tunnel N Door	Area	LAeq 4am-7	88.9	21.0	65.2	76.9	14.8	0.0	0.0	3	287.40	-60.2	-4.4	0.0	-1.1	0.0	0.0	10.8	0.0	0.0	0.0	10.8
Batch Tunnel A_OptB-Batch Tunnel Roof	Area	LAeq day	88.8	28.0	61.2	77.5	41.8	0.0	0.0	0	288.50	-60.2	-1.4	-3.5	-0.9	0.0	0.6	11.4	0.0	0.0	0.0	11.4
Batch Tunnel A_OptB-Batch Tunnel Roof	Area	LAeq night	88.8	28.0	61.2	77.5	41.8	0.0	0.0	0	288.50	-60.2	-1.4	-3.5	-0.9	0.0	0.6	11.4	0.0	-6.0	0.0	5.4
Batch Tunnel A_OptB-Batch Tunnel Roof	Area	LAeq 4am-7	88.8	28.0	61.2	77.5	41.8	0.0	0.0	0	288.50	-60.2	-1.4	-3.5	-0.9	0.0	0.6	11.4	0.0	0.0	0.0	11.4
Batch Tunnel A_OptB-Batch Tunnel S	Area	LAeq day	86.4	28.0	58.7	68.2	8.9	0.0	0.0	3	289.41	-60.2	-2.2	-5.5	-0.9	0.0	0.0	0.4	0.0	0.0	0.0	0.4
Batch Tunnel A_OptB-Batch Tunnel S	Area	LAeq night	86.4	28.0	58.7	68.2	8.9	0.0	0.0	3	289.41	-60.2	-2.2	-5.5	-0.9	0.0	0.0	0.4	0.0	-6.0	0.0	-5.6
Batch Tunnel A_OptB-Batch Tunnel S	Area	LAeq 4am-7	86.4	28.0	58.7	68.2	8.9	0.0	0.0	3	289.41	-60.2	-2.2	-5.5	-0.9	0.0	0.0	0.4	0.0	0.0	0.0	0.4
Batch Tunnel A_OptB-Batch Tunnel S Door	Area	LAeq day	86.3	0.0	80.3	89.7	8.8	0.0	0.0	3	289.82	-60.2	-2.9	-7.8	-1.5	0.0	0.0	20.2	0.0	0.0	0.0	20.2
Batch Tunnel A_OptB-Batch Tunnel S Door	Area	LAeq night	86.3	0.0	80.3	89.7	8.8	0.0	0.0	3	289.82	-60.2	-2.9	-7.8	-1.5	0.0	0.0	20.2	0.0	-6.0	0.0	14.2

North Maclean 23135

Mean propagation Leq - Concrete Plant_Open Slumping_SP Calculation

10

Source	Source type	Time slice	Li	Rw	L'w	Lw	l or A	Kl	KT	DO	S	Adiv	Agr	Abar	Aatm	ADI	dLrefl	Ls	Cmet	dLw	ZR	Lr
			dB(A)	dB	dB(A)	dB(A)	m,m ²	dB	dB	dB	m	dB	dB	dB	dB	dB	dB(A)	dB(A)	dB	dB	dB	dB(A)
Batch Tunnel A_OptB-Batch Tunnel S Door	Area	LAeq 4am-7	86.3	0.0	80.3	89.7	8.8	0.0	0.0	3	289.82	-60.2	-2.9	-7.8	-1.5	0.0	0.0	20.2	0.0	0.0	0.0	20.2
Batch Tunnel A_OptB-Batch Tunnel W	Area	LAeq day	89.7	28.0	62.1	78.8	46.9	0.0	0.0	3	286.70	-60.1	-1.8	0.0	-1.0	0.0	0.0	16.6	0.0	0.0	0.0	16.6
Batch Tunnel A_OptB-Batch Tunnel W	Area	LAeq night	89.7	28.0	62.1	78.8	46.9	0.0	0.0	3	286.70	-60.1	-1.8	0.0	-1.0	0.0	0.0	16.6	0.0	-6.0	0.0	10.6
Batch Tunnel A_OptB-Batch Tunnel W	Area	LAeq 4am-7	89.7	28.0	62.1	78.8	46.9	0.0	0.0	3	286.70	-60.1	-1.8	0.0	-1.0	0.0	0.0	16.6	0.0	0.0	0.0	16.6
Cement Flyash Trucks	Line	LAeq day			66.9	92.5	366.5	0.0	0.0	0	291.82	-60.3	-0.8	-0.3	-2.4	0.0	0.3	25.6	0.0	-1.8	0.0	23.8
Cement Flyash Trucks	Line	LAeq night			66.9	92.5	366.5	0.0	0.0	0	291.82	-60.3	-0.8	-0.3	-2.4	0.0	0.3	25.6	0.0			
Cement Flyash Trucks	Line	LAeq 4am-7			66.9	92.5	366.5	0.0	0.0	0	291.82	-60.3	-0.8	-0.3	-2.4	0.0	0.3	25.6	0.0	-1.8	0.0	23.8
FEL	Area	LAeq day			70.5	103.3	1925.4	0.0	0.0	0	345.92	-61.8	-2.0	-0.6	-2.5	0.0	0.4	32.3	0.0	0.0	0.0	32.3
FEL	Area	LAeq night			70.5	103.3	1925.4	0.0	0.0	0	345.92	-61.8	-2.0	-0.6	-2.5	0.0	0.4	32.3	0.0	-3.0	0.0	29.3
FEL	Area	LAeq 4am-7			70.5	103.3	1925.4	0.0	0.0	0	345.92	-61.8	-2.0	-0.6	-2.5	0.0	0.4	32.3	0.0	-3.0	0.0	29.3
Silo Filter A	Point	LAeq day			84.3	84.3		0.0	0.0	0	286.63	-60.1	-1.7	-1.3	-1.4	0.0	0.0	19.8	0.0	0.0	0.0	19.8
Silo Filter A	Point	LAeq night			84.3	84.3		0.0	0.0	0	286.63	-60.1	-1.7	-1.3	-1.4	0.0	0.0	19.8	0.0	0.0	0.0	19.8
Silo Filter A	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	286.63	-60.1	-1.7	-1.3	-1.4	0.0	0.0	19.8	0.0	0.0	0.0	19.8
Silo Filter B	Point	LAeq day			84.3	84.3		0.0	0.0	0	287.94	-60.2	-1.7	-3.2	-1.3	0.0	0.0	18.0	0.0	0.0	0.0	18.0
Silo Filter B	Point	LAeq night			84.3	84.3		0.0	0.0	0	287.94	-60.2	-1.7	-3.2	-1.3	0.0	0.0	18.0	0.0	0.0	0.0	18.0
Silo Filter B	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	287.94	-60.2	-1.7	-3.2	-1.3	0.0	0.0	18.0	0.0	0.0	0.0	18.0
Silo Filter C	Point	LAeq day			84.3	84.3		0.0	0.0	0	291.66	-60.3	-1.7	-2.6	-1.3	0.0	0.0	18.4	0.0	0.0	0.0	18.4
Silo Filter C	Point	LAeq night			84.3	84.3		0.0	0.0	0	291.66	-60.3	-1.7	-2.6	-1.3	0.0	0.0	18.4	0.0	0.0	0.0	18.4
Silo Filter C	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	291.66	-60.3	-1.7	-2.6	-1.3	0.0	0.0	18.4	0.0	0.0	0.0	18.4
Silo Filter E	Point	LAeq day			84.3	84.3		0.0	0.0	0	292.91	-60.3	-1.7	-2.4	-1.3	0.0	0.0	18.6	0.0	0.0	0.0	18.6
Silo Filter E	Point	LAeq night			84.3	84.3		0.0	0.0	0	292.91	-60.3	-1.7	-2.4	-1.3	0.0	0.0	18.6	0.0	0.0	0.0	18.6
Silo Filter E	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	292.91	-60.3	-1.7	-2.4	-1.3	0.0	0.0	18.6	0.0	0.0	0.0	18.6
Slumping uncovered 1	Point	LAeq day			109.6	109.6		0.0	0.0	0	293.36	-60.3	-1.5	0.0	-2.2	0.0	0.4	43.3	0.0	-3.3	0.0	40.0
Slumping uncovered 1	Point	LAeq night			109.6	109.6		0.0	0.0	0	293.36	-60.3	-1.5	0.0	-2.2	0.0	0.4	43.3	0.0	-9.3	0.0	34.0
Slumping uncovered 1	Point	LAeq 4am-7			109.6	109.6		0.0	0.0	0	293.36	-60.3	-1.5	0.0	-2.2	0.0	0.4	43.3	0.0	-3.3	0.0	40.0
Slumping uncovered 2	Point	LAeq day			109.6	109.6		0.0	0.0	0	305.12	-60.7	-1.5	0.0	-2.3	0.0	2.6	44.2	0.0	-3.3	0.0	40.9
Slumping uncovered 2	Point	LAeq night			109.6	109.6		0.0	0.0	0	305.12	-60.7	-1.5	0.0	-2.3	0.0	2.6	44.2	0.0	-9.3	0.0	34.8
Slumping uncovered 2	Point	LAeq 4am-7			109.6	109.6		0.0	0.0	0	305.12	-60.7	-1.5	0.0	-2.3	0.0	2.6	44.2	0.0	-3.3	0.0	40.9
Truck Washout Main Plant	Point	LAeq day			103.0	103.0		0.0	0.0	0	318.51	-61.1	-2.6	0.0	-1.9	0.0	0.0	30.8	0.0	-3.3	0.0	27.5
Truck Washout Main Plant	Point	LAeq night			103.0	103.0		0.0	0.0	0	318.51	-61.1	-2.6	0.0	-1.9	0.0	0.0	30.8	0.0	-9.3	0.0	21.4
Truck Washout Main Plant	Point	LAeq 4am-7			103.0	103.0		0.0	0.0	0	318.51	-61.1	-2.6	0.0	-1.9	0.0	0.0	30.8	0.0	-3.3	0.0	27.5
Unloading Bulk Cement	Point	LAeq day			106.0	106.0		0.0	0.0	0	282.69	-60.0	-1.7	0.0	-3.0	0.0	4.2	40.2	0.0	-1.8	0.0	38.4

MWA Environmental

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North Maclean 23135

Mean propagation Leq - Concrete Plant_Open Slumping_SP Calculation

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Source	Source type	Time slice	Li	Rw	L'w	Lw	l or A	Kl	KT	DO	S	Adiv	Agr	Abar	Aatm	ADI	dLrefl	Ls	Cmet	dLw	ZR	Lr
			dB(A)	dB	dB(A)	dB(A)	m,m²	dB	dB	dB	m	dB	dB	dB	dB	dB	dB(A)	dB(A)	dB	dB	dB	dB(A)
Unloading Bulk Cement	Point	LAeq night			106.0	106.0		0.0	0.0	0	282.69	-60.0	-1.7	0.0	-3.0	0.0	4.2	40.2	0.0			
Unloading Bulk Cement	Point	LAeq 4am-7			106.0	106.0		0.0	0.0	0	282.69	-60.0	-1.7	0.0	-3.0	0.0	4.2	40.2	0.0	-1.8	0.0	38.4
Receiver R2 FI GF LAeq 4am-7 47 dB(A) LAeq day 48 dB(A) LAeq night 40 dB(A) Lmax 51 dB(A)																						
Agg and Sand Trucks	Line	LAeq day			72.9	98.7	378.6	0.0	0.0	0	195.18	-56.8	-0.8	-1.3	-1.6	0.0	0.1	38.2	0.0	0.0	0.0	38.2
Agg and Sand Trucks	Line	LAeq night			72.9	98.7	378.6	0.0	0.0	0	195.18	-56.8	-0.8	-1.3	-1.6	0.0	0.1	38.2	0.0			
Agg and Sand Trucks	Line	LAeq 4am-7			72.9	98.7	378.6	0.0	0.0	0	195.18	-56.8	-0.8	-1.3	-1.6	0.0	0.1	38.2	0.0	-3.0	0.0	35.2
Agitator Trucks	Line	LAeq day			75.4	97.5	161.0	0.0	0.0	0	180.89	-56.1	-0.8	-1.1	-1.6	0.0	0.1	37.9	0.0	0.0	0.0	37.9
Agitator Trucks	Line	LAeq night			75.4	97.5	161.0	0.0	0.0	0	180.89	-56.1	-0.8	-1.1	-1.6	0.0	0.1	37.9	0.0	-6.0	0.0	31.9
Agitator Trucks	Line	LAeq 4am-7			75.4	97.5	161.0	0.0	0.0	0	180.89	-56.1	-0.8	-1.1	-1.6	0.0	0.1	37.9	0.0	0.0	0.0	37.9
Agitator Trucks	Line	LAeq day			75.4	95.0	90.3	0.0	0.0	0	166.89	-55.4	-0.8	-0.7	-1.5	0.0	0.1	36.6	0.0	0.0	0.0	36.6
Agitator Trucks	Line	LAeq night			75.4	95.0	90.3	0.0	0.0	0	166.89	-55.4	-0.8	-0.7	-1.5	0.0	0.1	36.6	0.0	-6.0	0.0	30.6
Agitator Trucks	Line	LAeq 4am-7			75.4	95.0	90.3	0.0	0.0	0	166.89	-55.4	-0.8	-0.7	-1.5	0.0	0.1	36.6	0.0	0.0	0.0	36.6
Batch Tunnel A_OptB-Batch Tunnel E	Area	LAeq day	90.3	28.0	62.8	79.5	47.2	0.0	0.0	3	214.35	-57.6	-2.1	-14.4	-0.6	0.0	0.1	8.0	0.0	0.0	0.0	8.0
Batch Tunnel A_OptB-Batch Tunnel E	Area	LAeq night	90.3	28.0	62.8	79.5	47.2	0.0	0.0	3	214.35	-57.6	-2.1	-14.4	-0.6	0.0	0.1	8.0	0.0	-6.0	0.0	2.0
Batch Tunnel A_OptB-Batch Tunnel E	Area	LAeq 4am-7	90.3	28.0	62.8	79.5	47.2	0.0	0.0	3	214.35	-57.6	-2.1	-14.4	-0.6	0.0	0.1	8.0	0.0	0.0	0.0	8.0
Batch Tunnel A_OptB-Batch Tunnel N	Area	LAeq day	86.0	28.0	58.3	63.8	3.6	0.0	0.0	3	215.95	-57.7	-2.0	-7.4	-0.6	0.0	0.0	-0.8	0.0	0.0	0.0	-0.8
Batch Tunnel A_OptB-Batch Tunnel N	Area	LAeq night	86.0	28.0	58.3	63.8	3.6	0.0	0.0	3	215.95	-57.7	-2.0	-7.4	-0.6	0.0	0.0	-0.8	0.0	-6.0	0.0	-6.8
Batch Tunnel A_OptB-Batch Tunnel N	Area	LAeq 4am-7	86.0	28.0	58.3	63.8	3.6	0.0	0.0	3	215.95	-57.7	-2.0	-7.4	-0.6	0.0	0.0	-0.8	0.0	0.0	0.0	-0.8
Batch Tunnel A_OptB-Batch Tunnel N Door	Area	LAeq day	88.9	21.0	65.2	76.9	14.8	0.0	0.0	3	215.94	-57.7	-4.0	-6.9	-0.2	0.0	0.0	11.0	0.0	0.0	0.0	11.0
Batch Tunnel A_OptB-Batch Tunnel N Door	Area	LAeq night	88.9	21.0	65.2	76.9	14.8	0.0	0.0	3	215.94	-57.7	-4.0	-6.9	-0.2	0.0	0.0	11.0	0.0	-6.0	0.0	5.0
Batch Tunnel A_OptB-Batch Tunnel N Door	Area	LAeq 4am-7	88.9	21.0	65.2	76.9	14.8	0.0	0.0	3	215.94	-57.7	-4.0	-6.9	-0.2	0.0	0.0	11.0	0.0	0.0	0.0	11.0
Batch Tunnel A_OptB-Batch Tunnel Roof	Area	LAeq day	88.8	28.0	61.2	77.5	41.8	0.0	0.0	0	212.81	-57.6	-1.4	-3.5	-0.7	0.0	0.2	14.6	0.0	0.0	0.0	14.6
Batch Tunnel A_OptB-Batch Tunnel Roof	Area	LAeq night	88.8	28.0	61.2	77.5	41.8	0.0	0.0	0	212.81	-57.6	-1.4	-3.5	-0.7	0.0	0.2	14.6	0.0	-6.0	0.0	8.5
Batch Tunnel A_OptB-Batch Tunnel Roof	Area	LAeq 4am-7	88.8	28.0	61.2	77.5	41.8	0.0	0.0	0	212.81	-57.6	-1.4	-3.5	-0.7	0.0	0.2	14.6	0.0	0.0	0.0	14.6
Batch Tunnel A_OptB-Batch Tunnel S	Area	LAeq day	86.4	28.0	58.7	68.2	8.9	0.0	0.0	3	209.45	-57.4	-2.1	-2.8	-0.7	0.0	0.0	8.2	0.0	0.0	0.0	8.2
Batch Tunnel A_OptB-Batch Tunnel S	Area	LAeq night	86.4	28.0	58.7	68.2	8.9	0.0	0.0	3	209.45	-57.4	-2.1	-2.8	-0.7	0.0	0.0	8.2	0.0	-6.0	0.0	2.2
Batch Tunnel A_OptB-Batch Tunnel S	Area	LAeq 4am-7	86.4	28.0	58.7	68.2	8.9	0.0	0.0	3	209.45	-57.4	-2.1	-2.8	-0.7	0.0	0.0	8.2	0.0	0.0	0.0	8.2
Batch Tunnel A_OptB-Batch Tunnel S Door	Area	LAeq day	86.3	0.0	80.3	89.7	8.8	0.0	0.0	3	209.81	-57.4	-2.8	-3.2	-1.3	0.0	0.0	27.9	0.0	0.0	0.0	27.9

MWA Environmental

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North Maclean 23135

Mean propagation Leq - Concrete Plant_Open Slumping_SP Calculation

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Source	Source type	Time slice	Li	Rw	L'w	Lw	l or A	Kl	KT	DO	S	Adiv	Agr	Abar	Aatm	ADI	dLrefl	Ls	Cmet	dLw	ZR	Lr
			dB(A)	dB	dB(A)	dB(A)	m,m²	dB	dB	dB	m	dB	dB	dB	dB	dB	dB(A)	dB(A)	dB	dB	dB	dB(A)
Batch Tunnel A_OptB-Batch Tunnel S Door	Area	LAeq night	86.3	0.0	80.3	89.7	8.8	0.0	0.0	3	209.81	-57.4	-2.8	-3.2	-1.3	0.0	0.0	27.9	0.0	-6.0	0.0	21.9
Batch Tunnel A_OptB-Batch Tunnel S Door	Area	LAeq 4am-7	86.3	0.0	80.3	89.7	8.8	0.0	0.0	3	209.81	-57.4	-2.8	-3.2	-1.3	0.0	0.0	27.9	0.0	0.0	0.0	27.9
Batch Tunnel A_OptB-Batch Tunnel W	Area	LAeq day	89.7	28.0	62.1	78.8	46.9	0.0	0.0	3	211.14	-57.5	-2.0	-1.9	-0.7	0.0	0.0	19.7	0.0	0.0	0.0	19.7
Batch Tunnel A_OptB-Batch Tunnel W	Area	LAeq night	89.7	28.0	62.1	78.8	46.9	0.0	0.0	3	211.14	-57.5	-2.0	-1.9	-0.7	0.0	0.0	19.7	0.0	-6.0	0.0	13.7
Batch Tunnel A_OptB-Batch Tunnel W	Area	LAeq 4am-7	89.7	28.0	62.1	78.8	46.9	0.0	0.0	3	211.14	-57.5	-2.0	-1.9	-0.7	0.0	0.0	19.7	0.0	0.0	0.0	19.7
Cement Flyash Trucks	Line	LAeq day			66.9	92.5	366.5	0.0	0.0	0	195.51	-56.8	-0.8	-1.4	-1.6	0.0	0.1	32.0	0.0	-1.8	0.0	30.3
Cement Flyash Trucks	Line	LAeq night			66.9	92.5	366.5	0.0	0.0	0	195.51	-56.8	-0.8	-1.4	-1.6	0.0	0.1	32.0	0.0			
Cement Flyash Trucks	Line	LAeq 4am-7			66.9	92.5	366.5	0.0	0.0	0	195.51	-56.8	-0.8	-1.4	-1.6	0.0	0.1	32.0	0.0	-1.8	0.0	30.3
FEL	Area	LAeq day			70.5	103.3	1925.4	0.0	0.0	0	268.26	-59.6	-2.0	-2.9	-1.8	0.0	0.4	37.4	0.0	0.0	0.0	37.4
FEL	Area	LAeq night			70.5	103.3	1925.4	0.0	0.0	0	268.26	-59.6	-2.0	-2.9	-1.8	0.0	0.4	37.4	0.0	-3.0	0.0	34.4
FEL	Area	LAeq 4am-7			70.5	103.3	1925.4	0.0	0.0	0	268.26	-59.6	-2.0	-2.9	-1.8	0.0	0.4	37.4	0.0	-3.0	0.0	34.4
Silo Filter A	Point	LAeq day			84.3	84.3		0.0	0.0	0	214.07	-57.6	-1.7	-2.9	-1.0	0.0	0.0	21.2	0.0	0.0	0.0	21.2
Silo Filter A	Point	LAeq night			84.3	84.3		0.0	0.0	0	214.07	-57.6	-1.7	-2.9	-1.0	0.0	0.0	21.2	0.0	0.0	0.0	21.2
Silo Filter A	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	214.07	-57.6	-1.7	-2.9	-1.0	0.0	0.0	21.2	0.0	0.0	0.0	21.2
Silo Filter B	Point	LAeq day			84.3	84.3		0.0	0.0	0	211.05	-57.5	-1.7	-2.9	-1.0	0.0	0.0	21.3	0.0	0.0	0.0	21.3
Silo Filter B	Point	LAeq night			84.3	84.3		0.0	0.0	0	211.05	-57.5	-1.7	-2.9	-1.0	0.0	0.0	21.3	0.0	0.0	0.0	21.3
Silo Filter B	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	211.05	-57.5	-1.7	-2.9	-1.0	0.0	0.0	21.3	0.0	0.0	0.0	21.3
Silo Filter C	Point	LAeq day			84.3	84.3		0.0	0.0	0	218.01	-57.8	-1.7	-3.9	-0.8	0.0	0.0	20.1	0.0	0.0	0.0	20.1
Silo Filter C	Point	LAeq night			84.3	84.3		0.0	0.0	0	218.01	-57.8	-1.7	-3.9	-0.8	0.0	0.0	20.1	0.0	0.0	0.0	20.1
Silo Filter C	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	218.01	-57.8	-1.7	-3.9	-0.8	0.0	0.0	20.1	0.0	0.0	0.0	20.1
Silo Filter E	Point	LAeq day			84.3	84.3		0.0	0.0	0	215.14	-57.6	-1.7	-2.9	-1.0	0.0	0.0	21.1	0.0	0.0	0.0	21.1
Silo Filter E	Point	LAeq night			84.3	84.3		0.0	0.0	0	215.14	-57.6	-1.7	-2.9	-1.0	0.0	0.0	21.1	0.0	0.0	0.0	21.1
Silo Filter E	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	215.14	-57.6	-1.7	-2.9	-1.0	0.0	0.0	21.1	0.0	0.0	0.0	21.1
Slumping uncovered 1	Point	LAeq day			109.6	109.6		0.0	0.0	0	184.01	-56.3	-1.5	-8.9	-0.8	0.0	0.0	42.1	0.0	-3.3	0.0	38.8
Slumping uncovered 1	Point	LAeq night			109.6	109.6		0.0	0.0	0	184.01	-56.3	-1.5	-8.9	-0.8	0.0	0.0	42.1	0.0	-9.3	0.0	32.8
Slumping uncovered 1	Point	LAeq 4am-7			109.6	109.6		0.0	0.0	0	184.01	-56.3	-1.5	-8.9	-0.8	0.0	0.0	42.1	0.0	-3.3	0.0	38.8
Slumping uncovered 2	Point	LAeq day			109.6	109.6		0.0	0.0	0	206.87	-57.3	-1.5	-11.7	-0.8	0.0	0.7	38.9	0.0	-3.3	0.0	35.6
Slumping uncovered 2	Point	LAeq night			109.6	109.6		0.0	0.0	0	206.87	-57.3	-1.5	-11.7	-0.8	0.0	0.7	38.9	0.0	-9.3	0.0	29.6
Slumping uncovered 2	Point	LAeq 4am-7			109.6	109.6		0.0	0.0	0	206.87	-57.3	-1.5	-11.7	-0.8	0.0	0.7	38.9	0.0	-3.3	0.0	35.6
Truck Washout Main Plant	Point	LAeq day			103.0	103.0		0.0	0.0	0	254.75	-59.1	-2.6	-5.1	-0.8	0.0	0.1	35.5	0.0	-3.3	0.0	32.2
Truck Washout Main Plant	Point	LAeq night			103.0	103.0		0.0	0.0	0	254.75	-59.1	-2.6	-5.1	-0.8	0.0	0.1	35.5	0.0	-9.3	0.0	26.1

North Maclean 23135

Mean propagation Leq - Concrete Plant_Open Slumping_SP Calculation

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Source	Source type	Time slice	Li	Rw	L'w	Lw	l or A	Kl	KT	DO	S	Adiv	Agr	Abar	Aatm	ADI	dLrefl	Ls	Cmet	dLw	ZR	Lr
			dB(A)	dB	dB(A)	dB(A)	m,m ²	dB	dB	dB	m	dB	dB	dB	dB	dB	dB(A)	dB(A)	dB	dB	dB	dB(A)
Truck Washout Main Plant	Point	LAeq 4am-7			103.0	103.0		0.0	0.0	0	254.75	-59.1	-2.6	-5.1	-0.8	0.0	0.1	35.5	0.0	-3.3	0.0	32.2
Unloading Bulk Cement	Point	LAeq day			106.0	106.0		0.0	0.0	0	208.02	-57.4	-1.6	-1.4	-2.2	0.0	1.5	44.9	0.0	-1.8	0.0	43.1
Unloading Bulk Cement	Point	LAeq night			106.0	106.0		0.0	0.0	0	208.02	-57.4	-1.6	-1.4	-2.2	0.0	1.5	44.9	0.0			
Unloading Bulk Cement	Point	LAeq 4am-7			106.0	106.0		0.0	0.0	0	208.02	-57.4	-1.6	-1.4	-2.2	0.0	1.5	44.9	0.0	-1.8	0.0	43.1
Receiver R3 FI GF LAeq 4am-7 47 dB(A) LAeq day 48 dB(A) LAeq night 41 dB(A) Lmax 52 dB(A)																						
Agg and Sand Trucks	Line	LAeq day			72.9	98.7	378.6	0.0	0.0	0	161.04	-55.1	-0.8	-3.7	-1.2	0.0	0.2	38.0	0.0	0.0	0.0	38.0
Agg and Sand Trucks	Line	LAeq night			72.9	98.7	378.6	0.0	0.0	0	161.04	-55.1	-0.8	-3.7	-1.2	0.0	0.2	38.0	0.0			
Agg and Sand Trucks	Line	LAeq 4am-7			72.9	98.7	378.6	0.0	0.0	0	161.04	-55.1	-0.8	-3.7	-1.2	0.0	0.2	38.0	0.0	-3.0	0.0	35.0
Agitator Trucks	Line	LAeq day			75.4	97.5	161.0	0.0	0.0	0	156.73	-54.9	-0.8	-3.9	-1.1	0.0	0.2	36.9	0.0	0.0	0.0	36.9
Agitator Trucks	Line	LAeq night			75.4	97.5	161.0	0.0	0.0	0	156.73	-54.9	-0.8	-3.9	-1.1	0.0	0.2	36.9	0.0	-6.0	0.0	30.9
Agitator Trucks	Line	LAeq 4am-7			75.4	97.5	161.0	0.0	0.0	0	156.73	-54.9	-0.8	-3.9	-1.1	0.0	0.2	36.9	0.0	0.0	0.0	36.9
Agitator Trucks	Line	LAeq day			75.4	95.0	90.3	0.0	0.0	0	133.09	-53.5	-0.8	-3.8	-1.1	0.0	0.6	36.4	0.0	0.0	0.0	36.4
Agitator Trucks	Line	LAeq night			75.4	95.0	90.3	0.0	0.0	0	133.09	-53.5	-0.8	-3.8	-1.1	0.0	0.6	36.4	0.0	-6.0	0.0	30.4
Agitator Trucks	Line	LAeq 4am-7			75.4	95.0	90.3	0.0	0.0	0	133.09	-53.5	-0.8	-3.8	-1.1	0.0	0.6	36.4	0.0	0.0	0.0	36.4
Batch Tunnel A_OptB-Batch Tunnel E	Area	LAeq day	90.3	28.0	62.8	79.5	47.2	0.0	0.0	3	171.00	-55.7	-2.0	-14.3	-0.5	0.0	0.0	10.1	0.0	0.0	0.0	10.1
Batch Tunnel A_OptB-Batch Tunnel E	Area	LAeq night	90.3	28.0	62.8	79.5	47.2	0.0	0.0	3	171.00	-55.7	-2.0	-14.3	-0.5	0.0	0.0	10.1	0.0	-6.0	0.0	4.1
Batch Tunnel A_OptB-Batch Tunnel E	Area	LAeq 4am-7	90.3	28.0	62.8	79.5	47.2	0.0	0.0	3	171.00	-55.7	-2.0	-14.3	-0.5	0.0	0.0	10.1	0.0	0.0	0.0	10.1
Batch Tunnel A_OptB-Batch Tunnel N	Area	LAeq day	86.0	28.0	58.3	63.8	3.6	0.0	0.0	3	176.23	-55.9	-1.9	-12.3	-0.3	0.0	0.0	-3.7	0.0	0.0	0.0	-3.7
Batch Tunnel A_OptB-Batch Tunnel N	Area	LAeq night	86.0	28.0	58.3	63.8	3.6	0.0	0.0	3	176.23	-55.9	-1.9	-12.3	-0.3	0.0	0.0	-3.7	0.0	-6.0	0.0	-9.7
Batch Tunnel A_OptB-Batch Tunnel N	Area	LAeq 4am-7	86.0	28.0	58.3	63.8	3.6	0.0	0.0	3	176.23	-55.9	-1.9	-12.3	-0.3	0.0	0.0	-3.7	0.0	0.0	0.0	-3.7
Batch Tunnel A_OptB-Batch Tunnel N Door	Area	LAeq day	88.9	21.0	65.2	76.9	14.8	0.0	0.0	3	176.21	-55.9	-3.8	-11.9	-0.1	0.0	0.0	8.1	0.0	0.0	0.0	8.1
Batch Tunnel A_OptB-Batch Tunnel N Door	Area	LAeq night	88.9	21.0	65.2	76.9	14.8	0.0	0.0	3	176.21	-55.9	-3.8	-11.9	-0.1	0.0	0.0	8.1	0.0	-6.0	0.0	2.0
Batch Tunnel A_OptB-Batch Tunnel N Door	Area	LAeq 4am-7	88.9	21.0	65.2	76.9	14.8	0.0	0.0	3	176.21	-55.9	-3.8	-11.9	-0.1	0.0	0.0	8.1	0.0	0.0	0.0	8.1
Batch Tunnel A_OptB-Batch Tunnel Roof	Area	LAeq day	88.8	28.0	61.2	77.5	41.8	0.0	0.0	0	171.13	-55.7	-1.3	-3.6	-0.6	0.0	0.0	16.3	0.0	0.0	0.0	16.3
Batch Tunnel A_OptB-Batch Tunnel Roof	Area	LAeq night	88.8	28.0	61.2	77.5	41.8	0.0	0.0	0	171.13	-55.7	-1.3	-3.6	-0.6	0.0	0.0	16.3	0.0	-6.0	0.0	10.3
Batch Tunnel A_OptB-Batch Tunnel Roof	Area	LAeq 4am-7	88.8	28.0	61.2	77.5	41.8	0.0	0.0	0	171.13	-55.7	-1.3	-3.6	-0.6	0.0	0.0	16.3	0.0	0.0	0.0	16.3
Batch Tunnel A_OptB-Batch Tunnel S	Area	LAeq day	86.4	28.0	58.7	68.2	8.9	0.0	0.0	3	165.75	-55.4	-2.1	-3.7	-0.5	0.0	0.0	9.5	0.0	0.0	0.0	9.5
Batch Tunnel A_OptB-Batch Tunnel S	Area	LAeq night	86.4	28.0	58.7	68.2	8.9	0.0	0.0	3	165.75	-55.4	-2.1	-3.7	-0.5	0.0	0.0	9.5	0.0	-6.0	0.0	3.5
Batch Tunnel A_OptB-Batch Tunnel S	Area	LAeq 4am-7	86.4	28.0	58.7	68.2	8.9	0.0	0.0	3	165.75	-55.4	-2.1	-3.7	-0.5	0.0	0.0	9.5	0.0	0.0	0.0	9.5

North Maclean 23135

Mean propagation Leq - Concrete Plant_Open Slumping_SP Calculation

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Source	Source type	Time slice	Li	Rw	L'w	Lw	I or A	KI	KT	DO	S	Adiv	Agr	Abar	Aatm	ADI	dLrefl	Ls	Cmet	dLw	ZR	Lr
			dB(A)	dB	dB(A)	dB(A)	m,m ²	dB	dB	dB	m	dB	dB	dB	dB	dB	dB(A)	dB(A)	dB	dB	dB	dB(A)
Batch Tunnel A_OptB-Batch Tunnel S Door	Area	LAeq day	86.3	0.0	80.3	89.7	8.8	0.0	0.0	3	165.75	-55.4	-2.8	-4.4	-0.9	0.0	0.4	29.6	0.0	0.0	0.0	29.6
Batch Tunnel A_OptB-Batch Tunnel S Door	Area	LAeq night	86.3	0.0	80.3	89.7	8.8	0.0	0.0	3	165.75	-55.4	-2.8	-4.4	-0.9	0.0	0.4	29.6	0.0	-6.0	0.0	23.6
Batch Tunnel A_OptB-Batch Tunnel S Door	Area	LAeq 4am-7	86.3	0.0	80.3	89.7	8.8	0.0	0.0	3	165.75	-55.4	-2.8	-4.4	-0.9	0.0	0.4	29.6	0.0	0.0	0.0	29.6
Batch Tunnel A_OptB-Batch Tunnel W	Area	LAeq day	89.7	28.0	62.1	78.8	46.9	0.0	0.0	3	170.78	-55.6	-2.0	-3.6	-0.6	0.0	0.0	20.1	0.0	0.0	0.0	20.1
Batch Tunnel A_OptB-Batch Tunnel W	Area	LAeq night	89.7	28.0	62.1	78.8	46.9	0.0	0.0	3	170.78	-55.6	-2.0	-3.6	-0.6	0.0	0.0	20.1	0.0	-6.0	0.0	14.0
Batch Tunnel A_OptB-Batch Tunnel W	Area	LAeq 4am-7	89.7	28.0	62.1	78.8	46.9	0.0	0.0	3	170.78	-55.6	-2.0	-3.6	-0.6	0.0	0.0	20.1	0.0	0.0	0.0	20.1
Cement Flyash Trucks	Line	LAeq day			66.9	92.5	366.5	0.0	0.0	0	159.37	-55.0	-0.8	-3.8	-1.2	0.0	0.1	31.8	0.0	-1.8	0.0	30.1
Cement Flyash Trucks	Line	LAeq night			66.9	92.5	366.5	0.0	0.0	0	159.37	-55.0	-0.8	-3.8	-1.2	0.0	0.1	31.8	0.0			
Cement Flyash Trucks	Line	LAeq 4am-7			66.9	92.5	366.5	0.0	0.0	0	159.37	-55.0	-0.8	-3.8	-1.2	0.0	0.1	31.8	0.0	-1.8	0.0	30.1
FEL	Area	LAeq day			70.5	103.3	1925.4	0.0	0.0	0	192.65	-56.7	-2.0	-4.7	-1.1	0.0	0.4	39.2	0.0	0.0	0.0	39.2
FEL	Area	LAeq night			70.5	103.3	1925.4	0.0	0.0	0	192.65	-56.7	-2.0	-4.7	-1.1	0.0	0.4	39.2	0.0	-3.0	0.0	36.2
FEL	Area	LAeq 4am-7			70.5	103.3	1925.4	0.0	0.0	0	192.65	-56.7	-2.0	-4.7	-1.1	0.0	0.4	39.2	0.0	-3.0	0.0	36.2
Silo Filter A	Point	LAeq day			84.3	84.3		0.0	0.0	0	175.74	-55.9	-1.7	-5.0	-0.6	0.0	0.0	21.1	0.0	0.0	0.0	21.1
Silo Filter A	Point	LAeq night			84.3	84.3		0.0	0.0	0	175.74	-55.9	-1.7	-5.0	-0.6	0.0	0.0	21.1	0.0	0.0	0.0	21.1
Silo Filter A	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	175.74	-55.9	-1.7	-5.0	-0.6	0.0	0.0	21.1	0.0	0.0	0.0	21.1
Silo Filter B	Point	LAeq day			84.3	84.3		0.0	0.0	0	170.54	-55.6	-1.7	-3.0	-0.8	0.0	0.0	23.2	0.0	0.0	0.0	23.2
Silo Filter B	Point	LAeq night			84.3	84.3		0.0	0.0	0	170.54	-55.6	-1.7	-3.0	-0.8	0.0	0.0	23.2	0.0	0.0	0.0	23.2
Silo Filter B	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	170.54	-55.6	-1.7	-3.0	-0.8	0.0	0.0	23.2	0.0	0.0	0.0	23.2
Silo Filter C	Point	LAeq day			84.3	84.3		0.0	0.0	0	175.85	-55.9	-1.7	-4.8	-0.7	0.0	0.0	21.3	0.0	0.0	0.0	21.3
Silo Filter C	Point	LAeq night			84.3	84.3		0.0	0.0	0	175.85	-55.9	-1.7	-4.8	-0.7	0.0	0.0	21.3	0.0	0.0	0.0	21.3
Silo Filter C	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	175.85	-55.9	-1.7	-4.8	-0.7	0.0	0.0	21.3	0.0	0.0	0.0	21.3
Silo Filter E	Point	LAeq day			84.3	84.3		0.0	0.0	0	170.81	-55.6	-1.7	-3.0	-0.8	0.0	0.0	23.3	0.0	0.0	0.0	23.3
Silo Filter E	Point	LAeq night			84.3	84.3		0.0	0.0	0	170.81	-55.6	-1.7	-3.0	-0.8	0.0	0.0	23.3	0.0	0.0	0.0	23.3
Silo Filter E	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	170.81	-55.6	-1.7	-3.0	-0.8	0.0	0.0	23.3	0.0	0.0	0.0	23.3
Slumping uncovered 1	Point	LAeq day			109.6	109.6		0.0	0.0	0	128.68	-53.2	-1.5	-13.3	-0.5	0.0	4.8	46.0	0.0	-3.3	0.0	42.7
Slumping uncovered 1	Point	LAeq night			109.6	109.6		0.0	0.0	0	128.68	-53.2	-1.5	-13.3	-0.5	0.0	4.8	46.0	0.0	-9.3	0.0	36.6
Slumping uncovered 1	Point	LAeq 4am-7			109.6	109.6		0.0	0.0	0	128.68	-53.2	-1.5	-13.3	-0.5	0.0	4.8	46.0	0.0	-3.3	0.0	42.7
Slumping uncovered 2	Point	LAeq day			109.6	109.6		0.0	0.0	0	145.43	-54.2	-1.5	-16.7	-0.5	0.0	0.0	36.7	0.0	-3.3	0.0	33.4
Slumping uncovered 2	Point	LAeq night			109.6	109.6		0.0	0.0	0	145.43	-54.2	-1.5	-16.7	-0.5	0.0	0.0	36.7	0.0	-9.3	0.0	27.4
Slumping uncovered 2	Point	LAeq 4am-7			109.6	109.6		0.0	0.0	0	145.43	-54.2	-1.5	-16.7	-0.5	0.0	0.0	36.7	0.0	-3.3	0.0	33.4

MWA Environmental

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North Maclean 23135

Mean propagation Leq - Concrete Plant_Open Slumping_SP Calculation

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Source	Source type	Time slice	Li	Rw	L'w	Lw	l or A	Kl	KT	DO	S	Adiv	Agr	Abar	Aatm	ADI	dLrefl	Ls	Cmet	dLw	ZR	Lr
			dB(A)	dB	dB(A)	dB(A)	m,m ²	dB	dB	dB	m	dB	dB	dB	dB	dB	dB(A)	dB(A)	dB	dB	dB	dB(A)
Truck Washout Main Plant	Point	LAeq day			103.0	103.0		0.0	0.0	0	199.63	-57.0	-2.6	-3.9	-0.9	0.0	0.0	38.7	0.0	-3.3	0.0	35.4
Truck Washout Main Plant	Point	LAeq night			103.0	103.0		0.0	0.0	0	199.63	-57.0	-2.6	-3.9	-0.9	0.0	0.0	38.7	0.0	-9.3	0.0	29.4
Truck Washout Main Plant	Point	LAeq 4am-7			103.0	103.0		0.0	0.0	0	199.63	-57.0	-2.6	-3.9	-0.9	0.0	0.0	38.7	0.0	-3.3	0.0	35.4
Unloading Bulk Cement	Point	LAeq day			106.0	106.0		0.0	0.0	0	170.72	-55.6	-1.6	-8.3	-1.2	0.0	0.0	39.1	0.0	-1.8	0.0	37.4
Unloading Bulk Cement	Point	LAeq night			106.0	106.0		0.0	0.0	0	170.72	-55.6	-1.6	-8.3	-1.2	0.0	0.0	39.1	0.0			
Unloading Bulk Cement	Point	LAeq 4am-7			106.0	106.0		0.0	0.0	0	170.72	-55.6	-1.6	-8.3	-1.2	0.0	0.0	39.1	0.0	-1.8	0.0	37.4
Receiver R4 FI GF LAeq 4am-7 45 dB(A) LAeq day 46 dB(A) LAeq night 39 dB(A) Lmax 49 dB(A)																						
Agg and Sand Trucks	Line	LAeq day			72.9	98.7	378.6	0.0	0.0	0	195.20	-56.8	-0.8	-3.9	-1.5	0.0	0.1	35.8	0.0	0.0	0.0	35.8
Agg and Sand Trucks	Line	LAeq night			72.9	98.7	378.6	0.0	0.0	0	195.20	-56.8	-0.8	-3.9	-1.5	0.0	0.1	35.8	0.0			
Agg and Sand Trucks	Line	LAeq 4am-7			72.9	98.7	378.6	0.0	0.0	0	195.20	-56.8	-0.8	-3.9	-1.5	0.0	0.1	35.8	0.0	-3.0	0.0	32.8
Agitator Trucks	Line	LAeq day			75.4	97.5	161.0	0.0	0.0	0	193.66	-56.7	-0.8	-3.9	-1.4	0.0	0.1	34.7	0.0	0.0	0.0	34.7
Agitator Trucks	Line	LAeq night			75.4	97.5	161.0	0.0	0.0	0	193.66	-56.7	-0.8	-3.9	-1.4	0.0	0.1	34.7	0.0	-6.0	0.0	28.7
Agitator Trucks	Line	LAeq 4am-7			75.4	97.5	161.0	0.0	0.0	0	193.66	-56.7	-0.8	-3.9	-1.4	0.0	0.1	34.7	0.0	0.0	0.0	34.7
Agitator Trucks	Line	LAeq day			75.4	95.0	90.3	0.0	0.0	0	169.00	-55.5	-0.8	-4.3	-1.3	0.0	0.5	33.4	0.0	0.0	0.0	33.4
Agitator Trucks	Line	LAeq night			75.4	95.0	90.3	0.0	0.0	0	169.00	-55.5	-0.8	-4.3	-1.3	0.0	0.5	33.4	0.0	-6.0	0.0	27.4
Agitator Trucks	Line	LAeq 4am-7			75.4	95.0	90.3	0.0	0.0	0	169.00	-55.5	-0.8	-4.3	-1.3	0.0	0.5	33.4	0.0	0.0	0.0	33.4
Batch Tunnel A_OptB-Batch Tunnel E	Area	LAeq day	90.3	28.0	62.8	79.5	47.2	0.0	0.0	3	202.37	-57.1	-2.0	-5.1	-0.7	0.0	0.0	17.7	0.0	0.0	0.0	17.7
Batch Tunnel A_OptB-Batch Tunnel E	Area	LAeq night	90.3	28.0	62.8	79.5	47.2	0.0	0.0	3	202.37	-57.1	-2.0	-5.1	-0.7	0.0	0.0	17.7	0.0	-6.0	0.0	11.6
Batch Tunnel A_OptB-Batch Tunnel E	Area	LAeq 4am-7	90.3	28.0	62.8	79.5	47.2	0.0	0.0	3	202.37	-57.1	-2.0	-5.1	-0.7	0.0	0.0	17.7	0.0	0.0	0.0	17.7
Batch Tunnel A_OptB-Batch Tunnel N	Area	LAeq day	86.0	28.0	58.3	63.8	3.6	0.0	0.0	3	207.08	-57.3	-2.0	-12.4	-0.4	0.0	0.0	-5.3	0.0	0.0	0.0	-5.3
Batch Tunnel A_OptB-Batch Tunnel N	Area	LAeq night	86.0	28.0	58.3	63.8	3.6	0.0	0.0	3	207.08	-57.3	-2.0	-12.4	-0.4	0.0	0.0	-5.3	0.0	-6.0	0.0	-11.3
Batch Tunnel A_OptB-Batch Tunnel N	Area	LAeq 4am-7	86.0	28.0	58.3	63.8	3.6	0.0	0.0	3	207.08	-57.3	-2.0	-12.4	-0.4	0.0	0.0	-5.3	0.0	0.0	0.0	-5.3
Batch Tunnel A_OptB-Batch Tunnel N Door	Area	LAeq day	88.9	21.0	65.2	76.9	14.8	0.0	0.0	3	207.06	-57.3	-4.0	-11.6	-0.2	0.0	0.0	6.8	0.0	0.0	0.0	6.8
Batch Tunnel A_OptB-Batch Tunnel N Door	Area	LAeq night	88.9	21.0	65.2	76.9	14.8	0.0	0.0	3	207.06	-57.3	-4.0	-11.6	-0.2	0.0	0.0	6.8	0.0	-6.0	0.0	0.8
Batch Tunnel A_OptB-Batch Tunnel N Door	Area	LAeq 4am-7	88.9	21.0	65.2	76.9	14.8	0.0	0.0	3	207.06	-57.3	-4.0	-11.6	-0.2	0.0	0.0	6.8	0.0	0.0	0.0	6.8
Batch Tunnel A_OptB-Batch Tunnel Roof	Area	LAeq day	88.8	28.0	61.2	77.5	41.8	0.0	0.0	0	201.88	-57.1	-1.4	-3.4	-0.7	0.0	0.0	15.0	0.0	0.0	0.0	15.0
Batch Tunnel A_OptB-Batch Tunnel Roof	Area	LAeq night	88.8	28.0	61.2	77.5	41.8	0.0	0.0	0	201.88	-57.1	-1.4	-3.4	-0.7	0.0	0.0	15.0	0.0	-6.0	0.0	9.0
Batch Tunnel A_OptB-Batch Tunnel Roof	Area	LAeq 4am-7	88.8	28.0	61.2	77.5	41.8	0.0	0.0	0	201.88	-57.1	-1.4	-3.4	-0.7	0.0	0.0	15.0	0.0	0.0	0.0	15.0
Batch Tunnel A_OptB-Batch Tunnel S	Area	LAeq day	86.4	28.0	58.7	68.2	8.9	0.0	0.0	3	196.68	-56.9	-2.1	-4.6	-0.6	0.0	0.0	7.0	0.0	0.0	0.0	7.0
Batch Tunnel A_OptB-Batch Tunnel S	Area	LAeq night	86.4	28.0	58.7	68.2	8.9	0.0	0.0	3	196.68	-56.9	-2.1	-4.6	-0.6	0.0	0.0	7.0	0.0	-6.0	0.0	1.0

North Maclean 23135

Mean propagation Leq - Concrete Plant_Open Slumping_SP Calculation

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Source	Source type	Time slice	Li	Rw	L'w	Lw	l or A	Kl	KT	DO	S	Adiv	Agr	Abar	Aatm	ADI	dLrefl	Ls	Cmet	dLw	ZR	Lr
			dB(A)	dB	dB(A)	dB(A)	m,m²	dB	dB	dB	m	dB	dB	dB	dB	dB	dB(A)	dB(A)	dB	dB	dB	dB(A)
Batch Tunnel A_OptB-Batch Tunnel S	Area	LAeq 4am-7	86.4	28.0	58.7	68.2	8.9	0.0	0.0	3	196.68	-56.9	-2.1	-4.6	-0.6	0.0	0.0	7.0	0.0	0.0	0.0	7.0
Batch Tunnel A_OptB-Batch Tunnel S Door	Area	LAeq day	86.3	0.0	80.3	89.7	8.8	0.0	0.0	3	196.61	-56.9	-2.9	-6.5	-0.8	0.0	0.0	25.7	0.0	0.0	0.0	25.7
Batch Tunnel A_OptB-Batch Tunnel S Door	Area	LAeq night	86.3	0.0	80.3	89.7	8.8	0.0	0.0	3	196.61	-56.9	-2.9	-6.5	-0.8	0.0	0.0	25.7	0.0	-6.0	0.0	19.7
Batch Tunnel A_OptB-Batch Tunnel S Door	Area	LAeq 4am-7	86.3	0.0	80.3	89.7	8.8	0.0	0.0	3	196.61	-56.9	-2.9	-6.5	-0.8	0.0	0.0	25.7	0.0	0.0	0.0	25.7
Batch Tunnel A_OptB-Batch Tunnel W	Area	LAeq day	89.7	28.0	62.1	78.8	46.9	0.0	0.0	3	202.01	-57.1	-2.1	-14.7	-0.5	0.0	0.6	8.0	0.0	0.0	0.0	8.0
Batch Tunnel A_OptB-Batch Tunnel W	Area	LAeq night	89.7	28.0	62.1	78.8	46.9	0.0	0.0	3	202.01	-57.1	-2.1	-14.7	-0.5	0.0	0.6	8.0	0.0	-6.0	0.0	2.0
Batch Tunnel A_OptB-Batch Tunnel W	Area	LAeq 4am-7	89.7	28.0	62.1	78.8	46.9	0.0	0.0	3	202.01	-57.1	-2.1	-14.7	-0.5	0.0	0.6	8.0	0.0	0.0	0.0	8.0
Cement Flyash Trucks	Line	LAeq day			66.9	92.5	366.5	0.0	0.0	0	193.95	-56.7	-0.8	-3.9	-1.4	0.0	0.1	29.7	0.0	-1.8	0.0	28.0
Cement Flyash Trucks	Line	LAeq night			66.9	92.5	366.5	0.0	0.0	0	193.95	-56.7	-0.8	-3.9	-1.4	0.0	0.1	29.7	0.0	-1.8	0.0	28.0
Cement Flyash Trucks	Line	LAeq 4am-7			66.9	92.5	366.5	0.0	0.0	0	193.95	-56.7	-0.8	-3.9	-1.4	0.0	0.1	29.7	0.0	-1.8	0.0	28.0
FEL	Area	LAeq day			70.5	103.3	1925.4	0.0	0.0	0	213.68	-57.6	-2.0	-6.0	-0.9	0.0	0.3	37.1	0.0	0.0	0.0	37.1
FEL	Area	LAeq night			70.5	103.3	1925.4	0.0	0.0	0	213.68	-57.6	-2.0	-6.0	-0.9	0.0	0.3	37.1	0.0	-3.0	0.0	34.1
FEL	Area	LAeq 4am-7			70.5	103.3	1925.4	0.0	0.0	0	213.68	-57.6	-2.0	-6.0	-0.9	0.0	0.3	37.1	0.0	-3.0	0.0	34.1
Silo Filter A	Point	LAeq day			84.3	84.3		0.0	0.0	0	206.70	-57.3	-1.7	-4.0	-0.8	0.0	0.0	20.5	0.0	0.0	0.0	20.5
Silo Filter A	Point	LAeq night			84.3	84.3		0.0	0.0	0	206.70	-57.3	-1.7	-4.0	-0.8	0.0	0.0	20.5	0.0	0.0	0.0	20.5
Silo Filter A	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	206.70	-57.3	-1.7	-4.0	-0.8	0.0	0.0	20.5	0.0	0.0	0.0	20.5
Silo Filter B	Point	LAeq day			84.3	84.3		0.0	0.0	0	201.48	-57.1	-1.7	-2.9	-0.9	0.0	0.0	21.8	0.0	0.0	0.0	21.8
Silo Filter B	Point	LAeq night			84.3	84.3		0.0	0.0	0	201.48	-57.1	-1.7	-2.9	-0.9	0.0	0.0	21.8	0.0	0.0	0.0	21.8
Silo Filter B	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	201.48	-57.1	-1.7	-2.9	-0.9	0.0	0.0	21.8	0.0	0.0	0.0	21.8
Silo Filter C	Point	LAeq day			84.3	84.3		0.0	0.0	0	206.02	-57.3	-1.7	-4.0	-0.8	0.0	0.0	20.6	0.0	0.0	0.0	20.6
Silo Filter C	Point	LAeq night			84.3	84.3		0.0	0.0	0	206.02	-57.3	-1.7	-4.0	-0.8	0.0	0.0	20.6	0.0	0.0	0.0	20.6
Silo Filter C	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	206.02	-57.3	-1.7	-4.0	-0.8	0.0	0.0	20.6	0.0	0.0	0.0	20.6
Silo Filter E	Point	LAeq day			84.3	84.3		0.0	0.0	0	200.94	-57.1	-1.7	-2.8	-0.9	0.0	0.0	21.9	0.0	0.0	0.0	21.9
Silo Filter E	Point	LAeq night			84.3	84.3		0.0	0.0	0	200.94	-57.1	-1.7	-2.8	-0.9	0.0	0.0	21.9	0.0	0.0	0.0	21.9
Silo Filter E	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	200.94	-57.1	-1.7	-2.8	-0.9	0.0	0.0	21.9	0.0	0.0	0.0	21.9
Slumping uncovered 1	Point	LAeq day			109.6	109.6		0.0	0.0	0	161.22	-55.1	-1.5	-13.1	-0.6	0.0	4.2	43.4	0.0	-3.3	0.0	40.1
Slumping uncovered 1	Point	LAeq night			109.6	109.6		0.0	0.0	0	161.22	-55.1	-1.5	-13.1	-0.6	0.0	4.2	43.4	0.0	-9.3	0.0	34.1
Slumping uncovered 1	Point	LAeq 4am-7			109.6	109.6		0.0	0.0	0	161.22	-55.1	-1.5	-13.1	-0.6	0.0	4.2	43.4	0.0	-3.3	0.0	40.1
Slumping uncovered 2	Point	LAeq day			109.6	109.6		0.0	0.0	0	174.47	-55.8	-1.5	-13.2	-0.7	0.0	0.0	38.4	0.0	-3.3	0.0	35.1
Slumping uncovered 2	Point	LAeq night			109.6	109.6		0.0	0.0	0	174.47	-55.8	-1.5	-13.2	-0.7	0.0	0.0	38.4	0.0	-9.3	0.0	29.1

North Maclean 23135

Mean propagation Leq - Concrete Plant_Open Slumping_SP Calculation

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Source	Source type	Time slice	Li	Rw	L'w	Lw	I or A	KI	KT	DO	S	Adiv	Agr	Abar	Aatm	ADI	dLrefl	Ls	Cmet	dLw	ZR	Lr
			dB(A)	dB	dB(A)	dB(A)	m,m ²	dB	dB	dB	m	dB	dB	dB	dB	dB	dB(A)	dB(A)	dB	dB	dB	dB(A)
Slumping uncovered 2	Point	LAeq 4am-7			109.6	109.6		0.0	0.0	0	174.47	-55.8	-1.5	-13.2	-0.7	0.0	0.0	38.4	0.0	-3.3	0.0	35.1
Truck Washout Main Plant	Point	LAeq day			103.0	103.0		0.0	0.0	0	225.20	-58.0	-2.6	-3.2	-1.1	0.0	0.1	38.1	0.0	-3.3	0.0	34.8
Truck Washout Main Plant	Point	LAeq night			103.0	103.0		0.0	0.0	0	225.20	-58.0	-2.6	-3.2	-1.1	0.0	0.1	38.1	0.0	-9.3	0.0	28.8
Truck Washout Main Plant	Point	LAeq 4am-7			103.0	103.0		0.0	0.0	0	225.20	-58.0	-2.6	-3.2	-1.1	0.0	0.1	38.1	0.0	-3.3	0.0	34.8
Unloading Bulk Cement	Point	LAeq day			106.0	106.0		0.0	0.0	0	202.52	-57.1	-1.6	-6.9	-1.6	0.0	0.0	38.7	0.0	-1.8	0.0	37.0
Unloading Bulk Cement	Point	LAeq night			106.0	106.0		0.0	0.0	0	202.52	-57.1	-1.6	-6.9	-1.6	0.0	0.0	38.7	0.0			
Unloading Bulk Cement	Point	LAeq 4am-7			106.0	106.0		0.0	0.0	0	202.52	-57.1	-1.6	-6.9	-1.6	0.0	0.0	38.7	0.0	-1.8	0.0	37.0
Receiver R5 FI GF LAeq 4am-7 44 dB(A) LAeq day 45 dB(A) LAeq night 39 dB(A) Lmax 49 dB(A)																						
Agg and Sand Trucks	Line	LAeq day			72.9	98.7	378.6	0.0	0.0	0	205.29	-57.2	-0.8	-4.2	-1.5	0.0	0.1	35.0	0.0	0.0	0.0	35.0
Agg and Sand Trucks	Line	LAeq night			72.9	98.7	378.6	0.0	0.0	0	205.29	-57.2	-0.8	-4.2	-1.5	0.0	0.1	35.0	0.0			
Agg and Sand Trucks	Line	LAeq 4am-7			72.9	98.7	378.6	0.0	0.0	0	205.29	-57.2	-0.8	-4.2	-1.5	0.0	0.1	35.0	0.0	-3.0	0.0	32.0
Agitator Trucks	Line	LAeq day			75.4	97.5	161.0	0.0	0.0	0	205.33	-57.2	-0.8	-3.7	-1.6	0.0	0.0	34.1	0.0	0.0	0.0	34.1
Agitator Trucks	Line	LAeq night			75.4	97.5	161.0	0.0	0.0	0	205.33	-57.2	-0.8	-3.7	-1.6	0.0	0.0	34.1	0.0	-6.0	0.0	28.1
Agitator Trucks	Line	LAeq 4am-7			75.4	97.5	161.0	0.0	0.0	0	205.33	-57.2	-0.8	-3.7	-1.6	0.0	0.0	34.1	0.0	0.0	0.0	34.1
Agitator Trucks	Line	LAeq day			75.4	95.0	90.3	0.0	0.0	0	181.30	-56.2	-0.8	-4.5	-1.4	0.0	0.4	32.5	0.0	0.0	0.0	32.5
Agitator Trucks	Line	LAeq night			75.4	95.0	90.3	0.0	0.0	0	181.30	-56.2	-0.8	-4.5	-1.4	0.0	0.4	32.5	0.0	-6.0	0.0	26.5
Agitator Trucks	Line	LAeq 4am-7			75.4	95.0	90.3	0.0	0.0	0	181.30	-56.2	-0.8	-4.5	-1.4	0.0	0.4	32.5	0.0	0.0	0.0	32.5
Batch Tunnel A_OptB-Batch Tunnel E	Area	LAeq day	90.3	28.0	62.8	79.5	47.2	0.0	0.0	3	209.99	-57.4	-2.0	-4.3	-0.7	0.0	0.0	18.2	0.0	0.0	0.0	18.2
Batch Tunnel A_OptB-Batch Tunnel E	Area	LAeq night	90.3	28.0	62.8	79.5	47.2	0.0	0.0	3	209.99	-57.4	-2.0	-4.3	-0.7	0.0	0.0	18.2	0.0	-6.0	0.0	12.1
Batch Tunnel A_OptB-Batch Tunnel E	Area	LAeq 4am-7	90.3	28.0	62.8	79.5	47.2	0.0	0.0	3	209.99	-57.4	-2.0	-4.3	-0.7	0.0	0.0	18.2	0.0	0.0	0.0	18.2
Batch Tunnel A_OptB-Batch Tunnel N	Area	LAeq day	86.0	28.0	58.3	63.8	3.6	0.0	0.0	3	214.83	-57.6	-2.0	-12.2	-0.4	0.0	0.0	-5.5	0.0	0.0	0.0	-5.5
Batch Tunnel A_OptB-Batch Tunnel N	Area	LAeq night	86.0	28.0	58.3	63.8	3.6	0.0	0.0	3	214.83	-57.6	-2.0	-12.2	-0.4	0.0	0.0	-5.5	0.0	-6.0	0.0	-11.5
Batch Tunnel A_OptB-Batch Tunnel N	Area	LAeq 4am-7	86.0	28.0	58.3	63.8	3.6	0.0	0.0	3	214.83	-57.6	-2.0	-12.2	-0.4	0.0	0.0	-5.5	0.0	0.0	0.0	-5.5
Batch Tunnel A_OptB-Batch Tunnel N Door	Area	LAeq day	88.9	21.0	65.2	76.9	14.8	0.0	0.0	3	214.81	-57.6	-4.0	-11.3	-0.2	0.0	0.0	6.7	0.0	0.0	0.0	6.7
Batch Tunnel A_OptB-Batch Tunnel N Door	Area	LAeq night	88.9	21.0	65.2	76.9	14.8	0.0	0.0	3	214.81	-57.6	-4.0	-11.3	-0.2	0.0	0.0	6.7	0.0	-6.0	0.0	0.7
Batch Tunnel A_OptB-Batch Tunnel N Door	Area	LAeq 4am-7	88.9	21.0	65.2	76.9	14.8	0.0	0.0	3	214.81	-57.6	-4.0	-11.3	-0.2	0.0	0.0	6.7	0.0	0.0	0.0	6.7
Batch Tunnel A_OptB-Batch Tunnel Roof	Area	LAeq day	88.8	28.0	61.2	77.5	41.8	0.0	0.0	0	209.72	-57.4	-1.4	-3.4	-0.7	0.0	0.0	14.6	0.0	0.0	0.0	14.6
Batch Tunnel A_OptB-Batch Tunnel Roof	Area	LAeq night	88.8	28.0	61.2	77.5	41.8	0.0	0.0	0	209.72	-57.4	-1.4	-3.4	-0.7	0.0	0.0	14.6	0.0	-6.0	0.0	8.6
Batch Tunnel A_OptB-Batch Tunnel Roof	Area	LAeq 4am-7	88.8	28.0	61.2	77.5	41.8	0.0	0.0	0	209.72	-57.4	-1.4	-3.4	-0.7	0.0	0.0	14.6	0.0	0.0	0.0	14.6
Batch Tunnel A_OptB-Batch Tunnel S	Area	LAeq day	86.4	28.0	58.7	68.2	8.9	0.0	0.0	3	204.67	-57.2	-2.1	-4.4	-0.6	0.0	0.0	6.9	0.0	0.0	0.0	6.9

MWA Environmental

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North Maclean 23135

Mean propagation Leq - Concrete Plant_Open Slumping_SP Calculation

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Source	Source type	Time slice	Li	Rw	L'w	Lw	l or A	Kl	KT	DO	S	Adiv	Agr	Abar	Aatm	ADI	dLrefl	Ls	Cmet	dLw	ZR	Lr
			dB(A)	dB	dB(A)	dB(A)	m,m²	dB	dB	dB	m	dB	dB	dB	dB	dB	dB(A)	dB(A)	dB	dB	dB	dB(A)
Batch Tunnel A_OptB-Batch Tunnel S	Area	LAeq night	86.4	28.0	58.7	68.2	8.9	0.0	0.0	3	204.67	-57.2	-2.1	-4.4	-0.6	0.0	0.0	6.9	0.0	-6.0	0.0	0.8
Batch Tunnel A_OptB-Batch Tunnel S	Area	LAeq 4am-7	86.4	28.0	58.7	68.2	8.9	0.0	0.0	3	204.67	-57.2	-2.1	-4.4	-0.6	0.0	0.0	6.9	0.0	0.0	0.0	6.9
Batch Tunnel A_OptB-Batch Tunnel S Door	Area	LAeq day	86.3	0.0	80.3	89.7	8.8	0.0	0.0	3	204.55	-57.2	-2.9	-6.4	-0.8	0.0	0.0	25.4	0.0	0.0	0.0	25.4
Batch Tunnel A_OptB-Batch Tunnel S Door	Area	LAeq night	86.3	0.0	80.3	89.7	8.8	0.0	0.0	3	204.55	-57.2	-2.9	-6.4	-0.8	0.0	0.0	25.4	0.0	-6.0	0.0	19.4
Batch Tunnel A_OptB-Batch Tunnel S Door	Area	LAeq 4am-7	86.3	0.0	80.3	89.7	8.8	0.0	0.0	3	204.55	-57.2	-2.9	-6.4	-0.8	0.0	0.0	25.4	0.0	0.0	0.0	25.4
Batch Tunnel A_OptB-Batch Tunnel W	Area	LAeq day	89.7	28.0	62.1	78.8	46.9	0.0	0.0	3	210.12	-57.4	-2.1	-15.2	-0.5	0.0	0.6	7.2	0.0	0.0	0.0	7.2
Batch Tunnel A_OptB-Batch Tunnel W	Area	LAeq night	89.7	28.0	62.1	78.8	46.9	0.0	0.0	3	210.12	-57.4	-2.1	-15.2	-0.5	0.0	0.6	7.2	0.0	-6.0	0.0	1.1
Batch Tunnel A_OptB-Batch Tunnel W	Area	LAeq 4am-7	89.7	28.0	62.1	78.8	46.9	0.0	0.0	3	210.12	-57.4	-2.1	-15.2	-0.5	0.0	0.6	7.2	0.0	0.0	0.0	7.2
Cement Flyash Trucks	Line	LAeq day			66.9	92.5	366.5	0.0	0.0	0	203.48	-57.2	-0.8	-4.4	-1.5	0.0	0.1	28.8	0.0	-1.8	0.0	27.1
Cement Flyash Trucks	Line	LAeq night			66.9	92.5	366.5	0.0	0.0	0	203.48	-57.2	-0.8	-4.4	-1.5	0.0	0.1	28.8	0.0			
Cement Flyash Trucks	Line	LAeq 4am-7			66.9	92.5	366.5	0.0	0.0	0	203.48	-57.2	-0.8	-4.4	-1.5	0.0	0.1	28.8	0.0	-1.8	0.0	27.1
FEL	Area	LAeq day			70.5	103.3	1925.4	0.0	0.0	0	213.92	-57.6	-2.0	-6.4	-0.8	0.0	0.2	36.8	0.0	0.0	0.0	36.8
FEL	Area	LAeq night			70.5	103.3	1925.4	0.0	0.0	0	213.92	-57.6	-2.0	-6.4	-0.8	0.0	0.2	36.8	0.0	-3.0	0.0	33.7
FEL	Area	LAeq 4am-7			70.5	103.3	1925.4	0.0	0.0	0	213.92	-57.6	-2.0	-6.4	-0.8	0.0	0.2	36.8	0.0	-3.0	0.0	33.7
Silo Filter A	Point	LAeq day			84.3	84.3		0.0	0.0	0	214.76	-57.6	-1.7	-3.6	-0.9	0.0	0.0	20.5	0.0	0.0	0.0	20.5
Silo Filter A	Point	LAeq night			84.3	84.3		0.0	0.0	0	214.76	-57.6	-1.7	-3.6	-0.9	0.0	0.0	20.5	0.0	0.0	0.0	20.5
Silo Filter A	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	214.76	-57.6	-1.7	-3.6	-0.9	0.0	0.0	20.5	0.0	0.0	0.0	20.5
Silo Filter B	Point	LAeq day			84.3	84.3		0.0	0.0	0	209.63	-57.4	-1.7	-2.8	-1.0	0.0	0.0	21.4	0.0	0.0	0.0	21.4
Silo Filter B	Point	LAeq night			84.3	84.3		0.0	0.0	0	209.63	-57.4	-1.7	-2.8	-1.0	0.0	0.0	21.4	0.0	0.0	0.0	21.4
Silo Filter B	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	209.63	-57.4	-1.7	-2.8	-1.0	0.0	0.0	21.4	0.0	0.0	0.0	21.4
Silo Filter C	Point	LAeq day			84.3	84.3		0.0	0.0	0	213.47	-57.6	-1.7	-3.6	-0.9	0.0	0.0	20.6	0.0	0.0	0.0	20.6
Silo Filter C	Point	LAeq night			84.3	84.3		0.0	0.0	0	213.47	-57.6	-1.7	-3.6	-0.9	0.0	0.0	20.6	0.0	0.0	0.0	20.6
Silo Filter C	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	213.47	-57.6	-1.7	-3.6	-0.9	0.0	0.0	20.6	0.0	0.0	0.0	20.6
Silo Filter E	Point	LAeq day			84.3	84.3		0.0	0.0	0	208.46	-57.4	-1.7	-2.7	-1.0	0.0	0.0	21.6	0.0	0.0	0.0	21.6
Silo Filter E	Point	LAeq night			84.3	84.3		0.0	0.0	0	208.46	-57.4	-1.7	-2.7	-1.0	0.0	0.0	21.6	0.0	0.0	0.0	21.6
Silo Filter E	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	208.46	-57.4	-1.7	-2.7	-1.0	0.0	0.0	21.6	0.0	0.0	0.0	21.6
Slumping uncovered 1	Point	LAeq day			109.6	109.6		0.0	0.0	0	171.19	-55.7	-1.5	-12.9	-0.6	0.0	3.8	42.7	0.0	-3.3	0.0	39.4
Slumping uncovered 1	Point	LAeq night			109.6	109.6		0.0	0.0	0	171.19	-55.7	-1.5	-12.9	-0.6	0.0	3.8	42.7	0.0	-9.3	0.0	33.3
Slumping uncovered 1	Point	LAeq 4am-7			109.6	109.6		0.0	0.0	0	171.19	-55.7	-1.5	-12.9	-0.6	0.0	3.8	42.7	0.0	-3.3	0.0	39.4
Slumping uncovered 2	Point	LAeq day			109.6	109.6		0.0	0.0	0	181.50	-56.2	-1.5	-13.2	-0.7	0.0	0.0	38.1	0.0	-3.3	0.0	34.8

North Maclean 23135

Mean propagation Leq - Concrete Plant_Open Slumping_SP Calculation

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Source	Source type	Time slice	Li	Rw	L'w	Lw	l or A	Kl	KT	DO	S	Adiv	Agr	Abar	Aatm	ADI	dLrefl	Ls	Cmet	dLw	ZR	Lr
			dB(A)	dB	dB(A)	dB(A)	m,m ²	dB	dB	dB	m	dB	dB	dB	dB	dB	dB(A)	dB(A)	dB	dB	dB	dB(A)
Slumping uncovered 2	Point	LAeq night			109.6	109.6		0.0	0.0	0	181.50	-56.2	-1.5	-13.2	-0.7	0.0	0.0	38.1	0.0	-9.3	0.0	28.7
Slumping uncovered 2	Point	LAeq 4am-7			109.6	109.6		0.0	0.0	0	181.50	-56.2	-1.5	-13.2	-0.7	0.0	0.0	38.1	0.0	-3.3	0.0	34.8
Truck Washout Main Plant	Point	LAeq day			103.0	103.0		0.0	0.0	0	228.73	-58.2	-2.6	-5.6	-0.7	0.0	0.0	35.9	0.0	-3.3	0.0	32.6
Truck Washout Main Plant	Point	LAeq night			103.0	103.0		0.0	0.0	0	228.73	-58.2	-2.6	-5.6	-0.7	0.0	0.0	35.9	0.0	-9.3	0.0	26.6
Truck Washout Main Plant	Point	LAeq 4am-7			103.0	103.0		0.0	0.0	0	228.73	-58.2	-2.6	-5.6	-0.7	0.0	0.0	35.9	0.0	-3.3	0.0	32.6
Unloading Bulk Cement	Point	LAeq day			106.0	106.0		0.0	0.0	0	211.09	-57.5	-1.6	-11.5	-1.2	0.0	0.0	34.1	0.0	-1.8	0.0	32.4
Unloading Bulk Cement	Point	LAeq night			106.0	106.0		0.0	0.0	0	211.09	-57.5	-1.6	-11.5	-1.2	0.0	0.0	34.1	0.0			
Unloading Bulk Cement	Point	LAeq 4am-7			106.0	106.0		0.0	0.0	0	211.09	-57.5	-1.6	-11.5	-1.2	0.0	0.0	34.1	0.0	-1.8	0.0	32.4
Receiver R6 FI GF LAeq 4am-7 41 dB(A) LAeq day 42 dB(A) LAeq night 37 dB(A) Lmax 45 dB(A)																						
Agg and Sand Trucks	Line	LAeq day			72.9	98.7	378.6	0.0	0.0	0	295.98	-60.4	-0.8	-4.7	-2.0	0.0	0.0	30.7	0.0	0.0	0.0	30.7
Agg and Sand Trucks	Line	LAeq night			72.9	98.7	378.6	0.0	0.0	0	295.98	-60.4	-0.8	-4.7	-2.0	0.0	0.0	30.7	0.0			
Agg and Sand Trucks	Line	LAeq 4am-7			72.9	98.7	378.6	0.0	0.0	0	295.98	-60.4	-0.8	-4.7	-2.0	0.0	0.0	30.7	0.0	-3.0	0.0	27.7
Agitator Trucks	Line	LAeq day			75.4	97.5	161.0	0.0	0.0	0	322.86	-61.2	-0.8	-4.9	-2.2	0.0	0.0	28.4	0.0	0.0	0.0	28.4
Agitator Trucks	Line	LAeq night			75.4	97.5	161.0	0.0	0.0	0	322.86	-61.2	-0.8	-4.9	-2.2	0.0	0.0	28.4	0.0	-6.0	0.0	22.4
Agitator Trucks	Line	LAeq 4am-7			75.4	97.5	161.0	0.0	0.0	0	322.86	-61.2	-0.8	-4.9	-2.2	0.0	0.0	28.4	0.0	0.0	0.0	28.4
Agitator Trucks	Line	LAeq day			75.4	95.0	90.3	0.0	0.0	0	318.89	-61.1	-0.8	-5.4	-2.1	0.0	0.0	25.6	0.0	0.0	0.0	25.6
Agitator Trucks	Line	LAeq night			75.4	95.0	90.3	0.0	0.0	0	318.89	-61.1	-0.8	-5.4	-2.1	0.0	0.0	25.6	0.0	-6.0	0.0	19.6
Agitator Trucks	Line	LAeq 4am-7			75.4	95.0	90.3	0.0	0.0	0	318.89	-61.1	-0.8	-5.4	-2.1	0.0	0.0	25.6	0.0	0.0	0.0	25.6
Batch Tunnel A_OptB-Batch Tunnel E	Area	LAeq day	90.3	28.0	62.8	79.5	47.2	0.0	0.0	3	300.74	-60.6	-2.1	-3.9	-1.0	0.0	0.0	15.0	0.0	0.0	0.0	15.0
Batch Tunnel A_OptB-Batch Tunnel E	Area	LAeq night	90.3	28.0	62.8	79.5	47.2	0.0	0.0	3	300.74	-60.6	-2.1	-3.9	-1.0	0.0	0.0	15.0	0.0	-6.0	0.0	8.9
Batch Tunnel A_OptB-Batch Tunnel E	Area	LAeq 4am-7	90.3	28.0	62.8	79.5	47.2	0.0	0.0	3	300.74	-60.6	-2.1	-3.9	-1.0	0.0	0.0	15.0	0.0	0.0	0.0	15.0
Batch Tunnel A_OptB-Batch Tunnel N	Area	LAeq day	86.0	28.0	58.3	63.8	3.6	0.0	0.0	3	303.89	-60.6	-1.7	-12.2	-0.7	0.0	0.0	-8.5	0.0	0.0	0.0	-8.5
Batch Tunnel A_OptB-Batch Tunnel N	Area	LAeq night	86.0	28.0	58.3	63.8	3.6	0.0	0.0	3	303.89	-60.6	-1.7	-12.2	-0.7	0.0	0.0	-8.5	0.0	-6.0	0.0	-14.6
Batch Tunnel A_OptB-Batch Tunnel N	Area	LAeq 4am-7	86.0	28.0	58.3	63.8	3.6	0.0	0.0	3	303.89	-60.6	-1.7	-12.2	-0.7	0.0	0.0	-8.5	0.0	0.0	0.0	-8.5
Batch Tunnel A_OptB-Batch Tunnel N Door	Area	LAeq day	88.9	21.0	65.2	76.9	14.8	0.0	0.0	3	303.88	-60.6	-4.5	-13.4	-0.3	0.0	0.0	1.1	0.0	0.0	0.0	1.1
Batch Tunnel A_OptB-Batch Tunnel N Door	Area	LAeq night	88.9	21.0	65.2	76.9	14.8	0.0	0.0	3	303.88	-60.6	-4.5	-13.4	-0.3	0.0	0.0	1.1	0.0	-6.0	0.0	-5.0
Batch Tunnel A_OptB-Batch Tunnel N Door	Area	LAeq 4am-7	88.9	21.0	65.2	76.9	14.8	0.0	0.0	3	303.88	-60.6	-4.5	-13.4	-0.3	0.0	0.0	1.1	0.0	0.0	0.0	1.1
Batch Tunnel A_OptB-Batch Tunnel Roof	Area	LAeq day	88.8	28.0	61.2	77.5	41.8	0.0	0.0	0	302.74	-60.6	-1.4	-3.6	-1.0	0.0	0.4	11.3	0.0	0.0	0.0	11.3
Batch Tunnel A_OptB-Batch Tunnel Roof	Area	LAeq night	88.8	28.0	61.2	77.5	41.8	0.0	0.0	0	302.74	-60.6	-1.4	-3.6	-1.0	0.0	0.4	11.3	0.0	-6.0	0.0	5.3
Batch Tunnel A_OptB-Batch Tunnel Roof	Area	LAeq 4am-7	88.8	28.0	61.2	77.5	41.8	0.0	0.0	0	302.74	-60.6	-1.4	-3.6	-1.0	0.0	0.4	11.3	0.0	0.0	0.0	11.3

MWA Environmental

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North Maclean 23135

Mean propagation Leq - Concrete Plant_Open Slumping_SP Calculation

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Source	Source type	Time slice	Li	Rw	L'w	Lw	l or A	Kl	KT	DO	S	Adiv	Agr	Abar	Aatm	ADI	dLrefl	Ls	Cmet	dLw	ZR	Lr
			dB(A)	dB	dB(A)	dB(A)	m,m²	dB	dB	dB	m	dB	dB	dB	dB	dB	dB(A)	dB(A)	dB	dB	dB	dB(A)
Batch Tunnel A_OptB-Batch Tunnel S	Area	LAeq day	86.4	28.0	58.7	68.2	8.9	0.0	0.0	3	301.81	-60.6	-2.2	-3.6	-0.9	0.0	0.0	3.9	0.0	0.0	0.0	3.9
Batch Tunnel A_OptB-Batch Tunnel S	Area	LAeq night	86.4	28.0	58.7	68.2	8.9	0.0	0.0	3	301.81	-60.6	-2.2	-3.6	-0.9	0.0	0.0	3.9	0.0	-6.0	0.0	-2.1
Batch Tunnel A_OptB-Batch Tunnel S	Area	LAeq 4am-7	86.4	28.0	58.7	68.2	8.9	0.0	0.0	3	301.81	-60.6	-2.2	-3.6	-0.9	0.0	0.0	3.9	0.0	0.0	0.0	3.9
Batch Tunnel A_OptB-Batch Tunnel S Door	Area	LAeq day	86.3	0.0	80.3	89.7	8.8	0.0	0.0	3	301.37	-60.6	-2.9	-5.2	-1.4	0.0	0.0	22.7	0.0	0.0	0.0	22.7
Batch Tunnel A_OptB-Batch Tunnel S Door	Area	LAeq night	86.3	0.0	80.3	89.7	8.8	0.0	0.0	3	301.37	-60.6	-2.9	-5.2	-1.4	0.0	0.0	22.7	0.0	-6.0	0.0	16.7
Batch Tunnel A_OptB-Batch Tunnel S Door	Area	LAeq 4am-7	86.3	0.0	80.3	89.7	8.8	0.0	0.0	3	301.37	-60.6	-2.9	-5.2	-1.4	0.0	0.0	22.7	0.0	0.0	0.0	22.7
Batch Tunnel A_OptB-Batch Tunnel W	Area	LAeq day	89.7	28.0	62.1	78.8	46.9	0.0	0.0	3	304.67	-60.7	-2.1	-17.6	-0.8	0.0	0.0	0.6	0.0	0.0	0.0	0.6
Batch Tunnel A_OptB-Batch Tunnel W	Area	LAeq night	89.7	28.0	62.1	78.8	46.9	0.0	0.0	3	304.67	-60.7	-2.1	-17.6	-0.8	0.0	0.0	0.6	0.0	-6.0	0.0	-5.4
Batch Tunnel A_OptB-Batch Tunnel W	Area	LAeq 4am-7	89.7	28.0	62.1	78.8	46.9	0.0	0.0	3	304.67	-60.7	-2.1	-17.6	-0.8	0.0	0.0	0.6	0.0	0.0	0.0	0.6
Cement Flyash Trucks	Line	LAeq day			66.9	92.5	366.5	0.0	0.0	0	294.55	-60.4	-0.8	-4.7	-2.0	0.0	0.0	24.6	0.0	-1.8	0.0	22.8
Cement Flyash Trucks	Line	LAeq night			66.9	92.5	366.5	0.0	0.0	0	294.55	-60.4	-0.8	-4.7	-2.0	0.0	0.0	24.6	0.0			
Cement Flyash Trucks	Line	LAeq 4am-7			66.9	92.5	366.5	0.0	0.0	0	294.55	-60.4	-0.8	-4.7	-2.0	0.0	0.0	24.6	0.0	-1.8	0.0	22.8
FEL	Area	LAeq day			70.5	103.3	1925.4	0.0	0.0	0	246.81	-58.8	-2.0	-4.0	-1.5	0.0	0.2	37.0	0.0	0.0	0.0	37.0
FEL	Area	LAeq night			70.5	103.3	1925.4	0.0	0.0	0	246.81	-58.8	-2.0	-4.0	-1.5	0.0	0.2	37.0	0.0	-3.0	0.0	34.0
FEL	Area	LAeq 4am-7			70.5	103.3	1925.4	0.0	0.0	0	246.81	-58.8	-2.0	-4.0	-1.5	0.0	0.2	37.0	0.0	-3.0	0.0	34.0
Silo Filter A	Point	LAeq day			84.3	84.3		0.0	0.0	0	307.33	-60.7	-1.7	-2.4	-1.4	0.0	0.0	18.1	0.0	0.0	0.0	18.1
Silo Filter A	Point	LAeq night			84.3	84.3		0.0	0.0	0	307.33	-60.7	-1.7	-2.4	-1.4	0.0	0.0	18.1	0.0	0.0	0.0	18.1
Silo Filter A	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	307.33	-60.7	-1.7	-2.4	-1.4	0.0	0.0	18.1	0.0	0.0	0.0	18.1
Silo Filter B	Point	LAeq day			84.3	84.3		0.0	0.0	0	305.99	-60.7	-1.7	-2.4	-1.4	0.0	0.0	18.1	0.0	0.0	0.0	18.1
Silo Filter B	Point	LAeq night			84.3	84.3		0.0	0.0	0	305.99	-60.7	-1.7	-2.4	-1.4	0.0	0.0	18.1	0.0	0.0	0.0	18.1
Silo Filter B	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	305.99	-60.7	-1.7	-2.4	-1.4	0.0	0.0	18.1	0.0	0.0	0.0	18.1
Silo Filter C	Point	LAeq day			84.3	84.3		0.0	0.0	0	302.32	-60.6	-1.7	-3.2	-1.3	0.0	0.0	17.5	0.0	0.0	0.0	17.5
Silo Filter C	Point	LAeq night			84.3	84.3		0.0	0.0	0	302.32	-60.6	-1.7	-3.2	-1.3	0.0	0.0	17.5	0.0	0.0	0.0	17.5
Silo Filter C	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	302.32	-60.6	-1.7	-3.2	-1.3	0.0	0.0	17.5	0.0	0.0	0.0	17.5
Silo Filter E	Point	LAeq day			84.3	84.3		0.0	0.0	0	301.01	-60.6	-1.7	-3.2	-1.3	0.0	0.0	17.5	0.0	0.0	0.0	17.5
Silo Filter E	Point	LAeq night			84.3	84.3		0.0	0.0	0	301.01	-60.6	-1.7	-3.2	-1.3	0.0	0.0	17.5	0.0	0.0	0.0	17.5
Silo Filter E	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	301.01	-60.6	-1.7	-3.2	-1.3	0.0	0.0	17.5	0.0	0.0	0.0	17.5
Slumping uncovered 1	Point	LAeq day			109.6	109.6		0.0	0.0	0	303.53	-60.6	-1.5	-7.1	-1.3	0.0	0.0	39.0	0.0	-3.3	0.0	35.7
Slumping uncovered 1	Point	LAeq night			109.6	109.6		0.0	0.0	0	303.53	-60.6	-1.5	-7.1	-1.3	0.0	0.0	39.0	0.0	-9.3	0.0	29.7
Slumping uncovered 1	Point	LAeq 4am-7			109.6	109.6		0.0	0.0	0	303.53	-60.6	-1.5	-7.1	-1.3	0.0	0.0	39.0	0.0	-3.3	0.0	35.7

North Maclean 23135

Mean propagation Leq - Concrete Plant_Open Slumping_SP Calculation

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Source	Source type	Time slice	Li	Rw	L'w	Lw	l or A	Kl	KT	DO	S	Adiv	Agr	Abar	Aatm	ADI	dLrefl	Ls	Cmet	dLw	ZR	Lr
			dB(A)	dB	dB(A)	dB(A)	m,m ²	dB	dB	dB	m	dB	dB	dB	dB	dB	dB(A)	dB(A)	dB	dB	dB	dB(A)
Slumping uncovered 2	Point	LAeq day			109.6	109.6		0.0	0.0	0	287.73	-60.2	-1.5	-12.4	-1.0	0.0	0.0	34.5	0.0	-3.3	0.0	31.2
Slumping uncovered 2	Point	LAeq night			109.6	109.6		0.0	0.0	0	287.73	-60.2	-1.5	-12.4	-1.0	0.0	0.0	34.5	0.0	-9.3	0.0	25.2
Slumping uncovered 2	Point	LAeq 4am-7			109.6	109.6		0.0	0.0	0	287.73	-60.2	-1.5	-12.4	-1.0	0.0	0.0	34.5	0.0	-3.3	0.0	31.2
Truck Washout Main Plant	Point	LAeq day			103.0	103.0		0.0	0.0	0	276.18	-59.8	-2.6	-3.5	-1.2	0.0	0.0	35.9	0.0	-3.3	0.0	32.6
Truck Washout Main Plant	Point	LAeq night			103.0	103.0		0.0	0.0	0	276.18	-59.8	-2.6	-3.5	-1.2	0.0	0.0	35.9	0.0	-9.3	0.0	26.6
Truck Washout Main Plant	Point	LAeq 4am-7			103.0	103.0		0.0	0.0	0	276.18	-59.8	-2.6	-3.5	-1.2	0.0	0.0	35.9	0.0	-3.3	0.0	32.6
Unloading Bulk Cement	Point	LAeq day			106.0	106.0		0.0	0.0	0	308.45	-60.8	-1.7	-20.6	-1.3	0.0	0.0	21.6	0.0	-1.8	0.0	19.9
Unloading Bulk Cement	Point	LAeq night			106.0	106.0		0.0	0.0	0	308.45	-60.8	-1.7	-20.6	-1.3	0.0	0.0	21.6	0.0			
Unloading Bulk Cement	Point	LAeq 4am-7			106.0	106.0		0.0	0.0	0	308.45	-60.8	-1.7	-20.6	-1.3	0.0	0.0	21.6	0.0	-1.8	0.0	19.9
Receiver R7 FI GF LAeq 4am-7 43 dB(A) LAeq day 44 dB(A) LAeq night 39 dB(A) Lmax 48 dB(A)																						
Agg and Sand Trucks	Line	LAeq day			72.9	98.7	378.6	0.0	0.0	0	247.74	-58.9	-0.8	-3.2	-1.8	0.0	0.1	34.0	0.0	0.0	0.0	34.0
Agg and Sand Trucks	Line	LAeq night			72.9	98.7	378.6	0.0	0.0	0	247.74	-58.9	-0.8	-3.2	-1.8	0.0	0.1	34.0	0.0			
Agg and Sand Trucks	Line	LAeq 4am-7			72.9	98.7	378.6	0.0	0.0	0	247.74	-58.9	-0.8	-3.2	-1.8	0.0	0.1	34.0	0.0	-3.0	0.0	31.0
Agitator Trucks	Line	LAeq day			75.4	97.5	161.0	0.0	0.0	0	279.93	-59.9	-0.8	-4.5	-2.0	0.0	0.0	30.3	0.0	0.0	0.0	30.3
Agitator Trucks	Line	LAeq night			75.4	97.5	161.0	0.0	0.0	0	279.93	-59.9	-0.8	-4.5	-2.0	0.0	0.0	30.3	0.0	-6.0	0.0	24.2
Agitator Trucks	Line	LAeq 4am-7			75.4	97.5	161.0	0.0	0.0	0	279.93	-59.9	-0.8	-4.5	-2.0	0.0	0.0	30.3	0.0	0.0	0.0	30.3
Agitator Trucks	Line	LAeq day			75.4	95.0	90.3	0.0	0.0	0	284.61	-60.1	-0.8	-5.2	-1.8	0.0	0.1	27.1	0.0	0.0	0.0	27.1
Agitator Trucks	Line	LAeq night			75.4	95.0	90.3	0.0	0.0	0	284.61	-60.1	-0.8	-5.2	-1.8	0.0	0.1	27.1	0.0	-6.0	0.0	21.1
Agitator Trucks	Line	LAeq 4am-7			75.4	95.0	90.3	0.0	0.0	0	284.61	-60.1	-0.8	-5.2	-1.8	0.0	0.1	27.1	0.0	0.0	0.0	27.1
Batch Tunnel A_OptB-Batch Tunnel E	Area	LAeq day	90.3	28.0	62.8	79.5	47.2	0.0	0.0	3	256.42	-59.2	-2.1	-3.4	-0.9	0.0	0.0	17.0	0.0	0.0	0.0	17.0
Batch Tunnel A_OptB-Batch Tunnel E	Area	LAeq night	90.3	28.0	62.8	79.5	47.2	0.0	0.0	3	256.42	-59.2	-2.1	-3.4	-0.9	0.0	0.0	17.0	0.0	-6.0	0.0	11.0
Batch Tunnel A_OptB-Batch Tunnel E	Area	LAeq 4am-7	90.3	28.0	62.8	79.5	47.2	0.0	0.0	3	256.42	-59.2	-2.1	-3.4	-0.9	0.0	0.0	17.0	0.0	0.0	0.0	17.0
Batch Tunnel A_OptB-Batch Tunnel N	Area	LAeq day	86.0	28.0	58.3	63.8	3.6	0.0	0.0	3	258.09	-59.2	-1.7	-3.6	-0.8	0.0	0.0	1.5	0.0	0.0	0.0	1.5
Batch Tunnel A_OptB-Batch Tunnel N	Area	LAeq night	86.0	28.0	58.3	63.8	3.6	0.0	0.0	3	258.09	-59.2	-1.7	-3.6	-0.8	0.0	0.0	1.5	0.0	-6.0	0.0	-4.5
Batch Tunnel A_OptB-Batch Tunnel N	Area	LAeq 4am-7	86.0	28.0	58.3	63.8	3.6	0.0	0.0	3	258.09	-59.2	-1.7	-3.6	-0.8	0.0	0.0	1.5	0.0	0.0	0.0	1.5
Batch Tunnel A_OptB-Batch Tunnel N Door	Area	LAeq day	88.9	21.0	65.2	76.9	14.8	0.0	0.0	3	258.09	-59.2	-4.2	-2.4	-0.6	0.0	0.0	13.4	0.0	0.0	0.0	13.4
Batch Tunnel A_OptB-Batch Tunnel N Door	Area	LAeq night	88.9	21.0	65.2	76.9	14.8	0.0	0.0	3	258.09	-59.2	-4.2	-2.4	-0.6	0.0	0.0	13.4	0.0	-6.0	0.0	7.4
Batch Tunnel A_OptB-Batch Tunnel N Door	Area	LAeq 4am-7	88.9	21.0	65.2	76.9	14.8	0.0	0.0	3	258.09	-59.2	-4.2	-2.4	-0.6	0.0	0.0	13.4	0.0	0.0	0.0	13.4
Batch Tunnel A_OptB-Batch Tunnel Roof	Area	LAeq day	88.8	28.0	61.2	77.5	41.8	0.0	0.0	0	258.44	-59.2	-1.4	-3.7	-0.8	0.0	0.4	12.7	0.0	0.0	0.0	12.7
Batch Tunnel A_OptB-Batch Tunnel Roof	Area	LAeq night	88.8	28.0	61.2	77.5	41.8	0.0	0.0	0	258.44	-59.2	-1.4	-3.7	-0.8	0.0	0.4	12.7	0.0	-6.0	0.0	6.7

MWA Environmental

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North Maclean 23135

Mean propagation Leq - Concrete Plant_Open Slumping_SP Calculation

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Source	Source type	Time slice	Li	Rw	L'w	Lw	l or A	Kl	KT	DO	S	Adiv	Agr	Abar	Aatm	ADI	dLrefl	Ls	Cmet	dLw	ZR	Lr
			dB(A)	dB	dB(A)	dB(A)	m,m²	dB	dB	dB	m	dB	dB	dB	dB	dB	dB(A)	dB(A)	dB	dB	dB	dB(A)
Batch Tunnel A_OptB-Batch Tunnel Roof	Area	LAeq 4am-7	88.8	28.0	61.2	77.5	41.8	0.0	0.0	0	258.44	-59.2	-1.4	-3.7	-0.8	0.0	0.4	12.7	0.0	0.0	0.0	12.7
Batch Tunnel A_OptB-Batch Tunnel S	Area	LAeq day	86.4	28.0	58.7	68.2	8.9	0.0	0.0	3	259.05	-59.3	-2.2	-13.9	-0.6	0.0	0.0	-4.8	0.0	0.0	0.0	-4.8
Batch Tunnel A_OptB-Batch Tunnel S	Area	LAeq night	86.4	28.0	58.7	68.2	8.9	0.0	0.0	3	259.05	-59.3	-2.2	-13.9	-0.6	0.0	0.0	-4.8	0.0	-6.0	0.0	-10.8
Batch Tunnel A_OptB-Batch Tunnel S	Area	LAeq 4am-7	86.4	28.0	58.7	68.2	8.9	0.0	0.0	3	259.05	-59.3	-2.2	-13.9	-0.6	0.0	0.0	-4.8	0.0	0.0	0.0	-4.8
Batch Tunnel A_OptB-Batch Tunnel S Door	Area	LAeq day	86.3	0.0	80.3	89.7	8.8	0.0	0.0	3	258.60	-59.2	-2.9	-19.7	-0.8	0.0	0.1	10.1	0.0	0.0	0.0	10.1
Batch Tunnel A_OptB-Batch Tunnel S Door	Area	LAeq night	86.3	0.0	80.3	89.7	8.8	0.0	0.0	3	258.60	-59.2	-2.9	-19.7	-0.8	0.0	0.1	10.1	0.0	-6.0	0.0	4.1
Batch Tunnel A_OptB-Batch Tunnel S Door	Area	LAeq 4am-7	86.3	0.0	80.3	89.7	8.8	0.0	0.0	3	258.60	-59.2	-2.9	-19.7	-0.8	0.0	0.1	10.1	0.0	0.0	0.0	10.1
Batch Tunnel A_OptB-Batch Tunnel W	Area	LAeq day	89.7	28.0	62.1	78.8	46.9	0.0	0.0	3	260.43	-59.3	-2.1	-17.8	-0.7	0.0	0.0	1.9	0.0	0.0	0.0	1.9
Batch Tunnel A_OptB-Batch Tunnel W	Area	LAeq night	89.7	28.0	62.1	78.8	46.9	0.0	0.0	3	260.43	-59.3	-2.1	-17.8	-0.7	0.0	0.0	1.9	0.0	-6.0	0.0	-4.1
Batch Tunnel A_OptB-Batch Tunnel W	Area	LAeq 4am-7	89.7	28.0	62.1	78.8	46.9	0.0	0.0	3	260.43	-59.3	-2.1	-17.8	-0.7	0.0	0.0	1.9	0.0	0.0	0.0	1.9
Cement Flyash Trucks	Line	LAeq day			66.9	92.5	366.5	0.0	0.0	0	245.73	-58.8	-0.8	-3.3	-1.8	0.0	0.1	27.9	0.0	-1.8	0.0	26.1
Cement Flyash Trucks	Line	LAeq night			66.9	92.5	366.5	0.0	0.0	0	245.73	-58.8	-0.8	-3.3	-1.8	0.0	0.1	27.9	0.0			
Cement Flyash Trucks	Line	LAeq 4am-7			66.9	92.5	366.5	0.0	0.0	0	245.73	-58.8	-0.8	-3.3	-1.8	0.0	0.1	27.9	0.0	-1.8	0.0	26.1
FEL	Area	LAeq day			70.5	103.3	1925.4	0.0	0.0	0	197.20	-56.9	-2.0	-4.1	-1.3	0.0	0.1	39.1	0.0	0.0	0.0	39.1
FEL	Area	LAeq night			70.5	103.3	1925.4	0.0	0.0	0	197.20	-56.9	-2.0	-4.1	-1.3	0.0	0.1	39.1	0.0	-3.0	0.0	36.1
FEL	Area	LAeq 4am-7			70.5	103.3	1925.4	0.0	0.0	0	197.20	-56.9	-2.0	-4.1	-1.3	0.0	0.1	39.1	0.0	-3.0	0.0	36.1
Silo Filter A	Point	LAeq day			84.3	84.3		0.0	0.0	0	262.51	-59.4	-1.7	-3.0	-1.1	0.0	0.0	19.1	0.0	0.0	0.0	19.1
Silo Filter A	Point	LAeq night			84.3	84.3		0.0	0.0	0	262.51	-59.4	-1.7	-3.0	-1.1	0.0	0.0	19.1	0.0	0.0	0.0	19.1
Silo Filter A	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	262.51	-59.4	-1.7	-3.0	-1.1	0.0	0.0	19.1	0.0	0.0	0.0	19.1
Silo Filter B	Point	LAeq day			84.3	84.3		0.0	0.0	0	262.67	-59.4	-1.7	-3.0	-1.1	0.0	0.0	19.1	0.0	0.0	0.0	19.1
Silo Filter B	Point	LAeq night			84.3	84.3		0.0	0.0	0	262.67	-59.4	-1.7	-3.0	-1.1	0.0	0.0	19.1	0.0	0.0	0.0	19.1
Silo Filter B	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	262.67	-59.4	-1.7	-3.0	-1.1	0.0	0.0	19.1	0.0	0.0	0.0	19.1
Silo Filter C	Point	LAeq day			84.3	84.3		0.0	0.0	0	257.43	-59.2	-1.7	-2.5	-1.2	0.0	0.0	19.7	0.0	0.0	0.0	19.7
Silo Filter C	Point	LAeq night			84.3	84.3		0.0	0.0	0	257.43	-59.2	-1.7	-2.5	-1.2	0.0	0.0	19.7	0.0	0.0	0.0	19.7
Silo Filter C	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	257.43	-59.2	-1.7	-2.5	-1.2	0.0	0.0	19.7	0.0	0.0	0.0	19.7
Silo Filter E	Point	LAeq day			84.3	84.3		0.0	0.0	0	257.59	-59.2	-1.7	-2.4	-1.2	0.0	0.0	19.9	0.0	0.0	0.0	19.9
Silo Filter E	Point	LAeq night			84.3	84.3		0.0	0.0	0	257.59	-59.2	-1.7	-2.4	-1.2	0.0	0.0	19.9	0.0	0.0	0.0	19.9
Silo Filter E	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	257.59	-59.2	-1.7	-2.4	-1.2	0.0	0.0	19.9	0.0	0.0	0.0	19.9
Slumping uncovered 1	Point	LAeq day			109.6	109.6		0.0	0.0	0	271.73	-59.7	-1.5	-9.3	-1.0	0.0	0.1	38.1	0.0	-3.3	0.0	34.8
Slumping uncovered 1	Point	LAeq night			109.6	109.6		0.0	0.0	0	271.73	-59.7	-1.5	-9.3	-1.0	0.0	0.1	38.1	0.0	-9.3	0.0	28.8

North Maclean 23135

Mean propagation Leq - Concrete Plant_Open Slumping_SP Calculation

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Source	Source type	Time slice	Li	Rw	L'w	Lw	l or A	Kl	KT	DO	S	Adiv	Agr	Abar	Aatm	ADI	dLrefl	Ls	Cmet	dLw	ZR	Lr
			dB(A)	dB	dB(A)	dB(A)	m,m ²	dB	dB	dB	m	dB	dB	dB	dB	dB	dB(A)	dB(A)	dB	dB	dB	dB(A)
Slumping uncovered 1	Point	LAeq 4am-7			109.6	109.6		0.0	0.0	0	271.73	-59.7	-1.5	-9.3	-1.0	0.0	0.1	38.1	0.0	-3.3	0.0	34.8
Slumping uncovered 2	Point	LAeq day			109.6	109.6		0.0	0.0	0	251.40	-59.0	-1.5	-7.4	-1.1	0.0	0.0	40.7	0.0	-3.3	0.0	37.4
Slumping uncovered 2	Point	LAeq night			109.6	109.6		0.0	0.0	0	251.40	-59.0	-1.5	-7.4	-1.1	0.0	0.0	40.7	0.0	-9.3	0.0	31.3
Slumping uncovered 2	Point	LAeq 4am-7			109.6	109.6		0.0	0.0	0	251.40	-59.0	-1.5	-7.4	-1.1	0.0	0.0	40.7	0.0	-3.3	0.0	37.4
Truck Washout Main Plant	Point	LAeq day			103.0	103.0		0.0	0.0	0	223.47	-58.0	-2.6	-3.7	-1.0	0.0	0.0	37.8	0.0	-3.3	0.0	34.5
Truck Washout Main Plant	Point	LAeq night			103.0	103.0		0.0	0.0	0	223.47	-58.0	-2.6	-3.7	-1.0	0.0	0.0	37.8	0.0	-9.3	0.0	28.5
Truck Washout Main Plant	Point	LAeq 4am-7			103.0	103.0		0.0	0.0	0	223.47	-58.0	-2.6	-3.7	-1.0	0.0	0.0	37.8	0.0	-3.3	0.0	34.5
Unloading Bulk Cement	Point	LAeq day			106.0	106.0		0.0	0.0	0	264.31	-59.4	-1.7	-20.7	-1.2	0.0	0.0	22.9	0.0	-1.8	0.0	21.1
Unloading Bulk Cement	Point	LAeq night			106.0	106.0		0.0	0.0	0	264.31	-59.4	-1.7	-20.7	-1.2	0.0	0.0	22.9	0.0			
Unloading Bulk Cement	Point	LAeq 4am-7			106.0	106.0		0.0	0.0	0	264.31	-59.4	-1.7	-20.7	-1.2	0.0	0.0	22.9	0.0	-1.8	0.0	21.1
Receiver R8 FI GF LAeq 4am-7 40 dB(A) LAeq day 41 dB(A) LAeq night 36 dB(A) Lmax 45 dB(A)																						
Agg and Sand Trucks	Line	LAeq day			72.9	98.7	378.6	0.0	0.0	0	399.51	-63.0	-0.8	-1.5	-2.9	0.0	0.4	30.9	0.0	0.0	0.0	30.9
Agg and Sand Trucks	Line	LAeq night			72.9	98.7	378.6	0.0	0.0	0	399.51	-63.0	-0.8	-1.5	-2.9	0.0	0.4	30.9	0.0			
Agg and Sand Trucks	Line	LAeq 4am-7			72.9	98.7	378.6	0.0	0.0	0	399.51	-63.0	-0.8	-1.5	-2.9	0.0	0.4	30.9	0.0	-3.0	0.0	27.8
Agitator Trucks	Line	LAeq day			75.4	97.5	161.0	0.0	0.0	0	424.17	-63.5	-0.8	-1.3	-3.0	0.0	0.3	29.1	0.0	0.0	0.0	29.1
Agitator Trucks	Line	LAeq night			75.4	97.5	161.0	0.0	0.0	0	424.17	-63.5	-0.8	-1.3	-3.0	0.0	0.3	29.1	0.0	-6.0	0.0	23.1
Agitator Trucks	Line	LAeq 4am-7			75.4	97.5	161.0	0.0	0.0	0	424.17	-63.5	-0.8	-1.3	-3.0	0.0	0.3	29.1	0.0	0.0	0.0	29.1
Agitator Trucks	Line	LAeq day			75.4	95.0	90.3	0.0	0.0	0	447.39	-64.0	-0.8	-3.7	-2.9	0.0	0.9	24.4	0.0	0.0	0.0	24.4
Agitator Trucks	Line	LAeq night			75.4	95.0	90.3	0.0	0.0	0	447.39	-64.0	-0.8	-3.7	-2.9	0.0	0.9	24.4	0.0	-6.0	0.0	18.4
Agitator Trucks	Line	LAeq 4am-7			75.4	95.0	90.3	0.0	0.0	0	447.39	-64.0	-0.8	-3.7	-2.9	0.0	0.9	24.4	0.0	0.0	0.0	24.4
Batch Tunnel A_OptB-Batch Tunnel E	Area	LAeq day	90.3	28.0	62.8	79.5	47.2	0.0	0.0	3	404.30	-63.1	-1.9	-1.5	-1.4	0.0	0.0	14.6	0.0	0.0	0.0	14.6
Batch Tunnel A_OptB-Batch Tunnel E	Area	LAeq night	90.3	28.0	62.8	79.5	47.2	0.0	0.0	3	404.30	-63.1	-1.9	-1.5	-1.4	0.0	0.0	14.6	0.0	-6.0	0.0	8.5
Batch Tunnel A_OptB-Batch Tunnel E	Area	LAeq 4am-7	90.3	28.0	62.8	79.5	47.2	0.0	0.0	3	404.30	-63.1	-1.9	-1.5	-1.4	0.0	0.0	14.6	0.0	0.0	0.0	14.6
Batch Tunnel A_OptB-Batch Tunnel N	Area	LAeq day	86.0	28.0	58.3	63.8	3.6	0.0	0.0	3	401.99	-63.1	-1.8	-0.8	-1.4	0.0	0.0	-0.2	0.0	0.0	0.0	-0.2
Batch Tunnel A_OptB-Batch Tunnel N	Area	LAeq night	86.0	28.0	58.3	63.8	3.6	0.0	0.0	3	401.99	-63.1	-1.8	-0.8	-1.4	0.0	0.0	-0.2	0.0	-6.0	0.0	-6.3
Batch Tunnel A_OptB-Batch Tunnel N	Area	LAeq 4am-7	86.0	28.0	58.3	63.8	3.6	0.0	0.0	3	401.99	-63.1	-1.8	-0.8	-1.4	0.0	0.0	-0.2	0.0	0.0	0.0	-0.2
Batch Tunnel A_OptB-Batch Tunnel N Door	Area	LAeq day	88.9	21.0	65.2	76.9	14.8	0.0	0.0	3	401.99	-63.1	-5.0	-0.7	-1.3	0.0	0.0	9.9	0.0	0.0	0.0	9.9
Batch Tunnel A_OptB-Batch Tunnel N Door	Area	LAeq night	88.9	21.0	65.2	76.9	14.8	0.0	0.0	3	401.99	-63.1	-5.0	-0.7	-1.3	0.0	0.0	9.9	0.0	-6.0	0.0	3.9
Batch Tunnel A_OptB-Batch Tunnel N Door	Area	LAeq 4am-7	88.9	21.0	65.2	76.9	14.8	0.0	0.0	3	401.99	-63.1	-5.0	-0.7	-1.3	0.0	0.0	9.9	0.0	0.0	0.0	9.9
Batch Tunnel A_OptB-Batch Tunnel Roof	Area	LAeq day	88.8	28.0	61.2	77.5	41.8	0.0	0.0	0	405.68	-63.2	-1.4	-3.6	-1.3	0.0	0.4	8.4	0.0	0.0	0.0	8.4

North Maclean 23135

Mean propagation Leq - Concrete Plant_Open Slumping_SP Calculation

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Source	Source type	Time slice	Li	Rw	L'w	Lw	l or A	Kl	KT	DO	S	Adiv	Agr	Abar	Aatm	ADI	dLrefl	Ls	Cmet	dLw	ZR	Lr
			dB(A)	dB	dB(A)	dB(A)	m,m²	dB	dB	dB	m	dB	dB	dB	dB	dB	dB(A)	dB(A)	dB	dB	dB	dB(A)
Batch Tunnel A_OptB-Batch Tunnel Roof	Area	LAeq night	88.8	28.0	61.2	77.5	41.8	0.0	0.0	0	405.68	-63.2	-1.4	-3.6	-1.3	0.0	0.4	8.4	0.0	-6.0	0.0	2.4
Batch Tunnel A_OptB-Batch Tunnel Roof	Area	LAeq 4am-7	88.8	28.0	61.2	77.5	41.8	0.0	0.0	0	405.68	-63.2	-1.4	-3.6	-1.3	0.0	0.4	8.4	0.0	0.0	0.0	8.4
Batch Tunnel A_OptB-Batch Tunnel S	Area	LAeq day	86.4	28.0	58.7	68.2	8.9	0.0	0.0	3	409.60	-63.2	-2.3	-11.1	-0.9	0.0	0.0	-6.4	0.0	0.0	0.0	-6.4
Batch Tunnel A_OptB-Batch Tunnel S	Area	LAeq night	86.4	28.0	58.7	68.2	8.9	0.0	0.0	3	409.60	-63.2	-2.3	-11.1	-0.9	0.0	0.0	-6.4	0.0	-6.0	0.0	-12.4
Batch Tunnel A_OptB-Batch Tunnel S	Area	LAeq 4am-7	86.4	28.0	58.7	68.2	8.9	0.0	0.0	3	409.60	-63.2	-2.3	-11.1	-0.9	0.0	0.0	-6.4	0.0	0.0	0.0	-6.4
Batch Tunnel A_OptB-Batch Tunnel S Door	Area	LAeq day	86.3	0.0	80.3	89.7	8.8	0.0	0.0	3	409.32	-63.2	-3.0	-15.8	-0.9	0.0	0.0	9.7	0.0	0.0	0.0	9.7
Batch Tunnel A_OptB-Batch Tunnel S Door	Area	LAeq night	86.3	0.0	80.3	89.7	8.8	0.0	0.0	3	409.32	-63.2	-3.0	-15.8	-0.9	0.0	0.0	9.7	0.0	-6.0	0.0	3.7
Batch Tunnel A_OptB-Batch Tunnel S Door	Area	LAeq 4am-7	86.3	0.0	80.3	89.7	8.8	0.0	0.0	3	409.32	-63.2	-3.0	-15.8	-0.9	0.0	0.0	9.7	0.0	0.0	0.0	9.7
Batch Tunnel A_OptB-Batch Tunnel W	Area	LAeq day	89.7	28.0	62.1	78.8	46.9	0.0	0.0	3	407.11	-63.2	-2.2	-13.0	-1.1	0.0	0.0	2.3	0.0	0.0	0.0	2.3
Batch Tunnel A_OptB-Batch Tunnel W	Area	LAeq night	89.7	28.0	62.1	78.8	46.9	0.0	0.0	3	407.11	-63.2	-2.2	-13.0	-1.1	0.0	0.0	2.3	0.0	-6.0	0.0	-3.7
Batch Tunnel A_OptB-Batch Tunnel W	Area	LAeq 4am-7	89.7	28.0	62.1	78.8	46.9	0.0	0.0	3	407.11	-63.2	-2.2	-13.0	-1.1	0.0	0.0	2.3	0.0	0.0	0.0	2.3
Cement Flyash Trucks	Line	LAeq day			66.9	92.5	366.5	0.0	0.0	0	399.24	-63.0	-0.8	-1.7	-2.9	0.0	0.5	24.6	0.0	-1.8	0.0	22.8
Cement Flyash Trucks	Line	LAeq night			66.9	92.5	366.5	0.0	0.0	0	399.24	-63.0	-0.8	-1.7	-2.9	0.0	0.5	24.6	0.0			
Cement Flyash Trucks	Line	LAeq 4am-7			66.9	92.5	366.5	0.0	0.0	0	399.24	-63.0	-0.8	-1.7	-2.9	0.0	0.5	24.6	0.0	-1.8	0.0	22.8
FEL	Area	LAeq day			70.5	103.3	1925.4	0.0	0.0	0	357.28	-62.1	-2.0	-2.6	-2.2	0.0	0.3	34.7	0.0	0.0	0.0	34.7
FEL	Area	LAeq night			70.5	103.3	1925.4	0.0	0.0	0	357.28	-62.1	-2.0	-2.6	-2.2	0.0	0.3	34.7	0.0	-3.0	0.0	31.7
FEL	Area	LAeq 4am-7			70.5	103.3	1925.4	0.0	0.0	0	357.28	-62.1	-2.0	-2.6	-2.2	0.0	0.3	34.7	0.0	-3.0	0.0	31.7
Silo Filter A	Point	LAeq day			84.3	84.3		0.0	0.0	0	406.44	-63.2	-1.7	-3.0	-1.8	0.0	0.0	14.6	0.0	0.0	0.0	14.6
Silo Filter A	Point	LAeq night			84.3	84.3		0.0	0.0	0	406.44	-63.2	-1.7	-3.0	-1.8	0.0	0.0	14.6	0.0	0.0	0.0	14.6
Silo Filter A	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	406.44	-63.2	-1.7	-3.0	-1.8	0.0	0.0	14.6	0.0	0.0	0.0	14.6
Silo Filter B	Point	LAeq day			84.3	84.3		0.0	0.0	0	410.04	-63.2	-1.7	-2.6	-1.7	0.0	0.0	15.0	0.0	0.0	0.0	15.0
Silo Filter B	Point	LAeq night			84.3	84.3		0.0	0.0	0	410.04	-63.2	-1.7	-2.6	-1.7	0.0	0.0	15.0	0.0	0.0	0.0	15.0
Silo Filter B	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	410.04	-63.2	-1.7	-2.6	-1.7	0.0	0.0	15.0	0.0	0.0	0.0	15.0
Silo Filter C	Point	LAeq day			84.3	84.3		0.0	0.0	0	402.94	-63.1	-1.7	-3.1	-1.7	0.0	0.0	14.7	0.0	0.0	0.0	14.7
Silo Filter C	Point	LAeq night			84.3	84.3		0.0	0.0	0	402.94	-63.1	-1.7	-3.1	-1.7	0.0	0.0	14.7	0.0	0.0	0.0	14.7
Silo Filter C	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	402.94	-63.1	-1.7	-3.1	-1.7	0.0	0.0	14.7	0.0	0.0	0.0	14.7
Silo Filter E	Point	LAeq day			84.3	84.3		0.0	0.0	0	406.47	-63.2	-1.7	-3.1	-1.7	0.0	0.0	14.6	0.0	0.0	0.0	14.6
Silo Filter E	Point	LAeq night			84.3	84.3		0.0	0.0	0	406.47	-63.2	-1.7	-3.1	-1.7	0.0	0.0	14.6	0.0	0.0	0.0	14.6
Silo Filter E	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	406.47	-63.2	-1.7	-3.1	-1.7	0.0	0.0	14.6	0.0	0.0	0.0	14.6
Slumping uncovered 1	Point	LAeq day			109.6	109.6		0.0	0.0	0	441.46	-63.9	-1.5	-5.1	-2.1	0.0	0.0	36.9	0.0	-3.3	0.0	33.6

MWA Environmental

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North Maclean 23135

Mean propagation Leq - Concrete Plant_Open Slumping_SP Calculation

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Source	Source type	Time slice	Li	Rw	L'w	Lw	l or A	Kl	KT	DO	S	Adiv	Agr	Abar	Aatm	ADI	dLrefl	Ls	Cmet	dLw	ZR	Lr
			dB(A)	dB	dB(A)	dB(A)	m,m ²	dB	dB	dB	m	dB	dB	dB	dB	dB	dB(A)	dB(A)	dB	dB	dB	dB(A)
Slumping uncovered 1	Point	LAeq night			109.6	109.6		0.0	0.0	0	441.46	-63.9	-1.5	-5.1	-2.1	0.0	0.0	36.9	0.0	-9.3	0.0	27.6
Slumping uncovered 1	Point	LAeq 4am-7			109.6	109.6		0.0	0.0	0	441.46	-63.9	-1.5	-5.1	-2.1	0.0	0.0	36.9	0.0	-3.3	0.0	33.6
Slumping uncovered 2	Point	LAeq day			109.6	109.6		0.0	0.0	0	418.22	-63.4	-1.5	-2.9	-2.9	0.0	0.0	38.9	0.0	-3.3	0.0	35.6
Slumping uncovered 2	Point	LAeq night			109.6	109.6		0.0	0.0	0	418.22	-63.4	-1.5	-2.9	-2.9	0.0	0.0	38.9	0.0	-9.3	0.0	29.6
Slumping uncovered 2	Point	LAeq 4am-7			109.6	109.6		0.0	0.0	0	418.22	-63.4	-1.5	-2.9	-2.9	0.0	0.0	38.9	0.0	-3.3	0.0	35.6
Truck Washout Main Plant	Point	LAeq day			103.0	103.0		0.0	0.0	0	364.46	-62.2	-2.6	-3.7	-1.5	0.0	0.0	33.1	0.0	-3.3	0.0	29.8
Truck Washout Main Plant	Point	LAeq night			103.0	103.0		0.0	0.0	0	364.46	-62.2	-2.6	-3.7	-1.5	0.0	0.0	33.1	0.0	-9.3	0.0	23.8
Truck Washout Main Plant	Point	LAeq 4am-7			103.0	103.0		0.0	0.0	0	364.46	-62.2	-2.6	-3.7	-1.5	0.0	0.0	33.1	0.0	-3.3	0.0	29.8
Unloading Bulk Cement	Point	LAeq day			106.0	106.0		0.0	0.0	0	409.92	-63.2	-1.7	-9.7	-2.8	0.0	0.0	28.6	0.0	-1.8	0.0	26.8
Unloading Bulk Cement	Point	LAeq night			106.0	106.0		0.0	0.0	0	409.92	-63.2	-1.7	-9.7	-2.8	0.0	0.0	28.6	0.0			
Unloading Bulk Cement	Point	LAeq 4am-7			106.0	106.0		0.0	0.0	0	409.92	-63.2	-1.7	-9.7	-2.8	0.0	0.0	28.6	0.0	-1.8	0.0	26.8
Receiver R9 FI GF LAeq 4am-7 42 dB(A) LAeq day 42 dB(A) LAeq night 37 dB(A) Lmax 47 dB(A)																						
Agg and Sand Trucks	Line	LAeq day			72.9	98.7	378.6	0.0	0.0	0	385.14	-62.7	-0.8	-0.2	-3.0	0.0	0.8	29.0	0.0	0.0	0.0	29.0
Agg and Sand Trucks	Line	LAeq night			72.9	98.7	378.6	0.0	0.0	0	385.14	-62.7	-0.8	-0.2	-3.0	0.0	0.8	29.0	0.0			
Agg and Sand Trucks	Line	LAeq 4am-7			72.9	98.7	378.6	0.0	0.0	0	385.14	-62.7	-0.8	-0.2	-3.0	0.0	0.8	29.0	0.0	-3.0	0.0	25.9
Agitator Trucks	Line	LAeq day			75.4	97.5	161.0	0.0	0.0	0	394.25	-62.9	-0.8	-0.1	-3.0	0.0	0.6	26.7	0.0	0.0	0.0	26.7
Agitator Trucks	Line	LAeq night			75.4	97.5	161.0	0.0	0.0	0	394.25	-62.9	-0.8	-0.1	-3.0	0.0	0.6	26.7	0.0	-6.0	0.0	20.6
Agitator Trucks	Line	LAeq 4am-7			75.4	97.5	161.0	0.0	0.0	0	394.25	-62.9	-0.8	-0.1	-3.0	0.0	0.6	26.7	0.0	0.0	0.0	26.7
Agitator Trucks	Line	LAeq day			75.4	95.0	90.3	0.0	0.0	0	425.97	-63.6	-0.8	-0.9	-3.2	0.0	1.5	26.8	0.0	0.0	0.0	26.8
Agitator Trucks	Line	LAeq night			75.4	95.0	90.3	0.0	0.0	0	425.97	-63.6	-0.8	-0.9	-3.2	0.0	1.5	26.8	0.0	-6.0	0.0	20.8
Agitator Trucks	Line	LAeq 4am-7			75.4	95.0	90.3	0.0	0.0	0	425.97	-63.6	-0.8	-0.9	-3.2	0.0	1.5	26.8	0.0	0.0	0.0	26.8
Batch Tunnel A_OptB-Batch Tunnel E	Area	LAeq day	90.3	28.0	62.8	79.5	47.2	0.0	0.0	3	384.92	-62.7	-1.8	0.0	-1.4	0.0	0.0	16.5	0.0	0.0	0.0	16.5
Batch Tunnel A_OptB-Batch Tunnel E	Area	LAeq night	90.3	28.0	62.8	79.5	47.2	0.0	0.0	3	384.92	-62.7	-1.8	0.0	-1.4	0.0	0.0	16.5	0.0	-6.0	0.0	10.4
Batch Tunnel A_OptB-Batch Tunnel E	Area	LAeq 4am-7	90.3	28.0	62.8	79.5	47.2	0.0	0.0	3	384.92	-62.7	-1.8	0.0	-1.4	0.0	0.0	16.5	0.0	0.0	0.0	16.5
Batch Tunnel A_OptB-Batch Tunnel N	Area	LAeq day	86.0	28.0	58.3	63.8	3.6	0.0	0.0	3	380.22	-62.6	-1.8	0.0	-1.3	0.0	0.0	-2.2	0.0	0.0	0.0	-2.2
Batch Tunnel A_OptB-Batch Tunnel N	Area	LAeq night	86.0	28.0	58.3	63.8	3.6	0.0	0.0	3	380.22	-62.6	-1.8	0.0	-1.3	0.0	0.0	-2.2	0.0	-6.0	0.0	-8.2
Batch Tunnel A_OptB-Batch Tunnel N	Area	LAeq 4am-7	86.0	28.0	58.3	63.8	3.6	0.0	0.0	3	380.22	-62.6	-1.8	0.0	-1.3	0.0	0.0	-2.2	0.0	0.0	0.0	-2.2
Batch Tunnel A_OptB-Batch Tunnel N Door	Area	LAeq day	88.9	21.0	65.2	76.9	14.8	0.0	0.0	3	380.22	-62.6	-4.9	0.0	-1.5	0.0	0.0	7.0	0.0	0.0	0.0	7.0
Batch Tunnel A_OptB-Batch Tunnel N Door	Area	LAeq night	88.9	21.0	65.2	76.9	14.8	0.0	0.0	3	380.22	-62.6	-4.9	0.0	-1.5	0.0	0.0	7.0	0.0	-6.0	0.0	1.0
Batch Tunnel A_OptB-Batch Tunnel N Door	Area	LAeq 4am-7	88.9	21.0	65.2	76.9	14.8	0.0	0.0	3	380.22	-62.6	-4.9	0.0	-1.5	0.0	0.0	7.0	0.0	0.0	0.0	7.0

North Maclean 23135

Mean propagation Leq - Concrete Plant_Open Slumping_SP Calculation

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Source	Source type	Time slice	Li	Rw	L'w	Lw	l or A	Kl	KT	DO	S	Adiv	Agr	Abar	Aatm	ADI	dLrefl	Ls	Cmet	dLw	ZR	Lr
			dB(A)	dB	dB(A)	dB(A)	m,m ²	dB	dB	dB	m	dB	dB	dB	dB	dB	dB(A)	dB(A)	dB	dB	dB	dB(A)
Batch Tunnel A_OptB-Batch Tunnel Roof	Area	LAeq day	88.8	28.0	61.2	77.5	41.8	0.0	0.0	0	385.30	-62.7	-1.4	-3.3	-1.3	0.0	0.0	8.4	0.0	0.0	0.0	8.4
Batch Tunnel A_OptB-Batch Tunnel Roof	Area	LAeq night	88.8	28.0	61.2	77.5	41.8	0.0	0.0	0	385.30	-62.7	-1.4	-3.3	-1.3	0.0	0.0	8.4	0.0	-6.0	0.0	2.4
Batch Tunnel A_OptB-Batch Tunnel Roof	Area	LAeq 4am-7	88.8	28.0	61.2	77.5	41.8	0.0	0.0	0	385.30	-62.7	-1.4	-3.3	-1.3	0.0	0.0	8.4	0.0	0.0	0.0	8.4
Batch Tunnel A_OptB-Batch Tunnel S	Area	LAeq day	86.4	28.0	58.7	68.2	8.9	0.0	0.0	3	390.53	-62.8	-2.2	-11.0	-0.9	0.0	0.0	-6.0	0.0	0.0	0.0	-6.0
Batch Tunnel A_OptB-Batch Tunnel S	Area	LAeq night	86.4	28.0	58.7	68.2	8.9	0.0	0.0	3	390.53	-62.8	-2.2	-11.0	-0.9	0.0	0.0	-6.0	0.0	-6.0	0.0	-12.0
Batch Tunnel A_OptB-Batch Tunnel S	Area	LAeq 4am-7	86.4	28.0	58.7	68.2	8.9	0.0	0.0	3	390.53	-62.8	-2.2	-11.0	-0.9	0.0	0.0	-6.0	0.0	0.0	0.0	-6.0
Batch Tunnel A_OptB-Batch Tunnel S Door	Area	LAeq day	86.3	0.0	80.3	89.7	8.8	0.0	0.0	3	390.44	-62.8	-3.0	-15.0	-1.2	0.0	4.6	15.0	0.0	0.0	0.0	15.0
Batch Tunnel A_OptB-Batch Tunnel S Door	Area	LAeq night	86.3	0.0	80.3	89.7	8.8	0.0	0.0	3	390.44	-62.8	-3.0	-15.0	-1.2	0.0	4.6	15.0	0.0	-6.0	0.0	9.0
Batch Tunnel A_OptB-Batch Tunnel S Door	Area	LAeq 4am-7	86.3	0.0	80.3	89.7	8.8	0.0	0.0	3	390.44	-62.8	-3.0	-15.0	-1.2	0.0	4.6	15.0	0.0	0.0	0.0	15.0
Batch Tunnel A_OptB-Batch Tunnel W	Area	LAeq day	89.7	28.0	62.1	78.8	46.9	0.0	0.0	3	385.72	-62.7	-2.2	-7.9	-1.2	0.0	0.0	7.3	0.0	0.0	0.0	7.3
Batch Tunnel A_OptB-Batch Tunnel W	Area	LAeq night	89.7	28.0	62.1	78.8	46.9	0.0	0.0	3	385.72	-62.7	-2.2	-7.9	-1.2	0.0	0.0	7.3	0.0	-6.0	0.0	1.3
Batch Tunnel A_OptB-Batch Tunnel W	Area	LAeq 4am-7	89.7	28.0	62.1	78.8	46.9	0.0	0.0	3	385.72	-62.7	-2.2	-7.9	-1.2	0.0	0.0	7.3	0.0	0.0	0.0	7.3
Cement Flyash Trucks	Line	LAeq day			66.9	92.5	366.5	0.0	0.0	0	386.45	-62.7	-0.8	-0.3	-3.0	0.0	0.9	22.9	0.0	-1.8	0.0	21.1
Cement Flyash Trucks	Line	LAeq night			66.9	92.5	366.5	0.0	0.0	0	386.45	-62.7	-0.8	-0.3	-3.0	0.0	0.9	22.9	0.0			
Cement Flyash Trucks	Line	LAeq 4am-7			66.9	92.5	366.5	0.0	0.0	0	386.45	-62.7	-0.8	-0.3	-3.0	0.0	0.9	22.9	0.0	-1.8	0.0	21.1
FEL	Area	LAeq day			70.5	103.3	1925.4	0.0	0.0	0	366.88	-62.3	-2.0	-1.9	-2.3	0.0	0.5	32.5	0.0	0.0	0.0	32.5
FEL	Area	LAeq night			70.5	103.3	1925.4	0.0	0.0	0	366.88	-62.3	-2.0	-1.9	-2.3	0.0	0.5	32.5	0.0	-3.0	0.0	29.5
FEL	Area	LAeq 4am-7			70.5	103.3	1925.4	0.0	0.0	0	366.88	-62.3	-2.0	-1.9	-2.3	0.0	0.5	32.5	0.0	-3.0	0.0	29.5
Silo Filter A	Point	LAeq day			84.3	84.3		0.0	0.0	0	384.24	-62.7	-1.7	-3.1	-1.7	0.0	0.0	15.2	0.0	0.0	0.0	15.2
Silo Filter A	Point	LAeq night			84.3	84.3		0.0	0.0	0	384.24	-62.7	-1.7	-3.1	-1.7	0.0	0.0	15.2	0.0	0.0	0.0	15.2
Silo Filter A	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	384.24	-62.7	-1.7	-3.1	-1.7	0.0	0.0	15.2	0.0	0.0	0.0	15.2
Silo Filter B	Point	LAeq day			84.3	84.3		0.0	0.0	0	389.35	-62.8	-1.7	-2.1	-1.7	0.0	0.0	16.0	0.0	0.0	0.0	16.0
Silo Filter B	Point	LAeq night			84.3	84.3		0.0	0.0	0	389.35	-62.8	-1.7	-2.1	-1.7	0.0	0.0	16.0	0.0	0.0	0.0	16.0
Silo Filter B	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	389.35	-62.8	-1.7	-2.1	-1.7	0.0	0.0	16.0	0.0	0.0	0.0	16.0
Silo Filter C	Point	LAeq day			84.3	84.3		0.0	0.0	0	383.36	-62.7	-1.7	-3.1	-1.6	0.0	0.0	15.1	0.0	0.0	0.0	15.1
Silo Filter C	Point	LAeq night			84.3	84.3		0.0	0.0	0	383.36	-62.7	-1.7	-3.1	-1.6	0.0	0.0	15.1	0.0	0.0	0.0	15.1
Silo Filter C	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	383.36	-62.7	-1.7	-3.1	-1.6	0.0	0.0	15.1	0.0	0.0	0.0	15.1
Silo Filter E	Point	LAeq day			84.3	84.3		0.0	0.0	0	388.34	-62.8	-1.7	-2.4	-1.7	0.0	0.0	15.8	0.0	0.0	0.0	15.8
Silo Filter E	Point	LAeq night			84.3	84.3		0.0	0.0	0	388.34	-62.8	-1.7	-2.4	-1.7	0.0	0.0	15.8	0.0	0.0	0.0	15.8
Silo Filter E	Point	LAeq 4am-7			84.3	84.3		0.0	0.0	0	388.34	-62.8	-1.7	-2.4	-1.7	0.0	0.0	15.8	0.0	0.0	0.0	15.8

North Maclean 23135
Mean propagation Leq - Concrete Plant_Open Slumping_SP Calculation

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Source	Source type	Time slice	Li	Rw	L'w	Lw	I or A	KI	KT	DO	S	Adiv	Agr	Abar	Aatm	ADI	dLrefl	Ls	Cmet	dLw	ZR	Lr
			dB(A)	dB	dB(A)	dB(A)	m,m ²	dB	dB	dB	m	dB	dB	dB	dB	dB	dB(A)	dB(A)	dB	dB	dB	dB(A)
Slumping uncovered 1	Point	LAeq day			109.6	109.6		0.0	0.0	0	428.02	-63.6	-1.5	-3.4	-2.2	0.0	2.6	41.5	0.0	-3.3	0.0	38.2
Slumping uncovered 1	Point	LAeq night			109.6	109.6		0.0	0.0	0	428.02	-63.6	-1.5	-3.4	-2.2	0.0	2.6	41.5	0.0	-9.3	0.0	32.1
Slumping uncovered 1	Point	LAeq 4am-7			109.6	109.6		0.0	0.0	0	428.02	-63.6	-1.5	-3.4	-2.2	0.0	2.6	41.5	0.0	-3.3	0.0	38.2
Slumping uncovered 2	Point	LAeq day			109.6	109.6		0.0	0.0	0	409.62	-63.2	-1.6	-0.3	-3.0	0.0	3.3	41.5	0.0	-3.3	0.0	38.2
Slumping uncovered 2	Point	LAeq night			109.6	109.6		0.0	0.0	0	409.62	-63.2	-1.6	-0.3	-3.0	0.0	3.3	41.5	0.0	-9.3	0.0	32.2
Slumping uncovered 2	Point	LAeq 4am-7			109.6	109.6		0.0	0.0	0	409.62	-63.2	-1.6	-0.3	-3.0	0.0	3.3	41.5	0.0	-3.3	0.0	38.2
Truck Washout Main Plant	Point	LAeq day			103.0	103.0		0.0	0.0	0	356.01	-62.0	-2.6	-0.4	-2.2	0.0	0.0	24.0	0.0	-3.3	0.0	20.7
Truck Washout Main Plant	Point	LAeq night			103.0	103.0		0.0	0.0	0	356.01	-62.0	-2.6	-0.4	-2.2	0.0	0.0	24.0	0.0	-9.3	0.0	14.7
Truck Washout Main Plant	Point	LAeq 4am-7			103.0	103.0		0.0	0.0	0	356.01	-62.0	-2.6	-0.4	-2.2	0.0	0.0	24.0	0.0	-3.3	0.0	20.7
Unloading Bulk Cement	Point	LAeq day			106.0	106.0		0.0	0.0	0	386.61	-62.7	-1.7	0.0	-3.9	0.0	3.9	28.0	0.0	-1.8	0.0	26.2
Unloading Bulk Cement	Point	LAeq night			106.0	106.0		0.0	0.0	0	386.61	-62.7	-1.7	0.0	-3.9	0.0	3.9	28.0	0.0			
Unloading Bulk Cement	Point	LAeq 4am-7			106.0	106.0		0.0	0.0	0	386.61	-62.7	-1.7	0.0	-3.9	0.0	3.9	28.0	0.0	-1.8	0.0	26.2