

Environmental Noise Assessment

Allawuna Landfill Environmental Noise



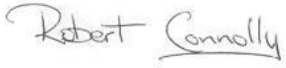


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EXECUTIVE SUMMARY

VIPAC Engineers & Scientists were engaged by Bowman & Associates Pty Ltd to conduct an environmental noise assessment for the proposed landfill development at lots 9926, 26934, 4869 & 5931 on the Great Southern Highway, St. Ronans, Shire of York, Western Australia.

We understand that both the site itself and immediate surrounding premises is all zoned General Agriculture. The nearest noise sensitive receivers (NSR) are as follows:

- Residential unit to the North East of the proposed development (approximately 2 km away). The address is 2974 Great Southern Highway, St Ronans, Shire of York.
- Residential unit to the East of the proposed development (approximately 2.4 km away). The address is 3462 Great Southern Highway, St Ronans, Shire of York.
- Mount Observation Picnic area to the North West of the proposed development (approximately 2.5 km away). The address is 3060 Talbot West Road, Mount Observation, Shire of York.

Acoustical modelling has been carried out for the proposed facility in SoundPLAN acoustical software. Both construction and operation phase of the development have been modelled based on the topographical information, equipment schedule, operating hours and the sound power level information of the proposed equipment.

Acoustic modelling in SoundPLAN demonstrates that the predicted noise levels during construction phase at the nearby noise sensitive premises are within the EPNR noise requirements during the day-time. It is, however, noted that noise from construction activities is a special condition that is not required to comply with the Assigned Noise Levels prescribed in the EPNR 1997 Noise Regulations.

The operational phase of the proposed development is modelled based on the revised elevation of the landfill footprint map (refer to Appendix C). Vipac understand that mobile equipment would be filling the existing land area and build-up the site to an elevation of 350.5m (RL). Considering the noise propagation aspect from the development site to the nearby noise sensitive premises, Vipac assumes that modelling the mobile equipment working at this height would generate the worst case condition scenario in terms of noise reception at the noise sensitive premises. The SoundPLAN model demonstrates that the predicted noise levels at the noise sensitive receivers during the operational phase are within the EPNR 1997 noise requirements.

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1. INTRODUCTION

VIPAC Engineers & Scientists were engaged by Bowman & Associates Pty Ltd to conduct an environmental noise assessment for the proposed landfill development at lots 9926, 26934, 4869 & 5931 on the Great Southern Highway, St. Ronans, Shire of York, Western Australia. The proposed site is approximately 62 km from Perth CBD.

We understand that both the site itself and immediate surrounding premises is all zoned General Agriculture. The nearest noise sensitive receivers (NSR) are as follows:

- Residential unit to the North East of the proposed development (approximately 2 km away). The address is 2974 Great Southern Highway, St Ronans, Shire of York.
- Residential unit to the East of the proposed development (approximately 2.4 km away). The address is 3462 Great Southern Highway, St Ronans, Shire of York.
- Mount Observation Picnic area to the North West of the proposed development (approximately 2.5 km away). The address is 3060 Talbot West Road, Mount Observation, Shire of York.

This report presents the results of the noise impact assessment on nearby Noise Sensitive Receivers (NSR) due to the proposed construction and operation of the development. The location of the development and the noise sensitive receivers are shown on the map presented in Figure A-1 in Appendix A of this report.

2. REFERENCES

- [1] Environmental Protection (Noise) Regulations 1997. Department of Environmental Protection, Government of Western Australia.
- [2] Shire of York - IntraMaps Town Planning Zoning Maps
- [3] Revised Footprint Layout – Received from Bowman & Associates Pty Ltd by e-mail in August 2015.
- [4] Revised Site Layout Drawings for Allawuna Landfill - Received from Bowman & Associates Pty Ltd by e-mail in March 2015.
- [5] AS 2436 1981 Guide to Noise Control On Construction, Maintenance And Demolition Sites
- [6] SoundPLAN Software Version 7.1 Acoustical Database.
- [7] SoundPLAN Software Manual Version 7.1. 2011
- [8] Weather data retrieved from <http://www.wunderground.com/>
- [9] Guidance for the Assessment of Environmental Factors: Environmental Noise (Draft) No. 8, May 2007 - Environment Protection Authority, Government of Western Australia.
- [10] Vehicle Standard (Australian Design Rule 28/01 — External Noise of Motor Vehicles) 2006.

3. CRITERIA

3.1. THE REGULATIONS

Environmental noise is governed in Western Australia by the Environmental Protection (Noise) Regulations 1997 (the Regulations) [1]. The Regulations [1] set noise limits to ensure that noise from other premises is kept to acceptable levels, thus reducing noise annoyance. These allowable noise limits are defined as ‘assigned noise levels’ at receiver points. Regulation 7 of the EPNR (1997) [1] requires that “noise emitted from any premises when received at other premises must not cause, or significantly contribute to, a level of noise which exceeds the assigned level in respect of noise received at premises of that kind”.

The Regulations [1] do allow for special conditions, which have been made to allow for reasonable amounts of economic, cultural and social activity at levels that may exceed the assigned levels, but are within normal community expectations.

Noise from Construction activities is one such special condition that is not required to comply with the Assigned Noise Levels prescribed in the Regulations [1]; rather it sets out management practices which must be adhered to instead.

3.2. ASSIGNED NOISE LEVELS

The Environmental Protection (Noise) Regulations 1997 [1] sets out the maximum allowable noise levels based on the time of day and land use, applicable at noise sensitive premises in the vicinity of the development. The maximum allowable noise levels are determined based on the assigned noise levels (LA10, LA1, and LAmax) adjusted with the Influencing Factor (IF) calculated in accordance with the Regulations which takes into account the land zoning in the vicinity of the receiver location. Table 3-1 shows the maximum assigned noise levels at various premises.

Table 3-1: Assigned noise levels depending on type of premises receiving noise [1]

| Type of premises receiving noise | Time of day | Assigned level (dB) | | |
|---|---|---------------------|---------|---------|
| | | LA10 | LA1 | LA max |
| Noise sensitive premises at locations within 15 meters of a building directly associated with a noise sensitive use | 0700 to 1900 hours Monday to Saturday | 45 + IF | 55 + IF | 65 + IF |
| | 0900 to 1900 hours Sunday and public holidays | 40 + IF | 50 + IF | 65 + IF |
| | 1900 to 22 hours all days | 40 + IF | 50 + IF | 55 + IF |
| | 2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday, public holidays | 35 + IF | 45 + IF | 55 + IF |
| Noise sensitive premises at locations further than 15 metres from a building directly associated with a noise sensitive use | All hours | 60 | 75 | 80 |
| Commercial premises | All hours | 60 | 75 | 80 |
| Industrial and utility premises | All hours | 65 | 80 | 90 |

Regulation 7 of EPNR 1997 [1] also requires that the noise character must be “free” of annoying characteristics, namely:

- Tonality, eg. Whining, droning;
- Modulation, eg. like a siren; and
- Impulsiveness, eg. Banging, thumping.

Regulation 9 of EPNR 1997 [1] sets out objective tests to assess whether the noise is taken to be “free” of these characteristics. If these characteristics cannot be reasonably and practicably removed, eg. in the case of an emission like music, then a series of adjustments to the measured levels are set out, and the adjusted level must comply with the assigned level. The adjustments are set out below in Table 3-2 and are cumulative to a maximum of 15 dB.

Table 3-2: Penalty assessment table

| Adjustment where noise emission is not music* | | | Adjustment where noise emission is music | |
|---|-----------------------------|--------------------------------|--|--------------------------------|
| Where tonality is present | Where modulation is present | Where Impulsiveness is present | Where impulsiveness is not present | Where impulsiveness is present |
| + 5 dB | + 5 dB | + 10 dB | + 10 dB | + 15 dB |

*These adjustments are cumulative to a maximum of 15 dB.

The area on which the NSR’s reside is predominately zoned as ‘Agriculture’ according to Shire of York zoning map [2]. VIPAC has assumed that the noise sensitive receiving areas have the same assigned noise levels as Residential for the purposes of the IF calculation. The zoning map used is presented in Figure A-2 in Appendix A of this report.

The influencing factor has been calculated for these NSR’s, the calculation is summarised below in Table 3-3, taking into account the percentage of land zoned residential, commercial or industrial in both 100m and 450m radius circles, as well as the number of major and secondary roads in each circle.

Table 3-3: EPNR 1997 Influencing Factor (IF) Calculation

| 100m Radius Circle | | | 450m Radius Circle | | |
|--------------------|------------------------|--------------------|--------------------|------------|------------|
| Residential | Commercial | Industrial | Residential | Commercial | Industrial |
| 100% | 0% | 0% | 100% | 0% | 0% |
| I | | | | | |
| 0 | | | | | |
| C | | | | | |
| 0 | | | | | |
| 100m Radius Circle | | 450m Radius Circle | | | |
| No. of major roads | No. of secondary roads | No. of major roads | | | |
| 0 | 0 | 0 | | | |
| TF | | | | | |
| 0 | | | | | |
| IF (I+C+TF) | | | | | |
| 0 | | | | | |

The Environmental Protection Act (1986) assigned noise levels at the nearby Noise Sensitive Locations are therefore summarized in Table 3-4 below and must be adhered to if the above conditions are not all met. These levels should be used as a guide level for noise emissions at all times at the boundary to ensure that absolute compliance is achieved. As the IF is calculated as zero for all NSR’s, the levels shown in Table 3-4 shall apply.

Table: 3-4: Assigned noise levels depending on type of premises receiving noise

| Type of premises receiving noise | Time of day | Assigned level (dB) | | |
|----------------------------------|---|---------------------|-----------------|-------------------|
| | | L _{A10} | L _{A1} | L _{Amax} |
| Noise sensitive premises | 07.00 to 19.00 hours Monday to Saturday | 45 | 55 | 65 |
| | 09.00 to 19.00 hours Sunday and Public Holidays | 40 | 50 | 65 |
| | 19.00 to 22.00 hours all days | 40 | 50 | 55 |
| | 22.00 hours on any day to 07.00 hours Monday to Saturday and 22 to 09.00 hours Sunday and Public Holidays | 35 | 45 | 55 |
| Commercial Premises | Anytime of the day and week | 60 | 75 | 80 |
| Industrial and utility premises | Anytime of the day and week | 65 | 80 | 90 |

We note that in addition to the criteria outlined above, if the far field sound pressure level produced by the source may exhibit tonality, modulation, or contains an impulsive component, the predicted noise level would incur a 5dB(A) penalty for tones and modulation and a 10dB(A) penalty for impulsiveness [2], to a maximum cumulative penalty of 15dB(A) as stipulated in the EPNR 1997 [1].

For construction work carried out between 7am and 7pm on any day which is not a Sunday or public holiday –

- The construction work must be carried out in accordance with control of noise practices set out in section six of *Australian Standard 2436-1981 “Guidelines to Noise Control on Construction, Maintenance and Demolition Sites”*,
- The equipment used for construction work must be the quietest reasonably available, and
- The chief executive officer may request that a noise management plan be submitted for the construction work at any time.

4. SITE DESCRIPTION AND EQUIPMENT SCHEDULE

We have conducted our noise assessment (acoustic modelling) for Allawuna Landfill both during Construction and Operational Phase based on the following information provided by Bowman & Associates.

The proposed development will be in operation between 0700 and 1700 hrs Monday to Saturday during construction phase and between 0600 and 1700 hrs Monday to Saturday during operational phase. The list of equipment and their locations during construction and operational phase are listed in Table 4-1 and Table 4-2 below.

The noise emission levels from the proposed development are evaluated at the nearest noise sensitive receivers (location 1 to location 3 shown in Figure A-1 in Appendix A). The proposed development shall meet the Environmental Noise Criteria [1] provided the noise levels predicted at these locations are within the specified limits.

Table 4-1: Equipment proposed for use during construction phase of the development

| Equipment Details | Number of Equipment | Location of deployment |
|------------------------|---------------------|---|
| Wheel Tractor Scraper | 1 | Access Road |
| Loader | 1 | |
| Articulated Dump Truck | 1 | |
| Smooth Drum Roller | 1 | |
| Grader | 1 | |
| Water Cart | 1 | |
| Car | 40 | |
| 30 tonne excavator | 2 | Landfill Footprint, Leachate Dam and Stormwater Dam |
| Loader | 1 | |
| Dozer | 1 | |
| Articulated Dump Truck | 2 | |
| Pad Foot Roller | 1 | |
| Grader | 1 | |
| Water Cart | 1 | |

Table 4-2: Equipment proposed for use during operational phase of the development

| Equipment Details | Number of Equipment | Time of Operation | Location of deployment |
|-------------------------|--|-------------------|------------------------|
| Semi-trailer road train | 1 road train per 20 minutes during operating hours | 3.30 am to 5pm | Access Road |
| 50t Compactor | 1 | 6am to 5pm | Landfill Footprint |
| Dozer | 1 | 6am to 5pm | |
| Dump Truck* | 1 | 7am to 5pm | |
| Water Cart | 1 | 6am to 5pm | |
| Grader* | 1 | 7am to 5pm | |

The operation of the dump truck and grader are mutually exclusive as the same person will be responsible for the operation of both machines. As the Sound Power Level of the Grader is higher than the Dump Truck, the Grader is used for acoustic modelling purposes to simulate worst case condition.

5. NOISE SURVEY

An environmental noise survey was carried out at the proposed site between 23rd August and 31st August 2012 inclusive. A noise logger was installed on site for the week-long measurement. Measurement was carried out at the northwestern boundary of the proposed development (near the Mount Observation picnic area). The equipment used for the measurement is shown in Table 5-1 below. The measured noise data are presented in Figure B-1 in Appendix B of this report.

Table 5-1: Equipment used during environmental noise survey

| Equipment | Manufacturer | Model | Serial Number |
|---|--------------|-------|---------------|
| Type 2 Sound Level Meter (noise logger) | Larson Davis | 720 | 0173 |

Weather conditions have been logged by a nearby weather station located in Wundowie in Northam, WA [8]. For the purpose of this assessment the weather conditions are taken to be representative of site conditions. Where there was an occurrence of winds of 19km/h and above or precipitation, data

has been excluded from the assessment. The weather data during the period of measurement is presented Figure B-2 in Appendix B of this report.

Measured daily average background noise levels on site are graphically presented in Figure 5-1 below.

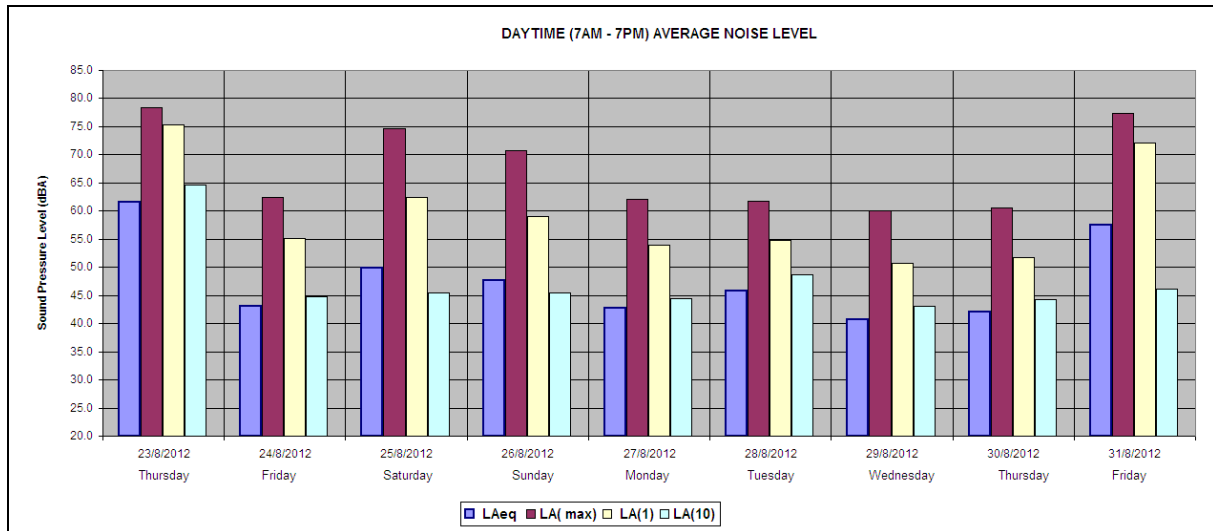


Figure 5-1: Measured daily average background noise levels

Site observations showed that the dominant source of noise at the proposed development is traffic noise from Great Southern Highway. The results of the environmental noise survey (free field measurements) have been summarised in **Table 5-2** below. Measured noise profile at the proposed development is presented in Appendix B of this report.

Table 5-2: ENS Results – Measured background noise levels at the proposed site

| | Measured Average Day Time (7am – 7 pm) Noise Levels (dB) | | | | | |
|-----------------|--|---------------------|-------------------|--------------------|--------------------|--------------------|
| | L _{Aeq} | L _{A(max)} | L _{A(1)} | L _{A(10)} | L _{A(50)} | L _{A(90)} |
| Overall Average | 50 | 70 | 65 | 46 | 40 | 38 |

The measured noise data demonstrate that the background noise level at the proposed site is in exceedance of the environmental noise criteria [1] as presented in Table 3-4.

6. ACOUSTIC MODELLING OF THE PROPOSED FACILITY

6.1. SOFTWARE TOOL AND PREDICTION STANDARDS

VIPAC used the widely used commercial software package ‘SoundPLAN’ for the acoustic modeling and simulation of Allawuna Landfill for both the construction and operation phases.

SoundPLAN is specialised in acoustical modelling and simulation. Noise modelling within SoundPLAN encompasses traffic noise, occupational noise - indoors and outdoors, general industrial noise and aircraft noise. More than 50 calculation standards are implemented to satisfy the needs of noise control engineers. The software has been tested worldwide on actual projects to ensure that the predicted data are in agreement with measured noise levels. SoundPLAN is used throughout Australia for numerous acoustical projects. Outdoor noise propagation for the proposed development has been modelled using Concawe [9].

6.2. MODELLING ASSUMPTIONS

The following assumptions have been made for the acoustical modelling:

- The ground surface is developed based on the contour map provided by Bowman & Associates Pty Ltd [4]. The ground is assumed absorptive in nature.
- Noises from nearby public roads are not considered within the model since noise emissions from vehicles on public roads are exempt from the requirements of EPNR 1997.
- The operating hours for the construction stage is assumed to be between 7am and 5pm Monday to Saturday.
- The operating hours for the operational phase is assumed to be 6am to 5pm Monday to Saturday.
- Tonality effects are unlikely to have any influence at such a long distance (over 2 km) from the work area, hence, tonality effects have therefore been discounted from the modelling.
- Acoustical modelling for the operation stage is based on the landfill footprint (with elevation details) as provided by Bowman & Associates [3]. Refer to Appendix C.

6.3. SOUND POWER LEVELS OF EQUIPMENT

The sound power levels of the equipment used during the construction and operation phases of the development are based on the database provided in the Australian Standard AS 2436 1981 Guide to Noise Control on Construction, Maintenance and Demolition Sites [5]. The sound power levels of the equipment are listed in **Table 6-3-1** below.

Table 6-3-1: Sound power level of equipment used for the development [5]

| Equipment Details | Sound Power Level (dBA) |
|---|-------------------------|
| Wheel Tractor Scraper | 117 |
| Loader | 120 |
| Articulated Dump Truck | 107 |
| Smooth Drum Roller | 106 |
| Grader | 118 |
| Water Cart | 108 |
| Car | 98 |
| Excavator | 118 |
| Dozer | 119 |
| Semi-trailer road train* | 113* |
| 50t Compactor | 124 |
| *Sound power level predicted based on Sound Pressure Level as per Vehicle Standard (Australian Design Rule 28/01 — External Noise of Motor Vehicles) 2006 [10]. | |
| - It was assumed that 1 road train would be in and out per 20 minutes during operating hours. The Road train would start from 3.30am in the morning. | |

6.4. PREDICTED RESULTS - NOISE LEVELS AT THE NOISE SENSITIVE RECEIVERS

Noise levels due to both construction and facility operation are modelled and predicted at 3 locations in the vicinity of the proposed development. These single point receiver locations are shown in Figure A-1 in Appendix A of this report. The predicted noise levels are presented in the following sections. The noise levels shown in the following tables (L_{A10} , L_{A1} and L_{AMAX}) are computed based on the predicted noise level (L_{Aeq}) in SoundPLAN and the relationships between noise parameters established from measured data.

6.4.1. Construction Phase

Predicted noise levels during the construction phase of the development are presented in Table 6-4-1-1 below.

Table 6-4-1-1: Predicted Noise Levels at the Noise Sensitive Receivers – Construction Phase

| Location of Noise Sensitive Receivers | SoundPLAN Predicted Day-Average Noise Levels, Leq (dBA) | Computed* Noise Levels (dBA) | | |
|--|---|------------------------------|-----------|------------|
| | | L_{A1} | L_{A10} | L_{Amax} |
| 1 (3060 Talbot West Road, Mount Observation Picnic Area) | 33.4 | 37 | 34 | 40 |
| 2 (2974 Great Southern Highway, St Ronans) | 40.1 | 48 | 42 | 53 |
| 3 (3462 Great Southern Highway, St Ronans) | 34.5 | 39 | 35 | 42 |
| EPNR Requirements between 07.00 to 19.00 hours Monday to Saturday | | 55 | 45 | 65 |
| *Acoustical parameters such as L_{A1} , L_{A10} and L_{Amax} have been computed using SoundPLAN predicted L_{Aeq} value based on the regression lines established from measured on site noise data. Refer to Appendix D for the regression charts. | | | | |

Noise from construction activities is a special condition that is not required to comply with the Assigned Noise Levels prescribed in the Regulations [1]. It is, however, noted that the predicted noise levels at the nearby noise sensitive premises are within the EPNR noise requirements during the day-time.

6.4.2. Operational Phase

The predicted noise levels (both during day and night-time) during the operational phase are presented in Table 6-4-2-1 and Table 6-4-2-2 below. It is observed that predicted noise levels (due to operation of the proposed facility) at the nearest noise sensitive premises during day-time (7am and 7pm) and night-time (10pm-7am) are within the EPNR 1997 noise requirements.

**Table 6-4-2-1: Predicted Noise Levels at the Noise Sensitive Premises – Operational Phase
 (Day- Average between 7am and 7pm)**

| Locations of Noise Sensitive Receivers | SoundPLAN Predicted Day-Average Noise Levels, Leq (dBA) | Computed* Noise Levels (dBA) | | |
|---|---|--|------------------|-------------------|
| | | L _{A1} | L _{A10} | L _{Amax} |
| 1 (3060 Talbot West Road, Mount Observation) | 26.4 | Should be well below 45 dBA. (LAeq and Lns correlation was not modelled for LAeq below 30 dBA due to unavailability of data.) | | |
| 2 (2974 Great Southern Highway, St Ronans) | 39.4 | 47 | 41 | 52 |
| 3 (3462 Great Southern Highway, St Ronans) | 34.7 | 39 | 36 | 43 |
| EPNR Requirements between 07.00 to 19.00 hours Monday to Saturday | | 55 | 45 | 65 |

*Acoustical parameters such as LA1, LA10 and LAmax have been computed using SoundPLAN predicted LAeq value based on the regression lines established from measured on site noise data. Refer to Appendix D for the regression charts.

**Table 6-4-2: Predicted Noise Levels at the Noise Sensitive Receivers – Operational Phase
 (Night – Average between 3am and 7am)**

| Locations of Noise Sensitive Receivers | SoundPLAN Predicted Night-Average Noise Levels, Leq (dBA) | Computed* Noise Levels (dBA) | | |
|---|---|---|------------------|-------------------|
| | | L _{A1} | L _{A10} | L _{Amax} |
| 1 (3060 Talbot West Road, Mount Observation) | 22.2 | Should be below 35 dBA. (LAeq and Lns correlation was not modelled for LAeq below 30 dBA due to unavailability of data.) | | |
| 2 (2974 Great Southern Highway, St Ronans) | 33.9 | 38 | 34 | 41 |
| 3 (3462 Great Southern Highway, St Ronans) | 29.1 | Should be below 35 dBA. (LAeq and Lns correlation was not modelled for LAeq below 30 dBA due to unavailability of data.) | | |
| EPNR Requirements between 22.00 hours on any day to 07.00 hours Monday to Saturday and 22 to 09.00 hours Sunday and Public Holidays | | 45 | 35 | 55 |

*Acoustical parameters such as LA1, LA10 and LAmax have been computed using SoundPLAN predicted LAeq value based on the regression lines established from measured on site noise data. Refer to Appendix D for the regression charts.

6.5. GRID NOISE MAP

Noise contour maps are generated in SoundPLAN for both the construction and operational phases of the development. The following figures presents the ground noise levels (1.5m above ground) in all outdoor areas of the proposed development.

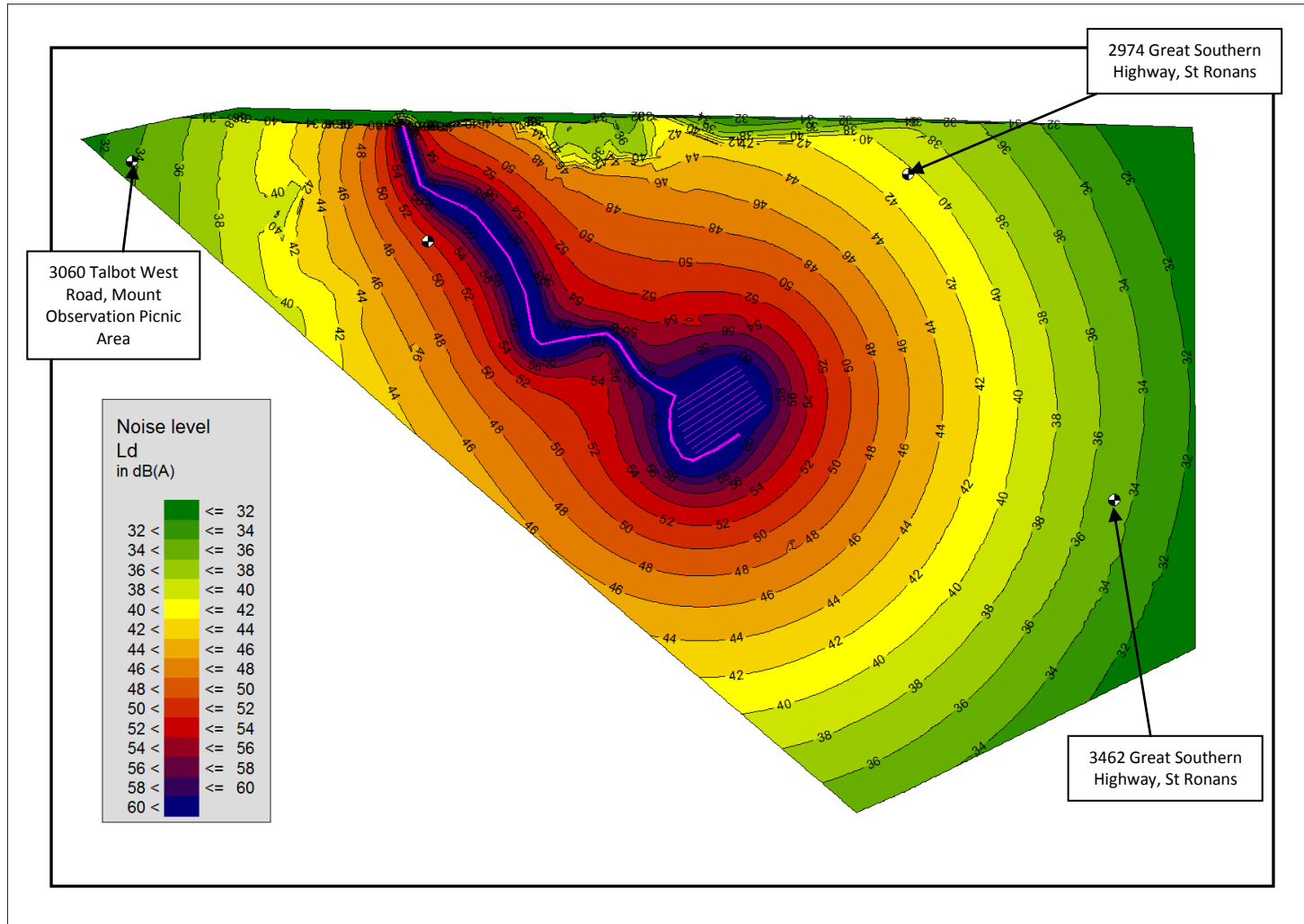


Figure 6-5-1: 2D Grid Noise Map – Construction Phase (Day-time average between 7am and 7pm)

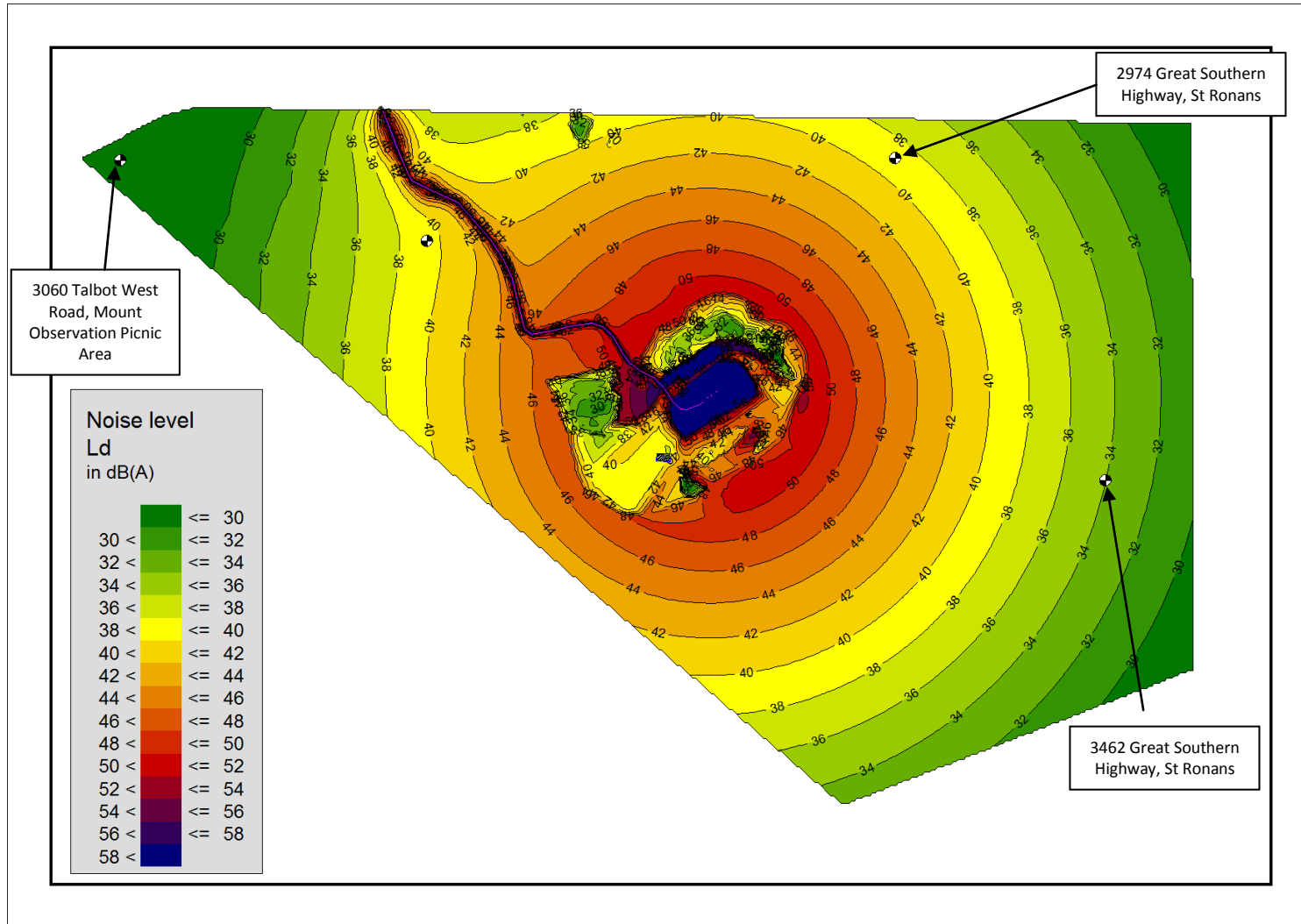


Figure 6-5-2: 2D Grid Noise Map – Operational Phase (Day-time average between 7am and 7pm)

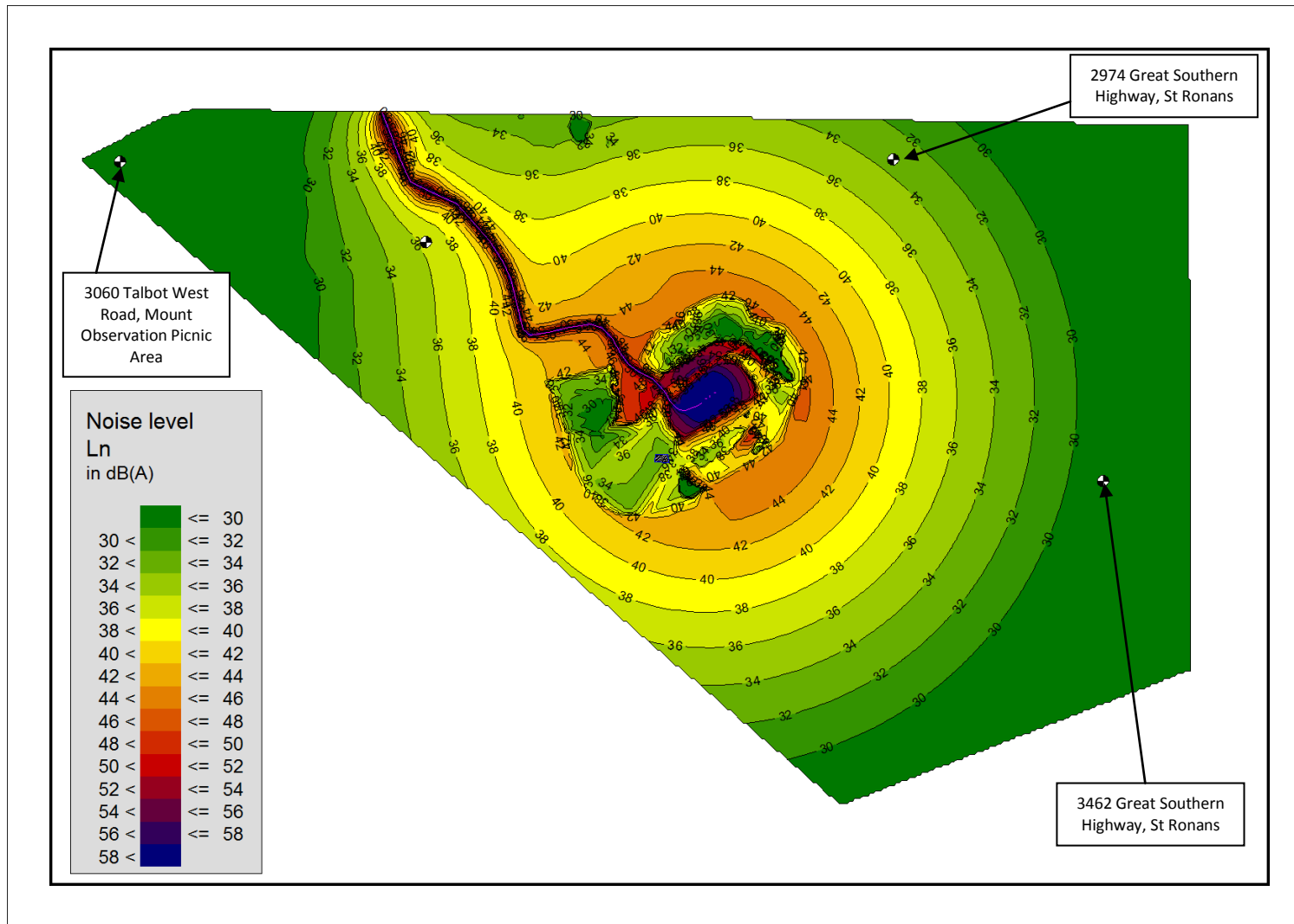


Figure 6-6-3: 2D Grid Noise Map – Operational Phase (Night-time average between 3am and 7am)

7. CONCLUSION

VIPAC Engineers & Scientists were engaged by Bowman & Associates Pty Ltd to conduct an environmental noise assessment for the proposed landfill development at lots 9926, 26934, 4869 & 5931 on the Great Southern Highway, St. Ronans, Shire of York, Western Australia.

Acoustical modelling has been carried out for the proposed facility in SoundPLAN acoustical software. It is found that the predicted noise levels at the nearest noise sensitive receivers of the proposed facility are within the specified EPNR 1997 [1] criteria and thus meet the environmental noise criteria.

Appendix A. Site Maps and Drawings

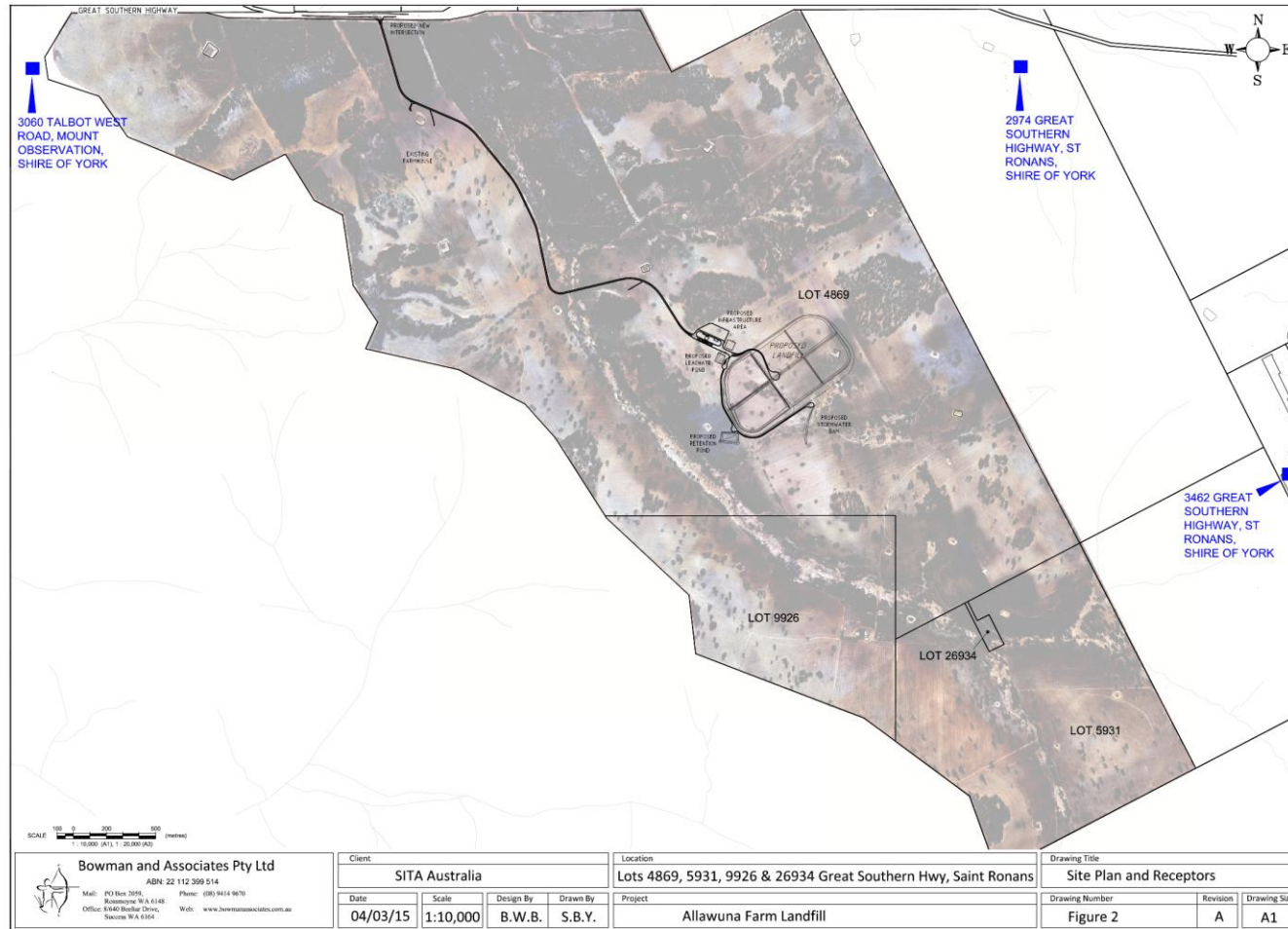


Figure A-1 Site map of the proposed development (revised footprint)

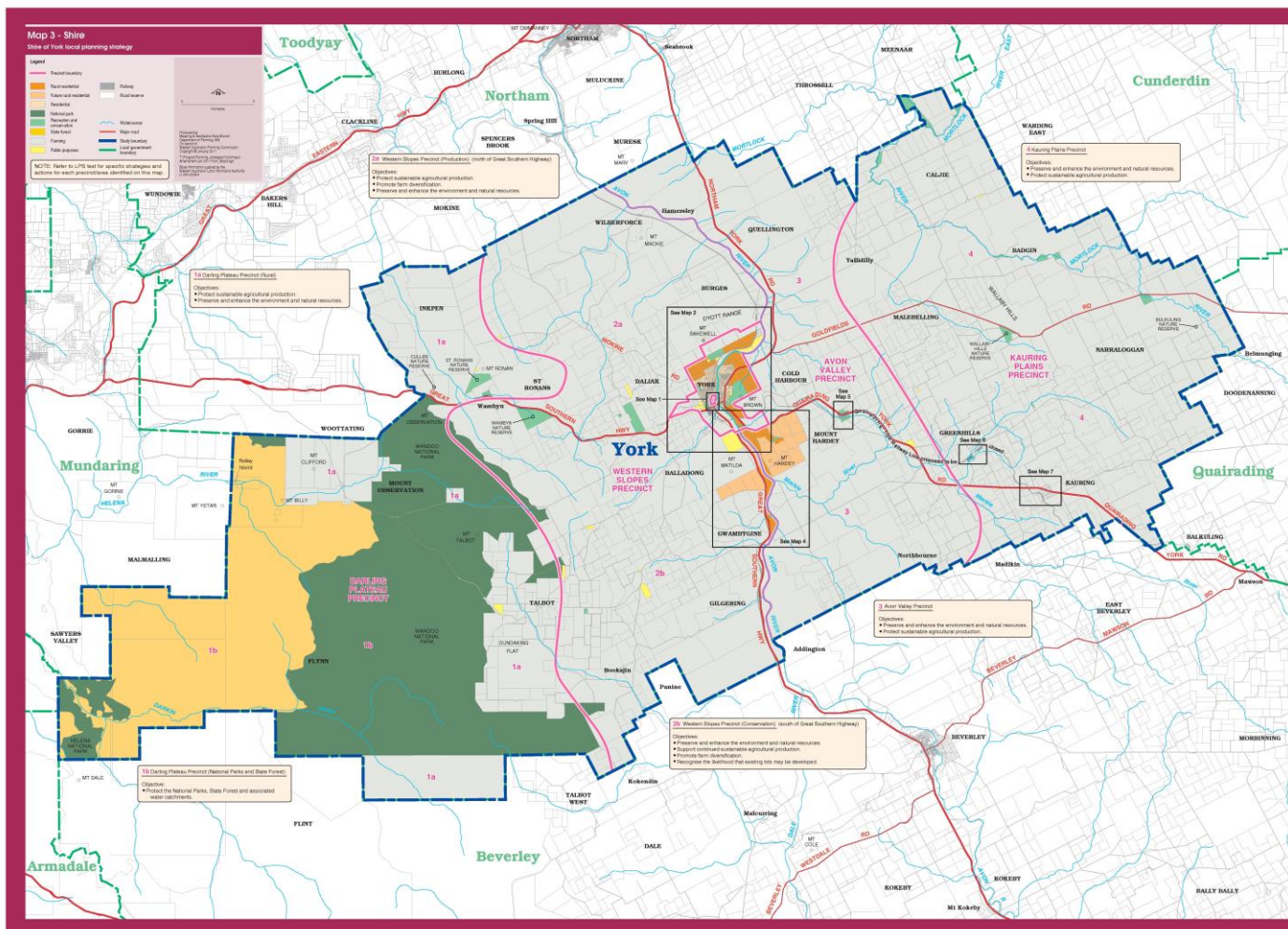


Figure A-2: Zoning map showing the proposed development area

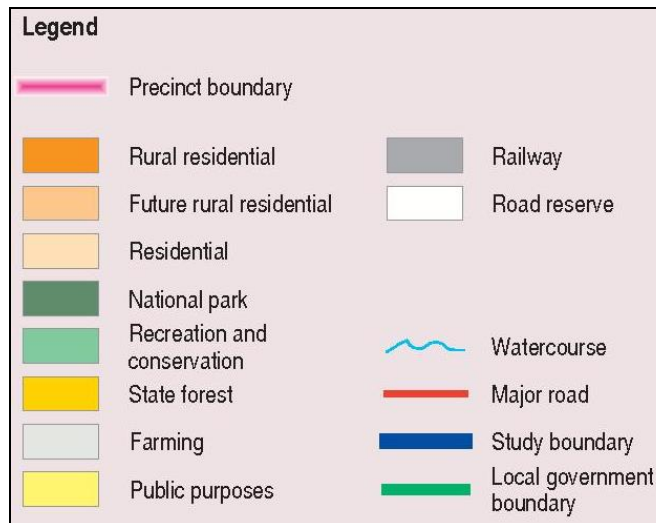
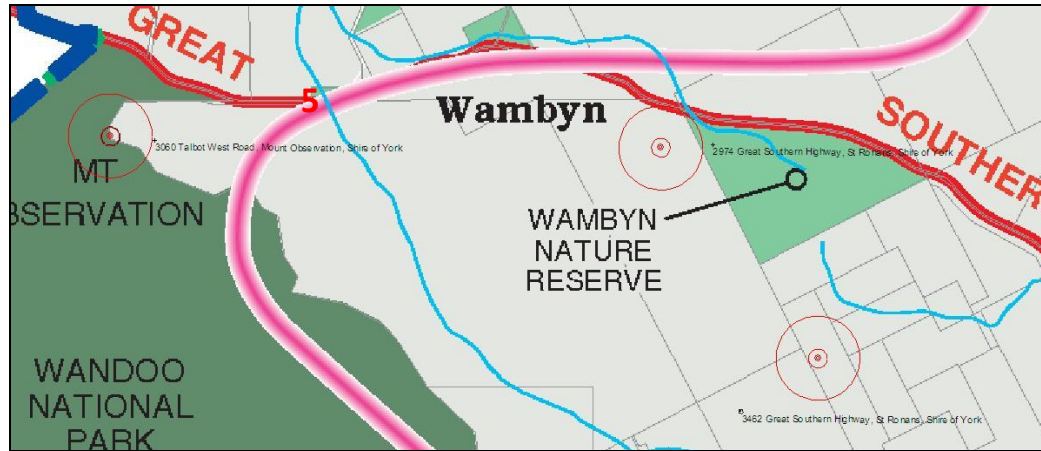


Figure A-3: Zoning Map showing 100m and 450m circles for EPNR IF calculation

Appendix B. Noise Survey and Weather Data

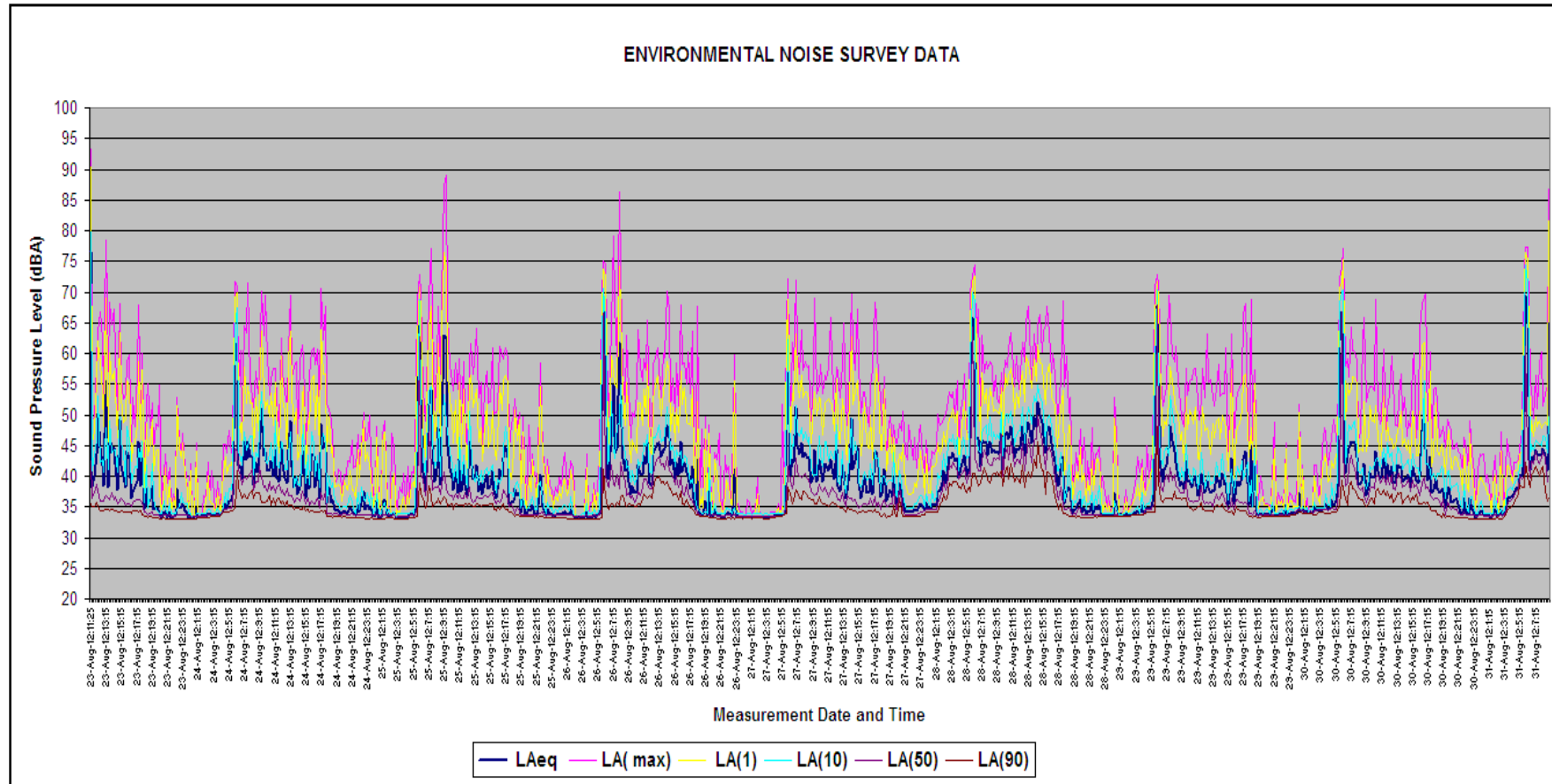


Figure B-1: Measured background noise levels at the proposed development

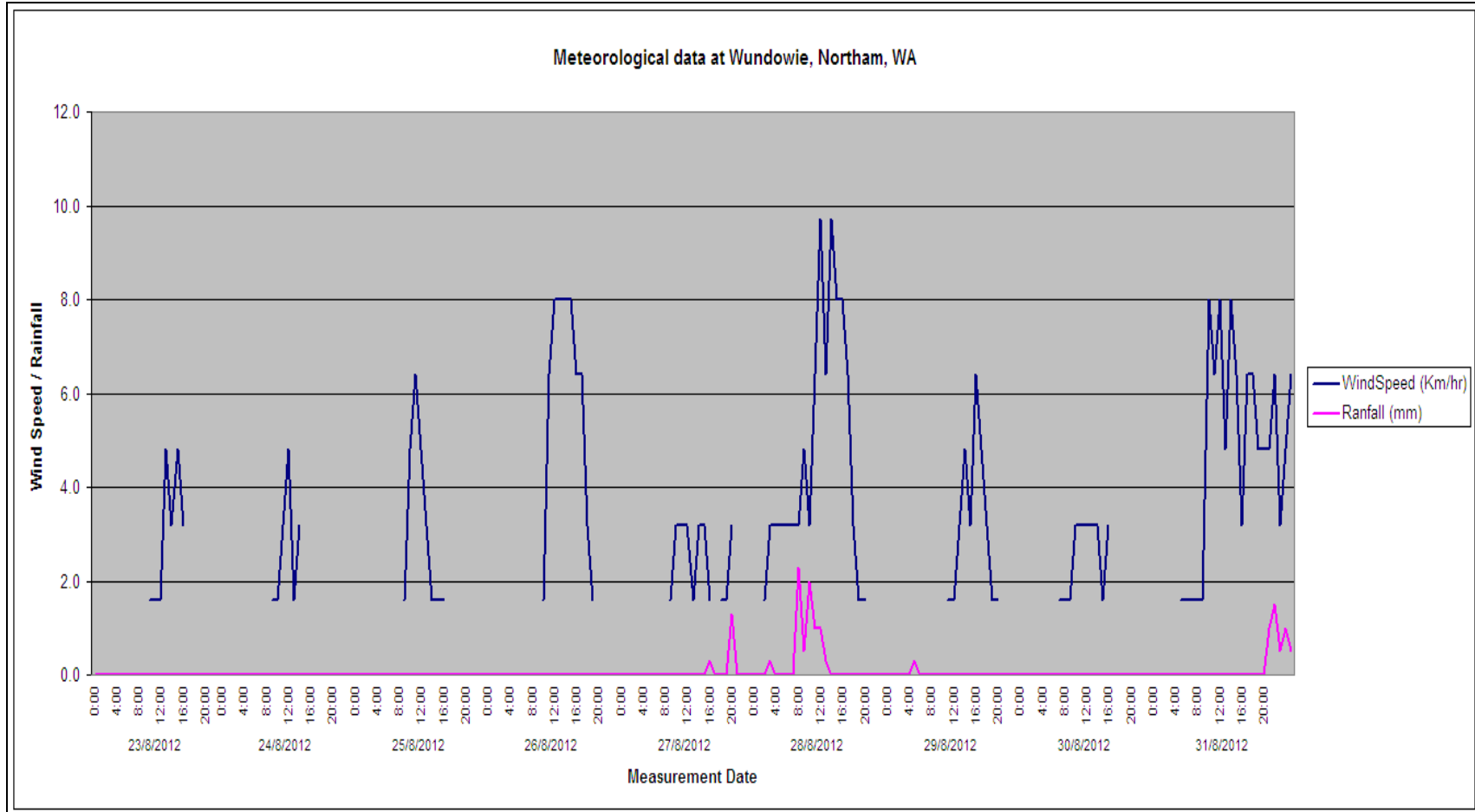


Figure B-2: Representative site weather data during noise measurement period [8]

Appendix C. DRAWINGS USED FOR THE PROPOSED DEVELOPMENT

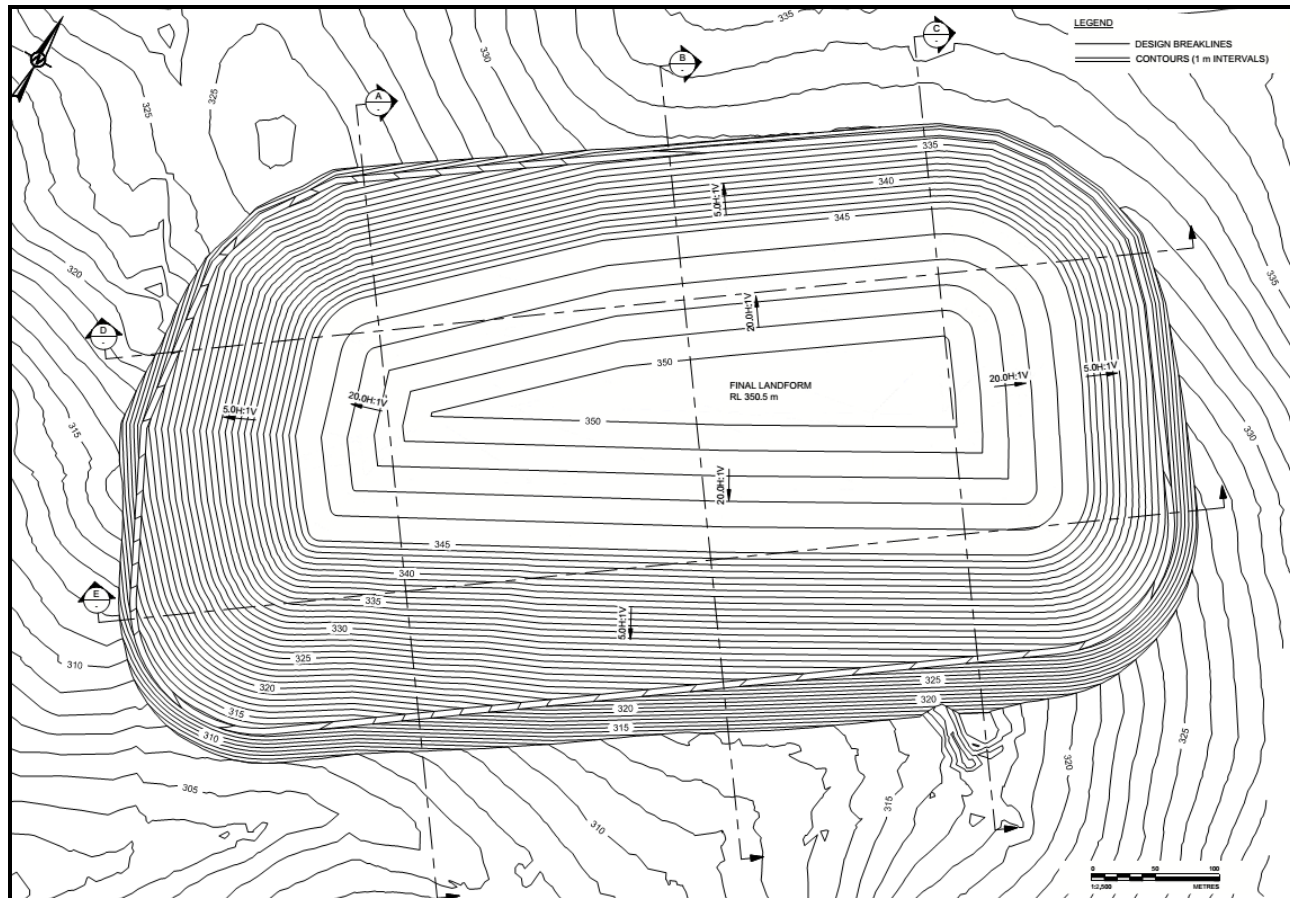


Figure C1: Development site footprint used for the development of Sound PLAN Model

Appendix D. REGRESSION CHARTS

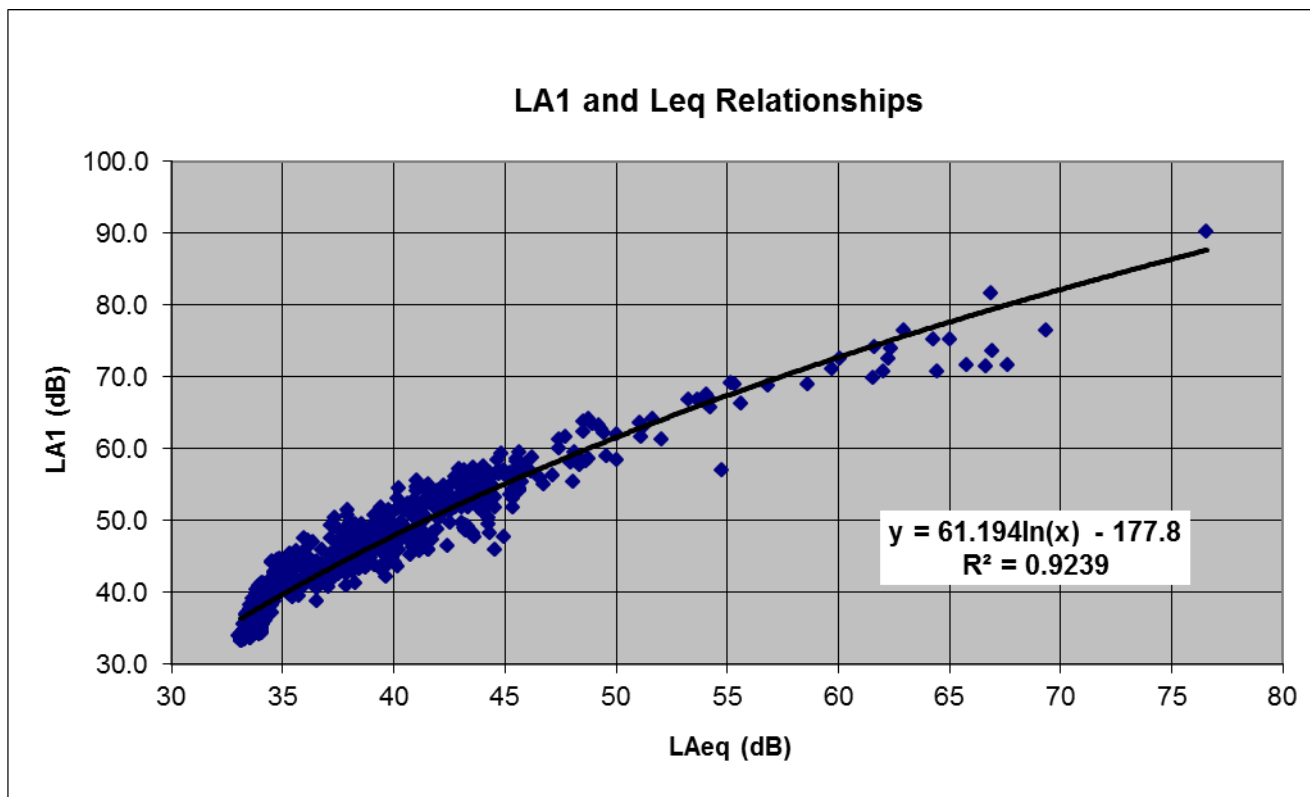


Figure D1: Regression line established between LA1 and LAeq based on measured data on site

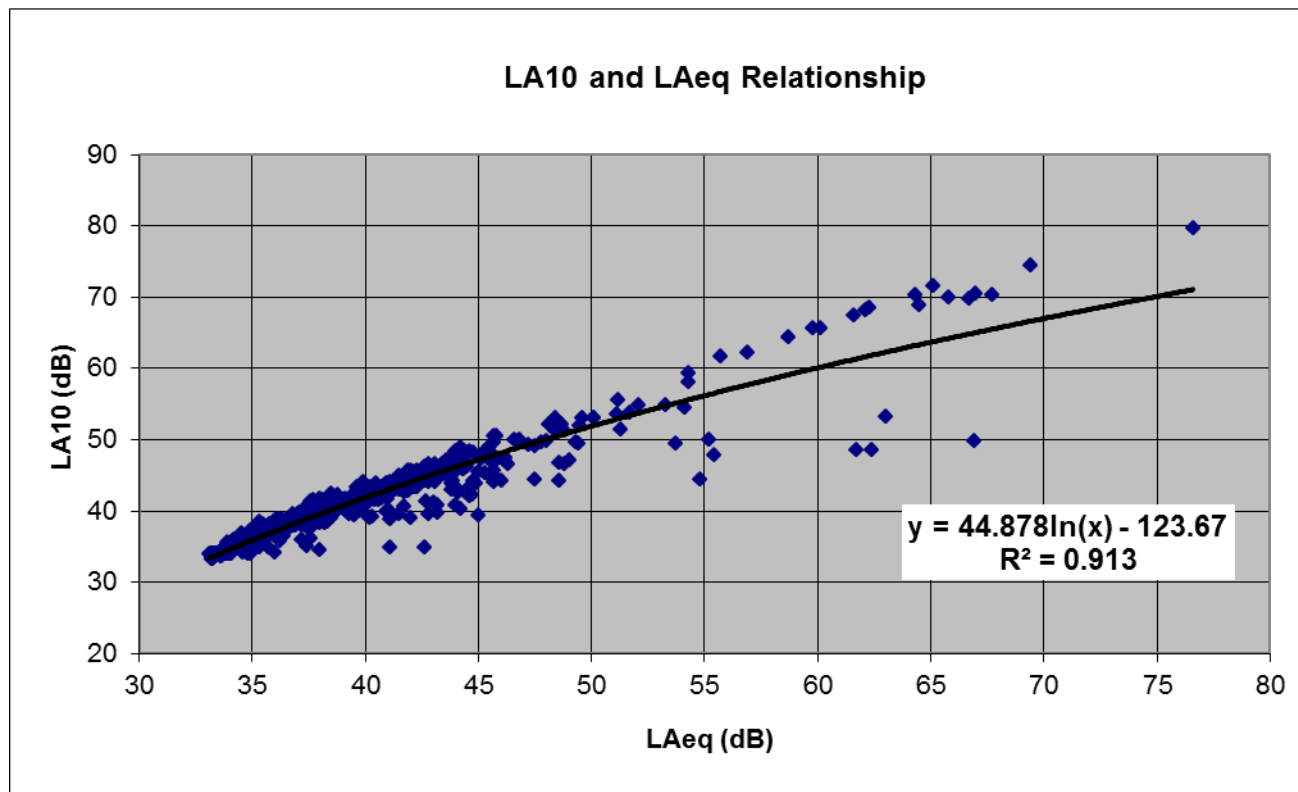


Figure D2: Regression line established between LA10 and LAeq based on measured data on site

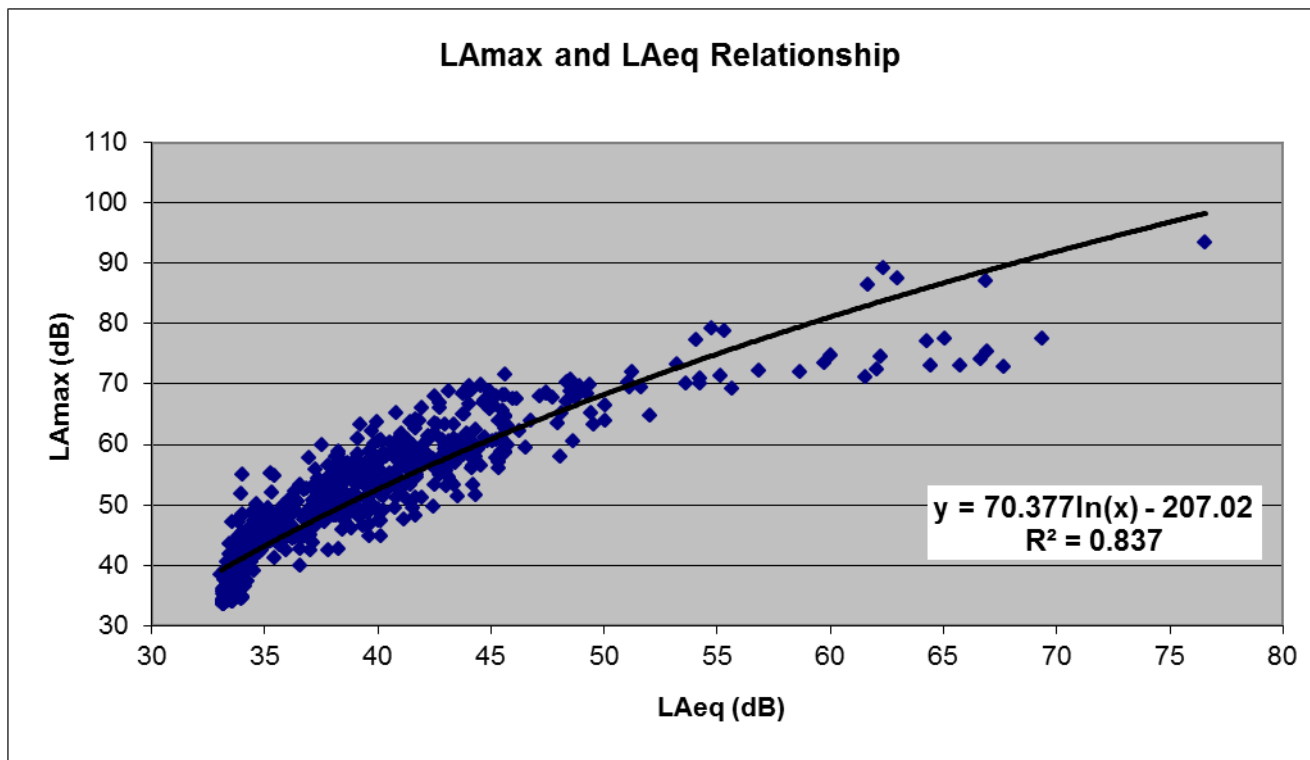


Figure D3: Regression line established between LAmax and LAeq based on measured data on site