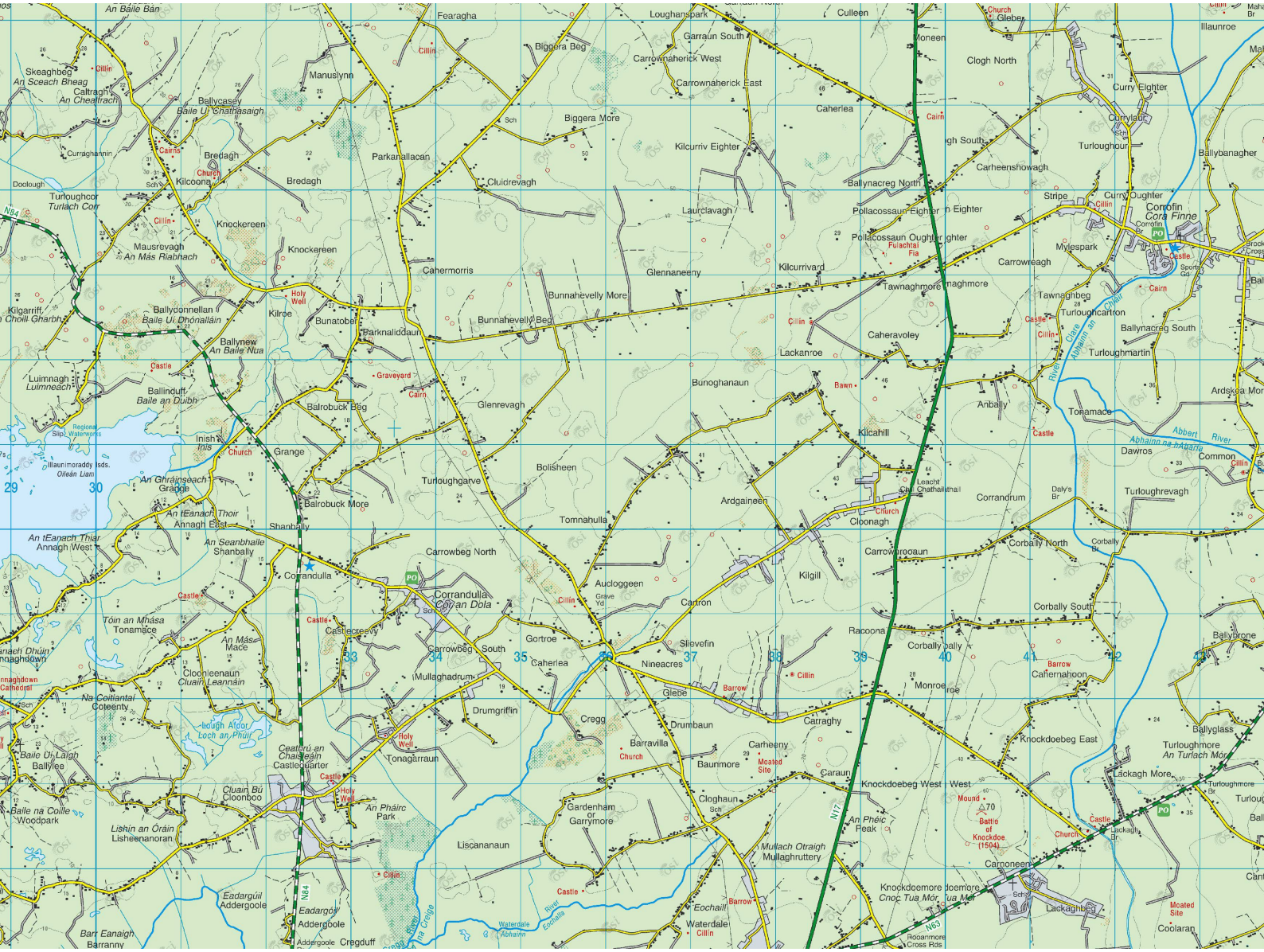
CHAPTER 11

NOISE AND VIBRATION



QUARRY CONSULTING

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Introduction

11.1 Noise and Vibration Consultants were commissioned by Harrington Concrete & Quarries to assess the potential noise and vibrations impacts of a proposed development at their quarry at Ardgaineen, Claregalway, Co. Galway. The proposed development includes laterally extending the extraction area without increasing the intensity of operation.

11.2 The existing quarry consists of a manufacturing area where all blasted material has historically been processed at a fixed primary, secondary, tertiary crushing and screening plants close to or on surface together with a concrete batching plant, a block-making plant and an asphalt plant all located on surface. The aforementioned facilities have been authorised by various planning consents.

11.3 The assessment is predominately made using measured levels during two survey periods and predictions made using data from plant measured on site.

Statement of Authority

11.4 This chapter of the EIAR has been prepared by Mr. Brendan O'Reilly of Noise and Vibration Consultants Ltd. Brendan has a Master's degree in noise and vibration from Liverpool University and has over 40 years' experience in noise and vibration control (and many years' experience in preparation of noise impact statements having dealt with all noise and vibration aspects of Europe's largest Zn/Pb for over 35 years). Brendan has been a member of a number of professional organisations over many years including the SFA, ISEE and IMQS. Brendan was a co-author and project partner (as a senior noise consultant) in 'Environmental Quality Objectives Noise in Quiet Areas' administered by the Environmental Protection Agency on behalf of the Department of the Environment, Heritage and Local Government. Brendan has considerable experience in the assessment of noise impact and has compiled EIA studies ranging from quarries, mines, tailings ponds, retail development, wastewater treatment plants, housing developments and wind farms.

Description of Proposed Activity

11.5 The application consists of a total area of c.12 Ha which includes 4.35 Ha of the existing quarry and 6.1 Ha of a greenfield area which is an extension of the existing footprint. The proposal involves extraction area down to 4mOD which is above the lowest level of the existing quarry floor.

11.6 The production levels of quarry activities will remain consistent. However, the fixed near-surface processing, including primary and secondary crushing and screening, will be relocated to the quarry floor. The tertiary crushing and screening processes will continue at their current near-surface location. This proposal is designed to maintain production intensity while extending the quarry's operational lifespan.

Noise Monitoring Surveys of Quarry Operation

11.7 Three noise monitoring surveys were previously undertaken at the quarry as part of a planning application previously submitted to Galway Co. Co. (GCC Ref P18/1149). The first noise monitoring survey was undertaken on 24th April 2018 and is the basis for assessing the impact of the proposed development while a second noise monitoring survey was carried out continuously during a period between 30thOctober and 8th November 2018. This second noise survey was carried out at similar locations to the first monitoring event in response to a further information request by Galway Co. Co. to Planning Application P18/1149. Recently a third noise monitoring survey was untaken from 2nd to 3rd April 2025. The three monitoring surveys are discussed in this chapter, however as the 2025 survey was carried out at normal operational activity (approx. 50%

activity) the survey was not considered useful for the purposes of assessing noise levels associated with the proposed development. This aspect is discussed further in sections 11.37 to 11.45 incl.

11.8 The results of all the 2018 surveys remain relevant and were used for predicting the noise levels at receptors as those survey were carried out when operation activity was at a high level and audible at all locations. Additionally, the consistency in monitoring locations and methodology ensures that the data is robust and reflective of the quarry's typical noise emissions, thereby aiding in assessing the potential maximum impact of the current proposal.

Noise Monitoring Methodology

11.9 The following instruments were used;

Four Larson Davis LxT Sound Expert Precision Integrating Sound Level Analyser/Data logger and 1/3 octave band analysing facility.

- One Larson Davis 812 Precision Integrating Sound Level Analyser/Data logger. The Larson Davis 812 was replaced by a Larson Davis LxT for the 2025 survey.
- Wind Shields Type: Double Skinned Wind Screens.
- Calibration Type: Larson Davis Precision Acoustic Calibrator Model CAL250 and CAL 200.

11.10 All instruments conform to BS EN 61672-1 and BS EN 60942, Class 1 and ISO Type 1. (**Appendix 11.1**: Calibration certificates).

11.11 Five noise monitors were used during the noise surveys with four monitors set up to run continuously at receptors N1 to N4 incl. with the fifth monitor used to monitor and assess the active noise sources in the quarry during the surveys. The fifth monitor was also used to provide for a short period noise assessment at Location N5.

Weather for 24th April 2018 Noise Survey

11.12 Care was taken during the first survey to ensure that weather conditions were good for such a survey. Noise monitoring during the first noise survey was in dry condition with a wind speed of 1 to 3m/s in a light northerly wind direction.

Measurement Parameters

11.13 L_{Aeq} is the A-weighted equivalent continuous sound level measured during the sample period. It is an average of the fluctuating noise level over the sample period. It can also be described as a notional steady level that has the same sound energy as the real fluctuating noise over a specified time interval- it is a type of average represented by a single number over a specified time interval.

11.14 L_{AFMax} is the maximum A-weighted sound level during a stated time period (Fast Time weighting).

- L_{A10} is the A-weighted sound level, which is exceeded for 10% of the sample period.
- L_{A50} is the A-weighted sound level, which is exceeded for 50% of the sample period
- L_{A90} is the A-weighted sound level, which is exceeded for 90% of the sample period and is defined as the background noise level within BS 4142.
- L_{A5} is the A-weighted sound level, which is exceeded for 5% of the sample period.

Measurement Procedure

11.15 Noise monitors were set up to run continuously and concurrently at four of the nearest receptor locations around the quarry (N1 to N4) with instruments set on 30- minute intervals and with microphones at 1.5m above ground level. All the environmental noise analysers had data logging

facilities set on real-time, the logged data was later downloaded via a personal computer using software. All noise monitors were calibrated before and after the survey and the maximum drift of calibration was 0.04dB. All monitors were within calibration certification times (Appendix 11.1).

Existing Quarry Operation during Noise Survey on 24th April 2018

11.16 **Plate 1** shows the monitoring /prediction locations denoted N1 to N5 and zones of activity numbered 1 to 6 (referred to as zones 1 to 6 in **Table 11.3**). Zones 1 to 5 denote the centre of activity of the quarry operation during the noise survey. Zone 5 represented the centre of activity for the crushing and screening fixed plant located close to surface. Zone 6 denotes the location of the extraction process close to the quarry face during the survey.

Quarry Operations during Noise Survey on 24th April 2018

11.17 The plant shown in **Table 11.1** hrs was run continuously on 24th April between 13.20 and 16.15 hrs and is shown with noise levels of individual activity when operating. The activities denoted in Zones 2 to 5 were operating continuously between 13.20 and 16.15 hrs. The three crushers /screeners are in series and represented within Zone 5 in Plate 11.1. During the monitoring period road trucks entered and left the site at low speed giving a negligible contribution to the overall noise environment. The site is a large area noise source with the noise emissions off site influenced by the nearest zones of activity. The noise levels at the boundary receptors will not be significantly affected by wind direction within 300m of the nearest activity. **Table 11.1** gives a list of activity / plant which normally operate in the quarry during maximum production.

Plate 0.1: Noise Monitoring Locations & Main Noise Sources Denoted by Centre of Activity for Zones 1-7 denoted as numbers 1 to 7.

Note: Zones numbered 7 relates to the proposed development

Table 11-1: Noise Sources & Noise Levels of Individual Plant in Operation on 24th April 2018

Noise Source	Noise level @ 10m Leq dBA	Comments
Batching Plant	79	Ready-mix truck being loaded
Asphalt Plant with 16.6Kw motors max. cap. @ 250tonnes/hr	74.5	New plant with main noise sources enclosed and motors within 1.5m of ground
Primary Crusher/Screener #1	86	Below surface level but conveyors and screeners visible on surface
Secondary crusher/Screener #2	85.5	Below surface level but conveyors and screeners visible on surface
Tertiary crusher/Screener #3	85	Below surface level but conveyors and screeners visible on surface
McCloskey tracked screener	79.5	Above ground level beside bins-portable plant
Volvo front-end loader-8 tonne	82.5	Pulling load up ramp
Cat 980 front end loader-10 tonne	83	Up ramp filling bins
Komatsu HD605-60 tonne	88	Travelling up ramp

11.18 Noise sources from plant on-site which was not operational on 24th April'18 is given in Table 11.3.

Table 11-2: Noise sources from plant on-site which was not operational on 24th April'18

Noise Source	Noise level @ 10m Leq dBA	Comments
Tracked drill rig for shot hole drilling +	85	A 3m high barrier provides 10dB attenuation when operating on surface-top bench
Portable Crusher / screener	85	20dB + barrier attenuation
Aveling Barford Rd 55 + -55 tonne dump truck	89	Operates when quarry is at full operating capacity feeding the #1 crusher at quarry floor with 20dB + barrier attenuation

Block making plant*	86	Operates on surface when demand requires
Forklift grab*	84	Operates on surface and used to move bales of block to nearby storage area for loading /delivery

+ Taken from BS 5228-1:2009. * Taken from own database

Results of Noise Survey on 24th April 2018

11.19 A summary of the noise levels recorded are given in **Table 11.3**. At each monitoring location there was noise contribution from non-quarry sources. These sources ranged from road traffic near and far, local farming activity and periods of very heavy rainfall on the morning of 8th September. Attendance at each noise monitoring location for periods allowed for interpretation to appropriate the noise levels generated by the quarry activity. The L90 value closely correlates the noise levels from the quarry operation. **Table 11.3** also shows the comparison between the periods of quarry activity and when there was no quarry activity (see complete data-set in **Appendix 11.2**: Noise data April 2018).

Table 11-3: Recorded mean noise levels taken at 30 minute intervals on 24thApril'18

Location id	Period	LAeq dBA	LA50 dBA	LA90 dBA	Comments
N1	13.30-16.00 hrs	49.3	48.7	46.0	Quarry in operation
	16.30-18.00 hrs	47.0	45.8	42.1	Quarry closed down
N2	13.30-16.00 hrs	49.7	47.8	44.4	Quarry in operation
	16.30-18.00 hrs	46.8	42.9	38.9	Quarry closed down
N3	13.30-16.00 hrs	49.8	48.5	45.5	Quarry in operation
	16.30-18.00 hrs	45.9	41.2	36.5	Quarry closed down
N4	13.30-16.00 hrs	51.3	50.2	47.3	Quarry in operation
	16.30-18.00 hrs	52.0	48.8	42.8	Quarry closed down

11.20 Analysis of noise data

- At location N1 the quarry gave Leq noise levels of **46dBA**
- At location N2 the quarry gave Leq noise levels of **44.4dBA**
- At location N3 the quarry gave noise levels of **45.5dBA**
- At location N4 the quarry gave noise levels of **47.3dBA**

11.21 At location N4 the Leq noise levels did not change when the quarry operation shut down. There is a berm and a large stockpile of material both which acts as a very significant acoustic berm between the quarry and receptors north to north-west of the site. Location 4 being close to the local road would have higher noise levels generated from local road traffic. The relationship between the L90 (and Leq) values with the quarry operating and closed down demonstrates the

impact of the quarry activity is no more than marginal. From observation/measurements made at location N4 the quarry operation gave Leq noise levels in the region of 47.3dBA. The noise level at location 5 was calculated from the measured levels at location 3 (according to the model in section 11.52) and equates to a Leq noise level of 45.2dBA.

Noise Monitoring Survey from 30th October to 7th November 2018

11.22 A second noise monitoring event was undertaken at the quarry between Tuesday 30th October and Wednesday 7th November 2018. This monitoring event was undertaken in response to an FI request by Galway Co. Co. in relation to Planning Application P18/1149.

11.23 The Planning Authority was of the opinion that the noise monitoring survey conducted on the 24thApril 2018 was insufficient in terms of its duration and therefore requested monitoring to be carried out over a minimum period of a week.

11.24 The noise monitors were set up at the same four monitoring locations N1 – N4 and measured continuously for a one-week period.

11.25 During the noise survey the weather was varied with the wind speed ranging from 0.5 to 6.5m/s (see noise data October/ November 2018 **Appendix 11.3**). The wind direction ranged between south, south-west and west. Temperature ranged between 4 and 13^{0}C. Rainfall and wind measurements were taken at location N2. The weather data was verified by checking the site data with the local Athenry Met Station.

11.26 A log of the quarry operation was kept on site and is included in **Appendix 11.3** along with hourly noise levels. When Plant is classified as 'Plant on' it means that all the crushers were in operation with associated trucking to and from crushers and to stockpiles, trucks were being loaded from the concrete batching plant and the tarmacadam plant was in operation. During the 7-day period the blocking machine did not operate. Furthermore, the blocking plant did not operate during the one-day survey carried out on 24th April 2018, however it was included in the predicted levels when the cumulative level of all plant is operation was being determined using each of the two noise surveys. The quarry operation commenced at 08.00hrs and stopped at 16.30hrs. On Friday the operations stopped at 13.00hrs. On 1st November the plant stopped at 11.00hrs and a blast went at 13.00hrs. A third noise survey was carried out during April 2025, however during this survey the dominant noise levels were from the N83 road traffic, so the data was not used for modelling prediction.

11.27 Photos of noise monitors in-situ is given in **Appendix 11.3** with one third octave band analysis for each monitoring location given in **Appendix 11.5**. Table 11.4 gives the recorded mean noise levels taken at 1-hour intervals rounded to nearest whole number.

Table 11-4: Recorded mean levels taken at 1-hour intervals rounded to the nearest whole number

Location id	Period	LAeq dBA	LA50 dBA	LA90 dBA	Comments
N1	08.00-17.00 hrs	51	49	45	Quarry in operation-Plant on
N2	08.00-17.00 hrs	49	47	43	Quarry in operation-Plant on
N3	08.00-17.00 hrs	48	45	40	Quarry in operation-Plant on
N4	08.00-17.00 hrs	50	48	45	Quarry in operation-Plant on

Commentary and Weather Effects

11.28 Noise levels in the environs of the quarry are influenced mainly by quarry operations and road traffic flow from the nearby N83. Other lesser contributions come from local farming, wind generated effects on vegetation and domestic activity. Noise levels are not significantly influenced by temperature or pressure during daytime. Rainfall can influence noise level especially during very heavy down pours, however light rainfall / drizzle will have negligible influence on noise levels above 40dBA.

11.29 Elevated wind speeds will influence noise levels especially when measurement locations are close to vegetation (tall trees etc.) which is normal with measurements being made at receptors. The influence can be greatest when using standard wind shields. Typically, when recording mean hourly wind speed gusts within that period will give maximum speeds ranging between a factor of 1.5 and 2 times above the mean wind speed. Relatively low wind speed can influence noise level when directly from source to receiver. Wind generated noise will vary at an individual sites due to local vegetation and exposure to the wind on a microphone.

11.30 Road traffic generated contribution is usually at its highest in the morning between 06.30 and 09.00 hrs.

11.31 A period from 13.00 hrs on Friday 2nd November to Saturday 3rd November at 20.00hrs is highlighted during this period there was no quarry activity, yet the period coincided with some of the highest noise levels recorded and that was mainly due to elevated wind speed effects on vegetation see Appendix 11.3.

11.32 Location N1: The noise levels sources are attributable to the quarry, road traffic from the N83 and local roads, wind generated noise from vegetation, birds and local domestic activity. Attended noise levels downwind was recorded at 44-45dBA which correspond to the L90 level of 45dBA. The Lmax levels are from noise levels sources generated close to the microphone and un-associated to the quarry activity. The main source of quarry noise at this location was from crushing and screening above surface.

11.33 Location N2: The noise levels sources are attributable to the quarry, road traffic from the N83 and local roads, wind generated noise from vegetation and birds. The monitoring location is exposed with some tall conifers nearby. Attended noise levels in the region of 42-43dBA was recorded and correspond to the mean L90 level of 43dBA. The Lmax levels are from noise levels sources generated close to the microphone and un-associated to the quarry activity. The main source of quarry noise at this location was from crushing and screening above surface.

11.34 Location N3: The noise levels sources are attributable to the quarry, road traffic from the N83 and local roads, wind generated noise from vegetation and local activity. Attended noise levels upwind was recorded at 38-40dBA closely corresponds to the mean L90 level of 40dBA. There was a low level of quarry audibility at this location. The block machine which would be the nearest activity to this location was not operating during any periods during the week long monitoring. The Lmax levels are from noise levels sources generated close to the microphone and un-associated to the quarry activity.

11.35 Location N4: The noise levels sources are attributable to the quarry, road traffic from the N83, local roads and quarry road, wind generated noise from vegetation, trucks entering and exiting the quarry site and local farming activity. Attended noise levels was recorded at 43-45dBA which corresponds to the L90 level of 45dBA. There was a low level of quarry audibility from the site at this location, but contributions were audible from trucks. The Lmax levels are from noise levels sources generated close to the microphone and un-associated to the quarry activity.

11.36 There was no clear impulsive or tonal component at any of the monitoring locations. A one-third octave frequency band analysis is given in **Appendix 11.5** for each monitoring location.

Noise monitoring survey undertaken from 2nd April to 3rd April 2025.

11.37 The noise monitors were set up at the same monitoring locations N1 to N4 incl. as in the previous surveys to run continuously and concurrently at the nearest receptors surrounding the quarry. Instruments set on 15-minute intervals with microphones at 1.5m above ground level. All the environmental noise analysers had data logging facilities set on real-time, the logged data was later downloaded via a personal computer using software. All noise monitors were calibrated before and after the survey by a Larson Davis CAL 200 with the maximum drift of calibration being less than 0.03dB well within standard guidelines. All monitors were within calibration certification times see **Appendix 11.1**. **Table 11.5** gives the recorded mean noise levels taken at 15minute intervals rounded to nearest whole number. During the survey the Asphalt plant operated from 07.00 to 09.00hrs and the ready-mix plan operated as given in Table 11.5.

Table 11-5: Recorded mean noise levels taken at 15-minute intervals on 2nd to 3rd April'25

Location id	Period	LAeq dBA	LA10 dBA	LA50 dBA	LA90 dBA	Comments
N1	2nd April 14:45-16:45 hrs	49	52	48	45	Quarry in operation
	2nd April 16:45-18:00 hrs	48	51	47	45	Quarry not operating
	3rd April 07.30-16.30 hrs	49	51	48	45	Quarry in operation
	3rd April 16:30-18:00 hrs	51	53	50	47	Quarry not operating
N2	2nd April 14:15-16:45 hrs	44	46	43	41	Quarry in operation
	2nd April 16.45-18.00 hrs	42	44	41	39	Quarry not operating
	3rd April 07.30-16.30 hrs	44	45	42	39	Quarry in operation
	3rd April 16:30- 18:00 hrs	45	47	45	43	Quarry not operating
N3	2nd April 13.45-16.45 hrs	46	48	38	33	Quarry in operation
	2nd April 16.45-18.00 hrs	49	51	34	30	Quarry not operating
	3rd April 07.30-16.30 hrs	45	47	41	37	Quarry in operation
	3rd April 16:30- 18:00 hrs	49	53	44	39	Quarry not operating
N4	2nd April 13.00-16.45 hrs	47	50	45	41	Quarry in operation
	2nd April 16.45-18.00 hrs	47	50	46	42	Quarry not operating
	3rd April 07.30-16.30 hrs	49	52	47	43	Quarry in operation
	3rd April 16:30- 18:00 hrs	49	52	47	44	Quarry not operating

Commentary and Weather Effects

11.38 During the noise survey the weather was varied with the wind speed ranging from 3 to 8m/s (see 15-minute noise data in **Appendix 11.4**. The wind direction was in a steady easterly direction with temperature ranged between 6 and 16^{0}C. There was no rainfall during the period and wind data was verified from the local Athenry Met Station.

11.39 The quarry was at an operational level which pertains for approximately 60% in any one year (Reference Quarry Manager). Wind direction during the survey was easterly directly from the very high traffic flow on the N83. The dominant noise during the noise survey was from road traffic with onsite operations in-audible at all locations during my many visits to each location. Furthermore, the N83 being a line source (not a point source) means the geometric spreading reduces noise levels by 3 dBA instead of 6 dBA for a point source. During the survey the

11.40 Location N1: The main noise source was from N83 road traffic and birds (crows) which contributed to Lmax levels with quarry activity inaudible on my visits to this location.

11.41 Location N2: The main noise source was N83 road traffic with quarry activity inaudible on my visits to this location.

11.42 Location N3: The main noise sources was N83 road traffic with quarry activity inaudible on my visits to this location.

11.43 Location N4: The main noise sources was N83 road traffic, traffic to the site, with on-site quarry activity inaudible on my visits to this location.

11.44 The dominant noise at all locations were from the noise emissions from the high flow N83 road traffic with site activity inaudible.

Noise Levels during the three Survey Periods

11.45 A summary of the mean noise levels obtained from the 24thApril 2018 and the 30thOct to 8th Nov'18 monitoring periods are given in **Table 11.6. The summary of mean levels includes periods during which the plant operated at near full capacity.** All data relating to periods when plant was not operating was excluded. The nose levels obtained during the 2025 survey were excluded from the prediction assessment as the dominant noise during the survey was from N83 road traffic.

11.46 **Table 11.6** gives the measurements obtained during the 2018 one day's supervised monitoring and the measurements obtained during the seven-day period when the plant was operating

Table 11-6: Noise levels recorded over the 1 -week period and the 1-day period

Dwelling Id	Measured mean noise level Leq 1hr dBA 30th Oct to 8th Nov'18	Measured mean noise level Leq 1hr dBA 1 day- 24th April'18
N1	45	46
N2	43	44.4
N3	40	45.5
N4	45	47.3
N5	45*	45.2

*Predicted based on measurements taken at N4

11.47 The quarry noise levels from 1-week of monitoring period were marginally lower at all locations than that obtained during the 1-day monitoring period. The higher levels of 24th April '18 was used along with predicted levels of plant which was not operating during the noise survey (refer to **Table 11.2**).

Proposed Development

11.48 In the proposed development Zones 6 represents the new location for components of fixed primary, secondary crushing and screening which moves to the quarry floor at 15 to 20m below surface.

11.49 Zone 7 denotes an area (referred to in Plate 1 and **Table 11.7**) where excavation and processing of rock is at a location close to the quarry face and boundary and is being carried out together with simultaneous drilling of shot holes on surface at locations which are closest to prediction locations N1 to N7.

Predicted Noise Levels from Proposed Development

11.50 The marginally higher levels obtained on 24th April'18 are used in the prediction for the proposal off:

- Increased quarry excavation footprint
- Moving some of the primary and secondary crushing and screening to the quarry floor

11.51 The footprint of the quarry noise sources in Zones 1 to 4 inclusive will not alter due to the proposed development, however some of the noise sources in the surface fixed crushing and screening plant (Zone 5) will be located to the quarry floor. The proposed development including rock extraction can occur in tandem with the operation of the existing surface infrastructure, so both are assessed together as cumulative impacts.

Predicted Noise Levels from Plant not in Operation during Surveys

11.52 The difference between noise levels at two far-field locations can be calculated as:

$$L_{p2} - L_{p1} = 10 \log (R_2 / R_1)^2 - (A_{atm} + A_{gr} + A_{br} + A_{mis})$$
$$= 20 \log (R_2 / R_1) - (A_{atm} + A_{gr} + A_{br} + A_{mis})$$

Where

L_{p1} = sound pressure level at location 1
L_{p2} = sound pressure level at location 2
R_1 = distance from source to location 1
R_2 = distance from source to location 2

and where

A_{atm} = Attenuation due to air absorption
A_{gr} = Attenuation due to ground absorption
A_{br} = Attenuation provided by a berm/barrier
A_{mis} = Attenuation provided by miscellaneous other effects
Attenuation by air absorption, ground absorption and miscellaneous effects is conservatively assumed as 2dBA.

11.53 **Table 11.7** gives a list of activity in each zone and the distance of centre of activity in that zone to the nearest receptor. The list of activity includes locations around the perimeter of the proposed quarry footprint in Zone 7 with the near surface primary and secondary crushing and screening moved to the quarry floor denoted by activity in Zone 6 (see **Plate 11.1)**.

Table 11-7: Noise monitoring locations and distance of activity to nearest receptors

Receptor id	Distance (m)	Activity
N1	401	Zone 5-Tertiary crushing and screening
	648	Zone 1-Blockyard including forklift
	565	Zone 3-Batching plant / ready-mix truck filling
	577	Zone 2-Asphalt Plant
	544	Zone 4-Storage bins and screener
	335	Zone 6-Primary, secondary crushing, screening on quarry floor
	108	Zone 7- Shot drilling on surface
	128	Zone 7- Excavator loading to dumper for trucking
N2	664	Zone 5-Tertiary crushing screening
	810	Zone 1-Blockyard including forklift including forklift
	772	Zone 3-Batching plant / ready-mix truck filling
	735	Zone 2-Asphalt Plant
	711	Zone 4-Storage bins and screener
	554	Zone 6-Primary, secondary crushing, screening on quarry floor
	362	Zone 7- Shot drilling on surface
	382	Zone 7- Excavator loading to dumper for trucking
N3	479	Zone 5-Tertiary crushing screening
	302	Zone 1-Blockyard including forklift
	378	Zone 3-Batching plant / ready-mix truck filling
	291	Zone 2-Asphalt Plant
	311	Zone 4-Storage bins and screener
	425	Zone 6-Primary, secondary crushing, screening on quarry floor
	218	Zone 7- Shot drilling on surface
	238	Zone 7- Excavator loading to dumper for trucking
N4	330	Zone 5-Tertiary crushing screening
	564	Zone 1-Blockyard including forklift
	459	Zone 3-Batching plant / ready-mix truck filling
	532	Zone 2-Asphalt Plant
	504	Zone 4-Storage bins and screener
	394	Zone 6-Primary, secondary crushing, screening on quarry floor
	301	Zone 7- Shot drilling on surface

	321	Zone 7- Excavator loading to dumper for trucking
N5	512	Zone 5-Tertiary crushing screening
	243	Zone 1-Blockyard including forklift
	347	Zone 3-Batching plant / ready-mix truck filling
	301	Zone 2-Asphalt Plant
	335	Zone 4-Storage bins and screener
	528	Zone 6-Primary, secondary crushing, screening on quarry floor
	290	Zone 7- Shot drilling on surface
	310	Zone 7- Excavator loading to dumper for trucking

NB: Zones 1 to 7 is denoted in Plate 11.1 as numbers 1 to 7

11.54 The predicted maximum noise levels assumes that excavation is at the location nearest to each receptors N1 to N5 denoted by Zone 7 (**Plate 11.1**). Zone 7 also includes surface shot hole drilling occurring at the nearest point to the prediction made for receptors 1 to 5 inclusive.

11.55 The activity in Zone 5 is reduced considerable by removing the primary and secondary crushing / screening to a new location on the quarry floor. All other zone surface activity is fixed and remains at the same distance to receptors as during the two noise survey periods.

11.56 An allowance of 12dBA has been made for shot drill where shot drilling is located beside the 3.5 /4m berm. A reduction of 20dBA has been allowed where the plant is on the quarry floor where the path difference is well in excess of 2m (Ref BS 5228-1:2009). A reduction of 20dBA is assumed for quarry extraction activity such as loading blasted rock to dumpers, as this activity will be within approx. 40m of the active face (the author has recorded barrier effects in similar locations well in excess of 30dBA when such activity is within 40m of the active quarry face).

11.57 **Table 11.8** gives the predicted noise levels at receptors taking into account the proposal to increase the quarry footprint and moving items of fixed plant (primary and secondary crushing and screening) to the quarry floor. The predicted noise levels assume that shot hole drilling and excavation of rock is being carried out at the same time while operating at the nearest point to receptors.

Table 11-8: Predicted noise levels at locations nearest to receptors

Location ID	Distance to receptor (m) from activity	Attenuation allowed for barrier/berm effects	Predicted noise level dBA	Cumulative noise level dBA
N1	Shot hole drilling on surface= 108m	12	52.3	
	Extraction at quarry face = 128m	20	41.0	
	Primary/secondary crushing and screening on quarry floor = 409m	20	34.7	
	Dump truck = 401m	20	36.9	52.9
	Block yard = 648m	10	39.8	
	Forklift = 648m	10	37.8	
N2	Shot hole drilling = 362m	12	43.8	
	Extraction at quarry face = 382m	20	32.0	
	Primary/secondary crushing and screening on quarry floor = 585m	20	31.5	45.8

	Dump truck =	664m	20	32.6	
	Block yard =	810m	10	37.8	
	Forklift =	810m	10	35.8	
N3	Shot hole drilling =	218m	12	49.2	
	Loading rock at quarry face=	238m	20	35.5	
	Primary/secondary crushing and screening on quarry floor =	371m	20	35.4	52.1
	Dump truck =	479m	20	35.4	
	Blockyard =	302m	10	46.4	
	Forklift =	302m	10	44.6	
N4	Shot hole drilling =	301m	12	45.4	
	Loading rock at quarry face=	321m	20	32.8	
	Primary/secondary crushing and screening on quarry floor =	445m	20	33.8	48.3
	Dump truck =	330m	20	38.6	
	Blockyard =	564m	10	41.0	
	Forklift =	564m	10	39.0	
N5	Shot hole drilling =	290m	12	43.8	
	Loading rock at quarry face=	310m	20	33.2	
	Primary/secondary crushing and screening on quarry floor =	464m	20	32.6	51.5
	Dump truck =	512m	20	34.8	
	Blockyard =	243m	10	48.3	
	Forklift =	243m	10	46.3	

Note: Crushing and screening has been included in the noise survey measurements

11.58 The total quarry noise levels (measured and predicted) are given in **Table 11.9** include the predicted noise levels in **Table 11.8.**

11.59 Adjustments are made to the total noise levels measured to allow for primary, secondary crushing and screening being moved to the quarry floor. This is to account for these items of plant already included in the recorded noise levels in **Table 11.6**.

11.60 Combining the active noise sources with noise levels (**Table 11.1**) in the quarry during the noise survey results in:

11.61 (79+74.4+86+85.5+85+79.5+82.5+83+88) which added equates to an equivalent level at 10m of 93.6dBA. When the two crushing/ systems are removed the total level equates to a level at 10m of 91.8dBA a difference of 1.2dBA. This difference is subtracted from the values in **Table 11.1**. to avoid over estimation of the crushing screening systems whereby part of this system is being moved to the quarry floor with prediction made for same.

11.62 **Table 11.9** gives the predicted cumulative noise levels from the proposed development with all plant operating with shot hole drilling on top bench and rock excavation at location denoted by Zone 7 on **Plate 11.1** (all operations at nearest point to receptors N1 to N5). Shot hole drilling typically occurs for approximately 2 to 3 days for each blast with the number of blasts per year could range from 10 to 20 depending on demand.

11.63 The predicted maximum noise levels due to surface drilling at receptors N1 and N4 (and receptors between these locations) south of the development will occur for no more than a total of 2 to 3 days.

Table 11-9: Predicted noise levels from proposed development when operating at full capacity at locations nearest receptors

Dwelling Id	All plant in operation Leq 1hr dBA	Cumulative Leq 1hr dBA
N1	(46.0-1.2) + 52.9	53.5
N2	(44.4-1.2) + 45.8	47.7
N3	(45.5-1.2) + 52.1	52.8
N4	(47.3-1.2) + 48.3	50.3
N5	(45.2-1.2) + 51.5	52.2

NB: Predictions are made for locations 6 and 7 based on Tables 11.8 and 11.9. Maximum noise levels at N6 are predicted at 48.8 dBA while the maximum predicted noise levels at N7 is 50.9 dBA.

Ameliorative Measures in Place

11.64 The asphalt plant has been constructed with motors at low level and housed.

11.65 Reversing beepers on site mobile plant have been replaced with 'white noise beepers' which is not audible to any receptors.

11.66 Rubber lining has been installed on all transfer points on the crusher / screener systems.

11.67 All motors and pulleys are maintained to a high standard with regular maintenance to avoid any tonal or impulsive components in the emission.

11.68 All mobile plant on site has well maintained silencers.

Ameliorative Measures Being Put in Place

11.69 The primary and secondary crusher and screening systems are being relocated to the quarry floor well below the surrounding surface level, with the quarry faces acting as a significant acoustic barrier.

11.70 A screening berm is proposed around part of the proposed quarry extension area.

11.71 Machinery will be throttled down or turned off when not in use and this to include crushing screening systems.

11.72 A noise buying standard will be put in place where any replacement of mobile or fixed plant will have noise characteristics considered.

Relevant Guidance and Current Noise Limits of Existing Operations

11.73 The EPA has produced Environmental Management Guidelines- 'Environmental Management in the Extractive Industry (Non-Scheduled Minerals) [2]', 2006. This document references 'A Guidance Note for Noise in Relation to Scheduled Activities (EPA, 1996[1])'. It deals with the

[2] Quarries and Ancillary Activities, Guidelines for Planning Authorities Dept of the Environment, Heritage and Local Government April 2004

[1] Ref. EPA's Guidance Note For Noise In Relation to Scheduled Activities, 1996

approach to be taken in the measurement and control of noise, and provided advice in relation to the setting of emission limits values and compliance monitoring.

11.74 In relation to quarry developments and ancillary activities, it is recommended that noise from the activities, it recommended that noise from the activities on site shall not exceed the following noise limits at the nearest noise-sensitive receptor:

- Daytime 08.00-20.00 hrs LAeq (1h) = 55dBA
- Night-time 20.00-08.00 hrs LAeq (1h) = 45dBA
- 95% of all noise levels shall comply with the specified limits values(s). No noise level shall exceed the limit value by more than 2dBA.

Current Noise Limits of Existing Operation

11.75 The quarry operates under ABP-310037-21 (dated 18th Jan 2023) and Planning Authority Ref. No. 211/69 under Condition 3 and Condition 4.

11.76 Condition 3

- (1) States: 'The Concrete Batching Plant and the Macadam Plant, and all activities occurring therein, shall only operate between 0700 hours and 2000 hours, Monday to Friday and between 0800 hours and 1600 hours on Saturdays. No activity shall take place outside these hours within any part of the site before 0800 hours on any day'.
- (2) No works shall take place at night-time or outside of the foregoing amended hours of operation.

11.77 Condition 4

11.78 During the operational phase of the development the noise level from within the boundaries of the site measured at noise sensitive locations in the vicinity, shall not exceed-

- (a) an LArT value of 55dBA during the period 0700 hours and 2000 hours from Monday to Friday (inclusive) and 0800 hours to 1600 hours on Saturdays.
- (b) an LArT value of 45dB(A) at any other time. The T value shall be 15 minutes.

Noise Assessment of Operation

11.79 The noise levels from the existing facility have been measured at the nearest receptors surrounding the site. Where plant was idle, the noise level of the idle plant was predicted at the nearest receptors and the cumulative levels (noise levels of all plant which operates in the quarry) were assessed. The predicted maximum cumulative noise levels (all plant in the quarry operating together) are within the noise limits of Condition 3 and Condition 4 at all locations. It should be noted that all plant operating together would be an exceptionally rare scenario. It should also be noted that there is a significant noise contribution from road traffic on the N83 which was evident during the April 2025 noise survey. The noise emissions will be greatest with an east wind while NE and SE winds will contribute lower levels around the perimeter of development. At distance greater than 500m from the N83 the emissions will be in the lower frequency spectrum.

Construction Noise

11.80 The main construction activity involved in the proposed development is the construction of berms close to the boundary perimeter. For these works it is assumed that a dump truck and excavator will be operating close to the boundary.

11.81 The NRA guidelines for construction noise which are considered acceptable are given in **Table 11.10**.

Table 11-10: Noise levels that are acceptable based on the NRA Guidelines

Day / Times	Guideline Limits
Monday to Friday 07:00 – 19:00hrs 19:00 – 22:00hrs	 70dB LAeq, (1h) and LAmax 80dB *60dB LAeq, (1h) and LAmax 65dB*
Saturday 08:00 – 16:30hrs	 65dB LAeq,1h and Lamax 75dB
Sunday and Bank Holidays 08:00 – 16:00hrs	 *60dB LAeq,1h and LAmax 65dB*

11.82 Construction times for the development is:

Construction times for the development is: Monday to Friday: 07.00 to 20.00hrs, Saturday 08.00 to 16.00hrs with no work on Sundays, or Bank Holidays.

Predicted Construction Noise levels

11.83 The predicted noise levels are carried out using the model in section 11.52. An assumed source noise levels equivalent is given as Leq 1hr of 88dBA at 10m. The berm construction will use overburden material from the site. **Table 11.11** give the predicted maximum noise levels during construction at locations close to receptors.

Table 11-11: Predicted maximum noise levels at locations close to receptors

Location ID	Distance to receptor (m) from activity		Attenuation allowed for barrier/berm effects	Predicted noise level dBA
N1	Dump truck+ Excavator=	127m	2	63.9
N2	Dump truck+ Excavator=	332m	2	55.6
N3	Dump truck+ Excavator=	188m	2	60.5
N4	Dump truck+ Excavator=	271m	2	57.3
N5	Dump truck+ Excavator=	260m	2	57.7
N6	Dump truck+ Excavator=	183m	2	57.5
N7	Dump truck+ Excavator=	275m	2	57.2

Assessment of Construction Noise

11.84 The maximum predicted construction noise levels are well within the NRA Guidelines.

11.85 The proposal should not increase the traffic flow on the local road network. There is a logarithmic relationship between road traffic flow and noise levels. Typically doubling the traffic flow will result in a 3dBA noise level increase. There will no increase in road traffic noise levels by the continued operation of the quarry.

Ground Vibration from Road Traffic

11.86 The ground vibration levels from road traffic will be below the level of sensitivity at all receptors along the exit route at less than 0.2mm/sec.

Blast Vibration

Ground Vibration

11.87 Ground vibration is caused by the imperfect utilisation of the explosive energy released from the fragmentation of rock during blasting operations. The energy that is unused in the fragmentation of rock propagates as an elastic disturbance away from the shot area as seismic waves. These waves, which radiate in a complex manner, diminish in strength with distance from the source. The theory relative to this motion is based on an idealised (sinusoidal) vibratory motion. When these waves come into contact with a free face, physical motion results as the energy induces oscillation in the ground surface. Blasting vibration is a surface wave type, which incorporates components of both body and surface motion.

11.88 Ground vibration itself is in-audible, however air vibrations (air overpressure) both audible and sub-audible usually accompany it. The resulting impacts of blasting vibration are often characterised as being impulsive and of short duration, usually less than 2 seconds. It is difficult for the average lay person to differentiate between the various types of vibrations (ground vibration and air overpressure), humans commonly associate the level of vibration with the 'loudness' of a blast.

Ground Vibration Control

11.89 Ground vibration from blasting at any receptor point is influenced in the main by:

- the maximum instantaneous charge of explosives usually referred to as MIC.
- the medium between blast source and receptor point and.
- the distance between the receptor point and the blast source.

11.90 Ground vibration control is based on reducing and controlling the weight of explosives detonated per delay. In any given situation large amounts of explosives can be detonated using time delay intervals (greater than 8millie-second) between specific charges within the overall blast. The level of ground vibration is directly related to the maximum charge weight per delay and numerous studies have shown that peak particle velocity (PPV) is directly related to the maximum charge weight per delay. In terms of predicting ground vibration each quarry location is 'site specific'. Typically, a 'scaled distance' regression line can be established using monitored vibration data, MIC and distance. Vibration monitoring of each blast will determine if blast vibration compliance is met and it also allows the development and adjustments to the 'scale distance' regression line for the proposed site. As this is an established blasting site a significant amount of data is available to demonstrate compliance with ground vibration levels. In practice the distance and MIC to a blast receptor will determine the MIC used for blasting. As blasting operations move in a north north-east and east direction blast vibration levels can be reduced by lowering the MIC if necessary. The MIC can be lowered using a combination of methods:

- reducing the shot hole diameter

- reducing the bench height, thereby reducing the shot hole
- decking charges-dividing the charge with the shot hole by using a minimum of 1.5m of stemming

11.91 The most up to date technology in blasting operation is used and will continue to be used in the quarry. To this end face profiling will be carried for each blast so that the accurate geometry of the free face can be established, thereby enabling the optimum burden and spacing to be applied for each blast. Ground vibration and air overpressure will be recorded for each blast at monitoring stations with state-of-the-art seismographs. Monitoring can assess compliance with blast vibration limits being met.

Historical Blast Measurements

11.92 Several blasts have been conducted in the excavation area where monitoring has shown compliance. Blasting will move closer to receptors to the north, east and south- east areas. Blasting will move closest to receptor V4, however ground vibration levels can be kept well within the ground vibration limit. Lowering the MIC in any specific blast will reduce ground vibration levels. Historical ground vibration levels are kept well below statutory limits. Blast vibration will decrease with distance in all directions although the level of attenuation may vary slightly due to geological conditions.

11.93 **Table 11.12** demonstrates a good level of compliance with the ground vibration limits over a number of years. The PPV is denoted by the maximum vector, or the maximum of each of the three orthogonal directions: the horizontal longitudinal, vertical, horizontal transverse (L,V,T). The locations of blast measurements are given in **Plate 11.2**, except for one distant location at 1.5km from the blast source (see Table 11.12 for levels).

Plate 11.2: Ground Vibration and Air Overpressure Monitoring Locations

Table 11-12: Blast vibration Levels including Air-Overpressure for 2019 to 2025

2019 BLASTING DETAILS							
							Air
Location	Date	MIC	Total	L	T	V	Overpressure
		Kg	Charge/Kg	mm/s	mm/s	mm/s	dB
V4	25/02/2019	60	2266	2.4	1.9	2.4	117
V5	25/02/2019	60	2266	1.3	1.6	0.9	106
			2020 BLASTING DETAILS				
							Air
Location	Date	MIC	Total	L	T	V	Overpressure

		Kg	Charge/Kg	mm/s	mm/s	mm/s	dB
V1	06/10/2020	60	3,161	1.0	2.0	1.3	117
V1	22/10/2020	64	2,166	1.5	1.6	2.4	108
V1	10/11/2020	61	22,88	2.2	1.5	1.7	116
V4	10/11/2020	61	22,88	2.4	2.2	2.9	118

2021 BLASTING DETAILS							
							Air
Location	Date	MIC	Total	L	T	V	Overpressure
		Kg	Charge/Kg	mm/s	mm/s	mm/s	dB
V1	10/08/2021	86	5595	2.3	2.7	2.1	124
V1	23/09/2021	90	3965	1.8	2.2	2.4	119
			2022 BLASTING DETAILS				
							Air
Location	Date	MIC	Total	L	T	V	Overpressure
		Kg	Charge/Kg	mm/s	mm/s	mm/s	dB
V1	10/03/2022	104	3265	1.0	2.0	1.3	118
V1	06/09/2022	100	3395	1.5	1.6	2.4	121
V1	04/10/2022	100	5200	2.2	1.5	1.7	126

2023 BLASTING DETAILS							
							Air
Location	Date	MIC	Total	L	T	V	Overpressure
		Kg	Charge/Kg	mm/s	mm/s	mm/s	dB
V1	27/07/2023	104	4543	1.1	2.2	1.9	130
V1	28/08/2023	100	3875	1.1	1.4	1.2	126

V1	21/09/2023	113	4185	1.5	1.4	1.1	125
			2024 BLASTING DETAILS				
							Air
Location	Date	MIC	Total	L	T	V	Overpressure
		Kg	Charge/Kg	mm/s	mm/s	mm/s	dB
V1	10/03/2024	104	4,527	2.0	1.4	2.6	123
V1	12/03/2024	110	5,077	1.5	1.5	1.3	124
V1	02/09/2024	122	5,831	3.1	2.0	1.3	123
M & A Hindle Over 1.5km from blast	02/09/2024	122	5,831	<0.5	<0.5	<0.5	<120
V1	16/03/2024	100	5,552	3.4	3.6	2.9	124
V1	12/11/2024			3.2	2.0	2.3	123

2025 BLASTING DETAILS							
							Air
Location	Date	MIC	Total	L	T	V	Overpressure
		Kg	Charge/Kg	mm/s	mm/s	mm/s	dB
V1	10/03/2025	104	4,527	2.0	1.4	2.6	123

11.94 Variations in the maximum instantaneous charge weights (MIC) and distance to a receptor at any specific site are closely related to variations in vibration magnitude. The distance from a blast to receiver and MIC determines the basis of vibration prediction.

Ground Vibration Criteria, Guidelines/Recommendations/Standards

11.95 The measurement of peak particle velocity (PPV) is internationally recognised as the best single descriptor to use when assessing potential ground vibration damage to structures/buildings. More recently velocity-frequency control bounds are used as damage control criteria. There are no Irish standards for ground vibration control, however there are limits recommended in the EPA's Guidance Note on Noise in Relation to Scheduled Activities. These limits are also recommended in the Guidelines for Planning Authorities for *Quarries and Ancillary Activities* issues in April 2004 by the Department of the Environment, Heritage and Local Government. The EPA has also published a document "Environmental Management Guidelines" Environmental

Management in the Extractive Industry (Non-Schedule Minerals)-2006. There are many different standards and recommendations being used internationally, some like the German DIN 4150[1] that lacks data for its foundation. However, most of these standards and recommendations are derived from the considerable work carried by the U. S Bureau of Mines (USBM). The USBM Report of Investigation 8507[2] gives practical safe criteria for blasts that generate low frequency ground vibrations (<40Hz). These are 19 mm/sec for modern houses and 12.7 mm/sec for older houses. Since 1993 British Standards Institute have adopted BS 7385 Part 2: 1993[3], this is based predominately on a literature review of the previous studies already alluded to in this report

11.96 For the quarry development the vibration limits will be similar to those already in place by Galway Co. Co. and within the EPA's Guidance Note).

Blast Vibration Limits for Current Operation

11.97 Condition 4 of Galway Co. Co. Section 261 Order states:

- Blasting shall be designed and operated so that:
- 'Ground vibration arising from any blasts carried out on site shall not exceed a peak particle velocity of 12mmls in any of the three mutually octagonal planes at the threshold of any house in the vicinity of the site'.
- The air overpressure arising from the blasts shall not exceed 125dB (lin) max peak with a 95% confidence limit when measured outside the nearest house to the blast.
- Monitoring for ground vibration and air over pressure shall be carried out by the operator during each blast.

Air Blast (Air-Overpressure) Noise

11.98 A blast causes a diverging shock-wave front that quickly reduces to the speed of sound, and an air blast is then propagated through the atmosphere as sound waves. Air blast or air overpressure is the term used to describe the low frequency, high energy air vibrations generated by blasting detonation. Air blasts are characterised by containing a larger proportion of its energy in the sub-audible spectrum, below 20 Hz. Because the waves associated with air blasts are essentially outside the audible spectrum (below 20 Hz), a separate unit of measure, pressure is reported.

11.99 The pressure is recorded using an air-blast transducer and the linear device must measure accurately in the structurally critical range, 2 to 20 Hz. Air blast (sound waves) can be reported in two distinct units of measurements, pressure (psi) or decibels (dB)

11.100 Sound waves in the form of the sub-audible sound waves (air overpressure/air blast waves), and noise (the audible waves) are sometimes linked inextricable. It is difficult sometimes for humans to differentiate between the characteristics of air blasts and noise.

11.101 Sub-audible waves are generally the biggest concern. The sub-audible sound waves, if high enough can excite structures to produce audible rattle inside structures and may, in the extreme, break glass and crack wall coverings. However, there are no known cases of foundation cracks from air blasts at values anywhere near the glass breakage threshold of 140 dB[4]. The cracking of

[1] German Standard, DIN 4150; Part 3: 1986, Vibration in buildings; effects on structures

[2] Siskind, D. E, Stagg, M. S., Kopp, and Dowding, C. H. (1980) '*Structure Response and Damage Produced by Ground Vibration From Surface Mine Blasting*' U .S Bureau of Mines RI 8507

[4] Siskind, D. E., Crum, S. V., and Plis, N. M. (1993). '*Blast Vibrations and Other Potential Causes of Damage in Homes Near a Large Surface Coal Mine in Indiana*', USBM, RI 9455

glass (the weakest component of a structure) is likely to be probabilistic in nature. In other words, not all windows will crack at 140 dB.

11.102 A wind speed of 9 m/s produces a pressure equal to 133.7 dB (0.014 psi). Although such wind is comparable in amplitude to a strong air-blast, its effects are not as noticeable because of the relatively slow rate of wind change and the corresponding minor or non-existent rattling, compared with the rapid rise time (impulsive) of an air blast transient.

11.103 Air blast waves are attenuated over distance in much the same way as sound waves; however, there are some differences due to the lower frequency of the sub-audible air blast waves. Lower frequency waves are attenuated at a lower rate by air absorption over distance than the higher frequency audible waves. Air blasts, being very high pulses of energy in the form of low frequency waves can travel great distances. **Temperature inversions have minimal impact near a blast but can increase by over 10 dB at distances of 800m or more.** However, lack of focusing at short distance is important, since only at short distances are pressures large enough to produce cracking. The effects of ambient temperature and relative humidity are considered negligible, at less than 1 dB at 1Km[5]. Prediction and control of air blasts can be more difficult than that of ground vibration due to the influences of weather conditions on the air blast propagation.

Control of Air Blasts

11.104 The principal factors governing air blasts are:

- (a) the type and quantity of explosives
- (b) the degree and type of confinement (stemming)
- (c) the method of initiation (not-use of exposed detonating Cord etc.)
- (d) local geology, topography and distance
- (e) atmospheric conditions

11.105 Factors (a), (b) and (c) are variables within the control of the quarry operator whereas (d) and (e) are essentially uncontrollable at any particular site. However, by varying the timing of a blast (avoid early morning or late evening), by controlling the degree of confinement and by using non-electric or electronic detonators as the method of initiation (non –use of detonating Cord on surface) the quarry operator, in effect, achieves partial control over the influence of atmospheric conditions and hence over the blast emissions. It is important to note that atmospheric conditions (including temperature inversions) will have little effects at distances within 300m.

11.106 It is proposed to limit the air blast to an air overpressure level of 125 dB (Lin peak) with a 95% confidence limit when measured with instrumentation that has a linear response down to 2 Hz. as is given in condition 4 of the existing permission. This proposed limit is well below the safe level of 133 dB for air blasts given by Siskind *et al.*, 1980[6] and is also within the limit recommended by the EPA.

Flyrock

11.107 Flyrock can occur due to incorrect design and poor management of blasting rounds where there is inadequate stemming or inadequate burden (overcharging the holes with explosives).

[5] Aimone-Martin, C., and Martin, R. S. (2000). *Effects of Temperature and Humidity on Airblast Sound Pressure Levels*. Journal of the International Society of Explosive Engineers

[6] Siskind, D. E., Stachura, V.J., Stagg, M. S., and Kopp, J. W. (1980). *Structural Response and Damage Produced by Air Blast from Surface Mining*, USBM, RI 8485

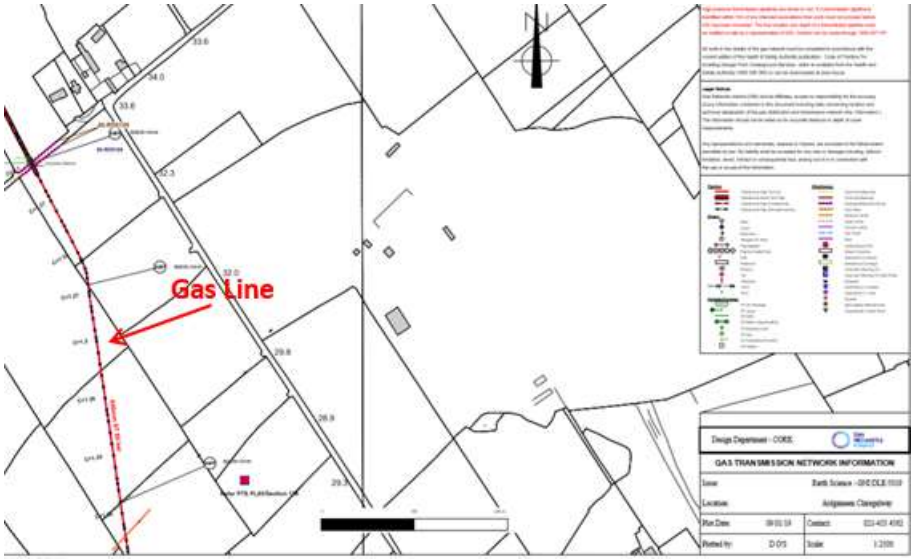
Overcharging can be avoided by following proper management procedures). Considerations for the bench height, bench face profile, face condition, local geology, rock properties, burden and spacing of the drilling pattern and in particular to the first row of boreholes when calculating charge weight per hole will ultimately define the optimum powder and energy factors for a safe and productive blast. The measures taken to control ground vibration and air-overpressure will also control and counteract the possibility of flyrock.

Blasting in Proximity of Gas Networks Ireland Gas Line

11.108 In response to a FI, P18/1149, Galway Co. Co. requested that we assess the potential impact of blasting at the quarry on the high pressure gas line which is located to the west of the application site and working quarry. The layout of the gas pipeline obtained from GNI with respect to the quarry is illustrated on **Plate 11.3** (refer to location V5 in **Plate 11.2**). The boundary of the quarry blasting footprint is shown in red on **Plate 11.1**.

11.109 Considerable work has been carried out on the Response of Blasting Vibration on Pipelines and Buried Structures (Construction Vibrations, Charles H. Dowding, Professor of Civil Engineering, Northwestern University, Prentice Hall, 1996). Quote: 'Buried structures can withstand particle velocity excitation far in excess (at least 165 to 210mm/sec) far in excess of the 50mm/sec cautionary control. Such a possibility in not surprising if the basic modes of construction impulse or blast deformation of buried structures are considered'. The text gives the presentation of cases preceded by theoretical explanation of the restrained response, axial and circumferential (hoop) pipe strains, relative stiffness of the ground and structure, plane-wave excitation, and calculation of structure and ground strains. The text deals with three case studies, one involved blasting adjacent to a discharge tunnel for nuclear power plant in Virginia, the second dealt with three steel pipelines used for natural gas transmission, while the third dealt with a steel pipeline for water transmission. Blast effects tests conducted on the pipeline demonstrates the response of an existing pipeline trenched in rock that is excited by motions from blasts in rock.

Plate 11.3: Location of Gas Line Relative to Quarry



11.110 Swiss Standard- Union of Professionals of the Road, adapted 1992

11.111 This is one of the few standards that give guidance based on;

- Classes of sensitivity
- Frequency of occurrences and;

- Range of frequencies in Hz

11.112 Water and gas pipelines are classified as low sensitivity while frequency of blast occurrences could be classified as less than 1000. Indicative values in guidance are given at up to two times the indicative value of 15mm/sec as peak particle velocity (ppv) at frequencies of less than 30Hz, which equates to a guideline value of 30mm/s. At higher wave frequencies the guideline values are above 40mm/sec.

Gas Pipeline

11.113 Gas Network Ireland (GNI) have taken cognisance of the quarry and blasting. They have also issued 'A Code of Practice' entitled 'Working in the vicinity of the Transmission Networks'. For blasting GNI should be consulted if undertaking blasting within 400m.

11.114 The 600mm diameter high pressure pipeline is buried and transverses west of the site with the nearest point of blasting at 490m metres from the nearest point of the gas pipeline. The ground vibration limit for blasting at all receptors is 12mm/sec peak particle velocity with some receptors closer to blasting than the pipeline.

Vibration Monitoring Close to Gas Pipeline (Location V5)

11.115 Blast vibration monitoring measurement were taken for a blast carried out on 25th February 2019. The results of blast vibration measurements are given in **Table 11.13**. **Plate 11.2** and **Plate 11.3** shows the locations of monitoring.

Table 11-13: Blast vibration Levels including Air-Overpressure on 25th February 2019

2019 BLASTING DETAILS								
								Air
Location	**Date**	**MIC**	**Total**	**Tonnes**	**L**	**T**	**V**	**Overpressure**
		Kg	**Charge/Kg**	**Blasted**	**mm/s**	**mm/s**	**mm/s**	**dB**
V4	25/02/2019	60	2266	10,920	2.4	1.9	2.4	117
V5	25/02/2019	60	2266	10,920	1.3	1.6	0.9	106

Assessment

11.116 The PPV at location V5 close to gas pipeline was 1.6mm/s at a level of orders of magnitude below which damage is likely. Furthermore, a single storey or two storey house is significantly more sensitive to ground vibration than a high pressure buried pipeline. Location V4 is the nearest receptor to blasting. **Plate 11. 2** shows the boundary of the proposed quarry footprint for extraction.

11.117 The ground vibration limit of 12mm/sec for receptors is a level at which superficial damage to properties approach zero and orders of magnitude below the level at which the buried pipeline would be adversely impacted upon.

11.118 The ground vibration levels from operation of the quarry are well with guidelines and within limits given by ABP and the Local Authority.

Mitigating Impacts for Ground Vibration, Air-Overpressure Noise and Flyrock Control

11.119 The following controls are in place so that ground vibration, air overpressure and noise is minimised and kept within the regulatory limits. Specific mitigations measures followed are listed as follows:

Table 11-14: **Mitigating Impacts for Ground Vibration, Air-Overpressure Noise and Flyrock Control**

- Pre-blasting management procedures, loading procedures and blasting management procedures are in place at all times- shot rules.
- Considerable care will be taken to conduct the blast only between 10:00 hrs and 16:00 hrs, Monday to Friday. No blast will be conducted on weekends or bank holidays.
- Prior drilling of any blast a face profiling or a trigonometric bench height measurement will be carried out for all blasts.
- Prior to drilling the blasting pattern, the quarry foreman will mark the position of the boreholes and the blast number on the ground as per the agreed blasting plan approved and signed by the Drilling and Blasting Manager.
- A blasting plan will be issue by the blaster in charge for agreement to the Drilling and Blasting Manager prior the drilling of any blast.
- Only personnel with appropriated Certification in drilling and blasting will be allowed to operate the blasting programs.
- A driller's log will be in place at all times.
- A site specific scale distance regression for the proposed development site is developed (or equivalent) as blasting continues over the life of the quarry.
- Monitoring locations for ground vibration and air overpressure will be agreed prior to blasting. Monitoring data will be used to allow for future adjustments to the maximum instantaneous charge of the blast if required.
- All seismographs will have a certificate of calibration from the manufacturer and all certificates and serial numbers of each seismograph to be use for the monitoring of the blast will be kept on file.
- Advance warning notice of all blasts is given to residents (and will continue to be given) in the environs of the quarry at least 24hrs prior to blasting.
- Ensure that the optimum blast ratio is maintained and ensure that the maximum amount of explosive on any one delay, the maximum instantaneous charge (MIC) is optimised so that the ground vibration levels are kept below the regulatory limits.
- Explosive charges will be properly and adequately confined by a sufficient amount of quality of stemming by using angular chippings and/or a combination of angular chippings and plug.
- The adequate confinement of all charges by means of accurate face survey and the subsequent judicious placement of explosives by certified personnel.
- Overcharging will be avoided by considering depth, burden and spacing when calculating charge weight per hole

- There will be no exposed detonating cord used in surface.
- The initiation sequence in the blast will be set in a way that it progresses away from the nearest sensitive locations or structure to be protected, were practical.
- An adequate powder factor and energy factor will be chosen for each blast by considering safety, confinement and productivity.
- Borehole deviation studies will be conducted in order to have a better control on potential deviation.
- Only the necessary sub drilling to achieve good breakage will be use (Normally 1 to 1.5 m), excessive sub-drilling will be avoided at all times.
- Increase confinement on the boreholes of the explosives by using angle chippings or a combination of angled chippings and a plug.
- Use of decked charges if required in order to reduce the Maximum Instantaneous Charge (MIC) if required.

Do-nothing Scenario

11.120 If the proposed development were not to proceed, the operator would continue to operate within the authorised area of the quarry until a further planning permission was granted.

Unplanned Events

11.121 In the event of an emergency such as a fire to plant or equipment, the emergency response plan will be implemented, and the relative emergency services will be contacted should they be required. In the event of an increase in noise levels associated with plant or vehicle breakdown, an assessment in relation to the cause of the emissions will be undertaken and the activity will not recommence until the problem has been rectified.

Decommissioning

11.122 Noise effects during decommissioning are likely to be of a similar nature to that during the operation of the quarry. Any legislation, guidance or best practice relevant at the time of decommissioning would be complied with.

Monitoring

11.123 Ground vibration monitoring is carried out at for each blast and will continued to be carried out.

11.124 Noise monitoring will continue to be undertaken around the application site. Noise monitoring locations shall be reviewed and revised where and as/when necessary. The results of the noise monitoring shall be submitted to the Galway County Council on a regular basis for review and record purposes.

Residual Impacts

11.125 It is not anticipated that there will be an adverse impact on noise or vibration quality in the vicinity of the application site provided that mitigation measures recommended above and best practice is applied.

Technical Difficulties

11.126 There were no technical difficulties encountered during the study / assessment.

Summary of Effects

11.127 The significance of effects of the proposed development is described in accordance with the EPA guidance document '*Guidelines on the information to be contained in the Environmental Impact Assessment Reports (EIAR), EPA May 2022'*. The details of the methodology for describing the significance of effects are provided in Table 3.4: Section 3.7.3 of the 2022 EPA document. **Table 11.15** gives a summary of effects, using the guidelines given by the EPA.

Table 11-15: Summary of Effects

	Quality	Significance	Duration
Construction Noise Decommissioning	Negative	Not significant	Temporary
Ground Vibration and Air Overpressure	Negative	Not significant	Momentary
Operational Noise incl. Cumulative	Negative	Not Significant	Long Term

Conclusion – Noise and Blast Vibration

11.128 The predicted (and measured) noise levels from the quarry operation are within the existing noise limits and guideline limits as published by the EPA. The predicted noise levels assume that all plant will be operating together at locations closest to receptors which is a scenario that will be extremely rare. **The proposed development will not increase the intensify of the existing operation.**

11.129 Historical vibration and air overpressure monitoring over a number of years demonstrate compliance with statutory limits. To ensure compliance with regulatory limits, monitoring of all blast vibration will be carried out at agreed location / locations. Keeping within the statutory ground vibration limits ensures that the likelihood of damage (or superficial damage) to property approaches zero.

Glossary of Technical Terms

- *Peak Particle Velocity* (PPV) – the maximum rate of change of particle displacement, measured in millimetres per second (mm/sec).
- *Frequency* (Hz) – the number of cycles per second of vibration usually expressed in Hertz (Hz)
- *dB* – Decibel, a unit of measure on a logarithmic scale used to quantify pressure fluctuations such as those associated with air overpressure (concussion wave)
- *dB(A)* – Decibel measured within an A weighted frequency curve that differentiates between sounds of different frequency in a similar way to the human ear
- *Maximum Instantaneous Charge Weight* – The maximum amount of explosives detonated at any one precise instance in time
- *Scaled Distance* – The blast/receiver separation distance divided by the square root of the maximum instantaneous charge weight
- *Blast Ratio* – The amount of work per unit of explosive measured in tonnes of rock per kilogram of explosives detonated
- *Delay Interval* – The time between successive detonations of detonators
- *Sequential Detonation* – The method of control of time intervals between explosions of individual charges
- *Stemming* – The term given to the inert material, typically stone chippings that is placed into the top of a borehole which has already been filled with explosives. The length of stemming should equal the distance between the hole and its associated free face.
- *Burden* – The distance measured at right angles between a row of holes and the free face, or between rows of holes.
- *Shot* – is a borehole complete with primed charge and stemming
- *Bench blasting* - method of blasting in quarries and opencast sites by means of steps or benches with holes positioned parallel to the bench face.
- *Flyrock* - The projection of material from the blast site to any area beyond the designated danger zone.
- *Free face* - A rock surface bounded by air.

Vibration Terminology

- *Particle Velocity (V)* - the particle velocity is defined as the rate of change of amplitude or, for sinusoidal motion this may be mathematically expressed as;
- $V=2\pi fa$
- Where, 'V' represents PPV (mm/sec.), 'f' is the frequency (Hz) and 'a' is the peak particle displacement or amplitude (mm). Particle velocity as the term suggests is the movement of particles within a body or medium.
- Vibration is usually measured in three orthogonal directions: the vertical, horizontal transverse and the horizontal longitudinal (often termed the x, y, z vector components). Vibration waves can be divided into P (primary) waves which are compression wave, S (secondary) waves which are shear waves, Rayleigh waves, Love waves, Stonely waves etc. However, in practice it is very difficult (and not very important) to distinguish between these

waves. In most cases the vertical component is the *body wave* while the *surface waves* are the longitudinal and transverse waves.

- *Peak Vector Sum (PVS)* - the peak vector sum is often referred to as the RPPV (resultant peak particle velocity) and can be mathematically expressed as;
- $$PVS = \sqrt{X^2 + Y^2 + Z^2}$$
- and this is equal to the real time resultant (not the pseudo resultant). You will usually find that in practice the average difference in the peak vector-particle and the PVS is less than 10% at distances in excess of 200 metres[5].
- *Zero cross frequency (zc)* - zero crossing frequency is the frequency at the peak particle velocity of the recorded wave.

References

- [1] Siskind, D.E., Stagg, M.S., Kopp, J.W. and Dowding C.H., *Structural response and damage produced by ground vibration from surface mine blasting,* United States Bureau of Mines (USBM), Report of Investigations No. RI 8507, 1980. OSMRE –The U.S. Office of Surface Mining (OSM) regulation given by the solid line is a modification of USBM
- [2] DIN 4150: Part 3: 1986, Vibrations in Buildings; Effects on Structures.
- [3] BS 7385: Part 2: 1993 Evaluation and Measurement for Vibration in Buildings,
- Part 2. Guide to damage levels from ground borne vibration.
- [4] Dowding, Charles, H. (1996). *Construction Vibrations*, 610 pages, Prentice Hall.
- [5] O'Reilly, B., (2000), Noise and Vibration Monitoring Around an Active Base Metal Mine, M. Phil Thesis, Liverpool University, U.K.
- [6] BS 5228:2009-1A;2014: Code of Practice for Noise and Vibration Control on Open Sites-Part 1: Noise.

Appendices

Appendix 11.1 – Noise Calibration Certs

Appendix 11.2 – Noise Data April 2018 and Barrier Screening Effects

Appendix 11.3 – Noise Data Oct-Nov 2018 and Photos of Monitors In-Situ

Appendix 11.4 – Noise Data April 2025 and One-Third Octaves for

Appendix 11.5 – One-Third Octave Frequency Oct/Nov 2018 for N1 to N4 incl.

Appendix 1: Copy of Calibration Certificates 2018 and 2025

Calibration Certificate

Certificate Number 2017007721
Customer:
Environmental Measurement
Unit 12
Dublin, 24, Ireland

Model Number	LxT SE	***Procedure Number***	D0001.8384
Serial Number	0005130	***Technician***	Ron Harris
Test Results	**Pass**	***Calibration Date***	20 Jul 2017
Initial Condition	As Manufactured	***Calibration Due***	
Description	Sound Expert LxT Class 1 Sound Level Meter Firmware Revision: 2.301	***Temperature***	23.49 °C ± 0.25 °C
		Humidity	49.4 %RH ± 2.0 %RH
		Static Pressure	86.55 kPa ± 0.13 kPa

Evaluation Method ***Tested with:*** ***Data reported in dB re 20 µPa.***

Larson Davis PRMLxT1L. S/N 042861
PCB 377B02. S/N 174104
Larson Davis CAL200. S/N 9079
Larson Davis CAL291. S/N 0203

Compliance Standards Compliant to Manufacturer Specifications and the following standards when combined with Calibration Certificate from procedure D0001.8378:

IEC 60651:2001 Type 1	ANSI S1.4-2014 Class 1
IEC 60804:2000 Type 1	ANSI S1.4 (R2006) Type 1
IEC 61252:2002	ANSI S1.11 (R2009) Class 1
IEC 61260:2001 Class 1	ANSI S1.25 (R2007)
IEC 61672:2013 Class 1	ANSI S1.43 (R2007) Type 1

Issuing lab certifies that the instrument described above meets or exceeds all specifications as stated in the referenced procedure (unless otherwise noted). It has been calibrated using measurement standards traceable to the International System of Units (SI) through the National Institute of Standards and Technology (NIST), or other national measurement institutes, and meets the requirements of ISO/IEC 17025:2005.
Test points marked with a ‡ in the uncertainties column do not fall within this laboratory's scope of accreditation.

The quality system is registered to ISO 9001:2008.

This calibration is a direct comparison of the unit under test to the listed reference standards and did not involve any sampling plans to complete. No allowance has been made for the instability of the test device due to use, time, etc. Such allowances would be made by the customer as needed.

The uncertainties were computed in accordance with the ISO Guide to the Expression of Uncertainty in Measurement (GUM). A coverage factor of approximately 2 sigma (k=2) has been applied to the standard uncertainty to express the expanded uncertainty at approximately 95% confidence level.

Correction data from Larson Davis LxT Manual for SoundTrack LxT & SoundExpert Lxt, I770.01 Rev J Supporting Firmware Version 2.301, 2015-04-30

Larson Davis, a division of PCB Piezotronics, Inc
1681 West 820 North
Provo. UT 84601. United States

Calibration Certificate

Certificate Number 2017007695
Customer:
Environmental Measurement
Unit 12
Dublin, 24, Ireland

Model Number	LxT SE		***Procedure Number***	D0001.8378	
Serial Number	0005131		***Technician***	Ron Harris	
Test Results	**Pass**		***Calibration Date***	20 Jul 2017	
Initial Condition	As Manufactured		***Calibration Due***		
			Temperature	23.54 °C	± 0.25 °C
Description	Sound Expert LxT Class 1 Sound Level Meter Firmware Revision: 2.301		***Humidity***	51.2 %RH	± 2.0 %RH
			Static Pressure	86.47 kPa	± 0.13 kPa

Evaluation Method Tested electrically using Larson Davis PRMLxT1L S/N 042862 and a 12.0 pF capacitor to simulate microphone capacitance. Data reported in dB re 20 µPa assuming a microphone sensitivity of 23.6 mV/Pa.

Compliance Standards Compliant to Manufacturer Specifications and the following standards when combined with Calibration Certificate from procedure D0001.8384:

IEC 60651:2001 Type 1	ANSI S1.4-2014 Class 1
IEC 60804:2000 Type 1	ANSI S1.4 (R2006) Type 1
IEC 61252:2002	ANSI S1.11 (R2009) Class 1
IEC 61260:2001 Class 1	ANSI S1.25 (R2007)
IEC 61672:2013 Class 1	ANSI S1.43 (R2007) Type 1

Issuing lab certifies that the instrument described above meets or exceeds all specifications as stated in the referenced procedure (unless otherwise noted). It has been calibrated using measurement standards traceable to the International System of Units (SI) through the National Institute of Standards and Technology (NIST), or other national measurement institutes, and meets the requirements of ISO/IEC 17025:2005. **Test points marked with a ‡ in the uncertainties column do not fall within this laboratory's scope of accreditation.**

The quality system is registered to ISO 9001:2008.

This calibration is a direct comparison of the unit under test to the listed reference standards and did not involve any sampling plans to complete. No allowance has been made for the instability of the test device due to use, time, etc. Such allowances would be made by the customer as needed.

The uncertainties were computed in accordance with the ISO Guide to the Expression of Uncertainty in Measurement (GUM). A coverage factor of approximately 2 sigma (k=2) has been applied to the standard uncertainty to express the expanded uncertainty at approximately 95% confidence level.

Correction data from Larson Davis LxT Manual for SoundTrack LxT & SoundExpert Lxt, I770.01 Rev J Supporting Firmware Version 2.301, 2015-04-30

Calibration Check Frequency: 1000 Hz; Reference Sound Pressure Level: 114 dB re 20 µPa

Calibration Certificate

Certificate Number 2017007701
Customer:
Environmental Measurement
Unit 12
Dublin, 24, Ireland

Model Number	LxT SE	***Procedure Number***	D0001.8378	
Serial Number	0005132	***Technician***	Ron Harris	
Test Results	**Pass**	***Calibration Date***	20 Jul 2017	
Initial Condition	As Manufactured	***Calibration Due***		
Description	Sound Expert LxT Class 1 Sound Level Meter Firmware Revision: 2.301	***Temperature***	23.63 °C	± 0.25 °C
		Humidity	51.3 %RH	± 2.0 %RH
		Static Pressure	86.51 kPa	± 0.13 kPa

Evaluation Method Tested electrically using Larson Davis PRMLxT1L S/N 042863 and a 12.0 pF capacitor to simulate microphone capacitance. Data reported in dB re 20 µPa assuming a microphone sensitivity of 23.6 mV/Pa.

Compliance Standards Compliant to Manufacturer Specifications and the following standards when combined with Calibration Certificate from procedure D0001.8384:

IEC 60651:2001 Type 1	ANSI S1.4-2014 Class 1
IEC 60804:2000 Type 1	ANSI S1.4 (R2006) Type 1
IEC 61252:2002	ANSI S1.11 (R2009) Class 1
IEC 61260:2001 Class 1	ANSI S1.25 (R2007)
IEC 61672:2013 Class 1	ANSI S1.43 (R2007) Type 1

Issuing lab certifies that the instrument described above meets or exceeds all specifications as stated in the referenced procedure (unless otherwise noted). It has been calibrated using measurement standards traceable to the International System of Units (SI) through the National Institute of Standards and Technology (NIST), or other national measurement institutes, and meets the requirements of ISO/IEC 17025:2005. **Test points marked with a ‡ in the uncertainties column do not fall within this laboratory's scope of accreditation.**

The quality system is registered to ISO 9001:2008.

This calibration is a direct comparison of the unit under test to the listed reference standards and did not involve any sampling plans to complete. No allowance has been made for the instability of the test device due to use, time, etc. Such allowances would be made by the customer as needed.

The uncertainties were computed in accordance with the ISO Guide to the Expression of Uncertainty in Measurement (GUM). A coverage factor of approximately 2 sigma (k=2) has been applied to the standard uncertainty to express the expanded uncertainty at approximately 95% confidence level.

Correction data from Larson Davis LxT Manual for SoundTrack LxT & SoundExpert Lxt, I770.01 Rev J Supporting Firmware Version 2.301, 2015-04-30

Calibration Check Frequency: 1000 Hz; Reference Sound Pressure Level: 114 dB re 20 µPa

Calibration Certificate

Certificate Number 2017007719
Customer:
Environmental Measurement
Unit 12
Dublin, 24, Ireland

Model Number	LxT SE
Serial Number	0005133
Test Results	**Pass**
Initial Condition	As Manufactured
Description	Sound Expert LxT Class 1 Sound Level Meter Firmware Revision: 2.301

Procedure Number	D0001.8384		
Technician	Ron Harris		
Calibration Date	20 Jul 2017		
Calibration Due			
Temperature	23.51	°C	± 0.25 °C
Humidity	50	%RH	± 2.0 %RH
Static Pressure	86.54	kPa	± 0.13 kPa

Evaluation Method ***Tested with:***

Larson Davis PRMLxT1L. S/N 042864
PCB 377B02. S/N 174133
Larson Davis CAL200. S/N 9079
Larson Davis CAL291. S/N 0203

Data reported in dB re 20 µPa.

Compliance Standards Compliant to Manufacturer Specifications and the following standards when combined with Calibration Certificate from procedure D0001.8378:

IEC 60651:2001 Type 1	ANSI S1.4-2014 Class 1
IEC 60804:2000 Type 1	ANSI S1.4 (R2006) Type 1
IEC 61252:2002	ANSI S1.11 (R2009) Class 1
IEC 61260:2001 Class 1	ANSI S1.25 (R2007)
IEC 61672:2013 Class 1	ANSI S1.43 (R2007) Type 1

Issuing lab certifies that the instrument described above meets or exceeds all specifications as stated in the referenced procedure (unless otherwise noted). It has been calibrated using measurement standards traceable to the International System of Units (SI) through the National Institute of Standards and Technology (NIST), or other national measurement institutes, and meets the requirements of ISO/IEC 17025:2005.
Test points marked with a ‡ in the uncertainties column do not fall within this laboratory's scope of accreditation.

The quality system is registered to ISO 9001:2008.

This calibration is a direct comparison of the unit under test to the listed reference standards and did not involve any sampling plans to complete. No allowance has been made for the instability of the test device due to use, time, etc. Such allowances would be made by the customer as needed.

The uncertainties were computed in accordance with the ISO Guide to the Expression of Uncertainty in Measurement (GUM). A coverage factor of approximately 2 sigma (k=2) has been applied to the standard uncertainty to express the expanded uncertainty at approximately 95% confidence level.

Correction data from Larson Davis LxT Manual for SoundTrack LxT & SoundExpert Lxt, I770.01 Rev J Supporting Firmware Version 2.301, 2015-04-30

Larson Davis, a division of PCB Piezotronics, Inc
1681 West 820 North
Provo, UT 84601, United States
716-684-0001

ACCREDITED Cert. #3822.01

LARSON DAVIS
A PCB PIEZOTRONICS DIV.

Certificate of Calibration

Certificate Number: 30216

Sound Level Meter
Larson Davis Model 812

Client: Environmental Measurements
Unit 12, Tallaght Business Centre
Whitestown Business Park
Co.Dublin 24, Ireland

Instrument Make:	Larson Davis	***Microphone Make:***	PCB
Instrument Model:	812	***Microphone Model:***	377B02
Serial Number:	0722	***Serial Number:***	107548
Preamplifier Make:	Larson Davis	***Calibrator Make:***	
Preamplifier Model:	PRM828	***Calibrator Model:***	
Serial Number:	2337	***Calibrator Serial Number:***	
		Calibrator Adaptor:	
Extension Cable:	not supplied	***Calibrator Certification Ref:***	

This is to certify that the above instrument was calibrated according to MTS Calibration Ltd. Measurement Procedures and was found to comply as summarised below. The measurements were carried out using the Test Equipment listed below, all of whose calibrations are traceable to UK National Standards. The management controls of MTS Calibration Ltd. are registered in its current Quality Manual, and are designed to be in compliance with BS EN ISO/IEC 17025: 2005. Copies of the relevant certificates, test procedures and test results, together with the traceability of test equipment are filed with MTS Calibration Ltd. and extracts are available on request.

This instrument was tested in accordance with the recommendations of BS 7580: Part 1 1997 (not all tests were performed) with the following results:

	Manufacturer's Specification	*BS EN 60651 Type 1*
Self-Generated Noise:	Complies	no specification – measured 14.9 dB(A)
Dynamic Linearity – electrical response:	Complies	Complies between 20.8 and 126.5 dB(A)
Frequency Weighting A - electrical response:	Complies	Complies
Frequency Weighting A - acoustic response:	Complies	Complies
Frequency Weighting C - electrical response:	Complies	Complies
Crest Factor:	Complies	Complies
Burst (RMS accuracy):	Fails	Complies
Time Weightings F, S, I (Detector):	Complies	Complies
Microphone Response:	Complies	Complies (assessed as overall acoustic specification)

Calibrated at 114.12 dB re 20µPa, 250 Hz – calibration offset = 6.9 dB
Polarisation Voltage 0 V

Test Equipment:

Equipment	Manufacturer	Model	Serial No.	Traceability Ref.	Cal. Due
Condenser Microphone	Larson Davis	2541	7300	TE 157	October 2017
Acoustic Calibrator 250Hz	Larson Davis	CAL250	4483	TE 116	September 2018
Real-Time Frequency Analyser	Larson Davis	2900	0492	TE 108	November 2017
Signal Generator	Hewlett Packard	33120A	US36016577	TE 111	June 2017
Digital Multimeter	Hewlett Packard	34401A	3146A63804	TE 105	June 2017

Date of Receipt: 21st April 2017
Date of Calibration: 24th & 25th April 2017
Date of Certificate: 25th April 2017

Authorised Signatory .....
Stuart Cowling

Calibration Certs for April 2025 Survey

MTS Calibration Ltd,
The Grange Business Centre,
Belasis Avenue,
Billingham TS23 1LG,
England
Telephone: 01642 876 410

CERTIFICATE OF CALIBRATION

Approved Signatory:

Tony Sherris

Issued by: MTS Calibration Ltd

Date of Issue: 25 October 2023 **Certificate Number:** 38900

Sound Level Meter

Sound Level Meter Periodic Tests to EN 61672-3: 2013 Class 1

Client: Brendan O'Reilly

Instrument Make: Larson Davis
Instrument Model: LxT1L
Serial Number: 0004647

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Associated Equipment	Make	Model	Serial number
Preamplifier	Larson Davis	PRMLxT1L	055806
Microphone	PCB	377B02	316352
Calibrator	Larson Davis	CAL200	9175
Calibrator supplied by	MTS for this calibration		

The measurements were performed at The Grange Business Centre, Belasis Avenue, TS23 1LD. The results only apply to the items tested.

Periodic tests were performed in accordance with procedures from IEC 61672-3:2013 Class 1

Test results summary, detailed results are shown on subsequent pages.

Tests performed	Section	Results of test	Page	Comments
Calibration Certificate	22		1	
Additional information			2	
Indication with Calibrator Supplied	10	No Limit	3	
Self-Generated Noise	11	No Limit	3	
Frequency and Time-weightings at 1kHz	14	Complies	3	
Long term stability	15	Complies	3	
High stability	21	Complies	3	
Acoustic Tests	12	Complies	4	
Frequency Weighting A	13	Complies	5	
Frequency Weighting C	13	Complies	6	
Frequency Weighting Z	13	Complies	7	
Level Linearity	16	Complies	8	
Level Linearity Range Control	17		n/a	SLM only has one range
Tone-burst Response	18	Complies	9	
Peak C sound level	19	Complies	10	
Overload indication	20	Complies	11	

The instrument was within the above specification as received - no modifications were made

The sound level meter submitted for testing has successfully completed the periodic tests of IEC 61672-3: 2013 for the environmental conditions under which the tests were performed. As evidence was publicly available, from an independent testing organisation responsible for approving the results of pattern evaluation tests performed in accordance with IEC 61672-2: 2013, to demonstrate that the model of sound level meter fully conformed to the Class 1 specifications in IEC 61672-1: 2013, the sound level meter submitted for testing conforms to the Class 1 specifications of IEC 61672-1: 2013

Additional tests performed	Reference	
Microphone full frequency response	38902	See additional certificate
Filter calibration, third octave or octave	38900F	See additional certificate

MTS Calibration Ltd,
The Grange Business Centre,
Belasis Avenue,
Billingham TS23 1LG,
England
Telephone: 01642 876 410

CERTIFICATE OF CALIBRATION

Approved Signatory:

Tony Sherris

Issued by: MTS Calibration Ltd

Date of Issue: 03 August 2023 **Certificate Number:** 38651

Sound Level Meter

Sound Level Meter Periodic Tests to EN 61672-3: 2013 Class 1

Client: Brendan Oreilly

Instrument Make: Larson Davis
Instrument Model: LxT1L
Serial Number: 0004570

MIC 8

Associated Equipment	Make	Model	Serial number
Preamplifier	Larson Davis	PRMLxT1L	042742
Microphone	PCB	377B02	113026
Calibrator	Larson Davis	CAL200	9175
Calibrator supplied by	MTS for this calibration		

The measurements were performed at The Grange Business Centre, Belasis Avenue, TS23 1LD. The results only apply to the items tested.

Periodic tests were performed in accordance with procedures from IEC 61672-3:2013 Class 1

Test results summary, detailed results are shown on subsequent pages.

Tests performed	Section	Results of test	Page	Comments
Calibration Certificate	22		1	
Additional information			2	
Indication with Calibrator Supplied	10	No Limit	3	
Self-Generated Noise	11	No Limit	3	
Frequency and Time-weightings at 1kHz	14	Complies	3	
Long term stability	15	Complies	3	
High stability	21	Complies	3	
Acoustic Tests	12	Complies	4	
Frequency Weighting A	13	Complies	5	
Frequency Weighting C	13	Complies	6	
Frequency Weighting Z	13	Complies	7	
Level Linearity	16	Complies	8	
Level Linearity Range Control	17		n/a	SLM only has one range
Tone-burst Response	18	Complies	9	
Peak C sound level	19	Complies	10	
Overload indication	20	Complies	11	

The instrument was within the above specification as received - no modifications were made

The sound level meter submitted for testing has successfully completed the periodic tests of IEC 61672-3: 2013 for the environmental conditions under which the tests were performed. As evidence was publicly available, from an independent testing organisation responsible for approving the results of pattern evaluation tests performed in accordance with IEC 61672-2: 2013, to demonstrate that the model of sound level meter fully conformed to the Class 1 specifications in IEC 61672-1: 2013, the sound level meter submitted for testing conforms to the Class 1 specifications of IEC 61672-1: 2013

Additional tests performed	Reference	
Microphone full frequency response	38651	See additional certificate
Filter calibration, third octave or octave	38651F	See additional certificate

MTS Calibration Ltd,
The Grange Business Centre,
Belasis Avenue,
Billingham TS23 1LG,
England
Telephone: 01642 876 410

CERTIFICATE OF CALIBRATION

Approved Signatory:

Tony Sherris

Issued by: MTS Calibration Ltd

Date of Issue: 07 March 2023 **Certificate Number:** 38162

Sound Level Meter

Sound Level Meter Periodic Tests to EN 61672-3: 2013 Class 1

Client: Brendan O'Reilly

Instrument Make: Larson Davis
Instrument Model: LxT1
Serial Number: 0004643

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Associated Equipment	Make	Model	Serial number
Preamplifier	PCB	PRMLxT1L	065027
Microphone	PCB	377B02	105882
Calibrator	Larson Davis	CAL200	9175
Calibrator supplied by	the Client, with the SLM		

The measurements were performed at The Grange Business Centre, Belasis Avenue, TS23 1LD. The results only apply to the items tested.

Periodic tests were performed in accordance with procedures from IEC 61672-3:2013 Class 1

Test results summary, detailed results are shown on subsequent pages.

Tests performed	Section	Results of test	Page	Comments
Calibration Certificate	22		1	
Additional information			2	
Indication with Calibrator Supplied	10	No Limit	3	
Self-Generated Noise	11	No Limit	3	
Frequency and Time-weightings at 1kHz	14	Complies	3	
Long term stability	15	Complies	3	
High stability	21	Complies	3	
Acoustic Tests	12	Complies	4	
Frequency Weighting A	13	Complies	5	
Frequency Weighting C	13	Complies	6	
Frequency Weighting Z	13	Complies	7	
Level Linearity	16	Complies	8	
Level Linearity Range Control	17		n/a	SLM only has one range
Tone-burst Response	18	Complies	9	
Peak C sound level	19	Complies	10	
Overload indication	20	Complies	11	

The instrument was within the above specification as received - no modifications were made

The sound level meter submitted for testing has successfully completed the periodic tests of IEC 61672-3: 2013 for the environmental conditions under which the tests were performed. As evidence was publicly available, from an independent testing organisation responsible for approving the results of pattern evaluation tests performed in accordance with IEC 61672-2: 2013, to demonstrate that the model of sound level meter fully conformed to the Class 1 specifications in IEC 61672-1: 2013, the sound level meter submitted for testing conforms to the Class 1 specifications of IEC 61672-1: 2013

Additional tests performed	Reference	
Microphone full frequency response	38164	See additional certificate
Filter calibration, third octave or octave	38162F	See additional certificate

MTS Calibration Ltd,
The Grange Business Centre,
Belasis Avenue,
Billingham TS23 1LG,
England
Telephone: 01642 876 410

CERTIFICATE OF CALIBRATION

Approved Signatory:

Tony Sherris

Issued by: MTS Calibration Ltd

Date of Issue: 02 August 2023 **Certificate Number:** 38648

Sound Level Meter

Sound Level Meter Periodic Tests to EN 61672-3: 2013 Class 1

Client: Brendan Oreilly

Instrument Make: Larson Davis
Instrument Model: LxT1L
Serial Number: 0005660

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Associated Equipment	Make	Model	Serial number
Preamplifier	Larson Davis	PRMLxT1L	055684
Microphone	PCB	377B02	305875
Calibrator	Larson Davis	CAL200	9175
Calibrator supplied by	MTS for this calibration		

The measurements were performed at The Grange Business Centre, Belasis Avenue, TS23 1LD. The results only apply to the items tested.

Periodic tests were performed in accordance with procedures from IEC 61672-3:2013 Class 1

Test results summary, detailed results are shown on subsequent pages.

Tests performed	Section	Results of test	Page	Comments
Calibration Certificate	22		1	
Additional information			2	
Indication with Calibrator Supplied	10	No Limit	3	
Self-Generated Noise	11	No Limit	3	
Frequency and Time-weightings at 1kHz	14	Complies	3	
Long term stability	15	Complies	3	
High stability	21	Complies	3	
Acoustic Tests	12	Complies	4	
Frequency Weighting A	13	Complies	5	
Frequency Weighting C	13	Complies	6	
Frequency Weighting Z	13	Complies	7	
Level Linearity	16	Complies	8	
Level Linearity Range Control	17		n/a	SLM only has one range
Tone-burst Response	18	Complies	9	
Peak C sound level	19	Complies	10	
Overload indication	20	Complies	11	

The instrument was within the above specification as received - no modifications were made

The sound level meter submitted for testing has successfully completed the periodic tests of IEC 61672-3: 2013 for the environmental conditions under which the tests were performed. As evidence was publicly available, from an independent testing organisation responsible for approving the results of pattern evaluation tests performed in accordance with IEC 61672-2: 2013, to demonstrate that the model of sound level meter fully conformed to the Class 1 specifications in IEC 61672-1: 2013, the sound level meter submitted for testing conforms to the Class 1 specifications of IEC 61672-1: 2013

Additional tests performed	Reference	
Microphone full frequency response	38650	See additional certificate
Filter calibration, third octave or octave	38648F	See additional certificate

MTS Calibration Ltd,
The Grange Business Centre,
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Billingham TS23 1LG,
England
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CERTIFICATE OF CALIBRATION

Approved Signatory:

Tony Sherris

Issued by: MTS Calibration Ltd

Date of Issue: 08 March 2023 **Certificate Number:** 38149

Sound Level Meter

Sound Level Meter Periodic Tests to EN 61672-3: 2013 Class 1

Client: Brendan Oreilly

Instrument Make: Larson Davis
Instrument Model: LxT1L
Serial Number: 0005992

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Associated Equipment	Make	Model	Serial number
Preamplifier	PCB	PRMLxT1L	028029
Microphone	PCB	377B02	147913
Calibrator	Larson Davis	CAL200	18140
Calibrator supplied by	the Client, with the SLM		

The measurements were performed at The Grange Business Centre, Belasis Avenue, TS23 1LD. The results only apply to the items tested.

Periodic tests were performed in accordance with procedures from IEC 61672-3:2013 Class 1

Test results summary, detailed results are shown on subsequent pages.

Tests performed	Section	Results of test	Page	Comments
Calibration Certificate	22		1	
Additional information			2	
Indication with Calibrator Supplied	10	No Limit	3	
Self-Generated Noise	11	No Limit	3	
Frequency and Time-weightings at 1kHz	14	Complies	3	
Long term stability	15	Complies	3	
High stability	21	Complies	3	
Acoustic Tests	12	Complies	4	
Frequency Weighting A	13	Complies	5	
Frequency Weighting C	13	Complies	6	
Frequency Weighting Z	13	Complies	7	
Level Linearity	16	Complies	8	
Level Linearity Range Control	17		n/a	SLM only has one range
Tone-burst Response	18	Complies	9	
Peak C sound level	19	Complies	10	
Overload indication	20	Complies	11	

The instrument was within the above specification as received - no modifications were made

The sound level meter submitted for testing has successfully completed the periodic tests of IEC 61672-3: 2013 for the environmental conditions under which the tests were performed. As evidence was publicly available, from an independent testing organisation responsible for approving the results of pattern evaluation tests performed in accordance with IEC 61672-2: 2013, to demonstrate that the model of sound level meter fully conformed to the Class 1 specifications in IEC 61672-1: 2013, the sound level meter submitted for testing conforms to the Class 1 specifications of IEC 61672-1: 2013

Additional tests performed	Reference	
Microphone full frequency response	38151	See additional certificate
Filter calibration, third octave or octave	38149F	See additional certificate
Calibrator calibration	38152U	See additional UKAS certificate

MTS Calibration Ltd,
The Grange Business Centre,
Belasis Avenue,
Billingham TS23 1LG,
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Telephone: 01642 876 410

0602

CERTIFICATE OF CALIBRATION

Approved Signatory:

Tony Sherris

Issued by: MTS Calibration Ltd
Performed by Nick Box
Date of Issue: 13 February 2025 **Certificate Number:** 40483U

Sound Calibrator

Client: Environmental Measurements — *Brendan O'Reilly*
Unit 12, Tallaght Business Centre
Whitestown Business Park
Co.Dublin 24, Ireland

The Device calibrated was:

Larson Davis **Model CAL200** **Serial Number 18140**

The measurements were performed at Elvington Close, Billingham, TS23 3YS and the measured values were as follows:

Output Level 1:	94.04	dB re 20µPa	± 0.12 dB (k= 2)
Fundamental Frequency 1:	1000.02	Hz	± 0.11 Hz (k= 2.05
Total Harmonic Distortion 1:	0.38	%	± 0.011 % (k= 2)
Output Level 2:	114.09	dB re 20µPa	± 0.12 dB (k= 2)
Fundamental Frequency 2:	1000.02	Hz	± 0.11 Hz (k= 2)
Total Harmonic Distortion 2:	0.50	%	± 0.011 % (k= 2)

This measurement is valid only for the above device configured for calibration of a WS-2 microphone under the stated environmental conditions. For deviation of prevailing conditions, the manufacturer's literature for the calibrator should be referred to.

Date of Measurements: 12 February 2025 *Date of Receipt:* 11 February 2025

Method of calibration **MTS Calibration Ltd work procedure WP01 issue U3-1**

A Reference Calibrator was used to establish the sensitivity of the measurement chain. The same measurement chain is then used to determine the output level of the Object Calibrator by the difference between its output and that of the nominated Reference Calibrator. Four independent measurements of the third-octave band sound pressure levels produced by the Reference Calibrators and the Object Calibrator are averaged to minimise uncertainties of the calibration. The measurement chain consists of a calibrated, Reference Microphone, Reference Preamplifier and Reference Analyser.

As well as providing a traceable measurement of the sound pressure level in the cavity of the Object Calibrator, the Calibrator's frequency and total harmonic distortion are also measured. Frequency is determined from the average of four independent measurements using a multimeter. The total harmonic distortion is measured from the average of three independent measurements by third octave analysis, subtracting the level of the fundamental frequency from the sum of the combined harmonics in the frequency band to 20kHz. The complete procedure is detailed in the MTS Calibration Ltd work procedure WP01.

The sound pressure level generated by the calibrator in its WS2 configuration was measured by reference to the reference Sound Calibrator as shown in the Test Equipment section below.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k (individually calculated as above), providing a coverage probability of approximately 95%. The uncertainty evaluation has been calculated in accordance with the current version of UKAS publication M3003. The uncertainty quoted for the Distortion Measurement is the Distortion Percentage as measured, multiplied by our Uncertainty as calculated for the individual measurement or our CMC, whichever is the larger.

Measurement Conditions:

Temperature	22.7	°C	± 1 °C
Atmospheric Pressure	1023.6	mBar	± 2 mBar
Relative Humidity	33.7	%	± 5 %

Test Equipment used during this calibration:

Equipment	Manufacturer	Model	Serial No.	Traceability Ref.	Calibration Due
Reference Calibrator	Brüel & Kjær	4231	2343058	TE 132	Jun-26
Multimeter	HP	34401A	36146A63804	TE 105	Jan-26
Microphone	B&K	4133	810486	TE 155	Oct-25
Real-Time Analyser (set 1)	Larson Davis	2900	0492	TE 108	Sep-25

End of Certificate

Appendix 11.2 – Noise Data April 2018 and Screening Effects

Location N1										
Date	Time	Duration	LAeq	LAFmin	LAFmax	LAF5	LAF10	LAF33	LAF50	LAF90
2018-04-24	13:30:00	00:30:00.0	49.2	41.8	59.5	52.0	51.1	49.5	48.6	46.0
2018-04-24	14:00:00	00:30:00.0	50.0	42.1	61.9	53.5	51.6	49.6	48.8	46.1
2018-04-24	14:30:00	00:30:00.0	49.6	41.2	58.5	52.8	52.0	50.1	49.1	46.0
2018-04-24	15:00:00	00:30:00.0	49.2	42.1	60.0	51.9	51.1	49.4	48.7	46.2
2018-04-24	15:30:00	00:30:00.0	48.8	41.7	56.5	51.9	51.1	49.3	48.3	45.5
			49.3	41.8	59.3	52.4	51.4	49.6	48.7	46.0
2018-04-24	16:30:00	00:30:00.0	45.8	35.5	60.5	49.9	48.7	45.8	44.5	40.8
2018-04-24	17:00:00	00:30:00.0	48.9	38.2	61.6	52.9	51.7	49.0	47.7	43.8
2018-04-24	17:30:00	00:30:00.0	46.2	34.7	57.7	50.4	49.2	46.3	45.0	41.6
			47.0	36.1	59.9	51.1	49.9	47.0	45.8	42.1

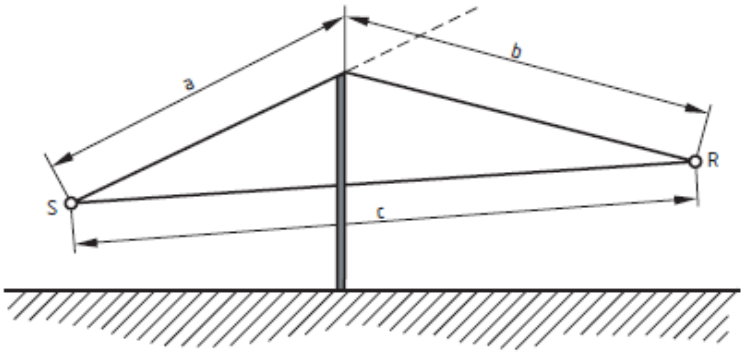
Location 2	Time	Duration	LAeq	LAFmin	LAFmax	LAF5	LAF10	LAF33	LAF50	LAF90
2018-04-24	13:30:00	00:30:00.0	48.1	39.9	54.7	50.1	49.3	47.5	46.5	44.0
2018-04-24	14:00:00	00:30:00.0	49.0	40.6	56.7	50.8	50.0	48.2	47.3	45.0
2018-04-24	14:30:00	00:30:00.0	50.9	39.1	61.2	54.1	52.8	49.9	48.5	44.4
2018-04-24	15:00:00	00:30:00.0	50.8	36.8	61.2	54.0	53.1	50.0	48.6	43.8
2018-04-24	15:30:00	00:30:00.0	49.8	39.0	57.8	52.1	51.2	49.2	48.1	44.9
			49.7	39.1	58.3	52.2	51.3	49.0	47.8	44.4
2018-04-24	16:30:00	00:30:00.0	47.2	35.1	63.0	48.9	47.4	44.2	43.0	39.3
2018-04-24	17:00:00	00:30:00.0	46.3	35.2	57.5	47.8	46.8	43.9	42.4	38.2
2018-04-24	17:30:00	00:30:00.0	47.0	33.9	54.5	48.2	47.4	44.9	43.4	39.1
			46.8	34.7	58.3	48.3	47.2	44.3	42.9	38.9

Location N3											
Date	Time	Duration	LAeq	LAFmin	LAFmax	LAF1	LAF5	LAF10	LAF33	LAF50	LAF90
2018-04-24	13:30:00	00:30:00.0	49.9	38.6	71.1	55.6	52.2	51.3	49.3	48.0	42.2
2018-04-24	14:00:00	00:30:00.0	49.2	43.2	68.9	53.3	51.7	50.9	49.2	48.3	46.2
2018-04-24	14:30:00	00:30:00.0	50.7	43.4	76.2	55.2	52.5	51.6	49.9	49.1	46.7
2018-04-24	15:00:00	00:30:00.0	49.8	43.1	63.5	57.7	52.4	51.5	49.7	48.8	46.3
2018-04-24	15:30:00	00:30:00.0	49.3	43.4	68.3	55.3	51.4	50.6	49.0	48.2	46.2
			49.8	42.4	69.6	55.4	52.0	51.2	49.4	48.5	45.5
2018-04-24	16:30:00	00:30:00.0	45.5	35.8	67.5	53.1	49.6	47.7	44.3	42.7	38.9
2018-04-24	17:00:00	00:30:00.0	47.2	30.9	70.2	56.3	50.5	49.0	44.7	43.0	36.9
2018-04-24	17:30:00	00:30:00.0	44.9	29.7	72.7	57.6	48.5	44.4	39.6	38.0	33.6
			45.9	32.1	70.1	55.7	49.5	47.0	42.9	41.2	36.5

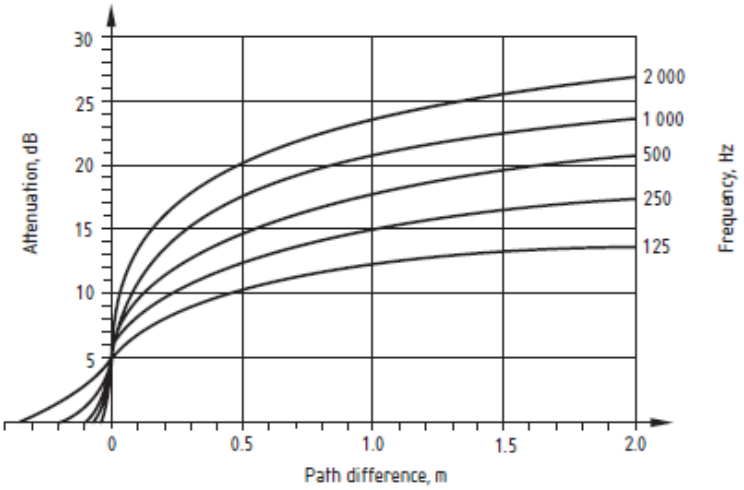
Location N4										
Date	Time	Duration	LAeq	LAFmin	LAFmax	LAF5	LAF10	LAF33	LAF50	LAF90
2018-04-24	14:00:00	00:30:00.0	51.0	42.3	64.9	55.0	53.4	50.8	49.7	46.8
2018-04-24	14:30:00	00:30:00.0	50.8	43.3	63.1	54.2	53.2	51.0	50.0	47.4
2018-04-24	15:00:00	00:30:00.0	51.9	44.4	65.9	55.3	54.2	51.9	50.9	48.0
2018-04-24	15:30:00	00:30:00.0	51.3	43.0	67.2	55.3	53.9	51.3	50.1	46.9
			51.3	43.2	65.3	54.9	53.7	51.3	50.2	47.3
2018-04-24	16:30:00	00:30:00.0	49.8	39.0	67.1	54.7	53.2	49.1	47.1	43.2
2018-04-24	17:00:00	00:30:00.0	53.7	38.9	69.1	59.3	57.5	52.9	50.6	44.9
2018-04-24	17:30:00	00:30:00.0	52.5	35.9	67.5	58.0	56.2	51.8	49.7	43.6
2018-04-24	18:00:00	00:30:00.0	52.6	32.9	67.0	58.4	56.2	51.4	48.9	41.5
2018-04-24	18:30:00	00:30:00.0	51.4	31.6	69.5	57.1	55.4	50.4	47.9	40.6
			52.0	35.7	68.0	57.5	55.7	51.1	48.8	42.8

Figure F.3 **Screening effect of barriers**

Unless otherwise stated, dimensions are in metres



a) Illustration of path difference (a + b – c) introduced by a barrier



b) Barrier attenuation at different frequencies of sound

Key

S Source

R Receiver

F.2.2.2.2 Distance adjustment

For propagation over hard ground, $K = K_h$. For propagation over 100% soft ground, $K = K_s$, providing that the source is operating at ground level and the receiver is no more than 2.5 m above the ground. If either the source or receiver is more than 2.5 m above the ground, the additional attenuation offered by soft ground needs to be reduced until at 15 m its value is the same as that at hard ground.

Appendix 11.3:Noise data Nov/Dec 2018 and Photos of Monitors In-situ

Table 1							Locn N1						
			Leq	Lmin	Lmax	L5	L10	L50	L90	Rain	wind		Plant
Date	Time	Duration	dBA	dBA	dBA	dBA	dBA	dBA	dBA	mm	m/s		Status
2018-10-30	11:51:52	00:08:07.7	56.1	48.5	83.8	56.2	55.2	52.6	50.5				
2018-10-30	12:00:00	01:00:00.0	51.8	39.5	72.7	54.9	53.7	50.8	46.8	0.2	3.0	Tuesday	Plant on
2018-10-30	13:00:00	01:00:00.0	48.0	38.5	64.5	51.7	50.4	46.4	43.0	0.0	2.5	Tuesday	Plant on
2018-10-30	14:00:00	01:00:00.0	51.5	42.6	84.4	53.3	52.2	49.6	47.3	0.2	2.0	Tuesday	Plant on
2018-10-30	15:00:00	01:00:00.0	50.3	43.1	64.1	53.1	52.3	50.0	46.2	0.0	1.5	Tuesday	Plant on
2018-10-30	16:00:00	01:00:00.0	46.2	37.2	64.7	49.5	48.2	45.2	42.5	0.4	1.5	Tuesday	Plant on
2018-10-30	17:00:00	01:00:00.0	46.9	38.4	77.5	49.0	47.9	44.9	42.2	0.2	1.5	Tuesday	Plant off
2018-10-30	18:00:00	01:00:00.0	45.7	38.1	52.7	48.8	48.0	45.1	42.4	0.0	1.5	Tuesday	Plant off
2018-10-30	19:00:00	01:00:00.0	45.0	34.6	54.0	48.3	47.5	44.4	41.1	0.0	1.0	Tuesday	Plant off
2018-10-30	20:00:00	01:00:00.0	44.5	28.2	54.2	48.5	47.4	43.6	38.8	0.0	2.0	Tuesday	Plant off
2018-10-30	21:00:00	01:00:00.0	43.0	28.8	56.7	46.9	45.8	41.9	37.3	0.0	1.5	Tuesday	Plant off
2018-10-30	22:00:00	01:00:00.0	41.9	24.9	56.6	46.4	45.0	40.2	35.1	0.0	2.0	Tuesday	Plant off
2018-10-30	23:00:00	01:00:00.0	41.6	22.5	57.2	46.1	44.9	40.1	32.7	0.0	2.0	Tuesday	Plant off
2018-10-31	00:00:00	01:00:00.0	38.5	20.5	59.1	43.6	42.1	36.4	27.3	0.0	1.5	Wednes	Plant off
2018-10-31	01:00:00	01:00:00.0	40.5	20.1	57.8	46.1	44.3	37.0	28.7	0.0	1.5	Wednesd	Plant off
2018-10-31	02:00:00	01:00:00.0	41.4	20.7	60.8	46.8	44.5	36.5	28.9	0.0	1.0	Wednesd	Plant off
2018-10-31	03:00:00	01:00:00.0	40.5	20.9	60.4	45.9	43.3	35.5	27.9	0.0	2.0	Wednesd	Plant off
2018-10-31	04:00:00	01:00:00.0	39.3	22.7	57.9	44.6	42.8	36.2	29.8	0.0	1.5	Wednesd	Plant off
2018-10-31	05:00:00	01:00:00.0	42.9	24.0	62.9	47.5	45.6	40.9	35.2	0.6	3.0	Wednesd	Plant off
2018-10-31	06:00:00	01:00:00.0	46.3	35.9	60.8	49.6	48.6	45.7	42.1	0.4	2.5	Wednesd	Plant off
2018-10-31	07:00:00	01:00:00.0	50.6	41.5	63.9	53.6	52.8	50.0	47.3	0.4	3.0	Wednesd	Plant off
2018-10-31	08:00:00	01:00:00.0	50.8	44.3	61.7	53.6	52.9	50.3	47.8	0.7	3.5	Wednesd	Plant on
2018-10-31	09:00:00	01:00:00.0	50.0	39.9	76.4	52.6	51.8	49.2	46.2	1.2	3.0	Wednesd	Plant on
2018-10-31	10:00:00	01:00:00.0	48.0	36.2	62.4	52.3	51.1	46.3	40.6	0.6	2.5	Wednesd	Plant on
2018-10-31	11:00:00	01:00:00.0	50.1	35.6	79.1	53.9	52.7	48.5	42.3	0.7	3.5	Wednesd	Plant on
2018-10-31	12:00:00	01:00:00.0	49.6	32.3	65.5	53.5	52.5	48.5	42.5	0.6	1.5	Wednesd	Plant on
2018-10-31	13:00:00	01:00:00.0	50.7	30.7	72.0	56.8	55.2	40.5	33.6	0.4	2.0	Wednesd	Plant on
2018-10-31	14:00:00	01:00:00.0	49.6	41.5	70.0	53.1	51.6	47.6	44.8	0.0	2.0	Wednesd	Plant on
2018-10-31	15:00:00	01:00:00.0	53.0	42.5	65.2	57.2	56.1	51.7	47.0	0.0	1.5	Wednesd	Plant on
2018-10-31	16:00:00	01:00:00.0	53.2	33.9	72.7	58.1	57.0	49.4	40.8	0.0	1.5	Wednesd	Plant on
2018-10-31	17:00:00	01:00:00.0	45.2	28.5	64.3	49.2	47.9	43.3	37.4	0.0	1.0	Wednesd	Plant off
2018-10-31	18:00:00	01:00:00.0	42.9	26.1	55.3	47.9	46.6	41.2	33.1	0.0	0.5	Wednesd	Plant off
2018-10-31	19:00:00	01:00:00.0	39.6	27.3	56.9	44.7	42.9	37.3	32.3	0.0	0.5	Wednesd	Plant off
2018-10-31	20:00:00	01:00:00.0	43.0	28.1	70.5	46.9	45.8	41.3	35.9	0.0	0.5	Wednesd	Plant off
2018-10-31	21:00:00	01:00:00.0	41.5	22.6	71.1	46.6	44.8	37.6	30.7	0.0	0.0	Wednesd	Plant off
2018-10-31	22:00:00	01:00:00.0	38.7	23.1	57.3	44.6	41.4	35.1	29.5	0.0	0.5	Wednesd	Plant off
2018-10-31	23:00:00	01:00:00.0	39.1	20.2	57.3	44.8	41.6	35.1	27.3	0.0	1.0	Wednesd	Plant off
2018-11-01	00:00:00	01:00:00.0	37.5	19.4	57.5	42.4	40.5	33.7	24.4	0.0	1.0	Thursday	Plant off
2018-11-01	01:00:00	01:00:00.0	38.0	19.2	53.4	43.6	41.7	34.4	25.5	0.0	1.0	Thursday	Plant off
2018-11-01	02:00:00	01:00:00.0	35.8	17.0	52.2	41.7	39.3	31.2	21.7	0.9	0.5	Thursday	Plant off
2018-11-01	03:00:00	01:00:00.0	37.0	17.6	53.0	43.3	41.0	31.3	20.9	0.0	1.0	Thursday	Plant off
2018-11-01	04:00:00	01:00:00.0	36.9	18.1	54.8	42.5	40.2	32.3	21.4	0.0	1.5	Thursday	Plant off
2018-11-01	05:00:00	01:00:00.0	42.7	19.2	55.9	48.0	46.1	40.5	32.5	0.0	2.0	Thursday	Plant off
2018-11-01	06:00:00	01:00:00.0	45.6	29.5	59.4	49.2	48.1	44.9	40.7	0.0	1.5	Thursday	Plant off
2018-11-01	07:00:00	01:00:00.0	50.0	40.6	64.7	53.4	52.4	48.9	46.0	0.0	1.0	Thursday	Plant off
2018-11-01	08:00:00	01:00:00.0	51.3	43.2	71.4	54.1	53.3	50.4	47.8	0.0	1.5	Thursday	Plant on
2018-11-01	09:00:00	01:00:00.0	48.3	37.8	68.9	51.5	50.4	47.2	43.5	0.0	2.5	Thursday	Plant on
2018-11-01	10:00:00	01:00:00.0	47.0	34.3	64.4	51.7	50.0	44.7	38.2	0.0	2.0	Thursday	Plant on

Table 1							Locn N1						
			Leq	Lmin	Lmax	L5	L10	L50	L90	Rain	wind		Plant
Date	Time	Duration	dBA	dBA	dBA	dBA	dBA	dBA	dBA	mm	m/s		Status
2018-11-01	11:00:00	01:00:00.0	44.7	30.5	66.2	49.5	47.3	40.2	35.4	0.0	2.5	Thursday	Plant off
2018-11-01	12:00:00	01:00:00.0	53.4	29.7	86.5	52.1	47.9	39.4	35.0	0.0	2.0	Thursday	Plant off
2018-11-01	13:00:00	01:00:00.0	47.4	29.9	83.2	49.4	47.0	38.7	34.1	0.5	2.5	Thursday	Plant off
2018-11-01	14:00:00	01:00:00.0	41.9	30.4	66.3	46.3	44.4	39.2	35.1	0.0	3.5	Thursday	Plant off
2018-11-01	15:00:00	01:00:00.0	41.7	29.7	63.7	45.6	44.0	39.8	36.1	0.0	1.5	Thursday	Plant off
2018-11-01	16:00:00	01:00:00.0	46.2	30.6	69.1	52.2	47.6	40.8	36.5	0.0	2.0	Thursday	Plant off
2018-11-01	17:00:00	01:00:00.0	44.6	28.1	57.1	48.7	47.4	43.5	37.7	0.0	1.5	Thursday	Plant off
2018-11-01	18:00:00	01:00:00.0	40.8	26.2	56.7	45.7	44.1	39.0	30.9	0.0	1.5	Thursday	Plant off
2018-11-01	19:00:00	01:00:00.0	41.6	26.6	58.2	47.4	45.2	38.4	32.9	0.0	1.0	Thursday	Plant off
2018-11-01	20:00:00	01:00:00.0	38.8	23.4	58.0	44.6	42.2	34.9	27.9	0.0	0.0	Thursday	Plant off
2018-11-01	21:00:00	01:00:00.0	39.3	23.9	55.5	45.5	42.9	35.1	28.9	0.0	1.0	Thursday	Plant off
2018-11-01	22:00:00	01:00:00.0	36.7	21.8	53.7	42.4	40.5	33.1	27.6	0.0	1.5	Thursday	Plant off
2018-11-01	23:00:00	01:00:00.0	37.8	22.5	57.1	43.4	40.8	33.8	27.6	0.0	0.5	Thursday	Plant off
2018-11-02	00:00:00	01:00:00.0	34.1	17.7	53.8	39.9	37.9	29.5	22.4	0.0	0.5	Friday	Plant off
2018-11-02	01:00:00	01:00:00.0	33.9	18.7	52.4	39.7	37.5	28.7	21.8	0.0	0.5	Friday	Plant off
2018-11-02	02:00:00	01:00:00.0	35.9	18.1	54.5	42.1	39.2	29.6	21.2	0.0	1.0	Friday	Plant off
2018-11-02	03:00:00	01:00:00.0	35.8	17.4	53.1	41.3	39.3	31.5	20.7	0.0	1.5	Friday	Plant off
2018-11-02	04:00:00	01:00:00.0	38.0	18.5	53.0	44.0	41.9	33.5	21.5	0.0	2.8	Friday	Plant off
2018-11-02	05:00:00	01:00:00.0	43.7	21.5	54.6	48.7	47.5	41.7	34.1	0.0	3.6	Friday	Plant off
2018-11-02	06:00:00	01:00:00.0	47.3	33.3	63.8	50.6	49.7	46.5	42.2	0.0	2.6	Friday	Plant off
2018-11-02	07:00:00	01:00:00.0	50.1	41.9	65.8	53.1	52.3	49.5	46.7	0.0	2.2	Friday	Plant off
2018-11-02	08:00:00	01:00:00.0	52.6	44.4	65.2	55.1	54.2	52.0	50.0	0.0	2.0	Friday	Plant on
2018-11-02	09:00:00	01:00:00.0	51.4	42.8	72.2	54.0	53.0	50.6	48.3	0.0	1.6	Friday	Plant on
2018-11-02	10:00:00	01:00:00.0	50.1	40.5	65.2	53.5	52.2	49.1	45.5	0.0	1.8	Friday	Plant on
2018-11-02	11:00:00	01:00:00.0	52.7	46.4	69.7	56.3	54.6	51.3	49.3	0.0	2.0	Friday	Plant on
2018-11-02	12:00:00	01:00:00.0	53.7	41.9	67.1	57.5	56.0	52.6	49.4	0.0	2.6	Friday	Plant on
2018-11-02	13:00:00	01:00:00.0	53.2	41.5	69.0	58.9	56.4	49.8	46.1	0.2	4.8	Friday	Plant off
2018-11-02	14:00:00	01:00:00.0	52.7	42.7	69.1	57.6	55.4	49.8	46.6	0.6	6.0	Friday	Plant off
2018-11-02	15:00:00	01:00:00.0	54.2	43.8	71.1	59.2	56.7	51.1	47.9	0.6	5.5	Friday	Plant off
2018-11-02	16:00:00	01:00:00.0	55.8	42.6	72.1	61.5	59.1	52.5	48.5	0.5	5.5	Friday	Plant off
2018-11-02	17:00:00	01:00:00.0	58.7	45.2	73.7	64.4	62.3	55.3	50.5	0.8	6.5	Friday	Plant off
2018-11-02	18:00:00	01:00:00.0	59.8	45.9	77.7	65.5	63.6	56.6	51.0	0.6	7.5	Friday	Plant off
2018-11-02	19:00:00	01:00:00.0	61.7	46.3	77.4	67.7	65.6	58.1	51.8	0.0	8.0	Friday	Plant off
2018-11-02	20:00:00	01:00:00.0	58.5	42.3	73.0	64.7	62.5	54.5	48.4	0.0	7.5	Friday	Plant off
2018-11-02	21:00:00	01:00:00.0	57.9	41.5	75.2	64.0	61.8	53.7	47.5	0.0	7.0	Friday	Plant off
2018-11-02	22:00:00	01:00:00.0	60.2	42.2	77.8	66.3	64.2	56.4	49.9	0.0	7.5	Friday	Plant off
2018-11-02	23:00:00	01:00:00.0	59.0	41.4	73.1	65.2	62.9	54.7	48.0	0.0	7.4	Friday	Plant off
2018-11-03	00:00:00	01:00:00.0	58.2	41.5	72.7	64.3	62.2	54.2	47.9	0.0	5.0	Saturday	Plant off
2018-11-03	01:00:00	01:00:00.0	57.5	39.0	72.5	63.8	61.6	53.3	46.8	0.0	6.0	Saturday	Plant off
2018-11-03	02:00:00	01:00:00.0	58.9	35.1	73.6	65.3	63.2	54.3	46.5	0.0	6.5	Saturday	Plant off
2018-11-03	03:00:00	01:00:00.0	55.8	33.2	72.3	62.3	59.7	49.8	41.1	0.0	5.5	Saturday	Plant off
2018-11-03	04:00:00	01:00:00.0	56.8	38.4	72.9	63.2	60.6	51.5	44.9	**0.5**	6.5	Saturday	Plant off
2018-11-03	05:00:00	01:00:00.0	57.7	38.5	75.9	63.7	61.4	52.9	45.4	**0.4**	6.0	Saturday	Plant off
2018-11-03	06:00:00	01:00:00.0	54.1	36.8	70.9	60.3	57.8	49.5	43.0	0.4	5.5	Saturday	Plant off
2018-11-03	07:00:00	01:00:00.0	55.9	39.6	75.0	61.9	59.6	51.5	44.8	0.6	5.0	Saturday	Plant off
2018-11-03	08:00:00	01:00:00.0	53.5	37.1	72.2	59.6	57.1	48.3	42.0	1.6	7.0	Saturday	Plant off
2018-11-03	09:00:00	01:00:00.0	56.8	39.1	75.4	63.3	60.5	50.7	44.1	0.3	6.0	Saturday	Plant off
2018-11-03	10:00:00	01:00:00.0	51.8	35.7	70.2	58.1	55.4	46.8	42.1	0.0	5.5	Saturday	Plant off

Table 1							Locn N1						
			Leq	Lmin	Lmax	L5	L10	L50	L90	Rain	wind		Plant
Date	Time	Duration	dBA	dBA	dBA	dBA	dBA	dBA	dBA	mm	m/s		Status
2018-11-03	11:00:00	01:00:00.0	55.1	39.4	70.9	61.5	59.2	50.2	44.3	0.9	5.5	Saturday	Plant off
2018-11-03	12:00:00	01:00:00.0	55.1	39.6	71.7	61.3	58.9	50.0	44.3	0.0	6.5	Saturday	Plant off
2018-11-03	13:00:00	01:00:00.0	56.0	39.7	70.4	62.2	60.2	51.7	45.4	0.0	6.0	Saturday	Plant off
2018-11-03	14:00:00	01:00:00.0	55.2	39.0	70.4	61.5	59.3	50.4	43.8	0.0	5.5	Saturday	Plant off
2018-11-03	15:00:00	01:00:00.0	56.0	37.7	71.9	62.5	60.1	51.0	44.7	0.0	6.0	Saturday	Plant off
2018-11-03	16:00:00	01:00:00.0	54.8	39.2	70.7	61.2	58.9	49.8	44.4	0.0	7.0	Saturday	Plant off
2018-11-03	17:00:00	01:00:00.0	53.4	39.2	68.7	59.7	57.3	49.1	43.9	0.0	6.5	Saturday	Plant off
2018-11-03	18:00:00	01:00:00.0	53.9	37.4	68.7	60.1	57.6	49.4	43.9	0.0	5.5	Saturday	Plant off
2018-11-03	19:00:00	01:00:00.0	55.8	39.5	74.6	62.0	59.8	51.2	44.9	0.0	4.0	Saturday	Plant off
2018-11-03	20:00:00	01:00:00.0	56.0	34.6	73.3	62.6	60.1	50.0	41.0	0.8	5.0	Saturday	Plant off
2018-11-03	21:00:00	01:00:00.0	51.5	32.1	69.9	58.0	55.2	45.7	39.8	0.0	5.0	Saturday	Plant off
2018-11-03	22:00:00	01:00:00.0	52.4	33.8	71.7	58.6	56.2	46.8	40.2	0.0	4.0	Saturday	Plant off
2018-11-03	23:00:00	01:00:00.0	53.6	33.5	70.0	60.1	57.6	48.3	41.7	0.0	5.0	Saturday	Plant off
2018-11-04	00:00:00	01:00:00.0	51.9	32.0	70.2	58.4	55.7	46.4	40.0	0.0	4.8	Sunday	Plant off
2018-11-04	01:00:00	01:00:00.0	48.9	29.0	69.3	55.2	52.3	43.1	37.4	0.0	4.0	Sunday	Plant off
2018-11-04	02:00:00	01:00:00.0	48.8	29.8	70.5	54.6	51.4	42.1	36.4	0.0	4.8	Sunday	Plant off
2018-11-04	03:00:00	01:00:00.0	50.3	31.1	69.2	56.5	53.6	44.4	38.0	0.0	4.6	Sunday	Plant off
2018-11-04	04:00:00	01:00:00.0	45.9	28.8	65.7	51.6	48.8	40.6	35.0	0.0	3.8	Sunday	Plant off
2018-11-04	05:00:00	01:00:00.0	47.0	24.0	67.7	53.0	49.5	39.4	31.7	0.0	4.2	Sunday	Plant off
2018-11-04	06:00:00	01:00:00.0	45.9	27.9	66.2	51.7	48.5	40.3	35.3	0.0	4.2	Sunday	Plant off
2018-11-04	07:00:00	01:00:00.0	47.7	31.6	64.6	53.8	51.1	43.5	38.1	0.0	2.0	Sunday	Plant off
2018-11-04	08:00:00	01:00:00.0	46.9	32.1	64.1	52.0	49.9	43.7	39.6	0.0	3.5	Sunday	Plant off
2018-11-04	09:00:00	01:00:00.0	50.4	36.5	68.0	56.0	53.7	46.5	42.3	0.0	4.0	Sunday	Plant off
2018-11-04	10:00:00	01:00:00.0	48.9	36.4	67.8	54.2	52.1	45.6	41.4	0.0	5.0	Sunday	Plant off
2018-11-04	11:00:00	01:00:00.0	50.0	36.7	65.6	55.7	53.3	46.5	42.1	0.0	4.5	Sunday	Plant off
2018-11-04	12:00:00	01:00:00.0	49.6	35.1	66.6	55.2	52.9	46.2	41.6	0.0	3.5	Sunday	Plant off
2018-11-04	13:00:00	01:00:00.0	46.7	33.5	65.3	52.0	49.9	43.3	39.3	0.0	3.0	Sunday	Plant off
2018-11-04	14:00:00	01:00:00.0	45.9	32.6	70.4	50.9	48.5	42.5	38.5	0.0	2.0	Sunday	Plant off
2018-11-04	15:00:00	01:00:00.0	43.1	31.3	63.4	47.1	45.7	41.3	37.8	0.0	1.0	Sunday	Plant off
2018-11-04	16:00:00	01:00:00.0	46.5	37.4	61.4	49.8	48.8	45.6	42.3	0.0	1.0	Sunday	Plant off
2018-11-04	17:00:00	01:00:00.0	47.4	40.4	64.1	50.0	49.1	46.7	44.3	0.0	2.0	Sunday	Plant off
2018-11-04	18:00:00	01:00:00.0	45.7	35.9	56.7	48.5	47.8	45.3	42.2	0.0	1.5	Sunday	Plant off
2018-11-04	19:00:00	01:00:00.0	45.3	33.2	56.0	48.7	47.9	44.6	41.0	0.0	1.5	Sunday	Plant off
2018-11-04	20:00:00	01:00:00.0	45.5	35.3	54.9	48.6	47.9	45.0	41.6	0.0	2.0	Sunday	Plant off
2018-11-04	21:00:00	01:00:00.0	44.1	32.6	54.4	47.7	46.7	43.4	39.4	0.0	2.0	Sunday	Plant off
2018-11-04	22:00:00	01:00:00.0	43.5	27.1	55.9	47.7	46.5	42.3	37.4	0.0	1.5	Sunday	Plant off
2018-11-04	23:00:00	01:00:00.0	41.6	20.4	54.1	46.8	45.3	39.4	31.9	0.0	2.0	Sunday	Plant off
2018-11-05	00:00:00	01:00:00.0	38.3	20.5	55.8	44.0	42.2	34.9	28.1	0.4	1.5	Monday	Plant off
2018-11-05	01:00:00	01:00:00.0	39.1	26.2	53.5	44.2	42.5	36.8	31.2	1.4	1.5	Monday	Plant off
2018-11-05	02:00:00	01:00:00.0	38.2	29.7	56.2	42.5	40.8	36.3	33.2	1.0	1.5	Monday	Plant off
2018-11-05	03:00:00	01:00:00.0	32.3	20.7	52.9	37.0	34.8	29.8	24.3	0.9	1.5	Monday	Plant off
2018-11-05	04:00:00	01:00:00.0	33.0	18.7	52.6	38.8	36.6	28.0	21.5	0.4	2.5	Monday	Plant off
2018-11-05	05:00:00	01:00:00.0	36.0	20.3	52.0	41.0	39.4	33.5	25.7	0.0	2.5	Monday	Plant off
2018-11-05	06:00:00	01:00:00.0	38.2	27.6	56.8	42.0	40.8	36.7	32.5	0.0	3.0	Monday	Plant off
2018-11-05	07:00:00	01:00:00.0	45.0	33.6	62.3	49.8	47.0	42.3	38.9	0.0	3.0	Monday	Plant off
2018-11-05	08:00:00	01:00:00.0	47.7	36.0	62.8	50.7	49.6	46.9	42.6	0.0	3.5	Monday	Plant on
2018-11-05	09:00:00	01:00:00.0	48.9	32.2	65.3	52.3	51.2	47.8	39.3	0.0	2.5	Monday	Plant on
2018-11-05	10:00:00	01:00:00.0	43.9	32.0	62.9	48.0	46.1	41.4	35.5	0.0	3.0	Monday	Plant on

Table 1							Locn N1						
			Leq	Lmin	Lmax	L5	L10	L50	L90	Rain	wind		Plant
Date	Time	Duration	dBA	dBA	dBA	dBA	dBA	dBA	dBA	mm	m/s		Status
2018-11-05	11:00:00	01:00:00.0	46.0	39.0	66.4	49.2	47.8	44.7	42.6	0.0	2.5	Monday	Plant on
2018-11-05	12:00:00	01:00:00.0	49.1	31.3	62.7	53.6	52.4	47.6	39.5	0.0	2.5	Monday	Plant on
2018-11-05	13:00:00	01:00:00.0	44.9	31.9	63.1	50.7	49.6	38.4	34.3	0.0	2.5	Monday	Plant on
2018-11-05	14:00:00	01:00:00.0	50.2	41.2	65.1	53.7	52.8	49.3	45.1	0.0	0.5	Monday	Plant on
2018-11-05	15:00:00	01:00:00.0	43.4	37.4	60.2	46.3	45.1	42.5	40.5	0.0	1.0	Monday	Plant on
2018-11-05	16:00:00	01:00:00.0	45.9	37.3	62.1	48.9	48.0	45.4	42.4	0.0	1.0	Monday	Plant on
2018-11-05	17:00:00	01:00:00.0	45.2	37.8	64.0	48.7	47.6	44.1	41.4	0.0	1.0	Monday	Plant off
2018-11-05	18:00:00	01:00:00.0	45.5	36.0	55.3	48.7	47.8	44.8	42.5	0.0	2.0	Monday	Plant off
2018-11-05	19:00:00	01:00:00.0	43.4	35.3	54.1	46.7	45.7	42.8	40.0	0.0	1.0	Monday	Plant off
2018-11-05	20:00:00	01:00:00.0	42.7	32.2	53.3	46.5	45.3	41.8	38.8	0.0	2.5	Monday	Plant off
2018-11-05	21:00:00	01:00:00.0	41.7	30.7	54.3	45.8	44.5	40.6	36.5	0.0	1.5	Monday	Plant off
2018-11-05	22:00:00	01:00:00.0	41.6	27.8	57.8	46.0	44.6	39.9	35.3	0.0	2.5	Monday	Plant off
2018-11-05	23:00:00	01:00:00.0	41.8	26.4	54.7	46.4	44.9	40.3	34.1	0.0	2.0	Monday	Plant off
2018-11-06	00:00:00	01:00:00.0	38.5	21.5	53.5	43.7	42.1	36.0	27.9	0.0	2.5	Tuesday	Plant off
2018-11-06	01:00:00	01:00:00.0	38.1	20.1	55.2	43.8	42.1	34.6	25.2	0.0	2.5	Tuesday	Plant off
2018-11-06	02:00:00	01:00:00.0	42.5	23.0	65.3	47.6	45.3	38.3	32.0	0.0	3.0	Tuesday	Plant off
2018-11-06	03:00:00	01:00:00.0	48.1	28.2	67.6	53.8	51.2	43.6	37.8	0.0	2.5	Tuesday	Plant off
2018-11-06	04:00:00	01:00:00.0	46.1	25.1	64.2	52.1	49.7	41.5	35.0	0.0	3.0	Tuesday	Plant off
2018-11-06	05:00:00	01:00:00.0	51.2	30.4	70.6	56.9	54.6	47.1	40.3	0.0	4.5	Tuesday	Plant off
2018-11-06	06:00:00	01:00:00.0	52.8	40.7	72.7	58.0	56.1	49.3	45.2	0.0	5.8	Tuesday	Plant off
2018-11-06	07:00:00	01:00:00.0	54.9	45.1	71.9	59.6	57.7	52.9	49.2	0.0	6.0	Tuesday	Plant off
2018-11-06	08:00:00	01:00:00.0	54.4	43.5	71.4	58.9	57.1	52.5	49.2	0.0	6.5	Tuesday	Plant on
2018-11-06	09:00:00	01:00:00.0	53.5	43.8	68.0	58.1	56.4	51.7	48.1	0.0	5.2	Tuesday	Plant on
2018-11-06	10:00:00	01:00:00.0	54.9	41.8	72.3	60.0	58.0	52.0	48.0	0.0	5.4	Tuesday	Plant on
2018-11-06	11:00:00	01:00:00.0	57.7	45.6	75.2	62.9	60.9	54.7	50.1	0.0	5.6	Tuesday	Plant on
2018-11-06	12:00:00	01:00:00.0	56.9	44.0	72.0	62.4	60.5	53.9	49.1	0.2	5.0	Tuesday	Plant on
2018-11-06	13:00:00	01:00:00.0	51.2	39.9	65.7	55.9	54.4	49.0	44.2	0.2	6.2	Tuesday	Plant on
2018-11-06	14:00:00	01:00:00.0	52.9	46.1	66.9	56.7	55.3	51.6	49.2	0.6	5.2	Tuesday	Plant on
2018-11-06	15:00:00	01:00:00.0	51.7	46.4	65.2	54.6	53.5	50.9	48.9	2.1	3.8	Tuesday	Plant on
2018-11-06	16:00:00	01:00:00.0	50.3	41.7	60.6	53.5	52.6	49.8	46.4	0.0	3.2	Tuesday	Plant on
2018-11-06	17:00:00	01:00:00.0	48.7	41.5	59.9	51.7	50.8	48.1	45.4	0.0	5.0	Tuesday	Plant off
2018-11-06	18:00:00	01:00:00.0	47.2	37.0	60.1	50.7	49.7	46.3	42.7	0.0	4.0	Tuesday	Plant off
2018-11-06	19:00:00	01:00:00.0	44.7	33.3	57.1	49.0	47.6	43.4	39.8	0.0	4.5	Tuesday	Plant off
2018-11-06	20:00:00	01:00:00.0	44.4	32.3	56.0	48.3	47.1	43.3	40.1	0.0	1.0	Tuesday	Plant off
2018-11-06	21:00:00	01:00:00.0	44.3	30.4	56.6	48.7	47.3	42.9	38.6	0.0	1.5	Tuesday	Plant off
2018-11-06	22:00:00	01:00:00.0	42.0	26.1	55.7	46.5	45.2	40.6	35.0	0.0	1.0	Tuesday	Plant off
2018-11-06	23:00:00	01:00:00.0	41.2	22.4	57.4	46.4	44.6	38.8	31.7	0.0	2.0	Tuesday	Plant off
2018-11-07	00:00:00	01:00:00.0	38.0	18.1	53.9	43.5	41.8	35.4	23.8	0.0	3.0	Wednesd	Plant off
2018-11-07	01:00:00	01:00:00.0	35.9	18.6	55.0	41.6	39.8	32.0	23.5	0.0	3.5	Wednesd	Plant off
2018-11-07	02:00:00	01:00:00.0	36.8	17.3	53.7	42.6	40.6	32.5	21.1	0.0	3.0	Wednesd	Plant off
2018-11-07	03:00:00	01:00:00.0	35.1	16.6	55.1	41.4	38.8	27.2	17.7	0.0	2.5	Wednesd	Plant off
2018-11-07	04:00:00	01:00:00.0	36.3	17.1	54.1	42.5	40.4	31.4	22.5	0.0	3.5	Wednesd	Plant off
2018-11-07	05:00:00	01:00:00.0	30.2	17.1	46.7	36.1	33.6	26.6	20.6	0.0	2.2	Wednesd	Plant off
2018-11-07	06:00:00	01:00:00.0	34.7	21.3	53.2	38.8	37.3	33.2	28.3	0.0	2.4	Wednesd	Plant off
2018-11-07	07:00:00	01:00:00.0	44.1	30.7	70.1	48.1	44.9	39.6	35.0	0.0	2.6	Wednesd	Plant off
2018-11-07	08:00:00	01:00:00.0	53.0	37.6	67.6	57.1	56.1	52.1	42.0	0.0	2.8	Wednesd	Plant on
2018-11-07	09:00:00	01:00:00.0	53.4	40.4	67.0	57.0	56.1	52.4	47.3	0.0	2.2	Wednesd	Plant on
2018-11-07	10:00:00	01:00:00.0	53.5	35.0	70.4	58.3	57.2	52.5	40.3	0.0	3.2	Wednesd	Plant on

Table 1							Locn N1						
			Leq	Lmin	Lmax	L5	L10	L50	L90	Rain	wind		Plant
Date	Time	Duration	dBA	dBA	dBA	dBA	dBA	dBA	dBA	mm	m/s		Status
2018-11-07	11:00:00	01:00:00.0	50.6	40.7	70.9	54.3	53.0	49.3	46.4	0.0	5.6	Wednesd	Plant on
2018-11-07	12:00:00	01:00:00.0	56.0	36.4	70.6	60.3	59.0	54.9	44.8	0.0	4.8	Wednesd	Plant on
2018-11-07	13:00:00	01:00:00.0	51.3	34.2	72.2	57.6	55.7	44.0	38.7	0.0	4.6	Wednesd	Plant on
2018-11-07	14:00:00	01:00:00.0	51.1	42.2	64.7	54.8	53.7	50.2	47.0	0.0	5.4	Wednesd	Plant on
2018-11-07	15:00:00	01:00:00.0	51.1	42.6	63.8	54.8	53.6	50.1	47.1	0.0	4.8	Wednesd	Plant on
2018-11-07	16:00:00	01:00:00.0	51.2	43.0	66.4	55.1	53.8	49.8	46.9	0.0	4.4	Wednesd	Plant on
2018-11-07	17:00:00	01:00:00.0	47.6	35.6	69.2	52.2	49.7	44.3	40.1	0.0	4.0	Wednesd	Plant off
2018-11-07	18:00:00	01:00:00.0	45.4	34.0	56.3	49.8	48.7	44.0	38.5	0.0	4.0	Wednesd	Plant off
2018-11-07	19:00:00	01:00:00.0	46.0	37.5	58.6	49.7	48.7	45.0	41.9	0.0	3.5	Wednesd	Plant off
2018-11-07	20:00:00	01:00:00.0	46.0	36.5	59.3	49.5	48.5	45.3	42.0	0.0	3.0	Wednesd	Plant off
2018-11-07	21:00:00	01:00:00.0	46.8	35.7	59.9	50.7	49.4	45.7	42.3	0.0	2.0	Wednesd	Plant off
2018-11-07	22:00:00	01:00:00.0	47.5	32.6	65.2	52.1	50.3	45.4	41.4	0.0	3.0	Wednesd	Plant off
2018-11-07	23:00:00	01:00:00.0	48.9	31.7	64.9	54.5	52.3	45.6	40.7	0.0	3.5	Wednesd	Plant off
2018-11-08	00:00:00	01:00:00.0	46.7	30.0	65.6	52.5	50.3	43.0	37.4	0.0	4.5	Thursday	Plant off
2018-11-08	01:00:00	01:00:00.0	40.1	24.3	54.4	45.4	43.7	37.4	31.2	0.0	4.0	Thursday	Plant off
2018-11-08	02:00:00	01:00:00.0	39.0	22.6	55.2	44.4	42.5	36.2	28.8	0.0	4.5	Thursday	Plant off
2018-11-08	03:00:00	01:00:00.0	38.6	22.8	59.9	44.0	42.0	35.0	28.0	0.0	3.0	Thursday	Plant off
2018-11-08	04:00:00	01:00:00.0	45.9	28.8	64.3	51.3	48.6	41.8	36.1	0.0	3.5	Thursday	Plant off
2018-11-08	05:00:00	01:00:00.0	44.0	28.7	63.3	48.2	46.7	42.1	36.2	0.0	6.5	Thursday	Plant off
2018-11-08	06:00:00	01:00:00.0	47.5	37.2	59.7	51.1	49.9	46.5	43.7	0.0	5.0	Thursday	Plant off
2018-11-08	07:00:00	01:00:00.0	51.4	42.0	67.9	54.9	53.7	50.4	47.8	0.0	4.3	Thursday	Plant off

Table 2							Locn N2						
			Leq	Lmin	Lmax	L5	L10	L50	L90	Rain	wind		Plant
Date	Time	Duration	dBA	dBA	dBA	dBA	dBA	dBA	dBA	mm	m/s		Status
2018-10-30	12:24:39	00:35:20.8	51.3	37.4	79.1	55.0	53.8	50.2	43.2	0.2	3.0	Tuesday	Plant on
2018-10-30	13:00:00	01:00:00.0	46.0	37.0	63.7	51.1	49.7	43.5	41.0	0.0	2.5	Tuesday	Plant on
2018-10-30	14:00:00	01:00:00.0	50.8	38.6	68.9	54.4	53.3	50.0	44.9	0.2	2.0	Tuesday	Plant on
2018-10-30	15:00:00	01:00:00.0	49.9	40.1	66.4	53.5	52.5	49.1	44.6	0.0	1.5	Tuesday	Plant on
2018-10-30	16:00:00	01:00:00.0	45.3	35.5	60.5	49.0	48.0	44.5	40.0	0.4	1.5	Tuesday	Plant on
2018-10-30	17:00:00	01:00:00.0	43.4	37.2	68.1	45.6	44.9	42.9	40.7	0.2	1.5	Tuesday	Plant off
2018-10-30	18:00:00	01:00:00.0	43.8	37.1	51.3	46.1	45.6	43.6	41.3	0.0	1.5	Tuesday	Plant off
2018-10-30	19:00:00	01:00:00.0	45.0	36.2	56.1	48.2	47.4	44.2	41.1	0.0	1.0	Tuesday	Plant off
2018-10-30	20:00:00	01:00:00.0	44.6	29.9	57.5	48.1	47.2	44.0	39.2	0.0	2.0	Tuesday	Plant off
2018-10-30	21:00:00	01:00:00.0	43.4	29.5	54.8	47.3	46.3	42.4	37.7	0.0	1.5	Tuesday	Plant off
2018-10-30	22:00:00	01:00:00.0	42.3	28.3	54.7	46.7	45.5	40.9	35.5	0.0	2.0	Tuesday	Plant off
2018-10-30	23:00:00	01:00:00.0	43.0	21.5	57.4	47.6	46.3	41.2	33.8	0.0	2.0	Tuesday	Plant off
2018-10-31	00:00:00	01:00:00.0	40.2	21.2	56.7	45.5	43.9	37.5	27.5	0.0	1.5	Wednesd	Plant off
2018-10-31	01:00:00	01:00:00.0	41.0	21.1	57.8	47.4	45.0	35.8	27.5	0.0	1.5	Wednesd	Plant off
2018-10-31	02:00:00	01:00:00.0	38.4	22.2	55.5	44.5	42.3	33.9	27.7	0.0	1.0	Wednesd	Plant off
2018-10-31	03:00:00	01:00:00.0	36.4	22.6	52.3	42.1	40.4	32.4	26.5	0.0	2.0	Wednesd	Plant off
2018-10-31	04:00:00	01:00:00.0	38.1	23.4	56.4	43.4	42.0	34.9	28.2	0.0	1.5	Wednesd	Plant off
2018-10-31	05:00:00	01:00:00.0	41.3	24.8	55.8	45.4	44.3	40.2	33.9	0.6	3.0	Wednesd	Plant off
2018-10-31	06:00:00	01:00:00.0	45.3	33.7	53.5	48.3	47.5	44.9	41.6	0.4	2.5	Wednesd	Plant off
2018-10-31	07:00:00	01:00:00.0	48.6	40.5	68.6	50.9	50.1	48.0	45.9	0.4	3.0	Wednesd	Plant off
2018-10-31	08:00:00	01:00:00.0	50.4	42.5	68.6	53.2	52.2	49.5	47.0	0.7	3.5	Wednesd	Plant on
2018-10-31	09:00:00	01:00:00.0	51.0	37.7	67.1	54.6	53.5	50.2	43.8	1.2	3.0	Wednesd	Plant on
2018-10-31	10:00:00	01:00:00.0	51.0	37.8	70.7	55.8	54.8	47.5	42.1	0.6	2.5	Wednesd	Plant on
2018-10-31	11:00:00	01:00:00.0	52.4	36.2	69.4	56.9	55.9	51.0	41.5	0.7	3.5	Wednesd	Plant on
2018-10-31	12:00:00	01:00:00.0	52.7	32.9	66.0	57.3	56.2	51.1	42.1	0.6	1.5	Wednesd	Plant on
2018-10-31	13:00:00	01:00:00.0	51.5	31.4	67.3	57.8	56.4	39.0	35.2	0.4	2.0	Wednesd	Plant on
2018-10-31	14:00:00	01:00:00.0	48.4	38.8	64.4	52.8	51.6	47.0	43.5	0.0	2.0	Wednesd	Plant on
2018-10-31	15:00:00	01:00:00.0	51.7	42.0	65.9	55.8	54.8	50.2	45.5	0.0	1.5	Wednesd	Plant on
2018-10-31	16:00:00	01:00:00.0	50.7	31.1	63.4	56.0	54.9	43.8	36.9	0.0	1.5	Wednesd	Plant on
2018-10-31	17:00:00	01:00:00.0	43.3	26.6	68.3	47.3	46.1	41.7	35.7	0.0	1.0	Wednesd	Plant off
2018-10-31	18:00:00	01:00:00.0	37.5	25.1	52.4	42.2	41.1	35.7	29.1	0.0	0.5	Wednesd	Plant off
2018-10-31	19:00:00	01:00:00.0	33.7	26.2	55.8	36.7	36.0	33.0	30.2	0.0	0.5	Wednesd	Plant off
2018-10-31	20:00:00	01:00:00.0	37.3	22.5	64.4	42.1	40.5	34.8	28.1	0.0	0.5	Wednesd	Plant off
2018-10-31	21:00:00	01:00:00.0	38.9	23.9	69.8	43.5	42.4	36.2	29.6	0.0	0.0	Wednesd	Plant off
2018-10-31	22:00:00	01:00:00.0	34.5	21.3	46.6	38.9	37.7	33.0	28.7	0.0	0.5	Wednesd	Plant off
2018-10-31	23:00:00	01:00:00.0	34.6	20.4	55.8	39.5	37.9	32.6	26.8	0.0	1.0	Wednesd	Plant off
2018-11-01	00:00:00	01:00:00.0	35.1	19.0	49.9	40.3	39.0	32.6	22.8	0.0	1.0	Thursday	Plant off
2018-11-01	01:00:00	01:00:00.0	39.1	19.6	58.7	45.0	42.9	35.0	25.0	0.0	1.0	Thursday	Plant off
2018-11-01	02:00:00	01:00:00.0	33.4	17.8	51.7	39.2	37.4	28.6	21.6	0.9	0.5	Thursday	Plant off
2018-11-01	03:00:00	01:00:00.0	35.2	17.2	52.2	41.7	38.7	28.9	20.6	0.0	1.0	Thursday	Plant off
2018-11-01	04:00:00	01:00:00.0	34.5	17.4	50.9	40.1	37.9	30.7	20.5	0.0	1.5	Thursday	Plant off
2018-11-01	05:00:00	01:00:00.0	42.2	21.0	56.7	47.6	45.8	39.7	32.7	0.0	2.0	Thursday	Plant off
2018-11-01	06:00:00	01:00:00.0	45.6	30.0	64.3	49.1	48.1	44.8	40.3	0.0	1.5	Thursday	Plant off
2018-11-01	07:00:00	01:00:00.0	47.4	39.1	64.8	50.8	49.7	46.1	43.0	0.0	1.0	Thursday	Plant off
2018-11-01	08:00:00	01:00:00.0	56.3	40.7	70.6	62.0	60.5	52.0	43.9	0.0	1.5	Thursday	Plant on
2018-11-01	09:00:00	01:00:00.0	50.7	35.4	66.6	56.3	54.9	46.4	41.2	0.0	2.5	Thursday	Plant on
2018-11-01	10:00:00	01:00:00.0	48.0	33.5	64.5	53.5	52.0	44.2	37.3	0.0	2.0	Thursday	Plant on
2018-11-01	11:00:00	01:00:00.0	44.8	28.2	64.4	49.8	48.2	38.3	33.7	0.0	2.5	Thursday	Plant off

Table 2							Locn N2						
			Leq	Lmin	Lmax	L5	L10	L50	L90	Rain	wind		Plant
Date	Time	Duration	dBA	dBA	dBA	dBA	dBA	dBA	dBA	mm	m/s		Status
2018-11-01	12:00:00	01:00:00.0	45.3	29.8	66.6	52.1	46.2	38.8	35.8	0.0	2.0	Thursday	Plant off
2018-11-01	13:00:00	01:00:00.0	47.5	30.7	85.7	49.8	47.1	38.8	33.5	0.5	2.5	Thursday	Plant off
2018-11-01	14:00:00	01:00:00.0	40.1	31.9	60.9	45.0	42.6	37.1	34.5	0.0	3.5	Thursday	Plant off
2018-11-01	15:00:00	01:00:00.0	40.3	29.4	64.0	44.6	43.0	37.5	33.8	0.0	1.5	Thursday	Plant off
2018-11-01	16:00:00	01:00:00.0	45.1	27.3	63.8	53.4	44.1	37.3	32.8	0.0	2.0	Thursday	Plant off
2018-11-01	17:00:00	01:00:00.0	38.4	26.1	63.5	42.0	40.5	36.6	32.5	0.0	1.5	Thursday	Plant off
2018-11-01	18:00:00	01:00:00.0	34.9	25.6	48.9	39.1	37.6	33.4	29.3	0.0	1.5	Thursday	Plant off
2018-11-01	19:00:00	01:00:00.0	35.7	25.4	54.1	40.9	39.3	33.0	28.8	0.0	1.0	Thursday	Plant off
2018-11-01	20:00:00	01:00:00.0	33.8	22.8	48.1	38.5	37.2	31.4	27.8	0.0	0.0	Thursday	Plant off
2018-11-01	21:00:00	01:00:00.0	34.6	22.5	49.5	39.2	37.6	32.8	27.8	0.0	1.0	Thursday	Plant off
2018-11-01	22:00:00	01:00:00.0	33.2	20.4	45.9	38.1	36.6	31.4	26.8	0.0	1.5	Thursday	Plant off
2018-11-01	23:00:00	01:00:00.0	34.1	21.5	47.9	39.2	37.8	31.8	27.0	0.0	0.5	Thursday	Plant off
2018-11-02	00:00:00	01:00:00.0	31.8	17.7	45.8	37.5	35.3	28.7	21.4	0.0	0.5	Friday	Plant off
2018-11-02	01:00:00	01:00:00.0	31.8	16.8	48.7	37.7	35.9	27.5	20.2	0.0	0.5	Friday	Plant off
2018-11-02	02:00:00	01:00:00.0	33.8	17.4	51.8	39.6	37.3	29.5	21.4	0.0	1.0	Friday	Plant off
2018-11-02	03:00:00	01:00:00.0	34.2	17.2	51.2	40.2	38.2	29.8	19.5	0.0	1.5	Friday	Plant off
2018-11-02	04:00:00	01:00:00.0	37.3	18.8	54.0	43.4	41.3	33.5	21.5	0.0	2.8	Friday	Plant off
2018-11-02	05:00:00	01:00:00.0	44.6	22.7	56.6	49.4	48.1	42.6	35.3	0.0	3.6	Friday	Plant off
2018-11-02	06:00:00	01:00:00.0	48.9	35.5	67.3	52.1	51.1	47.8	43.5	0.0	2.6	Friday	Plant off
2018-11-02	07:00:00	01:00:00.0	50.6	43.0	68.3	53.3	52.6	50.0	47.3	0.0	2.2	Friday	Plant off
2018-11-02	08:00:00	01:00:00.0	49.1	43.9	60.4	51.4	50.8	48.7	47.0	0.0	2.0	Friday	Plant on
2018-11-02	09:00:00	01:00:00.0	47.8	42.9	60.2	50.0	49.4	47.5	45.8	0.0	1.6	Friday	Plant on
2018-11-02	10:00:00	01:00:00.0	47.7	40.8	67.4	50.2	49.4	47.2	45.3	0.0	1.8	Friday	Plant on
2018-11-02	11:00:00	01:00:00.0	49.4	40.8	61.4	52.3	51.4	48.9	46.7	0.0	2.0	Friday	Plant on
2018-11-02	12:00:00	01:00:00.0	50.1	39.6	64.4	53.2	52.3	49.7	45.7	0.0	2.6	Friday	Plant on
2018-11-02	13:00:00	01:00:00.0	50.3	39.2	65.0	54.1	53.1	49.3	44.2	0.2	4.8	Friday	Plant off
2018-11-02	14:00:00	01:00:00.0	50.5	44.2	63.9	53.4	52.4	49.8	47.9	0.6	6.0	Friday	Plant off
2018-11-02	15:00:00	01:00:00.0	50.6	38.7	64.4	54.1	53.0	50.0	44.9	0.6	5.5	Friday	Plant off
2018-11-02	16:00:00	01:00:00.0	48.6	42.4	61.9	51.1	50.3	48.2	46.1	0.5	5.5	Friday	Plant off
2018-11-02	17:00:00	01:00:00.0	52.6	45.8	63.8	55.5	54.5	51.9	49.6	0.8	6.5	Friday	Plant off
2018-11-02	18:00:00	01:00:00.0	54.2	47.5	64.0	57.6	56.6	53.4	50.8	0.6	7.5	Friday	Plant off
2018-11-02	19:00:00	01:00:00.0	55.2	46.8	66.2	59.0	57.9	54.2	51.2	0.0	8.0	Friday	Plant off
2018-11-02	20:00:00	01:00:00.0	51.5	43.1	62.6	55.0	54.0	50.7	47.6	0.0	7.5	Friday	Plant off
2018-11-02	21:00:00	01:00:00.0	51.1	43.5	61.1	54.8	53.8	50.1	47.0	0.0	7.0	Friday	Plant off
2018-11-02	22:00:00	01:00:00.0	52.0	45.0	63.7	55.7	54.4	51.1	48.5	0.0	7.5	Friday	Plant off
2018-11-02	23:00:00	01:00:00.0	50.2	43.1	62.8	53.5	52.5	49.4	46.6	0.0	7.4	Friday	Plant off
2018-11-03	00:00:00	01:00:00.0	49.4	42.7	61.9	52.7	51.7	48.6	46.4	0.0	5.0	Saturday	Plant off
2018-11-03	01:00:00	01:00:00.0	49.4	42.5	60.6	52.8	51.6	48.5	46.2	0.0	6.0	Saturday	Plant off
2018-11-03	02:00:00	01:00:00.0	50.7	39.2	62.3	54.3	53.4	50.0	45.0	0.0	6.5	Saturday	Plant off
2018-11-03	03:00:00	01:00:00.0	47.4	32.5	59.1	52.4	50.7	45.6	38.3	0.0	5.5	Saturday	Plant off
2018-11-03	04:00:00	01:00:00.0	49.1	41.0	61.4	52.9	51.5	47.8	44.8	0.5	6.5	Saturday	Plant off
2018-11-03	05:00:00	01:00:00.0	49.3	40.9	61.6	53.4	52.1	48.1	44.9	0.4	6.0	Saturday	Plant off
2018-11-03	06:00:00	01:00:00.0	46.0	38.3	58.4	48.9	48.1	45.4	42.8	0.4	5.5	Saturday	Plant off
2018-11-03	07:00:00	01:00:00.0	47.9	40.3	64.4	51.3	50.3	46.9	44.2	0.6	5.0	Saturday	Plant off
2018-11-03	08:00:00	01:00:00.0	46.2	37.6	66.5	50.0	48.7	45.0	41.3	1.6	7.0	Saturday	Plant off
2018-11-03	09:00:00	01:00:00.0	50.1	40.1	68.4	54.9	53.1	47.6	43.7	0.3	6.0	Saturday	Plant off
2018-11-03	10:00:00	01:00:00.0	45.7	37.1	82.2	48.0	46.6	43.2	40.6	0.0	5.5	Saturday	Plant off
2018-11-03	11:00:00	01:00:00.0	47.5	38.6	69.5	50.9	49.8	46.2	43.4	0.9	5.5	Saturday	Plant off

Table 2							Locn N2						
			Leq	Lmin	Lmax	L5	L10	L50	L90	Rain	wind		Plant
Date	Time	Duration	dBA	dBA	dBA	dBA	dBA	dBA	dBA	mm	m/s		Status
2018-11-03	12:00:00	01:00:00.0	50.1	40.9	70.0	55.3	53.4	47.4	43.8	0.0	6.5	Saturday	Plant off
2018-11-03	13:00:00	01:00:00.0	48.4	41.8	63.5	51.9	50.8	47.5	44.8	0.0	6.0	Saturday	Plant off
2018-11-03	14:00:00	01:00:00.0	47.5	38.7	60.9	51.6	50.2	46.3	43.5	0.0	5.5	Saturday	Plant off
2018-11-03	15:00:00	01:00:00.0	48.5	38.0	63.4	52.7	51.1	46.9	43.7	0.0	6.0	Saturday	Plant off
2018-11-03	16:00:00	01:00:00.0	47.9	41.0	62.4	51.6	50.2	46.5	44.1	0.0	7.0	Saturday	Plant off
2018-11-03	17:00:00	01:00:00.0	46.3	40.2	72.4	49.1	48.3	45.5	43.2	0.0	6.5	Saturday	Plant off
2018-11-03	18:00:00	01:00:00.0	47.3	39.7	64.2	50.6	49.6	46.4	43.7	0.0	5.5	Saturday	Plant off
2018-11-03	19:00:00	01:00:00.0	50.6	40.6	71.6	55.8	52.2	47.5	44.8	0.0	4.0	Saturday	Plant off
2018-11-03	20:00:00	01:00:00.0	48.6	35.4	61.5	53.9	52.4	46.0	40.2	0.8	5.0	Saturday	Plant off
2018-11-03	21:00:00	01:00:00.0	43.1	32.3	55.4	46.5	45.5	42.4	38.6	0.0	5.0	Saturday	Plant off
2018-11-03	22:00:00	01:00:00.0	43.4	35.0	54.3	46.6	45.8	42.7	39.3	0.0	4.0	Saturday	Plant off
2018-11-03	23:00:00	01:00:00.0	44.5	36.5	55.2	48.3	47.0	43.5	40.8	0.0	5.0	Saturday	Plant off
2018-11-04	00:00:00	01:00:00.0	42.2	33.9	54.1	45.8	44.8	41.3	37.9	0.0	4.8	Sunday	Plant off
2018-11-04	01:00:00	01:00:00.0	39.7	29.2	51.6	43.5	42.5	38.5	34.9	0.0	4.0	Sunday	Plant off
2018-11-04	02:00:00	01:00:00.0	39.6	30.5	52.0	43.5	42.3	38.4	34.7	0.0	4.8	Sunday	Plant off
2018-11-04	03:00:00	01:00:00.0	41.3	28.9	56.1	45.8	44.3	39.5	35.2	0.0	4.6	Sunday	Plant off
2018-11-04	04:00:00	01:00:00.0	39.3	30.0	52.4	43.3	42.2	38.0	34.2	0.0	3.8	Sunday	Plant off
2018-11-04	05:00:00	01:00:00.0	38.3	26.9	52.5	43.2	41.6	36.0	30.9	0.0	4.2	Sunday	Plant off
2018-11-04	06:00:00	01:00:00.0	39.0	28.3	60.6	42.9	41.6	37.6	33.3	0.0	4.2	Sunday	Plant off
2018-11-04	07:00:00	01:00:00.0	42.5	32.2	58.5	46.4	45.2	41.1	36.7	0.0	2.0	Sunday	Plant off
2018-11-04	08:00:00	01:00:00.0	43.3	32.7	64.1	47.3	45.9	41.7	38.2	0.0	3.5	Sunday	Plant off
2018-11-04	09:00:00	01:00:00.0	44.2	36.5	62.9	47.2	46.2	43.2	40.7	0.0	4.0	Sunday	Plant off
2018-11-04	10:00:00	01:00:00.0	43.4	36.6	65.2	46.1	45.1	42.5	40.3	0.0	5.0	Sunday	Plant off
2018-11-04	11:00:00	01:00:00.0	43.8	36.2	66.1	46.3	45.3	42.4	40.0	0.0	4.5	Sunday	Plant off
2018-11-04	12:00:00	01:00:00.0	43.5	34.7	67.3	46.1	45.2	42.2	39.6	0.0	3.5	Sunday	Plant off
2018-11-04	13:00:00	01:00:00.0	41.9	32.9	67.4	44.4	43.4	40.7	37.8	0.0	3.0	Sunday	Plant off
2018-11-04	14:00:00	01:00:00.0	41.1	30.6	63.9	44.3	42.9	39.3	36.1	0.0	2.0	Sunday	Plant off
2018-11-04	15:00:00	01:00:00.0	39.4	30.8	63.6	42.9	41.9	38.4	35.1	0.0	1.0	Sunday	Plant off
2018-11-04	16:00:00	01:00:00.0	45.3	37.0	65.3	48.5	47.7	44.2	41.1	0.0	1.0	Sunday	Plant off
2018-11-04	17:00:00	01:00:00.0	47.3	40.2	71.7	49.3	48.7	46.6	44.4	0.0	2.0	Sunday	Plant off
2018-11-04	18:00:00	01:00:00.0	45.0	34.7	52.6	48.0	47.2	44.6	41.5	0.0	1.5	Sunday	Plant off
2018-11-04	19:00:00	01:00:00.0	45.8	33.5	58.3	49.7	48.5	44.8	41.1	0.0	1.5	Sunday	Plant off
2018-11-04	20:00:00	01:00:00.0	45.6	34.0	54.0	49.1	48.2	45.0	41.0	0.0	2.0	Sunday	Plant off
2018-11-04	21:00:00	01:00:00.0	44.0	31.3	54.7	47.9	46.8	43.1	38.6	0.0	2.0	Sunday	Plant off
2018-11-04	22:00:00	01:00:00.0	43.8	26.9	56.5	48.1	46.8	42.4	37.2	0.0	1.5	Sunday	Plant off
2018-11-04	23:00:00	01:00:00.0	41.0	20.0	55.8	46.2	44.6	38.2	30.6	0.0	2.0	Sunday	Plant off
2018-11-05	00:00:00	01:00:00.0	37.7	18.9	53.8	43.5	41.1	34.2	25.5	0.4	1.5	Monday	Plant off
2018-11-05	01:00:00	01:00:00.0	38.9	21.9	58.9	44.4	42.6	36.3	28.2	1.4	1.5	Monday	Plant off
2018-11-05	02:00:00	01:00:00.0	34.6	26.6	51.9	39.4	37.3	32.7	29.8	1.0	1.5	Monday	Plant off
2018-11-05	03:00:00	01:00:00.0	30.1	19.2	47.8	35.5	32.8	27.7	21.9	0.9	1.5	Monday	Plant off
2018-11-05	04:00:00	01:00:00.0	32.2	17.8	54.6	37.6	35.1	26.3	20.8	0.4	2.5	Monday	Plant off
2018-11-05	05:00:00	01:00:00.0	35.7	18.4	49.9	41.3	39.3	32.8	23.8	0.0	2.5	Monday	Plant off
2018-11-05	06:00:00	01:00:00.0	38.8	26.1	64.1	42.4	41.1	36.8	33.0	0.0	3.0	Monday	Plant off
2018-11-05	07:00:00	01:00:00.0	43.7	29.3	71.7	44.2	42.5	39.2	35.9	0.0	3.0	Monday	Plant off
2018-11-05	08:00:00	01:00:00.0	50.9	36.2	79.8	48.7	47.5	44.3	41.5	0.0	3.5	Monday	Plant on
2018-11-05	09:00:00	01:00:00.0	47.6	35.5	79.7	47.0	45.6	42.6	39.6	0.0	2.5	Monday	Plant on
2018-11-05	10:00:00	01:00:00.0	43.8	33.5	72.8	44.9	42.2	38.9	36.9	0.0	3.0	Monday	Plant on
2018-11-05	11:00:00	01:00:00.0	44.0	34.3	68.8	48.7	45.4	39.5	37.2	0.0	2.5	Monday	Plant on

Table 2							Locn N2						
			Leq	Lmin	Lmax	L5	L10	L50	L90	Rain	wind		Plant
Date	Time	Duration	dBA	dBA	dBA	dBA	dBA	dBA	dBA	mm	m/s		Status
2018-11-05	12:00:00	01:00:00.0	45.5	34.1	70.0	50.8	47.7	40.8	37.1	0.0	2.5	Monday	Plant on
2018-11-05	13:00:00	01:00:00.0	39.8	30.6	65.8	43.2	41.9	37.3	33.9	0.0	2.5	Monday	Plant on
2018-11-05	14:00:00	01:00:00.0	45.1	34.7	65.7	49.2	47.8	43.2	39.5	0.0	0.5	Monday	Plant on
2018-11-05	15:00:00	01:00:00.0	40.9	33.7	60.4	44.9	42.4	39.0	37.1	0.0	1.0	Monday	Plant on
2018-11-05	16:00:00	01:00:00.0	44.6	35.2	64.6	47.5	46.6	43.9	41.0	0.0	1.0	Monday	Plant on
2018-11-05	17:00:00	01:00:00.0	42.0	34.2	70.0	43.9	43.1	40.7	38.6	0.0	1.0	Monday	Plant off
2018-11-05	18:00:00	01:00:00.0	43.4	36.0	55.9	46.7	45.8	42.6	40.1	0.0	2.0	Monday	Plant off
2018-11-05	19:00:00	01:00:00.0	41.3	34.3	51.7	44.7	43.7	40.5	38.0	0.0	1.0	Monday	Plant off
2018-11-05	20:00:00	01:00:00.0	41.3	30.6	58.1	45.1	43.9	40.2	36.9	0.0	2.5	Monday	Plant off
2018-11-05	21:00:00	01:00:00.0	40.2	30.0	52.3	43.8	42.7	39.3	35.6	0.0	1.5	Monday	Plant off
2018-11-05	22:00:00	01:00:00.0	41.7	27.6	55.9	46.2	44.9	40.2	35.1	0.0	2.5	Monday	Plant off
2018-11-05	23:00:00	01:00:00.0	42.9	26.4	56.2	47.7	46.3	41.1	35.2	0.0	2.0	Monday	Plant off
2018-11-06	00:00:00	01:00:00.0	39.9	21.4	58.2	44.9	43.4	37.2	28.2	0.0	2.5	Tuesday	Plant off
2018-11-06	01:00:00	01:00:00.0	38.7	20.4	57.1	44.7	42.9	34.1	24.5	0.0	2.5	Tuesday	Plant off
2018-11-06	02:00:00	01:00:00.0	39.8	24.0	52.3	44.5	43.0	38.1	32.4	0.0	3.0	Tuesday	Plant off
2018-11-06	03:00:00	01:00:00.0	42.6	32.1	54.5	46.0	45.0	42.0	38.1	0.0	2.5	Tuesday	Plant off
2018-11-06	04:00:00	01:00:00.0	38.6	25.2	51.4	43.3	42.0	36.8	31.7	0.0	3.0	Tuesday	Plant off
2018-11-06	05:00:00	01:00:00.0	44.2	30.7	54.7	48.1	47.1	43.3	38.4	0.0	4.5	Tuesday	Plant off
2018-11-06	06:00:00	01:00:00.0	47.7	40.2	60.0	50.8	49.8	47.0	44.3	0.0	5.8	Tuesday	Plant off
2018-11-06	07:00:00	01:00:00.0	49.7	45.2	69.4	51.7	51.1	49.3	47.6	0.0	6.0	Tuesday	Plant off
2018-11-06	08:00:00	01:00:00.0	50.2	43.0	67.1	52.4	51.7	49.9	48.0	0.0	6.5	Tuesday	Plant on
2018-11-06	09:00:00	01:00:00.0	49.7	42.0	64.9	52.3	51.7	49.2	46.6	0.0	5.2	Tuesday	Plant on
2018-11-06	10:00:00	01:00:00.0	48.9	39.7	69.8	51.6	50.7	48.2	45.6	0.0	5.4	Tuesday	Plant on
2018-11-06	11:00:00	01:00:00.0	49.7	43.8	62.7	52.6	51.6	49.0	47.0	0.0	5.6	Tuesday	Plant on
2018-11-06	12:00:00	01:00:00.0	49.5	41.6	59.8	52.3	51.5	49.0	46.6	0.2	5.0	Tuesday	Plant on
2018-11-06	13:00:00	01:00:00.0	49.0	40.4	62.4	53.7	52.5	46.7	43.8	0.2	6.2	Tuesday	Plant on
2018-11-06	14:00:00	01:00:00.0	49.8	43.6	63.4	53.0	52.0	49.1	46.9	0.6	5.2	Tuesday	Plant on
2018-11-06	15:00:00	01:00:00.0	49.0	42.5	67.5	51.9	50.9	48.1	45.7	2.1	3.8	Tuesday	Plant on
2018-11-06	16:00:00	01:00:00.0	49.3	39.0	65.2	52.9	51.9	48.5	44.3	0.0	3.2	Tuesday	Plant on
2018-11-06	17:00:00	01:00:00.0	46.9	39.0	61.8	49.4	48.7	46.5	44.2	0.0	5.0	Tuesday	Plant off
2018-11-06	18:00:00	01:00:00.0	46.3	37.2	60.3	49.3	48.5	45.8	43.0	0.0	4.0	Tuesday	Plant off
2018-11-06	19:00:00	01:00:00.0	44.3	32.0	55.1	47.5	46.7	43.8	40.0	0.0	4.5	Tuesday	Plant off
2018-11-06	20:00:00	01:00:00.0	44.6	32.4	54.8	47.9	47.0	43.9	40.6	0.0	1.0	Tuesday	Plant off
2018-11-06	21:00:00	01:00:00.0	44.7	31.7	56.7	48.3	47.3	43.8	39.5	0.0	1.5	Tuesday	Plant off
2018-11-06	22:00:00	01:00:00.0	43.0	25.9	59.4	47.5	46.3	41.4	35.8	0.0	1.0	Tuesday	Plant off
2018-11-06	23:00:00	01:00:00.0	42.7	23.2	57.6	48.2	46.6	39.8	30.8	0.0	2.0	Tuesday	Plant off
2018-11-07	00:00:00	01:00:00.0	39.4	17.7	54.6	45.3	43.5	35.8	23.9	0.0	3.0	Wednesd	Plant off
2018-11-07	01:00:00	01:00:00.0	35.8	18.1	53.2	41.6	39.6	31.8	22.5	0.0	3.5	Wednesd	Plant off
2018-11-07	02:00:00	01:00:00.0	37.0	16.9	52.9	42.9	41.0	32.3	19.7	0.0	3.0	Wednesd	Plant off
2018-11-07	03:00:00	01:00:00.0	34.6	16.0	53.3	41.0	38.2	27.0	17.4	0.0	2.5	Wednesd	Plant off
2018-11-07	04:00:00	01:00:00.0	34.1	16.4	51.8	39.8	37.7	29.5	21.8	0.0	3.5	Wednesd	Plant off
2018-11-07	05:00:00	01:00:00.0	27.6	16.5	43.2	32.2	30.5	25.9	20.4	0.0	2.2	Wednesd	Plant off
2018-11-07	06:00:00	01:00:00.0	34.9	20.9	50.0	39.0	37.5	33.5	28.7	0.0	2.4	Wednesd	Plant off
2018-11-07	07:00:00	01:00:00.0	39.7	32.5	65.8	41.0	39.6	37.1	35.2	0.0	2.6	Wednesd	Plant off
2018-11-07	08:00:00	01:00:00.0	52.6	35.0	72.1	57.9	56.5	49.9	41.5	0.0	2.8	Wednesd	Plant on
2018-11-07	09:00:00	01:00:00.0	51.6	34.7	70.0	55.3	54.2	50.8	45.4	0.0	2.2	Wednesd	Plant on
2018-11-07	10:00:00	01:00:00.0	50.0	31.5	66.5	54.9	53.8	48.8	37.9	0.0	3.2	Wednesd	Plant on
2018-11-07	11:00:00	01:00:00.0	51.8	43.2	65.7	55.5	54.3	50.8	48.7	0.0	5.6	Wednesd	Plant on

Table 2							Locn N2						
			Leq	Lmin	Lmax	L5	L10	L50	L90	Rain	wind		Plant
Date	Time	Duration	dBA	dBA	dBA	dBA	dBA	dBA	dBA	mm	m/s		Status
2018-11-07	12:00:00	01:00:00.0	53.3	35.4	66.2	57.9	56.5	52.0	43.9	0.0	4.8	Wednesd	Plant on
2018-11-07	13:00:00	01:00:00.0	48.1	33.6	65.0	54.3	52.8	41.3	39.0	0.0	4.6	Wednesd	Plant on
2018-11-07	14:00:00	01:00:00.0	48.1	39.4	63.2	51.7	50.6	47.0	45.9	0.0	5.4	Wednesd	Plant on
2018-11-07	15:00:00	01:00:00.0	48.1	39.5	64.7	51.8	50.6	47.0	45.9	0.0	4.8	Wednesd	Plant on
2018-11-07	16:00:00	01:00:00.0	50.3	38.6	66.9	54.3	53.1	49.0	45.0	0.0	4.4	Wednesd	Plant on
2018-11-07	17:00:00	01:00:00.0	44.4	34.5	67.6	48.0	44.8	40.8	38.0	0.0	4.0	Wednesd	Plant off
2018-11-07	18:00:00	01:00:00.0	43.3	34.7	53.9	47.3	46.4	42.0	37.9	0.0	4.0	Wednesd	Plant off
2018-11-07	19:00:00	01:00:00.0	46.6	38.0	59.9	50.0	49.0	45.9	42.8	0.0	3.5	Wednesd	Plant off
2018-11-07	20:00:00	01:00:00.0	46.8	36.8	57.0	50.0	49.2	46.2	42.9	0.0	3.0	Wednesd	Plant off
2018-11-07	21:00:00	01:00:00.0	46.7	36.1	59.0	50.1	49.1	45.9	42.2	0.0	2.0	Wednesd	Plant off
2018-11-07	22:00:00	01:00:00.0	45.5	31.4	58.6	49.4	48.3	44.4	39.7	0.0	3.0	Wednesd	Plant off
2018-11-07	23:00:00	01:00:00.0	43.6	33.0	57.1	47.5	46.4	42.5	39.0	0.0	3.5	Wednesd	Plant off
2018-11-08	00:00:00	01:00:00.0	41.1	29.9	53.2	45.4	44.1	39.8	35.2	0.0	4.5	Thursday	Plant off
2018-11-08	01:00:00	01:00:00.0	39.9	21.9	65.3	45.2	43.4	36.3	28.6	0.0	4.0	Thursday	Plant off
2018-11-08	02:00:00	01:00:00.0	40.0	23.4	57.0	45.4	43.6	37.0	29.5	0.0	4.5	Thursday	Plant off
2018-11-08	03:00:00	01:00:00.0	38.7	23.5	56.0	44.2	42.4	35.3	27.1	0.0	3.0	Thursday	Plant off
2018-11-08	04:00:00	01:00:00.0	40.2	28.0	54.4	45.0	43.6	38.2	33.5	0.0	3.5	Thursday	Plant off
2018-11-08	05:00:00	01:00:00.0	43.8	30.2	57.7	48.0	46.9	42.5	36.4	0.0	6.5	Thursday	Plant off
2018-11-08	06:00:00	01:00:00.0	48.2	39.6	56.3	51.2	50.4	47.7	44.8	0.0	5.0	Thursday	Plant off
2018-11-08	07:00:00	01:00:00.0	50.1	44.7	66.5	52.2	51.6	49.8	48.1	0.0	4.3	Thursday	Plant off
2018-11-08	08:00:00	01:00:00.0	53.3	45.6	70.3	55.9	55.2	53.0	50.6	0.0	6.0	Thursday	

Table 3							Locn N3						
			Leq	Lmin	Lmax	L5	L10	L50	L90	Rain	wind		Plant
Date	Time	Duration	dBA	dBA	dBA	dBA	dBA	dBA	dBA	mm	m/s		Status
2018-10-30	13:10:28	00:49:31.9	49.0	36.8	78.7	52.5	51.0	44.8	40.5	0.0	2.5	Tuesday	Plant on
2018-10-30	14:00:00	01:00:00.0	50.7	34.0	69.3	54.3	53.2	49.7	41.6	0.2	2.0	Tuesday	Plant on
2018-10-30	15:00:00	01:00:00.0	49.6	34.3	65.0	53.9	52.8	48.3	39.8	0.0	1.5	Tuesday	Plant on
2018-10-30	16:00:00	01:00:00.0	42.2	33.0	66.6	47.0	45.1	39.4	36.5	0.4	1.5	Tuesday	Plant on
2018-10-30	17:00:00	01:00:00.0	43.7	30.5	63.1	50.1	48.3	38.9	33.8	0.2	1.5	Tuesday	Plant off
2018-10-30	18:00:00	01:00:00.0	33.4	26.7	45.4	36.3	35.2	32.6	30.4	0.0	1.5	Tuesday	Plant off
2018-10-30	19:00:00	01:00:00.0	33.4	25.6	63.6	35.4	34.1	31.3	29.2	0.0	1.0	Tuesday	Plant off
2018-10-30	20:00:00	01:00:00.0	32.2	22.8	55.9	35.8	34.5	30.8	27.5	0.0	2.0	Tuesday	Plant off
2018-10-30	21:00:00	01:00:00.0	32.2	21.4	65.7	33.9	32.6	29.4	26.6	0.0	1.5	Tuesday	Plant off
2018-10-30	22:00:00	01:00:00.0	28.6	21.4	42.7	32.2	31.0	27.5	24.6	0.0	2.0	Tuesday	Plant off
2018-10-30	23:00:00	01:00:00.0	29.6	18.6	49.9	33.5	32.3	28.4	24.1	0.0	2.0	Tuesday	Plant off
2018-10-31	00:00:00	01:00:00.0	27.8	18.6	48.6	31.6	30.3	26.1	22.2	0.0	1.5	Wednesd	Plant off
2018-10-31	01:00:00	01:00:00.0	28.9	18.9	50.3	32.9	31.5	26.8	22.6	0.0	1.5	Wednesd	Plant off
2018-10-31	02:00:00	01:00:00.0	27.7	17.9	43.4	32.2	30.8	26.2	21.7	0.0	1.0	Wednesd	Plant off
2018-10-31	03:00:00	01:00:00.0	28.3	18.6	48.5	32.5	30.6	25.8	21.5	0.0	2.0	Wednesd	Plant off
2018-10-31	04:00:00	01:00:00.0	32.3	20.5	50.7	38.0	34.2	28.9	25.3	0.0	1.5	Wednesd	Plant off
2018-10-31	05:00:00	01:00:00.0	34.5	21.1	52.8	38.7	37.3	32.5	28.2	0.6	3.0	Wednesd	Plant off
2018-10-31	06:00:00	01:00:00.0	43.9	27.5	55.3	47.8	47.0	43.1	33.3	0.4	2.5	Wednesd	Plant off
2018-10-31	07:00:00	01:00:00.0	49.9	40.7	78.3	53.5	52.8	47.4	44.1	0.4	3.0	Wednesd	Plant off
2018-10-31	08:00:00	01:00:00.0	51.7	39.3	70.7	54.5	53.5	50.8	47.9	0.7	3.5	Wednesd	Plant on
2018-10-31	09:00:00	01:00:00.0	51.2	35.2	66.7	54.7	53.5	50.3	41.7	1.2	3.0	Wednesd	Plant on
2018-10-31	10:00:00	01:00:00.0	44.9	31.6	67.7	48.8	47.1	42.1	35.3	0.6	2.5	Wednesd	Plant on
2018-10-31	11:00:00	01:00:00.0	43.9	29.8	67.6	48.3	46.3	41.4	36.9	0.7	3.5	Wednesd	Plant on
2018-10-31	12:00:00	01:00:00.0	47.7	27.6	73.8	50.3	49.3	45.1	37.9	0.6	1.5	Wednesd	Plant on
2018-10-31	13:00:00	01:00:00.0	42.1	24.6	71.5	47.4	45.7	34.0	28.0	0.4	2.0	Wednesd	Plant on
2018-10-31	14:00:00	01:00:00.0	47.2	34.9	69.3	50.5	48.3	44.2	40.0	0.0	2.0	Wednesd	Plant on
2018-10-31	15:00:00	01:00:00.0	47.3	38.5	69.8	50.6	48.9	44.9	42.2	0.0	1.5	Wednesd	Plant on
2018-10-31	16:00:00	01:00:00.0	42.7	27.4	70.1	46.5	44.7	39.6	31.4	0.0	1.5	Wednesd	Plant on
2018-10-31	17:00:00	01:00:00.0	44.3	25.1	67.7	50.2	48.2	33.0	29.4	0.0	1.0	Wednesd	Plant off
2018-10-31	18:00:00	01:00:00.0	40.1	22.2	63.8	49.0	43.5	30.1	25.9	0.0	0.5	Wednesd	Plant off
2018-10-31	19:00:00	01:00:00.0	31.4	23.0	62.2	32.6	31.7	29.3	26.7	0.0	0.5	Wednesd	Plant off
2018-10-31	20:00:00	01:00:00.0	30.0	21.9	55.2	32.9	31.7	28.3	25.8	0.0	0.5	Wednesd	Plant off
2018-10-31	21:00:00	01:00:00.0	31.5	20.3	64.0	31.5	29.5	25.2	23.2	0.0	0.0	Wednesd	Plant off
2018-10-31	22:00:00	01:00:00.0	31.2	20.1	66.2	30.1	28.1	24.4	22.4	0.0	0.5	Wednesd	Plant off
2018-10-31	23:00:00	01:00:00.0	25.9	18.1	58.0	27.1	25.9	22.8	20.2	0.0	1.0	Wednesd	Plant off
2018-11-01	00:00:00	01:00:00.0	23.1	17.5	42.1	26.2	25.1	21.9	19.5	0.0	1.0	Thursday	Plant off
2018-11-01	01:00:00	01:00:00.0	25.2	17.5	51.3	29.2	27.7	23.0	20.1	0.0	1.0	Thursday	Plant off
2018-11-01	02:00:00	01:00:00.0	35.2	16.8	61.8	42.8	35.7	22.9	19.4	0.9	0.5	Thursday	Plant off
2018-11-01	03:00:00	01:00:00.0	32.2	17.0	58.3	37.0	27.1	21.4	18.7	0.0	1.0	Thursday	Plant off
2018-11-01	04:00:00	01:00:00.0	23.5	17.2	47.9	27.4	25.9	21.2	18.8	0.0	1.5	Thursday	Plant off
2018-11-01	05:00:00	01:00:00.0	35.0	18.2	54.5	42.0	38.3	26.3	22.6	0.0	2.0	Thursday	Plant off
2018-11-01	06:00:00	01:00:00.0	41.0	22.3	69.5	41.3	35.5	31.3	28.3	0.0	1.5	Thursday	Plant off
2018-11-01	07:00:00	01:00:00.0	50.2	40.4	73.4	53.6	51.0	48.1	45.9	0.0	1.0	Thursday	Plant off
2018-11-01	08:00:00	01:00:00.0	51.5	43.7	73.3	54.6	53.6	50.3	47.1	0.0	1.5	Thursday	Plant on
2018-11-01	09:00:00	01:00:00.0	48.1	34.6	81.2	49.8	48.1	44.3	40.8	0.0	2.5	Thursday	Plant on
2018-11-01	10:00:00	01:00:00.0	45.4	28.1	73.7	47.1	44.8	39.3	32.0	0.0	2.0	Thursday	Plant on
2018-11-01	11:00:00	01:00:00.0	44.2	24.8	68.8	48.9	45.4	37.9	30.5	0.0	2.5	Thursday	Plant off
2018-11-01	12:00:00	01:00:00.0	44.1	35.6	68.7	49.2	44.7	39.9	38.2	0.0	2.0	Thursday	Plant off

Table 3							Locn N3						
			Leq	Lmin	Lmax	L5	L10	L50	L90	Rain	wind		Plant
Date	Time	Duration	dBA	dBA	dBA	dBA	dBA	dBA	dBA	mm	m/s		Status
2018-11-01	13:00:00	01:00:00.0	43.6	33.8	68.1	50.0	47.6	39.7	37.2	0.5	2.5	Thursday	Plant off
2018-11-01	14:00:00	01:00:00.0	43.5	27.0	66.3	46.3	45.0	41.2	36.3	0.0	3.5	Thursday	Plant off
2018-11-01	15:00:00	01:00:00.0	41.8	22.2	67.7	45.0	41.7	33.4	27.5	0.0	1.5	Thursday	Plant off
2018-11-01	16:00:00	01:00:00.0	40.2	24.3	65.2	45.1	40.9	30.8	27.3	0.0	2.0	Thursday	Plant off
2018-11-01	17:00:00	01:00:00.0	43.0	24.2	64.2	51.0	48.6	32.5	28.1	0.0	1.5	Thursday	Plant off
2018-11-01	18:00:00	01:00:00.0	28.9	24.1	45.2	31.4	30.6	28.3	26.5	0.0	1.5	Thursday	Plant off
2018-11-01	19:00:00	01:00:00.0	29.8	22.8	59.6	31.3	30.1	27.2	25.3	0.0	1.0	Thursday	Plant off
2018-11-01	20:00:00	01:00:00.0	29.6	20.7	61.7	30.9	29.7	26.8	24.3	0.0	0.0	Thursday	Plant off
2018-11-01	21:00:00	01:00:00.0	28.9	21.6	44.1	32.4	31.0	27.6	25.0	0.0	1.0	Thursday	Plant off
2018-11-01	22:00:00	01:00:00.0	31.4	19.3	64.1	32.1	30.1	25.5	23.0	0.0	1.5	Thursday	Plant off
2018-11-01	23:00:00	01:00:00.0	25.6	19.1	51.7	28.6	27.6	24.5	22.1	0.0	0.5	Thursday	Plant off
2018-11-02	00:00:00	01:00:00.0	26.5	17.0	52.4	27.6	25.7	21.9	19.2	0.0	0.5	Friday	Plant off
2018-11-02	01:00:00	01:00:00.0	23.0	17.1	46.9	26.1	24.8	21.5	19.1	0.0	0.5	Friday	Plant off
2018-11-02	02:00:00	01:00:00.0	27.1	17.4	54.2	28.6	26.7	22.0	19.5	0.0	1.0	Friday	Plant off
2018-11-02	03:00:00	01:00:00.0	24.1	17.1	50.1	27.4	25.9	21.8	19.2	0.0	1.5	Friday	Plant off
2018-11-02	04:00:00	01:00:00.0	24.8	17.2	42.4	28.9	27.5	23.3	19.3	0.0	2.8	Friday	Plant off
2018-11-02	05:00:00	01:00:00.0	31.4	20.9	42.2	35.3	34.5	30.0	25.5	0.0	3.6	Friday	Plant off
2018-11-02	06:00:00	01:00:00.0	37.7	25.8	66.6	39.8	38.8	36.7	33.1	0.0	2.6	Friday	Plant off
2018-11-02	07:00:00	01:00:00.0	50.0	34.3	80.1	52.6	51.5	45.5	38.1	0.0	2.2	Friday	Plant off
2018-11-02	08:00:00	01:00:00.0	55.3	47.7	75.7	58.1	57.1	54.2	51.7	0.0	2.0	Friday	Plant on
2018-11-02	09:00:00	01:00:00.0	53.7	42.2	67.5	56.9	55.9	53.1	47.5	0.0	1.6	Friday	Plant on
2018-11-02	10:00:00	01:00:00.0	52.1	36.9	67.4	57.1	55.8	50.2	40.0	0.0	1.8	Friday	Plant on
2018-11-02	11:00:00	01:00:00.0	54.8	46.8	70.2	58.2	57.1	53.8	51.1	0.0	2.0	Friday	Plant on
2018-11-02	12:00:00	01:00:00.0	55.0	41.8	70.3	58.4	57.5	54.3	49.3	0.0	2.6	Friday	Plant on
2018-11-02	13:00:00	01:00:00.0	49.6	41.6	68.7	52.5	51.4	48.6	46.0	0.2	4.8	Friday	Plant on
2018-11-02	14:00:00	01:00:00.0	47.3	40.4	65.9	50.7	49.5	46.2	43.3	0.6	6.0	Friday	Plant on
2018-11-02	15:00:00	01:00:00.0	48.9	40.7	69.8	52.7	51.8	46.9	43.8	0.6	5.5	Friday	Plant on
2018-11-02	16:00:00	01:00:00.0	46.4	39.7	66.4	50.8	49.1	44.7	41.8	0.5	5.5	Friday	Plant off
2018-11-02	17:00:00	01:00:00.0	50.4	39.0	69.3	55.5	53.9	47.6	42.7	0.8	6.5	Friday	Plant off
2018-11-02	18:00:00	01:00:00.0	51.7	38.6	66.8	56.5	55.0	49.3	44.7	0.6	7.5	Friday	Plant off
2018-11-02	19:00:00	01:00:00.0	53.3	41.2	68.1	58.6	56.8	50.5	45.5	0.0	8.0	Friday	Plant off
2018-11-02	20:00:00	01:00:00.0	50.7	38.3	65.2	56.1	54.0	48.0	43.3	0.0	7.5	Friday	Plant off
2018-11-02	21:00:00	01:00:00.0	50.2	36.6	65.6	55.3	53.6	47.5	42.3	0.0	7.0	Friday	Plant off
2018-11-02	22:00:00	01:00:00.0	51.5	38.1	66.6	56.6	54.8	49.0	43.9	0.0	7.5	Friday	Plant off
2018-11-02	23:00:00	01:00:00.0	50.3	38.9	64.4	55.5	53.5	47.8	42.9	0.0	7.4	Friday	Plant off
2018-11-03	00:00:00	01:00:00.0	50.3	36.6	63.5	55.4	53.8	47.9	43.0	0.0	5.0	Saturday	Plant off
2018-11-03	01:00:00	01:00:00.0	49.9	38.0	63.0	55.2	53.3	47.4	42.6	0.0	6.0	Saturday	Plant off
2018-11-03	02:00:00	01:00:00.0	50.7	31.2	66.7	56.1	54.3	47.7	38.9	0.0	6.5	Saturday	Plant off
2018-11-03	03:00:00	01:00:00.0	47.0	29.3	61.5	52.3	50.6	44.1	36.9	0.0	5.5	Saturday	Plant off
2018-11-03	04:00:00	01:00:00.0	49.6	38.7	61.5	54.7	53.0	47.3	42.7	**0.5**	6.5	Saturday	Plant off
2018-11-03	05:00:00	01:00:00.0	48.7	38.5	63.1	54.0	52.1	46.3	42.3	**0.4**	6.0	Saturday	Plant off
2018-11-03	06:00:00	01:00:00.0	47.0	34.5	61.2	51.7	50.1	44.8	40.6	0.4	5.5	Saturday	Plant off
2018-11-03	07:00:00	01:00:00.0	48.7	37.3	68.6	53.4	51.9	46.1	42.1	0.6	5.0	Saturday	Plant off
2018-11-03	08:00:00	01:00:00.0	46.1	31.8	70.9	50.2	48.4	42.2	37.1	1.6	7.0	Saturday	Plant off
2018-11-03	09:00:00	01:00:00.0	49.7	35.0	69.6	55.1	53.1	45.9	40.4	0.3	6.0	Saturday	Plant off
2018-11-03	10:00:00	01:00:00.0	44.0	32.1	72.8	48.6	46.4	39.6	35.4	0.0	5.5	Saturday	Plant off
2018-11-03	11:00:00	01:00:00.0	46.6	34.2	65.7	52.0	50.2	43.5	38.5	0.9	5.5	Saturday	Plant off
2018-11-03	12:00:00	01:00:00.0	49.8	34.5	69.6	55.4	53.3	45.5	38.6	0.0	6.5	Saturday	Plant off

Table 3							Locn N3						
			Leq	Lmin	Lmax	L5	L10	L50	L90	Rain	wind		Plant
Date	Time	Duration	dBA	dBA	dBA	dBA	dBA	dBA	dBA	mm	m/s		Status
2018-11-03	13:00:00	01:00:00.0	46.9	35.4	67.1	52.2	50.2	43.4	38.8	0.0	6.0	Saturday	Plant off
2018-11-03	14:00:00	01:00:00.0	46.9	33.8	66.7	51.8	49.5	42.7	38.2	0.0	5.5	Saturday	Plant off
2018-11-03	15:00:00	01:00:00.0	49.0	34.2	66.8	55.0	52.4	45.0	39.4	0.0	6.0	Saturday	Plant off
2018-11-03	16:00:00	01:00:00.0	49.4	36.6	68.7	54.9	53.2	46.1	40.7	0.0	7.0	Saturday	Plant off
2018-11-03	17:00:00	01:00:00.0	44.1	33.0	63.3	49.0	47.5	41.5	37.7	0.0	6.5	Saturday	Plant off
2018-11-03	18:00:00	01:00:00.0	45.6	34.9	62.5	50.9	48.7	42.7	38.7	0.0	5.5	Saturday	Plant off
2018-11-03	19:00:00	01:00:00.0	51.2	35.6	74.0	55.9	52.6	44.8	39.7	0.0	4.0	Saturday	Plant off
2018-11-03	20:00:00	01:00:00.0	49.5	28.8	65.0	56.0	53.9	43.8	33.9	0.8	5.0	Saturday	Plant off
2018-11-03	21:00:00	01:00:00.0	38.8	27.1	54.3	43.6	41.5	35.7	30.1	0.0	5.0	Saturday	Plant off
2018-11-03	22:00:00	01:00:00.0	42.8	28.8	57.7	48.8	46.3	38.9	33.9	0.0	4.0	Saturday	Plant off
2018-11-03	23:00:00	01:00:00.0	43.4	30.8	55.4	49.0	47.2	40.7	35.7	0.0	5.0	Saturday	Plant off
2018-11-04	00:00:00	01:00:00.0	40.0	28.5	56.6	45.5	43.4	37.2	32.4	0.0	4.8	Sunday	Plant off
2018-11-04	01:00:00	01:00:00.0	37.8	26.4	53.4	43.1	41.2	34.9	30.3	0.0	4.0	Sunday	Plant off
2018-11-04	02:00:00	01:00:00.0	38.4	25.0	52.1	44.0	41.8	35.1	30.0	0.0	4.8	Sunday	Plant off
2018-11-04	03:00:00	01:00:00.0	41.0	26.3	56.1	46.9	44.5	37.2	31.8	0.0	4.6	Sunday	Plant off
2018-11-04	04:00:00	01:00:00.0	36.0	21.6	53.4	42.1	39.6	31.1	25.4	0.0	3.8	Sunday	Plant off
2018-11-04	05:00:00	01:00:00.0	40.0	23.5	54.9	46.3	44.7	35.5	28.5	0.0	4.2	Sunday	Plant off
2018-11-04	06:00:00	01:00:00.0	33.9	23.2	54.2	38.6	36.2	31.1	27.6	0.0	4.2	Sunday	Plant off
2018-11-04	07:00:00	01:00:00.0	44.6	26.1	71.8	47.5	42.2	34.3	31.2	0.0	2.0	Sunday	Plant off
2018-11-04	08:00:00	01:00:00.0	44.2	29.0	70.1	48.7	44.5	36.5	32.5	0.0	3.5	Sunday	Plant off
2018-11-04	09:00:00	01:00:00.0	43.5	30.2	70.9	46.7	43.6	37.5	34.1	0.0	4.0	Sunday	Plant off
2018-11-04	10:00:00	01:00:00.0	41.0	30.7	69.8	43.7	41.2	36.7	34.0	0.0	5.0	Sunday	Plant off
2018-11-04	11:00:00	01:00:00.0	41.4	29.6	67.2	44.9	42.5	36.4	32.7	0.0	4.5	Sunday	Plant off
2018-11-04	12:00:00	01:00:00.0	40.8	28.7	67.3	45.6	43.5	37.1	32.7	0.0	3.5	Sunday	Plant off
2018-11-04	13:00:00	01:00:00.0	40.8	27.3	69.0	45.8	43.4	35.2	30.8	0.0	3.0	Sunday	Plant off
2018-11-04	14:00:00	01:00:00.0	36.7	25.0	63.9	40.9	37.7	31.1	28.1	0.0	2.0	Sunday	Plant off
2018-11-04	15:00:00	01:00:00.0	38.5	24.7	61.4	42.4	37.7	30.4	28.0	0.0	1.0	Sunday	Plant off
2018-11-04	16:00:00	01:00:00.0	44.3	27.6	65.5	50.8	50.5	35.2	31.6	0.0	1.0	Sunday	Plant off
2018-11-04	17:00:00	01:00:00.0	45.8	29.7	64.6	51.3	51.1	36.0	33.0	0.0	2.0	Sunday	Plant off
2018-11-04	18:00:00	01:00:00.0	33.5	26.7	65.9	34.7	33.8	31.6	29.9	0.0	1.5	Sunday	Plant off
2018-11-04	19:00:00	01:00:00.0	33.4	25.1	58.4	34.5	33.3	30.7	28.4	0.0	1.5	Sunday	Plant off
2018-11-04	20:00:00	01:00:00.0	32.8	26.4	55.7	35.4	34.5	32.2	30.0	0.0	2.0	Sunday	Plant off
2018-11-04	21:00:00	01:00:00.0	32.5	25.2	47.1	35.5	34.6	31.8	29.3	0.0	2.0	Sunday	Plant off
2018-11-04	22:00:00	01:00:00.0	32.4	23.6	41.2	35.3	34.6	32.0	28.9	0.0	1.5	Sunday	Plant off
2018-11-04	23:00:00	01:00:00.0	31.3	20.3	55.0	34.5	33.4	29.6	26.2	0.0	2.0	Sunday	Plant off
2018-11-05	00:00:00	01:00:00.0	33.1	20.2	44.9	37.3	36.6	30.2	25.6	0.4	1.5	Monday	Plant off
2018-11-05	01:00:00	01:00:00.0	36.4	26.0	59.9	39.9	39.0	35.4	31.9	1.4	1.5	Monday	Plant off
2018-11-05	02:00:00	01:00:00.0	40.4	34.2	50.9	42.8	42.2	40.2	37.2	1.0	1.5	Monday	Plant off
2018-11-05	03:00:00	01:00:00.0	35.1	23.8	48.6	39.2	38.4	33.7	29.3	0.9	1.5	Monday	Plant off
2018-11-05	04:00:00	01:00:00.0	32.5	18.8	53.2	36.2	35.1	30.6	24.2	0.4	2.5	Monday	Plant off
2018-11-05	05:00:00	01:00:00.0	35.5	20.6	52.3	40.9	38.8	32.6	26.2	0.0	2.5	Monday	Plant off
2018-11-05	06:00:00	01:00:00.0	39.4	25.7	54.2	43.0	41.8	38.4	34.7	0.0	3.0	Monday	Plant off
2018-11-05	07:00:00	01:00:00.0	47.3	33.3	72.5	49.2	44.3	39.7	37.4	0.0	3.0	Monday	Plant off
2018-11-05	08:00:00	01:00:00.0	47.2	33.2	70.7	51.2	46.5	39.3	36.7	0.0	3.5	Monday	Plant on
2018-11-05	09:00:00	01:00:00.0	43.8	30.7	68.1	47.4	45.4	40.3	36.1	0.0	2.5	Monday	Plant on
2018-11-05	10:00:00	01:00:00.0	40.7	29.4	67.0	44.0	40.8	36.2	33.6	0.0	3.0	Monday	Plant on
2018-11-05	11:00:00	01:00:00.0	41.5	30.0	67.1	44.9	42.5	38.1	33.6	0.0	2.5	Monday	Plant on
2018-11-05	12:00:00	01:00:00.0	41.7	27.3	68.0	46.4	42.5	36.3	30.6	0.0	2.5	Monday	Plant on

Table 3							Locn N3						
			Leq	Lmin	Lmax	L5	L10	L50	L90	Rain	wind		Plant
Date	Time	Duration	dBA	dBA	dBA	dBA	dBA	dBA	dBA	mm	m/s		Status
2018-11-05	13:00:00	01:00:00.0	41.2	24.7	71.5	44.2	40.5	36.2	31.7	0.0	2.5	Monday	Plant on
2018-11-05	14:00:00	01:00:00.0	39.1	27.1	64.3	41.6	38.9	33.3	30.3	0.0	0.5	Monday	Plant on
2018-11-05	15:00:00	01:00:00.0	40.4	30.3	63.8	43.5	42.0	38.4	33.4	0.0	1.0	Monday	Plant on
2018-11-05	16:00:00	01:00:00.0	48.3	29.8	70.7	52.3	51.0	46.2	36.4	0.0	1.0	Monday	Plant on
2018-11-05	17:00:00	01:00:00.0	39.9	27.0	68.2	41.7	38.9	33.0	30.6	0.0	1.0	Monday	Plant off
2018-11-05	18:00:00	01:00:00.0	38.8	28.4	75.6	37.3	36.2	33.6	31.6	0.0	2.0	Monday	Plant off
2018-11-05	19:00:00	01:00:00.0	35.5	27.4	66.0	36.5	34.8	32.2	30.5	0.0	1.0	Monday	Plant off
2018-11-05	20:00:00	01:00:00.0	34.1	25.5	62.9	36.3	34.8	31.9	29.9	0.0	2.5	Monday	Plant off
2018-11-05	21:00:00	01:00:00.0	32.5	24.9	58.1	35.1	33.7	30.7	28.5	0.0	1.5	Monday	Plant off
2018-11-05	22:00:00	01:00:00.0	31.8	23.8	52.0	35.0	33.9	30.8	28.0	0.0	2.5	Monday	Plant off
2018-11-05	23:00:00	01:00:00.0	32.8	22.9	55.6	35.8	34.3	30.8	27.6	0.0	2.0	Monday	Plant off
2018-11-06	00:00:00	01:00:00.0	29.8	21.1	44.9	33.6	32.4	28.5	24.6	0.0	2.5	Tuesday	Plant off
2018-11-06	01:00:00	01:00:00.0	28.8	18.7	46.4	32.9	31.5	27.1	22.3	0.0	2.5	Tuesday	Plant off
2018-11-06	02:00:00	01:00:00.0	32.6	20.2	53.0	36.8	35.1	30.6	26.1	0.0	3.0	Tuesday	Plant off
2018-11-06	03:00:00	01:00:00.0	36.8	23.0	52.9	42.0	40.0	34.1	29.4	0.0	2.5	Tuesday	Plant off
2018-11-06	04:00:00	01:00:00.0	37.0	25.0	50.9	42.2	40.6	34.1	29.4	0.0	3.0	Tuesday	Plant off
2018-11-06	05:00:00	01:00:00.0	43.6	32.3	61.0	48.3	47.0	41.6	37.0	0.0	4.5	Tuesday	Plant off
2018-11-06	06:00:00	01:00:00.0	44.9	36.5	57.2	49.4	47.6	43.3	39.8	0.0	5.8	Tuesday	Plant off
2018-11-06	07:00:00	01:00:00.0	48.7	38.4	74.2	51.1	49.7	46.3	41.4	0.0	6.0	Tuesday	Plant off
2018-11-06	08:00:00	01:00:00.0	52.6	40.5	68.1	56.7	55.4	51.8	45.3	0.0	6.5	Tuesday	Plant on
2018-11-06	09:00:00	01:00:00.0	53.8	42.7	75.0	57.2	56.0	52.7	48.4	0.0	5.2	Tuesday	Plant on
2018-11-06	10:00:00	01:00:00.0	51.8	40.1	69.9	56.6	55.4	48.1	43.5	0.0	5.4	Tuesday	Plant on
2018-11-06	11:00:00	01:00:00.0	54.7	46.1	67.7	57.8	56.9	54.0	51.4	0.0	5.6	Tuesday	Plant on
2018-11-06	12:00:00	01:00:00.0	53.3	44.2	68.3	56.8	55.8	52.4	48.7	0.2	5.0	Tuesday	Plant on
2018-11-06	13:00:00	01:00:00.0	50.2	41.7	62.6	54.4	53.2	48.6	45.7	0.2	6.2	Tuesday	Plant on
2018-11-06	14:00:00	01:00:00.0	53.2	45.1	71.5	56.3	55.4	52.2	49.4	0.6	5.2	Tuesday	Plant on
2018-11-06	15:00:00	01:00:00.0	52.7	45.0	65.7	55.9	54.9	51.9	49.4	2.1	3.8	Tuesday	Plant on
2018-11-06	16:00:00	01:00:00.0	49.3	35.0	66.2	53.9	52.8	48.2	38.8	0.0	3.2	Tuesday	Plant on
2018-11-06	17:00:00	01:00:00.0	48.3	32.5	72.0	51.3	50.8	43.0	36.4	0.0	5.0	Tuesday	Plant off
2018-11-06	18:00:00	01:00:00.0	36.6	28.9	55.7	40.2	38.4	35.5	33.1	0.0	4.0	Tuesday	Plant off
2018-11-06	19:00:00	01:00:00.0	34.7	28.0	60.0	37.0	35.9	33.0	31.1	0.0	4.5	Tuesday	Plant off
2018-11-06	20:00:00	01:00:00.0	33.2	27.8	57.1	35.2	34.5	32.4	30.7	0.0	1.0	Tuesday	Plant off
2018-11-06	21:00:00	01:00:00.0	33.5	25.3	60.3	36.3	35.2	32.2	29.8	0.0	1.5	Tuesday	Plant off
2018-11-06	22:00:00	01:00:00.0	31.4	21.9	48.5	34.7	33.5	30.2	26.3	0.0	1.0	Tuesday	Plant off
2018-11-06	23:00:00	01:00:00.0	30.1	20.1	53.8	33.8	32.1	27.9	24.4	0.0	2.0	Tuesday	Plant off
2018-11-07	00:00:00	01:00:00.0	27.5	17.0	51.4	31.3	29.7	24.3	20.2	0.0	3.0	Wednesd	Plant off
2018-11-07	01:00:00	01:00:00.0	25.5	17.5	46.6	30.1	27.4	22.4	19.9	0.0	3.5	Wednesd	Plant off
2018-11-07	02:00:00	01:00:00.0	24.2	16.7	43.3	28.3	26.2	21.3	18.6	0.0	3.0	Wednesd	Plant off
2018-11-07	03:00:00	01:00:00.0	30.6	16.6	53.7	35.6	31.2	21.7	18.2	0.0	2.5	Wednesd	Plant off
2018-11-07	04:00:00	01:00:00.0	30.5	17.4	51.3	36.2	31.6	25.0	20.7	0.0	3.5	Wednesd	Plant off
2018-11-07	05:00:00	01:00:00.0	24.2	16.9	41.5	28.2	27.0	23.0	19.0	0.0	2.2	Wednesd	Plant off
2018-11-07	06:00:00	01:00:00.0	35.3	21.6	53.7	40.9	40.1	30.8	26.8	0.0	2.4	Wednesd	Plant off
2018-11-07	07:00:00	01:00:00.0	44.8	36.5	68.0	48.1	44.5	40.2	38.8	0.0	2.6	Wednesd	Plant off
2018-11-07	08:00:00	01:00:00.0	45.2	35.8	69.3	48.9	45.6	40.7	38.9	0.0	2.8	Wednesd	Plant on
2018-11-07	09:00:00	01:00:00.0	44.4	31.9	68.6	46.9	44.1	39.5	35.7	0.0	2.2	Wednesd	Plant on
2018-11-07	10:00:00	01:00:00.0	40.3	28.6	64.4	44.2	42.0	37.7	33.1	0.0	3.2	Wednesd	Plant on
2018-11-07	11:00:00	01:00:00.0	42.8	35.5	66.6	45.5	44.4	41.1	39.1	0.0	5.6	Wednesd	Plant on
2018-11-07	12:00:00	01:00:00.0	46.2	32.2	71.4	47.0	45.4	41.5	37.2	0.0	4.8	Wednesd	Plant on

Table 3							Locn N3						
			Leq	Lmin	Lmax	L5	L10	L50	L90	Rain	wind		Plant
Date	Time	Duration	dBA	dBA	dBA	dBA	dBA	dBA	dBA	mm	m/s		Status
2018-11-07	13:00:00	01:00:00.0	43.5	36.2	65.0	46.6	44.7	40.9	38.8	0.0	4.6	Wednesd	Plant on
2018-11-07	14:00:00	01:00:00.0	43.8	32.5	64.8	47.9	46.1	41.5	37.9	0.0	5.4	Wednesd	Plant on
2018-11-07	15:00:00	01:00:00.0	46.7	37.4	67.6	49.7	48.1	44.6	42.0	0.0	4.8	Wednesd	Plant on
2018-11-07	16:00:00	01:00:00.0	48.9	33.2	73.9	50.7	49.4	45.1	38.3	0.0	4.4	Wednesd	Plant on
2018-11-07	17:00:00	01:00:00.0	43.0	29.2	73.7	47.5	44.8	33.8	31.8	0.0	4.0	Wednesd	Plant off
2018-11-07	18:00:00	01:00:00.0	34.5	25.0	68.2	34.9	33.4	30.5	28.4	0.0	4.0	Wednesd	Plant off
2018-11-07	19:00:00	01:00:00.0	35.3	27.0	61.6	37.5	36.6	33.9	30.5	0.0	3.5	Wednesd	Plant off
2018-11-07	20:00:00	01:00:00.0	36.1	30.1	58.1	38.5	37.8	35.6	33.6	0.0	3.0	Wednesd	Plant off
2018-11-07	21:00:00	01:00:00.0	36.4	30.1	54.3	38.8	38.1	36.0	33.8	0.0	2.0	Wednesd	Plant off
2018-11-07	22:00:00	01:00:00.0	36.4	28.4	50.9	39.7	38.6	35.6	33.1	0.0	3.0	Wednesd	Plant off
2018-11-07	23:00:00	01:00:00.0	38.5	28.1	54.4	42.8	41.3	36.9	33.4	0.0	3.5	Wednesd	Plant off
2018-11-08	00:00:00	01:00:00.0	36.5	25.1	49.1	41.7	39.9	34.0	29.6	0.0	4.5	Thursday	Plant off
2018-11-08	01:00:00	01:00:00.0	30.3	21.1	40.6	34.1	33.0	29.3	25.3	0.0	4.0	Thursday	Plant off
2018-11-08	02:00:00	01:00:00.0	30.4	20.5	45.3	34.7	33.4	28.8	24.4	0.0	4.5	Thursday	Plant off
2018-11-08	03:00:00	01:00:00.0	29.3	19.4	42.1	33.6	32.3	27.7	23.3	0.0	3.0	Thursday	Plant off
2018-11-08	04:00:00	01:00:00.0	34.2	24.2	47.1	38.6	37.1	32.4	28.5	0.0	3.5	Thursday	Plant off
2018-11-08	05:00:00	01:00:00.0	34.7	25.0	51.5	38.0	36.7	33.5	29.3	0.0	6.5	Thursday	Plant off
2018-11-08	06:00:00	01:00:00.0	40.5	32.9	50.6	43.8	42.9	39.8	36.3	0.0	5.0	Thursday	Plant off
2018-11-08	07:00:00	01:00:00.0	45.5	38.2	69.3	48.9	47.5	43.4	41.1	0.0	4.3	Thursday	Plant off
2018-11-08	08:00:00	01:00:00.0	55.3	43.9	74.5	58.8	57.5	54.4	49.0	0.0	6.0	Thursday	

Table 4							Locn N4						
			Leq	Lmin	Lmax	L5	L10	L50	L90	Rain	wind		Plant
Date	Time	Duration	dBA	dBA	dBA	dBA	dBA	dBA	dBA	mm	m/s		Status
30Oct2018	14:00:00	1:00:00	47.8	38.2	76.4	50.6	49.6	47.1	44.7	0.2	2.0	Tuesday	Plant on
30Oct2018	15:00:00	1:00:00	47.7	38.1	62.1	50.6	49.6	47.1	44.5	0.0	1.5	Tuesday	Plant on
30Oct2018	16:00:00	1:00:00	45.2	34.5	58.5	49.2	48.1	43.7	40.6	0.4	1.5	Tuesday	Plant on
30Oct2018	17:00:00	1:00:00	43.3	33.7	62.3	46.7	45.7	42.2	38.8	0.2	1.5	Tuesday	Plant off
30Oct2018	18:00:00	1:00:00	42	34.1	57.7	45.2	44.2	41.2	38.6	0.0	1.5	Tuesday	Plant off
30Oct2018	19:00:00	1:00:00	41.7	30.8	59.2	45	44.1	41.1	38.3	0.0	1.0	Tuesday	Plant off
30Oct2018	20:00:00	1:00:00	40.8	28.1	51.2	45.1	44	39.7	35	0.0	2.0	Tuesday	Plant off
30Oct2018	21:00:00	1:00:00	39.7	28.3	53.1	44	42.7	38.2	34.2	0.0	1.5	Tuesday	Plant off
30Oct2018	22:00:00	1:00:00	38.2	25	52.5	43.1	41.5	36.5	31.6	0.0	2.0	Tuesday	Plant off
30Oct2018	23:00:00	1:00:00	39.3	22.8	67.7	42.7	41.2	36.1	30.1	0.0	2.0	Tuesday	Plant off
31Oct2018	00:00:00	1:00:00	35	21.8	51.2	40.2	38.5	32.8	26.5	0.0	1.5	Wednes	Plant off
31Oct2018	01:00:00	1:00:00	35.2	22	51.6	40.7	39	32.6	26.6	0.0	1.5	Wednes	Plant off
31Oct2018	02:00:00	1:00:00	33.8	23.8	49.2	38.7	37.2	31.8	27.6	0.0	1.0	Wednes	Plant off
31Oct2018	03:00:00	1:00:00	32.8	22.6	51.5	37.8	35.7	30	25.5	0.0	2.0	Wednes	Plant off
31Oct2018	04:00:00	1:00:00	35.6	24.3	53	41.2	38.8	32.1	28.1	0.0	1.5	Wednes	Plant off
31Oct2018	05:00:00	1:00:00	38.3	25.8	56.1	42.8	41.2	36.7	31.8	0.6	3.0	Wednes	Plant off
31Oct2018	06:00:00	1:00:00	44.2	33.6	56.8	47.5	46.7	43.3	38.7	0.4	2.5	Wednes	Plant off
31Oct2018	07:00:00	1:00:00	48.7	40.6	62	52.1	51.1	48.1	44.8	0.4	3.0	Wednes	Plant off
31Oct2018	08:00:00	1:00:00	49.7	42.2	60.2	52.7	51.7	49.2	46.3	0.7	3.5	Wednes	Plant on
31Oct2018	09:00:00	1:00:00	47.3	39.1	60.3	50.2	49.3	47	43.7	1.2	3.0	Wednes	Plant on
31Oct2018	10:00:00	1:00:00	47.2	38.6	71	51.2	50.1	45.6	40.5	0.6	2.5	Wednes	Plant on
31Oct2018	11:00:00	1:00:00	49.8	40.6	69.9	53.2	52.1	48.6	44.2	0.7	3.5	Wednes	Plant on
31Oct2018	12:00:00	1:00:00	49.3	37.1	67.7	52.7	51.8	48	44.2	0.6	1.5	Wednes	Plant on
31Oct2018	13:00:00	1:00:00	48.7	36.8	68.5	53.8	52.6	43	39	0.4	2.0	Wednes	Plant on
31Oct2018	14:00:00	1:00:00	49.3	43.2	78.2	51.8	50.7	48	45.7	0.0	2.0	Wednes	Plant on
31Oct2018	15:00:00	1:00:00	50.7	44	66.4	53.6	52.7	49.7	46.8	0.0	1.5	Wednes	Plant on
31Oct2018	16:00:00	1:00:00	51.5	33.3	69.7	55.7	54.8	49	39.7	0.0	1.5	Wednes	Plant on
31Oct2018	17:00:00	1:00:00	43.3	32.3	57.2	48	46.7	41.8	37.2	0.0	1.0	Wednes	Plant off
31Oct2018	18:00:00	1:00:00	41.3	27.6	54.6	46.2	44.8	39.7	32.6	0.0	0.5	Wednes	Plant off
31Oct2018	19:00:00	1:00:00	40.3	28.1	56.1	45.6	44.1	37.8	33.3	0.0	0.5	Wednes	Plant off
31Oct2018	20:00:00	1:00:00	40.2	27.3	63.8	45	43.5	37.6	32.6	0.0	0.5	Wednes	Plant off
31Oct2018	21:00:00	1:00:00	38.8	24.5	67.7	44.8	42.8	33	28.6	0.0	0.0	Wednes	Plant off
31Oct2018	22:00:00	1:00:00	37.2	24.8	55.8	43.2	40.7	32.8	29	0.0	0.5	Wednes	Plant off
31Oct2018	23:00:00	1:00:00	37.1	22.3	59.8	43.2	40.8	32.1	26.8	0.0	1.0	Wednes	Plant off
01Nov2018	00:00:00	1:00:00	35.7	21.3	57	40.8	38.7	32.1	25.5	0.0	1.0	Thursday	Plant off
01Nov2018	01:00:00	1:00:00	35	21.1	50.2	40.6	38.8	32.3	25.3	0.0	1.0	Thursday	Plant off
01Nov2018	02:00:00	1:00:00	34.7	19.8	52.7	41.2	38	30	24.3	0.9	0.5	Thursday	Plant off
01Nov2018	03:00:00	1:00:00	35.5	20.1	52.5	41.5	37.5	30.1	23	0.0	1.0	Thursday	Plant off
01Nov2018	04:00:00	1:00:00	34.8	20.3	52.6	41.1	38	30.1	23.1	0.0	1.5	Thursday	Plant off
01Nov2018	05:00:00	1:00:00	40.2	20.6	58.7	46.1	43.8	36.3	29.3	0.0	2.0	Thursday	Plant off
01Nov2018	06:00:00	1:00:00	41.6	29.3	53.8	45.2	44.2	40.7	36.8	0.0	1.5	Thursday	Plant off
01Nov2018	07:00:00	1:00:00	46.3	38	61.6	49.8	48.7	45.3	42.2	0.0	1.0	Thursday	Plant off
01Nov2018	08:00:00	1:00:00	49.8	41.2	67	53.5	52.2	48.7	45.7	0.0	1.5	Thursday	Plant on
01Nov2018	09:00:00	1:00:00	47.8	39	64.5	51	49.8	47.2	44.2	0.0	2.5	Thursday	Plant on
01Nov2018	10:00:00	1:00:00	46.6	38.8	72	50.5	49.2	45.2	41.1	0.0	2.0	Thursday	Plant on
01Nov2018	11:00:00	1:00:00	48.1	36	65.7	53.7	48.7	43.3	40.2	0.0	2.5	Thursday	Plant off
01Nov2018	12:00:00	1:00:00	46.2	34.2	66	51.2	48.5	43.2	39.6	0.0	2.0	Thursday	Plant off

Table 4							Locn N4						
			Leq	Lmin	Lmax	L5	L10	L50	L90	Rain	wind		Plant
Date	Time	Duration	dBA	dBA	dBA	dBA	dBA	dBA	dBA	mm	m/s		Status
01Nov2018	13:00:00	1:00:00	46.7	31.8	74.7	51.2	49.7	42.7	37	0.5	2.5	Thursday	Plant off
01Nov2018	14:00:00	1:00:00	43.2	31.6	63.7	48	46	40.3	36.7	0.0	3.5	Thursday	Plant off
01Nov2018	15:00:00	1:00:00	42.5	28.8	62.5	47.1	45.2	40.5	35.8	0.0	1.5	Thursday	Plant off
01Nov2018	16:00:00	1:00:00	46.8	33.3	67	52.2	50.2	43.3	38.6	0.0	2.0	Thursday	Plant off
01Nov2018	17:00:00	1:00:00	49	29.8	64.1	54.7	53.2	44.5	38.7	0.0	1.5	Thursday	Plant off
01Nov2018	18:00:00	1:00:00	41	30.3	55.2	45.3	44.2	39.6	34.2	0.0	1.5	Thursday	Plant off
01Nov2018	19:00:00	1:00:00	39.7	28	54.8	45.1	43.3	37.1	31.8	0.0	1.0	Thursday	Plant off
01Nov2018	20:00:00	1:00:00	37.2	26.5	53.7	43.2	41	33	29.6	0.0	0.0	Thursday	Plant off
01Nov2018	21:00:00	1:00:00	38.8	25.8	60.7	44.8	42.2	34.3	30.5	0.0	1.0	Thursday	Plant off
01Nov2018	22:00:00	1:00:00	35.8	24.6	52.2	41.7	39.6	32.6	28.5	0.0	1.5	Thursday	Plant off
01Nov2018	23:00:00	1:00:00	35.6	23.8	53.8	41.2	37.3	30.8	27.3	0.0	0.5	Thursday	Plant off
02Nov2018	00:00:00	1:00:00	31.6	21.5	51	36.2	32.8	27.6	24.5	0.0	0.5	Friday	Plant off
02Nov2018	01:00:00	1:00:00	31.8	21.5	48.1	36.8	34.3	28.6	24.1	0.0	0.5	Friday	Plant off
02Nov2018	02:00:00	1:00:00	37	20.8	62.1	41	37.7	28.8	23.6	0.0	1.0	Friday	Plant off
02Nov2018	03:00:00	1:00:00	13.5	20.5	49.8	39.2	37.1	30.6	22.8	0.0	1.5	Friday	Plant off
02Nov2018	04:00:00	1:00:00	35.2	20.6	52.7	40.7	39.1	32	24	0.0	2.8	Friday	Plant off
02Nov2018	05:00:00	1:00:00	42.5	24.5	52.6	47.5	46.2	40.3	33.7	0.0	3.6	Friday	Plant off
02Nov2018	06:00:00	1:00:00	46	33.3	60.5	49.7	47.7	44	39.7	0.0	2.6	Friday	Plant off
02Nov2018	07:00:00	1:00:00	46.8	39.2	56.8	50	49.2	46.3	44	0.0	2.2	Friday	Plant off
02Nov2018	08:00:00	1:00:00	49.8	44.2	62.7	52.2	51.3	49.6	47.7	0.0	2.0	Friday	Plant on
02Nov2018	09:00:00	1:00:00	49.2	42	62	51.7	51.1	48.8	46.2	0.0	1.6	Friday	Plant on
02Nov2018	10:00:00	1:00:00	47.7	40.3	62.7	51	50	47.2	43.8	0.0	1.8	Friday	Plant on
02Nov2018	11:00:00	1:00:00	48.8	45.2	60	51.2	50.5	48.2	46.7	0.0	2.0	Friday	Plant on
02Nov2018	12:00:00	1:00:00	48.3	41.5	64.6	50.8	50.1	48.1	45.7	0.0	2.6	Friday	Plant on
02Nov2018	13:00:00	1:00:00	46.8	40.8	62.5	50.3	49.1	45.7	43.6	0.2	4.8	Friday	Plant on
02Nov2018	14:00:00	1:00:00	48	42.5	63.2	51.2	50.2	47.1	44.8	0.6	6.0	Friday	Plant on
02Nov2018	15:00:00	1:00:00	49	43.7	64.8	52.1	51.1	48.2	46.5	0.6	5.5	Friday	Plant on
02Nov2018	16:00:00	1:00:00	49.8	43.7	67.7	53	52.1	49.1	46.6	0.5	5.5	Friday	Plant off
02Nov2018	17:00:00	1:00:00	53.1	46.5	65.7	56.7	55.7	52.2	49.2	0.8	6.5	Friday	Plant off
02Nov2018	18:00:00	1:00:00	52.7	46.2	60.3	55.7	55	52.2	49.8	0.6	7.5	Friday	Plant off
02Nov2018	19:00:00	1:00:00	54.2	47.2	61.6	57.7	56.7	53.6	50.7	0.0	8.0	Friday	Plant off
02Nov2018	20:00:00	1:00:00	50.5	42	61.2	54.2	53.2	49.6	46.2	0.0	7.5	Friday	Plant off
02Nov2018	21:00:00	1:00:00	50	42.7	56.8	53.2	52.2	49.2	46.5	0.0	7.0	Friday	Plant off
02Nov2018	22:00:00	1:00:00	50.8	44.5	63	54.1	53.2	50.2	47.7	0.0	7.5	Friday	Plant off
02Nov2018	23:00:00	1:00:00	49.5	43.7	56	52.6	51.7	49	46.5	0.0	7.4	Friday	Plant off
03Nov2018	00:00:00	1:00:00	48.6	42.2	59.6	51.6	50.7	48.1	45.7	0.0	5.0	Saturday	Plant off
03Nov2018	01:00:00	1:00:00	47.7	42.2	54.3	50.3	49.5	47.2	45.3	0.0	6.0	Saturday	Plant off
03Nov2018	02:00:00	1:00:00	49.1	36.2	62.2	52.7	52	48.5	41.6	0.0	6.5	Saturday	Plant off
03Nov2018	03:00:00	1:00:00	45.7	32.3	61.7	49.8	48.7	44.6	38.6	0.0	5.5	Saturday	Plant off
03Nov2018	04:00:00	1:00:00	47.2	40.2	62.7	50.7	49.8	46.3	43.5	**0.5**	6.5	Saturday	Plant off
03Nov2018	05:00:00	1:00:00	46.8	39.1	58.2	50.2	49.2	46.2	43.6	**0.4**	6.0	Saturday	Plant off
03Nov2018	06:00:00	1:00:00	44.2	36.7	56.6	47.2	46.2	43.7	41	0.4	5.5	Saturday	Plant off
03Nov2018	07:00:00	1:00:00	46.3	40.5	64.7	49.5	48.7	45.7	43.3	0.6	5.0	Saturday	Plant off
03Nov2018	08:00:00	1:00:00	45.5	35.8	64.7	49.3	48	43.7	39.6	1.6	7.0	Saturday	Plant off
03Nov2018	09:00:00	1:00:00	48.2	37	65.5	53.1	51.3	46.2	42.5	0.3	6.0	Saturday	Plant off
03Nov2018	10:00:00	1:00:00	44.2	35.5	65.5	47.8	46.2	42.2	39.2	0.0	5.5	Saturday	Plant off
03Nov2018	11:00:00	1:00:00	46.2	38.8	62.2	50	48.8	45.1	42.2	0.9	5.5	Saturday	Plant off

Table 4							Locn N4						
			Leq	Lmin	Lmax	L5	L10	L50	L90	Rain	wind		Plant
Date	Time	Duration	dBA	dBA	dBA	dBA	dBA	dBA	dBA	mm	m/s		Status
03Nov2018	12:00:00	1:00:00	47.2	38.7	66.7	51.7	50.2	45.3	41.2	0.0	6.5	Saturday	Plant off
03Nov2018	13:00:00	1:00:00	46.3	39.7	59.2	50	49.1	45.5	42.7	0.0	6.0	Saturday	Plant off
03Nov2018	14:00:00	1:00:00	46.2	38.3	62	50.2	48.7	45.1	42	0.0	5.5	Saturday	Plant off
03Nov2018	15:00:00	1:00:00	47.5	38.2	65.5	51.6	50	46.1	42.7	0.0	6.0	Saturday	Plant off
03Nov2018	16:00:00	1:00:00	50.3	38.7	72.5	54.8	53.2	47.5	43.3	0.0	7.0	Saturday	Plant off
03Nov2018	17:00:00	1:00:00	46	38.7	68.5	49.7	48.2	44.3	41.5	0.0	6.5	Saturday	Plant off
03Nov2018	18:00:00	1:00:00	45.3	38.8	62.5	48.7	47.7	44.5	41.8	0.0	5.5	Saturday	Plant off
03Nov2018	19:00:00	1:00:00	48.2	39	64.5	53.6	50.8	46.1	43.3	0.0	4.0	Saturday	Plant off
03Nov2018	20:00:00	1:00:00	47.2	33	65.9	52.7	51.2	44.7	37	0.8	5.0	Saturday	Plant off
03Nov2018	21:00:00	1:00:00	40.7	31.5	56.7	44.7	43.5	39.3	36	0.0	5.0	Saturday	Plant off
03Nov2018	22:00:00	1:00:00	41.6	32.1	58.2	45.3	44.3	40.5	37.2	0.0	4.0	Saturday	Plant off
03Nov2018	23:00:00	1:00:00	42.8	35	56.5	46.5	45.5	42	38.7	0.0	5.0	Saturday	Plant off
04Nov2018	00:00:00	1:00:00	41	33.3	59.2	44.6	43.6	39.7	36.7	0.0	4.8	Sunday	Plant off
04Nov2018	01:00:00	1:00:00	38.3	29.3	53.8	42.2	41.1	37.2	33.5	0.0	4.0	Sunday	Plant off
04Nov2018	02:00:00	1:00:00	38.1	29.8	55.5	42.2	41	36.6	33.6	0.0	4.8	Sunday	Plant off
04Nov2018	03:00:00	1:00:00	40.8	32.3	59.6	45.3	44	39.3	35.7	0.0	4.6	Sunday	Plant off
04Nov2018	04:00:00	1:00:00	37.2	28.6	52.2	41.7	40.2	35.5	32.6	0.0	3.8	Sunday	Plant off
04Nov2018	05:00:00	1:00:00	38.7	24.8	55.3	44.3	42.7	34.7	29.8	0.0	4.2	Sunday	Plant off
04Nov2018	06:00:00	1:00:00	36.2	28.3	54.1	39.8	38.5	34.8	32.1	0.0	4.2	Sunday	Plant off
04Nov2018	07:00:00	1:00:00	41.7	31.1	65.2	45.3	43.2	39.1	35.7	0.0	2.0	Sunday	Plant off
04Nov2018	08:00:00	1:00:00	42.7	33	61.2	47.2	45.5	40.5	37.5	0.0	3.5	Sunday	Plant off
04Nov2018	09:00:00	1:00:00	42.7	35.2	63.3	46.2	44.8	41.5	38.8	0.0	4.0	Sunday	Plant off
04Nov2018	10:00:00	1:00:00	42.8	34.3	66.2	46.7	45.2	40.6	37.8	0.0	5.0	Sunday	Plant off
04Nov2018	11:00:00	1:00:00	43.3	34.7	72.2	46.8	45.2	40.7	38.1	0.0	4.5	Sunday	Plant off
04Nov2018	12:00:00	1:00:00	43.2	33.5	66.7	47.3	45.8	41.3	37.7	0.0	3.5	Sunday	Plant off
04Nov2018	13:00:00	1:00:00	41.2	30.3	65.5	45.5	43.8	37.7	34	0.0	3.0	Sunday	Plant off
04Nov2018	14:00:00	1:00:00	40.7	28.3	68.9	45.3	43.2	36.1	32.3	0.0	2.0	Sunday	Plant off
04Nov2018	15:00:00	1:00:00	39.1	29.1	64.8	43.3	42	36.3	32.5	0.0	1.0	Sunday	Plant off
04Nov2018	16:00:00	1:00:00	44.1	33.5	68.9	47.3	46.2	42.6	39	0.0	1.0	Sunday	Plant off
04Nov2018	17:00:00	1:00:00	46	37.2	65.9	48.2	46.8	44.1	41.3	0.0	2.0	Sunday	Plant off
04Nov2018	18:00:00	1:00:00	42.8	33.3	51.6	46.3	45.6	42.2	38.7	0.0	1.5	Sunday	Plant off
04Nov2018	19:00:00	1:00:00	43	33.3	57.6	46.6	45.5	42	38.7	0.0	1.5	Sunday	Plant off
04Nov2018	20:00:00	1:00:00	42.7	33.1	50.7	46	45.2	42.1	38.8	0.0	2.0	Sunday	Plant off
04Nov2018	21:00:00	1:00:00	41.5	30.8	55.8	45.2	44.1	40.5	36.6	0.0	2.0	Sunday	Plant off
04Nov2018	22:00:00	1:00:00	41.2	27.3	55	45.3	44.2	40	35.5	0.0	1.5	Sunday	Plant off
04Nov2018	23:00:00	1:00:00	39	21.5	53.6	44.2	42.7	36.2	29.3	0.0	2.0	Sunday	Plant off
05Nov2018	00:00:00	1:00:00	35.1	23.3	47.8	40	38.2	33.1	28.8	0.4	1.5	Monday	Plant off
05Nov2018	01:00:00	1:00:00	37.3	26.8	51.7	41.5	40.2	35.8	32.5	1.4	1.5	Monday	Plant off
05Nov2018	02:00:00	1:00:00	39.2	32.1	54.8	43.5	41.7	38	35.3	1.0	1.5	Monday	Plant off
05Nov2018	03:00:00	1:00:00	36	23.6	56.2	41.7	39.2	32.8	26.8	0.9	1.5	Monday	Plant off
05Nov2018	04:00:00	1:00:00	37.2	21.1	55.1	43.7	41.3	30.8	24.8	0.4	2.5	Monday	Plant off
05Nov2018	05:00:00	1:00:00	43.7	25.1	58.8	49.1	47.3	41	32	0.0	2.5	Monday	Plant off
05Nov2018	06:00:00	1:00:00	46.6	32.1	59.1	50.7	49.3	45.3	40.7	0.0	3.0	Monday	Plant off
05Nov2018	07:00:00	1:00:00	48.2	40.8	60.8	51.2	50.2	47.6	44.8	0.0	3.0	Monday	Plant off
05Nov2018	08:00:00	1:00:00	47.6	42	61.6	51.5	49.5	45.8	43.7	0.0	3.5	Monday	Plant on
05Nov2018	09:00:00	1:00:00	46.1	42.1	56.7	49.2	47.8	45.2	43.7	0.0	2.5	Monday	Plant on
05Nov2018	10:00:00	1:00:00	48.7	41.2	60.3	53.3	51.3	46.7	44.5	0.0	3.0	Monday	Plant on

Table 4							Locn N4						
			Leq	Lmin	Lmax	L5	L10	L50	L90	Rain	wind		Plant
Date	Time	Duration	dBA	dBA	dBA	dBA	dBA	dBA	dBA	mm	m/s		Status
05Nov2018	11:00:00	1:00:00	47.1	40.3	62.8	50.6	49	45.1	42.8	0.0	2.5	Monday	Plant on
05Nov2018	12:00:00	1:00:00	46.6	41.7	58	50.2	48.7	45.5	43.6	0.0	2.5	Monday	Plant on
05Nov2018	13:00:00	1:00:00	48.2	41.7	60.2	53	51	46.2	44.1	0.0	2.5	Monday	Plant on
05Nov2018	14:00:00	1:00:00	48.1	42.7	59.5	52.3	50.3	46.7	44.7	0.0	0.5	Monday	Plant on
05Nov2018	15:00:00	1:00:00	48.6	42.6	59.7	53.2	51.3	46.7	44.7	0.0	1.0	Monday	Plant on
05Nov2018	16:00:00	1:00:00	49.1	43.2	63.5	53.6	51.5	47.1	44.8	0.0	1.0	Monday	Plant on
05Nov2018	17:00:00	1:00:00	43	33.7	60.2	46.7	45.5	41.7	38.2	0.0	1.0	Monday	Plant off
05Nov2018	18:00:00	1:00:00	43.1	35.7	61	46.1	45.2	42.2	39.3	0.0	2.0	Monday	Plant off
05Nov2018	19:00:00	1:00:00	41.7	34.2	57.8	45.2	44.5	40.6	37.7	0.0	1.0	Monday	Plant off
05Nov2018	20:00:00	1:00:00	41.3	30	55.7	45.2	44.2	40.1	35.7	0.0	2.5	Monday	Plant off
05Nov2018	21:00:00	1:00:00	37.5	28.6	51.1	41.5	40.1	36.2	33.3	0.0	1.5	Monday	Plant off
05Nov2018	22:00:00	1:00:00	38.2	28.1	55.2	42.5	41.1	36.7	32.8	0.0	2.5	Monday	Plant off
05Nov2018	23:00:00	1:00:00	39.2	27	54.7	43.7	42.3	37.8	32.6	0.0	2.0	Monday	Plant off
06Nov2018	00:00:00	1:00:00	36.5	24	51.2	41.1	39.7	34.7	28.8	0.0	2.5	Tuesday	Plant off
06Nov2018	01:00:00	1:00:00	34.5	22.6	49.1	39.5	38	32.1	25.5	0.0	2.5	Tuesday	Plant off
06Nov2018	02:00:00	1:00:00	37.3	24.6	51.2	41.5	40.3	36	31.6	0.0	3.0	Tuesday	Plant off
06Nov2018	03:00:00	1:00:00	40.2	29.3	51.7	43.3	42.5	39.7	36.3	0.0	2.5	Tuesday	Plant off
06Nov2018	04:00:00	1:00:00	38.6	28.1	57.5	43.1	41.2	36.2	32	0.0	3.0	Tuesday	Plant off
06Nov2018	05:00:00	1:00:00	46	32.8	63.3	50.5	48.7	43.7	39	0.0	4.5	Tuesday	Plant off
06Nov2018	06:00:00	1:00:00	48.3	40.2	67.4	52.6	50.8	46.3	43.7	0.0	5.8	Tuesday	Plant off
06Nov2018	07:00:00	1:00:00	51.7	43.7	68.2	55.1	53.8	50.3	47.7	0.0	6.0	Tuesday	Plant off
06Nov2018	08:00:00	1:00:00	51.8	43.7	64.8	55.2	54.1	51	48.6	0.0	6.5	Tuesday	Plant on
06Nov2018	09:00:00	1:00:00	50.7	43.1	65.3	54.2	53	49.7	47.1	0.0	5.2	Tuesday	Plant on
06Nov2018	10:00:00	1:00:00	51.2	41.7	69.2	55.3	53.5	49.5	46.7	0.0	5.4	Tuesday	Plant on
06Nov2018	11:00:00	1:00:00	54	46	71	58.5	56.5	51.6	48.7	0.0	5.6	Tuesday	Plant on
06Nov2018	12:00:00	1:00:00	53	42.5	70	57.7	55.6	50.5	46.8	0.2	5.0	Tuesday	Plant on
06Nov2018	13:00:00	1:00:00	46.8	38.8	65.3	51	49.1	45.2	42.2	0.2	6.2	Tuesday	Plant on
06Nov2018	14:00:00	1:00:00	47.2	42.2	62.7	50.3	48.8	46	44.3	0.6	5.2	Tuesday	Plant on
06Nov2018	15:00:00	1:00:00	46.8	42.2	62.7	49.3	48.5	46.2	44.6	2.1	3.8	Tuesday	Plant on
06Nov2018	16:00:00	1:00:00	47.2	40.2	61.3	50.2	49.3	46.7	44	0.0	3.2	Tuesday	Plant on
06Nov2018	17:00:00	1:00:00	47.7	39.7	68.2	52	50.2	46.2	43.7	0.0	5.0	Tuesday	Plant off
06Nov2018	18:00:00	1:00:00	43.8	35.1	55.6	47.2	46.2	43.2	39.7	0.0	4.0	Tuesday	Plant off
06Nov2018	19:00:00	1:00:00	41.3	32.8	56.2	45.7	44.2	39.7	36.7	0.0	4.5	Tuesday	Plant off
06Nov2018	20:00:00	1:00:00	41.2	32.5	57.2	45.2	44.2	40.1	37.1	0.0	1.0	Tuesday	Plant off
06Nov2018	21:00:00	1:00:00	41.1	30.3	55.6	45.8	44.1	39.5	36	0.0	1.5	Tuesday	Plant off
06Nov2018	22:00:00	1:00:00	38.5	25.8	51.5	43	41.5	37.1	32	0.0	1.0	Tuesday	Plant off
06Nov2018	23:00:00	1:00:00	36.7	24.5	51.6	41.5	40	34.7	29.3	0.0	2.0	Tuesday	Plant off
07Nov2018	00:00:00	1:00:00	33.1	21.3	47.5	38.2	37	30.6	24.5	0.0	3.0	Wednes	Plant off
07Nov2018	01:00:00	1:00:00	32.8	22.1	48	38.2	36.2	30.1	25.3	0.0	3.5	Wednes	Plant off
07Nov2018	02:00:00	1:00:00	33.8	21.5	50.7	40	37.6	29.8	23.8	0.0	3.0	Wednes	Plant off
07Nov2018	03:00:00	1:00:00	38.7	22.5	68.5	39.2	36.2	28.1	23.8	0.0	2.5	Wednes	Plant off
07Nov2018	04:00:00	1:00:00	34.6	22.8	51.1	40.2	37.5	30.6	26	0.0	3.5	Wednes	Plant off
07Nov2018	05:00:00	1:00:00	33.5	22.8	48.2	38.3	37	31	25.8	0.0	2.2	Wednes	Plant off
07Nov2018	06:00:00	1:00:00	40.2	26.1	51.2	44.2	43.2	39.2	34.3	0.0	2.4	Wednes	Plant off
07Nov2018	07:00:00	1:00:00	44.3	35.8	63	48	46.8	43.5	40.6	0.0	2.6	Wednes	Plant off
07Nov2018	08:00:00	1:00:00	51.2	36.1	68.5	55.2	54.2	50.2	40.3	0.0	2.8	Wednes	Plant on
07Nov2018	09:00:00	1:00:00	51.6	40.5	65.2	54.8	53.8	50.8	48	0.0	2.2	Wednes	Plant on

Table 4							Locn N4						
			Leq	Lmin	Lmax	L5	L10	L50	L90	Rain	wind		Plant
Date	Time	Duration	dBA	dBA	dBA	dBA	dBA	dBA	dBA	mm	m/s		Status
07Nov2018	10:00:00	1:00:00	53.5	38.3	67.2	57.8	56.8	53	42.5	0.0	3.2	Wednes	Plant on
07Nov2018	11:00:00	1:00:00	55.6	48	71.5	59.1	57.7	54.6	52.1	0.0	5.6	Wednes	Plant on
07Nov2018	12:00:00	1:00:00	55.8	37.3	73.5	60.1	58.8	55	44.1	0.0	4.8	Wednes	Plant on
07Nov2018	13:00:00	1:00:00	54.6	40.5	69	60.5	59.2	46.7	43.1	0.0	4.6	Wednes	Plant on
07Nov2018	14:00:00	1:00:00	53.7	45.7	70.7	57.5	56.3	52.7	49.6	0.0	5.4	Wednes	Plant on
07Nov2018	15:00:00	1:00:00	51	43.8	63.2	54.5	53.2	50	47.5	0.0	4.8	Wednes	Plant on
07Nov2018	16:00:00	1:00:00	52.5	44.3	68.4	57.2	55.5	50.2	47.7	0.0	4.4	Wednes	Plant on
07Nov2018	17:00:00	1:00:00	45	33.7	68.7	49.7	47.2	42.3	38.3	0.0	4.0	Wednes	Plant off
07Nov2018	18:00:00	1:00:00	42.6	31.8	54.1	47	45.7	41.2	35.8	0.0	4.0	Wednes	Plant off
07Nov2018	19:00:00	1:00:00	43	34.8	54.2	46.3	45.5	42.2	39.5	0.0	3.5	Wednes	Plant off
07Nov2018	20:00:00	1:00:00	43.6	36.1	54.2	46.8	45.8	43	40.2	0.0	3.0	Wednes	Plant off
07Nov2018	21:00:00	1:00:00	44.1	35.8	57.3	47.3	46.5	43.3	40.5	0.0	2.0	Wednes	Plant off
07Nov2018	22:00:00	1:00:00	44.2	33.5	64.1	48.3	46.8	42.6	39	0.0	3.0	Wednes	Plant off
07Nov2018	23:00:00	1:00:00	42.3	33.6	67.5	45.8	44.5	40.6	37.7	0.0	3.5	Wednes	Plant off
08Nov2018	00:00:00	1:00:00	40.7	28.5	62.2	45.1	43.2	38.2	34.1	0.0	4.5	Thursday	Plant off
08Nov2018	01:00:00	1:00:00	36.7	23.8	52.6	41.6	39.8	34.7	29.1	0.0	4.0	Thursday	Plant off
08Nov2018	02:00:00	1:00:00	36.2	25.5	51.1	41.1	39.6	34	29.1	0.0	4.5	Thursday	Plant off
08Nov2018	03:00:00	1:00:00	35.1	24.8	49.8	39.7	38.2	32.8	27.6	0.0	3.0	Thursday	Plant off
08Nov2018	04:00:00	1:00:00	38.5	32	54	41.8	41.1	37.6	34.7	0.0	3.5	Thursday	Plant off
08Nov2018	05:00:00	1:00:00	40.5	29.8	53.7	44.7	43.6	39.3	34.1	0.0	6.5	Thursday	Plant off
08Nov2018	06:00:00	1:00:00	45.2	37.5	55.7	48.6	47.6	44.3	41.7	0.0	5.0	Thursday	Plant off
08Nov2018	07:00:00	1:00:00	49.2	43.2	63.7	52.5	51.5	48.6	46.2	0.0	4.3	Thursday	Plant off
08Nov2018	08:00:00	1:00:00	50.8	44.1	66.9	53.3	52.5	50.2	48.2	0.0	6.0	Thursday	


Location N1 facing towards quarry and towards house


Location N2 facing towards quarry and towards house

N3: Facing towards quarry and house

N4: Facing towards quarry

N4: Facing towards house

Appendix 11.4 – Noise Survey Data April 2025 - Locations N1 to N4 incl.

N1											Wind	Quarry
Date	Time	Duration	LAeq	LAFmin	LAFmax	LAF5	LAF10	LAF33	LAF50	LAF90	Speed	Status
2025-04-02	14:45:00	00:15:00.0	48.6	42.7	59.0	52.0	51.1	48.8	47.8	45.5	6.0	Operating
2025-04-02	15:00:00	00:15:00.0	49.6	41.2	68.0	53.0	51.6	49.2	48.1	45.8	5.5	Operating
2025-04-02	15:15:00	00:15:00.0	49.8	41.3	61.1	53.7	52.5	49.9	48.3	45.7		Operating
2025-04-02	15:30:00	00:15:00.0	48.3	42.2	58.5	51.1	50.3	48.6	47.8	45.6		Operating
2025-04-02	15:45:00	00:15:00.0	48.5	40.2	57.8	52.1	51.1	48.8	47.6	44.8		Operating
2025-04-02	16:00:00	00:15:00.0	47.7	40.7	57.4	50.9	50.1	48.2	47.0	44.1	5.0	Operating
2025-04-02	16:15:00	00:15:00.0	52.6	39.6	66.1	58.6	58.4	50.6	49.3	45.7		Operating
2025-04-02	16:30:00	00:15:00.0	48.4	39.9	62.4	51.8	51.1	48.3	47.2	44.8		Operating
			49	41	61	53	52	49	48	45		
2025-04-02	16:45:00	00:15:00.0	49.0	38.3	76.4	51.9	51.2	48.7	47.4	44.4		Off
2025-04-02	17:00:00	00:15:00.0	48.0	41.3	60.5	51.3	50.4	48.3	47.3	44.4	4.5	Off
2025-04-02	17:15:00	00:15:00.0	47.9	40.5	55.5	50.7	50.1	48.4	47.5	44.8		Off
2025-04-02	17:30:00	00:15:00.0	48.3	41.8	61.8	51.0	50.3	48.8	47.9	45.3		Off
2025-04-02	17:45:00	00:15:00.0	48.2	40.8	60.4	51.4	50.8	48.5	47.3	44.9		Off
			48	41	63	51	51	49	47	45		
2025-04-02	18:00:00	00:15:00.0	47.7	41.1	56.4	50.9	49.9	48.0	47.0	44.7	5.0	Off
2025-04-02	18:15:00	00:15:00.0	46.8	39.6	56.9	49.9	49.1	47.0	46.0	44.0		Off
2025-04-02	18:30:00	00:15:00.0	47.3	40.1	57.5	50.7	49.7	47.7	46.7	43.7		Off
2025-04-02	18:45:00	00:15:00.0	48.2	42.2	58.0	51.0	50.0	48.4	47.7	45.6		Off
2025-04-02	19:00:00	00:15:00.0	46.9	37.4	58.3	50.4	49.1	47.2	46.4	42.0	4.5	Off
2025-04-02	19:15:00	00:15:00.0	47.6	40.4	62.5	51.0	49.9	47.7	46.7	44.5		Off
2025-04-02	19:30:00	00:15:00.0	47.8	38.6	59.7	50.8	50.0	48.1	47.1	44.7		Off
2025-04-02	19:45:00	00:15:00.0	47.1	40.6	57.6	50.4	49.2	47.2	46.4	43.8		Off
2025-04-02	20:00:00	00:15:00.0	48.8	41.2	60.2	52.4	51.4	49.0	47.8	45.1	4.0	Off
2025-04-02	20:15:00	00:15:00.0	48.8	40.5	71.6	51.4	50.4	48.4	47.4	44.8		Off
2025-04-02	20:30:00	00:15:00.0	51.6	39.5	71.5	54.4	50.4	47.8	46.6	43.4		Off
2025-04-02	20:45:00	00:15:00.0	45.2	37.6	54.5	48.3	47.3	45.4	44.6	42.1		Off
2025-04-02	21:00:00	00:15:00.0	45.3	38.6	54.1	47.7	47.0	45.6	45.0	42.9	3.5	Off
2025-04-02	21:15:00	00:15:00.0	45.7	37.4	53.9	48.8	48.0	46.3	45.3	42.1		Off
2025-04-02	21:30:00	00:15:00.0	45.6	36.8	53.1	48.5	47.7	46.0	45.2	42.3		Off
2025-04-02	21:45:00	00:15:00.0	45.5	37.4	53.1	48.4	47.6	46.0	45.1	42.5		Off
2025-04-02	22:00:00	00:15:00.0	46.8	38.2	54.0	49.4	48.6	47.3	46.6	43.3		Off
2025-04-02	22:15:00	00:15:00.0	45.1	36.0	53.3	48.1	47.5	45.8	44.8	40.4		Off
2025-04-02	22:30:00	00:15:00.0	43.4	34.5	53.5	48.2	46.7	42.9	41.9	39.5		Off
2025-04-02	22:45:00	00:15:00.0	44.6	33.1	55.2	47.6	47.0	44.8	43.9	41.4		Off
2025-04-02	23:00:00	00:15:00.0	43.0	30.4	52.8	46.1	45.6	44.0	42.7	35.3		Off
2025-04-02	23:15:00	00:15:00.0	45.0	29.0	54.0	48.2	47.7	45.9	44.6	39.0		Off
2025-04-02	23:30:00	00:15:00.0	46.5	35.9	65.2	49.7	47.7	45.5	44.4	40.7		Off
2025-04-02	23:45:00	00:15:00.0	43.9	36.0	52.3	47.2	46.3	44.4	43.3	40.1		Off
2025-04-03	00:00:00	00:15:00.0	43.5	29.4	53.0	46.9	46.2	44.1	42.9	38.2		Off
2025-04-03	00:15:00	00:15:00.0	41.9	31.6	50.2	45.6	44.8	42.2	41.0	37.7		Off
2025-04-03	00:30:00	00:15:00.0	40.7	26.5	49.8	44.9	44.0	41.8	39.8	30.6		Off

N1											Wind	Quarry
Date	Time	Duration	LAeq	LAFmin	LAFmax	LAF5	LAF10	LAF33	LAF50	LAF90	Speed	Status
2025-04-03	00:45:00	00:15:00.0	37.2	27.6	48.1	41.4	40.3	37.5	36.1	31.8		Off
2025-04-03	01:00:00	00:15:00.0	40.2	28.4	55.4	45.7	43.6	40.0	38.0	33.0		Off
2025-04-03	01:15:00	00:15:00.0	36.9	21.5	53.1	42.1	40.4	36.8	34.0	26.3		Off
2025-04-03	01:30:00	00:15:00.0	39.5	24.5	49.1	44.4	43.0	40.0	37.9	31.0		Off
2025-04-03	01:45:00	00:15:00.0	38.7	25.5	55.3	44.0	42.3	38.2	35.8	29.9		Off
2025-04-03	02:00:00	00:15:00.0	38.7	24.7	51.2	42.9	41.9	39.2	37.6	30.0		Off
2025-04-03	02:15:00	00:15:00.0	37.4	22.1	52.7	41.9	40.7	37.4	35.6	30.1		Off
2025-04-03	02:30:00	00:15:00.0	35.3	21.5	50.3	40.9	39.0	35.3	33.1	25.9		Off
2025-04-03	02:45:00	00:15:00.0	41.7	30.1	53.4	45.9	45.0	42.2	40.5	34.6		Off
2025-04-03	03:00:00	00:15:00.0	39.3	24.3	52.9	44.8	43.3	39.2	36.4	28.8		Off
2025-04-03	03:15:00	00:15:00.0	40.2	25.6	54.3	46.0	44.3	39.7	36.1	28.1		Off
2025-04-03	03:30:00	00:15:00.0	34.8	23.0	51.0	40.6	38.4	33.2	30.8	26.2		Off
2025-04-03	03:45:00	00:15:00.0	38.1	23.9	53.9	44.5	41.5	35.6	33.3	28.0		Off
2025-04-03	04:00:00	00:15:00.0	37.9	27.3	52.9	43.0	41.2	37.1	35.3	30.7		Off
2025-04-03	04:15:00	00:15:00.0	39.3	25.9	51.4	45.3	43.9	38.8	36.3	29.0		Off
2025-04-03	04:30:00	00:15:00.0	39.9	26.0	54.6	45.4	44.0	39.7	37.4	29.0		Off
2025-04-03	04:45:00	00:15:00.0	39.8	25.0	51.5	44.9	43.5	39.9	37.8	29.8		Off
2025-04-03	05:00:00	00:15:00.0	43.0	28.6	56.0	47.3	46.4	43.8	41.9	34.0		Off
2025-04-03	05:15:00	00:15:00.0	43.7	33.9	55.3	47.3	46.5	44.2	42.8	38.7		Off
2025-04-03	05:30:00	00:15:00.0	46.6	35.5	56.9	49.5	48.8	47.1	46.1	43.0		Off
2025-04-03	05:45:00	00:15:00.0	47.1	40.6	55.2	49.7	49.1	47.6	46.8	44.4		Off
2025-04-03	06:00:00	00:15:00.0	52.2	43.9	67.1	56.8	55.2	52.0	50.6	47.4	3.5	Off
2025-04-03	06:15:00	00:15:00.0	54.9	45.7	71.7	58.6	57.3	54.8	53.6	50.9		Off
2025-04-03	06:30:00	00:15:00.0	51.6	45.2	62.8	55.2	54.3	51.5	50.6	48.6		Off
2025-04-03	06:45:00	00:15:00.0	52.0	45.1	68.9	56.0	54.4	51.4	50.7	48.3		Off
2025-04-03	07:00:00	00:15:00.0	50.9	45.0	63.2	53.9	52.9	51.3	50.4	47.9	5.0	Off
2025-04-03	07:15:00	00:15:00.0	51.3	47.1	62.2	53.1	52.5	51.6	51.1	49.5		Off
2025-04-03	07:30:00	00:15:00.0	56.6	47.2	72.5	57.0	56.4	53.5	52.4	50.3		Operating
2025-04-03	07:45:00	00:15:00.0	53.8	46.6	68.5	56.9	56.5	52.9	52.0	49.9		Operating
2025-04-03	08:00:00	00:15:00.0	51.7	45.9	60.7	54.8	53.8	51.8	51.1	49.1	5.5	Operating
2025-04-03	08:15:00	00:15:00.0	50.9	42.8	60.8	54.4	53.7	51.4	49.7	47.1		Operating
2025-04-03	08:30:00	00:15:00.0	49.6	42.6	60.3	52.2	51.5	49.8	49.2	47.5		Operating
2025-04-03	08:45:00	00:15:00.0	50.9	43.6	66.5	53.8	52.9	51.1	50.3	47.5		Operating
2025-04-03	09:00:00	00:15:00.0	53.5	42.7	73.2	60.2	59.6	50.9	49.3	46.9	5.5	Operating
2025-04-03	09:15:00	00:15:00.0	47.3	38.7	59.1	50.6	49.7	47.5	46.7	43.3		Operating
2025-04-03	09:30:00	00:15:00.0	47.8	38.3	74.4	50.7	49.3	47.0	45.7	43.4		Operating
2025-04-03	09:45:00	00:15:00.0	47.3	39.6	57.5	50.9	49.9	47.5	46.5	43.7		Operating
2025-04-03	10:00:00	00:15:00.0	46.5	39.2	57.8	50.2	48.9	46.4	45.5	43.1	5.5	Operating
2025-04-03	10:15:00	00:15:00.0	47.2	39.3	58.5	50.4	49.7	47.3	46.5	43.3		Operating
2025-04-03	10:30:00	00:15:00.0	46.7	37.7	58.4	49.8	49.0	47.0	46.1	43.3		Operating
2025-04-03	10:45:00	00:15:00.0	48.9	39.7	61.7	52.6	51.6	49.8	47.2	43.8		Operating
2025-04-03	11:00:00	00:15:00.0	45.7	37.0	56.4	48.8	48.1	46.1	45.1	42.5	6.5	Operating
2025-04-03	11:15:00	00:15:00.0	47.7	38.3	65.7	52.6	50.4	47.2	46.1	42.7		Operating
2025-04-03	11:30:00	00:15:00.0	46.0	38.8	59.3	49.0	48.1	46.3	45.3	42.6		Operating

N1											Wind	Quarry
Date	Time	Duration	LAeq	LAFmin	LAFmax	LAF5	LAF10	LAF33	LAF50	LAF90	Speed	Status
2025-04-03	11:45:00	00:15:00.0	46.6	38.7	54.5	49.7	48.9	47.3	46.2	42.7		Operating
2025-04-03	12:00:00	00:15:00.0	51.1	38.0	68.1	58.0	53.5	48.1	46.7	43.2	6.5	Operating
2025-04-03	12:15:00	00:15:00.0	47.6	40.1	62.2	50.6	49.7	47.7	46.9	44.3		Operating
2025-04-03	12:30:00	00:15:00.0	48.1	40.6	61.1	51.6	50.6	48.3	47.3	44.4		Operating
2025-04-03	12:45:00	00:15:00.0	47.6	40.8	57.2	51.1	50.0	48.0	46.9	44.2		Operating
2025-04-03	13:00:00	00:15:00.0	48.1	41.4	63.9	51.4	50.5	48.2	47.2	45.0	7.5	Operating
2025-04-03	13:15:00	00:15:00.0	49.1	41.7	75.6	51.7	50.8	48.4	47.3	45.1		Operating
2025-04-03	13:30:00	00:15:00.0	49.3	42.3	58.8	52.2	51.2	49.6	48.7	46.0		Operating
2025-04-03	13:45:00	00:15:00.0	48.3	41.3	59.5	51.4	50.5	48.5	47.5	45.4		Operating
2025-04-03	14:00:00	00:15:00.0	48.4	41.2	59.7	52.2	51.0	48.5	47.5	44.6	8.0	Operating
2025-04-03	14:15:00	00:15:00.0	49.0	41.5	60.1	52.3	51.4	49.4	48.4	45.1		Operating
2025-04-03	14:30:00	00:15:00.0	49.0	42.2	57.0	52.1	51.2	49.4	48.5	45.4		Operating
2025-04-03	14:45:00	00:15:00.0	49.4	42.2	61.5	53.3	52.1	49.6	48.4	45.7		Operating
2025-04-03	15:00:00	00:15:00.0	49.9	43.1	59.9	53.5	52.5	50.1	49.0	46.5	8.0	Operating
2025-04-03	15:15:00	00:15:00.0	49.8	42.1	60.5	53.1	52.2	50.2	49.3	45.9		Operating
2025-04-03	15:30:00	00:15:00.0	49.7	42.6	60.3	53.4	52.1	49.7	48.7	46.4		Operating
2025-04-03	15:45:00	00:15:00.0	49.5	41.8	61.0	52.8	51.8	49.8	48.9	46.2		Operating
2025-04-03	16:00:00	00:15:00.0	49.3	42.4	64.0	52.5	51.5	49.5	48.5	45.5	7.5	Operating
2025-04-03	16:15:00	00:15:00.0	50.6	41.6	62.6	54.2	53.1	50.3	49.2	46.6		Operating
			49	41	62	53	51	49	48	45		
2025-04-03	16:30:00	00:15:00.0	49.4	43.0	64.9	52.4	51.6	49.5	48.6	46.1		Off
2025-04-03	16:45:00	00:15:00.0	51.1	44.7	61.3	54.6	53.4	51.4	50.4	47.9		Off
2025-04-03	17:00:00	00:15:00.0	51.0	44.2	60.7	53.7	53.1	51.5	50.6	47.4	6.5	Off
2025-04-03	17:15:00	00:15:00.0	50.8	42.9	63.4	54.2	53.1	50.8	49.9	47.4		Off
2025-04-03	17:30:00	00:15:00.0	51.3	44.3	62.2	54.1	53.4	51.6	50.8	48.2		Off
2025-04-03	17:45:00	00:15:00.0	50.1	42.6	61.0	53.0	52.5	50.5	49.6	46.9		Off
			51	44	62	54	53	51	50	47		
2025-04-03	18:00:00	00:15:00.0	49.6	42.2	61.8	52.7	52.0	49.8	48.9	46.0	6.0	Off
2025-04-03	18:15:00	00:15:00.0	49.5	41.8	59.4	53.1	52.1	49.8	48.6	46.0		Off
2025-04-03	18:30:00	00:15:00.0	49.5	43.0	60.0	52.4	51.4	49.6	48.8	46.4		Off
2025-04-03	18:45:00	00:05:42.9	49.4	42.2	63.7	53.7	52.3	49.2	48.1	46.0		Off
			49	42	62	53	52	49	48	46		

N1											Wind	Quarry
Date	Time	Duration	LAeq	LAFmin	LAFmax	LAF5	LAF10	LAF33	LAF50	LAF90	Speed	Status
2025-04-02	14:15:00	00:15:00.0	44.5	37.1	58.8	47.7	46.7	44.6	43.5	40.9	6.0	operating
2025-04-02	14:30:00	00:15:00.0	44.7	38.2	57.6	47.8	46.6	44.5	43.6	41.4		operating
2025-04-02	14:45:00	00:15:00.0	44.8	37.7	56.7	47.4	46.7	45.1	44.4	41.5		operating
2025-04-02	15:00:00	00:15:00.0	44.1	38.0	53.2	47.1	46.2	44.3	43.4	41.2	5.5	operating
2025-04-02	15:15:00	00:15:00.0	44.3	38.1	55.5	47.1	46.3	44.6	43.8	41.4		operating
2025-04-02	15:30:00	00:15:00.0	43.4	35.6	62.1	46.8	45.9	43.6	42.4	39.3		operating
2025-04-02	15:45:00	00:15:00.0	44.1	36.3	59.5	46.9	46.1	44.3	43.4	40.8		operating
2025-04-02	16:00:00	00:15:00.0	43.7	38.3	66.3	46.3	45.6	43.8	43.0	40.8	5.0	operating
2025-04-02	16:15:00	00:15:00.0	42.4	36.6	53.0	45.0	44.3	42.7	41.9	39.8		operating
2025-04-02	16:30:00	00:15:00.0	43.2	35.6	56.3	46.0	45.2	43.6	42.7	40.6		Off
			44	37	58	47	46	44	43	41		
2025-04-02	16:45:00	00:15:00.0	40.4	33.4	60.6	43.2	42.4	40.7	39.7	37.2		Off
2025-04-02	17:00:00	00:15:00.0	41.1	34.5	56.5	44.2	43.4	41.4	40.4	38.1	4.5	Off
2025-04-02	17:15:00	00:15:00.0	43.2	35.9	59.3	45.9	44.9	43.0	42.1	39.2		Off
2025-04-02	17:30:00	00:15:00.0	43.2	38.4	53.4	45.6	44.8	43.4	42.7	40.8		Off
2025-04-02	17:45:00	00:15:00.0	42.8	36.8	52.1	45.5	44.8	43.2	42.4	39.6		Off
			42	36	56	45	44	42	41	39		Off
												Off
2025-04-02	18:00:00	00:15:00.0	42.8	36.6	52.4	45.5	44.8	43.1	42.3	39.9	5.0	Off
2025-04-02	18:15:00	00:15:00.0	42.8	37.1	50.9	45.6	44.8	43.1	42.3	40.0		Off
2025-04-02	18:30:00	00:15:00.0	43.0	36.8	56.6	45.6	44.8	43.2	42.4	39.9		Off
2025-04-02	18:45:00	00:15:00.0	43.7	37.2	53.1	47.1	45.9	43.9	43.0	40.7		Off
2025-04-02	19:00:00	00:15:00.0	42.4	33.3	52.9	45.4	44.6	42.9	42.1	37.8	4.5	Off
2025-04-02	19:15:00	00:15:00.0	43.3	35.3	58.2	46.3	45.4	43.6	42.7	39.9		Off
2025-04-02	19:30:00	00:15:00.0	50.6	35.8	78.6	52.5	47.6	44.8	43.9	41.0		Off
2025-04-02	19:45:00	00:15:00.0	44.7	36.9	57.0	47.5	46.7	45.0	44.1	41.4		Off
2025-04-02	20:00:00	00:15:00.0	49.8	38.0	70.8	52.1	48.6	46.1	45.1	42.4	4.0	Off
2025-04-02	20:15:00	00:15:00.0	45.5	38.7	59.7	48.2	47.2	45.3	44.5	42.2		Off
2025-04-02	20:30:00	00:15:00.0	47.8	37.2	67.0	49.3	47.9	45.8	44.9	41.5		Off
2025-04-02	20:45:00	00:15:00.0	45.2	38.2	54.3	47.9	47.3	45.7	44.7	42.0		Off
2025-04-02	21:00:00	00:15:00.0	44.3	35.8	52.1	47.3	46.6	44.7	43.7	40.8	3.5	Off
2025-04-02	21:15:00	00:15:00.0	44.9	32.6	53.3	48.5	47.6	45.4	44.3	40.3		Off
2025-04-02	21:30:00	00:15:00.0	44.7	35.0	56.6	48.5	47.5	45.0	43.8	39.8		Off
2025-04-02	21:45:00	00:15:00.0	44.2	35.4	52.4	47.8	46.9	44.7	43.3	39.6		Off
2025-04-02	22:00:00	00:15:00.0	46.0	36.7	53.5	49.4	48.6	46.6	45.3	41.3		Off
2025-04-02	22:15:00	00:15:00.0	43.0	33.4	50.6	46.3	45.6	43.7	42.4	37.9		Off
2025-04-02	22:30:00	00:15:00.0	41.8	32.6	51.4	45.4	44.4	42.0	40.9	37.2		Off
2025-04-02	22:45:00	00:15:00.0	43.3	30.2	51.7	46.9	46.1	43.7	42.5	39.2		Off
2025-04-02	23:00:00	00:15:00.0	41.8	28.3	52.6	46.1	44.9	42.2	40.7	33.7		Off
2025-04-02	23:15:00	00:15:00.0	42.8	28.4	54.5	47.5	46.5	43.2	40.9	34.5		Off
2025-04-02	23:30:00	00:15:00.0	42.3	34.2	52.6	46.9	45.6	42.1	40.6	37.4		Off
2025-04-02	23:45:00	00:15:00.0	41.2	32.8	50.7	45.1	44.0	41.5	40.3	36.3		Off
2025-04-03	00:00:00	00:15:00.0	41.0	25.9	49.4	44.9	43.8	41.6	40.3	35.1		Off
2025-04-03	00:15:00	00:15:00.0	38.9	27.4	49.1	43.1	41.9	39.0	37.6	33.7		Off
2025-04-03	00:30:00	00:15:00.0	37.9	21.6	48.4	42.7	41.5	38.2	36.0	27.9		Off

N2											Wind	Quarry
Date	Time	Duration	LAeq	LAFmin	LAFmax	LAF5	LAF10	LAF33	LAF50	LAF90	Speed	Status
2025-04-03	00:45:00	00:15:00.0	36.6	22.7	49.2	41.7	40.2	36.5	34.3	29.3		Off
2025-04-03	01:00:00	00:15:00.0	39.9	26.5	52.6	45.7	43.6	38.6	36.4	31.9		Off
2025-04-03	01:15:00	00:15:00.0	36.5	19	52.0	42.5	40.7	35.6	32.7	23.2		Off
2025-04-03	01:30:00	00:15:00.0	40.0	20.5	53.0	45.9	44.1	39.3	36.6	28.6		Off
2025-04-03	01:45:00	00:15:00.0	35.1	21.5	48.3	40.7	38.7	34.1	32.0	26.9		Off
2025-04-03	02:00:00	00:15:00.0	35.9	24.3	51.3	41.3	39.2	34.6	32.9	28.3		Off
2025-04-03	02:15:00	00:15:00.0	34.8	19.2	51.5	40.7	38.4	32.9	31.3	26.8		Off
2025-04-03	02:30:00	00:15:00.0	33.3	20.1	49.0	39.7	36.5	30.4	27.7	23		Off
2025-04-03	02:45:00	00:15:00.0	38.4	26.1	54.3	44.5	41.5	36.1	34.4	30.3		Off
2025-04-03	03:00:00	00:15:00.0	37.3	21.3	53.2	44.0	41.4	33.3	31.6	27.3		Off
2025-04-03	03:15:00	00:15:00.0	37.3	22.7	53.7	43.3	40.9	34.2	32.4	26.5		Off
2025-04-03	03:30:00	00:15:00.0	32.4	22.1	51.3	37.6	34.6	29.8	28.2	24.4		Off
2025-04-03	03:45:00	00:15:00.0	33.6	21.2	53.7	39.8	37.2	31.3	29.5	24.9		Off
2025-04-03	04:00:00	00:15:00.0	33.6	25.1	49.4	38.6	36.0	31.9	30.8	28.2		Off
2025-04-03	04:15:00	00:15:00.0	34.5	24.8	48.1	40.5	38.4	32.7	30.6	26.7		Off
2025-04-03	04:30:00	00:15:00.0	34.1	24	48.1	39.0	37.1	33.4	31.6	26.7		Off
2025-04-03	04:45:00	00:15:00.0	34.7	24.3	48.1	40.3	38.3	33.7	31.5	27.7		Off
2025-04-03	05:00:00	00:15:00.0	37.7	26.5	50.0	42.9	41.4	37.1	35.0	30.6		Off
2025-04-03	05:15:00	00:15:00.0	40.1	30.9	55.5	45.6	43.7	38.6	36.7	33.7		Off
2025-04-03	05:30:00	00:15:00.0	42.6	31.5	55.0	47.1	45.7	42.7	41.0	36.4		Off
2025-04-03	05:45:00	00:15:00.0	44.2	35.8	54.5	48.5	47.3	44.3	42.9	39.3		Off
2025-04-03	06:00:00	00:15:00.0	45.3	37.7	58.5	48.6	47.7	45.4	44.5	41.8	3.5	Off
2025-04-03	06:15:00	00:15:00.0	49.4	38.7	67.2	53.3	51.2	47.4	46.1	42.8		Off
2025-04-03	06:30:00	00:15:00.0	54.6	41.7	76.5	62.7	54.4	48.4	47.6	45.2		Off
2025-04-03	06:45:00	00:15:00.0	49.6	41.4	71.1	51.5	50.4	48.6	47.6	44.7		Off
2025-04-03	07:00:00	00:15:00.0	47.8	39.9	62.5	51.7	50.3	47.7	46.5	43.5	5.0	Off
2025-04-03	07:15:00	00:15:00.0	46.6	40.6	55.8	49.3	48.7	47.0	46.2	43.7		Off
2025-04-03	07:30:00	00:15:00.0	46.8	40.6	68.1	49.4	48.4	46.5	45.6	43.1		Operating
2025-04-03	07:45:00	00:15:00.0	50.8	40.2	66.6	58.5	51.1	47.1	46.0	42.9		Operating
2025-04-03	08:00:00	00:15:00.0	51.4	38.8	77.8	55.9	49.0	45.9	44.9	41.9	5.5	Operating
2025-04-03	08:15:00	00:15:00.0	44.2	36.3	62.0	47.2	46.1	43.7	42.6	39.4		Operating
2025-04-03	08:30:00	00:15:00.0	42.4	36.7	56.3	45.5	44.3	42.5	41.6	39.2		Operating
2025-04-03	08:45:00	00:15:00.0	47.3	37.8	69.8	49.1	46.2	43.4	42.4	40.1		Operating
2025-04-03	09:00:00	00:15:00.0	46.4	36.2	68.1	46.4	44.9	42.5	41.5	38.8	5.5	Operating
2025-04-03	09:15:00	00:15:00.0	42.0	34.1	62.4	44.3	43.3	41.1	40.1	37.9		Operating
2025-04-03	09:30:00	00:15:00.0	49.4	33.0	77.9	43.4	42.4	40.5	39.4	35.8		Operating
2025-04-03	09:45:00	00:15:00.0	44.3	34.4	71.4	44.2	43.4	41.5	40.5	38.1		Operating
2025-04-03	10:00:00	00:15:00.0	41.6	34.6	62.3	44.6	43.5	41.5	40.5	37.5	5.5	Operating
2025-04-03	10:15:00	00:15:00.0	41.3	33.5	53.2	44.6	43.6	41.6	40.6	37.7		Operating
2025-04-03	10:30:00	00:15:00.0	44.4	33.9	66.2	45.5	44.3	41.7	40.5	37.5		Operating
2025-04-03	10:45:00	00:15:00.0	40.9	33.0	50.6	44.0	43.2	41.4	40.4	37.5		Operating
2025-04-03	11:00:00	00:15:00.0	40.1	32.3	49.4	43.3	42.4	40.5	39.5	36.0	6.5	Operating
2025-04-03	11:15:00	00:15:00.0	41.3	32.5	59.9	45.6	43.3	40.2	39.1	36.1		Operating
2025-04-03	11:30:00	00:15:00.0	40.0	31.8	60.3	43.4	42.2	39.9	38.8	35.9		Operating

N2											Wind	Quarry
Date	Time	Duration	LAeq	LAFmin	LAFmax	LAF5	LAF10	LAF33	LAF50	LAF90	Speed	Status
2025-04-03	11:45:00	00:15:00.0	41.1	30.8	60.9	44.2	43.3	40.9	39.9	36.1		Operating
2025-04-03	12:00:00	00:15:00.0	40.7	31.5	54.4	43.8	42.8	41.0	40.1	36.4	6.5	Operating
2025-04-03	12:15:00	00:15:00.0	41.5	34.9	52.6	45.1	44.2	41.8	40.5	37.4		Operating
2025-04-03	12:30:00	00:15:00.0	41.1	35.8	57.5	43.6	42.9	41.4	40.7	38.5		Operating
2025-04-03	12:45:00	00:15:00.0	42.2	36.7	52.5	45.1	44.2	42.5	41.6	39.4		Operating
2025-04-03	13:00:00	00:15:00.0	42.6	37.6	51.0	44.9	44.3	42.9	42.2	40.4	7.5	Operating
2025-04-03	13:15:00	00:15:00.0	42.1	36.1	52.1	45.0	44.4	42.5	41.4	38.8		Operating
2025-04-03	13:30:00	00:15:00.0	42.8	36.2	53.4	45.7	44.9	43.1	42.3	39.8		Operating
2025-04-03	13:45:00	00:15:00.0	42.9	35.6	56.3	45.7	44.8	43.2	42.4	40.1		Operating
2025-04-03	14:00:00	00:15:00.0	42.4	36.5	50.3	45.0	44.4	42.9	42.1	39.6	8.0	Operating
2025-04-03	14:15:00	00:15:00.0	43.7	38.0	61.5	46.1	45.4	43.8	43.1	41.0		Operating
2025-04-03	14:30:00	00:15:00.0	43.3	37.9	53.5	45.9	45.1	43.6	42.9	40.8		Operating
2025-04-03	14:45:00	00:15:00.0	43.7	36.7	52.5	46.5	45.5	43.8	43.1	41.3		Operating
2025-04-03	15:00:00	00:15:00.0	45.3	38.7	61.6	48.4	46.8	44.7	43.8	41.4	8.0	Operating
2025-04-03	15:15:00	00:15:00.0	44.6	37.7	58.0	47.7	46.9	44.8	43.9	41.4		Operating
2025-04-03	15:30:00	00:15:00.0	45.6	37.2	64.5	48.5	46.8	44.2	43.4	40.6		Operating
2025-04-03	15:45:00	00:15:00.0	45.5	37.9	62.7	48.4	47.2	45.1	44.3	41.6		Operating
2025-04-03	16:00:00	00:15:00.0	48.3	37.2	64.8	55.0	50.9	45.0	43.7	40.7	7.5	Operating
2025-04-03	16:15:00	00:15:00.0	48.8	40.6	66.8	54.4	50.2	46.0	45.2	43.2		Operating
			44	36	60	47	45	43	42	39		
2025-04-03	16:30:00	00:15:00.0	45.4	40.1	56.0	47.8	47.2	45.6	44.9	42.8		Off
2025-04-03	16:45:00	00:15:00.0	45.0	39.8	54.6	47.4	46.8	45.4	44.7	42.6	6.5	Off
2025-04-03	17:00:00	00:15:00.0	46.9	40.6	69.9	48.9	48.1	46.3	45.5	43.3		Off
2025-04-03	17:15:00	00:15:00.0	46.2	39.5	73.5	48.6	47.6	45.8	45.1	43.0		Off
2025-04-03	17:30:00	00:15:00.0	44.3	38.1	51.1	46.5	46.0	44.8	44.1	41.8		Off
2025-04-03	17:45:00	00:15:00.0	44.9	39.2	54.8	47.7	46.8	45.1	44.3	42.2		Off
			45	40	60	48	47	46	45	43		
2025-04-03	18:00:00	00:15:00.0	44.4	38.3	52.0	46.9	46.2	44.8	44.1	42.0	6.0	Off
2025-04-03	18:15:00	00:15:00.0	44.2	37.1	53.3	46.6	45.9	44.5	43.9	41.8		Off
2025-04-03	18:30:00	00:04:33.3	44.5	38.8	58.8	47.1	45.6	44.2	43.4	41.3		Off

N3											Wind	Quarry
Date	Time	Duration	LAeq	LAFmin	LAFmax	LAF5	LAF10	LAF33	LAF50	LAF90	Speed	Status
2025-04-02	13:35:24	00:09:35.7	49.7	31.0	82.4	48.3	46.7	42.0	38.9	33.9		Operating
2025-04-02	13:45:00	00:15:00.0	41.2	31.5	58.5	45.7	43.9	40.2	38.5	34.6		Operating
2025-04-02	14:00:00	00:15:00.0	39.8	30.6	53.5	44.5	42.3	39.0	37.3	33.6	6.0	Operating
2025-04-02	14:15:00	00:15:00.0	43.1	31.5	59.2	47.7	46.3	42.8	41.1	35.9		Operating
2025-04-02	14:30:00	00:15:00.0	45.7	31.1	62.5	52.4	48.6	41.8	39.8	34.9		Operating
2025-04-02	14:45:00	00:15:00.0	53.1	29.7	70.6	60.5	57.3	45.7	41.7	34.6		Operating
2025-04-02	15:00:00	00:15:00.0	47.9	29.3	67.1	54.8	52.0	42.4	39.2	32.8	5.5	Operating
2025-04-02	15:15:00	00:15:00.0	41.0	30.8	59.3	46.6	43.5	38.1	36.1	32.9		Operating
2025-04-02	15:30:00	00:15:00.0	52.0	29.5	69.3	59.6	56.3	42.1	38.3	33.5		Operating
2025-04-02	15:45:00	00:15:00.0	48.6	28.6	68.3	55.6	49.3	38.4	35.5	31.9		Operating
2025-04-02	16:00:00	00:15:00.0	42.2	28.7	62.0	48.2	43.4	37.8	35.8	31.4	5.0	Operating
2025-04-02	16:15:00	00:15:00.0	43.7	28.0	61.9	51.0	47.9	37.2	34.0	30.2		Operating
2025-04-02	16:30:00	00:15:00.0	45.9	27.3	62.5	53.4	50.6	38.2	34.6	30.2		Operating
			46	30	64	51	48	40	38	33		
2025-04-02	16:45:00	00:15:00.0	46.7	26.6	68.9	48.9	40.0	33.4	31.4	28.8		Off
2025-04-02	17:00:00	00:15:00.0	49.4	26.6	67.2	57.3	52.0	34.4	32.6	29.8	4.5	Off
2025-04-02	17:15:00	00:15:00.0	50.8	27.9	69.8	58.5	54.6	38.8	35.1	31.1		Off
2025-04-02	17:30:00	00:15:00.0	48.5	28.5	69.7	55.9	50.8	36.8	34.5	31.7		Off
2025-04-02	17:45:00	00:15:00.0	51.9	27.8	68.4	59.7	56.6	41.3	35.6	30.6		Off
			49	28	69	56	51	37	34	30		
2025-04-02	18:00:00	00:15:00.0	45.8	27.2	70.0	52.2	44.8	32.8	31.6	29.5	5.0	Off
2025-04-02	18:15:00	00:15:00.0	39.9	28.1	62.7	41.8	38.2	34.8	33.6	31.0		Off
2025-04-02	18:30:00	00:15:00.0	46.2	27.8	64.1	53.8	48.4	35.7	33.5	30.7		Off
2025-04-02	18:45:00	00:15:00.0	48.5	31.3	67.7	55.5	51.7	40.2	37.2	33.8		Off
2025-04-02	19:00:00	00:15:00.0	48.4	29.9	64.7	56.2	53.0	41.0	37.4	33.4	4.5	Off
2025-04-02	19:15:00	00:15:00.0	46.8	29.3	65.4	54.1	49.0	38.1	35.5	32.4		Off
2025-04-02	19:30:00	00:15:00.0	46.2	29.6	64.9	53.6	49.2	38.2	36.0	32.9		Off
2025-04-02	19:45:00	00:15:00.0	45.4	30.6	66.7	52.3	47.9	36.2	34.9	32.8		Off
2025-04-02	20:00:00	00:15:00.0	48.8	29.8	69.5	54.1	47.1	35.6	34.5	32.1	4.0	Off
2025-04-02	20:15:00	00:15:00.0	47.9	30.7	69.8	55.1	49.2	38.0	36.2	33.4		Off
2025-04-02	20:30:00	00:15:00.0	39.9	28.7	57.6	45.7	42.4	36.3	34.8	31.9		Off
2025-04-02	20:45:00	00:15:00.0	41.2	28.7	61.3	47.0	43.2	37.7	35.6	31.9		Off
2025-04-02	21:00:00	00:15:00.0	33.4	27.8	49.1	37.4	35.4	32.7	31.6	29.7	3.5	Off
2025-04-02	21:15:00	00:15:00.0	33.3	29.3	44.8	35.3	34.7	33.6	33.0	31.5		Off
2025-04-02	21:30:00	00:15:00.0	34.1	29.3	40.6	36.3	35.7	34.5	34.0	31.9		Off
2025-04-02	21:45:00	00:15:00.0	34.3	27.9	45.0	36.6	36.0	34.6	33.9	31.9		Off
2025-04-02	22:00:00	00:15:00.0	34.9	29.8	53.3	36.6	36.0	34.7	34.2	32.7		Off
2025-04-02	22:15:00	00:15:00.0	34.8	27.3	42.4	37.5	36.9	35.4	34.5	31.4		Off
2025-04-02	22:30:00	00:15:00.0	32.8	27.1	41.3	35.8	35.0	33.1	32.2	29.9		Off
2025-04-02	22:45:00	00:15:00.0	33.7	26.3	43.3	36.6	35.9	34.2	33.2	30.3		Off
2025-04-02	23:00:00	00:15:00.0	32.5	24.0	43.5	35.5	34.7	33.0	32.1	27.7		Off
2025-04-02	23:15:00	00:15:00.0	33.0	25.1	42.3	35.7	35.1	33.4	32.6	30.0		Off
2025-04-02	23:30:00	00:15:00.0	34.7	29.0	48.3	37.9	36.4	34.5	33.8	31.7		Off
2025-04-02	23:45:00	00:15:00.0	32.6	26.5	42.2	35.5	34.8	32.9	32.0	29.6		Off
2025-04-03	00:00:00	00:15:00.0	30.7	23.8	46.9	33.3	32.5	30.7	29.9	27.2		Off
2025-04-03	00:15:00	00:15:00.0	32.6	25.8	55.2	34.9	33.8	31.8	30.9	28.7		Off
2025-04-03	00:30:00	00:15:00.0	31.7	20.3	50.8	34.8	34.0	32.1	30.9	23.9		Off

N3											Wind	Quarry
Date	Time	Duration	LAeq	LAFmin	LAFmax	LAF5	LAF10	LAF33	LAF50	LAF90	Speed	Status
2025-04-03	00:45:00	00:15:00.0	29.0	21.8	42.0	32.5	31.6	29.3	28.1	24.6		Off
2025-04-03	01:00:00	00:15:00.0	30.1	22.8	45.6	34.8	32.9	29.8	28.5	25.7		Off
2025-04-03	01:15:00	00:15:00.0	26.8	18.5	37.4	30.2	29.4	27.3	26.0	21.8		Off
2025-04-03	01:30:00	00:15:00.0	28.5	22.0	38.2	31.3	30.6	29.0	28.1	24.9		Off
2025-04-03	01:45:00	00:15:00.0	27.7	21.4	35.7	31.6	30.6	27.7	26.6	24.1		Off
2025-04-03	02:00:00	00:15:00.0	29.3	21.0	38.1	33.1	32.0	29.9	28.5	23.7		Off
2025-04-03	02:15:00	00:15:00.0	28.2	21.0	37.6	31.5	30.5	28.5	27.5	24.8		Off
2025-04-03	02:30:00	00:15:00.0	26.7	18.6	35.9	30.6	29.6	27.1	25.9	21.5		Off
2025-04-03	02:45:00	00:15:00.0	30.8	24.2	43.7	33.5	32.7	31.1	30.3	27.9		Off
2025-04-03	03:00:00	00:15:00.0	29.9	22.2	44.0	33.6	32.6	30.3	29.0	25.6		Off
2025-04-03	03:15:00	00:15:00.0	31.5	20.2	44.4	36.4	35.2	31.6	29.6	24.4		Off
2025-04-03	03:30:00	00:15:00.0	28.8	21.2	41.7	32.7	31.5	29.1	27.8	24.0		Off
2025-04-03	03:45:00	00:15:00.0	32.1	22.2	41.7	37.5	36.2	31.5	29.9	25.5		Off
2025-04-03	04:00:00	00:15:00.0	31.3	23.9	46.2	34.7	33.8	31.7	30.4	27.5		Off
2025-04-03	04:15:00	00:15:00.0	32.4	23.8	42.9	36.4	35.5	32.6	31.4	27.9		Off
2025-04-03	04:30:00	00:15:00.0	33.0	22.8	45.1	36.9	35.7	33.4	32.1	27.6		Off
2025-04-03	04:45:00	00:15:00.0	31.8	22.7	43.5	34.9	34.2	32.5	31.4	27.2		Off
2025-04-03	05:00:00	00:15:00.0	34.5	26.1	43.1	37.2	36.7	35.2	34.4	30.3		Off
2025-04-03	05:15:00	00:15:00.0	35.9	29.5	42.9	38.1	37.5	36.4	35.7	33.0		Off
2025-04-03	05:30:00	00:15:00.0	37.6	33.2	43.3	39.6	39.1	38.0	37.5	35.6		Off
2025-04-03	05:45:00	00:15:00.0	38.8	34.1	45.2	40.7	40.2	39.1	38.6	37.2		Off
2025-04-03	06:00:00	00:15:00.0	41.9	35.4	55.5	46.3	45.0	41.5	40.0	37.7	3.5	Off
2025-04-03	06:15:00	00:15:00.0	48.1	38.1	64.1	53.3	52.1	46.8	44.9	41.8		Off
2025-04-03	06:30:00	00:15:00.0	48.1	38.3	77.5	50.7	48.8	44.1	42.9	41.2		Off
2025-04-03	06:45:00	00:15:00.0	45.0	39.8	61.0	48.6	46.4	44.2	43.6	41.9		Off
2025-04-03	07:00:00	00:15:00.0	44.6	41.1	59.7	47.2	45.4	44.0	43.6	42.6	5.0	Off
2025-04-03	07:15:00	00:15:00.0	45.7	40.7	62.5	49.4	46.2	43.8	43.3	42.2		Off
2025-04-03	07:30:00	00:15:00.0	43.2	39.5	53.8	44.9	44.4	43.3	42.8	41.7		Operating
2025-04-03	07:45:00	00:15:00.0	45.3	40.8	60.8	49.3	46.9	44.0	43.5	42.2		Operating
2025-04-03	08:00:00	00:15:00.0	45.2	40.0	60.7	49.2	47.1	44.0	43.3	42.0	5.5	Operating
2025-04-03	08:15:00	00:15:00.0	43.9	39.0	55.4	48.1	46.3	43.3	42.5	41.1		Operating
2025-04-03	08:30:00	00:15:00.0	43.9	38.5	62.5	46.9	44.6	42.5	41.9	40.4		Operating
2025-04-03	08:45:00	00:15:00.0	42.8	37.7	56.4	46.4	44.9	42.2	41.4	39.8		Operating
2025-04-03	09:00:00	00:15:00.0	42.0	35.1	64.5	46.1	43.9	40.6	39.5	37.2	5.5	Operating
2025-04-03	09:15:00	00:15:00.0	39.8	32.0	58.6	45.2	41.8	38.3	37.1	34.7		Operating
2025-04-03	09:30:00	00:15:00.0	38.8	31.5	56.6	42.9	40.8	37.5	36.3	33.9		Operating
2025-04-03	09:45:00	00:15:00.0	38.7	29.7	56.0	43.0	41.1	37.4	36.2	33.8		Operating
2025-04-03	10:00:00	00:15:00.0	41.8	30.6	61.6	46.8	44.5	39.2	37.1	33.3	5.5	Operating
2025-04-03	10:15:00	00:15:00.0	43.8	30.2	61.5	48.3	46.4	42.2	39.8	35.1		Operating
2025-04-03	10:30:00	00:15:00.0	40.7	29.5	59.4	45.2	43.4	40.1	38.6	34.3		Operating
2025-04-03	10:45:00	00:15:00.0	41.3	35.1	59.6	44.6	43.2	41.1	40.3	38.0		Operating
2025-04-03	11:00:00	00:15:00.0	45.9	31.7	67.5	49.6	46.2	41.4	39.6	35.4	6.5	Operating
2025-04-03	11:15:00	00:15:00.0	41.4	29.1	61.8	47.1	43.2	38.3	36.3	31.8		Operating
2025-04-03	11:30:00	00:15:00.0	46.3	29.7	61.7	53.9	49.1	41.0	38.0	32.9		Operating

N3											Wind	Quarry
Date	Time	Duration	LAeq	LAFmin	LAFmax	LAF5	LAF10	LAF33	LAF50	LAF90	Speed	Status
2025-04-03	11:45:00	00:15:00.0	42.8	31.5	60.2	48.6	45.8	40.6	38.9	35.4		Operating
2025-04-03	12:00:00	00:15:00.0	43.6	30.6	64.7	47.6	44.7	40.2	38.3	33.7	6.5	Operating
2025-04-03	12:15:00	00:15:00.0	41.9	30.0	61.2	47.1	44.8	40.0	37.8	33.3		Operating
2025-04-03	12:30:00	00:15:00.0	46.7	30.7	63.2	53.6	50.8	42.7	40.2	34.4		Operating
2025-04-03	12:45:00	00:15:00.0	47.8	32.1	65.2	54.3	50.8	44.6	42.4	37.3		Operating
2025-04-03	13:00:00	00:15:00.0	52.2	33.1	70.1	59.5	56.3	46.9	43.7	38.2	7.5	Operating
2025-04-03	13:15:00	00:15:00.0	46.8	31.3	67.7	51.6	48.2	43.1	40.9	34.8		Operating
2025-04-03	13:30:00	00:15:00.0	51.9	31.6	67.8	59.4	57.0	44.8	41.1	36.1		Operating
2025-04-03	13:45:00	00:15:00.0	41.3	32.9	61.8	45.6	43.9	40.7	39.5	36.9		Operating
2025-04-03	14:00:00	00:15:00.0	48.4	33.5	65.9	55.1	51.4	44.5	42.4	38.1	8.0	Operating
2025-04-03	14:15:00	00:15:00.0	47.6	32.1	67.8	50.7	47.0	42.3	40.5	35.7		Operating
2025-04-03	14:30:00	00:15:00.0	48.6	33.9	67.3	55.4	52.5	45.1	43.0	37.8		Operating
2025-04-03	14:45:00	00:15:00.0	48.3	35.3	67.5	55.1	51.4	44.2	41.9	38.0		Operating
2025-04-03	15:00:00	00:15:00.0	48.7	35.0	64.4	55.3	52.3	46.2	43.6	38.9	8.0	Operating
2025-04-03	15:15:00	00:15:00.0	49.0	34.8	68.9	54.6	51.4	45.5	43.6	38.5		Operating
2025-04-03	15:30:00	00:15:00.0	50.6	34.0	68.3	57.4	53.8	46.6	44.2	39.1		Operating
2025-04-03	15:45:00	00:15:00.0	46.1	33.7	65.8	49.8	48.0	44.7	43.1	39.0		Operating
2025-04-03	16:00:00	00:15:00.0	47.6	33.0	66.0	52.8	49.4	44.0	41.8	37.3	7.5	Operating
2025-04-03	16:15:00	00:15:00.0	48.3	34.9	67.4	53.9	49.7	44.7	43.2	39.3		Operating
			45	33	63	50	47	42	41	37		Operating
2025-04-03	16:30:00	00:15:00.0	50.0	34.9	65.6	56.5	54.3	47.9	44.7	38.3		Off
2025-04-03	16:45:00	00:15:00.0	47.2	34.9	64.9	53.0	50.3	45.1	42.5	38.2		Off
2025-04-03	17:00:00	00:15:00.0	55.1	37.7	71.6	62.1	59.1	51.1	48.2	42.2	6.5	Off
2025-04-03	17:15:00	00:15:00.0	46.6	35.7	66.3	51.9	49.8	45.1	43.3	39.2		Off
2025-04-03	17:30:00	00:15:00.0	43.9	35.1	65.9	48.2	47.0	43.5	41.8	37.9		Off
2025-04-03	17:45:00	00:15:00.0	52.3	35.1	69.5	59.5	55.6	46.8	44.4	39.7		Off
			49	36	67	55	53	47	44	39		
2025-04-03	18:00:00	00:15:00.0	42.5	33.0	58.9	47.0	45.1	41.9	40.8	36.2	6.0	Off
2025-04-03	18:15:00	00:08:17.6	45.6	33.4	71.2	49.3	47.6	43.4	41.2	36.2		Off

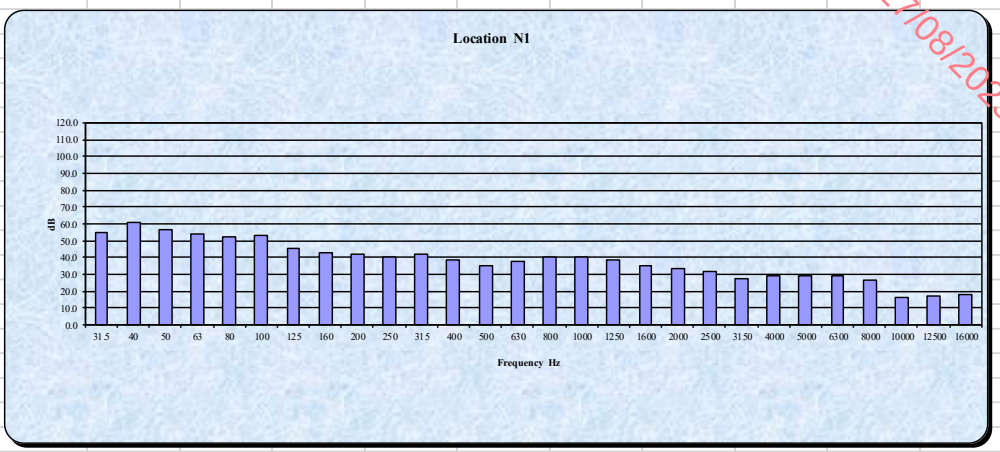
N4											Wind	Quarry
Date	Time	Duration	LAeq	LAFmin	LAFmax	LAF5	LAF10	LAF33	LAF50	LAF90	Speed	Status
2025-04-02	12:45:00	00:15:00.0	45.5	36.1	58.9	49.3	48.5	45.4	43.7	40.8		operating
2025-04-02	13:00:00	00:15:00.0	47.7	36.4	64.3	52.9	51.1	46.7	44.9	41.2	6.5	operating
2025-04-02	13:15:00	00:15:00.0	46.6	37.7	61.2	51.7	50.3	45.9	44.2	41.0		operating
2025-04-02	13:30:00	00:15:00.0	47.8	35.7	61.7	52.5	50.9	47.4	45.9	41.9		operating
2025-04-02	13:45:00	00:15:00.0	45.3	36.3	59.3	50.0	48.3	44.8	43.3	39.9		operating
2025-04-02	14:00:00	00:15:00.0	45.9	35.3	61.5	50.4	48.5	45.0	43.6	40.1	6.0	operating
2025-04-02	14:15:00	00:15:00.0	48.5	37.7	65.7	51.9	50.2	46.9	45.5	41.8		operating
2025-04-02	14:30:00	00:15:00.0	49.6	37.0	66.1	53.3	51.7	47.0	45.3	40.7		operating
2025-04-02	14:45:00	00:15:00.0	46.3	35.3	59.5	51.6	49.9	45.4	43.9	40.1		operating
2025-04-02	15:00:00	00:15:00.0	48.1	35.6	69.3	53.7	51.3	45.6	43.7	39.9	5.5	operating
2025-04-02	15:15:00	00:15:00.0	48.5	36.5	63.0	54.0	51.8	47.4	45.5	40.9		operating
2025-04-02	15:30:00	00:15:00.0	47.7	36.8	71.3	50.9	49.6	46.2	44.5	41.0		operating
2025-04-02	15:45:00	00:15:00.0	47.4	32.8	68.8	53.4	51.2	46.3	44.1	39.5		operating
2025-04-02	16:00:00	00:15:00.0	47.2	37.0	60.2	52.2	50.6	46.8	45.1	41.2	5.0	operating
2025-04-02	16:15:00	00:15:00.0	46.6	35.6	65.1	51.1	50.1	46.5	45.0	41.0		operating
2025-04-02	16:30:00	00:15:00.0	45.6	36.5	58.6	49.8	48.7	45.9	44.3	40.1		operating
			47	36	63	52	50	46	45	41		
2025-04-02	16:45:00	00:15:00.0	47.2	34.9	60.8	51.9	50.6	47.3	45.7	40.7		Off
2025-04-02	17:00:00	00:15:00.0	46.5	37.2	58.0	50.2	49.3	46.8	45.3	41.4	4.5	Off
2025-04-02	17:15:00	00:15:00.0	46.3	36.8	57.8	50.5	49.4	46.6	44.8	41.3		Off
2025-04-02	17:30:00	00:15:00.0	47.8	38.0	58.6	51.4	50.6	48.2	47.0	43.1		Off
2025-04-02	17:45:00	00:15:00.0	46.6	35.7	69.3	50.4	49.2	46.6	45.3	41.4		Off
			47	37	61	51	50	47	46	42		
2025-04-02	18:00:00	00:15:00.0	46.5	36.4	68.0	50.3	49.2	46.3	45.0	41.5	5.0	Off
2025-04-02	18:15:00	00:15:00.0	46.9	37.1	67.2	51.0	49.4	45.9	44.4	41.6		Off
2025-04-02	18:30:00	00:15:00.0	46.6	37.2	64.1	50.7	49.7	46.5	45.0	41.2		Off
2025-04-02	18:45:00	00:15:00.0	46.4	37.6	60.2	50.9	49.4	46.0	44.6	41.9		Off
2025-04-02	19:00:00	00:15:00.0	45.3	36.3	56.5	49.3	48.6	45.2	44.2	41.2	4.5	Off
2025-04-02	19:15:00	00:15:00.0	47.4	38.8	62.2	52.0	50.8	47.1	45.6	42.7		Off
2025-04-02	19:30:00	00:15:00.0	46.7	38.6	59.8	50.8	49.7	46.6	45.2	42.8		Off
2025-04-02	19:45:00	00:15:00.0	46.4	36.9	61.6	52.0	49.8	45.4	44.1	41.8		Off
2025-04-02	20:00:00	00:15:00.0	46.7	38.6	58.3	51.5	50.0	46.3	45.1	42.2	4.0	Off
2025-04-02	20:15:00	00:15:00.0	46.0	38.1	57.7	50.1	48.9	45.8	44.8	42.0		Off
2025-04-02	20:30:00	00:15:00.0	45.8	36.5	64.2	50.1	48.3	44.9	43.8	40.9		Off
2025-04-02	20:45:00	00:15:00.0	43.2	35.6	55.4	46.9	45.5	43.3	42.1	39.3		Off
2025-04-02	21:00:00	00:15:00.0	44.2	36.1	58.7	48.5	47.2	43.4	42.5	39.7	3.5	Off
2025-04-02	21:15:00	00:15:00.0	44.6	36.4	57.0	48.9	47.4	44.4	43.4	40.5		Off
2025-04-02	21:30:00	00:15:00.0	44.6	35.6	54.7	48.1	46.7	44.8	44.0	41.1		Off
2025-04-02	21:45:00	00:15:00.0	44.5	36.6	53.8	48.2	47.0	44.5	43.4	41.0		Off
2025-04-02	22:00:00	00:15:00.0	44.5	36.0	56.5	47.3	46.4	44.8	43.8	40.7		Off
2025-04-02	22:15:00	00:15:00.0	43.6	34.9	53.2	46.2	45.6	44.2	43.4	40.2		Off
2025-04-02	22:30:00	00:15:00.0	42.9	34.2	54.3	47.4	45.7	42.6	41.4	38.6		Off
2025-04-02	22:45:00	00:15:00.0	43.6	31.1	52.5	46.8	46.1	44.1	43.0	40.1		Off
2025-04-02	23:00:00	00:15:00.0	41.8	27.7	51.2	45.3	44.4	42.5	41.2	35.0		Off
2025-04-02	23:15:00	00:15:00.0	41.5	29.9	55.6	45.4	44.5	41.8	40.6	36.0		Off
2025-04-02	23:30:00	00:15:00.0	46.7	35.4	68.4	49.9	46.4	43.3	42.1	39.0		Off
2025-04-02	23:45:00	00:15:00.0	42.0	32.8	61.2	45.7	44.4	42.2	41.1	38.3		Off
2025-04-03	00:00:00	00:15:00.0	40.2	27.3	53.5	43.3	42.4	40.6	39.5	35.8		Off
2025-04-03	00:15:00	00:15:00.0	39.7	30.7	51.4	42.9	42.0	39.6	38.3	35.4		Off
2025-04-03	00:30:00	00:15:00.0	39.8	24.0	56.2	43.6	42.3	39.7	38.1	28.0		Off
2025-04-03	00:45:00	00:15:00.0	35.9	24.4	47.6	39.4	38.6	36.6	35.3	29.0		Off

N4											Wind
Date	Time	Duration	LAeq	LAFmin	LAFmax	LAF5	LAF10	LAF33	LAF50	LAF90	Speed
2025-04-03	01:00:00	00:15:00.0	38.4	26.8	53.7	43.1	41.4	38.4	36.7	30.8	
2025-04-03	01:15:00	00:15:00.0	33.7	22.7	50.1	37.8	36.6	34.0	32.4	25.8	
2025-04-03	01:30:00	00:15:00.0	37.2	25.7	53.8	41.3	39.9	37.0	35.4	30.6	
2025-04-03	01:45:00	00:15:00.0	35.7	26.0	51.2	41.1	38.7	34.3	32.7	29.5	
2025-04-03	02:00:00	00:15:00.0	35.3	25.2	48.4	39.7	38.5	35.4	34.2	29.6	
2025-04-03	02:15:00	00:15:00.0	36.2	25.3	54.8	40.3	37.5	34.5	33.0	29.1	
2025-04-03	02:30:00	00:15:00.0	34.2	23.7	47.1	38.4	37.3	34.3	32.6	26.2	
2025-04-03	02:45:00	00:15:00.0	37.7	28.5	49.5	41.2	40.2	38.1	36.8	32.6	
2025-04-03	03:00:00	00:15:00.0	36.6	26.2	47.7	40.8	40.0	37.2	35.0	30.1	
2025-04-03	03:15:00	00:15:00.0	38.0	27.1	48.6	42.9	41.9	38.0	34.9	31.1	
2025-04-03	03:30:00	00:15:00.0	34.7	25.5	48.6	39.2	37.7	34.6	33.4	29.7	
2025-04-03	03:45:00	00:15:00.0	38.1	26.8	54.6	44.1	42.2	36.1	34.5	30.9	
2025-04-03	04:00:00	00:15:00.0	38.0	27.4	49.0	42.3	41.2	38.4	36.8	32.3	
2025-04-03	04:15:00	00:15:00.0	39.2	27.5	50.6	44.0	42.7	39.7	37.4	31.2	
2025-04-03	04:30:00	00:15:00.0	38.8	25.9	51.0	42.8	41.6	39.2	37.9	32.2	
2025-04-03	04:45:00	00:15:00.0	40.2	26.9	55.6	44.4	43.4	40.6	38.7	31.8	
2025-04-03	05:00:00	00:15:00.0	42.7	29.3	52.9	46.7	45.9	43.4	41.5	36.7	
2025-04-03	05:15:00	00:15:00.0	43.0	34.7	52.1	45.8	45.0	43.4	42.6	39.7	
2025-04-03	05:30:00	00:15:00.0	45.1	34.9	53.3	47.5	46.9	45.8	44.9	42.2	
2025-04-03	05:45:00	00:15:00.0	46.1	40.1	53.6	48.2	47.7	46.5	45.8	43.7	
2025-04-03	06:00:00	00:15:00.0	49.8	42.6	66.6	54.3	52.5	49.4	48.0	45.7	3.5
2025-04-03	06:15:00	00:15:00.0	53.0	44.2	71.1	58.2	56.4	51.4	50.5	48.4	
2025-04-03	06:30:00	00:15:00.0	51.3	45.7	74.0	53.5	52.4	50.6	49.8	48.5	
2025-04-03	06:45:00	00:15:00.0	51.4	46.0	63.3	53.9	53.2	51.7	51.0	49.0	
2025-04-03	07:00:00	00:15:00.0	52.4	46.9	71.3	54.6	53.9	52.2	51.5	49.3	5.0
2025-04-03	07:15:00	00:15:00.0	52.9	47.8	68.4	55.4	54.6	53.1	52.3	50.5	
2025-04-03	07:30:00	00:15:00.0	53.1	47.2	62.5	55.5	54.9	53.6	52.8	50.5	
2025-04-03	07:45:00	00:15:00.0	52.4	46.7	63.6	55.3	54.1	52.0	51.2	49.3	
2025-04-03	08:00:00	00:15:00.0	51.9	45.8	65.5	55.4	54.0	51.8	51.0	49.0	5.5
2025-04-03	08:15:00	00:15:00.0	50.5	43.1	63.9	54.7	53.1	50.6	49.1	46.6	
2025-04-03	08:30:00	00:15:00.0	50.5	42.4	65.7	53.6	52.6	50.8	49.8	46.8	
2025-04-03	08:45:00	00:15:00.0	52.0	43.3	69.3	56.3	54.2	51.4	50.3	47.3	
2025-04-03	09:00:00	00:15:00.0	49.8	41.1	68.5	53.6	52.5	49.4	47.9	44.8	5.5
2025-04-03	09:15:00	00:15:00.0	49.7	38.0	62.7	53.9	52.9	49.7	47.8	43.2	
2025-04-03	09:30:00	00:15:00.0	48.4	38.2	69.8	52.0	50.3	47.3	45.8	42.2	
2025-04-03	09:45:00	00:15:00.0	49.2	37.9	73.2	53.9	52.2	48.4	46.3	41.9	
2025-04-03	10:00:00	00:15:00.0	47.0	37.4	63.2	52.2	50.4	46.6	44.6	41.7	5.5
2025-04-03	10:15:00	00:15:00.0	48.4	37.9	63.5	52.9	51.3	47.4	46.0	42.4	
2025-04-03	10:30:00	00:15:00.0	47.2	36.6	62.9	51.6	50.2	47.1	45.0	41.5	
2025-04-03	10:45:00	00:07:44.9	47.3	38.2	63.7	51.2	49.6	46.4	44.8	42.5	
2025-04-03	11:00:00	00:15:00.0	47.2	34.7	61.6	52.4	50.4	46.0	44.3	39.8	6.5
2025-04-03	11:15:00	00:15:00.0	47.2	35.6	61.4	53.0	50.6	45.9	44.0	39.5	
2025-04-03	11:30:00	00:15:00.0	47.4	36.2	60.7	52.8	50.9	46.6	44.5	39.9	

N4											Wind	Quarry
Date	Time	Duration	LAeq	LAFmin	LAFmax	LAF5	LAF10	LAF33	LAF50	LAF90	Speed	Status
2025-04-03	11:45:00	00:15:00.0	47.2	35.7	68.2	52.1	50.3	46.1	44.4	39.9		operating
2025-04-03	12:00:00	00:15:00.0	48.8	37.4	65.0	54.4	52.4	47.8	45.5	41.7	6.5	operating
2025-04-03	12:15:00	00:15:00.0	47.5	36.2	65.6	52.3	50.2	46.0	44.4	40.8		operating
2025-04-03	12:30:00	00:15:00.0	48.8	38.0	64.6	54.8	52.5	46.9	45.0	41.3		operating
2025-04-03	12:45:00	00:15:00.0	46.9	39.3	59.8	51.3	49.8	46.4	45.2	42.4		operating
2025-04-03	13:00:00	00:15:00.0	46.7	39.0	65.1	50.5	49.0	46.3	45.1	42.0	7.5	operating
2025-04-03	13:15:00	00:15:00.0	47.5	37.8	64.0	51.8	50.4	47.3	45.6	41.3		operating
2025-04-03	13:30:00	00:15:00.0	48.3	39.3	63.3	52.7	51.3	48.2	46.7	42.7		operating
2025-04-03	13:45:00	00:15:00.0	48.7	39.8	61.8	53.7	51.7	47.6	45.9	42.8		operating
2025-04-03	14:00:00	00:15:00.0	48.6	39.4	71.6	52.7	51.3	47.9	46.4	42.8	8.0	operating
2025-04-03	14:15:00	00:15:00.0	48.7	40.3	63.4	52.6	51.1	48.2	46.8	43.6		operating
2025-04-03	14:30:00	00:15:00.0	49.5	40.7	66.4	53.6	52.0	48.8	47.4	44.4		operating
2025-04-03	14:45:00	00:15:00.0	48.8	40.0	60.8	53.5	52.1	48.1	46.4	43.0		operating
2025-04-03	15:00:00	00:15:00.0	50.0	40.5	62.8	55.2	53.2	49.0	47.2	43.6	8.0	operating
2025-04-03	15:15:00	00:15:00.0	49.7	40.5	62.2	54.4	52.8	49.6	47.9	43.7		operating
2025-04-03	15:30:00	00:15:00.0	49.5	40.5	65.8	54.2	52.5	48.9	47.2	44.0		operating
2025-04-03	15:45:00	00:15:00.0	48.7	39.7	58.7	53.0	51.8	48.6	47.3	43.8		operating
2025-04-03	16:00:00	00:15:00.0	49.0	40.6	61.9	53.6	51.7	48.7	47.3	44.0	7.5	operating
2025-04-03	16:15:00	00:15:00.0	49.7	40.8	62.1	53.7	52.7	49.9	48.4	44.3		operating
			49	40	64	53	52	48	47	43		
2025-04-03	16:30:00	00:15:00.0	47.7	39.8	58.3	51.6	50.6	47.8	46.4	43.5		Off
2025-04-03	16:45:00	00:15:00.0	50.3	39.7	61.6	54.2	53.0	50.4	49.1	44.4		Off
2025-04-03	17:00:00	00:15:00.0	50.9	43.3	61.4	55.1	53.9	50.6	49.5	46.5	6.5	Off
2025-04-03	17:15:00	00:15:00.0	49.7	41.0	63.6	53.2	52.0	49.4	48.3	45.0		Off
2025-04-03	17:30:00	00:15:00.0	50.4	43.0	64.3	54.0	53.0	50.6	49.3	46.2		Off
2025-04-03	17:45:00	00:15:00.0	50.6	42.4	61.1	55.0	53.7	50.6	49.2	45.3		Off
			49	40	64	53	52	49	47	44		
2025-04-03	18:00:00	00:15:00.0	49.5	41.0	67.6	54.2	52.9	49.0	47.3	43.7	6.0	

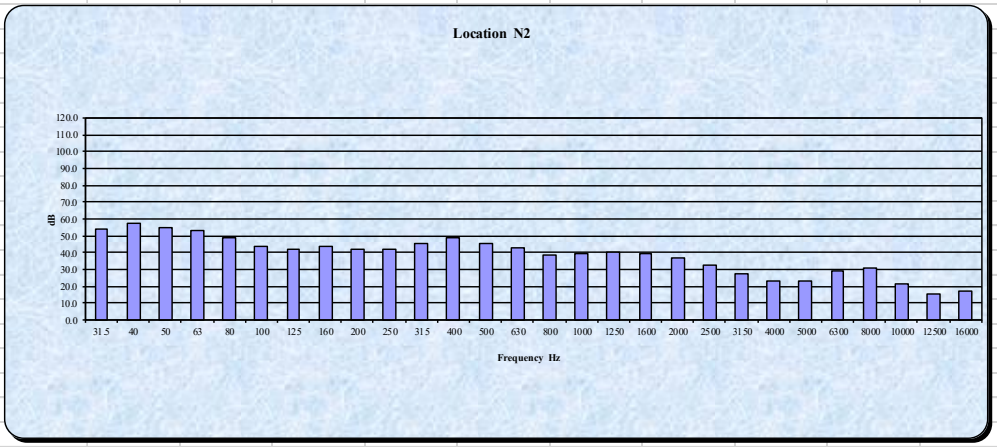
Appendix 5: One-Third Octave Frequency 2018, N1-N4 incl.

Freq.	dBz.
31.5	55.0
40	60.8
50	57.0
63	54.2
80	52.1
100	53.3
125	45.6
160	43.2
200	41.9
250	40.7
315	42.0
400	39.0
500	35.6
630	38.0
800	40.6
1000	40.3
1250	38.6
1600	35.6
2000	33.4
2500	31.4
3150	27.7
4000	29.5
5000	29.5
6300	29.4
8000	26.7
10000	16.6
12500	17.1
16000	17.9



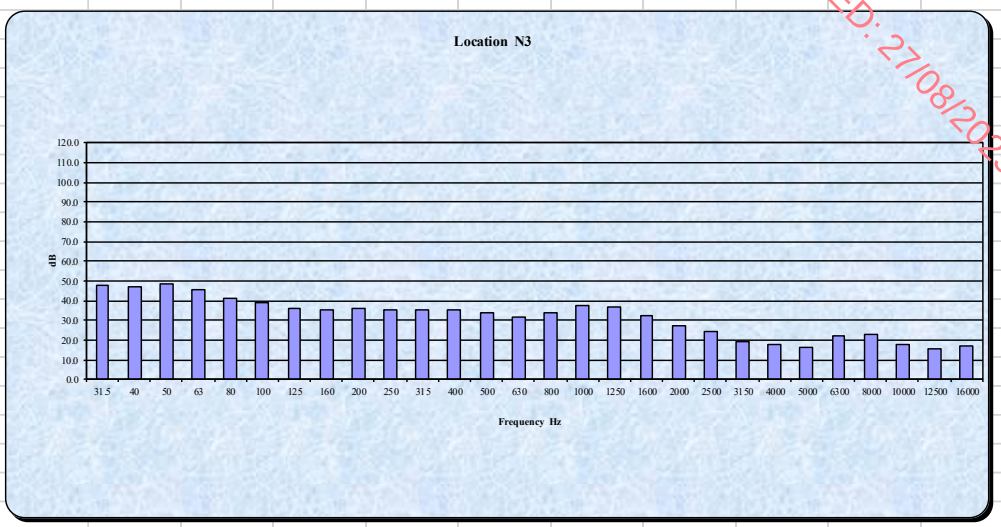
Location N1

Freq.	dBz.
31.5	54.0
40	57.8
50	55.0
63	53.5
80	49.0
100	43.9
125	42.3
160	43.9
200	42.3
250	42.1
315	45.6
400	48.5
500	45.6
630	42.7
800	38.7
1000	39.8
1250	40.5
1600	39.8
2000	36.8
2500	32.6
3150	27.6
4000	23.2
5000	23.5
6300	29.1
8000	30.6
10000	21.7
12500	15.9
16000	17.3



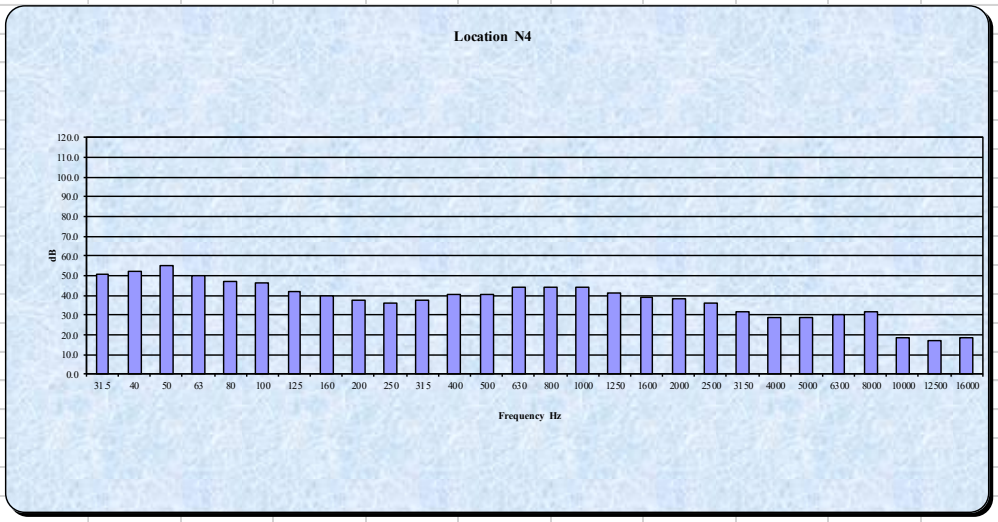
Location N2

Freq.	dBz.
31.5	47.6
40	46.8
50	48.5
63	45.8
80	41.4
100	38.9
125	36.1
160	35.4
200	35.8
250	35.6
315	35.3
400	34.9
500	33.9
630	31.9
800	33.7
1000	37.3
1250	36.5
1600	32.5
2000	27.4
2500	24.1
3150	18.9
4000	17.6
5000	16.0
6300	22.4
8000	23.1
10000	17.5
12500	15.7
16000	16.8



Location N3

Freq.	dBz.
31.5	50.3
40	52.1
50	55.2
63	50.2
80	47.1
100	46.5
125	41.6
160	39.9
200	37.6
250	35.8
315	37.5
400	40.5
500	40.6
630	43.8
800	44.1
1000	43.9
1250	41.1
1600	39.0
2000	38.1
2500	36.1
3150	31.2
4000	28.6
5000	28.6
6300	30.0
8000	31.8
10000	18.5
12500	17.0
16000	18.4



Location N4