FEHILY TIMONEY

CONSULTANTS IN ENGINEERING,
ENVIRONMENTAL SCIENCE
& PLANNING

# APPENDIX 8.1

## NOISE & VIBRATION

Appendix 8.1a – Baseline Noise Measurements and Data Analysis

Appendix 8.1b – Equipment Calibration Certificates

Appendix 8.1c – Noise Sensitive Location Details

Appendix 8.1d – Valley Correction

Appendix 8.1e – Sound Power Level Data For Wind Turbines

Appendix 8.1f – Predicted Noise Levels From Wind farm At Nearby Noise Sensitive Locations

# APPENDIX 8.1a

# BASELINE NOISE MEASUREMENTS AND DATA ANALYIS

## Baseline Noise Measurements

Baseline noise monitoring was undertaken at four receptor locations, to establish the existing background noise levels at these locations. These locations represent the nearest residential locations to the north, south east and west of the proposed wind farm.

### Selection of Monitoring Locations

Section 2.2.5 of the Institute of Acoustics', *A Good Practice Guide to the Application of ETUS-R-97 for the Assessment at Rating of Wind Turbine Noise* (2013) regarding use of proxy locations states "*When choosing a location that will serve as a proxy for others, the basis for selection is that it can reasonably be claimed, from inspection and observation, to be representative of the non-surveyed locations, in line with the criteria of Section 2.5. Measurement locations outside a property's curtilage (such as an adjacent field) may be used when access to a representative property cannot be obtained, provided that such a location can be justified as being representative. No general guidance can therefore be given on the number of measurement locations as this will be site-specific*." Section 2.5 of the GPG is summarised in Table 8.1.1 with the applicability of the proxy locations selected for Coumnagappul Wind Farm.

**Table 8.1.1: IOA GPG Section 2.5 Criteria and Applicability to Coumnagappul Wind Farm Monitoring Locations**

| Requirements of Section 2.5 | Coumnagappul Wind Farm Monitoring Locations |
|---|---|
| 2.5.1 *Where possible, measurements should be made in the vicinity of a dwelling in an area frequently used for rest and recreation.* | Location R51 was placed in a field next to the property. It was not possible to place the noise meter in the garden of the property due to dogs with electric fence at the property. The noise meter was located approximately 12m from the façade of the house.<br><br>Location R71: Noise monitor was placed in the field behind property with a view towards the proposed windfarm. This location was chosen as there was little space within the rear garden of the property and to avoid screening from the outbuilding to the rear of the property. |
| 2.5.2 *Equipment should be placed at outdoor positions where noise levels are representative of typical 'low' levels likely to be experienced in the vicinity of a dwelling (or group of dwellings if the measurements are intended to be applied to more than one dwelling). The overriding consideration is that it can reasonably be claimed, from inspection and observation, that there are no other suitable noise-sensitive locations, in the vicinity of any selected location and close to a dwelling, where background noise levels would be expected to be consistently lower than the levels at the selected position.* | This was adhered to for all measurement locations. |

| Requirements of Section 2.5 | Coumnagappul Wind Farm Monitoring Locations |
|---|---|
| 2.5.3 *Ideally the position should be one which would be exposed to noise from the wind turbines whilst being best-screened from other noise sources such as nearby roads or vegetation.* | The locations were in open areas or within the curtilage of a dwelling, set back from local roads and vegetation/ forestry where possible. Locations were chosen to have a direct line of sight to the proposed wind farm development. |
| 2.5.4 *The background surveys provide the basis for setting both daytime and night-time noise limits: the measurement position must therefore reasonably represent external areas (for daytime noise) and also building façades containing windows (for night-time noise).* | The locations being used to derive limits are representative of external areas and façade locations. |
| 2.5.5 *In most locations, background noise levels will be determined by wind in trees and vegetation and noise sources external to the property such as traffic noise. The presence of local noise sources such as boiler flues, garden fountains, domestic drains, watercourses and farm equipment should be identified.* | There were some local noise sources described below.<br>Prior to Round 1 of the measurements there was significantly heavy rainfall in the area. However, no additional water noise sources from drains or streams were noted at the monitoring locations. This was not an issue for Round 2 of the noise monitoring. |
| 2.5.6 *Where it is not possible to exclude the influence of variable local noise sources by selection of monitoring position, it is generally possible to identify such data from inspection of noise level time histories and therefore to exclude it from the data set used to derive noise limits* | Attendance at the monitoring location during installation, battery changes and equipment collection did not identify any variable noise sources. Atypical data was removed from data analysis. |
| 2.5.7 *In all cases, microphones should be supported at a height of 1.2 – 1.5 metres above the ground and no closer than 3.5 metres to any significant reflecting surface (such as a building or fence), except the ground. The position should be within 20 metres of the dwelling unless there are particular reasons for measuring at a more distant position (such as the presence of vegetation or denial of access); if so, the reasons should be explained.* | The microphones were mounted on tripods at approximate height of 1.5 m and at least 3.5 m from any significant reflecting surface other than the ground. Where possible the noise monitors were located within 20 m. |
| 2.5.8 *A resident at a selected property may request that measurements are made at a position which is considered inappropriate; perhaps because the preferred location(s) are inconvenient (it might obstruct lawn mowing, for example). In this situation the consultant should explain clearly the reasons why the measurements could be compromised; if no agreement can be reached, an alternative property or location should be sought. The assistance of the EHO may help to resolve these situations.* | At location R51 the noise meter was placed in a field next to the property to avoid potential damage to equipment caused by dogs at the property. |

Monitoring Locations

Noise monitoring was conducted at four locations, selected for obtaining a detailed representation of the background noise levels at receptors surrounding the development. Details of the four noise monitoring locations are provided in Table 8.1.2. The position of the monitoring locations is shown in Figure 8.2, Volume IV of the EIAR.

**Table 8.1.2: Details on the Noise Monitoring Locations**

| Location ID | Easting | Northing | Description | Photograph |
|---|---|---|---|---|
| R6 (N1) | 623019 | 611473 | Noise meter in front garden, approximately 10m from front façade of property | Plate 8.1-1 |
| R25 (N2) | 623943 | 607284 | Noise meter in north west corner of property approximately 9m from the property. | Plate 8.1-2 |
| R51 (N3) | 622155 | 608843 | Noise meter in field south of property, approximately 12m from the property | Plate 8.1-3 |
| R71 (N4) | 626025 | 612230 | Noise meter in a field just south of the property to the rear of the property, approximately 13m from the property. | Plate 8.1-4 |

**Location N1**

This location was to the west of the property, in the front garden. The microphone was in the front garden approximately 10m from the front façade of the dwelling. Generally, the area was very quiet with very occasional noise from road traffic. This location is north west of the proposed windfarm.

At this location there is a small stream west of the property and road, beyond a band of trees, over 100m from the measurement location. Noise from the stream was not observed during meter installation or collection.

**Plate A8.1-1: Monitoring Location R6**

**Location N2**

This location was at a property located within a cul-de-sac off the L1041. The noise meter was located in the north west corner of the property, a short distance from a dog kennel at the property. The meter was approximately 9m from the rear façade of the property. The area was very quiet, as it was a cul de sac and approximately 2.5km from the L1041 with passing traffic. This location is south of the proposed windfarm.

The main noise sources were from farming activities and livestock (sheep, cows). Also, noise from wind in the tall tree by the roadside, was observed, and noise from dogs barking. This location is south of the proposed windfarm. This is also the location for the rain gauge.

**Plate A8.1-2: Monitoring Location R25**

**Location N3**

This location is in a field south of the property. It was not possible to set up the meter in the front garden due to dogs with electric fence. The noise meter was approximately 12m from the front façade of the house, and a similar distance to the house from the adjacent road. This location is west of the proposed windfarm.

**Plate A8.1-3: Monitoring Location N3**

**Location N4**

This location is south of the property in the field behind the house, with a view towards the proposed windfarm. The noise meter was approximately 13m to the rear of the property. There is an outbuilding, with dogs to the rear of the property. This location is north east of the proposed windfarm.

**Plate A8.1-4: Monitoring Location N4**

*Measurement Periods*

The IOA GPG states "*The duration of a background noise survey is determined only by the need to acquire sufficient valid data over the range of wind speeds. It is unlikely that this requirement can be met in less than 2 weeks.*" If insufficient wind data is collected after two weeks, the monitoring period will be extended subject to acquiring sufficient valid data over the range of wind speeds. Sufficient data was captured at all monitoring locations with a minimum of two and a half weeks' worth of data captured at all monitoring locations.

*Definition of Time Periods*

The following periods were analysed for this report:

| | |
|---|---|
| Amenity/Quiet Daytime hours | 18:00 – 23:00 Monday to Friday<br>13:00 – 18:00 Saturday<br>07:00 – 18:00 Sunday |
| Night-time hours | 23:00 – 07:00 |

Monitoring Equipment

Baseline noise monitoring was carried out using Larson Davis Sound Expert Sound level meters (round 1) and Svantek Svan 977 Class 1 sound level meters (round 2). Details of the noise monitoring equipment are presented in Table 8.1.3. The sound level meters were fitted with ½" microphones. At location N2, N3 and N4 the microphone was surrounded by a secondary windshield. At location N1 the microphone was fitted with a single oversized wind shield. The setup used is in keeping with ESTU W/13/00386/REP, Noise Measurements in Windy Conditions and IOA Good Practice Guidelines, 2013. Calibration certificates for each sound level meter are provided in Appendix 8.1b.

**Table 8.1.3: Details of Noise Monitoring Equipment**

| Monitoring Location | Meter Type | Serial Number |
|---|---|---|
| R6 (N1)<br>(Round 2) | Svan 977 | 34173 |
| R25 (N2)<br>(Round 1)<br>(Round 2) | Svan 977 | 34876 |
| R51 (N3)<br>(Round 1) | Larson Davis Sound Expert | LxT4642 |
| R71 (N4)<br>(Round 1) | Larson Davis Sound Expert | LxT6241 |

A CR800 Series data logger was used to record rainfall during the first round of measurements and a CR300 series was used for the second round of measurements. In both cases the rain gauge was located at location N2. This meteorological data was acquired every 10 minutes simultaneously with noise data.

## Monitoring Protocol

Baseline noise measurements were undertaken at four locations near the proposed wind farm. Round 1 of the measurements took place between 25th of February 2021 and 15th March 2021. Round 2 of the measurements took place between the 21st April 2021 and the 11th May 2021.

The following monitoring protocol was carried out at each of the monitoring locations:

1. The sound level meters were calibrated on-site and set to log $L_{A90}$ statistics on a fast time weighted response every ten minutes.
2. Each sound level meter microphone was mounted at 1.5 m above ground level and fitted with an enhanced windshield. Each microphone was placed at least 3.5 m from reflecting surfaces to obtain 'free field' conditions.
3. Wind speed and wind direction measurements were taken from permanent mast installed on site. Wind speed was measured at a range of heights and data from anemometers at 60 m and 80 m were used to extrapolate the wind speed data up to a hub height of 104 m.

   The standardised 10 m wind speed was obtained from the turbine hub height wind speed by correcting it to 10 m height using a ground roughness factor of 0.05 m. Roughness length (or logarithmic) shear profile:

$$U_1 = U_2 \frac{ln\left(H_1/z\right)}{ln\left(H_2/z\right)}$$

   where $U_1$ is the wind speed to be calculated, $U_2$ is the measured wind speed, $H_1$ is the height of the measured wind speed to be calculated (10m), $H_2$ is the height of the measured wind speed and $z$ is the ground roughness length (m). A roughness length of 0.05m is used to standardise hub height wind speeds to 10m height in the IEC 61400-11:2012 standard.

4. The $L_{A90}$ statistic measurements were synchronised with the 10 m standardised wind speeds derived from the on-site meteorological mast data.
5. A logging rain gauge was also installed (at Monitoring Location R25) and similarly logged rainfall events over successive 10-minute intervals, also synchronised to the noise level and wind speed measurements.
6. After the monitoring was completed, the noise meters were re-tested using the calibration noise source to ensure that the meters had not drifted.

## Analysis of the Baseline Data

Following collection of the site data, the following protocol was used to analyse the baseline data:

1. The raw baseline $L_{A90}$ noise data was reviewed to determine whether there are any periods of non-consistent noise level due to equipment malfunction.
2. The raw noise level data was then correlated with the time synchronised wind speed and rainfall data. Preliminary data analysis was used to remove datasets ($L_{A90}$, wind speed and occurrence of rainfall event) which contain a rainfall event as these data sets are required to be removed from further analysis in line with best practice as outlined in the IOA Good Practice Guide and Supplementary Guidance Note 2 on Data Processing.
3. The prevailing background noise during for daytime periods uses the amenity/quiet daytime hours. The prevailing background noise during night-time periods excludes early morning periods to remove the dawn chorus which is not prevalent through that whole year., with data recorded between 04:00 and 07:00 was removed from further analysis.
4. Once the rainfall events have been accounted for, the remaining data was graphed using a wind speed based plot to establish whether there are any remaining data outliers, representing atypical noise sources or events.
5. Once the remaining data sets were found to be representative of the noise environment, they were analysed to ensure that sufficient data remained to provide sufficient data coverage over the necessary wind speeds. The IOA Good Practice Guide (May 2013) requires, as a minimum, no fewer than five valid data sets across each 1 m/s wind speed from turbine cut-in to rated power. Where integer wind speeds have less than five valid data sets, the prevailing background noise trend will not be extended beyond the range covered by adequate data sets. See Section 'Data Available for Determination of Prevailing Background Noise Levels' for details.
6. A 'best fit' trend (not higher than a fourth order polynomial) was then derived to present the assumed prevailing background noise level at each monitoring location. See Section 'Results' for details.

## Data Available for Determination of Prevailing Background Noise Levels

The requirement for the survey duration is dictated by the range of wind speeds to be collected. The IOA Good Practice Guide to the Application of ETSU-R-97[1] for the Assessment and Rating of Wind Turbine Noise, (May 2013) states that "*As a guideline, no fewer than 200 data points should be recorded in each of the amenity hours and night-time periods with no fewer than 5 data points in any 1 m/s wind speed bin.*"

[1] Department of Trade and Industry (1996), The Assessment and Rating of Noise from Wind Farms Report ETSU-R-97

The Wind Energy Development Guidelines (Department of Environment, Heritage and Local Government, 2006) do not provide the specific periods which are represented by daytime and night-time hours, therefore the definitions from ETSU-R-97 are taken as 07:00 to 23:00 hrs for daytime and 23:00 to 07:00 hrs for night-time.

Prevailing background noise levels were derived for night-time periods. The number of valid datasets are shown in Tables 8.1.4 and 8.1.5 with wind speed ranges greyed out which did not satisfy the criteria of at least 5 data points in any 1 m/s wind speed bin.

**Table 8.1.4: Number of Valid Datasets: Noise Monitoring Locations - Nighttime8**

| Wind Speed (at standardised 10 m height), m/s | Valid Datasets | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | R6 | | R25 | | R51 | | R71 | |
| | Day | Night | Day | Night | Day | Night | Day | Night |
| 0 | 20 | 6 | 20 | 6 | 31 | 28 | 31 | 28 |
| 1 | 71 | 30 | 73 | 30 | 114 | 104 | 114 | 104 |
| 2 | 90 | 62 | 94 | 62 | 163 | 91 | 162 | 91 |
| 3 | 80 | 55 | 81 | 55 | 137 | 90 | 137 | 90 |
| 4 | 107 | 76 | 104 | 77 | 84 | 84 | 83 | 84 |
| 5 | 54 | 75 | 57 | 79 | 84 | 39 | 84 | 39 |
| 6 | 68 | 100 | 68 | 105 | 42 | 42 | 42 | 42 |
| 7 | 104 | 103 | 107 | 105 | 46 | 42 | 46 | 42 |
| 8 | 77 | 43 | 78 | 49 | 42 | 31 | 42 | 31 |
| 9 | 41 | 20 | 42 | 23 | 17 | 26 | 17 | 26 |
| 10 | 43 | 28 | 44 | 29 | 6 | 24 | 6 | 24 |
| 11 | 43 | 15 | 44 | 15 | 9 | 7 | 9 | 7 |
| 12 | 23 | 17 | 24 | 23 | 16 | 9 | 16 | 9 |
| 13 | 30 | 21 | 30 | 25 | 8 | 2 | 8 | 2 |
| 14 | 10 | 3 | 11 | 6 | 0 | 1 | 0 | 1 |
| Total Number of Data Points | 861 | 654 | 877 | 689 | 799 | 620 | 797 | 620 |
| | Did not satisfy the criteria of at least 5 data points in any 1 m/s wind speed bin | | | | | | | |

Results

In this section, the prevailing background noise level in dB $L_{A90}$ relative to standardised 10 m height wind speeds are provided for each monitoring location as per the requirements of the survey. The prevailing background noise level is plotted as a solid line for the night-time periods at each monitoring location. In all cases, the highest order of polynomial used is a fourth order polynomials provided lines of best fit to the scatter data.

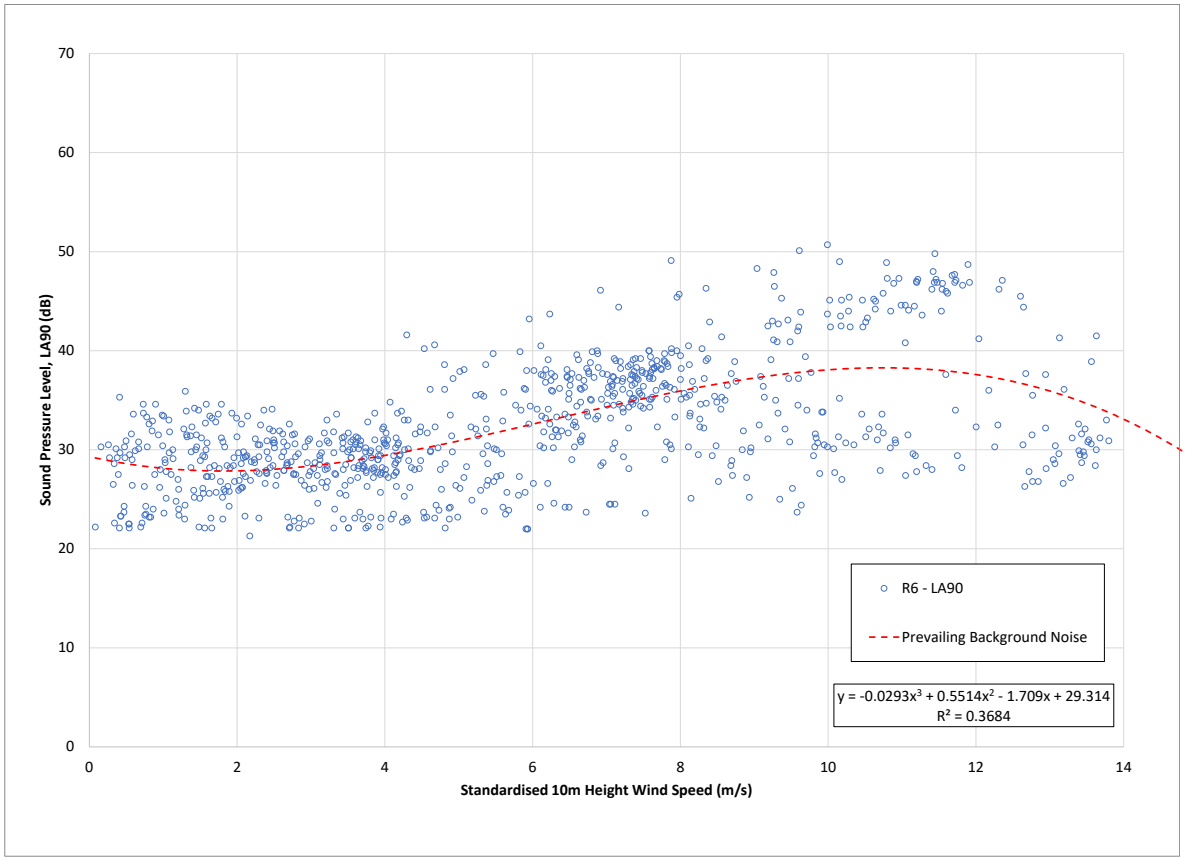


**Image A8.1: Prevailing Daytime Background ($L_{A90}$) Noise Levels at R6**

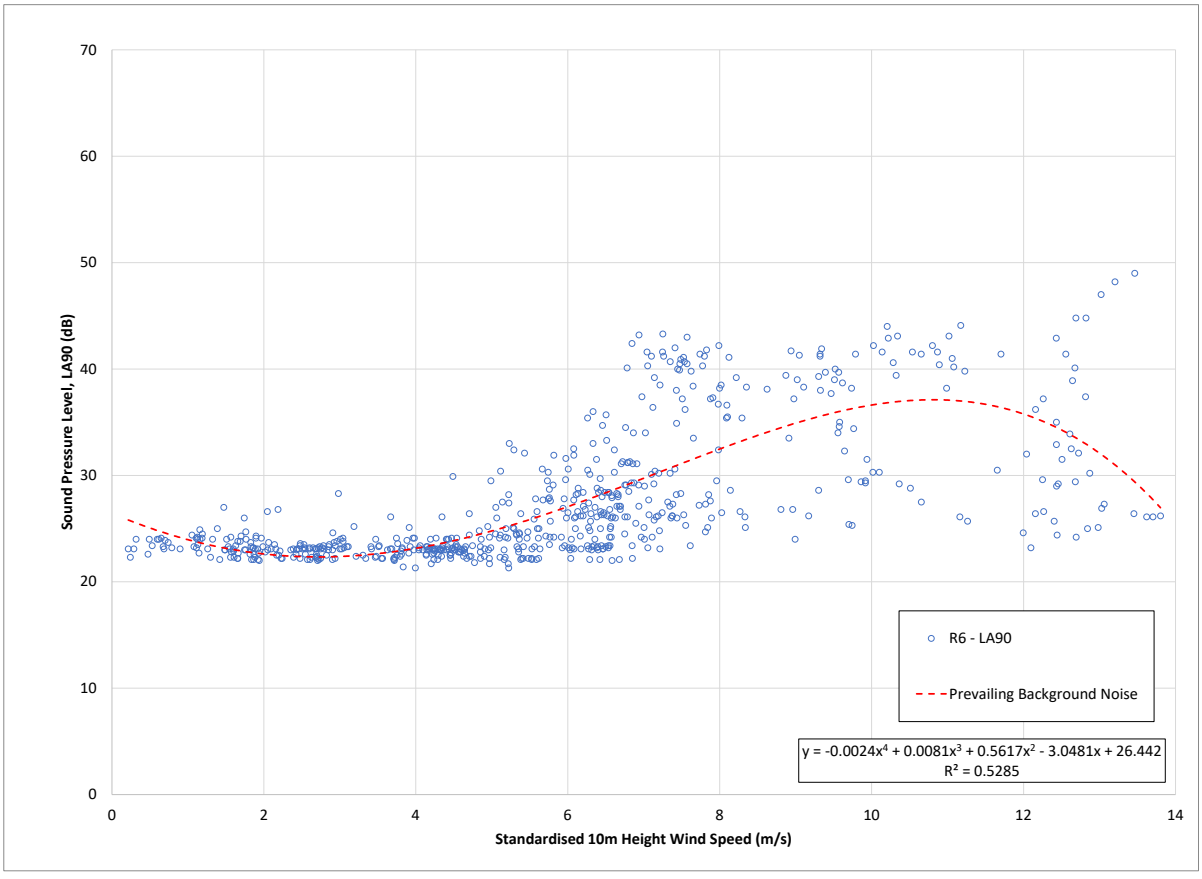


**Image A8.2: Prevailing Night-time Background ($L_{A90}$) Noise Levels at R6**

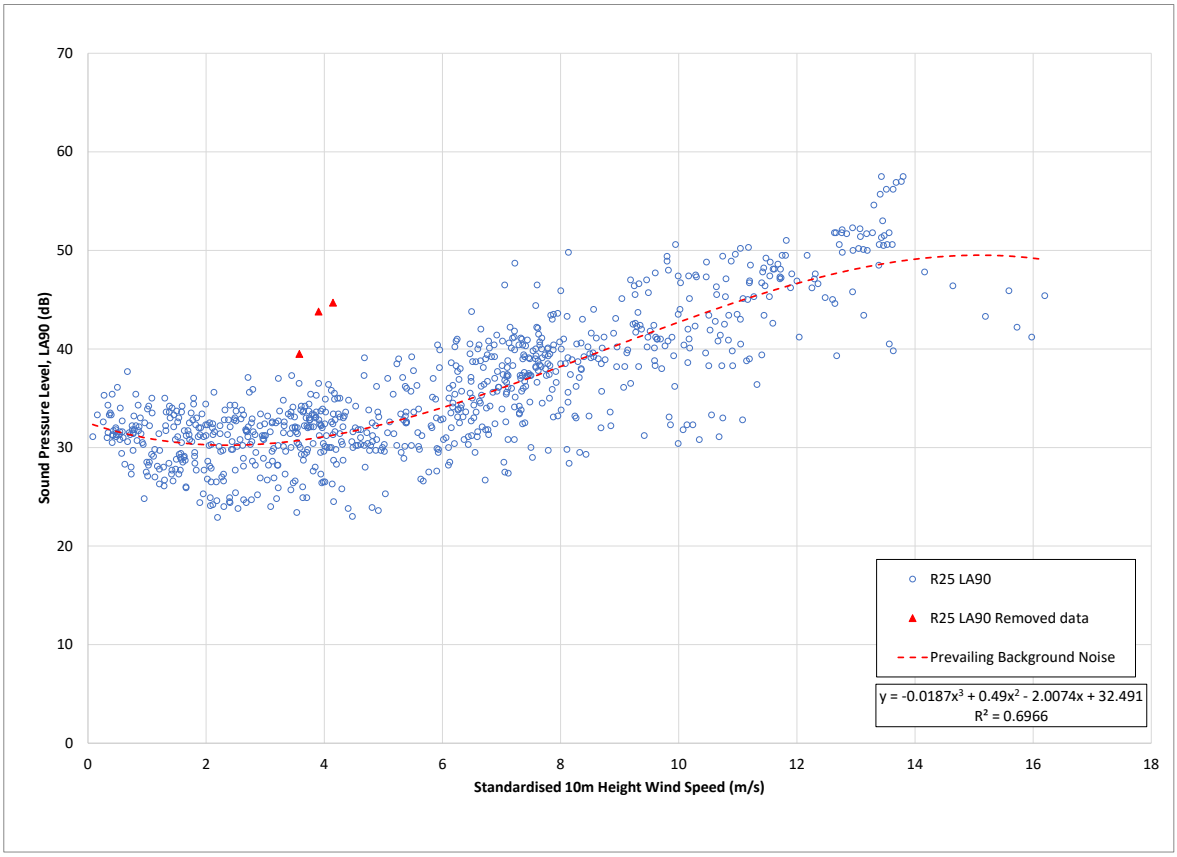


**Image A8.3: Prevailing Daytime Background ($L_{A90}$) Noise Levels at R25**

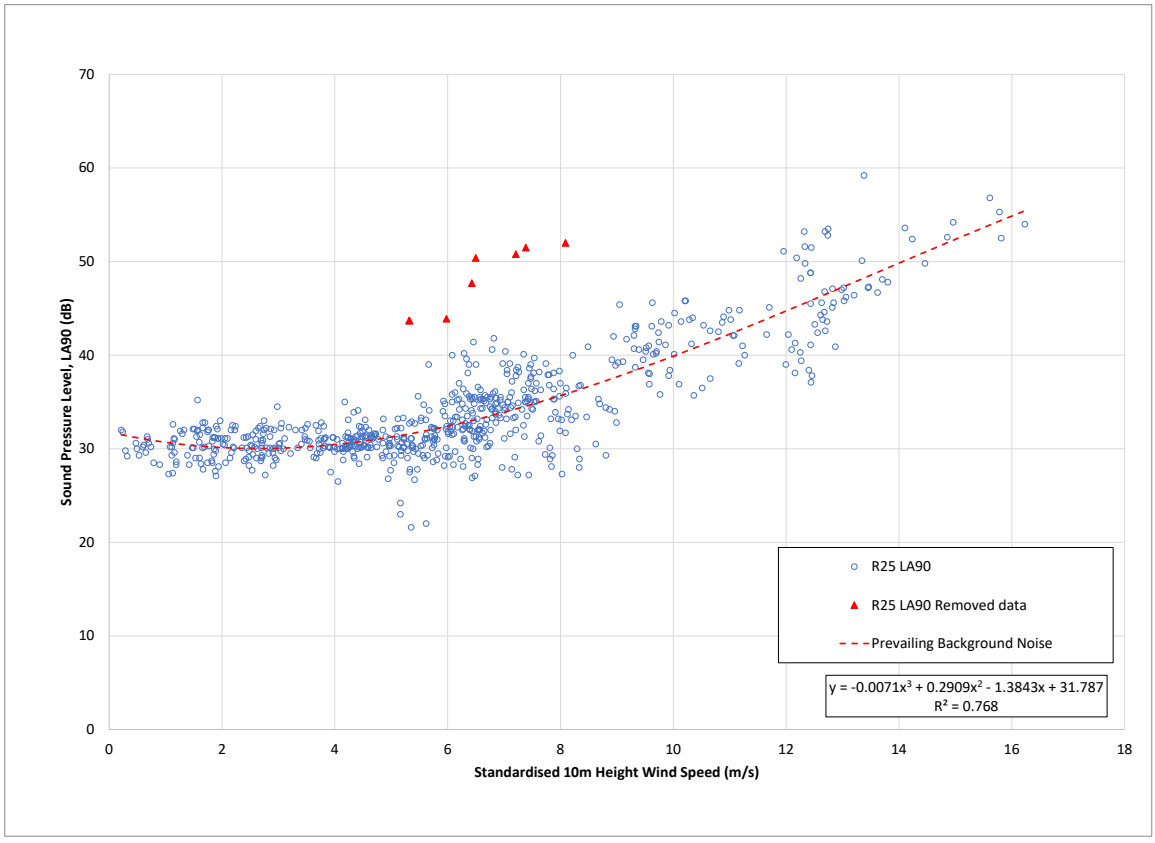


**Image A8.4: Prevailing Night-time Background ($L_{A90}$) Noise Levels at R25**

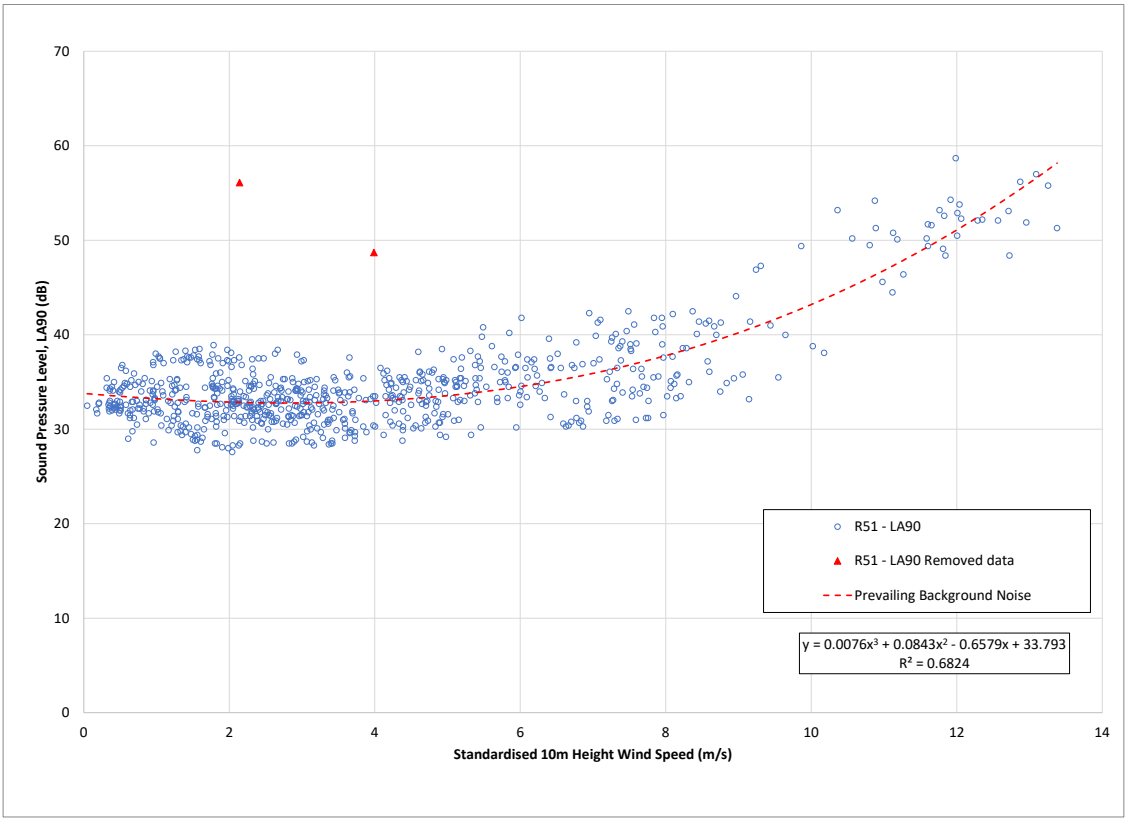


**Image A8.5: Prevailing Daytime Background ($L_{A90}$) Noise Levels at R51**

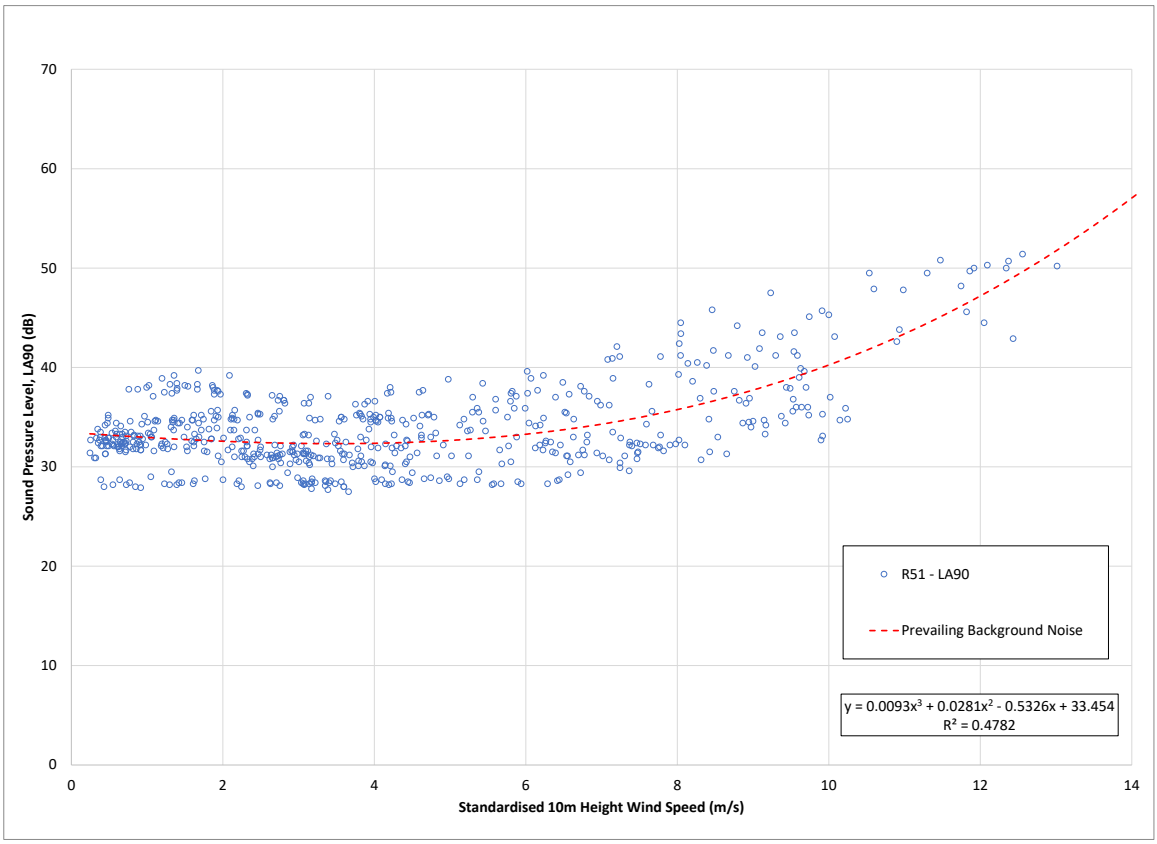


**Image A8.6: Prevailing Night-time Background ($L_{A90}$) Noise Levels at R51**

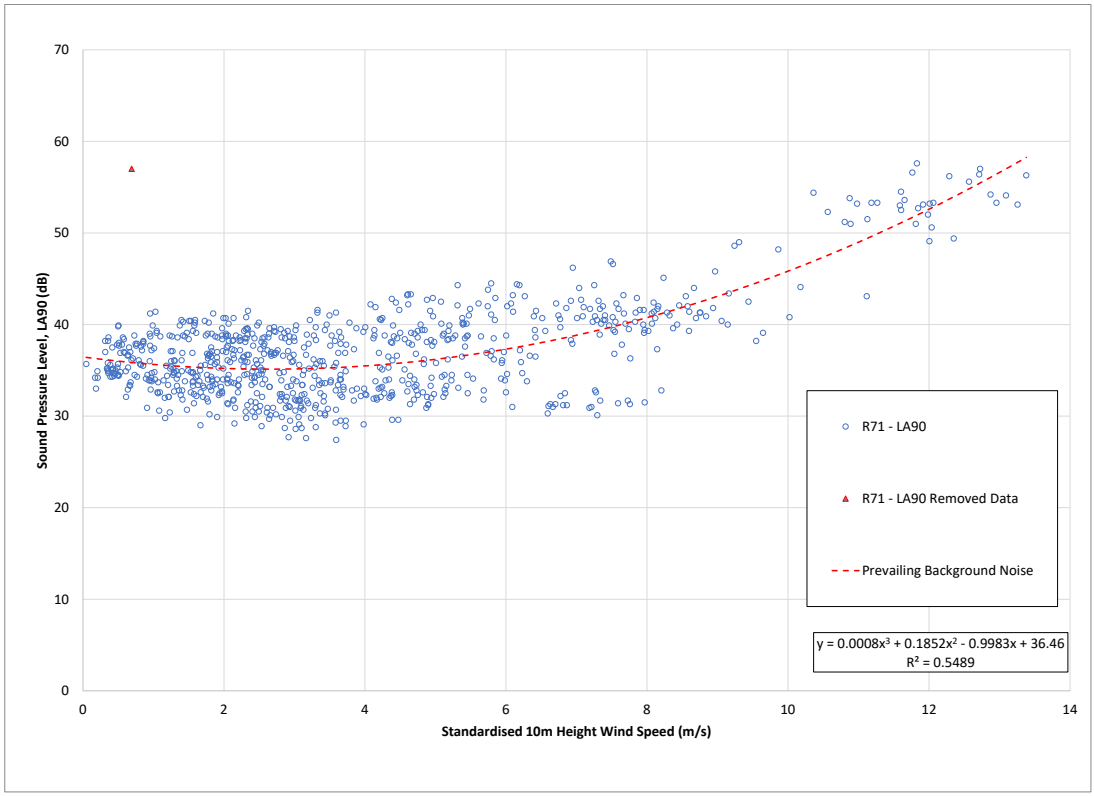


**Image A8.7: Prevailing Daytime Background ($L_{A90}$) Noise Levels at R71**

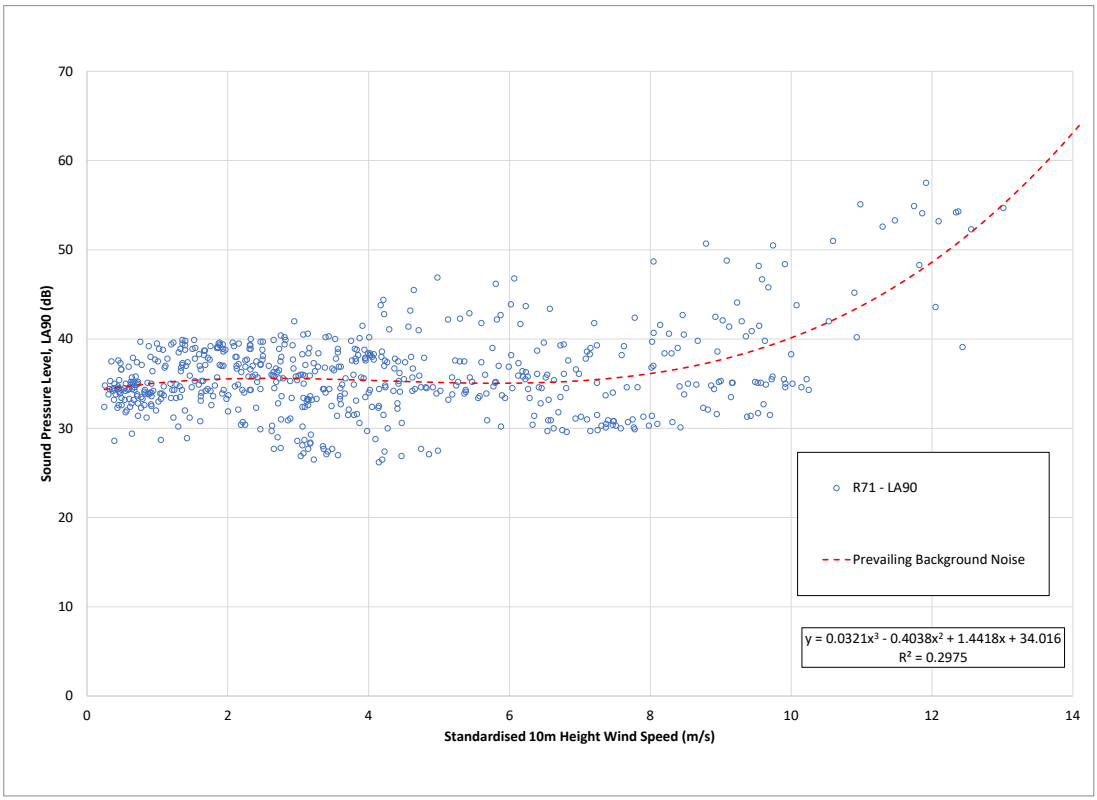


**Image A8.8: Prevailing Night-time Background ($L_{A90}$) Noise Levels at R71**

**Table 8.1.7: Prevailing Background Noise – Daytime Periods**

| Location | Prevailing Background Noise $L_{A90,10min}$ (dB) at Standardised 10 m Height Wind Speed (m/s) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| R6 | 30.2 | 30.2 | 31.0 | 32.4 | 34.2 | 36.1 | 37.8 | 39.1 | 39.8 | §39.8 | §39.8 | §39.8 | §39.8 |
| R25 | 29.3 | 29.7 | 30.8 | 32.5 | 34.7 | 37.0 | 39.5 | 42.0 | 44.3 | 46.3 | 47.8 | 48.7 | § 48.7 |
| R51 | 32.8 | 32.7 | 32.9 | 33.5 | 34.4 | 35.8 | 37.7 | 40.1 | 43.1 | 46.7 | 51.0 | 56.0 | § 56.0 |
| R71 | 35.2 | 35.2 | 35.5 | 36.2 | 37.3 | 38.8 | 40.7 | 43.1 | 45.8 | 49.0 | 52.5 | 56.6 | § 56.6 |

§ - noise level restricted to the highest derived point
* - noise level restricted to lowest derived point

**Table 8.1.8: Prevailing Background Noise – Night-time Periods**

| Location | Prevailing Background Noise $L_{A90,10min}$ (dB) at Standardised 10 m Height Wind Speed (m/s) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| R6 | 22.5 | 22.0 | 22.2 | 22.9 | 23.9 | 24.8 | 25.3 | §25.3 | §25.3 | §25.3 | §25.3 | §25.3 | §25.3 |
| R25 | 30.1 | 30.1 | 30.4 | 31.2 | 32.4 | 33.9 | 35.7 | 37.7 | 39.9 | 42.2 | 44.7 | 47.2 | 49.8 |
| R51 | 32.6 | 32.4 | 32.4 | 32.7 | 33.3 | 34.3 | 35.8 | 37.7 | 40.2 | 43.4 | 47.2 | §47.2 | §47.2 |
| R71 | 35.5 | 35.6 | 35.4 | 35.1 | 35.1 | 35.3 | 36.1 | 37.7 | 40.2 | 43.7 | 48.6 | §48.6 | §48.6 |

§ - noise level restricted to the highest derived point
* - noise level restricted to lowest derived point

# APPENDIX 8.1b

# EQUIPMENT CALIBRATION CERTIFICATES

NSAI
National Metrology Laboratory

# Certificate of Calibration

| | |
|---|---|
| Issued to | Fehily Timoney & Company<br>J5 Plaza<br>North Business Park<br>North Road<br>Dublin 11 |
| Attention of | John Mahon |

| | |
|---|---|
| Certificate Number | 194958 |
| Item Calibrated | Svantek SVAN 977 Sound Level Meter with ACO 7052E Microphone |
| Serial Number | 34173 (SLM) and 54691 (Microphone) |
| Client ID Number | #3 |
| Order Number | 6678 |
| Date Received | 20 Dec 2019 |
| NML Procedure Number | AP-NM-09 |
| Method | The above sound level meter was allowed to stabilise for a suitable period in laboratory conditions. It was then calibrated by carrying out the verification tests detailed in IEC 61672-3 (2006), *Periodic tests, specification for the verification of sound level meters.* This standard specifies a procedure for the periodic verification of conformance of a sound level meter or integrating-averaging meter to IEC 61672-1 (2003). |
| Calibration Standards | Norsonic 1504A Calibration System incorporating:<br>SR DS360 Signal Generator, No. 0735 [Cal Due Date: 31 Jan 2020]<br>Agilent 34401A Digital Multimeter, No. 0736 [Cal Due Date: 31 Jan 2020]<br>B&K 4134 Measuring Microphone, No. 0743 [Cal Due Date: 24 Apr 2021]<br>B&K 4228 Pistonphone, No. 0741 [Cal Due Date: 19 Jan 2020]<br>B&K 4226 Acoustical Calibrator, No. 0150 [Cal Due Date: 21 Jun 2020] |

| | | | |
|---|---|---|---|
| Calibrated by | David Fleming | Approved by | Paul Hetherington |
| Date of Calibration | 10 Jan 2020 | Date of Issue | 10 Jan 2020 |

CIPM MRA

This certificate is consistent with Calibration and Measurement Capabilities (CMC's) that are included in Appendix C of the Mutual Recognition Arrangement (MRA) drawn up by the International Committee for Weights and Measures. Under the MRA, all participating institutes recognize the validity of each other's calibration certificates and measurement reports for quantities, ranges and measurement uncertainties specified in Appendix C (for details see www.bipm.org)

NSAI
National Metrology Laboratory

# Certificate of Calibration

| | |
|---|---|
| Issued to | Fehily Timoney & Company<br>J5 Plaza<br>North Business Park<br>North Road<br>Dublin 11 |
| Attention of | John Mahon |

| | |
|---|---|
| Certificate Number | 194959 |
| Item Calibrated | Svantek SVAN 977 Sound Level Meter with ACO 7052E Microphone |
| Serial Number | 34876 (SLM) and 56429 (Microphone) |
| Client ID Number | #2 |
| Order Number | 6678 |
| Date Received | 20 Dec 2019 |
| NML Procedure Number | AP-NM-09 |
| Method | The above sound level meter was allowed to stabilise for a suitable period in laboratory conditions. It was then calibrated by carrying out the verification tests detailed in IEC 61672-3 (2006), *Periodic tests, specification for the verification of sound level meters*. This standard specifies a procedure for the periodic verification of conformance of a sound level meter or integrating-averaging meter to IEC 61672-1 (2003). |
| Calibration Standards | Norsonic 1504A Calibration System incorporating:<br>SR DS360 Signal Generator, No. 0735 [Cal Due Date: 31 Jan 2020]<br>Agilent 34401A Digital Multimeter, No. 0736 [Cal Due Date: 31 Jan 2020]<br>B&K 4134 Measuring Microphone, No. 0743 [Cal Due Date: 24 Apr 2021]<br>B&K 4228 Pistonphone, No. 0741 [Cal Due Date: 19 Jan 2020]<br>B&K 4226 Acoustical Calibrator, No. 0150 [Cal Due Date: 21 Jun 2020] |

| | | | |
|---|---|---|---|
| Calibrated by | David Fleming | Approved by | Paul Hetherington |
| Date of Calibration | 09 Jan 2020 | Date of Issue | 10 Jan 2020 |

CIPM MRA

This certificate is consistent with Calibration and Measurement Capabilities (CMC's) that are included in Appendix C of the Mutual Recognition Arrangement (MRA) drawn up by the International Committee for Weights and Measures. Under the MRA, all participating institutes recognize the validity of each other's calibration certificates and measurement reports for quantities, ranges and measurement uncertainties specified in Appendix C (for details see www.bipm.org)

# Calibration Certificate

***Certificate Number 2020009751***
***Customer:***
**Environmental Measurement**
**Unit 12 Tallaght Business Centre**
**Whitestown Business Park**
**Dublin, 24, Ireland**

| | | | | | |
|---|---|---|---|---|---|
| ***Model Number*** | LxT SE | ***Procedure Number*** | D0001.8378 | | |
| ***Serial Number*** | 0006241 | ***Technician*** | Ron Harris | | |
| ***Test Results*** | **Pass** | ***Calibration Date*** | 4 Sep 2020 | | |
| ***Initial Condition*** | As Manufactured | ***Calibration Due*** | | | |
| | | ***Temperature*** | 23.69 | °C | ± 0.25 °C |
| ***Description*** | Sound Expert LxT | ***Humidity*** | 50.5 | %RH | ± 2.0 %RH |
| | Class 1 Sound Level Meter | ***Static Pressure*** | 86.75 | kPa | ± 0.13 kPa |
| | Firmware Revision: 2.404 | | | | |

***Evaluation Method*** Tested electrically using Larson Davis PRMLxT1L S/N 069977 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 S1.25 (R2007) |
| IEC 61672:2013 Class 1 | ANSI S1.43 (R2007) Type 1 |
| IEC 61260:2001 Class 1 | ANSI S1.11 (R2009) Class 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 17025:2017. **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 9001:2015.

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, l770.01 Rev O Supporting Firmware Version 4.0.5, 2019-09-10

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

LARSON DAVIS - A PCB PIEZOTRONICS DIV.
1681 West 820 North
Provo, UT 84601, United States
716-684-0001

ACCREDITED Cert. #3823.01

LARSON DAVIS
A PCB PIEZOTRONICS DIV.



1.

# CERTIFICATE OF CALIBRATION


Issued by: **MTS Calibration Ltd.**
Laboratory address: 17 Elvington Close
Billingham TS23 3YS
Telephone: +44 (0)1642 876 410 England


Please note delivery address below

**Date of Issue:** 26 April 2019 **Certificate Number:** 33234

## Third-Octave Band Digital Filter

## Third-Octave Band Filter verification to BS EN 61260:1996

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

***Instrument Make:*** Larson Davis
***Instrument Model:*** LxT1
***Serial Number:*** 0004642

The centre frequency sequence of this filter set follows the exact base 10 midband frequency sequence of IEC 61260 and measurements have been made accordingly

***Associated Preamplifier:*** - ***Make :*** Larson Davis — ***Calibrated by:*** MTS
- ***Model :*** PRMLxT1L — ***Certificate Number:*** 33234
- ***Serial Number :*** 036048 — ***Date:*** 26 April 2019

***Associated Sound Level Meter*** - ***Make:*** Larson Davis — ***Calibrated by:*** MTS
- ***Model:*** LxT1 — ***Certificate Number:*** 33234
- ***Serial Number:*** 0004642 — ***Date:*** 26 April 2019

This is to certify that this instrument, whose calibration records are enclosed in this file, has been tested in accordance with MTS Calibration Ltd. Work Procedures. The instrument as configured above has been found to be in compliance with attenuation and frequency characteristics as specified by BS EN 61260: 1996 and the results are reported in the following pages and summarised below. The results obtained are only for limited tests and do not indicate conformance to the full requirements of the standard, and are only applicable to those filter bands tested. The measurements were carried out using equipment whose calibrations are traceable to UK National Standards. The management controls of MTS Calibration Ltd. are registered in the current issue of its Quality Manual, which are designed to be in conformity with BS EN ISO/IEC 17025: 2005. Test procedures and test results and details of the traceability of test equipment to National Standards are filed with MTS Calibration Ltd. and relevant extracts are available on request.

Because a digital filter will have the same amplitude characteristic relative to its centre frequency, only three filters were measured at each of the test frequencies specified by BS EN 61260:1996 for BASE-10 distribution. The measurements made were relative to the attenuation of the 1kHz filter at 1kHz input frequency and input level 1V. Because the measurements include a linearity contribution from the sound level meter, and could be variable with frequency, the assessment is valid only for this pairing. The sound level meter was set for "Linear" frequency response on the lowest range setting which did not give overload at any test frequency or test level. Its compliance with the standard was assessed by referring the measurements to the tolerances specified.

**Third-Octave Band Filter** — Compliance with BS EN 61260: 1996 Class 1

125 Hz complies
1000 Hz complies
8kHz complies

Uncertainties of measurements:
Within Passband (0.89 to 1.12 of centre frequency) dB: 0.42
Outside Passband dB: 1.48

Test Equipment:

| Equipment | Manufacturer | Model | Serial No. | Traceability Ref. | Cal. Due |
|---|---|---|---|---|---|
| Signal Generator (set 1) | HP | 33120A | US34007150 | TE 103 | Oct-19 |

Authorised signatory: RA SH

**Date of Receipt:** 17 April 2019
**Date of Calibration:** 26 April 2019
**Date of Certificate:** 26 April 2019

Tony Sherris — Page: 1 of: 4

# APPENDIX 8.1c

# NOISE SENSITIVE LOCATION DETAILS

**Table 8.3.1: Noise Sensitive Location Details**

| Receptor ID | Description | Easting | Northing |
|---|---|---|---|
| R1 | Residential | 621065 | 608272 |
| R2 | Residential | 623391 | 611537 |
| R3 | Residential | 621496 | 607637 |
| R4 | Residential | 621787 | 608432 |
| R5 | Residential | 621878 | 608395 |
| R6 | Residential | 623031 | 611483 |
| R7 | Derelict | 622884 | 611283 |
| R8 | Residential | 622974 | 611677 |
| R9 | Residential | 622999 | 611786 |
| R10 | Residential and Commercial | 623568 | 611446 |
| R11 | Residential | 623024 | 611985 |
| R12 | Residential | 623302 | 612263 |
| R13 | Residential | 625107 | 612625 |
| R14 | Residential | 625500 | 612144 |
| R15 | Residential | 625334 | 612295 |
| R16 | Residential | 622609 | 606911 |
| R17 | Residential | 624985 | 612644 |
| R18 | Residential and Commercial | 625354 | 612428 |
| R19 | Residential | 625886 | 612382 |
| R20 | Residential | 621793 | 611630 |
| R21 | Residential | 623003 | 611907 |
| R22 | Residential | 623341 | 606277 |
| R23 | Residential | 623433 | 606418 |
| R24 | Residential | 622979 | 611649 |
| R25 | Residential | 623946 | 607257 |
| R26 | Derelict | 622643 | 606939 |
| R27 | Residential | 623301 | 606455 |
| R28 | Residential | 621783 | 608562 |
| R29 | Residential | 625923 | 612368 |
| R30 | Commercial | 623308 | 606270 |
| R31 | Residential | 623329 | 606188 |
| R32 | Residential | 623400 | 606029 |
| R33 | Residential | 623381 | 606034 |
| R34 | Residential | 623292 | 606034 |
| R35 | Derelict | 622046 | 607526 |
| R36 | Residential | 622014 | 607615 |
| R37 | Derelict | 621722 | 607346 |
| R38 | Residential | 622604 | 606872 |
| R39 | Residential and Commercial | 622531 | 607125 |
| R40 | Residential and Commercial | 624121 | 607487 |
| R41 | Residential and Commercial | 624113 | 607386 |

| Receptor ID | Description | Easting | Northing |
|---|---|---|---|
| R42 | Residential and Commercial | 623807 | 607124 |
| R43 | Residential | 622828 | 607021 |
| R44 | Residential | 623477 | 606691 |
| R45 | Residential | 623374 | 606221 |
| R46 | Residential and Commercial | 623140 | 606114 |
| R47 | Residential | 621896 | 609618 |
| R48 | Residential and Commercial | 621081 | 608930 |
| R49 | Residential and Commercial | 621821 | 608397 |
| R50 | Residential and Commercial | 622087 | 609247 |
| R51 | Residential | 622164 | 608864 |
| R52 | Derelict | 621958 | 608937 |
| R53 | Residential and Commercial | 622112 | 608738 |
| R54 | Residential and Commercial | 622177 | 607400 |
| R55 | Residential | 621759 | 607447 |
| R56 | Residential and Commercial | 622660 | 606717 |
| R57 | Residential and Commercial | 622243 | 611756 |
| R58 | Residential and Commercial | 622259 | 611767 |
| R59 | Derelict | 623754 | 605714 |
| R60 | Residential and Commercial | 624236 | 606087 |
| R61 | Residential | 623767 | 605835 |
| R62 | Residential and Commercial | 623980 | 606203 |
| R63 | Residential | 622997 | 611559 |
| R64 | Residential and Commercial | 623595 | 611301 |
| R65 | Residential | 626233 | 612278 |
| R66 | Residential | 625348 | 612447 |
| R67 | Residential | 623399 | 611481 |
| R68 | Derelict | 623527 | 611371 |
| R69 | Residential | 623521 | 611522 |
| R70 | Residential | 626341 | 612341 |
| R71 | Residential and Commercial | 626022 | 612247 |
| R72 | Residential and Commercial | 625913 | 612352 |
| R73 | Residential | 625432 | 612254 |
| R74 | Residential | 625359 | 612412 |
| R75 | Residential and Commercial | 625098 | 612517 |
| R76 | Residential and Commercial | 624914 | 612878 |
| R77 | Residential | 625975 | 612459 |
| R78 | Residential and Commercial | 622631 | 611699 |
| R79 | Residential and Commercial | 622691 | 611714 |
| R80 | Residential | 626093 | 612357 |
| R81 | Residential | 623192 | 612366 |
| R87 | Residential | 619423 | 605342 |
| R98 | Residential | 619400 | 605980 |
| R99 | Residential | 619402 | 605955 |

| Receptor ID | Description | Easting | Northing |
|---|---|---|---|
| R100 | Residential | 619349 | 605836 |
| R101 | Residential | 619336 | 605835 |
| R102 | Residential | 619323 | 605834 |
| R103 | Residential | 619313 | 605832 |
| R104 | Residential | 619360 | 605799 |
| R105 | Residential | 619363 | 605789 |
| R114 | Residential and Commercial | 618969 | 606439 |
| R118 | Residential | 619305 | 607293 |
| R121 | Residential | 619315 | 605865 |
| R122 | Residential | 619319 | 605877 |
| R123 | Residential | 619324 | 605890 |
| R124 | Residential | 619328 | 605903 |
| R145 | Residential | 619078 | 606497 |
| R146 | Residential | 619331 | 605916 |
| R147 | Residential | 619332 | 605925 |
| R148 | Residential | 619481 | 605553 |
| R152 | Residential | 617683 | 608426 |
| R162 | Residential | 619134 | 606463 |
| R173 | Residential | 619627 | 604526 |
| R252 | Residential | 619368 | 606046 |
| R253 | Residential | 619408 | 605858 |
| R254 | Residential | 619419 | 605825 |
| R255 | Residential | 619385 | 606019 |
| R256 | Residential and Commercial | 619773 | 606040 |
| R257 | Residential | 619368 | 605775 |
| R258 | Residential | 619375 | 605750 |
| R259 | Residential | 619382 | 605739 |
| R260 | Residential | 619384 | 605728 |
| R261 | Residential | 619395 | 605702 |
| R262 | Residential | 619397 | 605689 |
| R263 | Residential and Commercial | 619441 | 605677 |
| R264 | Residential and Commercial | 619441 | 605677 |
| R265 | Residential | 619482 | 605610 |
| R266 | Residential | 619439 | 605529 |
| R267 | Residential | 619508 | 605547 |
| R268 | Residential | 619415 | 605278 |
| R269 | Residential | 619629 | 605159 |
| R270 | Residential | 619490 | 605181 |
| R276 | Residential | 619469 | 605050 |
| R277 | Residential and Commercial | 619630 | 606736 |
| R278 | Residential | 619082 | 606583 |
| R279 | Residential and Commercial | 619060 | 606615 |
| R280 | Residential | 619050 | 606700 |

| Receptor ID | Description | Easting | Northing |
|---|---|---|---|
| R282 | Residential | 619371 | 607284 |
| R283 | Residential | 619397 | 605890 |
| R284 | Residential | 619370 | 605763 |
| R285 | Residential | 619387 | 605717 |
| R286 | Residential and Commercial | 619469 | 605568 |
| R287 | Residential and Commercial | 619768 | 605800 |
| R288 | Residential | 619320 | 606367 |
| R289 | Residential | 619297 | 606229 |
| R290 | Residential | 619297 | 606221 |
| R291 | Residential | 619276 | 606308 |
| R292 | Residential and Commercial | 619185 | 606325 |
| R293 | Residential | 619139 | 606375 |
| R294 | Residential | 619156 | 606508 |
| R296 | Residential | 619513 | 604911 |
| R298 | Residential | 619375 | 604957 |
| R323 | Residential | 619539 | 604622 |
| R325 | Residential | 619431 | 605366 |
| R332 | Residential | 619128 | 606602 |

# APPENDIX 8.1.d

# VALLEY CORRECTION

**Table 8.4.1: Valley Correction Coumnagappul Windfarm**

| Receptor ID | Description | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | T1 | T2 | T4 | T5 | T6 | T7 | T8 | T10 | T11 | T12 |
| R1 | Residential | 3 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| R2 | Residential | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R3 | Residential | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R4 | Residential | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R5 | Residential | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R6 | Residential | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R7 | Derelict | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R8 | Residential | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R9 | Residential | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R10 | Residential and Commercial | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R11 | Residential | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R12 | Residential | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R13 | Residential | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R14 | Residential | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R15 | Residential | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R16 | Residential | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R17 | Residential | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R18 | Residential and Commercial | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R19 | Residential | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R20 | Residential | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R21 | Residential | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R22 | Residential | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 |
| R23 | Residential | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 |
| R24 | Residential | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R25 | Residential | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0 |
| R26 | Derelict | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| R27 | Residential | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 |
| R28 | Residential | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R29 | Residential | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R30 | Commercial | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 |
| R31 | Residential | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 |
| R32 | Residential | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 |
| R33 | Residential | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 |
| R34 | Residential | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 |

| Receptor ID | Description | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | T1 | T2 | T4 | T5 | T6 | T7 | T8 | T10 | T11 | T12 |
| R35 | Derelict | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R36 | Residential | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R37 | Derelict | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R38 | Residential | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R39 | Residential and Commercial | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R40 | Residential and Commercial | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R41 | Residential and Commercial | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R42 | Residential and Commercial | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 3 | 0 |
| R43 | Residential | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0 |
| R44 | Residential | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 |
| R45 | Residential | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 |
| R46 | Residential and Commercial | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 |
| R47 | Residential | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R48 | Residential and Commercial | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R49 | Residential and Commercial | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R50 | Residential and Commercial | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R51 | Residential | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R52 | Derelict | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R53 | Residential and Commercial | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R54 | Residential and Commercial | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R55 | Residential | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R56 | Residential and Commercial | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| R57 | Residential and Commercial | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R58 | Residential and Commercial | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R59 | Derelict | 3 | 3 | 0 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| R60 | Residential and Commercial | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 0 | 3 |

| Receptor ID | Description | T1 | T2 | T4 | T5 | T6 | T7 | T8 | T10 | T11 | T12 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| R61 | Residential | 0 | 3 | 0 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| R62 | Residential and Commercial | 0 | 3 | 0 | 3 | 3 | 3 | 0 | 3 | 0 | 0 |
| R63 | Residential | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R64 | Residential and Commercial | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R65 | Residential | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R66 | Residential | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R67 | Residential | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R68 | Derelict | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R69 | Residential | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R70 | Residential | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R71 | Residential and Commercial | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R72 | Residential and Commercial | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R73 | Residential | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R74 | Residential | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R75 | Residential and Commercial | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R76 | Residential and Commercial | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R77 | Residential | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R78 | Residential and Commercial | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R79 | Residential and Commercial | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R80 | Residential | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R81 | Residential | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**Table 8.4.1: Valley Correction Dyrick Hill and Tierney Windfarm**

| Receptor ID | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | T1 | T2 | T4 | T5 | T6 | T7 | T8 | T10 | T11 | T12 | T13 | Tierny 1 |
| R82_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R83_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| R87_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R88_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 3 | 0 |
| R89_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| R94_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R95_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R96_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R97_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 3 | 3 | 3 |
| R98_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R99_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R100_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R101_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R102_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R103_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R104_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R105_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R106_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0 |
| R107_A | 0 | 3 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 0 |
| R108_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 3 | 3 |
| R109_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 3 |
| R110_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 3 |
| R111_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| R112_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| R113_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R114_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 3 | 3 |
| R116_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| R117_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| R118_A | 0 | 0 | 3 | 3 | 3 | 3 | 3 | 0 | 3 | 0 | 0 | 0 |
| R119_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0 |
| R120_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0 |
| R121_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R122_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R123_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |

| Receptor ID | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | T1 | T2 | T4 | T5 | T6 | T7 | T8 | T10 | T11 | T12 | T13 | Tierny 1 |
| R124_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R125_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R126_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R127_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| R128_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| R129_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R130_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R131_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 3 |
| R132_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 3 | 3 | 3 |
| R133_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 3 | 3 | 3 |
| R134_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 3 | 3 |
| R135_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R136_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R137_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 3 |
| R138_A | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 0 |
| R139_A | 3 | 3 | 3 | 3 | 3 | 3 | 0 | 3 | 3 | 0 | 0 | 0 |
| R142_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| R145_A | 0 | 0 | 0 | 3 | 0 | 3 | 3 | 0 | 3 | 3 | 3 | 3 |
| R146_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R147_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R148_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R149_A | 0 | 0 | 0 | 3 | 3 | 3 | 3 | 0 | 3 | 3 | 3 | 3 |
| R150_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 3 | 3 |
| R151_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 3 | 0 |
| R152_A | 0 | 0 | 0 | 3 | 3 | 3 | 3 | 0 | 3 | 3 | 3 | 3 |
| R153_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0 |
| R157_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 3 | 3 |
| R158_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 3 |
| R159_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| R160_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 3 |
| R161_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 3 |
| R162_A | 0 | 0 | 0 | 3 | 0 | 3 | 3 | 0 | 3 | 3 | 3 | 3 |
| R163_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R164_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| R165_A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Receptor ID | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | T1 | T2 | T4 | T5 | T6 | T7 | T8 | T10 | T11 | T12 | T13 | Tierny 1 |
| R166_A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R167_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0 |
| R173_A | 3 | 3 | 3 | 3 | 3 | 3 | 0 | 0 | 3 | 0 | 0 | 0 |
| R174_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R175_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| R176_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| R177_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| R178_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R179_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 3 |
| R180_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 3 |
| R181_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| R182_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R183_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| R184_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 3 |
| R185_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 3 |
| R186_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 3 |
| R187_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 3 |
| R201_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R202_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R203_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R204_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R205_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R206_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R207_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R208_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R209_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R210_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 3 | 3 |
| R211_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 3 | 3 | 3 |
| R212_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 3 | 3 | 3 |
| R213_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 3 | 3 |
| R214_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 3 | 3 |
| R215_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 3 |
| R216_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 3 |
| R217_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 3 |
| R222_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 3 | 0 |

| Receptor ID | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | T1 | T2 | T4 | T5 | T6 | T7 | T8 | T10 | T11 | T12 | T13 | Tierny 1 |
| R223_A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R224_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0 |
| R225_A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R226_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| R227_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R228_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 3 |
| R229_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R230_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R231_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R232_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 3 | 3 | 3 |
| R233_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 3 | 3 |
| R234_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 3 |
| R235_A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R236_A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R237_A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R238_A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R239_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| R240_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| R241_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R242_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R243_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 3 | 3 |
| R244_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 3 | 3 |
| R245_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R246_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R247_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R248_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| R249_A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R250_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R251_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 3 |
| R252_A | 0 | 0 | 0 | 3 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R253_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R254_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R255_A | 0 | 0 | 0 | 3 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R256_A | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 0 |
| R257_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |

| Receptor ID | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | T1 | T2 | T4 | T5 | T6 | T7 | T8 | T10 | T11 | T12 | T13 | Tierny 1 |
| R258_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R259_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R260_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R261_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R262_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R263_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R264_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R265_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R266_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R267_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R268_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R269_A | 0 | 3 | 3 | 3 | 3 | 3 | 3 | 0 | 3 | 0 | 0 | 0 |
| R270_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R271_A | 3 | 3 | 3 | 3 | 3 | 3 | 0 | 3 | 3 | 0 | 0 | 0 |
| R272_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0 |
| R273_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0 |
| R274_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 3 | 0 |
| R275_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 3 | 0 |
| R276_A | 0 | 0 | 0 | 3 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R277_A | 0 | 0 | 3 | 3 | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 0 |
| R278_A | 0 | 0 | 0 | 3 | 0 | 3 | 3 | 0 | 3 | 3 | 3 | 3 |
| R279_A | 0 | 0 | 0 | 3 | 0 | 3 | 3 | 0 | 3 | 3 | 3 | 3 |
| R280_A | 0 | 0 | 0 | 3 | 0 | 3 | 3 | 0 | 3 | 3 | 3 | 3 |
| R281_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 3 | 3 |
| R282_A | 0 | 0 | 3 | 3 | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 0 |
| R283_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R284_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R285_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R286_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R287_A | 0 | 3 | 3 | 3 | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 0 |
| R288_A | 0 | 0 | 0 | 3 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R289_A | 0 | 0 | 0 | 3 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R290_A | 0 | 0 | 0 | 3 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R291_A | 0 | 0 | 0 | 3 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R292_A | 0 | 0 | 0 | 3 | 0 | 3 | 3 | 0 | 3 | 3 | 3 | 3 |

| Receptor ID | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | T1 | T2 | T4 | T5 | T6 | T7 | T8 | T10 | T11 | T12 | T13 | Tierny 1 |
| R293_A | 0 | 0 | 0 | 3 | 0 | 3 | 3 | 0 | 3 | 3 | 3 | 3 |
| R294_A | 0 | 0 | 0 | 3 | 0 | 3 | 3 | 0 | 3 | 3 | 3 | 3 |
| R295_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 3 | 3 |
| R296_A | 3 | 3 | 3 | 3 | 0 | 3 | 3 | 0 | 3 | 0 | 0 | 0 |
| R297_A | 3 | 3 | 3 | 3 | 3 | 3 | 0 | 0 | 3 | 3 | 0 | 0 |
| R298_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R299_A | 0 | 0 | 3 | 3 | 3 | 3 | 3 | 0 | 3 | 3 | 3 | 3 |
| R300_A | 0 | 0 | 0 | 3 | 0 | 3 | 3 | 0 | 3 | 3 | 3 | 3 |
| R301_A | 0 | 0 | 0 | 3 | 0 | 3 | 3 | 0 | 3 | 3 | 3 | 3 |
| R302_A | 0 | 0 | 0 | 3 | 0 | 3 | 3 | 0 | 3 | 3 | 3 | 3 |
| R303_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 3 | 3 | 3 |
| R304_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R305_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R306_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R307_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R308_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R309_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R310_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 3 | 3 |
| R311_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R312_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0 |
| R313_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0 |
| R314_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0 |
| R315_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R316_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R317_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R318_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 3 |
| R319_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R320_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R321_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R322_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| R323_A | 3 | 3 | 3 | 3 | 3 | 3 | 0 | 0 | 3 | 0 | 0 | 0 |
| R324_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 3 | 3 |
| R325_A | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 |
| R327_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R328_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |

| Receptor ID | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | T1 | T2 | T4 | T5 | T6 | T7 | T8 | T10 | T11 | T12 | T13 | Tierny 1 |
| R329_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 3 |
| R330_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R331_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R332_A | 0 | 0 | 0 | 3 | 0 | 3 | 3 | 0 | 3 | 3 | 3 | 3 |
| R333_A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 |
| R334_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| R335_A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0 |

# APPENDIX 8.1e

# SOUND POWER LEVEL DATA FOR WIND TURBINES

**Table 8.5.1: Wind Turbine (Vestas 162 6.0MW) - Sound Power Data (10 Hz to 10 kHz) Corresponding to Wind Speeds Referenced to Hub Height**

| Wind Speed (m/s) | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 63 | 74.2 | 75.4 | 76.9 | 81.0 | 84.6 | 85.6 | 85.5 | 85.0 | 84.4 | 83.7 | 83.0 | 82.2 | 81.2 |
| 125 | 81.9 | 82.8 | 84.5 | 88.6 | 92.1 | 93.1 | 93.0 | 92.6 | 92.1 | 91.7 | 91.1 | 90.6 | 90.0 |
| 250.0 | 86.8 | 87.5 | 89.2 | 93.2 | 96.8 | 97.7 | 97.5 | 97.3 | 97.0 | 96.8 | 96.5 | 96.1 | 95.8 |
| 500.0 | 88.9 | 89.3 | 90.9 | 94.9 | 98.5 | 99.4 | 99.4 | 99.3 | 99.2 | 99.2 | 99.1 | 99.0 | 98.9 |
| 1000.0 | 88.2 | 88.2 | 89.7 | 93.8 | 97.3 | 98.3 | 98.4 | 98.5 | 98.6 | 98.8 | 98.9 | 99.1 | 99.2 |
| 2000.0 | 84.6 | 84.2 | 85.6 | 89.6 | 93.2 | 94.2 | 94.5 | 94.9 | 95.3 | 95.5 | 95.9 | 96.2 | 96.6 |
| 4000.0 | 78.3 | 77.4 | 78.5 | 82.6 | 86.3 | 87.3 | 87.8 | 88.5 | 89.1 | 89.7 | 90.2 | 90.7 | 91.3 |
| 8000.0 | 69.1 | 67.7 | 68.5 | 72.6 | 76.4 | 77.5 | 78.3 | 79.3 | 80.1 | 80.8 | 81.6 | 82.3 | 83.1 |
| LwA | 93.9 | 94.2 | 95.8 | 99.8 | 103.4 | 104.3 | 104.3 | 104.3 | 104.3 | 104.3 | 104.3 | 104.3 | 104.3 |

**Table 8.5.2: Wind Turbine (Vestas 162 6.0MW) – Typical 1/1 octave band spectrum for 63 Hz to 8 kHz.**

| 1/1 oct. band, center freq. | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|---|---|---|---|---|---|---|---|---|
| 2 m/s | 74.2 | 81.9 | 86.8 | 88.9 | 88.2 | 84.6 | 78.3 | 69.1 |
| 3 m/s | 75.4 | 82.8 | 87.5 | 89.3 | 88.2 | 84.2 | 77.4 | 67.7 |
| 4 m/s | 76.9 | 84.5 | 89.2 | 90.9 | 89.7 | 85.6 | 78.5 | 68.5 |
| 5 m/s | 81.0 | 88.6 | 93.2 | 94.9 | 93.8 | 89.6 | 82.6 | 72.6 |
| 6 m/s | 84.6 | 92.1 | 96.8 | 98.5 | 97.3 | 93.2 | 86.3 | 76.4 |
| 7 m/s | 85.6 | 93.1 | 97.7 | 99.4 | 98.3 | 94.2 | 87.3 | 77.5 |
| 8 m/s | 85.5 | 93.0 | 97.5 | 99.4 | 98.4 | 94.5 | 87.8 | 78.3 |
| 9 m/s | 85.0 | 92.6 | 97.3 | 99.3 | 98.5 | 94.9 | 88.5 | 79.3 |
| 10 m/s | 84.4 | 92.1 | 97.0 | 99.2 | 98.6 | 95.3 | 89.1 | 80.1 |
| 11 m/s | 83.7 | 91.7 | 96.8 | 99.2 | 98.8 | 95.5 | 89.7 | 80.8 |
| 12 m/s | 83.0 | 91.1 | 96.5 | 99.1 | 98.9 | 95.9 | 90.2 | 81.6 |
| 13 m/s | 82.2 | 90.6 | 96.1 | 99.0 | 99.1 | 96.2 | 90.7 | 82.3 |
| 14 m/s | 81.2 | 90.0 | 95.8 | 98.9 | 99.2 | 96.6 | 91.3 | 83.1 |

**Table 8.5.3: Wind Turbine (Bonus 150 4kW) - Sound Power Data (10 Hz to 10 kHz) Corresponding to Wind Speeds Referenced to Hub Height**

| Wind Speed (m/s) | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|
| **Sound Power level** | 92.1 | 93.1 | 94.2 | 95.5 | 96.7 | 97.6 | 98.3 | 98.7 |

**Table 8.5.4: Wind Turbine (Bonus 150 4kW) – Typical 1/1 octave band spectrum for 63 Hz to 8 kHz.**

| 1/1 oct. band, center freq. | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | LwA |
|---|---|---|---|---|---|---|---|---|---|
| 11 m/s | 83.1 | 88.1 | 89.1 | 93.1 | 93.1 | 90.1 | 87.1 | 80.1 | 98.7 |

# APPENDIX 8.1f

# PREDICTED NOISE LEVELS FROM WIND FARM AT NEARBY NOISE SENSITIVE LOCATIONS

**Table 8.4.1: Coumnagappul Windfarm noise at residential locations**

| Receptor ID | Description | Windspeed m/s | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| R1 | Residential | 17.9 | 18.6 | 20.2 | 24.2 | 27.8 | 28.7 | 28.7 | 28.4 | 28.2 | 28.0 | 27.8 | 27.5 | 27.3 |
| R2 | Residential | 22.0 | 22.5 | 24.2 | 28.2 | 31.8 | 32.6 | 32.6 | 32.5 | 32.3 | 32.2 | 32.0 | 31.8 | 31.6 |
| R3 | Residential | 18.5 | 19.0 | 20.7 | 24.7 | 28.3 | 29.1 | 29.1 | 28.9 | 28.7 | 28.6 | 28.3 | 28.1 | 27.9 |
| R4 | Residential | 20.9 | 21.5 | 23.1 | 27.1 | 30.7 | 31.6 | 31.6 | 31.4 | 31.2 | 31.1 | 30.8 | 30.6 | 30.4 |
| R5 | Residential | 21.3 | 21.8 | 23.4 | 27.5 | 31.0 | 31.9 | 31.9 | 31.7 | 31.6 | 31.4 | 31.2 | 31.0 | 30.8 |
| R6 | Residential | 21.2 | 21.7 | 23.4 | 27.4 | 31.0 | 31.8 | 31.8 | 31.7 | 31.5 | 31.4 | 31.2 | 31.0 | 30.8 |
| R7 | Derelict | 22.9 | 23.4 | 25.0 | 29.0 | 32.6 | 33.5 | 33.5 | 33.3 | 33.1 | 33.0 | 32.8 | 32.7 | 32.5 |
| R8 | Residential | 21.2 | 21.8 | 23.4 | 27.5 | 31.0 | 31.9 | 31.9 | 31.7 | 31.5 | 31.4 | 31.2 | 31.0 | 30.8 |
| R9 | Residential | 20.8 | 21.4 | 23.0 | 27.0 | 30.6 | 31.4 | 31.4 | 31.3 | 31.1 | 30.9 | 30.8 | 30.6 | 30.3 |
| R10 | Residential and Commercial | 23.0 | 23.5 | 25.1 | 29.1 | 32.7 | 33.6 | 33.6 | 33.4 | 33.3 | 33.2 | 33.0 | 32.8 | 32.7 |
| R11 | Residential | 19.9 | 20.5 | 22.1 | 26.2 | 29.8 | 30.6 | 30.6 | 30.4 | 30.2 | 30.1 | 29.9 | 29.7 | 29.4 |
| R12 | Residential | 18.3 | 18.8 | 20.5 | 24.5 | 28.1 | 28.9 | 28.9 | 28.8 | 28.5 | 28.4 | 28.2 | 28.0 | 27.7 |
| R13 | Residential | 17.0 | 17.6 | 19.3 | 23.3 | 26.9 | 27.7 | 27.7 | 27.5 | 27.3 | 27.1 | 26.9 | 26.7 | 26.4 |
| R14 | Residential | 18.4 | 19.0 | 20.6 | 24.7 | 28.2 | 29.1 | 29.1 | 28.9 | 28.7 | 28.6 | 28.3 | 28.1 | 27.9 |
| R15 | Residential | 18.1 | 18.7 | 20.3 | 24.3 | 27.9 | 28.8 | 28.8 | 28.6 | 28.3 | 28.2 | 28.0 | 27.7 | 27.5 |
| R16 | Residential | 20.1 | 20.7 | 22.3 | 26.3 | 29.9 | 30.8 | 30.8 | 30.6 | 30.4 | 30.3 | 30.1 | 29.9 | 29.7 |
| R17 | Residential | 17.1 | 17.7 | 19.3 | 23.3 | 26.9 | 27.8 | 27.8 | 27.6 | 27.3 | 27.2 | 26.9 | 26.7 | 26.5 |
| R18 | Residential and Commercial | 17.5 | 18.1 | 19.7 | 23.8 | 27.3 | 28.2 | 28.2 | 28.0 | 27.8 | 27.6 | 27.4 | 27.2 | 26.9 |
| R19 | Residential | 16.8 | 17.4 | 19.0 | 23.0 | 26.6 | 27.5 | 27.5 | 27.3 | 27.0 | 26.9 | 26.6 | 26.4 | 26.2 |
| R20 | Residential | 18.6 | 19.2 | 20.8 | 24.9 | 28.4 | 29.3 | 29.3 | 29.1 | 28.8 | 28.7 | 28.4 | 28.2 | 28.0 |
| R21 | Residential | 20.3 | 20.8 | 22.4 | 26.5 | 30.0 | 30.9 | 30.9 | 30.8 | 30.5 | 30.4 | 30.2 | 30.0 | 29.8 |
| R22 | Residential | 21.1 | 21.7 | 23.3 | 27.4 | 30.9 | 31.8 | 31.8 | 31.6 | 31.4 | 31.3 | 31.1 | 30.9 | 30.7 |
| R23 | Residential | 22.0 | 22.5 | 24.2 | 28.2 | 31.8 | 32.6 | 32.6 | 32.5 | 32.3 | 32.1 | 32.0 | 31.7 | 31.5 |
| R24 | Residential | 21.4 | 21.9 | 23.5 | 27.6 | 31.2 | 32.0 | 32.0 | 31.8 | 31.7 | 31.6 | 31.4 | 31.2 | 31.0 |
| R25 | Residential | 27.3 | 27.8 | 29.4 | 33.4 | 37.0 | 37.9 | 37.9 | 37.7 | 37.6 | 37.5 | 37.4 | 37.2 | 37.1 |
| R26 | Derelict | 20.7 | 21.2 | 22.9 | 26.9 | 30.5 | 31.3 | 31.3 | 31.2 | 31.0 | 30.8 | 30.7 | 30.4 | 30.3 |
| R27 | Residential | 21.8 | 22.4 | 24.0 | 28.0 | 31.6 | 32.5 | 32.5 | 32.3 | 32.1 | 32.0 | 31.7 | 31.6 | 31.4 |
| R28 | Residential | 21.0 | 21.6 | 23.2 | 27.3 | 30.8 | 31.7 | 31.7 | 31.5 | 31.3 | 31.2 | 31.0 | 30.8 | 30.6 |
| R29 | Residential | 16.8 | 17.4 | 19.0 | 23.0 | 26.6 | 27.4 | 27.4 | 27.3 | 27.0 | 26.8 | 26.6 | 26.4 | 26.1 |
| R30 | Commercial | 21.0 | 21.6 | 23.2 | 27.3 | 30.9 | 31.7 | 31.7 | 31.5 | 31.3 | 31.2 | 30.9 | 30.7 | 30.5 |
| R31 | Residential | 20.7 | 21.3 | 23.0 | 27.0 | 30.6 | 31.4 | 31.4 | 31.2 | 31.0 | 30.9 | 30.7 | 30.5 | 30.3 |
| R32 | Residential | 20.2 | 20.8 | 22.5 | 26.5 | 30.1 | 30.9 | 30.9 | 30.7 | 30.5 | 30.4 | 30.2 | 29.9 | 29.7 |
| R33 | Residential | 20.2 | 20.8 | 22.5 | 26.5 | 30.1 | 30.9 | 30.9 | 30.7 | 30.5 | 30.4 | 30.2 | 29.9 | 29.7 |
| R34 | Residential | 20.0 | 20.6 | 22.3 | 26.3 | 29.9 | 30.7 | 30.7 | 30.5 | 30.3 | 30.2 | 30.0 | 29.7 | 29.5 |

| Receptor ID | Description | Windspeed m/s | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| R35 | Derelict | 19.9 | 20.5 | 22.1 | 26.1 | 29.7 | 30.6 | 30.6 | 30.4 | 30.2 | 30.1 | 29.9 | 29.6 | 29.4 |
| R36 | Residential | 20.0 | 20.6 | 22.2 | 26.2 | 29.8 | 30.7 | 30.7 | 30.5 | 30.2 | 30.1 | 29.9 | 29.7 | 29.5 |
| R37 | Derelict | 18.3 | 18.9 | 20.5 | 24.5 | 28.1 | 29.0 | 29.0 | 28.8 | 28.5 | 28.4 | 28.1 | 27.9 | 27.7 |
| R38 | Residential | 20.0 | 20.5 | 22.2 | 26.2 | 29.8 | 30.6 | 30.6 | 30.5 | 30.2 | 30.1 | 29.9 | 29.7 | 29.5 |
| R39 | Residential and Commercial | 20.6 | 21.1 | 22.8 | 26.8 | 30.4 | 31.2 | 31.2 | 31.1 | 30.9 | 30.7 | 30.6 | 30.4 | 30.2 |
| R40 | Residential and Commercial | 29.0 | 29.5 | 31.1 | 35.1 | 38.7 | 39.6 | 39.6 | 39.5 | 39.3 | 39.3 | 39.2 | 39.1 | 39.0 |
| R41 | Residential and Commercial | 28.2 | 28.6 | 30.2 | 34.2 | 37.8 | 38.7 | 38.7 | 38.6 | 38.5 | 38.4 | 38.3 | 38.2 | 38.0 |
| R42 | Residential and Commercial | 26.7 | 27.2 | 28.8 | 32.8 | 36.4 | 37.3 | 37.3 | 37.2 | 37.0 | 36.9 | 36.7 | 36.6 | 36.5 |
| R43 | Residential | 21.9 | 22.4 | 24.0 | 28.1 | 31.6 | 32.5 | 32.5 | 32.3 | 32.1 | 32.0 | 31.8 | 31.7 | 31.5 |
| R44 | Residential | 23.4 | 23.9 | 25.6 | 29.6 | 33.2 | 34.0 | 34.0 | 33.8 | 33.7 | 33.5 | 33.3 | 33.2 | 33.0 |
| R45 | Residential | 21.0 | 21.5 | 23.2 | 27.2 | 30.8 | 31.6 | 31.6 | 31.5 | 31.2 | 31.1 | 30.9 | 30.7 | 30.5 |
| R46 | Residential and Commercial | 20.0 | 20.6 | 22.2 | 26.2 | 29.8 | 30.7 | 30.7 | 30.5 | 30.2 | 30.1 | 29.9 | 29.7 | 29.5 |
| R47 | Residential | 22.2 | 22.7 | 24.4 | 28.4 | 32.0 | 32.8 | 32.8 | 32.7 | 32.5 | 32.4 | 32.2 | 32.0 | 31.8 |
| R48 | Residential and Commercial | 18.3 | 18.9 | 20.6 | 24.6 | 28.2 | 29.0 | 29.0 | 28.8 | 28.6 | 28.4 | 28.2 | 27.9 | 27.7 |
| R49 | Residential and Commercial | 21.0 | 21.6 | 23.2 | 27.2 | 30.8 | 31.7 | 31.7 | 31.5 | 31.3 | 31.2 | 31.0 | 30.8 | 30.6 |
| R50 | Residential and Commercial | 23.2 | 23.8 | 25.4 | 29.4 | 33.0 | 33.9 | 33.9 | 33.7 | 33.5 | 33.4 | 33.2 | 33.0 | 32.8 |
| R51 | Residential | 22.6 | 23.1 | 24.8 | 28.8 | 32.4 | 33.2 | 33.2 | 33.1 | 32.8 | 32.7 | 32.6 | 32.4 | 32.2 |
| R52 | Derelict | 22.3 | 22.9 | 24.5 | 28.5 | 32.1 | 33.0 | 33.0 | 32.8 | 32.6 | 32.5 | 32.3 | 32.1 | 31.9 |
| R53 | Residential and Commercial | 22.2 | 22.7 | 24.4 | 28.4 | 32.0 | 32.8 | 32.8 | 32.7 | 32.5 | 32.4 | 32.2 | 32.0 | 31.8 |
| R54 | Residential and Commercial | 19.9 | 20.5 | 22.1 | 26.1 | 29.7 | 30.6 | 30.6 | 30.4 | 30.2 | 30.1 | 29.9 | 29.7 | 29.5 |
| R55 | Residential | 18.6 | 19.2 | 20.8 | 24.9 | 28.4 | 29.3 | 29.3 | 29.1 | 28.9 | 28.7 | 28.5 | 28.2 | 28.1 |
| R56 | Residential and Commercial | 19.9 | 20.5 | 22.2 | 26.2 | 29.8 | 30.6 | 30.6 | 30.4 | 30.2 | 30.1 | 29.9 | 29.7 | 29.5 |
| R57 | Residential and Commercial | 18.6 | 19.3 | 20.9 | 24.9 | 28.5 | 29.4 | 29.4 | 29.2 | 28.9 | 28.8 | 28.6 | 28.3 | 28.1 |
| R58 | Residential and Commercial | 18.7 | 19.3 | 20.9 | 25.0 | 28.5 | 29.4 | 29.4 | 29.2 | 28.9 | 28.8 | 28.6 | 28.4 | 28.1 |
| R59 | Derelict | 20.8 | 21.3 | 23.0 | 27.0 | 30.6 | 31.4 | 31.4 | 31.3 | 31.0 | 30.9 | 30.7 | 30.4 | 30.2 |
| R60 | Residential and Commercial | 22.6 | 23.2 | 24.8 | 28.8 | 32.4 | 33.3 | 33.3 | 33.1 | 32.9 | 32.8 | 32.6 | 32.3 | 32.2 |

| Receptor ID | Description | Windspeed m/s | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| R61 | Residential | 21.2 | 21.8 | 23.4 | 27.5 | 31.0 | 31.9 | 31.9 | 31.7 | 31.4 | 31.3 | 31.1 | 30.9 | 30.7 |
| R62 | Residential and Commercial | 21.8 | 22.4 | 24.0 | 28.0 | 31.6 | 32.5 | 32.5 | 32.3 | 32.1 | 32.0 | 31.8 | 31.6 | 31.4 |
| R63 | Residential | 20.8 | 21.3 | 22.9 | 27.0 | 30.5 | 31.4 | 31.4 | 31.2 | 31.0 | 30.9 | 30.7 | 30.5 | 30.3 |
| R64 | Residential and Commercial | 24.0 | 24.5 | 26.1 | 30.1 | 33.7 | 34.6 | 34.6 | 34.5 | 34.3 | 34.2 | 34.0 | 33.9 | 33.7 |
| R65 | Residential | 17.3 | 17.9 | 19.5 | 23.5 | 27.1 | 28.0 | 28.0 | 27.8 | 27.5 | 27.4 | 27.1 | 26.9 | 26.6 |
| R66 | Residential | 17.5 | 18.0 | 19.7 | 23.7 | 27.3 | 28.1 | 28.1 | 27.9 | 27.7 | 27.6 | 27.3 | 27.1 | 26.8 |
| R67 | Residential | 22.4 | 22.9 | 24.5 | 28.5 | 32.1 | 33.0 | 33.0 | 32.8 | 32.6 | 32.5 | 32.4 | 32.2 | 32.0 |
| R68 | Derelict | 23.3 | 23.8 | 25.5 | 29.5 | 33.1 | 33.9 | 33.9 | 33.8 | 33.6 | 33.6 | 33.4 | 33.2 | 33.1 |
| R69 | Residential | 22.4 | 22.9 | 24.5 | 28.6 | 32.1 | 33.0 | 33.0 | 32.9 | 32.7 | 32.6 | 32.4 | 32.2 | 32.1 |
| R70 | Residential | 17.2 | 17.9 | 19.5 | 23.5 | 27.1 | 28.0 | 28.0 | 27.7 | 27.5 | 27.4 | 27.1 | 26.8 | 26.6 |
| R71 | Residential and Commercial | 17.0 | 17.6 | 19.2 | 23.2 | 26.8 | 27.6 | 27.6 | 27.5 | 27.2 | 27.1 | 26.8 | 26.6 | 26.4 |
| R72 | Residential and Commercial | 16.8 | 17.4 | 19.1 | 23.1 | 26.7 | 27.5 | 27.5 | 27.4 | 27.1 | 26.9 | 26.7 | 26.4 | 26.2 |
| R73 | Residential | 18.1 | 18.7 | 20.3 | 24.3 | 27.9 | 28.8 | 28.8 | 28.6 | 28.4 | 28.2 | 28.0 | 27.8 | 27.5 |
| R74 | Residential | 17.6 | 18.2 | 19.8 | 23.8 | 27.4 | 28.3 | 28.3 | 28.1 | 27.8 | 27.7 | 27.5 | 27.2 | 27.0 |
| R75 | Residential and Commercial | 17.5 | 18.1 | 19.7 | 23.7 | 27.3 | 28.2 | 28.2 | 28.0 | 27.7 | 27.6 | 27.4 | 27.1 | 26.9 |
| R76 | Residential and Commercial | 16.2 | 16.8 | 18.5 | 22.5 | 26.1 | 26.9 | 26.9 | 26.7 | 26.5 | 26.3 | 26.1 | 25.8 | 25.6 |
| R77 | Residential | 16.4 | 17.0 | 18.6 | 22.6 | 26.2 | 27.0 | 27.0 | 26.9 | 26.6 | 26.4 | 26.2 | 25.9 | 25.7 |
| R78 | Residential and Commercial | 20.1 | 20.6 | 22.3 | 26.3 | 29.9 | 30.7 | 30.7 | 30.6 | 30.4 | 30.2 | 30.0 | 29.8 | 29.7 |
| R79 | Residential and Commercial | 20.2 | 20.8 | 22.4 | 26.4 | 30.0 | 30.9 | 30.9 | 30.7 | 30.5 | 30.4 | 30.2 | 30.0 | 29.8 |
| R80 | Residential | 17.3 | 17.9 | 19.6 | 23.6 | 27.2 | 28.0 | 28.0 | 27.8 | 27.6 | 27.4 | 27.2 | 26.9 | 26.7 |
| R81 | Residential | 18.6 | 19.2 | 20.8 | 24.8 | 28.4 | 29.3 | 29.3 | 29.1 | 28.9 | 28.7 | 28.5 | 28.3 | 28.0 |

**Table 8.4.1: Coumnagappul Windfarm noise at residential locations, including Coumnagappul Transformer, Dyrick Hill and Tierney turbine**

| Receptor ID | Windspeed m/s | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| R1_A | 20.9 | 21.3 | 22.3 | 25.5 | 28.8 | 29.6 | 29.6 | 29.4 | 29.2 | 29.1 | 28.9 | 28.6 | 28.4 |
| R2_A | 23.7 | 24.1 | 25.3 | 28.7 | 32.0 | 32.9 | 32.8 | 32.7 | 32.5 | 32.4 | 32.2 | 32.1 | 31.9 |
| R3_A | 21.2 | 21.6 | 22.7 | 25.9 | 29.1 | 30.0 | 29.9 | 29.8 | 29.6 | 29.4 | 29.2 | 29.0 | 28.8 |
| R4_A | 23.2 | 23.5 | 24.7 | 27.9 | 31.2 | 32.1 | 32.0 | 31.9 | 31.7 | 31.6 | 31.3 | 31.1 | 30.9 |
| R5_A | 23.5 | 23.9 | 25.0 | 28.3 | 31.5 | 32.4 | 32.4 | 32.2 | 32.0 | 31.9 | 31.7 | 31.5 | 31.3 |
| R6_A | 23.1 | 23.5 | 24.7 | 28.0 | 31.3 | 32.2 | 32.1 | 32.0 | 31.8 | 31.7 | 31.5 | 31.3 | 31.1 |
| R7_A | 24.3 | 24.7 | 26.0 | 29.5 | 32.8 | 33.7 | 33.7 | 33.5 | 33.3 | 33.2 | 33.0 | 32.9 | 32.7 |
| R8_A | 22.9 | 23.3 | 24.5 | 28.0 | 31.3 | 32.2 | 32.1 | 32.0 | 31.8 | 31.7 | 31.4 | 31.3 | 31.1 |
| R9_A | 22.5 | 22.9 | 24.1 | 27.5 | 30.9 | 31.7 | 31.7 | 31.5 | 31.3 | 31.2 | 31.0 | 30.8 | 30.6 |
| R10_A | 24.5 | 24.9 | 26.1 | 29.6 | 33.0 | 33.8 | 33.8 | 33.6 | 33.5 | 33.4 | 33.2 | 33.0 | 32.9 |
| R11_A | 21.8 | 22.2 | 23.4 | 26.7 | 30.1 | 31.0 | 30.9 | 30.7 | 30.5 | 30.4 | 30.2 | 30.0 | 29.8 |
| R12_A | 20.5 | 20.9 | 22.0 | 25.3 | 28.5 | 29.4 | 29.3 | 29.1 | 28.9 | 28.8 | 28.6 | 28.3 | 28.1 |
| R13_A | 19.3 | 19.7 | 20.8 | 24.0 | 27.3 | 28.2 | 28.1 | 27.9 | 27.6 | 27.5 | 27.3 | 27.0 | 26.8 |
| R14_A | 20.5 | 20.9 | 22.0 | 25.3 | 28.6 | 29.5 | 29.4 | 29.2 | 29.0 | 28.9 | 28.7 | 28.4 | 28.2 |
| R15_A | 20.2 | 20.6 | 21.7 | 25.0 | 28.3 | 29.1 | 29.1 | 28.9 | 28.7 | 28.5 | 28.3 | 28.1 | 27.9 |
| R16_A | 22.3 | 22.7 | 23.9 | 27.2 | 30.4 | 31.3 | 31.2 | 31.1 | 30.9 | 30.8 | 30.6 | 30.4 | 30.2 |
| R17_A | 19.4 | 19.7 | 20.8 | 24.1 | 27.3 | 28.2 | 28.1 | 27.9 | 27.7 | 27.6 | 27.3 | 27.1 | 26.9 |
| R18_A | 19.7 | 20.1 | 21.2 | 24.5 | 27.7 | 28.6 | 28.5 | 28.3 | 28.1 | 28.0 | 27.7 | 27.5 | 27.3 |
| R19_A | 19.1 | 19.5 | 20.6 | 23.8 | 27.0 | 27.9 | 27.8 | 27.6 | 27.4 | 27.3 | 27.0 | 26.8 | 26.6 |
| R20_A | 20.6 | 21.0 | 22.2 | 25.6 | 28.8 | 29.7 | 29.6 | 29.5 | 29.2 | 29.1 | 28.9 | 28.6 | 28.4 |
| R21_A | 22.0 | 22.4 | 23.6 | 27.0 | 30.3 | 31.3 | 31.2 | 31.0 | 30.8 | 30.7 | 30.5 | 30.3 | 30.1 |
| R22_A | 22.7 | 23.1 | 24.4 | 27.9 | 31.3 | 32.2 | 32.1 | 31.9 | 31.7 | 31.6 | 31.4 | 31.2 | 31.0 |
| R23_A | 23.4 | 23.8 | 25.1 | 28.7 | 32.1 | 33.0 | 32.9 | 32.7 | 32.5 | 32.4 | 32.2 | 32.0 | 31.8 |
| R24_A | 23.0 | 23.4 | 24.6 | 28.1 | 31.4 | 32.3 | 32.3 | 32.1 | 31.9 | 31.8 | 31.6 | 31.4 | 31.3 |
| R25_A | 28.2 | 28.6 | 30.0 | 33.7 | 37.1 | 38.0 | 38.0 | 37.8 | 37.7 | 37.7 | 37.5 | 37.3 | 37.2 |
| R26_A | 22.7 | 23.1 | 24.3 | 27.6 | 30.9 | 31.8 | 31.7 | 31.6 | 31.4 | 31.3 | 31.1 | 30.9 | 30.7 |
| R27_A | 23.3 | 23.7 | 25.0 | 28.5 | 31.9 | 32.8 | 32.7 | 32.6 | 32.3 | 32.2 | 32.0 | 31.8 | 31.6 |
| R28_A | 23.3 | 23.7 | 24.8 | 28.1 | 31.3 | 32.2 | 32.2 | 32.0 | 31.8 | 31.7 | 31.5 | 31.3 | 31.1 |
| R29_A | 19.1 | 19.5 | 20.6 | 23.8 | 27.0 | 27.9 | 27.8 | 27.6 | 27.4 | 27.2 | 27.0 | 26.7 | 26.5 |
| R30_A | 22.6 | 23.0 | 24.3 | 27.8 | 31.2 | 32.1 | 32.0 | 31.8 | 31.6 | 31.5 | 31.3 | 31.1 | 30.9 |
| R31_A | 22.3 | 22.7 | 24.0 | 27.5 | 30.9 | 31.8 | 31.7 | 31.6 | 31.3 | 31.2 | 31.0 | 30.8 | 30.6 |
| R32_A | 21.9 | 22.3 | 23.6 | 27.1 | 30.4 | 31.4 | 31.3 | 31.1 | 30.9 | 30.7 | 30.5 | 30.3 | 30.1 |
| R33_A | 21.9 | 22.3 | 23.6 | 27.1 | 30.4 | 31.3 | 31.2 | 31.1 | 30.8 | 30.7 | 30.5 | 30.3 | 30.1 |
| R34_A | 21.7 | 22.1 | 23.4 | 26.9 | 30.3 | 31.2 | 31.1 | 30.9 | 30.7 | 30.5 | 30.3 | 30.1 | 29.9 |
| R35_A | 22.4 | 22.7 | 23.8 | 27.1 | 30.3 | 31.2 | 31.1 | 31.0 | 30.8 | 30.7 | 30.5 | 30.2 | 30.0 |

| Receptor ID | Windspeed m/s | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| R36_A | 22.4 | 22.8 | 23.9 | 27.1 | 30.4 | 31.3 | 31.2 | 31.0 | 30.8 | 30.7 | 30.5 | 30.3 | 30.1 |
| R37_A | 21.1 | 21.4 | 22.5 | 25.7 | 28.9 | 29.8 | 29.8 | 29.6 | 29.4 | 29.2 | 29.0 | 28.8 | 28.5 |
| R38_A | 22.2 | 22.6 | 23.7 | 27.0 | 30.3 | 31.2 | 31.1 | 31.0 | 30.7 | 30.6 | 30.4 | 30.2 | 30.0 |
| R39_A | 22.8 | 23.1 | 24.3 | 27.6 | 30.8 | 31.8 | 31.7 | 31.5 | 31.3 | 31.2 | 31.0 | 30.8 | 30.7 |
| R40_A | 29.9 | 30.2 | 31.6 | 35.3 | 38.8 | 39.7 | 39.7 | 39.6 | 39.4 | 39.4 | 39.3 | 39.2 | 39.1 |
| R41_A | 29.1 | 29.4 | 30.8 | 34.5 | 38.0 | 38.9 | 38.8 | 38.7 | 38.6 | 38.5 | 38.4 | 38.3 | 38.2 |
| R42_A | 27.6 | 28.0 | 29.4 | 33.1 | 36.5 | 37.4 | 37.4 | 37.3 | 37.1 | 37.0 | 36.9 | 36.8 | 36.6 |
| R43_A | 23.6 | 24.0 | 25.2 | 28.7 | 32.0 | 32.9 | 32.8 | 32.7 | 32.5 | 32.4 | 32.2 | 32.0 | 31.8 |
| R44_A | 24.7 | 25.1 | 26.4 | 30.0 | 33.4 | 34.3 | 34.2 | 34.1 | 33.9 | 33.8 | 33.6 | 33.4 | 33.2 |
| R45_A | 22.5 | 22.9 | 24.2 | 27.7 | 31.1 | 32.0 | 31.9 | 31.8 | 31.6 | 31.4 | 31.2 | 31.0 | 30.8 |
| R46_A | 21.8 | 22.2 | 23.4 | 26.9 | 30.2 | 31.1 | 31.1 | 30.9 | 30.6 | 30.5 | 30.3 | 30.1 | 29.9 |
| R47_A | 24.2 | 24.5 | 25.7 | 29.0 | 32.4 | 33.2 | 33.2 | 33.0 | 32.8 | 32.7 | 32.5 | 32.3 | 32.2 |
| R48_A | 21.1 | 21.5 | 22.6 | 25.7 | 29.0 | 29.8 | 29.8 | 29.6 | 29.4 | 29.3 | 29.0 | 28.8 | 28.6 |
| R49_A | 23.3 | 23.6 | 24.8 | 28.0 | 31.3 | 32.2 | 32.1 | 32.0 | 31.8 | 31.7 | 31.5 | 31.3 | 31.1 |
| R50_A | 25.2 | 25.5 | 26.7 | 30.0 | 33.3 | 34.2 | 34.2 | 34.0 | 33.8 | 33.7 | 33.5 | 33.4 | 33.2 |
| R51_A | 24.8 | 25.2 | 26.3 | 29.5 | 32.8 | 33.6 | 33.6 | 33.4 | 33.2 | 33.1 | 33.0 | 32.8 | 32.6 |
| R52_A | 24.4 | 24.7 | 25.9 | 29.2 | 32.5 | 33.4 | 33.3 | 33.2 | 33.0 | 32.8 | 32.6 | 32.5 | 32.3 |
| R53_A | 24.5 | 24.8 | 26.0 | 29.2 | 32.4 | 33.3 | 33.2 | 33.1 | 32.9 | 32.8 | 32.6 | 32.4 | 32.2 |
| R54_A | 22.4 | 22.7 | 23.8 | 27.0 | 30.3 | 31.2 | 31.1 | 31.0 | 30.8 | 30.6 | 30.4 | 30.2 | 30.0 |
| R55_A | 21.3 | 21.7 | 22.8 | 26.0 | 29.2 | 30.1 | 30.0 | 29.9 | 29.7 | 29.5 | 29.3 | 29.1 | 28.9 |
| R56_A | 22.1 | 22.5 | 23.6 | 27.0 | 30.3 | 31.2 | 31.1 | 30.9 | 30.7 | 30.6 | 30.4 | 30.2 | 30.0 |
| R57_A | 20.8 | 21.2 | 22.3 | 25.6 | 28.9 | 29.8 | 29.7 | 29.5 | 29.3 | 29.2 | 29.0 | 28.7 | 28.5 |
| R58_A | 20.8 | 21.2 | 22.3 | 25.7 | 28.9 | 29.8 | 29.7 | 29.5 | 29.3 | 29.2 | 29.0 | 28.8 | 28.5 |
| R59_A | 22.0 | 22.5 | 23.9 | 27.5 | 30.9 | 31.8 | 31.7 | 31.5 | 31.3 | 31.1 | 30.9 | 30.7 | 30.5 |
| R60_A | 23.7 | 24.1 | 25.5 | 29.2 | 32.6 | 33.5 | 33.5 | 33.3 | 33.1 | 32.9 | 32.7 | 32.5 | 32.3 |
| R61_A | 22.5 | 22.9 | 24.3 | 27.9 | 31.3 | 32.2 | 32.1 | 32.0 | 31.7 | 31.6 | 31.3 | 31.1 | 30.9 |
| R62_A | 23.1 | 23.6 | 24.9 | 28.5 | 31.8 | 32.8 | 32.7 | 32.5 | 32.3 | 32.2 | 32.0 | 31.8 | 31.6 |
| R63_A | 22.7 | 23.1 | 24.3 | 27.6 | 30.9 | 31.7 | 31.7 | 31.5 | 31.3 | 31.2 | 31.0 | 30.8 | 30.7 |
| R64_A | 25.4 | 25.8 | 27.0 | 30.6 | 33.9 | 34.8 | 34.8 | 34.6 | 34.5 | 34.4 | 34.2 | 34.1 | 33.9 |
| R65_A | 19.3 | 19.7 | 20.9 | 24.2 | 27.5 | 28.3 | 28.3 | 28.1 | 27.8 | 27.7 | 27.4 | 27.2 | 27.0 |
| R66_A | 19.7 | 20.1 | 21.2 | 24.4 | 27.7 | 28.5 | 28.4 | 28.3 | 28.0 | 27.9 | 27.7 | 27.4 | 27.2 |
| R67_A | 24.0 | 24.4 | 25.6 | 29.0 | 32.3 | 33.2 | 33.2 | 33.0 | 32.9 | 32.8 | 32.6 | 32.4 | 32.2 |
| R68_A | 24.9 | 25.2 | 26.5 | 30.0 | 33.3 | 34.2 | 34.1 | 34.0 | 33.8 | 33.8 | 33.6 | 33.4 | 33.3 |
| R69_A | 24.1 | 24.4 | 25.6 | 29.1 | 32.4 | 33.3 | 33.2 | 33.1 | 32.9 | 32.8 | 32.6 | 32.5 | 32.3 |
| R70_A | 19.2 | 19.6 | 20.8 | 24.1 | 27.4 | 28.3 | 28.2 | 28.0 | 27.8 | 27.7 | 27.4 | 27.1 | 26.9 |
| R71_A | 19.3 | 19.7 | 20.8 | 24.0 | 27.2 | 28.1 | 28.0 | 27.8 | 27.6 | 27.4 | 27.2 | 27.0 | 26.7 |
| R72_A | 19.2 | 19.5 | 20.6 | 23.8 | 27.1 | 27.9 | 27.9 | 27.7 | 27.4 | 27.3 | 27.1 | 26.8 | 26.6 |

| Receptor ID | Windspeed m/s | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| R73_A | 20.2 | 20.6 | 21.8 | 25.0 | 28.3 | 29.1 | 29.1 | 28.9 | 28.7 | 28.5 | 28.3 | 28.1 | 27.9 |
| R74_A | 19.8 | 20.2 | 21.3 | 24.5 | 27.8 | 28.7 | 28.6 | 28.4 | 28.2 | 28.0 | 27.8 | 27.6 | 27.4 |
| R75_A | 19.7 | 20.1 | 21.2 | 24.4 | 27.7 | 28.6 | 28.5 | 28.3 | 28.1 | 27.9 | 27.7 | 27.5 | 27.3 |
| R76_A | 18.7 | 19.0 | 20.1 | 23.3 | 26.5 | 27.4 | 27.3 | 27.1 | 26.9 | 26.7 | 26.5 | 26.2 | 26.0 |
| R77_A | 18.8 | 19.1 | 20.2 | 23.4 | 26.6 | 27.5 | 27.4 | 27.2 | 27.0 | 26.8 | 26.6 | 26.3 | 26.1 |
| R78_A | 21.9 | 22.3 | 23.5 | 26.9 | 30.2 | 31.1 | 31.0 | 30.9 | 30.7 | 30.5 | 30.3 | 30.1 | 30.0 |
| R79_A | 22.1 | 22.5 | 23.7 | 27.0 | 30.3 | 31.2 | 31.2 | 31.0 | 30.8 | 30.7 | 30.5 | 30.3 | 30.1 |
| R80_A | 19.3 | 19.7 | 20.9 | 24.2 | 27.5 | 28.4 | 28.3 | 28.1 | 27.9 | 27.7 | 27.5 | 27.2 | 27.0 |
| R81_A | 20.6 | 21.0 | 22.1 | 25.5 | 28.8 | 29.6 | 29.6 | 29.4 | 29.2 | 29.0 | 28.8 | 28.6 | 28.4 |
| R82_A | 26.8 | 27.3 | 28.8 | 32.7 | 36.2 | 37.2 | 37.1 | 37.0 | 36.9 | 36.8 | 36.7 | 36.5 | 36.4 |
| R83_A | 22.2 | 22.7 | 24.3 | 28.3 | 31.9 | 32.8 | 32.7 | 32.6 | 32.4 | 32.3 | 32.1 | 31.9 | 31.7 |
| R87_A | 18.9 | 19.4 | 20.7 | 24.2 | 27.6 | 28.5 | 28.5 | 28.3 | 28.1 | 28.0 | 27.7 | 27.4 | 27.2 |
| R88_A | 17.3 | 17.9 | 19.5 | 23.4 | 27.0 | 27.9 | 27.8 | 27.6 | 27.3 | 27.2 | 26.9 | 26.6 | 26.3 |
| R89_A | 22.3 | 22.9 | 24.5 | 28.4 | 32.0 | 32.9 | 32.9 | 32.7 | 32.5 | 32.4 | 32.2 | 32.0 | 31.8 |
| R94_A | 22.8 | 23.0 | 23.9 | 27.0 | 29.8 | 31.0 | 31.2 | 31.3 | 31.2 | 31.2 | 31.1 | 30.9 | 30.7 |
| R95_A | 22.6 | 22.9 | 23.9 | 27.0 | 30.0 | 31.1 | 31.2 | 31.3 | 31.2 | 31.2 | 31.0 | 30.9 | 30.7 |
| R96_A | 23.8 | 24.1 | 25.1 | 28.2 | 31.1 | 32.3 | 32.4 | 32.5 | 32.4 | 32.5 | 32.3 | 32.1 | 32.0 |
| R97_A | 23.6 | 24.1 | 25.6 | 29.5 | 33.0 | 33.9 | 33.9 | 33.7 | 33.5 | 33.5 | 33.3 | 33.1 | 32.9 |
| R98_A | 19.6 | 20.0 | 21.1 | 24.5 | 27.8 | 28.7 | 28.7 | 28.6 | 28.4 | 28.3 | 28.1 | 27.8 | 27.6 |
| R99_A | 19.6 | 20.0 | 21.1 | 24.5 | 27.8 | 28.7 | 28.7 | 28.6 | 28.4 | 28.3 | 28.1 | 27.8 | 27.6 |
| R100_A | 19.5 | 20.0 | 21.1 | 24.5 | 27.9 | 28.8 | 28.8 | 28.7 | 28.5 | 28.3 | 28.1 | 27.9 | 27.6 |
| R101_A | 19.5 | 20.0 | 21.1 | 24.6 | 27.9 | 28.8 | 28.8 | 28.7 | 28.5 | 28.4 | 28.2 | 27.9 | 27.7 |
| R102_A | 19.5 | 20.0 | 21.2 | 24.6 | 27.9 | 28.8 | 28.8 | 28.7 | 28.5 | 28.4 | 28.2 | 27.9 | 27.7 |
| R103_A | 19.6 | 20.0 | 21.2 | 24.6 | 27.9 | 28.9 | 28.9 | 28.8 | 28.6 | 28.4 | 28.2 | 28.0 | 27.7 |
| R104_A | 19.4 | 19.9 | 21.1 | 24.5 | 27.8 | 28.7 | 28.7 | 28.6 | 28.4 | 28.3 | 28.1 | 27.8 | 27.6 |
| R105_A | 19.4 | 19.9 | 21.1 | 24.5 | 27.8 | 28.7 | 28.7 | 28.6 | 28.4 | 28.3 | 28.1 | 27.8 | 27.6 |
| R106_A | 19.7 | 20.2 | 21.7 | 25.5 | 28.9 | 29.9 | 29.8 | 29.6 | 29.4 | 29.3 | 29.1 | 28.8 | 28.6 |
| R107_A | 18.5 | 19.1 | 20.6 | 24.4 | 27.9 | 28.8 | 28.7 | 28.5 | 28.3 | 28.1 | 27.9 | 27.6 | 27.4 |
| R108_A | 24.4 | 24.9 | 26.5 | 30.4 | 33.9 | 34.9 | 34.8 | 34.7 | 34.5 | 34.4 | 34.3 | 34.1 | 33.9 |
| R109_A | 27.3 | 27.8 | 29.3 | 33.3 | 36.9 | 37.8 | 37.8 | 37.6 | 37.5 | 37.4 | 37.3 | 37.2 | 37.0 |
| R110_A | 25.4 | 25.9 | 27.4 | 31.4 | 35.0 | 35.9 | 35.9 | 35.8 | 35.6 | 35.5 | 35.3 | 35.2 | 35.1 |
| R111_A | 25.5 | 25.9 | 27.5 | 31.4 | 34.9 | 35.9 | 35.8 | 35.7 | 35.5 | 35.5 | 35.3 | 35.1 | 35.0 |
| R112_A | 25.7 | 26.1 | 27.6 | 31.5 | 35.0 | 36.0 | 36.0 | 35.8 | 35.7 | 35.6 | 35.5 | 35.3 | 35.1 |
| R113_A | 23.2 | 23.6 | 24.9 | 28.4 | 31.7 | 32.7 | 32.8 | 32.7 | 32.6 | 32.5 | 32.3 | 32.1 | 31.9 |
| R114_A | 23.1 | 23.3 | 24.0 | 26.7 | 29.6 | 30.5 | 30.8 | 31.0 | 31.0 | 31.1 | 30.9 | 30.8 | 30.6 |
| R116_A | 21.5 | 22.0 | 23.6 | 27.6 | 31.2 | 32.1 | 32.0 | 31.9 | 31.7 | 31.5 | 31.3 | 31.1 | 31.0 |
| R117_A | 21.1 | 21.7 | 23.3 | 27.3 | 30.8 | 31.7 | 31.7 | 31.5 | 31.3 | 31.2 | 31.0 | 30.8 | 30.6 |

| Receptor ID | Windspeed m/s | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| R118_A | 24.4 | 24.5 | 25.0 | 27.1 | 31.8 | 30.7 | 31.1 | 31.5 | 31.7 | 31.8 | 31.7 | 31.6 | 31.5 |
| R119_A | 19.1 | 19.7 | 21.2 | 25.0 | 28.5 | 29.4 | 29.3 | 29.1 | 28.9 | 28.7 | 28.5 | 28.3 | 28.0 |
| R120_A | 19.2 | 19.7 | 21.2 | 25.0 | 28.5 | 29.4 | 29.4 | 29.2 | 28.9 | 28.8 | 28.6 | 28.3 | 28.1 |
| R121_A | 19.6 | 20.0 | 21.2 | 24.6 | 27.9 | 28.8 | 28.9 | 28.8 | 28.6 | 28.4 | 28.2 | 28.0 | 27.7 |
| R122_A | 19.6 | 20.1 | 21.2 | 24.6 | 27.9 | 28.8 | 28.8 | 28.8 | 28.6 | 28.4 | 28.2 | 28.0 | 27.7 |
| R123_A | 19.6 | 20.0 | 21.2 | 24.6 | 27.9 | 28.8 | 28.8 | 28.7 | 28.6 | 28.4 | 28.2 | 27.9 | 27.7 |
| R124_A | 19.6 | 20.1 | 21.2 | 24.6 | 27.9 | 28.8 | 28.8 | 28.7 | 28.6 | 28.4 | 28.2 | 28.0 | 27.7 |
| R125_A | 22.3 | 22.8 | 24.4 | 28.4 | 31.9 | 32.9 | 32.8 | 32.6 | 32.4 | 32.4 | 32.1 | 31.9 | 31.7 |
| R126_A | 22.9 | 23.4 | 24.9 | 28.9 | 32.4 | 33.4 | 33.3 | 33.2 | 32.9 | 32.9 | 32.7 | 32.5 | 32.3 |
| R127_A | 22.1 | 22.6 | 24.2 | 28.2 | 31.7 | 32.6 | 32.6 | 32.4 | 32.2 | 32.1 | 31.9 | 31.7 | 31.5 |
| R128_A | 23.1 | 23.6 | 25.2 | 29.2 | 32.7 | 33.6 | 33.6 | 33.4 | 33.2 | 33.1 | 33.0 | 32.8 | 32.6 |
| R129_A | 24.5 | 24.9 | 26.3 | 30.0 | 33.4 | 34.3 | 34.4 | 34.3 | 34.1 | 34.1 | 33.9 | 33.7 | 33.5 |
| R130_A | 23.7 | 24.0 | 25.0 | 28.2 | 31.2 | 32.3 | 32.4 | 32.5 | 32.4 | 32.4 | 32.2 | 32.1 | 31.9 |
| R131_A | 23.3 | 23.7 | 24.9 | 28.4 | 31.6 | 32.6 | 32.7 | 32.6 | 32.5 | 32.5 | 32.3 | 32.1 | 31.9 |
| R132_A | 23.6 | 24.1 | 25.6 | 29.4 | 32.9 | 33.8 | 33.8 | 33.7 | 33.5 | 33.4 | 33.2 | 33.0 | 32.9 |
| R133_A | 23.6 | 24.1 | 25.5 | 29.4 | 32.9 | 33.8 | 33.8 | 33.6 | 33.5 | 33.4 | 33.2 | 33.0 | 32.8 |
| R134_A | 25.0 | 25.5 | 27.1 | 31.0 | 34.5 | 35.4 | 35.4 | 35.3 | 35.1 | 35.0 | 34.8 | 34.7 | 34.5 |
| R135_A | 25.9 | 26.3 | 27.8 | 31.7 | 35.2 | 36.2 | 36.2 | 36.0 | 35.9 | 35.8 | 35.6 | 35.5 | 35.3 |
| R136_A | 24.7 | 25.1 | 26.7 | 30.7 | 34.3 | 35.2 | 35.1 | 35.0 | 34.8 | 34.7 | 34.6 | 34.4 | 34.3 |
| R137_A | 21.7 | 22.2 | 23.6 | 27.5 | 31.0 | 32.0 | 31.9 | 31.7 | 31.5 | 31.4 | 31.2 | 31.0 | 30.8 |
| R138_A | 17.8 | 18.3 | 19.8 | 23.6 | 27.1 | 28.0 | 27.9 | 27.7 | 27.5 | 27.3 | 27.0 | 26.8 | 26.5 |
| R139_A | 18.9 | 19.5 | 21.0 | 24.8 | 28.3 | 29.3 | 29.2 | 29.0 | 28.7 | 28.6 | 28.3 | 28.0 | 27.8 |
| R142_A | 22.0 | 22.6 | 24.1 | 28.1 | 31.7 | 32.6 | 32.6 | 32.4 | 32.2 | 32.1 | 31.9 | 31.7 | 31.5 |
| R145_A | 23.2 | 23.4 | 24.1 | 26.7 | 29.6 | 30.5 | 30.8 | 31.0 | 31.1 | 31.1 | 31.0 | 30.8 | 30.7 |
| R146_A | 19.7 | 20.1 | 21.2 | 24.6 | 27.9 | 28.8 | 28.8 | 28.7 | 28.5 | 28.4 | 28.2 | 28.0 | 27.7 |
| R147_A | 19.7 | 20.1 | 21.2 | 24.6 | 27.9 | 28.8 | 28.8 | 28.7 | 28.5 | 28.4 | 28.2 | 28.0 | 27.7 |
| R148_A | 19.0 | 19.4 | 20.7 | 24.2 | 27.5 | 28.4 | 28.4 | 28.3 | 28.0 | 27.9 | 27.6 | 27.4 | 27.1 |
| R149_A | 24.5 | 24.7 | 25.3 | 27.7 | 29.7 | 31.3 | 31.7 | 32.0 | 32.1 | 32.3 | 32.1 | 32.0 | 31.9 |
| R150_A | 22.8 | 23.3 | 24.6 | 28.3 | 31.7 | 32.7 | 32.7 | 32.6 | 32.4 | 32.3 | 32.1 | 31.9 | 31.8 |
| R151_A | 19.3 | 19.8 | 21.3 | 25.0 | 28.5 | 29.4 | 29.3 | 29.2 | 28.9 | 28.8 | 28.5 | 28.3 | 28.1 |
| R152_A | 21.1 | 21.5 | 22.6 | 25.9 | 29.0 | 30.1 | 30.1 | 30.1 | 30.0 | 29.9 | 29.7 | 29.5 | 29.3 |
| R153_A | 19.4 | 19.9 | 21.3 | 25.1 | 28.5 | 29.4 | 29.4 | 29.3 | 29.0 | 28.9 | 28.7 | 28.4 | 28.2 |
| R157_A | 30.3 | 30.3 | 30.4 | 31.8 | 31.9 | 34.6 | 35.5 | 36.4 | 36.8 | 37.1 | 37.1 | 37.0 | 37.0 |
| R158_A | 39.4 | 39.4 | 39.4 | 40.5 | 34.4 | 42.9 | 44.1 | 45.2 | 45.7 | 46.1 | 46.1 | 46.1 | 46.0 |
| R159_A | 22.6 | 23.1 | 24.7 | 28.7 | 32.2 | 33.2 | 33.1 | 32.9 | 32.7 | 32.6 | 32.5 | 32.3 | 32.1 |
| R160_A | 21.2 | 21.7 | 23.3 | 27.3 | 30.8 | 31.8 | 31.7 | 31.5 | 31.3 | 31.2 | 31.0 | 30.8 | 30.6 |
| R161_A | 20.7 | 21.2 | 22.8 | 26.8 | 30.4 | 31.3 | 31.2 | 31.0 | 30.8 | 30.7 | 30.4 | 30.2 | 30.0 |

| Receptor ID | Windspeed m/s | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| R162_A | 22.9 | 23.2 | 23.9 | 26.5 | 29.5 | 30.4 | 30.6 | 30.8 | 30.8 | 30.9 | 30.7 | 30.6 | 30.4 |
| R163_A | 17.9 | 18.5 | 19.8 | 23.6 | 27.0 | 28.0 | 27.9 | 27.7 | 27.5 | 27.3 | 27.1 | 26.8 | 26.5 |
| R164_A | 23.3 | 23.8 | 25.4 | 29.4 | 32.9 | 33.9 | 33.8 | 33.7 | 33.5 | 33.4 | 33.2 | 33.0 | 32.8 |
| R165_A | 28.5 | 28.9 | 30.5 | 34.5 | 38.1 | 39.0 | 39.0 | 38.9 | 38.7 | 38.7 | 38.5 | 38.4 | 38.3 |
| R166_A | 29.4 | 29.8 | 31.4 | 35.5 | 39.0 | 40.0 | 39.9 | 39.8 | 39.7 | 39.6 | 39.5 | 39.4 | 39.2 |
| R167_A | 19.7 | 20.2 | 21.6 | 25.4 | 28.8 | 29.8 | 29.7 | 29.6 | 29.3 | 29.2 | 29.0 | 28.7 | 28.5 |
| R173_A | 19.3 | 19.8 | 21.1 | 24.8 | 28.2 | 29.2 | 29.1 | 29.0 | 28.7 | 28.6 | 28.3 | 28.0 | 27.8 |
| R174_A | 22.4 | 22.8 | 23.8 | 27.1 | 30.2 | 31.2 | 31.3 | 31.3 | 31.3 | 31.2 | 31.1 | 30.9 | 30.7 |
| R175_A | 22.3 | 22.9 | 24.4 | 28.4 | 32.0 | 32.9 | 32.8 | 32.7 | 32.5 | 32.4 | 32.2 | 32.0 | 31.8 |
| R176_A | 22.8 | 23.3 | 24.9 | 28.9 | 32.4 | 33.4 | 33.3 | 33.1 | 32.9 | 32.9 | 32.7 | 32.5 | 32.3 |
| R177_A | 23.1 | 23.6 | 25.2 | 29.2 | 32.7 | 33.7 | 33.6 | 33.5 | 33.3 | 33.2 | 33.0 | 32.8 | 32.6 |
| R178_A | 18.8 | 19.3 | 20.8 | 24.6 | 28.1 | 29.0 | 29.0 | 28.8 | 28.6 | 28.4 | 28.2 | 27.9 | 27.7 |
| R179_A | 20.5 | 21.1 | 22.6 | 26.5 | 30.0 | 30.9 | 30.9 | 30.7 | 30.5 | 30.3 | 30.1 | 29.9 | 29.7 |
| R180_A | 19.9 | 20.4 | 21.9 | 25.8 | 29.3 | 30.2 | 30.1 | 30.0 | 29.8 | 29.6 | 29.4 | 29.1 | 28.9 |
| R181_A | 27.5 | 28.0 | 29.6 | 33.5 | 37.1 | 38.0 | 38.0 | 37.9 | 37.7 | 37.6 | 37.5 | 37.3 | 37.2 |
| R182_A | 23.4 | 23.9 | 25.5 | 29.5 | 33.1 | 34.0 | 33.9 | 33.8 | 33.6 | 33.5 | 33.3 | 33.1 | 33.0 |
| R183_A | 27.0 | 27.4 | 29.0 | 33.0 | 36.6 | 37.5 | 37.4 | 37.3 | 37.2 | 37.1 | 36.9 | 36.8 | 36.6 |
| R184_A | 25.8 | 26.2 | 27.8 | 31.8 | 35.3 | 36.3 | 36.2 | 36.1 | 36.0 | 35.9 | 35.7 | 35.6 | 35.4 |
| R185_A | 25.6 | 26.1 | 27.6 | 31.7 | 35.2 | 36.1 | 36.1 | 36.0 | 35.8 | 35.7 | 35.6 | 35.4 | 35.2 |
| R186_A | 26.8 | 27.2 | 28.8 | 32.8 | 36.4 | 37.3 | 37.3 | 37.1 | 37.0 | 37.0 | 36.7 | 36.6 | 36.5 |
| R187_A | 20.6 | 21.1 | 22.5 | 26.4 | 29.9 | 30.9 | 30.8 | 30.6 | 30.4 | 30.3 | 30.1 | 29.9 | 29.6 |
| R201_A | 27.1 | 27.6 | 29.1 | 33.1 | 36.6 | 37.5 | 37.5 | 37.4 | 37.2 | 37.2 | 37.0 | 36.9 | 36.8 |
| R202_A | 27.7 | 28.1 | 29.7 | 33.6 | 37.2 | 38.1 | 38.1 | 37.9 | 37.8 | 37.7 | 37.6 | 37.4 | 37.3 |
| R203_A | 27.2 | 27.6 | 29.2 | 33.1 | 36.6 | 37.6 | 37.5 | 37.4 | 37.3 | 37.2 | 37.0 | 36.9 | 36.7 |
| R204_A | 26.3 | 26.7 | 28.2 | 32.1 | 35.7 | 36.6 | 36.6 | 36.4 | 36.3 | 36.2 | 36.1 | 35.9 | 35.8 |
| R205_A | 24.9 | 25.3 | 26.7 | 30.5 | 33.9 | 34.9 | 34.9 | 34.8 | 34.6 | 34.6 | 34.4 | 34.2 | 34.1 |
| R206_A | 24.1 | 24.5 | 25.8 | 29.4 | 32.7 | 33.7 | 33.7 | 33.7 | 33.5 | 33.5 | 33.3 | 33.1 | 33.0 |
| R207_A | 22.8 | 23.1 | 24.0 | 27.1 | 30.1 | 31.2 | 31.4 | 31.4 | 31.4 | 31.4 | 31.2 | 31.0 | 30.9 |
| R208_A | 22.9 | 23.2 | 24.2 | 27.4 | 30.3 | 31.5 | 31.6 | 31.6 | 31.6 | 31.6 | 31.4 | 31.2 | 31.1 |
| R209_A | 23.4 | 23.8 | 24.8 | 28.1 | 31.2 | 32.3 | 32.3 | 32.4 | 32.3 | 32.3 | 32.1 | 31.9 | 31.8 |
| R210_A | 22.8 | 23.3 | 24.6 | 28.3 | 31.8 | 32.7 | 32.7 | 32.6 | 32.4 | 32.4 | 32.1 | 32.0 | 31.8 |
| R211_A | 23.0 | 23.5 | 24.9 | 28.6 | 32.0 | 33.0 | 33.0 | 32.9 | 32.7 | 32.6 | 32.4 | 32.2 | 32.0 |
| R212_A | 24.2 | 24.7 | 26.2 | 30.1 | 33.6 | 34.6 | 34.5 | 34.4 | 34.2 | 34.1 | 33.9 | 33.8 | 33.6 |
| R213_A | 23.8 | 24.3 | 25.8 | 29.7 | 33.2 | 34.1 | 34.1 | 33.9 | 33.8 | 33.7 | 33.5 | 33.3 | 33.2 |
| R214_A | 23.0 | 23.5 | 25.0 | 28.9 | 32.5 | 33.4 | 33.3 | 33.2 | 33.0 | 32.9 | 32.7 | 32.5 | 32.3 |
| R215_A | 22.9 | 23.5 | 25.0 | 28.9 | 32.4 | 33.3 | 33.3 | 33.1 | 32.9 | 32.9 | 32.6 | 32.5 | 32.3 |
| R216_A | 20.4 | 20.9 | 22.4 | 26.2 | 29.7 | 30.6 | 30.6 | 30.4 | 30.2 | 30.1 | 29.9 | 29.6 | 29.4 |

| Receptor ID | Windspeed m/s | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| R217_A | 20.3 | 20.8 | 22.3 | 26.1 | 29.6 | 30.6 | 30.5 | 30.4 | 30.1 | 30.0 | 29.8 | 29.5 | 29.3 |
| R222_A | 17.4 | 18.0 | 19.5 | 23.5 | 27.0 | 28.0 | 27.9 | 27.6 | 27.4 | 27.2 | 26.9 | 26.6 | 26.4 |
| R223_A | 16.9 | 17.5 | 19.0 | 22.9 | 26.4 | 27.3 | 27.3 | 27.0 | 26.8 | 26.6 | 26.3 | 26.1 | 25.8 |
| R224_A | 18.2 | 18.8 | 20.4 | 24.4 | 27.9 | 28.8 | 28.7 | 28.5 | 28.3 | 28.1 | 27.9 | 27.6 | 27.4 |
| R225_A | 28.5 | 28.9 | 30.5 | 34.6 | 38.1 | 39.1 | 39.0 | 38.9 | 38.7 | 38.7 | 38.6 | 38.4 | 38.3 |
| R226_A | 22.5 | 23.0 | 24.6 | 28.5 | 32.1 | 33.0 | 33.0 | 32.8 | 32.7 | 32.5 | 32.3 | 32.1 | 32.0 |
| R227_A | 25.7 | 26.1 | 27.7 | 31.7 | 35.3 | 36.2 | 36.2 | 36.0 | 35.9 | 35.8 | 35.6 | 35.5 | 35.4 |
| R228_A | 26.9 | 27.4 | 29.0 | 32.9 | 36.5 | 37.4 | 37.4 | 37.3 | 37.1 | 37.0 | 36.9 | 36.7 | 36.6 |
| R229_A | 27.5 | 28.0 | 29.6 | 33.5 | 37.0 | 38.0 | 37.9 | 37.8 | 37.7 | 37.6 | 37.5 | 37.3 | 37.2 |
| R230_A | 26.0 | 26.5 | 28.0 | 31.8 | 35.3 | 36.3 | 36.3 | 36.1 | 36.0 | 35.9 | 35.7 | 35.6 | 35.4 |
| R231_A | 22.5 | 22.8 | 23.9 | 27.1 | 30.1 | 31.2 | 31.3 | 31.4 | 31.3 | 31.3 | 31.1 | 30.9 | 30.7 |
| R232_A | 24.4 | 24.8 | 26.3 | 30.1 | 33.6 | 34.6 | 34.5 | 34.4 | 34.2 | 34.1 | 34.0 | 33.8 | 33.6 |
| R233_A | 24.2 | 24.7 | 26.2 | 30.1 | 33.6 | 34.6 | 34.5 | 34.4 | 34.2 | 34.2 | 34.0 | 33.8 | 33.6 |
| R234_A | 20.7 | 21.2 | 22.7 | 26.6 | 30.2 | 31.1 | 31.0 | 30.9 | 30.6 | 30.5 | 30.3 | 30.0 | 29.8 |
| R235_A | 31.1 | 31.6 | 33.2 | 37.2 | 40.8 | 41.7 | 41.7 | 41.5 | 41.4 | 41.4 | 41.3 | 41.2 | 41.0 |
| R236_A | 31.2 | 31.6 | 33.2 | 37.2 | 40.8 | 41.7 | 41.7 | 41.6 | 41.5 | 41.4 | 41.3 | 41.2 | 41.1 |
| R237_A | 28.2 | 28.7 | 30.3 | 34.3 | 37.9 | 38.8 | 38.8 | 38.6 | 38.5 | 38.4 | 38.3 | 38.2 | 38.1 |
| R238_A | 25.2 | 25.7 | 27.3 | 31.3 | 34.9 | 35.8 | 35.8 | 35.6 | 35.4 | 35.4 | 35.2 | 35.0 | 34.9 |
| R239_A | 22.5 | 23.0 | 24.6 | 28.5 | 32.1 | 33.0 | 33.0 | 32.8 | 32.6 | 32.5 | 32.3 | 32.1 | 32.0 |
| R240_A | 22.6 | 23.2 | 24.7 | 28.7 | 32.3 | 33.2 | 33.2 | 33.0 | 32.8 | 32.7 | 32.5 | 32.3 | 32.1 |
| R241_A | 23.9 | 24.4 | 26.0 | 30.0 | 33.5 | 34.5 | 34.4 | 34.3 | 34.1 | 34.0 | 33.8 | 33.6 | 33.5 |
| R242_A | 24.4 | 24.9 | 26.4 | 30.4 | 34.0 | 34.9 | 34.9 | 34.7 | 34.5 | 34.5 | 34.3 | 34.1 | 34.0 |
| R243_A | 24.5 | 24.9 | 26.5 | 30.4 | 33.9 | 34.9 | 34.8 | 34.7 | 34.5 | 34.4 | 34.2 | 34.1 | 33.9 |
| R244_A | 24.4 | 24.9 | 26.5 | 30.4 | 33.9 | 34.9 | 34.8 | 34.7 | 34.5 | 34.4 | 34.2 | 34.1 | 33.9 |
| R245_A | 28.5 | 29.0 | 30.6 | 34.6 | 38.1 | 39.1 | 39.0 | 38.9 | 38.8 | 38.7 | 38.6 | 38.5 | 38.4 |
| R246_A | 27.6 | 28.1 | 29.6 | 33.5 | 37.1 | 38.0 | 38.0 | 37.9 | 37.7 | 37.7 | 37.5 | 37.4 | 37.3 |
| R247_A | 27.8 | 28.3 | 29.8 | 33.8 | 37.3 | 38.2 | 38.2 | 38.1 | 37.9 | 37.9 | 37.7 | 37.6 | 37.5 |
| R248_A | 25.4 | 25.9 | 27.4 | 31.3 | 34.9 | 35.8 | 35.8 | 35.6 | 35.5 | 35.4 | 35.2 | 35.0 | 34.9 |
| R249_A | 36.1 | 36.5 | 38.1 | 42.2 | 45.7 | 46.7 | 46.6 | 46.6 | 46.5 | 46.5 | 46.4 | 46.3 | 46.2 |
| R250_A | 22.1 | 22.7 | 24.3 | 28.3 | 31.8 | 32.7 | 32.7 | 32.5 | 32.3 | 32.2 | 32.0 | 31.8 | 31.6 |
| R251_A | 20.7 | 21.3 | 22.9 | 26.8 | 30.4 | 31.3 | 31.2 | 31.1 | 30.8 | 30.7 | 30.5 | 30.3 | 30.1 |
| R252_A | 19.9 | 20.3 | 21.4 | 24.8 | 28.1 | 29.0 | 29.0 | 28.9 | 28.8 | 28.6 | 28.4 | 28.2 | 28.0 |
| R253_A | 19.4 | 19.9 | 21.0 | 24.4 | 27.7 | 28.6 | 28.6 | 28.5 | 28.4 | 28.2 | 28.0 | 27.7 | 27.5 |
| R254_A | 19.4 | 19.8 | 21.0 | 24.4 | 27.7 | 28.6 | 28.6 | 28.5 | 28.3 | 28.2 | 27.9 | 27.7 | 27.5 |
| R255_A | 19.8 | 20.3 | 21.4 | 24.7 | 28.0 | 28.9 | 29.0 | 28.9 | 28.7 | 28.6 | 28.4 | 28.1 | 27.9 |
| R256_A | 19.8 | 20.2 | 21.4 | 24.8 | 28.2 | 29.1 | 29.1 | 28.9 | 28.8 | 28.6 | 28.4 | 28.1 | 27.9 |
| R257_A | 19.4 | 19.8 | 21.0 | 24.5 | 27.8 | 28.7 | 28.7 | 28.6 | 28.4 | 28.3 | 28.0 | 27.8 | 27.5 |

| Receptor ID | Windspeed m/s | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| R258_A | 19.4 | 19.8 | 21.0 | 24.5 | 27.8 | 28.7 | 28.7 | 28.6 | 28.4 | 28.2 | 28.0 | 27.8 | 27.5 |
| R259_A | 19.3 | 19.8 | 21.0 | 24.4 | 27.8 | 28.7 | 28.7 | 28.6 | 28.3 | 28.2 | 28.0 | 27.7 | 27.5 |
| R260_A | 19.3 | 19.8 | 21.0 | 24.4 | 27.8 | 28.7 | 28.7 | 28.5 | 28.3 | 28.2 | 28.0 | 27.7 | 27.5 |
| R261_A | 19.3 | 19.7 | 20.9 | 24.4 | 27.7 | 28.7 | 28.6 | 28.5 | 28.3 | 28.2 | 27.9 | 27.7 | 27.4 |
| R262_A | 19.3 | 19.7 | 20.9 | 24.4 | 27.7 | 28.7 | 28.6 | 28.5 | 28.3 | 28.2 | 27.9 | 27.7 | 27.4 |
| R263_A | 19.2 | 19.6 | 20.8 | 24.3 | 27.6 | 28.5 | 28.5 | 28.4 | 28.2 | 28.1 | 27.8 | 27.6 | 27.3 |
| R264_A | 19.2 | 19.6 | 20.8 | 24.3 | 27.6 | 28.5 | 28.5 | 28.4 | 28.2 | 28.1 | 27.8 | 27.6 | 27.3 |
| R265_A | 19.0 | 19.5 | 20.7 | 24.2 | 27.5 | 28.5 | 28.4 | 28.3 | 28.1 | 27.9 | 27.7 | 27.4 | 27.2 |
| R266_A | 19.0 | 19.5 | 20.7 | 24.2 | 27.6 | 28.5 | 28.5 | 28.4 | 28.1 | 28.0 | 27.7 | 27.5 | 27.2 |
| R267_A | 18.9 | 19.4 | 20.6 | 24.1 | 27.5 | 28.4 | 28.3 | 28.2 | 28.0 | 27.9 | 27.6 | 27.3 | 27.1 |
| R268_A | 18.9 | 19.4 | 20.6 | 24.2 | 27.6 | 28.5 | 28.5 | 28.3 | 28.1 | 27.9 | 27.7 | 27.4 | 27.2 |
| R269_A | 19.2 | 19.7 | 21.1 | 24.8 | 28.2 | 29.1 | 29.0 | 28.9 | 28.6 | 28.4 | 28.2 | 27.9 | 27.7 |
| R270_A | 18.6 | 19.1 | 20.4 | 24.0 | 27.4 | 28.3 | 28.3 | 28.1 | 27.9 | 27.7 | 27.5 | 27.2 | 26.9 |
| R271_A | 18.9 | 19.4 | 21.0 | 24.8 | 28.3 | 29.3 | 29.2 | 29.0 | 28.7 | 28.6 | 28.3 | 28.0 | 27.8 |
| R272_A | 19.0 | 19.6 | 21.0 | 24.8 | 28.3 | 29.3 | 29.2 | 29.0 | 28.8 | 28.6 | 28.4 | 28.1 | 27.9 |
| R273_A | 19.1 | 19.7 | 21.2 | 25.0 | 28.5 | 29.4 | 29.4 | 29.2 | 28.9 | 28.8 | 28.6 | 28.3 | 28.1 |
| R274_A | 19.5 | 20.1 | 21.4 | 25.1 | 28.5 | 29.5 | 29.4 | 29.3 | 29.1 | 28.9 | 28.7 | 28.5 | 28.2 |
| R275_A | 19.6 | 20.0 | 21.4 | 25.1 | 28.5 | 29.4 | 29.4 | 29.2 | 29.0 | 28.9 | 28.7 | 28.4 | 28.2 |
| R276_A | 18.8 | 19.3 | 20.6 | 24.2 | 27.7 | 28.6 | 28.5 | 28.3 | 28.1 | 27.9 | 27.7 | 27.4 | 27.2 |
| R277_A | 20.8 | 21.2 | 22.1 | 25.0 | 28.3 | 29.1 | 29.2 | 29.2 | 29.1 | 29.0 | 28.8 | 28.6 | 28.4 |
| R278_A | 23.6 | 23.8 | 24.4 | 26.9 | 29.8 | 30.7 | 31.0 | 31.3 | 31.3 | 31.4 | 31.3 | 31.1 | 31.0 |
| R279_A | 23.8 | 24.0 | 24.6 | 27.1 | 29.9 | 30.8 | 31.1 | 31.4 | 31.5 | 31.6 | 31.4 | 31.3 | 31.2 |
| R280_A | 24.5 | 24.6 | 25.1 | 27.4 | 30.2 | 31.0 | 31.4 | 31.8 | 31.9 | 32.1 | 31.9 | 31.8 | 31.7 |
| R281_A | 26.4 | 26.5 | 26.8 | 28.7 | 31.2 | 32.0 | 32.6 | 33.2 | 33.4 | 33.7 | 33.6 | 33.5 | 33.4 |
| R282_A | 23.7 | 23.9 | 24.4 | 26.6 | 31.0 | 30.2 | 30.6 | 31.0 | 31.1 | 31.2 | 31.1 | 30.9 | 30.8 |
| R283_A | 19.5 | 19.9 | 21.1 | 24.4 | 27.8 | 28.7 | 28.7 | 28.6 | 28.4 | 28.3 | 28.0 | 27.8 | 27.5 |
| R284_A | 19.4 | 19.8 | 21.0 | 24.5 | 27.8 | 28.7 | 28.7 | 28.6 | 28.4 | 28.3 | 28.0 | 27.8 | 27.5 |
| R285_A | 19.3 | 19.8 | 21.0 | 24.4 | 27.8 | 28.7 | 28.7 | 28.5 | 28.3 | 28.2 | 28.0 | 27.7 | 27.5 |
| R286_A | 19.0 | 19.5 | 20.7 | 24.2 | 27.6 | 28.5 | 28.4 | 28.3 | 28.1 | 27.9 | 27.7 | 27.4 | 27.2 |
| R287_A | 19.4 | 19.8 | 21.0 | 24.5 | 27.9 | 28.8 | 28.7 | 28.6 | 28.4 | 28.3 | 28.0 | 27.7 | 27.5 |
| R288_A | 20.6 | 20.9 | 21.9 | 25.1 | 28.3 | 29.1 | 29.2 | 29.2 | 29.1 | 29.0 | 28.8 | 28.6 | 28.4 |
| R289_A | 20.4 | 20.7 | 21.8 | 25.0 | 28.3 | 29.2 | 29.2 | 29.2 | 29.0 | 29.0 | 28.7 | 28.5 | 28.3 |
| R290_A | 20.4 | 20.7 | 21.8 | 25.0 | 28.3 | 29.2 | 29.2 | 29.2 | 29.0 | 29.0 | 28.7 | 28.5 | 28.3 |
| R291_A | 20.6 | 20.9 | 21.9 | 25.1 | 28.3 | 29.2 | 29.3 | 29.3 | 29.1 | 29.1 | 28.9 | 28.7 | 28.4 |
| R292_A | 22.3 | 22.5 | 23.3 | 26.1 | 29.2 | 30.1 | 30.3 | 30.4 | 30.4 | 30.4 | 30.2 | 30.0 | 29.9 |
| R293_A | 22.6 | 22.8 | 23.6 | 26.3 | 29.3 | 30.2 | 30.4 | 30.6 | 30.6 | 30.6 | 30.5 | 30.3 | 30.1 |
| R294_A | 23.0 | 23.3 | 23.9 | 26.5 | 29.5 | 30.3 | 30.6 | 30.8 | 30.9 | 30.9 | 30.8 | 30.6 | 30.5 |

| Receptor ID | Windspeed m/s | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| R295_A | 25.5 | 25.6 | 26.0 | 28.1 | 30.6 | 31.5 | 32.0 | 32.5 | 32.7 | 32.8 | 32.7 | 32.7 | 32.6 |
| R296_A | 19.8 | 20.3 | 21.6 | 25.2 | 28.6 | 29.6 | 29.5 | 29.4 | 29.1 | 29.0 | 28.7 | 28.5 | 28.2 |
| R297_A | 19.3 | 19.9 | 21.4 | 25.2 | 28.7 | 29.7 | 29.6 | 29.4 | 29.2 | 29.0 | 28.7 | 28.5 | 28.2 |
| R298_A | 18.7 | 19.2 | 20.5 | 24.2 | 27.6 | 28.5 | 28.5 | 28.3 | 28.1 | 27.9 | 27.6 | 27.4 | 27.1 |
| R299_A | 24.3 | 24.5 | 25.0 | 27.5 | 29.7 | 31.2 | 31.5 | 31.8 | 31.9 | 32.0 | 31.9 | 31.8 | 31.6 |
| R300_A | 25.2 | 25.3 | 25.8 | 28.0 | 29.6 | 31.5 | 31.9 | 32.4 | 32.5 | 32.7 | 32.6 | 32.5 | 32.4 |
| R301_A | 25.4 | 25.6 | 26.0 | 28.3 | 29.9 | 31.8 | 32.3 | 32.7 | 32.8 | 33.0 | 32.9 | 32.8 | 32.7 |
| R302_A | 26.2 | 26.4 | 26.8 | 28.9 | 30.2 | 32.3 | 32.8 | 33.3 | 33.5 | 33.7 | 33.6 | 33.5 | 33.4 |
| R303_A | 27.9 | 28.0 | 28.3 | 30.1 | 30.5 | 33.3 | 34.0 | 34.6 | 34.9 | 35.1 | 35.0 | 35.0 | 34.9 |
| R304_A | 25.6 | 25.7 | 26.3 | 28.6 | 30.5 | 32.3 | 32.7 | 33.0 | 33.2 | 33.3 | 33.2 | 33.1 | 33.0 |
| R305_A | 22.6 | 23.0 | 24.2 | 27.6 | 30.8 | 31.9 | 31.9 | 31.9 | 31.8 | 31.7 | 31.5 | 31.3 | 31.2 |
| R306_A | 22.8 | 23.1 | 24.3 | 27.7 | 30.8 | 31.9 | 32.0 | 31.9 | 31.8 | 31.8 | 31.6 | 31.4 | 31.2 |
| R307_A | 25.3 | 25.5 | 26.1 | 28.5 | 30.6 | 32.2 | 32.6 | 32.9 | 33.0 | 33.1 | 33.0 | 32.9 | 32.8 |
| R308_A | 23.2 | 23.5 | 24.3 | 27.3 | 30.0 | 31.3 | 31.4 | 31.6 | 31.6 | 31.6 | 31.4 | 31.3 | 31.1 |
| R309_A | 23.7 | 24.0 | 24.7 | 27.4 | 29.8 | 31.2 | 31.5 | 31.7 | 31.7 | 31.8 | 31.7 | 31.5 | 31.4 |
| R310_A | 27.5 | 27.6 | 27.9 | 29.8 | 30.6 | 33.1 | 33.7 | 34.3 | 34.6 | 34.8 | 34.7 | 34.7 | 34.6 |
| R311_A | 22.8 | 23.2 | 24.3 | 27.6 | 30.8 | 31.9 | 31.9 | 31.9 | 31.8 | 31.8 | 31.6 | 31.4 | 31.2 |
| R312_A | 19.1 | 19.6 | 21.1 | 24.9 | 28.5 | 29.4 | 29.3 | 29.1 | 28.9 | 28.7 | 28.5 | 28.3 | 28.0 |
| R313_A | 18.9 | 19.5 | 20.9 | 24.8 | 28.3 | 29.2 | 29.1 | 28.9 | 28.7 | 28.6 | 28.3 | 28.1 | 27.9 |
| R314_A | 19.1 | 19.6 | 21.1 | 24.9 | 28.4 | 29.4 | 29.3 | 29.1 | 28.9 | 28.8 | 28.5 | 28.3 | 28.0 |
| R315_A | 18.0 | 18.5 | 19.9 | 23.6 | 27.0 | 28.0 | 27.9 | 27.7 | 27.5 | 27.3 | 27.1 | 26.8 | 26.6 |
| R316_A | 17.8 | 18.4 | 19.7 | 23.4 | 26.9 | 27.8 | 27.8 | 27.6 | 27.3 | 27.2 | 26.9 | 26.6 | 26.4 |
| R317_A | 18.2 | 18.7 | 20.0 | 23.7 | 27.1 | 28.0 | 28.0 | 27.8 | 27.6 | 27.4 | 27.2 | 26.9 | 26.7 |
| R318_A | 22.7 | 23.2 | 24.6 | 28.3 | 31.7 | 32.7 | 32.7 | 32.5 | 32.4 | 32.3 | 32.1 | 31.9 | 31.7 |
| R319_A | 22.8 | 23.2 | 24.5 | 28.1 | 31.4 | 32.4 | 32.4 | 32.4 | 32.2 | 32.1 | 31.9 | 31.7 | 31.6 |
| R320_A | 22.5 | 22.9 | 24.2 | 27.8 | 31.2 | 32.2 | 32.2 | 32.1 | 31.9 | 31.9 | 31.7 | 31.5 | 31.3 |
| R321_A | 24.0 | 24.5 | 25.9 | 29.7 | 33.2 | 34.1 | 34.1 | 34.0 | 33.8 | 33.7 | 33.6 | 33.4 | 33.2 |
| R322_A | 23.1 | 23.6 | 25.2 | 29.2 | 32.8 | 33.7 | 33.6 | 33.5 | 33.3 | 33.2 | 33.0 | 32.8 | 32.6 |
| R323_A | 19.6 | 20.1 | 21.5 | 25.1 | 28.6 | 29.5 | 29.4 | 29.3 | 29.0 | 28.9 | 28.6 | 28.4 | 28.1 |
| R324_A | 26.6 | 26.8 | 27.1 | 29.1 | 30.2 | 32.5 | 33.1 | 33.6 | 33.8 | 34.0 | 33.9 | 33.8 | 33.8 |
| R325_A | 18.9 | 19.4 | 20.7 | 24.2 | 27.6 | 28.5 | 28.5 | 28.3 | 28.1 | 28.0 | 27.7 | 27.4 | 27.2 |
| R327_A | 23.9 | 24.3 | 25.5 | 28.9 | 32.1 | 33.1 | 33.2 | 33.2 | 33.1 | 33.1 | 32.9 | 32.7 | 32.6 |
| R328_A | 23.9 | 24.3 | 25.3 | 28.7 | 31.7 | 32.9 | 32.9 | 33.0 | 32.9 | 32.9 | 32.7 | 32.5 | 32.4 |
| R329_A | 20.8 | 21.4 | 23.0 | 27.0 | 30.5 | 31.5 | 31.4 | 31.2 | 31.0 | 30.8 | 30.6 | 30.4 | 30.2 |
| R330_A | 19.0 | 19.5 | 20.9 | 24.6 | 28.0 | 29.0 | 28.9 | 28.8 | 28.5 | 28.4 | 28.1 | 27.9 | 27.7 |
| R331_A | 24.0 | 24.4 | 25.6 | 29.1 | 32.3 | 33.4 | 33.4 | 33.4 | 33.3 | 33.2 | 33.0 | 32.9 | 32.7 |
| R332_A | 23.5 | 23.7 | 24.3 | 26.8 | 29.8 | 30.5 | 30.9 | 31.1 | 31.2 | 31.3 | 31.2 | 31.0 | 30.9 |

| Receptor ID | Windspeed m/s | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| R333_A | 18.1 | 18.6 | 20.2 | 24.2 | 27.7 | 28.6 | 28.5 | 28.3 | 28.1 | 27.9 | 27.7 | 27.4 | 27.2 |
| R334_A | 25.2 | 25.4 | 26.0 | 28.5 | 30.6 | 32.2 | 32.6 | 32.9 | 33.0 | 33.1 | 33.0 | 32.8 | 32.7 |
| R335_A | 19.7 | 20.2 | 21.6 | 25.3 | 28.7 | 29.6 | 29.6 | 29.5 | 29.2 | 29.1 | 28.9 | 28.7 | 28.4 |

FEHILY TIMONEY

**CONSULTANTS IN ENGINEERING,
ENVIRONMENTAL SCIENCE
& PLANNING**

**www.fehilytimoney.ie**

Cork Dublin Carlow