

Mumblin Wind Farm Pty Ltd

Proposed Mumblin Wind Farm

Verification of Environmental (Predictive) Noise Assessment

Reference:

Rev0 | 14 November 2025

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Job number 298918-01

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Auditor Verification Statement

I, Kym A Burgemeister, an environmental auditor appointed under Part 8.3 of the *Environment Protection Act 2017*, having:

1. Been requested by Mumblin Wind Farm Pty Ltd to undertake a verification process and produce a Verification Report for the environmental (predictive) noise assessment for the proposed Mumblin Wind Farm, undertaken by Marshall Day Acoustics Pty Ltd.
2. Specifically, I have been requested to independently verify whether or not the pre-construction (predictive) environment noise assessment as provided in the report entitled Mumblin Wind Farm – Environmental Noise Assessment (Marshall Day Acoustics Pty Ltd, Report Rp 001 R05 20200546, dated 10 November 2025) has been conducted in accordance with New Zealand Standard NZS 6808:2010 Acoustics – Wind Farm Noise (NZS 6808:2010).
3. This verification is required under clause 52.32-4 of the Victorian Planning Provisions (*Planning and Environment Act 1987*)
4. Having regard to:
 - New Zealand Standard 6808:2010 Acoustics – Wind Farm Noise (NZS 6808:2010)
 - Planning Guidelines for Development of Wind Energy Facilities (Department of Transport and Planning, dated September 2023) (DTP Guidelines)
 - Victoria Planning Provisions (Amendment VC234)
 - *Environment Protection Act 2017* as amended by the *Environment Protection Amendment Act 2018*
 - *Environment Protection Regulations 2021* as amended by the *Environment Protection Amendment (Wind Turbine Noise) Regulations 2022*
 - Mumblin Wind Farm Background Noise Monitoring (Marshall Day Acoustics Pty Ltd, Report Rp 002 20200546, dated 27 May 2024)
 - Environmental Auditor Guidelines - Verification and review for wind energy facilities (EPA Publication 1692.1, dated December 2024)

and the following relevant documents:

- ISO 9613-2:1996 Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation, International Organisation for Standardisation, 1996
- ISO 9613-2:2024 Attenuation of sound during propagation outdoors – Part 2: Engineering method for the prediction of sound pressure levels outdoors, International Organisation for Standardisation, 2024
- IEC 61400-11 (Ed 3, 2012) Wind Turbines – Acoustic noise measurement techniques
- A good practice guide to the application of ETSU-R-97 for the assessment and rating of wind turbine noise, UK Institute of Acoustics, dated May 2013 (UK IoA Guidance)
- Wind Energy Facility Turbine Noise Regulation Guidelines (EPA Website, accessed November 2025)
- Wind Energy Facility Turbine Noise Technical Guideline (EPA Publication 3011, December 2024)

- Environmental Auditor Guidelines – Provision of statements and reports for environmental audits and preliminary risk screen assessments (EPA Publication 2022, dated August 2021)
 - Environmental Auditor Guidelines for Appointment and Conduct (Publication 865.15, dated December 2024)
5. Hereby declare that I am able to verify that the environmental (predictive) noise assessment for the proposed Mumblin Wind Farm, as provided in the report:
- Mumblin Wind Farm – Environmental Noise Assessment (Marshall Day Acoustics Pty Ltd, Report Rp 001 R05 20200546, dated 10 November 2025)

has been conducted in accordance with NZS 6808:2010. Details on relevant specific issues are provided in the attached Verification Report.

Dated: 14 November 2025

Signed



Kym A Burgemeister

Environmental Auditor (Industrial Facilities in the subcategory of wind energy facilities) – Appointed pursuant to the *Environment Protection Act 2017*
Appointment ID EXT001596

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List of Acronyms

Acronym	Definition
AGL	Above Ground level
dB(A)	A-weighted decibels, unit for the measurement of sound. The A-weighting is an adjustment to reflect how humans hear sound.
DTP	Department of Transport and Planning Victoria
EPA	Environment Protection Authority Victoria
EP Act	<i>Environment Protection Act 2017</i> as amended by the <i>Environment Protection Amendment Act 2018</i>
ERS	Environment Reference Standard
GED	General Environmental Duty (requirement under Section 25 of the EP Act)
IEC 61400-11:2012	International Standard IEC61400-11:2012 Wind turbines – Part 11: Acoustic noise measurement techniques
ISO 1996.2	International Standards Organisation ISO 1996.2:2017 Acoustics – Description, measurement and assessment of environmental noise – Part 2: Determination of sound pressure levels
L _{A90(10 min)}	A-weighted noise level exceeded for 90% of the measurement period, where the measurement period is 10 minutes
LGA	Local Government Act
MDA	Marshall Day Acoustics Pty Ltd
NMP	Noise Management Plan
MWF	Mumblin Wind Farm
NZS 6808:2010	New Zealand Standard Acoustics – Wind Farm Noise NZS 6808:2010
EP Regulations	Environment Protection Regulations 2021 as amended by the Environment Protection Amendment (Wind Turbine Noise) Regulations 2022
SAC	Special Audible Characteristic
Standard	New Zealand Standard Acoustics – Wind Farm Noise NZS 6808:2010
UK IoA Guidance	A good practice guide to the application of ETSU-R-97 for the assessment and rating of wind turbine noise (dated May 2013)
WEF	Wind Energy Facility
WEF Proponent	Mumblin Wind Farm Pty Ltd
WTG	Wind Turbine Generator

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1. Introduction

1.1 Purpose

Mumblin Wind Farm Pty Ltd (the Proponent) is seeking approval for the construction and operation of the proposed Mumblin Wind Farm (proposed Project), comprising of eight (8) wind turbine generators (WTGs) and related infrastructure on a site located approximately ten (10) km west of Cobden Victoria. The site is located within the local government area (LGA) of Corangamite Shire. For consistency with applicable Victorian legislation, the proposed Project is also referred to in this report as the proposed Mumblin Wind Energy Facility (proposed Mumblin WEF).

Kym Burgemeister, an environmental auditor (auditor) appointed under Part 8.3 of the *Environmental Protection Act 2017* (EP Act), has been requested by Mumblin Wind Farm Pty Ltd to undertake a verification process and produce a Verification Report (this report) against NZS 6808:2010 for the pre-construction (predictive) environmental noise assessment undertaken by Marshall Day Acoustics Pty Ltd (MDA).

This verification is required under clause 52.32-4 of the Victorian Planning Provisions (Planning and Environment Act 1987), and the guidance document entitled Planning Guidelines for Development of Wind Energy Facilities (Department of Transport and Planning, dated September 2023) (DTP Guidelines). The purpose of this verification is to establish that, should a permit be granted for the WEF, it would be able to comply with the noise limit that would apply to the facility, once constructed, under the EP Regulations 2021.

The verification has been undertaken by Kym Burgemeister (auditor) with additional technical support provided to the auditor from his Expert Support Team member Helen Searle (as provided for under EPA Publication 865.15 Environmental Auditor Guidelines for Appointment and Conduct, dated December 2024).

This verification process has been limited to the predictive noise issues associated with the operational WTGs, for assessment against NZS 6808:2010. It therefore excludes the following aspects:

- Construction noise and vibration.
- Operational noise other than the WTGs (eg transformer station).
- Operational vibration.

The Environmental Auditor Guidelines - Verification and review for wind energy facilities (EPA Publication 1692.1, dated December 2024) provides a recommended approach for conducting the pre-construction verification which has informed the structure of this Verification Assessment Report.

The MDA report includes a statement that further detailed noise modelling and an updated noise assessment will be undertaken prior to construction, to model the final wind farm layout and selected WTG model to assess compliance with NZS 6808:2010.

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1.2 Reviewed reports

The primary document that has been reviewed for this Verification is:

- Mumblin Wind Farm – Environmental Noise Assessment (Marshall Day Acoustics Pty Ltd, Report Rp 001 R05 20200546, dated 10 November 2025) (MDA Report)

Additional project specific reports which have been reviewed and referenced are:

- Mumblin Wind Farm Background Noise Monitoring (Marshall Day Acoustics Pty Ltd, Report Rp 002 20200546, dated 27 May 2024) (MDA Background Noise Monitoring Report)

1.3 Referenced documents

In undertaking this review, the auditor has made reference to the following documents:

- New Zealand Standard 6808:2010 Acoustics – Wind Farm Noise (NZS 6808:2010)
- *Environment Protection Act 2017* as amended by the *Environment Protection Amendment Act 2018*
- Environment Protection Regulations 2021 as amended by the Environment Protection Amendment (Wind Turbine Noise) Regulations 2022
- Victoria Planning Provisions (Amendment VC 234)
- Planning Guidelines for Development of Wind Energy Facilities (Department of Transport and Planning, dated September 2023) (DTP Guidelines)
- ISO 9613-2:1996 Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation, International Organisation for Standardisation, 1996
- IEC 61400-11 (Ed 3, 2012) Wind Turbines – Acoustic noise measurement techniques
- A good practice guide to the application of ETSU-R-97 for the assessment and rating of wind turbine noise, UK Institute of Acoustics, dated May 2013 (UK IoA Guidance)
- Wind Energy Facility Turbine Noise Regulation Guidelines (EPA Website, accessed November 2025)
- Environmental Auditor Guidelines - Verification and review for wind energy facilities (EPA Publication 1692.1, dated December 2024)
- Environmental Auditor Guidelines – Provision of statements and reports for environmental audits and preliminary risk screen assessments (EPA Publication 2022, dated August 2021)
- Environmental Auditor Guidelines for Appointment and Conduct (Publication 865.15, dated December 2024)

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2. Applicable Legislation and Guidelines

The current regulatory framework for Wind Energy Facilities (WEFs) in Victoria is outlined in the Wind Energy Facility Turbine Noise Regulation Guidelines (EPA website, May 2025) and the Wind Energy Facility Turbine Noise – Technical Guideline (EPA Publication 3011, December 2024).

As part of the Victorian wind energy facility (WEF) planning permit application process, an application must include a Pre-construction Noise Assessment report (VPP 52.32-4). Under the planning approval requirements, the Proponent is required to engage an Environmental Auditor appointed under Part 8.3, Division 1 of the Environment Protection Act 2017 to undertake a verification of the Pre-construction Noise Assessment.

While this verification is strictly not an audit process, guidance on the audit of pre-construction noise is provided in Section 2.5.1 and Section 3 of *Environmental Auditor Guidelines – Verification and review for wind energy facilities* (EPA Publication 1692.1, December 2024) which has informed the structure of this Verification report.

Reference has also been made to the following EPA publications:

- Guidelines for Conducting Environmental Audits (EPA Publication 2041.1, dated September 2023)
- Environmental Auditor Guidelines for Appointment and Conduct (Publication 865.15, dated December 2024)

A summary of the applicable legislation and guidelines is provided in Section 3.0 and Appendix E of the MDA Report.

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3. Approach to the Verification Assessment

Section 3 of Publication 1692.1 notes that the verification is to be conducted in a manner deemed appropriate by the environmental auditor but would typically include the following steps:

1. Familiarisation with the WEF development proposal and planned operation.
2. Inspection of the WEF project site and the surrounding environment.
3. Assessment of the rigour of the process used to identify surrounding noise sensitive locations.
4. Review of the pre-construction noise assessment considering the WEF development proposal and operations including:
 - a. turbine technical specifications and power ratings
 - b. tower locations
 - c. topography maps and aerial imagery, and
 - d. any other relevant factors.
5. Review of background noise assessments (where available).
6. Technical verification of the predictive noise assessment, including:
 - a. methodology applied to conduct the assessment
 - b. review manufacturer's or turbine technical reports on representative sound power and frequency spectrums produced by the turbines
 - c. noise monitoring equipment and parameters used
 - d. interrogated the rigor of the modelling selected parameters and processes
7. Review of identified potential noise impacts and any operational plans to manage the impacts (e.g. select turbines operating in reduced power modes during certain wind conditions) that are proposed as part of the WEF permit application.
8. Require clarification on mapped noise sensitive locations.
9. Risk assessment, including a qualitative statement on the risk of non-compliance.

The Verification assessment is generally consistent with the above approach, as documented within Section 4 of this Verification Report.

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4. Verification Assessment

A checklist (Appendix A1) has been prepared to summarise compliance of the pre-construction (predictive) noise assessment against the requirements of NZS 6808:2010. This should be referred to, in addition to the discussion of key issues in the following sections.

4.1 Proposed WEF development and operation

A brief description of the proposed Project is provided in Section 2.0 of the MDA Report.

For the purposes of this Verification Report, the following elements of the proposed Project are noted:

- The proposed Project is to be located within the Corangamite Shire Council local government area (Moyne LGA), approximately 10 km west of Cobden.
- The Proponent is seeking consent for 8 WTGs, with a tip height of up to 252 m. Two wind turbine models options, the Vestas V162-6.8MW and V172-7.2MW WTGs, both with nominal hub height of 166 m have been assessed as the candidate models for the predictive noise assessment. Further details of these models are provided in Section 6.2 of the MDA Report.

4.2 Project site inspection

An inspection of the general area in which it is proposed to locate the Mumblin WEF was undertaken by the auditor on 22 October 2025.

The intent of the site inspection was to ascertain the environmental and community context, the WTG placements in relation to the location of identified noise sensitive receiver locations, and the locations used for background noise and meteorological monitoring. The inspection confirmed general conditions on the site and surrounding areas referred to in the MDA Report and the MDA Background Noise Monitoring Report. The scope of the verification did not include confirming GPS locations of proposed individual WTGs.

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4.3 Identification of noise sensitive locations

A total of 199 noise sensitive locations (receivers) have been identified within 5 km of the proposed Project and are considered in the noise assessment.

There is a camping ground located on the north-eastern side of Lake Elingamite. The camping ground at Lake Elingamite theoretically satisfies the NZS 6808:2010 definition as an existing right and therefore a sensitive receiver location – it is understood that this camping ground is a free and unsupervised camping area, and does not include any services (toilets, waste collection, fresh water or power).

Section 6.1.2 of the MDA Report notes that there are no receivers outside the Project boundary with noise agreements in place or proposed between the landowners and the proponent. The MDA report identifies 8 stakeholder receivers located within the Project boundary, as presented in Appendix D.

4.3.1 Verification of wind turbine noise agreements

The auditor has confirmed (via email from the Proponent) that there are no properties that hold a wind turbine noise agreement (stakeholder receivers) located outside of the Project Boundary at the time of this verification.

The confirmed stakeholder receivers within the Project Boundary are as follows:

- 61(S)
- 79(S)
- 80(S)

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- 81(S)
- 82(S)
- 98(S)
- 177(S)
- 178(S)

The stakeholder receivers within the Project Boundary appear to be correctly identified within Figure 1 and Appendix C of the MDA Report. Further discussion of the associated compliance limits is provided in Section 4.5.

4.4 Review of background noise assessment

While a review of the background noise monitoring is not strictly required as part of the verification process, the measured background noise levels are used to set the noise limits at noise sensitive receiver locations. It is therefore appropriate to review the methodology and findings of the background noise monitoring to confirm that the approach used complied with NZS 6808:2010.

The background noise monitoring was undertaken by MDA, as documented in the report entitled Mumblin Wind Farm Background Noise Monitoring (Marshall Day Acoustics Pty Ltd, Report Rp 002 20200546, dated 27 May 2024) (MDA Background Noise Monitoring Report). A summary of the findings of the background monitoring assessment are also presented in Section 5.0 of the MDA Report.

The following sections outline the key points regarding the Background Noise Monitoring Report.

4.4.1 Requirement to undertake background noise monitoring

An earlier noise modelling assessment indicated that predicted noise levels are below 35 dB L_{A90} at all non-stakeholder receivers. It is understood that this previous predictive assessment report (Mumblin Wind Farm – Noise Assessment, Marshall Day Acoustics Pty Ltd, Report Rp 001 R03 20200546, dated 27 May 2024) concluded that predicted noise levels are below 35 dB L_{A90} at all non-stakeholder receivers. As such, in accordance with NZS 6808, based on the wind turbine layout detailed in Appendix B and the selected candidate turbine model, background noise monitoring is not required to be undertaken. (MDA Background Noise Monitoring Report, Section 2.1).

The auditor confirms that this approach is in accordance with NZS 6808:2010 Section 7.1.4. Furthermore, the guidance provided in Section 4.3.2 of the DTP Guidelines does not require a mandatory background monitoring assessment to be included in an application for a planning permit.

However, MDA state that, for completeness, two (2) background monitoring locations were identified and background noise monitoring was undertaken at two (2) receivers.

Subsequent to the issue of the MDA Background Noise Monitoring Report, the predictive assessment has been revised to include different candidate turbine models, with results presented in Section 6.4 of the Predictive Noise Assessment Report. The updated assessment results include predicted noise levels above 35 dB L_{A90} at one non-stakeholder receiver (Receiver 176) and therefore background noise monitoring should be undertaken at this receiver (see Section 4.4.2 below).

The location of the meteorological mast used to undertake the wind speed and direction measurements is indicated in the maps and appears to be appropriate for the characterisation of the meteorological conditions during the background noise level survey.

4.4.2 Selection of background noise monitoring locations

The selection of background monitoring locations is provided in Section 2.1 of the MDA Background Noise Monitoring Report.

A total of two (2) preferred background monitoring locations (Receivers 59 and 176) were originally identified by MDA on the basis of good practice. Subsequent updated noise modelling has indicated that

background noise monitoring is *required* at Receiver 176 as it is within the updated 35 dB(A) prediction contour for one of the proposed turbines (see Section 4.4.1 above).

However, it is understood that consent to conduct noise monitoring was not granted at Receiver 176, and that monitoring was therefore undertaken at Receiver 98 (a stakeholder receiver located approximately 200 m north-west across Retallacks Road) (Refer to MDA Background Noise Monitoring Report, Table 1 and Figure 1). The auditor reviewed these locations during the site visit on 22 October 2025, and concluded that this was a reasonable alternative monitoring location.

4.4.3 Monitoring survey methodology

The monitoring methodology used by MDA is provided in the MDA Background Noise Monitoring Report, Section 2.2, Table 2, with additional detail in the attached appendices. The following key points are noted:

- Detailed information regarding the microphone location at each monitoring location is provided in Appendix F (Receiver 59) and Appendix G (Receiver 98), including individual aerial and site photographs showing specific measurement locations. This indicates that the measurement locations were located at appropriate positions relative to nearby sensitive receiver locations and the proposed locations of the wind turbines.
- The noise monitoring equipment adopted for the background noise level measurements, and wind shielding appears to be appropriate. Further details of survey instrumentation are provided in Appendix C of the MDA Background Noise Monitoring Report.
- The background noise monitoring has been undertaken over approximately 7 weeks in June and July 2023. The number of measured data points at each location exceeds the minimum recommendation of 1,440 data pairs given in NZS 6808:2010.
- The site wind-speed at hub height (166 m AGL) has been determined based on extrapolating the wind speed measurements at 60 m, 100 m, 120.2 m and 141.4 m, and using the measured site-specific wind-shear coefficients. This method is appropriate and undertaken in accordance with S7.3.2 of NZS 6808:2010. Further details of coordinates of the met masts, analysis process and wind roses are provided in Appendix D and Appendix H of the MDA Background Noise Monitoring Report.

It is concluded that the background noise level measurements have been undertaken in accordance with NZS 6808:2010. A comparison between the measurement methodology and the requirements of NZS 6808:2010 are provided in the table in Appendix A1 of this report.

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4.4.4 Data analysis

The methodology used by MDA for analysis of the data is provided in the MDA Background Noise Monitoring Report, Section 2.3 (particularly Table 3). Background noise levels and derived noise limits (both all-time and night-time) are provided in Sections 3.1 and 3.2 respectively. The following key points are noted:

- The data analysis includes filtering out data that is affected by rainfall or extraneous noise in accordance with S7.2.4 of NZS 6808:2010. Periods with likely extraneous noise have been identified using the one-third octave band methodology documented by Griffin et. al¹. This approach has been shown to remove data pairs with generally higher noise levels from the regression analysis and so will result in a conservative assessment of the background noise level.
- The background noise level and filtered wind speed data has been analysed using a 3rd order polynomial regression generally between the cut-in wind speed (5 m/s & 6 m/s) and the maximum expected operational speed (21 m/s) (noted in Appendix E of the Background Noise Monitoring Report), which is appropriate. The regression has been truncated at some locations at low wind speeds, where the

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¹ Griffin, D., Delaire, C. and Pischedda, P. (2013) *Methods of identifying extraneous noise during unattended noise measurements*. 20th International Congress of Sound and Vibration.

polynomial regression would result in an increase in noise level with reducing wind speed, in accordance with the UK IoA Guidance.

- The monitoring results and summary of data analysis for each monitoring location are shown in Appendices F and G of the MDA Background Noise Monitoring Report.
- Regression analysis was undertaken for both the 24-hour data, and night-period data only ie consistent with NZS 6808:2010 Section 7.4.1.
- The reported square of the correlation coefficient (r^2) for both Locations 59 and 98 are 0.178 and 0.125 respectively for all time data, and 0.484 and 0.495 respectively for the night-period data only (shown in Appendix E of the Background Noise Monitoring Report). This is not particularly high, and representative of a relatively wide range of results, rather than highly correlated data.

Noise limits have been derived at integer hub-height wind speeds, and are consistent with the noise limits provided in NZS 6808:2010 Section 5.2 for sensitive receiver locations.

4.5 Compliance limits

Section 6.1.3 of the MDA Report provides a breakdown of the status of the 199 noise sensitive receivers considered in the assessment:

- Non-stakeholder receivers
- Stakeholder receivers with a noise agreement
- Stakeholder within the project boundary

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The noise limit applied by the assessment depends on the defined status of the receivers.

Regulation 131B specifies that NZS 6808:2010 is the relevant noise standard for the proposed wind farm. The Proponent has appropriately applied the noise limit of 40 dBL_{A90} or background (dBL_{A90}) + 5 dB, whichever is the greater at all non-stakeholder receivers.

NZS 6808:2010 (Section 2.4) states that the noise limits do not apply to receivers within the boundary of the proposed wind farm site. The auditor understands that 8 of the receivers are located within the boundary of the proposed wind farm site (MDA Report, Section 2, Section 6.1.2 and Appendix D). MDA has applied a “reference level” of 45 dBL_{A90} or background (dBL_{A90}) + 5 dB at stakeholder receivers within the project boundary. This is consistent with the recommendation provided in the DTP Guidelines.

Regulation 131A allows the noise limits provided in NZS 6808 to be modified if there is a wind turbine noise agreement in place between a WEF owner/ operator and a relevant landowner (stakeholder receiver). Regulation 131 BA still places a noise limit for this situation where such an agreement is made on or after 01 November 2021. It is understood that there are currently no stakeholder receivers where a noise agreement is in place or proposed between the landowners and the Proponent (MDA Report, Section 6.1.2).

The proposed applicable noise limits in Table 6, Section 6.1.3 of the MDA Report are consistent with NZS 6808:2010, Regulation 131BA, and the DTP Guidelines for stakeholders and non-stakeholders.

4.5.1 Consideration of a high amenity noise limit

NZS 6808:2010 Section 5.3.1 provides guidance as to whether a high amenity noise limit may be justified. A discussion of the consideration of high amenity noise limits is provided in Section 6.1.1 of the MDA Report, as required by Sections 4.3.2 and 5.1.2 of the DTP Guidelines.

The auditor accepts that MDA has documented an appropriate assessment of this issue in Section 6.1.1 of the MDA Report, adopting the guidance of Section 5.2 of the EPA Technical Guideline.

The auditor accepts that the areas within the Farming Zone (Refer to Appendix G of the MDA Report for Zoning Map) around the proposed Project do not warrant consideration of a high amenity noise limit. It is also noted that only one non-stakeholder receiver (Receiver 176) is located within the predicted 35 dBL_{A90} contour.

4.6 Technical verification of the predictive noise assessment

The following verification assessment is based on information provided in the MDA Report, Section 6.0, and associated appendices.

4.6.1 Assessment methodology

The assessment methodology for the pre-construction (predictive) noise assessment is set out in Section 4 of the Report. The auditor accepts the outlined methodology and notes that it is generally consistent with the assessment methodology outlined in Section 3.2 of NZS 6808:2010 and the DTP Guidelines.

4.6.2 Candidate wind turbine

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Choice of candidate turbine

NZS 6808:2010 does not provide any requirements on the choice of WTG. The choice of WTG option(s) selected for the predictive noise assessment should be consistent with the likely option to be finally selected. Specifically, the assessment can then take into account sound power levels and any Special Audible Characteristics (SACs) of the turbine options.

The auditor is satisfied that the candidate WTGs (Vestas V162-6.8MW, Vestas V172-7.2MW) are appropriate for this initial assessment, and notes that a further assessment of the preferred option will be undertaken when selected, including achieving compliance with the planning permit limits at surrounding sensitive receivers (Refer to Section 6.2 of the MDA Report).

Sound power levels

The source sound power levels used in the noise predictions are based on the documented sound power level data and spectral (octave band) data for the candidate turbine provided by the manufacturer Vestas, in accordance with Section 6.2.1 of NZS 6808:2010 (Refer to Section 6.3.1 of the MDA Report, and Appendix J).

It is unclear whether these source levels have been determined by Vestas in accordance with IEC 61400-11 (Ed 3, 2012) Wind Turbines – Acoustic measurement techniques (IEC 61400-11: 2012), or are estimates or predictions made by Vestas (either are acceptable under NZS 6808:2010). Nevertheless, the reported noise emission levels appear consistent with the levels that would be expected from large wind turbines of this type.

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Consideration of Special Audible Characteristics

Wind farm sound that exhibits Special Audible Characteristics (SACs), such as tonality, impulsiveness or amplitude modulation is subject to penalties between 1–6 dB to account for the additional audibility and annoyance caused by sound with these characteristics. However, as noted in Section 5.4 of NZS 6808:2010, special audible characteristics cannot always be predicted in advance.

MDA has noted that there is limited data or evidence for tonality, or prediction of amplitude modulation and impulsiveness at the planning stage. Therefore, no adjustment has been made for SACs in the assessment, although SACs would be considered further in subsequent stages of the Project, including the operational phase (Refer to Section 6.3.2 of the MDA Report).

This approach is considered to be reasonable at this stage. However, it is recommended that measurements of the tonality of the turbine selected for installation (in accordance with IEC 61400-11:2012) are reviewed as they become available, or verified by on-site emission testing of the first turbines commissioned on the site.

4.6.3 Noise prediction model

The noise prediction model is described in Appendix H of the MDA Report. The noise level predictions have been undertaken using the noise propagation model provided in ISO 9613-2:1996 Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation, International Organisation for Standardisation, 1996 (ISO 9613-2:1996), which has been shown in national and international studies to provide reasonable results for wind farm noise level predictions. NZS 6808:2010, Section 6.1.3 refers to

ISO 9613-2:1996 as “an example of a prediction method that has been shown to correlate well with measured data for wind farms...”

In the opinion of the auditor and his team, the calculation parameters that have been adopted for temperature, humidity and ground absorption are reasonable, and correspond to best practice.

The noise level predictions have adopted the following conservative assumptions:

- Ground characterisation, typifying soft ground conditions $G=0.5$
- Barrier effect limited to 2 dB
- Screening based on turbine tip height, not hub height
- +3 dB penalty for ‘concave’ ground topography (‘valley’ effects).
- 1.5m AGL receiver height.

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These considerations are not explicitly required by NZS 6808:2010 or implemented in ISO 9613-2:1996; however, they are commonly adopted as good practice for wind farm noise assessment based on the good practice guide to the application of ETSU-R-97 for the assessment and rating of wind turbine noise, UK Institute of Acoustics, dated May 2013 (UK IoA Guidance).

It is noted that a receiver height of 1.5 m has been adopted in the predictions, rather than 4.0 m recommended in the Wind Energy Facility Turbine Noise, Technical Guideline. The assessment provides a comprehensive justification for the selection of receiver height used for the predictions, which is acceptable.

4.6.4 Consideration of cumulative noise from other WEFs

NZS 6808:2010 Section 5.6 requires that:

... the noise limits in Sections 5.2 and 5.3 should apply to the cumulative sound level of all wind farms affecting any noise sensitive location.

MDA state that... to our knowledge, the nearest approved and/or operating wind farm is the Timboon West Wind Farm (approximately 20 km to the south) (MDA Report, Section 6.5).

A review of current mapping indicates that this is the nearest operating wind energy facility, and it is therefore accepted that there would not be any significant cumulative impacts; however, the proximity of adjacent wind farms should be checked as part of the planning approval process.

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4.6.5 Uncertainty

NZS 6808:2010 Section 5.7 states that:

“Prediction and measurement of sound levels from wind farms involve values of a range of parameters that can be known or predicted only within a certain tolerance. The size of such uncertainties determine the level of confidence in the overall results.”

NZS 6808:2010 Appendix C – Uncertainty states that:

It is good practice to state the uncertainty and confidence level for any sound levels determined in accordance with this Standard. Uncertainty should be determined in accordance with the procedures of Craven and Kerry (2001)

MDA used SoundPlan v9.0 software, utilising the international standard ISO 9613-2:1996 sound propagation model as the method to calculate the level of broadband A-weighted wind farm noise expected to occur at surrounding sensitive receiver locations.

The software in conjunction with the digital terrain model of the site, has been used to evaluate the path between each turbine and receiver pairing, and then subsequently applies the adjustments to each turbine’s predicted noise contribution where appropriate. As mentioned above, NZS 6808:2010 notes that the ISO 9613-2:1996 sound propagation model has been demonstrated to generally result in conservative noise predictions.

All acoustic measurements and noise predictions are subject to measurement and calculation uncertainty. While MDA's analysis is not subject to a detailed Uncertainty Analysis, it does generally adopt conservative assumptions, including a +1.0 dB contingency to account for input data uncertainty. The auditor and his team agree that this approach for modelling noise from WEFs is appropriately conservative.

4.6.6 Compliance with noise standards

The auditor finds that the MDA Report is in general compliance with the applicable standards and guidelines.

A checklist (Appendix A1) has been prepared to summarise compliance against the requirements of NZS 6808:2010, for undertaking the pre-construction (predictive) noise assessment.

4.6.7 Compliance with noise limits

The highest predicted L_{A90} noise levels are provided in Table 8 of Section 6.4 of the MDA Report for both candidate turbines. In summary, the assessment predicted that the highest noise levels:

- at all non-involved receiver locations outside the proposed Project boundary complied with the applicable noise limit of 40 dB L_{A90}
- at all involved receiver locations inside the proposed Project boundary complied with the reference noise limit of 45 dB L_{A90} .

These noise limits are consistent with those required in Regulation 131BA and the DTP Guidelines.

4.6.8 Review of potential noise impacts and management measures

Section 8.0 of the MDA Report provides a summary of the noise management measures. No particular operational restrictions have been identified as being required at this stage of the assessment.

4.7 Risk assessment

The auditor has undertaken a general assessment of the risk of non-compliance with applicable noise limits outlined in Section 4.5 of this Verification Report.

The following factors have been considered in making this assessment:

- The technical assessment of the predictive noise assessment indicates that the noise modelling and assessment has adopted an appropriate approach and methodology that is consistent with the requirements of NZS 6808 and relevant technical guidance.
- The noise level predictions adopt reasonable input parameters.
- Only one non-stakeholder receiver is located within the 35 dBA contour; background noise monitoring has been conducted at a reference location in close proximity to this receiver, enabling robust future post-construction compliance testing.
- All other receivers near the 35 dBA contour are situated within the wind farm site boundary, where no specific regulatory noise limit applies—only a reference level (45 dB L_{A90}) is used in accordance with best practice. Predicted levels at these receivers are significantly (> 6 dB) below the reference level at all receivers.
- There are no current or planned WEFs near the Mumblin WEF that would be expected to increase the cumulative WEF noise levels for the site.

Based on these factors, the risk of non-compliance with the applicable noise limits is considered by the auditor to be low.

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5. Auditor Comments and Recommendation

5.1 Comments

The verification process concludes that the environmental (predictive) noise assessment for the proposed Mumblin Wind Farm, as provided in the MDA Report, has been conducted in accordance with NZS 6808:2010. Details on relevant specific issues are provided in this Verification Report, and Appendix A1.

Modelling of final turbine selection and wind farm layout: it is understood that a further pre-construction (predictive) noise assessment is required before any construction can commence, to model the final wind farm layout and selected WTG model, to assess compliance with NZS 6808:2010.

5.2 Recommendations

The Auditor makes the following recommendations in relation to the Proposed Mumblin Wind Farm:

1. Turbine tonality: it is recommended that measurements of the tonality of the turbine selected for installation (in accordance with IEC 61400-11:2012) are reviewed as they become available, or verified by on-site emission testing of the first turbines commissioned on the site.
2. Further background noise monitoring: it is recommended that an additional period of pre-construction background noise monitoring is undertaken around the perimeter to of the windfarm to enable post-construction assessment at both non-stakeholder and stakeholder locations in accordance with NZS 6808:2010, EP Regulations and DTP Guidelines. The background monitoring locations should be selected to provide a representative selection of the background noise environments in proximity to the wind farm, in particular those receivers within the 35 dB predicted noise level contour.

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A.1 NZS 6808:2010 Checklist

The following checklist has been prepared by the auditor to verify compliance with the NZS 6808:2010 within the following information sources:

Information Sources:

- Mumblin Wind Farm – Environmental Noise Assessment (Marshall Day Acoustics Pty Ltd, Report Rp 001 R05 20200546, dated 10 November 2025) (MDA Report)
- Mumblin Wind Farm – Background Noise Monitoring (Marshall Day Acoustics Pty Ltd, Report Rp 002 20200546, dated 27 May 2024) (MDA Background Noise Monitoring Report)

The checklist also addresses the *Minimum requirements per-construction Verification Checklist* within Appendix A of the Environmental Auditor Guidelines.

NZS6808:2010 Section/Clause	NZS 6808:2010 Requirement	Reference Section – Predictive Noise Assessment Report	Reference Section – Background Noise Monitoring Report	Assessment	Compliance
3.1.3	Adopt A-frequency weighted L90 centile level for wind farm sound	S5.0, S6.1.3, S6.4 Table 10	S2.2, Table 2		Comply
5.2	Noise Limits – Non-stakeholder and stakeholder receivers	S6.1.2, S6.1.3 Table 3		Noise limits based on EP Regs 131BA requirements	Comply
5.3	Assessment of applicability of High Amenity Areas Noise Limits	S6.1.1		The wind farm is not in an area with zonings where the ‘high amenity noise limit’ would apply	Comply
5.4	Assessment for Special Audible Characteristics	S6.3.2		No quoted IEC 61400-11 test emission data for candidate turbine. Assessment based on observation that the occurrence of tonality is unusual. Amplitude modulation is impractical to determine pre-construction.	Comply
5.6	Cumulative Effects	S6.5		MDA state that the nearest approved and/or operating wind farm understood to be Timboon West Wind Farm, located 17 km to the North. Should be checked during approval process.	Comply

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NZS6808:2 010 Section/Cla use	NZS 6808:2010 Requirement	Reference Section – Predictive Noise Assessment Report	Reference Section – Background Noise Monitoring Report	Assessment	Compliance
5.7	Uncertainty	S6.3.1 Appendix H2		+1 dB adjustment adopted to account for typical values of test uncertainty.	Comply
6.1.1	Noise modelling method Predictions should identify all noise sensitive locations that might be exposed to > 35 dB L _{A90(10 min)} , and then predictions to establish the likely wind farm sound levels at each of these locations	S6.4 Appendix I		All receivers located outside the project boundary are predicted to all have WEF highest noise levels < 35 dB L _{A90(10 min)} , except for non-stakeholder receiver 176 (35.9 dB L _{A90(10 min)}).	Comply
6.1.2	Noise modelling method Factors that the predictions of wind farm sound levels should take into account a) Sound power levels and positions of wind turbines b) Directivity of propagation c) Meteorological conditions d) Attenuation due to geometric spreading e) Attenuation due to atmospheric absorption f) Ground attenuation g) Miscellaneous attenuation h) Barrier and terrain screening	Appendix H		Appropriate modelling, propagation and attenuation parameters have been adopted <div style="border: 2px solid red; padding: 10px; text-align: center; color: red; font-weight: bold;">This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright</div>	Comply
6.1.3	Noise modelling method Sound propagation calculation method (ISO 9613-2 noted, detailed in Appendix B). Other prediction methods can be used, provided the details, assumptions, and limitations of the model are stated.	Appendix H		ISO 9613-2:1996 used with the adoption of appropriate modelling parameters	Comply

NZS6808:2010 Section/Clause	NZS 6808:2010 Requirement	Reference Section – Predictive Noise Assessment Report	Reference Section – Background Noise Monitoring Report	Assessment	Compliance
6.1.4	Noise modelling method ... the wind farm sound levels at a given noise sensitive location shall be determined by calculating the individual contributions of each wind turbine in octave-bands from at least 63 Hz to 4 Hz, and then A-weighting and energy adding these results to determine an overall predicted level at a given wind speed	Appendix H		Octave bands from 31.5Hz–8kHz centre frequencies have been adopted for the noise modelling.	Comply
6.1.5	Noise modelling method A set of overall levels will be predicted covering the wind speed range for which sound power level data are available from the manufacturer. As a minimum, the wind speed range shall include the range specified by IEC 61400-11 and the wind speed corresponding to the highest sound level generated by the turbine. All predicted wind farm sound levels shall be calculated at hub-height wind speeds.	Appendix I		Wind speeds from 4–15 m/s adopted for prediction and assessment.	Comply
6.1.6	Noise modelling method The levels predicted for the wind speed corresponding to 95% rated power of the turbines should be used for determining the positions of the 35 dB and 40 dB sound level contours around the wind farm.	S6.3.1		Predictions based on highest source level corresponding to 100% rated power and maximum sound power output. This is more conservative than 95%.	Comply

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NZS6808:2010 Section/Clause	NZS 6808:2010 Requirement	Reference Section – Predictive Noise Assessment Report	Reference Section – Background Noise Monitoring Report	Assessment	Compliance
6.2.1	<p>Sound Power Levels</p> <p>The sound power levels of a wind turbine used for predicting sound levels should be obtained from the wind turbine manufacturer.</p> <p>For the purposes of this Standard, it is recommended that wind farm sound level predictions be based on the apparent sound power and tonality values for the nominated wind turbine model, determined in accordance with IEC 61400-11.</p>	S6.3.1 Appendix J		<div style="border: 2px solid red; padding: 10px;"> <p>This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright</p> </div>	Comply
7.1.3	<p>Measurement</p> <p>Every sound level measurement must be made at clearly identified noise sensitive locations</p>	S5.0	S2.1	<p>MDA’s earlier noise modelling assessment (Mumblin Wind Farm – Noise Assessment, Marshall Day Acoustics Pty Ltd, Report Rp 001 R03 20200546, dated 04 October 2022) indicated that predicted noise levels would be below 35 dBL_{A90} at all non-stakeholder receivers. As such, in accordance with NZS 6808, based on the wind turbine layout detailed in Appendix B and the selected candidate turbine model, background noise monitoring was not required to be undertaken. (MDA Background Noise Monitoring Report, Section 2.1).</p> <p>The auditor confirms that this approach is in accordance with Section 7.1.4 of NZS 6808:2010. Further, the guidance provided in Section 4.3.2 of the DTP Guidelines does not require a mandatory background monitoring assessment to be included in an application for a planning permit.</p> <p>However, MDA state that, for completeness, 2 background monitoring locations were identified (refer to comment under 7.1.5).</p> <p>Subsequent to the issue of the MDA Background Noise Monitoring Report, the predictive assessment has been revised to include different candidate turbine models, with results presented in Section 6.4 of the MDA Report. The results of this predictive assessment indicates that predicted noise levels are above 35 dBL_{A90} at one non-stakeholder receiver (Receiver 176) and that therefore background noise monitoring should be undertaken at this receiver or a nearby representative location.</p>	Comply

NZS6808:2010 Section/Clause	NZS 6808:2010 Requirement	Reference Section – Predictive Noise Assessment Report	Reference Section – Background Noise Monitoring Report	Assessment	Compliance
7.1.4	<p>Measurement</p> <p>Background sound level measurements and subsequent analysis to determine the relative noise limits should be carried out where wind farm sound levels of 35 dBL_{A90(10 min)} or higher are predicted for noise sensitive locations, when the wind turbines are at 95% rated power.</p>			Refer to comment under 7.1.3	Not assessed
7.1.5	<p>Measurement</p> <p>When considering a group of noise sensitive location, it is acceptable to conduct background sound level measurements at a representative location. These measurements shall then be used to define noise limits that apply to every noise sensitive location in that group. The sound generating features at the representative location shall be similar in proximity and character to those at other noise sensitive locations represented by that location.</p>		S2.1	<p>Refer to previous comment S7.1.3</p> <p>A total of 2 preferred background monitoring locations (Receivers 59 and 176) were identified by MDA. However, it is understood that consent to conduct noise monitoring was not granted at Receiver 176, and that monitoring was therefore undertaken at Receiver 98 (a stakeholder receiver located approximately 200 m north west across Retallacks Road) (Refer to Background Noise Monitoring Report, Table 1 and Figure 1). The auditor reviewed these locations during the site visit on 22 October 2025, and concluded that this was a reasonable alternative monitoring location.</p>	Not assessed
7.1.6	<p>Measurement</p> <p>Sound level measurements should be made at noise sensitive locations and where practical should be on the wind farm side of buildings. Measurement positions should be 3.5 m from any significant reflecting surfaces other than the ground, and from other structures or objects...</p>		S2.1 Appendices F and G	Measurement locations appear reasonable.	Comply

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NZS6808:2010 Section/Clause	NZS 6808:2010 Requirement	Reference Section – Predictive Noise Assessment Report	Reference Section – Background Noise Monitoring Report	Assessment	Compliance
7.2.1/ C7.2.1	<p>Sound Data</p> <p>Sound level measurements should be made during a representative range of wind speeds and directions generally expected at the wind farm...</p> <p>“... a minimum of 10 days of continuous monitoring will be required to give suitable range of data. Typically, this will give in excess of 1440 data points, which should be plotted against the appropriate corresponding wind data</p> <p>It may require measurements to be made for extended periods of time to ensure that data includes the representative range of wind conditions....</p>		S2.2 Appendices F and G Appendix H	<p>Reported measurements appear to cover a reasonable range of wind speeds and directions.</p> <p>The report includes a wind rose of the measurement period and typical yearly average wind rose.</p>	Comply
7.2.2	<p>Sound data</p> <p>Sound levels shall be measured in accordance with NZS 6801 except for the restrictions in 7.2.3 and 7.2.4 of NZS6801... Measurement time intervals of 10 minutes shall be used</p>		S2.2	Background sound level measurements have been conducted in accordance with the Standard.	Comply
7.2.3	<p>Sound data</p> <p>The instrumentation used for the sound measurements shall meet the requirements of section 5 of NZS 6801.</p>		Appendix C	Appropriate survey instrumentation has been used.	Comply

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NZS6808:2010 Section/Clause	NZS 6808:2010 Requirement	Reference Section – Predictive Noise Assessment Report	Reference Section – Background Noise Monitoring Report	Assessment	Compliance
7.2.4	<p>Sound data</p> <p>Extraneous sound levels caused by events, including precipitation, insects, fauna, and so on, should, as far as is practical for an unattended monitoring exercise, be identified and removed from the data.</p> <p>Methods for identifying extraneous sound events include octave-band spectrum measurements and asking residents to keep an activity log during measurements.</p>		S2.3	A local weather station has been used to identify periods of precipitation. A reasonable extraneous noise test has been used to identify and remove periods affected by extraneous noise.	Comply
7.3.1	<p>Wind data</p> <p>...concurrent measurements of wind speed and direction shall be taken within the wind farm site at a known height AGL, preferable at the height of the wind turbine hub.</p> <p>Wind speed measurements are usually not required at the locations where the sound measurements are made</p>	<p style="text-align: center; color: red; border: 2px solid red; padding: 5px;">This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright</p>	S2.2 Appendix C Appendix D	Wind speed measurements at the hub-height have been extrapolated from the site met mast based on site-specific wind shear measurements. The location of the met mast is indicated within Figure 1 and coordinates listed in Table 11 of Appendix C.	Comply
7.3.2	<p>Wind data</p> <p>If measurements have not been conducted at hub-height, then the hub-height wind speeds should be predicted from wind-shear relationships.</p>			S2.2 Appendix D	As above.
7.3.3	<p>Wind data</p> <p>The same location and height should be used for the wind measurements before and after installation provided the wind at this position is not likely to be affected by the turbines.</p>	Not assessed			Not assessed

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NZS6808:2010 Section/Clause	NZS 6808:2010 Requirement	Reference Section – Predictive Noise Assessment Report	Reference Section – Background Noise Monitoring Report	Assessment	Compliance
7.4.1	<p>Background measurements</p> <p>Background sound level measurements should be plotted against the hub-height wind speeds existing at the time of each measurement to obtain a scatter plot. Examine this plot to determine whether a singular regression relationship is evident.</p> <p>If there are markedly different groups within the scatter plot, then separate scatter plots may be required for different condition, including wind directions, and times of day</p>		S2.3 Appendices F and G	Regression analysis has been undertaken.	Comply
7.4.2	<p>Background measurements</p> <p>Find the regression curve that gives the best correlation coefficient between sound level and wind speed for each scatter plot and use it to describe the average background sound level at different wind speed.</p> <p>Sparseness of data or obvious outliers should not be allowed to unreasonable influence the regressions curve.</p> <p>...at extremes of the wind speed range analysed. In these cases, it may be more appropriate to use a ‘bin analysis’ procedure as outlined in IEC 61400-11.</p>		S2.3 Appendices F and G	<p>Regression analysis has been undertaken.</p> <div style="border: 2px solid red; padding: 10px; text-align: center; margin: 10px 0;"> <p>This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright</p> </div>	Comply
7.4.3	<p>Background measurements</p> <p>If there is a poor correlation between wind speed and sound level, further investigation of wind conditions should be undertaken, possibly including wind-flow modelling, local knowledge, site observations or local wind monitoring.</p>		S2.3	A separate regression analysis of the night-time period has been undertaken.	Comply

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NZS6808:2 010 Section/Cla use	NZS 6808:2010 Requirement	Reference Section – Predictive Noise Assessment Report	Reference Section – Background Noise Monitoring Report	Assessment	Compliance
7.4.4	Background measurements Where multiple regressions are indicated, and therefore several regression curves have been obtained, noise limits should be set on the basis of each regression curve derived.		S3.1 and S3.2	Limits have been set on both the 24hr and night-time only regression analysis.	Comply
7.5	Post-installation measurements			Not applicable	
7.6	Compliance Assessment			Not applicable	
7.7	On-Off Testing			Not applicable	
8.1	Any report of wind farm noise predictions in accordance with this Standard shall refer to this Standard and provide the following:	This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright			
	a) A map showing the topography (contour lines) in the vicinity of the wind farm, the position of the wind turbines, and noise sensitive locations;	Appendix B, F, G			Comply
	b) Noise sensitive locations for which wind farm sound levels are calculated;	Appendix D			Comply
	c) Wind turbine sound power levels;	S6.3.1 Appendix I			Comply
	d) The make and model of the wind turbines;	S6.2 Table 4			Comply
	e) The hub-height of the wind turbines;	S6.2 Table 4			Comply
	f) Distance of noise sensitive locations from the wind turbines;	Appendix C			Comply
	g) Calculation procedure used;	Appendix H			Comply

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NZS6808:2 010 Section/Cla use	NZS 6808:2010 Requirement	Reference Section – Predictive Noise Assessment Report	Reference Section – Background Noise Monitoring Report	Assessment	Compliance
	h) Meteorological conditions assumed;	Appendix H			Comply
	i) Air absorption parameters used;	Appendix H			Comply
	j) Ground attenuation parameters used;	Appendix H			Comply
	k) Topography/ screening assumed;	Appendix G, H			Comply
	l) Predicted far-field wind farm sound levels	S6.4 Table 8 Figure 1 Appendix I			Comply
8.2	Documentation Any report of background sound level measurements and assessment in accordance with this Standard shall refer to this Standard and provide the following:	This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright		Refer to previous comment S7.1.3.	Comply
	a) Description of the sound monitoring equipment including ancillary equipment;		Appendix C		Comply
	b) The location of sound monitoring positions		Appendix F Table 14 and Figure 2 Appendix G Table 17 and Figure 6		Comply
	c) Description of the anemometry equipment including the height AGL of the anemometer;		Table 11, Appendix C		Comply
	d) Positions of wind speed measurements;		Table 11, Appendix C Figure 1		Comply
	e) Time and duration of the monitoring period;		S2.2 Table 2		Comply

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NZS6808:2010 Section/Clause	NZS 6808:2010 Requirement	Reference Section – Predictive Noise Assessment Report	Reference Section – Background Noise Monitoring Report	Assessment	Compliance
	f) Averaging period for both sound and wind speed measurements;		S2.2 Table 2		
	g) Atmospheric conditions: the wind speed and direction at the wind farm position and rainfall shall be recorded;		S2.2 Table 2		Comply
	h) Number of data pairs measured (wind speed in m/s, background sound in L90);		Appendix F, Table 16 Appendix G, Table 19		Comply
	i) Description of the regression analysis;		Table 3 Appendix E		Comply
	j) Graphical plots showing the data scatter and the regressions curves.		Appendix F, Figure 4.8 Appendix G, Figure 4.9		Comply
8.3	Documentation Compliance Assessment	N/A		Not applicable	Not applicable
8.4	Documentation Submission of Reports	N/A		Not applicable	
Appendix A	Recommended Consent Conditions	N/A		Not applicable	
Appendix B	Special Audible Characteristics	S6.3.3		Refer to S6.3.2 of this report. The proposed approach is considered to be reasonable at this stage. However, it is recommended that measurements of the tonality of the turbine selected for installation (in accordance with IEC 61400-11:2012) are reviewed as they become available, or verified by on-site emission testing of the first turbines commissioned on the site.	Comply
Appendix C	Uncertainty	S6.3.1 Appendix H2		Refer to S4.6.5 of this report	Comply

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NZS6808:2010 Section/Clause	NZS 6808:2010 Requirement	Reference Section – Predictive Noise Assessment Report	Reference Section – Background Noise Monitoring Report	Assessment	Compliance
Appendix D	Prediction Method Example	Appendix H		ISO 9613 has been adopted	Comply

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