

Before the Independent Hearing Commissioner  
At Ashburton District Council

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*under:* the Resource Management Act 1991

*in the matter of:* application LUC23/0109 to the Ashburton District Council relating to the proposed equestrian centre located on 279 Stranges Road, Ashburton

*between:* **Southern Parallel Equine Centre Limited**  
*Applicant*

*and:* **Ashburton District Council**  
*Consent Authority*

Statement of evidence of Rewa Satory

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Dated: 20 March 2024

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## **STATEMENT OF EVIDENCE OF REWA SATORY**

### **INTRODUCTION**

- 1 My full name is Rewa Jane Satory.
- 2 I am an Associate Acoustic Engineer with Acoustic Engineering Services Limited (*AES*), an acoustic engineering consultancy with head office based in Christchurch. I hold a Bachelor of Engineering from the University of Canterbury. I am a Member of the Acoustical Society of New Zealand.
- 3 I have over eight years' experience in the field of acoustic engineering consultancy and have been involved with a large number of environmental noise assessment projects throughout New Zealand on behalf of applicants, submitters and as a peer reviewer for Councils.
- 4 My experience includes assessing noise levels from many activities including the operation of sporting facilities and heavy vehicle movements on sites in Ashburton, Christchurch and Selwyn Districts.
- 5 I have been engaged by Southern Parallel Equine Centre Limited to provide expert evidence on noise effects in relation to its application for a resource consent (*Application*) to establish an equine centre in Lake Hood (the *Proposed Equine Centre*).

### **CODE OF CONDUCT**

- 6 Although this is not an Environment Court hearing, I note that in preparing my evidence I have reviewed the Code of Conduct for Expert Witnesses contained in Part 9 of the Environment Court Practice Note 2023. I have complied with it in preparing my evidence. I confirm that the issues addressed in this statement of evidence are within my area of expertise, except where relying on the opinion or evidence of other witnesses. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

### **SCOPE OF EVIDENCE**

- 7 My evidence will deal with the following:
  - 7.1 Appropriate noise levels;
  - 7.2 Operational noise of the Proposed Equine Centre including day-to-day and event operation; and
  - 7.3 Construction noise.
- 8 In preparing my evidence, I have reviewed:

- 8.1 The Application;
- 8.2 Relevant sections of the Ashburton District Plan;
- 8.3 Submissions on the Application; and
- 8.4 The section 42A report.

### **SUMMARY OF EVIDENCE**

- 9 The actual and potential noise from both day-to-day and event activity at the Proposed Equine Centre is expected to comply with the District Plan noise rules at all neighbouring sites.
- 10 Noise received at residential sites in the Aquatic Park zone from the Proposed Equine Centre is expected to be 45 dB  $L_{Aeq}$  or less during day-to-day activity and on event days. I consider this noise will be acceptable and have minimal adverse effect.
- 11 I agree with the Council's planner, Mr Boyes, that where construction adheres to the requirements of NZS 6803:1999 *Acoustics – Construction* the temporary effects of construction noise will be minimal.

### **THE PROPOSED EQUINE CENTRE**

- 12 The proposal is for an equine centre comprised of:
  - 12.1 An equine breeding centre and veterinary clinic;
  - 12.2 Stud selling facility;
  - 12.3 Stabling for a total of 658 horses;
  - 12.4 Carparking for staff and horse floats;
  - 12.5 Existing dwelling for staff accommodation;
  - 12.6 Two polo fields, and a covered outdoor dressage arena; and
  - 12.7 Fields and grazing areas.
- 13 The application AEE sets out a full description of the built and outdoor facilities proposed and I refer the Commissioner to that document for further detail.
- 14 Of particular relevance to my acoustic assessment, informal carparking (gravel, unmarked) will be provided for horse coaches, horse floats and cars alongside the veterinary clinic, breeding centre and main stable blocks, with an additional 45 car parking spaces located adjacent the selling centre. Additional parking for light vehicles will be provided in grassed areas on event days.

- 15 The main entrance will be a paved driveway from Stranges Road, with a second entrance from Huntingdon Avenue for staff and emergencies only. A network of gravel driveways branching from the main driveway will be used to access the veterinary clinic, breeding centre, selling centre, carpark and carparking alongside the stables.

### **APPROPRIATE NOISE LEVELS**

- 16 Guidance as to what appropriate noise levels may be in this environment may be obtained from several sources.

#### **Ashburton District Plan noise standards**

- 17 The site is zone Rural B under the Ashburton District Plan. The following noise standards apply for noise emissions when received within the boundary of sites in the Residential C zone or notional boundary of dwellings in a Rural B zone:

*Daytime (0700 to 2200 hours) 50 dB  $L_{Aeq} (1 hr)$  75 dB  $L_{AFmax}$*

*Night-time (2200 to 0700 hours) 40 dB  $L_{Aeq} (1 hr)$  65 dB  $L_{AFmax}$*

- 18 The noise standards that apply at the boundary of any other site in the Rural B Zone are as follows:

*Daytime (0700 to 2200 hours) 65 dB  $L_{Aeq} (1 hr)$  85 dB  $L_{AFmax}$*

*Night-time (2200 to 0700 hours) 45 dB  $L_{Aeq} (1 hr)$  70 dB  $L_{AFmax}$*

- 19 There are no specific noise limits for noise received in the Aquatic Park Zone from properties outside of the Zone. However, properties in the Aquatic Park Zone that are not in Residential areas are required to conduct activities such that the following noise levels are not exceeded at or within the site boundary of any occupied residential unit in the Residential areas of the Zone:

*Daytime (0730 to 2100 hours) 55 dB  $L_{Aeq} (1 hr)$*

*Night-time (2100 to 0730 hours) 45 dB  $L_{Aeq} (1 hr)$*

- 20 The District Plan states that noise shall be measured and assessed in accordance with NZS 6801:2008 *Acoustics – Measurement of environmental sound*, and NZS 6802:2008 *Acoustics – Environmental noise*. NZS 6802:2008 recommends a 15-minute measurement interval for fluctuating continuous sound.

#### **NZS 6802:2008**

- 21 NZS 6802:2008 *Acoustics – Environmental noise* sets out procedures for the assessment of noise for compliance with noise limits and provides guidance for the setting of noise limits for consent conditions.

- 22 The standard outlines a guideline daytime limit of 55 dB  $L_{Aeq(15\text{ min})}$  and a night-time noise limit of 45 dB  $L_{Aeq(15\text{ min})}$  for “*the reasonable protection of health and amenity associated with the use of land for residential purposes*”. The standard also recommends a night-time  $L_{max}$  noise limit of 75 dB  $L_{AFmax}$  to prevent sleep disturbance.
- 23 The standard recommends the site boundary of noise sensitive sites or notional boundary of a rural dwelling as the appropriate assessment location.

#### **World Health Organisation**

- 24 Guidelines for Community Noise, a document produced by the World Health Organisation (WHO) based on extensive international research recommends a guideline limit of 55 dB  $L_{Aeq(16\text{ hours})}$  to ensure few people are seriously annoyed in residential situations. A guideline limit of 50 dB  $L_{Aeq(16\text{ hours})}$  is recommended to prevent moderate annoyance. A guideline night-time limit of 45 dB  $L_{Aeq}$  and 60 dB  $L_{Amax}$  is recommended to allow occupants to sleep with windows open.

#### **Conclusions regarding appropriate noise levels**

- 25 Based on the above, noise from the Proposed Equine Centre which complies with the District Plan noise limits would be expected to have a minimal adverse effect when received at the notional boundary of any dwelling in the Rural B zone or the site boundary of any Residential C property.
- 26 There are no District Plan limits for noise received in the Aquatic Park zone from this site; however, provided noise received at Residential areas in this zone is consistent with the Rural B / C limits discussed above, adverse noise effects are expected to be minimal.

#### **OPERATIONAL NOISE GENERATED BY THE PROPOSED EQUINE CENTRE**

- 27 The primary noise generating activities expected from operation of the Proposed Equine Centre are:
- 27.1 Noise generated by light and heavy vehicles travelling about on the site (engine noise, road/tyre noise, door slams, engine starts and the like).
- 27.2 Noise generated by equestrian training, including noise from polo sticks hitting the ball, handheld loudspeakers on the side-lines of polo and show jumping fields and outdoor PA system in the outdoor dressage arena for music.
- 28 I have considered each of these noise sources below, in the context of both ‘typical day-to-day activity’, and sales event days.
- 29 Both of these scenarios are only expected to take place during the period from 0730 to 2100 hours, and noise emissions should

therefore be assessed against the various District Plan 'daytime' noise limits. I understand a very low level of activity is expected outside these hours (for example, occasional sporadic vehicle movements), and so expect full compliance to be achieved with the night time limits, without the need for detailed analysis.

### **Typical day-to-day activity**

- 30 In order to determine the noise from day-to-day activity I have modelled the following scenario:
- 30.1 17 vehicle movements occurring in a peak 15-minute period, along with one service delivery vehicle movement and two horse float/truck movements. As the traffic report predicts a peak hour of 34 staff and visitor movements, I expect this to be conservative. I have assumed light vehicles including utes to have a sound power of 90 dB  $L_{WA}$ , and horse float and service vehicles to have a sound power of 105 dB  $L_{WA}$  (to allow for large trucks such as for feed or bedding delivery). An additional 5 dB has been added where vehicles will be driving on gravel. All vehicles were modelled travelling at 10 km/h.
- 30.2 Both polo fields occupied concurrently with 8 players on the field at one time, and the activity is occurring continuously in each area with a single handheld megaphone utilised for training instruction. A sound power of 108 dB  $L_{WA}$  has been assumed per field with the megaphone having a sound power of 105 dB  $L_{WA}$ . I expect this to be conservative as it is consistent with, for example an ice-hockey game<sup>1</sup> and is considerably higher than a field hockey game.
- 30.3 A dressage practice in the outdoor arena with two speakers for music. Each speaker has been assumed to have a sound power of 100 dB  $L_{WA}$ . I expect this is realistic, but note that music is only played for some dressage practice/demonstrations.
- 30.4 All training/grazing fields occupied for training with 600 horses outside, equivalent to 1 horse per 300 m<sup>2</sup>. This includes the outdoor sand arena and covered horse walking area. A sound power of 54 dB  $L_{WA}$  has been assumed per horse.<sup>2</sup> I expect this to be conservative as it is unlikely that all horses will be outside at any one time.

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<sup>1</sup> Determination of noise emissions and sound emissions from sports and leisure facilities, determination of the state of the art, Technical Monitoring Association of Northern Germany e.V., on behalf of the Lower Saxony Environment Minister, 1987.

<sup>2</sup> Kropsch, Michael & Lechner, Christoph. (2013). Manual for the assessment of farm noise - Praxisleitfaden Schalltechnik in der Landwirtschaft. Zeitschrift für Lärmbekämpfung. Bd. 8. 242.

- 30.5 All 40 staff and 10 visitors outside spread across the site with half speaking in loud voices with a sound power of 78 dB  $L_{WA}$  based on *American National Standards Institute Standard ANSI S3.5 – 1997 Methods for calculation of the Speech Intelligibility Index*. I expect that many staff will work indoors and when outside will be quiet or only speaking in a normal voice.
- 31 Based on the above, noise at the nearest Residential C zoned site boundary at 2 Village Green Drive is expected to be 48 dB  $L_{Aeq}$ . Noise at all other Residential C zoned properties is expected to be lower than this level.
- 32 The following noise levels are expected at the nearest notional boundaries of dwellings in Rural B zoned properties:
- |      |                    |                 |
|------|--------------------|-----------------|
| 32.1 | 159A Stranges Road | 40 dB $L_{Aeq}$ |
| 32.2 | 339 Stranges Road  | 37 dB $L_{Aeq}$ |
| 32.3 | 703 Grahams Road   | 34 dB $L_{Aeq}$ |
- 33 At the nearest Rural B zoned boundaries, the following site boundary noise levels are expected:
- |      |  |                 |
|------|--|-----------------|
| 33.1 | 36 Huntingdon Ave<br>opposite the staff driveway | 49 dB $L_{Aeq}$ |
| 33.2 | Stranges Road<br>opposite the main entrance      | 52 dB $L_{Aeq}$ |
| 33.3 | Southern boundary                                | 41 dB $L_{Aeq}$ |
| 33.4 | Eastern boundary                                 | 44 dB $L_{Aeq}$ |
- 34 At the nearest Aquatic Park zoned property at 6 Ludlow Drive, noise from peak day-to-day activity is expected to be 45 dB  $L_{Aeq}$ .
- 35 Noise from  $L_{max}$  events such as car door slams, polo sticks hitting the ball, and a referee's whistle are expected to be 60 dB  $L_{AFmax}$  or less when measured anywhere offsite.
- 36 Compliance with the relevant District Plan daytime limits is therefore expected at all relevant site and notional boundaries, and noise levels are expected to be low at the closest Aquatic Park zoned residential properties. The effects of noise from day-to-day activities are therefore conservatively expected to be minimal.
- Sales event days**
- 37 An annual sales event is expected where up to 500 people may be present on site. Activity for the sales event will primarily be located

in the Stud Selling Centre with some display or competition style events in the dressage and polo fields.

- 38 On sales event days there is expected to be very little activity on the majority of the site; however, a worst-case noise generating scenario where two demonstration polo matches and a competition dressage event are occurring to show the horses for sale, has been considered.
- 39 During the sales day the Stud Selling Centre will host attendees in the lounge/restaurant area. A worst-case scenario where 500 people are outside on the outdoor deck with half speaking in raised voices has been modelled.
- 40 The indoor reverberant level of the Stud Selling covered arena was modelled at 80 dB  $L_{Aeq}$ , to allow for amplification of the auctioneer's voice with all 4 large garage style doors open.
- 41 In the peak hour the traffic report stated that there will be 14 horse float trips and 137 other trips. All these vehicles are expected to use the main entrance. A peak 15-minute period where 7 horse floats, and 34 light vehicles enter the site using the main entrance along with 17 staff vehicles using the staff driveway has been considered.
- 42 The horse floats will park in the avenues adjacent to the main stables. Other sales day attended vehicles will use a grassed parking area which has been assumed to be in the grassed exercise areas adjacent to the main stables.
- 43 Based on the above at the nearest Residential C zone site boundary at 2 Village Green Drive the noise is expected to be 48 dB  $L_{Aeq}$ . Noise at all other Residential C zoned properties is expected to be lower than this level.
- 44 The following noise levels are expected at the nearest notional boundaries of dwellings in Rural B zoned properties:
- |      |                    |                 |
|------|--------------------|-----------------|
| 44.1 | 159A Stranges Road | 41 dB $L_{Aeq}$ |
| 44.2 | 339 Stranges Road  | 40 dB $L_{Aeq}$ |
| 44.3 | 703 Grahams Road   | 36 dB $L_{Aeq}$ |
- 45 At the nearest Rural B zoned boundaries, the following site boundary noise levels are expected:
- |      |  |                 |
|------|--|-----------------|
| 45.1 | 36 Huntingdon Ave<br>opposite the staff driveway | 49 dB $L_{Aeq}$ |
| 45.2 | Stranges Road<br>opposite the main entrance      | 57 dB $L_{Aeq}$ |



- 45.3 Southern boundary 45 dB  $L_{Aeq}$
- 45.4 Eastern boundary 45 dB  $L_{Aeq}$
- 46 At the nearest Aquatic zoned property at 6 Ludlow Drive, noise from peak sales day activity is expected to be 45 dB  $L_{Aeq}$ .
- 47 Noise from  $L_{max}$  events such as car door slams, polo sticks hitting the ball, and a referee's whistle are expected to be 60 dB  $L_{AFmax}$  when measured anywhere offsite.
- 48 Compliance with the relevant District Plan daytime limits is therefore expected at all relevant site and notional boundaries, and noise levels are expected to be low at the closest Aquatic Park zoned residential properties. The effects of noise from the annual sales event are therefore conservatively expected to be minimal.

### **CONSTRUCTION NOISE**

- 49 Noise generated by demolition and construction activities associated with the development of buildings and landscaping at this site has the potential to adversely affect nearby properties, especially if carried out during the early morning or evening hours.
- 50 The Ashburton District Plan specifically excludes construction activities from the general noise standards for all zones, Rule 11.8.3 *Noise – Noise Standards – Construction Noise* states that construction noise shall comply with NZS 6803:1999 *Acoustics – Construction Noise*.
- 51 I recommend that the applicant adopts best practice procedures to reduce the likelihood of annoyance, nuisance and adverse health effects to people in the vicinity of construction work, and that these activities are planned and managed in accordance with NZ 6803:1999 *Acoustics – Construction Noise*, and that construction is undertaken to ensure noise does not exceed the sound levels specified in Table 2 of the Standard.
- 52 The key noise limit in Table 2 of the Standard is 70 dB  $L_{Aeq}$  measured at 1 metre from the façade of the dwellings during the daytime. In order to demonstrate the scale of effects I have considered a situation where an excavator and loader each with a sound power of 108 dB  $L_{WA}$  are used to form the grazing areas at the north eastern corner of the site. Noise at the boundary of 2 Village Green Drive directly across Huntingdon Avenue from the grazing area is expected to be 57 - 69 dB  $L_{Aeq}$  when both machines are operating. The highest noise levels are expected when equipment is located at the north eastern corner of the grazing area. I therefore expect it will be practicable to comply with the noise limits in NZS 6803:1999 at all times.

## **RESPONSE TO SUBMISSIONS**

- 53 The submission of John Skevington and Jo Ruane raises concerns about potential noise effects of the Proposed Equine Centre. My evidence above addresses this concern and concludes that noise effects will be minimal.

## **RESPONSE TO SECTION 42A REPORT**

- 54 I have read the portions of the section 42A report prepared by Nick Boyes (consultant planner to Ashburton District Council).
- 55 The report agrees that operation noise is likely to comply with the District Plan limits and mentions noise in the context of amenity of the rural area with regard to construction noise only and provides a condition requiring a Construction Noise Management Plan to manage any adverse effects from construction noise.
- 56 I consider that compliance with the provisions outlined in NZS 6083:1999 *Acoustics – Construction Noise* and the adoption of a Construction Noise Management Plan will ensure that any adverse effects are minimal.

## **CONCLUSIONS**

- 57 Noise from all sources expected to be associated with the Proposed Equine Centre on Stranges Road, in Huntingdon, Ashburton, has been considered.
- 58 Based on a review of the relevant District Plan noise limits, national and international guidance, where noise levels associated with the proposal comply with the District Plan noise limits at rural notional boundaries and residential site boundaries, noise effects are expected to be minimal.
- 59 My modelling and analysis, based on conservative assumptions, confirms that operational noise is expected to comply with the District Plan limits in all scenarios.
- 60 Construction noise is also expected to comply with the limits outlined in NZS 6083:1999 *Acoustics – Construction Noise*.
- 61 I therefore expect the noise effects of the proposal to be minimal.

Dated: 20 March 2024

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Rewa Satory