TODOROSKI AIR SCIENCES
Suite 2B, 14 Glen Street Eastwood, NSW 2122
Phone: 02 9874 2123
Fax: 02 9874 2125
Email: info@airsciences.com.au
Web: www.airsciences.com.au
ACN: 151 202 765 | ABN: 74 955 076 914

12 November 2022

Luke Farrell
Principal Environmental Scientist
Element Environment
Via email: luke@elementenvironment.com.au

RE: Noise Assessment – Tyrecycle Modification

Dear Luke,
Todoroski Air Sciences has assessed the potential for noise impacts to arise due to the proposed development application to expand production at the Tyrecycle Pty Ltd (Tycrecyle) tyre recycling facility at Erskine Park (hereafter referred to as the Project). This report investigates the likely change in noise emissions associated with the Project relative to the approved operations.

This noise assessment has been prepared in general accordance with the NSW EPA document *Noise Policy for Industry* (**NSW EPA, 2017**).

Project description
Tyrecycle operates a tyre recycling facility at 1-21 Grady Crescent, Erskine Park, New South Wales (NSW). Tyrecycle was granted approval for the facility on 20 December 2020 (DA 20/0589).

The facility is located within an industrial area with all operations at the site occurring within an industrial building. The operations include the receival and storage of tyres for shredding and granulating at an approved production rate of 29,000 tonnes per annum (tpa) and stockpiling of up to 970 tonnes of material at the site at any one time.

Figure 1 presents the location of the Project site with reference to the surrounding assessment locations.

Tyrecycle is seeking development consent to allow for an increase in the annual production rate to 60,000tpa and allow for stockpiling of up to 2,300 tonnes of material at the site at any one time. The Project does not require a change to the approved processing activities, building infrastructure or footprint or hours of operation. Additional vehicle movements to and from the site will also result from transportation of additional received tyres and dispatched product due to the Project.

A qualitative assessment has been conducted to determine the potential change in noise emissions and associated noise impacts with the Project relative to the approved operations.

Figure 1: Project setting

Existing environment

Local meteorological conditions

Annual and seasonal windroses generated from data recorded at the Horsley Park Equestrian Centre AWS during 2021 are presented in **Figure 2**.

On an annual basis, the most dominant winds are from the southwest with variable winds from the other directions. In summer, winds predominately originate from the south-southeast, southeast and east. In autumn the most prevalent winds are from the southwest with few winds from the northeast. In winter, winds predominantly occur from the southwest to the north. Spring has varied winds from all directions with the most dominant winds from the southwest.

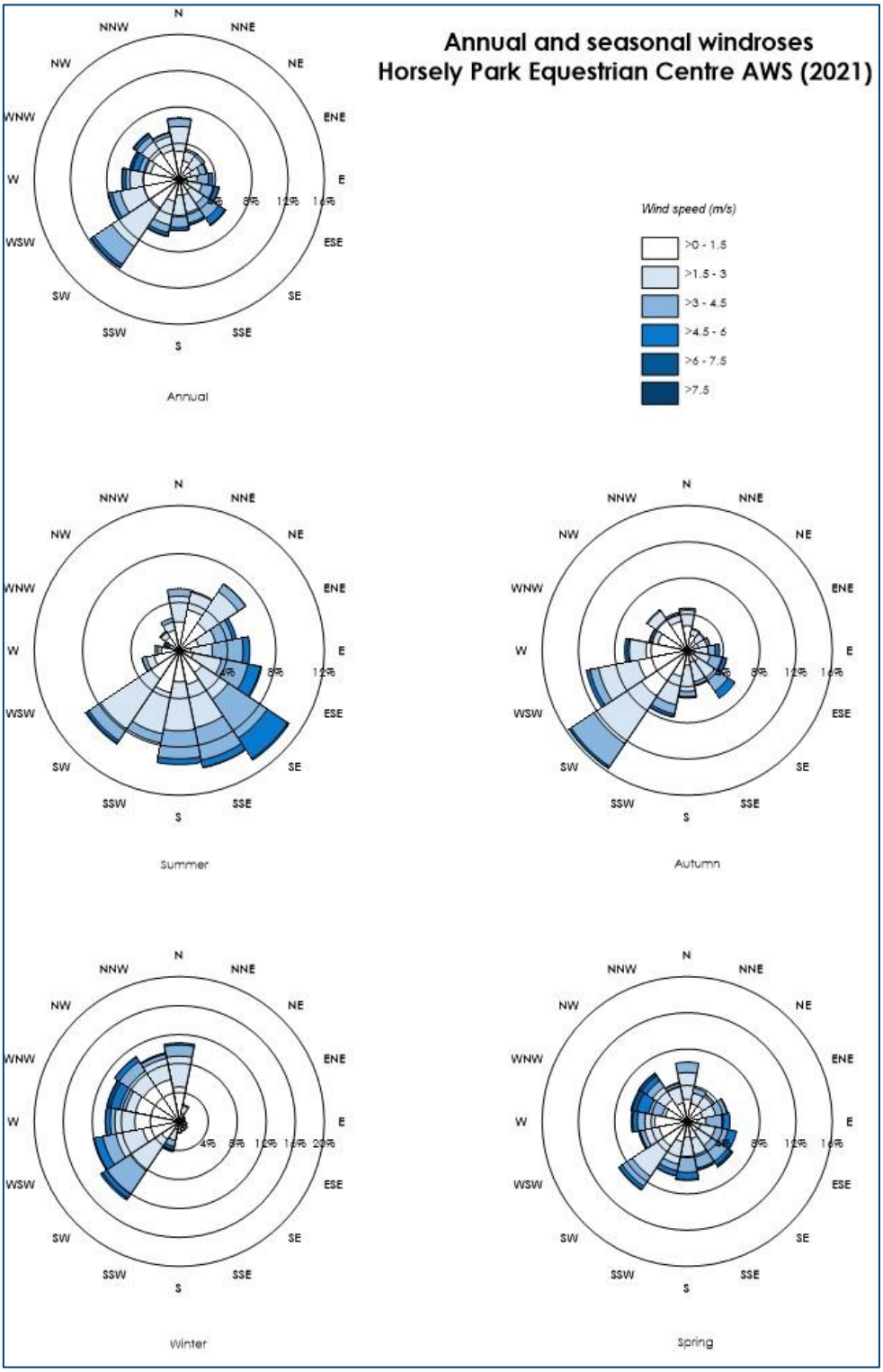


Figure 2: Annual and seasonal windroses – Horsley Park Equestrian Centre AWS (2021)

Review of noise monitoring

Attended noise monitoring was conducted at three locations in May 2022 in accordance with Environment Protection Licence (EPL) 21464 by **JTA Health, Safety & Noise Specialists (2022)**. The noise monitoring locations are shown in **Figure 3** and representative of the nearest receivers to the Project.

Figure 3: Noise monitoring locations

The measured noise levels are presented graphically in **Figure 4**. The noise levels measured on each occasion per day, evening or night are shown in the figure as points along with the applicable noise criteria which is shown as the solid red line. The prevailing conditions at the time of each measurement is split by calm periods, wind away from or to the receiver location.

The results show that winds towards the receiver locations are limited during the monitoring period and that extraneous noise sources appear to be influencing the measurements. This is apparent with the measured levels are above the Project specific noise criteria on multiple occasions when the wind is away from the receiver locations. Most of the periods when the wind is towards the receiver locations indicate noise levels below the Project specific noise criteria and suggests that noise from the site is largely inaudible. The noise monitoring report confirms that level of extraneous noise sources from traffic, wildlife and operations at adjacent industrial facilities made direct measurement of Project noise emissions difficult (**JTA Health, Safety & Noise Specialists, 2022)**.

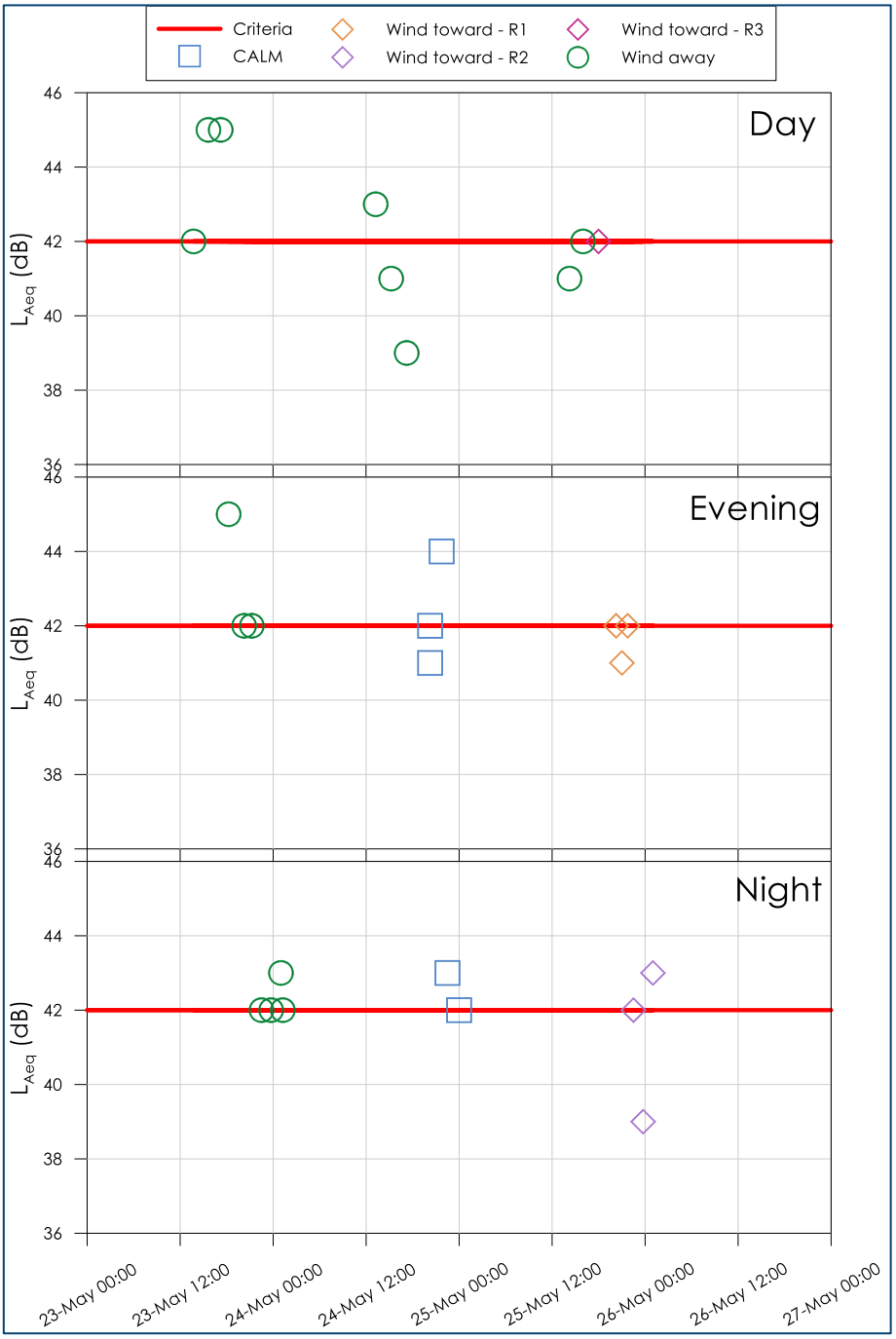
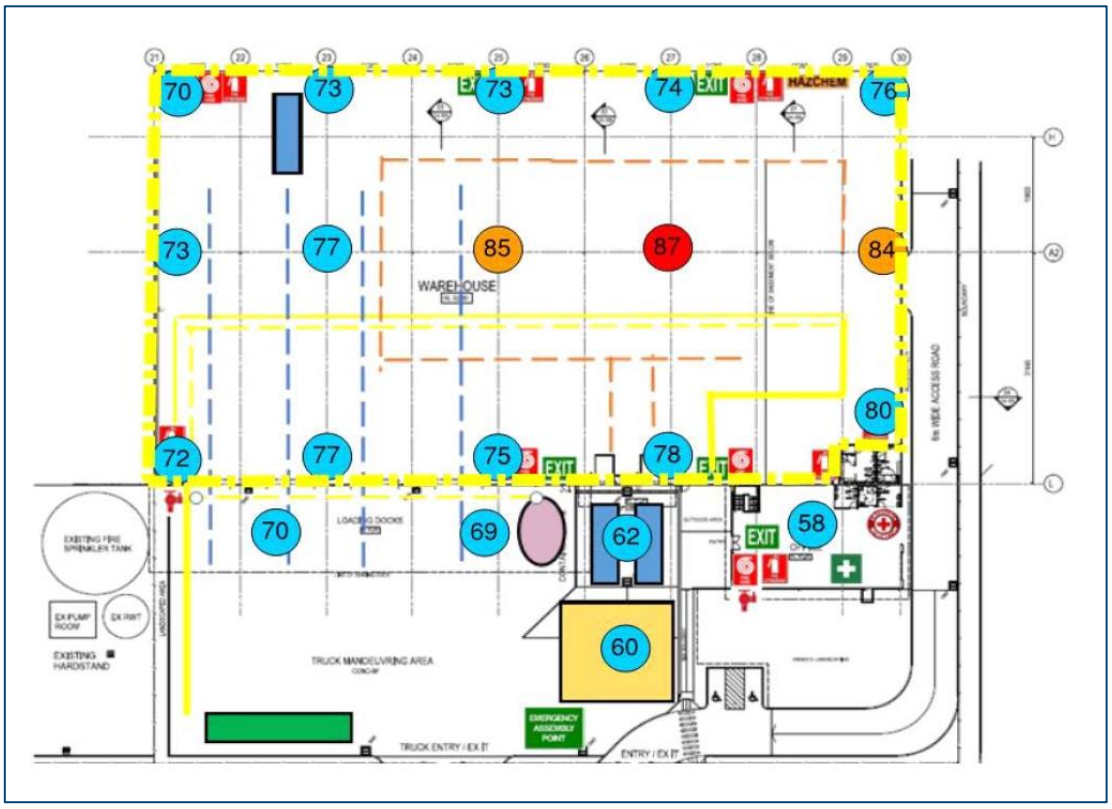


Figure 4: Measured noise levels at monitoring lcoations

An Occupational Noise Assessment (**JTA Health, Safety & Noise Specialists, 2021**) for the site was reviewed to assist with characterising the noise levels from the equipment within the warehouse. The report indicates the measure noise levels of the equipment are comparable to the noise levels for the equipment assumed in the *Noise Impact Assessment Tyrecycle Erskine Park* (NIA) (**Todoroski Air Sciences, 2020**).

A sound pressure map of the facility indicating continuous exposure over 8 hours is presented in **Figure 5**. Based on the sound pressure map the noise levels range from approximately 70dBA to 87dBA internally. The 8-hour exposure can be converted to an equivalent 15-minute period by increasing the noise level by 5dBA, the maximum noise level experienced near the walls of the facility would become 89dBA (i.e. 84 + 5).

A site visit was also conducted on 5th October 2022 to perform site specific noise measurements. During the site visit, there was an equipment failure, and a complete set of noise measurements could not be performed. However, based on the noise experienced whilst the equipment was running, the noise levels measured by the JTA and presented in the sound pressure map are considered sensible for the operations.



Source: JTA Health, Safety & Noise Specialists, 2021

Figure 5: Sound pressure level map

Assessment of potential noise impacts

To assess the noise impacts associated with the Project a qualitative approach has been applied that considers the potential change in noise levels associated with the Project relative to the approved operations.

As noted, the Project seeks to increase the annual production rate to 60,000tpa, up from 29,000tpa, with no change required to the approved processing activities, building infrastructure or footprint or hours of operation. The increase in the annual production will be achieved with the existing processing equipment operating for longer periods within the approved operational hours. Currently the equipment is only required to run intermittently to achieve the approved process rate.

The NIA assumed a potential worst-case scenario with all the equipment within the warehouse operating at a maximum capacity at the same time. A noise level of 93dBA was estimated for the within the warehouse with all equipment operating and applied in the modelling predictions. It was noted in the Occupational Noise Assessment some of the equipment was only operating part of the period which may explain the differences in the measured level. The modelled noise level is higher than the measurements conducted at the site and is considered suitably conservative for representing the operations.

Other noise sources included in the NIA are the operations truck movements and truck loading activity outside the warehouse in the driveway. Based on the Project, whilst there would be some additional truck movements these would occur intermittently over the day and there are no proposed changes to the approved morning and afternoon peak heavy movements. The NIA assessed the potential noise from the trucks based on the peak heavy movements which would represent that maximum and thus would already account for the worst-case conditions for the Project.

We also note that as a conservative measure, the scenario in the NIA assumed daytime levels of plant activity, along with an F-class temperature inversion and light winds towards receivers. In reality, the modelled weather condition corresponds with night-time periods when there would likely be minimal site activity external to the warehouse building. Thus, the predicted noise levels in the NIA are conservative and would adequately account for the increased production associated with the Project. There is not expected to be any additional noise associated with the operations above that already predicted for the Project.

Summary and conclusions

The report has assessed the potential for noise impacts associated with the proposed development application to increase production at the tyre recycling facility at 1-21 Grady Crescent, Erskine Park.

The Project would achieve an increase in the annual production rate by operating the existing processing equipment for longer periods within the approved operational hours. Currently the equipment is only operated intermittently. The modelling predictions presented in the NIA represents a potential worst-case operation assuming all equipment within the warehouse operates at the same time and would account for the change in production associated with the Project. Therefore, the Project would not result in any additional noise impact above that predicted in the NIA.

Please feel free to contact us if you would like to clarify any aspect of this report.

Yours faithfully,
Todoroski Air Sciences

Philip Henschke

References

JTA Health, Safety & Noise Specialists (2021)

"Occupational Noise Assessment Tyrecycle Pty Ltd – Erskine Park", prepared by JTA Health, Safety & Noise Specialists, December 2021.

JTA Health, Safety & Noise Specialists (2022)

"Environmental Noise Assessment Tyrecycle Pty Ltd – Erskine Park", prepared by JTA Health, Safety & Noise Specialists, June 2022.

Todoroski Air Sciences (2020)

"Noise Impact Assessment Tyrecycle Erskine Park", prepared by Todoroski Air Sciences for Tyrecycle Pty Ltd, September 2020.

NSW EPA (2017)

"Noise Policy for Industry", NSW Environment Protection Authority, October 2017.