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## ENVIRONMENTAL NOISE ASSESSMENT

REFERENCE NO. S12564-R1

WETHERILL PARK RRF | ASSESSMENT DATE: 5 APRIL 2023

**Environmental Noise Assessment**

20 Davis Rd, Wetherill Park NSW 2164

Prepared for

**Veolia**

20 Davis Rd, Wetherill Park NSW 2164

by

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Our Reference: S12564-R1

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Date: 12 April 2023

## Executive Summary

This report presents the findings of an Environmental Noise Assessment of Veolia's Wetherill Park RRF (Resource Recovery Facility) at 20 Davis Rd, Wetherill Park NSW 2164. The aim of this report is to assess the noise emission performance of the site. Veolia's EPL for Wetherill Park RRF (EPL 4548) contains no limits for environmental noise. Consequently, this report provides a noise map that estimates the site noise emission into the surrounding area based on on-site noise measurements. This assessment is of the period from 15 June 2021 to 14 June 2022.

The results of this assessment indicate that:

- Industrial noise emanating from operations at Wetherill Park RRF (engine noise from plant within the RRF and arriving/departing trucks) dominated the soundscape during the measurements.
- The results of the assessment show that noise immissions from the site were below the NPI's recommended noise project trigger levels.

Based on the above, Veolia need not implement any additional noise mitigation to reduce environmental noise levels.

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## 1. Introduction

This report presents the findings of an Environmental Noise Assessment of Veolia's Wetherill Park RRF (Resource Recovery Facility) at 20 Davis Rd, Wetherill Park NSW 2164. The aim of this report is to assess the noise emission performance of the site. Veolia's EPL for Wetherill Park RRF (EPL 4548) contains no limits for environmental noise. Consequently, this report provides a noise map that estimates the site noise emission into the surrounding area based on on-site noise measurements. This assessment is of the period from 15 June 2021 to 14 June 2022.

The study follows the procedures and method outlined in our approved proposal<sup>1</sup>. Dora Ambrosi-Wall, Environmental Advisor (NSW/ ACT) at Veolia authorised the work. Toby Dudman, Consultant Acoustician, from Hibbs conducted the site work and assessment. We wish to acknowledge, and express our gratitude, for the assistance provided by all the staff at Wetherill Park RRF with conducting the survey and assessments.

Appendix A has background information about the site. This includes a description of the site and activities, and data supporting the assessment.

### 1.1 Report Limitations and Disclaimer

Hibbs & Associates Pty Ltd prepared this report for Veolia solely for the purposes set out herein and we do not intend that any other person use or rely on the contents of the Report. The information contained in this report is based on a limited review of the site, interviews with site personnel and review of documentation provided to Hibbs & Associates Pty Ltd at the time of the review. Whilst the information contained in the Report is accurate to the best of our knowledge and belief, Hibbs & Associates Pty Ltd cannot guarantee the completeness or accuracy of any of the descriptions or conclusions based on the information supplied to it or obtained during the investigations, site surveys, visits and interviews. Furthermore, conditions can change within limited periods of time, and this should be considered if the Report is to be used after any elapsed period subsequent to its issue.

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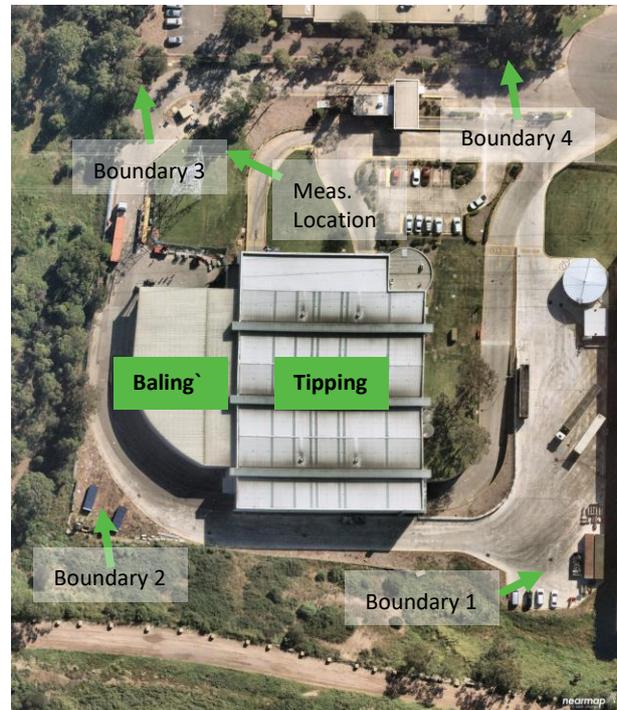
<sup>1</sup> Hibbs. *Wetherill Park Environmental Noise Assessment*. Reference SQ9457. 10 March 2023.

## 2. Assessment

### 2.1 Method

This assessment determined the site source terms from measurements around the site. We modelled noise emission using iNoise software implementing ISO 9613-2<sup>2</sup>. The model was built and validated in the 2020 noise assessment. It was confirmed in the 2021 noise assessment. We confirmed that the model remained current with direct measurements at an intermediate location at the site where the source noise level is separate from the general ambient level. Appendix B describes the survey measurements and site source terms.

Although the EPL has no noise limits, we compared the site noise emission levels at the boundary following relevant guidance in the NSW Noise Policy for Industry (NPI)<sup>3</sup>. Table 2.2 in the NPI lists the recommended amenity noise trigger level as 70 dB  $L_{Aeq}$  for industrial receptors.



**Figure 2.1: Measurement Location and Assessed Boundary Locations**

### 2.2 Surveys

We conducted attended measurements at the site between 10:00 hours and 11:00 hours on 05 April 2023. These measurements were used to confirm the validated noise model. The weather was dry with a slight and intermittent southerly breeze. The site seemed busy. There was a near continuous stream of trucks entering and leaving the site most of the time. Industrial noise emanating from operations at Wetherill Park RRF (engine noise from plant within the RRF and arriving/departing trucks) dominated the soundscape during the measurements.



**Photograph 2.1: Site from Measurement Location**

<sup>2</sup> ISO 1996, ISO 9613-2 Acoustics - Attenuation of sound during propagation outdoors - Part 2 General method of calculation

<sup>3</sup> NSW Environmental Protection Agency (2017) *Noise Policy for Industry*. Environmental Protection Agency, Sydney.

**Table 2.1: Survey Results**

Start Time	$L_{Aeq,15min}$ (dB)	$L_{A10,15min}$ (dB)	$L_{A90,15min}$ (dB)	Temp. (deg C)	Wind speed (m/s)	Wind direction	Relative humidity (per cent)
10:17:50 AM	66	67	60	16.6	18.6	3	SSW
10:32:57 AM	63	65	57	16.5			
10:54:14 AM	60	62	55	15.9			

### 2.3 Assessment

Noise emissions from the site will vary throughout the day and from day to day due to the variations in site traffic, amount of operational plant and waste composition. The assessment (Table 2.2) calculated noise immissions during commonly occurring noisy 15-minute periods during the day and night operational conditions. Appendix B shows the assessment input data. The results of the assessment show that noise immissions from the site were below the NPI's recommended noise project trigger levels. Noise immissions at the boundaries will be lower than those calculated by this assessment most of the time.

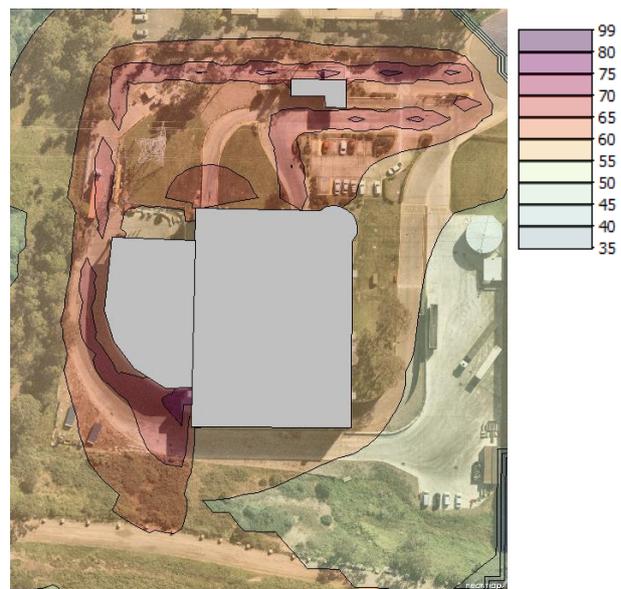
**Table 2.2: Assessment Results**

Assessment	Applicable Hours	Project Noise Trigger Level, $L_{Aeq,15min}$ (dB)	Noise Immission, $L_{Aeq,15min}$ (dB) at Boundary 1	Noise Immission, $L_{Aeq,15min}$ (dB) at Boundary 2	Noise Immission, $L_{Aeq,15min}$ (dB) at Boundary 3	Noise Immission, $L_{Aeq,15min}$ (dB) at Boundary 4
Day	0500-1800	70	65.1	67.6	68.4	69.7
Night	1800-0500	70	48.7	58.7	63.1	64.8

N.B. The NPI uses day (07-18), evening (18-20) and night (20-07) assessment periods when assessing impacts to residential receptors. The periods adopted for this assessment align with site operations because the project trigger noise level for industrial receptors is independent of the time of day.



**Figure 2.2:  $L_{Aeq,15m}$  noise contours - Day**



**Figure 2.3:  $L_{Aeq,15m}$  noise contours - Night**

### 3. Summary and Conclusions

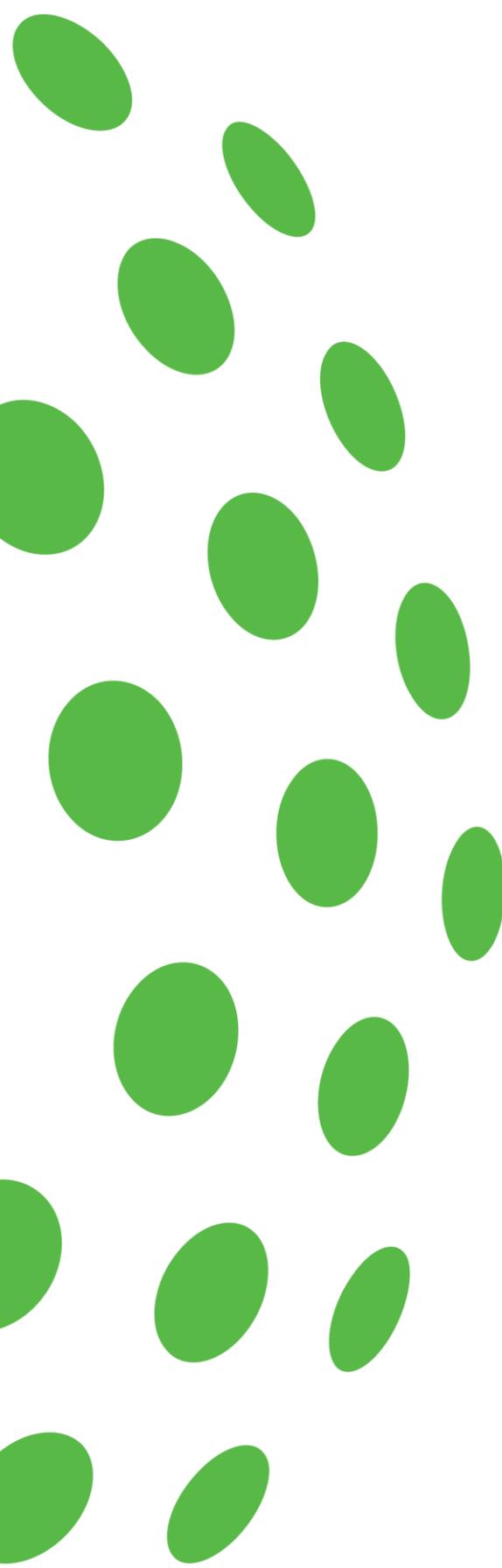
The results of this assessment indicate that:

- Industrial noise emanating from operations at Wetherill Park RRF (engine noise from plant within the RRF and arriving/departing trucks) dominated the soundscape during the measurements.
- The results of the assessment show that noise immissions from the site were below the NPI's recommended noise project trigger levels.

Based on the above, Veolia need not implement any additional noise mitigation to reduce environmental noise levels. Tonal reverse alarms on vehicles are more noticeable than broad-band non-tonal reverse alarms. In the previous report <sup>4</sup> we recommended that the site operator (Suez) investigated the feasibility of using broad-band non-tonal reverse alarms on their mobile site plant at Wetherill Park RRF to minimise their potential environmental noise impact. We observed that this had been carried out and heard non-tonal ('squawking') reversing alarms from vehicles in the tipping hall and around the baling area.

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<sup>4</sup> Suez Recycling And Recovery, Environmental Noise Assessment, Wetherill Park RRF. Reference No. S11864-R1. 22 October 2021



## Appendix A Background Information

## A.1 Site Description

Wetherill Park RRF is a waste transfer station. Waste is dropped off by commercial trucks and public vehicles, then compacted and loaded into trucks. There is also a baling machine which bales recyclable material, which is then loaded onto waiting trucks by a forklift.

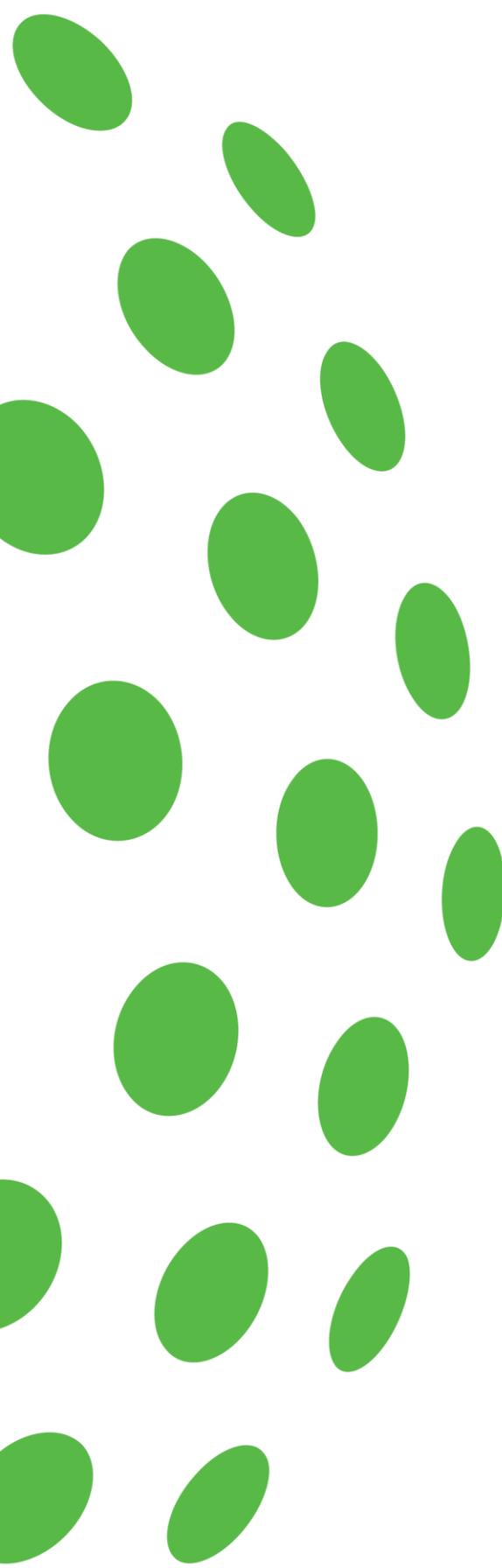
Operations are 24-hours a day Monday-Friday. The site closes 1300 hrs on Saturdays and re-opens Sunday morning at 1000 hrs. The site contains plant including a bulldozer, excavators with grab arm, front end loader, forklifts, and a mini dozer with bucket broom. Most of this plant is operational during the day period. Night-time operations are restricted to only use of the bulldozer occasionally and the flow rate of trucks entering the site decreases.

**Table A.1: Noise Sources**

Name	Description	Operational times
Rubbish Trucks	Trucks arrive at the site, tip their load, and depart.	24 hours
Quad trucks	Loaded with waste to be transported.	0530-1600hrs
Bale trucks	Trucks are loaded with bales to be transported.	1500-1700hrs
Bulldozer	Flattens and organises waste. Use of bulldozer is reduced during the night period.	24 hours
Front-end loader	Flattens and organises waste.	0500-1800hrs
Excavators	There are two on site, they are used to disperse the waste and load trucks.	0500-1800hrs
Forklift	Loads bales onto trucks.	0500-1700hrs
Baling machine	Bales material. This is in a separate area to west of the main tipping area.	0500-1500hrs
Mini dozer with bucket broom	Used to clean the floor of the tipping area.	0500-1800hrs



**Figure A.1: Routes of trucks**



## Appendix B Site Source Term Data

## B.1 References

- ISO (2010) ISO 3744 *Acoustics - Determination of sound power levels and sound energy levels of noise sources using sound pressure - Engineering methods for an essentially free field over a reflecting plane*
- ISO (1996) ISO 9613-2 *Acoustics -- Attenuation of sound during propagation outdoors -- Part 2: General method of calculation*
- Geoscience Australia. Elevation and Depth - Foundation Spatial Data
- NearMap

## B.2 Site Source Terms

We determined the average diffuse internal sound pressure level ( $L_i$ ) for the tipping hall and baling area from the results of two logging sound level meters installed on the walls. The source term is the spatial and temporal energetical average of the relevant data. Vehicle movements around the site are modelled as line sources with sound power levels derived from the weighbridge data. The model represents a commonly occurring noisy 15-minute period on a typical day comprising the following:

### Day time:

- 3 trucks in 15-min
- dozer, grab and trucks unloading 100% of the time in the tipping hall
- baling machine operating and forklift loading an idling truck in baling shed 100% of the time

### Night-time:

- 1 truck in 15-min
- dozer running for 25% of the time in the tipping hall

**Table B.1: Noise Source Terms**

Octave-Band Frequency (Hz)	Unit	63	125	250	500	1000	2000	4000	8000
Tipping area (Day)	$L_i$ (dB)	80.6	76.6	82.7	80.5	77.7	74.7	69.0	62.0
Tipping area (Night)	$L_i$ (dB)	69.9	65.8	71.9	69.7	67.0	63.9	58.2	51.2
Baling area	$L_i$ (dB)	76.0	74.9	75.6	69.4	65.1	63.7	60.7	56.7
Moving truck	$L_w$ (dB)	101.7	106.6	101.2	99.8	100.7	101.5	97.9	92.4
Forklift	$L_w$ (dB)	102.0	102.6	100.3	99.3	97.3	93.8	91.4	88.2
Idling truck	$L_w$ (dB)	102.6	103.4	96.1	94.6	95.6	101.2	93.8	88.6

## B.3 Validation Survey

Table B.2 shows that the model predicts noise emissions from the facility within about 1 dB of the 95% upper confidence level of the combined dataset of all measured noise levels. This demonstrates that the model is robust and representative of the upper range of long-term emissions.

**Table B.2: Model validation survey results**

Daytime assessment situation	Noise level, $L_{Aeq,15m}$ (dB)
Model result	67.2
95% upper confidence of measured levels - 2020 survey	69.1
95% upper confidence of measured levels - 2021 survey	65.3
95% upper confidence of measured levels - 2023 survey	69.0
95% upper confidence of measured levels - all survey data combined	68.3

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