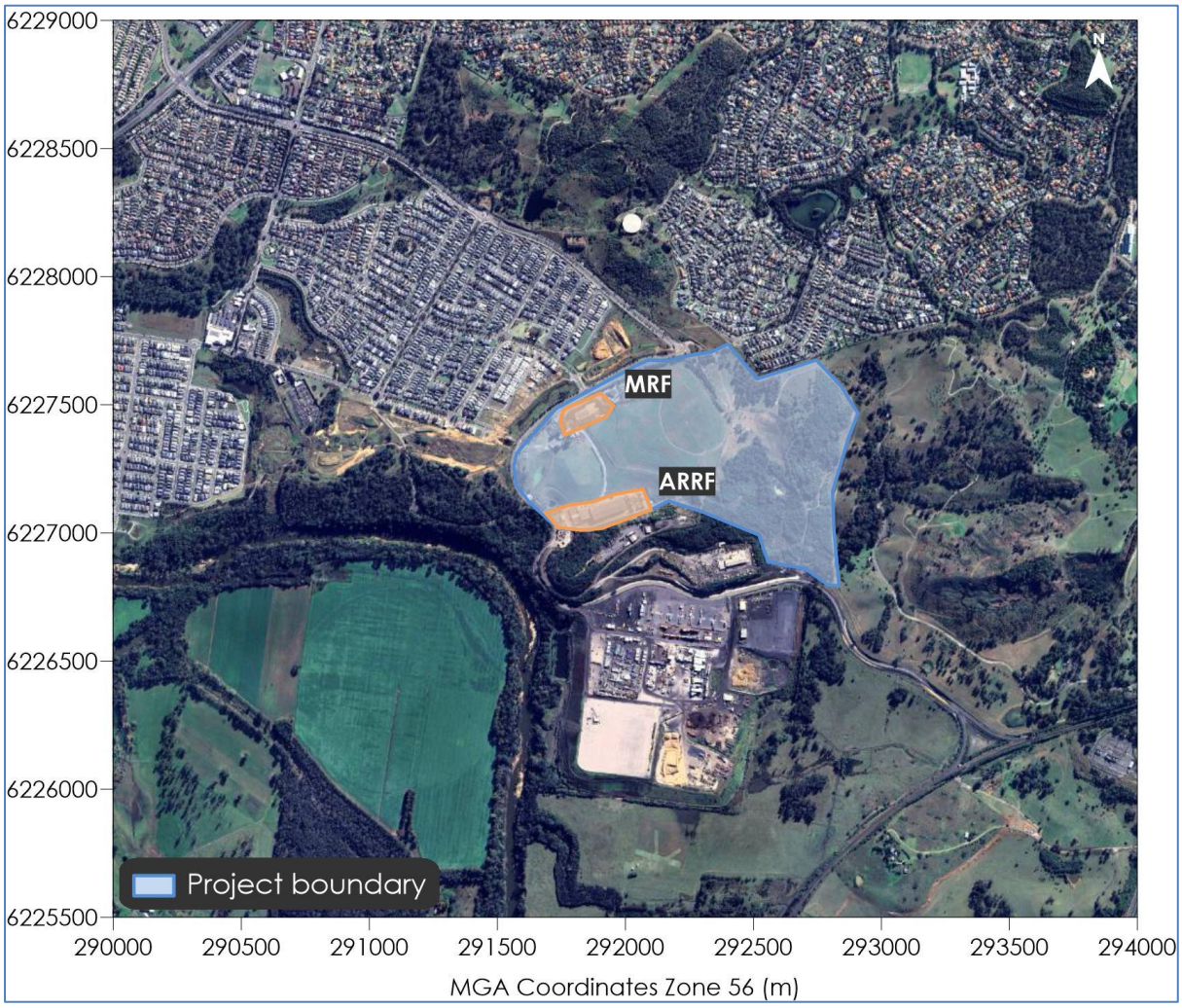


Figure 1: Project location

Odour and noise complaints

A Complaints Register and telephone line is maintained at the site by Veolia. There have been no recorded odour or noise complaints received by Veolia in regard to the Project since 2023.

Field odour survey

A series of field odour surveys was conducted on 2 September 2025. During the survey, winds were light and ranged from the south-southwest to north in the morning and east-northeast to east in the afternoon.

Confirmation was received from the site prior to the odour survey to verify that the site was in full operation at the time of the field odour surveys. The odour surveys were completed at times likely to lead to the highest odour impacts, that is during low wind speed conditions.

The field odour surveys were conducted in accordance with the NSW Environmental Protection Authority (EPA) *Guide to Conducting Field Odour Surveys* (**NSW EPA, 2022b**).

Odour survey methodology

The field odour survey methodology is based on a simplified version of the German Standard VDI 3940 "Determination of Odorants in Ambient Air by Field Inspections". During the field odour survey, a measurement is taken at the location over a period of 10 minutes. Over the 10-minute interval, the assessor tests the ambient air at 10 second intervals and records their observation of the intensity of the odour, the odour characteristic, and the hedonic tone of the odour every 10 seconds. **Table 1**, **Table 2** and **Table 3** present the odour intensity rating scale, suggested odour characteristic descriptors, and hedonic tone, respectively, suitable to be applied for the field odour surveys.

Table 1: Odour intensity rating scale

Rating	Intensity description
0	No odour
1	Very slight
2	Slight
3	Distinct
4	Strong
5	Very strong
6	Extremely strong

Table 2: Odour characteristic descriptors

Odour type code	Odour characteristic descriptor	Odour type code	Odour characteristic descriptor
1	Fragrant	9	Faecal, manure, sewer
2	Household gas	10	Fishy
3	Burnt smoky	11	Diesel/car fumes
4	Herbal, green, cut grass	12	Seaweed, mangroves
5	Oily, fatty	13	Compost
6	Rotten eggs, sulfide	14	Musty, earthy, mouldy
7	Sour, body odour	15	Sour garbage
8	Meaty		

Table 3: Hedonic tone rating scale

Rating	Hedonic tone description
-4	Extremely unpleasant
-3	Very unpleasant
-2	Unpleasant
-1	Mildly unpleasant
0	Neutral
+1	Mildly pleasant
+2	Pleasant
+3	Very pleasant
+4	Extremely pleasant

Odour survey locations

The odour survey locations are presented in **Table 4** and **Figure 2** and are representative of locations downwind of the Project based on the prevailing wind conditions at the time of the survey recorded by the monitoring station at Campbelltown (Mount Annan) monitoring station, located approximately 2.5km to the northeast of the Project.

Table 4: Odour survey monitoring locations

Date	Time	Location ID	Wind direction	Average wind speed (m/s)
2/09/2025	10:00am	1	N	1.7
	10:13am	2	N	1.7
	10:26am	3	N	1.7
	10:45am	4	N	2.5
	1:47pm	5	ENE	3.1
	2:13pm	6	ENE	2.5
	2:25pm	7	ENE	2.5
	2:37pm	8	ENE	3.1
	2:49pm	9	ENE	3.1
	3:00pm	10	E	3.1
	3:12pm	11	E	2.5
	10:48am	12	E	2.5
	11:01am	13	NE	2.5
	11:14am	14	NE	2.5
	11:28am	15	NE	2.5
	11:40am	16	ENE	3.1
	12:15pm	17	ENE	1.9
	8:49am	18	SSW	1.9
	8:37am	19	SSW	1.9
	8:24am	20	SSW	CALM
	8:12am	21	SSW	CALM
	8:00am	22	SSW	CALM

Figure 2: Odour survey monitoring locations

Odour survey results

The predominant odours observed during the surveys were very slight to slight diesel/ car fumes associated with passing vehicles or idling trucks, faint herbal smells due to nearby vegetation and recently cut grass, weak smoke and oily/fatty cooking odours from residential dwellings, slight manure odours from nearby agricultural fields, and very slight to slight sour garbage odours. The sour garbage smell was most detectable at the Project's boundary (Location 15, 16 and 17), with weaker and infrequent sour garbage odours observed offsite (Location 11 and 14).

It is to be noted that the garbage odour detected at Location 11 and 14 was predominately from the passing trucks delivering waste material to the Project, and not solely from the Project site itself.

Following the field odour surveys, the assessor went onto the Project site in order to identify whether there were potential on-site sources of odours similar to those detected in the field. It is considered that the sour garbage odours observed at the Project boundary and offsite likely originated from the Project and Project related activities such as the passing waste trucks. Other odour characters detected during the survey period were considered to be from non-Project related activities.

Figure 3 presents the count of odour intensity for at each location for each survey period. The majority of odour intensity counts were 0 at each location indicating minimal odour detection.

Figure 4 presents the frequency of all observed odour characters as a pie chart at each monitoring location. Odour characters varied at each location during different periods of the survey.

Figure 5 presents the frequency of all observed Project-related odour characters as a pie chart at each monitoring location. The sour garbage odour was most noticeable at the Project's at three locations with faint and infrequent identical odours observed offsite at two locations.

The full field odour survey logs can be provided upon request.

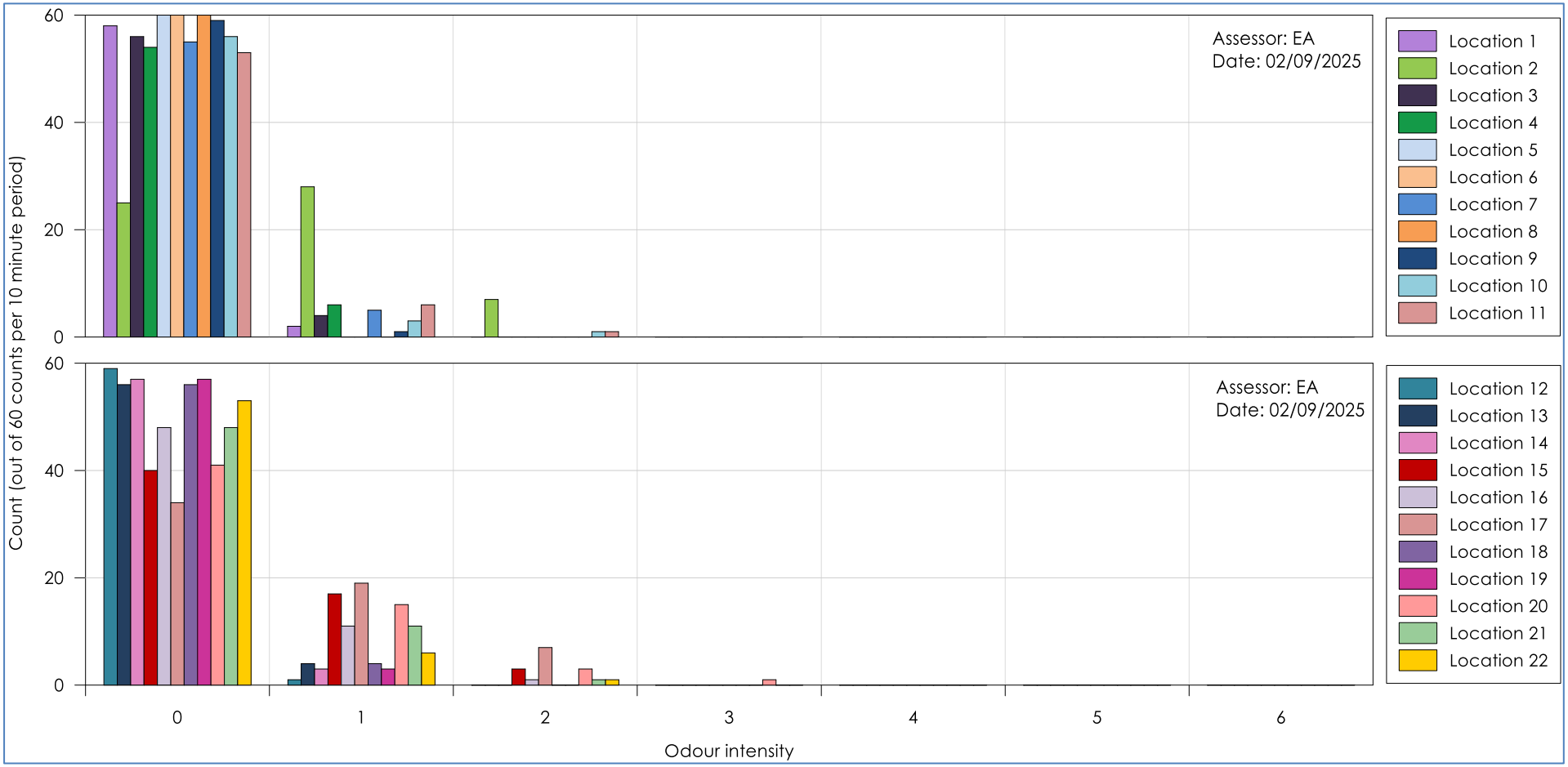


Figure 3: Field odour survey results - Count of odour intensity

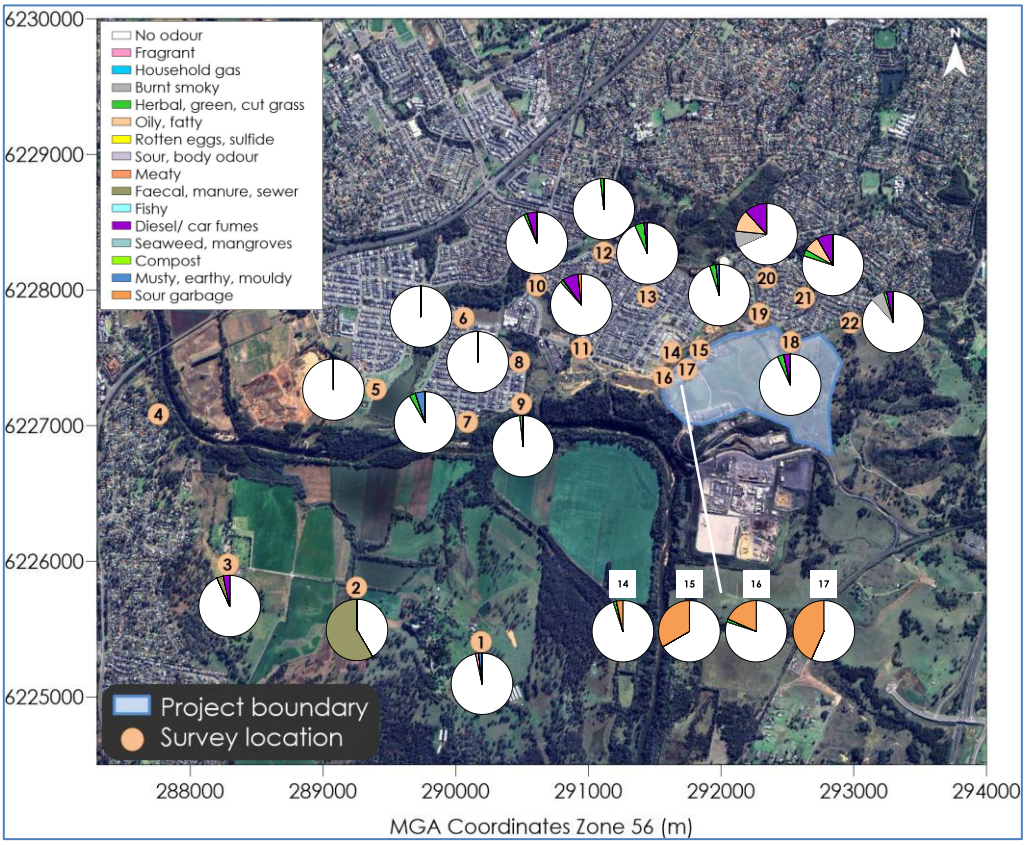


Figure 4: Field odour survey results – Odour characters

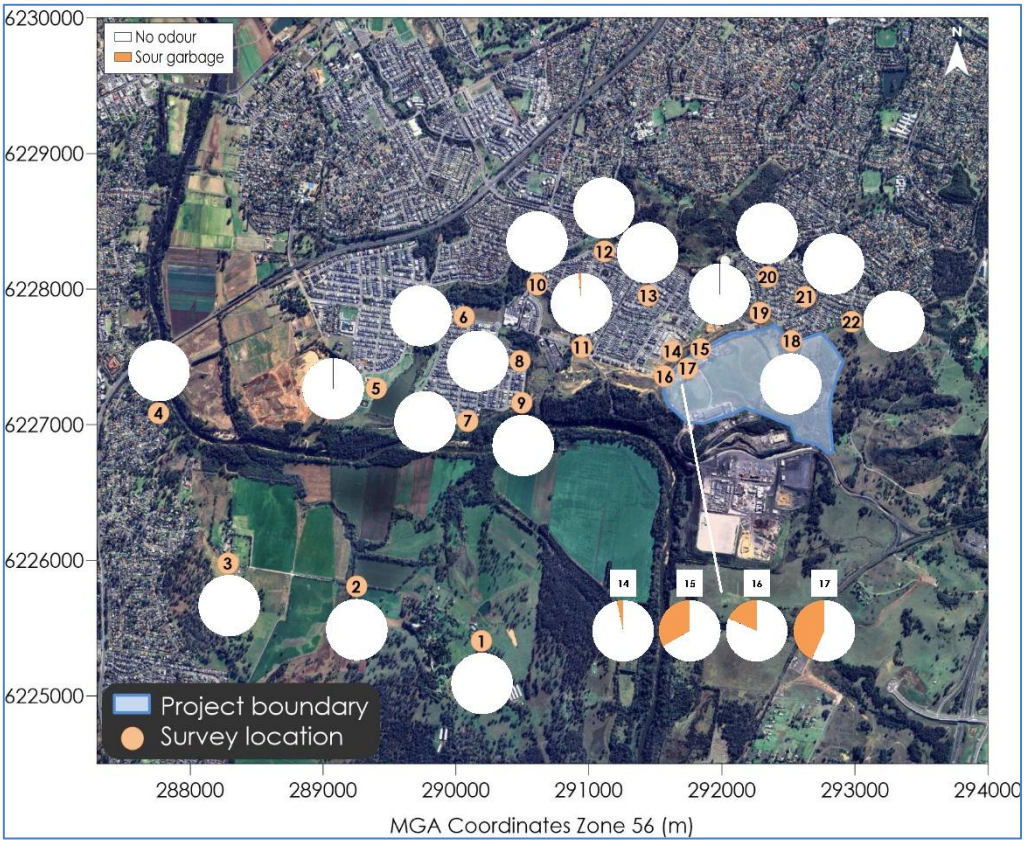


Figure 5: Field odour survey results – Odour characters (Project-related)

Evaluation of odour

The offensiveness of potentially Project related odour (i.e. sour garbage) detected during the study period has been evaluated using the FIDOL factors (frequency, intensity, duration, odour character and location).

Table 5 presents a summary of the FIDOL evaluation for sour garbage odours. While the sour garbage odour characters are considered to have a mildly unpleasant to unpleasant hedonic tone, as the intensity was predominately very slight to slight (i.e. only just detectable), and the odours frequency and duration were generally low, it is considered that this odour could not reasonably be perceived as offensive.

Per the VDI guideline, an odour is deemed offensive when a distinct odour intensity is detected in more than 10% of a single observation period. As no distinct odour levels were recorded at any monitoring location, it can be reasonably inferred that the Project did not result in any offensive odours. In addition, as discussed, any sour garbage odours detected at Location 11 and 14 were primarily due to passing waste trucks and not solely from the Project itself.

Table 5: Evaluation of Project related odour using FIDOL factors

Date	Assessor	Location ID	Frequency	Intensity	Duration	Odour character	Location
3/09/2025	EA	11	2%	Very slight	10 seconds	Sour garbage	Residential
		14	3%	Very slight	10 seconds	Sour garbage	Residential
		15	28%	Very slight	10 to 40 seconds	Sour garbage	Project boundary
			5%	Slight	10 to 20 seconds		
		16	17%	Very slight	10 to 30 seconds	Sour garbage	Project boundary
			2%	Slight	10 seconds		
		17	32%	Very slight	10 to 30 seconds	Sour garbage	Project boundary
			12%	Slight	10 to 40 seconds		

The field odour survey results were compared against the predicted odour impacts from the Project presented in the *Air Quality Impact Assessment Veolia Spring Farm Advanced Resource Recovery Facility Modification 7* (**Todoroski Air Sciences, 2024**).

Figure 6 presents the predicted odour concentration as prepared in the odour assessment report. The modelling results show that the odour concentrations will not exceed the 2OU criterion at the nearest residential receptors.

The odour survey results are considered consistent with the modelling predictions, as odours detected from the Project site were most noticeable at the Project boundary with minimal Project-related odours detected at some of the offsite locations; however, these were primarily attributed to passing waste trucks delivering material to the site.

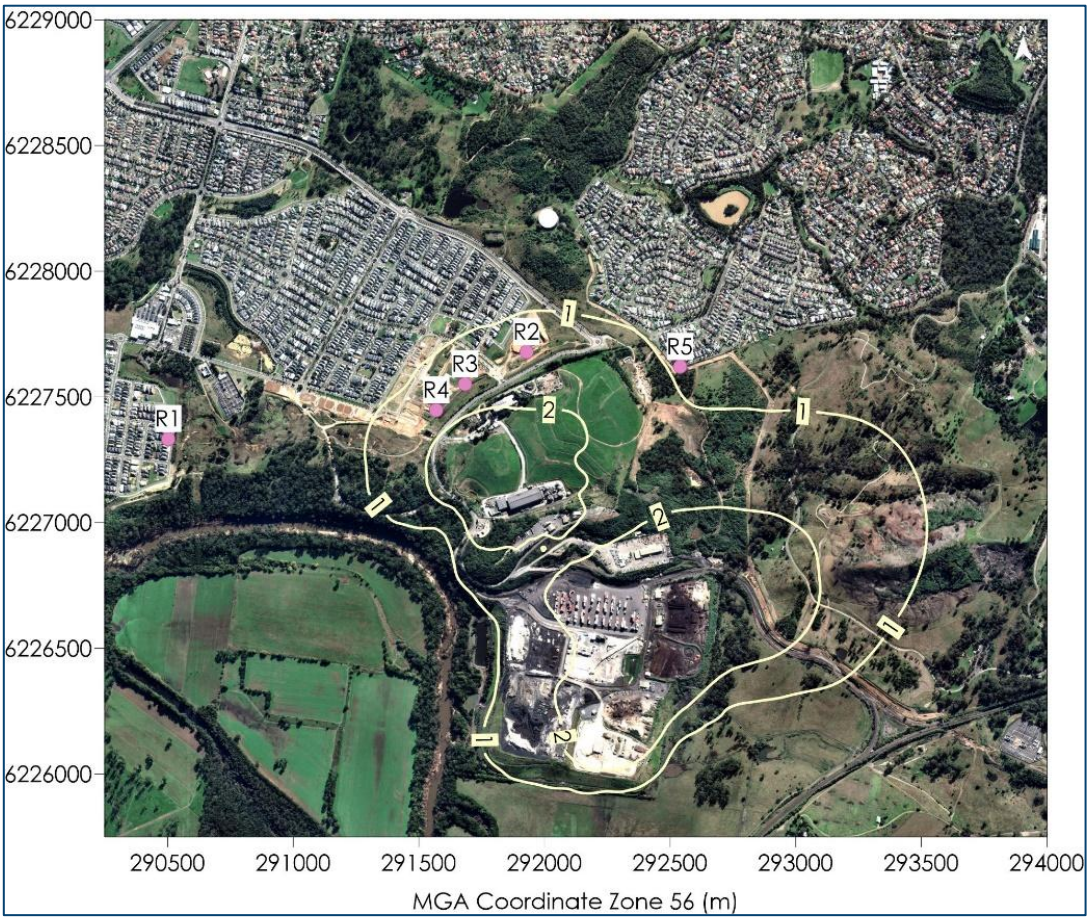


Figure 6: Predicted 99th percentile nose-response average ground level odour concentrations – cumulative impact (Source: Todoroski Air Science, 2024)

Noise monitoring

A series of attended noise monitoring measurements was conducted on 19 September 2025. The attended noise monitoring was conducted over 15-minute periods to assess for compliance and validation of noise predictions in the *Noise Impact Assessment Spring Farm Advanced Resource Recovery Facility 20 Barrow Road Spring Farm, NSW* (**Muller Acoustics Consulting, 2024**).

The noise monitoring was conducted as per the NSW EPA document *Approved Methods for the Measurement and Analysis of Environmental Noise in NSW* (**NSW EPA, 2022a**). Confirmation was received from site prior to the noise monitoring to verify that the site was in full operation at the time of the noise measurements.

The noise monitoring locations are shown in **Figure 2** and presented in **Table 4**. Attended noise monitoring was conducted using a Nti Audio XL2 Audio and Acoustic Analyzer, NATA Calibrated. Prevailing wind conditions at the time of the survey were recorded by the Campbelltown (Mount Annan) monitoring station.

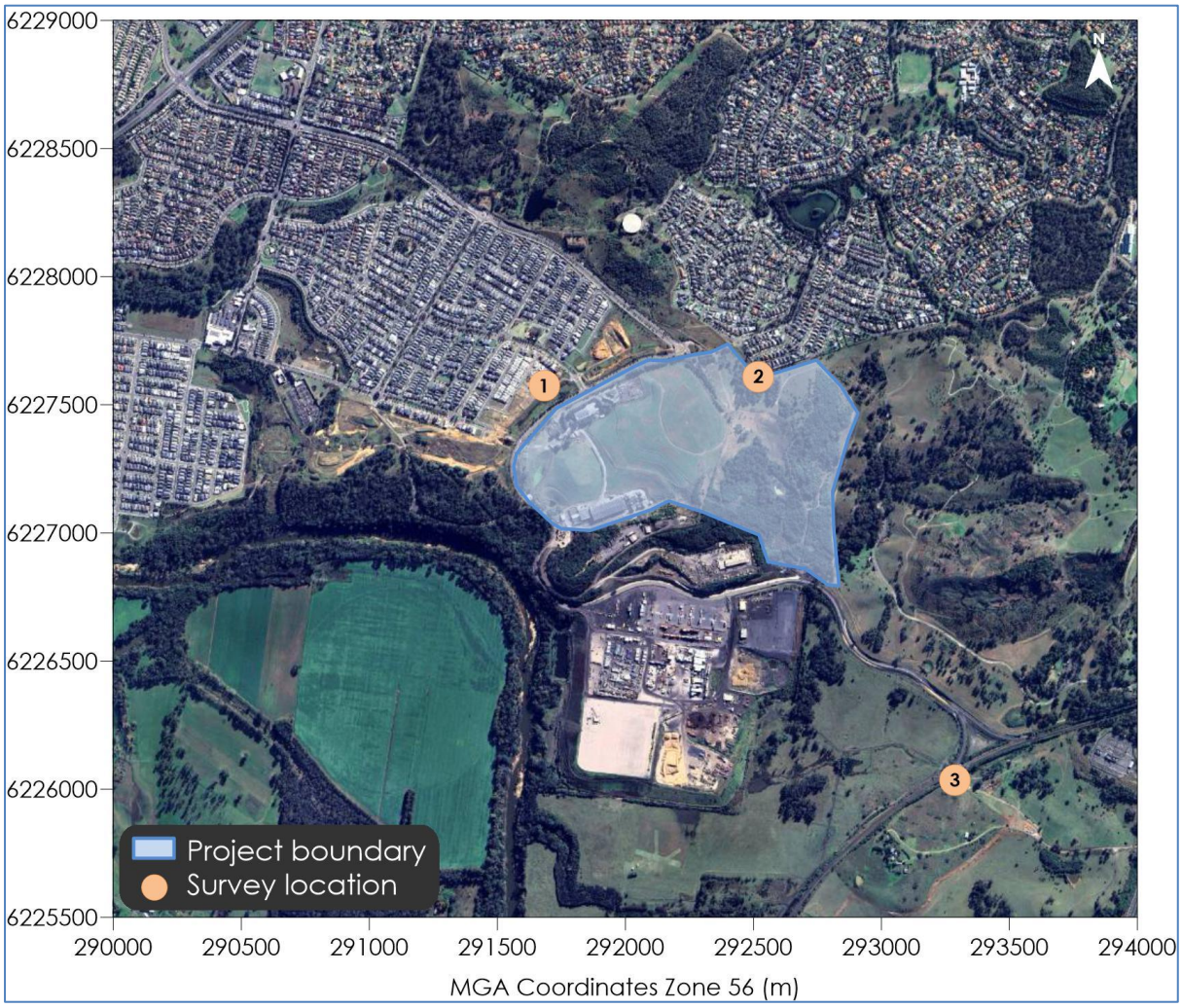


Figure 7: Noise monitoring locations

Table 6: Noise monitoring location – Meteorological conditions

Location ID	Period	Time	Wind direction	Wind speed (m/s)	Average temperature (°C)	Average relative humidity (%)	Rain (mm)
1	Day	11:30am	NNW	2.5	21.1	39	Nil
2	Day	12:00pm	WNW	2.5	21.8	37	Nil
3	Day	12:30pm	NNE	2.5	22.6	38	Nil
1	Evening	6:15pm	NNW	1.9	19.9	49	Nil
2	Evening	6:45pm	N	1.9	20.5	46	Nil
3	Evening	7:15pm	N	2.5	20.6	47	Nil
1	Night	10:15pm	NNW	1.9	20.0	49	Nil
2	Night	10:45pm	N	1.1	19.0	55	Nil
3	Night	11:15pm	N	0.6	17.8	62	Nil
1	Night	11:55pm	N	2.5	18.6	60	Nil
2	Night	11:45pm	N	2.5	18.6	60	Nil
3	Night	11:35pm	N	2.5	18.6	60	Nil

Project noise criteria

The Project noise trigger levels per the Project Approval (05_0098) and Environmental Protection License (EPL) 12588 are presented in **Table 7** and have been adopted for the attended noise monitoring.

Table 7: Noise trigger levels (dB(A))

Period	$L_{Aeq\ (15\ minute)}$	$L_{A1\ (1\ minute)}$
Day (7:00 – 18:00)	39	-
Evening (18:00 – 22:00)	39	-
Night (22:00 – 7:00)	35	45

Attended noise monitoring results

Table 8 summarises the noise measurement results from the attended monitoring.

Table 8: Attended noise measurement results

Location ID	Start time	Period	$L_{Aeq,15min}$	$L_{Aeq,1min}$	Trigger level	Comments
1	11:30am	Day	39	N/A	39	Local road traffic audible. Dog barking from nearby residence. No Project noise audible.
2	12:00pm	Day	32	N/A	39	Local road traffic audible. No Project noise audible. Construction noise nearby. No Project noise audible.
3	12:30pm	Day	39	N/A	39	Overhead airplane and bird noises. No Project noise audible.
1	6:15pm	Evening	36	N/A	39	Local road traffic audible. No Project noise audible.
2	6:45pm	Evening	32	N/A	39	Local road traffic audible. No Project noise audible.
3	7:15pm	Evening	38	N/A	39	Birds roosting in nearby trees. No Project noise audible.
1	10:15pm	Night	35	N/A	35	No Project noise audible. Occasional local traffic.
2	10:45pm	Night	34	N/A	35	No Project noise audible. Occasional local traffic.
3	11:15pm	Night	35	N/A	35	No Project noise audible.
1	11:55pm	Night	N/A	39	45	No Project noise audible.
2	11:45pm	Night	N/A	40	45	No Project noise audible.
3	11:35pm	Night	N/A	41	45	No Project noise audible. Occasional dog barking.

N/A – not applicable

The attended monitoring results presented in **Table 8** indicate that no audible noise from the site were detected at any the monitoring locations. The predominant noise source observed during the monitoring campaign were attributed to vehicle movements along nearby roadways, construction activities in the surrounding area along with extraneous noises from the natural environment.

Noise survey results comparison

The noise measurement results were compared against the predicted noise impacts from the Project site presented in the *Noise Impact Assessment Spring Farm Advanced Resource Recovery Facility 20 Barrow Road Spring Farm, NSW* (**Muller Acoustics Consulting, 2024**).

Figure 8 presents the predicted noise levels from the noise impact assessment report during each monitoring period.

The attended noise measurements at each location included ambient background sources unrelated to the Project, such as road traffic, wildlife, and aircraft, which contributed to the measured level. Project related noise was not audible at any of the monitoring locations, suggesting that the modelled Project contribution remains valid and within the predicted limits.

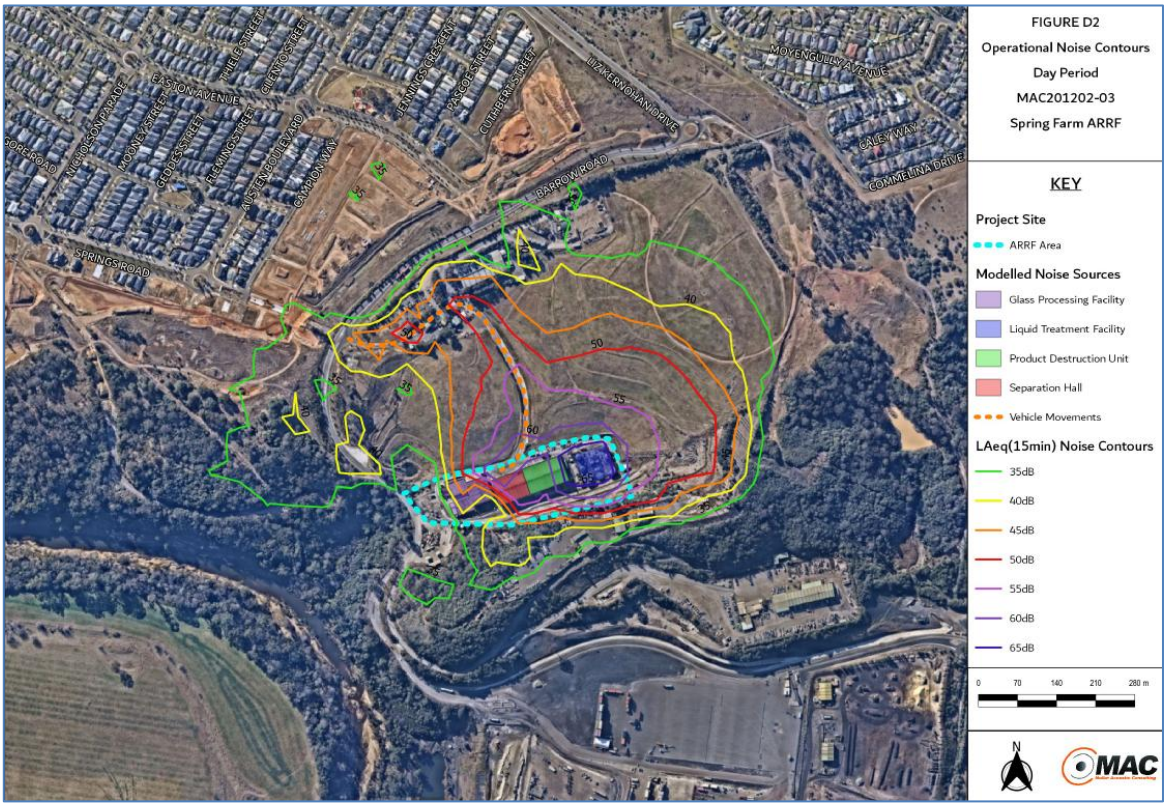


Figure 8: Predicted noise levels (Muller Acoustics Consulting, 2024)

Site audit

A site audit was conducted on 2 September 2025 to identify the potential odour and noise sources and current odour and noise control measures.

The Project receives and processes a mix of putrescible and non-putrescible waste from both residential and commercial sources. Waste materials are delivered to the site and deposited within the MRF, where they are sorted and consolidated. The sorted waste is then either transferred offsite for alternative processing and disposal or sent to the ARRF for further processing, such as at the glass processing plant.

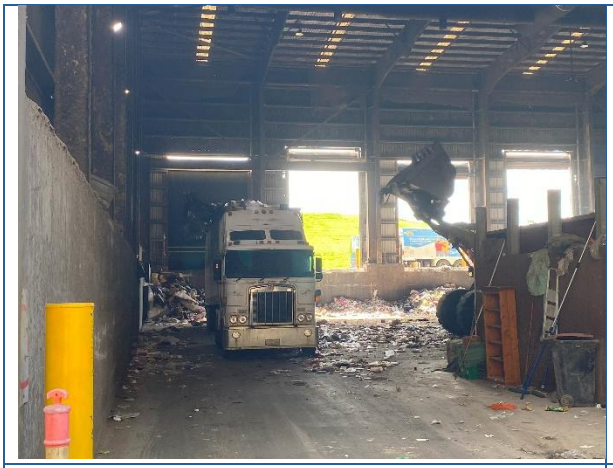
Organic material is also received at the ARRF, where it is deposited, consolidated, and loaded onto trucks for dispatch to appropriate offsite processing facilities. Any material stored onsite overnight for processing the following day is kept in designated, enclosed storage bunkers within a fully enclosed warehouse, with roller doors shut to contain odour and emissions.

Todoroski Air Sciences identified the key odour and noise emission sources at the site as the material receival and unloading/loading area, vehicles entering and exiting the site, biofilter, storage bunkers, the MRF screening processing plant, ARRF processing area, and the glass processing plant.

Images of the potential odour and noise sources that were taken during the site audit are presented in **Figure 9**.

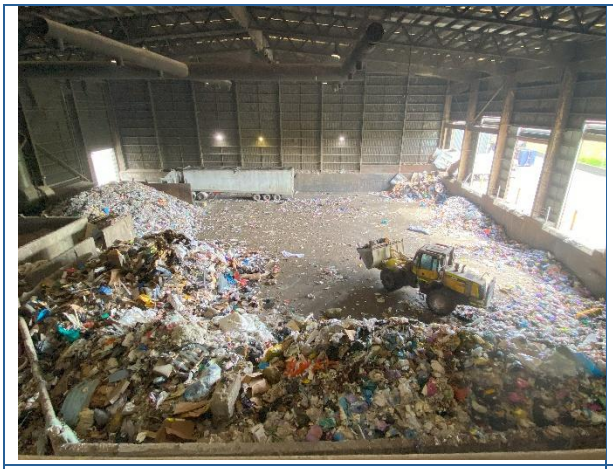
The odour survey results identified sour garbage odours as the most prevalent at the Project boundary, with no such odours detected at offsite locations, apart from passing waste trucks associated with waste material delivery to the site. A site inspection determined that the primary source of odour was likely attributable to materials being received and unloaded at the site. Attended noise monitoring confirmed that noise from the Project was not audible at any of the offsite monitoring locations and were below the applicable criterion.

The current odour and noise controls, mitigation and management measures are considered to be effective in reducing odour and noise impacts in the surrounding environment. No additional measures are recommended for the site.



Vehicles entering and exiting the site

Material receival and unloading area



Material receival and unloading area

Material granulation area

Crushing and screening unit

Crushing and screening unit

Crushing and screening unit

Crushing and screening unit

Material storage area

Material storage area

Biofilter

Biofilter

Material loading area

Material loading area

Figure 9: Potential odour and noise sources

Summary and conclusions

This report has investigated the potential for odour and noise impacts associated with the Veolia Spring Farm Resource Recovery Park at Spring Farm.

The field odour survey indicates that primarily sour garbage odour characters, likely related to the Project, were observed at the Project boundary, these were generally of a weak intensity, too infrequent and relatively short lived to be considered offensive, and per the VDI methodology, no offensive odours associated with the Project were identified in the surrounding area. In addition, the odour survey results were considered consistent with the modelling prediction presented in the odour assessment report and the extent of impacts from the site. Notably, the surveys were completed at times likely to lead to the highest odour impacts.

The attended noise measurements indicate that the noise emissions from the Project comply with relevant noise trigger levels. Furthermore, the measured noise levels were consistent with the predictions made in the noise impact assessment report, confirming the accuracy of the noise modelling and the extent of impacts from the site.

Overall, given the nature of the air and noise emissions sources and the existing control measures, the results indicate that the site was operating without undue impact in the surrounding environment at the times the surveys and attended monitoring were completed and compare well with the predicted impacts at the monitoring locations. The current odour and noise mitigation measures are considered to be effective, and no additional measures are recommended.

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

Yours faithfully,
Todoroski Air Sciences

Emilie Aragnou

References

Muller Acoustics Consulting (2024)

"Noise Impact Assessment Spring Farm Advanced Resource Recovery Facility 20 Barrow Road Spring Farm, NSW", prepared by Muller Acoustics Consulting, May 2024.

NSW EPA (2022a)

"Approved Methods for the Measurement and Analysis of Environmental Noise in NSW", NSW Environment Protection Authority, January 2022.

NSW EPA (2022b)

"Guide to conducting field odour surveys", NSW EPA, June 2022

Todoroski Air Sciences (2024)

"Air Quality Impact Assessment Veolia Spring Farm Advanced Resource Recovery Facility Modification 7", prepared by Todoroski Air Sciences, May 2024.