

Date: Friday, 25 November 2016
Project Number: 216 126
Project: Joe White Malting, Minto
Email: tracy.davey@cardno.com.au
File: Addendum letter v1.2- Acoustic Report

Joe White Malting
C/o Cardno
L9, 203 Pacific Highway, St Leonards, NSW
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Attention: Tracy Davey

Re: Addendum Letter to the Acoustic Report

Dear Tracy,

This is an addendum letter to PK acoustic report (216 126 dated 30 August 2016) and in response to Department of Planning & Environment additional requirements as stated in their letter dated 27/9/2016 and EPA comments in their letter dated 22/09/2016.

Part 2 of the EPA letter requires proposed modifications to satisfy

- (a) Operational noise limits specified in the project approval.
- (b) Noise limits in the environment protection license.

It states that these limits are identical and relate to noise from the premises (including transportation noise).

Part 4 of EPA letter requires preparation of a Noise Verification Report to demonstrate that compliance with the noise limits (including transportation noise) is achieved.

Schedule 3 of DA 08-0157 Schedule 3 Condition 16 approval prepared by DoP provides the noise limits as follows:

16- Operational noise limits

The proponent shall ensure that noise generated by the project's operation does not exceed the noise limits presented in the following Table 1.

Table 1, Project noise limits dB(A)

Location	Day	Evening	Night	
	L _{Aeq} (15 min)	L _{Aeq} (15 min)	L _{Aeq} (15 min)	L _{Aeq} (15 min)
Nearest residence (9 Borthwick Street, Minto)	45	40	40	50

We have extended our assessment to consider the above additional requirements and to assess the noise impact from the proposed modifications upon the nearest residential building at 9 Borthwick Street as highlighted in the EPA in the above Table.

The proposed modification involves an increase in the importation of raw materials by 103000 tonnes above the existing 54000 tonnes per annum.

1.Noise from operation of the trucks

Attended noise measurements were made on Pembroke Road at two locations as follows:

- (a) At the roundabout 2m from the side of the kerb
- (b) On Pembroke Road 2 m from the edge of the kerb, at a location approx 60 m from the roundabout

Table 2 presents the measurement results. Values have been rounded to the nearest 0.5 dB.

Table 2: Noise measurement levels

Location	Ambient $L_{Aeq}(15 \text{ min})$	$L_{A1} (1 \text{ min})$
At the roundabout 2m from the side of the kerb	70.0	93.5
On Pembroke Road 60 m from the roundabout, 2m from the kerb	70.5	86.0

The daytime ambient noise measured at the roundabout was 70 dBA. This was calculated to the boundary of 9 Borthwick Street residence. The attenuation effects of distance and directivity were considered in the calculations. The boundary fence does not provide much attenuation as it has gaps hence it is not considered to be an acoustic fence. A summary of calculation results is presented in Table 3 .

Table 3: Traffic and ambient noise levels

Descriptor	SPL at roundabout, dBA	SPL at residential receiver, dBA	Criteria, dBA
Ambient $L_{Aeq} (15 \text{ min})$	70	60	45
Max Level $L_{A1} (1 \text{ min})$	93.5	75.5	50

The above results indicate that the existing daytime noise level already exceeds the criteria.

In the Traffic Report (Report by Cardno, Ref 600330, Modification 4 dated 22 November 2016) provides figures for the existing traffic volumes for the different legs of the intersection. To get an indication of the number of heavy vehicles we have added up the figures and obtained the following results;

For AM peak:

- Pembroke Road, north of roundabout 1070 vehicle movements, includes 88 trucks (8.3% heavy vehicle)
- Pembroke Road, south of roundabout 1077 vehicle movements, includes 89 trucks (8.3% heavy vehicle)

For PM peak:

- Pembroke Road, north of roundabout 1106 vehicle movements, includes 44 trucks (4% heavy vehicle)
- Pembroke Road, south of roundabout 1107 vehicle movements, includes 44 trucks (4% heavy vehicle)

Section 4 (Conclusion) of the Traffic Report states that the proposed modification will yield a traffic generation potential of:

- *Based on the operational data, JWM can be expected to receive 4 truck in the AM peak hour between 8:00am to 9:00am corresponding to 8 truck movements, and the development peak is expected to be between 2:00pm to 3:00pm where JWM can expect to receive up to 18 trucks corresponding to 36 truck movements.*
- *It is also pertinent to note in this regard that using the supplied operational data to forecast the truck intake numbers assumes that JWM will only be expecting to receive trucks approximately 26% of the time on work days only, that is, the site will not generate any additional truck movements in the AM peak hour for the 74% of the time. This is therefore a very conservative assessment given that realistically, it can be assumed that the arrival patterns of delivery trucks will be better distributed throughout the week.*
- *All intersections will have sufficient capacity to accommodate background traffic in 2026 AM peak hour plus the additional truck movements generated by the modification proposal, with all intersection operating at level of service D or better*
- *Cardno has identified the mitigation measures required for Rose Payten Drive / Pembroke Road / Smiths Creek Bypass intersection and Rose Payten Drive / Campbelltown Road intersection under the 2026 PM peak hour traffic demands as per Roads and Maritime's request. In this context, it is important to note that Campbelltown City Council is currently undertaking a review of the future year requirements for the Raby Precinct, which includes an assessment of the intersections evaluated as part of this study. It must be noted that the recommendations / comments below are independent of that review, which is still ongoing:*
 - *With a revised phasing sequence, the Rose Payten Drive / Pembroke Road / Smiths Creek Bypass will be able to accommodate 2026 background traffic volumes and further confirms that the nominal increase of 4 truck movements will have negligible impact on the operational performance of the intersection.*
 - *With increased left-turn short lane lengths and revised phasing sequence, the Rose Payten Drive / Campbelltown Road will be able to accommodate 2026 background traffic volumes and further confirms that the nominal increase of 4 truck movements will have negligible impact on the operational performance of the intersection.*

Noise increase from the generated traffic (2 trucks in one hour) over the existing volume (44 trucks at peak hour) was calculated. Calculations indicate that the noise increase will be in the order of 0.2 dBA which is negligible.

The noise increase due generated traffic will be even lower if the additional 2 trucks are compared against the total existing traffic volume (ie 1070 vph for AM peak and 1106 vph for pm peak). For any night time truck movements (between 6 am and 7 am), we expect the noise increase and the relative impact will be the same, as the area is industrial and there will be considerable vehicle and truck movement in the area.

In our opinion, considering that existing noise levels exceed the criteria, and as the newly generated traffic will be a small proportion of the existing traffic volume, it will cause a marginal increase in noise level which is not perceptible by human ears and will not change the existing amenity level at the residential properties close to Pembroke Road roundabout.

2. Noise from the plant

Operational noise emissions from the plant was considered to the surrounding sensitive receivers. The plant is located in an industrial estate and is surrounded by a train line and other industrial units. The nearest residential property at 9 Borthwick Street is 395 m from the subject plant. From our experience, typical maximum noise of malting plants are in the order of 80-90 dBA within the plant. Considering the above noise levels being emitted from the outdoor equipment such as pumps, trucks and lift trucks, the noise emissions were calculated to the nearest residential property. The attenuation effects of 395 m distance and directivity were considered in the calculations. Calculations indicate that the perceived noise level at this location will be 38 dBA. This level complies with the day time, evening & night criteria, hence a noise impact is not likely to occur.

Yours faithfully,



Peter Knowland
PKA Acoustic Consulting

Disclaimer applicable to all PKA recommendations within this correspondence

We stress that the advice given herein is for acoustic purposes only, and that the qualified personnel should be consulted with regard to compliance in disciplines other than in acoustics. All materials and recommendations have been determined only on the basis of their acoustic value. No consideration has been given to any other purpose or function. Separate advice must be sought for other issues including but not limited to, fire safety, structural and loading requirements, pressure drop, aesthetic value and for compatibility with any non acoustic requirements.