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Noise Assessment Addendum

The Lime Yard, Grimstead Road, West Grimstead

New Milton Sand and Ballast Ltd

CRM.593.001.TN.R.001

'Experience and expertise working in union'

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Noise Impact Addendum

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1 Introduction

1.1 Project Introduction

1.1.1 Enzygo Limited has been commissioned by New Milton Sand and Ballast Ltd (NMSB) to assess the potential noise implications associated with the proposed changes to the consented layout of the Soil Drying facility at The Lime Yard, Grimstead Road, West Grimstead near Salisbury.

1.1.2 Conditional consent for the development was granted under appeal in January 2022. Condition 10 of the consent relates to noise and states the following:

"10) Measured at the boundary of the nearest residential noise-sensitive receptors, the noise emitted by plant, machinery and operations within the site in relation to the use hereby permitted shall not exceed 1dB above the LA90(15min) at any time."

1.1.3 This assessment has been undertaken as an addendum to the original assessment and considers the potential impacts associated with a change to the Dust Management System (DMS) at the site. The assessment has been undertaken in accordance with the relevant standards and guidance on the development, and the requirements of Condition 10 above.

1.1.4 Details of the methodology, predictions, assessment, and conclusions employed in this assessment are presented within this report.

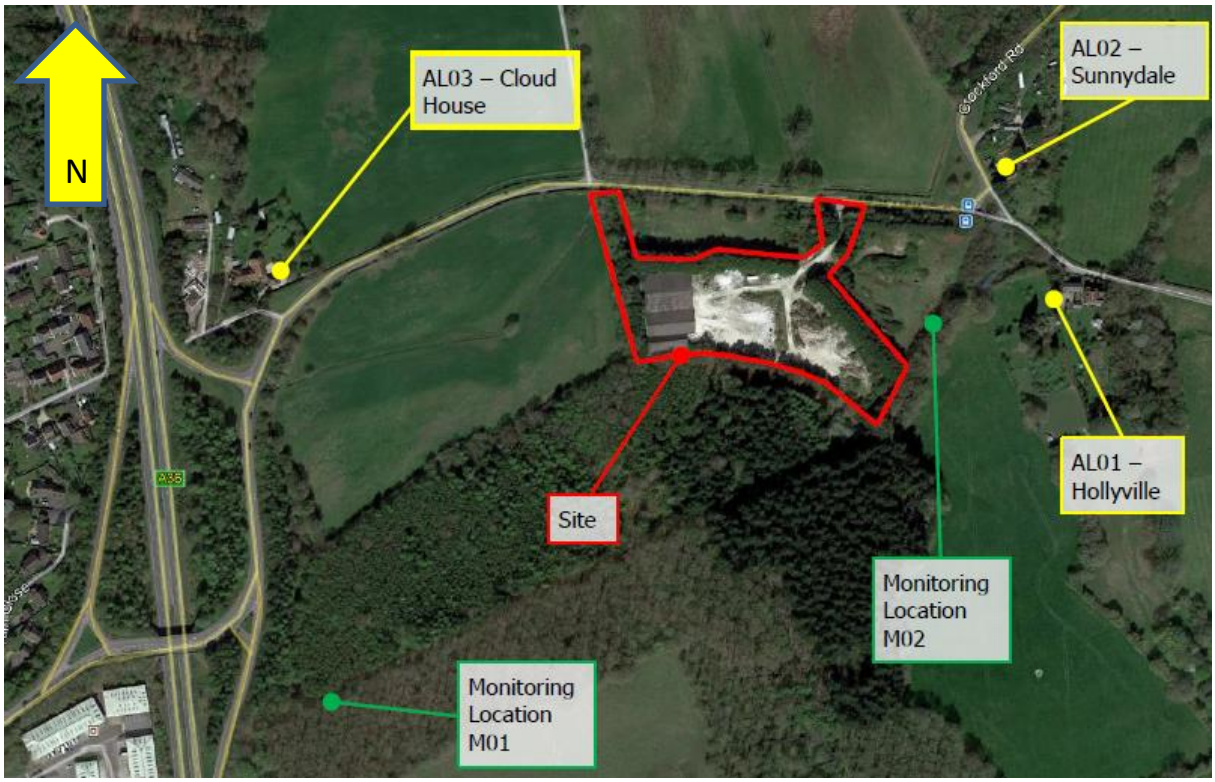
1.2 Site Description and Location

1.2.1 The site is located to the south of Grimstead Road, West Grimstead near Salisbury, approximately 350m to the east of the A36. Immediately north of the site is Grimstead Road which runs broadly east/west between West Grimstead and the A36.

1.2.2 The site was formally a lime yard; consented in 1990 for the processing and transporting of lime. The site is largely surrounded by mature tree growth, with a relatively large expanse of woodland to the south and southwest of the facility.

1.2.3 The site and surrounding area are shown in Figure 1-1. Also included on the figure are the noise monitoring locations used for the original baseline noise survey undertaken in October 2020, when noise measurements were made at two locations over approximately five consecutive days.

Figure 1-1:Site Location Plan



Google ©

1.2.4 The assessment locations identified above are detailed in Table 1-1 below:

Table 1-1: Assessment Locations

Receptor Address	Ordnance Survey Grid Co-ordinates		Distance to site boundary, m
	Easting	Northing	
AL01 – Hollyville	420514	126577	140
AL02 – Sunnydale	420260	126677	140
AL03 – Cloud House	419929	126605	250

1.3 Planning History

1.3.1 A planning application for the redevelopment of the site was submitted in 2021 under application reference 20/11232/FUL. The specifics of the application were for the change of use of the site to allow the storage, processing, and distribution of horticultural products.

1.3.2 A noise report prepared by Ion Acoustics (report reference A1653 R01a dated December 2020) was submitted in support of the application. The report included a baseline noise survey and predictive calculations and concluded that noise from the site would, at most, fall +1dB above the noise target.

1.3.3 The original planning application was refused with noise referenced in the refusal notice. More specifically, it stated:

"Whist the reuse of the site would potentially create rural employment opportunities, this benefit is considered to be outweighed by the potential harm that would result due to the

inevitable increase in the usage of the site, which will significantly increase the amount of noise and dust disturbance generated…."

1.3.4 Conditional consent was granted under appeal (reference APP/Y3940/W/21/3280132) in January 2022. Condition 10 of the consent relates to noise and is detailed in Paragraph 1.1.2 above.

1.4 Proposed Revisions

1.4.1 Information provided by the client indicates that the only proposed change to the consented layout is the relocation of the DMS from the westward elevation of the production/screening building to the southern elevation of the same building. All other aspects of the site are to remain as consented in the appeal decision notice.

1.4.2 The revised layout plan is presented in Figure 1-2 below.

Figure 1-2: Revised Site Layout Plan



1.4.3 The noise level generated by the DMS, as documented in the Ion Acoustics report, is based on proxy measurements made at an existing, operational DMS at another site. The measured noise levels indicate a sound power level of **100dB L_{WA}**.

1.4.4 It is noted that the operational hours of the facility remain as consented.

2 Noise Calculations and Assessment

2.1 Introduction

2.1.1 This section of the report documents the calculations and assessment undertaken to assess the potential noise impact arising from the relocation of the DMS.

2.1.2 The calculations have been undertaken to the locations identified in Figure 1-1 above, which are common with the original noise assessment report.

2.1.3 The Ion Acoustics report concluded that the noise, arising from operations at the facility, would result in a 'low noise impact' in accordance with BS4142[1]. More specifically, the assessment concluded that noise from the facility would, at worst, fall 1dB above the noise target at location AL02.

2.1.4 This assessment outcome gave rise to the requirements of Condition 10 of the appeal consent.

2.2 Noise Source Level

2.2.1 The noise level used in the original calculations detailed in the Ion Acoustics report indicates the DMS generates the following noise level:

Table 2-1: Dust Management System Noise Levels

Noise Source	Sound Power Levels in Octave Bands, HZ dB							Overall L_{WA}, dB
	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	
Dust Extraction System	97.7	95.6	98.1	97.0	95.7	92.0	91.0	100.3

2.2.2 The noise source was modelled as a point, located approximately 2.5m above local ground level.

2.3 Inherent Mitigation

2.3.1 The revised location of the DMS includes several inherent noise mitigation measures which provide a useful reduction in the propagation of noise from the source. These include:

- Screening from the elevations of the bagging barn (for sound propagating towards AL01);
- Screening from the attenuation bund to the eastern side of the site (for sound propagating towards AL01); and,
- Screening from the elevations of the processing building (for sound propagating towards AL02).

2.3.2 Further to this, the DMS would only operate during daytime, operational hours. It would not run during the evening or overnight.

[1] British Standard 4142:2014 +A1:2019. Methods for rating and assessing industrial and commercial sound.

2.4 Noise Calculations

2.4.1 In the absence of the original noise modelling files, the relocated DMS has been assessed as an entirely new noise source, rather than a relocation. In effect, the resultant calculations include *two* DMS noise sources. This is considered a worst-case assessment.

2.4.2 The predictions have been undertaken using standard calculation methodologies to account for distance correction and screening for intervening structures. Factors such as atmospheric absorption and ground effects have been omitted for simplicity.

2.4.3 Table 2-2 below calculates the predicted specific noise level from the DMS at the identified receptor locations:

Table 2-2: Predicted Noise Levels, dB

Receptor Location	Source Noise Level L_{WA}, dB	Distance (source to receptor), m	Distance Attenuation, dB	Screening, dB	Specific Noise Level at Receptor, dB
AL01	100.3	309	-57.8	-10	32.5
AL02	100.3	293	-57.3	-10	33.0
AL03	100.3	291	-57.3	-10	33.0

2.4.4 Notes to the table 2-2 above:

- Distance attenuation assumes hemispherical propagation from the source; and,
- Screening assumes a minimum of -10dB on the premise the source is completely obscured when viewed from the receptor.

2.4.5 The specific noise levels calculated above are low in absolute terms and are of a level which would be masked by other noise sources in the area and on the Lime Yard site.

2.4.6 The calculated specific noise levels have been used to inform the calculations in Table 2-3 below. This presents the calculation of the cumulative noise levels arising from the relocated DMS and the other noise sources from the original noise assessment.

Table 2-3: Calculated Noise Impacts, dB

Receptor Location	Specific Noise Level at Receptor, dB	Original Predicted Noise Levels, dB	Cumulative Noise Levels, dB	Rating Noise Level, dB	Noise Target, dB	Difference, dB
AL01	32.5	40.2	40.9	44	43	+1
AL02	33.0	40.5	41.2	44	43	+1
AL03	33.0	37.4	38.7	42	49	-7

2.4.7 Notes to Table 2-3:

- The predicted noise levels are taken from Table 15 of the Ion Acoustics report reference A1653 R01a;
- Cumulative noise levels are calculated through the logarithmic addition of the specific levels and the predicted levels (columns 2 and 3);

- The rating noise levels include +3dB correction for impulsive noise for consistency with the original assessment; and

- The rating noise levels are rounded to integer values in accordance with BS4142.

2.4.8 The inclusion of noise from the revised DMS would raise the cumulative noise levels by around 0.7dB at worst, which in the case of receptor AL01, is enough to tip the overall assessment outcome to +1dB when rounded to the nearest integer value.

2.4.9 It is reiterated that the assessment is based on several worst-case assumptions though is still compliant with the requirements of Condition 10.

3 Conclusion

3.1.1 Enzygo Limited has been commissioned by New Milton Sand and Ballast Ltd to assess the potential noise implications associated with the proposed changes to the consented layout of the Soil Drying facility at The Lime Yard, Grimstead Road, West Grimstead.

3.1.2 The assessment has been undertaken to the requirements of Condition 10 of the appeal consent which stipulates that noise from the site shall not exceed '1dB above the LA90 (15mins) at any time'.

3.2 Conclusion

3.2.1 The assessments summarised above demonstrate that, noise from the Dust Management System, when predicted to the nearest identified receptor locations, would be low in absolute terms, not exceeding 33dB at any receptor.

3.2.2 When logarithmically added to the predicted noise levels from the original assessment, the cumulative level increases by up to 0.7dB, which results in a +1dB assessment outcome at receptors AL01 and AL02. In relation to BS4142, this would fall well below an adverse noise impact, and would tend towards a 'low' impact.

3.2.3 The assessment outcome would comply with the requirements of Condition 10 of the appeal consent. As such, there are no reasons, on noise grounds, why the proposed variation cannot be granted consent.

Statement of Uncertainty

This report is based upon a range of measurements, a system of calculations and noise predictions. As such, this report attempts to quantify fluctuations in air pressure and is subject to the effects of meteorology, physical and perceived anomalies, tolerances within the measuring and monitoring equipment and accuracy margins within the noise modelling software. In the interests of repeatability, this report must be considered as being affected by common factors involved in the measurement and calculation of noise propagation.

All measurement values, outcomes and assumptions are subject to a margin of uncertainty. This has been quantified and assessed as follows:

- Rounding errors – systemic tolerance of ±1dB;
- Meteorology – allowance of ±1.9dB; and,

The most influential uncertainty factors for the assessment of noise are deemed to be equipment tolerances, meteorology, and software accuracy. A root-sum-square statistical average has been used to provide an overall margin of uncertainty of ±3dB.

Statement of Competency

The assessment has been undertaken by Mr Mark Harrison, Principal Acoustic Consultant at Enzygo Limited. Mr Harrison holds a Batchelor of Science degree in Music Technology and a post graduate Diploma in Acoustics and Noise Control.

Mr Harrison has worked in acoustic consultancy since 2007 and has worked on noise and vibration assessments in several sectors including industrial / commercial developments; power generation and distribution; residential developments; transport schemes; and mineral extraction and processing.

The assessment has been reviewed by Mr. Darren Lafon-Anthony who is the Director of Acoustics at Enzygo Limited. Mr. Lafon-Anthony holds a Master of Science Degree in Applied Acoustics and has been a Corporate Member of the Institute of Acoustics since July 2004 having previously been an Associate Member of the institute since October 2001. Mr. Lafon-Anthony is also a Fellow of the Institute of Quarrying based on his contribution to minerals and mining noise assessment and mitigation, a qualification he has held since September 2014.

Mr. Lafon-Anthony has worked in acoustics since January 1981. Initially as an engineer designing and overseeing manufacture of noise control equipment for the water industry, standby power diesel generator and power generation markets for several noise control equipment manufacturers and, since February 2004, as an environmental noise consultant in various sectors, including mineral and mining sites, waste disposal and recycling sites, large industrial developments, energy supply projects (EfW, STOR and Battery Energy sites) and residential developments in the UK, Europe and sub-Saharan Africa.

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