global environmental solutions

Eversley Haulage Yard,
Eversley, Hampshire

Noise Assessment

October 2010
SLR Ref: 403.00842.000002v2

CONTENTS

APPENDICES

1.0 INTRODUCTION

R Collard Limited has appointed SLR Consulting Limited to carry out a desk study to determine the effect on the local noise climate of moving various items of the external plant, comprising a wood shredder, crusher, picking line and trommel screen into a new, purpose built, waste reception building.

The assessment utilises historically measured noise data from similar operations at another waste transfer station site.

Whilst every effort has been made to ensure that this report is easy to understand, it is technical in nature; to assist the reader, a glossary of terminology is included in Appendix A.

2.0 PROPOSED SITE LAYOUT

Currently the wood shredder, crusher, picking line and trommel screen are situated externally on the eastern edge of the Evesley Haulage Yard. It is proposed to house the picking line and the trommel screen in a new waste reception building which will be located in the north-eastern corner of the site, with the remainder of the fixed plant continuing to operate externally.

The new building will measure approximately 80.0m long by 30.0m wide and, at the eaves, will be 16.6m high.

Three sides of the new building will consist of a 2.0m high brick trim with a single skin, vinyl coated, trapezoidal profile galvanised steel sheet wall above. The front of the building will be of similar construction but will also have 11 roller shutter doors spaced along its length.

The roof will again be constructed from single skin, vinyl coated, trapezoidal profile galvanised steel sheeting.

The location of the existing plant and the new proposed building are shown on the Drawing in Appendix B.

3.0 ASSESSMENT

3.1 Prediction of Noise Levels

Noise levels generated by the plant when located in their current positions and when the picking line and trommel screen are housed in the proposed waste reception building have been predicted using the proprietary software-based noise model, Cadna/A, which implements the full range of UK calculation methods.

Noise levels have been predicted at the following locations;

1. Hawker's Lodge to the south-west of the site;
2. The western site boundary; and
3. The southern site boundary.

These locations are shown on the drawing in Appendix B

R. Collard Limited have not provided any detailed noise levels for the plant which is operating at the site, therefore the noise predictions have been undertaken using historically measured noise levels from similar waste transfer stations.

Table 3-1 shows details of the plant and measured noise levels which have been utilised in the assessment.

Table 3-1
Plant Noise Levels, dB

Site Process	Item of Plant	Measured Noise Level L_{WA}
Shredding	Doppstadt AK230 Wood Shredder	110.0
Crushing	Pegson Premiertrak 1100 X 650 Jaw Crusher	115.0
Picking	Picking Line	84.0
Screening	Trommel Screen	120.0

3.2 Existing Noise Levels

Using the data shown in Table 3-1 the noise levels generated by the plant in their current positions have been predicted at the locations listed above.

The predictions take into account the distance between the sources and the receptor and the amount of attenuation due to atmospheric and ground absorption.

The predicted noise levels are shown in Table 3-2 below.

Table 3-2
Predicted Noise Levels, free-field dB

Location	Period	Predicted Noise Level $L_{Aeq,1hr}$
1. Hawker's Lodge	Daytime	57.6
2. Western Site Boundary		59.0
3. Southern Site Boundary		65.1

3.3 Proposed Noise Levels

Again, using the data shown in Table 3-1 the noise levels generated by the plant once the picking line and trommel screen have been relocated into the proposed waste reception building have been predicted to the same locations.

Table 3-3 details the expected attenuation that will be provided by the elements of the proposed waste reception building.

Table 3-3
Material Sound Reduction

Material	Frequency (Hz) and Sound Reduction (dB)								Overall Sound Reduction Index (R_w)
	63	125	250	500	1000	2000	4000	8000	
Brick Trim	28	34	34	40	56	73	76	78	45
Steel Sheeting	8	13	20	24	29	33	39	44	29
Roller Shutter Doors (closed)	8	13	20	24	29	33	39	44	29

The predictions take into account, the distance between the sources and the receptor and the amount of attenuation due to atmospheric and ground absorption.

The predictions also take into account the sound reduction of the building and assumed that the doors located in the front face of the building remain closed.

The predicted noise levels are shown in Table 3-4 below.

Table 3-4
Predicted Noise Levels, free-field dB

Location	Period	Predicted Noise Level $L_{Aeq,1hr}$
1. Hawker's Lodge	Daytime	52.7
2. Western Site Boundary		53.9
3. Southern Site Boundary		61.2

3.4 Comparison of Noise levels

Table 3-5 below shows the comparison between the exiting predicted noise levels and the predicted noise levels once the picking line and trommel screen is housed in the new proposed waste reception building.

Table 3-5
Predicted Noise Levels, free-field dB

Location	Existing Predicted Noise Level (dB)	Predicted Noise Level Including Proposed Building (dB)	Difference
1. Hawker's Lodge	57.6	52.7	-4.9
2. Western Site Boundary	59.0	53.9	-5.1
3. Southern Site Boundary	65.1	61.2	-3.9

It can be seen from Table 3-5 that the predicted noise levels at all of the locations are lower when the picking line and trommel screen are housed in the proposed waste reception building.

4.0 CONCLUSION

R Collard Limited has appointed SLR Consulting Limited to carry out a desk study to determine the effect on the local noise climate of moving various items of the external plant, comprising a wood shredder, crusher, picking line and trommel screen into a new, purpose built, waste reception building.

The assessment utilises historically measured noise data from similar operations at another waste transfer station site.

The assessment has shown that predicted noise levels at all of the locations are lower when the picking line and trommel screen are housed in the proposed waste reception building.

5.0 CLOSURE

This report has been prepared by SLR Consulting Limited with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with the client. Information reported herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of R Collard Limited; no warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the client and others in respect of any matters outside the agreed scope of the work.

APPENDIX A – GLOSSARY OF TERMINOLOGY

In order to assist the understanding of acoustic terminology and the relative change in noise, the following background information is provided.

The human ear can detect a very wide range of pressure fluctuations, which are perceived as sound. In order to express these fluctuations in a manageable way, a logarithmic scale called the decibel, or dB scale is used. The decibel scale typically ranges from 0dB (the threshold of hearing) to over 120dB. An indication of the range of sound levels commonly found in the environment is given in the following table.

Table A-1
Sound Levels Commonly Found in the Environment

Sound Level	Location
0dB(A)	Threshold of hearing
20 to 30dB(A)	Quiet bedroom at night
30 to 40dB(A)	Living room during the day
40 to 50dB(A)	Typical office
50 to 60dB(A)	Inside a car
60 to 70dB(A)	Typical high street
70 to 90dB(A)	Inside factory
100 to 110dB(A)	Burglar alarm at 1m away
110 to 130dB(A)	Jet aircraft on take off
140dB(A)	Threshold of Pain

Acoustic Terminology

dB (decibel) — The scale on which sound pressure level is expressed. It is defined as 20 times the logarithm of the ratio between the root-mean-square pressure of the sound field and a reference pressure ($2x10^{-5}$Pa).

dB(A) — A-weighted decibel. This is a measure of the overall level of sound across the audible spectrum with a frequency weighting (i.e. 'A' weighting) to compensate for the varying sensitivity of the human ear to sound at different frequencies.

L_{Aeq} — L_{Aeq} is defined as the notional steady sound level which, over a stated period of time, would contain the same amount of acoustical energy as the A - weighted fluctuating sound measured over that period.

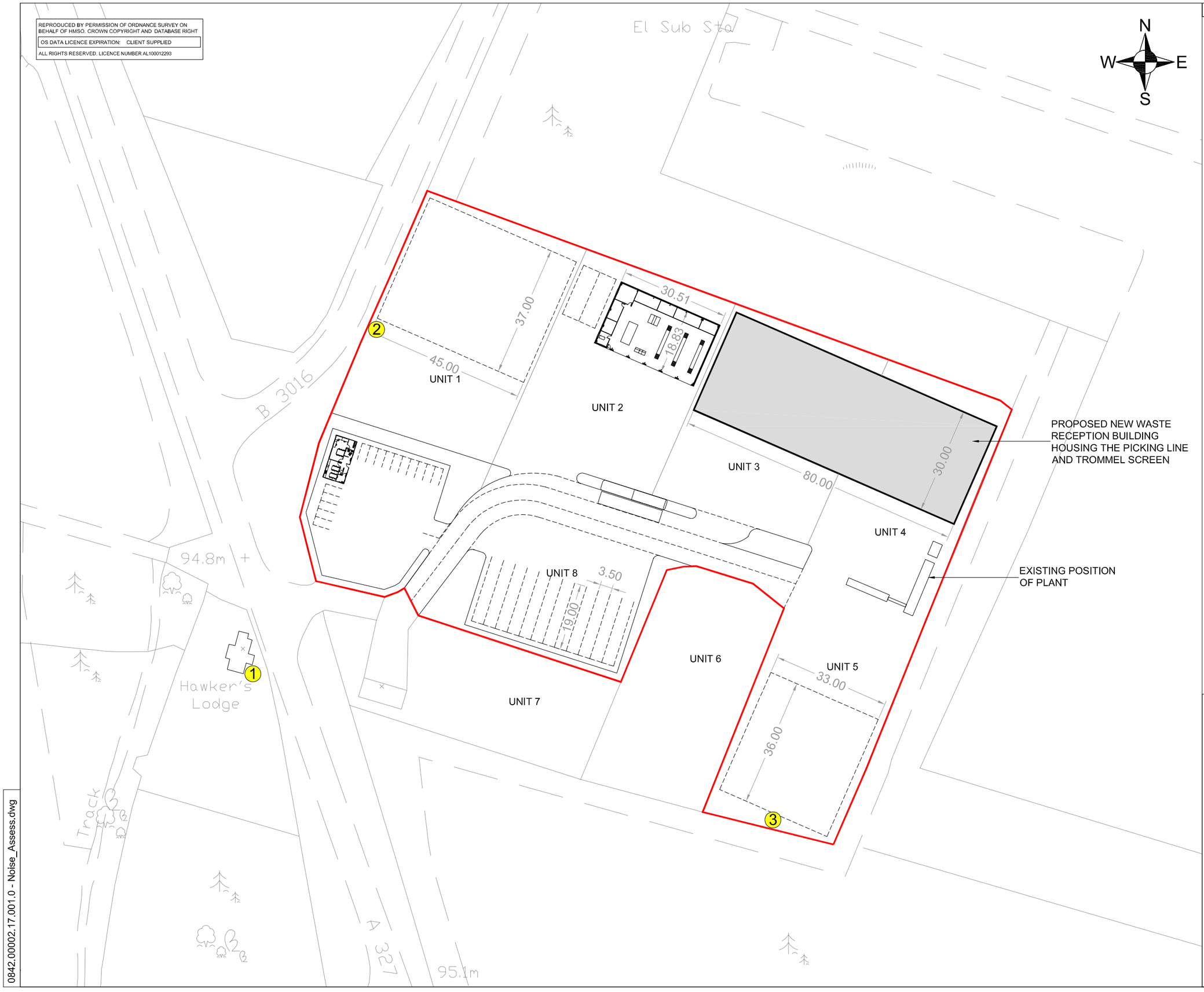
L_{10} & L_{90} — If a non-steady noise is to be described it is necessary to know both its level and the degree of fluctuation. The L_n indices are used for this purpose, and the term refers to the level exceeded for n% of the time. Hence L_{10} is the level exceeded for 10% of the time and as such can be regarded as the 'average maximum level'. Similarly, L_{90} is the 'average minimum level' and is often used to describe the background noise. It is common practice to use the L_{10} index to describe traffic noise.

L_{Amax} — L_{Amax} is the maximum A - weighted sound pressure level recorded over the period stated. L_{Amax} is sometimes used in assessing environmental noise where occasional loud noises occur, which may have little effect on the overall L_{eq} noise level but will still affect the noise environment. Unless

described otherwise, it is measured using the 'fast' sound level meter response.

APPENDIX B – NOISE MONITORING LOCATIONS

Figure B-1
Proposed Site Layout and Noise Prediction Locations



LEGEND

- SITE BOUNDARY
- (3) NOISE PREDICTION LOCATION

R.COLLARD
Demolish • Dispose • Recycle

SLR
ASPECT HOUSE
ASPECT BUSINESS PARK
BENNERLEY ROAD
NOTTINGHAM. NG6 8WR
T: 01159 647280
F: 01159 751576
www.slrconsulting.com

EVERSLEY HAULAGE YARD

NOISE ASSESSMENT

PROPOSED SITE LAYOUT AND NOISE PREDICTION LOCATIONS

1

Scale 1:1000@A3

Date OCTOBER 2010

0842.00002.17.001.0 - Noise_Assess.dwg