tms environment ltd

Specialists in Laboratory analysis, monitoring and environmental consultancy

TMS Environment Ltd
53 Broomhill Drive
Tallaght
Dublin 24

Phone: + 353 - 1 - 462 6710
Fax: + 353 - 1 - 462 6714
E-mail: info@tmsenv.ie

BASELINE ENVIRONMENTAL NOISE SURVEY

AT

LITTLETON , CO. TIPPERARY

FOR

Acorn Recycling

Prepared by:

Jonathon Daly Pat Power
Consultant

Approved by:

Pat Power
Consultant

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Directors: I Shanahan (Managing), P Wrobel

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1.0 Scope

This report presents the results of a baseline survey of environmental noise in the vicinity of the proposed development site at Littleton, Co. Tipperary. The survey was conducted during both day-time and night-time monitoring periods in order to assess the existing baseline noise environment in the vicinity of the proposed development site.

2.0 Regional environmental setting

The site is located approximately 2km from Littleton on the Killenaule road. The site is bounded to the north and east by agricultural lands.

3.0 Survey Protocol

3.1 Choice of measurement positions

Noise measurements were taken at a number of monitoring locations NSL1 and NSL2 and site boundary locations BN1 to BN4 to determine the existing noise climate at site boundary positions and at noise sensitive receptors that are situated in the vicinity of the site.

Noise monitoring locations were chosen according to the guidelines in *ISO 1996: Acoustics - Description and Measurement of Environmental Noise*. In all cases the microphone was mounted on an outdoor microphone stand at 1.3m above ground level and at least 3.5m away from any sound reflecting objects. A wind cover was placed on the microphone to reduce any wind interference during measurements. The meter is a Type 1 instrument in accordance with IEC 651 regulations. The Time Weighting used was Fast and the Frequency Weighting was A-weighted as per IEC 651.

Noise measurement locations NSL1 and NSL2, and BN1 to BN4 are described in Table 1 and are shown on a map in Appendix I.

3.2 Instrumentation and methodology

Noise measurements were made using a Bruel & Kjaer logging integrating sound level meter. The instrument was calibrated *in situ* at 94 dB prior to and after use using an acoustic calibrator. The measurements were made according to the requirements of *ISO 1996: Acoustics - Description and Measurement of Environmental Noise.*

3.3 Survey implementation

The survey was conducted by TMS Environment Ltd personnel on the 20th and 21st of July 2006. The measurement parameters included meteorological observations of prevailing conditions at the time of the survey. The main

measurement parameter was the equivalent continuous A-Weighted Sound Pressure Level, $L_{Aeq, T}$, over 30 minutes measurement intervals for the duration of the daytime survey. Night-time measurements were performed over 15 minute intervals in accordance with normal practice A statistical analysis of the measurement results was also completed so that the percentile levels, $L_{AN, T}$, for N = 90% and 10%. The percentile levels represent the noise level in dB(A) exceeded for N% of the measurement time and are used to describe the nature of measured noise. L_{A10} values are used to describe intermittent, high-energy noise events and L_{A90} values are representative of background noise levels.

4.0 Survey results

The measurement results for daytime measurements are reported in Table 2. Results of the night-time measurements are presented in Table 3. Noise measurement spectra are represented graphically in Appendix II.

Table 1 Noise monitoring locations, Ballybeg, Co. Tipperary

MONITORING LOCATION	DESCRIPTION
NSL1	House east of site
NSL2	House west of site
BN1	Eastern site boundary
BN2	Southern site boundary
BN3	Western site boundary
BN4	Northern site boundary

Table 2 Day-time environmental noise survey, Ballybeg, Co. Tipperary, 20th and 21st of July 2006.

MONITORING LOCATION	SURVEY TIME AND DATE	$L_{Aeq, 60min}$ dB(A)	$L_{A90, 60min}$ dB(A)	$L_{A10, 60min}$ dB(A)	MAJOR SOURCES OF NOISE
NSL1	20/07/2006 15:59 -16:29	69.9	38.6	69.6	Passing road traffic
NSL2	20/07/2006 15:24 - 15:54	65.7	39.6	64.2	Passing road traffic
BN1	20/07/2006 13:37 - 14:07	37.8	32.8	40.0	Quiet, leaves in breeze, 1 truck passed
BN2	20/07/2006 14:11 - 14:44	38.2	31.2	38.8	Birds, breeze in trees
BN3	20/07/2006 14:47 - 15:17	37.1	32.4	38.6	Light breeze, quiet, no traffic
BN4	20/07/2006 13:05 - 13:35	40.8	31.4	44.6	Passing traffic, birds, breeze.

NOTE: [1] Observed weather conditions during day-time monitoring were as follows; 20/07/2006: Sunny, hot and dry (22°C), Light wind of velocity 1-3m/s, south-easterly.

[2] Noise monitoring locations are as shown in Appendix I.

Table 3 Night-time environmental noise survey, Ballybeg, Co. Tipperary, on 20th and 21st of July 2006.

MONITORING LOCATION	SURVEY TIME AND DATE	$L_{Aeq,\ 60min}$ dB(A)	$L_{A90,\ 60min}$ dB(A)	$L_{A10,\ 60min}$ dB(A)	MAJOR SOURCES OF NOISE
NSL1	21/07/2006 05:04 - 05:34	34.1	27.8	35.2	Very quiet, birds, dogs in distance.
NSL2	21/07/2006 04:31 - 05:01	37.9	28.0	41.2	Very quiet, some dogs barking.
BN1	21/07/2006 06:11 - 06:41	38.6	30.0	42.0	Birds, distant traffic.
BN2	21/07/2006 06:47 - 07:17	36.3	29.6	39.4	Passing road traffic, birdsong
BN3	21/07/2006 07:22 - 07:52	37.7	29.8	41.6	Traffic noise
BN4	21/07/2006 05:39 - 06:09	43.2	32.2	45.0	Birds, intermittent traffic

NOTE: [1] Observed weather conditions during night-time monitoring were as follows; 21/07/2006 Cloudy, foggy, cold and dry

[2] Noise monitoring locations are as shown in Appendix I.

5.0 Evaluation of results

5.1 Daytime Monitoring

The World Health Organisation (WHO) recommends that outdoor daytime noise levels should be kept below $L_{Aeq,\ 60min}$ = 55dB(A) for daytime measurements and $L_{Aeq,15min}$ = 45dB(A) at night time in order to prevent any significant community annoyance. These noise limits are commonly adopted in Ireland by both the Environmental Protection Agency (EPA) and by Local Authorities, in order to minimise the environmental noise impact that existing or proposed industrial activities or development sites may have on the receiving environment.

The results of the noise monitoring survey as presented in Tables 2 and 3 above, and represented graphically in Appendix II, indicate that the noise climate in the vicinity of the proposed development site is typical for a rural area with low background levels and the ambient levels at sensitive locations are influenced by passing traffic.

Local traffic is the major source of noise at the sensitive locations NSL1 and NSL2. The high L_{10} levels of 64.2dB(A) and 69.9dB(A) indicate the traffic noise at NSL1 and NSL2 respectively.

At location BN1 on the eastern boundary the traffic noise was not a significant noise source with the average noise level recorded at 37.8dB(A). Rustling leaves and birds were the only noise sources. Birds and light winds were again the main source at BN2 on the southern boundary with the low level background noise of 31.2dB(A) recorded.

Traffic noise was audible at BN3 but not considered significant. Light winds contributed to the ambient level of 37.1dB(A). At location BN4 environmental noise consisting of light winds, birds again influenced the ambient levels. Intermittent traffic was also noted as a noise source.

5.2 Night time Monitoring

Night-time monitoring at NSL1 was recorded after 5am and there was no local traffic noise contribution. Dogs barking in the distance and birds singing were the only noise sources noted. The area was very quiet with average noise recorded at 34.1dB(A). Similarly at location NSL2, ambient levels were reflective of the quiet rural early morning environment. The average noise level was noted at 34.1dB(A).

The night-time noise environment at BN1 was again influenced by local and distant traffic noise. The L_{Aeq} was recorded at 58dB(A) while the corresponding L_{A10} values (which are representative of intermittent, high energy noise events such as passing road traffic) was 65dB(A).

The average noise levels at BN1 and BN2 were noted at 38.6dB(A) and 36.3dB(A). Birdsong and distant traffic was considered to be the main noise sources. Background levels were typical of a quiet rural environment.

At locations BN3 the road traffic noise was more noticeable and resulted in the average noise level of 37.7dB(A). The average level at BN4 was influenced by intermittent passing traffic and birdsong.

6.0 Conclusion

The results of this survey which was conducted during both day-time and night-time monitoring periods, indicate that the existing noise climate in the vicinity of the proposed development site is typical of a rural environment with low background noise. At locations NSL1 and NSL2 daytime traffic influences the average noise levels.

APPENDIX I

MAP OF NOISE MONITORING LOCATIONS FOR AMBIENT NOISE SURVEY