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Noise Assessment

Proposed Residential Development Of Land Off Carr Green Lane, Mapplewell, Nr Barnsley, South Yorkshire.

Prepared for: *Gladedale (South Yorkshire) Limited*

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1.0 Introduction.

1.1 The proposed residential development site is situated off Carr Green Lane, Mapplewell, and is bound by commercial / industrial occupiers to the north, open land (former colliery spoil heap) to the south and existing residential properties to the east and west.

1.2 Kirby Charles Associates Ltd were instructed by Gladedale (South Yorkshire) Ltd to carry out an assessment to determine the impact on the proposed residential development site of the noise generated by the commercial / industrial occupiers, and if required to detail noise reduction measures necessary to ensure the acceptable criteria levels are not exceeded.

1.3 The commercial / industrial occupiers at the northern boundary of the proposed residential development site comprise: (west to east direction)

i. Field View (Residential Care Home).

ii. Dodworth Plastics (no activity, appears to have ceased trading).

iii. Hayworth Engineering.

iv. Mapplewell Business Park (Gary's Autos, Swaledale Textiles, Spin Print Solutions, Clambers Funworld Childrens Indoor Play Centre, Fosters Bakery) – units rear blank façade facing onto proposal site.

v. Q&Q Recovery (recovery and storage of vehicles involved in accidents)

1.4 It is understood that generally the adjacent commercial / industrial occupiers only work a normal working week, e.g. 8am to 6pm Monday to Saturday, with the exception of Q&Q Recovery who have 24hr security staff in attendance and may be called out at anytime to recover vehicles involved in accidents. The accident vehicles being held in a secure compound for inspection by the insurance companies prior to being dispatched for repair or disposal.

2.0 Noise Standards And Guidelines.

2.1 The Department of the Environment Planning Policy Guidance Note PPG24:"Planning and Noise" gives guidance to local authorities on the use of their planning powers to minimise the adverse impact of noise.

2.2 In respect of transport related noise as it effects residential properties PPG24 states that:

> ***When assessing a proposal for residential development near a source of noise, local planning authorities should determine into which of the four noise exposure categories (NECs) the proposed site falls, taking into account of both the day and night-time noise levels."***

2.3 The Noise Exposure Categories are:

> *A -* ***Noise need not be considered as a determining factor in granting planning permission, although the noise level at the high end of the category should not be regarded as a desirable level.***

B - *Noise should be taken into account when determining planning applications and, where appropriate, conditions imposed to ensure an adequate level of protection against noise.*

C - *Planning permission should not normally be granted. Where it is considered that permission should be given, for example because there are no alternative quieter sites available, conditions should be imposed to ensure a commensurate level of protection against noise.*

D - *Planning permission should normally be refused.*

2.4 The noise levels, $LAeq_T$, corresponding to these noise exposure categories for road traffic are:

NOISE LEVELS CORRESPONDING TO THE NOISE EXPOSURE CATEGORIES FOR NEW DWELLINGS $LAeq_T$ dB				
NOISE SOURCE	NOISE EXPOSURE CATEGORY			
	NEC A	NEC B	NEC C	NEC D
Road Traffic				
07.00 hrs - 23.00 hrs	<55	55 - 63	63 - 72	>72
23.00 hrs – 07.00 hrs	<45	45 - 57	57 – 66	>66

2.5 Further, PPG24 states in Annex 2 that:

"Daytime

4. There is no recent, major, UK based research from which to take figures for road or rail traffic. The level at the boundary of NEC A and NEC B is therefore based on guidance provided by the World Health Organisation that "general daytime outdoor noise levels of less

than 55 dB(A) Leq are desirable to prevent any significant community annoyance".

"Night-time

5. As for daytime, there is no recent, major, UK based research from which to take figures for road or rail traffic. There has been research on the effects of aircraft noise, most recently on sleep disturbance, which looks at noise levels at which people are awoken from sleep. The night-time noise level at the boundary of NEC A and NEC B is based on the WHO guideline previously referred to which states that for night-time: "based on limited data available, a level of less than 35 dB(A) is recommended to preserve the restorative process of sleep" and this is considered more relevant when seeking to achieve the best practicable conditions for rest and sleep."

2.6 PPG 24 adds that a window open for ventilation provides between 10 and 15 dB(A) attenuation, assuming minimal attenuation the above NEC A external levels would therefore equate to internal levels of <45 dB(A) Leq_{16hr} during the daytime period and <35 dB(A) Leq_{8hr} during the night time period.

2.7 However, the British Standard 8233: 1999 '*Sound insulation and noise reduction for buildings – Code of practice*' indicates that for gardens and balconies etc. it is desirable that the steady noise level does not exceed 50 dB(A) Leq_T and 55 dB(A) Leq_T should be regarded as the upper limit, whilst an indication of the design target for indoor ambient noise levels is given at Table 5, i.e.

Table 5 – Indoor ambient noise levels in spaces when they are unoccupied

Criterion	Typical Situation	Design Range $LAeq_T$ dB	
		Good	Reasonable
Reasonable resting/sleeping conditions	Living rooms	30	40
	Bedrooms*	30	35
* For a reasonable standard in bedrooms at night, individual noise events (measured with F time-weighting) should not normally exceed 45 dB L_{Amax}.			

2.8 In relation to noise from industrial developments PPG24 states:

> *"The likelihood of complaints about noise from industrial development can be assessed, where the Standard is appropriate, using guidance in B.S.4142: 1990. Tonal or impulsive characteristics of the noise are likely to increase the scope for complaints and this is taken into account by the "rating level" defined in B.S.4142. This "rating level" should be used when stipulating the level of noise that can be permitted. The likelihood of complaints is indicated by the difference between the noise from the development (expressed in terms of the rating level) and the existing background noise level. The Standard indicates that:*
>
> *"A difference of around 10 dB or higher indicates that complaints are likely. A difference of around 5 dB is of marginal significance".*

2.9 The British Standard, BS 4142 as amended in 1997, refers to two indices, i.e.

a. **L90**, the level of noise exceeded for 90% of the measurement period, this is known as the background noise level, and

b. **Leq**, i.e. the equivalent continuous noise level, which is the steady noise level that contains the same amount of energy over a specific time period as that in a fluctuating sound.

2.10 The assessment procedure contained in B.S.4142 compares the noise from the proposed factory or fixed installation, using the Leq index corrected for tonal components etc., with the background noise level for the area, i.e. the L90 index.

2.11 If the corrected noise from the proposals is 10 dB(A) or more above the background noise level this is a positive indication that complaints would be likely whilst if the noise from the activity is 10 dB(A) below the L90 then this would be a positive indication that complaints would be unlikely. Differences of 5 dB(A) are of marginal significance.

3.0 Noise Assessment.

3.1 In order to determine the existing noise climate of the area monitoring was carried out on 14th March 2008 with the instrument being positioned at the northern boundary of the proposed residential site opposite Haywood Engineering.

3.2 All noise monitoring was undertaken using a Cirrus Type CR800B Precision Integrating/Logging Sound Level Meter which complies with the requirements of BS EN 60651:1994 (Type 1) and BS EN 60804:1994 (Type 1). The microphone to the

sound level meter was positioned 1.5m above ground level and equipped with a windshield at all times.

3.3 The instrument was calibrated before and after the monitoring periods using a Cirrus Type CR511E Calibrator, which complies with IEC 942, no drift in calibration was observed. Further, all instrumentation had been calibrated by the manufacturer within the previous 12 months.

3.4 In addition all noise monitoring was carried out when the weather conditions satisfied the requirements of the British Standard BS4142: 1997, i.e. mean wind speed less than 5m/s and no significant rainfall. Wind speeds were recorded using an anemometer.

3.5 Personnel were present throughout the monitoring periods thereby ensuring that an accurate representation of the prevailing noise climate was recorded.

3.6 In summary the results of the noise monitoring were: (Refer to Appendix A – Noise Monitoring Results)

Time Period	dB $LAeq_{1hr}$	dB $LA90_{1hr}$
07.00hrs to 08.00hrs	51.1	49.6
08.00hrs to 09.00hrs	51.6	48.9
09.00hrs to 10.00hrs	50.6	48.0
10.00hrs to 11.00hrs	48.0	45.6
11.00hrs to 12.00hrs	50.5	45.4
12.00hrs to 13.00hrs	49.9	45.8
13.00hrs to 14.00hrs	50.2	45.8
14.00hrs to 15.00hrs	48.2	45.1
15.00hrs to 16.00hrs	50.5	44.9
16.00hrs to 17.00hrs	48.5	44.6
17.00hrs to 18.00hrs	47.4	44.4
18.00hrs to 19.00hrs	44.1	38.2

3.7 Subjectively, during the monitoring period the noise generated by the adjacent commercial / industrial occupiers was at a low level, the only noise activities being vehicle movements, i.e. the occasional forklift truck movements at Hayworth Engineering / Q&Q Recovery and the occasional staff / delivery / despatch vehicle arrivals and departures at the units. It should however be noted that there was no activity at Dodworth Plastics, it would appear that the company had either ceased trading or had moved premises (unit empty and gates locked).

3.8 Assuming the noise generated by the adjacent commercial / industrial occupiers was transport related, i.e. vehicle movements, the results of the noise monitoring would indicate that the proposed residential development site was exposed to noise at PPG24 Noise Exposure Category (NEC) A during the day and night time periods:

> *NEC A - Noise need not be considered as a determining factor in granting planning permission, although the noise level at the high end of the category should not be regarded as a desirable level.*

3.9 However in order to minimise the potential of the adjacent industrial occupiers to cause annoyance or disturbance to the sleep of future residents of the proposal site it is recommended that, a 2.5m high acoustic fence be erected to the northern site boundary (extending from western corner of Dodworth Plastics to eastern corner of Q&Q Recovery) and that all habitable rooms, of dwellings adjacent to the northern boundary, with a view of the commercial / industrial units are fitted with windows having a manufacturers minimum sound insulation value of 38 dB (R_W) with

background ventilation being provided by acoustic vents which when fully open, provide a comparable sound insulation value to that of the closed window system, e.g. 6mm glass x 16mm air-gap x 6.8mm glass with Greenwoods MA3051 acoustic ventilator OR equivalent.

4.0 Conclusions.

4.1 This assessment has indicated that the noise generated by the activities of the adjacent commercial / industrial occupiers during the monitoring period was at a relatively low level, consisting generally of vehicle movements (including the occasional forklift truck).

4.2 This assessment has indicated that the proposed residential development site is typically exposed to noise (assumed transport related) at PPG24 Noise Exposure Category (NEC) A during the day and night time periods, i.e.

> *NEC A - Noise need not be considered as a determining factor in granting planning permission, although the noise level at the high end of the category should not be regarded as a desirable level.*

4.3 However, this assessment has recommended that in order to minimise the potential of the adjacent commercial / industrial occupiers to cause annoyance or disturbance to the sleep of future residents at the proposal site, the following noise reduction measures should be implemented:

i. A 2.5m high acoustic fence to be erected to the northern site boundary (extending from western corner of Dodworth Plastics to eastern corner of Q&Q Recovery).

ii. All habitable rooms. of dwellings adjacent to the northern boundary, with a view of the commercial / industrial units are fitted with windows having a manufacturers minimum sound insulation value of 38 dB (R_W) with background ventilation being provided by acoustic vents which when fully open, provide a comparable sound insulation value to that of the closed window system, e.g. 6mm glass x 16mm air-gap x 6.8mm glass with Greenwoods MA3051 acoustic ventilator OR equivalent.

APPENDIX A

NOISE MONITORING RESULTS

Gladedale Homes (South Yorkshire) Limited
Proposed Residential Development Of Land At Mapplewell, Barnsley.
Environmental Noise Monitoring Results.
Instrumentation - Cirrus Type CR:800B (C18728FD) Precision Integrating SLM
Instrumentation Calibration Date - March 2008
Weather Conditions: Dry, sunny. westerly breeze (1.0m/s), temp 8C
Monitoring Position: At northern site boundary, opposite Hayworth Engineering.

Date	Time	Leq	Lmin dB	Lmax	L1 dB	L10 dB	L50 dB	L90 dB
03/14/08	07:04	52.0	50.8	53.9	51.8	51.7	51.6	51.2
03/14/08	07:05	52.5	48.9	76.4	53.4	52.3	51.6	50.6
03/14/08	07:10	51.0	48.7	53.4	52.4	51.7	50.8	50.1
03/14/08	07:15	51.0	48.2	57.5	53.7	51.7	50.7	49.8
03/14/08	07:20	51.3	48.6	58.0	54.4	52.4	50.8	49.8
03/14/08	07:25	50.5	48.0	54.2	52.6	51.4	50.2	49.2
03/14/08	07:30	50.3	47.5	57.4	53.2	51.4	49.7	48.7
03/14/08	07:35	51.1	47.2	57.5	53.7	52.3	50.8	49.5
03/14/08	07:40	51.1	47.7	55.7	54.0	52.4	50.5	49.3
03/14/08	07:45	51.2	47.6	58.6	55.8	52.7	50.3	49.0
03/14/08	07:50	50.7	47.8	58.8	53.3	51.5	50.4	49.3
03/14/08	07:55	50.2	47.7	53.7	52.0	51.1	49.9	48.8
Mean Period:		**51.1**						**49.6**
03/14/08	08:00	50.4	47.5	55.1	52.4	51.2	50.1	49.0
03/14/08	08:05	50.0	47.2	54.0	51.4	50.6	49.8	48.7
03/14/08	08:10	50.1	47.5	53.7	51.7	50.9	49.8	49.0
03/14/08	08:15	49.8	46.9	57.1	51.4	50.5	49.4	48.6
03/14/08	08:20	50.6	48.0	56.3	53.0	51.7	50.2	49.0
03/14/08	08:25	50.6	46.8	54.7	53.2	52.0	50.2	48.3
03/14/08	08:30	49.8	47.4	53.9	51.6	50.7	49.4	48.4
03/14/08	08:35	50.2	47.6	55.2	52.8	50.9	49.9	48.8
03/14/08	08:40	50.6	47.9	55.4	53.0	51.5	50.3	49.2
03/14/08	08:45	49.9	47.8	54.3	51.7	50.6	49.6	48.8
03/14/08	08:50	51.3	47.1	62.9	58.9	51.8	49.8	48.8
03/14/08	08:55	57.0	48.2	72.1	66.9	60.7	51.5	50.7
Mean Period:		**51.5**						**48.9**
03/14/08	09:00	51.0	48.7	56.6	52.7	51.7	50.8	50.0
03/14/08	09:05	50.1	48.3	55.9	51.7	50.6	49.8	49.2
03/14/08	09:10	51.2	47.8	71.0	53.7	51.9	50.7	49.4
03/14/08	09:15	53.1	47.5	78.0	56.6	51.6	50.2	49.2
03/14/08	09:20	53.4	48.2	68.2	62.7	53.1	50.6	49.7
03/14/08	09:25	50.3	47.0	58.9	53.2	51.2	49.9	48.7

Date	Time	Leq	Lmin dB	Lmax	L1 dB	L10 dB	L50 dB	L90 dB
03/14/08	09:30	49.4	45.9	62.7	51.6	50.3	48.9	47.8
03/14/08	09:35	48.8	45.3	55.7	50.7	49.7	48.6	46.9
03/14/08	09:40	48.6	45.9	55.1	51.3	49.8	48.2	47.0
03/14/08	09:45	48.7	45.3	57.9	53.7	50.1	47.7	46.5
03/14/08	09:50	47.3	44.2	55.2	51.3	48.6	46.6	45.5
03/14/08	09:55	50.6	44.3	73.6	56.0	50.2	47.2	46.1
Mean Period:		50.6						48.0
03/14/08	10:00	47.6	43.6	61.7	50.9	48.9	46.9	45.4
03/14/08	10:05	47.5	44.4	53.8	50.7	48.6	46.9	45.8
03/14/08	10:10	50.0	44.0	61.5	57.5	51.9	48.0	45.8
03/14/08	10:15	49.8	44.5	68.4	57.4	50.5	47.5	45.9
03/14/08	10:20	48.4	45.0	59.9	53.3	49.5	47.5	46.4
03/14/08	10:25	47.9	44.3	58.7	51.6	49.1	47.3	45.9
03/14/08	10:30	47.6	44.8	54.6	50.3	48.6	47.1	46.1
03/14/08	10:35	47.3	43.3	58.7	49.7	48.2	46.8	45.6
03/14/08	10:40	47.5	43.8	55.2	50.3	48.8	47.0	45.5
03/14/08	10:45	47.2	44.1	61.7	50.8	48.2	46.4	45.4
03/14/08	10:50	47.4	43.1	58.2	51.7	49.0	46.6	45.0
03/14/08	10:55	46.3	42.9	53.4	49.6	47.5	45.8	44.5
Mean Period:		48.0						45.6
03/14/08	11:00	45.8	42.7	52.3	48.6	47.0	45.4	44.2
03/14/08	11:05	46.3	42.9	55.1	49.6	47.3	45.8	44.5
03/14/08	11:10	48.3	43.7	63.9	52.9	49.4	47.5	45.8
03/14/08	11:15	54.3	43.6	62.7	59.6	57.6	53.0	45.8
03/14/08	11:20	47.2	42.8	53.4	50.9	48.7	46.5	45.1
03/14/08	11:25	52.3	43.7	61.6	57.8	55.9	48.4	45.0
03/14/08	11:30	47.1	41.9	53.1	50.8	48.8	46.5	43.8
03/14/08	11:35	50.6	43.5	60.8	58.5	55.8	46.1	45.0
03/14/08	11:40	51.5	43.9	60.5	57.4	55.9	47.8	46.1
03/14/08	11:45	52.0	44.8	60.4	58.5	55.6	48.2	46.4
03/14/08	11:50	50.2	45.0	57.4	55.8	53.5	48.3	46.5
03/14/08	11:55	50.9	45.0	58.5	56.3	54.6	48.2	46.5
Mean Period:		50.5						45.4
03/14/08	12:00	49.4	45.8	64.9	53.6	51.2	48.3	47.2
03/14/08	12:05	49.6	45.0	58.4	54.4	51.8	48.4	46.8
03/14/08	12:10	53.3	45.1	67.7	60.8	55.9	50.4	47.0
03/14/08	12:15	48.4	44.5	56.3	52.8	49.7	47.7	46.5
03/14/08	12:20	47.7	44.0	56.6	51.3	48.5	47.2	46.0
03/14/08	12:25	47.7	44.7	52.0	50.2	48.5	47.4	46.2

Date	Time	Leq	Lmin dB	Lmax	L1 dB	L10 dB	L50 dB	L90 dB
03/14/08	12:30	47.3	44.1	54.2	50.1	48.3	46.9	45.5
03/14/08	12:35	55.3	43.4	77.0	67.0	52.7	46.8	44.7
03/14/08	12:40	46.7	43.7	51.0	49.1	47.8	46.3	44.9
03/14/08	12:45	45.8	43.5	50.0	48.1	46.7	45.4	44.5
03/14/08	12:50	47.5	44.1	57.2	51.7	48.6	46.8	45.6
03/14/08	12:55	46.9	44.0	52.5	49.3	48.2	46.4	45.1
Mean Period:		**49.9**						**45.8**
03/14/08	13:00	47.4	44.4	64.5	50.3	47.8	46.7	45.6
03/14/08	13:05	47.5	44.5	55.9	51.2	48.4	46.8	45.7
03/14/08	13:10	48.9	44.9	62.6	53.4	50.8	47.7	46.4
03/14/08	13:15	55.6	45.0	72.8	65.0	57.2	50.7	47.0
03/14/08	13:20	50.9	43.6	61.2	55.8	53.3	49.9	46.2
03/14/08	13:25	51.2	43.9	58.3	56.6	54.4	49.3	46.3
03/14/08	13:30	51.2	44.6	62.1	56.9	54.2	49.1	46.5
03/14/08	13:35	49.6	45.0	57.6	53.9	52.0	48.4	46.3
03/14/08	13:40	48.9	44.8	57.2	53.9	51.5	47.3	45.9
03/14/08	13:45	46.6	43.5	53.2	49.7	47.6	46.1	44.9
03/14/08	13:50	47.1	43.6	52.6	49.9	48.4	46.5	45.0
03/14/08	13:55	46.3	43.0	55.3	52.3	47.3	45.1	44.1
Mean Period:		**50.2**						**45.8**
03/14/08	14:00	48.1	42.6	55.9	54.3	52.0	45.8	44.4
03/14/08	14:05	48.7	43.6	57.6	54.0	51.7	46.6	45.2
03/14/08	14:10	48.9	43.1	56.5	54.4	51.9	46.3	44.9
03/14/08	14:15	50.7	44.3	59.3	56.2	53.8	48.1	45.9
03/14/08	14:20	47.0	43.1	56.1	54.6	47.1	45.8	44.8
03/14/08	14:25	47.1	43.3	54.2	50.6	47.9	46.6	45.3
03/14/08	14:30	46.2	43.5	50.7	48.3	47.1	46.0	44.8
03/14/08	14:35	47.6	45.0	56.7	50.2	48.7	47.1	46.1
03/14/08	14:40	46.4	43.8	50.6	48.6	47.3	45.9	45.0
03/14/08	14:45	50.3	42.9	75.8	56.8	48.0	45.9	44.6
03/14/08	14:50	47.0	43.6	60.3	51.8	47.7	46.0	44.9
03/14/08	14:55	48.0	43.7	61.2	54.7	50.3	46.0	44.8
Mean Period:		**48.2**						**45.1**
03/14/08	15:00	53.6	43.5	77.0	57.8	52.2	47.1	45.4
03/14/08	15:05	47.3	43.7	54.5	50.9	48.5	46.7	45.4
03/14/08	15:10	50.4	43.8	58.9	55.7	53.7	47.0	44.9
03/14/08	15:15	49.6	44.3	57.1	54.6	52.6	47.2	45.5
03/14/08	15:20	50.8	43.1	61.1	55.7	53.8	49.9	45.1
03/14/08	15:25	50.9	43.4	63.6	57.5	53.2	49.5	45.4

Date	Time	Leq	Lmin dB	Lmax	L1 dB	L10 dB	L50 dB	L90 dB
03/14/08	15:30	50.0	43.0	58.3	55.5	52.7	48.4	45.1
03/14/08	15:35	48.9	44.2	55.7	54.0	52.0	46.9	45.6
03/14/08	15:40	48.9	43.3	56.7	54.2	52.1	46.1	44.6
03/14/08	15:45	50.6	43.2	75.9	55.2	52.6	46.5	44.4
03/14/08	15:50	51.1	42.4	63.2	59.7	54.3	46.5	44.4
03/14/08	15:55	50.4	41.3	59.9	57.0	54.2	47.9	43.1
Mean Period:		50.5						44.9
03/14/08	16:00	49.3	41.1	59.9	55.0	52.3	47.5	43.1
03/14/08	16:05	46.5	41.9	55.7	52.2	48.0	45.4	44.0
03/14/08	16:10	52.8	44.4	66.6	63.6	53.8	46.7	45.5
03/14/08	16:15	48.2	42.8	62.8	54.7	50.9	46.1	44.6
03/14/08	16:20	51.5	43.5	65.1	59.0	54.7	48.2	45.3
03/14/08	16:25	46.5	42.2	58.8	50.7	47.9	45.5	43.9
03/14/08	16:30	45.5	42.2	56.2	48.6	46.4	44.9	43.8
03/14/08	16:35	45.8	42.5	56.4	48.7	46.7	45.2	44.2
03/14/08	16:40	46.1	43.0	50.5	48.6	47.3	45.6	44.4
03/14/08	16:45	46.8	44.2	56.4	48.7	47.5	46.3	45.4
03/14/08	16:50	48.6	44.2	66.5	56.8	48.3	46.4	45.3
03/14/08	16:55	46.6	44.1	52.1	48.0	47.2	46.3	45.4
Mean Period:		48.5						44.6
03/14/08	17:00	47.1	44.2	67.6	49.7	47.5	46.2	45.3
03/14/08	17:05	46.7	44.0	57.7	50.8	47.4	45.9	45.1
03/14/08	17:10	48.6	43.8	75.2	52.1	48.2	46.0	45.1
03/14/08	17:15	46.7	43.9	50.8	49.0	47.7	46.3	45.2
03/14/08	17:20	47.1	43.9	51.1	49.6	48.2	46.6	45.3
03/14/08	17:25	46.8	44.5	51.6	48.8	47.5	46.4	45.6
03/14/08	17:30	48.0	44.9	55.3	51.0	49.3	47.5	46.4
03/14/08	17:35	48.1	42.4	68.7	52.3	48.7	46.6	44.2
03/14/08	17:40	51.0	41.6	64.9	59.4	55.5	45.2	43.2
03/14/08	17:45	45.1	41.4	50.5	47.9	46.8	44.5	43.0
03/14/08	17:50	44.3	40.3	54.6	47.6	45.5	43.7	42.4
03/14/08	17:55	44.9	40.0	53.0	50.1	46.5	44.0	42.3
Mean Period:		47.4						44.4
03/14/08	18:00	45.0	39.3	56.6	50.8	46.6	43.8	42.0
03/14/08	18:05	44.7	39.0	57.7	50.3	47.3	43.0	40.6
03/14/08	18:10	43.1	38.4	54.0	47.3	44.5	42.1	40.4
03/14/08	18:15	41.5	38.0	54.5	45.5	42.8	40.5	39.2
03/14/08	18:20	43.3	36.6	64.6	45.0	42.4	40.6	39.0
03/14/08	18:25	40.3	35.9	50.4	45.2	42.0	39.2	37.5

Date	Time	Leq	Lmin dB	Lmax	L1 dB	L10 dB	L50 dB	L90 dB
03/14/08	18:30	40.2	34.8	48.6	45.5	42.8	38.6	36.8
03/14/08	18:35	37.7	34.0	46.7	40.5	38.6	37.2	36.0
03/14/08	18:40	37.6	34.0	41.7	39.9	38.5	37.3	36.0
03/14/08	18:45	38.4	34.1	47.8	42.4	39.2	37.7	36.4
03/14/08	18:50	39.3	35.9	44.7	42.9	40.6	38.7	37.3
03/14/08	18:55	51.6	32.7	77.8	62.2	49.5	40.0	36.6
Mean Period:		44.1						38.2

Police Helicopter nearby at 08.55hrs, 12.35hrs, 15.51hrs and 17.40hrs
Off-Road Bike on proposal site at 13.17hrs.