ACOUSTIC LOGIC CONSULTANCY
noise and vibration consultants
abn 11 068 954 343

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Report: 2008137/1802A/R8/SL

Prepared for: Mr Riccardo Alloggia
Investa Property Group

P&N BEVERAGES DEVELOPMENT

LOT 433 BLUETT DRIVE, IRONBARK INDUSTRIAL ESTATE, SMEATON GRANGE

ASSESSMENT OF INDUSTRIAL NOISE IMPACT

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1. EXECUTIVE SUMMARY

Investa Property Group has proposed to develop the site situated at Lot 433 Bluett Drive, Ironbark Industrial Estate, Smeaton Grange for P&N Beverages for use as its new headquarters, production and warehouse facility.

The nearest potentially affected residential receivers are those located to the east of the proposed site on Ashford Circuit, Chapman Circuit, Linton Road and the resident located on Turner Road, Smeaton Grange.

This assessment contains the results of unattended noise monitoring data obtained in a location which is representative of the existing background noise levels at the nearest potentially affected residential receivers in the absence of the proposed development. The results of the unattended noise monitoring and the calculation of noise emissions generated from the proposed operations have been assessed.

This report concludes that operation at the proposed site will comply at all times with the Environment Protection Authority *(EPA)* NSW Industrial Noise Policy.

This Acoustic Logic Consultancy *(ALC)* Pty Ltd assessment also addresses the cumulative noise impact when accounting for ancillary mechanical plant that will serve the proposed development in Section 7.2 of this document by outlining an approach and acoustic criteria that will serve as the basis for the detailed design of the mechanical plant. Although the detailed design of the mechanical services plant has not currently been undertaken, it is noted that mechanical services plant can easily be designed to satisfy the project acoustic objectives in addition to ensuring no impact upon the acoustic amenity of the nearest potentially affected residential receivers.

Investa Property Group in recognition of their requirement to minimise noise and vibration emissions from the proposed development site to adjacent land uses have commissioned ALC to provide a construction noise and vibration management plan which formulates a strategy for noise *(including traffic noise as a result of)* to comply with the relevant applicable Standards. This management plan also develops a monitoring programme to measure and regulate noise and vibration at all potentially affected locations in addition to establishing a direct communication network between the potentially affected groups, for example the Department of Infrastructure, Planning and Natural Resources, Investa Property Group Pty Ltd and Acoustic Logic Consultancy Pty Ltd. The construction noise and vibration management plan is provided as a separate document supporting this assessment.

As more detailed information regarding site equipment, vehicle types, work methodology becomes available *(typically after approval)*, ALC will be in a position to carry out a more detailed investigation as outlined in the management plan to ensure compliance is satisfied.

2. INTRODUCTION

This report presents our assessment of the potential operational noise impacts from the proposed development to be situated at Lot 433 Bluett Drive, Ironbark Industrial Estate, Smeaton Grange. The measures available to mitigate any identified impacts are presented.

The potential noise impact at the nearby properties from the operation of the facility has been assessed by:

- Predicting the noise levels generated at the nearest properties from the proposed activities.
- Comparing the noise levels generated by the proposed development to existing noise levels established from long term unattended noise monitoring.
- Determining whether the noise levels will comply with noise assessment criteria.

This assessment has been based on the architectural drawings and traffic report presented in Table 1.

Table 1 – Referenced Drawings and Reports

Consultant	Drawing / Report Number	Dated
De Angellis Taylor + Associates (Architecture)	Revision D DA01 DA02 DA03 DA04 DA05 DA06 DA07 DA08 DA09 DA10 DA11	26 February 2008
Cardno Eppel Olson (Traffic Consultant)	Reference: YN284072 121207 RM	12 December 2007

3. EXISTING CONDITIONS

3.1 GENERAL DESCRIPTION

The proposed development will be situated at Lot 433 Bluett Drive, Ironbark Industrial Estate, Smeaton Grange.

The nearest potentially affected residential receivers are those located to the east of the proposed site on Ashford Circuit, Chapman Circuit, Linton Road and the resident located on Turner Road, Smeaton Grange. It is proposed that the site be used for light industrial purposes.

3.2 SITE TOPOGRAPHY

The subject site will generally have a flat topography at approximately RL 91.5.

3.2.1 Local Noise Sources

Existing ambient noise levels are dominated by transportation noise from vehicles using the surrounding streets and local industrial/commercial noise.

3.3 NOISE MONITORING

Long term unattended noise monitoring was conducted in order to characterise the existing noise environment at the nearest potentially affected receiver.

3.3.1 Locations Monitored

Unattended noise monitoring was conducted towards the east of the site in vacant grassland towards Chapman Circuit.

This location was selected as the measured levels are representative of the existing background noise levels experienced by the nearest potentially affected residential receivers in the absence of noise generated by the proposed development.

3.3.2 Environmental Noise Levels

Environmental noise constantly varies in level, due to fluctuations in local noise sources including road traffic. Accordingly, a 15 minute measurement interval is normally utilised. Over this period, noise levels are monitored on a continuous basis and statistical and integrating techniques are used to determine noise description parameters.

In the case of environmental noise three principle measurement parameters are used, namely L_{10}, L_{90} and L_{eq}.

The L_{10} and L_{90} measurement parameters are statistical levels that represent the average maximum and average minimum noise levels respectively, over the measurement intervals.

The L_{10} parameter is commonly used to measure noise produced by a particular intrusive noise source since it represents the average of the loudest noise levels produced by the source.

Conversely, the L_{90} level (which is commonly referred to as the background noise level) represents the noise level heard in the quieter periods during a measurement interval. The L_{90} parameter is used to set the allowable noise level for new, potentially intrusive noise sources since the disturbance caused by the

new source depends on how audible it is above the pre-existing noise environment, particularly during quiet periods, as represented by the L_{90} level.

The L_{eq} parameter represents the average noise energy during a measurement period. This parameter is derived by integrating the noise levels measured over the measurement period. L_{eq} is important in the assessment of traffic noise impact as it closely corresponds with human perception of a changing noise environment; such is the character of industrial noise.

3.3.3 Period of Measurement

Unattended noise monitoring was conducted between the period of 25 January 2008 and 2 February 2008.

3.3.4 Measurement Equipment

Unattended noise monitoring was conducted over a nine day period in order to characterise the existing noise environment using three Acoustic Research Laboratories Pty Ltd noise monitors. The monitors were programmed to store 15-minute statistical noise levels throughout the monitoring period. The monitors were calibrated at the beginning and end of the measurement period using a RION NC-73 sound level calibrator with no significant drift detected. All noise measurements were taken on A-weighted fast response mode.

3.3.5 Existing Background and *"Amenity"* Noise Levels

Background noise levels during day time are dominated by general vehicular traffic and transportation noise. The EPA Industrial Noise Policy details specific steps in determining the background noise level for assessment of the day, evening and night time periods. Table 2 summarises the background noise levels determined at the three monitoring locations, based on the guidelines set out in the EPA Industrial Noise Policy and the results of unattended noise monitoring.

Table 2 –Measured Ambient Noise Levels

Location	Description	Day Noise Level 7am to 6pm (dB(A))	Evening Noise Level 6pm to 10pm (dB(A))	Night Noise Level 10pm to 7am (dB(A))
Near Chapman Circuit	Background $L_{90,15min}$	37	36	40

4. PROPOSED DEVELOPMENT

The proposed development is for the purpose of light industry use. It is proposed that the loading docks serving the proposed development will potentially operate on a 24-hour basis Monday to Sunday. Figure 1 is a site plan illustrating the location of the proposed loading dock and the car park entry and exits.

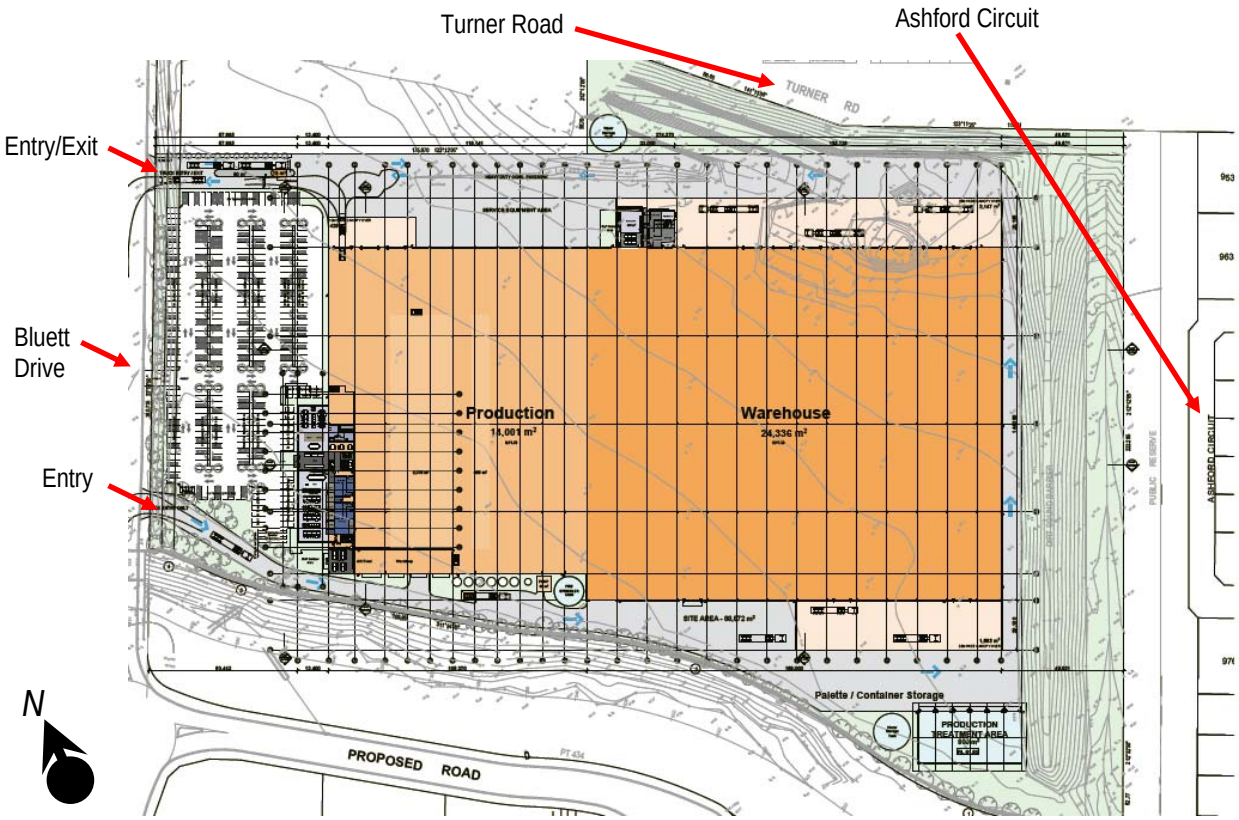


Figure 1 – Site Plan

The proposed hours of operation and activities for the subject site are presented below in Table 3.

Table 3 – Proposed Hours of Operation

Proposed Activities	Day	Time
Truck Hours	Monday to Sunday	24 Hours

Although the site will operate on a 24 hour 7 day a week basis, it is noted that Acoustic Logic Consultancy Pty Ltd has been advised that truck deliveries would only occur between the hours of 7.00am and 10.00pm.

It is noted that staff operations supporting loading dock activities would occur within the building. Measurements conducted within a similar facility by Acoustic Logic Consultancy Pty Ltd indicates that these activities do not generate significant noise emissions and that the proposed building fabric will ameliorate any potential impact.

5. NEAREST POTENTIALLY AFFECTED RECEIVER

The nearest potentially affected residential receivers are those located to the east of the proposed site on Ashford Circuit, Chapman Circuit, Linton Road and the resident located on Turner Road, Smeaton Grange. In Figure 2 we present a site survey indicating the location the nearest potentially affected residential receivers.

Figure 2 – Nearest Potentially Affected Residential Receivers

6. NOISE EMISSION LIMITS

Camden Council utilizes Part G, Chapter 16 of its Development Control Plan *(DCP)* 2006 to present noise mitigation strategies which are consistent with the Environment Protection Authority *(EPA)* New South Wales Industrial Noise Policy.

Although this policy is non-mandatory, it sets a framework for decision making and the enforcement of provisions relating to noise in the primary legislation.

In this assessment we have adopted the EPA's New South Wales Industrial Noise Policy, as it is an up to date tool for the assessment and control of noise from industrial and commercial/retail premises. Furthermore, the policy sets out a process to assess noise impact, potential noise mitigation strategies and describes a procedure for predicting, assessing and measuring noise.

Acoustic Logic Consultancy Pty Ltd has utilized the EPA *"Environmental Criteria for Road Traffic Noise (1999)"* guideline for the purpose of assessing noise emissions from vehicle movements arriving and departing from the proposed development.

6.1 INDUSTRIAL NOISE POLICY OBJECTIVES/GUIDELINES

The EPA NSW Industrial Noise Policy provides guidelines for the assessment of noise impacts from industrial and commercial/retail premises. The recommended assessment objectives vary depending on the nearest potentially affected receivers, the time of day and the type of noise source. The EPA NSW Industrial Noise Policy has two requirements that must both be satisfied; that is, an intrusiveness criterion and an amenity criterion.

6.1.1 Intrusiveness Criterion

The guideline is intended to limit the audibility of noise emissions, and requires that noise emissions measured using the L_{eq} descriptor not exceed the existing background noise level by more than 5 dB(A) Where applicable, the intrusive noise level should be penalised *(increased)* to account for any annoying characteristics such as tonality.

6.1.2 Amenity Criterion

The guideline is intended to limit the absolute noise level from all noise sources to a level that is consistent with the general environment.

The EPA NSW Industrial Noise Policy sets out acceptable noise levels for various localities. Table 2.1 titled *"Amenity Criteria"* on page 16 of the Policy designates four categories to distinguish different residential areas. They are rural, suburban, urban and urban/industrial interface. The EPA NSW Industrial Noise Policy also includes recommended noise levels for other land uses such as commercial and industrial premises. The EPA NSW Industrial Noise Policy states that residential receivers such as those neighbouring the proposed development, by virtue of their location and surroundings are classified such that the suburban amenity criterion is applied.

6.1.3 Sleep Arousal

Sleep arousal is a function of both the noise level and the duration of the noise. The EPA in its Environmental Noise Control Manual states that noise controls should be applied with the general intent to protect people from sleep arousal. To achieve this, the L_1 noise level of any specific noise source should not exceed the background noise level (L_{90}) by more than 15dB(A) outside a resident's bedroom window between the hours of 10pm and 7am. The L_1 noise level is the level exceeded for 1 per cent of the time and approximates the typical maximum noise level from a particular source. Since the minimum repeatable noise level is 40dB(A) the sleep disturbance criterion is 55dB(A) L_1 outside the closest bedroom window.

Table 4 presents the amenity criteria applicable to the nearest potentially affected residential receivers. The receiver type utilised against the indicative noise amenity area is defined by the suburban criteria. Furthermore, Table 5 presents the amenity criteria applicable to the nearest potentially affected commercial receivers.

Table 4 – EPA Recommended Acceptable Noise Levels for Nearest Potentially Affected Residential Receivers

Time of Day	Recommended Acceptable Noise Level dB(A) L_{Aeq}	Recommended Maximum Noise Level dB(A) L_{Aeq}
Day (7am to 6pm)	55	60
Evening (6pm to 10pm)	45	50
Night (10pm to 7am)	40	45

Table 5 – EPA Recommended Acceptable Noise Levels for Nearest Potentially Affected Commercial Receivers

Time of Day	Recommended Acceptable Noise Level dB(A) L_{Aeq}
When in use	65

6.2 TRAFFIC GENERATION

6.2.1 Environmental Criteria for Road and Traffic Noise

For land use developments with the potential to create additional traffic on local roads the development should comply with the requirements detailed in the EPA *"Environmental Criteria for Road and Traffic Noise - 1999"*. Criteria applicable to the development are detailed below. It is noted that the surrounding streets are deemed as local roads. If existing noise levels exceed those in Table 6, a 2dB increase in noise is allowed.

Table 6 - Criteria for Traffic Noise for New Developments

Time of day	Criteria for Acceptable Traffic Noise Level dB(A)
Day (7am to 10pm)	55 $L_{Aeq(1hr)}$
Night (10pm to 7am)	50 $L_{Aeq(1hr)}$

6.3 SUMMARY OF APPLICABLE ASSESSMENT CRITERIA

The intrusiveness and amenity criteria for this project have been determined using the guidelines presented in the EPA Industrial Noise Policy and the unattended noise monitoring data. These are summarised below. Table 10 present summaries of the criteria for both the day, evening and night time periods. Table 11 presents a summary of the criteria for vehicle movements created by the proposed development.

6.3.1 Day Time

Table 7 presents the measured L_{A90} background noise levels, and the assessment criteria based on the suburban interface criteria. The day period applies between 7am to 6pm Monday to Saturday; and 8am to 6pm Sundays and public holidays.

Table 7 – Day Time Period Criteria

Location	Measured L_{A90} Noise Level dB(A)	Amenity Criterion dB(A) L_{Aeq}	Intrusiveness Criterion dB(A) L_{Aeq}
Residential Receivers	37	55	42
Commercial Receivers	N/A	65	N/A

Table 7 indicates that the intrusiveness noise level criterion is more stringent than the amenity criterion for the nearest potentially affected residential receivers.

6.3.2 Evening

Table 8 presents the measured L_{A90} background noise levels, and the assessment criteria based on the suburban interface criteria. The evening time period applies between 6pm to 10pm.

Table 8 – Evening Time Period Criteria

Location	Measured L_{A90} Noise Level dB(A)	Amenity Criterion dB(A) L_{Aeq}	Intrusiveness Criterion dB(A) L_{Aeq}
Residential Receivers	36	45	41
Commercial Receivers	N/A	65	N/A

Table 8 indicates that the intrusiveness noise level criterion is as stringent as the amenity criterion for the nearest potentially affected residential receivers.

6.3.3 Night Time

Table 9 presents the measured L_{A90} background noise levels, and the assessment criteria based on the suburban interface criteria. The evening time period applies between 10pm to 7am.

Table 9 – Night Time Period Criteria

Location	Measured L_{A90} Noise Level dB(A)	Amenity Criterion dB(A) L_{Aeq}	Intrusiveness Criterion dB(A) L_{Aeq}
Residential Receivers	40	40	45
Commercial Receivers	N/A	60	N/A

Table 9 indicates that the amenity noise level is more stringent than the intrusiveness criterion for the nearest potentially affected residential receivers.

6.3.4 Assessment Criteria Summary

Table 10 presents a summary of the prevailing assessment criteria applicable to the proposed development to be situated at Lot 433 Bluett Drive, Ironbark Industrial Estate, Smeaton Grange at the nearest potentially affected residential receivers located to the east of the proposed site on Ashford Circuit, Chapman Circuit, Linton Road and the resident located on Turner Road, Smeaton Grange.

Table 10 – Noise Objectives

Location	Day Time Noise Objective dB(A) L_{Aeq}	Evening Time Noise Objective dB(A) L_{Aeq}	Night Time Noise Objective dB(A) L_{Aeq}
Residential Receivers	42	41	40
Commercial Receivers	60	60	60

Table 11 presents a summary of the criteria for vehicle movements created by the proposed development in accordance with requirements of the EPA *"Environmental Criteria for Road and Traffic Noise - 1999"*. It is noted that if the existing noise levels exceed those in Table 6, a 2dB increase in noise is allowed.

Table 11 - Criteria for Traffic Noise

Time of day	Criteria for Acceptable Traffic Noise Level dB(A)
Day (7am to 10pm)	55 $L_{Aeq(1hr)}$
Night (10pm to 7am)	50 $L_{Aeq(1hr)}$

7. NOISE ASSESSMENT

7.1 PREDICTED NOISE EMISSIONS

Noise emissions that will be generated from the proposed development have been predicted to the nearest potentially affected residential receivers located to the east of the proposed site on Ashford Circuit, Chapman Circuit, Linton Road and the resident located on Turner Road, Smeaton Grange. The noise levels will be compared to the noise objectives presented in Table 10 of Section 6.3.4 – *"Assessment Criteria Summary"* as determined using the EPA NSW Industrial Noise Policy.

The subsequent sections summarise the assessment of noise impact from the various noise sources identified as potentially affecting the nearest residential receivers.

7.1.1 Vehicle Movements

Noise emissions from truck movements associated with the loading docks were corrected for distance attenuation, acoustic screening, façade attenuation and air absorption to determine the resultant noise level at the nearest potentially affected residential receiver.

Calculations were based on noise monitoring data obtained at a similar facility, where noise measurements were conducted using a Norsonics SA-110 precision sound level analyser, set to fast response. The precision sound level analyser was calibrated before and after the measurements using a RION NC-73

precision sound level calibrator. No significant drift was recorded. The noise source emission levels used in calculations are presented in Table 12.

Table 12 - Noise Source Emission Levels

Noise Source	Sound Emission Level dB(A) at 7m	Type of Noise Source
Small Truck Reversing alarm	75[1]	Quasi-Steady, tonal
Trucks Manoeuvring/Reversing	75	Quasi-Steady
Truck Air Brakes	89	Transient
Truck Door Closing	75	Transient
Truck Starting	72	Transient
Semi-trailer Starting	89	Transient

[1] A 5 dB(A) penalty has been applied to this source to account for the tonal characteristic of noise produced.

SoundPlan™ has been utilised in order to model the above conditions for the daytime, evening time and night time periods.

Calculations for the day, evening and night time assessment periods are based on

- *Day Time* – Worst case scenario with the car park full, loading dock roller shutters open and 20% truck movements of the daily schedule in the worst one hour.
- *Evening Time* - Worst case scenario with the car park full, loading dock roller shutters open and 20% truck movements of the daily schedule in the worst one hour.
- *Night Time* - Worst case scenario with 25% of the car park full with the loading dock roller shutter closed and 5% truck movements of the daily schedule in the worst one hour.

Table 13 – Predicted Noise Emission Levels at Most Affected Receivers

Location	Time of day	Predicted Noise Emission Level dB(A) L_{Aeq}	Criteria dB(A) L_{Aeq}	Complies
Eastern Residential Receivers	Day	41[1]	42	Yes
	Evening	41[1]	41	Yes
	Night	35[1]	40	Yes
Northern Residential Receivers	Day	41[1]	42	Yes
	Evening	41[1]	41	Yes
	Night	37[1]	40	Yes
Mechanical Plant	Overall	26	26	Yes *(Refer to Section 7.3)*

1 Predicted noise emission level has been corrected for façade reflection.

The noise predictions clearly illustrate that noise emissions from the proposed commercial development to be situated at Lot 433 Bluett Drive, Ironbark Industrial Estate, Smeaton Grange will comply for the proposed operations during the daytime, evening time and night time periods and the EPA Noise Control Manual sleep arousal criteria provided the recommendations in Section 8 are implemented.

7.2 TRAFFIC NOISE GENERATION

Review of the Traffic Engineering report provided by Cardno Eppen Olson dated December 2007 validates their estimate of traffic generation based on The Road and Traffic Authorities *"Guide to Traffic Generating Developments (2002)"* on the basis of different types of land uses.

Section 2.3 *"Existing Traffic Movements"* and Table 5.1 of Section 5.0 *"Development Traffic Generation"* of the Cardno Eppen Olson report provides details of existing traffic volume on Anderson Road and Camden Valley Way which will be used as the path of ingress/egress to the proposed development. The traffic engineering report in the above mentioned Sections also outlines the proposed additional volumes of traffic that will be generated by the proposed development.

From these two figures, ALC is able to determine that the overall increase will be 1.7dB(A) which is within the 2dB(A) buffer zone outlined and permitted by the EPA *"Environmental Criteria for Road and Traffic Noise - 1999"* guideline.

As such, based on the Cardno Eppen Olson Traffic Engineering report, the minor overall increase in noise level is well below the noise levels required to satisfy the EPA *"Environmental Criteria for Road and Traffic Noise - 1999"* guidelines. On this basis, noise generated by vehicles associated with the proposed development would not impact upon the surrounding residents and would comply with the EPA road traffic noise criteria.

7.3 MECHANICAL SERVICES PLANT

The proposal also includes ancillary related mechanical services plant *(e.g. cooling towers)*. The combined level of noise emissions from the ancillary mechanical services plant will be assessed against the EPA NSW Industrial Noise Policy guidelines for noise intrusion. Since the combined noise emissions from the proposed development shall not exceed 5dB(A) above the existing background L_{A90} noise level at the nearest potentially affected residential receivers, it is proposed that noise emissions from the ancillary mechanical services plant not exceed 10dB(A) below the existing background L_{A90} noise level at the nearest potentially affected residential receiver.

Detailed plant selections are not available at this stage, and as such it is not possible to carry out a detailed examination of the ameliorative measures that may be required in order to achieve the noise objectives as presented in Table 14. This may include selecting the quietest plant practicable, or treating the plant with enclosures, barriers, duct lining and silencers, etc as required to comply with the noise objectives presented in Table 14.

Experience with similar projects indicates that it is possible to achieve the regulatory authority requirements with appropriate treatment determined at the Construction Certificate Stage.

Table 14 - Mechanical Services Plant Noise Criteria

Location	Day Time Criteria dB(A) L_{Aeq}	Evening Time Criteria dB(A) L_{Aeq}	Night Time Criteria dB(A) L_{Aeq}
Residential Receivers	27	26	30

8. RECOMMENDATIONS

This assessment concludes that the proposed commercial development to be situated at Lot 433 Bluett Drive, Ironbark Industrial Estate, Smeaton Grange with its associated loading docks and car parks can comply with the EPA NSW Industrial Noise Policy and the EPA Environmental Criteria for Road Traffic Noise (1999) provided the following recommendations are implemented.

- Minimum 4.1m high, solid imperforate barrier to be implemented as illustrated in Figure 1 and 2 in Appendix One of this report. The barrier may be constructed from concrete blockwork, Hebel etc, lapped and capped timber, etc ensuring that there are no gaps between panels or at the base of the barrier. The barrier can be combined with earth mounding to limit the impact on view lines of adjacent properties. IT IS NOTED THAT THE EXISTING NORTHERN RETAINING WALL OF 7M WILL SATISFY THE ACOUSTIC ASSESSMENT CRITERIA AS REQUIRED BY THE 4.1M NORTHERN BARRIER.
- Maintain the height profile of the earth mound above RL 91.50 along the eastern boundary as detailed in landscape drawing 07_088 L001C *(Rev C)* and the architectural drawing DA02 *(Rev C - Overall Site Plan)*.
- The loading dock roller shutters shall be open only during the day time and evening time assessment periods.
- Joint cover plates on drive ways shall be finished flush and mechanically fixed into place.
- Hours of construction are to be 7.00am to 6.00pm Monday to Friday and 8.00am to 1.00pm on Saturdays.

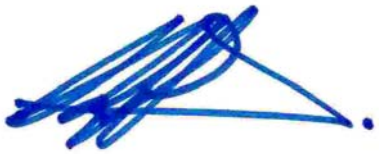
9. CONCLUSION

Potential noise impacts from the proposed commercial development to be situated at Lot 433 Bluett Drive, Ironbark Industrial Estate, Smeaton Grange has been assessed using the EPA NSW Industrial Noise Policy and the existing background noise levels measured in a location representative of the nearest potentially affected residential receivers.

Provided the recommendations presented in Section 8 of this report are implemented, then noise emissions from the proposed redevelopment will comply with the guidelines presented in the EPA Industrial Noise Policy.

Limits on noise emissions to prevent any adverse noise impact from mechanical services plant that may be installed as part of the proposed redevelopment have been recommended. A detailed assessment of noise emissions from this plant should be undertaken as part of the detailed design of the mechanical services plant items. With the provision of appropriate treatment, the recommended noise emissions limits would be achieved.

Report prepared by



ACOUSTIC LOGIC CONSULTANCY PTY LTD
Simon Lappas

APPENDIX ONE
SOUNDPLAN MODELS

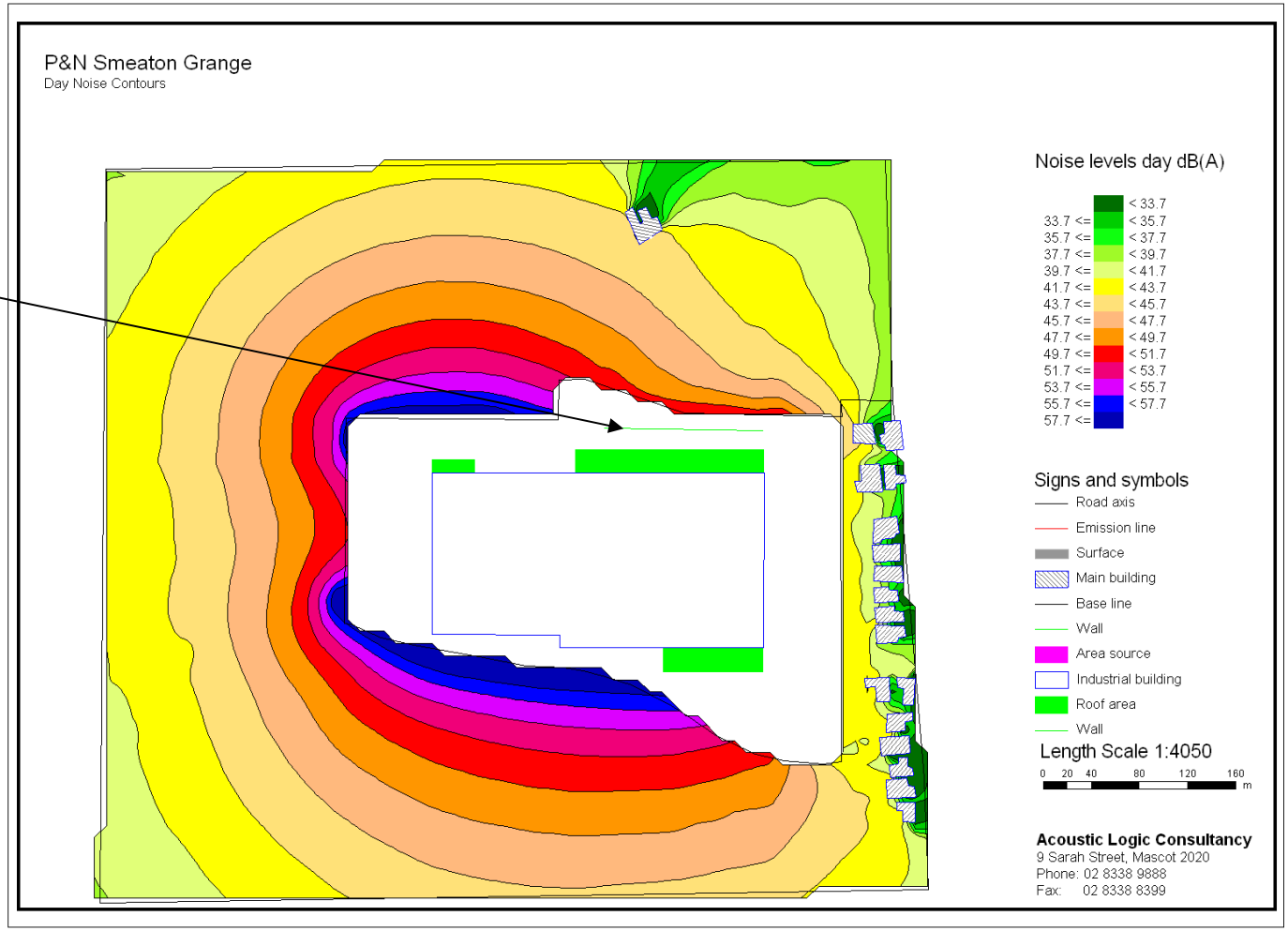


Figure 1 – Worst Hour Daytime and Evening Time Assessment Period Noise Contours

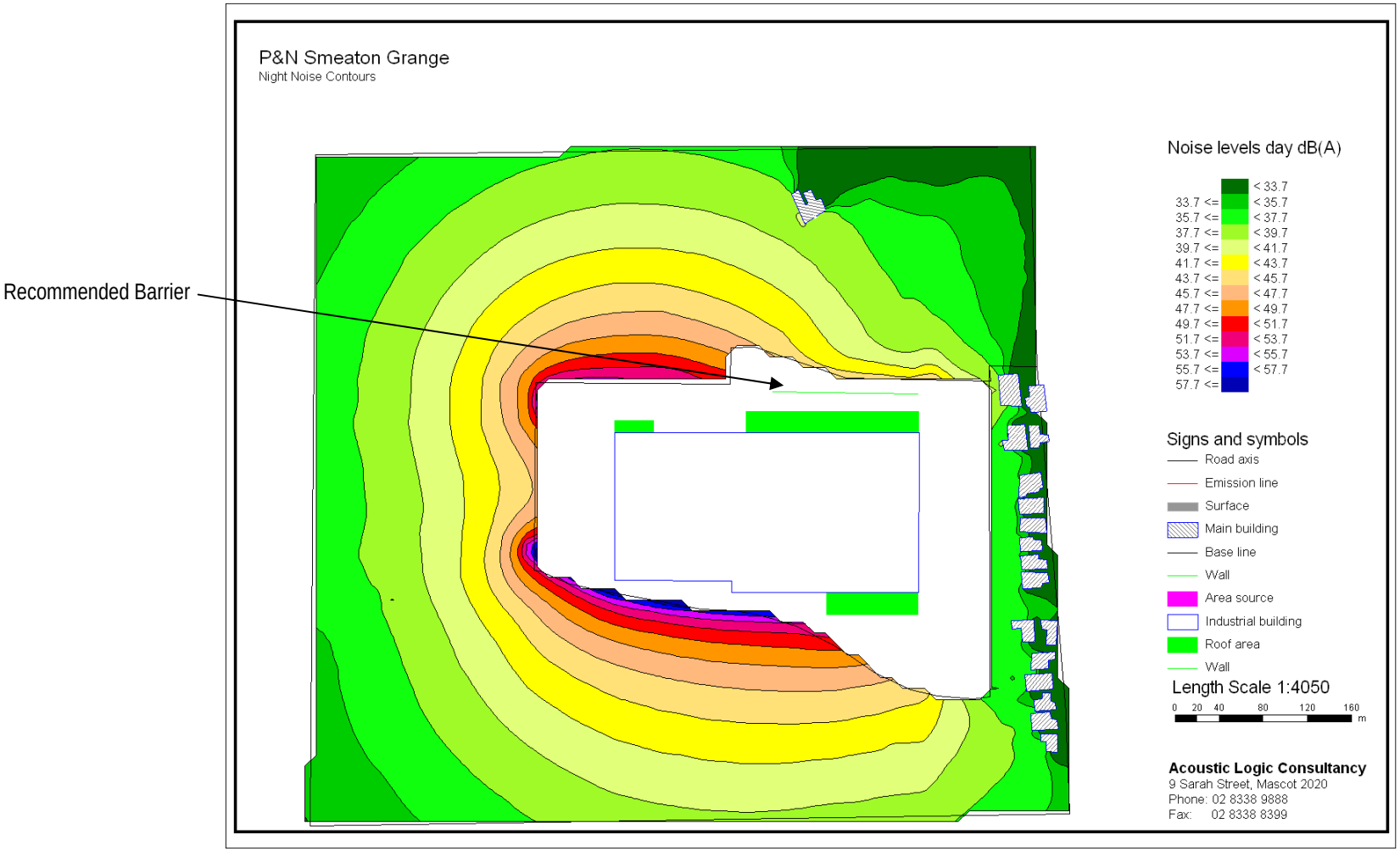
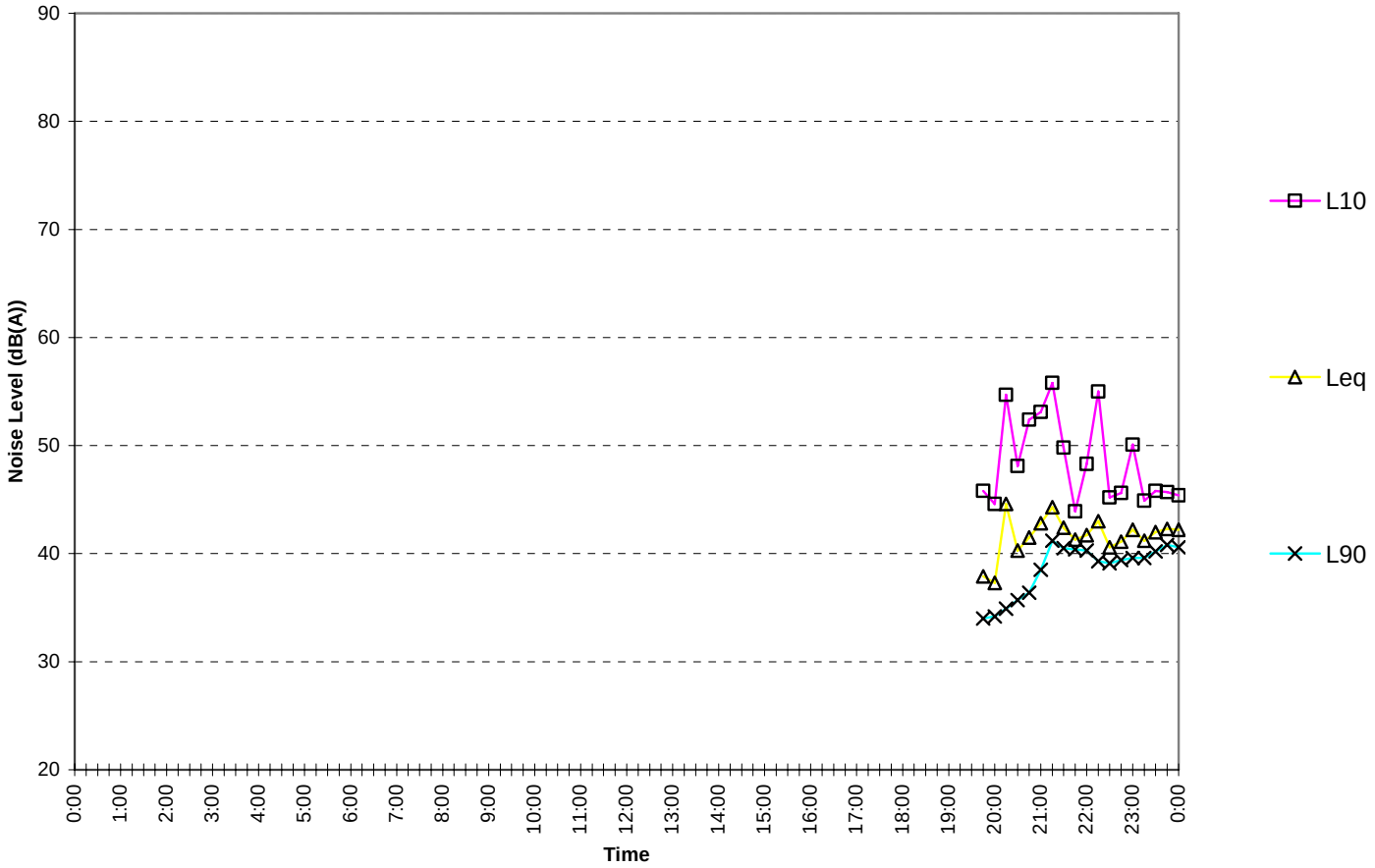


Figure 2 – Worst Hour Night Time Assessment Period Noise Contour

APPENDIX TWO
UNMANNED NOISE MONITORING DATA

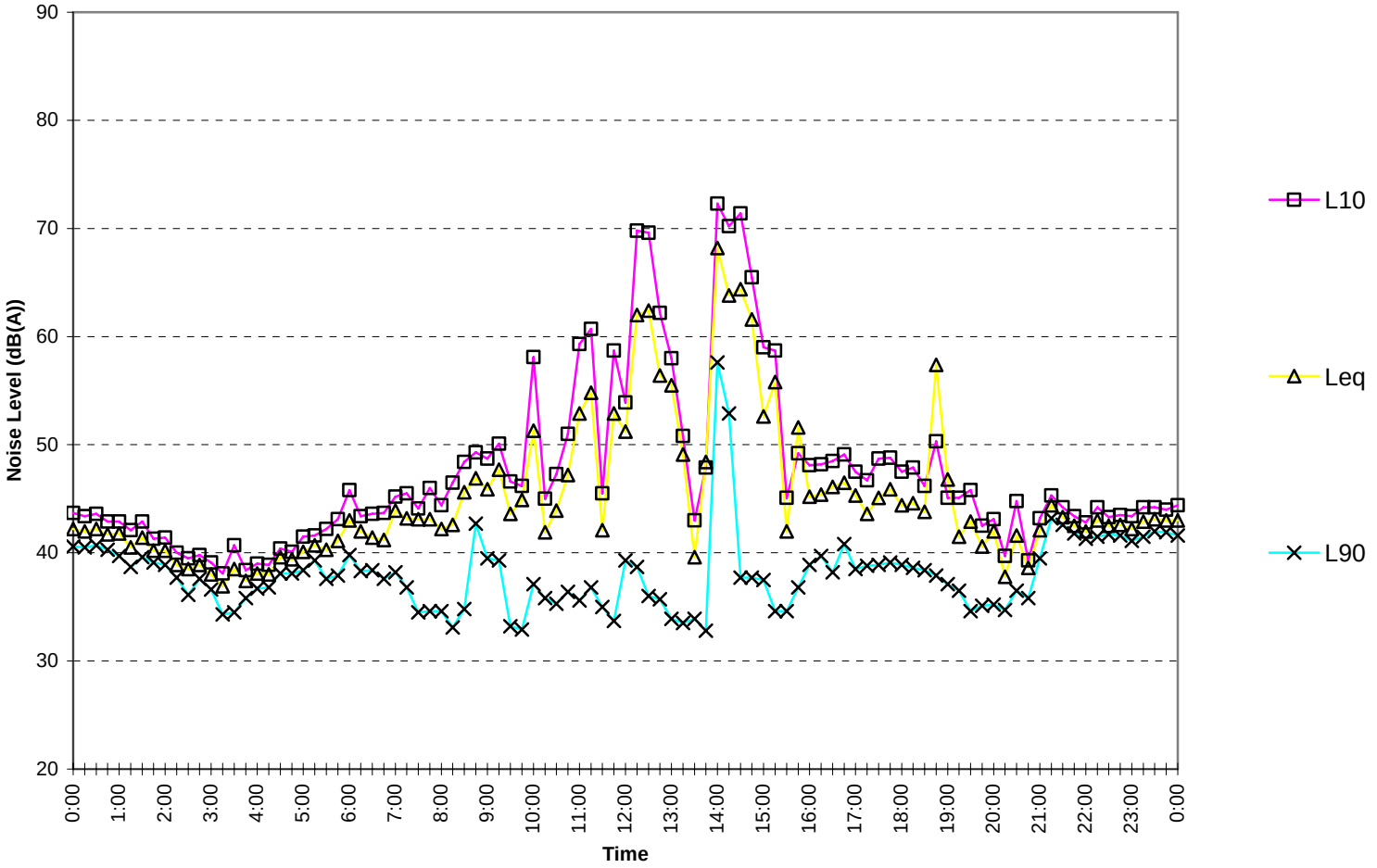
Smeaton Grange

Friday January 25,2008



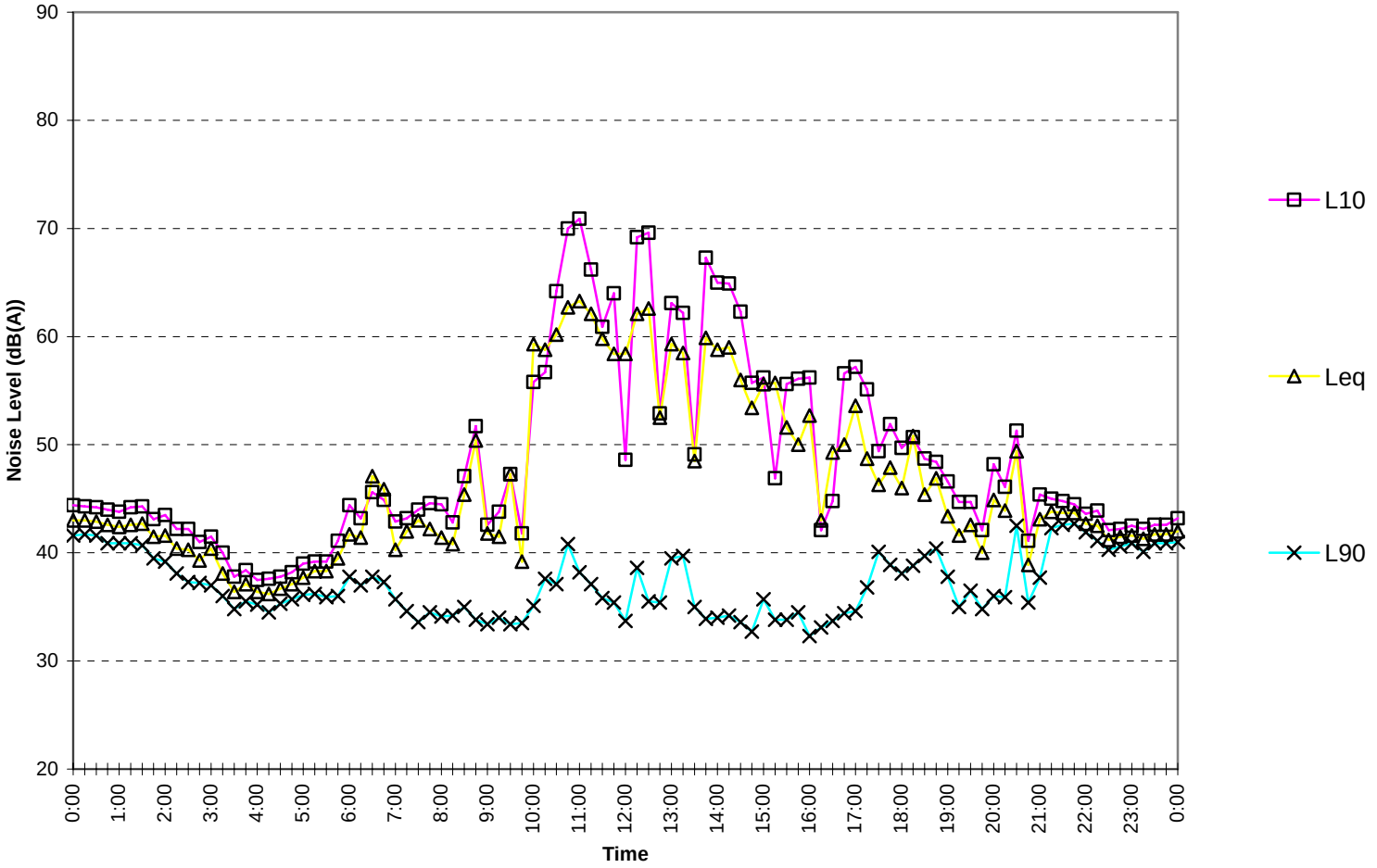
Smeaton Grange

Saturday January 26,2008



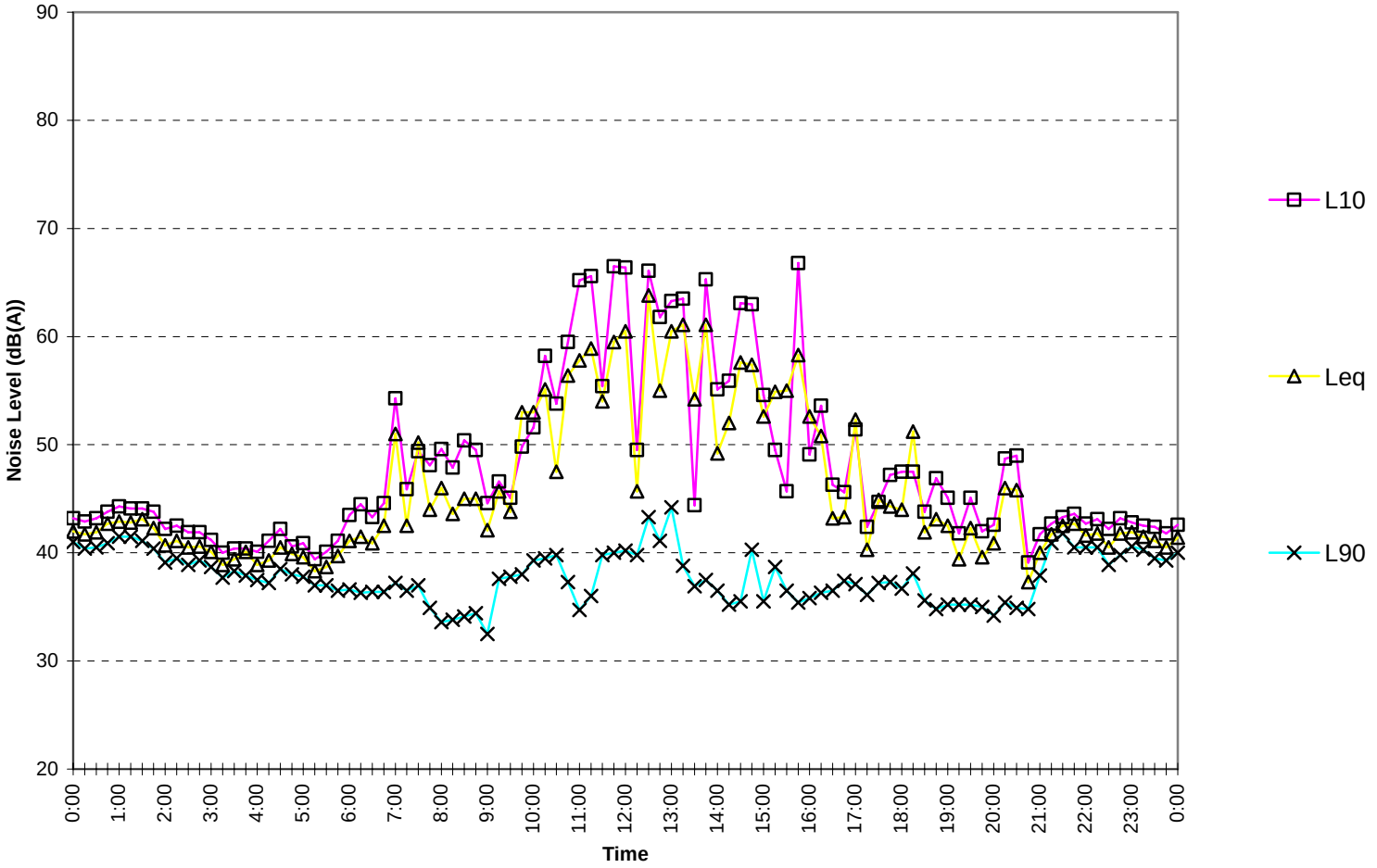
Smeaton Grange

Sunday January 27,2008



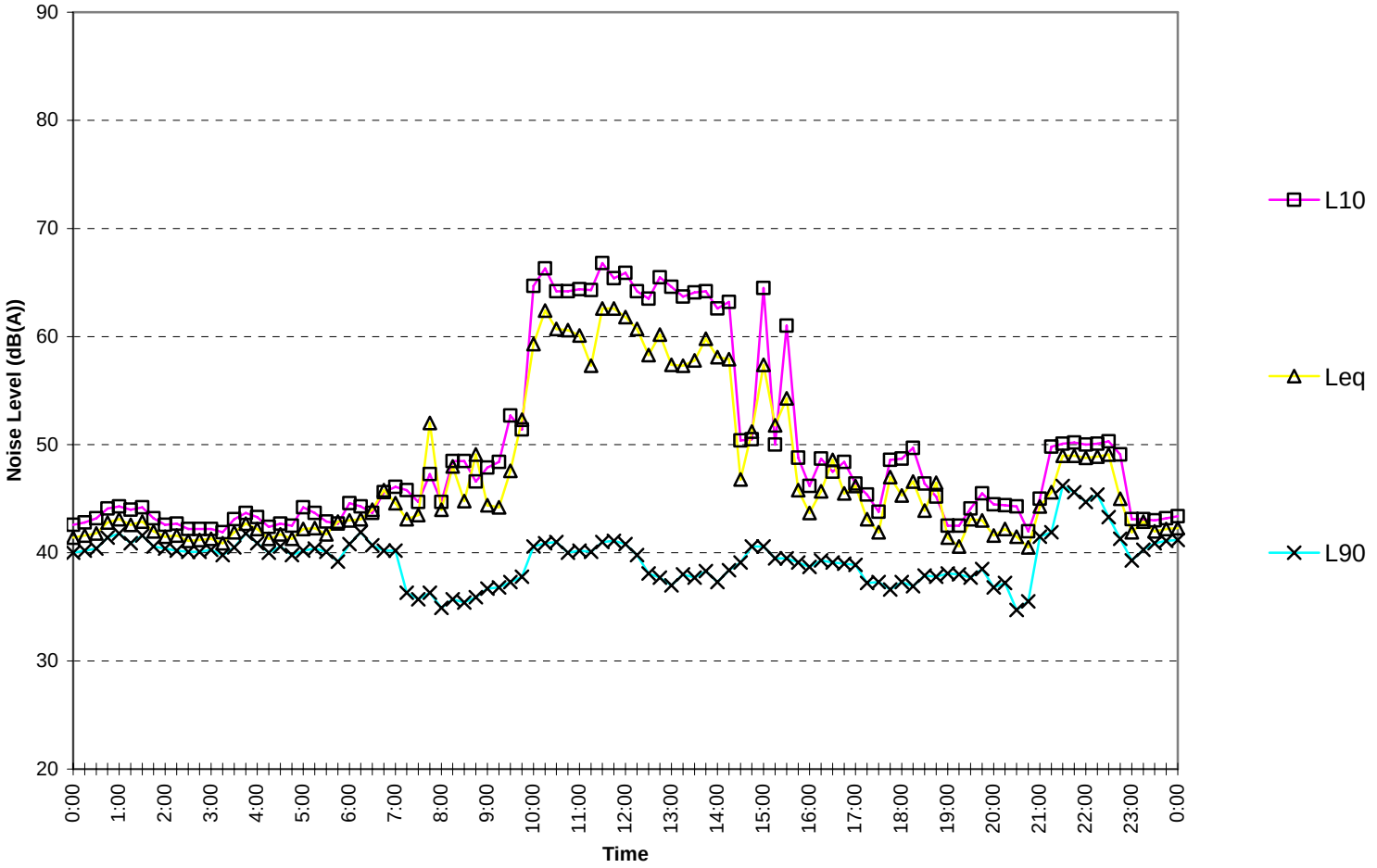
Smeaton Grange

Monday January 28,2008



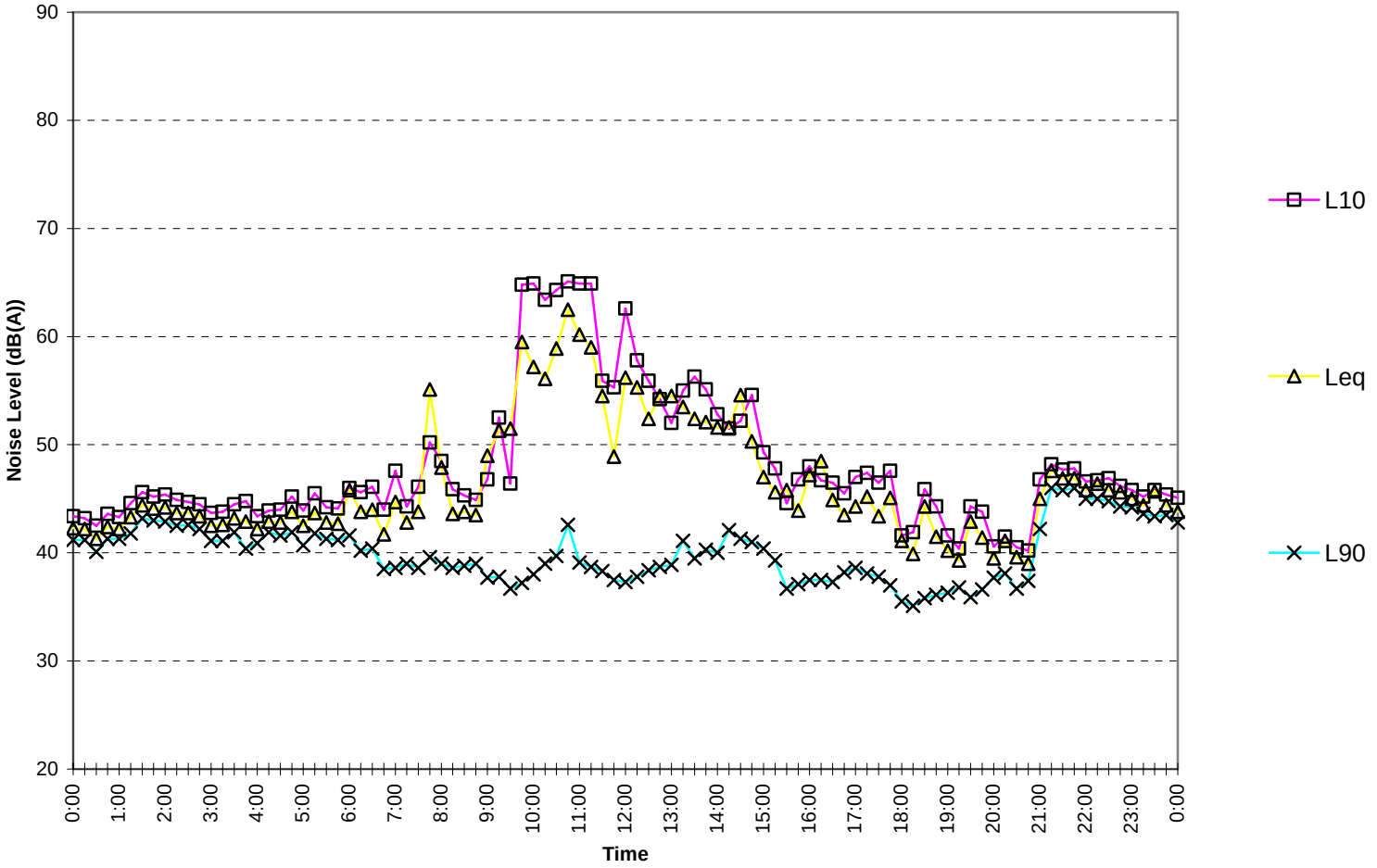
Smeaton Grange

Tuesday January 29,2008



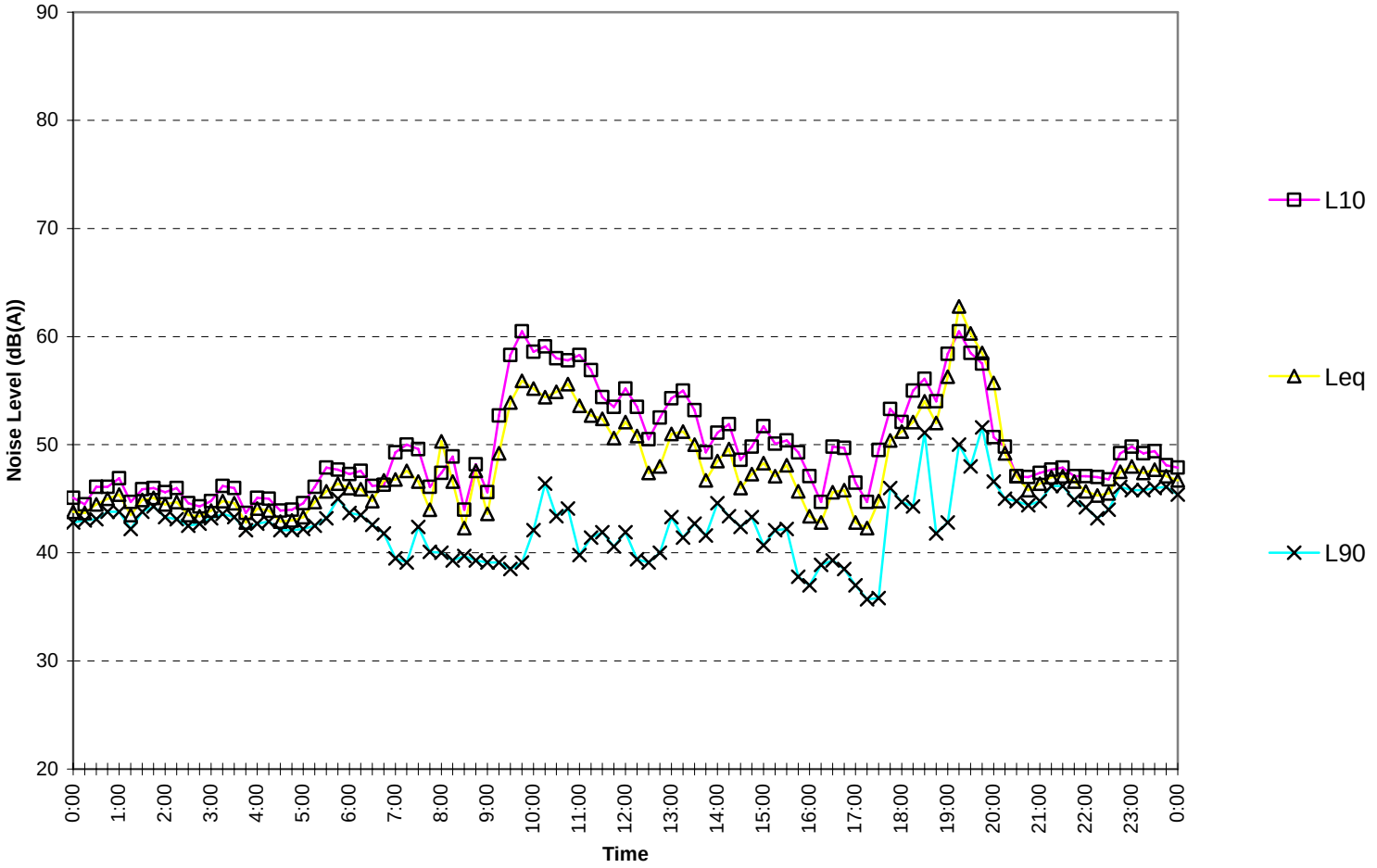
Smeaton Grange

Wednesday January 30,2008



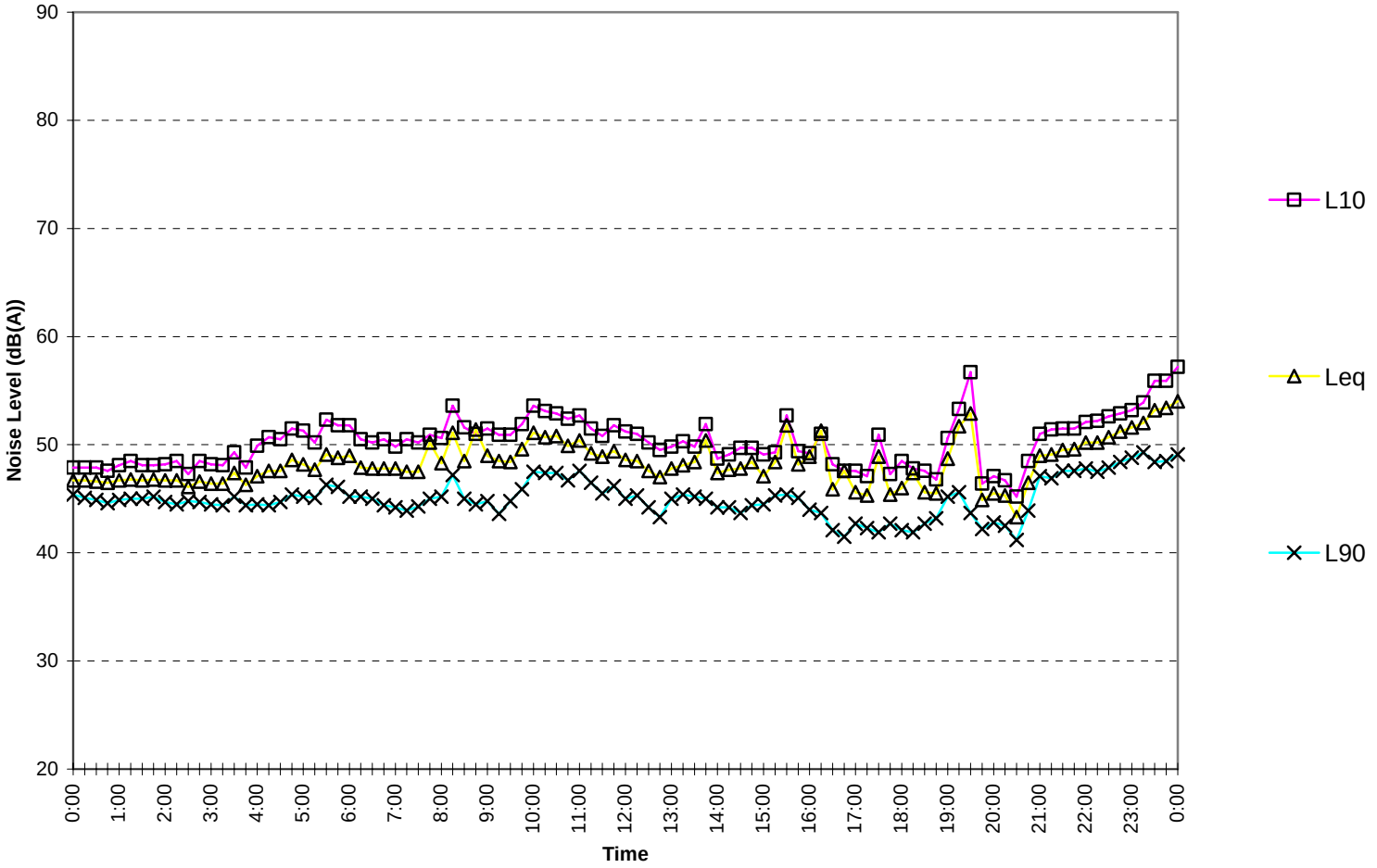
Smeaton Grange

Thursday January 31,2008



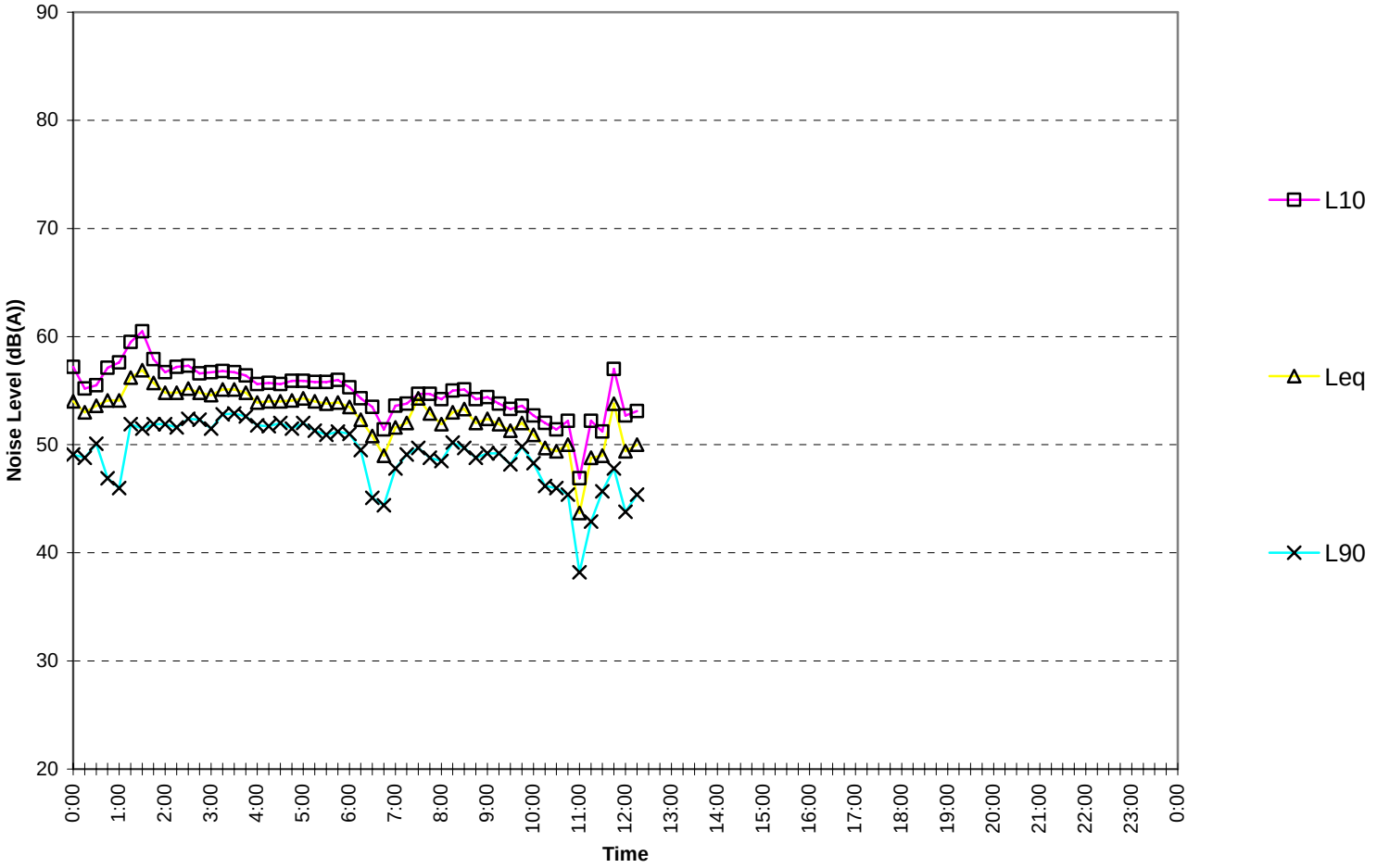
Smeaton Grange

Friday February 1,2008



Smeaton Grange

Saturday February 2,2008



APPENDIX THREE
METEORILOGICAL DATA FOR JANUARY 2008

APPENDIX FOUR
METEORILOGICAL DATA FOR FEBRUARY 2008