

BHP/CEM/23/A

Analysing
Testing
Consulting
Calibrating

TEST REPORT

Client:

**Patton Brothers
Gortletteragh
Stranolar
Co.Donegal**

BHP Ref No.: 87014

Order No.:

Date Received: 22nd June 2009

Date Tested: 22nd June 2009

Test Specification: Noise Monitoring



BHP

New Road
Thomondgate
Limerick
Ireland
Tel +353 61 455399
Fax + 353 61 455447
E Mail bhpcem2@bhp.ie

FAO: Tony Patton

***Item: Noise survey at Noise Sensitive Locations at the Patton Brothers operation
located at Gortletteragh, Stranolar, Co.Donegal.***

For and on behalf of BHP Ltd.

A handwritten signature in blue ink that reads 'R. Lenihan'.

Rachel Lenihan

Date Issued: 24th June 2009

Supplement to report No. N/A

Test results relate only to this item. This test report shall not be duplicated except in full and with the permission of the test laboratory

Contents

- 1.0 Scope
- 2.0 Survey Approach
- 3.0 Date of sampling
- 4.0 Results
 - 4.1 Noise levels
 - 4.2 Broadband Analysis
 - 4.3 1/3 Octave Frequency Analysis
- 5.0 Interpretation of results
 - 5.1 Noise Levels
- 6.0 Conclusions

Appendix A: Map showing noise monitoring locations

Appendix B: Photographs indicating noise monitoring locations

4.2 Broadband Analysis:

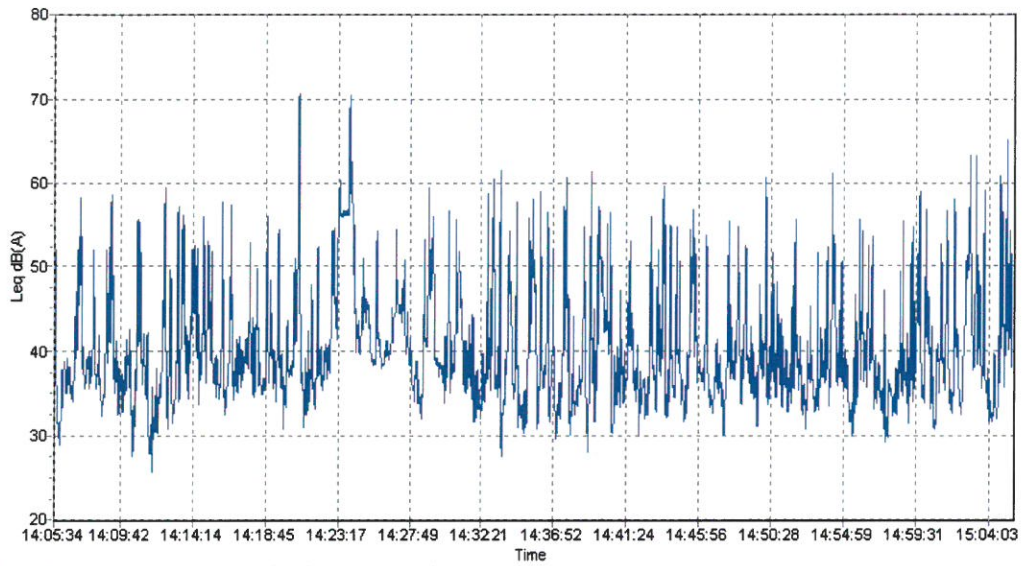


Fig 1: Broadband Analysis at Location A.

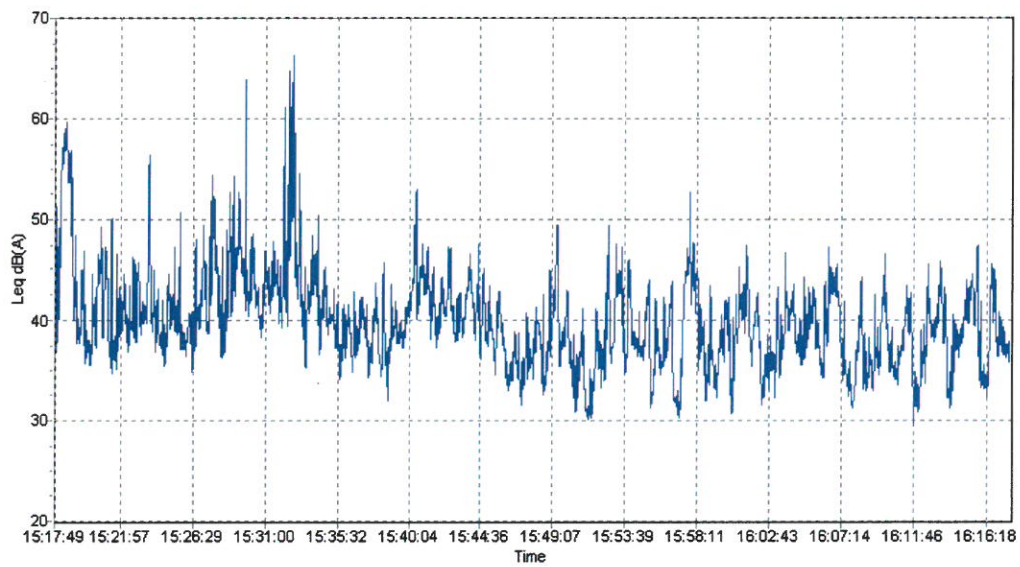


Fig 2: Broadband Analysis at Location B.

4.3 1/3 Octave Frequency Analysis:

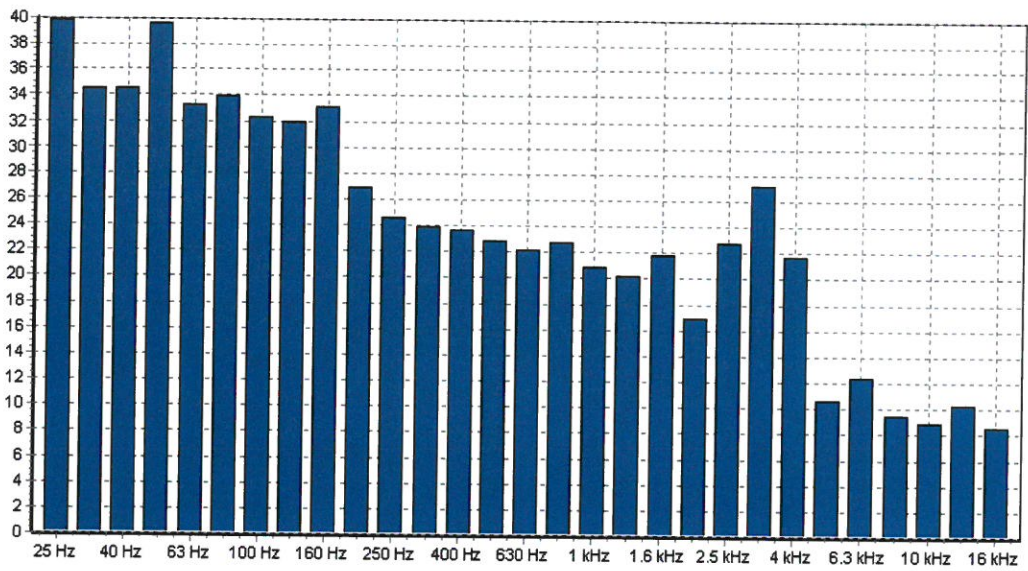


Fig 3: 1/3 Octave Frequency Analysis at Location A.

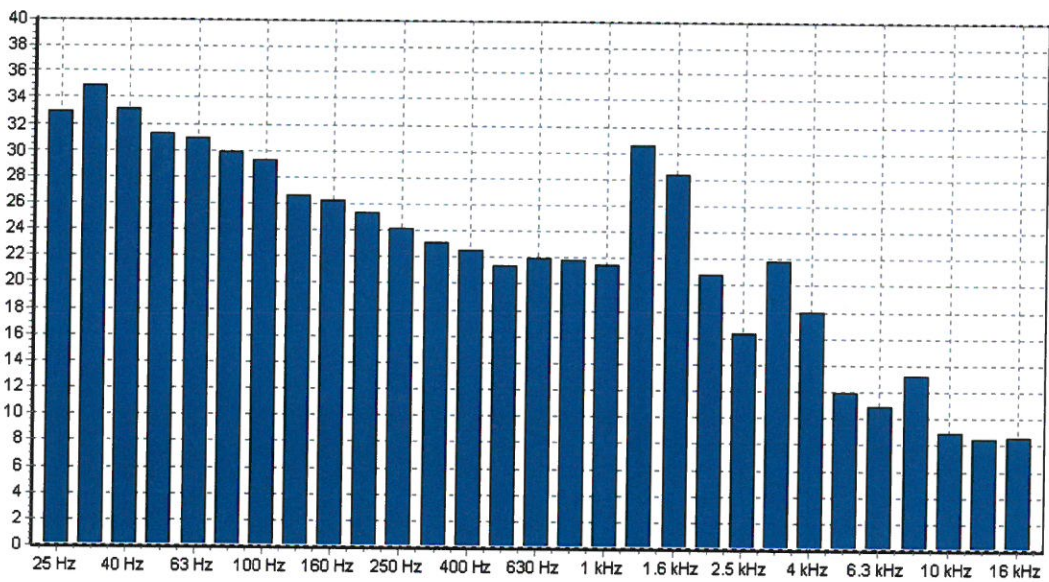


Fig 4: 1/3 Octave Frequency Analysis at Location B.

Weather Conditions during Monitoring

Cloud Cover: Overcast.

Wind: <0.1 m/s. Calm

5.0 Interpretation of results

5.1 Noise levels;

The daytime noise limits for the Patton Brothers operation in Gortletteragh, Stranolar, Co. Donegal are as follows:

Daytime Limit $L_{Aeq} < 55\text{dB}$

5.1.1 Day-time levels :

As can be seen in section 4.1, L_{Aeq} levels at the noise monitoring locations are less than the limit at both noise sensitive locations. Location A which represents a noise sensitive location was elevated due to passing traffic noise. The quarry was not audible from either location.

6.0 Conclusions

The noise contribution made by the operation does not exceed the daytime limit of 55dB at the noise sensitive locations. There was no evidence of tonal or impulsive qualities to the recorded noise from the quarry at the nominated locations.

Day-time Measurements - Noise Locations – Gortletteragh, Stranolar, Co.Donegal (22nd June 2009)

Location	Sampling Interval	Duration (mins)	L_{AEQ} dB	L_{A10} dB	L_{A90} dB	Wind speed m/s	Sampling notes
A	1405-1505hrs	60	48.8	50.3	33.0	<0.1	The quarry operation is not audible from this location. 1 lorry passed during monitoring reaching 70 dB. Traffic noise represented the main source of noise contribution.
B	1516-1616hrs	60	44.1	45.1	34.2	<0.1	The quarry operation is not audible in the background from this location. Passing traffic on the road into Stranolar is audible up to 50 dB. 1 helicopter passed at 1533 reaching up to 65dB.

1.0 Scope of survey

At the request of Patton Brothers, Gortletteragh, Stranolar, Co. Donegal, BHP undertook noise monitoring at their operation in Gortletteragh, Stranolar, Co. Donegal. The purpose of this survey was to provide Patton Brothers with the noise data and analysis required as part of their planning requirements.

This report deals with two noise sensitive locations at the operation in Gortletteragh, Stranolar, Co. Donegal and represent the nearest residential buildings.

2.0 Survey approach

A Cirrus 831A Type 1 sound level meter was used to monitor noise levels. Monitoring and the interpretation of acquired data is to the following standards:

- British Standard: BS 7445 Part 1: 1991 (ISO 1996-1: 1982) Description and measurement of Environmental Noise. Part 1. Guide to quantities and procedures.
- British Standard: BS 7445 Part 2: 1991 (ISO 1996-2: 1987) Description and measurement of Environmental Noise. Part 2. Guide to the acquisition of data pertinent to land use.
- British Standard: BS 7445 Part 3: 1991 (ISO 1996-3: 1987) Description and measurement of Environmental Noise. Part 3. Guide to application to noise limits.

60-minute daytime levels were measured at two locations. The locations were labelled as A and B and are identified on the map included in Appendix A.

Appendix B contains photographs of the noise monitoring equipment at the monitoring points.

3.0 Date of sampling

Sampling was carried out on the 22nd June 2009 for the daytime monitoring.

4.0 Results

4.1 Noise levels:

Levels are presented on the following pages.

Noise monitoring equipment at Monitoring Location B

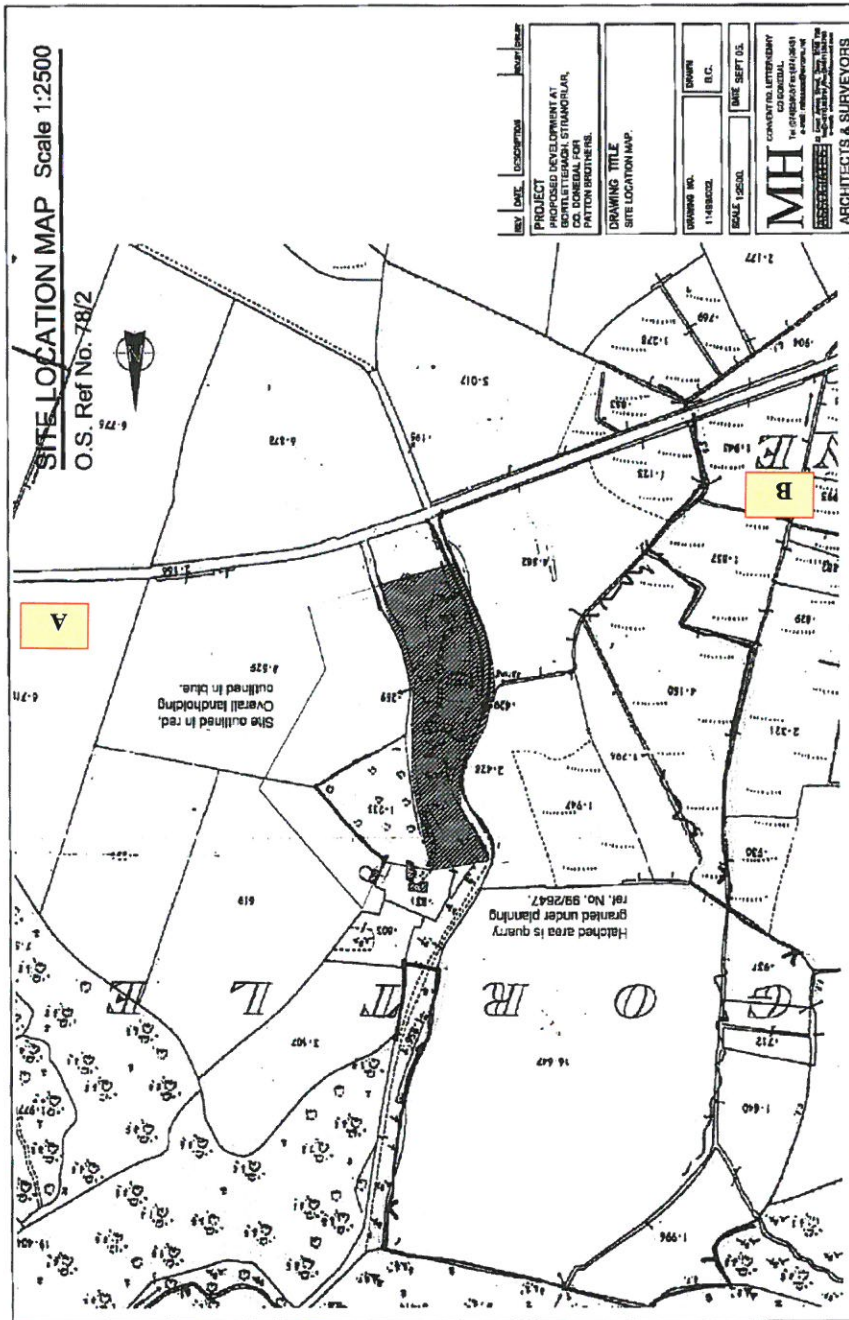


The image above illustrates the view as one looks towards the quarry location from the noise sensitive location while the image below illustrates the noise sensitive location.



Appendix A

Site map showing noise monitoring locations



Appendix B

Photographs of Noise Monitoring equipment on-site during monitoring

Noise monitoring equipment at Monitoring Location A



The image above illustrates the view as one looks towards the quarry location from the noise sensitive location while the image below illustrates the noise sensitive location.

