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County Council**

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Tá fáilte romhat gnó a  
dhéanamh as Gaeilge



**COMHAIRLE CHONTAE ROS COMÁIN**  
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Sub ①



[environment@roscommoncoco.ie](mailto:environment@roscommoncoco.ie)

25<sup>th</sup> October, 2006

JF\VM ENVIRONMENT

Dr. Jonathan Derham,  
Senior Inspector,  
Environmental Protection Agency,  
Environmental Licensing,  
Johnstown Castle,  
Wexford.

**Re: Shannonside IPPC licence application ref No.P0802-01**

Dear Jonathan,

Roscommon County Council have recently been dealing with a noise complaint in relation to the Shannonside Co-Op. Biospheric Engineering have carried out noise monitoring for us recently and I have attached a copy of there report for your attention.

In there conclusions they have found that there is a tonal content to the noise coming from the site. Is it possible for the agency to address this issue if an IPPC license is being granted? Please note I have also forwarded a copy of this report to Shannonside.

Yours sincerely,

**John Farrell**

A/Senior Executive Engineer  
Roscommon County Council  
Tel: 09066 37268





# Biospheric engineering

PARTNERS IN SUSTAINABLE DEVELOPMENT

Barna, Co. Galway.

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Mr. John Farrell,  
Roscommon County Council,  
Environment Section,  
Árus an Chontae,  
Roscommon,  
Co. Roscommon.

September 20<sup>th</sup> 2006

## Re: Shannonside Co-op

A chara,

With regard to the request for an assessment of the noise levels arising from the operations of the above we respond as follows:

### Qualifications

I am a Chartered Engineer and hold degrees in Engineering (BE, UCD), Law (LLB, NUI Galway) and Applied Acoustics (University of Derby, UK). I am author of "Road Traffic Noise – Are current design Criteria Adequate?", Irish Planning and Environmental Law Journal, Vol 9 (4), 2002, and have 25 years experience on noise and vibration issues.

### Site Description

The Shannonside Co-Op is a large food processing plant located on the eastern side of Ballaghadereen, Co. Roscommon. It is located to the north of the N5 national primary route. According to the National Roads Authority data the Annual Average Daily Traffic on that section of the N5 is about 6000 with 9% Heavy Commercial Traffic. This traffic level makes the area one of the busier sections of the N5.

The Co-Op operation is housed in a large building fronting on to the N5, with a large site to the rear used for truck parking etc. The site operates a wastewater treatment plant located to the rear (northeast) of the site. The plant is subject to a Licence issued under the Water Pollution Acts by Roscommon County Council.

The nearest residential area is a housing estate to the northwest adjacent to the factory site with one intervening field. A row of houses are oriented along the side of the Co-Op site with their rear elevations overlooking the field into the site. A small access remains at the end of the row of houses at the end remote from the N5. This access was used as one monitoring location (Location A).

Directors: Eugene McKeown., B.E., L.L.B. M. Sc., M.I.E.I., M.I.O.A., Chartered Engineer. Mary McKeown R.S.C.N., R.G.N.  
V.A.T. No. IE 6329750H Company Reg. No. 309750



The area is reasonably busy, with a constant level of traffic on the N5 and the local roads. The Co-Op operates at least two shifts and has HCV traffic entering and leaving the site. The wastewater treatment plant appears to operate on a 24 hour basis.

The planning conditions and the water pollution licence for the site contain no restrictions on noise levels. This is unfortunate but not unusual, given the age of the plant and licence, but limits the effective action(s) available to Roscommon County Council. As the Shannonside Co-Op is a large industrial plant it would be appropriate to apply the conditions usually imposed by the Environmental Protection Agency when they licence an industrial undertaking.

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The usual noise conditions imposed by the Environmental Protection Agency take the following form:

Control of noise:

*Activities on-site shall not give rise to noise levels off-site, measured at noise sensitive locations which exceed the following sound pressure limit (Leq,30min) values by more than 2 dB(A) at the specified noise sensitive locations.*

Daytime: 55 dB(A),  
Night-time: 45 dB(A).

*There shall be no clearly audible tonal component or impulsive component in the noise emission from the activity at any noise sensitive location.*

Such conditions are not currently imposed on Shannonside Co-Op but represent the current "state of the art" regarding reasonable noise conditions.

Measured Noise Levels

In order to assess the noise levels coming from the Shannonside Co-Op site noise level measurements were taken on 9<sup>th</sup>/10<sup>th</sup> May 2006. Measurements were taken at mid afternoon and after midnight. Weather conditions during the measurement periods were as follows:

Time	Temp. °C	Rel. Humid %	Barometer mBar	Wind	Weather
15:30 hrs	16.7	53	1020	Calm	Dry, sunny, 50% cloud cover
00:12 hrs	11.3		1021	Calm	Dry, fog forming

Noise measurements were carried out using a Bruel & Kjaer model 2260 noise level meter. The microphone was mounted at 1.4 metres above ground level and enclosed in a Bruel & Kjaer model 1404 Outdoor Microphone Kit. Narrow band frequency measurements were taken using a Bruel & Kjaer model 2260 noise level meter equipped with BZ 7208 FFT analysis software. The noise meter was calibrated prior to and after use using a Bruel & Kjaer model 4231 calibrator with no significant drift in calibration recorded.

The monitoring locations are indicated on the map above.

Measured Noise Levels

The noise level measured at Location A during the day are indicated on the attached plot. Noise levels varied from 50 dBA to 63dBA, which is a typical daytime value in an urban setting. The background noise comprised traffic noise from the N5 and local traffic, domestic noise from the nearby houses, birdsong and occasional aircraft overhead. A clear tonal noise was however present. The tonal noise had the characteristic of a high speed fan or blower or compressor. The most likely source of the noise was the Waste Water Treatment Plant at the rear of Shannonside Co-Op.



Due to the relatively high (but not excessive) noise levels during the day I decided to return late at night when background noise levels would have decreased in order to clarify the tonality issue.

Further measurements were taken at Location A and at Location B after midnight on 10/5/06. The noise levels recorded were 52 dBA at Location A and 50 dBA at Location B. These levels are due to noise from the Shannonside Co-Op at Location A and a combination of sources including the Co-Op at Location B. In both cases the levels are higher than desirable and certainly at Location A would give rise to complaints. I suspect that no complaints have arisen at Location A as the noise was there prior to the residents and there may be a certain tolerance of noise given the positive employment benefits etc. of the Co-Op.

The noise level at Location B is 50 dBA, which is a little higher than desirable. The overall noise level is not due solely to the Co-Op, traffic noise is a significant contributor. Surprisingly however, given the distance from the Co-Op noise from the Co-Op is clearly audible at Location B. The tonal noise evident at Location A is also clearly audible at Location B. The attached noise spectra (Location A night and Location B night) illustrate the noise levels at both locations.

On the basis of these spectra it would be reasonable to conclude that the noise level due to the Co-Op at Location A exceeds the EPA guideline limit of 45 dBA for night time values. The situation at Location B is less clear regarding the 45 dBA limit due to other noise sources.

The narrow band frequency analysis (Location B night FFT) clearly illustrating a tone at 370 Hertz. Using the Joint Nordic II Method of tonal analysis the appropriate penalty for the tone is 6 dB. The rated noise level at Location B is therefore  $(50 + 6) = 56$  dBA. This level exceeds the EPA night time limit and has a clear tonal component at 370 Hertz.

Please refer to attached noise level graphs.

### Conclusion

The EPA Guidelines of 55 dBA during the day period are not being breached by the Co-Op. There is however a clear tonal content to the noise coming from the site. The EPA night time level of 45 dBA is clearly breached and in addition a clearly audible tonal component at 370 Hz is contained in the noise emission.

The complaint made by Mr. Healy is justified.

### Recommended course of Action

As the Co-Op are not in breach of any planning or licence condition at present, Roscommon County Council are limited in the action they can take. A reasonable approach in the first instance would be to inform the Co-Op of the complaint and request that they remedy the issue.

In the absence of a favourable response from the Co-Op, it would be possible to issue a notice under the Environmental Protection Agency Act (section 107) specifying the following actions:

1. Identify the specific source of the tonal noise (What piece of equipment is involved?) causing the 370 Hz tone.
2. Reduce the noise emissions from the equipment so that the tonal component is not clearly audible and the overall noise emission level at Location A due to the Co-Op is less than 45 dBA at night.
3. Specify a reasonable time period in which to carry out the above.

Unfortunately District Court Orders using this piece of legislation can be difficult to obtain and to enforce.

An alternative approach would be to review the licence issued under the Water Pollution Acts (WP-1-6A) as a reasonable time has elapsed since it was issued and there has been a substantiated noise complaint made regarding the operation of the site.

The review of the licence would allow a noise condition such as that outlined earlier to be inserted in the licence. The Co-Op would then have to comply.

One of the three courses of action outlined above should resolve the problem.

I trust the above clarifies the situation for you. If you have any queries please do not hesitate to contact me directly.

Le Meas,

*Eugene P. McKeown*

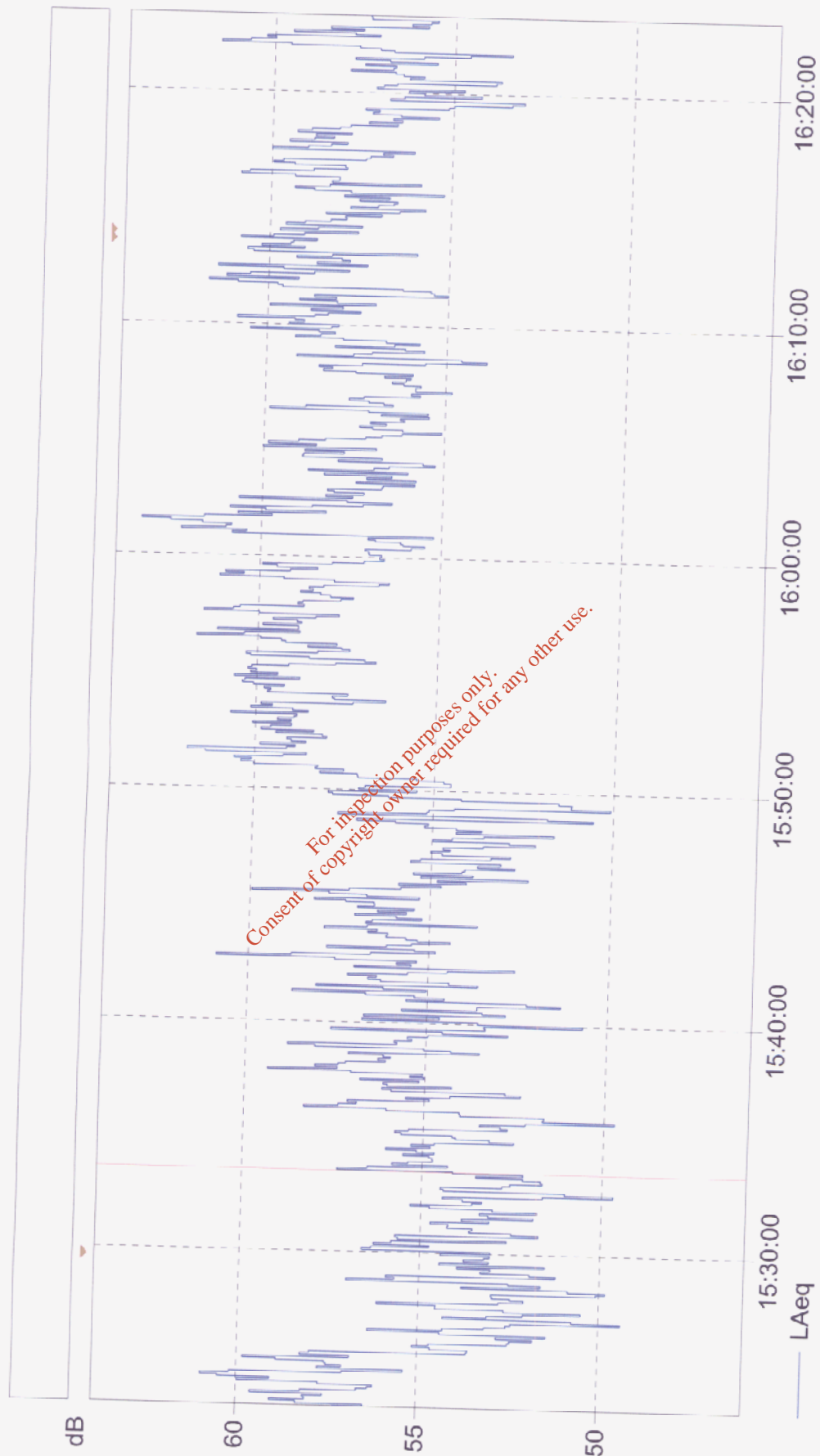
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Eugene McKeown

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Shannonside Co-Op

Location A day

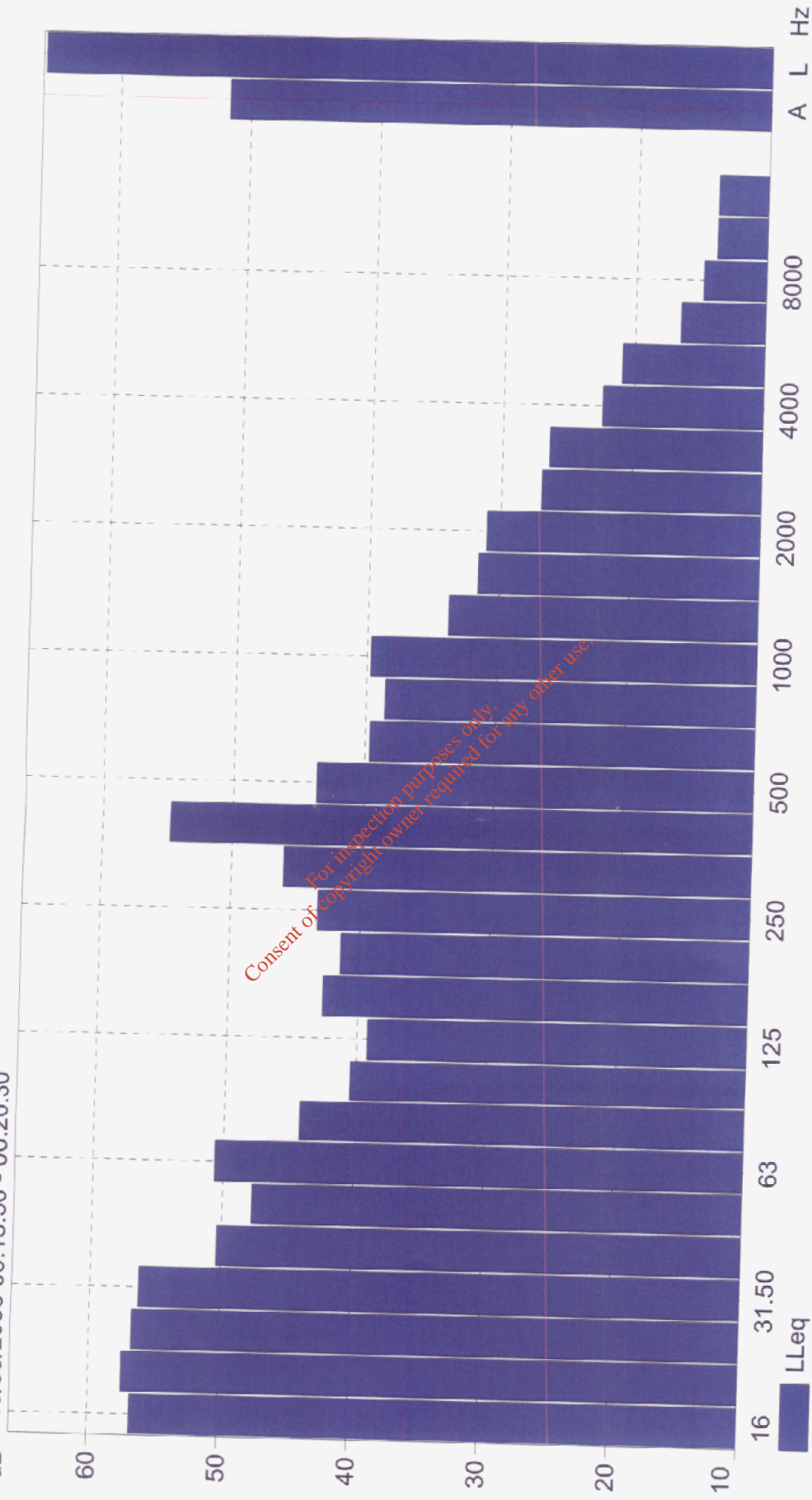


Cursor: 09/05/2006 15:33:25 - 15:33:30 LAeq=54.2 dB

Shannonside Co-Op

Location A night

dB 10/05/2006 00:15:30 - 00:20:30



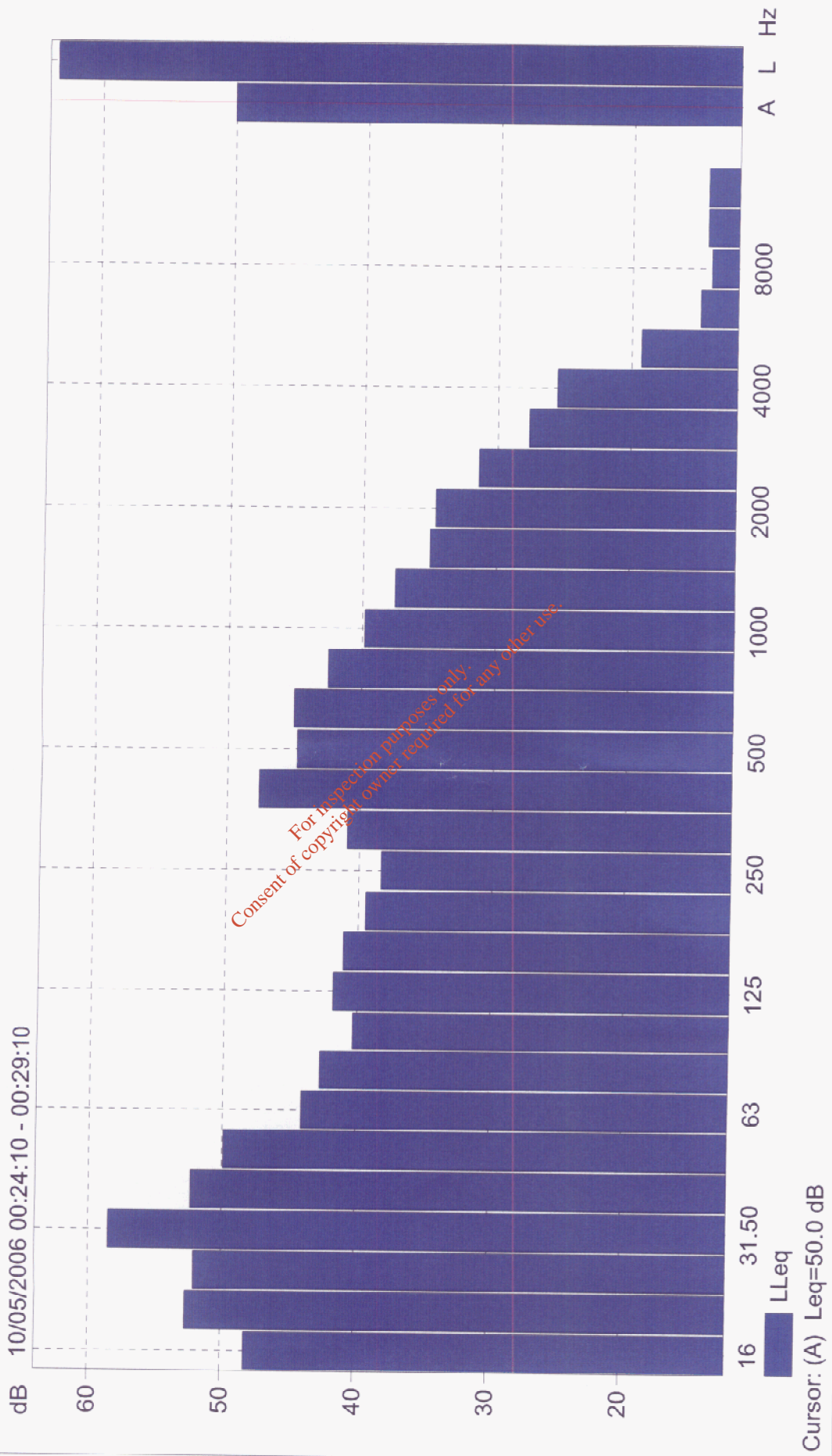
Cursor: (A) Leq=51.6 dB



Shannonside Co-Op

Location B night

10/05/2006 00:24:10 - 00:29:10



Shannonside Co-Op

