Application Note – Norsonic Measurements for

A procedure for the assessment of low frequency noise complaints – Salford University Guidance 2009

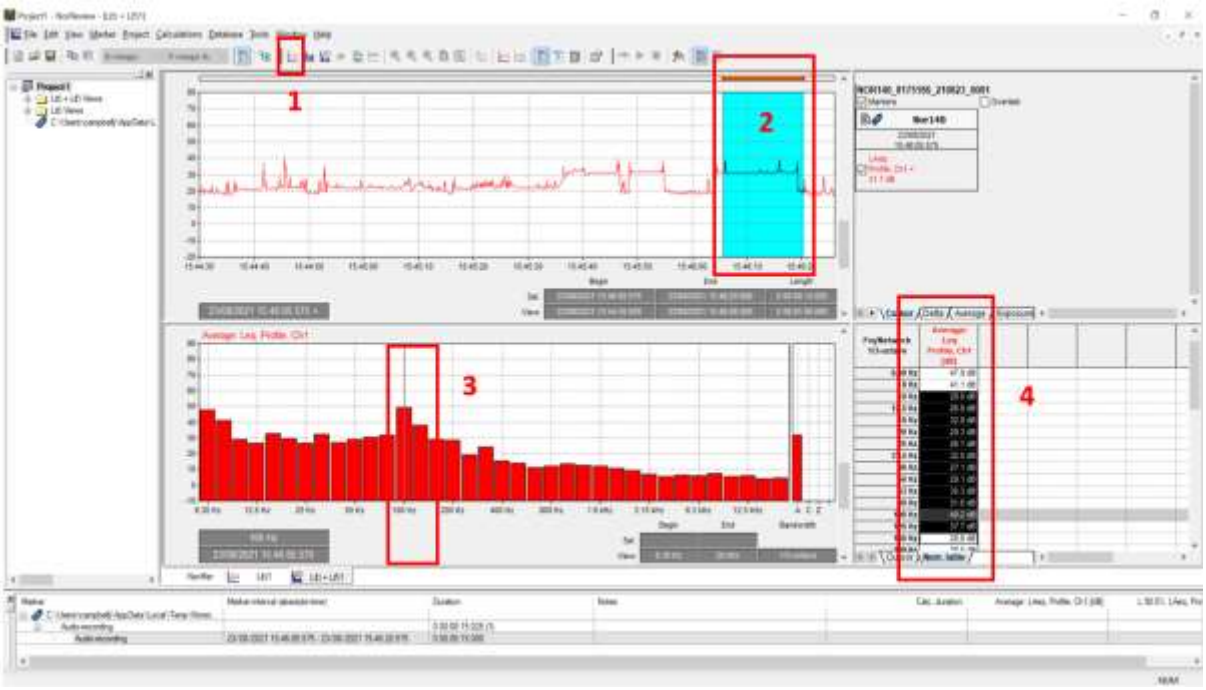
Make sure your instrument is setup to make a 1/3 octave measurement each second.

Load your measurement into NorReview in the normal way.

Click the level versus time/ frequency display – Lf +Lt

You then see a split display of average levels for each second in top part of the screen and the frequency in the bottom.

Identify the recordings where the complainant has noted the low frequency noise is present. Listen to this recording and make sure it does not include people moving around the properties or transportation noise – The concept of the standard is for investigating mechanical/ industrial type noise sources. If the recording meets this criteria click on it to display the frequencies for this recording. For longer recordings which contain other noises you can highlight part of the recording and just display the frequencies for this.



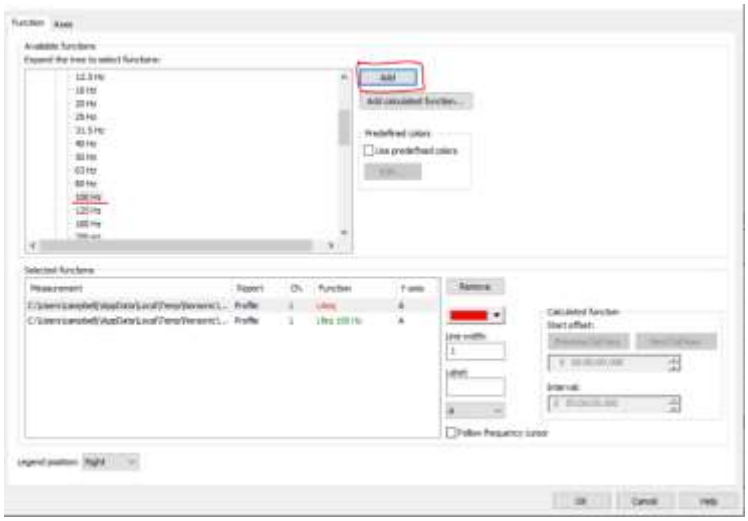
The numbers are displayed on the right side of the screen – Click the Num Table tab. These can be copied and pasted into Excel. We are only interested in frequencies from 10Hz to 160Hz for this standard.

Table V from the standard:

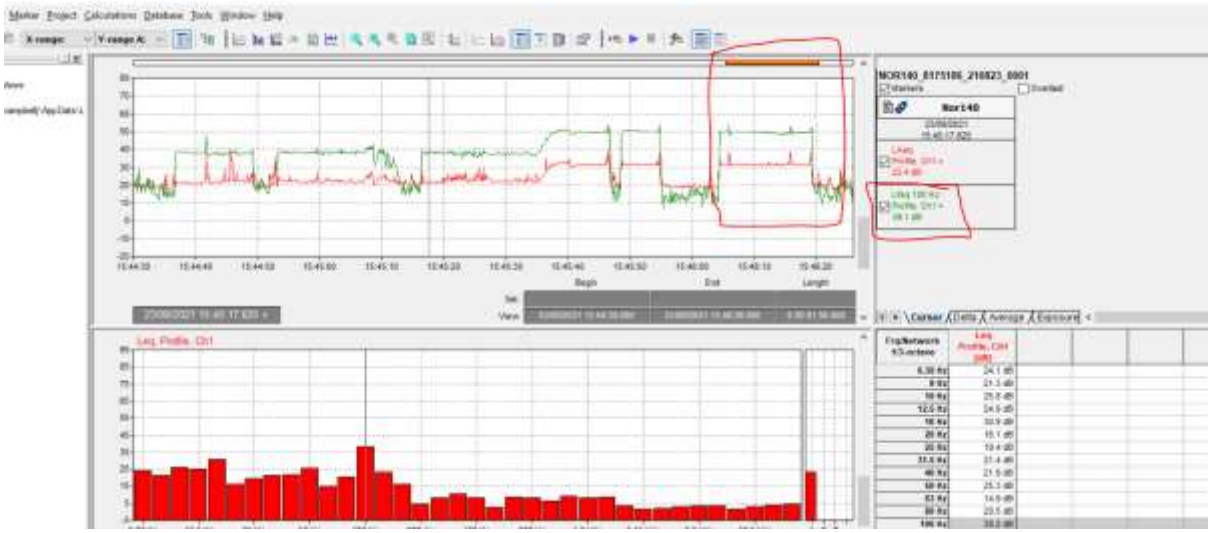
Hz	10	12.5	16	20	25	31.5	40	50	63	80	100	125	160
dB Night	92	87	83	74	64	56	49	43	42	40	38	36	34
dB Day	97	92	88	79	69	61	54	48	47	45	43	41	39

In the example above the highest 1/3 octave is at 100Hz. The Average value at 100Hz is 49.2dB which is above the limit for the day and the night. Note if the noise under investigation is impulsive and not constant you can apply a 5dB penalty to the measured values.

The next stage of the assessment is to view this frequency over time to see if it has correlation with the complainant's log/ diary sheet.



The example (from the office) shows repetitive presence of 100Hz tone which correlates with the recordings.



If there is a correlation you may wish to try and find the source of the noise. This is not always easy as low frequency noise is harder to pinpoint and identify. The third octave measurements can help you identify/ locate the source and it is sometimes useful to have the FFT module in your meter which gives a more detailed 'acoustic fingerprint' of the noise making it easier to locate sources where the acoustic environment is more complex.

Please contact Campbell Associates @ support@campbell-associates.co.uk With any questions.