

NOISE IMPACT ASSESSMENT

This report has been compiled for, and on behalf of, Environmental Essentials (UK) Ltd by the following competent consultant

Helen Woollaston MSc, PgDip, MIOA, AFOH (Operations Manager)

Signature



Date 12 May 2015

This report has been reviewed for, and on behalf of, Environmental Essentials (UK) Ltd by the following competent consultant

Lee Johnson (Managing Director)

Signature



Date 13 May 2015

Client Contact:	Air-Serv Vince Maguire
Address:	Redgate Road, Ashton-in-Makerfield, Wigan WN4 8DT
Tel:	01942 722333
Email:	vince.maguire@air-serv.co.uk

Environmental Essentials (UK) Ltd

Ebenezer House, Ryecroft, Newcastle under Lyme, Staffordshire. ST5 2BE

Tel: 0845 077 7761 Fax: 0845 077 7762

www.environmentalessentialsuk.co.uk

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GLOSSARY OF TERMS

A-weighting

The sound pressure level determined when using the frequency-weighting network A. The A-weighting network modifies the electrical response of a sound level meter so that the sensitivity of meter varies with frequency in approximately the same way that the sensitivity of the human hearing system.

The human ear has a non-linear frequency response, it is less sensitive at low and high frequencies and most sensitive in the range 1 to 4 kHz. The A-weighting is applied to measured or calculated sound pressure levels so that these levels correspond more closely to the response of the human ear. A-weighted sound levels are often denoted as dB(A).

Decibel dB

1. Unit level which denotes the ratio between two quantities that are proportional to power. The number of decibels corresponding to the ratio of two amounts of power is 10 times the logarithm to the base 10 of this ratio.
2. A linear numbering scale used to define a logarithmic amplitude scale, thereby compressing a wide range of amplitude values to a small set of numbers.
3. A unit that indicates that a quantity has a certain level above some pre-defined reference value.
4. The unit of measurement used for sound pressure levels. The scale is logarithmic rather than linear. The threshold of hearing is 0dB and the threshold of pain is 120dB. In practical terms these limits are seldom experienced and typical levels lie within the range 30dB (a quiet night time level in a bedroom) to 90dB (at the kerbside of a busy city street).

Equivalent Continuous A-Weighted Sound Pressure Level, $L_{Aeq,T}$

Value of the A-weighted sound pressure level in decibels of a continuous steady sound that, within a specified time interval, $T = t_2 - t_1$, has the same mean-squared sound pressure as a sound that varies with time...

[BS4142]

Maximum Sound Level, $L_{pA,max}$

The highest value of the A-weighted sound pressure level that occurs during a given event or time period. The time weighting should be specified.

[BS5228]

Measurement Time Interval, T_m

Total time over which measurements are taken

[BS4142]

Percentile Level (*Statistical Sound Level Indices* L_{AN} , L_{A90})

L_{AN} is the dB(A) level exceeded N% of the time, measured on a sound level meter with the Fast (F) time weighting e.g. L_{A90} the dB(A) level exceeded for 90% of the time is commonly used to estimate background noise level. L_{A10} the level exceeded for 10% of the time is commonly used in the assessment of road traffic noise.

Reference Time Interval, T_r

Specified interval over which the specific sound level is determined

[BS4142]

EXECUTIVE SUMMARY

Environmental Essentials (UK) Ltd was commissioned by Air-serv to undertake a noise impact survey of forecourt machines at their facility in Wigan.

The survey was conducted on the 8 April 2015 and reflects the conditions prevailing at the time.

The objectives of the survey were to establish the noise levels of an air machine (tyre inflator), vacuum machine and jet wash at measured distances from the machines, and/or during particular cycles, whilst in use.

The measured levels are taken 1m and 3m from each machine, as much as the position of the vehicle would allow.

The range of noise levels (L_{Aeq}) for the machines were as follows:

- Air Machine 60.4dB(A) to 65.4dB(A)
- Vacuum Machine 61.5dB(A) to 67.5dB(A)
- Jet Wash 57.2dB(A) to 70.4dB(A)

It is considered that these levels, under normal operating conditions, are typical for types of machines looked at in this report, when used individually.

INTRODUCTION

- 1.1 In order to provide an assessment of the noise from the forecourt machines, Air-serv commissioned Environmental Essentials (UK) Ltd to undertake noise measurements at their premises in Wigan where the machines are sited.
- 1.2 The objectives of the survey were to establish the noise levels of an air machine (tyre inflator), vacuum machine and jet wash at measured distances from the machines, and/or during particular cycles, whilst in use.

The distances measured from the machines were 1m and 3m.

- 1.3 The survey was undertaken by Helen Woollaston of Environmental Essentials (UK) Ltd on the 8 April 2015 and reflects the conditions prevailing at the time.

LEGISLATION AND GUIDANCE

- 2.1 The legislation and guidance illustrated below, are those which should be taken into consideration when installing new forecourt machines.

National Planning Policy Framework

- 2.2 The Planning Policy Guidance Note PPG24 '*Planning and Noise*' published in 1994 outlined the considerations to be taken into account by local authorities in determining planning applications both for noise sensitive developments and for those activities which will generate noise.

The Guidance acknowledged that noise can have a significant effect on the environment and on the quality of life enjoyed by individuals and communities. However, it advises that while the planning system should be used to minimise the adverse impact of noise, planning authorities should not place unreasonable restrictions on development, or add unduly to the costs and administrative burdens of business.

This Planning Policy Guidance Note has been replaced by the National Planning Policy Framework, published in 2012.

- 2.3 The National Planning Policy Framework (*NPPF*) sets out the Government's planning policies for England and how they are expected to be applied. It provides a framework within which local people and their accountable councils can produce their own distinctive local and neighbourhood plans, which reflect the needs and priorities of their communities.

- 2.4 Throughout the NPPF is the presumption in favour of sustainable development. The presumption is subject to two exceptions. First it will not apply where any adverse impacts of allowing development would "*significantly and demonstrably*" outweigh the benefits when assessed against the policies in the NPPF as a whole. Secondly, the presumption will not apply where specific policies in the NPPF – such as those relating to green belt or national parks – indicate that development should be restricted.

- 2.5 With regards to noise, the NPPF notes that:

"The planning system should contribute to and enhance the natural and local environment by...

- *preventing both new and existing development from contributing to or being out at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability"*

"Planning policies and decisions should aim to:

- *avoid noise from giving rise to significant adverse impacts on health and quality of life as a result of new development;*
- *mitigate and reduce to a minimum other adverse impacts on health and quality of life arising from noise from new development, including through the use of conditions;*
- *recognise that development will often create some noise and existing businesses wanting to develop in continuance of their business should not have unreasonable restrictions put on them because of changes in nearby land uses since they were established; and*
- *identify and protect areas tranquillity which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason."*

BS 4142:2014

- 2.6 British Standard 4142:2014 *Methods for rating and assessing industrial and commercial sound* describes methods for rating and assessing sound of an industrial and/or commercial nature, which includes:
- a) sound from industrial and manufacturing processes;
 - b) sound from fixed installations which comprise mechanical and electrical plant and equipment;
 - c) sound from the loading and unloading of goods and materials at industrial and/or commercial premises; and
 - d) sound from mobile plant and vehicles that is an intrinsic part of the overall sound emanating from premises or processes, such as that from forklift trucks, or that from train or ship movements on or around an industrial and/or commercial site.
- 2.7 BS4142 defines the following terms for describing existing and future noise levels:
- **Ambient Sound Level, $L_a = L_{Aeq,T}$**
Equivalent continuous A-weighted sound pressure level of the totally encompassing sound in a given situation at a given time, usually composed of sound from many sources near and far, at the assessment location over a given time interval, T
 - **Specific Sound Level, $L_s = L_{Aeq,T_r}$**
Equivalent continuous A-weighted sound pressure level produced by the specific sound source at the assessment location over a given time interval, T_r
 - **Residual Sound Level, $L_r = L_{Aeq,T}$**
Equivalent continuous A-weighted sound pressure level of the residual sound at the assessment location over a given time interval, T
 - **Background Noise Level, $L_{A90,T}$**
A-weighted sound pressure level that is exceeded by the residual sound at the assessment location for 90% of a given time interval, T , measured using time weighting F and quoted to the nearest whole number of decibels
- 2.8 The standard states that, when possible, the background sound level should be measured at the assessment location. It should be ensured that the measurement time interval is of sufficient duration to obtain a representative value of the background sound level.
- 2.9 BS4142 notes that where it is not possible to determine the specific sound level directly by measurement, it may be appropriate to determine the specific sound level by a combination of measurement and calculation.
- 2.10 Certain acoustic features can increase the significance of impact over the basic comparison between the specific sound level and the background sound level.

2.11 Subjectively and where appropriate, such as for instances where a new, proposed sound cannot be measured, the specific sound level should be corrected if a tonal or impulsive characteristic is expected to be present.

- **Tonality**
Just perceptible, apply a penalty of 2dB
Clearly perceptible, apply a penalty of 4dB
Highly perceptible, apply a penalty of 6dB
- **Impulsivity**
Just perceptible, apply a penalty of 3dB
Clearly perceptible, apply a penalty of 6dB
Highly perceptible, apply a penalty of 9dB

For other sound characteristics which are not tonal or impulsive but readily distinguishable, a penalty of 3dB can be applied.

Where a specific sound is intermittent and readily distinctive, a penalty of 3dB can be applied.

2.12 If the subjective method is not sufficient for assessing the audibility or prominence of tones or impulsive sounds, identification can be made using the one-third octave method and a correction of 6dB added if present.

2.13 When making an assessment the impact of a specific sound, an initial estimation is made by subtracting the measured background sound level from the rating level. Typically, the greater the difference, the greater the magnitude of impact:

- A difference of around +10dB or more is likely to be an indication of a significant adverse impact
- A difference of around +5dB is likely to be an indication of an adverse impact
- The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact
- Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact

Environmental Protection Act 1990

- 2.14 Chapter 43 of the Environmental Protection Act 1990 (EPA) makes provision for the improved control of pollution, including noise, arising from any industrial, commercial or activities of any other nature whatsoever.
Specifically, the EPA re-enacts the provisions of the Control of Pollution Act 1974; it restates the law defining statutory nuisances and improves the summary procedures for dealing with them.
- 2.15 Section 80 of the EPA empowers local authorities to deal with statutory nuisances when they occur. The level at which a noise is deemed to be a statutory noise nuisance is not defined in the EPA, this is left to the judgement of individual local authorities. The EPA also grants the right to private citizens to bring a court case against the owner/operator of a noise source.
- 2.16 With regards to the term 'nuisance' there is no specific definition in the Act, so the tests as at common law apply. A definition often used in Court is *"A nuisance is a material interference with a person's use or enjoyment of their land or property"*.
- 2.17 Case law supports the view that factors such as nature of noise, time of day or night it occurs, day of the week on which it occurs, how long it occurs for, how often it occurs and the character of the area in which it occurs should be taken into account when deciding whether the interference is material, as well as whether those affected are overly sensitive or whether they represent the "Man on the Clapham Omnibus".
- 2.18 In court proceedings for an offence, it is a defence to prove that 'best practicable means' were used to prevent or counteract the effects of noise. Under 79(9), 'best practicable means' is to be interpreted by reference to the following provisions:
- "practicable" means reasonably practicable having regard among other things to local conditions and circumstances, to the current state of technical knowledge and to the financial implications;
 - the means to be employed include the design, installation, maintenance and manner and periods of operation of plant and machinery, and the design, construction and maintenance of buildings and structures;
 - the test is to apply only so far as compatible with any duty imposed by law;
 - the test is to apply only so far as compatible with safety and safe working conditions, and with the exigencies of any emergency or unforeseeable circumstances.

World Health Organisation Document “Guidelines for Community Noise”

- 2.19 The World Health Organisation (WHO) published the document “Guidelines for Community Noise” in 2000. This states that general outdoor noise levels of below 50dB L_{Aeq} during the day are desirable to prevent ‘moderate’ community annoyance. The guidance and also recommends the L_{Aeq} should not exceed 30dB indoors if negative effects on sleep are to be avoided.

World Health Organisation Document “Night Noise Guidelines for Europe”

- 2.20 The World Health Organisation (WHO) published their “Night Noise Guidelines for Europe” in 2009. These guidelines are applicable to the Member States of the European Region, and may be considered as an extension to, as well as an update of, the previous WHO *Guidelines for Community Noise* (1999).
- 2.21 It states an $L_{night,outside}$ of 40dB should be the target of the night noise guidelines (NNG) to protect the public, including the most vulnerable groups such as children, the chronically ill and the elderly. Where 40dB is not feasible in the short run for various reasons, an interim target of 55dB $L_{night,outside}$.
- 2.22 The guidelines also state that the correction for inside levels to outside levels should be 21dB, as this takes into account that even in well insulated houses, windows may be open for a large part of the year.

EQUIPMENT AND STRATEGY

- 3.1 Measurements were made using the following equipment:
- CEL 633C Sound Level Meter (serial number 4637997)
 - CEL 495 Preamplifier (serial number 002165)
 - CEL 251 Microphone (serial number 2473)
 - CEL 120/1 Acoustic Calibrator (serial number 5230578)
- 3.2 All equipment was calibrated immediately prior to use and upon completion of the survey. No variation in calibration signal was observed.
- 3.3 Casella CEL calibrated the above equipment in March 2014. Copies of the calibration certificates are presented in Appendix C.
- 3.4 The weather conditions during the survey were fine, dry, approximately 25% cloud cover, wind speeds below 5m/s and air temperature of 16°C.
- 3.5 Three forecourt machines were measured those being an air machine (tyre inflator), vacuum machine and jet wash during particular cycles where applicable, whilst in use.
- 3.6 They were all measured at distances of 1m and 3m.
- 3.7 For each scenario, the measurements were carried out over a time period of one minute.

SITE OBSERVATIONS AND COMMENTS

- 4.1 AIR-serv manufacture and supply forecourt equipment, including air machines, jet washes and vacuum machines.
- 4.2 The facility is situated on South Lancashire Industrial Estate, surrounded by other industrial units, although the immediate area is not excessively noisy.
- 4.3 The three forecourt machines were located at the Air-serv premises, adjacent to the car parking area at the front of the main building.
- 4.4 All three machines were operated by Environmental Essentials UK Ltd and used on a Peugeot 208.

DISCUSSION OF RESULTS

- 5.1 From information supplied by representatives of the Client, Environmental Essentials (UK) Ltd considers the measured levels on the day of the assessment to be representative of normal operational conditions.
- 5.2 The noise survey recorded the following levels, as shown in Tables 1 and 3:

Table 1
Air Machine (tyre inflator), dB

	L_{Aeq}	L_{Amax}	L_{Amin}
At 1m			
Compressor	63.3	74.6	49.4
Compressor and Inflation/Check	65.4	76.9	56.1
At 3m			
Compressor	60.4	76.1	47.2
Compressor and Inflation/Check	61.9	72.9	58.6

Table 2
Vacuum Machine, dB

	L_{Aeq}	L_{Amax}	L_{Amin}
At 1m			
Machine running	66.5	70.7	65.3
Vacuuming car interior	66.1	69.5	62
At 3m			
Machine running	67.5	71.3	64.2
Vacuuming car interior	61.5	66.1	58.5

Table 3
Jet Wash, dB

	L_{Aeq}	L_{Amax}	L_{Amin}
At 1m			
Hot High Pressure Shampoo	67.8	75.4	59.4
Cold High Pressure Shampoo	70.4	79.9	61.6
Hot High Foam Brush	58.2	65.6	56.5
Wax Gloss	59.7	66.7	54.4
High Pressure Rinse	69.6	78.6	54.3
At 3m			
Hot High Pressure Shampoo	65.9	73	50.7
Cold High Pressure Shampoo	65.3	71.4	56.1
Hot High Foam Brush	57.2	69.4	54.9
Wax Gloss	64.8	78.1	53.7
High Pressure Rinse	70.4	77.1	64.6

- 5.3 A previous report produced in 2008 showed similar results for the three machines, although it is noted that one of the machines was measured off site at a forecourt in Leyland.
- 5.4 Of the three machines, the highest noise source was from the High Pressure Rinse cycle of the Jet Wash.
- 5.5 With regards to all machines, the customer would insert a coin in order to give a certain length of time for tyre inflation, vacuuming or jet washing. In particular with the Jet Wash, the customer can choose which cycle(s) they want and therefore the overall noise levels will vary.

Other influences on the noise levels from the Jet Wash may be from the type of vehicle being washed and whether it has any accessories such as roof rails, bicycle racks, tow bars, etc.

CONCLUSIONS

- 6.1 The measured levels are taken 1m and 3m from each machine, as much as the position of the vehicle would allow.
- 6.2 The range of noise levels (L_{Aeq}) for the machines were as follows:
- Air Machine 60.4dB(A) to 65.4dB(A)
 - Vacuum Machine 61.5dB(A) to 67.5dB(A)
 - Jet Wash 57.2dB(A) to 70.4dB(A)
- 6.3 It is considered that these levels, under normal operating conditions, are typical for types of machines looked at in this report, when used individually.

REFERENCES

1. National Planning Policy Framework, 2012
2. British Standard 4142:2014 *Methods for rating and assessing industrial and commercial sound*
3. Environmental Protection Act 1990
4. World Health Organisation *Guidelines for Community Noise* 2000
5. World Health Organisation *Night Noise Guidelines for Europe* 2009

APPENDIX A

OCTAVE BAND ANALYSIS

Operation/Location	L _{Aeq} (dB)	L _{Amax} (dB)	L _{Amin} (dB)	Frequency, L _{Aeq} (dB)							
				63Hz	125Hz	250Hz	500Hz	1KHz	2KHz	4KHz	8KHz
Air Machine (Tyre Inflator) at 1m											
Compressor	63.3	74.6	49.4	52.6	58.3	54.2	57.2	57.5	50.6	48.4	45.8
Compressor and Inflation/Check	65.4	76.9	56.1	53.2	59.4	55.7	59.2	58.8	53.3	55.6	53.6
Air Machine (Tyre Inflator) at 3m											
Compressor	60.4	76.1	47.2	48.9	53.8	50.5	57.5	52.2	45.2	42.7	40.8
Compressor and Inflation/Check	61.9	72.9	58.6	48.5	54.6	51.6	58.1	54	50.1	50.8	48.7

Operation/Location	L _{Aeq} (dB)	L _{Amax} (dB)	L _{Amin} (dB)	Frequency, L _{Aeq} (dB)							
				63Hz	125Hz	250Hz	500Hz	1KHz	2KHz	4KHz	8KHz
Vacuum Machine at 1m											
Machine running	66.5	70.7	65.3	40.6	56.6	60.3	61.1	57.1	56.1	56.8	52.9
Vacuuming car interior	66.1	69.5	62	38.7	53	58.9	62.9	56	53.1	55.6	52.1
Vacuum Machine at 3m											
Machine running	67.5	71.3	64.2	37.8	52.4	63.7	62.7	52.4	51.5	52.8	49.4
Vacuuming car interior	61.5	66.1	58.5	37.9	49.3	52	58.9	51.9	49.5	51.8	47.8

Operation/Location	L _{Aeq} (dB)	L _{Amax} (dB)	L _{Amin} (dB)	Frequency, L _{Aeq} (dB)							
				63Hz	125Hz	250Hz	500Hz	1KHz	2KHz	4KHz	8KHz
Jet Wash at 1m											
Hot High Pressure Shampoo	67.8	75.4	59.4	42.2	55.1	58.2	60.9	60.8	59.8	60.3	57.8
Cold High Pressure Shampoo	70.4	79.9	61.6	42.4	56.5	59.2	63.6	63.7	62.5	63.1	61
Hot High Foam Brush	58.2	65.6	56.5	50.3	47.6	50.7	55	50.7	45.7	39.4	38.6
Wax Gloss	59.7	66.7	54.4	36.8	46.7	52.4	50.4	49.8	52.2	53.6	51.1
High Pressure Rinse	69.6	78.6	54.3	43.8	55.5	58.3	61.5	61.9	61.7	63.3	61.8
Jet Wash at 3m											
Hot High Pressure Shampoo	65.9	73	50.7	43	53.7	57.1	59.1	57.6	57.9	58.7	56.5
Cold High Pressure Shampoo	65.3	71.4	56.1	46.6	54.4	57.4	58.9	58.2	56.3	57	55.3
Hot High Foam Brush	57.2	69.4	54.9	47.9	47.4	52.3	52.6	50.4	44.1	36.9	34.8
Wax Gloss	64.8	78.1	53.7	43.5	46.2	55.1	60.3	58.3	56.3	55.8	52.3
High Pressure Rinse	70.4	77.1	64.6	41.9	55.7	58.9	62.9	64	62.9	63.1	61.4

APPENDIX B

CALIBRATION CERTIFICATES

CASELLA

Certificate of Conformity and Calibration

Instrument Model:- CEL-693C
Serial Number: 4337997
Firmware revision: V129-28
Microphone Type:- CEL-251
Serial Number: 2470
Preamplifier Type:- CEL-495
Serial Number: 032185
Instrument Class/Type:- 1

Applicable standards:-

IEC 61672-1:2002 (EN 60661) (Electroacoustics - Sound Level Meters)
 IEC 80651-1:2013 (Sound Level Meters, ANSI S1.4-1983 Specifications for Sound Level Meters)
 Note: The test sequences performed in this report are in accordance with the current Sound Level Meter Standard - IEC 61672-1:2002. The calibration of tests performed are consistent to confirm the electroacoustic performance to an equivalent standard (currently superseded Sound Level Meter Standards - IEC 60661 and IEC 80651).

Test Conditions:- 20 °C
 31 % RH
 1028 mBar
Test Engineer:- Mike Hill
Date of Issue:- March 12, 2014

Declaration of conformity:-

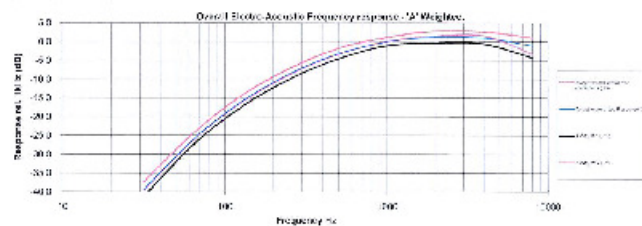
This test certificate confirms that the instrument specified above has been successfully tested to comply with the manufacturer's published specifications. Tests are performed using equipment traceable to national standards in accordance with Casella's ISO 9001:2008 quality procedures. This product is certified as being conformant to the requirements of the CE Directive.

Test Summary:-

Self-Generated Noise Test	All Tests Pass
Electron Signal Test Of Frequency Weighting	All Tests Pass
Frequency & Time Weighting At 1 kHz	All Tests Pass
Level Linearity On Test Reference Level Range	All Tests Pass
Toneburst Response Test	All Tests Pass
C Peak Sound Levels	All Tests Pass
Overload Indication	All Tests Pass
Autoshutdown	All Tests Pass

Combined Electro-Acoustic Frequency Response - A Weighted

Combined Electro-Acoustic Frequency Response - A Weighted (IEC 61672-1:2002)
 The following A-Weighted frequency response graph shows the instrument's overall frequency response based upon the application of multi-frequency pressure calibration. The responses Pass/Fail to the IEC correction coefficients are applied to pressure response. Reference level shown at 10.0.



Casella CFI
 Piquette, Kentucky Road
 (Company, Bedford)
 MK42 7JY
 Phone: +44(0) 1246 44130
 Fax: +44(0) 1246 441340
 Email: info@casella.com
 Web: www.casella.com

Casella CEL, Inc. a subsidiary of IEC-AL Industries, Inc.
 415 Lomax Blvd. 2nd Fl.
 Suite 200
 Dallas, TX 75201
 Tel: (972) 556-7966
 Fax: (972) 556-7967
 Email: info@casella.com
 Web: www.casella.com

CASELLA

CEL

Certificate of Conformity and Calibration

Customer: Environmental Essentials

Instrument: CEL-120/1

Serial Number: 5230578

Job Number: 11618

Date of issue: 12-Mar-2014

Engineer: M Hill

Traceable Equipment: Reference Calibrator EQ11084
DMM type Fluke 45 EQC0391

Test Conditions

Ambient Temperature 21.0 °C
Ambient Humidity 35.0 %RH
Ambient Pressure 1032 mBar

Results

	Level 1	Level 2	Frequency
Initial Reading	114.0 dB	93.9 dB	1.0000 kHz
Final Reading	114.0 dB	93.9 dB	1.0000 kHz

Uncertainty:

Level = 0.15 dB
Frequency = 0.5 Hz

This test certificate confirms that the instrument specified above has been successfully tested to comply with the manufacturer's published specifications.

Tests are performed using equipment traceable to national standards in accordance with Case's ISO 9000:2008 quality procedures.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95%.

This certificate may not be reproduced other than in full, except with prior written approval of the issuing laboratory.

Caseella CEL, Regent House, Wolseley Road, Kempston, Beds, MK42 7JY. Tel +44 (0) 1234 844100 Fax +44 (0) 1234 841490 E Mail info@casellameasurement.com Web www.casellameasurement.com	
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APPENDIX C

CERTIFICATES OF COMPETENCY

THE UNIVERSITY OF DERBY



THIS IS TO CERTIFY THAT
BY ORDER OF THE ACADEMIC BOARD

HELEN WOOLLASTON

has been awarded the Degree of
Master of Science

in Environmental Management

having satisfied the examiners for
an approved scheme of study and practice.

October 2004

Deputy Vice-Chancellor, Services

Vice-Chancellor

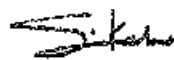
Diploma in Acoustics and Noise Control

This is to certify that

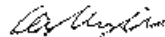
Helen Woollaston

*has satisfied the Examining Board in
the General Principles of Acoustics Module,
Laboratory, Project and Specialist Modules in*

*Noise Control Engineering
Transportation Noise*



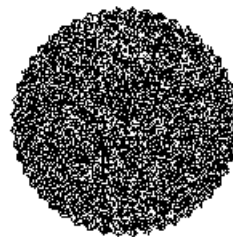
Chairman of the Examining Board



Institute Secretary

Date: 1992

*Reference Number: JEU180
Centre: University of Derby*



IPA (Institute of Professional Acousticians) is a not-for-profit organisation.
For more information, contact: 01323 566400 or info@ipa-uk.co.uk
Institute of Acoustics, 100, London Road, Derby, Derbyshire, DE1 1BB

Certificate of Membership

This is to certify that

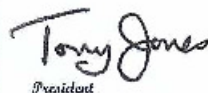
Helen Woollaston

has been elected as a

Member

*of the
Institute of Acoustics*

*Given under the seal of the Institute
in accordance with the
Articles of Association and By-Laws*


Tony Jones
President


Institute Secretary

Date 5th October 1992

Membership Number 31111



This certificate remains the property of the Institute and shall be returned to the Institute on demand.

Membership of this Institute is subject to annual renewal.

The Institute of Acoustics Limited, 77A St Peter's Street, St Albans Herts AL1 2JN
Tel: +44 (0)1727 848165 Fax: +44 (0)1727 853555 Email: info@ioa.org.uk www.ioa.org.uk
Instituted by Statute and Registered in England, No. 0157279 Registered Charity No. 262324

APPENDIX D

TERMS AND CONDITIONS

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The Company's pricing structure is based on the distribution of risk set out in these Terms and Conditions. Any request to vary these Terms will only be considered as part of a discussion of any consequent changes in the balancing of risks to be accepted by the parties, and any price increase considered appropriate. In allowing the Company to begin the Work, the Client agrees to the application of these Terms to the exclusion of any other terms that may have been proposed by the Client.

1.0 DEFINITIONS

- 1.1 "Company" means ENVIRONMENTAL ESSENTIALS UK Ltd
- 1.2 "Client" means the business entity to whom the proposal detailing the Work was submitted (unless otherwise agreed in writing by the Company);
- 1.3 "Limit of Liability" has the meaning given to it in clause 10.3;
- 1.4 "Report" means any findings, forecasts, statements of opinion, recommendations or report relating to or arising out of the Work;
- 1.5 "Price" means the fee rates, costs, expenses, lump sum price and any uplift or interest payable under these Terms;
- 1.6 "Work" means the services to be provided in accordance with the scope of work set out in the detailed written proposal submitted by the Company to the Client as may be modified under clause 2.3, including any Report.
- 1.7 "Authorised Employee" means any employee of the Company holding the office of Director of the Company.

2.0 COMPANY'S DUTIES

- 2.1 The Company will, subject to these Terms, carry out the Work for the Client with all the reasonable skill, care and diligence to be expected from a professional person or firm in the performance of similar services under these Terms and in the same circumstances, in accordance with relevant standards current at the time. No other warranty or representation, express or implied is included or intended in these Terms, the Report or the Company's written proposal to apply to the Work and it shall not do so.
- 2.2 The Company will promptly notify the Client if any aspect of the Work is found or expected to be significantly different from that addressed in the proposal if this is likely to have an effect on the Price or schedule of the Work.
- 2.3 The Company will perform the Work generally in accordance with the proposal, but reserves the right to vary the Work if it appears to the Company reasonably necessary to do so as a result of site conditions, new information, or of safety or environmental factors, on the basis that the Client agrees to bear the costs of additional work reasonably undertaken at the Company's standard rates or such rates as otherwise agreed in writing.
- 2.4 The Company will take all reasonable precautions to avoid damage to the Client's property. The Company shall not, however, be liable for any damage to services and structures that are not called to the Company's attention or are not located as shown on any plans which are provided to the Company.

3.0 CLIENT'S OBLIGATIONS

- 3.1 The Client acknowledges that in preparing the written proposal and in carrying out the Work, the Company has relied and continues to rely on the Client to make full disclosure of all known, assumed or suspected structures, tanks, utilities, pipelines, discharges, spillages, leachate and hazardous substances at, under or near the project site, together with all plans, surveys, reports, hydro graphic data, previous geotechnical or environmental investigations and any other relevant data. The Client shall promptly provide the Company with any new relevant information that becomes available.
- 3.2 The Client will co-operate with the Company in all reasonable ways and will make freely available or place at the Company's disposal all facilities and personnel reasonably required by the Company to carry out the Project including (without limitation) access, permits, power etc.
- 3.3 If the Client suspects at any time that the Work is or may be defective in any way whatsoever, the Client shall immediately draw the same to the attention of the Company and allow the Company the opportunity to correct the same. However, the Client acknowledges that the Work will not necessarily reveal all adverse conditions that could be identified either through a different formulation of the Work or through more detailed work being carried out.
- 3.4 When, following receipt of the Company's written proposal, the Client allows the Company to progress the work, the Company shall be entitled to assume the Client's acceptance of the written proposal and these Terms and Conditions.
- 3.5 When the Client allows the work to proceed in circumstances where the amount of the Company's fees have not been agreed, our standard hourly rates applicable at the time and disbursements shall apply (subject to any express written agreement to the contrary by an Authorised Employee).
- 3.6 The client cannot rely upon oral advice provided by any employee of the Company unless this advice has been confirmed in writing by ENVIRONMENTAL ESSENTIALS UK Ltd within 7 days.
- 3.7 The Company have assessed the substances hazardous to health which they use and the safety of the procedures used with these substances during the course of the work carried out on Clients' premises. The likely effects on health and safety of the Company's staff and Clients have been found to be trivial provided the substances are only used for the purposes intended and company procedures are followed.

- 3.8 The Client shall ensure that the Company and any Company employee working in the Client's undertaking are provided, in writing, with the following:
- i Comprehensive information on any risks to the health or safety of The Company employees that may arise out of, and in connection with, the conduct of the Client's undertaking.
 - ii Appropriate instructions and comprehensible information regarding those risks and the protective and preventative measures taken by the Client in order to meet his statutory obligations.
 - iii Sufficient information to enable the Company and its employees to identify, prior to the commencement of any contract, the person nominated for implementing emergency evacuation procedures and the procedures that should be followed in the event of any emergency occurring.

4.0 CONFIDENTIALITY

- 4.1 Each party will treat any information of a confidential nature relating to the other party which it comes across as a result of this agreement, and any information about the Work, as confidential.
- 4.2 Any Report will be addressed and delivered to the Client only. The parties will keep confidential the Report and neither will make it available or disclose its substance or contents to any third party.
- 4.3 Notwithstanding the foregoing, the Company reserves the right to use an outline description and generic image of the Work in its promotional literature.
- 4.4 This Clause shall not prevent the publication or disclosure of any such information once it has come within the public domain through no fault of the party which would otherwise owe the duty of confidentiality, information that has been lawfully acquired on a non-confidential basis, nor information published or disclosed under a duty or obligation owed to or imposed by any court, regulatory or governmental authority or body.

5.0 SAMPLE AND HAZARDOUS SUBSTANCES

- 5.1 Any hazardous substance or waste (including samples and contaminated equipment) arising from the Work shall be held by the Company as agent for the Client, whose property such materials shall remain. The Company will make all reasonable efforts to assist the Client with the safe handling and disposal of such materials; however the Client will be responsible for this disposal and for all associated costs.
- 5.2 The Client acknowledges and assumes the risk that commonly used exploration, investigative or remedial methods involve an inherent risk of contamination of previously uncontaminated soils and waters, including the potential migration of contaminants present on or beneath the surface of the project site or in the vicinity, and that any seal may be imperfect despite all reasonable or usual precautions.

6.0 DOCUMENTS AND REPORTS

- 6.1 All documentations made available by the Client under these Terms shall remain the property of the Client and shall be returned to the Client after use or on completion of the Work. The Company shall have the right to retain a copy of any document for its files. All other documents and records (including copies) generated by the Company and its sub-contractors etc. shall be the property of the Company.
- 6.2 Reports will remain the property of the Company until the Price is paid in full. Reports shall be used only by the Client for the purpose set out in the Company's written proposal and shall not be relied on or used for any other purpose whatsoever, or by any other party.
- 6.3 Copyright in the Company's written proposal and the Report and any intellectual property rights arising from the Work shall at all times belong to the Company, unless there is a specific written agreement otherwise, signed by an Authorised Employee.
- 6.4 The work provided by the Company is for the benefit of the Client only and shall not be relied upon by any third party without the written agreement of an Authorised Employee.

7.0 THE PRICE

- 7.1 Work will be carried out and charged on a time basis unless a fixed price or other basis is agreed in writing by an Authorised Employee. Any time charge contained or referred to in the Company's written proposal is for guidance only and relates to the fee rates and price schedule as at that date only. Invoices will be issued using the fee rates and price schedule in force at the time Work is carried out unless otherwise agreed in writing by an Authorised Employee. Any time charge or fixed price specified in the Company's written proposal will remain valid for a period of 30 days from the date of the proposal unless a different date is agreed in writing by an Authorised Employee.
- 7.2 Unless otherwise stated in the Company's written proposal, a charge will be made on all disbursements made by the Company associated with the Work in order to cover administrative costs. The disbursements include, but are not limited to: subcontractors, freight and packing charges, customs documentation, out-of-pocket expenses plus costs of travel, accommodation and meals away from the normal place of business of the Company's personnel incurred in carrying out the Work.

7.3 Where utilised, a charge will be made for the use of the Company's in-house computer services in accordance with a schedule of charges in force at the time the Work is carried out, unless otherwise agreed in writing by an Authorised Employee.

7.4 An amount equivalent to 2.5% of the price payable under clause 7.1 will be charged to cover the cost of communications and photocopying unless otherwise agreed in writing with the Client.

8.0 TERMS OF PAYMENT

8.1 Invoices will be rendered monthly in arrears unless otherwise set out in the Company's written proposal and shall be paid (without deduction or set-off) by the Client within 30 days of the date of submission of the invoice by the Company. Any sums remaining unpaid at the expiry of any such 30 days will bear interest to accrue from day to day, at the rate of 2% (two per cent) above the base rate of Yorkshire Bank Plc. from time to time in force, cumulatively on the balance outstanding, before as well as after judgement.

Without prejudice to clause 14, the Company reserves the right to suspend its services hereunder if any invoice is not paid within 60 days of the date of submission by the Company and claim damages on the basis of such suspension.

8.2 Where any expense to be reimbursed by the Client is paid by the Company in a currency other than sterling, it shall be reimbursed in sterling calculated at the official purchase rate of exchange prevailing at the date when the expense was incurred, together with any additional charge payable under clause 7.2.

8.3 Unless agreed in writing to the contrary payment for Work carried out in each calendar month shall become due at the end of that month. An interim invoice on account may be submitted for payment. The Client accepts the Terms in 8.1.

8.4 The cost of services and expenses incurred will bear any applicable value added tax charge or the like at the rate current at the date of invoice. Non-UK Clients shall remit all payments free of any taxes, levies or claims or duties arising outside the UK, and shall pay in full any of the like which may be due according to the laws of its country or state.

9.0 COMPANY PERSONNEL

It is a condition of this agreement that the Client will not approach or contact with the intention of employing or retaining any employee of the Company engaged on or connected with the Work without the prior agreement of the Company. This restriction is to apply at all times during the Work and for a period of one year immediately following the completion of the Work.

10.0 LIABILITY OF THE COMPANY

10.1 Save for the obligations set out in these Terms, all other warranties, obligations and representations are hereby excluded to the fullest extent permitted by law, and all relations between the parties and all matters, issues or claims in relation to the Work shall be governed by these Terms to the exclusion of any other liability whatsoever or howsoever arising under the law or tort or its equivalent in any other country. Notwithstanding the foregoing, nothing in these Terms shall restrict the Company's liability for death or personal injury caused by negligence.

10.2 The Company's liability shall be limited to the extent of any injury or loss that is directly attributable to the failure of the Company, its employees, its subcontractors, and/or agents to comply with the obligations on the part of the Company under these Terms. In no circumstances whatsoever shall the Company be liable to the Client for economic or indirect or consequential loss.

10.3 The Client acknowledges and accepts that the Price does not contain a premium sufficient to cover the Company's risk of unlimited liability in respect of the Work and that a limitation on the Company's liability is therefore reasonable, bearing in mind the relevant circumstances, including the cost and availability or otherwise of insurance cover. Without prejudice to the remainder of this clause, the Company shall be liable to the Client for such direct losses of the Client as are attributable directly to the Company's defective work, limited to an aggregate amount equivalent to ten times the Price up to an absolute maximum of £2,000,000 (the Limit of Liability) and with a minimum limit per claim of the lower of £5,000 or one quarter of the Price. The Company shall have no further liability to the Client, its servants or agents in connection with the Work.

11.0 INSURANCE

11.1 The Company has professional indemnity insurance cover, and shall, if the Client requests, provide evidence that such insurance cover is available up to the Limit of Liability.

12.0 DELEGATION AND ASSIGNMENT

12.1 Neither the rights nor obligations of the Client under these Terms may be assigned.

13.0 FORCE MAJEURE

13.1 If the Company is delayed in the Work by any act or default of the Client or any other party or by any cause beyond the reasonable control of the Company, the period for completion of the Work shall be extended by a reasonable period, subject to clause 14.5, and the Company shall be paid for any additional reasonable costs incurred attributable to the delay.

- 13.2 Neither the Company nor the Client shall be liable for any failure to perform caused by circumstances or events beyond their reasonable control. Should such circumstances or events occur, it is agreed that both parties shall use all reasonable efforts to overcome difficulties arising and to resume as soon as reasonably possible the normal pursuit and schedule of the Work subject to clause 14.5.

14.0 TERMINATION OR SUSPENSION

- 14.1 If either party shall become bankrupt, go into liquidation (other than voluntary liquidation for the purposes of amalgamation or reorganisation only) have a receiver, administrative receiver or administrator appointed over any part of its business or assets, enter into a composition with its creditors or otherwise become, in the reasonable opinion of the other, insolvent (the "Bankrupt Party"), the other party shall be entitled forthwith by notice to the Bankrupt Party to suspend the Work or terminate this agreement with immediate effect.
- 14.2 If the Client fails to pay any sum due hereunder within 60 days of the date of submission of the Company's invoice, the Company may by notice to the Client suspend the Work and, at the same or a later time, terminate this agreement with immediate effect.
- 14.3 Save in circumstances to which clause 13 applies, if either party (the "Defaulting Party") breaches a material term of this agreement which remains unremedied for 30 days after service of written notice on it specifying such a breach, or if the breach is not capable of remedy or it appears that the Defaulting Party is in breach of a material provision of any statute, statutory instrument or common law, the other party may by notice in writing to the Defaulting Party suspend the Work and, at the same time or a later time, terminate this agreement with immediate effect.
- 14.4 The Client may terminate this agreement on 14 days written notice to the Company, to expire no later than 10 days before the intended commencement date.
- 14.5 If circumstances or events beyond the reasonable control of the affected party prevent the proper performance of a party's obligations under this Agreement for more than 90 days, then either party may immediately terminate this Agreement by written notice to the other.
- 14.6 If the Client terminates this agreement under clauses 14.1 or 14.3 above the Client shall pay to the Company only such sums as are payable in respect of Work done and costs incurred during the period up to the date of termination.
- 14.7 If the Company terminates this agreement under clauses 14.1, 14.2 or 14.3, either party terminates this agreement under clause 14.5, or the Client terminates this agreement under clause 14.4 the Client shall pay to the Company, in addition to the sums referred to in clause 14.6, such sums or costs as are reasonably expended or incurred by the Company in bringing the Work to an end in a prompt but orderly fashion and, where the Client terminates this agreement under clause 14.4, a cancellation fee of 10 per cent of the Price, such sums in aggregate not to exceed the Price (where fixed).
- 14.8 If the Work is suspended under clauses 14.1, 14.2, 4.3 or 14.5 or the circumstances referred to in clause 13.2 apply, and the Company is required to perform any additional work or incur additional costs in connection with the suspension or resumption of the Work, the Client shall pay the Company in respect of the same within 28 days of the suspension or resumption.
- 14.9 Termination shall not affect or prejudice the accrued rights, claims or defences of either party.

15.0 STATUS OF THESE TERMS

- 15.1 These Terms, together with, or as varied by, the Company's written proposal or the express written agreement referred to in clause 15.2, prevail over all other terms or representations and supersede all prior discussion. Negotiations, arrangements, understandings or agreements between the parties (whether oral or otherwise), and shall constitute the entire agreement between the parties.
- 15.2 These Terms may be varied or excluded (in whole or in part) by the Company's written proposal or by subsequent express agreement in writing signed on behalf of the Company by an Authorised Employee, but not otherwise.
- 15.3 If any provision of this agreement is or becomes invalid, illegal or unenforceable in any respect, the remaining parts of this agreement shall remain in force.
- 15.4 This agreement shall be governed by and construed in accordance with English law and each party agrees to submit to the non-exclusive jurisdiction of English courts.

16.0 DISPUTES

- 16.1 Provided both parties consider that there is a reasonable prospect of resolving any disputes or differences which arise between them out of or in connection with this agreement or the Work by negotiations between them in good faith, or by either of the procedures referred to below, before resorting to legal proceedings the parties shall attempt to settle the same.

17.0 NOTICES

- 17.1 Any notice to be given by one party to the other shall be served by sending the same by post or facsimile transmission to, or by leaving the same at, the address for each party shown in the Company's written proposal or notified in writing as the address for service. Any notice sent by facsimile transmission shall be presumed to have been served at the time of transmission, providing that the transmission report shows it was sent to the correct number. A notice sent by post shall be deemed to have been served 4 days after posting (for sendings within the United Kingdom) or within 10 days for all other sendings.

18.0 THIRD PARTIES

- 18.1 The Client acknowledges and agrees that these Terms shall not confer on any third party a right to enforce any term of the agreement between the Client and the Company. This provision confirms the intention of both parties for the purposes of Section 1(2) of the Contracts (Rights of Third Parties) Act 1999.