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NOISE ASSESSMENT

INERT TREATMENT AND TRANSFER FACILITY
WOODCOTE WOOD QUARRY LANDFILL

NRS WOODCOTE AGGREGATES LTD

JUNE 2024

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Revision	Prepared By	Date
1.0	L Jephson BEng (Hons) MIOA	18/6/24

This report has been prepared using all reasonable skill and care within the resources and brief agreed with the client.
LF Acoustics Ltd accept no responsibility for matters outside the terms of the brief or for use of this report, wholly or in part, by third parties.

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1. Introduction

LF Acoustics Ltd have been appointed to prepare a noise assessment to support a permit application for an inert treatment and transfer facility located within Woodcote Wood Quarry.

Planning permission for the operation has been granted, subject to conditions, including controls on noise levels at surrounding noise sensitive properties. An Environmental Permit is now being sought for the proposed treatment and transfer facility and landfilling of inert materials within the quarry.

This report presents an assessment of the noise levels attributable to the proposed site operations upon occupants of neighbouring noise sensitive properties.

Baseline noise monitoring has been carried out to establish the prevailing noise levels upon which an assessment has been based. Calculations have been prepared, based upon the proposed operations and assessed against the requirements of the principal standards and guidance.

This report has been prepared by L Jephson BEng(Hons) MIOA, Director of LF Acoustics Ltd. He has been an acoustic consultant for over 30 years, specialising in environmental acoustics.

2. Standards and Guidelines

A description of the noise units referred to in this report is provided in Appendix A.

2.1. National Planning Policy Framework

The National Planning Policy Framework (NPPF) revised in December 2023 [1], sets out the Government's planning policies for England and how these should be applied. It provides a framework upon which locally prepared plans for housing and other development can be produced.

The purpose of the planning system is to contribute to the achievement of sustainable development and at the heart of the Framework is a presumption in favour of sustainable development.

With regards to noise, local planning policies and decisions should contribute to and enhance the natural and local environment by:

- preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of noise pollution.
- mitigate and reduce to a minimum, potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;
- identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.

Reference is made within the NPPF to the Noise Policy Statement for England (NPSE) [2] within Footnote 65, which sets out the long-term vision of the Government noise policy. Further information has been provided on the assessment of noise within recent Planning Practice Guidance, updated in July 2019 and available on the Government planning web site (https://www.gov.uk/guidance/noise--2). Whilst this guidance does not provide any objective criteria upon which to base noise assessments, the guidance provides a description of the relevant Effects Levels identified within the NPPF and NPSE and this is reproduced in Table 2.1.

Perception	Examples of Outcomes	Increasing Effect Level	Action
Not noticeable	No Effect	No Observed Effect (NOEL)	No specific measures required
Noticeable and not intrusive	Noise can be heard, but does not cause any change in behaviour or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life.	No Observed Adverse Effect	No specific measures required
		Lowest Observed Adverse Effect Level (LOAEL)	
Noticeable and intrusive	Noise can be heard and causes small changes in behaviour and/or attitude, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a perceived change in the quality of life.	Observed Adverse Effect	Mitigate and reduce to a minimum
		Significant Observed Adverse Effect Level (SOAEL)	
Noticeable and disruptive	The noise causes a material change in behaviour and/or attitude, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant Observed Adverse Effect	Avoid
Noticeable and very disruptive	Extensive and regular changes in behaviour and/or an inability to mitigate effect of noise leading to psychological stress or physiological effects, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory	Unacceptable Adverse Effect	Prevent

Table 2.1 Significance Criteria

The NPPF advises that development should seek to ensure that noise from proposed developments does not give rise to significant impacts, i.e. a level identified as a Significant Observed Adverse Effect (SOAEL), which is at a level where the noise would cause a material change in behaviour.

2.2. British Standard BS 4142

BS 4142 [3] is the British Standard for rating and assessing noise of a commercial or industrial nature and is relevant to the noise associated with the operation of the proposed plant.

BS 4142 is a comparative standard in which the estimated noise levels from the proposed development are compared to the representative / typical background noise level from existing uses.

The initial assessment relates the likelihood of adverse impact to the difference between the Rating Level of the noise being assessed and the background noise level. This assessment can be modified to take account of the context.

The background noise level is the L_{A90} noise level, usually measured in the absence of noise from the source being assessed, but may include other existing industrial or commercial sounds. The background noise levels should generally be obtained from a series of measurements each of not less than 15-minute duration.

The Rating Level of the noise being assessed is defined as its L_{Aeq} noise level (the 'specific noise level'), with the addition of appropriate corrections should the noise exhibit a marked impulsive and/or tonal component or should the noise be irregular enough in character to attract attention. The extent of the correction is dependent upon the degree of tonality or character in the noise and is determined either by subjective professional judgement, where the plant is not operational at present, or by measurements.

Where the noise is tonal in nature, the standard imposes the following character corrections when assessing the rating level based on a subjective assessment:

- 2 dB for a tone which is just perceptible;
- 4 dB where the tone is clearly perceptible; and
- 6 dB where the tone is highly perceptible.

Methods for identifying whether noise is tonal in nature are provided within BS 4142 Section 9.2, Annex C or Annex D.

Where noise exhibits other sound characteristics, the Standard advises a character correction of 3 dB should be applied.

During the daytime, the specified noise levels are determined over a reference time interval of 1 hour, with a 15-minute reference period adopted when assessing night-time noise.

If the Rating Level of the noise being assessed exceeds the background level by 10 dB or more BS 4142 advises that there is likely to be an indication of a significant adverse impact, depending upon context. A difference between background level and Rating Level of around 5 dB is likely to be an indication of an adverse impact, depending upon context. The lower the Rating Level is, relative to the background noise level, the less likely the specific source will have an adverse or significant adverse impact. Where the Rating Level does not exceed the background noise level is an indication of a low impact, depending upon context.

The assessment method outlined above is intended for the assessment of external noise levels and is not intended to assess the extent of impact at internal locations.

Where the initial assessment of impact, based upon and assessment of the external noise levels, needs to be modified due to the context, all pertinent factors should be taken into account, including:

- The absolute level of sound;
- Where background sound levels and rating levels are low, absolute levels might be as, or more, relevant than the margin by which the rating level exceeds the background. This is especially true at night; and

- The sensitivity of the receptor and whether the premises will already incorporate measures to ensure good internal and/or external acoustic conditions.

2.3. Environment Agency Guidelines

The proposed operations will require an Environmental Permit.

The Environment Agency (EA) guidance on the requirements for noise assessments for permit applications [4] requires an assessment of the noise levels associated with the proposed permitted operations.

The guidance requires the use of BS 4142 to quantify the level of environmental noise impact from industrial processes.

Whilst the guidance requires the use of BS 4142 to assess potential impacts, the EA assessment methodology differs from that within BS 4142 and following criteria to be considered:

Unacceptable level of audible or detectable noise

This level of noise means that significant pollution is being, or is likely to be, caused at a receptor (regardless of whether you are taking appropriate measures).

You must take further action or you may have to reduce or stop operations. The environment agencies will not issue a permit if you are likely to be operating at this level.

The closest corresponding BS 4142 descriptor is 'significant adverse impact' (following consideration of the context).

Audible or detectable noise

This level of noise means that noise pollution is being (or is likely to be) caused at a receptor.

Your duty is to use appropriate measures to prevent or, where that is not practicable, minimise noise. You are not in breach if you are using appropriate measures. But you will need to rigorously demonstrate that you are using appropriate measures.

The closest corresponding BS 4142 descriptor is 'adverse impact' (following consideration of the context).

No noise, or barely audible or detectable noise

This level of noise means that no action is needed beyond basic appropriate measures or BAT.

The closest corresponding BS 4142 descriptor is 'low impact or no impact' (following consideration of context).

Low impact does not mean there is no pollution. However, if you have correctly assessed it as low impact under BS 4142, the environment agencies may decide that taking action to minimise noise is a low priority. Note that BS 4142 is unlikely to be the appropriate methodology on its own to assess low frequency noise.

In undertaking the assessment and deriving the rating level of noise, the EA guidance specifies "where the sound is neither impulsive nor tonal, but you can readily distinguish it against the usual residual acoustic environment, the environment agencies will expect you to apply a minimum character correction of +3 decibels (dB) 'other'. This is unless you can robustly justify that you do not need such a correction."

3. Description of Development

3.1. Proposed Development

The quarry and proposed recycling facility are located to the west of the A41 as indicated on Figure 1. Figure 1 also indicates the proposed permit boundary.

The inert treatment and transfer facility would be located within the south-western area of the quarry, as indicated on Figure 2.

The processing plant would be located within the recycling area, which would include a wash plant, screen and crusher. Materials would be brought into the site from the A41 by HGV. The processed materials would be used to progressively landfill the quarry over five phases, as indicated on Figure 2.

3.2. Hours of Operation

Standard daytime hours of operation are proposed for the site, as follows:

- Monday to Friday between 07:00 and 18:00hrs;
- Saturday between 07:00 and 13:00hrs; and
- No working on Sundays, Bank and Public Holidays.

4. Current Planning Conditions

Planning permission for the quarry, landfill and restoration operations has been granted by Shropshire Council. The present planning permission, ref. 20/05097/VAR, includes the following conditions, which seek to ensure that noise from the operations maintain acceptable standards of noise at surrounding noise sensitive properties.

The relevant conditions are reproduced below for reference.

Noise and dust

7a. Subject to Condition 7b noise levels measured as LAeq 1h (free field) shall not exceed the following levels at the nearby noise sensitive locations during normal quarrying operations.

Location	Noise Limit LAeq (1hr)
Woodcote Hall	47
Brandon House	49
1 Chadwell Lane	50
88 Bloomsbury	46
Pine Ridge	49

b. Notwithstanding condition 7a, noise levels shall not exceed 70dB(A) LAeq 1h (free field) at any sensitive properties during temporary operations such as soil stripping. The increase in noise levels allowable for temporary operations shall not apply for more than 8 weeks in total in any one year.

c. A noise monitoring scheme to demonstrate ongoing compliance with the noise limits specified in conditions 7a and 7b above shall be submitted to the Local Planning Authority prior to the Commencement Date and the approved measures shall thereafter be implemented in full.

Reason: To protect the amenities of occupants of nearby properties from the adverse impact of noise emissions

8a. All plant and machinery used within the Site shall incorporate silencers in accordance with the manufacturers' specification and those silencers shall be maintained in good condition.

b. All quarry plant and machinery which is required to be fitted with reversing alarms shall be fitted with attenuated or non-audible reversing alarms rather than reversing bleepers.

Reason: To assist in safeguarding the amenities of the area from noise disturbance.

9. Water shall be applied to main haul roads and other areas as necessary within the Site in order to prevent the generation of dust by vehicular/plant traffic.

Reason: To assist in safeguarding the amenities of the area from dust disturbance.

10. In the event that a complaint regarding noise or dust impact is received by the Local Planning Authority and is subsequently notified in writing by the Authority to the Developer as a verified complaint the Developer shall submit a mitigation scheme for the approval in writing of the Authority which shall provide for the taking of appropriate remedial action within an agreed timescale. The mitigation scheme shall be submitted within 10 working days from the day when the Developer is notified of the complaint and the scheme shall be implemented in accordance with the approved details.

5. Baseline Conditions

5.1. Identification of Potentially Affected Receptors

There are no properties within close proximity to the proposed operations. The closest properties are located beyond 200 metres of the proposed recycling and landfill operations, and have been identified to be those specified within Condition 7a of the planning permission:

- Woodcote Hall, located to the north;
- Brandon House, located to the north-east, adjacent to the A41;
- 1 Chadwell Lane, located to the north-east, beyond the A41;
- 88 Bloomsbury, located to the south-east, adjacent to the A41; and
- Ridge House, located to the south-west, alongside the B4379.

The locations of the properties are indicated on Figure 1.

5.2. Baseline Noise Surveys

Condition 7a of the planning permission, includes noise limits at the surrounding properties, which have been derived from minerals planning guidance, to ensure that the operation does not result in a potential for adverse impacts.

The noise limits specified within Condition 7a are understood to have been based upon the highest noise levels predicted from the operation of the quarry and presented within the noise assessment that accompanied the original planning application. The limits were therefore not derived from the prevailing background noise levels.

On this basis, it has been considered appropriate to undertake an additional noise monitoring exercise to establish the current background noise levels at positions representative of the properties which would be most likely to be affected by noise from the proposed operations.

Given that the quarry is operational, the surveys were carried out at times and positions where noise from the current operations did not influence the measured noise levels, thus ensuring the levels measured, were typical of the general background noise environment.

The measurements comprised unattended noise surveys carried out at two positions representative of Ridge House to the south-west and Woodcote Hall to the north, which are considered to be the properties most likely to be affected by noise from the proposed operations.

The surveys were carried out between Friday 31 May and Wednesday 5 June 2024. The survey principally comprised the weekend period, as the quarry does not operate on Saturday afternoons and Sundays. Whilst these days provide the most reliable baseline periods, traffic on the A41 during these periods is likely to be lower, thus resulting in lower background noise levels than during the weekday and Saturday morning periods when the site would be operational.

Weather conditions during the survey period were monitored using a Davis Vantage Vue, located along the northern boundary of the quarry. The weather conditions during the survey are provided in Appendix B and have been summarised in Table 5.1.

Date		Conditions	Wind Strength	Wind Direction
Friday	31/5/24	Dry	4 m/s	S
Saturday	1/6/24	Dry	3 – 4 m/s	SSW
Sunday	2/6/24	Dry	2 – 4 m/s	SSW
Monday	3/6/24	Dry	1 – 3 m/s	SSW
Tuesday	4/6/24	Periods of Rain	2 – 4 m/s	SSW Turning NE pm
Wednesday	5/6/24	Dry	3 – 4 m/s	SE

Table 5.1 Summary of Weather Conditions

5.2.1. Noise Monitoring at Ridge House

An unattended noise survey was carried out along the western boundary of the quarry, at a position representative of Ridge House, between Friday 31 May and Wednesday 5 June 2024.

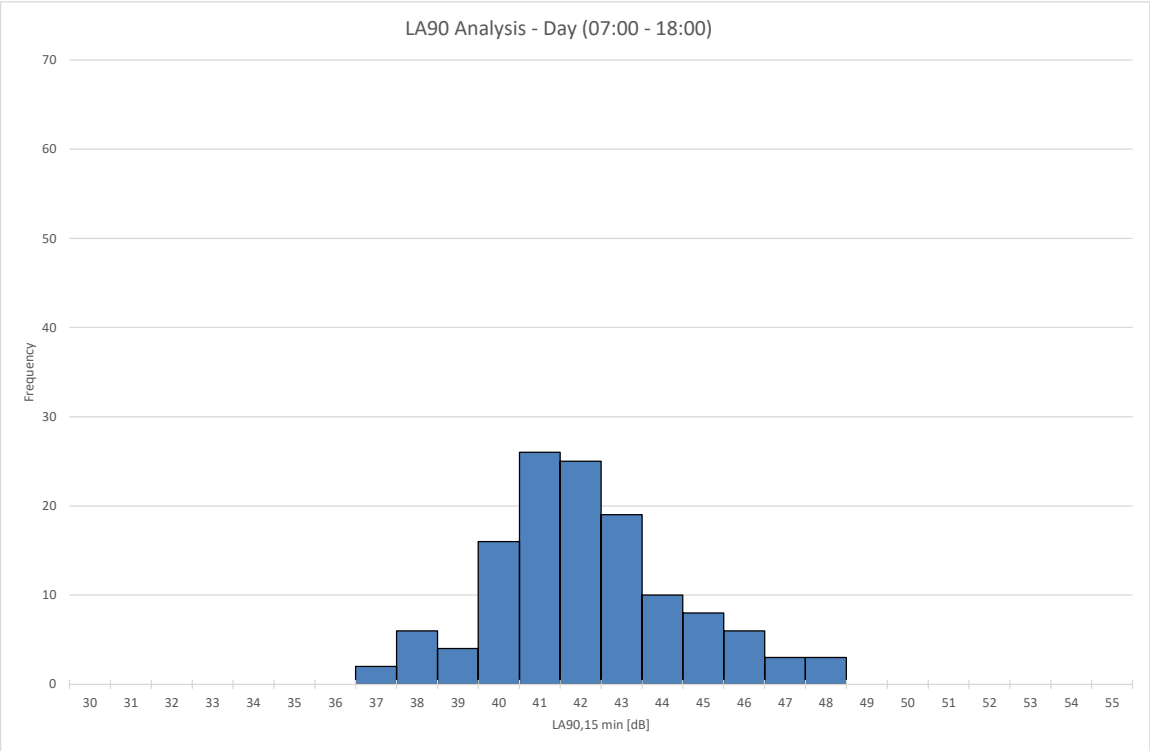
The measurements were obtained using a Cirrus CR171C Class 1 Sound Level Meter (Serial No. G0718574), which was calibrated before and after the exercise using a Cirrus CR515 Class 1 Acoustic Calibrator (Serial No. 753350). Both instruments had been calibrated within the previous 12 months in accordance with National Standards. The calibration certificates are provided in Appendix C.

The monitoring equipment was positioned within the quarry at the western boundary, as indicated on Figure 1. The position was considered to be representative of the noise environment at the property. The microphone was set in free-field conditions and at a height of 1.5 metres above the ground.

The main sources of noise observed at this monitoring position were noted to be attributable to road traffic travelling along the A41 to the east and along the B4379, and birdsong. Operations within the quarry were noted to be not audible at this location and thus the noise levels monitored throughout the survey period were considered to be typical of baseline conditions at this location.

The results of the survey for the daytime periods when the site would operate are presented in Appendix D.

A statistical analysis of the measured noise levels recorded over the operational hours has been made to determine the typical background noise levels at this location. The statistical analysis is provided below.



The analysis indicates a typical background noise level of 41 dB L_{A90} at this location, with the daytime ambient noise levels, attributable to road traffic of 51 dB $L_{Aeq,T}$.

5.2.2. Noise Monitoring at Woodcote Hall

It was not possible to access Woodcote Hall to undertake monitoring at that location. As a result, an alternative monitoring position was used, located along the northern quarry boundary, as indicated on Figure 1. The monitoring position was an equivalent distance from the A41 as the property and thus the measured noise levels at this location were considered to be representative of the noise levels at the property. The microphone was set in free-field conditions and at a height of 1.5 metres above the ground.

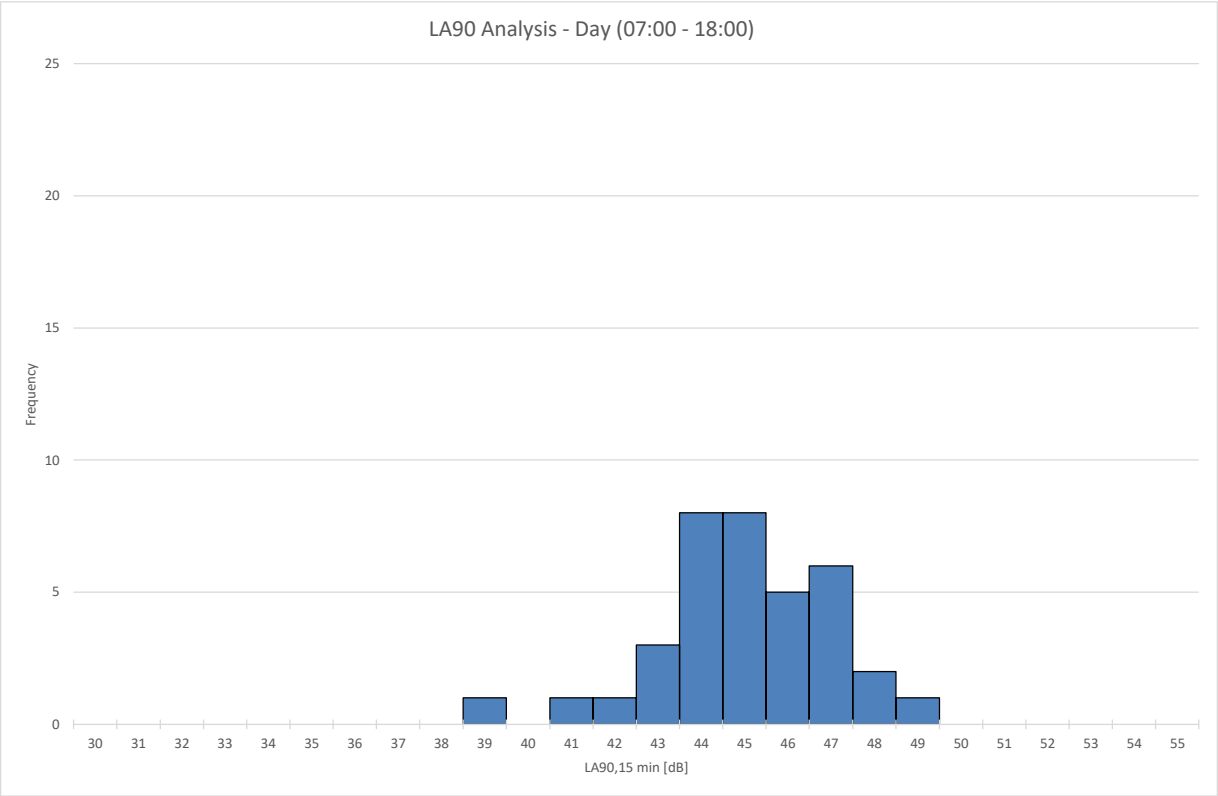
The measurements were obtained using a Cirrus CR171C Class 1 Sound Level Meter (Serial No. G303651), which was calibrated before and after the exercise using a Cirrus CR515 Class 1 Acoustic Calibrator (Serial No. 98078). Both instruments had been calibrated within the previous 12 months in accordance with National Standards. The calibration certificates are provided in Appendix C.

The measurements obtained at this location were taken between Friday 31 May and Sunday 2 June 2024.

Noise levels monitored at this location were observed to be principally associated with traffic travelling along the A41 to the east. Operations within the quarry were not generally audible, with the exception of occasional vehicle movements, which were noted to have minimal influence on the measured noise levels.

The results of the survey for the daytime periods when the site would operate are presented in Appendix E.

A statistical analysis of the measured noise levels recorded over the operational hours has been made to determine the typical background noise levels at this location. The statistical analysis is provided below.



The analysis indicates a typical background noise level of 44 dB L_{A90} at this location, with the daytime ambient noise levels, attributable to road traffic on the A41 of 48 dB $L_{Aeq,T}$.

6. Calculation of Operational Noise Levels

6.1. Proposed Operations

The proposed operations would be split into two main areas.

An inert waste recycling area would be located within the south-western corner of the quarry. Plant in this area would include a wash plant, crusher, screen, two excavators and two loading shovels. The plant would be located at the existing low levels within the quarry, thus effectively screened from the surrounding properties. HGVs would deliver material into the recycling area from the existing entrance from the A41 and would take recycled materials back out.

Processed materials would also be taken to the landfill areas using articulated dump trucks. A dozer and excavator would operate within the landfill areas.

6.2. Source Term Information

At present, there is no plant operating on site. Representative source term noise levels attributable to the operation of the plant have therefore been obtained adjacent to plant operating on other sites. The source terms adopted for this assessment are provided in Appendix F, which includes the coordinates used within the model, with the source data summarised in Table 5.1 below.

Source	Equivalent SWL [dB(A)]	Number	% On-Time
Recycling Area			
Wash Plant and Screen	104.9	1	100
Crusher	110.0	1	100
Excavator	100.9	2	100
Loading Shovel	101.1	2	100
HGV Movements	101.4	Worst-case hourly conditions assumed with 20 HGV movements travelling at 15 km/h.	
Landfill Area			
Dozer	107.3	1	100
Excavator	100.9	1	100
ADT Movements	105.8	Worst-case hourly conditions assumed with 24 ADT movements travelling at 15 km/h	

Table 6.1 Source Term Noise Levels

6.3. Calculation of Noise Levels

Noise levels attributable to the operation of the site have been calculated using the SoundPlan computer modelling package. The software implements the calculation procedure from ISO9613-2 [5].

Ground levels for the site and surrounding area have been obtained using LiDAR data. Plant operating within the recycling area has been assumed to be placed at the current ground levels. The landfill plant (excavator and dozer) has been assumed to be operating at the boundaries adjacent to the closest properties and at levels commensurate with the final restoration levels to provide worst-case operating conditions.

To provide worst-case conditions and to minimise potential uncertainties within the assessment, it has been assumed that all plant operating on site would be operating 100% of the time. Generally the landfill plant would tend to operate periodically with only the dozer typically in use and powered down between loads.

Calculations have been prepared for each main phase of the landfill operations to provide an indication in the variation of noise levels as the works progress.

The results of the noise modelling are presented graphically on Figures 3 to 7, with the tabulated results provided in Appendix F. The results are summarised in Table 6.2 below.

Location	Calculated Noise Levels [dB $L_{Aeq, 1hr}$]				
	Phase 1	Phase 2a	Phase 2b	Phase 3a	Phase 3b
Ridge House	40	40	39	39	40
Woodcote Hall	35	37	44	43	36
Brandon House	35	38	40	41	37
1 Chadwell Lane	35	37	40	39	37
88 Bloomsbury	40	40	38	40	43

Table 6.2 Calculated Worst Case Noise Levels

7. Assessment

7.1. Assessment Criteria

Noise levels attributable to the operation of the site have been assessed against the methodology within BS 4142, making reference to the specific EA guidance. BS 4142 provides a method of evaluating potential adverse impacts associated with the operation of the site and additionally takes account of any characteristics in the noise.

Noise from the operation of the plant would not normally be considered to be tonal or impulsive in nature. Noise from the recycling and landfill operations would also generate a similar character of noise to that associated with the quarrying operations. In accordance with the EA guidance, a 3 dB(A) other character correction has therefore been considered appropriate and applied to determine the rating level of noise upon which the initial BS 4142 assessment has been prepared.

The assessment at the neighbouring properties is provided below.

7.2. Uncertainties

Consideration to uncertainties within the assessment have been taken into account.

To minimise uncertainty associated with the baseline noise levels, the unattended noise surveys carried out to derive the baseline conditions were principally obtained over a weekend period, when traffic on the surrounding roads would have been lighter than during the weekday periods. Assuming a lower baseline will provide worst-case assessment conditions.

Source term noise levels from the plant have been obtained adjacent to equivalent plant to that which would be used on site, with the plant processing similar materials to that proposed.

The modelling has assumed that all plant would be fully operational, with the landfill plant operating at heights representative of the final restoration levels to provide worst-case conditions and thus reduce potential uncertainty within the calculated results.

7.3. Assessment of Noise Levels at Ridge House

An initial assessment of the noise levels at this property has been made in accordance with the BS 4142 methodology by comparing the rating level of noise against the prevailing background sound levels.

	Noise Level [dB]				
	Phase 1	**Phase 2a**	**Phase 2b**	**Phase 3a**	**Phase 3b**
Specific Noise Level	40	40	39	39	40
Acoustic Feature Correction	3	3	3	3	3
Rating Level	43	43	42	42	43
Background Noise Level [dB L_{A90}]	41	41	41	41	41
Excess of Rating Over Background Level	+2	+2	+1	+1	+2
Likelihood of Impact	Indication of Low Impact				

Table 7.1 Initial BS 4142 Assessment – Ridge House

The initial assessment above, which is based upon worst-case operating conditions, provides an indication of a low impact, with the rating noise levels attributable to the worst-case operating conditions not exceeding 2 dB(A) above the prevailing background noise levels.

Taking the context into account, noise levels this property are influenced by road traffic noise both from the A41 to the east and the B4379, which will tend to further mask noise from the site operations.

Referring to the planning condition limits, noise levels attributable to the proposed operations would remain at least 9 dB(A) below the normal working limit of 49 dB $L_{Aeq,\ 1\ hr}$, providing a positive indication that the operations would not result in a potential for adverse impacts.

With reference to the EA guidelines, noise from the proposed operations would be detectible at the property and whilst acceptable, noise attributable to site operations would need to be controlled and minimised.

7.4. Assessment of Noise Levels at Woodcote Hall

An initial assessment of the noise levels at this property has been made in accordance with the BS 4142 methodology by comparing the rating level of noise against the prevailing background sound levels.

	Noise Level [dB]				
	Phase 1	**Phase 2a**	**Phase 2b**	**Phase 3a**	**Phase 3b**
Specific Noise Level	35	37	44	43	36
Acoustic Feature Correction	3	3	3	3	3
Rating Level	38	40	47	46	39
Background Noise Level [dB L_{A90}]	44	44	44	44	44
Excess of Rating Over Background Level	-6	-4	+3	+2	-5
Likelihood of Impact	Indication of Low Impact				

Table 7.2 Initial BS 4142 Assessment – Woodcote Hall

The initial assessment above, which is based upon worst-case operating conditions, provides an indication of a low impact.

Generally, whilst working Phases 1, 2a and 3b, which are located away from the property, noise levels would remain below the prevailing background levels and are not likely to be clearly audible at the property.

Noise levels would be higher during operations within Phases 2b and 3a, which are within the northern area of the quarry and thus closer to the property. The worst-case noise levels indicate a rating level 3 dB(A) above the prevailing background noise levels, whilst the plant is located close to the northern boundary. Generally, however, noise levels would be lower, as the plant would be operating further from the boundary and generally below the surrounding ground level, thus screened from the property.

Referring to the planning condition limits, noise levels attributable to the proposed operations would remain at least 3 dB(A) below the normal working limit of 47 dB $L_{Aeq,\ 1\ hr}$, providing a positive indication that the operations would not result in a potential for adverse impacts.

With reference to the EA guidelines, noise from the proposed operations would be detectible at the property and, whilst acceptable, noise attributable to site operations would need to be controlled and minimised.

7.5. Assessment of Noise Levels at Other Surrounding Properties

The other surrounding properties are either located alongside the A41 or to the east of the A41, with noise levels at these properties principally influenced by road traffic travelling along the road.

The noise levels calculated at these properties would remain low, with noise levels generally lower than those predicted at the properties assessed above.

The noise levels at these properties would also remain below the planning condition limits, which seek to ensure adverse noise impacts are minimised and provide a positive indication that the operations would be acceptable.

It is likely that the noise would be detectable at times, principally during breaks in traffic, although the noise levels would remain below that which would result in any potential disturbance.

The highest predicted noise levels were observed at 88 Bloomsbury to the south, during the final landfill operations in Phase 3b, with a level of 43 dB $L_{Aeq,\ 1\ hr}$ calculated. This level of noise is substantially below that associated with the passing traffic and would not result in any potential for adverse impacts.

Providing appropriate controls are implemented to minimise noise from the site operations, noise levels would remain acceptable at the surrounding properties.

8. Noise Control Measures

Whilst the assessment within Section 7 indicates that the operation of the site would generate acceptable levels of noise at the neighbouring properties, appropriate controls would be adopted on site to ensure noise levels were minimised.

A noise management plan has been prepared for the operations, which has been submitted separately.

The measures to control noise levels from site operations would include:

- Ensuring plant is switched off when not in use;
- Adopting a site speed limit of 10mph to minimise noise from HGV movements;
- Maintain good road surfaces for vehicles;
- Regular maintenance of plant and equipment, with defective plant withdrawn from service;
- Use of temporary bunding to screen plant, where possible;
- Use of non-tonal reversing signals on mobile plant.

Due to the low levels of noise, regular noise monitoring is not considered to be required at neighbouring noise sensitive properties. Noise monitoring would, however, be undertaken following receipt of a justified complaint and this is described in more details within the noise management plan.

9. Summary

LF Acoustics Ltd have were appointed to prepare a noise assessment to support a permit application for an inert treatment and transfer facility located within Woodcote Wood Quarry.

Planning permission for the operation has been granted, subject to conditions, including controls on noise levels at surrounding noise sensitive properties. An Environmental Permit is now being sought for the proposed treatment and transfer facility and landfilling of inert materials within the quarry.

Noise monitoring has been carried out to establish baseline noise levels at positions representative of the properties potentially most likely to be affected by the proposed operations.

Calculations of the site noise levels have been made based upon likely worst-case operating conditions, assuming all plant on site fully operational.

An assessment of the operational noise levels has been made, which indicates that the noise levels at the surrounding properties would remain acceptable, with noise levels remaining below the planning condition limits and with no adverse noise impacts identified, when assessed against the requirements of BS 4142.

Considering the specific EA guidelines, noise levels at the surrounding properties would, as a worst-case, represent a detectable level of noise. This level of noise would be acceptable. Appropriate measures would, however, be implemented to control noise and ensure noise levels at the properties are minimised. The measures to be adopted are presented within the noise management plan.

References

1. Department for Levelling Up, Housing & Communities. National Planning Policy Framework. December 2023.

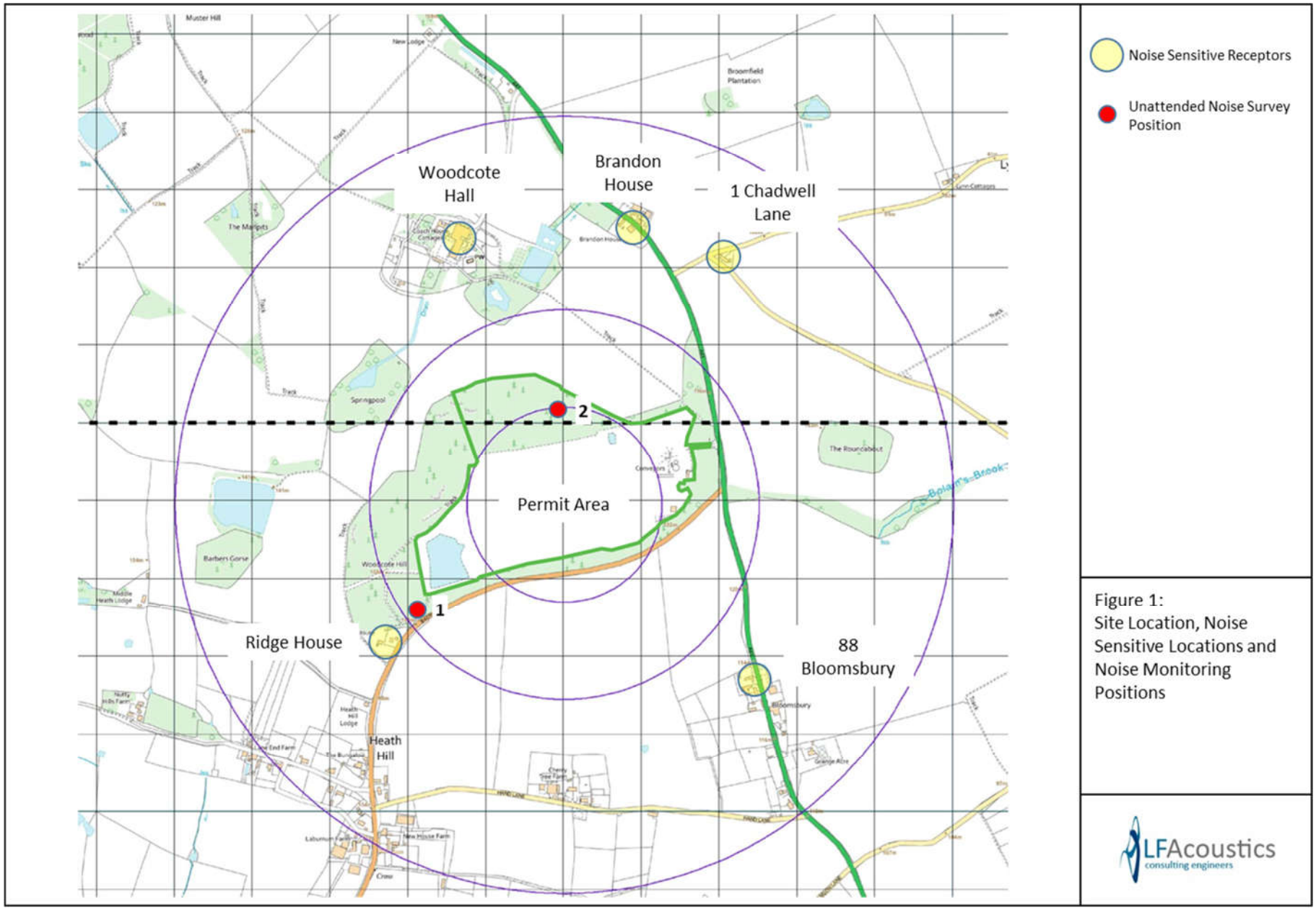
2. DEFRA. Noise Policy Statement for England (NPSE). March 2010.

3. British Standards Institute. Methods for Rating and Assessing Industrial and Commercial Sound. BS 4142:2014 +A1:2019.

4. Environment Agency. Noise and Vibration Management: Environmental Permits. Published 23 July 2021 and Updated 31 January 2022.

5. ISO. Acoustics – Attenuation of Sound During Propagation Outdoors – Part 2: General Method of Calculation. ISO 9613-2. 1996.

Figures


Noise Sensitive Receptors
Unattended Noise Survey Position
Woodcote Hall
Brandon House
1 Chadwell Lane
Permit Area
Ridge House
88 Bloomsbury
Heath Hill
1
2
Figure 1:
Site Location, Noise Sensitive Locations and Noise Monitoring Positions
LFAcoustics
consulting engineers

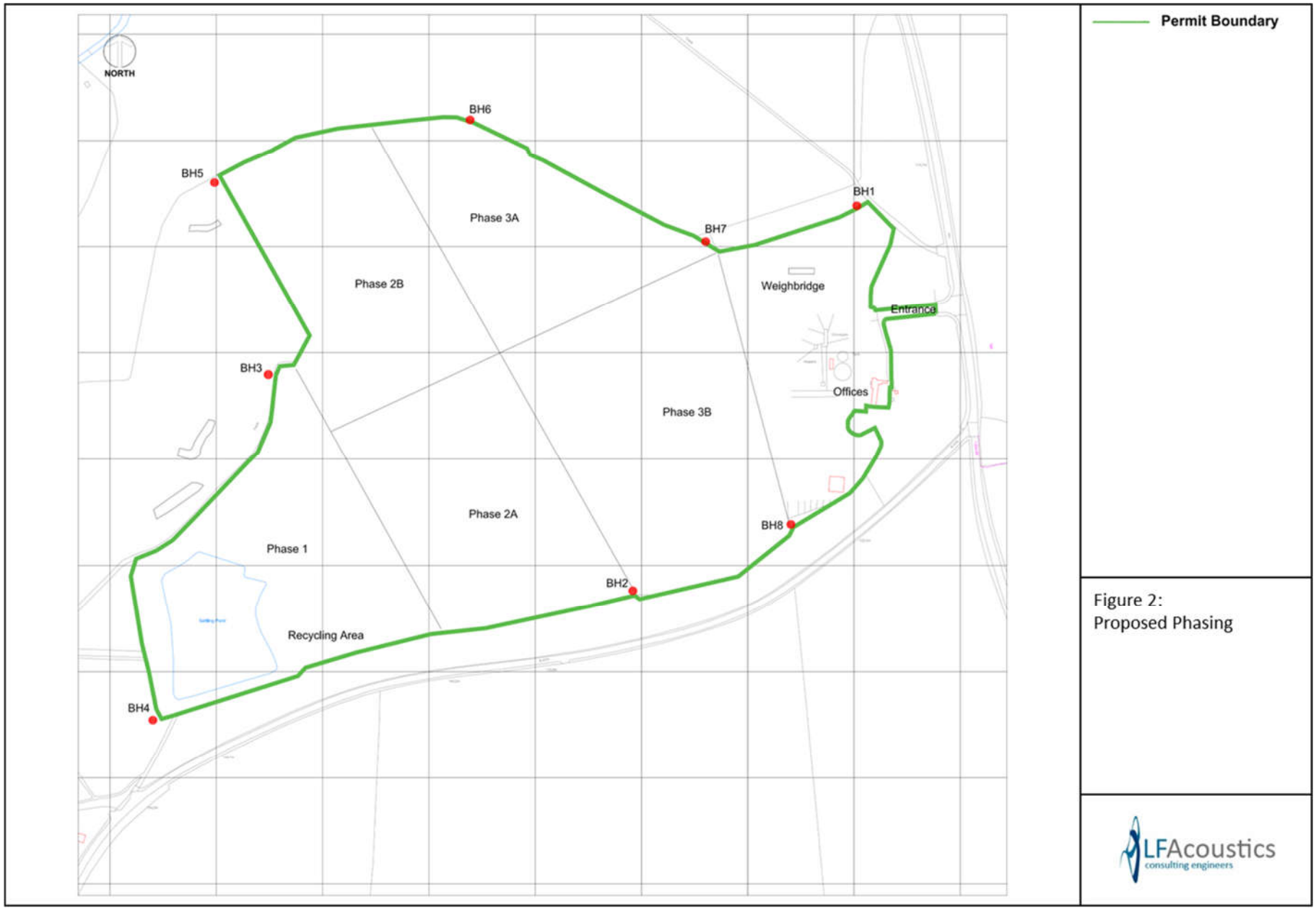


Figure 2:
Proposed Phasing

LFAcoustics
consulting engineers

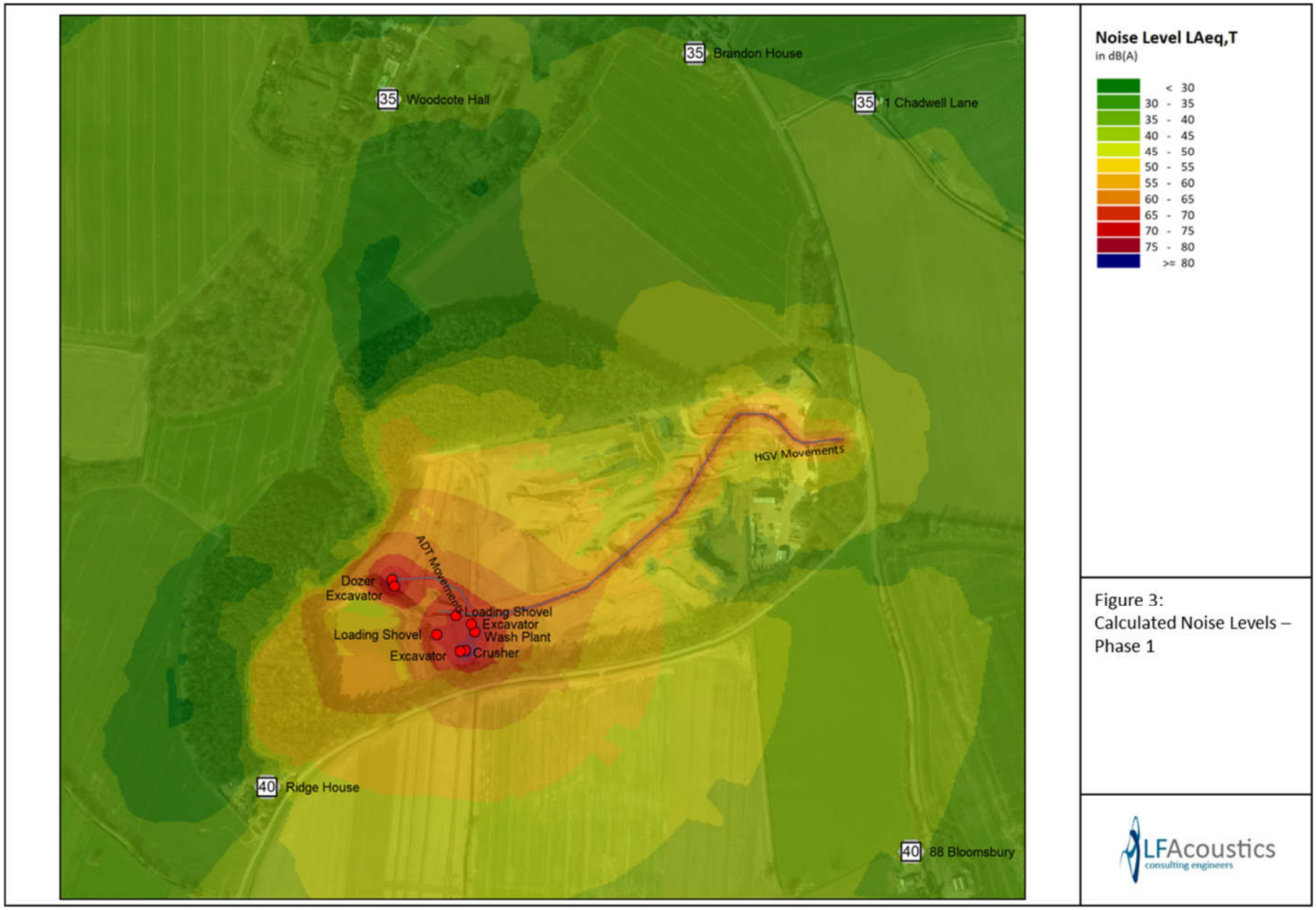


Figure 3:
Calculated Noise Levels – Phase 1

LFAcoustics
consulting engineers

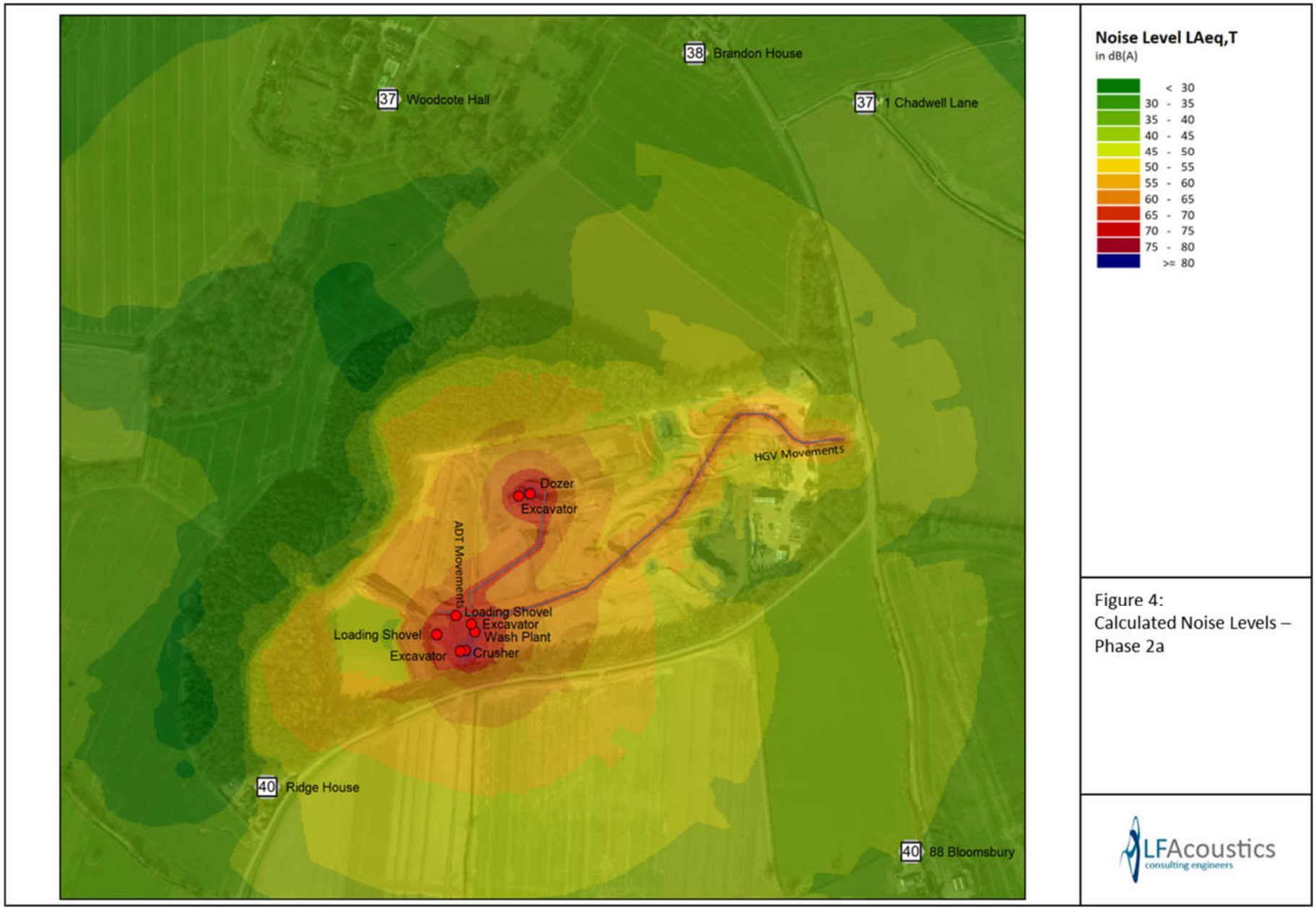
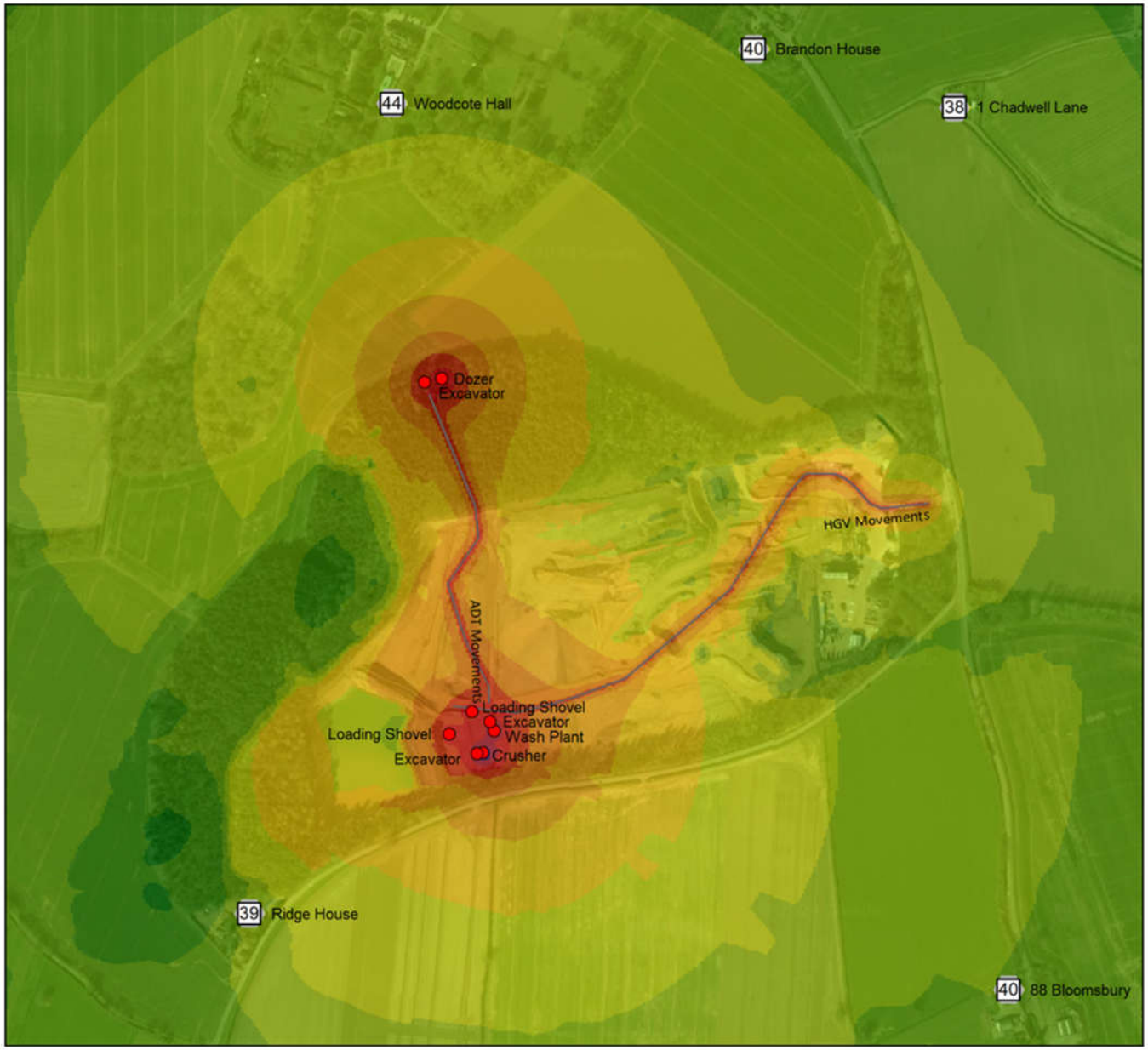


Figure 4:
Calculated Noise Levels – Phase 2a

LFAcoustics
consulting engineers



Noise Level LAeq,T
in dB(A)

	< 30
	30 - 35
	35 - 40
	40 - 45
	45 - 50
	50 - 55
	55 - 60
	60 - 65
	65 - 70
	70 - 75
	75 - 80
	>= 80

Figure 5:
Calculated Noise Levels – Phase 2b

LFAcoustics
consulting engineers

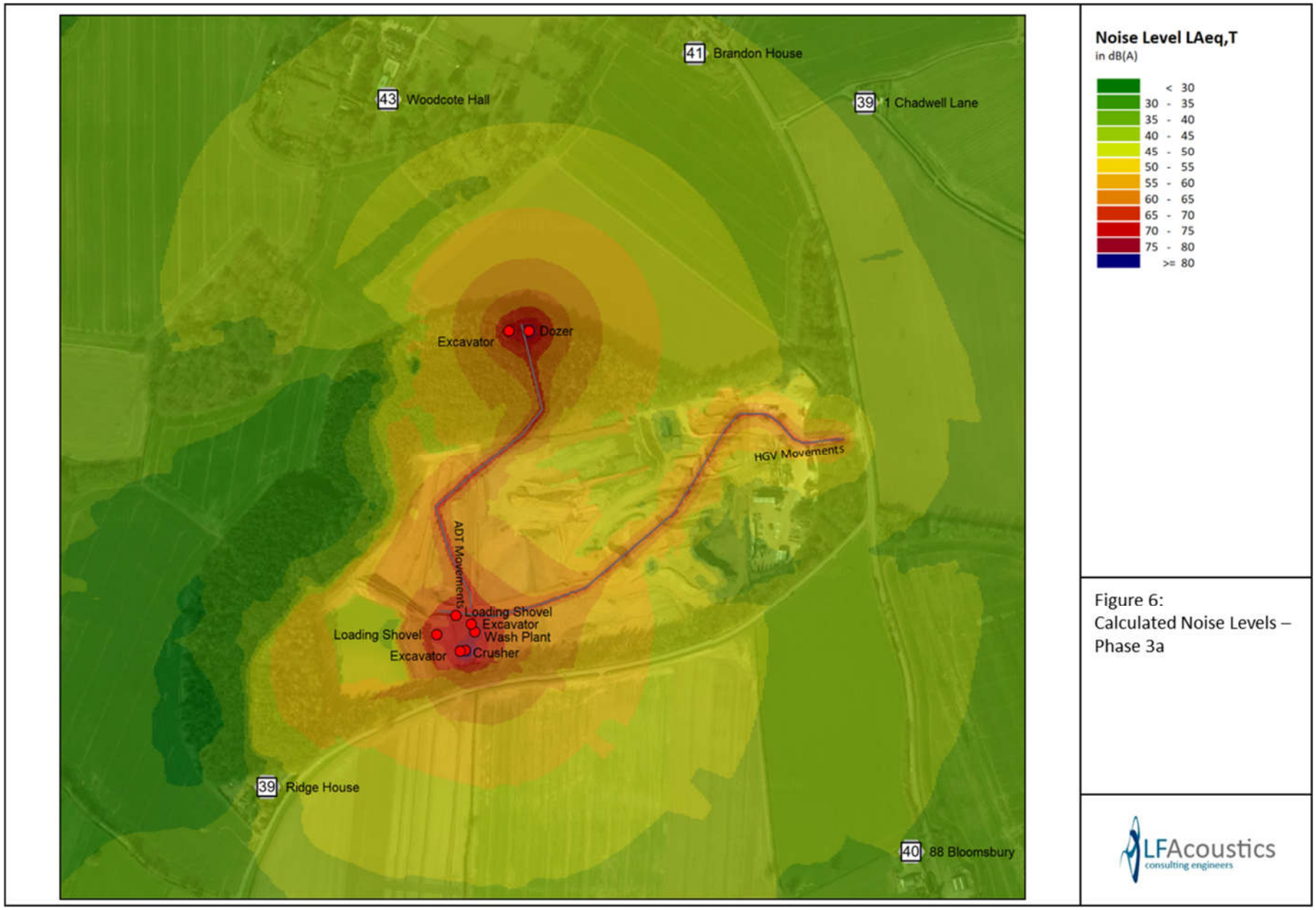


Figure 6:
Calculated Noise Levels – Phase 3a

LFAcoustics
consulting engineers

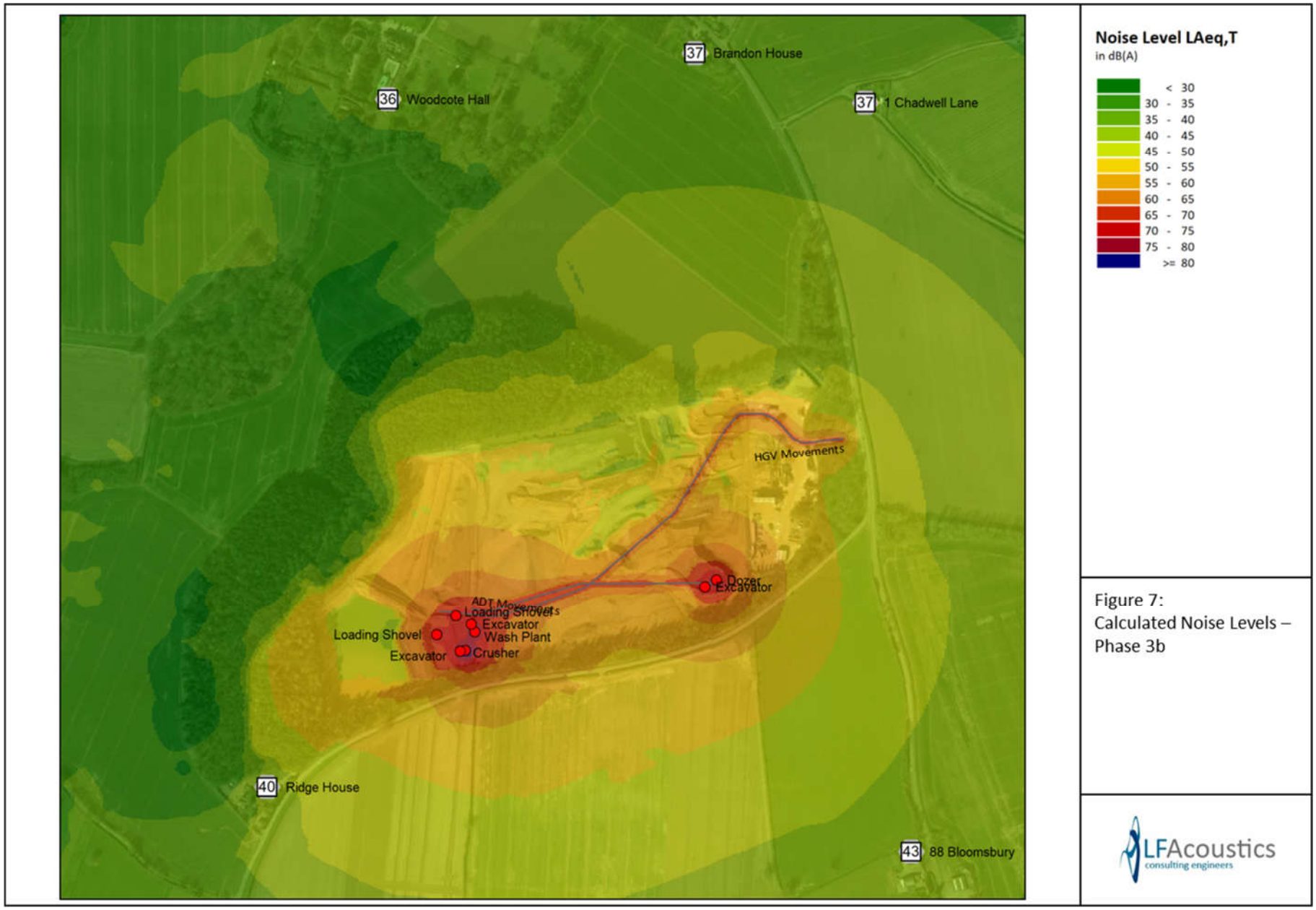


Figure 7:
Calculated Noise Levels – Phase 3b

LFAcoustics
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Appendix A
Noise Units

Decibels (dB)

Noise can be defined as unwanted sound. Sound in air can be considered as the propagation of energy through the air in the form of oscillatory changes in pressure. The size of the pressure changes in acoustic waves is quantified on a logarithmic decibel (dB) scale firstly because the range of audible sound pressures is very great, and secondly because the loudness function of the human auditory system is approximately logarithmic.

The dynamic range of the auditory system is generally taken to be 0 dB to 140 dB. Generally, the addition of noise from two sources producing the same sound pressure level, will lead to an increase in sound pressure level of 3 dB. A 3 dB noise change is generally considered to be just noticeable and a 10 dB change is generally accepted as leading to the subjective impression of a doubling or halving of loudness. A 5 dB change is generally considered to be clearly discernible.

A-weighting

The bandwidth of the frequency response of the ear is usually taken to be from about 18 Hz to 18,000 Hz. The auditory system is not equally sensitive throughout this frequency range. This is taken into account when making acoustic measurements by the use of A-weighting, a filter circuit which has a frequency response similar to the human auditory system.

Units Used to Describe Noises Which Change Their Level with Time

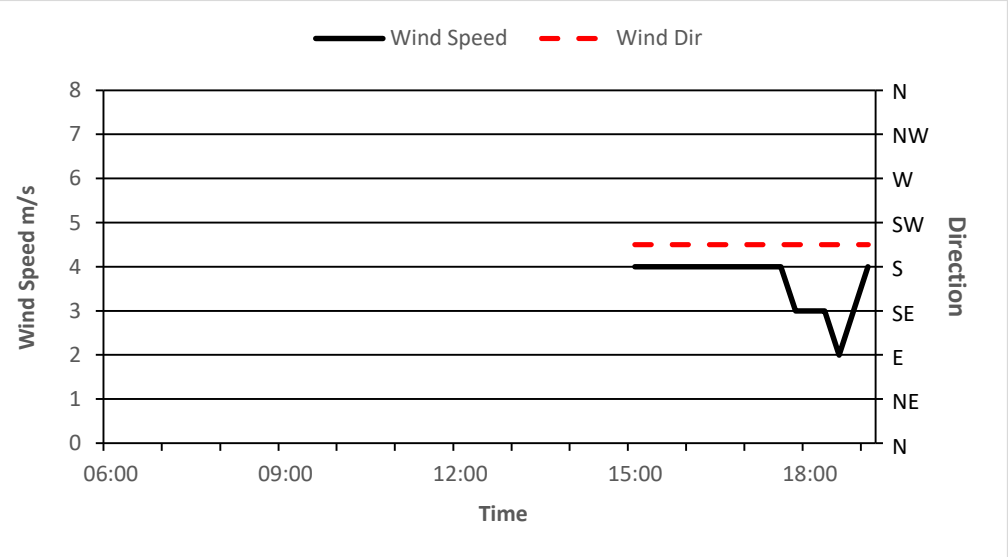
The Equivalent Continuous A-Weighted Sound Pressure Level ($L_{Aeq,T}$) is the principal measurement index for environmental noise. The $L_{Aeq,T}$ is defined as the A-weighted sound pressure level of the steady sound which contains the same acoustic energy as the noise being assessed over a specific time period, T.

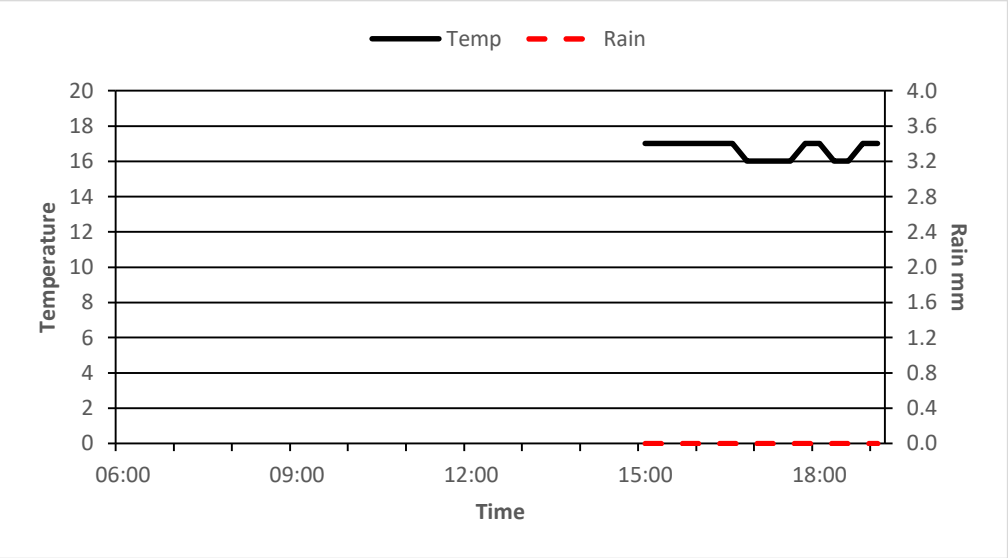
The L_{A90} is the noise level exceeded for 90% of the measurement period. It is generally used to quantify the background noise level, the underlying level of noise which is present even during the quieter parts of the measurement period.

The L_{Amax} is the single maximum value that the A-weighted sound pressure level reaches during a measurement period. $L_{Amax\,F}$, or Fast, is averaged over 0.125 of a second and $L_{Amax\,S}$, or Slow, is averaged over 1 second. The measured L_{Amax} noise levels in this assessment are Fast.

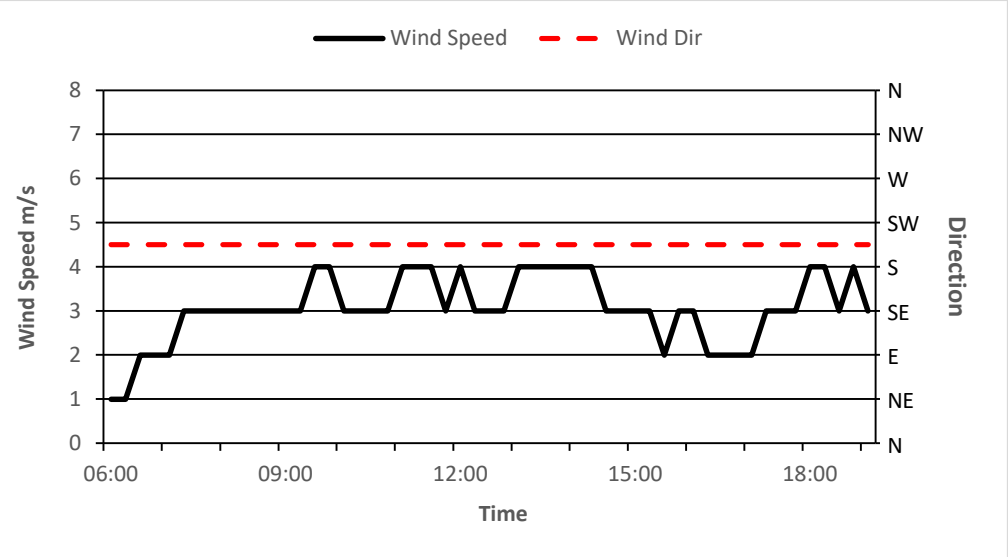
Appendix B
Weather Data

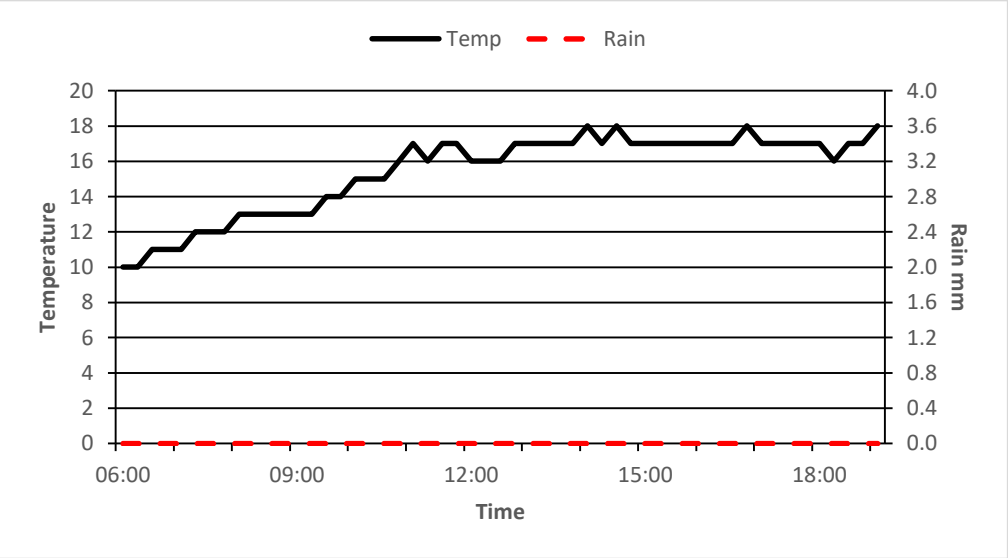
Woodcote Wood
Weather Data
Friday 31/5/24



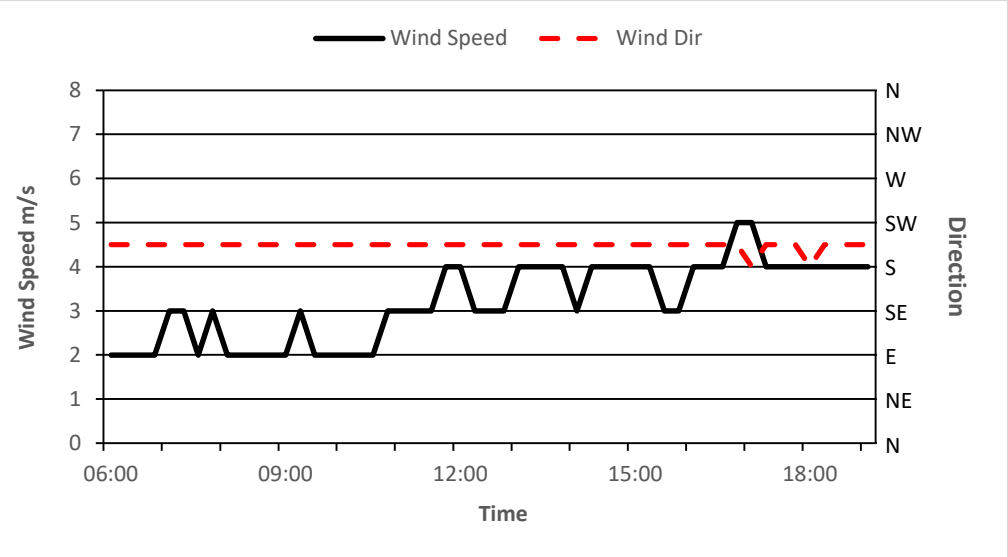


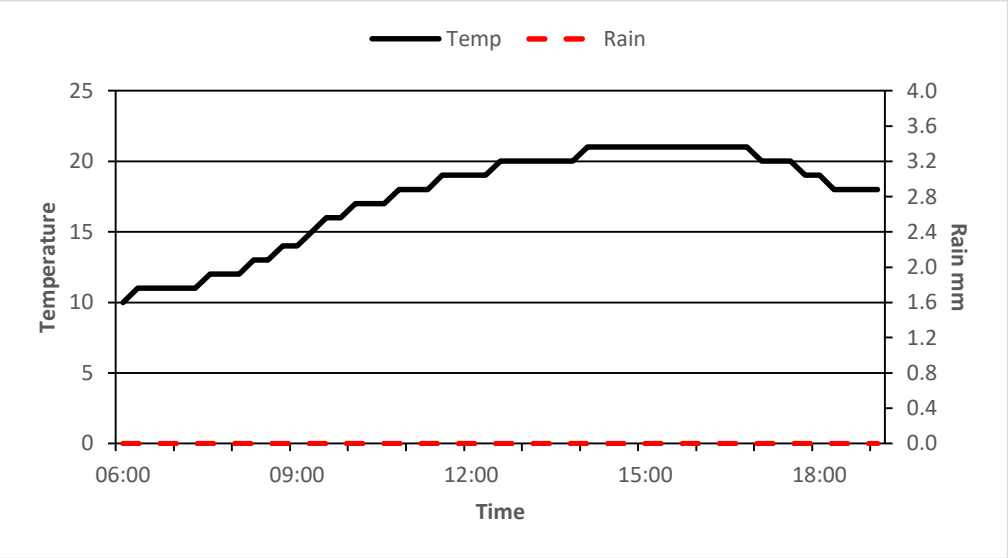
Woodcote Wood
Weather Data
Saturday 1/6/24



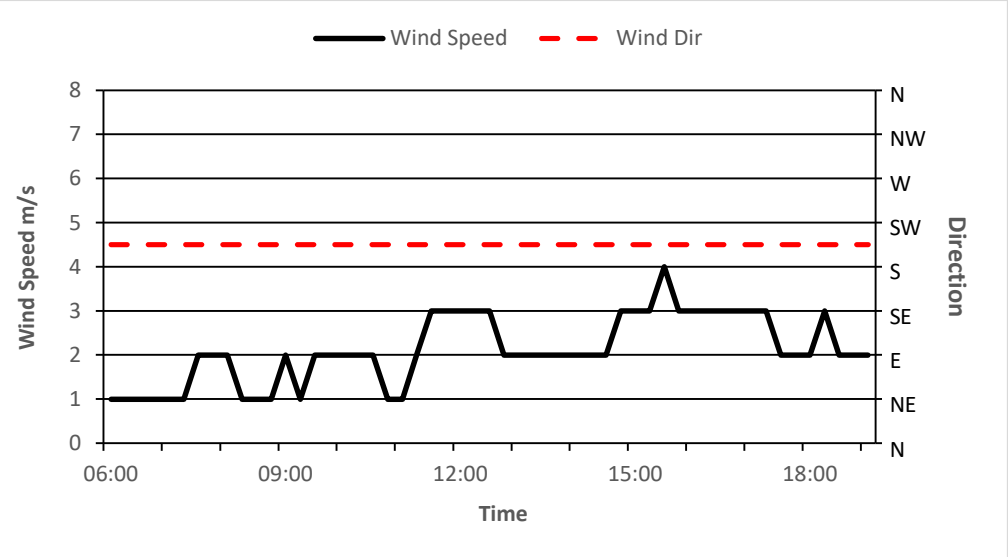


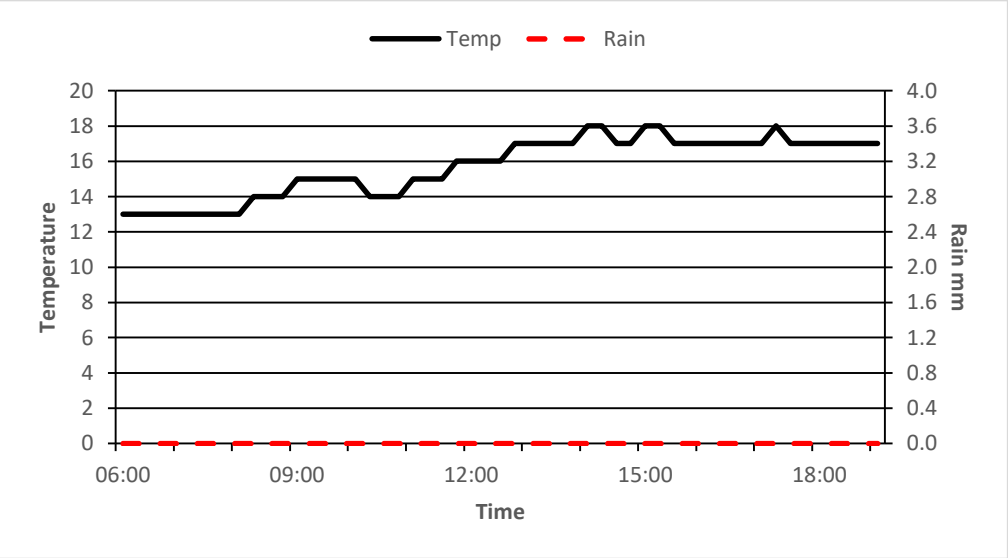
Woodcote Wood
Weather Data
Sunday 2/6/24



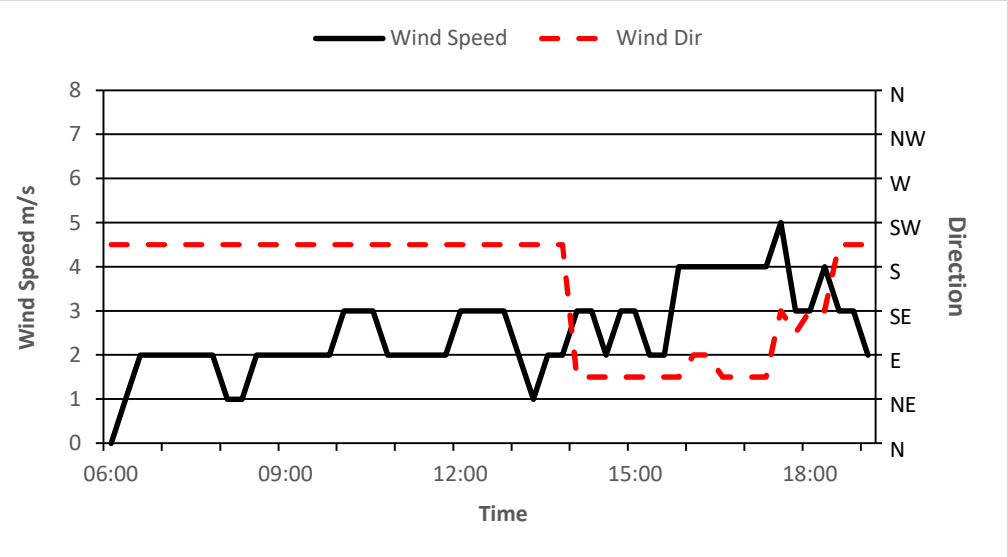


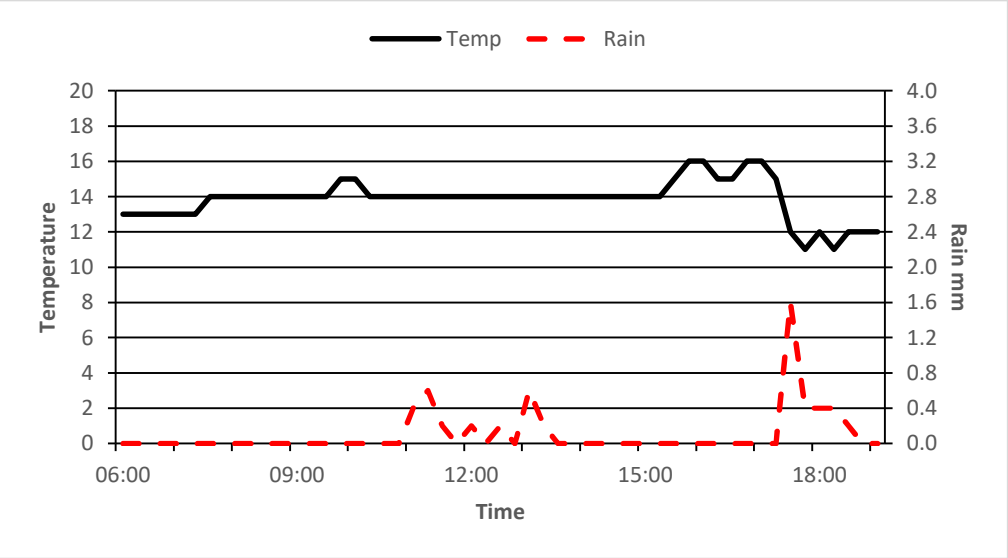
Woodcote Wood
Weather Data
Monday 3/6/24



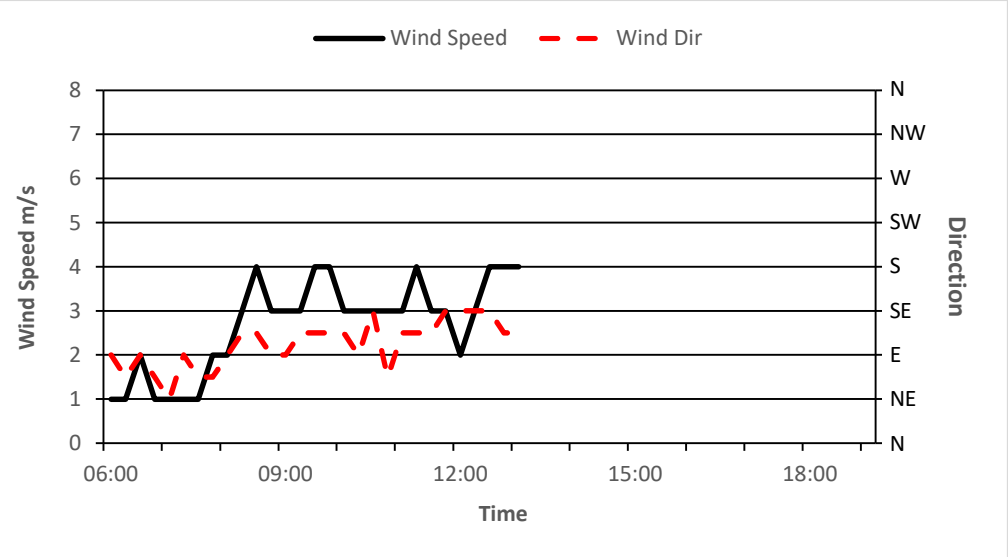


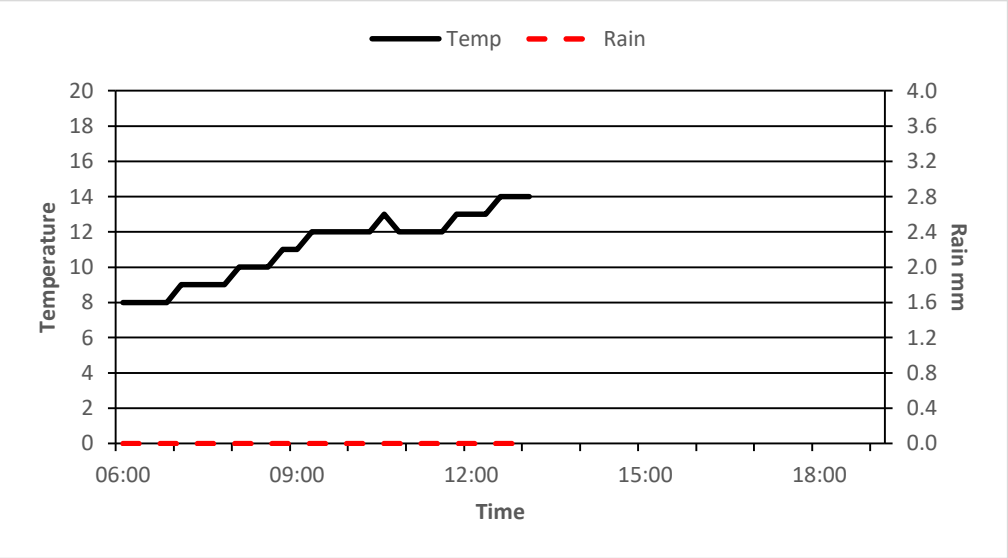
Woodcote Wood
Weather Data
Tuesday 4/6/24





Woodcote Wood
Weather Data
Wednesday 5/6/24





Appendix C
Calibration Certificates

CERTIFICATE OF CALIBRATION

ISSUED BY **Cirrus Research plc**

DATE OF ISSUE **11 April 2024** CERTIFICATE NUMBER **212296**

Cirrus Research plc
Acoustic House
Bridlington Road
Hunmanby
North Yorkshire
YO14 0PH
United Kingdom

Approved signatory
A.Windrass
Electronically signed:

Sound Level Meter : IEC 61672-3:2006

Instrument information

Manufacturer:	Cirrus Research plc	Notes:
Model:	CR:171C	
Serial number:	G071574	
Class:	1	
Firmware version:	2.5.1839	

Test summary

Date of calibration: 10 April 2024

The calibration was performed respecting the requirements of ISO/IEC 17025:2017.
Periodic tests were performed in accordance with procedures from IEC 61672-3:2006.

The sound level meter submitted for testing has successfully completed the class 1 periodic tests of IEC 61672-3:2006, for the environmental conditions under which the tests were performed.

However, no general statement or conclusion can be made about conformance of the sound level meter to the full requirements of IEC 61672-1:2002 because evidence was not publicly available, from an independent testing organisation responsible for pattern approvals, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2002 and because the periodic tests of IEC 61672-3:2006 cover only a limited subset of the specifications in IEC 61672-1:2002.

Notes

This certificate provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory. The results within this certificate relate only to the items calibrated. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a coverage probability of approximately 95%.

CERTIFICATE OF CALIBRATION

ISSUED BY Cirrus Research plc

DATE OF ISSUE 11 April 2024 CERTIFICATE NUMBER 212294

Cirrus Research plc
Acoustic House
Bridlington Road
Hunmanby
North Yorkshire
YO14 0PH
United Kingdom

Approved signatory
A Windrass
Electronically signed:

Sound Calibrator : IEC 60942:2003

Instrument information

Manufacturer: Cirrus Research plc

Model: CR:515

Serial number: 75350

Class: 1

Notes:

Test summary

Date of calibration: 11 April 2024

The sound calibrator detailed above has been calibrated to the published data as described in the operating manual and in the half-inch configuration. The procedures and techniques used are as described in IEC60942_2003 Annex B – Periodic Tests and three determinations of the sound pressure level, frequency and total distortion were made.

The sound pressure level was measured using a WS2F condenser microphone type MK:224 manufactured by Cirrus Research plc.

The results have been corrected to the reference pressure of 101.33 kPa using the manufacturer's data.

As public evidence was available, from a testing organisation responsible for approving the results of pattern evaluation tests, to demonstrate that the model of sound calibrator fully conformed to the requirements for pattern evaluation described in Annex A of IEC 60942:2003, the sound calibrator tested is considered to conform to all the Class 1 requirements of IEC 60942:2003.

The manufacturer's product information indicates that this model of sound calibrator has been formally pattern approved to IEC60942_2003 Annex A to Class 1. This has been confirmed by Laboratoire National d'Essais (LNE), Physikalisch-Technische Bundesanstalt (PTB) and APPLUS (APPLUS).

Notes:

This certificate provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory. The results within this certificate relate only to the items calibrated. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a coverage probability of approximately 95%.

CERTIFICATE OF CALIBRATION

ISSUED BY Cirrus Research plc

DATE OF ISSUE 11 April 2024 CERTIFICATE NUMBER 212299

Cirrus Research plc
Acoustic House
Bridlington Road
Hunmanby
North Yorkshire
YO14 0PH
United Kingdom

Approved signatory
A.Windrass
Electronically signed:

Sound Level Meter : IEC 61672-3:2013

Instrument information

Manufacturer:	Cirrus Research plc	Notes:
Model:	CR:171C	
Serial number:	G303651	
Class:	1	
Firmware version:	5.8.3251	

Test summary

Date of calibration: 10 April 2024

The calibration was performed respecting the requirements of ISO/IEC 17025:2017.
Periodic tests were performed in accordance with procedures from IEC 61672-3:2013.

The sound level meter submitted for testing successfully completed the class 1 periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed.

However, no general statement or conclusion can be made about conformance of the sound level meter to the full specifications of IEC 61672-1:2013 because (a) evidence was not publicly available, from an independent testing organisation responsible for pattern approvals, to determine that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013 or correction data for acoustical test of frequency weighting were not provided in the Instruction Manual and (b) because the periodic tests of IEC 61672-3:2013 cover only a limited subset of the specifications in IEC 61672-1:2013.

Notes

This certificate provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory. The results within this certificate relate only to the items calibrated. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a coverage probability of approximately 95%.

CERTIFICATE OF CALIBRATION

ISSUED BY Cirrus Research plc

DATE OF ISSUE 11 April 2024 CERTIFICATE NUMBER 212304

Cirrus Research plc
Acoustic House
Bridlington Road
Hunmanby
North Yorkshire
YO14 0PH
United Kingdom

Approved signatory
A.Windrass
Electronically signed

Sound Calibrator : IEC 60942:2003

Instrument information

Manufacturer: Cirrus Research plc **Notes:**

Model: CR:515

Serial number: 98078

Class: 1

Test summary

Date of calibration: 11 April 2024

The sound calibrator detailed above has been calibrated to the published data as described in the operating manual and in the half-inch configuration. The procedures and techniques used are as described in IEC60942_2003 Annex B – Periodic Tests and three determinations of the sound pressure level, frequency and total distortion were made.

The sound pressure level was measured using a WS2F condenser microphone type MK:224 manufactured by Cirrus Research plc.

The results have been corrected to the reference pressure of 101.33 kPa using the manufacturer's data.

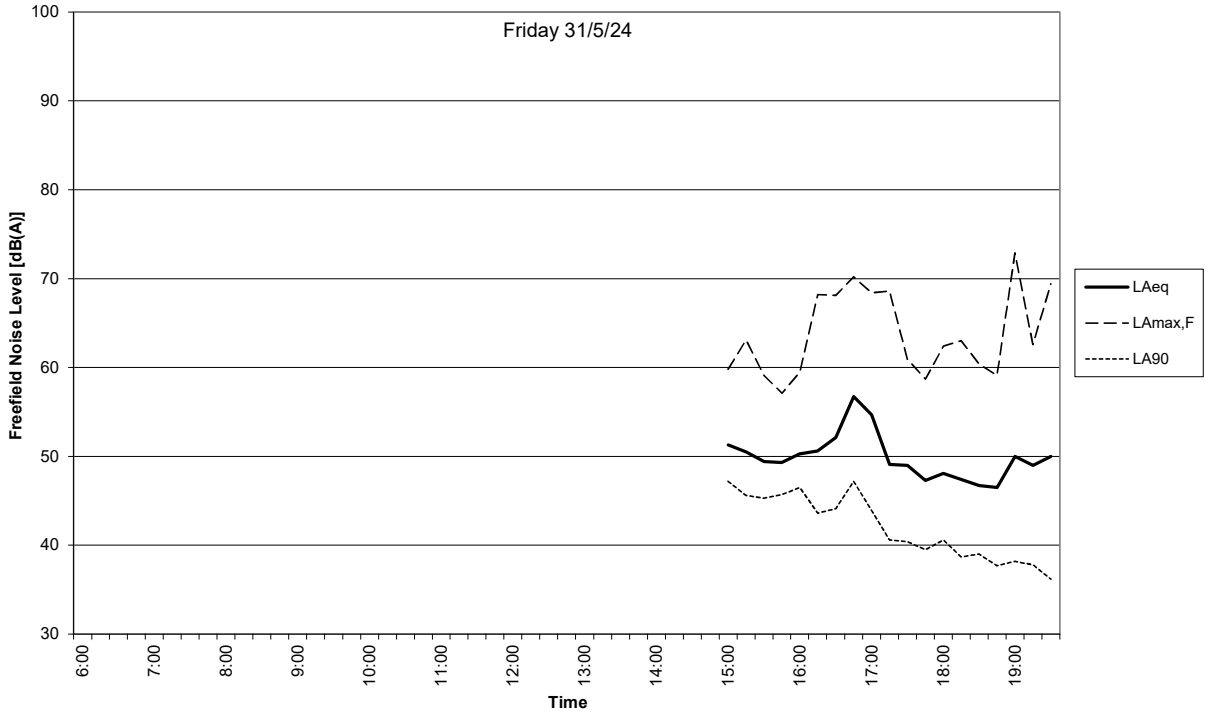
As public evidence was available, from a testing organisation responsible for approving the results of pattern evaluation tests, to demonstrate that the model of sound calibrator fully conformed to the requirements for pattern evaluation described in Annex A of IEC 60942:2003, the sound calibrator tested is considered to conform to all the Class 1 requirements of IEC 60942:2003.

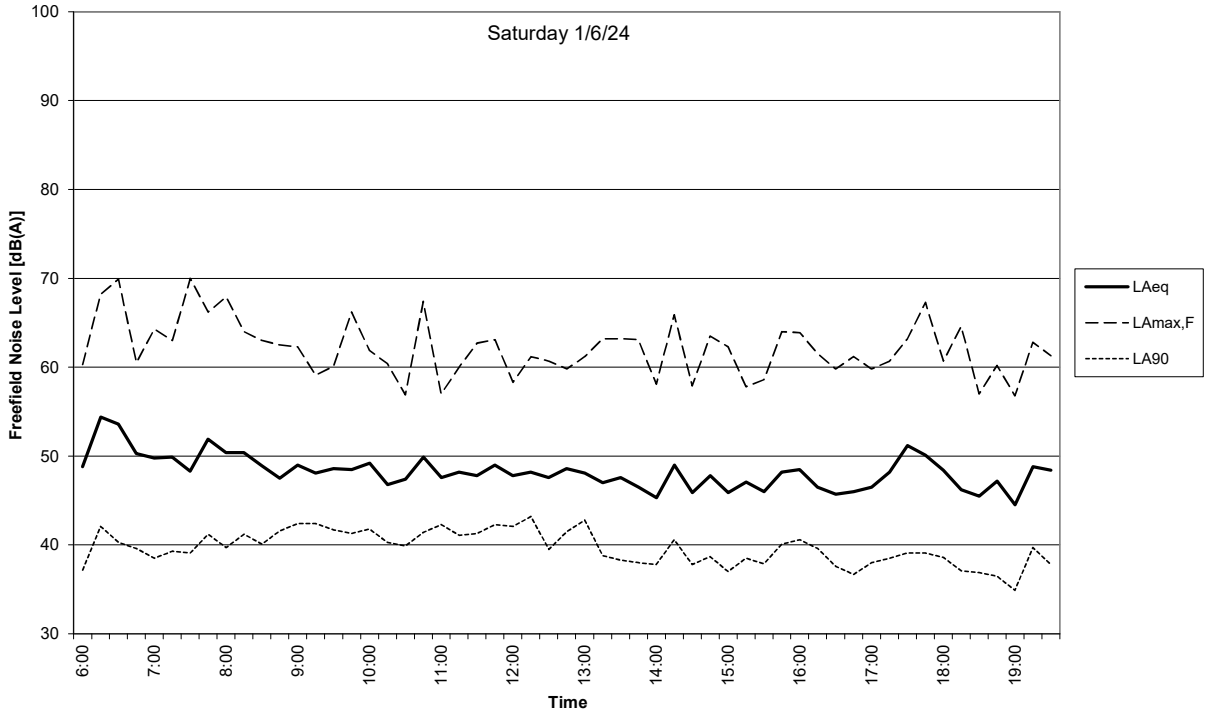
The manufacturer's product information indicates that this model of sound calibrator has been formally pattern approved to IEC60942_2003 Annex A to Class 1. This has been confirmed by Laboratoire National d'Essais (LNE), PhysikalischTechnische Bundesanstalt (PTB) and APPLUS (APPLUS).

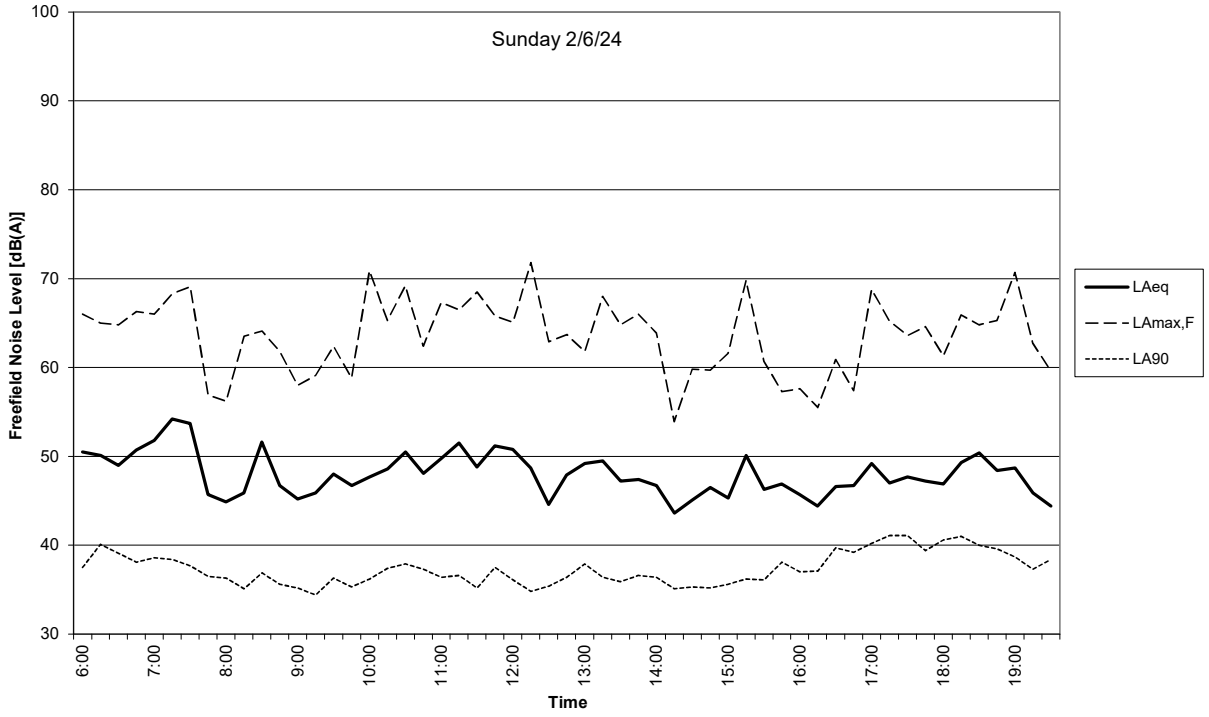
Notes:

This certificate provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory. The results within this certificate relate only to the items calibrated. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a coverage probability of approximately 95%.

Appendix D
Results of Unattended Noise Survey
Position 1 – Ridge House


Friday 31/5/24
Freefield Noise Level [dB(A)]
100
90
80
70
60
50
40
30
6:00
7:00
8:00
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
Time
LAeq
LAmax,F
LA90


Saturday 1/6/24
Freefield Noise Level [dB(A)]
100
90
80
70
60
50
40
30
6:00
7:00
8:00
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
Time
LAeq
LAmax,F
LA90


Sunday 2/6/24
Freefield Noise Level [dB(A)]
100
90
80
70
60
50
40
30
6:00
7:00
8:00
9:00
10:00
11:00
12:00
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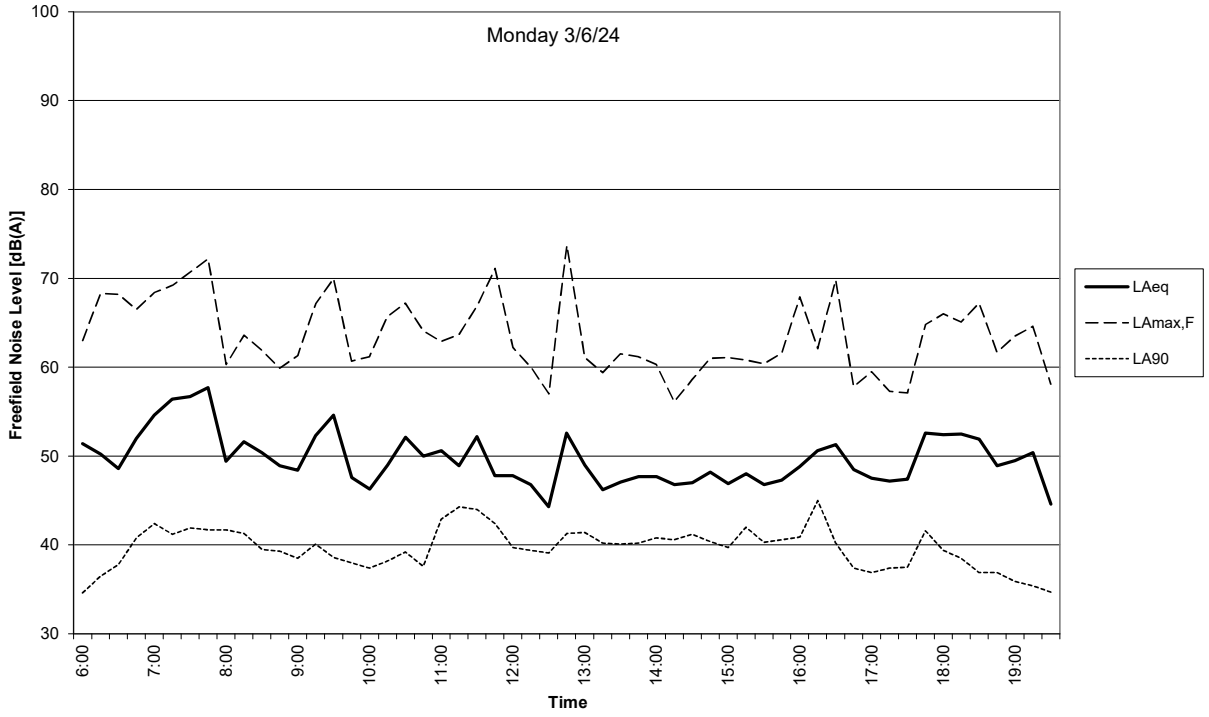
14:00
15:00
16:00
17:00
18:00
19:00
Time
LAeq
LAmax,F
LA90


Monday 3/6/24
Freefield Noise Level [dB(A)]
100
90
80
70
60
50
40
30
6:00
7:00
8:00
9:00
10:00
11:00
12:00
13:00
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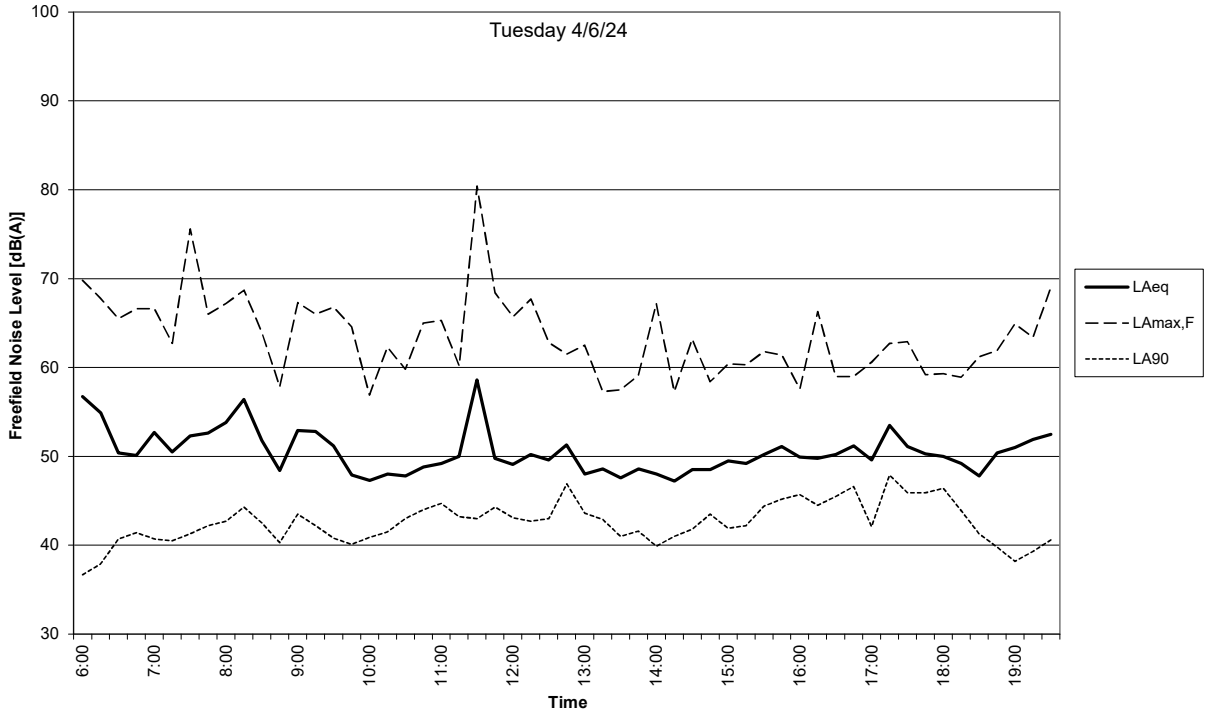
16:00
17:00
18:00
19:00
Time
LAeq
LAmax,F
LA90


Tuesday 4/6/24
Freefield Noise Level [dB(A)]
100
90
80
70
60
50
40
30
6:00
7:00
8:00
9:00
10:00
11:00
12:00
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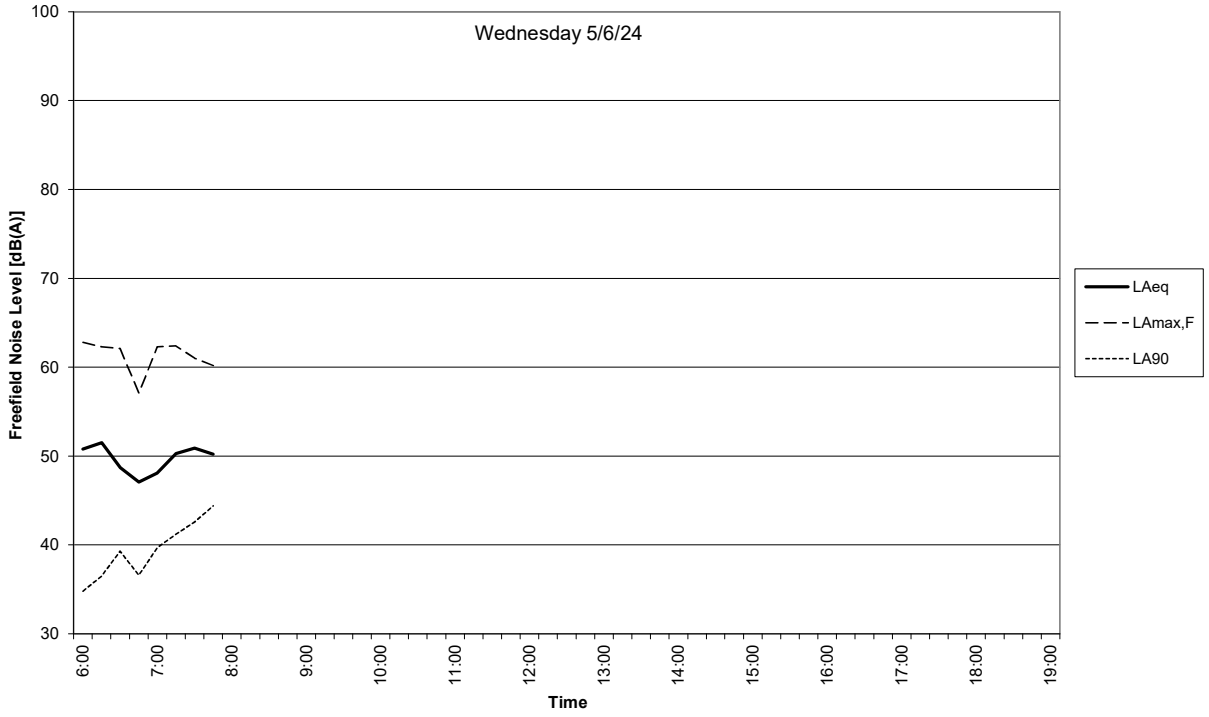
16:00
17:00
18:00
19:00
Time
LAeq
LAmax,F
LA90


Wednesday 5/6/24
Freefield Noise Level [dB(A)]
100
90
80
70
60
50
40
30
6:00
7:00
8:00
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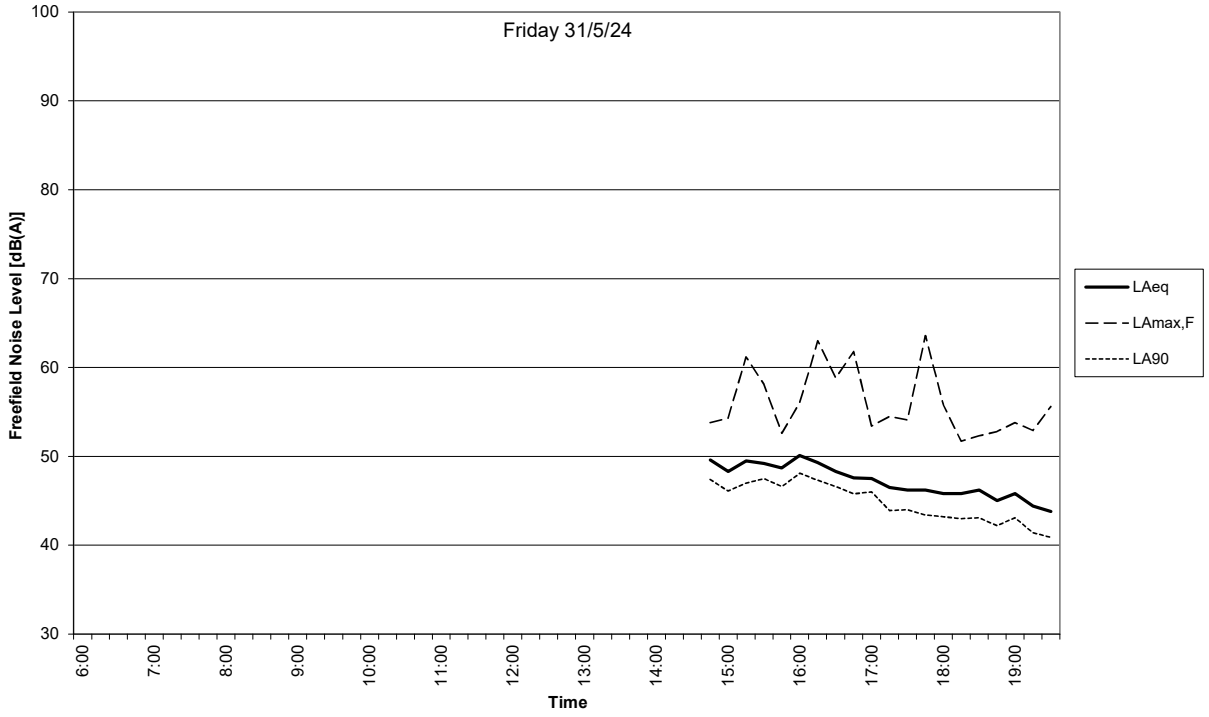
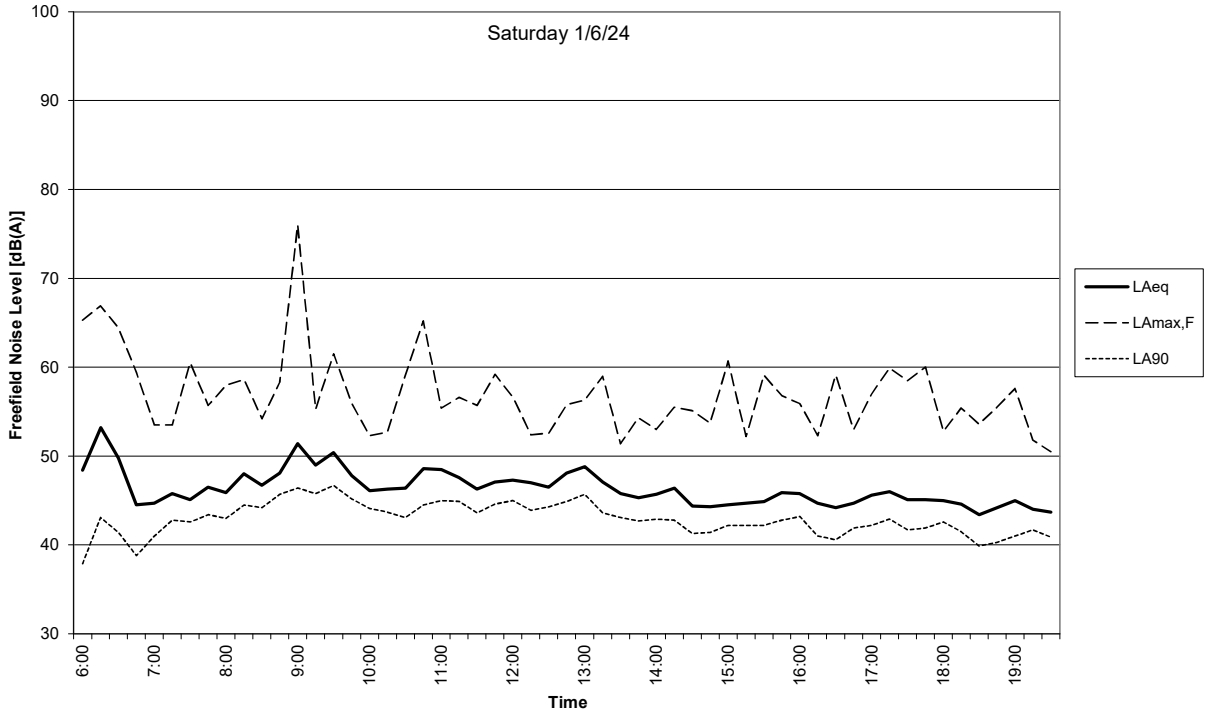
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
Time
LAeq
LAmax,F
LA90

Appendix E
Results of Unattended Noise Survey
Position 2 – Woodcote Hall


Friday 31/5/24
Freefield Noise Level [dB(A)]
100
90
80
70
60
50
40
30
6:00
7:00
8:00
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
Time
LAeq
LAmax,F
LA90


Saturday 1/6/24
Freefield Noise Level [dB(A)]
100
90
80
70
60
50
40
30
6:00
7:00
8:00
9:00
10:00
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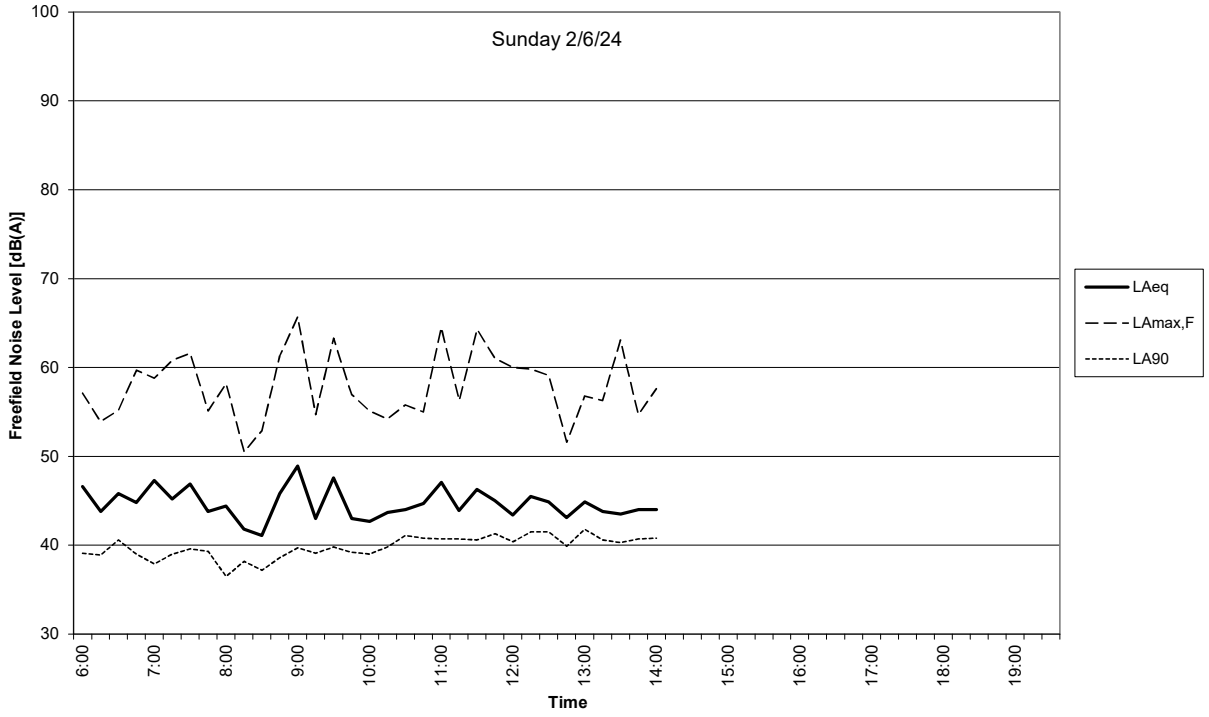
18:00
19:00
Time
LAeq
LAmax,F
LA90


Sunday 2/6/24
Freefield Noise Level [dB(A)]
100
90
80
70
60
50
40
30
6:00
7:00
8:00
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
Time
LAeq
LAmax,F
LA90

Appendix F
Calculation Details

Woodcote Wood Landfill
Octave spectra of the sources in dB(A) - Phase 1

Name	Source type	X	Y	Z	l or A	L'w	Lw	Time histogram	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	
		m	m	m	m,m²	dB(A)	dB(A)		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	
ADT Movements	Line	376801.92	314733.61	149.86	124.93	64.0	85.0	ADT Movements	66.9	73.9	74.4	76.8	80.1	79.7	73.1	
Crusher	Point	376840.40	314641.17	145.93		110.0	110.0	100%/24h	90.0	95.1	97.8	105.0	104.5	103.3	98.1	
Dozer	Point	376737.48	314741.71	160.00		107.3	107.3	100%/24h	78.6	87.3	98.2	98.3	103.3	101.5	96.6	
Excavator	Point	376833.41	314640.01	147.04		100.9	100.9	100%/24h	78.2	83.4	88.6	97.4	95.8	93.4	87.5	
Excavator	Point	376849.33	314678.43	146.14		100.9	100.9	100%/24h	78.2	83.4	88.6	97.4	95.8	93.4	87.5	
Excavator	Point	376740.29	314732.69	160.00		100.9	100.9	100%/24h	78.2	83.4	88.6	97.4	95.8	93.4	87.5	
HGV Movements	Line	377100.99	314827.72	133.68	711.00	61.6	90.2	HGV Movements	60.1	71.9	74.5	83.5	85.5	84.3	79.6	
Loading Shovel	Point	376827.59	314690.08	147.90		101.1	101.1	100%/24h	82.2	85.9	88.9	94.3	97.1	94.8	88.4	
Loading Shovel	Point	376800.42	314663.68	149.62		101.1	101.1	100%/24h	82.2	85.9	88.9	94.3	97.1	94.8	88.4	
Wash Plant	Point	376854.37	314667.57	148.15		104.9	104.9	100%/24h	90.7	92.8	96.5	95.2	97.8	99.2	97.5	

Woodcote Wood Landfill
Mean propagation Leq - Phase 1

Source	Source type	Time slice	L'w	Lw	l or A	S	Adiv	Agr	Abar	Aatm	Ls	dLw	Lr	
			dB(A)	dB(A)	m,m²	m	dB	dB	dB	dB	dB(A)	dB	dB(A)	
Receiver 1 Chadwell Lane X 377406.24 m Y 315416.67 m Z 109.49 m LAeq,1hr 34.7 dB(A)														
ADT Movements	Line	LAeq,1hr	64.0	85.0	124.9	909.93	-70.2	-1.6	-4.0	-4.0	5.2	13.8	19.0	
Crusher	Point	LAeq,1hr	110.0	110.0		960.68	-70.6	-2.5	-3.7	-4.2	29.0	0.0	29.0	
Dozer	Point	LAeq,1hr	107.3	107.3		951.51	-70.6	-1.3	-3.8	-4.3	27.3	0.0	27.3	
Excavator	Point	LAeq,1hr	100.9	100.9		965.79	-70.7	-2.4	-3.4	-3.6	20.8	0.0	20.8	
Excavator	Point	LAeq,1hr	100.9	100.9		925.46	-70.3	-2.4	-3.4	-3.5	21.3	0.0	21.3	
Excavator	Point	LAeq,1hr	100.9	100.9		955.96	-70.6	-2.0	-3.0	-3.2	22.1	0.0	22.1	
HGV Movements	Line	LAeq,1hr	61.6	90.2	711.0	614.35	-66.8	-2.1	-3.6	-3.5	14.2	13.0	27.2	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		929.65	-70.4	-1.4	-3.9	-3.8	21.7	0.0	21.7	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		967.27	-70.7	-1.4	-3.9	-3.9	21.2	0.0	21.2	
Wash Plant	Point	LAeq,1hr	104.9	104.9		931.24	-70.4	-1.0	-4.0	-4.1	25.4	0.0	25.4	
Receiver 88 Bloomsbury X 377471.25 m Y 314356.87 m Z 115.69 m LAeq,1hr 40.3 dB(A)														
ADT Movements	Line	LAeq,1hr	64.0	85.0	124.9	759.71	-68.6	-1.6	0.0	-3.9	10.9	13.8	24.7	
Crusher	Point	LAeq,1hr	110.0	110.0		692.61	-67.8	-2.5	0.0	-3.8	35.9	0.0	35.9	
Dozer	Point	LAeq,1hr	107.3	107.3		829.75	-69.4	-1.3	0.0	-4.5	32.1	0.0	32.1	
Excavator	Point	LAeq,1hr	100.9	100.9		698.56	-67.9	-2.4	0.0	-3.4	27.2	0.0	27.2	
Excavator	Point	LAeq,1hr	100.9	100.9		700.80	-67.9	-2.4	0.0	-3.4	27.2	0.0	27.2	
Excavator	Point	LAeq,1hr	100.9	100.9		823.10	-69.3	-2.0	0.0	-3.5	26.1	0.0	26.1	
HGV Movements	Line	LAeq,1hr	61.6	90.2	711.0	621.74	-66.9	-2.2	-2.7	-3.9	14.5	13.0	27.5	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		725.51	-68.2	-1.4	0.0	-3.4	28.0	0.0	28.0	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		738.44	-68.4	-1.4	0.0	-3.5	27.8	0.0	27.8	
Wash Plant	Point	LAeq,1hr	104.9	104.9		691.46	-67.8	-1.0	0.0	-4.2	32.0	0.0	32.0	
Receiver Brandon House X 377165.48 m Y 315486.27 m Z 105.99 m LAeq,1hr 35.1 dB(A)														
ADT Movements	Line	LAeq,1hr	64.0	85.0	124.9	834.91	-69.4	-1.6	-4.1	-3.7	6.1	13.8	19.9	
Crusher	Point	LAeq,1hr	110.0	110.0		906.34	-70.1	-2.5	-3.9	-3.9	29.5	0.0	29.5	
Dozer	Point	LAeq,1hr	107.3	107.3		860.50	-69.7	-1.3	-3.8	-4.0	28.5	0.0	28.5	
Excavator	Point	LAeq,1hr	100.9	100.9		910.00	-70.2	-2.4	-3.4	-3.4	21.4	0.0	21.4	
Excavator	Point	LAeq,1hr	100.9	100.9		868.42	-69.8	-2.4	-3.6	-3.2	21.9	0.0	21.9	
Excavator	Point	LAeq,1hr	100.9	100.9		866.93	-69.8	-2.0	-3.0	-2.9	23.2	0.0	23.2	
HGV Movements	Line	LAeq,1hr	61.6	90.2	711.0	648.03	-67.2	-2.1	-5.6	-3.4	11.8	13.0	24.8	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		885.93	-69.7	-1.4	-4.0	-3.5	22.4	0.0	22.4	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		901.00	-70.1	-1.4	-3.9	-3.6	22.0	0.0	22.0	
Wash Plant	Point	LAeq,1hr	104.9	104.9		876.83	-69.9	-1.0	-4.0	-4.0	26.0	0.0	26.0	
Receiver Ridge House X 376560.12 m Y 314448.14 m Z 153.54 m LAeq,1hr 40.2 dB(A)														
ADT Movements	Line	LAeq,1hr	64.0	85.0	124.9	375.11	-62.5	-0.8	-11.3	-0.7	9.7	13.8	23.5	
Crusher	Point	LAeq,1hr	110.0	110.0		340.41	-61.6	-2.5	-9.4	-0.8	35.7	0.0	35.7	
Dozer	Point	LAeq,1hr	107.3	107.3		343.04	-61.7	-0.1	-13.4	-0.9	31.1	0.0	31.1	
Excavator	Point	LAeq,1hr	100.9	100.9		333.98	-61.5	-2.4	-6.9	-0.9	29.2	0.0	29.2	
Excavator	Point	LAeq,1hr	100.9	100.9		369.77	-62.4	-2.3	-7.4	-1.0	27.8	0.0	27.8	
Excavator	Point	LAeq,1hr	100.9	100.9		336.86	-61.5	-0.8	-11.4	-0.8	26.4	0.0	26.4	
HGV Movements	Line	LAeq,1hr	61.6	90.2	711.0	575.99	-66.2	-2.1	-10.0	-2.1	9.8	13.0	22.8	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		360.70	-62.1	-1.0	-9.6	-0.9	27.4	0.0	27.4	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		322.83	-61.2	-1.0	-9.7	-0.9	28.3	0.0	28.3	
Wash Plant	Point	LAeq,1hr	104.9	104.9		367.10	-62.3	-1.0	-7.6	-1.1	32.9	0.0	32.9	
Receiver Woodcote Hall X 376731.17 m Y 315421.43 m Z 119.49 m LAeq,1hr 35.3 dB(A)														
ADT Movements	Line	LAeq,1hr	64.0	85.0	124.9	688.44	-67.7	-1.6	-8.7	-1.7	5.3	13.8	19.1	
Crusher	Point	LAeq,1hr	110.0	110.0		788.31	-68.9	-2.5	-7.5	-2.2	28.9	0.0	28.9	
Dozer	Point	LAeq,1hr	107.3	107.3		680.96	-67.7	-1.3	-5.0	-2.9	30.4	0.0	30.4	
Excavator	Point	LAeq,1hr	100.9	100.9		788.57	-68.9	-2.4	-6.5	-2.0	21.0	0.0	21.0	
Excavator	Point	LAeq,1hr	100.9	100.9		752.81	-68.5	-2.4	-6.8	-1.9	21.2	0.0	21.2	
Excavator	Point	LAeq,1hr	100.9	100.9		689.99	-67.8	-2.0	-3.7	-2.2	25.3	0.0	25.3	
HGV Movements	Line	LAeq,1hr	61.6	90.2	711.0	718.64	-68.1	-2.2	-6.8	-3.5	9.6	13.0	22.6	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		738.23	-68.4	-1.4	-8.2	-2.0	21.2	0.0	21.2	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		761.50	-68.6	-1.4	-7.5	-2.1	21.5	0.0	21.5	
Wash Plant	Point	LAeq,1hr	104.9	104.9		764.41	-68.7	-1.0	-7.3	-2.0	25.9	0.0	25.9	

Woodcote Wood Landfill
Mean propagation Leq - Phase 2a

Source	Source type	Time slice	L'w	Lw	l or A	S	Adiv	Agr	Abar	Aatm	Ls	dLw	Lr	
			dB(A)	dB(A)	m,m²	m	dB	dB	dB	dB	dB(A)	dB	dB(A)	
Receiver 1 Chadwell Lane X 377406.24 m Y 315416.67 m Z 109.49 m LAeq,1hr 37.2 dB(A)														
ADT Movements	Line	LAeq,1hr	64.0	87.4	218.9	803.41	-69.1	-1.9	-3.8	-3.7	9.0	13.8	22.8	
Crusher	Point	LAeq,1hr	110.0	110.0		960.68	-70.6	-2.5	-3.7	-4.2	29.0	0.0	29.0	
Dozer	Point	LAeq,1hr	107.3	107.3		730.04	-68.3	-1.2	0.0	-4.0	33.7	0.0	33.7	
Excavator	Point	LAeq,1hr	100.9	100.9		965.79	-70.7	-2.4	-3.4	-3.6	20.8	0.0	20.8	
Excavator	Point	LAeq,1hr	100.9	100.9		925.46	-70.3	-2.4	-3.4	-3.5	21.3	0.0	21.3	
Excavator	Point	LAeq,1hr	100.9	100.9		743.28	-68.4	-2.0	0.0	-3.3	27.3	0.0	27.3	
HGV Movements	Line	LAeq,1hr	61.6	90.2	711.0	614.35	-66.8	-2.1	-3.6	-3.5	14.2	13.0	27.2	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		929.65	-70.4	-1.4	-3.9	-3.8	21.7	0.0	21.7	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		967.27	-70.7	-1.4	-3.9	-3.9	21.2	0.0	21.2	
Wash Plant	Point	LAeq,1hr	104.9	104.9		931.24	-70.4	-1.0	-4.0	-4.1	25.4	0.0	25.4	
Receiver 88 Bloomsbury X 377471.25 m Y 314356.87 m Z 115.69 m LAeq,1hr 40.1 dB(A)														
ADT Movements	Line	LAeq,1hr	64.0	87.4	218.9	704.61	-68.0	-1.7	-1.5	-3.5	12.8	13.8	26.6	
Crusher	Point	LAeq,1hr	110.0	110.0		692.61	-67.8	-2.5	0.0	-3.8	35.9	0.0	35.9	
Dozer	Point	LAeq,1hr	107.3	107.3		739.96	-68.4	-1.2	-3.8	-3.5	30.4	0.0	30.4	
Excavator	Point	LAeq,1hr	100.9	100.9		698.56	-67.9	-2.4	0.0	-3.4	27.2	0.0	27.2	
Excavator	Point	LAeq,1hr	100.9	100.9		700.80	-67.9	-2.4	0.0	-3.4	27.2	0.0	27.2	
Excavator	Point	LAeq,1hr	100.9	100.9		749.67	-68.5	-2.0	-3.0	-2.6	24.8	0.0	24.8	
HGV Movements	Line	LAeq,1hr	61.6	90.2	711.0	621.74	-66.9	-2.2	-2.7	-3.9	14.5	13.0	27.5	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		725.51	-68.2	-1.4	0.0	-3.4	28.0	0.0	28.0	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		738.44	-68.4	-1.4	0.0	-3.5	27.8	0.0	27.8	
Wash Plant	Point	LAeq,1hr	104.9	104.9		691.46	-67.8	-1.0	0.0	-4.2	32.0	0.0	32.0	
Receiver Brandon House X 377165.48 m Y 315486.27 m Z 105.99 m LAeq,1hr 37.7 dB(A)														
ADT Movements	Line	LAeq,1hr	64.0	87.4	218.9	752.85	-68.5	-1.9	-4.8	-3.2	9.0	13.8	22.9	
Crusher	Point	LAeq,1hr	110.0	110.0		906.34	-70.1	-2.5	-3.9	-3.9	29.5	0.0	29.5	
Dozer	Point	LAeq,1hr	107.3	107.3		667.07	-67.5	-1.2	0.0	-3.8	34.8	0.0	34.8	
Excavator	Point	LAeq,1hr	100.9	100.9		910.00	-70.2	-2.4	-3.4	-3.4	21.4	0.0	21.4	
Excavator	Point	LAeq,1hr	100.9	100.9		868.42	-69.8	-2.4	-3.6	-3.2	21.9	0.0	21.9	
Excavator	Point	LAeq,1hr	100.9	100.9		676.08	-67.6	-2.0	-3.0	-2.4	26.0	0.0	26.0	
HGV Movements	Line	LAeq,1hr	61.6	90.2	711.0	648.03	-67.2	-2.1	-5.6	-3.4	11.8	13.0	24.8	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		865.93	-69.7	-1.4	-4.0	-3.5	22.4	0.0	22.4	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		901.00	-70.1	-1.4	-3.9	-3.6	22.0	0.0	22.0	
Wash Plant	Point	LAeq,1hr	104.9	104.9		876.83	-69.9	-1.0	-4.0	-4.0	26.0	0.0	26.0	
Receiver Ridge House X 376560.12 m Y 314448.14 m Z 153.54 m LAeq,1hr 40.0 dB(A)														
ADT Movements	Line	LAeq,1hr	64.0	87.4	218.9	471.72	-64.5	-1.4	-8.6	-1.2	11.8	13.8	25.6	
Crusher	Point	LAeq,1hr	110.0	110.0		340.41	-61.6	-2.5	-9.4	-0.8	35.7	0.0	35.7	
Dozer	Point	LAeq,1hr	107.3	107.3		557.25	-65.9	-0.7	-9.5	-1.8	29.3	0.0	29.3	
Excavator	Point	LAeq,1hr	100.9	100.9		333.98	-61.5	-2.4	-6.9	-0.9	29.2	0.0	29.2	
Excavator	Point	LAeq,1hr	100.9	100.9		369.77	-62.4	-2.3	-7.4	-1.0	27.8	0.0	27.8	
Excavator	Point	LAeq,1hr	100.9	100.9		543.91	-65.7	-1.4	-8.6	-1.3	23.8	0.0	23.8	
HGV Movements	Line	LAeq,1hr	61.6	90.2	711.0	575.99	-66.2	-2.1	-10.0	-2.1	9.8	13.0	22.8	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		360.70	-62.1	-1.0	-9.6	-0.9	27.4	0.0	27.4	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		322.83	-61.2	-1.0	-9.7	-0.9	28.3	0.0	28.3	
Wash Plant	Point	LAeq,1hr	104.9	104.9		367.10	-62.3	-1.0	-7.6	-1.1	32.9	0.0	32.9	
Receiver Woodcote Hall X 376731.17 m Y 315421.43 m Z 119.49 m LAeq,1hr 36.5 dB(A)														
ADT Movements	Line	LAeq,1hr	64.0	87.4	218.9	667.78	-67.5	-1.9	-8.1	-1.8	8.3	13.8	22.1	
Crusher	Point	LAeq,1hr	110.0	110.0		788.31	-68.9	-2.5	-7.5	-2.2	28.9	0.0	28.9	
Dozer	Point	LAeq,1hr	107.3	107.3		594.54	-66.5	-1.2	-3.8	-2.9	32.8	0.0	32.8	
Excavator	Point	LAeq,1hr	100.9	100.9		788.57	-68.9	-2.4	-6.5	-2.0	21.0	0.0	21.0	
Excavator	Point	LAeq,1hr	100.9	100.9		752.81	-68.5	-2.4	-6.8	-1.9	21.2	0.0	21.2	
Excavator	Point	LAeq,1hr	100.9	100.9		592.42	-66.4	-2.0	-3.1	-2.1	27.3	0.0	27.3	
HGV Movements	Line	LAeq,1hr	61.6	90.2	711.0	718.64	-68.1	-2.2	-6.8	-3.5	9.6	13.0	22.6	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		738.23	-68.4	-1.4	-8.2	-2.0	21.2	0.0	21.2	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		761.50	-68.6	-1.4	-7.5	-2.1	21.5	0.0	21.5	
Wash Plant	Point	LAeq,1hr	104.9	104.9		764.41	-68.7	-1.0	-7.3	-2.0	25.9	0.0	25.9	

Woodcote Wood Landfill
Mean propagation Leq - Phase 2b

Source	Source type	Time slice	L'w	Lw	l or A	S	Adiv	Agr	Abar	Aatm	Ls	dLw	Lr	
			dB(A)	dB(A)	m,m²	m	dB	dB	dB	dB	dB(A)	dB	dB(A)	
Receiver 1 Chadwell Lane X 377406.24 m Y 315416.67 m Z 109.49 m LAeq,1hr 37.8 dB(A)														
ADT Movements	Line	LAeq,1hr	64.0	90.1	406.4	793.92	-69.0	-1.8	-2.2	-3.9	13.3	13.8	27.1	
Crusher	Point	LAeq,1hr	110.0	110.0		960.68	-70.6	-2.5	-3.7	-4.2	29.0	0.0	29.0	
Dozer	Point	LAeq,1hr	107.3	107.3		697.60	-67.9	-1.2	0.0	-3.9	34.3	0.0	34.3	
Excavator	Point	LAeq,1hr	100.9	100.9		965.79	-70.7	-2.4	-3.4	-3.6	20.8	0.0	20.8	
Excavator	Point	LAeq,1hr	100.9	100.9		925.46	-70.3	-2.4	-3.4	-3.5	21.3	0.0	21.3	
Excavator	Point	LAeq,1hr	100.9	100.9		718.11	-68.1	-2.0	0.0	-3.2	27.6	0.0	27.6	
HGV Movements	Line	LAeq,1hr	61.6	90.2	711.0	614.35	-66.8	-2.1	-3.6	-3.5	14.2	13.0	27.2	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		929.65	-70.4	-1.4	-3.9	-3.8	21.7	0.0	21.7	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		967.27	-70.7	-1.4	-3.9	-3.9	21.2	0.0	21.2	
Wash Plant	Point	LAeq,1hr	104.9	104.9		931.24	-70.4	-1.0	-4.0	-4.1	25.4	0.0	25.4	
Receiver 88 Bloomsbury X 377471.25 m Y 314356.87 m Z 115.69 m LAeq,1hr 39.7 dB(A)														
ADT Movements	Line	LAeq,1hr	64.0	90.1	406.4	833.98	-69.4	-1.6	-1.7	-3.9	13.5	13.8	27.3	
Crusher	Point	LAeq,1hr	110.0	110.0		692.61	-67.8	-2.5	0.0	-3.8	35.9	0.0	35.9	
Dozer	Point	LAeq,1hr	107.3	107.3		1000.40	-71.0	-1.2	-5.1	-3.8	26.2	0.0	26.2	
Excavator	Point	LAeq,1hr	100.9	100.9		698.56	-67.9	-2.4	0.0	-3.4	27.2	0.0	27.2	
Excavator	Point	LAeq,1hr	100.9	100.9		700.80	-67.9	-2.4	0.0	-3.4	27.2	0.0	27.2	
Excavator	Point	LAeq,1hr	100.9	100.9		1011.44	-71.1	-2.0	-5.1	-2.6	20.1	0.0	20.1	
HGV Movements	Line	LAeq,1hr	61.6	90.2	711.0	621.74	-66.9	-2.2	-2.7	-3.9	14.5	13.0	27.5	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		725.51	-68.2	-1.4	0.0	-3.4	28.0	0.0	28.0	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		738.44	-68.4	-1.4	0.0	-3.5	27.8	0.0	27.8	
Wash Plant	Point	LAeq,1hr	104.9	104.9		691.46	-67.8	-1.0	0.0	-4.2	32.0	0.0	32.0	
Receiver Brandon House X 377165.48 m Y 315488.27 m Z 105.99 m LAeq,1hr 39.6 dB(A)														
ADT Movements	Line	LAeq,1hr	64.0	90.1	406.4	681.41	-67.7	-1.7	-2.9	-3.3	14.6	13.8	28.4	
Crusher	Point	LAeq,1hr	110.0	110.0		906.34	-70.1	-2.5	-3.9	-3.9	29.5	0.0	29.5	
Dozer	Point	LAeq,1hr	107.3	107.3		546.76	-65.7	-1.2	0.0	-3.2	37.1	0.0	37.1	
Excavator	Point	LAeq,1hr	100.9	100.9		910.00	-70.2	-2.4	-3.4	-3.4	21.4	0.0	21.4	
Excavator	Point	LAeq,1hr	100.9	100.9		888.42	-69.8	-2.4	-3.6	-3.2	21.9	0.0	21.9	
Excavator	Point	LAeq,1hr	100.9	100.9		564.43	-66.0	-2.0	0.0	-2.6	30.3	0.0	30.3	
HGV Movements	Line	LAeq,1hr	61.6	90.2	711.0	648.03	-67.2	-2.1	-5.6	-3.4	11.8	13.0	24.8	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		865.93	-69.7	-1.4	-4.0	-3.5	22.4	0.0	22.4	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		901.00	-70.1	-1.4	-3.9	-3.6	22.0	0.0	22.0	
Wash Plant	Point	LAeq,1hr	104.9	104.9		876.83	-69.9	-1.0	-4.0	-4.0	26.0	0.0	26.0	
Receiver Ridge House X 376560.12 m Y 314448.14 m Z 153.54 m LAeq,1hr 39.5 dB(A)														
ADT Movements	Line	LAeq,1hr	64.0	90.1	406.4	489.77	-64.8	-1.0	-12.7	-0.8	10.8	13.8	24.6	
Crusher	Point	LAeq,1hr	110.0	110.0		340.41	-61.6	-2.5	-9.4	-0.8	35.7	0.0	35.7	
Dozer	Point	LAeq,1hr	107.3	107.3		681.98	-67.7	-1.2	-19.8	-1.8	16.8	0.0	16.8	
Excavator	Point	LAeq,1hr	100.9	100.9		333.98	-61.5	-2.4	-6.9	-0.9	29.2	0.0	29.2	
Excavator	Point	LAeq,1hr	100.9	100.9		369.77	-62.4	-2.3	-7.4	-1.0	27.8	0.0	27.8	
Excavator	Point	LAeq,1hr	100.9	100.9		670.93	-67.5	-2.0	-18.4	-1.4	11.6	0.0	11.6	
HGV Movements	Line	LAeq,1hr	61.6	90.2	711.0	575.99	-66.2	-2.1	-10.0	-2.1	9.8	13.0	22.8	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		360.70	-62.1	-1.0	-9.6	-0.9	27.4	0.0	27.4	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		322.83	-61.2	-1.0	-9.7	-0.9	28.3	0.0	28.3	
Wash Plant	Point	LAeq,1hr	104.9	104.9		367.10	-62.3	-1.0	-7.6	-1.1	32.9	0.0	32.9	
Receiver Woodcote Hall X 376731.17 m Y 315421.43 m Z 119.49 m LAeq,1hr 43.8 dB(A)														
ADT Movements	Line	LAeq,1hr	64.0	90.1	406.4	509.95	-65.1	-1.7	-3.3	-2.2	17.7	13.8	31.5	
Crusher	Point	LAeq,1hr	110.0	110.0		788.31	-68.9	-2.5	-7.5	-2.2	28.9	0.0	28.9	
Dozer	Point	LAeq,1hr	107.3	107.3		337.95	-61.6	-1.2	0.0	-2.2	42.3	0.0	42.3	
Excavator	Point	LAeq,1hr	100.9	100.9		788.57	-68.9	-2.4	-6.5	-2.0	21.0	0.0	21.0	
Excavator	Point	LAeq,1hr	100.9	100.9		752.81	-68.5	-2.4	-6.8	-1.9	21.2	0.0	21.2	
Excavator	Point	LAeq,1hr	100.9	100.9		339.35	-61.6	-1.9	0.0	-1.7	35.6	0.0	35.6	
HGV Movements	Line	LAeq,1hr	61.6	90.2	711.0	718.64	-68.1	-2.2	-6.8	-3.5	9.6	13.0	22.6	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		738.23	-68.4	-1.4	-8.2	-2.0	21.2	0.0	21.2	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		761.50	-68.6	-1.4	-7.5	-2.1	21.5	0.0	21.5	
Wash Plant	Point	LAeq,1hr	104.9	104.9		764.41	-68.7	-1.0	-7.3	-2.0	25.9	0.0	25.9	

Woodcote Wood Landfill
Mean propagation Leq - Phase 3a

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Source	Source type	Time slice	L'w	Lw	l or A	S	Adiv	Agr	Abar	Aatm	Ls	dLw	Lr	
			dB(A)	dB(A)	m,m²	m	dB	dB	dB	dB	dB(A)	dB	dB(A)	
Receiver 1 Chadwell Lane X 377406.24 m Y 315416.67 m Z 109.49 m LAeq,1hr 39.2 dB(A)														
ADT Movements	Line	LAeq,1hr	64.0	90.9	484.0	716.35	-68.1	-2.1	-1.6	-3.6	15.5	13.8	29.3	
Crusher	Point	LAeq,1hr	110.0	110.0		960.68	-70.6	-2.5	-3.7	-4.2	29.0	0.0	29.0	
Dozer	Point	LAeq,1hr	107.3	107.3		576.04	-66.2	-1.3	0.0	-3.4	36.4	0.0	36.4	
Excavator	Point	LAeq,1hr	100.9	100.9		965.79	-70.7	-2.4	-3.4	-3.6	20.8	0.0	20.8	
Excavator	Point	LAeq,1hr	100.9	100.9		925.46	-70.3	-2.4	-3.4	-3.5	21.3	0.0	21.3	
Excavator	Point	LAeq,1hr	100.9	100.9		599.50	-66.5	-2.0	0.0	-2.8	29.6	0.0	29.6	
HGV Movements	Line	LAeq,1hr	61.6	90.2	711.0	614.35	-66.8	-2.1	-3.6	-3.5	14.2	13.0	27.2	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		929.65	-70.4	-1.4	-3.9	-3.8	21.7	0.0	21.7	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		967.27	-70.7	-1.4	-3.9	-3.9	21.2	0.0	21.2	
Wash Plant	Point	LAeq,1hr	104.9	104.9		931.24	-70.4	-1.0	-4.0	-4.1	25.4	0.0	25.4	
Receiver 88 Bloomsbury X 377471.25 m Y 314356.87 m Z 115.69 m LAeq,1hr 39.7 dB(A)														
ADT Movements	Line	LAeq,1hr	64.0	90.9	484.0	811.33	-69.2	-2.0	-2.0	-3.9	14.0	13.8	27.8	
Crusher	Point	LAeq,1hr	110.0	110.0		692.61	-67.8	-2.5	0.0	-3.8	35.9	0.0	35.9	
Dozer	Point	LAeq,1hr	107.3	107.3		913.19	-70.2	-1.3	-6.7	-3.3	25.8	0.0	25.8	
Excavator	Point	LAeq,1hr	100.9	100.9		698.56	-67.9	-2.4	0.0	-3.4	27.2	0.0	27.2	
Excavator	Point	LAeq,1hr	100.9	100.9		700.80	-67.9	-2.4	0.0	-3.4	27.2	0.0	27.2	
Excavator	Point	LAeq,1hr	100.9	100.9		930.14	-70.4	-2.0	-9.5	-2.0	17.1	0.0	17.1	
HGV Movements	Line	LAeq,1hr	61.6	90.2	711.0	621.74	-66.9	-2.2	-2.7	-3.9	14.5	13.0	27.5	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		725.51	-68.2	-1.4	0.0	-3.4	28.0	0.0	28.0	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		738.44	-68.4	-1.4	0.0	-3.5	27.8	0.0	27.8	
Wash Plant	Point	LAeq,1hr	104.9	104.9		691.46	-67.8	-1.0	0.0	-4.2	32.0	0.0	32.0	
Receiver Brandon House X 377165.48 m Y 315488.27 m Z 105.99 m LAeq,1hr 41.1 dB(A)														
ADT Movements	Line	LAeq,1hr	64.0	90.9	484.0	624.01	-66.9	-2.1	-1.6	-3.1	17.2	13.8	31.0	
Crusher	Point	LAeq,1hr	110.0	110.0		906.34	-70.1	-2.5	-3.9	-3.9	29.5	0.0	29.5	
Dozer	Point	LAeq,1hr	107.3	107.3		459.27	-64.2	-1.3	0.0	-2.8	39.0	0.0	39.0	
Excavator	Point	LAeq,1hr	100.9	100.9		910.00	-70.2	-2.4	-3.4	-3.4	21.4	0.0	21.4	
Excavator	Point	LAeq,1hr	100.9	100.9		868.42	-69.8	-2.4	-3.6	-3.2	21.9	0.0	21.9	
Excavator	Point	LAeq,1hr	100.9	100.9		474.29	-64.5	-2.0	0.0	-2.3	32.1	0.0	32.1	
HGV Movements	Line	LAeq,1hr	61.6	90.2	711.0	648.03	-67.2	-2.1	-5.6	-3.4	11.8	13.0	24.8	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		865.93	-69.7	-1.4	-4.0	-3.5	22.4	0.0	22.4	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		901.00	-70.1	-1.4	-3.9	-3.6	22.0	0.0	22.0	
Wash Plant	Point	LAeq,1hr	104.9	104.9		876.83	-69.9	-1.0	-4.0	-4.0	26.0	0.0	26.0	
Receiver Ridge House X 376560.12 m Y 314448.14 m Z 153.54 m LAeq,1hr 39.5 dB(A)														
ADT Movements	Line	LAeq,1hr	64.0	90.9	484.0	515.80	-65.2	-1.2	-12.6	-0.8	11.0	13.8	24.8	
Crusher	Point	LAeq,1hr	110.0	110.0		340.41	-61.6	-2.5	-9.4	-0.8	35.7	0.0	35.7	
Dozer	Point	LAeq,1hr	107.3	107.3		743.64	-68.4	-0.9	-19.6	-1.9	16.5	0.0	16.5	
Excavator	Point	LAeq,1hr	100.9	100.9		333.98	-61.5	-2.4	-6.9	-0.9	29.2	0.0	29.2	
Excavator	Point	LAeq,1hr	100.9	100.9		369.77	-62.4	-2.3	-7.4	-1.0	27.8	0.0	27.8	
Excavator	Point	LAeq,1hr	100.9	100.9		730.02	-68.3	-1.7	-18.6	-1.4	11.0	0.0	11.0	
HGV Movements	Line	LAeq,1hr	61.6	90.2	711.0	575.99	-66.2	-2.1	-10.0	-2.1	9.8	13.0	22.8	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		360.70	-62.1	-1.0	-9.6	-0.9	27.4	0.0	27.4	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		322.83	-61.2	-1.0	-9.7	-0.9	28.3	0.0	28.3	
Wash Plant	Point	LAeq,1hr	104.9	104.9		367.10	-62.3	-1.0	-7.6	-1.1	32.9	0.0	32.9	
Receiver Woodcote Hall X 376731.17 m Y 315421.43 m Z 119.49 m LAeq,1hr 42.6 dB(A)														
ADT Movements	Line	LAeq,1hr	64.0	90.9	484.0	521.46	-65.3	-2.0	-3.7	-2.4	17.5	13.8	31.3	
Crusher	Point	LAeq,1hr	110.0	110.0		788.31	-68.9	-2.5	-7.5	-2.2	28.9	0.0	28.9	
Dozer	Point	LAeq,1hr	107.3	107.3		384.92	-62.7	-1.3	0.0	-2.5	40.9	0.0	40.9	
Excavator	Point	LAeq,1hr	100.9	100.9		788.57	-68.9	-2.4	-6.5	-2.0	21.0	0.0	21.0	
Excavator	Point	LAeq,1hr	100.9	100.9		752.81	-68.5	-2.4	-6.8	-1.9	21.2	0.0	21.2	
Excavator	Point	LAeq,1hr	100.9	100.9		371.11	-62.4	-2.0	0.0	-1.9	34.6	0.0	34.6	
HGV Movements	Line	LAeq,1hr	61.6	90.2	711.0	718.64	-68.1	-2.2	-6.8	-3.5	9.6	13.0	22.6	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		738.23	-68.4	-1.4	-8.2	-2.0	21.2	0.0	21.2	
Loading Shovel	Point	LAeq,1hr	101.1	101.1		761.50	-68.6	-1.4	-7.5	-2.1	21.5	0.0	21.5	
Wash Plant	Point	LAeq,1hr	104.9	104.9		764.41	-68.7	-1.0	-7.3	-2.0	25.9	0.0	25.9	

Woodcote Wood Landfill
Mean propagation Leq - Phase 3b

Source	Source type	Time slice	L'w	Lw	l or A	S	Adiv	Agr	Abar	Aatm	Ls	dLw	Lr
			dB(A)	dB(A)	m,m²	m	dB	dB	dB	dB	dB(A)	dB	dB(A)
Receiver 1 Chadwell Lane X 377406.24 m Y 315416.67 m Z 109.49 m LAeq,1hr 37.3 dB(A)													
ADT Movements	Line	LAeq,1hr	64.0	89.5	348.1	791.15	-69.0	-1.9	-9.6	-3.0	6.0	13.8	19.8
Crusher	Point	LAeq,1hr	110.0	110.0		960.68	-70.6	-2.5	-3.7	-4.2	29.0	0.0	29.0
Dozer	Point	LAeq,1hr	107.3	107.3		708.65	-68.0	-1.2	0.0	-3.9	34.1	0.0	34.1
Excavator	Point	LAeq,1hr	100.9	100.9		965.79	-70.7	-2.4	-3.4	-3.6	20.8	0.0	20.8
Excavator	Point	LAeq,1hr	100.9	100.9		925.46	-70.3	-2.4	-3.4	-3.5	21.3	0.0	21.3
Excavator	Point	LAeq,1hr	100.9	100.9		722.74	-68.2	-1.9	0.0	-3.2	27.6	0.0	27.6
HGV Movements	Line	LAeq,1hr	61.6	90.2	711.0	614.35	-66.8	-2.1	-3.6	-3.5	14.2	13.0	27.2
Loading Shovel	Point	LAeq,1hr	101.1	101.1		929.65	-70.4	-1.4	-3.9	-3.8	21.7	0.0	21.7
Loading Shovel	Point	LAeq,1hr	101.1	101.1		967.27	-70.7	-1.4	-3.9	-3.9	21.2	0.0	21.2
Wash Plant	Point	LAeq,1hr	104.9	104.9		931.24	-70.4	-1.0	-4.0	-4.1	25.4	0.0	25.4
Receiver 88 Bloomsbury X 377471.25 m Y 314356.87 m Z 115.69 m LAeq,1hr 42.7 dB(A)													
ADT Movements	Line	LAeq,1hr	64.0	89.5	348.1	577.90	-66.2	-1.5	-0.9	-3.0	17.8	13.8	31.6
Crusher	Point	LAeq,1hr	110.0	110.0		692.61	-67.8	-2.5	0.0	-3.8	35.9	0.0	35.9
Dozer	Point	LAeq,1hr	107.3	107.3		473.94	-64.5	-1.2	0.0	-2.9	38.7	0.0	38.7
Excavator	Point	LAeq,1hr	100.9	100.9		698.56	-67.9	-2.4	0.0	-3.4	27.2	0.0	27.2
Excavator	Point	LAeq,1hr	100.9	100.9		700.80	-67.9	-2.4	0.0	-3.4	27.2	0.0	27.2
Excavator	Point	LAeq,1hr	100.9	100.9		476.04	-64.5	-2.0	0.0	-2.3	32.1	0.0	32.1
HGV Movements	Line	LAeq,1hr	61.6	90.2	711.0	621.74	-66.9	-2.2	-2.7	-3.9	14.5	13.0	27.5
Loading Shovel	Point	LAeq,1hr	101.1	101.1		725.51	-68.2	-1.4	0.0	-3.4	28.0	0.0	28.0
Loading Shovel	Point	LAeq,1hr	101.1	101.1		738.44	-68.4	-1.4	0.0	-3.5	27.8	0.0	27.8
Wash Plant	Point	LAeq,1hr	104.9	104.9		691.46	-67.8	-1.0	0.0	-4.2	32.0	0.0	32.0
Receiver Brandon House X 377165.48 m Y 315486.27 m Z 105.99 m LAeq,1hr 37.1 dB(A)													
ADT Movements	Line	LAeq,1hr	64.0	89.5	348.1	779.03	-68.8	-1.9	-8.7	-2.8	7.3	13.8	21.1
Crusher	Point	LAeq,1hr	110.0	110.0		906.34	-70.1	-2.5	-3.9	-3.9	29.5	0.0	29.5
Dozer	Point	LAeq,1hr	107.3	107.3		747.04	-68.5	-1.2	0.0	-4.1	33.5	0.0	33.5
Excavator	Point	LAeq,1hr	100.9	100.9		910.00	-70.2	-2.4	-3.4	-3.4	21.4	0.0	21.4
Excavator	Point	LAeq,1hr	100.9	100.9		868.42	-69.8	-2.4	-3.6	-3.2	21.9	0.0	21.9
Excavator	Point	LAeq,1hr	100.9	100.9		756.11	-68.6	-1.9	0.0	-3.3	27.1	0.0	27.1
HGV Movements	Line	LAeq,1hr	61.6	90.2	711.0	648.03	-67.2	-2.1	-5.6	-3.4	11.8	13.0	24.8
Loading Shovel	Point	LAeq,1hr	101.1	101.1		865.93	-69.7	-1.4	-4.0	-3.5	22.4	0.0	22.4
Loading Shovel	Point	LAeq,1hr	101.1	101.1		901.00	-70.1	-1.4	-3.9	-3.6	22.0	0.0	22.0
Wash Plant	Point	LAeq,1hr	104.9	104.9		876.83	-69.9	-1.0	-4.0	-4.0	26.0	0.0	26.0
Receiver Ridge House X 376560.12 m Y 314448.14 m Z 153.54 m LAeq,1hr 40.3 dB(A)													
ADT Movements	Line	LAeq,1hr	64.0	89.5	348.1	512.34	-65.2	-1.6	-7.6	-1.8	13.3	13.8	27.1
Crusher	Point	LAeq,1hr	110.0	110.0		340.41	-61.6	-2.5	-9.4	-0.8	35.7	0.0	35.7
Dozer	Point	LAeq,1hr	107.3	107.3		700.12	-67.9	-1.2	-3.8	-3.3	31.0	0.0	31.0
Excavator	Point	LAeq,1hr	100.9	100.9		333.98	-61.5	-2.4	-6.9	-0.9	29.2	0.0	29.2
Excavator	Point	LAeq,1hr	100.9	100.9		389.77	-62.4	-2.3	-7.4	-1.0	27.8	0.0	27.8
Excavator	Point	LAeq,1hr	100.9	100.9		681.28	-67.7	-1.9	-3.0	-2.4	25.9	0.0	25.9
HGV Movements	Line	LAeq,1hr	61.6	90.2	711.0	575.99	-66.2	-2.1	-10.0	-2.1	9.8	13.0	22.8
Loading Shovel	Point	LAeq,1hr	101.1	101.1		360.70	-62.1	-1.0	-9.6	-0.9	27.4	0.0	27.4
Loading Shovel	Point	LAeq,1hr	101.1	101.1		322.83	-61.2	-1.0	-9.7	-0.9	28.3	0.0	28.3
Wash Plant	Point	LAeq,1hr	104.9	104.9		387.10	-62.3	-1.0	-7.6	-1.1	32.9	0.0	32.9
Receiver Woodcote Hall X 376731.17 m Y 315421.43 m Z 119.49 m LAeq,1hr 36.1 dB(A)													
ADT Movements	Line	LAeq,1hr	64.0	89.5	348.1	756.55	-68.6	-1.8	-10.3	-1.8	7.0	13.8	20.8
Crusher	Point	LAeq,1hr	110.0	110.0		788.31	-68.9	-2.5	-7.5	-2.2	28.9	0.0	28.9
Dozer	Point	LAeq,1hr	107.3	107.3		824.48	-69.3	-1.2	0.0	-4.4	32.3	0.0	32.3
Excavator	Point	LAeq,1hr	100.9	100.9		788.57	-68.9	-2.4	-6.5	-2.0	21.0	0.0	21.0
Excavator	Point	LAeq,1hr	100.9	100.9		752.81	-68.5	-2.4	-6.8	-1.9	21.2	0.0	21.2
Excavator	Point	LAeq,1hr	100.9	100.9		823.39	-69.3	-1.9	0.0	-3.5	26.1	0.0	26.1
HGV Movements	Line	LAeq,1hr	61.6	90.2	711.0	718.64	-68.1	-2.2	-6.8	-3.5	9.8	13.0	22.8
Loading Shovel	Point	LAeq,1hr	101.1	101.1		738.23	-68.4	-1.4	-8.2	-2.0	21.2	0.0	21.2
Loading Shovel	Point	LAeq,1hr	101.1	101.1		761.50	-68.6	-1.4	-7.5	-2.1	21.5	0.0	21.5
Wash Plant	Point	LAeq,1hr	104.9	104.9		764.41	-68.7	-1.0	-7.3	-2.0	25.9	0.0	25.9