



Supplementary Background Noise Monitoring

**DCO Application
for the Alteration and
Construction of Hazardous
Waste and Low Level
Radioactive Waste Facilities,
East Northants Resource
Management Facility,
Stamford Road,
Northamptonshire**

AUGEAN SOUTH LTD

**R22.11319/1/AP
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REPORT DETAILS

Client	Augean South Ltd
Report Title	Supplementary Background Noise Monitoring – DCO Application for the Alteration and Construction of Hazardous Waste and Low Level Radioactive Waste Facilities
Site Address	East Northants Resource Management Facility, Stamford Road, Northamptonshire
Report Ref.	R22.11319/1/AP
Vibrocock Contact	[REDACTED]

QUALITY ASSURANCE

Issue No.	Issue Date	Author	Technical Review
1	20/01/22	[REDACTED]	[REDACTED]
		A Pickford BSc MSc MIOA Director	R Kennedy B.Eng MIOA Director

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Report No. R22.11319/1/AP

CONTENTS

1.0	Introduction	1
2.0	Survey	3
3.0	Results	5
4.0	Summary	6
5.0	Bibliography	8
6.0	Glossary of Technical Terms	9

TABLES

1	Noise Monitoring Instrumentation
2	November 2021 Background Noise Data Summary
3	Comparison between Background Noise Levels Measured in February 2021 and November 2021

FIGURES

1	Location Plan
2 – 5	Statistical Analysis

APPENDIX

1	Correspondence with North Northants Council
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1.0 INTRODUCTION

- 1.1 Augean South Ltd is the operator of the East Northants Resource Management Facility (ENRMF) and has submitted an application for a Development Consent Order (DCO) for an extension to the area and timescales for the operation of the site including an extension to the west of the existing site and increasing the throughput of the waste treatment and recovery facility. Vibrock Limited was commissioned to undertake a noise and vibration impact assessment of the proposals.
- 1.2 The background noise levels used within the impact assessment included in the Environmental Statement which accompanied the application were measured in February 2021 once the environment in the vicinity of the existing ENRMF site started to return to normal following the easing of the COVID-19 pandemic lockdown restrictions. For much of 2020 the effects of the pandemic resulted in unrepresentative noise climates because typical road, air and rail transport usage have been reduced by travel restrictions and social distancing measures.
- 1.3 Department for Transport statistics on the use of transport during the COVID-19 pandemic¹ reveals that during the February 2021 survey motor vehicle usage was around 60% for cars, 82% for LGVs and 99% for HGVs when compared to pre-covid traffic flows. When all of the above vehicle types are combined, motor vehicle usage (comprising cars, LGVs and HGVs) was at 67% of pre-covid flows.
- 1.4 The DfT generate these vehicle usage percentages via comparison with the equivalent day in the first week of February 2020 and the analysis is based on data from around 275 automatic traffic count sites across Great Britain.

¹ <https://www.gov.uk/government/statistics/transport-use-during-the-coronavirus-covid-19-pandemic>

- 1.5 This report presents the results of supplementary background noise monitoring undertaken in November 2021 to provide further information on the acoustic environment and the overall representativeness of the February 2021 data utilised for the DCO application.
- 1.6 During the November 2021 survey, DfT data indicates that motor vehicle usage was around 93% for cars, 108% for LGVs and 106% for HGVs when compared to pre-covid traffic flows. When all of the above vehicle types are combined, motor vehicle usage (comprising cars, LGVs and HGVs) was at 97% of pre-covid flows.
- 1.7 North Northants Council were informed of the intention to conduct supplementary background noise monitoring and the approach presented in this report was agreed as shown in Appendix 1.

2.0 SURVEY

- 2.1 Noise levels were measured by Vibrock Ltd during a 24 hour period from 11th – 12th November 2021 at the same locations utilised for the DCO application.
- 2.2 Measurements were undertaken with reference to the guidance provided with BS 4142², BS 7445³ and the ANC Environmental Sound Measurement Guide⁴.
- 2.3 A plan showing the noise-sensitive receptor locations relative to the ENRMF site is provided in Figure 1.
- 2.4 Monitoring was undertaken using the equipment detailed in Table 1.

Manufacturer	Type	Serial No.
Cirrus	Class 1 Integrating Sound Level Meter CR:171	G056448
	Class 1 Integrating Sound Level Meter CR:171	G300481
	Class 1 Integrating Sound Level Meter CR:171	G078475
	Class 1 Integrating Sound Level Meter CR:171	G078470
	Acoustic Calibrator CR:515	78061

Table 1. Noise Monitoring Instrumentation

- 2.5 During the survey the microphones were protected with suitable outdoor windshields and mounted on tripods.

² BS 4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound, British Standards Institution 2019.

³ BS 7445-1:2003 Description and measurement of environmental noise – Part 1 Guide to quantities and procedures. British Standards Institution 2003.

⁴ ANC Guidelines: Environmental Sound Measurement Guide. 2021.

2.6 The monitoring positions were 'free field' (no vertical reflective surfaces within 3.5 metres of the microphone) and at a height of between 1.2 – 1.5 metres above ground level.

2.7 The following set-up parameters were used:

- Time Weighting: Fast
- Frequency Weighting: A
- Averaging-Integrating Period: 1 minute
- Data Logging: Repeat (Contiguous)

2.8 With the equipment set up in the configuration used during measurement, field calibration checks were performed on site immediately before and after the survey period using a sound calibrator. No significant drift (i.e. no greater than ± 0.5 dB) in the calibration value was observed between the initial and final checks.

2.9 Weather conditions during the survey were dry and settled with average wind speeds considered to be around $2 - 3 \text{ ms}^{-1}$ and typically from a south-south-westerly direction. Cloud cover varied between 2 – 6 oktas, relative humidity was around 86 – 89 % and temperatures ranged from 9 – 14 °C.

2.10 The acoustic environment in Duddington Village and at Cuckoo Lodge consists primarily of road traffic noise associated with the A47 and A43. At Westhay Lodge, Westhay Cottages and Westhay Farm, the acoustic environment comprises distant road traffic, local vehicle movements along Stamford Road and birdsong along with occasional noise from aircraft, agricultural activity and operations at PC Howard Ltd and the existing ENRMF.

3.0 RESULTS

3.1 Statistical analysis in line with the example approach presented in Section 8 (Fig. 4) of BS 4142⁵ was performed to determine a representative background sound level at each assessment location during time periods that are relevant to the assessment of noise from the ENRMF site. This analysis is presented in Figures 2 – 5.

3.2 After reviewing and analysing the noise data collected during the survey, the background noise levels are summarised in Table 2.

Location	Background Noise Levels L _{A90} (dB)	
	Daytime (0700 – 1800)	Night-time (2300 – 0700)
Westhay Cottages and Farm	46	33
Westhay Lodge	36	27
Cuckoo Lodge	53	32
Duddington Village	54	38

Table 2. November 2021 Background Noise Level Summary

⁵ BS 4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound, British Standards Institution 2019.

4.0 SUMMARY

4.1 A comparison between the background noise data from February and November 2021 is presented in Table 3 below.

Location	Background Sound Levels L _{A90} (dB)			
	Daytime (0700 – 1800)		Night-time (2300 – 0700)	
	Feb 2021	Nov 2021	Feb 2021	Nov 2021
Westhay Cottages and Farm	45	46	33	33
Westhay Lodge	36	36	28	27
Cuckoo Lodge	51	53	33	32
Duddington Village	49	54	36	38

Table 3. Comparison between Background Noise Levels Measured in February 2021 and November 2021

4.2 The background noise levels measured during the two surveys are similar with small variations typically in the region of 0 – 2 dB(A). Daytime background noise levels measured in November 2021 are marginally higher suggesting that reduced traffic flows in February 2021 were having a minor impact on the acoustic environment.

4.3 When the November 2021 background noise levels are considered in the context of the noise impact assessment which was included in the Environmental Statement submitted as part of the DCO application, it is suggested that the magnitude of the potential impacts from the main operations within the proposed western extension are likely to be

marginally over-estimated although it should be noted that the measured variations in the background noise levels are not significant enough to have a material effect upon the overall conclusions of the assessment.

- 4.4 Accordingly, the conclusion presented in the Environmental Statement that there will be no significant or unacceptable adverse noise impacts at noise sensitive locations resulting from the proposed development including the existing ENRMF remains valid.

5.0 BIBLIOGRAPHY

ANC Guidelines: *Environmental Sound Measurement Guide*. May 2021.

BS 4142:2014+A1:2019 *Methods for rating and assessing industrial and commercial sound*, British Standards Institution 2019.

BS 7445-1:2003 *Description and measurement of environmental noise – Part 1 Guide to quantities and procedures*. British Standards Institution 2003.

Guidelines for Environmental Noise Impact Assessment, v1.2. Institute of Environmental Management & Assessment. November 2014.

Noise and Vibration Management: Environmental Permits. Environment Agency 2021.

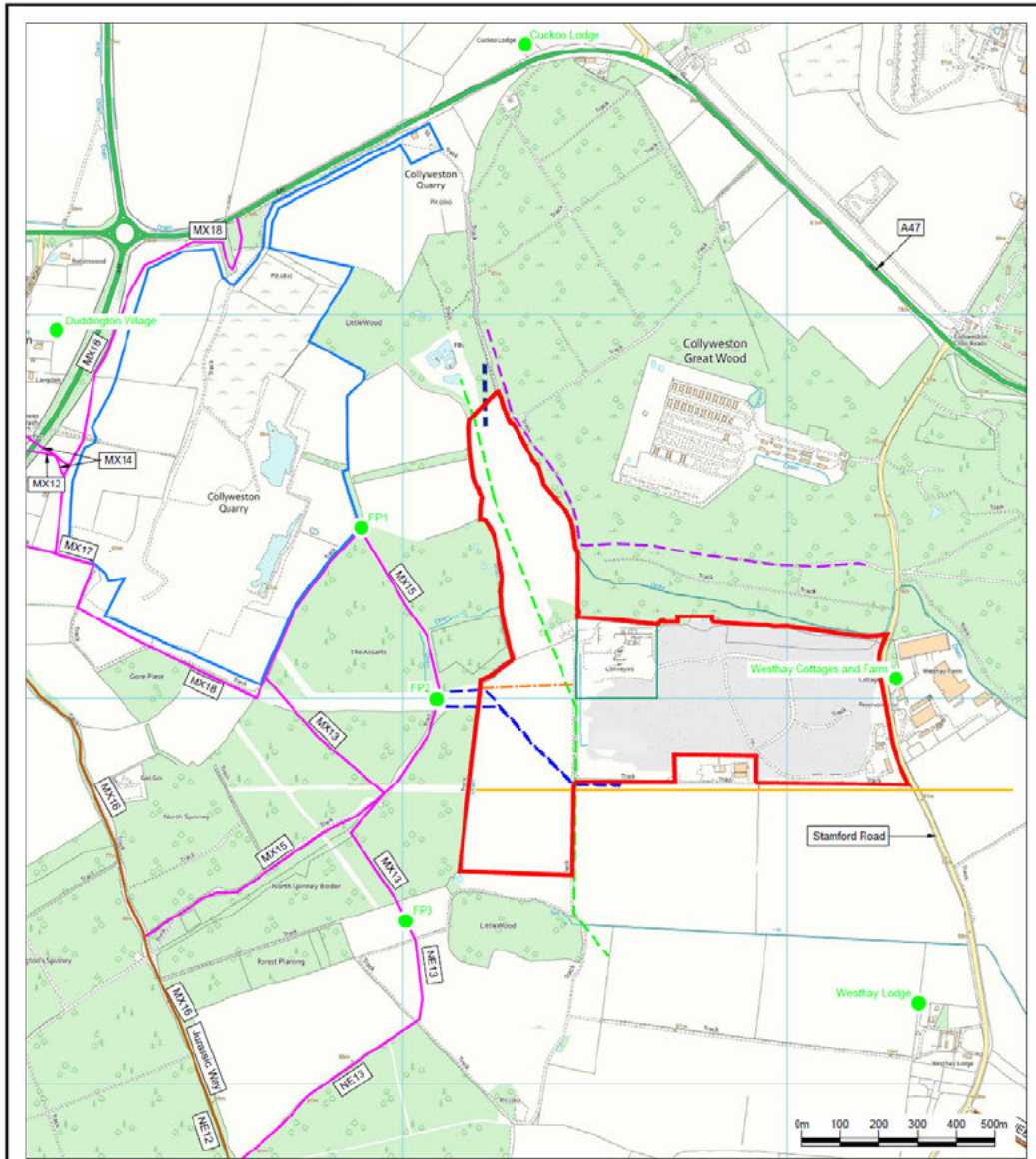
Risk assessments for your environmental permit. Environment Agency and Department for Environment, Food and Rural Affairs. March 2021.

6.0 GLOSSARY OF TECHNICAL TERMS

A-weighting	The human ear is most sensitive to frequencies in the range 1 kHz to 5 kHz. On each side of this range the sensitivity falls off. A-weighting is used in sound level meters to replicate this sensitivity and respond in the same way as the human ear.
Acoustic Environment	Sound from all sound sources as modified by the environment.
Ambient Sound Level $L_{Aeq,T}$	Totally encompassing sound in a given situation at a given time usually composed of sound from many sources near and far.
Background Sound Level $L_{A90,T}$	The A-weighted sound pressure level of the residual sound at the assessment position that is exceeded for 90% of a given time interval, T, measured using time weighting F.
Baseline Scenario	A description of the state of the environment without implementation of the project.
Equivalent continuous A-weighted sound pressure level $L_{Aeq,T}$	Value of the A-weighted sound pressure level of a continuous, steady sound that, within a specified time interval T, has the same mean square sound pressure as a sound under consideration whose level varies with time.
Free-field Level	The sound pressure level away from reflecting surfaces. Measurements made 1.2 - 1.5 metres above the ground and at least 3.5 metres away from other reflecting surfaces are usually regarded as free-field.
Residual Sound Level $L_{Aeq,T}$	Ambient sound remaining at a given position in a given situation when the specific sound source is suppressed to a degree such that it does not contribute to the ambient sound.

FIGURE 1

Location Plan



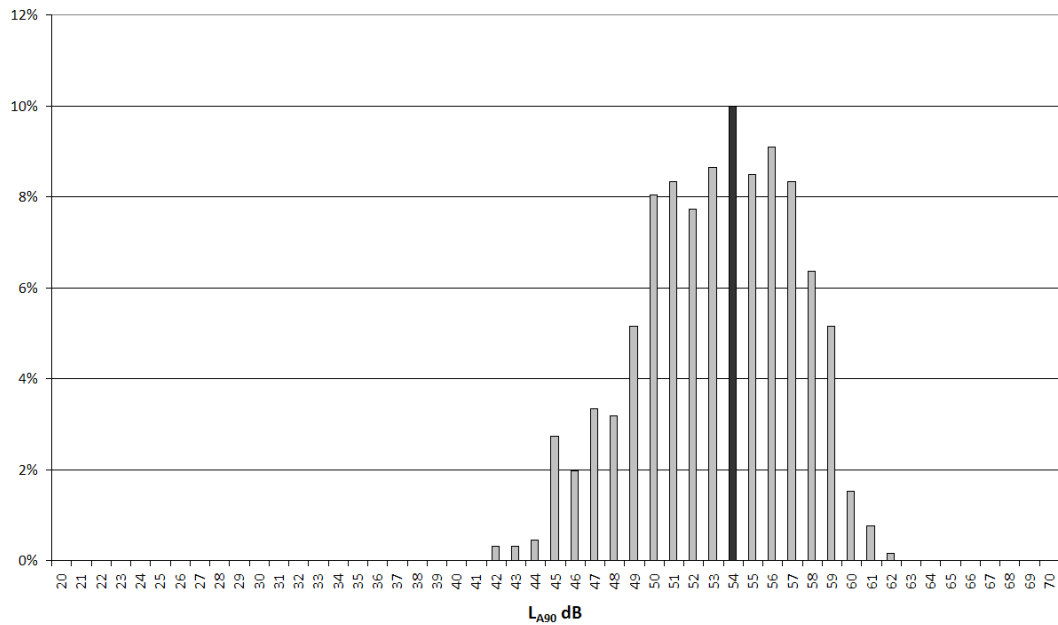
Key / Notes													
	Boundary of the area the subject of the application for the Development Consent Order												
	Approximate boundary of Collyweston Quarry												
	The approximate area of the proposed extended waste treatment and recovery facility and storage area												
	Approximate route of water pipelines												
	Approximate route of a disused water pipeline taken from DXF file supplied by Tigergeo Limited on 27 May 2021												
	Approximate route of an oil pipeline												
	Approximate route of an overhead electricity cable												
	Redundant and closed MOD pipeline												
	Approximate location of a high pressure gas pipeline												
	Bridleways												
	Footpaths												
	Approximate location of representative noise monitoring points												
<p>Note: Public rights of way taken from the Northamptonshire County Council Interactive Mapping</p>													
<table border="1"> <tr> <td>Rev</td> <td>Status</td> <td>Dim</td> <td>App</td> <td>Crk</td> <td>Date</td> </tr> <tr> <td></td> <td>Final</td> <td></td> <td></td> <td></td> <td>RLN/LZHSPS/08/07/21</td> </tr> </table>		Rev	Status	Dim	App	Crk	Date		Final				RLN/LZHSPS/08/07/21
Rev	Status	Dim	App	Crk	Date								
	Final				RLN/LZHSPS/08/07/21								
<p>Site: EAST NORTANTS RESOURCE MANAGEMENT FACILITY</p> <p>Client: </p> <p>Title: The application boundary, the services at and in the vicinity of the western extension and the public rights of way in the vicinity of ENRMF</p> <p>Scale: 1:10,000@A3</p> <p>Drawn by: AUKCW/07-21/22619</p> <p>Reproduced cadastral mapping by permission of Ordnance Survey on behalf of The Controller of Her Majesty's Stationery Office. © Crown copyright 2017. All rights reserved. Licence number 100017516.</p>													
<p>Business Centre Offices, Main Road, Banning, Atherstone, Warwickshire, CV35 9LE Telephone: 01927 717951 Fax: 01927 716087</p>													

FIGURE 2

Statistical Analysis to Determine the Background Sound Level

Location: Duddington Village

Daytime (0700 – 1800)



Night-time (2300 – 0700)

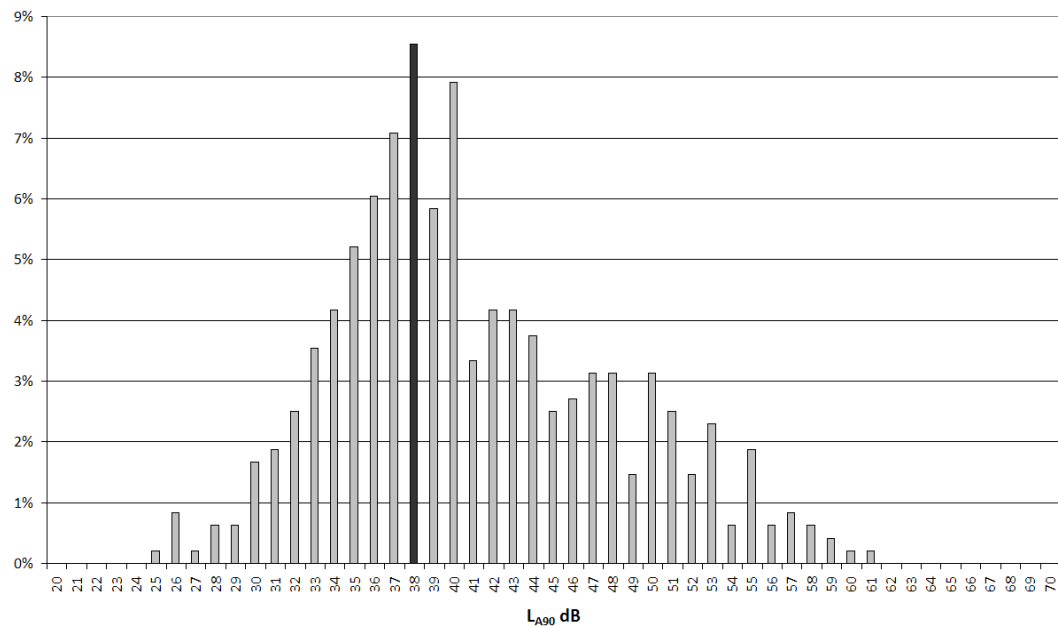
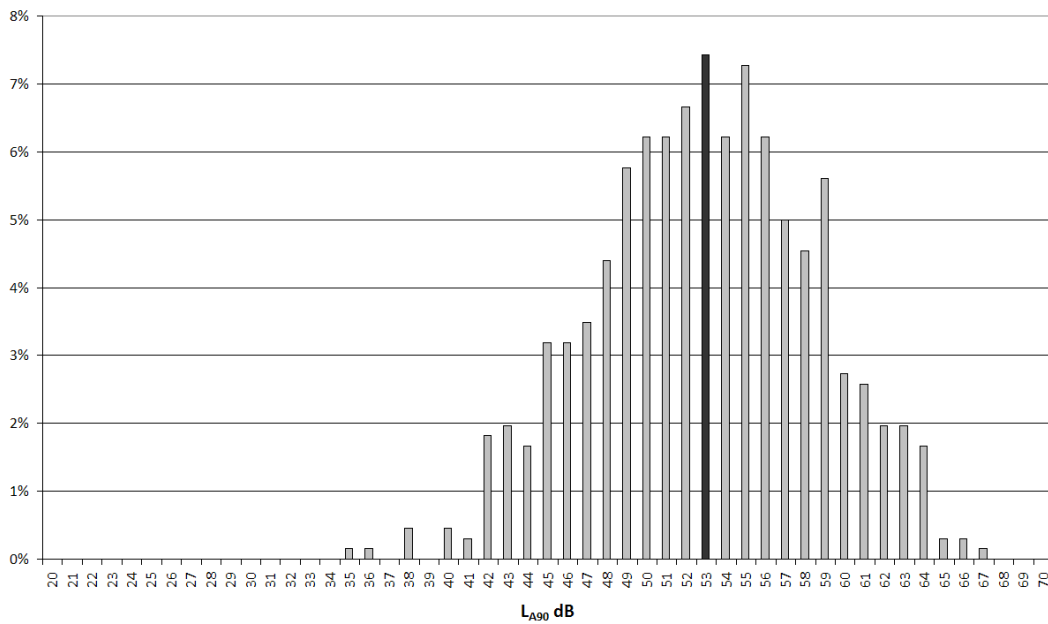


FIGURE 3

Statistical Analysis to Determine the Background Sound Level

Location: Cuckoo Lodge

Daytime (0700 – 1800)



Night-time (2300 – 0700)

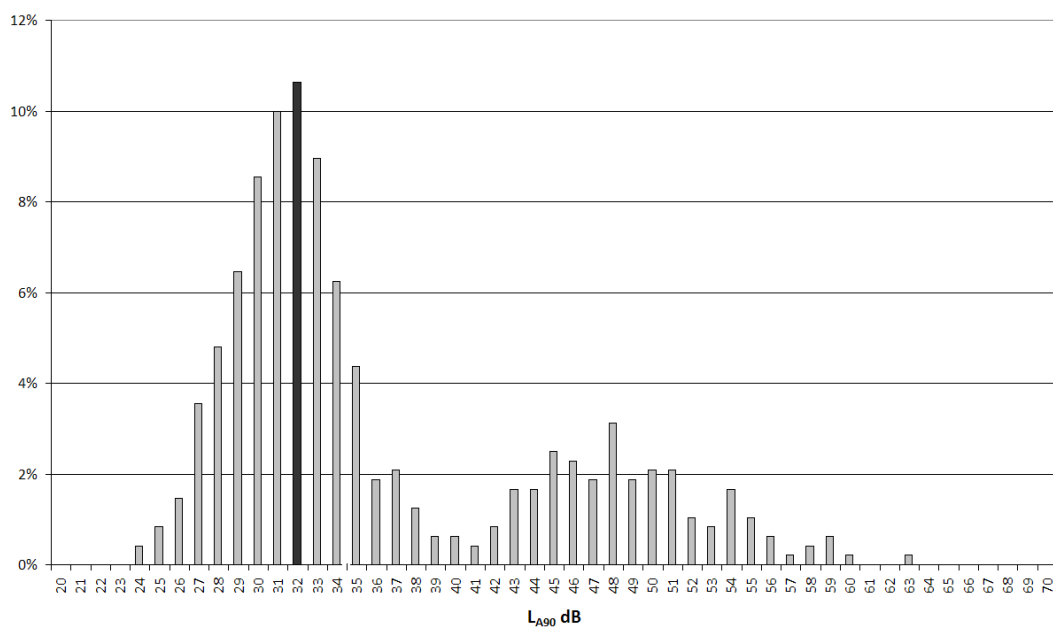
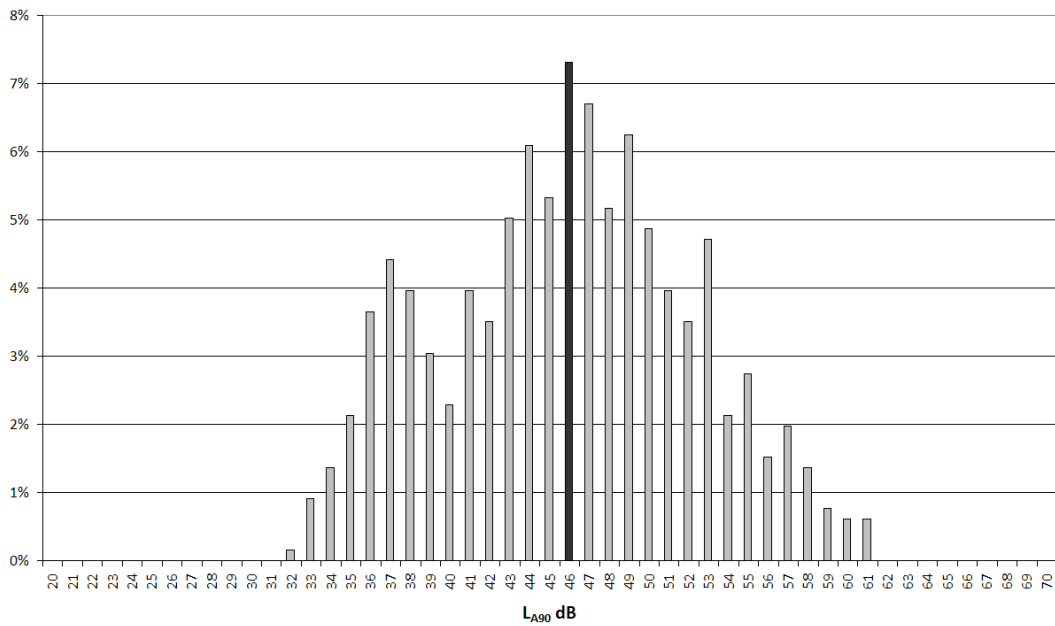


FIGURE 4

Statistical Analysis to Determine the Background Sound Level

Location: Westhay Cottages and Farm

Daytime (0700 – 1800)



Night-time (2300 – 0700)

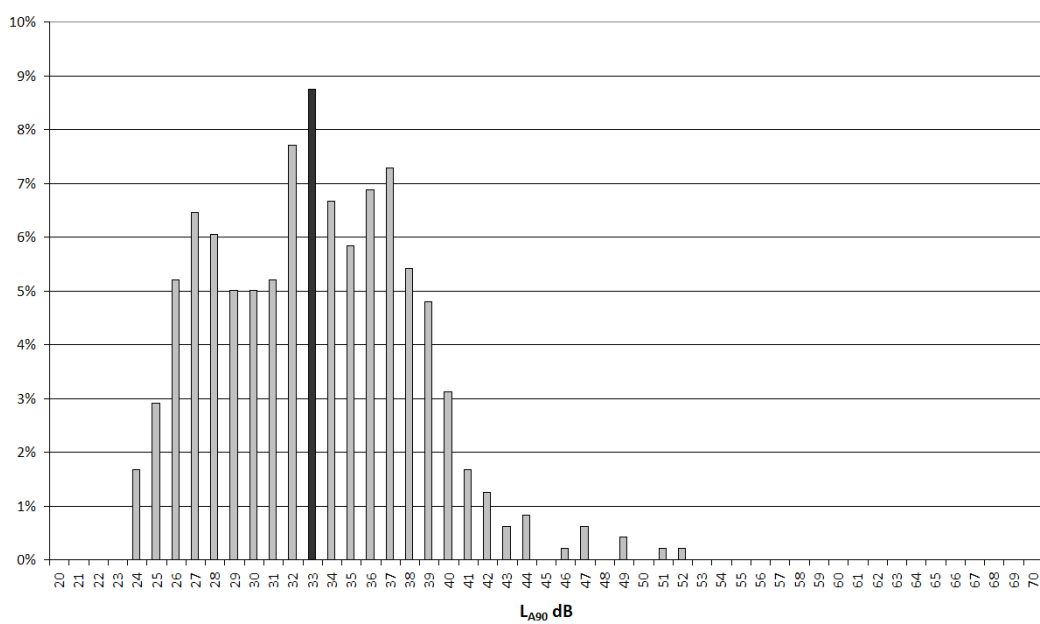
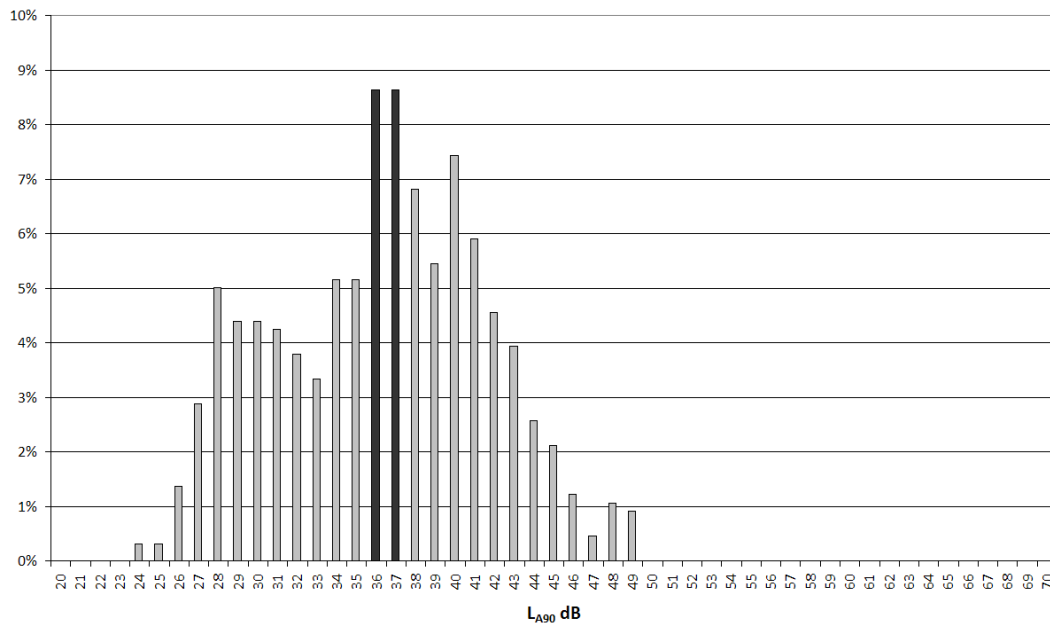


FIGURE 5

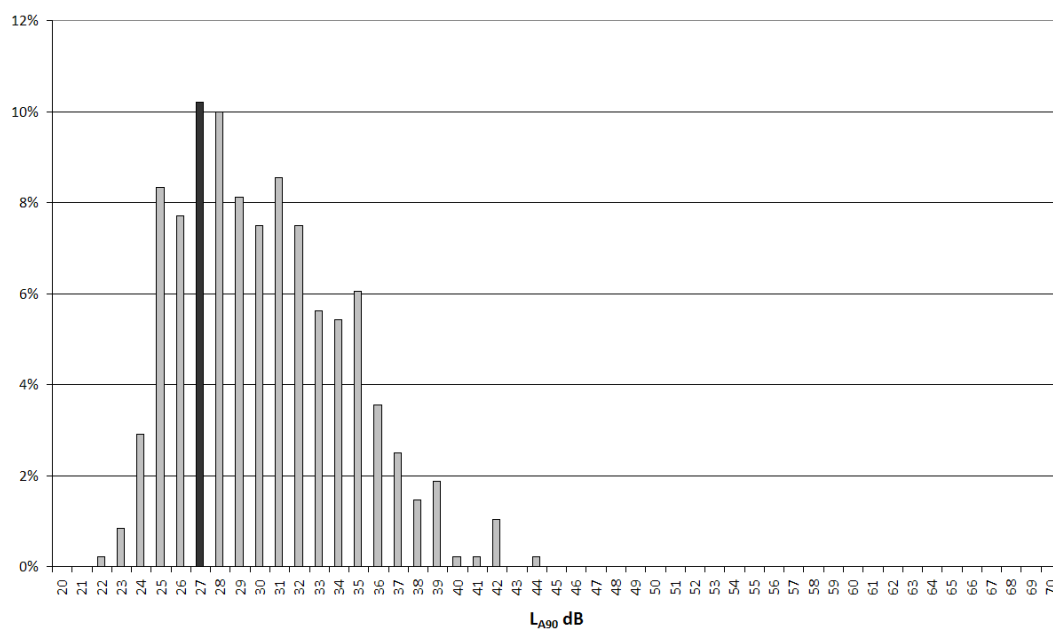
Statistical Analysis to Determine the Background Sound Level

Location: Westhay Lodge

Daytime (0700 – 1800)



Night-time (2300 – 0700)



APPENDIX 1

Supplementary Background Noise Monitoring

Correspondence with North Northamptonshire Council

From: [Andrew Pickford](#)
Sent: Monday, November 08, 2021 2:14 PM
To: [REDACTED]; [REDACTED]
Subject: Extension to ENRMF (DCO App) - Noise Impact Assessment

Hello Mandy,

Hope this email finds you well. We have been working away on the noise impact assessment for the DCO application - Extension to East Northants Resource Management Facility (ENRMF).

Following on from the emails below we will be updating the baseline noise data with a new survey that we are looking to undertake in November 2021. The reasoning behind this is so that we have some background noise data to compare against measurements undertaken previously when environmental noise levels in general terms may have been influenced by the coronavirus pandemic.

I just wanted to keep you in the loop of what we are doing. The survey will be an exact repeat of what has been agreed previously (see attached – 4 locations monitored over a minimum 24hr period).

If you have any questions or comments then please let me know.

Kind Regards

Andrew

Andrew Pickford

[REDACTED]

From: [Mandy Dennis](#)
Sent: Monday, November 22, 2021 9:15 AM
To: [Andrew Pickford](#)
Subject: RE: Extension to ENRMF (DCO App) - Noise Impact Assessment

Hi Andrew

Thanks for letting me know and I have no issues with your proposals.

Regards
Mandy

Mandy Dennis | Senior Environmental Protection Officer
North Northamptonshire Council
Cedar Drive, Thrapston, Northants NN14 4LZ
T: 0300 126 3000 | DD: [REDACTED]

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