HS2

March 2021

# Construction noise and vibration Monthly Report – January 2021

## London Borough of Ealing



gov.uk/hs2

**Non-Technical Summary** 1

**Abbreviations and Descriptions** 3

**1 Introduction** 4

1.2 Measurement Locations 7

**2 Summary of Results** 8

2.1 Summary of Measured Noise and Vibration Levels 8

2.2 Exceedances of the SOAEL 12

2.3 Exceedances of Trigger Level 14

2.4 Complaints 14

**Appendix A Site Locations** 16

**Appendix B Monitoring Locations** 23

**Appendix C Data** 29

## List of tables

Table 1: Table of Abbreviations 3
Table 2: Monitoring Locations 7
Table 3: Summary of Measured dB $L_{Aeq}$ Data over the Monitoring Period 9
Table 4: Summary of Measured PPV Data over the Monitoring Period 12
Table 5: Summary of Exceedances of SOAEL 13
Table 6: Summary of Exceedances of Trigger Levels 14
Table 7: Summary of Complaints 14

# Non-Technical Summary

This Noise and Vibration Monitoring Report fulfils HS2 Limited's commitment detailed in the Environmental Minimum Requirements (EMRs), Annex 1, Code of Construction Practice, to present the results of noise and vibration monitoring carried out within the London Borough of Ealing (LBE) (including one monitoring location on the boundary with the London Borough of Hammersmith and Fulham) during the month of January 2021.

Within this period monitoring was undertaken at the following worksites:

- Noise monitoring was undertaken in the vicinity of the Atlas Road worksite (ref. S001-WS02) where excavation works, drainage works, sheet piling, concrete works and utility diversion works were underway.
- Noise and vibration monitoring was undertaken in the vicinity of the Willesden EuroTerminal worksite (ref. S001-WS03), where stockpiling, excavations, construction of concrete slabs and walls, sheet piling, installations of fencing, compound site set up, building refitting works, ground resistivity testing, trial holes and removal of hard standings were underway.
- Noise monitoring was undertaken in the vicinity of the Victoria Road worksite (ref. S002-WS01), where site setup activities, backfilling and monitoring of piles, platform construction, installation of kerbing and works at the Victoria Road Ancillary Shaft were underway.
- Noise monitoring was undertaken in the vicinity of the Flat Iron compound (within worksite ref. S002-WS01), where breaking out of hardstanding, excavation and backfilling, hoarding works, removal of existing retaining wall, kerb installation and utility works were underway.
- Noise and vibration monitoring were undertaken in proximity of the Old Oak Common depot worksite (ref. S004-WS01), where excavation works, construction of site haul roads and dewatering works were underway.
- Noise monitoring was undertaken in proximity of the Mandeville Road Badminton Close compound (ref. BC Compound), where site setup and general housekeeping, excavation of trial pits and preparatory works for substation installation and hoarding were underway.
- Noise and vibration monitoring were undertaken in proximity of the Green Park Way Ventilation Shaft worksite (ref. SS05-SL06), where site housekeeping, excavations works, platform construction, hoarding works, utility works, trial holes and ground penetration testing were underway.

Further works, where monitoring was not undertaken, were also underway at the Westgate Ventilation Shaft and utility works at School Road, Bethune Road, Chase Road, Victoria Road, Atlas Road and Horsenden Lane.

The HS2 threshold levels for significant noise impacts were exceeded on one occasion due to HS2 works in the London Borough of Ealing during January 2021.

There were no exceedances of trigger levels as defined in Section 61 consents during the reporting period at any monitoring position.

Nine complaints were received during the monitoring period. A description of complaints, the results of investigation and any actions taken are detailed in Table 7 of this report.

# Abbreviations and Descriptions

The abbreviations, descriptions and project terminology used within this report can be found in Table 1.

Table 1: Table of Abbreviations

| Acronym/Term | Definition |
|---|---|
| $L_{Aeq,T}$ | See equivalent continuous sound pressure level |
| Ambient sound | A description of the all-encompassing sound at a given location and time which will include sound from many sources near and far. Ambient sound can be quantified in terms of the equivalent continuous sound pressure level, $L_{pAeq,T}$ |
| Decibel(s), or dB | Between the quietest audible sound and the loudest tolerable sound there is a million to one ratio in sound pressure (measured in Pascal (Pa)). Because of this wide range, a level scale called the decibel (dB) scale, based on a logarithmic ratio, is used in sound measurement. Audibility of sound covers a range of approximately 0-140dB. |
| Decibel(s) A-weighted, or dB(A) | The human ear system does not respond uniformly to sound across the detectable frequency range and consequently instrumentation used to measure sound is weighted to represent the performance of the ear. This is known as the 'A weighting' and is written as 'dB(A)'. |
| Equivalent continuous sound pressure level, or $L_{Aeq,T}$ | An index used internationally for the assessment of environmental sound impacts. It is defined as the notional unchanging level that would, over a given period of time (T), deliver the same sound energy as the actual time-varying sound over the same period. Hence fluctuating sound levels can be described in terms of an equivalent single figure value, typically expressed as a decibel level. |
| Exclusion of data | Measurement of noise levels can be affected by weather conditions such as prolonged periods of rain, winds speeds higher than 5m/s and snow/ice ground cover. Noise levels measured during these periods are considered not representative of normal noise conditions at the site and, for the purposes of this report, are excluded from the assessment of exceedances and calculation of typical noise levels and are also greyed out in charts. Identifiable incongruous noise and vibration events not attributable to HS2 construction noise are also excluded. |
| Façade | A facade noise level is the noise level 1m in front of a large reflecting surface. The effect of reflection, is to produce a slightly higher (typically +2.5 to +3 dB) sound level than it would be if the reflecting surface was not there. |
| Free-field | A free-field noise level is the noise level measured at a location where no reflective surfaces, other than the ground, lies within 3.5 metres of the microphone position. |
| LOAEL | Lowest Observed Adverse Effect Level - the level above which adverse effects on health and quality of life can be detected. |
| Peak particle velocity, or PPV | Instantaneous maximum velocity reached by a vibrating element as it oscillates about its rest position. The PPV is a simple indicator of perceptibility and risk of damage to structures due to vibration. It is usually measured in mm/s. |
| SOAEL | Significant Observed Adverse Effect Level - the level above which significant adverse effects on health and quality of life occur. |
| Sound pressure level | The parameter by which sound levels are measured in air. It is measured in decibels. The threshold of hearing has been set at 0dB, while the threshold of pain is approximately 120dB. Normal speech is approximately 60dB at a distance of 1 metre and a change of 3dB in a time varying sound signal is commonly regarded as being just detectable. A change of 10dB is subjectively twice, or half, as loud. |
| Vibration dose value, or VDV | An index used to evaluate human exposure to vibration in buildings. While the PPV provides information regarding the magnitude of single vibration events, the VDV provides a measure of the total vibration experienced over a specified period of time (typically 16h daytime and 8h night-time). It takes into account the magnitude, the number and the duration of vibration events and can be used to quantify exposure to continuous, impulsive, occasional and intermittent vibration. The vibration dose value is measured in $m/s^{1.75}$. |

# 1 Introduction

1.1.1 HS2 is required to undertake noise (and vibration) monitoring as necessary to comply with the requirements of the High Speed Rail (London-West Midlands) Environmental Minimum Requirements, including specifically Annex 1: Code of Construction Practice, in addition to any monitoring requirements arising from conditions imposed through consents under Section 61 of the Control of Pollution Act, 1974 or through Undertakings & Assurances given to third parties. Such monitoring may be undertaken for the following purposes:

- monitoring the impact of construction works;
- to investigate complaints, incidents and exceedance of trigger levels; or
- monitoring the effectiveness of noise and vibration control measures.

1.1.2 Monitoring data and interpretive reports are to be provided to each relevant local authority on a monthly basis and shall include a summary of the construction activities occurring, the data recorded over the monitoring period, any complaints received, any periods in exceedance of agreed trigger levels, the results of any investigations and any actions taken or mitigation measures implemented. This report provides noise data, and interpretation thereof, for monitoring carried out by HS2 within the London Borough of Ealing (LBE) (including one monitoring location on the boundary with the London Borough of Hammersmith and Fulham) during the month for the period 1st to 31st January 2021.

1.1.3 Active construction sites in the local authority area, where noise and vibration monitoring were conducted during this period, include:

- Atlas Road worksite, ref. S001-WS02 (see plan 3 in Appendix A), where work activities included:
  - Excavation and removal of concrete obstructions;
  - Drainage works, including excavation and backfilling of manholes;
  - Construction of platforms, sheet piling and cast-in-situ concreting activities;
  - Plate bearing tests and Dynamic Cone Penetration (DCP) tests; and
  - Works at power substation and cable route.
- Willesden EuroTerminal worksite, ref. S001-WS03 (see plan 3 in Appendix A), where work activities included:
  - Stockpiling;
  - Excavation works, construction of concrete slabs and walls and installations of steel reinforcement;

- Installation of fencing;
- Construction of platforms, sheet piling and cast-in-situ concreting activities;
- Building refitting works;
- Rail sidings maintenance works;
- Ground resistivity tests and trial holes;
- Hoarding works, including digging hoarding posts and pouring concrete;
- Compound site set up for Grand Union Canal and bridge abutment works; and
- Removal of hard standing from north road section in preparation of site haul road construction.

- Victoria Road worksite, ref. S002-WS01 (see plan 3 in Appendix A), where work activities included:
  - Site setup, including installation of edge protection to sheet piles, excavation of haul road ramps, haul road levelling/compacting, reinforcement of hoarding and saw cutting for utilities;
  - Backfilling and monitoring of piles;
  - Working platform construction;
  - Installation of kerbing along southern site haul road;
  - Plate bearing tests and Dynamic Cone Penetration (DCP) tests;
  - Installation of pre-cast concrete elements and pouring of slabs for the Victoria Road Ancillary Shaft; and
  - Utility diversion works.
- Flat Iron compound, within worksite ref. S002-WS01 (see plan 4 in Appendix A), where work activities included:
  - Breaking out of hardstanding for slip road;
  - Excavations and backfilling;
  - Hoarding works;
  - Removal of part of existing retaining wall;
  - Kerb installation works within the Lorry Holding Area; and
  - Utility works including installation of ducts for lighting and new gates.

- Old Oak Common depot worksite, located in the London Borough of Hammersmith and Fulham (LBHF), ref. S004-WS01 (see plan 5 in Appendix A), where work activities included:
  - Excavation works;
  - Construction of site haul road and pile mat; and
  - Dewatering works.
- Mandeville Road Badminton Close compound (ref. BC Compound), where work activities included:
  - Site setup and general site housekeeping;
  - Excavation of trial pits;
  - Relocation of existing storage units and cabin;
  - Preparatory works for installation of substation, including breaking out works and blinding of ground, and
  - Preparatory works for hoarding.
- Green Park Way Ventilation Shaft worksite, reference SS05-SL06 (see plan 1 in Appendix A), where work activities included:
  - General site housekeeping;
  - Continuation of excavation and platforms construction;
  - Hoarding installation;
  - Utility works, including installation of cabling, lighting and water pipes; and
  - Trial holes and ground penetration testing.

1.1.4 Further works, where monitoring did not take place, were undertaken at:

- School Road, Bethune Road, Chase Road, Victoria Road, Atlas Road and Horsenden Lane, as part of utility diversions; and
- the Westgate Ventilation Shaft, including hoarding installation, excavation and backfilling works, vegetation clearance and removal of waste material from the site, installation of pedestrian walkways, plate bearing tests.

1.1.5 The applicable standards, guidance, and monitoring methodology is outlined in the construction noise and vibration monitoring methodology report which can be found at the following location https://www.gov.uk/government/collections/monitoring-the-environmental-effects-of-hs2. Noise and vibration monitoring reports for previous months can also be found at this location.

## 1.2 Measurement Locations

1.2.1 Fifteen noise and four vibration monitoring installations were active in January 2021 in the LBE area. Table 2 summarises the position of noise and vibration monitoring installations within the LBE area in January 2021.

1.2.2 The noise monitor at measurement location N030, worksite S002-WS01, has been renamed as N042 for consistency with other documents.

1.2.3 The vibration monitor at measurement location V045 was relocated on Friday 22nd January 2021 to a more representative location at 25 Wells House Road as agreed with LBE.

1.2.4 Maps showing the position of noise and vibration monitoring installations are presented in Appendix B.

Table 2: Monitoring Locations

| Worksite Reference | Measurement Reference | Address |
|---|---|---|
| S001-WS02 | N032 | Shaftesbury Gardens |
| | N033 | Outside The Collective, Atlas Road / Victoria Road |
| | N060 | Atlas Road next to Bashey Road |
| S001-WS03 | N034 | Stephenson Street (north) |
| | N035 | Stephenson Street (south) |
| | N041 | Junction of Stephenson Street / Goodhall Street |
| | V052 | Stephenson Street (north) |
| S002-WS01 | N029 | Braitrim House, Victoria Road |
| | N042 | Boden House Car Park |
| | N031 | School Road, outside Acton Business Centre |
| | N049 | Flat Iron compound railway fence, Victoria Rd North Acton |
| | N050 | Acton Square, outside North Acton Station |
| S004-WS01 | N027 | Old Oak Common Lane |
| | N028 | Old Oak Common Lane, Hilltop Works |
| | V045_old | Old Oak Common Lane |
| | V045 | 25 Wells House Road |
| | V051 | Kildun Court, Old Oak Common Lane |
| BC Compound | N040 | Badminton Close |
| SS05-SL06 | N059 | Green Park Way Ventilation Shaft |
| | V053 | Green Park Way Ventilation Shaft |

# 2 Summary of Results

## 2.1 Summary of Measured Noise and Vibration Levels

2.1.1 Table 3 presents a summary of the measured noise levels at each monitoring location over the reporting period. The $L_{Aeq,T}$ is presented for each of the relevant time periods averaged over the calendar month, along with the highest single period $L_{Aeq,T}$ that was found to occur within the month.

Table 3: Summary of Measured dB $L_{Aeq}$ Data over the Monitoring Period

| Worksite Reference | Measurement Reference | Site Address | Free-field or Façade measurement | Weekday Average $L_{Aeq,T}$ (highest day $L_{Aeq,T}$) | | | | | Saturday Average $L_{Aeq,T}$ (highest day $L_{Aeq,T}$) | | | | | Sunday / Public Holiday Average $L_{Aeq,T}$ (highest day $L_{Aeq,T}$) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 0700 - 0800 | 0800 - 1800 | 1800 - 1900 | 1900 - 2200 | 2200 - 0700 | 0700 - 0800 | 0800 - 1300 | 1300 - 1400 | 1400 - 2200 | 2200 - 0700 | 0700 - 2200 | 2200 - 0700 |
| S001-WS02 | N032 | Shaftesbury Gardens | Free-field | 65.2 (68.8) | 66.3 (68.1) | 64.9 (68.7) | 63.6 (67.3) | 60.8 (68.5) | 62.1 (62.8) | 64.3 (65.6) | 64.8 (66.2) | 64.5 (71.1) | 59.6 (67.0) | 62.9 (64.9) | 60.3 (64.3) |
| | N033 | Outside The Collective, Atlas Road/Victoria Road | Free-field | 66.9 (68.3) | 67.8 (70.6) | 65.6 (69.7) | 64.4 (70.9) | 62.0 (70.4) | 63.0 (63.9) | 66.3 (72.7) | 65.2 (66.0) | 65.1 (68.9) | 60.1 (65.9) | 63.4 (66.5) | 61.3 (65.4) |
| | N060 | Atlas Road next to Bashey Road | Façade | 54.5 (59.2) | 62.6 (69.0) | 57.1 (76.9) | 53.5 (60.8) | 54.4 (69.5) | 50.8 (53.5) | 56.0 (64.8) | 52.1 (60.0) | 52.6 (60.7) | 48.6 (53.7) | 50.2 (54.6) | 52.3 (58.7) |
| S001-WS03 | N034 | Stephenson Street (north) | Free-field | 53.6 (56.3) | 57.2 (61.3) | 53.2 (59.1) | 53.1 (57.8) | 49.6 (59.9) | 51.1 (52.3) | 54.1 (57.6) | 53.2 (53.9) | 53.8 (57.3) | 47.2 (53.4) | 52.4 (56.6) | 50.1 (55.1) |
| | N035 | Stephenson Street (south) | Free-field | 55.8 (58.0) | 57.8 (61.5) | 52.2 (56.7) | 51.1 (55.7) | 48.8 (57.8) | 50.6 (51.5) | 53.9 (57.7) | 50.4 (52.9) | 52.3 (56.9) | 46.2 (51.5) | 51.4 (58.8) | 49.0 (53.3) |
| | N041 | Junction of Stephenson Street/Goodhall Street | Free-field | 54.5 (59.2) | 58.5 (62.9) | 54.4 (57.3) | 54.2 (62.1) | 50.5 (65.3) | 51.1 (52.0) | 58.3 (66.2) | 53.4 (54.9) | 54.5 (58.7) | 47.9 (54.3) | 53.6 (58.7) | 49.4 (52.6) |

| Worksite Reference | Measurement Reference | Site Address | Free-field or Façade measurement | Weekday Average $L_{Aeq,T}$ (highest day $L_{Aeq,T}$) | | | | | Saturday Average $L_{Aeq,T}$ (highest day $L_{Aeq,T}$) | | | | | Sunday / Public Holiday Average $L_{Aeq,T}$ (highest day $L_{Aeq,T}$) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 0700 - 0800 | 0800 - 1800 | 1800 - 1900 | 1900 - 2200 | 2200 - 0700 | 0700 - 0800 | 0800 - 1300 | 1300 - 1400 | 1400 - 2200 | 2200 - 0700 | 0700 - 2200 | 2200 - 0700 |
| S002-WS01 | N029 | Braitrim House, Victoria Road | Free-field | 52.8 (57.9) | 59.3 (62.7) | 57.0 (63.1) | 54.3 (57.9) | 53.2 (65.2) | 48.4 (49.8) | 53.1 (55.2) | 57.8 (63.9) | 52.2 (62.5) | 49.7 (60.3) | 51.2 (60.2) | 53.3 (69.1) |
| | N042 | Bodens car park | Free-field | 56.8 (59.1) | 63.7 (68.6) | 54.0 (56.4) | 52.9 (56.6) | 50.8 (64.5) | 50.7 (51.2) | 58.9 (62.2) | 61.0 (67.2) | 53.8 (58.6) | 48.7 (55.0) | 51.6 (55.1) | 50.0 (55.5) |
| | N031 | School Road, outside Acton Business Centre | Free-field | 58.9 (60.3) | 62.3 (63.9) | 60.7 (70.5) | 57.7 (61.4) | 54.5 (63.9) | 56.6 (61.1) | 60.8 (65.0) | 60.3 (60.6) | 59.4 (63.0) | 51.4 (56.2) | 57.9 (62.0) | 54.9 (65.6) |
| | N049 | Flat Iron compound | Free-field | 53.2 (56.7) | 59.9 (67.3) | 54.9 (58.8) | 53.6 (57.6) | 53.9 (67.6) | 52.0 (55.5) | 54.2 (56.9) | 56.1 (63.0) | 52.2 (54.8) | 48.0 (54.7) | 51.6 (62.5) | 50.9 (57.1) |
| | N050 | Acton Square, outside North Acton Station | Free-field | 63.9 (69.0) | 63.6 (64.9) | 63.1 (64.8) | 62.8 (66.1) | 58.4 (66.2) | 61.2 (62.3) | 63.3 (65.0) | 62.9 (63.9) | 63.2 (66.3) | 57.6 (63.9) | 62.4 (66.6) | 60.6 (73.5) |

| Worksite Reference | Measurement Reference | Site Address | Free-field or Façade measurement | Weekday Average $L_{Aeq,T}$ (highest day $L_{Aeq,T}$) | | | | | Saturday Average $L_{Aeq,T}$ (highest day $L_{Aeq,T}$) | | | | | Sunday / Public Holiday Average $L_{Aeq,T}$ (highest day $L_{Aeq,T}$) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 0700 - 0800 | 0800 - 1800 | 1800 - 1900 | 1900 - 2200 | 2200 - 0700 | 0700 - 0800 | 0800 - 1300 | 1300 - 1400 | 1400 - 2200 | 2200 - 0700 | 0700 - 2200 | 2200 - 0700 |
| S004-WS01 | N027 | Old Oak Common Lane | Free-field | 65.4 | 66.6 | 64.8 | 62.8 | 59.4 | 60.7 | 62.7 | 63.6 | 65.3 | 60.4 | 63.1 | 59.5 |
| | | | | (69.3) | (70.9) | (70.2) | (69.7) | (67.6) | (66.9) | (67.8) | (69.4) | (75.5) | (65.5) | (68.4) | (68.1) |
| | N028 | Old Oak Common Lane, Hilltop Works | Free-field | 66.4 | 67.1 | 65.5 | 64.1 | 60.4 | 65.4 | 65.4 | 66.4 | 67.6 | 61.2 | 65.3 | 61.0 |
| | | | | (69.3) | (70.9) | (70.2) | (69.7) | (67.6) | (66.9) | (67.8) | (69.4) | (75.5) | (65.5) | (68.4) | (68.1) |
| BC Compound | N040 | Badminton Close | Free-field | 55.3 | 55.6 | 54.8 | 54.1 | 51.5 | 52.3 | 53.7 | 54.5 | 53.9 | 49.9 | 53.0 | 50.6 |
| | | | | (58.3) | (58.4) | (57.1) | (60.3) | (57.7) | (53.3) | (57.2) | (55.8) | (56.1) | (54.3) | (56.1) | (56.3) |
| SS05-SL06 | N059 | Green Park Way Ventilation Shaft | Façade | 56.6 | 62.9 | 54.4 | 54.4 | 54.7 | 55.7 | 52.8 | 53.6 | 53.1 | 53.0 | 52.4 | 52.5 |
| | | | | (61.1) | (70.7) | (58.2) | (60.5) | (62.6) | (59.4) | (54.8) | (54.0) | (57.5) | (62.2) | (58.8) | (61.8) |

2.1.2 Table 4 presents a summary of the measured vibration levels at each monitoring location over the reporting period. The highest PPV measured during the monitoring along any axis is presented in the table.

Table 4: Summary of Measured PPV Data over the Monitoring Period

| Worksite Reference | Measurement Reference | Monitor Address | Highest PPV measured in any axis, mm/s |
|---|---|---|---|
| S001-WS03 | V052 | Stephenson Street (north) | 1.46 (Z-axis) |
| S004-WS01 | V045_old | Old Oak Common Lane | 0.58 (Z-axis) |
| | V045 | 25 Wells House Road | 2.23 (Z-axis) |
| S004-WS01 | V051 | Kildun Court, Old Oak Common Lane | 1.40 (Z-axis) |
| SS05-SL06 | V053 | Green Park Way Ventilation Shaft | 6.89* (X-axis) |

* High vibration levels are due to the proximity of the construction activities to the vibration monitor. The nearest residential receptors are further away (over 25m away) from the works and vibration levels at the receptor will therefore be lower.

2.1.3 Appendix C presents graphs of the noise and vibration monitoring data over the month for each of the measurement locations. Noise data presented consists of the hourly $L_{Aeq}$ values and, where relevant, the $L_{Aeq,T}$ values (where the time period T has been taken to be the averaging period as specified in Table 1 of HS2 Information Paper E23). Vibration data presented consist of hourly PPV values. The full data set for the monitoring equipment can be found at the following location: https://data.gov.uk/dataset/24542ae7-dd44-444f-b259-871c4cc43b5e/environmental-monitoring-data.

## 2.2 Exceedances of the SOAEL

2.2.1 The significant observed adverse effect level (SOAEL) is defined in the 'Planning Practice Guidance – Noise' as the level above which "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."

2.2.2 HS2 Phase One Information Paper E23: Control of Construction Noise and Vibration sets out the SOAELs for construction noise.

2.2.3 Where reported construction noise levels exceed the SOAEL, relevant periods will be identified. Summary statistics to evaluate ongoing qualification for noise insulation and temporary rehousing are also presented where relevant.

2.2.4 Table 5 presents a summary of recorded exceedances of the SOAEL at each measurement location over the reporting period, including the number of exceedances during each time period.

Table 5: Summary of Exceedances of SOAEL

| Worksite Reference | Measurement Reference | Site Address | Day (Weekday, Saturday, Sunday, Night) | Time period | Number of exceedances of SOAEL |
|---|---|---|---|---|---|
| S001-WS02 | N032 | Shaftesbury Gardens | All days | All periods | No exceedance |
| | N033 | Outside The Collective, Atlas Road / Victoria Road | All days | All periods | No exceedance |
| | N060 | Atlas Road next to Bashey Road | All days | All periods | No exceedance |
| S001-WS03 | N034 | Stephenson Street (north) | All days | All periods | No exceedance |
| | N035 | Stephenson Street (south) | All days | All periods | No exceedance |
| | N041 | Junction of Stephenson Street / Goodhall Street | All days | All periods | No exceedance |
| S002-WS01 | N029 | Braitrim House, Victoria Road | All days | All periods | No exceedance |
| | N042 | Bodens Car Park | All days | All periods | No exceedance |
| | N031 | School Road, outside Acton Business Centre | All days | All periods | Not applicable* |
| | N049 | Flat Iron compound | All days | All periods | No exceedance |
| | N050 | Acton Square, outside North Acton Station | All days | All periods | No exceedance |
| S004-WS01 | N027 | Old Oak Common Lane | All days | All periods | No exceedance |
| | N028 | Old Oak Common Lane, Hilltop Works | All days | All periods | No exceedance |
| BC Compound | N040 | Badminton Close | Night | 2200-0700 | 1 |
| SS05-SL06 | N059 | Green Park Way Ventilation Shaft | All days | All periods | Not applicable* |

* The defined SOAEL criteria are not applicable to non-residential properties.

2.2.5 One exceedance of the SOAEL was recorded due to HS2 construction works during January 2021. This is was due to fault with the on/off setting of the generator on site and action has been taken to fix the issue.

## 2.3 Exceedances of Trigger Level

2.3.1 Table 6 provides a summary of exceedances of the Section 61 trigger noise levels determined to be due to HS2 related construction noise measured during the reporting period, along with the findings of any investigation.

Table 6: Summary of Exceedances of Trigger Levels

| Complaint Reference Number (if applicable) | Worksite Reference | Date and Time Period | Identified Source | Results of Investigation (including noise monitoring results) | Actions Taken |
|---|---|---|---|---|---|
| - | - | - | - | - | -. |

## 2.4 Complaints

2.4.1 Table 7 provides a summary of complaint information related to noise and vibration received during the reporting period, along with the findings of any investigation.

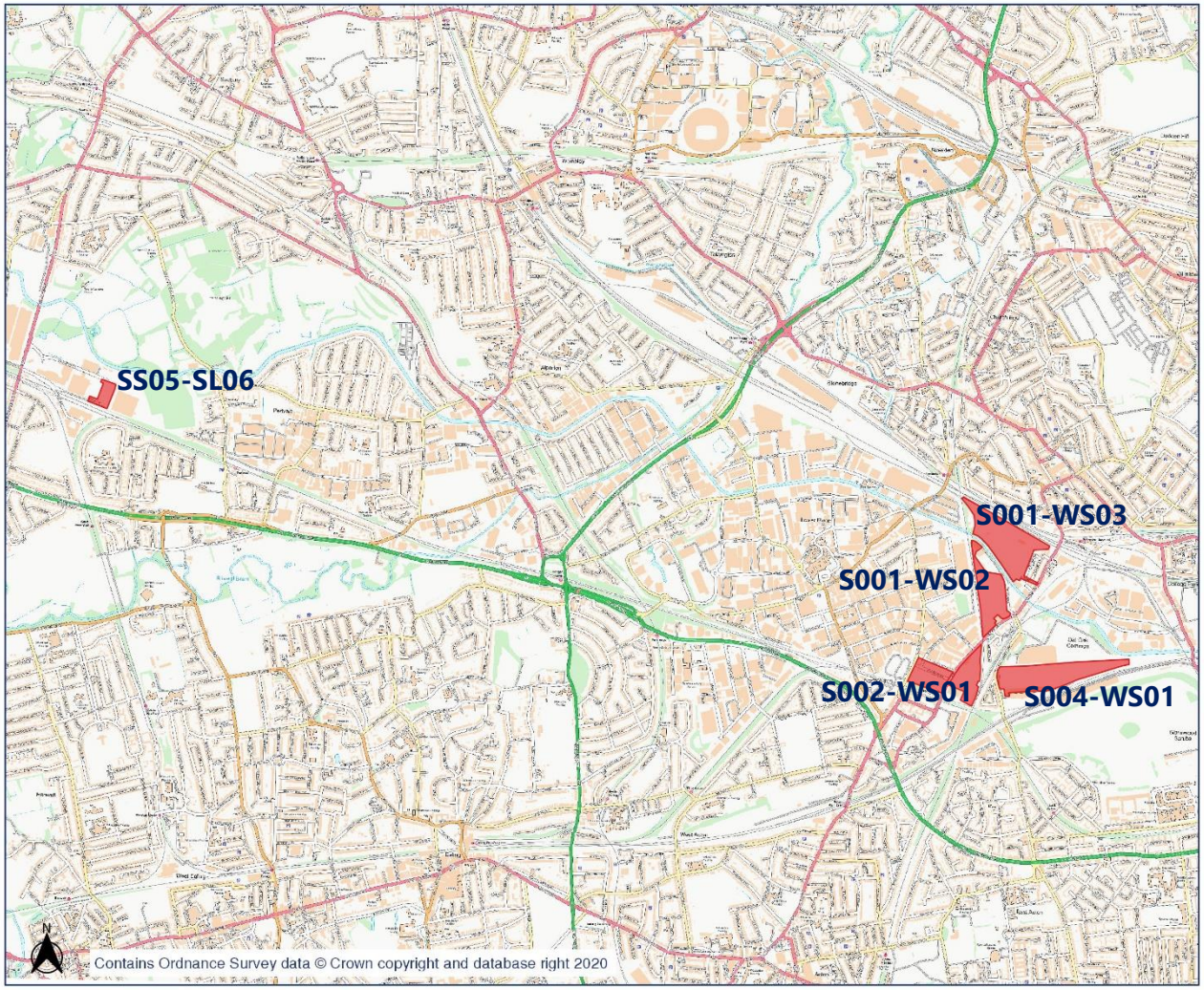
Table 7: Summary of Complaints

| Complaint Reference Number | Worksite Reference | Description of Complaint | Results of Investigation | Actions Taken |
|---|---|---|---|---|
| HS2-21-41146-C<br>HS2-21-41147-C<br>HS2-21-52205-C | S001-WS03 | Complaint due to construction vibration felt within the property. | Excavation works and movement of steel from stockpile were undertaken on the same date of the complaint. Monitoring data show that vibration levels were well below values potentially associated with building damage. Works were carried out in line with the Section 61 application and BPM were adopted. | The complainant has been contacted and information provided. No actions considered to be required for works on site which were in line with the Section 61 application coverage. However, the stockpile has been moved to a location further away from the site boundary. |
| HS2-21-41054-C | S001-WS03 | Complaint due to construction noise during the day. | Works were carried out in line with the Section 61 application and BPM were adopted. | The complainant has been contacted and information provided. No actions considered to be required for works on site which were in line with the Section 61 application coverage. |
| HS2-21-41232-C | SS05_SL06 | Complaint due to generator noise during night-time audible from | Generator supplier has been contacted to investigate if the unit was | The generator has been locked off to prevent it from coming on |

| Complaint Reference Number | Worksite Reference | Description of Complaint | Results of Investigation | Actions Taken |
|---|---|---|---|---|
| | | resident in Badminton Close. | only operating on batteries during the night-time period. | automatically. The community engagement team have been in touch with the resident to resolve the matter. |
| HS2-21-41268-C | S004-WS01 | Complaint due to high noise from grinding and digging activities during the day. | No HS2 works were taking place at the time of the complaint. | A response has been provided to the residents. |
| HS2-21-41234-C | S004-WS01 | Complaint due to audible construction noise before 7am. | On-going | On-going |
| HS2-21-53021-E | S001-WS03 | Complaint due to noise alarm during night-time. | Investigations shown that the fire activation alarm was coming from the recycling plant next to the site. | Information has been passed to HS2 and Grant Gable. |
| HS2-21-55755-E | Atlas Road | Complaint due to noise alarm during night-time. | Investigations shown that an alarm was going off at the time of the complaint. | The problem has been rectified. |

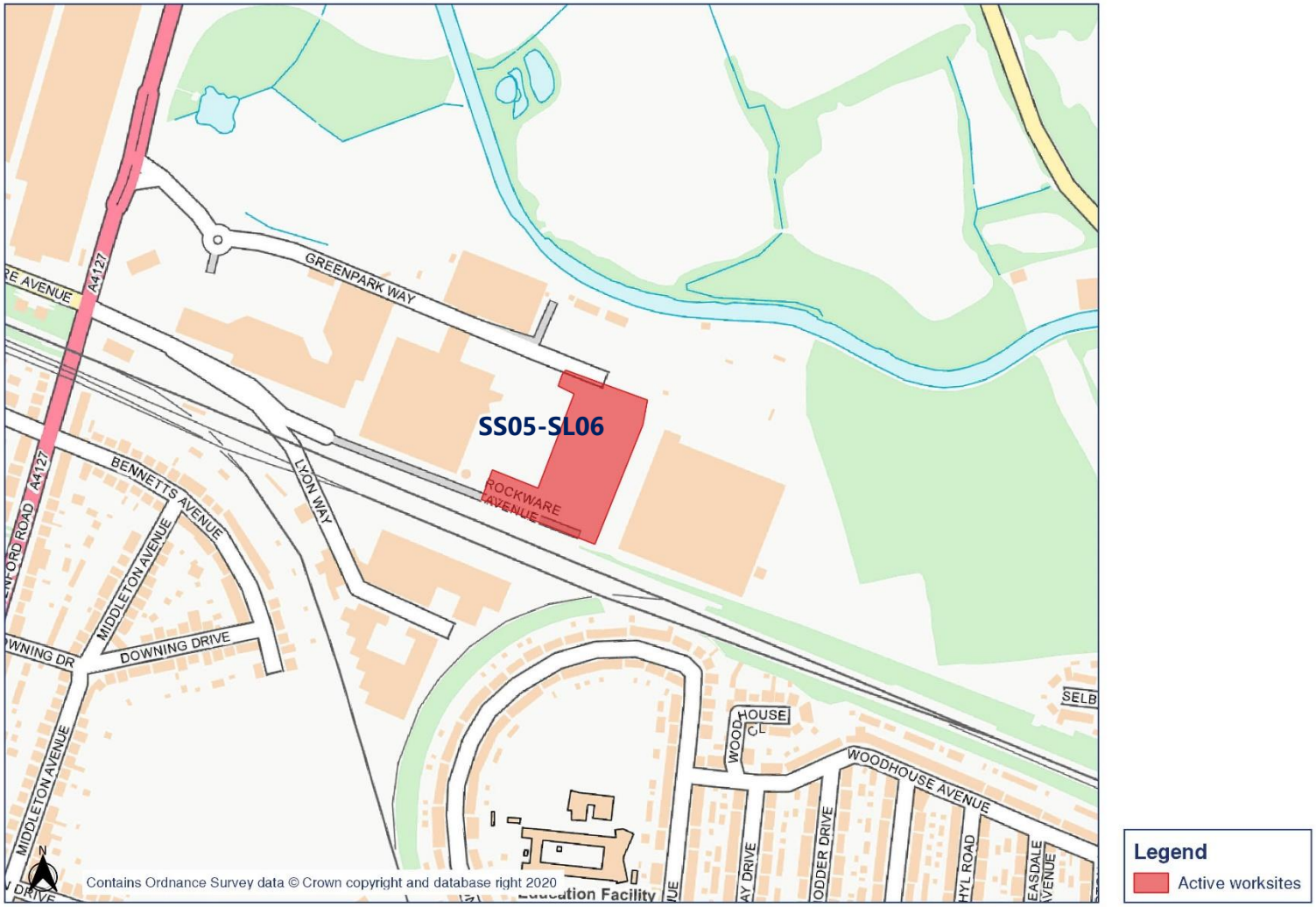
# Appendix A Site Locations

# HS2 Worksite identification plan - Overview



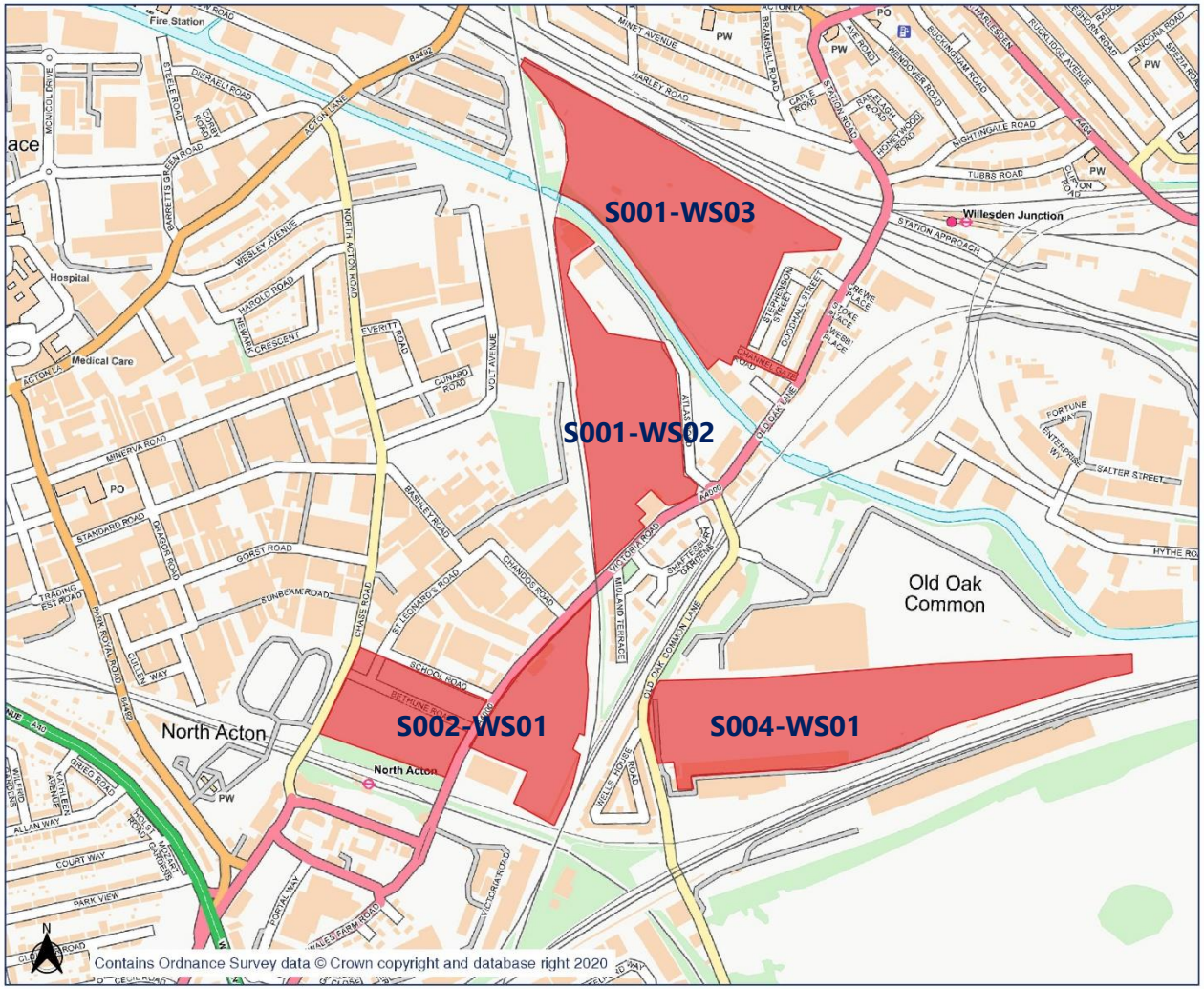
HS2

# Worksite identification plan - 1

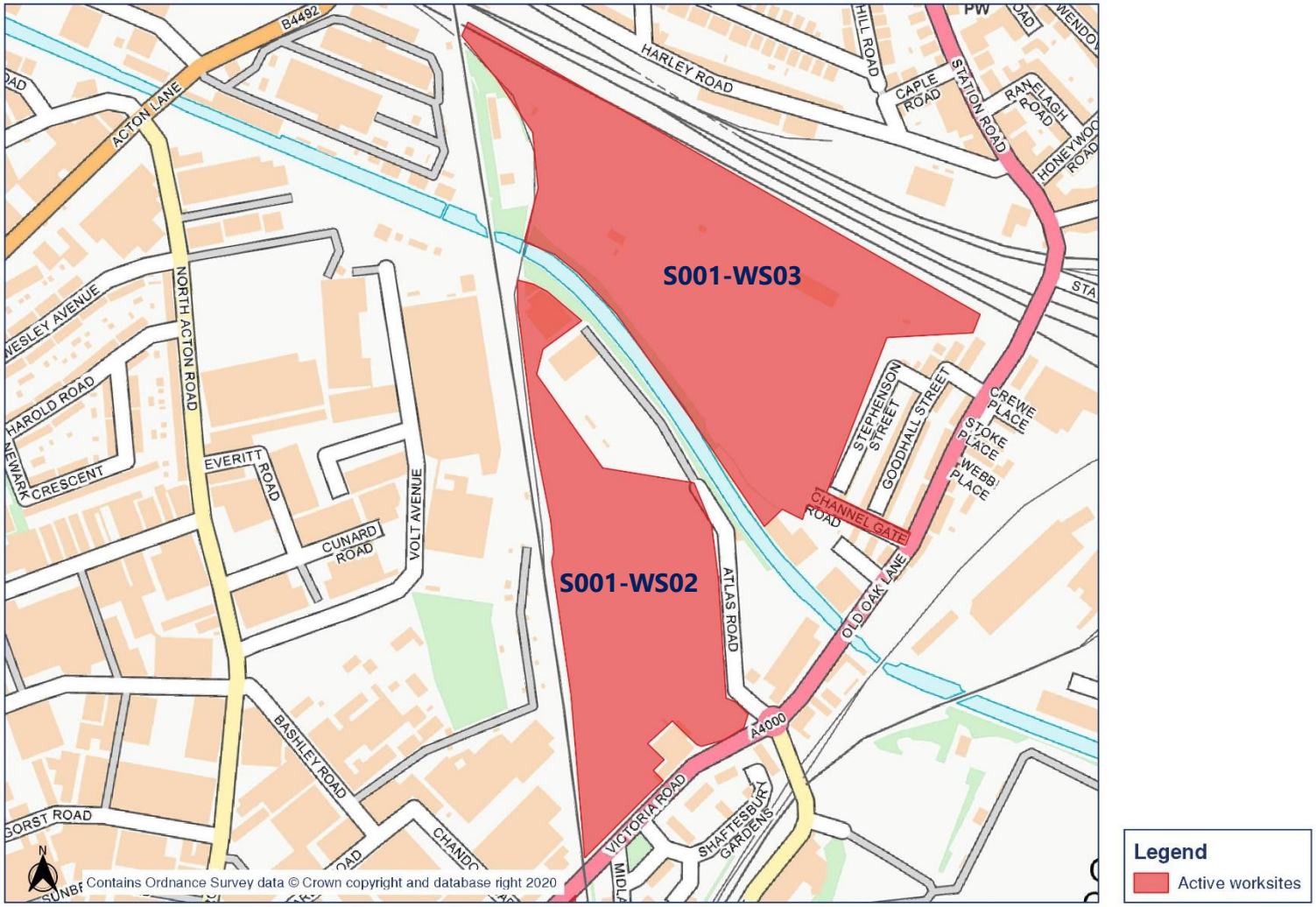



OFFICIAL

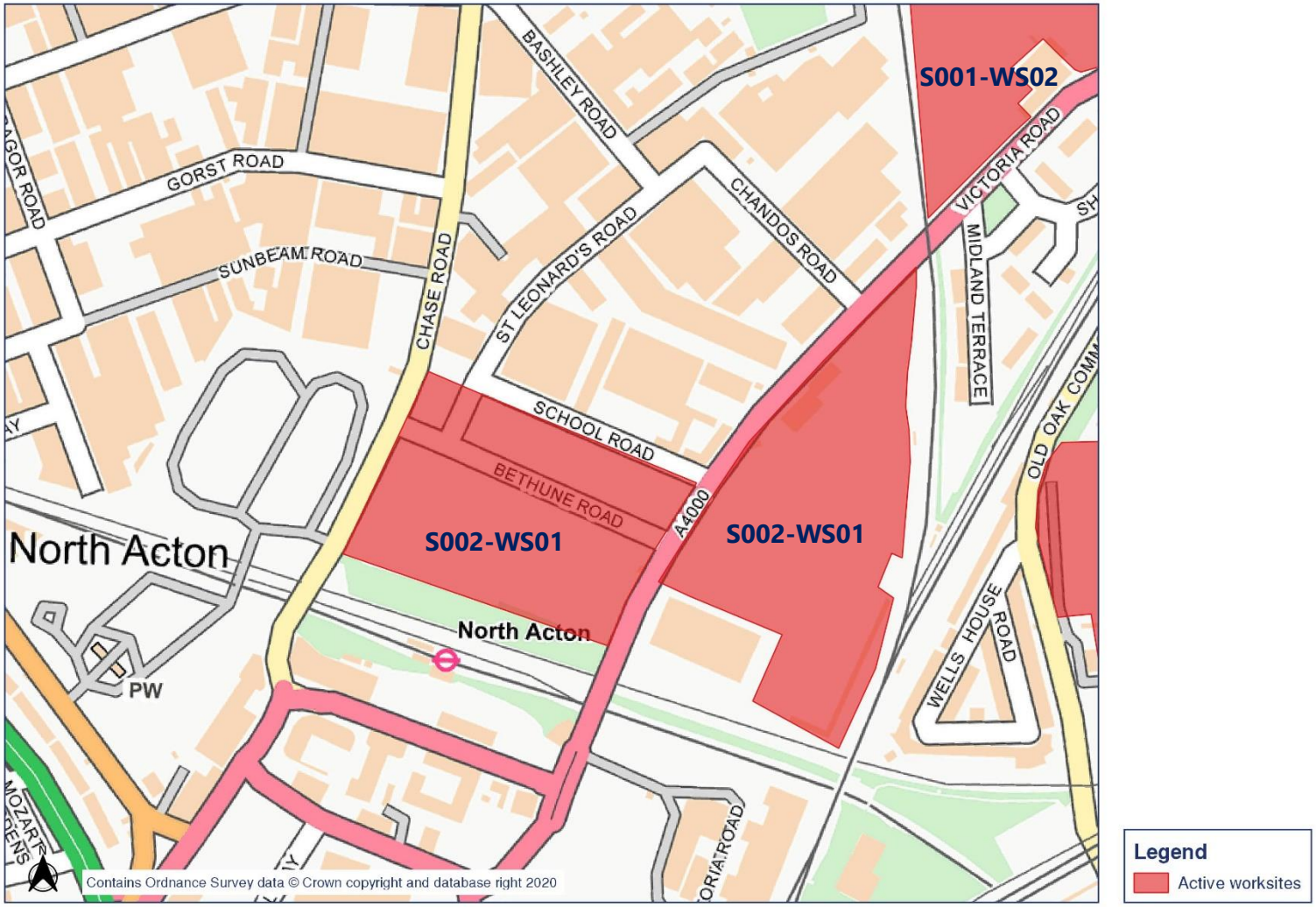
# Worksite identification plan - 2



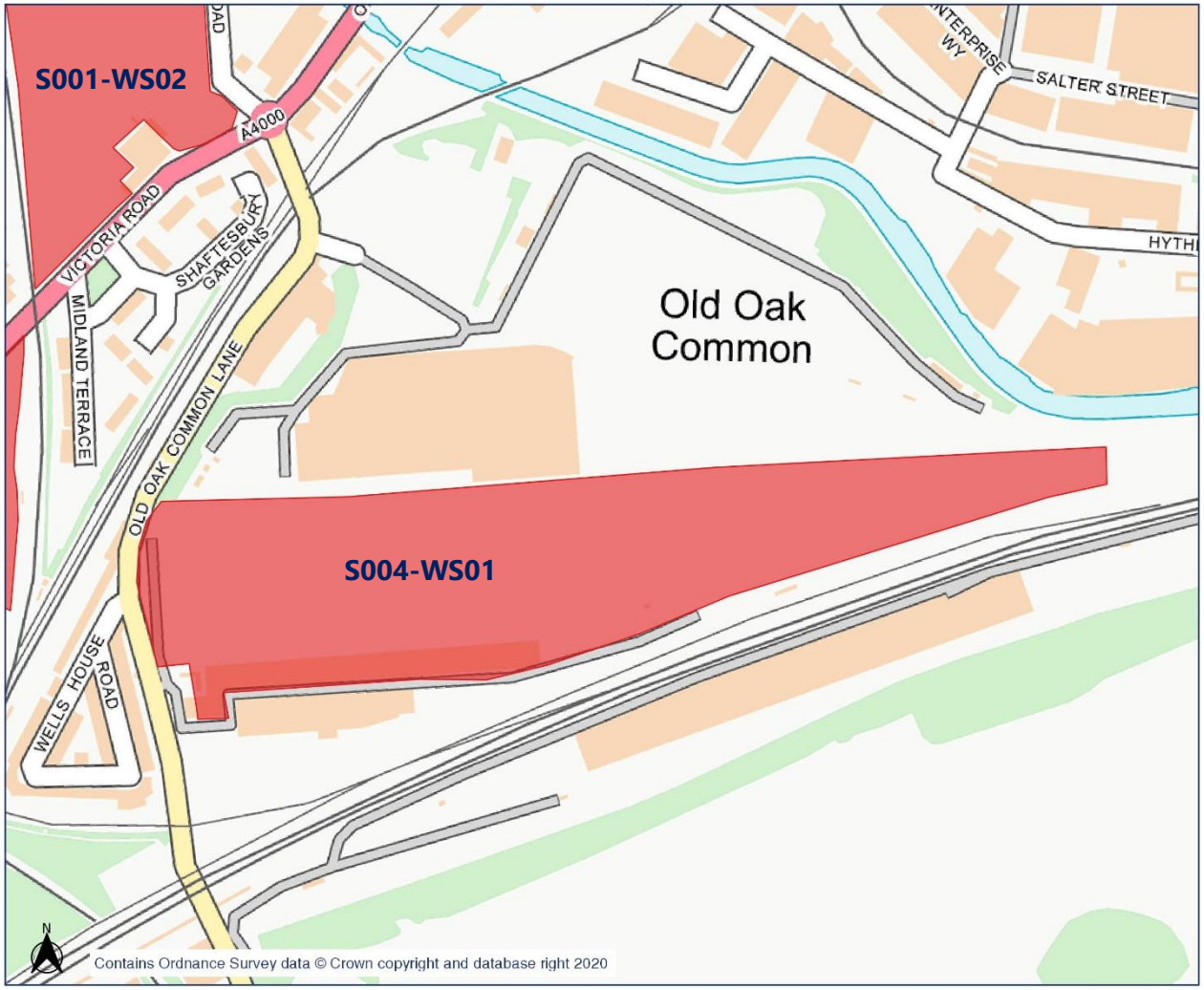
# Worksite identification plan - 3



# HS2 Worksite identification plan - 4

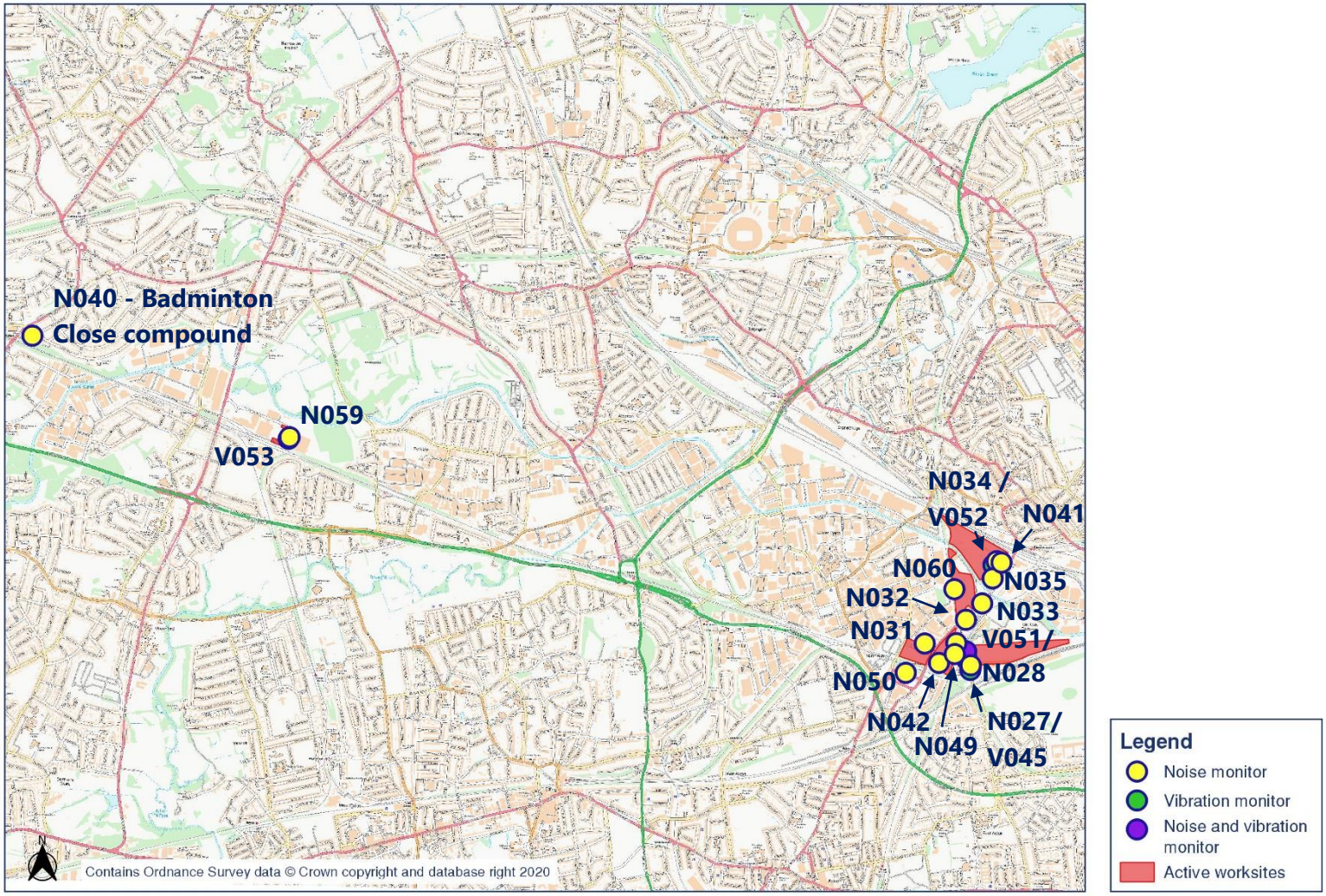


# Worksite identification plan - 5

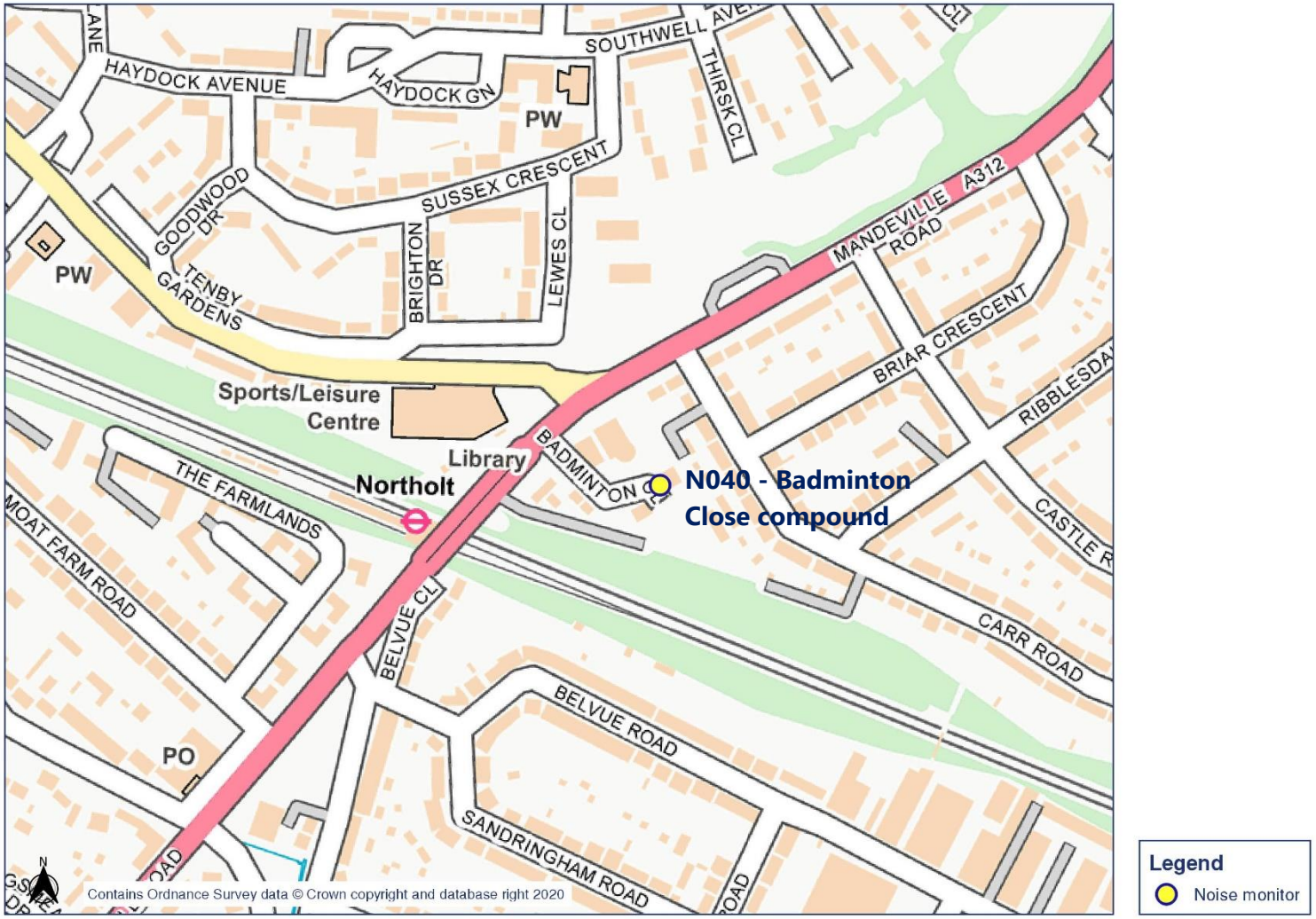


# Appendix B Monitoring Locations

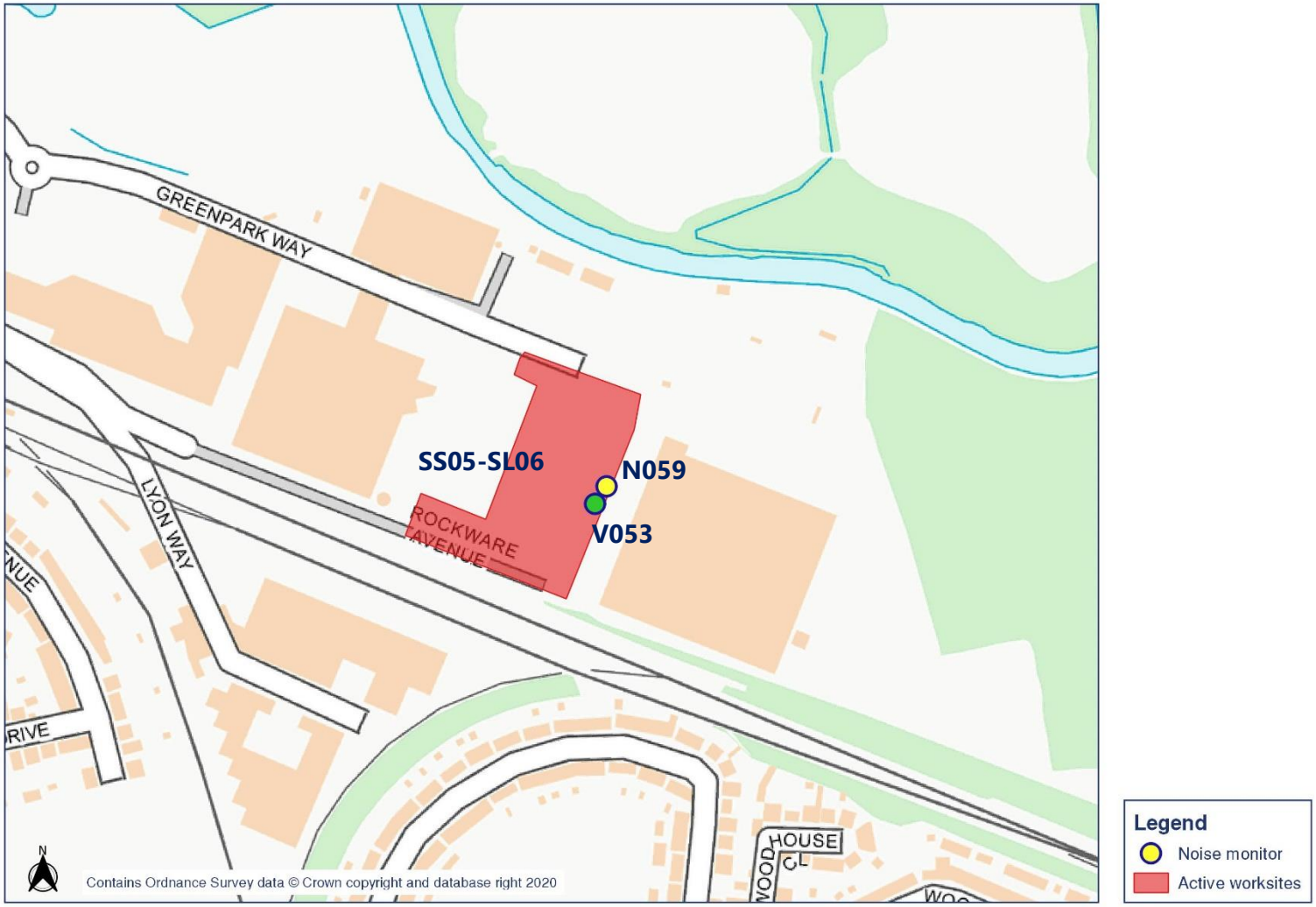
# HS2 Noise and vibration monitoring plan - Overview



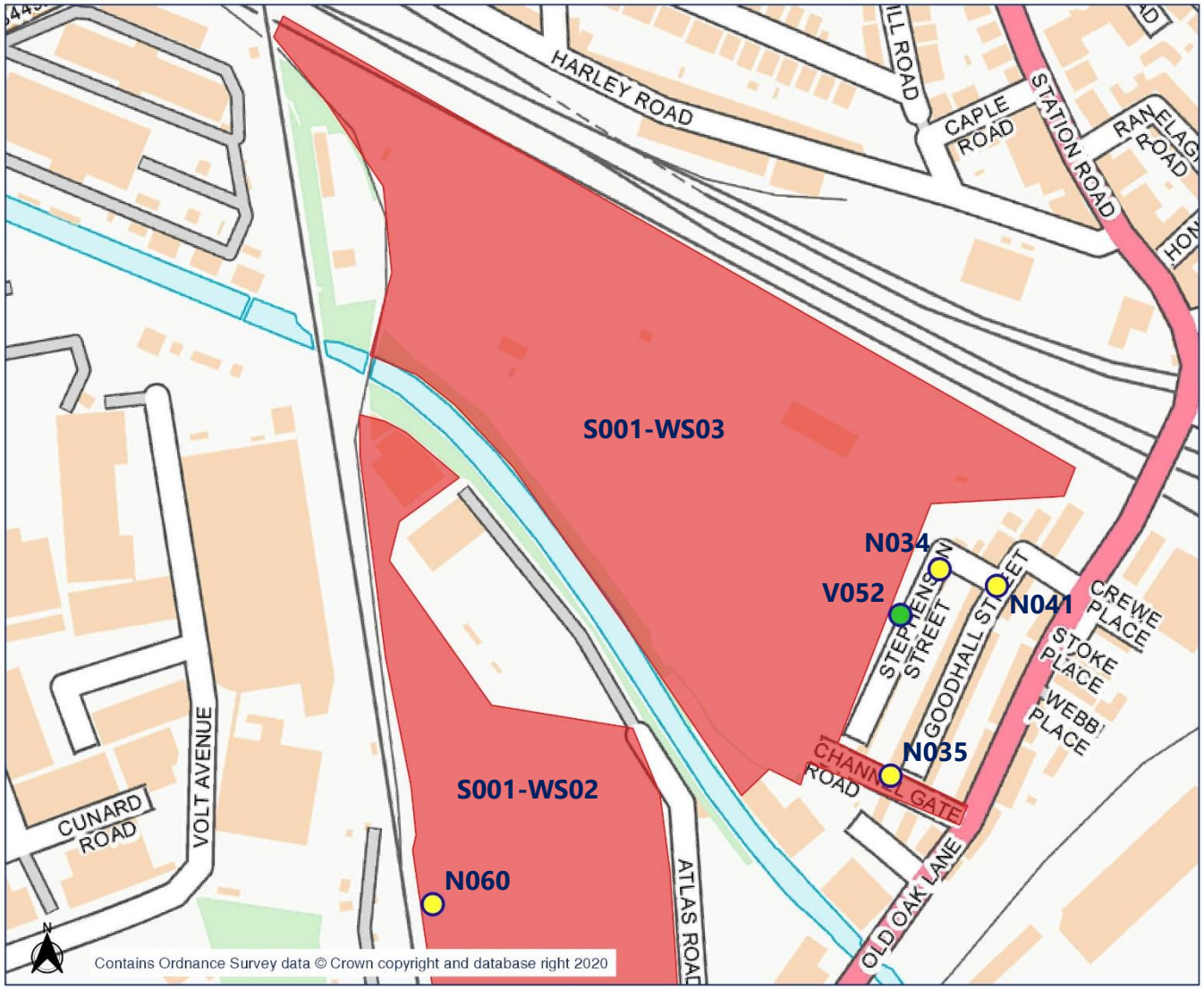
# HS2 Noise and vibration monitoring plan - 1



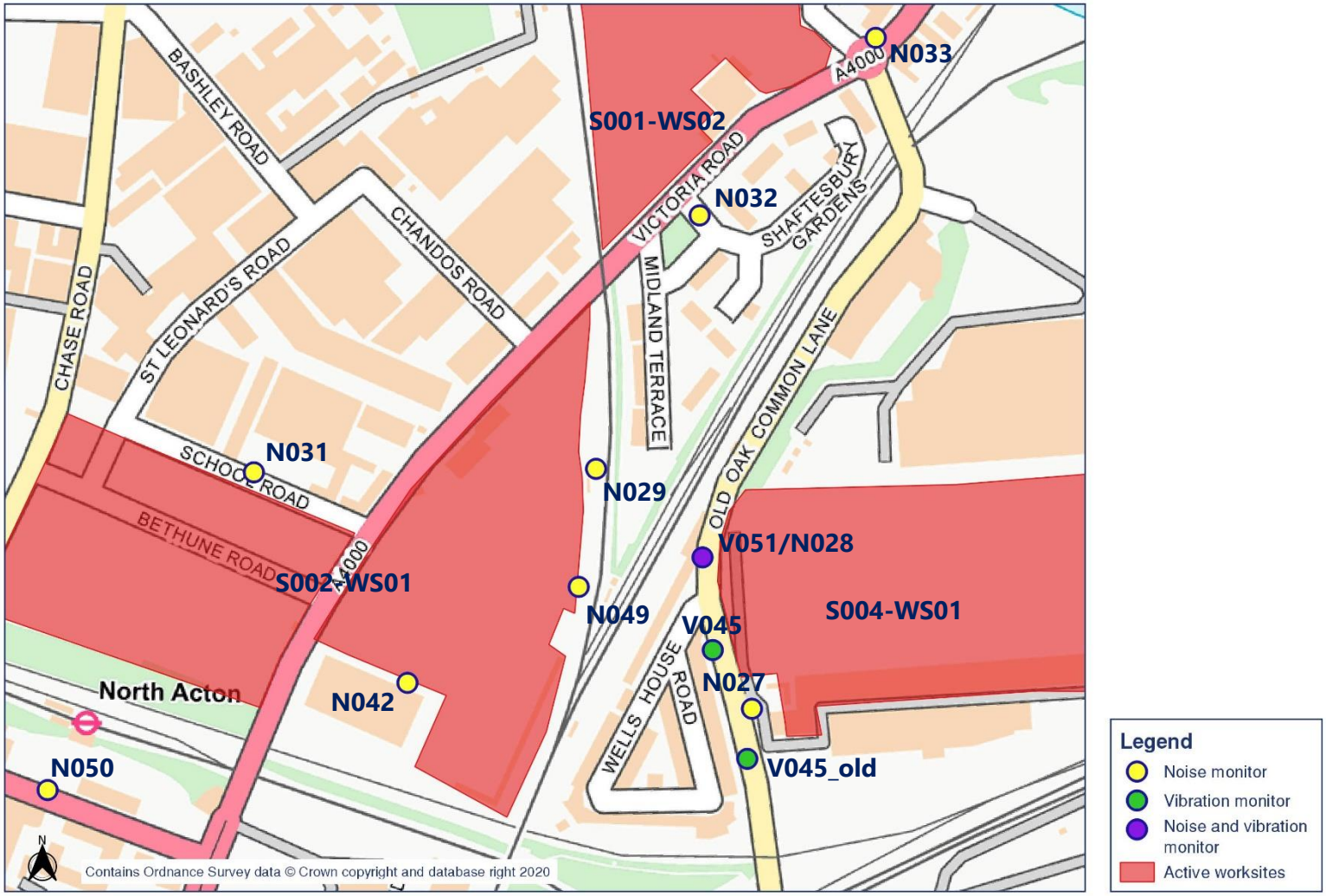
# HS2 Noise and vibration monitoring plan - 2



# HS2 Noise and vibration monitoring plan - 3



# HS2 Noise and vibration monitoring plan - 4

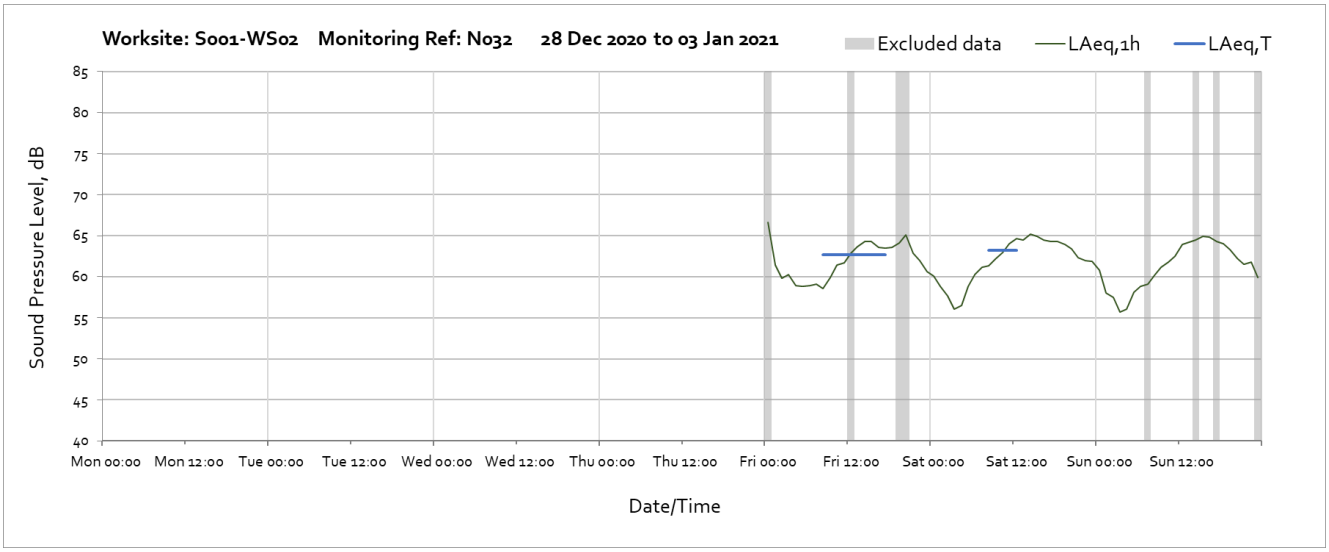


# Appendix C Data

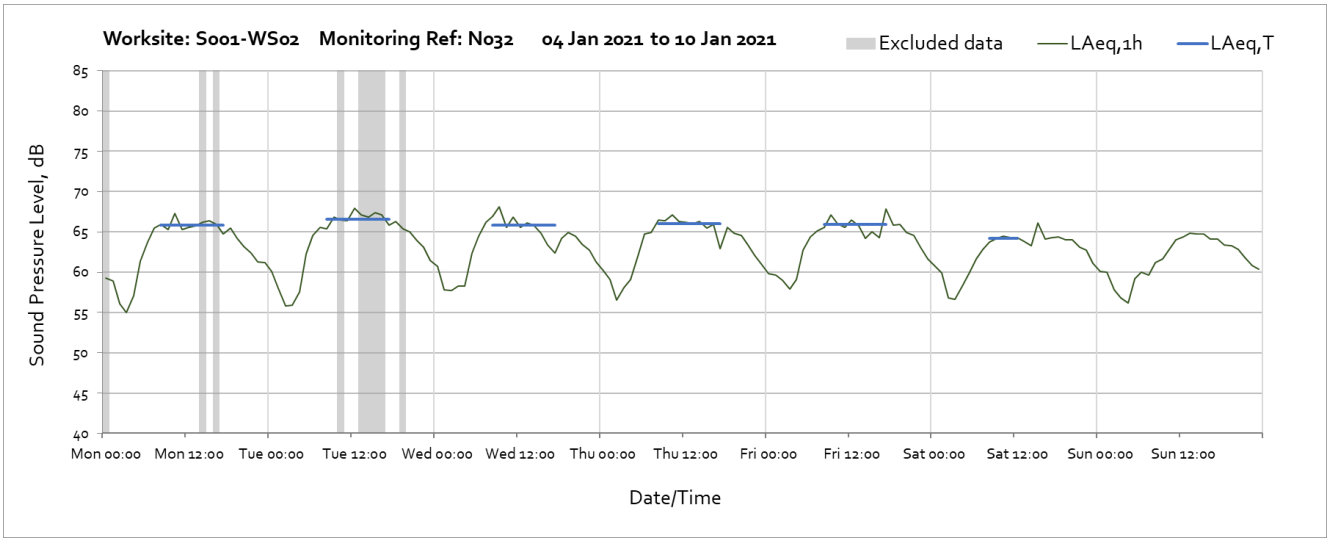
## Noise

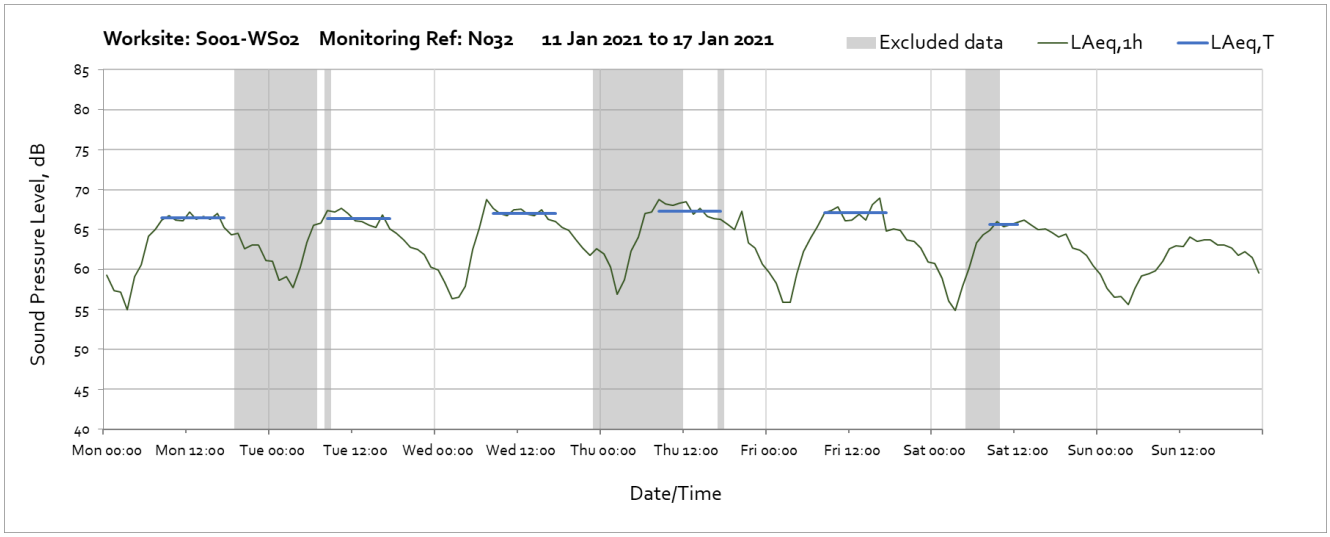
The following graphs show the hourly measured ambient noise level $L_{Aeq,1h}$ and, where relevant, the averaged noise level $L_{Aeq,T}$ values, where the time period T is as specified in Table 1 of HS2 Information Paper E23. Periods with adversely weather affected noise levels are greyed out and have been excluded from the calculation of the $L_{Aeq,T}$ values in Table 3 of the main report.

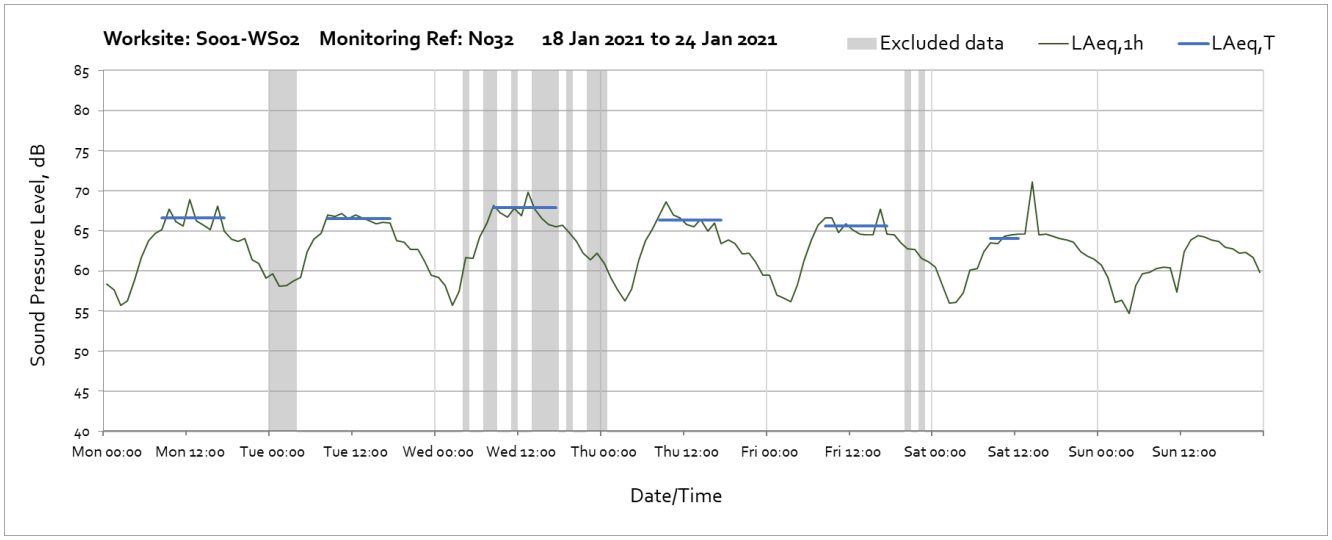
### Worksite: S001-WS02 – Monitoring Ref: N032

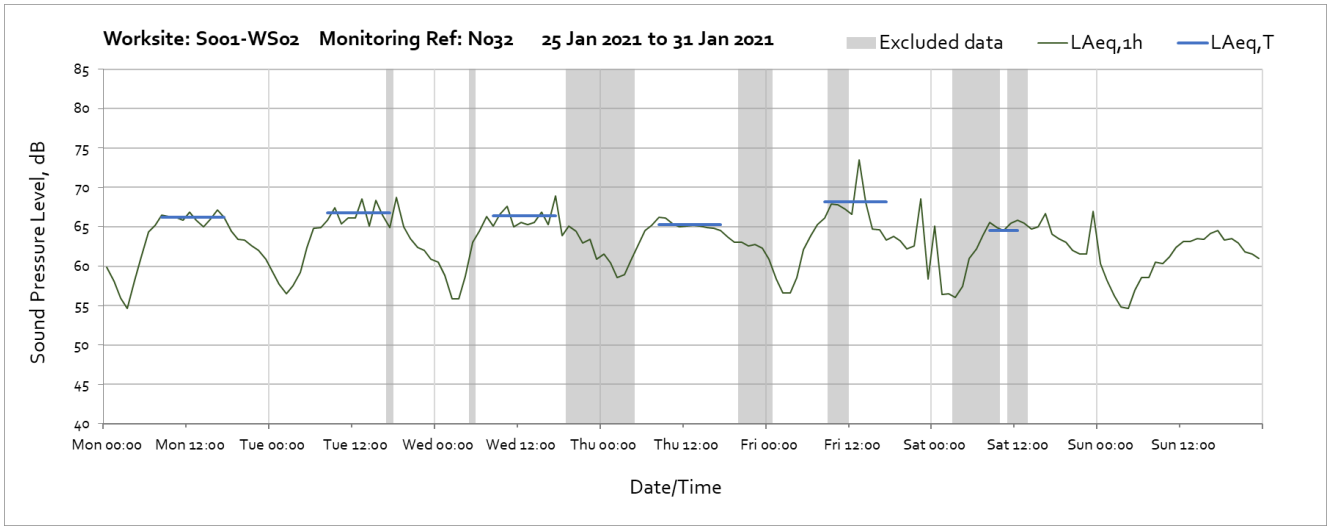



Note: High noise levels on the early hours of the 1st January were due to New Year's Eve celebrations and have been excluded to calculate values in Table 3.

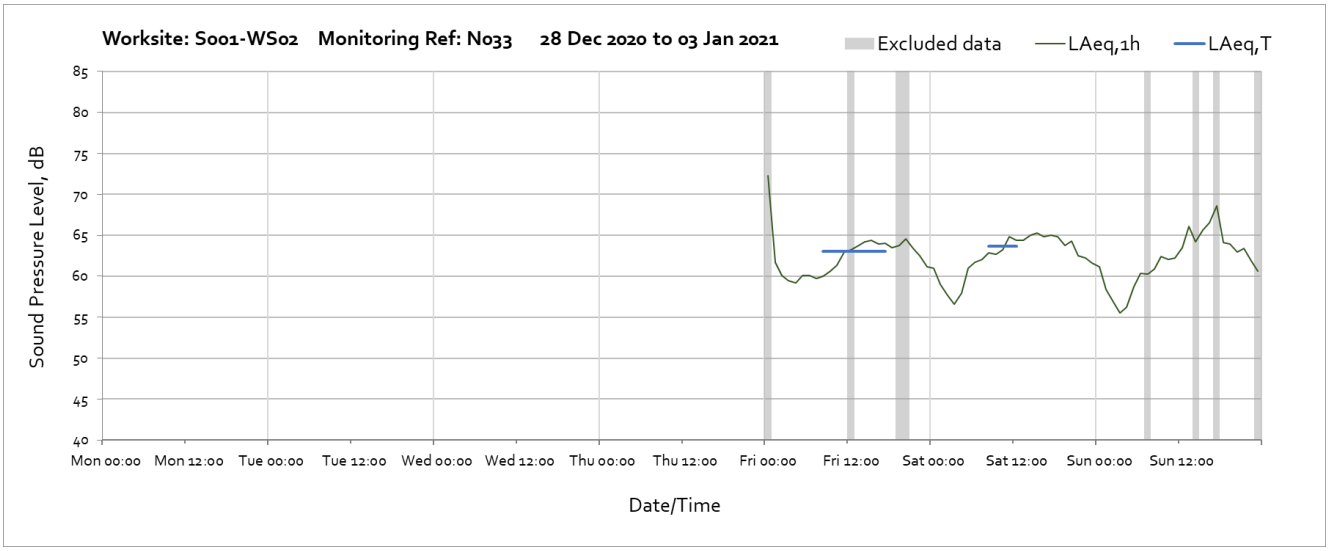



Worksite: S001-WS02 Monitoring Ref: N032 11 Jan 2021 to 17 Jan 2021
Excluded data
LAeq,1h
LAeq,T
Sound Pressure Level, dB
85
80
75
70
65
60
55
50
45
40
Mon 00:00
Mon 12:00
Tue 00:00
Tue 12:00
Wed 00:00
Wed 12:00
Thu 00:00
Thu 12:00
Fri 00:00
Fri 12:00
Sat 00:00
Sat 12:00
Sun 00:00
Sun 12:00
Date/Time

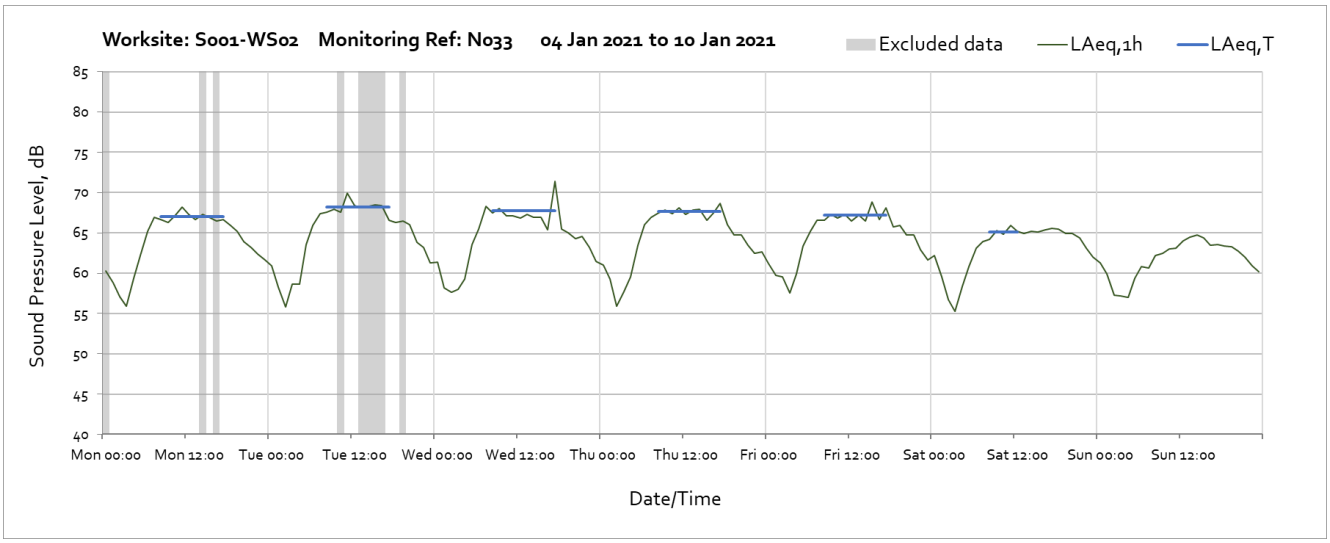

Worksite: S001-WS02 Monitoring Ref: N032 18 Jan 2021 to 24 Jan 2021
Excluded data
LAeq,1h
LAeq,T
Sound Pressure Level, dB
85
80
75
70
65
60
55
50
45
40
Mon 00:00
Mon 12:00
Tue 00:00
Tue 12:00
Wed 00:00
Wed 12:00
Thu 00:00
Thu 12:00
Fri 00:00
Fri 12:00
Sat 00:00
Sat 12:00
Sun 00:00
Sun 12:00
Date/Time

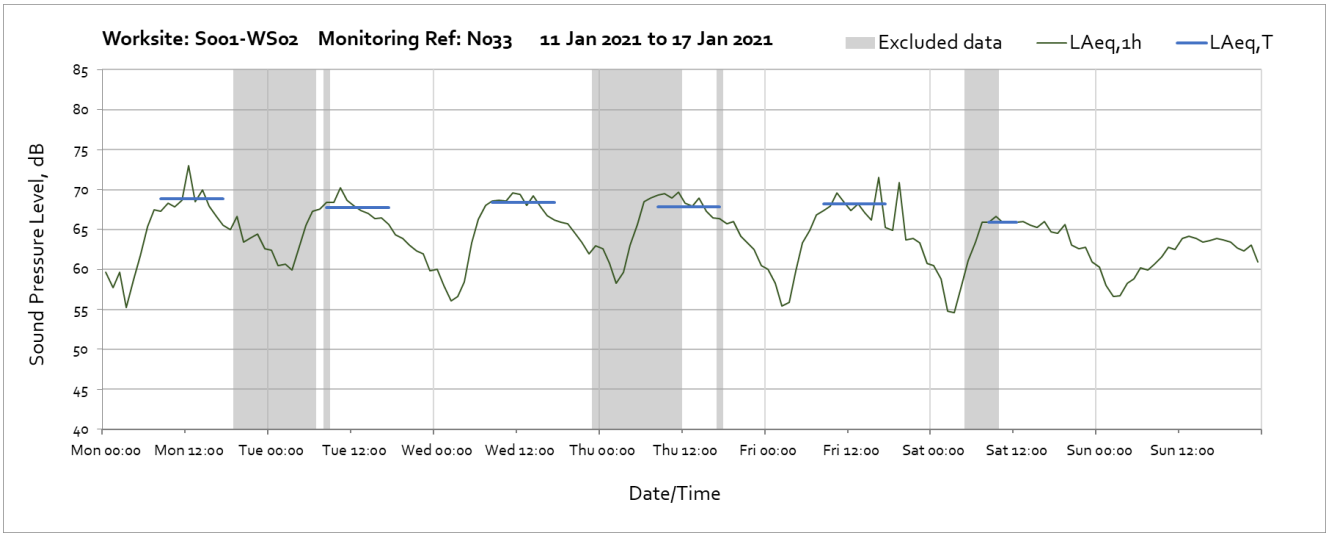

Worksite: S001-WS02 Monitoring Ref: N032 25 Jan 2021 to 31 Jan 2021
Excluded data
LAeq,1h
LAeq,T
Sound Pressure Level, dB
85
80
75
70
65
60
55
50
45
40
Mon 00:00
Mon 12:00
Tue 00:00
Tue 12:00
Wed 00:00
Wed 12:00
Thu 00:00
Thu 12:00
Fri 00:00
Fri 12:00
Sat 00:00
Sat 12:00
Sun 00:00
Sun 12:00
Date/Time

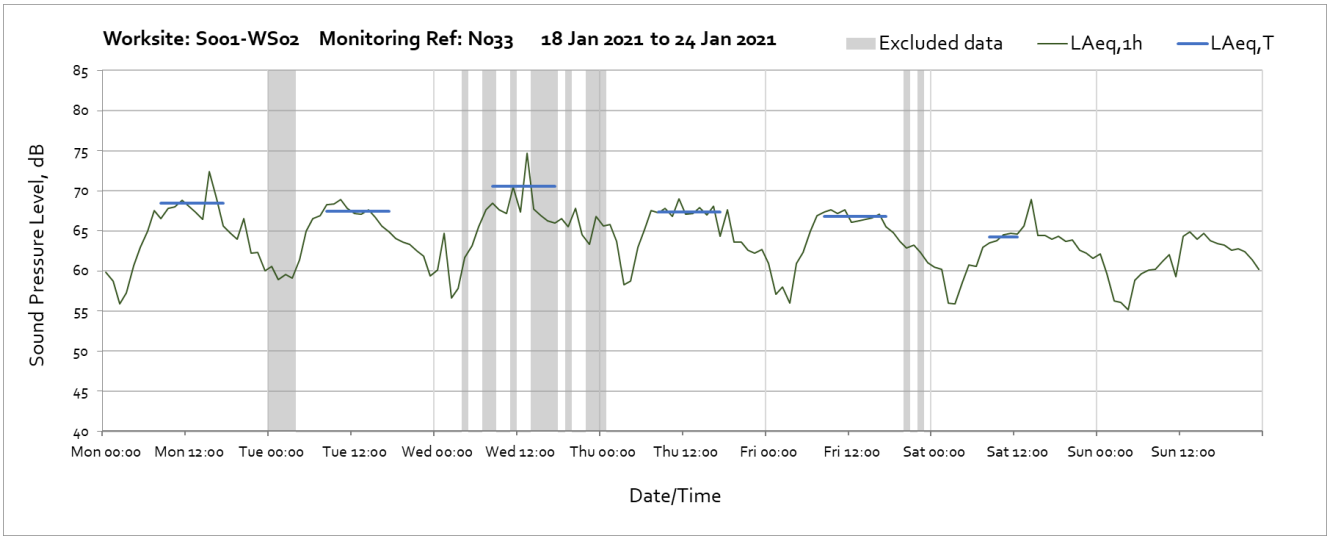
## Worksite: S001-WS02 – Monitoring Ref: N033

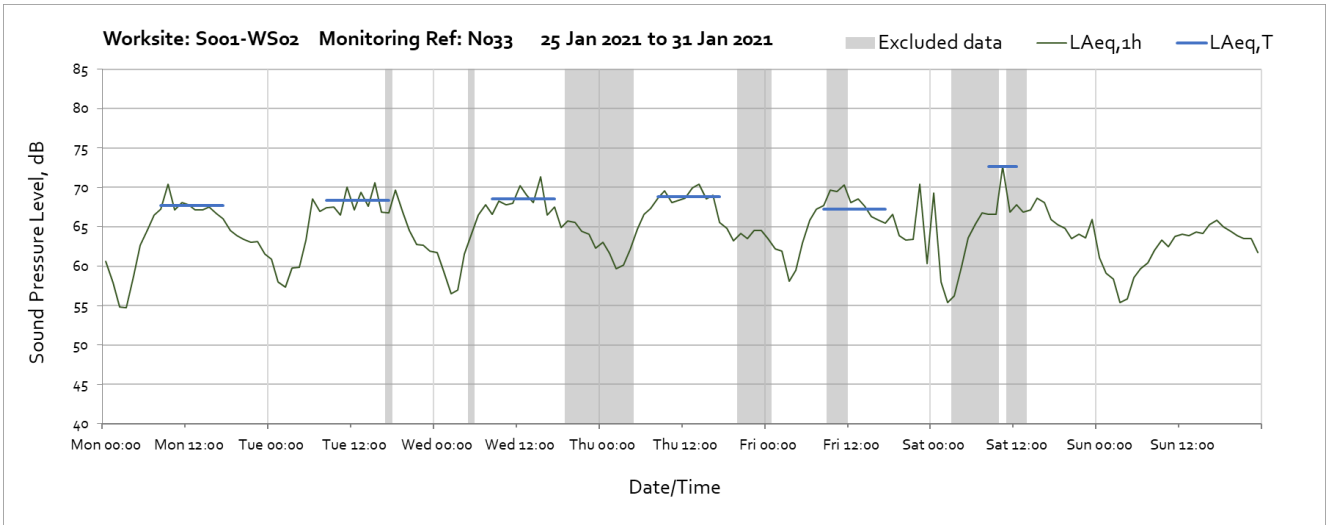



Note: High noise levels on the early hours of the 1st January were due to New Year's Eve celebrations and have been excluded to calculate values in Table 3.

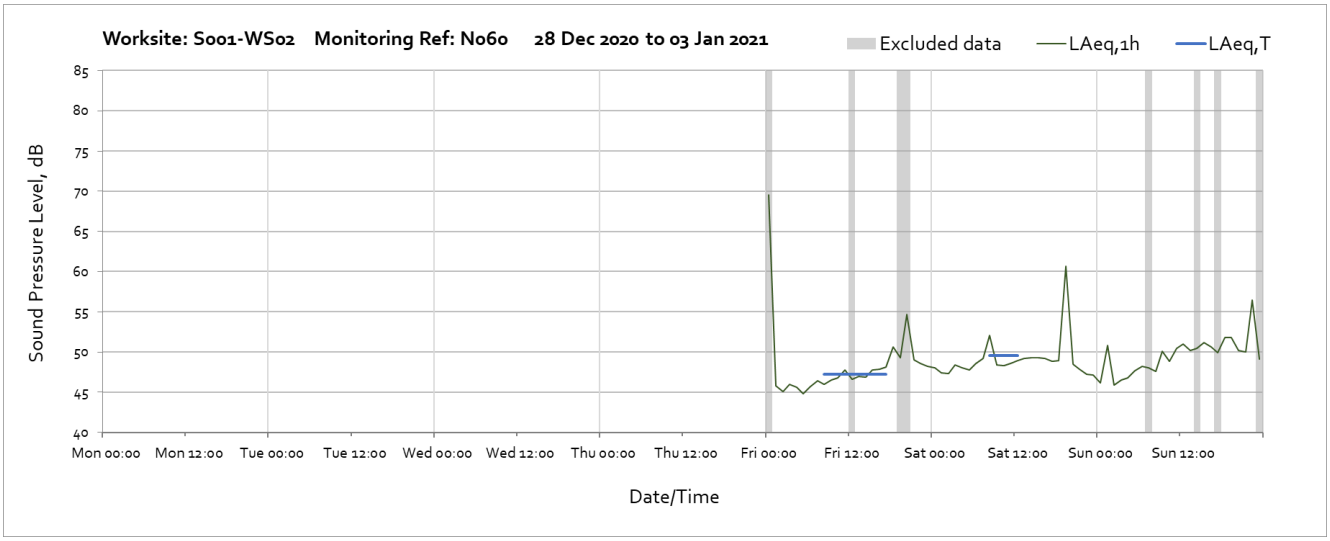


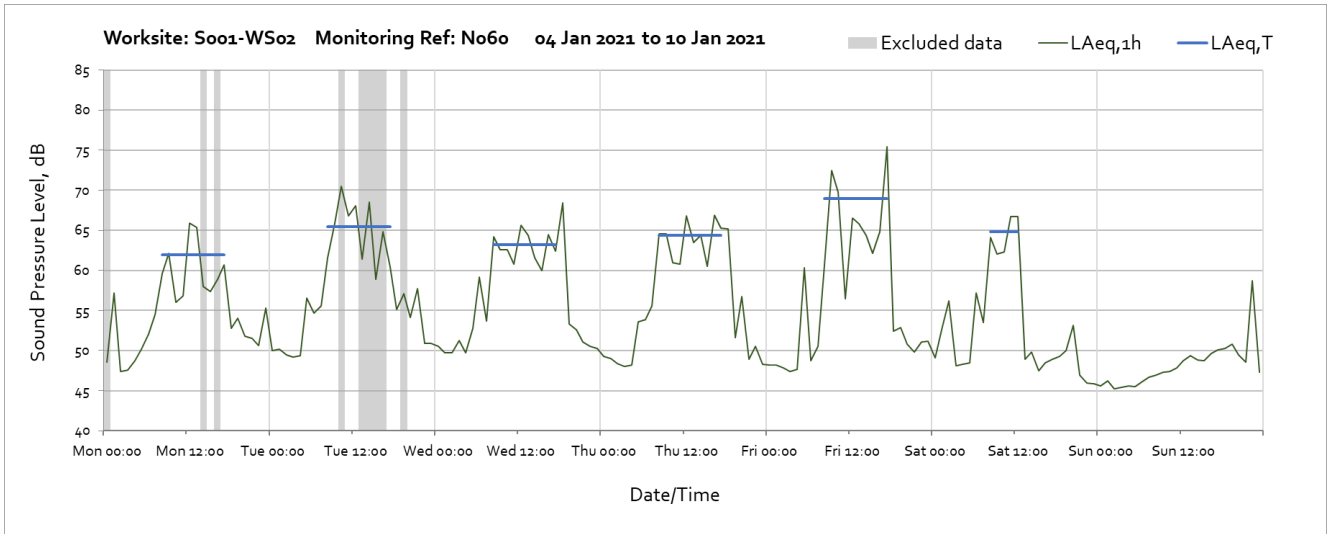


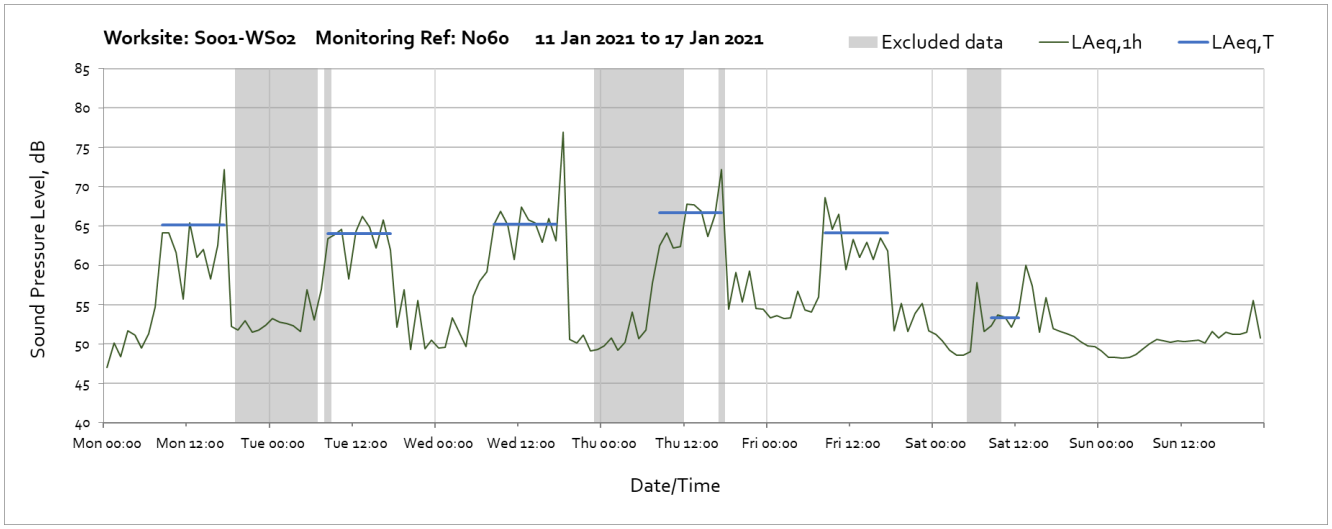



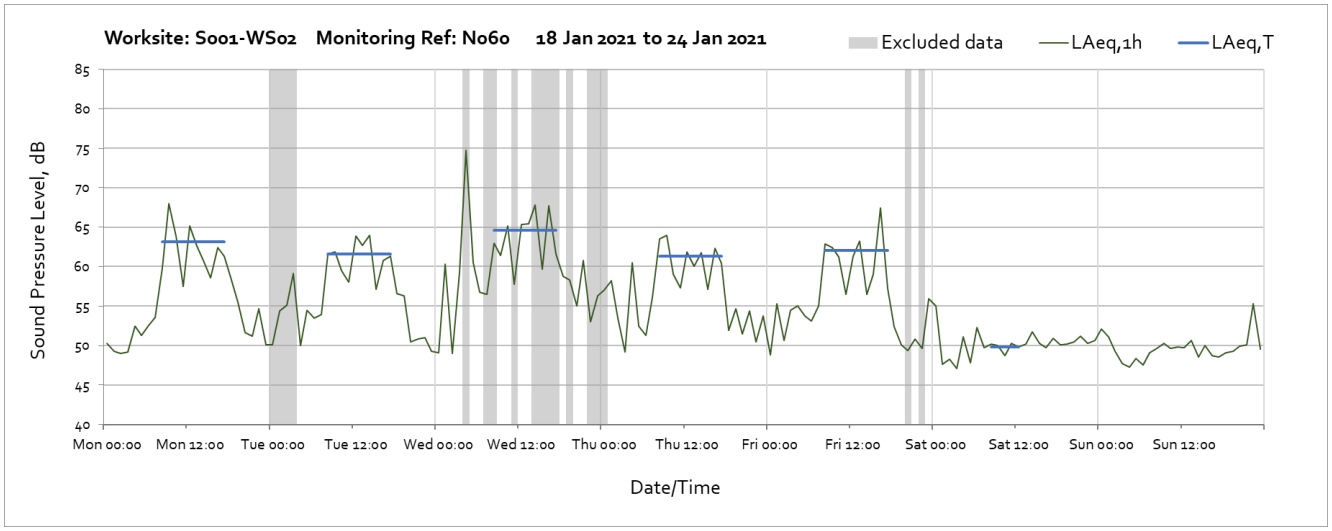

## Worksite: S001-WS02 – Monitoring Ref: N060

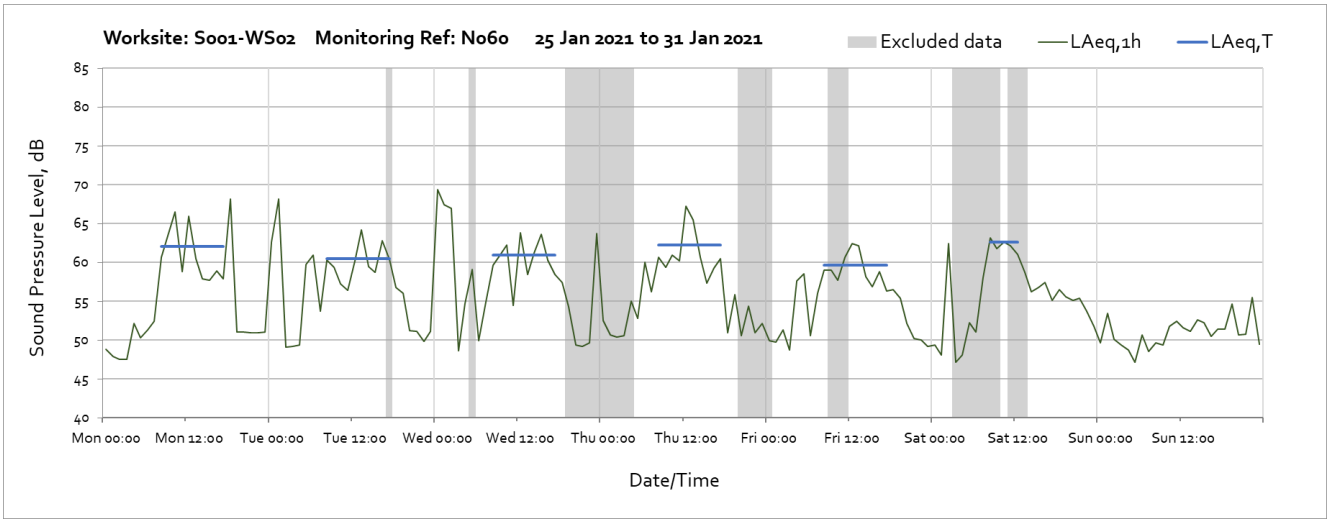



Note: High noise levels on the early hours of the 1st January were due to New Year's Eve celebrations and have been excluded to calculate values in Table 3.

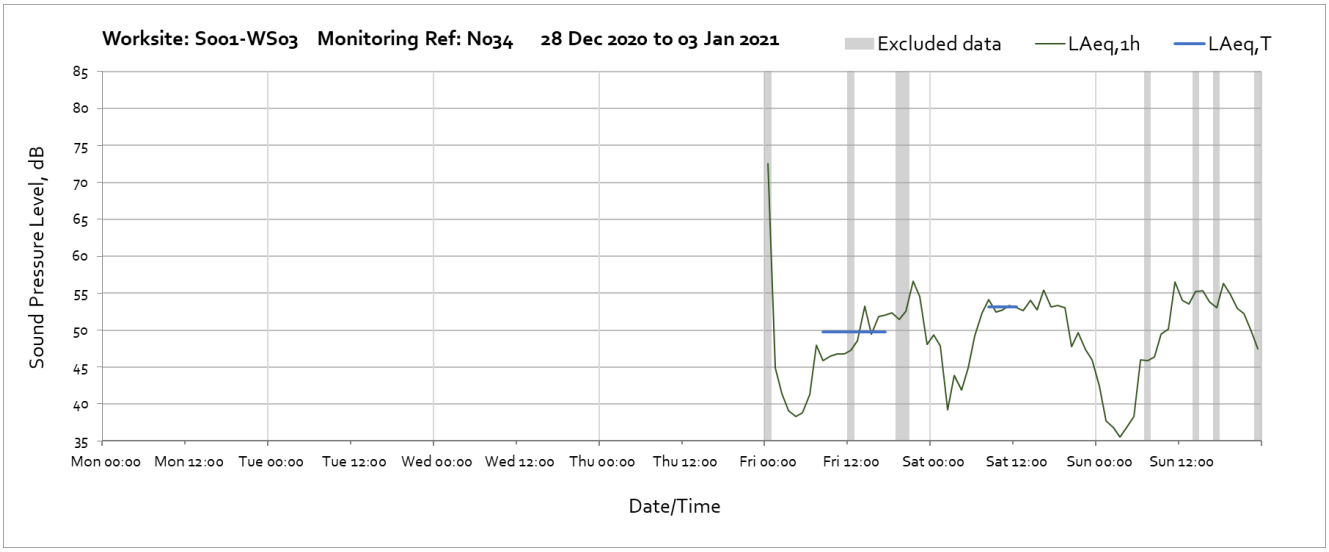

Worksite: S001-WS02 Monitoring Ref: N060 04 Jan 2021 to 10 Jan 2021
Excluded data
LAeq,1h
LAeq,T
Sound Pressure Level, dB
85
80
75
70
65
60
55
50
45
40
Mon 00:00
Mon 12:00
Tue 00:00
Tue 12:00
Wed 00:00
Wed 12:00
Thu 00:00
Thu 12:00
Fri 00:00
Fri 12:00
Sat 00:00
Sat 12:00
Sun 00:00
Sun 12:00
Date/Time


Worksite: S001-WS02 Monitoring Ref: N060 11 Jan 2021 to 17 Jan 2021
Excluded data
LAeq,1h
LAeq,T
Sound Pressure Level, dB
85
80
75
70
65
60
55
50
45
40
Mon 00:00
Mon 12:00
Tue 00:00
Tue 12:00
Wed 00:00
Wed 12:00
Thu 00:00
Thu 12:00
Fri 00:00
Fri 12:00
Sat 00:00
Sat 12:00
Sun 00:00
Sun 12:00
Date/Time

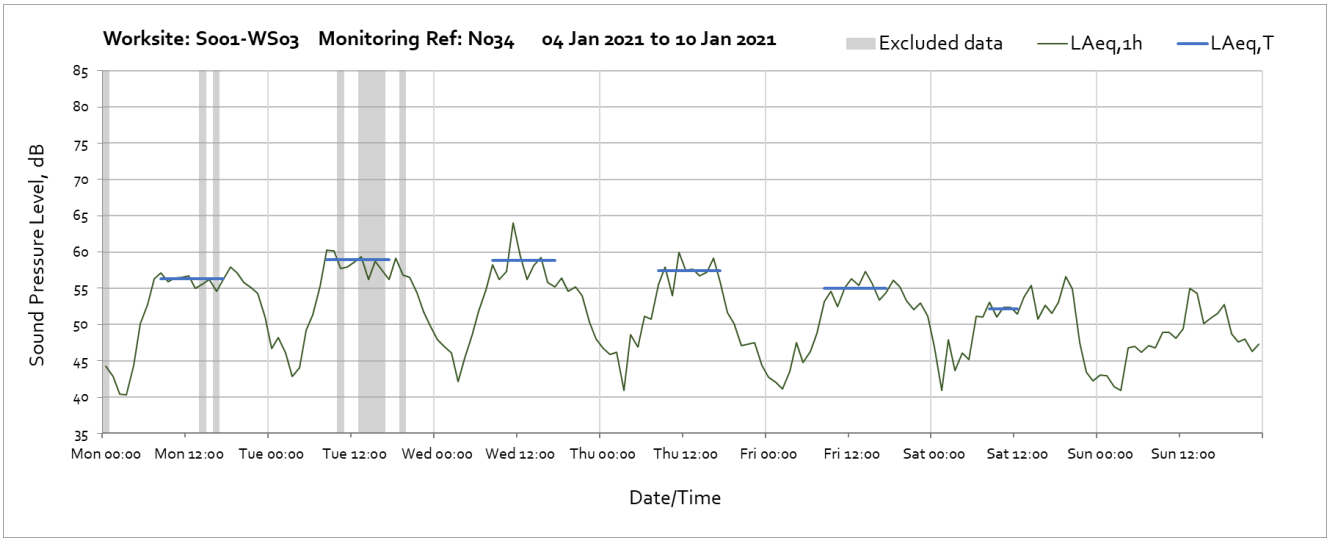

Worksite: S001-WS02 Monitoring Ref: N060 18 Jan 2021 to 24 Jan 2021
Excluded data
LAeq,1h
LAeq,T
Sound Pressure Level, dB
85
80
75
70
65
60
55
50
45
40
Mon 00:00
Mon 12:00
Tue 00:00
Tue 12:00
Wed 00:00
Wed 12:00
Thu 00:00
Thu 12:00
Fri 00:00
Fri 12:00
Sat 00:00
Sat 12:00
Sun 00:00
Sun 12:00
Date/Time

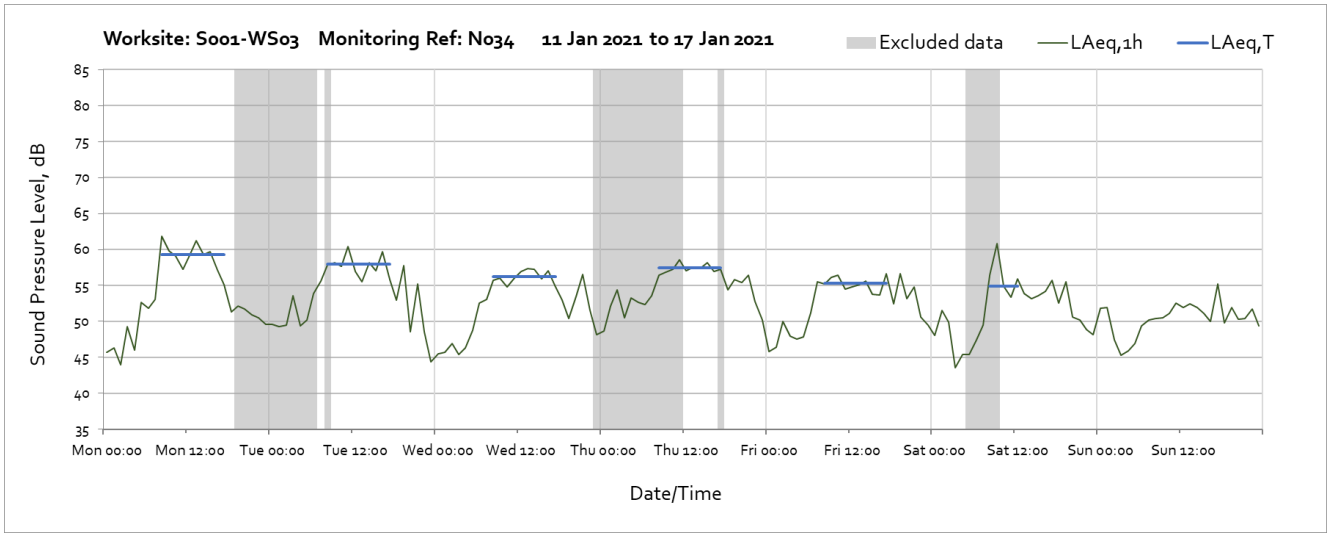


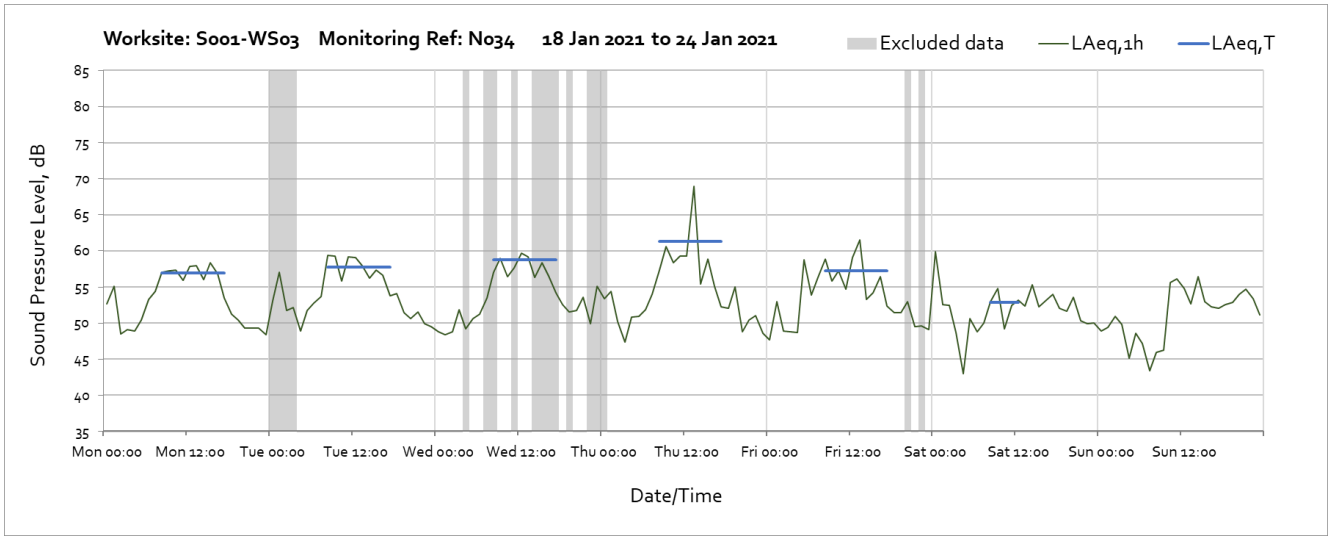

## Worksite: S001-WS03 – Monitoring Ref: N034

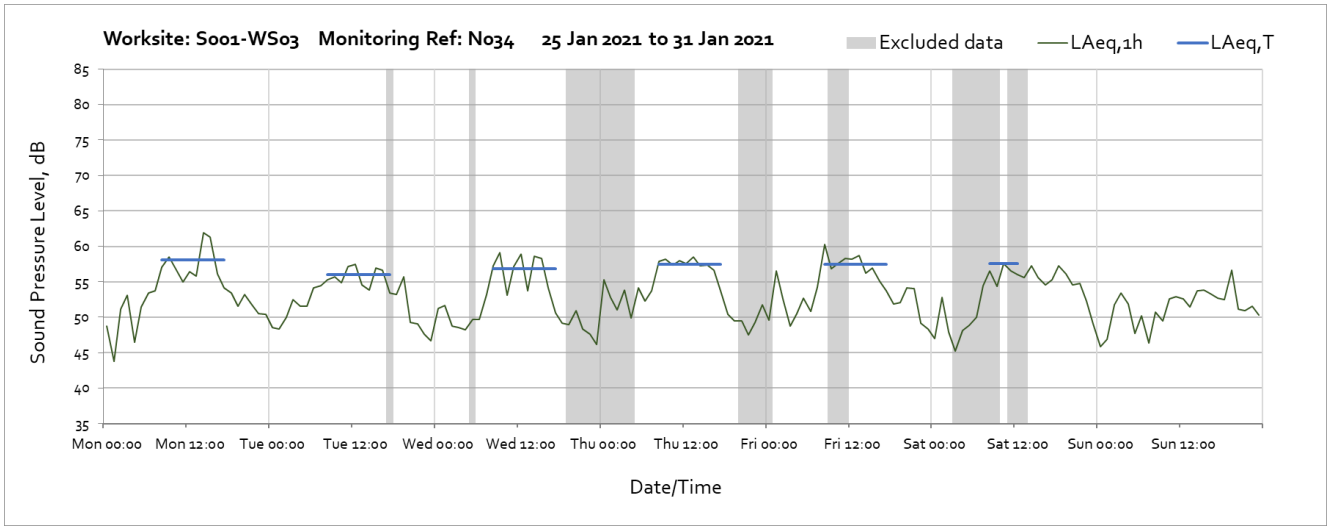



Note: High noise levels on the early hours of the 1st January were due to New Year's Eve celebrations and have been excluded to calculate values in Table 3.

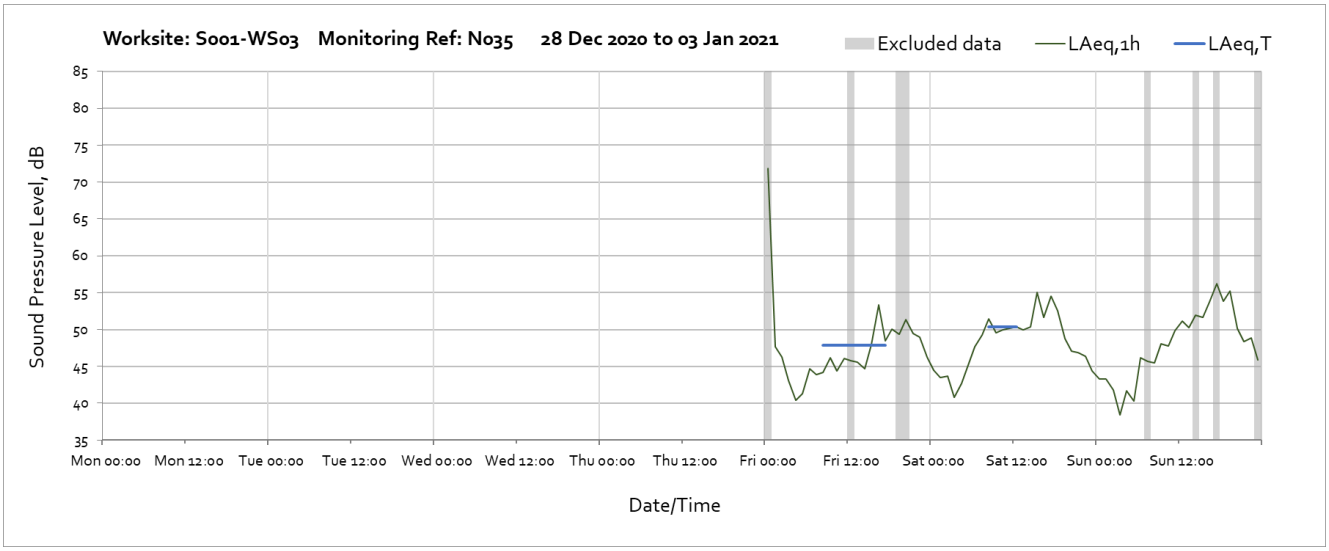



Worksite: S001-WS03 Monitoring Ref: N034 11 Jan 2021 to 17 Jan 2021
Excluded data
LAeq,1h
LAeq,T
Sound Pressure Level, dB
85
80
75
70
65
60
55
50
45
40
35
Mon 00:00
Mon 12:00
Tue 00:00
Tue 12:00
Wed 00:00
Wed 12:00
Thu 00:00
Thu 12:00
Fri 00:00
Fri 12:00
Sat 00:00
Sat 12:00
Sun 00:00
Sun 12:00
Date/Time

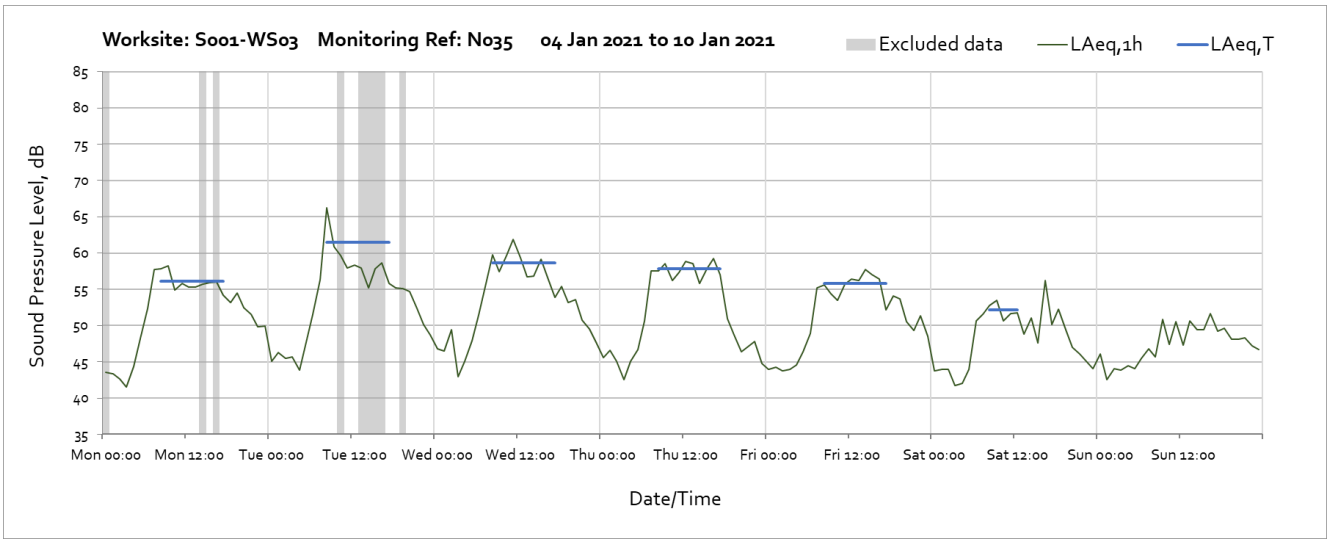

Worksite: S001-WS03 Monitoring Ref: N034 18 Jan 2021 to 24 Jan 2021
Excluded data
LAeq,1h
LAeq,T
Sound Pressure Level, dB
85
80
75
70
65
60
55
50
45
40
35
Mon 00:00
Mon 12:00
Tue 00:00
Tue 12:00
Wed 00:00
Wed 12:00
Thu 00:00
Thu 12:00
Fri 00:00
Fri 12:00
Sat 00:00
Sat 12:00
Sun 00:00
Sun 12:00
Date/Time

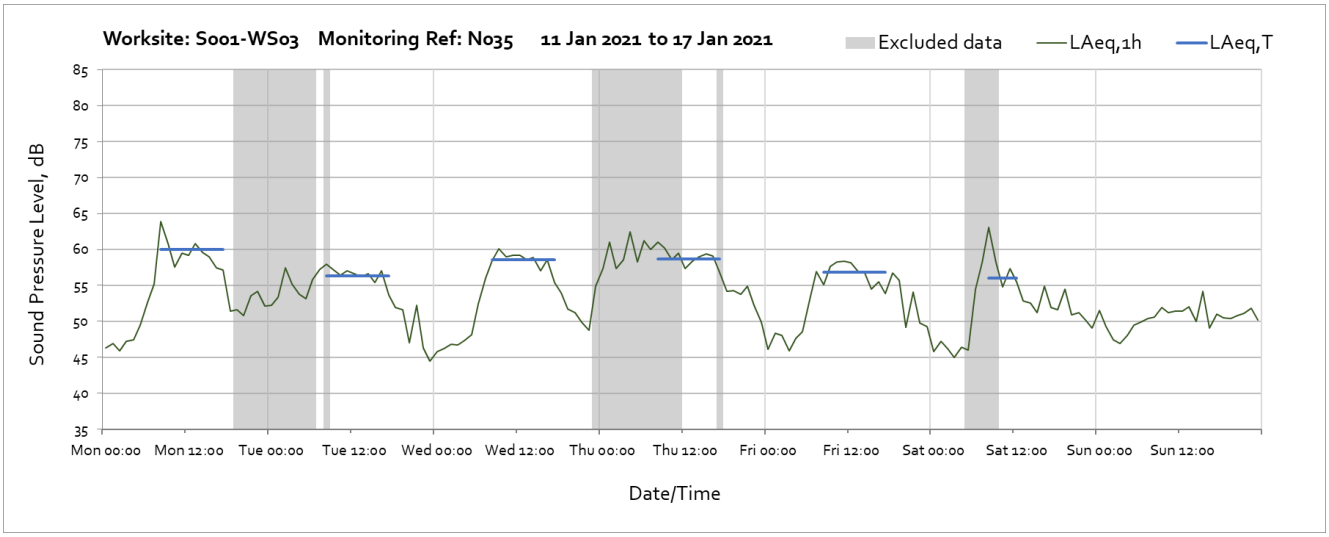

Worksite: S001-WS03 Monitoring Ref: N034 25 Jan 2021 to 31 Jan 2021
Excluded data
LAeq,1h
LAeq,T
Sound Pressure Level, dB
85
80
75
70
65
60
55
50
45
40
35
Mon 00:00
Mon 12:00
Tue 00:00
Tue 12:00
Wed 00:00
Wed 12:00
Thu 00:00
Thu 12:00
Fri 00:00
Fri 12:00
Sat 00:00
Sat 12:00
Sun 00:00
Sun 12:00
Date/Time

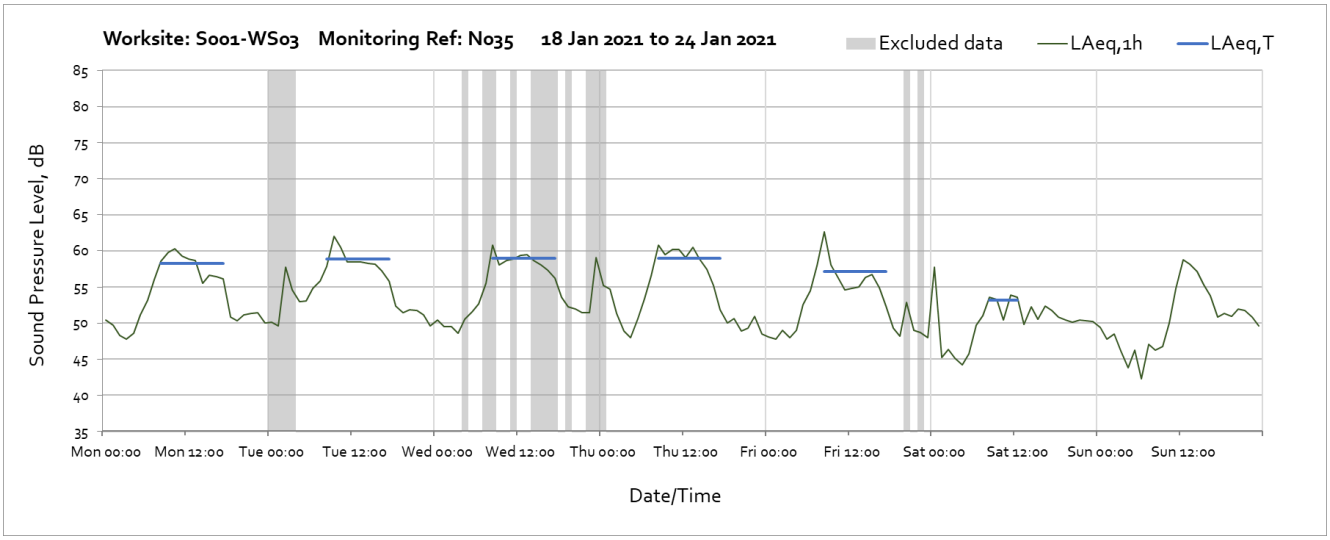
## Worksite: S001-WS03 – Monitoring Ref: N035

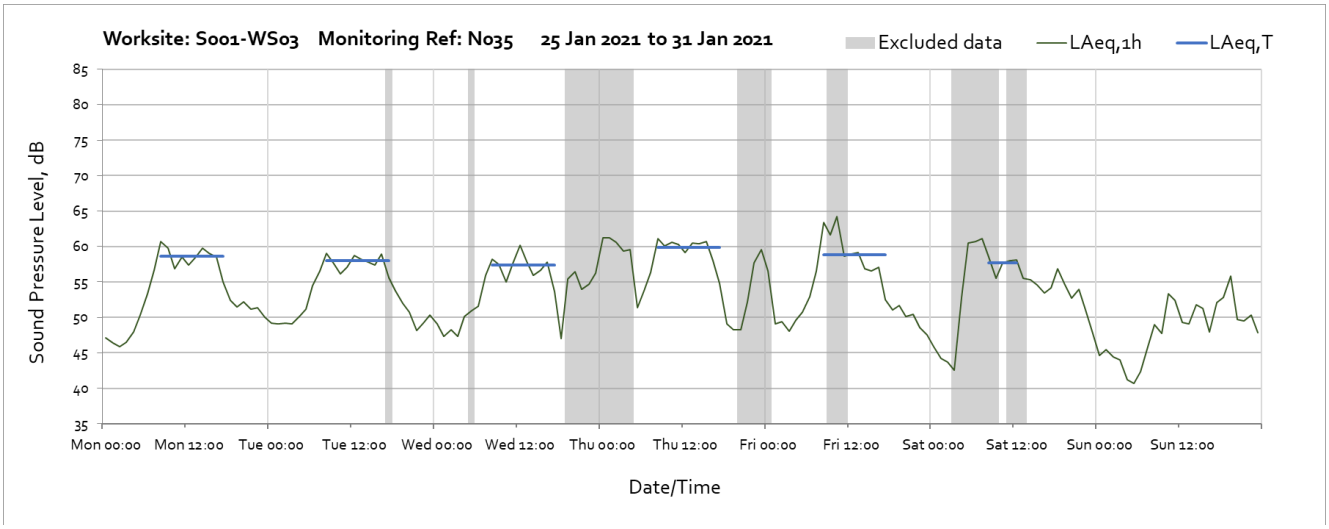



Note: High noise levels on the early hours of the 1st January were due to New Year's Eve celebrations and have been excluded to calculate values in Table 3.

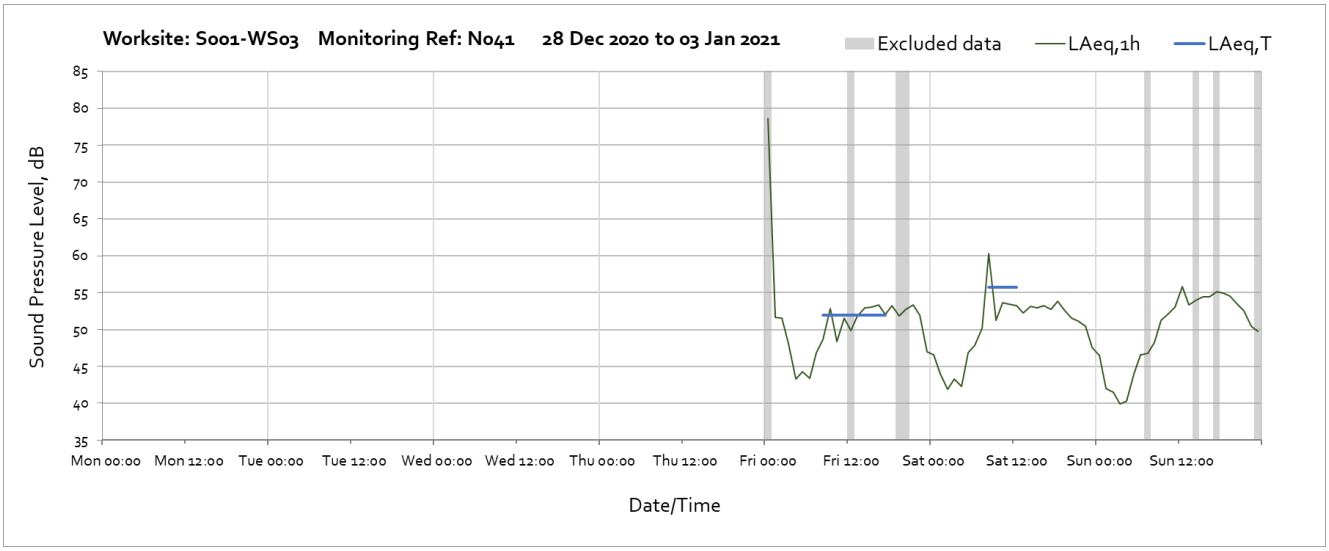


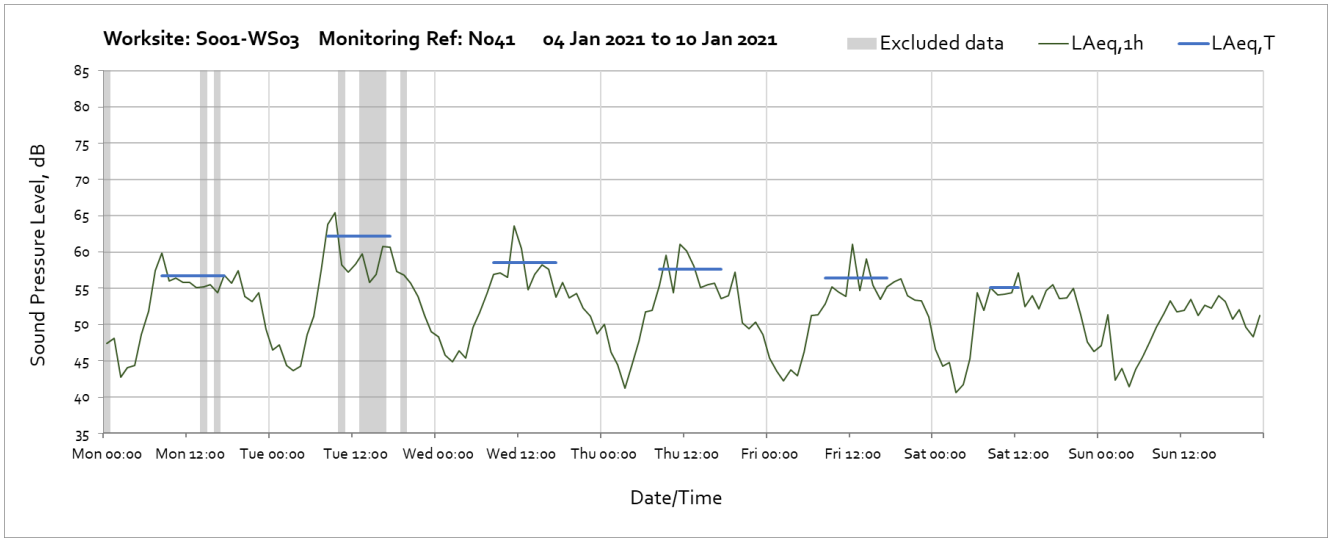


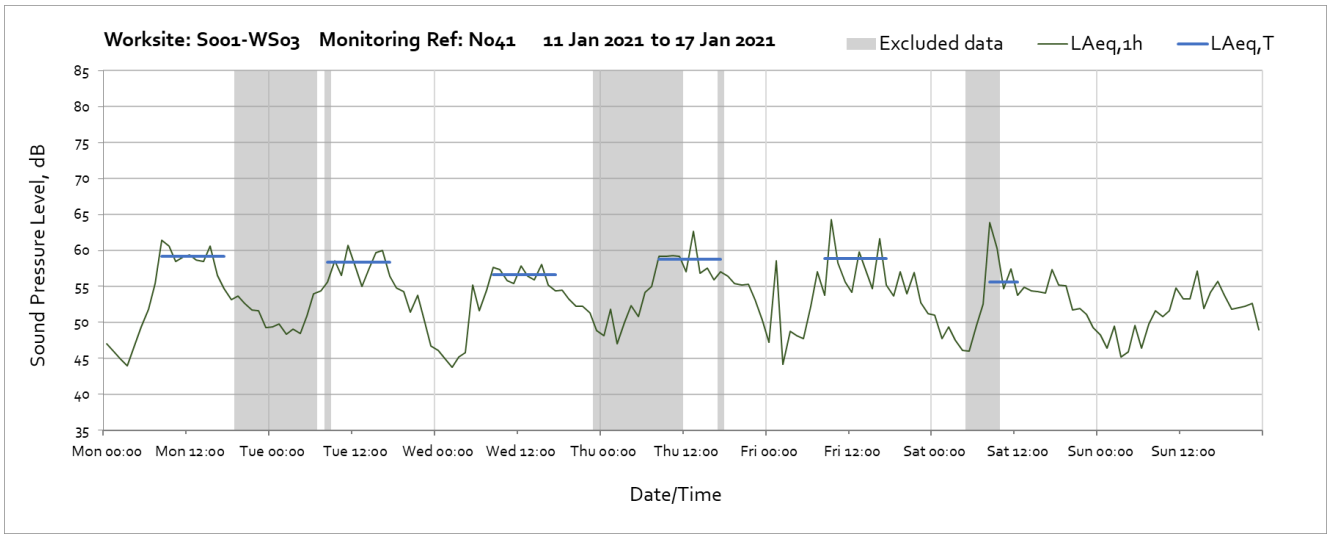



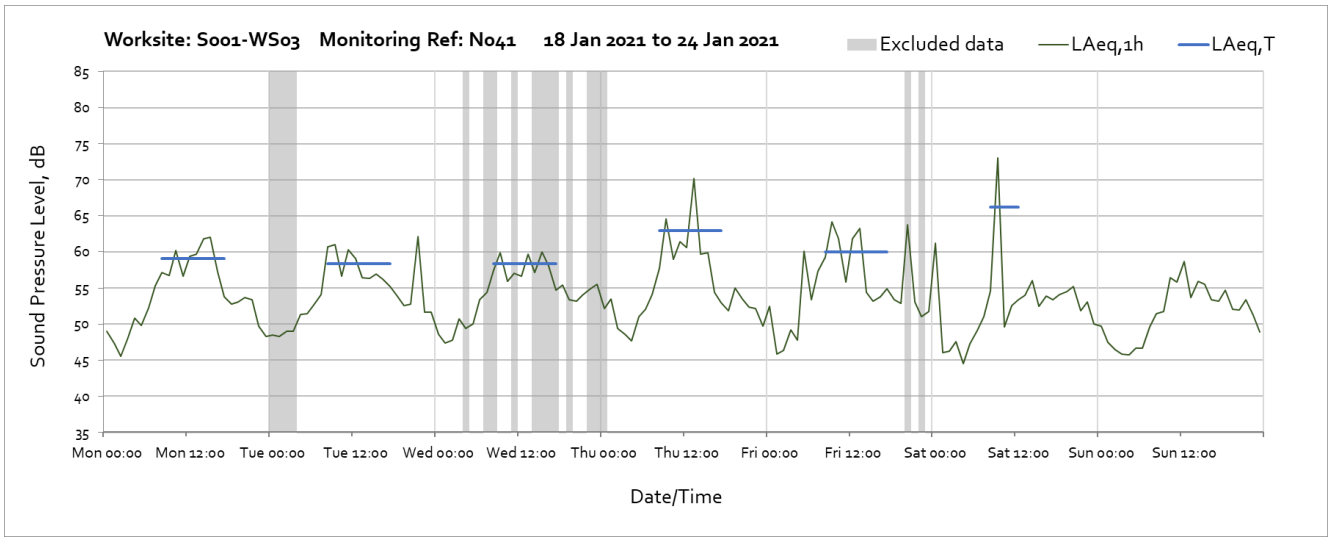

## Worksite: S001-WS03 – Monitoring Ref: N041

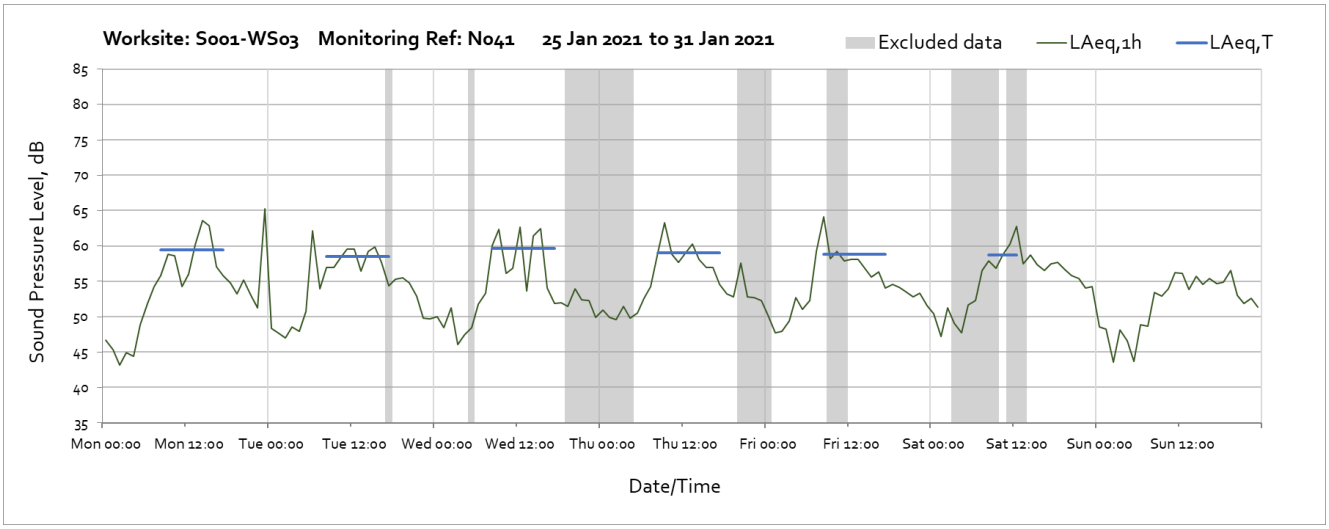



Note: High noise levels on the early hours of the 1st January were due to New Year's Eve celebrations and have been excluded to calculate values in Table 3.

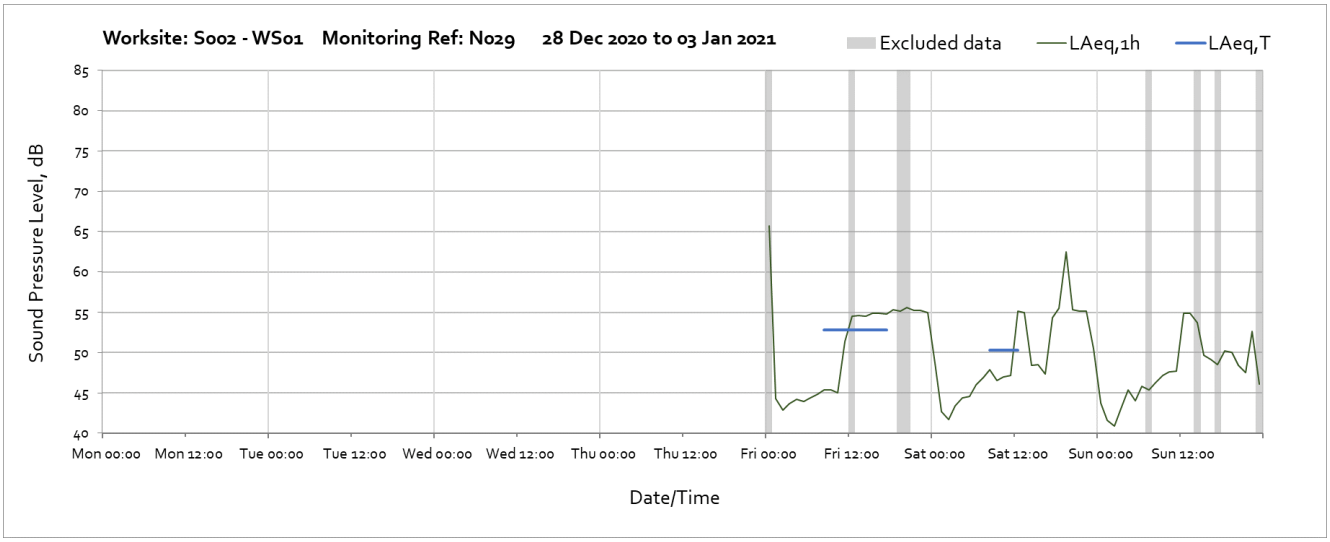

Worksite: S001-WS03 Monitoring Ref: N041 04 Jan 2021 to 10 Jan 2021
Excluded data
LAeq,1h
LAeq,T
Sound Pressure Level, dB
85
80
75
70
65
60
55
50
45
40
35
Mon 00:00
Mon 12:00
Tue 00:00
Tue 12:00
Wed 00:00
Wed 12:00
Thu 00:00
Thu 12:00
Fri 00:00
Fri 12:00
Sat 00:00
Sat 12:00
Sun 00:00
Sun 12:00
Date/Time


Worksite: S001-WS03 Monitoring Ref: N041 11 Jan 2021 to 17 Jan 2021
Excluded data
LAeq,1h
LAeq,T
Sound Pressure Level, dB
85
80
75
70
65
60
55
50
45
40
35
Mon 00:00
Mon 12:00
Tue 00:00
Tue 12:00
Wed 00:00
Wed 12:00
Thu 00:00
Thu 12:00
Fri 00:00
Fri 12:00
Sat 00:00
Sat 12:00
Sun 00:00
Sun 12:00
Date/Time

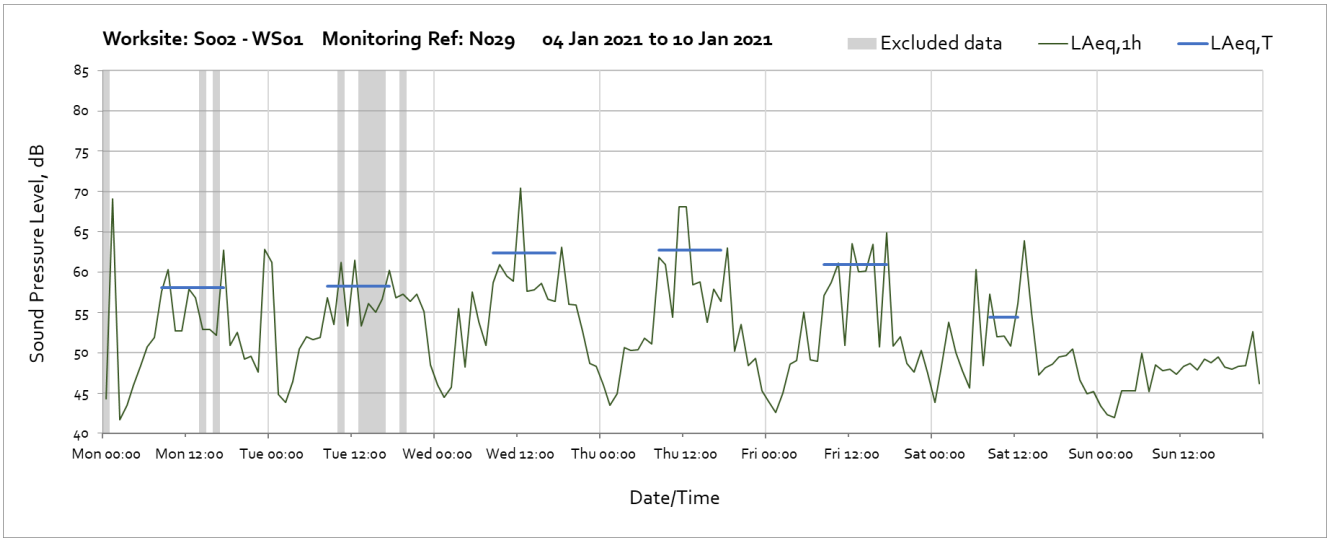

Worksite: S001-WS03 Monitoring Ref: N041 18 Jan 2021 to 24 Jan 2021
Excluded data
LAeq,1h
LAeq,T
Sound Pressure Level, dB
85
80
75
70
65
60
55
50
45
40
35
Mon 00:00
Mon 12:00
Tue 00:00
Tue 12:00
Wed 00:00
Wed 12:00
Thu 00:00
Thu 12:00
Fri 00:00
Fri 12:00
Sat 00:00
Sat 12:00
Sun 00:00
Sun 12:00
Date/Time

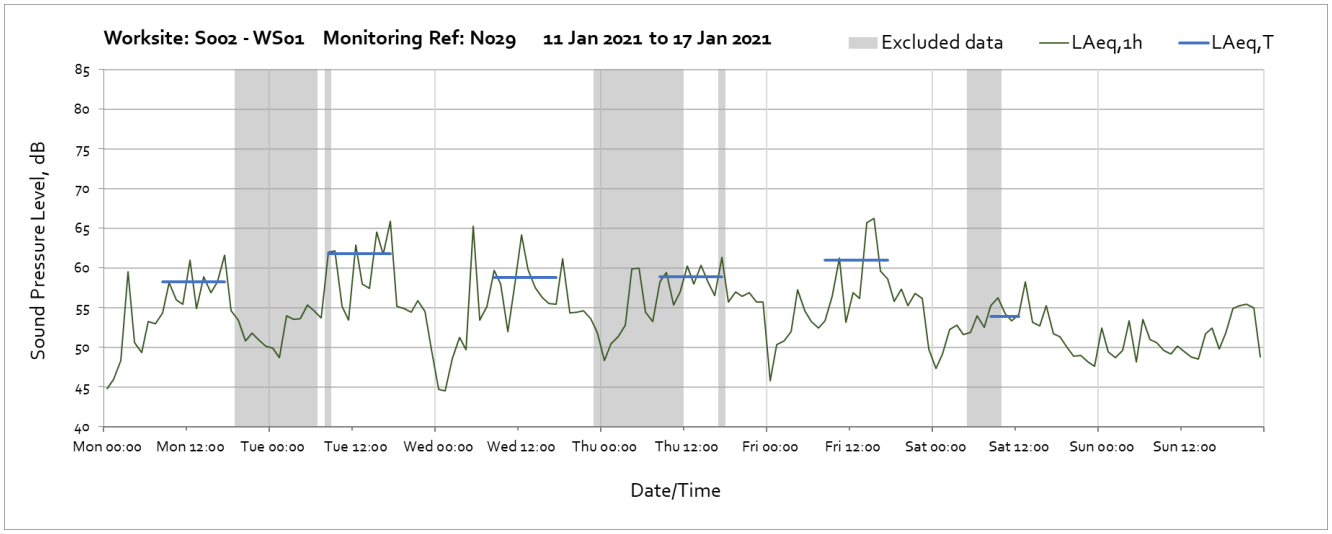


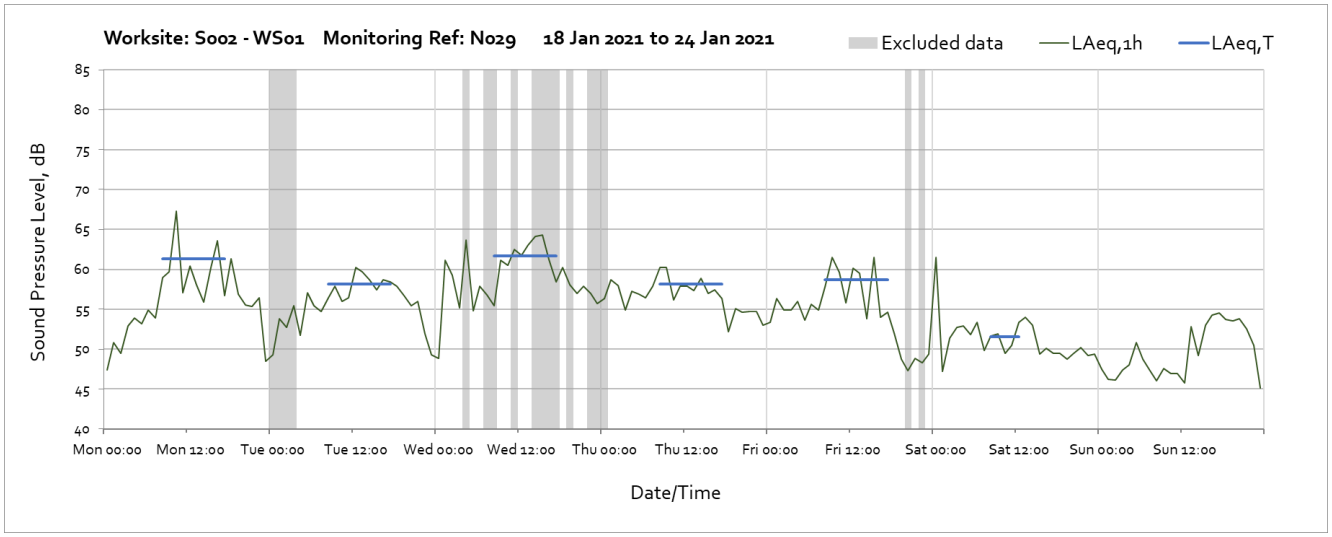

## Worksite: S002-WS01 – Monitoring Ref: N029

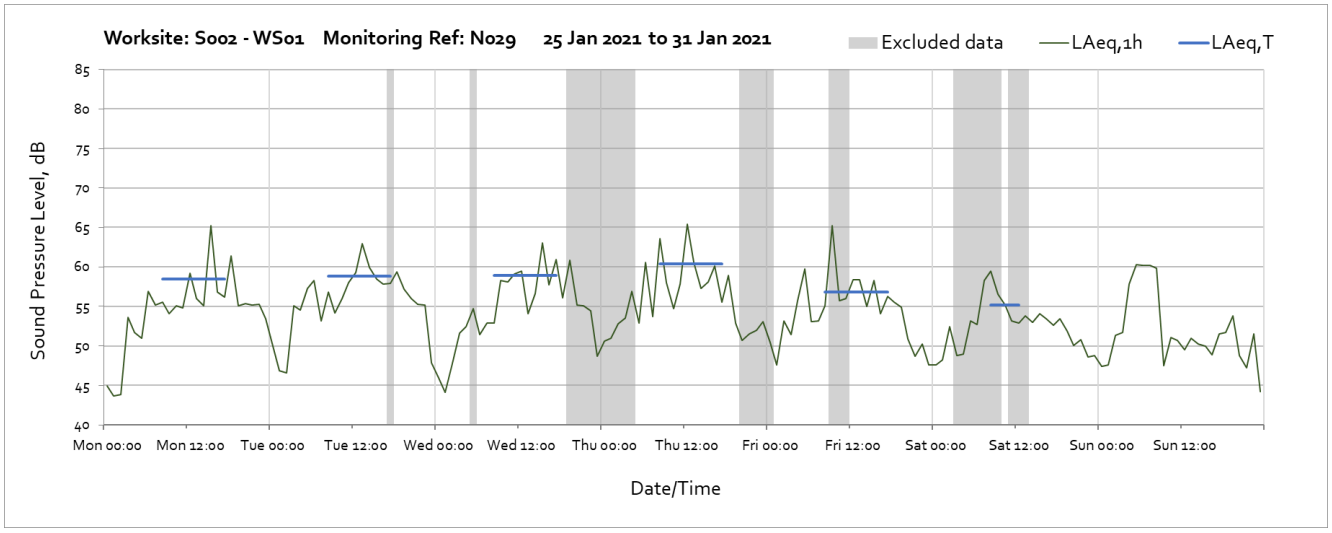



Note: High noise levels on the early hours of the 1st January were due to New Year's Eve celebrations and have been excluded to calculate values in Table 3.

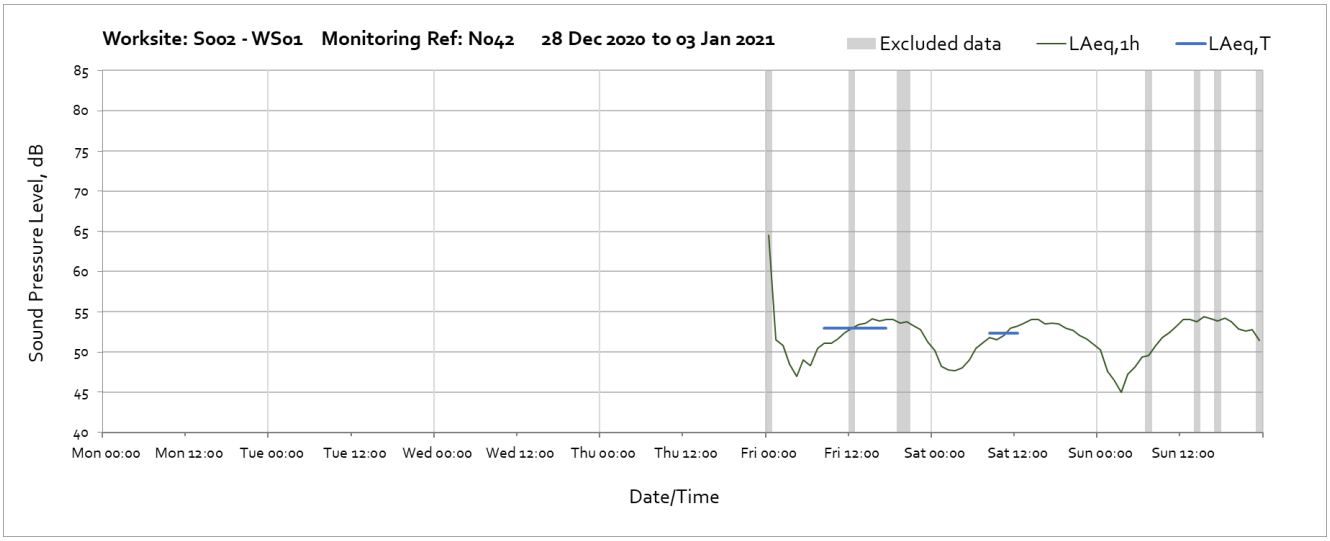



Worksite: S002 - WS01 Monitoring Ref: No29 11 Jan 2021 to 17 Jan 2021
Excluded data
LAeq,1h
LAeq,T
Sound Pressure Level, dB
85
80
75
70
65
60
55
50
45
40
Mon 00:00
Mon 12:00
Tue 00:00
Tue 12:00
Wed 00:00
Wed 12:00
Thu 00:00
Thu 12:00
Fri 00:00
Fri 12:00
Sat 00:00
Sat 12:00
Sun 00:00
Sun 12:00
Date/Time

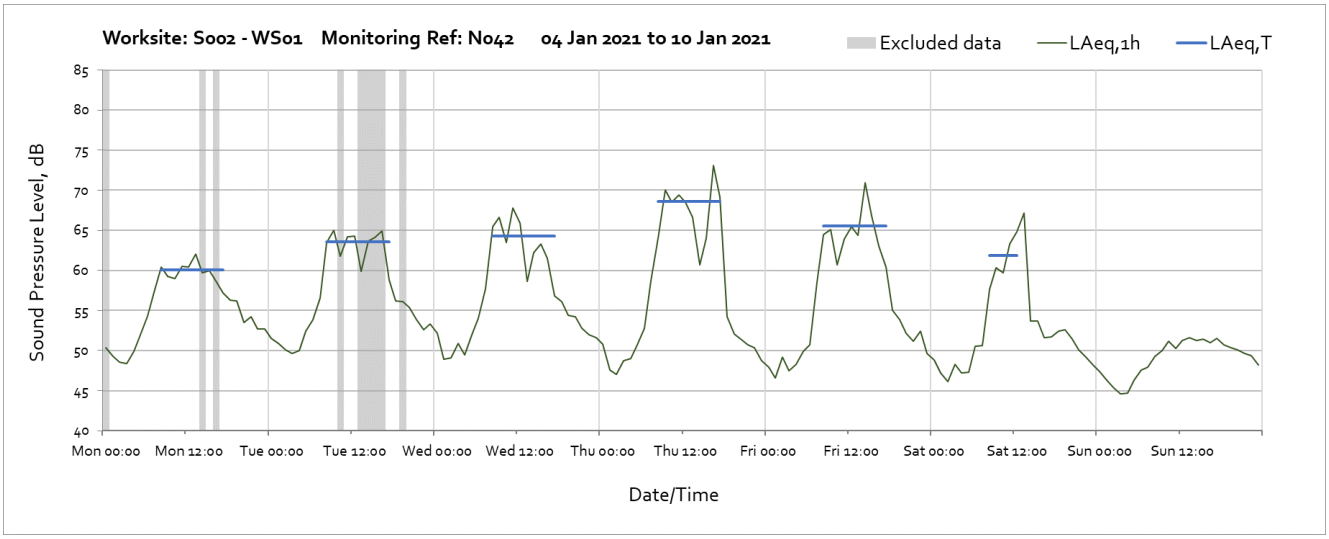

Worksite: S002 - WS01 Monitoring Ref: No29 18 Jan 2021 to 24 Jan 2021
Excluded data
LAeq,1h
LAeq,T
Sound Pressure Level, dB
85
80
75
70
65
60
55
50
45
40
Mon 00:00
Mon 12:00
Tue 00:00
Tue 12:00
Wed 00:00
Wed 12:00
Thu 00:00
Thu 12:00
Fri 00:00
Fri 12:00
Sat 00:00
Sat 12:00
Sun 00:00
Sun 12:00
Date/Time

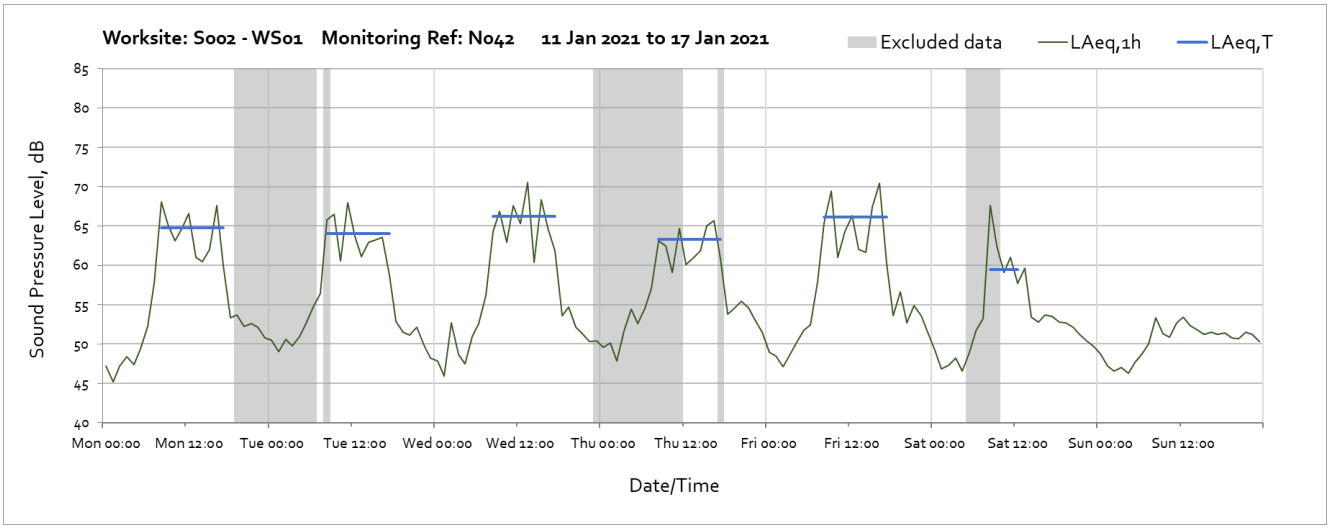

Worksite: S002 - WS01 Monitoring Ref: No29 25 Jan 2021 to 31 Jan 2021
Excluded data
LAeq,1h
LAeq,T
Sound Pressure Level, dB
85
80
75
70
65
60
55
50
45
40
Mon 00:00
Mon 12:00
Tue 00:00
Tue 12:00
Wed 00:00
Wed 12:00
Thu 00:00
Thu 12:00
Fri 00:00
Fri 12:00
Sat 00:00
Sat 12:00
Sun 00:00
Sun 12:00
Date/Time

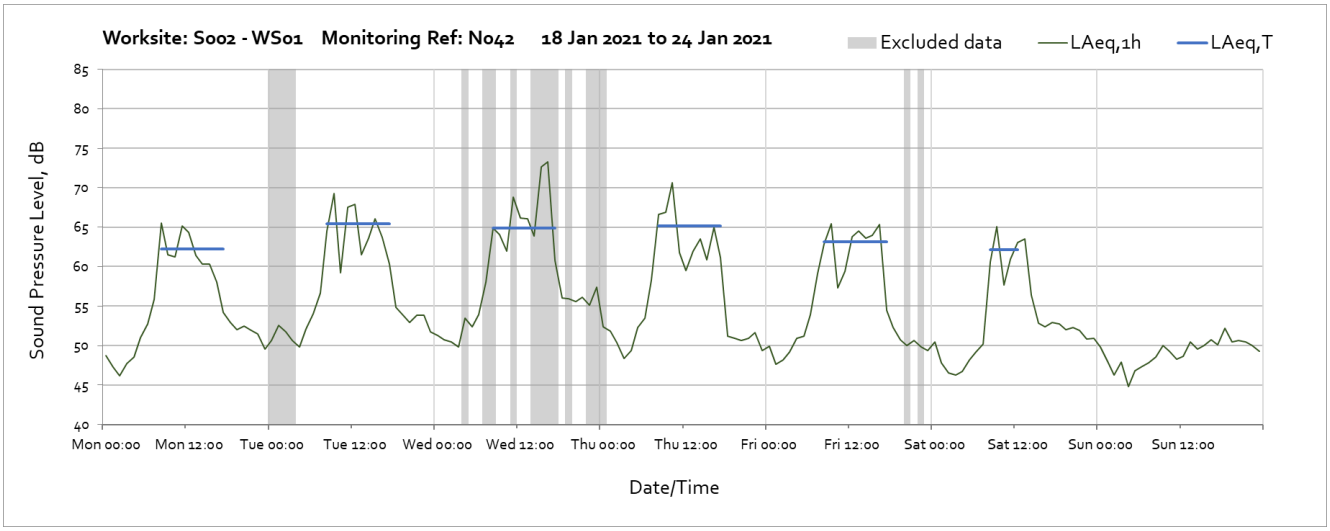
## Worksite: S002-WS01 – Monitoring Ref: N042

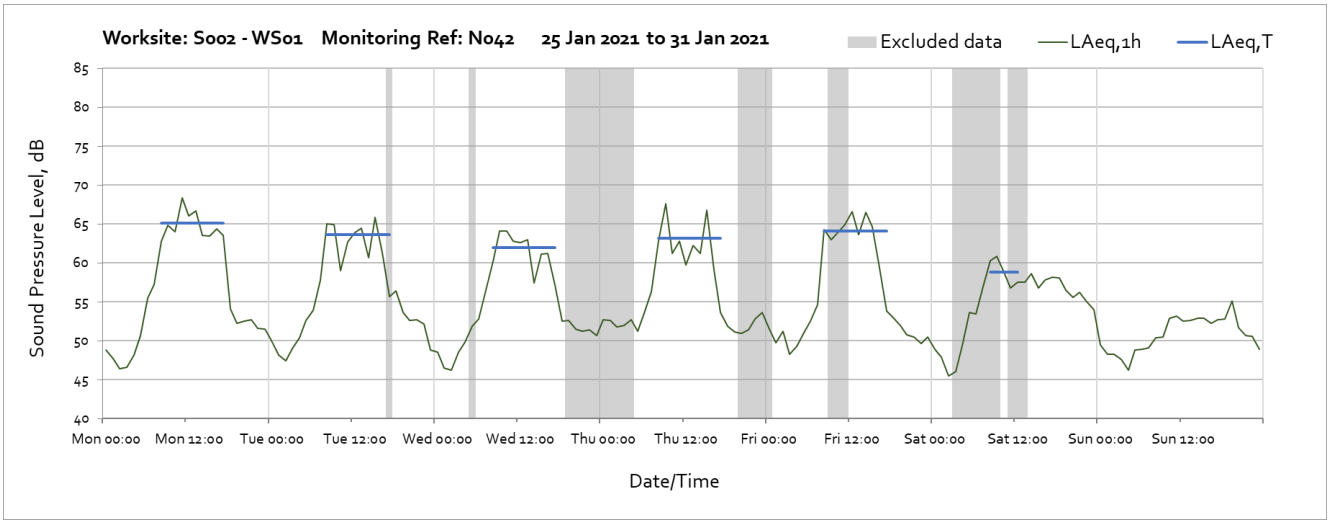



Note: High noise levels on the early hours of the 1st January were due to New Year's Eve celebrations and have been excluded to calculate values in Table 3.

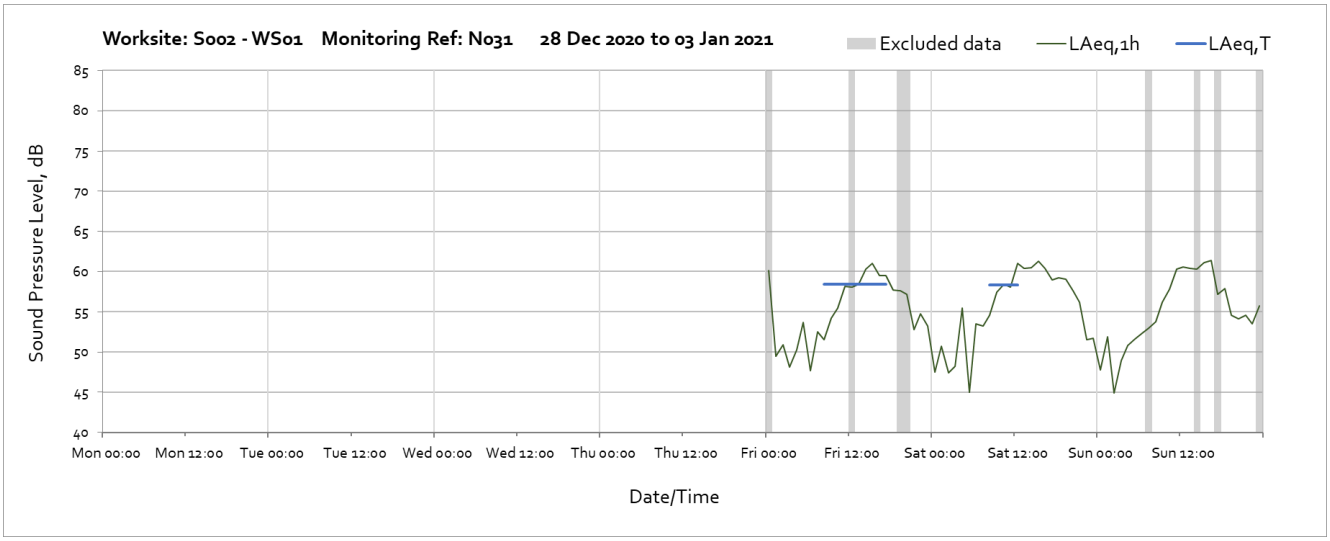


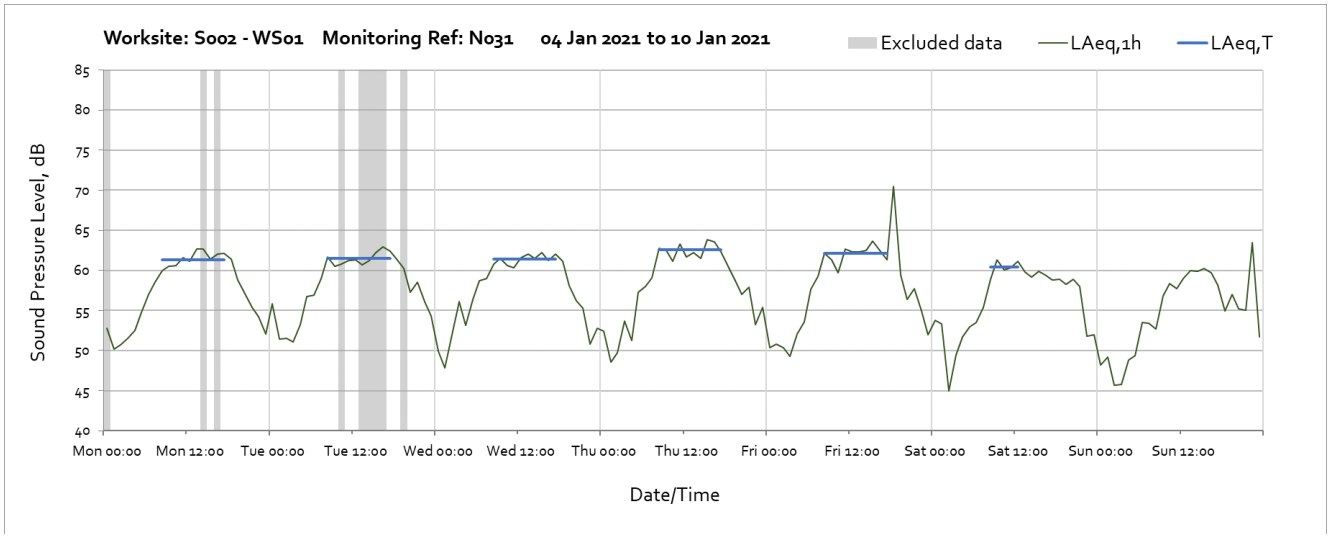


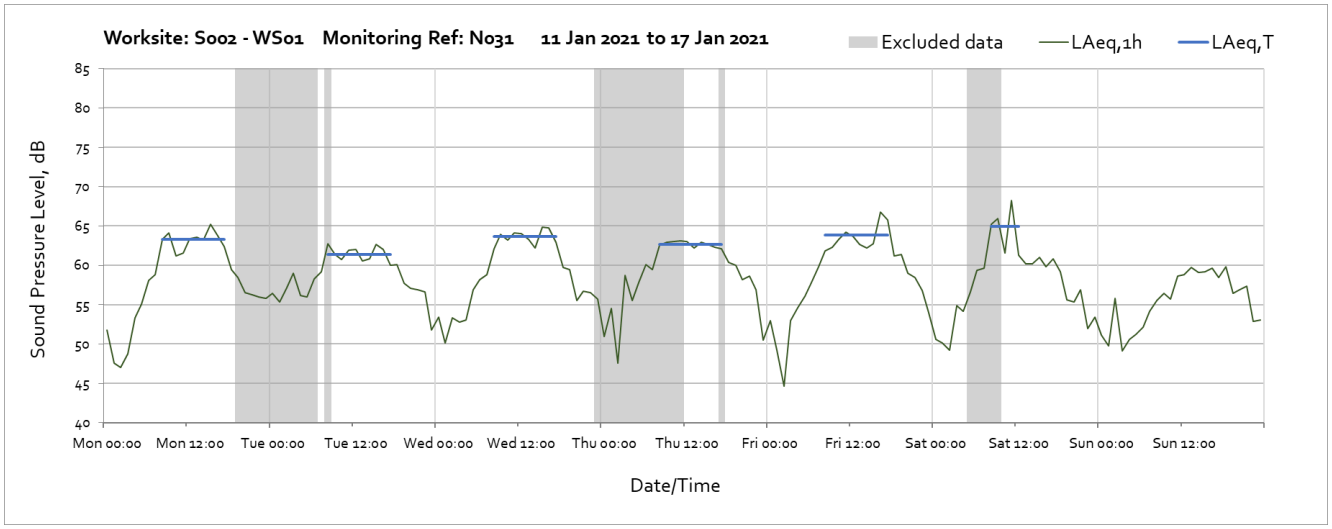



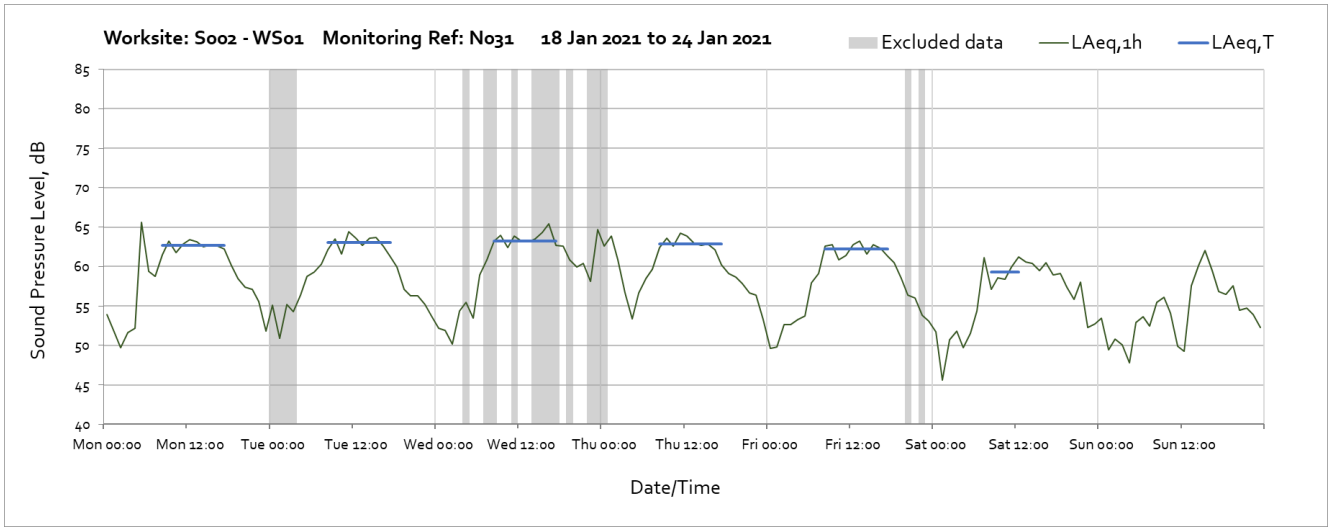

## Worksite: S002-WS01 – Monitoring Ref: N031

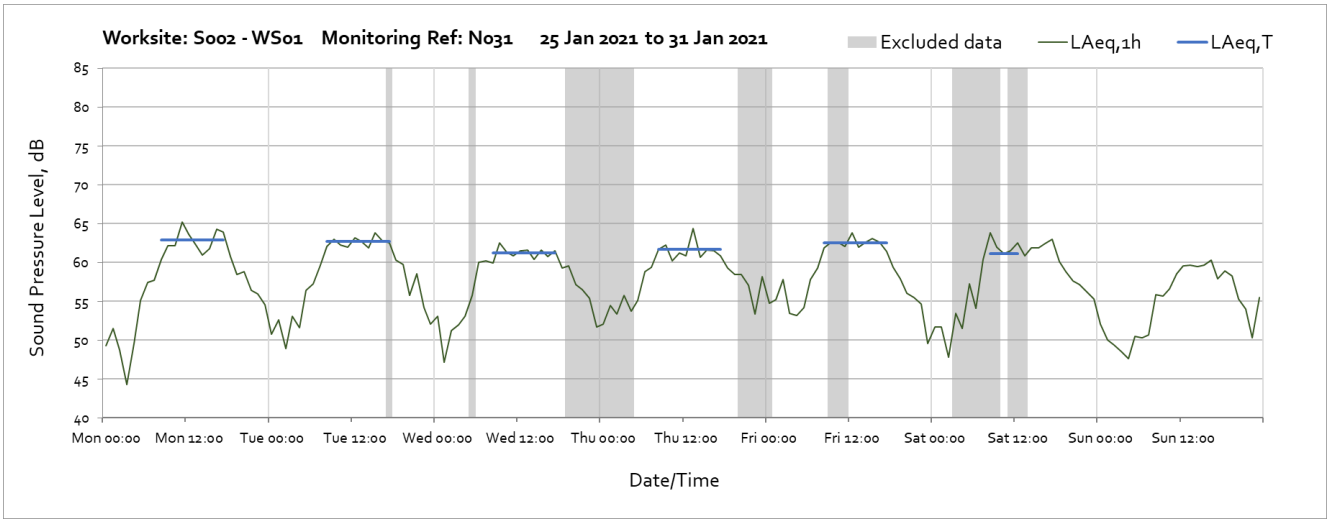



Note: High noise levels on the early hours of the 1st January were due to New Year's Eve celebrations and have been excluded to calculate values in Table 3.

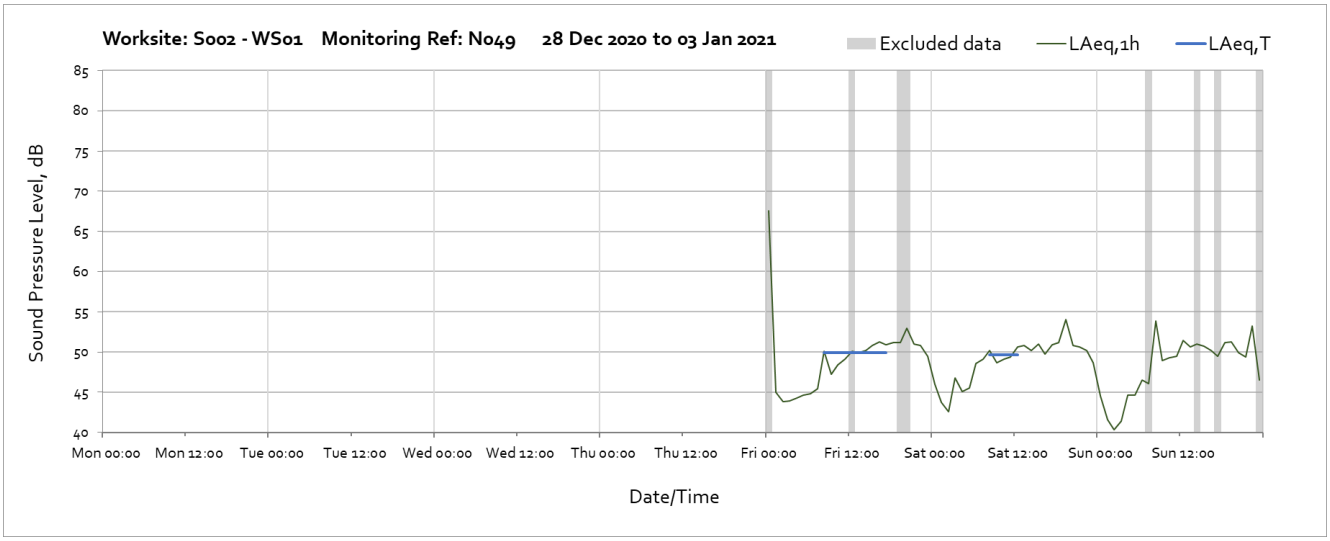

Worksite: S002 - WS01 Monitoring Ref: N031 04 Jan 2021 to 10 Jan 2021
Excluded data
LAeq,1h
LAeq,T
Sound Pressure Level, dB
85
80
75
70
65
60
55
50
45
40
Mon 00:00
Mon 12:00
Tue 00:00
Tue 12:00
Wed 00:00
Wed 12:00
Thu 00:00
Thu 12:00
Fri 00:00
Fri 12:00
Sat 00:00
Sat 12:00
Sun 00:00
Sun 12:00
Date/Time


Worksite: S002 - WS01 Monitoring Ref: N031 11 Jan 2021 to 17 Jan 2021
Excluded data
LAeq,1h
LAeq,T
Sound Pressure Level, dB
85
80
75
70
65
60
55
50
45
40
Mon 00:00
Mon 12:00
Tue 00:00
Tue 12:00
Wed 00:00
Wed 12:00
Thu 00:00
Thu 12:00
Fri 00:00
Fri 12:00
Sat 00:00
Sat 12:00
Sun 00:00
Sun 12:00
Date/Time

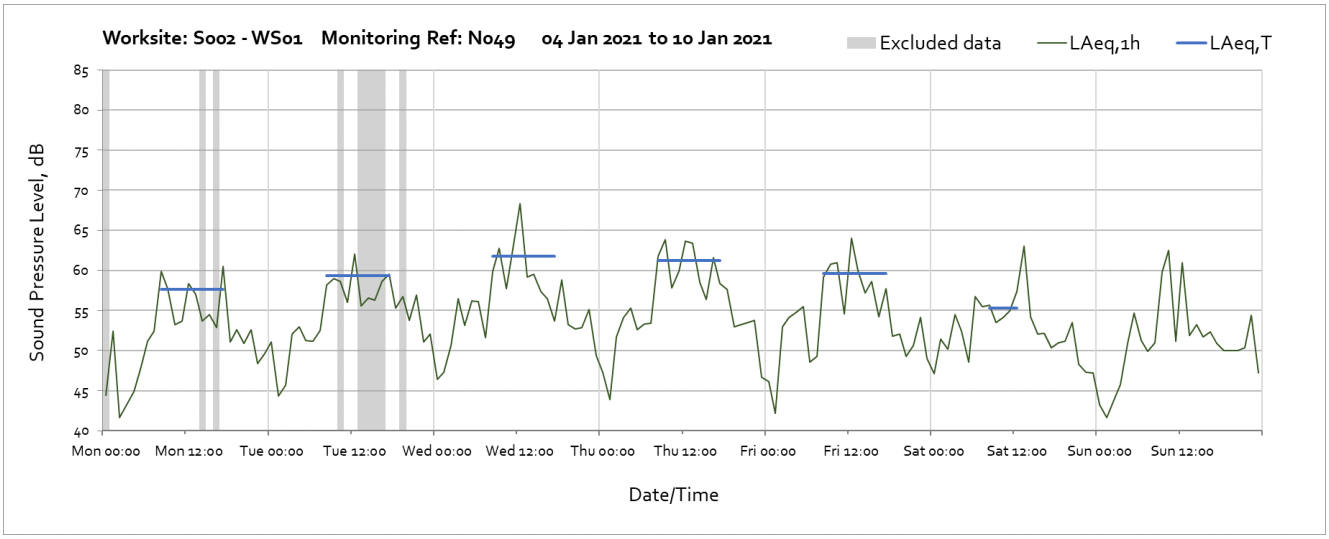

Worksite: S002 - WS01 Monitoring Ref: N031 18 Jan 2021 to 24 Jan 2021
Excluded data
LAeq,1h
LAeq,T
Sound Pressure Level, dB
85
80
75
70
65
60
55
50
45
40
Mon 00:00
Mon 12:00
Tue 00:00
Tue 12:00
Wed 00:00
Wed 12:00
Thu 00:00
Thu 12:00
Fri 00:00
Fri 12:00
Sat 00:00
Sat 12:00
Sun 00:00
Sun 12:00
Date/Time

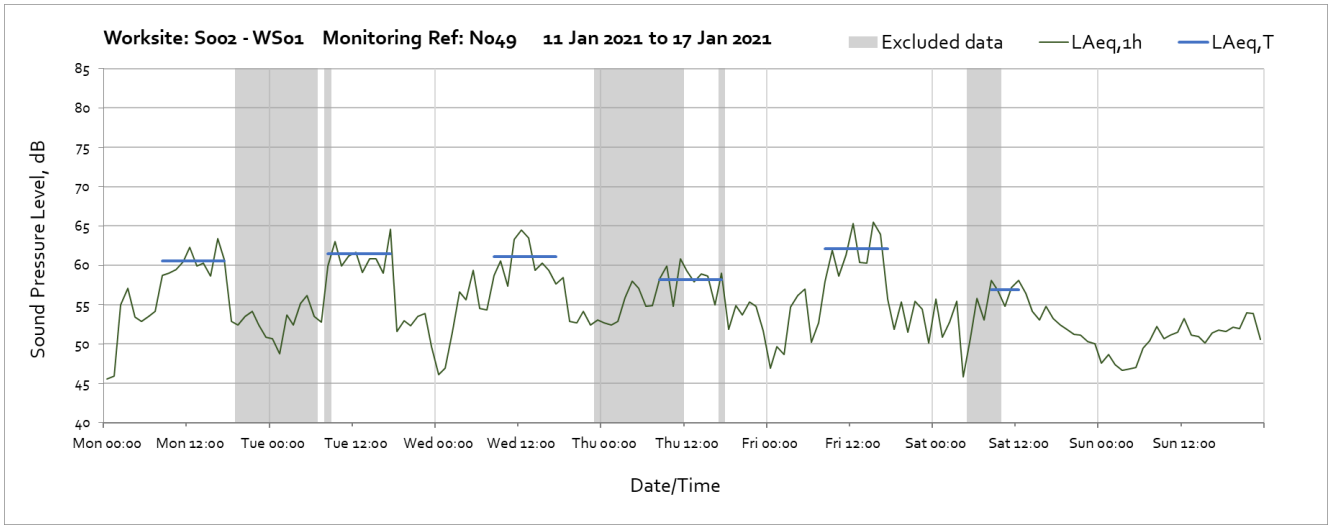


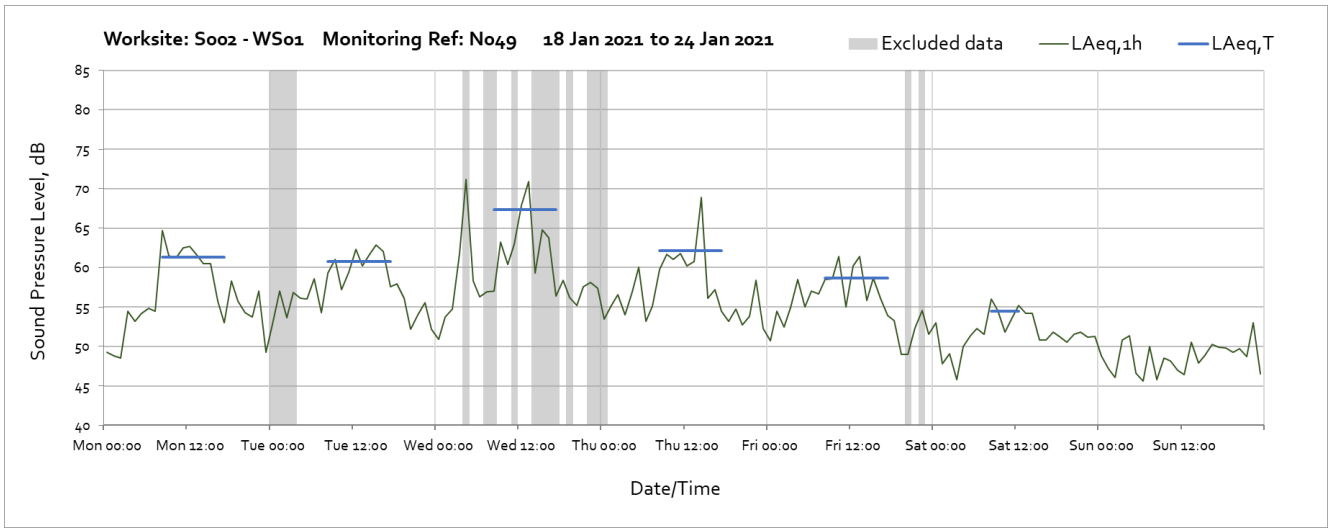

## Worksite: S002-WS01 – Monitoring Ref: N049

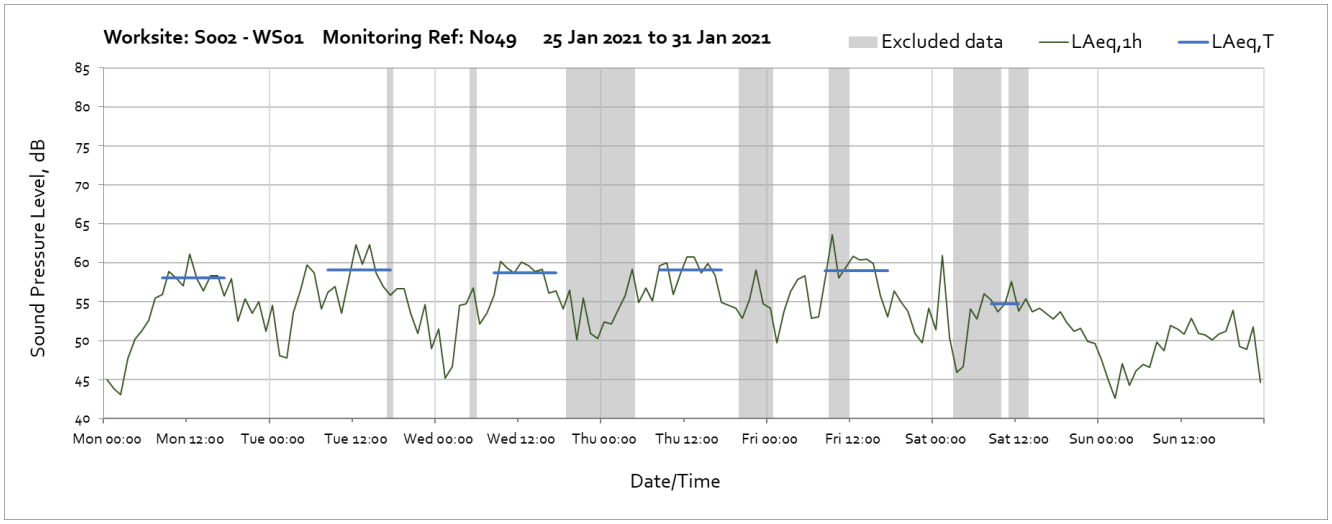



Note: High noise levels on the early hours of the 1st January were due to New Year's Eve celebrations and have been excluded to calculate values in Table 3.

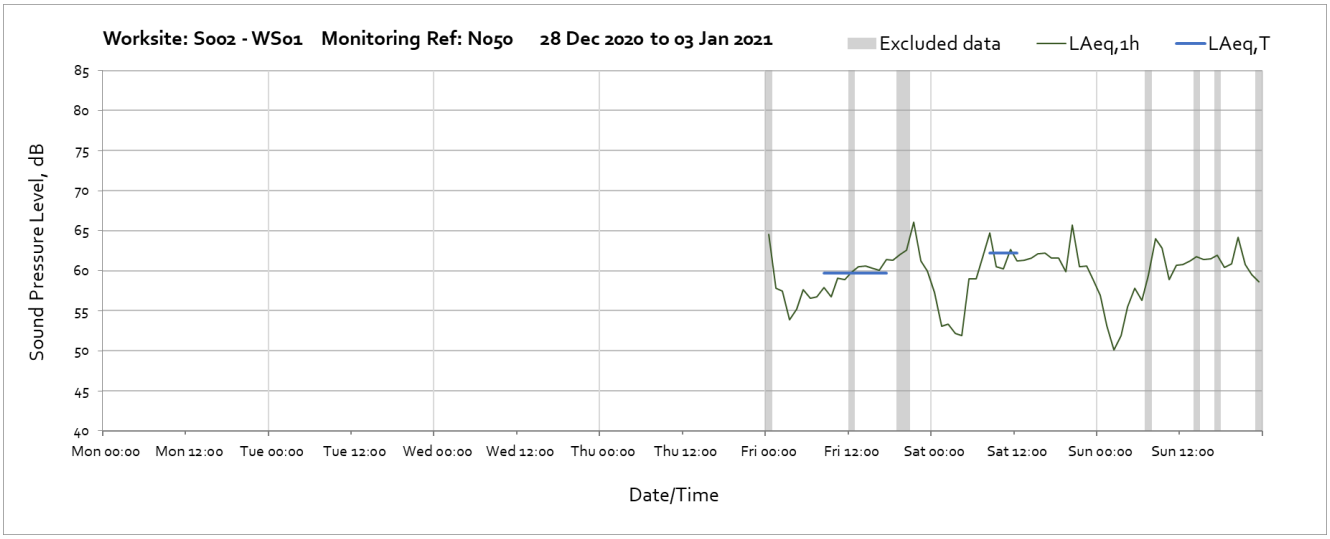



Worksite: S002 - WS01 Monitoring Ref: N049 11 Jan 2021 to 17 Jan 2021
Excluded data
LAeq,1h
LAeq,T
Sound Pressure Level, dB
85
80
75
70
65
60
55
50
45
40
Mon 00:00
Mon 12:00
Tue 00:00
Tue 12:00
Wed 00:00
Wed 12:00
Thu 00:00
Thu 12:00
Fri 00:00
Fri 12:00
Sat 00:00
Sat 12:00
Sun 00:00
Sun 12:00
Date/Time

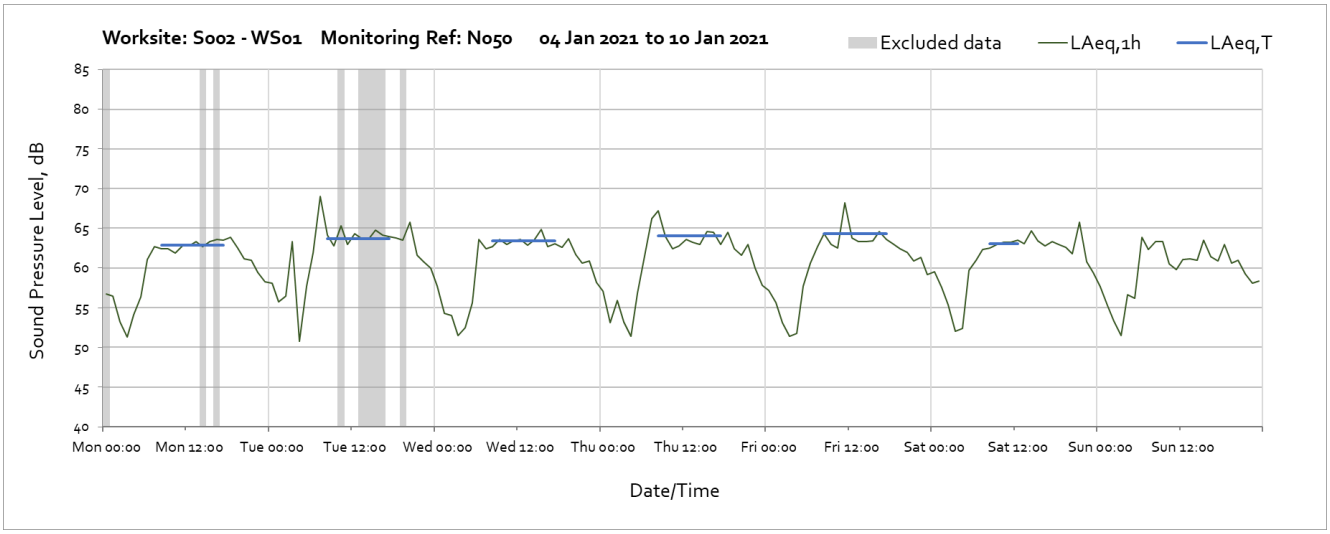

Worksite: S002 - WS01 Monitoring Ref: N049 18 Jan 2021 to 24 Jan 2021
Excluded data
LAeq,1h
LAeq,T
Sound Pressure Level, dB
85
80
75
70
65
60
55
50
45
40
Mon 00:00
Mon 12:00
Tue 00:00
Tue 12:00
Wed 00:00
Wed 12:00
Thu 00:00
Thu 12:00
Fri 00:00
Fri 12:00
Sat 00:00
Sat 12:00
Sun 00:00
Sun 12:00
Date/Time

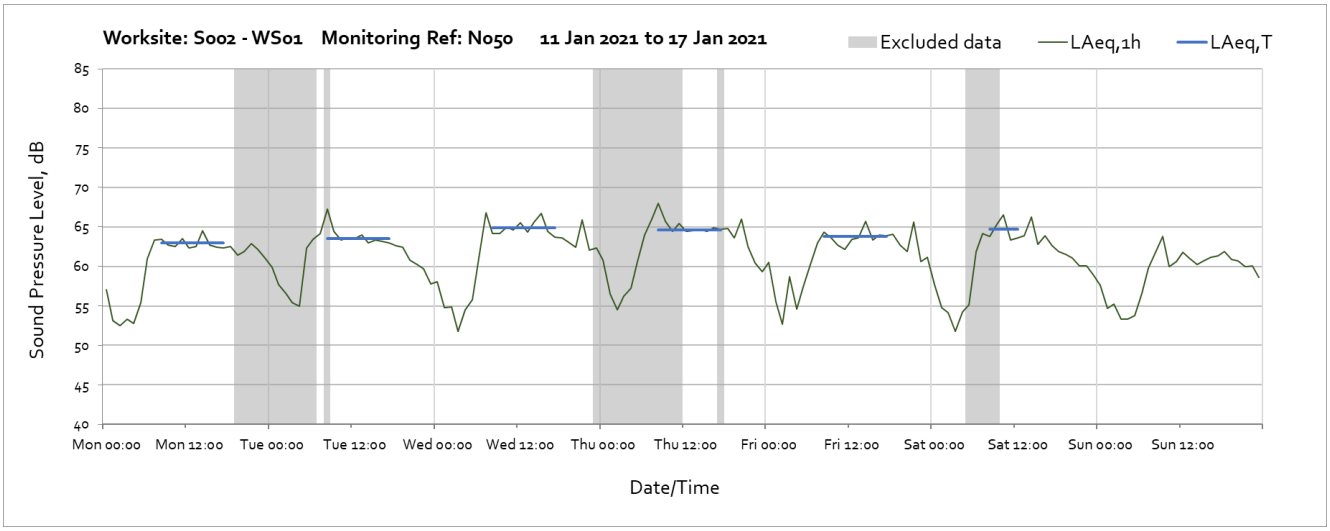

Worksite: S002 - WS01 Monitoring Ref: N049 25 Jan 2021 to 31 Jan 2021
Excluded data
LAeq,1h
LAeq,T
Sound Pressure Level, dB
85
80
75
70
65
60
55
50
45
40
Mon 00:00
Mon 12:00
Tue 00:00
Tue 12:00
Wed 00:00
Wed 12:00
Thu 00:00
Thu 12:00
Fri 00:00
Fri 12:00
Sat 00:00
Sat 12:00
Sun 00:00
Sun 12:00
Date/Time

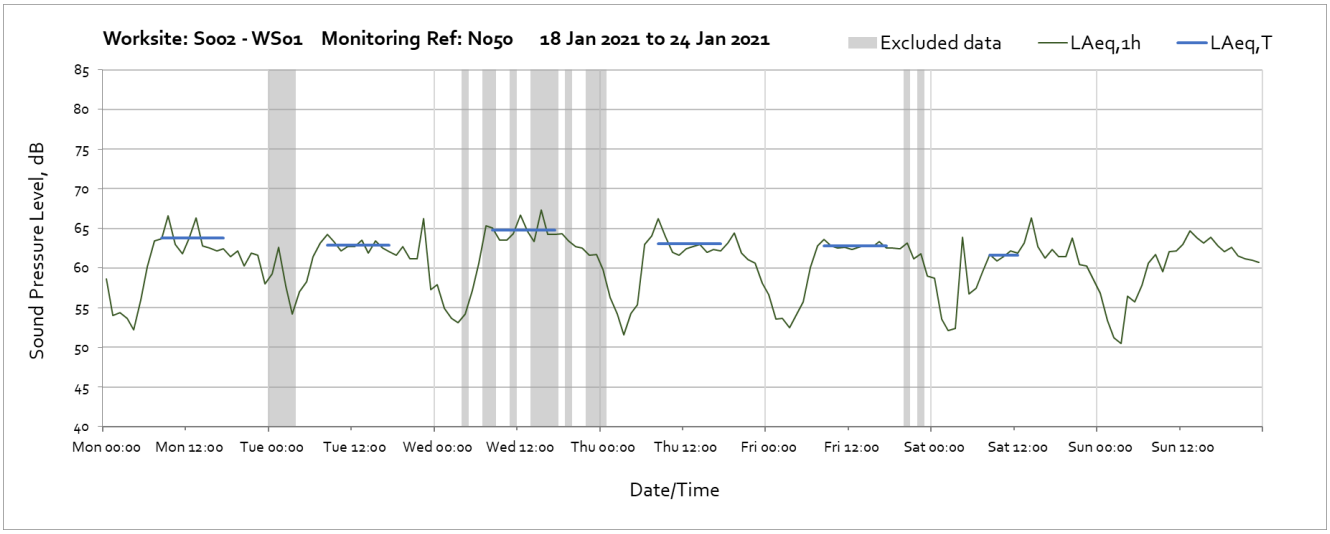
## Worksite: S002-WS01 – Monitoring Ref: N050

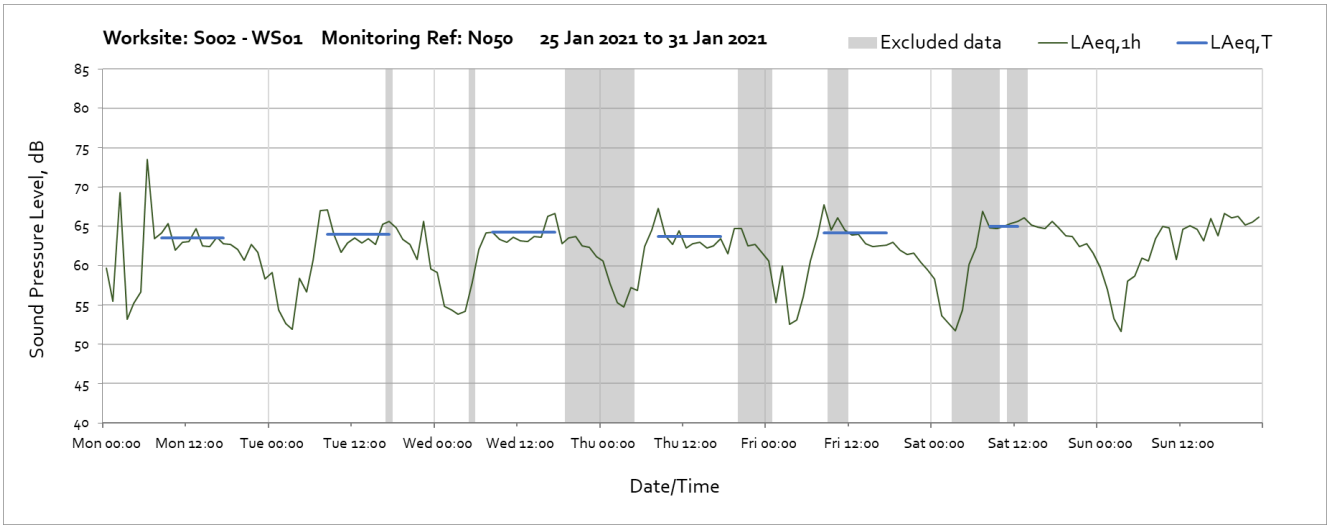



Note: High noise levels on the early hours of the 1st January were due to New Year's Eve celebrations and have been excluded to calculate values in Table 3.

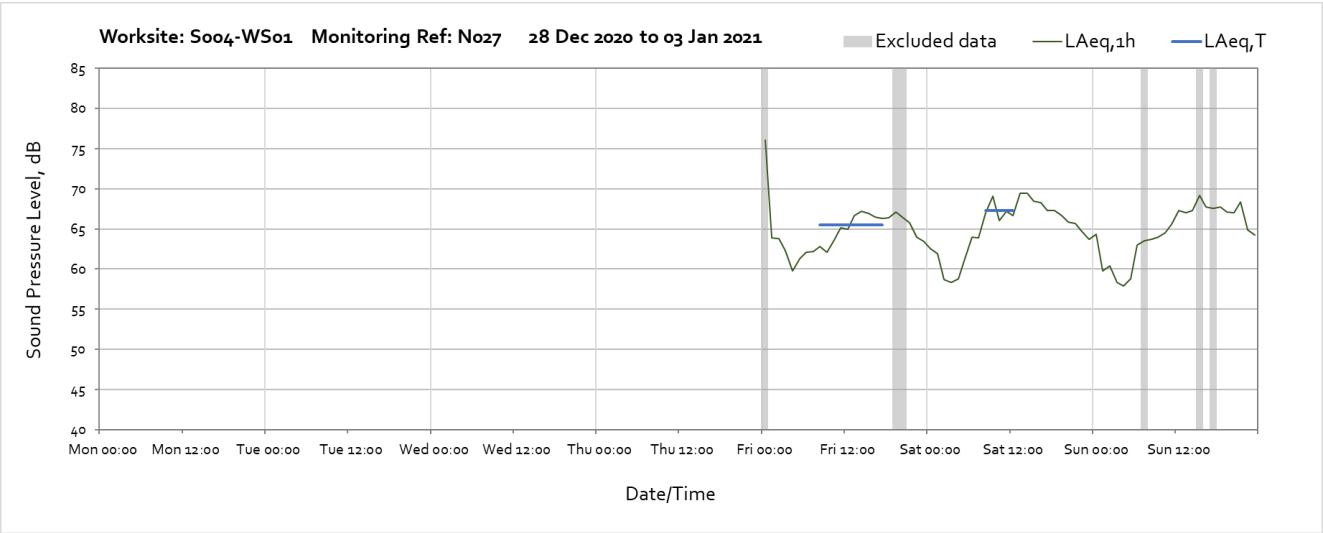


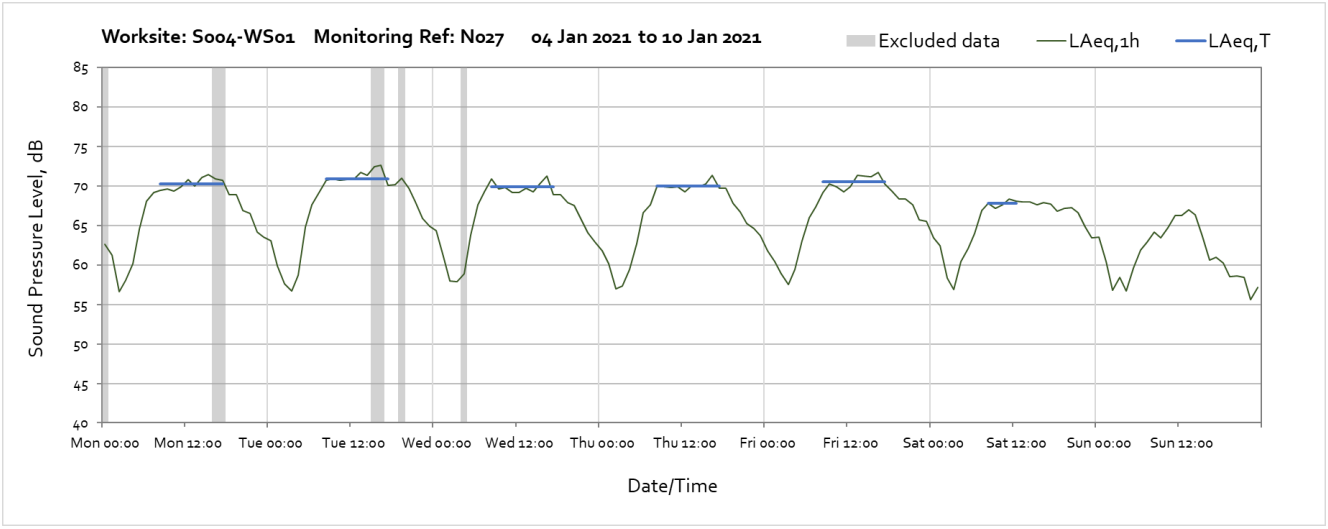


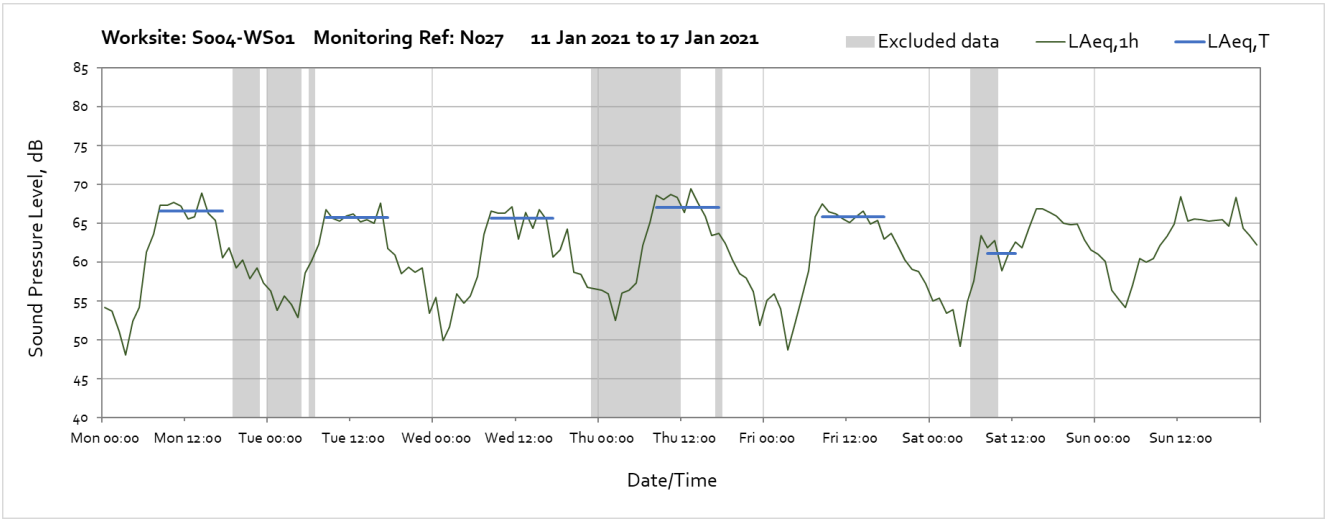



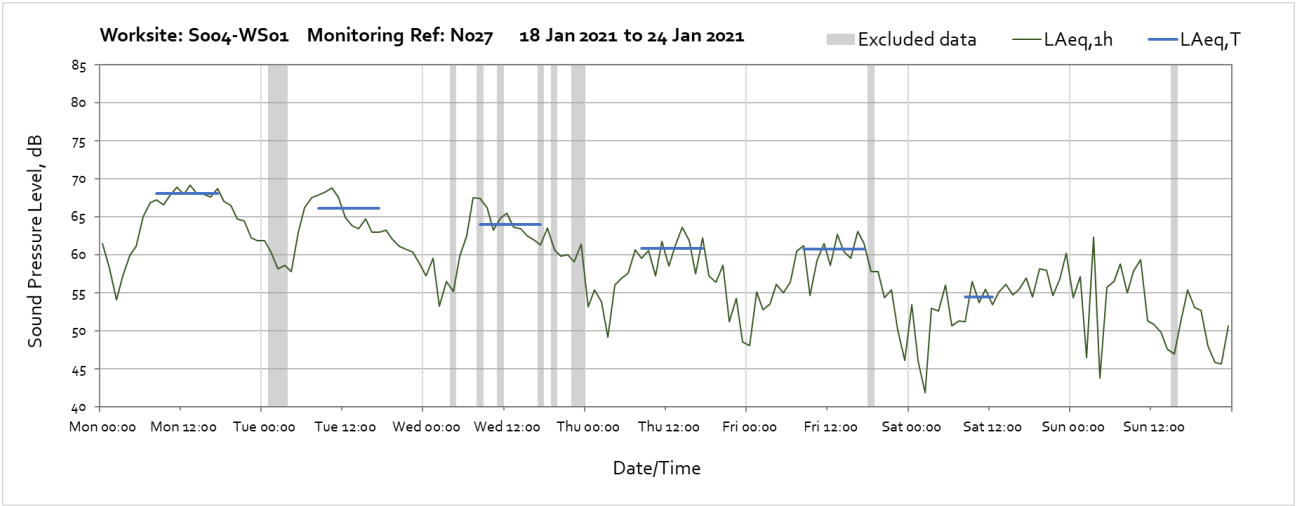

## Worksite: S004-WS01 – Monitoring Ref: N027

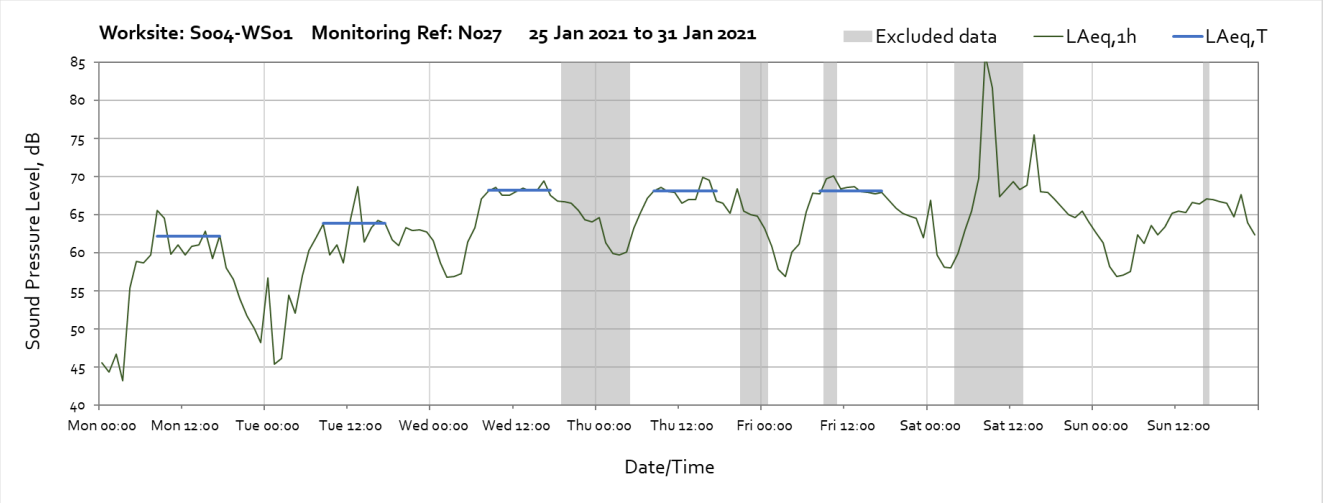



Note: High noise levels on the early hours of the 1st January were due to New Year's Eve celebrations and have been excluded to calculate values in Table 3.

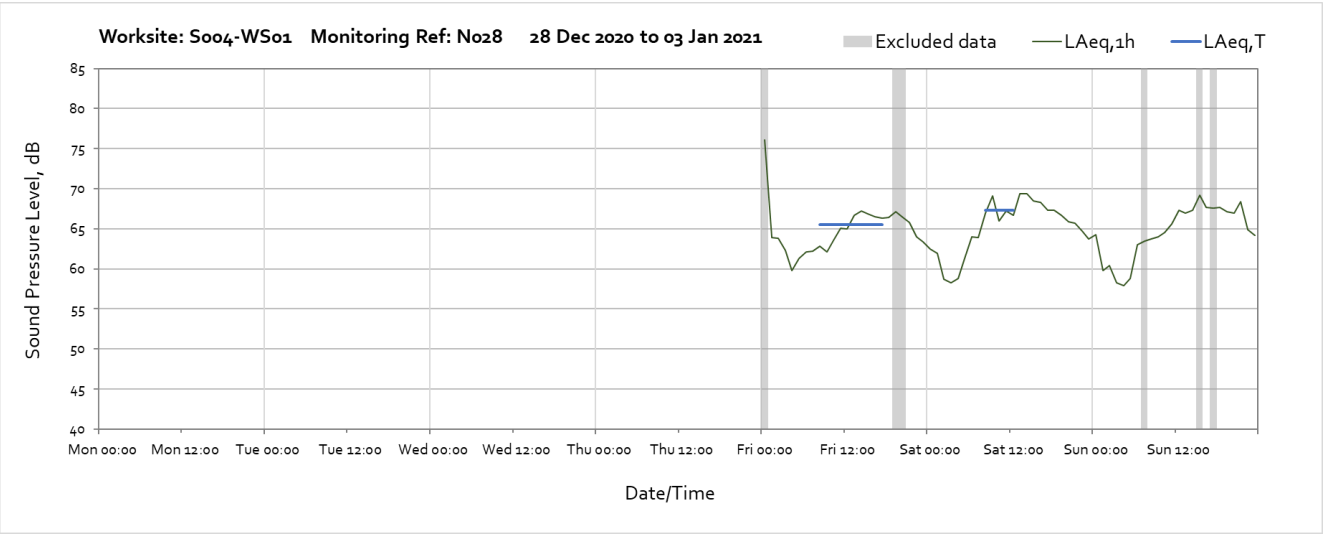

Worksite: S004-WS01 Monitoring Ref: N027 04 Jan 2021 to 10 Jan 2021
Excluded data
LAeq,1h
LAeq,T
Sound Pressure Level, dB
85
80
75
70
65
60
55
50
45
40
Mon 00:00
Mon 12:00
Tue 00:00
Tue 12:00
Wed 00:00
Wed 12:00
Thu 00:00
Thu 12:00
Fri 00:00
Fri 12:00
Sat 00:00
Sat 12:00
Sun 00:00
Sun 12:00
Date/Time


Worksite: S004-WS01 Monitoring Ref: N027 11 Jan 2021 to 17 Jan 2021
Excluded data
LAeq,1h
LAeq,T
Sound Pressure Level, dB
85
80
75
70
65
60
55
50
45
40
Mon 00:00
Mon 12:00
Tue 00:00
Tue 12:00
Wed 00:00
Wed 12:00
Thu 00:00
Thu 12:00
Fri 00:00
Fri 12:00
Sat 00:00
Sat 12:00
Sun 00:00
Sun 12:00
Date/Time

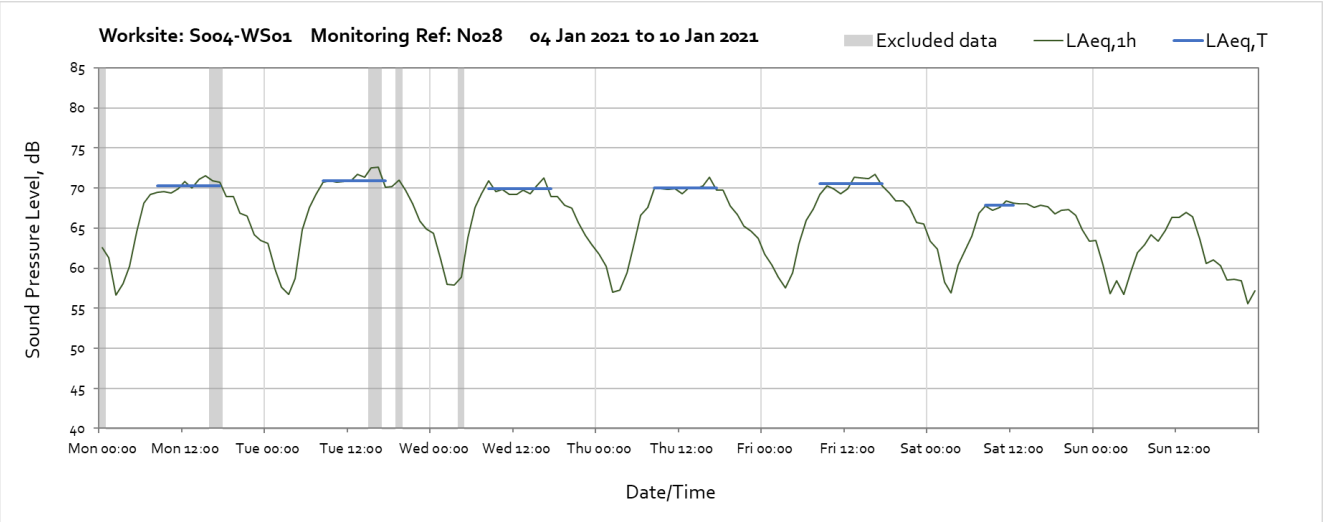

Worksite: S004-WS01 Monitoring Ref: N027 18 Jan 2021 to 24 Jan 2021
Excluded data
LAeq,1h
LAeq,T
Sound Pressure Level, dB
85
80
75
70
65
60
55
50
45
40
Mon 00:00
Mon 12:00
Tue 00:00
Tue 12:00
Wed 00:00
Wed 12:00
Thu 00:00
Thu 12:00
Fri 00:00
Fri 12:00
Sat 00:00
Sat 12:00
Sun 00:00
Sun 12:00
Date/Time

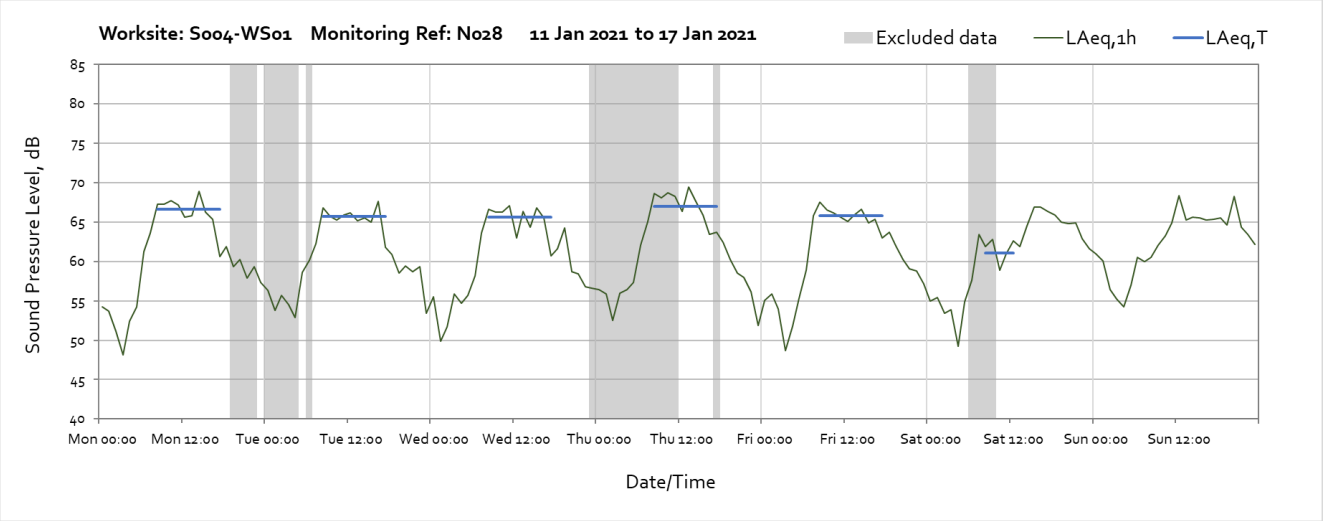


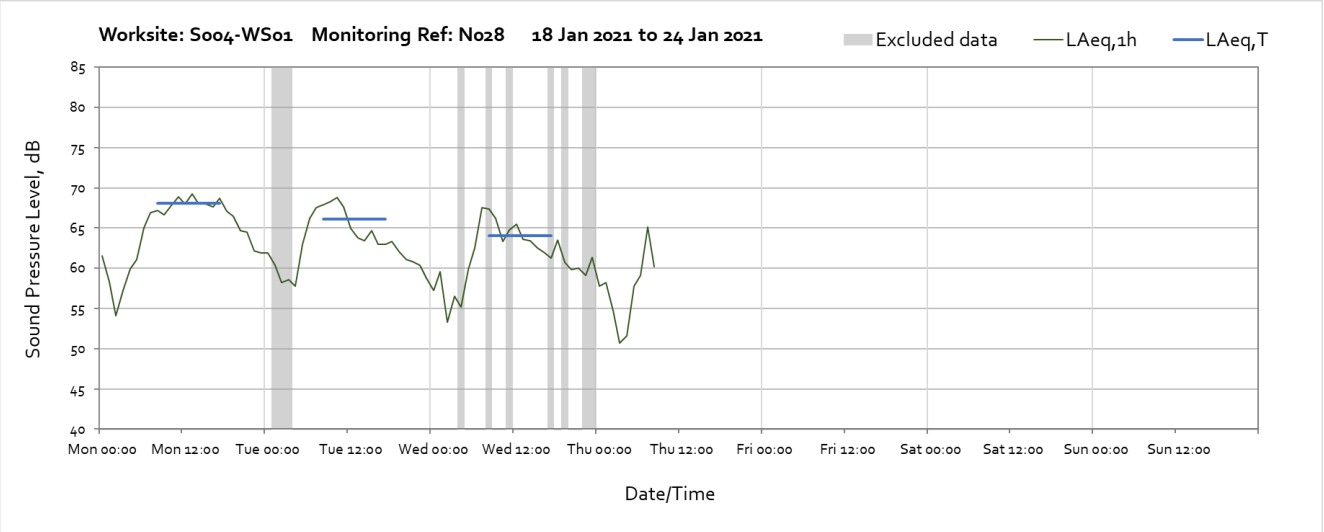

## Worksite: S004-WS01 – Monitoring Ref: N028



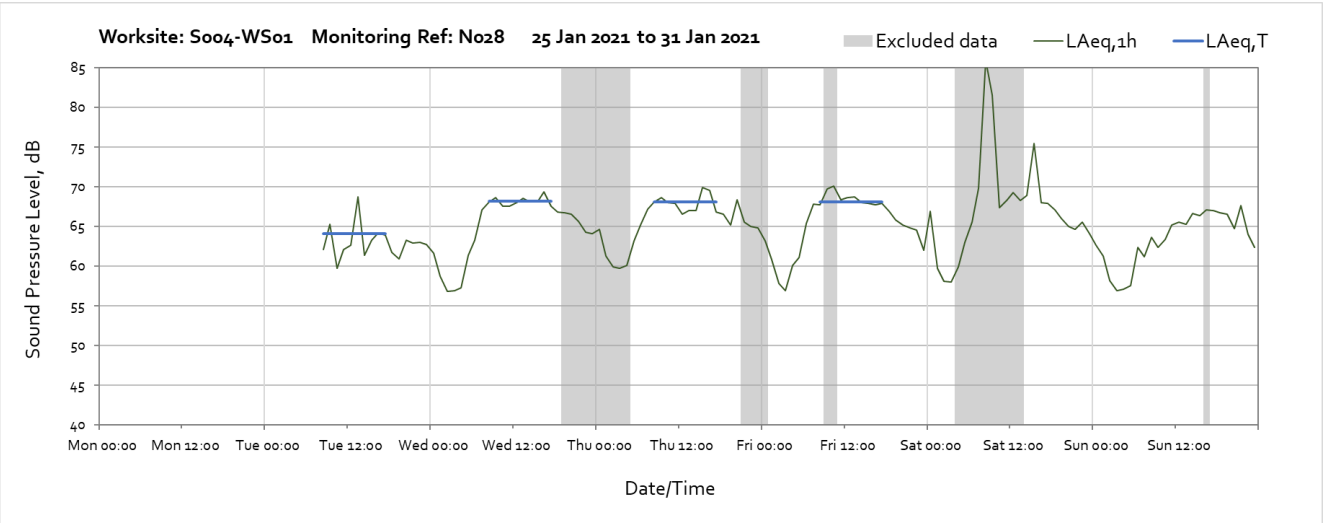

Note: High noise levels on the early hours of the 1st January were due to New Year's Eve celebrations and have been excluded to calculate values in Table 3.





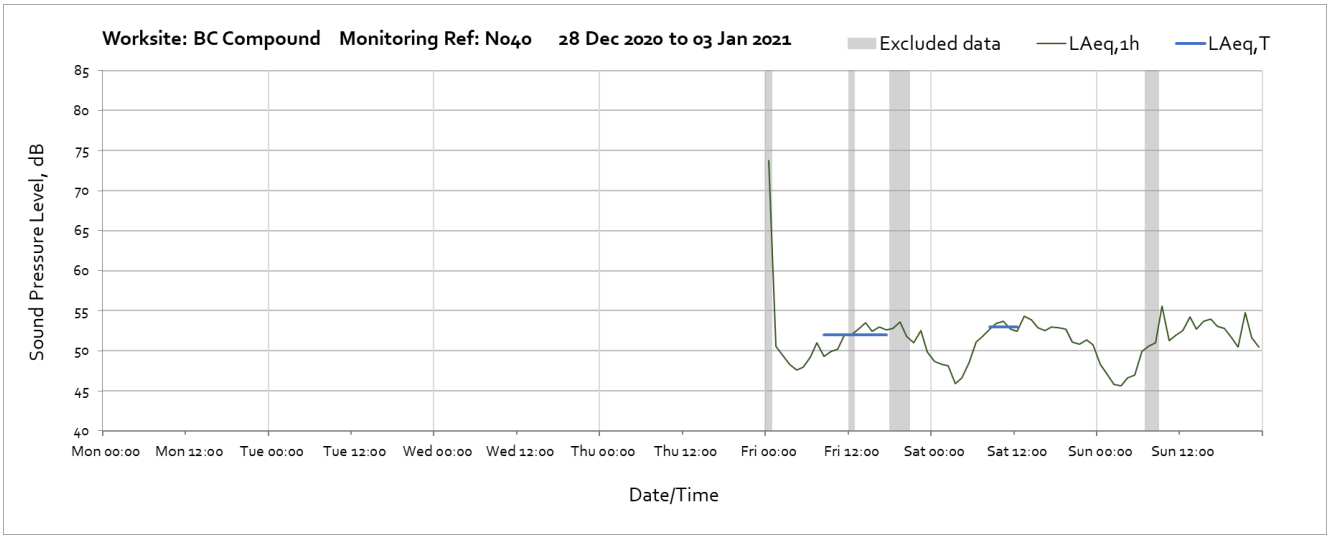




Note: Missing data between 09:00 on Thursday 21st and 08:00 on Tuesday 26th January 2021 was due to a fault with the system log in configuration of the noise monitor.

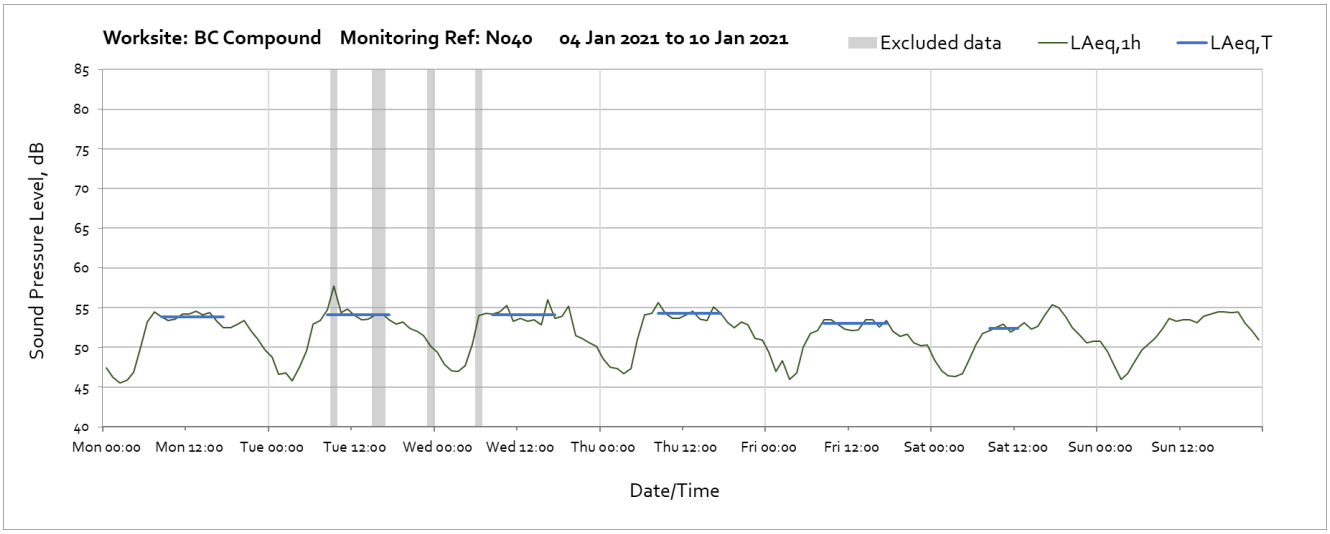


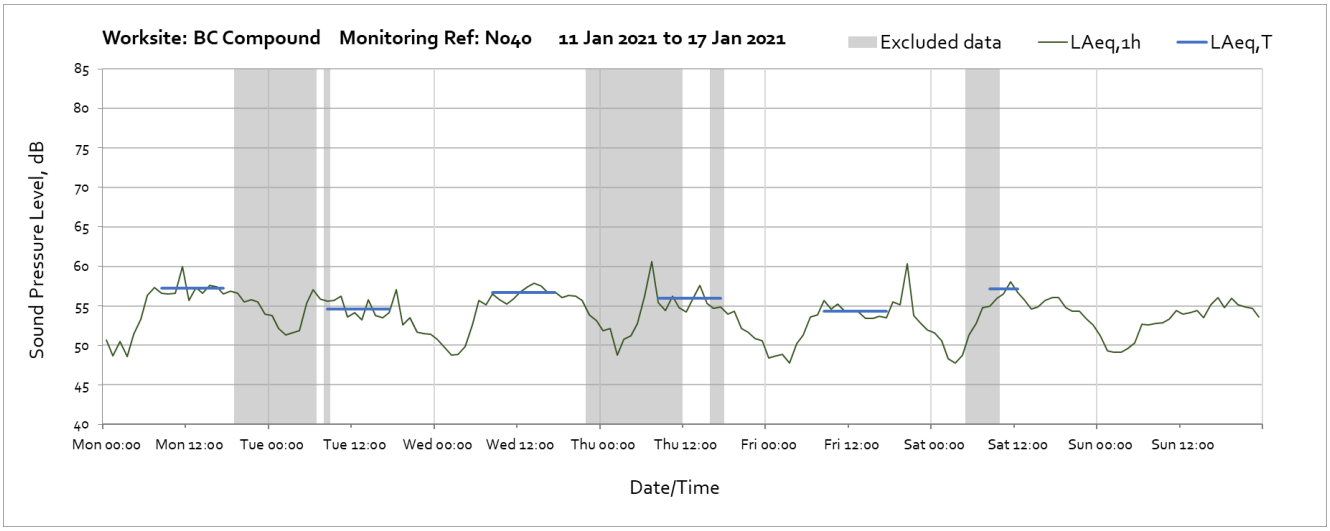

Note: Missing data between 09:00 on Thursday 21st and 08:00 on Tuesday 26th January 2021 was due to a fault with the system log in configuration of the noise monitor.

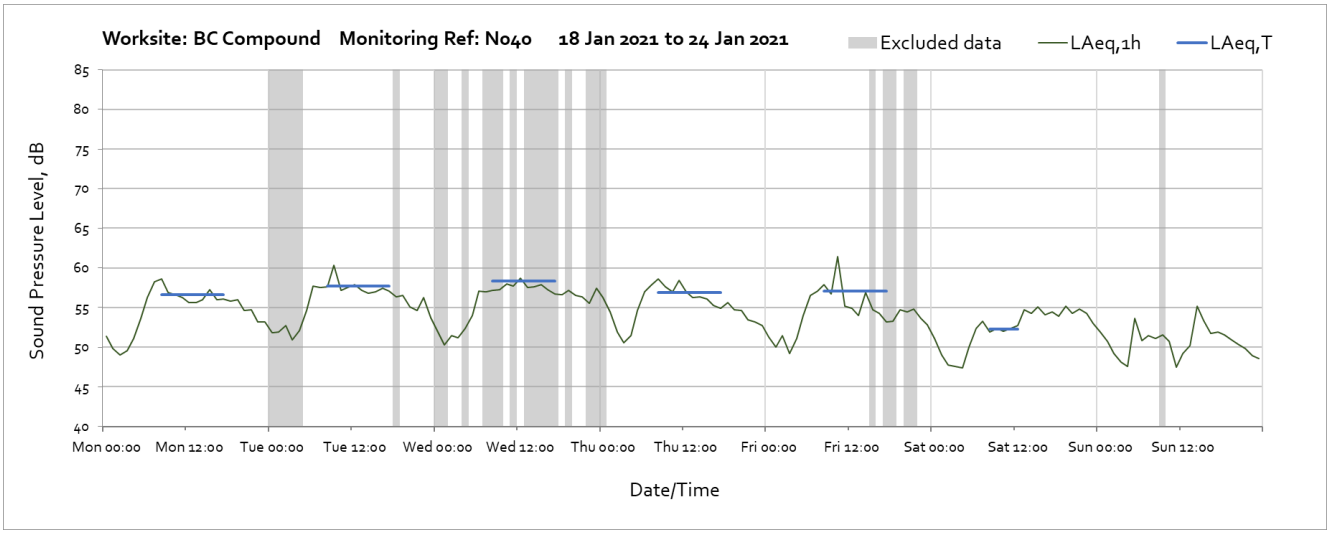
## Worksite: BC Compound – Monitoring Ref: N040

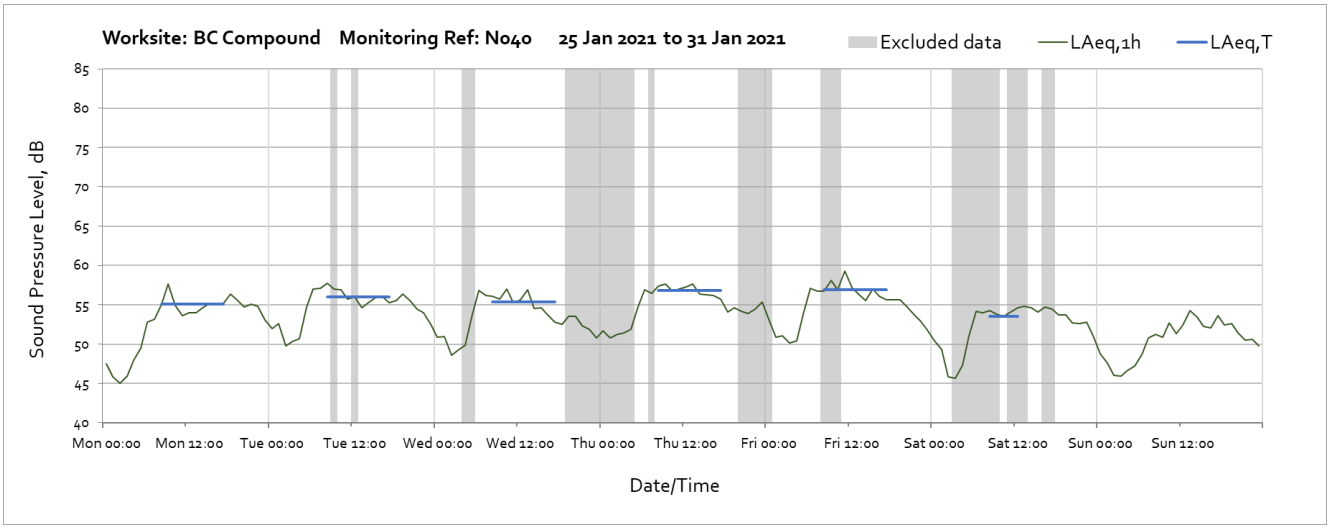



Note: High noise levels on the early hours of the 1st January were due to New Year's Eve celebrations and have been excluded to calculate values in Table 3.

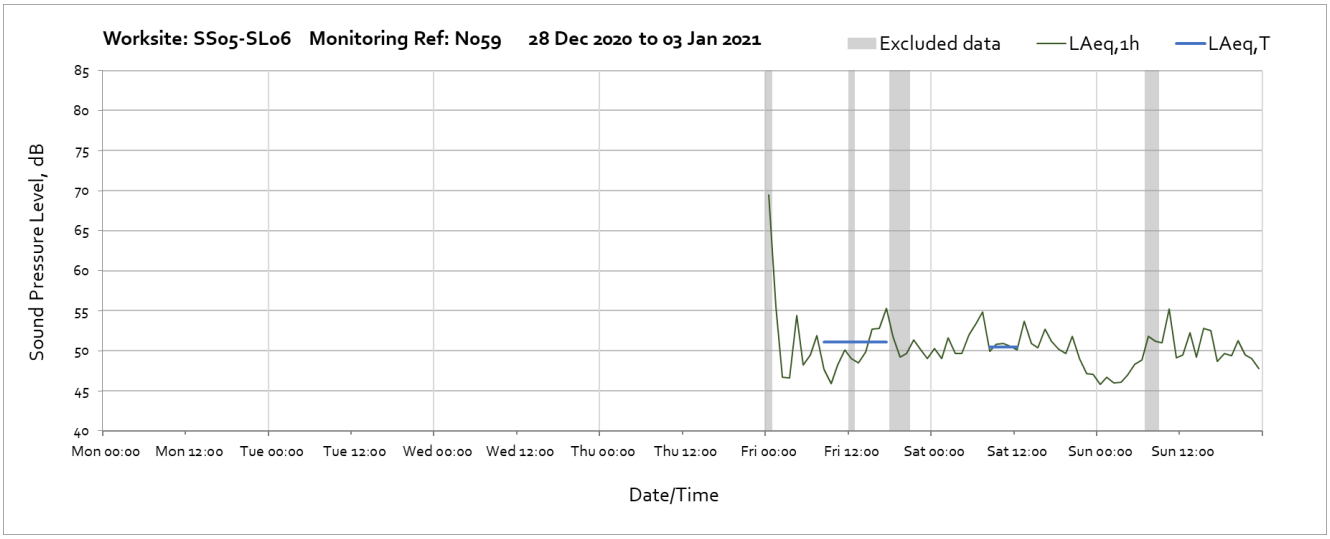


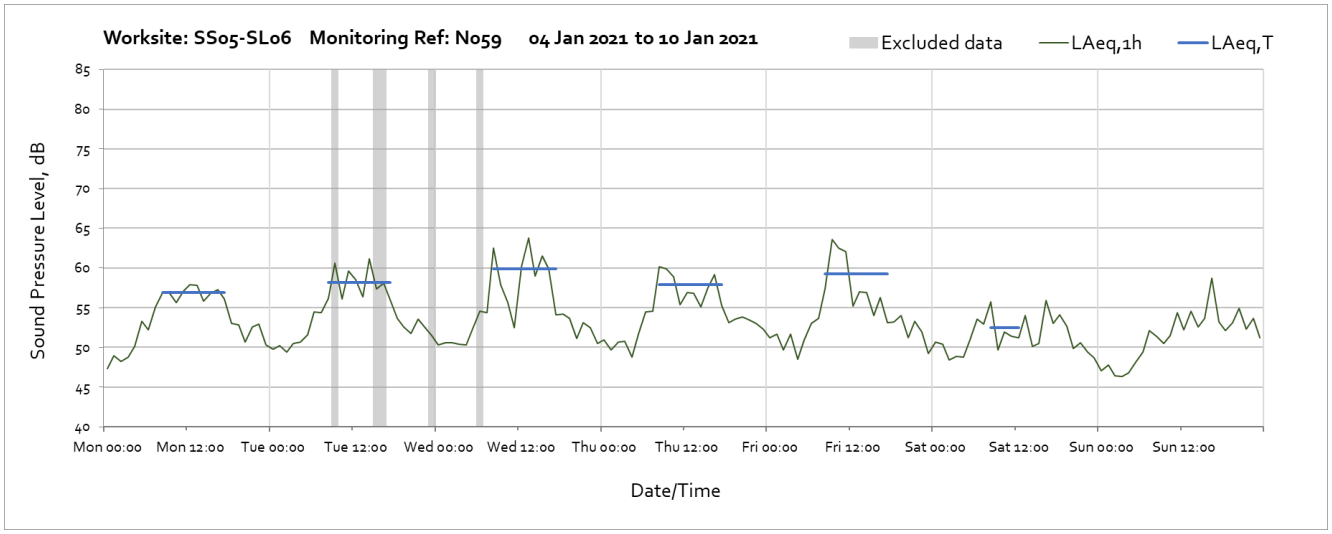


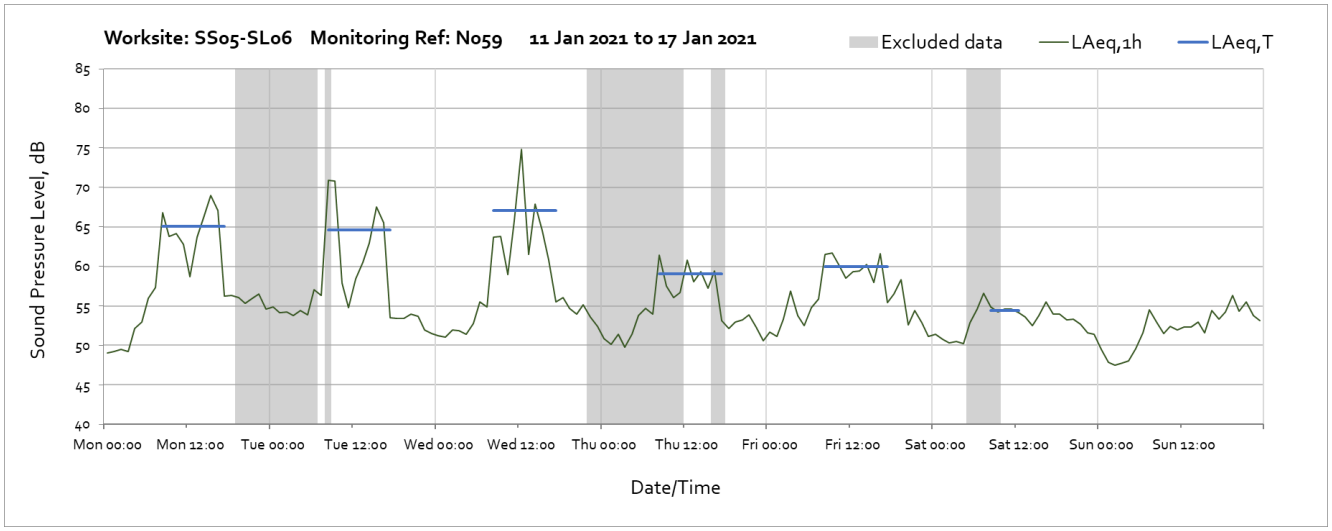



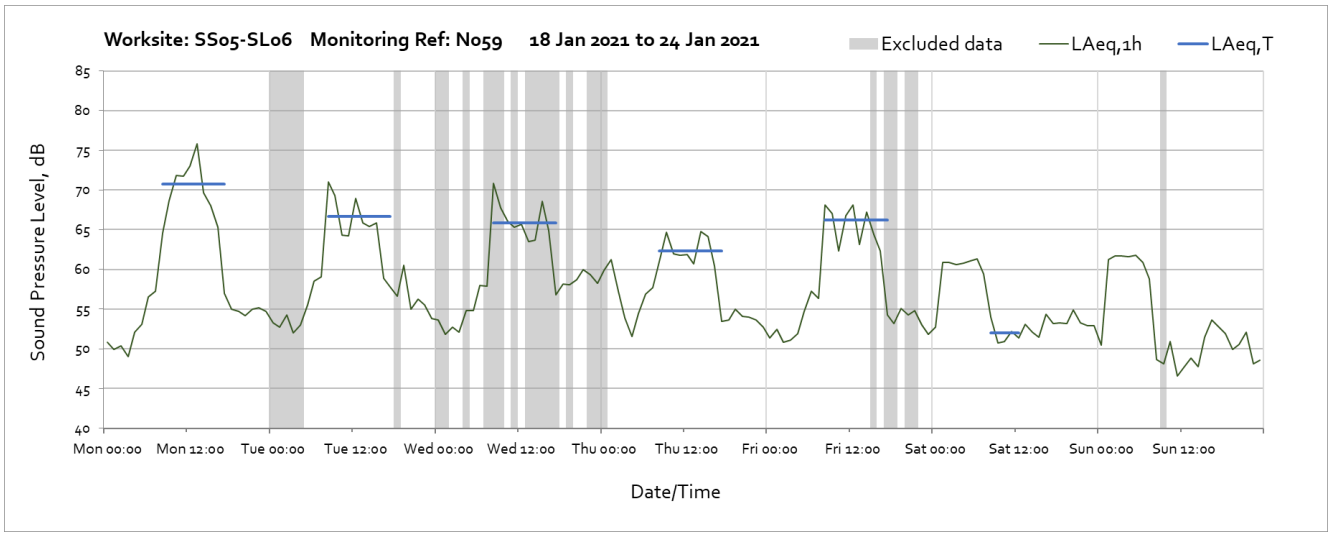

## Worksite: SS05-SL06 – Monitoring Ref: N059

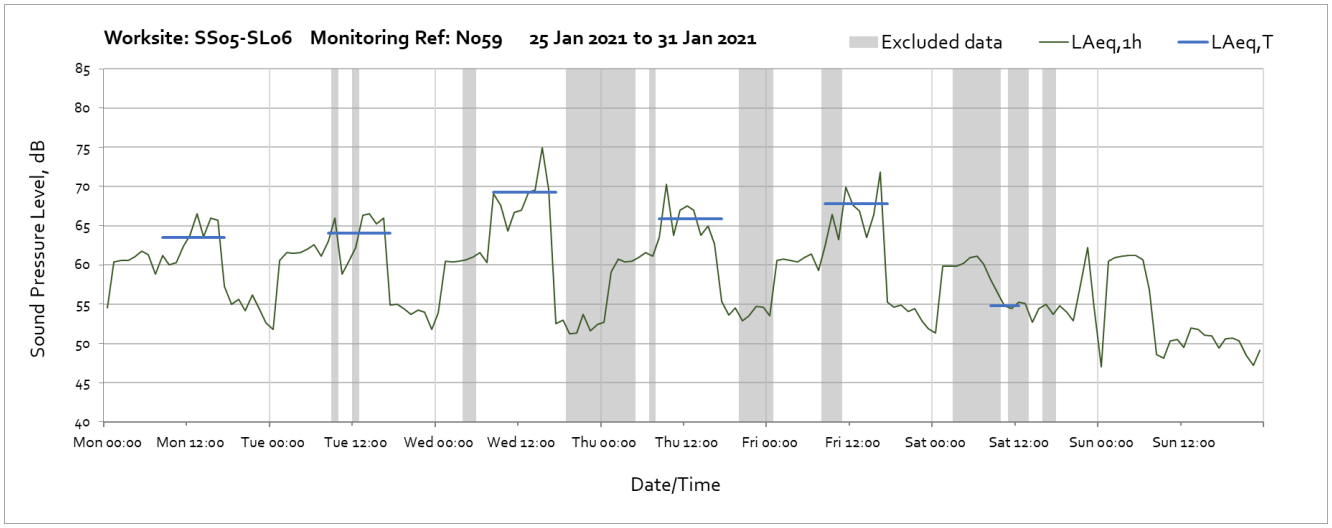



Note: High noise levels on the early hours of the 1st January were due to New Year's Eve celebrations and have been excluded to calculate values in Table 3.


Worksite: SS05-SL06 Monitoring Ref: No59 04 Jan 2021 to 10 Jan 2021
Excluded data
LAeq,1h
LAeq,T
Sound Pressure Level, dB
85
80
75
70
65
60
55
50
45
40
Mon 00:00
Mon 12:00
Tue 00:00
Tue 12:00
Wed 00:00
Wed 12:00
Thu 00:00
Thu 12:00
Fri 00:00
Fri 12:00
Sat 00:00
Sat 12:00
Sun 00:00
Sun 12:00
Date/Time


Worksite: SS05-SL06 Monitoring Ref: No59 11 Jan 2021 to 17 Jan 2021
Excluded data
LAeq,1h
LAeq,T
Sound Pressure Level, dB
85
80
75
70
65
60
55
50
45
40
Mon 00:00
Mon 12:00
Tue 00:00
Tue 12:00
Wed 00:00
Wed 12:00
Thu 00:00
Thu 12:00
Fri 00:00
Fri 12:00
Sat 00:00
Sat 12:00
Sun 00:00
Sun 12:00
Date/Time

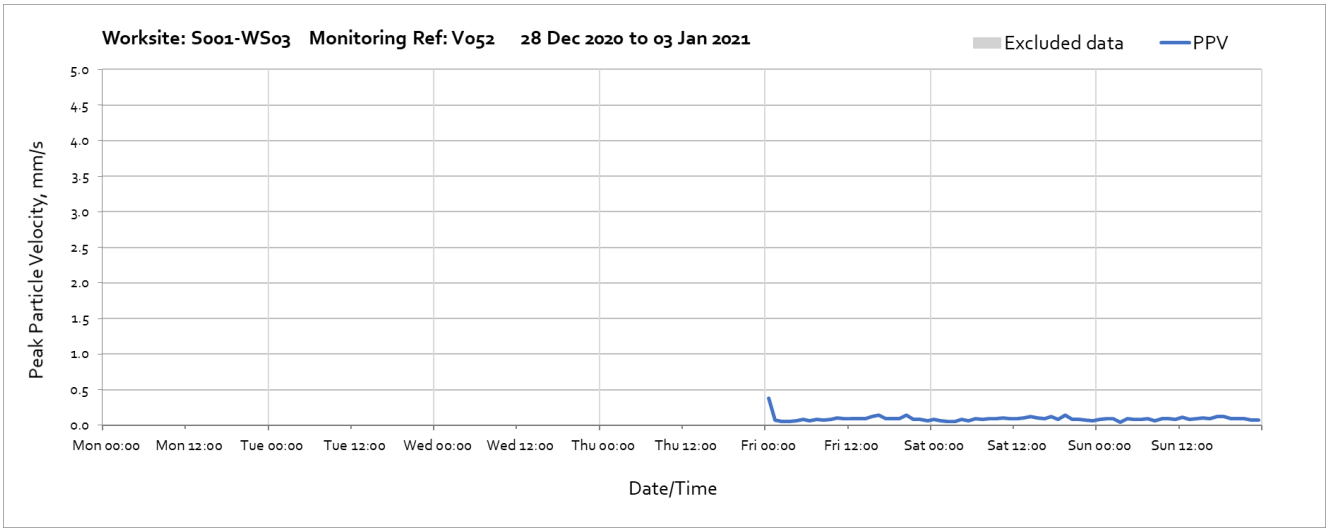

Worksite: SS05-SL06 Monitoring Ref: No59 18 Jan 2021 to 24 Jan 2021
Excluded data
LAeq,1h
LAeq,T
Sound Pressure Level, dB
85
80
75
70
65
60
55
50
45
40
Mon 00:00
Mon 12:00
Tue 00:00
Tue 12:00
Wed 00:00
Wed 12:00
Thu 00:00
Thu 12:00
Fri 00:00
Fri 12:00
Sat 00:00
Sat 12:00
Sun 00:00
Sun 12:00
Date/Time

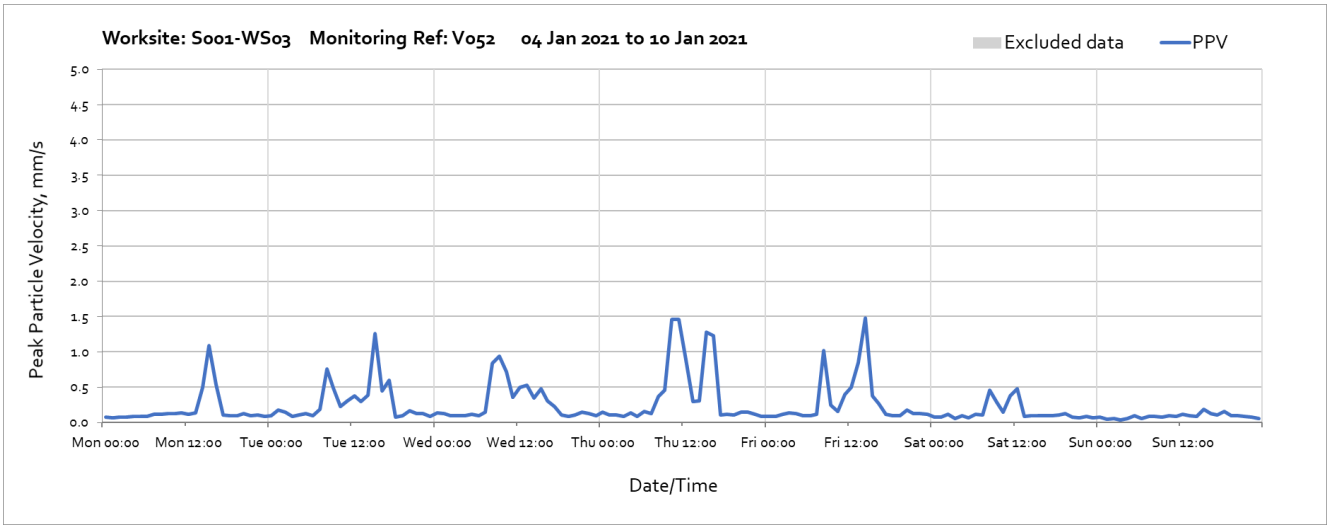

Worksite: SS05-SL06 Monitoring Ref: No59 25 Jan 2021 to 31 Jan 2021
Excluded data
LAeq,1h
LAeq,T
Sound Pressure Level, dB
85
80
75
70
65
60
55
50
45
40
Mon 00:00
Mon 12:00
Tue 00:00
Tue 12:00
Wed 00:00
Wed 12:00
Thu 00:00
Thu 12:00
Fri 00:00
Fri 12:00
Sat 00:00
Sat 12:00
Sun 00:00
Sun 12:00
Date/Time

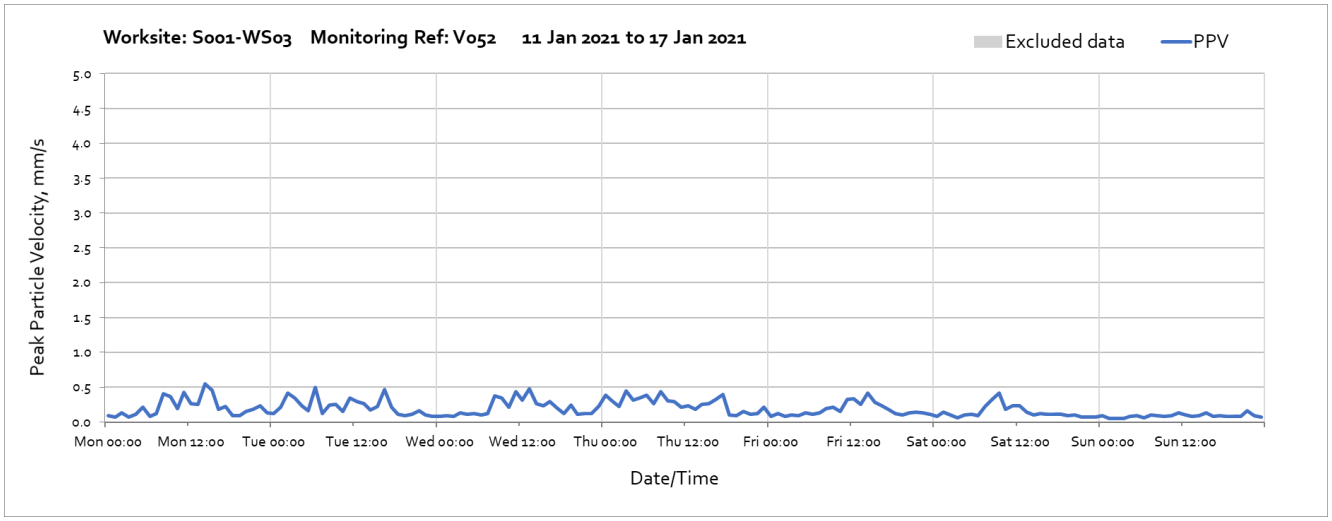
# Vibration

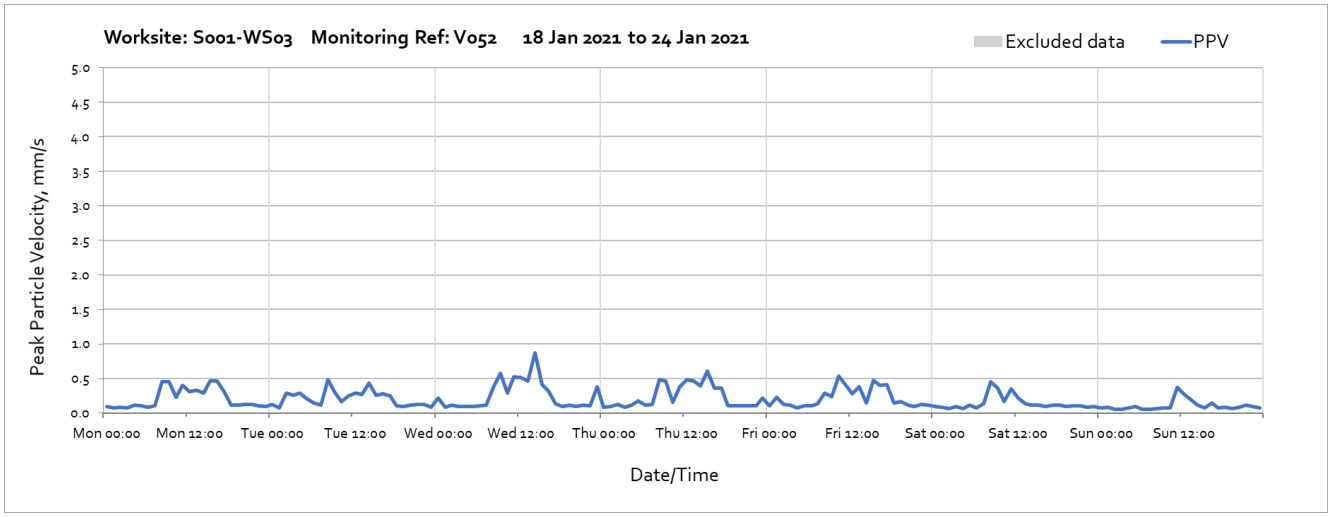
The following graphs show the hourly measured peak particle velocity PPV recorded during the monitoring period. The graphs show the resultant PPV due to vibration components on three orthogonal axis x, y and z. Where high values of PPV were caused by local interference with the vibration monitor, which are not representative of HS2 construction works, these values have been greyed out in the following charts and have been excluded to calculate values in Table 4 of the main report.

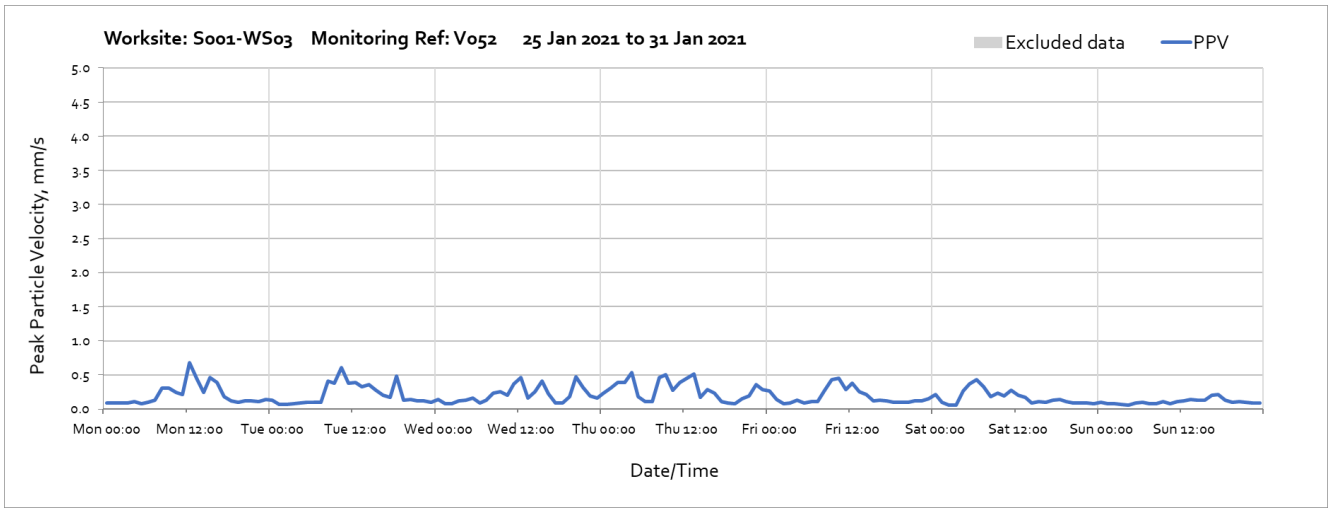
## Worksite: S001-WS03 – Monitoring Ref: V052



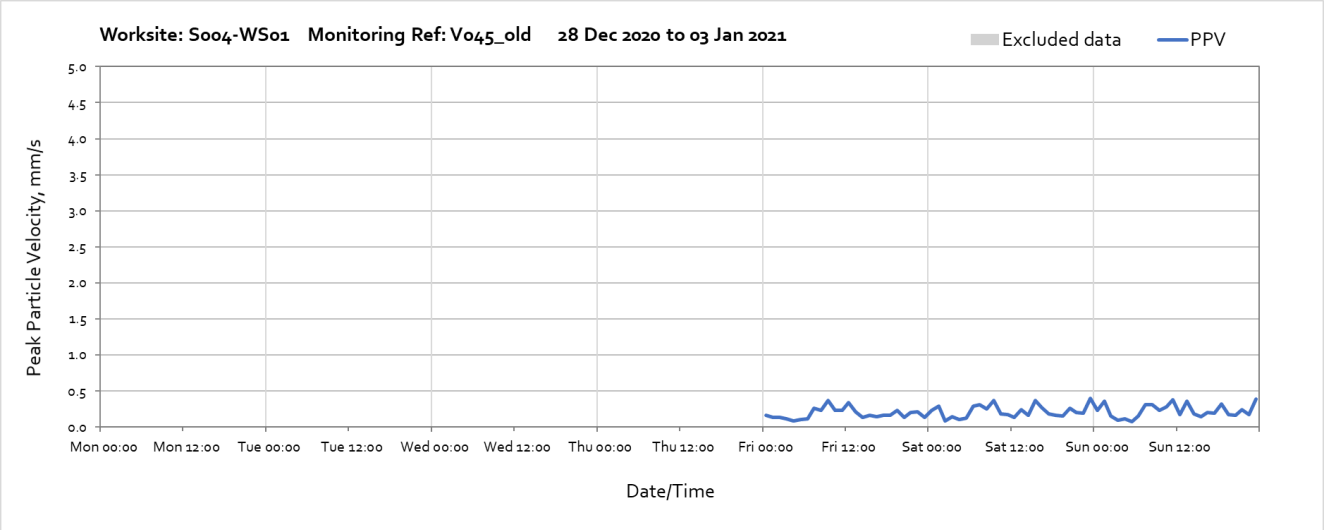



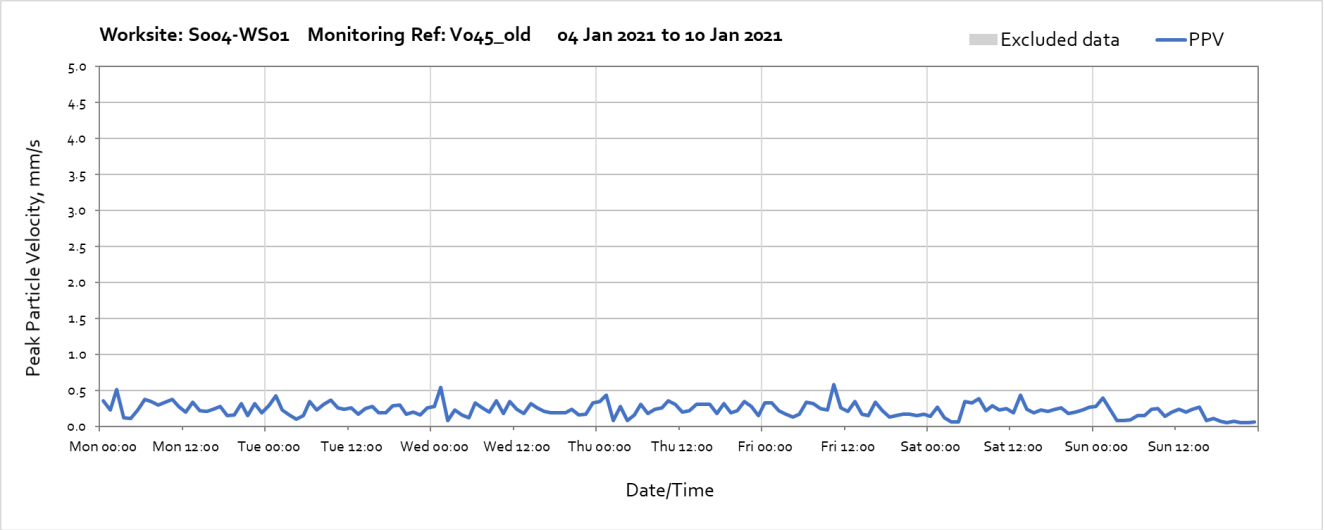

Worksite: S001-WS03 Monitoring Ref: V052 11 Jan 2021 to 17 Jan 2021
Excluded data
PPV
Peak Particle Velocity, mm/s
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Mon 00:00
Mon 12:00
Tue 00:00
Tue 12:00
Wed 00:00
Wed 12:00
Thu 00:00
Thu 12:00
Fri 00:00
Fri 12:00
Sat 00:00
Sat 12:00
Sun 00:00
Sun 12:00
Date/Time

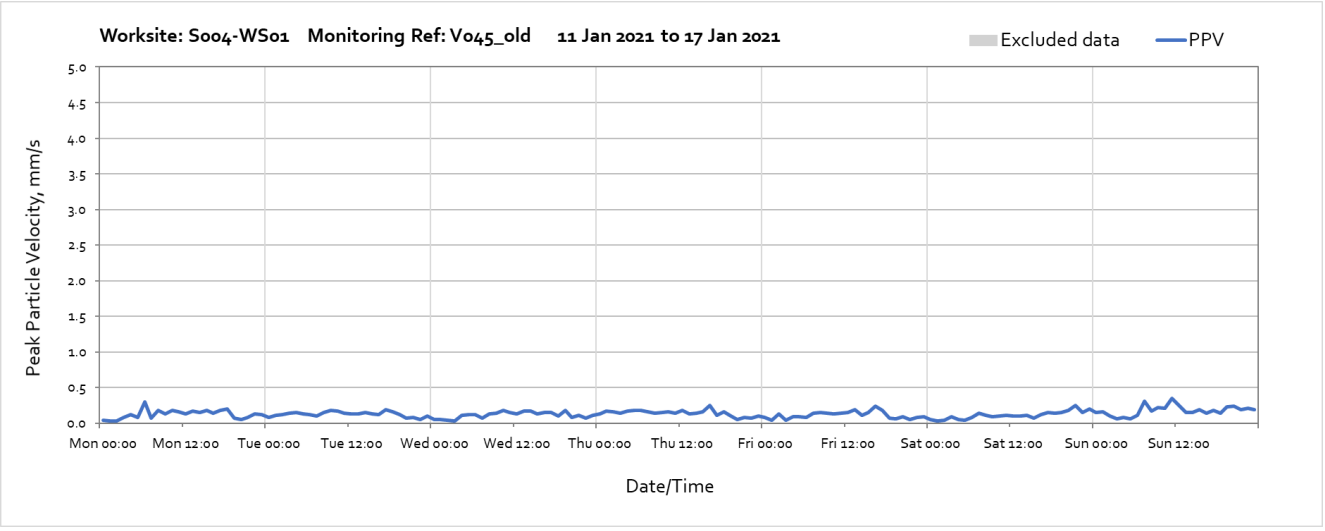

Worksite: S001-WS03 Monitoring Ref: V052 18 Jan 2021 to 24 Jan 2021
Excluded data
PPV
Peak Particle Velocity, mm/s
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Mon 00:00
Mon 12:00
Tue 00:00
Tue 12:00
Wed 00:00
Wed 12:00
Thu 00:00
Thu 12:00
Fri 00:00
Fri 12:00
Sat 00:00
Sat 12:00
Sun 00:00
Sun 12:00
Date/Time

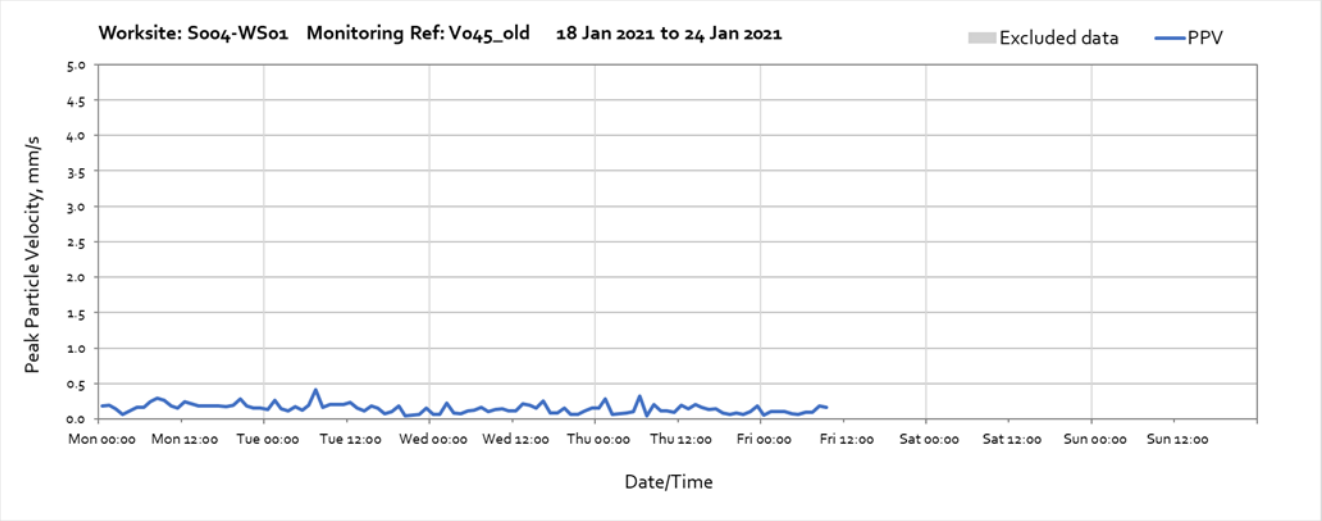

Worksite: S001-WS03 Monitoring Ref: V052 25 Jan 2021 to 31 Jan 2021
Excluded data
PPV
Peak Particle Velocity, mm/s
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Mon 00:00
Mon 12:00
Tue 00:00
Tue 12:00
Wed 00:00
Wed 12:00
Thu 00:00
Thu 12:00
Fri 00:00
Fri 12:00
Sat 00:00
Sat 12:00
Sun 00:00
Sun 12:00
Date/Time

## Worksite: S004-WS01 – Monitoring Ref: V045_old



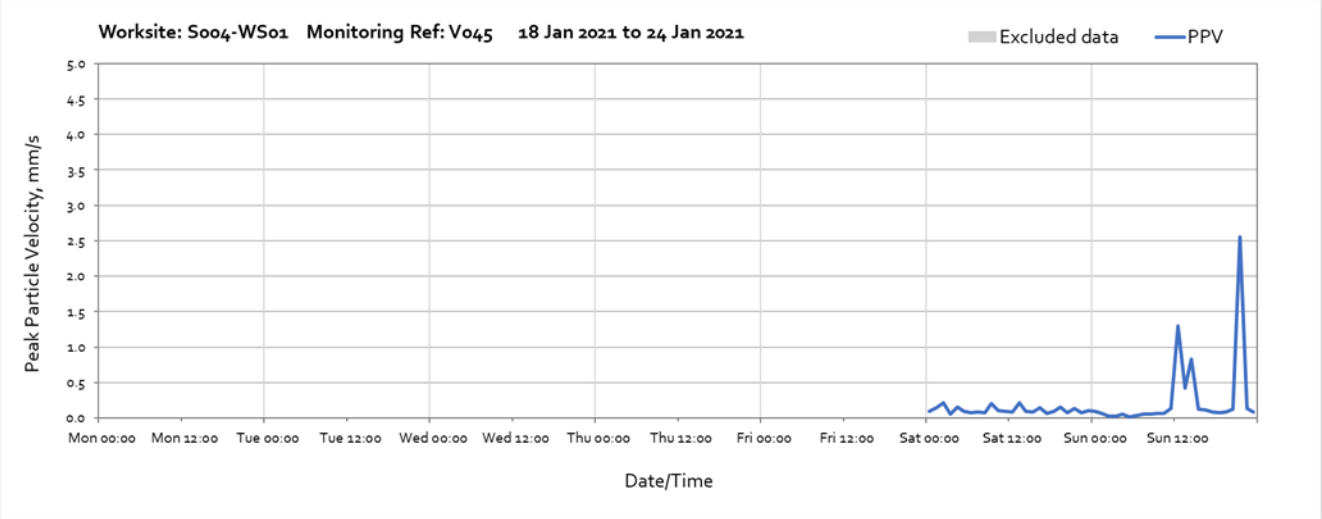



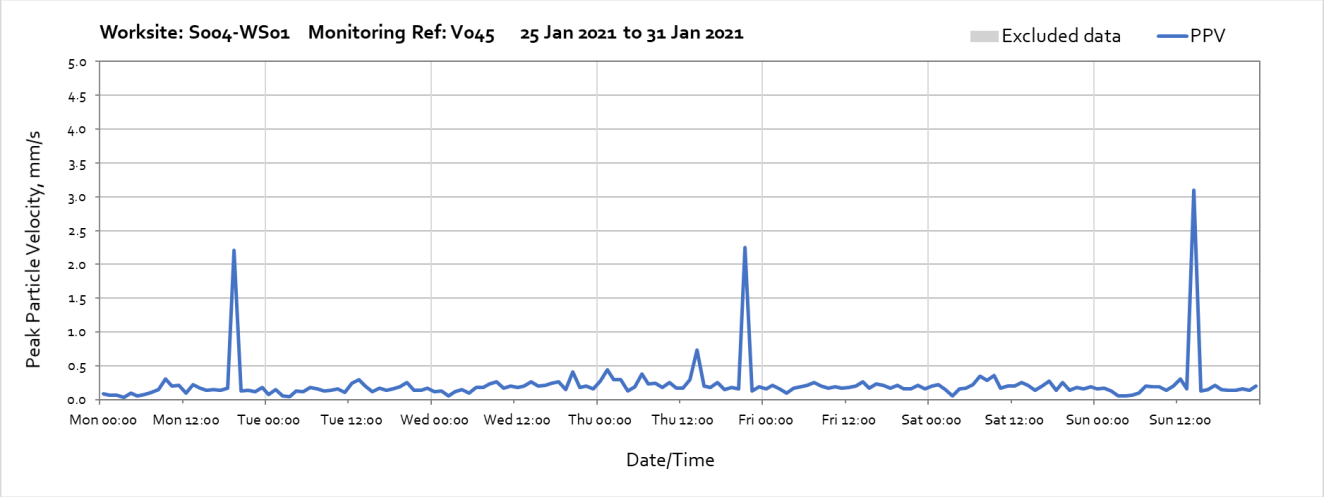



Note: High vibration levels and missing data between 11:00 on Friday 22nd and 00:00 on Saturday 23rd January 2021 was due to change of monitor location. The vibration monitor was moved from the worksite boundary to 25 Wells House Road.

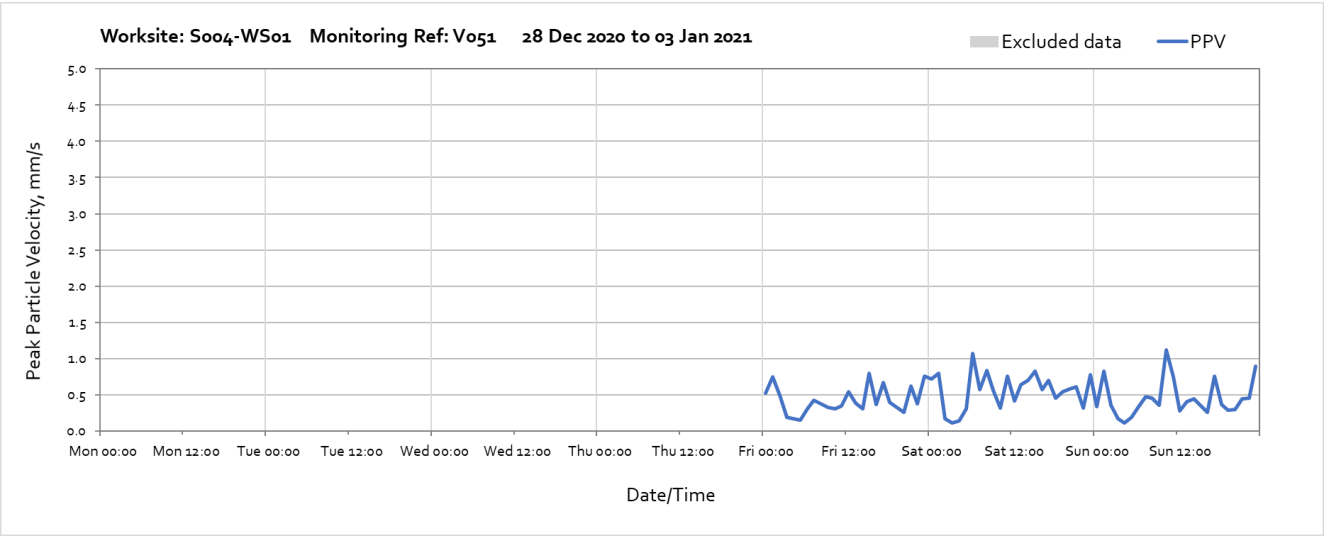
## Worksite: S004-WS01 – Monitoring Ref: V045

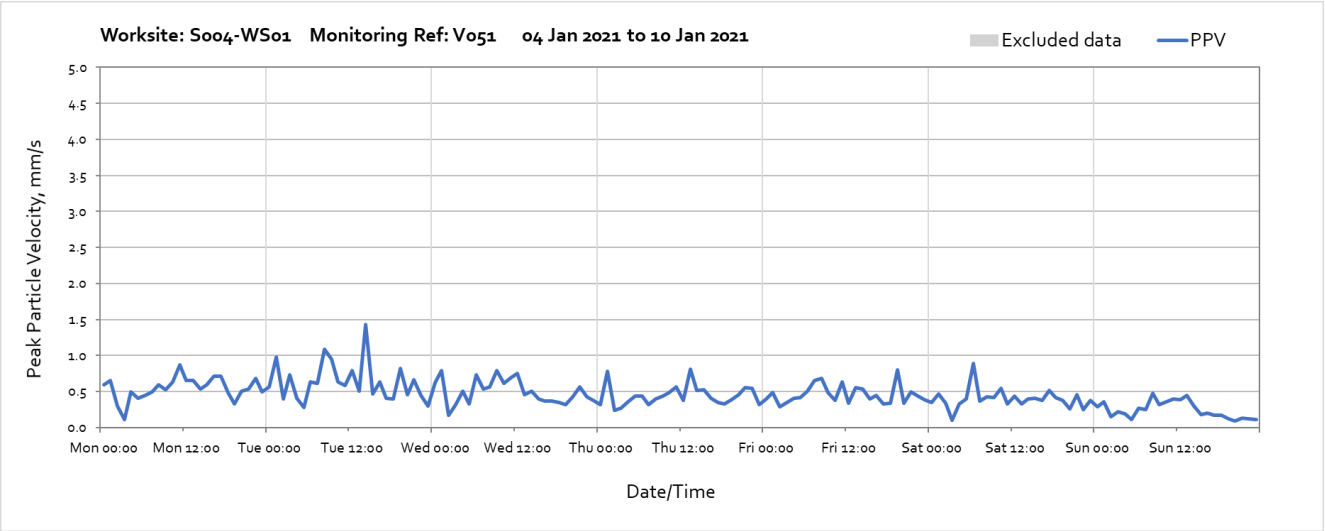


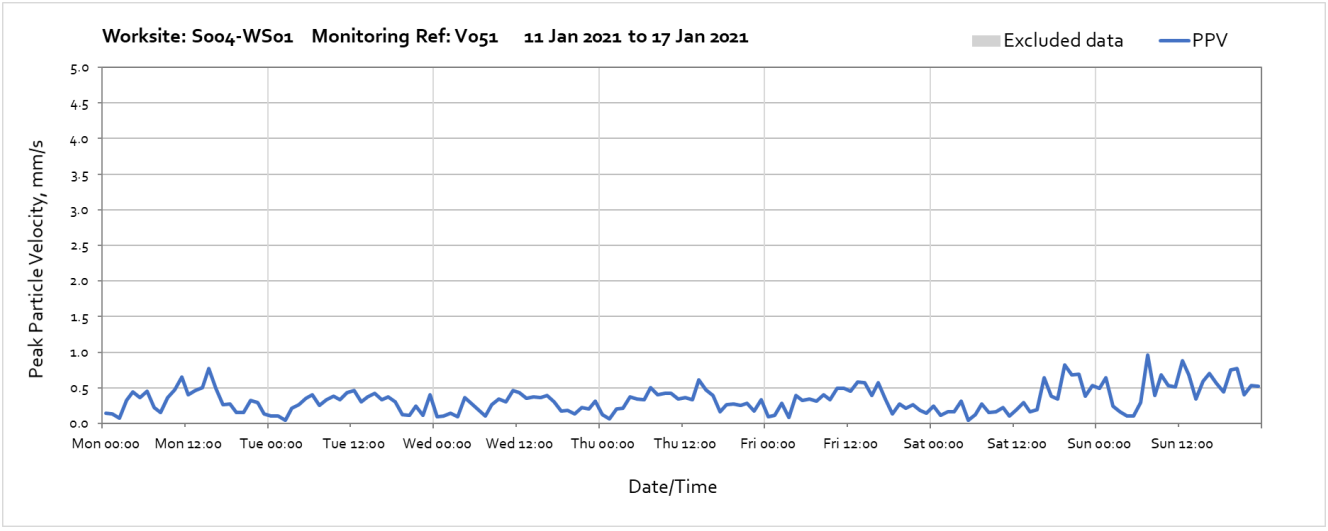

Note: High vibration levels and missing data between 11:00 on Friday 22nd and 00:00 on Saturday 23rd January 2021 was due to change of monitor location. The vibration monitor was moved from the worksite boundary to 25 Wells House Road.

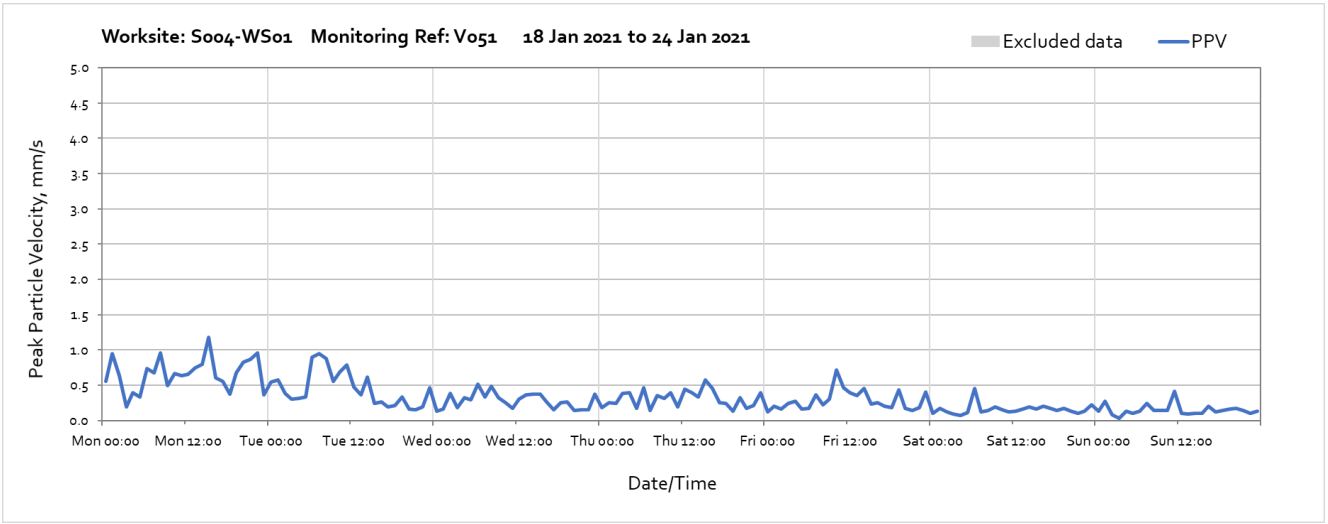


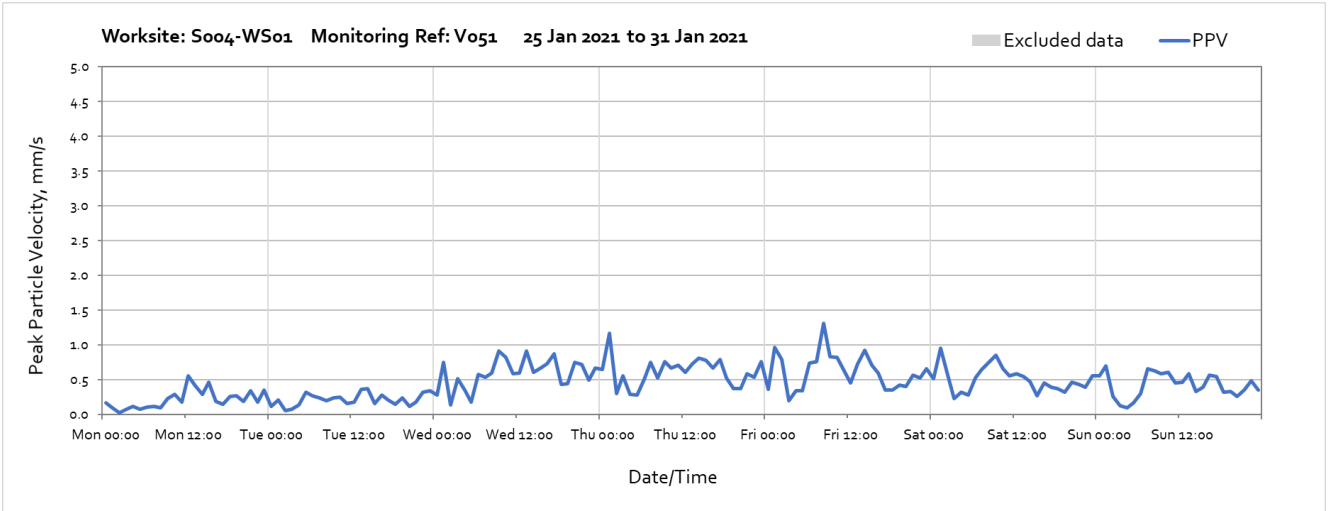

## Worksite: S004-WS01 – Monitoring Ref: V051



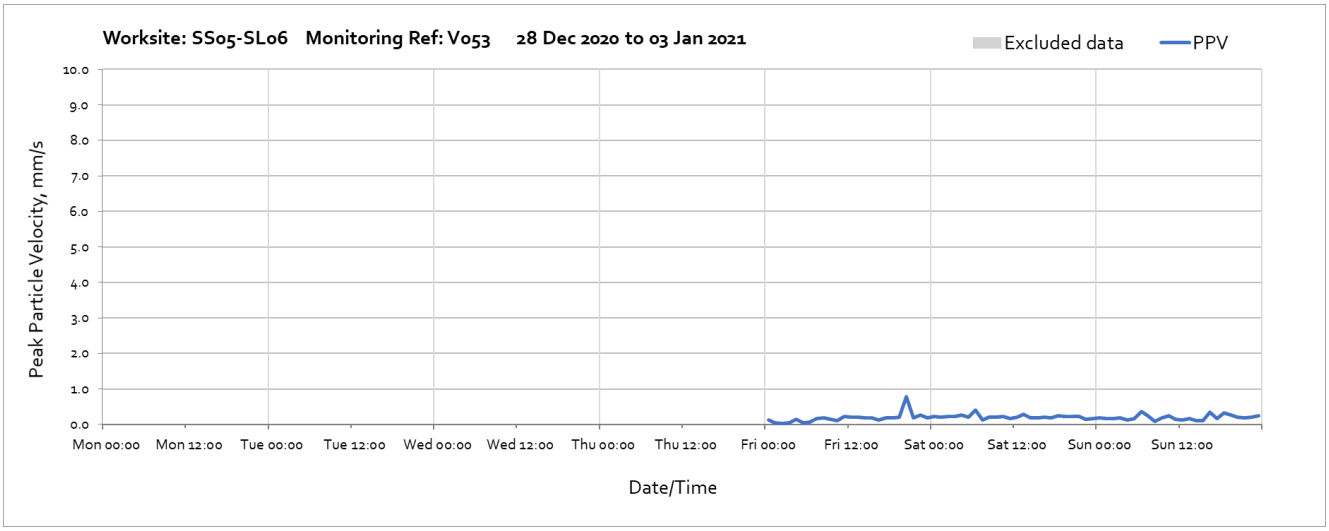



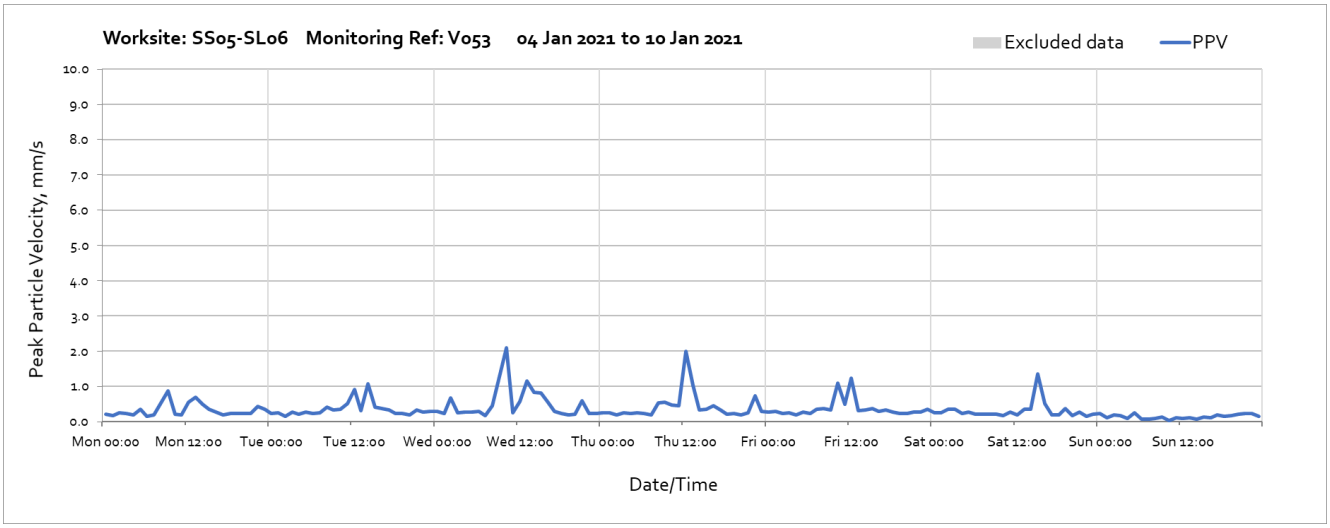

Worksite: S004-WS01 Monitoring Ref: V051 11 Jan 2021 to 17 Jan 2021
Excluded data
PPV
Peak Particle Velocity, mm/s
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Mon 00:00
Mon 12:00
Tue 00:00
Tue 12:00
Wed 00:00
Wed 12:00
Thu 00:00
Thu 12:00
Fri 00:00
Fri 12:00
Sat 00:00
Sat 12:00
Sun 00:00
Sun 12:00
Date/Time

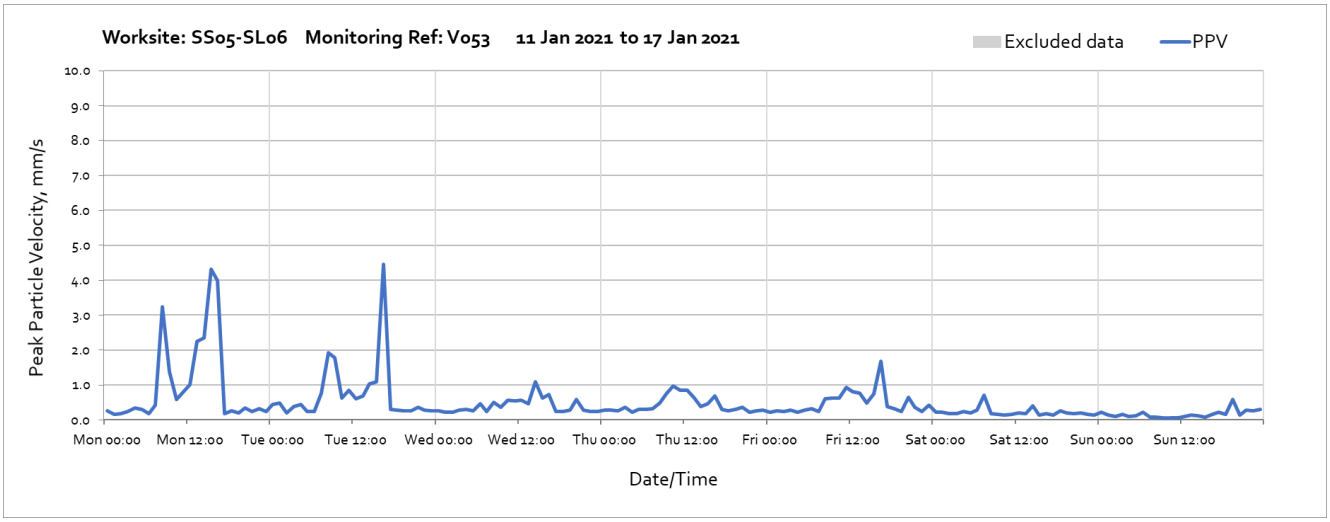

Worksite: S004-WS01 Monitoring Ref: V051 18 Jan 2021 to 24 Jan 2021
Excluded data
PPV
Peak Particle Velocity, mm/s
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Mon 00:00
Mon 12:00
Tue 00:00
Tue 12:00
Wed 00:00
Wed 12:00
Thu 00:00
Thu 12:00
Fri 00:00
Fri 12:00
Sat 00:00
Sat 12:00
Sun 00:00
Sun 12:00
Date/Time

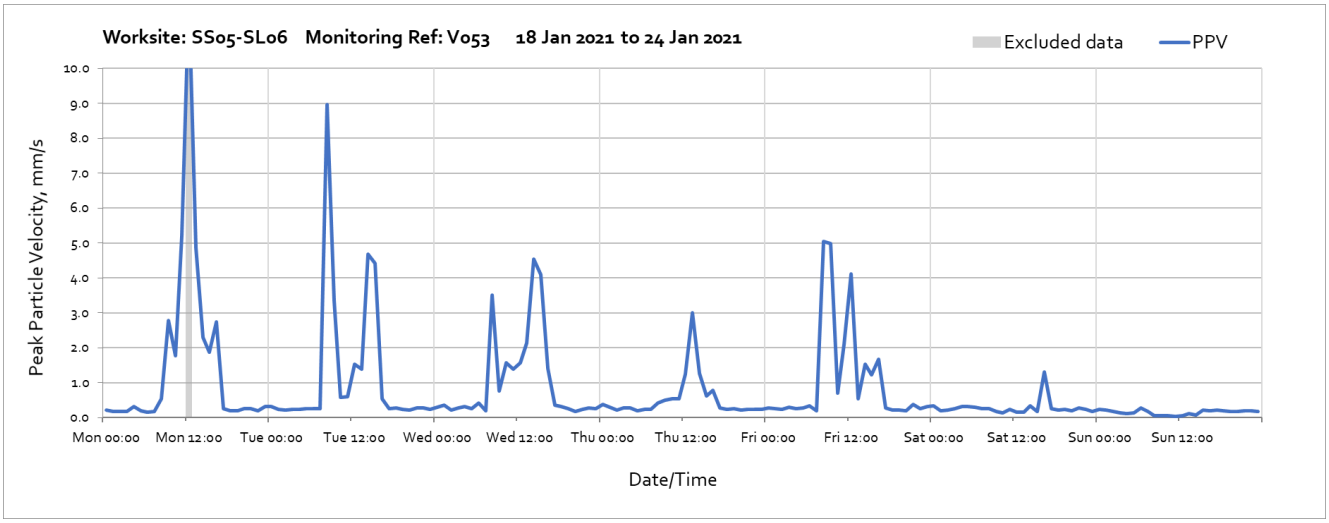

Worksite: S004-WS01 Monitoring Ref: V051 25 Jan 2021 to 31 Jan 2021
Excluded data
PPV
Peak Particle Velocity, mm/s
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Mon 00:00
Mon 12:00
Tue 00:00
Tue 12:00
Wed 00:00
Wed 12:00
Thu 00:00
Thu 12:00
Fri 00:00
Fri 12:00
Sat 00:00
Sat 12:00
Sun 00:00
Sun 12:00
Date/Time

## Worksite: SS05-SL06 – Monitoring Ref: V053

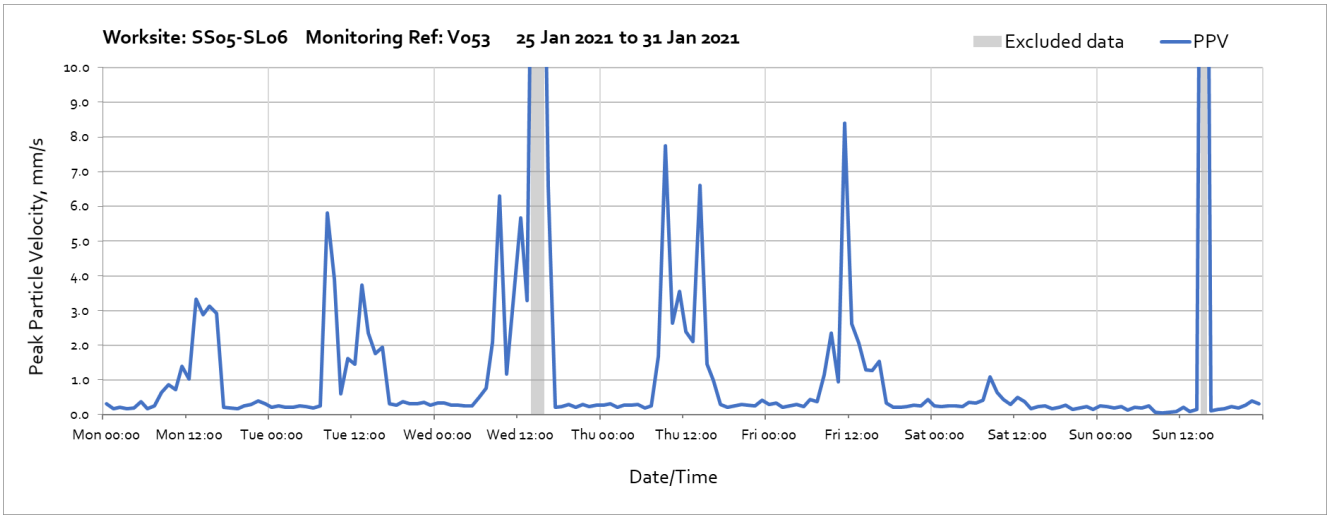





Note: High vibration levels measured at 12:00 on Monday 18th January 2021 was due works undertaken close to the monitor and are not representative of HS2 construction vibration.




Note: High vibration levels measured between 14:00 and 16:00 on Wednesday 27th January 2021 was due works undertaken close to the monitor and are not representative of HS2 construction vibration. High vibration levels measured at 15:00 on Sunday 31st January 2021 was due to local disturbance to the monitor and not representative of HS2 construction vibration.