

## **Construction Noise and Vibration Monthly Report – February 2022**

**Warwick District Council**

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# 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 Warwick District Council (WDC) area during the month of February 2022.

Within this period monitoring was undertaken at the following worksites:

- Noise monitoring was undertaken at the Burton Green Tunnel worksite (ref.: BGT), where work activities included backfilling, topsoil placement and drainage works.
- Noise monitoring was undertaken at Bockenden Cutting (ref.: BC), where work activities included drainage and backfilling works as well as compound operation.
- Noise monitoring was undertaken at the A429 Kenilworth Road Overbridge (ref.: A429KRO), where work activities included construction of temporary public right of way diversion, pond discharge works, installation of temporary fencing, dewatering works, site maintenance, breaking, excavation and stockpiling works.
- Noise monitoring was undertaken at the A46 Compound (ref.: A46C), where work activities included road diversion preparation works, drainage works (drainage ponds) and haul road foundation works.
- Noise monitoring was undertaken at the Stoneleigh Park (ref.: SP), where work activities included de-vegetation works, stockpiling, facility installation, and utility diversion works.
- Noise monitoring was undertaken at the Cubbington Road (ref.: CR), where work activities included earthworks, wheel-washer installation, and tarmac laying.
- Noise monitoring was undertaken at Fosseway Diversion (ref.: FD), where work activities included utility diversion works.
- Noise monitoring was undertaken at Offchurch Cutting (ref.: OC), where work activities included earthworks and stockpiling, and conveyor belt construction.

There were no exceedances of the HS2 threshold levels for significant noise impacts, which are defined in Information Paper E23 (<https://www.gov.uk/government/publications/hs2-information-papers-environment>), during the reporting period.

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

No complaints were received during the monitoring period. A description of the complaints, the results of investigations and any actions taken are detailed in Table 6 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 +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 Warwick District Council (WDC) area for the period 1<sup>st</sup> to 28<sup>th</sup> February 2022.

1.1.3 Construction sites in the local authority area where monitoring was undertaken during this period include:

- Burton Green Tunnel worksite (ref.: BGT, see plan 1 in Appendix A), where work activities included:
  - Backfilling and topsoil placement
  - Drainage works
- Bockenden Cutting (ref.: BC, see plan 1 in Appendix A), where work activities included:
  - drainage works;
  - backfilling works;
  - operation of compound.
- A429 Kenilworth Road Overbridge (ref.: A429KRO, see plan 2 in Appendix A), where work activities included:
  - public right of way diversion,

- topsoil stripping and stockpiling;
  - drainage works (pond construction and discharge);
  - site maintenance;
  - fencing works;
  - water extraction; and
  - breaking and excavation of main cutting to groundwater level.
- A46 Compound, (ref.: A46C, see plan 3 in Appendix A), where work activities included:
    - road diversion preparation works;
    - drainage works (including drainage ponds); and
    - haul road foundation works.
- Stoneleigh Park, (ref.: SP, see plan 3 in Appendix A), where work activities included:
    - de-vegetation works;
    - stockpiling;
    - facility installation; and
    - utility diversions.
- Cubbington Road (ref.: CR, see plan 4 in Appendix B), where work activities included:
    - earthworks (earth bunds and silt fences);
    - Wheel washer installation; and
    - Tarmac laying (on the access track).
- Fosseway Diversion (ref.: FD, see plan 5 in Appendix A), where work activities included:
    - installation of utility diversion along Fosseway; and
    - utility works along the Fosseway north of the northern roundabout.
- Offchurch Cutting worksite (ref.: OC, see plan 5 in Appendix A), where work activities included:
    - earthworks and stockpiling
    - conveyor belt construction

- 1.1.4 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 Fourteen (14) noise monitoring installations were active in February in the WDC area. Table 2 summarises the position of the noise monitoring installations within the WDC area in February 2022.
- 1.2.2 Maps showing the position of the noise and vibration monitoring installations are presented in Appendix B.

Table 2: Monitoring Locations

Worksite Reference	Measurement Reference	Address
Burton Green Tunnel (BGT)	BGT-N1	301 Cromwell Lane, Burton Green, Warwick, Warwickshire
	BGT-N2	Broadwell Woods Caravan Park, Red Lane, Burton Green, Warwick, Warwickshire
Bockenden Cutting (BC)	BC-N1	Thistle Estate, Red Lane, Burton Green, Warwick, Warwickshire
A429 Kenilworth Road Overbridge (A429KRO)	A429KRO-N1	Millburn Grange, Coventry Road, Kenilworth
	A429KRO-N2	Brookview, Milburn Grange, Coventry Road, Kenilworth
	A429KRO-N3	16 Kenilworth Road, Kenilworth
A46 Compound (A46C)	A46C-N1	Kingswood Farmhouse, Dalehouse Lane, Kenilworth
Stoneleigh Park (SP)	SP-N2	Stoneleigh Park, Kenilworth
Cubbington (CR)	CR-N1	Wychwood, Cubbington Road, Leamington Spa
Fosseway Diversion (FD)	FD-N1	Burnt Heath Cottages, Long Itchington Rd, Offchurch, Leamington Spa
	FD-N2	Spring Hill Cottages, Fosseway, Offchurch, Leamington Spa
Offchurch Cutting (OC)	OC-N1	Welsh Road, Offchurch, Leamington
	OC-N2	Valley Fields, Offchurch, Leamington Spa
	OC-N3	Brickyard Cottage, Welsh Road, Offchurch, Warwick

## 2 Summary of Results

### 2.1 Summary of Measured Noise 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<sub>Aeq</sub> Data over the Monitoring Period

Worksite Reference	Measurement Reference	Site Address	Free-field or Façade Measurement	Weekday Average L <sub>Aeq,T</sub> (Highest Day L <sub>Aeq,T</sub> )					Saturday Average L <sub>Aeq,T</sub> (Highest Day L <sub>Aeq,T</sub> )					Sunday / Public Holiday Average L <sub>Aeq,T</sub> (Highest Day L <sub>Aeq,T</sub> )	
				0700 - 0800	0800 - 1800	1800 - 1900	1900 - 2200	2200 - 0700	0700 - 0800	0800 - 1300	1300 - 1400	1400 - 2200	2200 - 0700	0700 - 2200	2200 - 0700
BGT	BGT-N1	301 Cromwell Lane, Burton Green,	Free-field	49.2 (56.7)	52.3 (58.2)	44.4 (50.9)	42.3 (56.4)	40.0 (51.3)	47.2 (49.2)	49.6 (49.9)	46.6 (46.8)	46.5 (51.0)	42.3 (47.7)	49.2 (59.7)	43.9 (54.7)
	BGT-N2	Broadwell Woods Caravan Park, Red Lane, Burton Green,	Free-field	52.4 (59.7)	56.3 (61.8)	47.6 (54.6)	46.0 (58.8)	45.4 (56.5)	48.9 (52.8)	52.4 (54.7)	51.3 (53.6)	48.4 (55.0)	45.3 (52.6)	50.2 (64.3)	45.8 (59.7)
BC	BC-N1	Thistle Estate, Red Lane, Burton Green	Free-field	45.2 (52.8)	45.2 (54.2)	39.1 (47.0)	37.8 (49.5)	36.7 (48.3)	44.3 (46.9)	45.6 (49.8)	43.8 (45.6)	41.9 (46.5)	38.2 (45.5)	44.4 (53.4)	40.7 (52.6)
A429KRO	A429KRO-N1	Millburn Grange, Coventry Road, Kenilworth	Free-field	50.4 (55.7)	55.7 (60.0)	51.3 (56.0)	52.2 (57.0)	51.0 (59.8)	51.6 (55.3)	52.5 (53.6)	51.1 (52.6)	49.8 (54.0)	46.1 (53.9)	51.4 (56.7)	47.5 (55.1)
	A429KRO-N2	Brookview, Milburn Grange, Coventry Road, Kenilworth	Free-field	50.5 (52.3)	53.3 (56.1)	49.6 (51.3)	49.5 (53.7)	47.8 (54.5)	49.1 (51.1)	50.3 (51.2)	49.7 (50.1)	48.7 (51.0)	43.8 (50.6)	49.2 (51.4)	44.1 (52.1)
	A429KRO-N3	16 Kenilworth Road, Kenilworth	Free-field	58.8 (61.0)	57.2 (58.6)	55.8 (57.9)	54.0 (57.3)	49.7 (59.3)	56.8 (59.8)	57.1 (57.9)	57.5 (57.7)	55.6 (57.6)	50.7 (60.2)	56.6 (60.6)	50.1 (58.1)
A46C	A46C-N1	Kingswood Farmhouse, Dalehouse Lane, Kenilworth	Free-field	63.0 (65.0)	60.9 (64.3)	59.5 (62.8)	58.3 (61.4)	56.4 (63.2)	60.3 (61.0)	63.3 (64.2)	63.0 (63.5)	60.3 (63.2)	54.3 (58.1)	61.8 (63.9)	57.1 (62.7)
SP	SP-N2	Stoneleigh Park, Kenilworth	Free-field	54.8 (57.9)	56.6 (62.8)	51.4 (57.9)	46.7 (54.9)	44.8 (54.4)	47.8 (48.8)	52.9 (54.4)	52.6 (56.8)	50.0 (55.3)	42.4 (48.0)	51.7 (60.4)	46.4 (58.0)

OFFICIAL

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
CR	CR-N1	Wychwood, Cubbington Road, Lillington	Free field	55.9 (62.5)	56.1 (59.1)	54.6 (58.1)	51.6 (59.8)	45.6 (55.4)	51.3 (51.3)	52.0* (53.9)*	51.7* (54.0)*	54.6 (57.4)	45.6* (51.5)*	53.7 (55.6)	47.4 (55.0)
FD	FD-N1	Burnt Heath Cottages Long Itchington Rd, Offchurch	Free-field	59.0 (70.3)	64.2 (70.7)	54.5 (58.4)	50.9 (57.7)	48.4 (61.4)	50.6 (54.0)	55.5 (59.7)	56.3 (59.9)	53.5 (60.3)	48.2 (56.2)	54.9 (66.7)	48.4 (61.3)
	FD-N2	Spring Hill Cottages Fosseway, Offchurch	Free-field	61.8 (66.8)	63.9 (67.8)	46.9 (54.3)	45.8 (65.8)	46.4 (66.5)	44.8 (46.9)	50.9 (56.0)	51.0 (53.8)	49.4 (59.6)	45.9 (54.0)	49.9 (63.3)	46.7 (61.9)
OC	OC-N1	Welsh Road, Offchurch,	Free-field	51.7 (55.7)	49.5 (51.7)	48.4 (55.9)	44.0 (48.7)	41.5 (54.0)	45.4 (45.4)	52.0* (53.9)*	51.7* (54.0)*	46.6 (49.2)	45.6* (51.5)*	46.1 (47.3)	42.9 (51.2)
	OC-N2	Valley Fields, Hunningham Road, Offchurch	Free field	50.0 (54.5)	52.9 (68.1)	45.9 (53.1)	43.4 (51.5)	43.9 (52.2)	46.8 (46.8)	50.9* (53.2)*	50.1* (52.0)*	46.2 (47.8)	45.9* (49.6)*	46.5 (47.6)	46.2 (52.6)
	OC-N3	Brickyard Cottage, Welsh Road, Offchurch,	Free-field	55.9 (59.1)	54.7 (58.4)	53.4 (60.4)	49.3 (56.4)	46.4 (58.1)	48.7 (48.7)	54.0* (55.4)*	54.1* (55.7)*	52.2 (54.8)	46.1* (52.5)*	53.5 (56.2)	49.8 (57.2)

Note: \* Indicates values derived from data that were excluded because of poor weather. These data are excluded for the purposes of calculating exceedances of the LOAEL and SOAEL but are here reinstated to allow the above values to be derived.

2.1.2 Appendix C presents graphs of the noise 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). 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 LOAEL and SOAEL

2.2.1 The lowest observed adverse effect level (LOAEL) is defined in the Planning Practice Guidance – Noise (PPG) as the level above which "noise starts to cause 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".

2.2.2 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."

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

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

2.2.5 Table 4 presents a summary of recorded exceedances of the LOAEL and SOAEL at each measurement location over the reporting period, including the number of exceedances during each time period.

Table 4: Summary of Exceedances of LOAEL and SOAEL

Worksite Reference	Measurement Reference	Site Address	Day (Weekday, Saturday, Sunday, Night)	Time period	Number of exceedances of LOAEL	Number of exceedances of SOAEL
BGT	BGT-N1*	301 Cromwell Lane, Burton Green, Warwick, Warwickshire	All days	All periods	No exceedances	No exceedances
	BGT-N2*	Broadwell Woods Caravan Park, Red Lane, Burton Green, Warwick, Warwickshire	All days	All periods	No exceedances	No exceedances
BC	BC-N1*	Thistle Estate, Red Lane, Burton Green, Warwick, Warwickshire	All days	All periods	No exceedances	No exceedances
A429KRO	A429KRO-N1*	Millburn Grange, Coventry Road, Kenilworth	All days	All periods	No exceedances	No exceedances
	A429KRO-N2*	Brookview, Milburn Grange, Coventry Road, Kenilworth	All days	All periods	No exceedances	No exceedances
	A429KRO-N3*	16 Kenilworth Road, Kenilworth	All days	All periods	No exceedances	No exceedances
A46C	A46C-N1	Kingswood Farmhouse, Dalehouse Lane, Kenilworth	All days	All periods	No exceedances	No exceedances
SP	SP-N2	Stoneleigh Park, Kenilworth	All days	All periods	Not applicable	Not applicable
CR	CR-N1	Wychwood, Cubbington Road, Lillington, Leamington Spa	All days	All periods	No exceedances	No exceedances



Worksite Reference	Measurement Reference	Site Address	Day (Weekday, Saturday, Sunday, Night)	Time period	Number of exceedances of LOAEL	Number of exceedances of SOAEL
FD	FD-N1	Burnt Heath Cottages Long Itchington Rd, Offchurch, Leamington Spa	Weekday	0800-1800	8	No exceedances
	FD-N2	Spring Hill Cottages Fosse Way, Offchurch, Leamington Spa	Weekday	0800-1800	7	No exceedances
OC	OC-N1*	Welsh Road, Offchurch, Leamington,	All days	All periods	No exceedances	No exceedances
	OC-N2*	Valley Fields, Hunningham Road, Offchurch, Leamington Spa	Weekday	0800-1800	1	No exceedances
	OC-N3	Brickyard Cottage, Welsh Road, Offchurch, Warwick	All days	All periods	No exceedances	No exceedances

\* A distance correction has been applied while calculating exceedances of the LOAEL and SOAEL.

2.2.6 LOAEL exceedances have been recorded at noise monitoring location ref.:FD-N1, FD-N2 and ref.: OC-N2 during core hours. No SOAEL exceedances occurred during the month of February.

## 2.3 Exceedances of Trigger Level

2.3.1 Table 5 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 5: 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

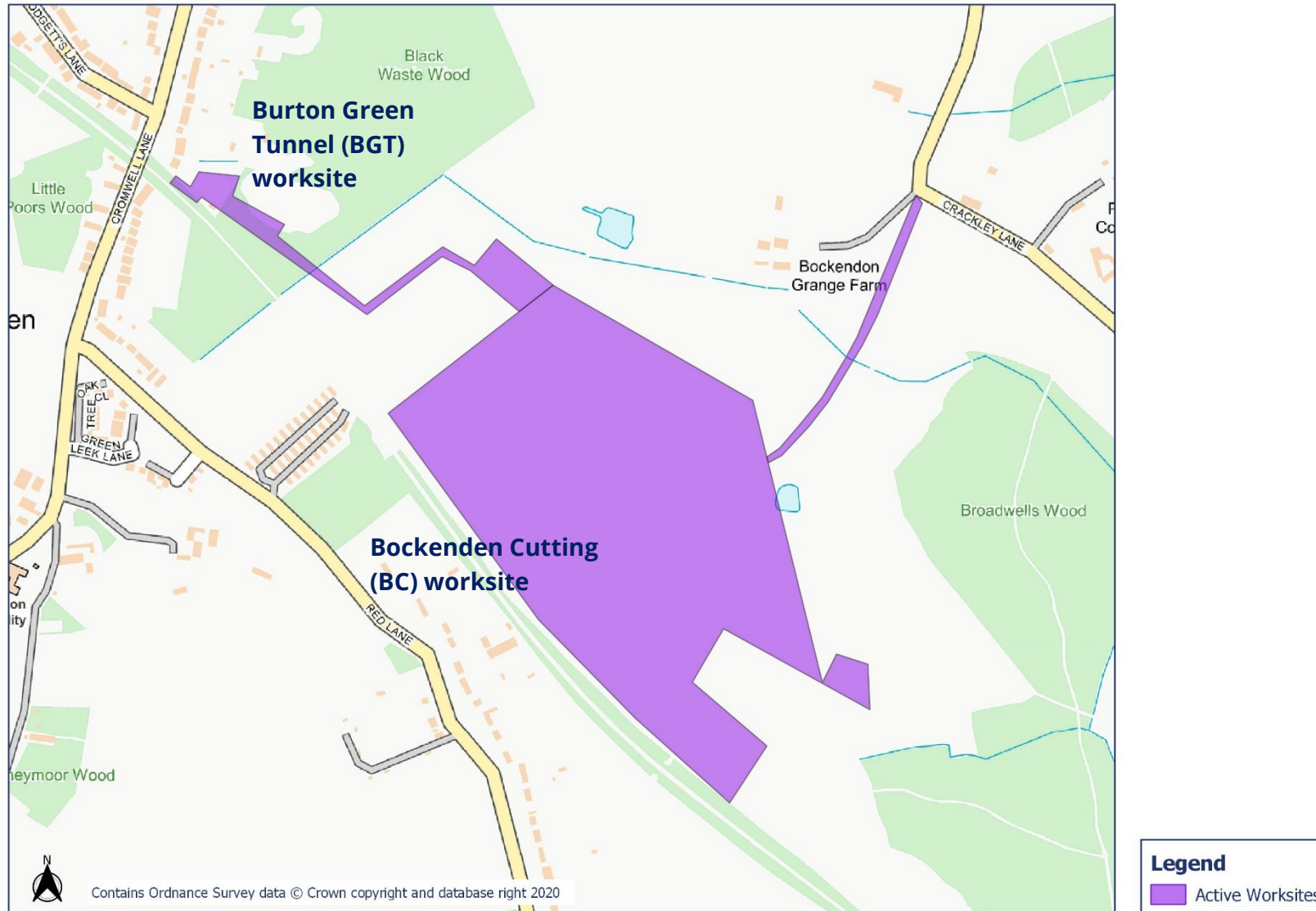
2.4.1 Table 6 provides a summary of complaint information related to noise and vibration received during the reporting period, along with the findings of any investigation.

Table 6: Summary of Complaints

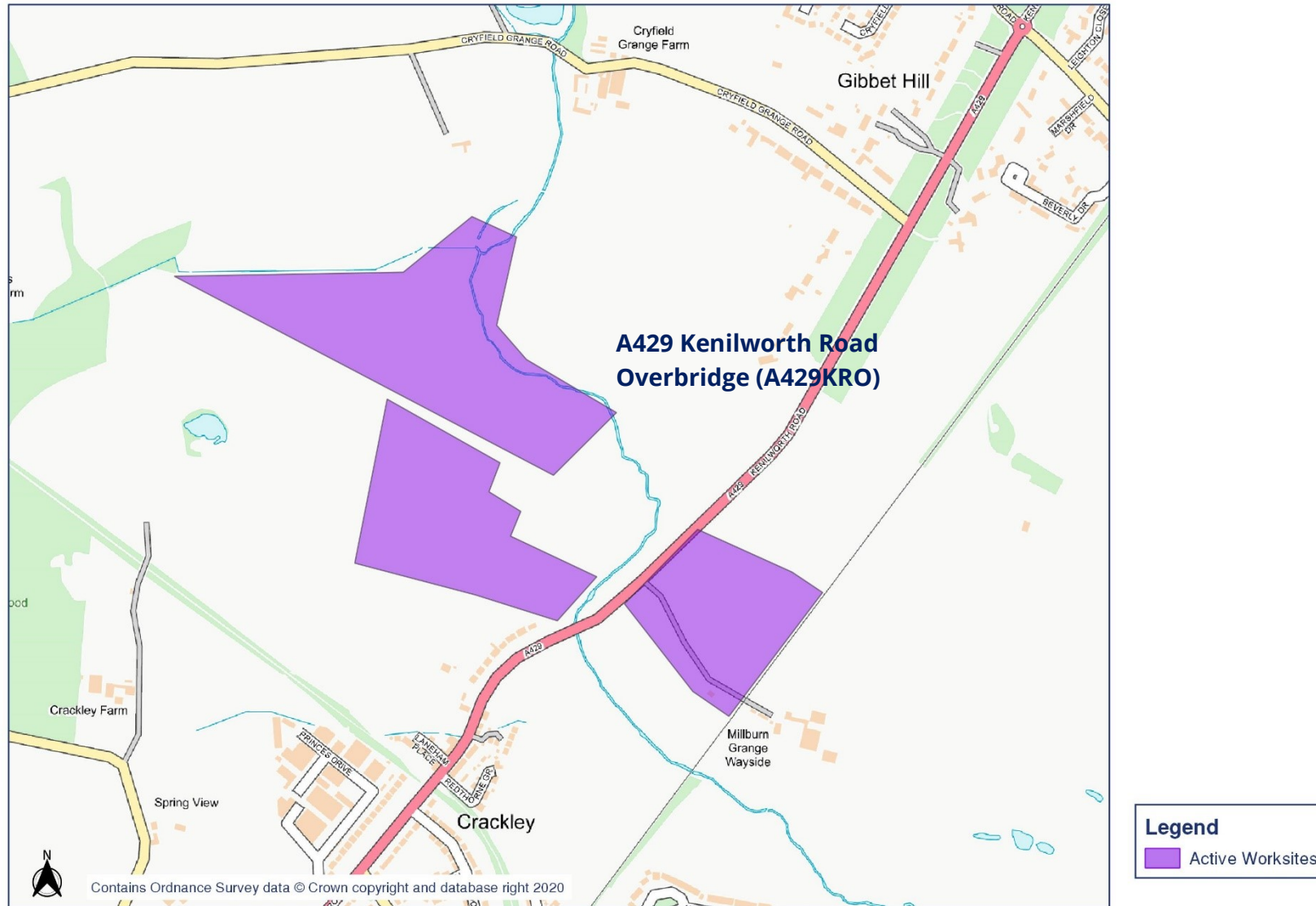
Complaint Reference Number	Worksite Reference	Description of Complaint	Results of Investigation	Actions Taken
-	-	-	-	-

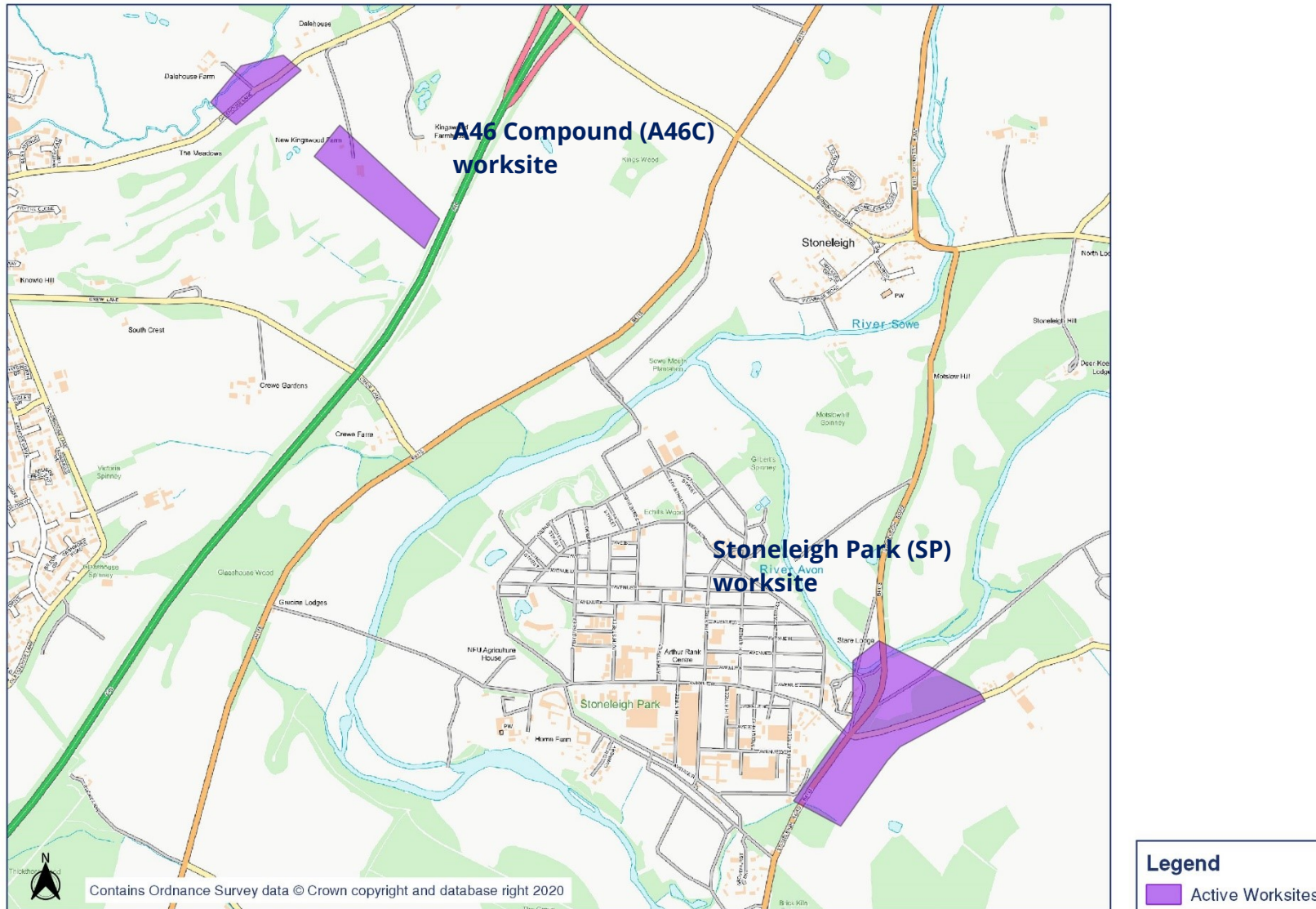
# Appendix A Site Locations

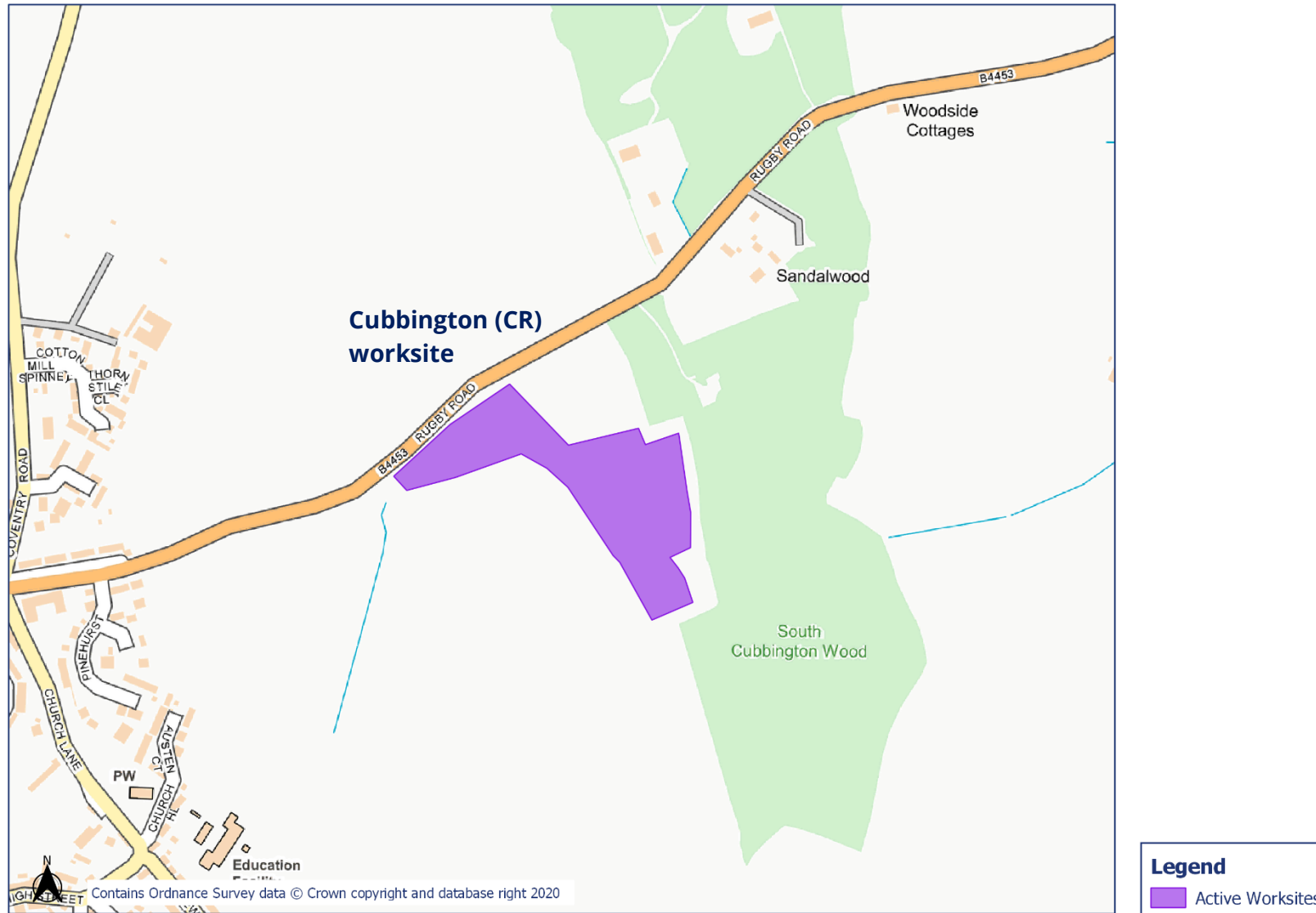




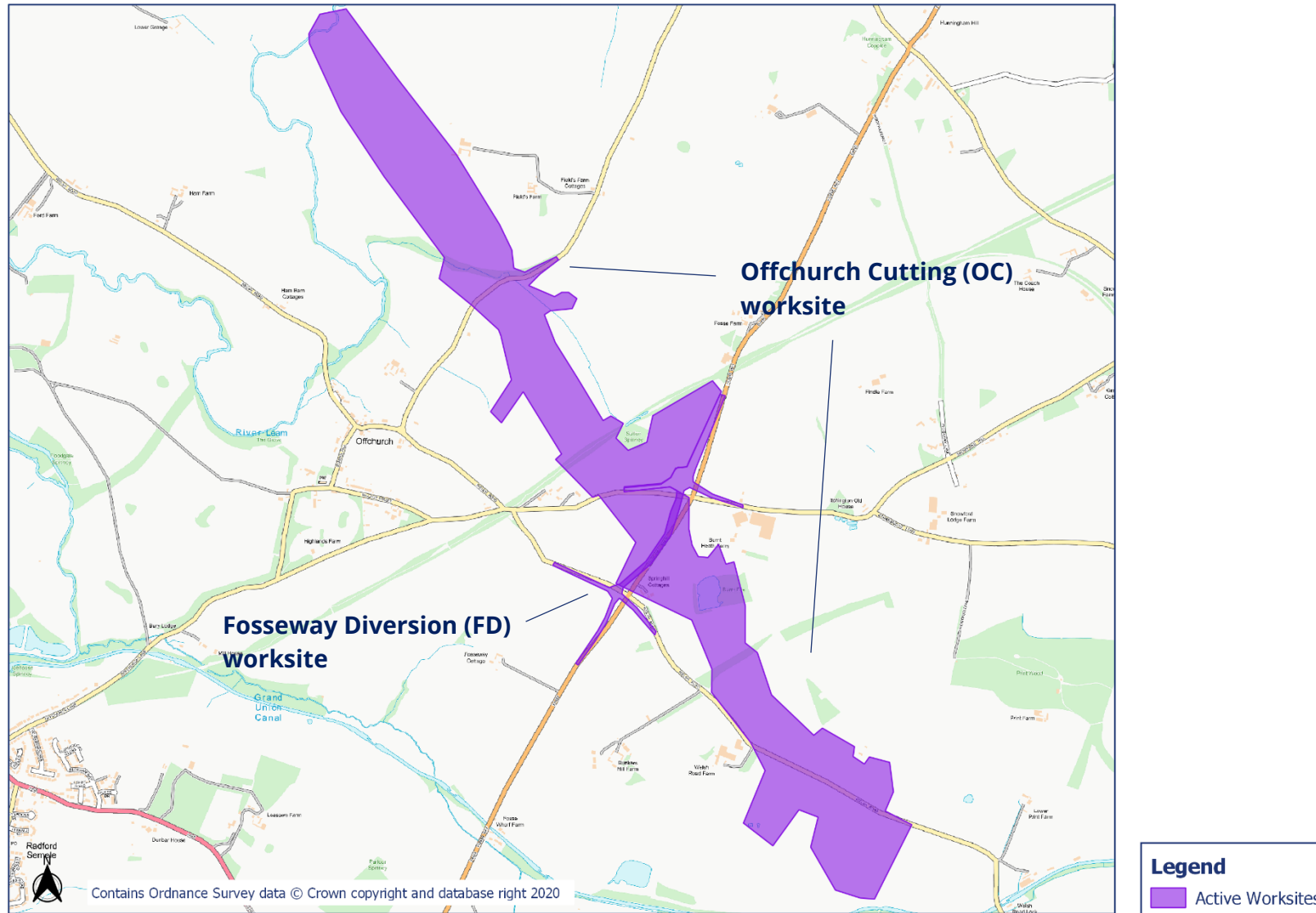




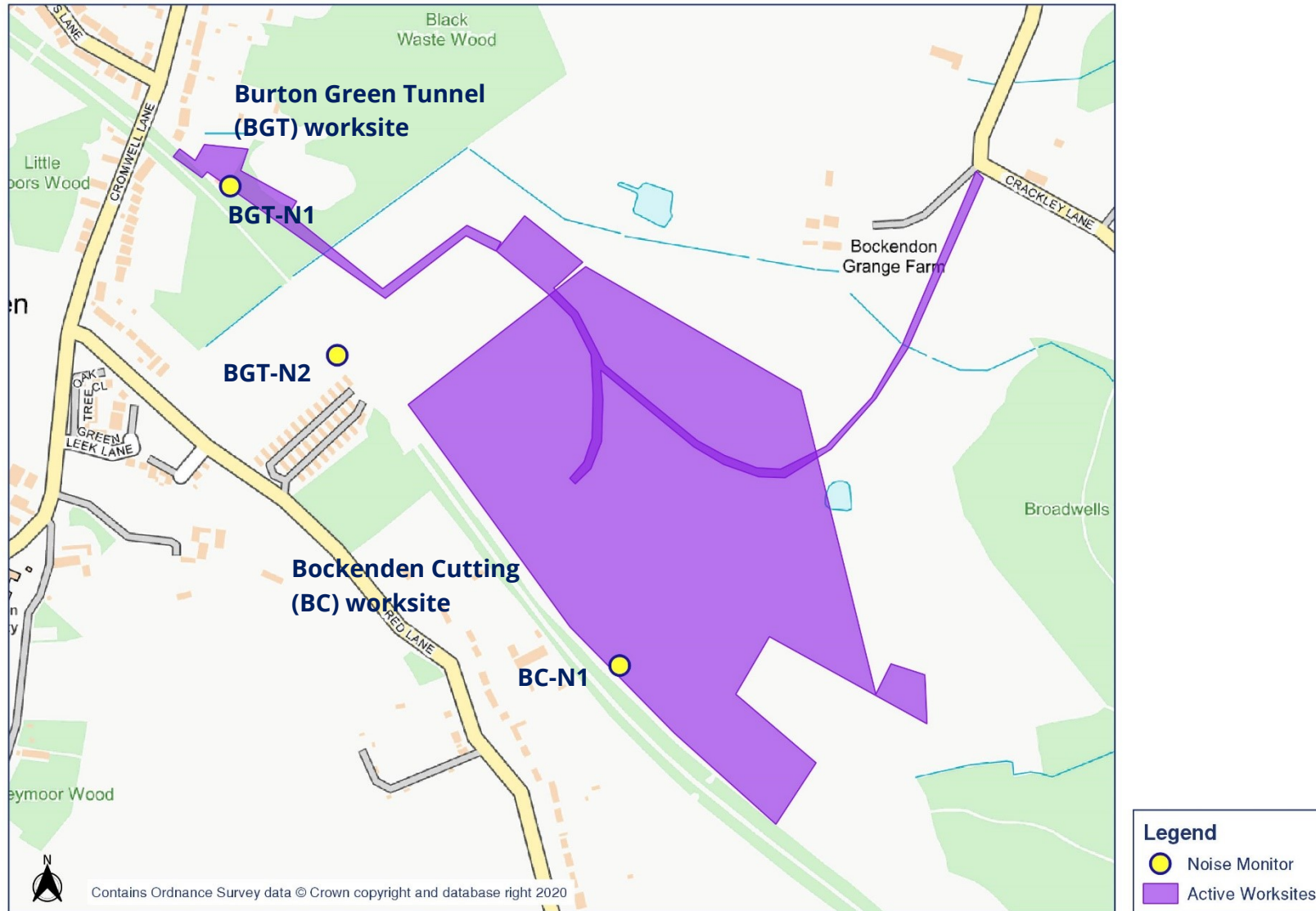


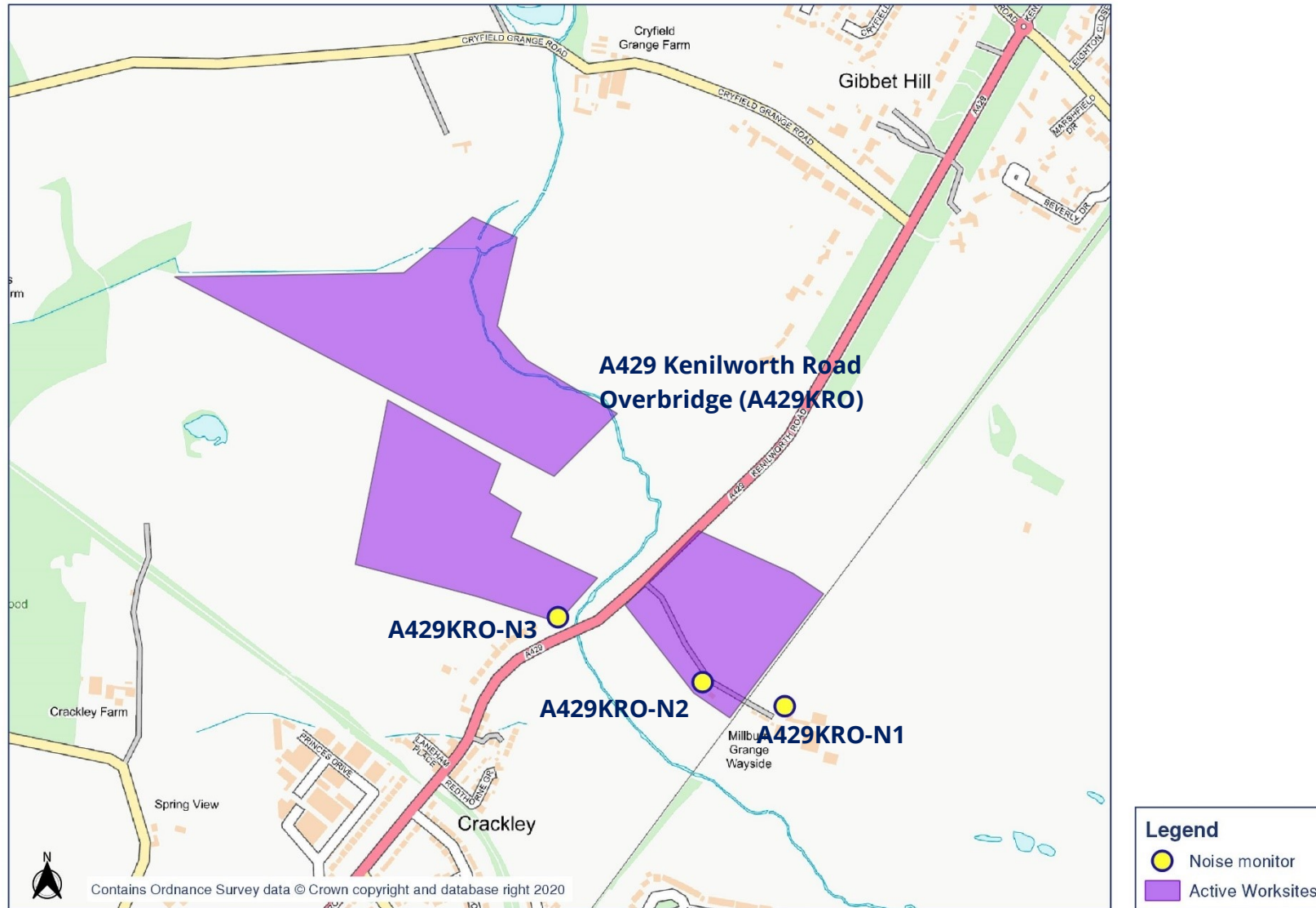




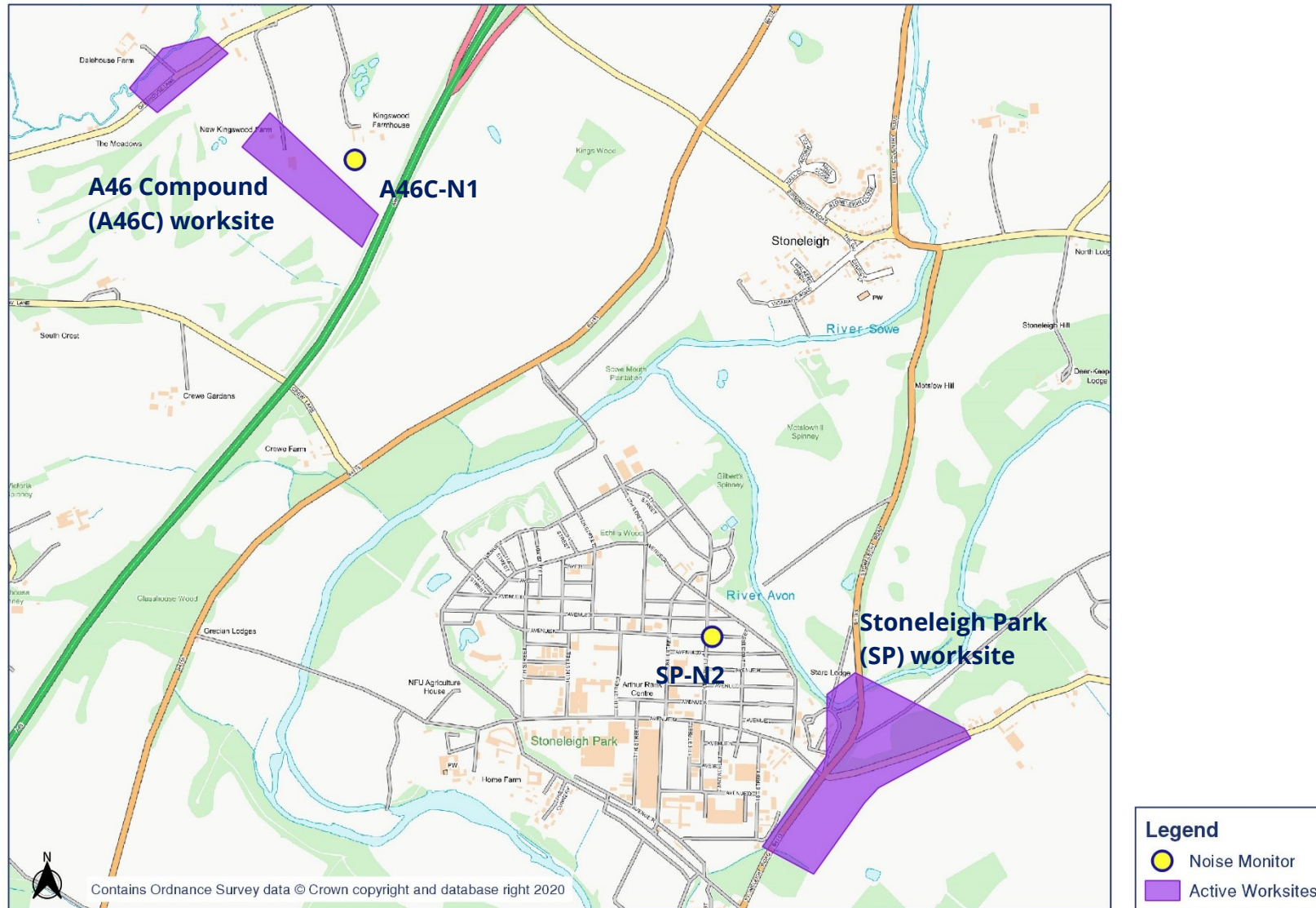


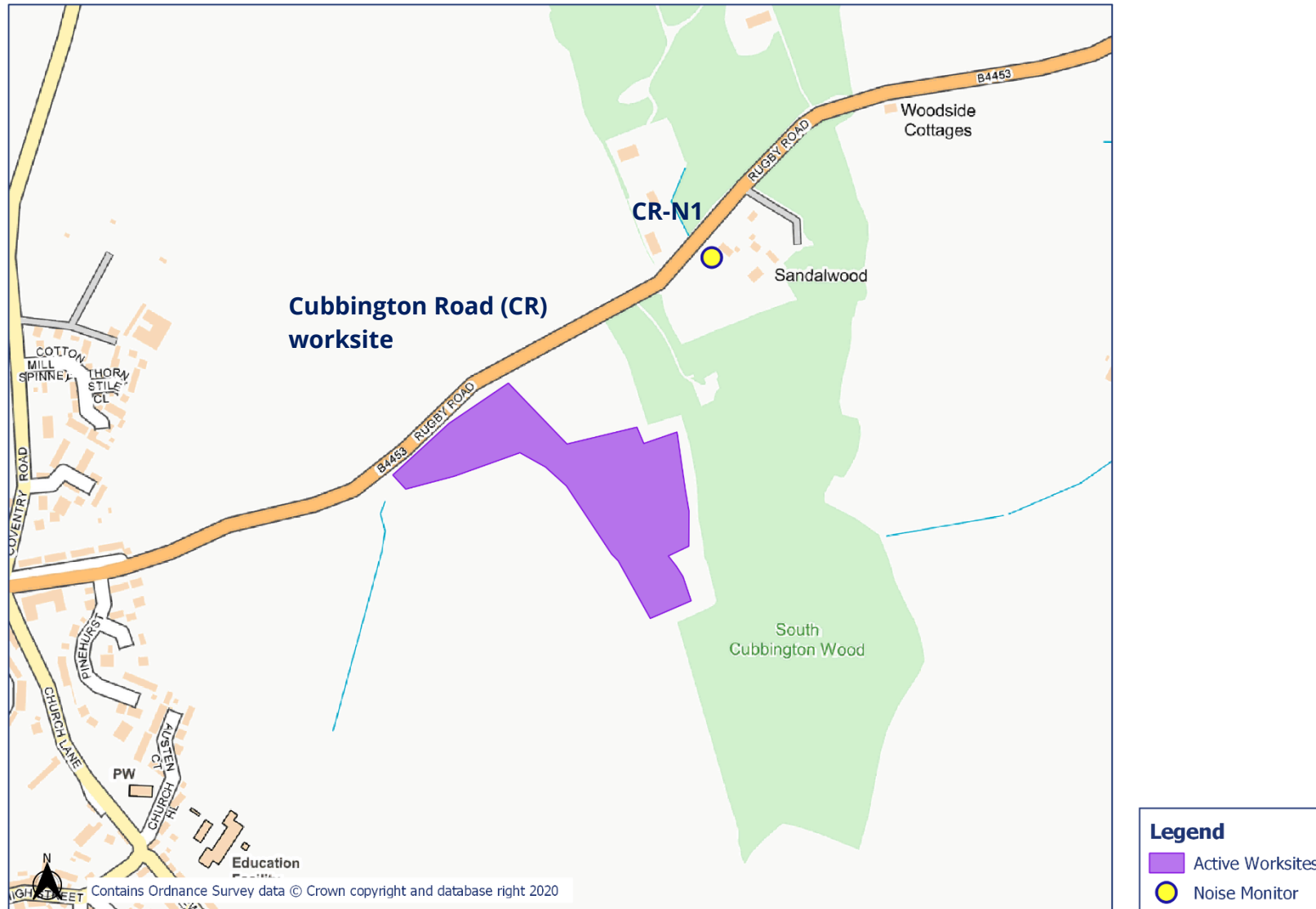
# Appendix B Monitoring Locations

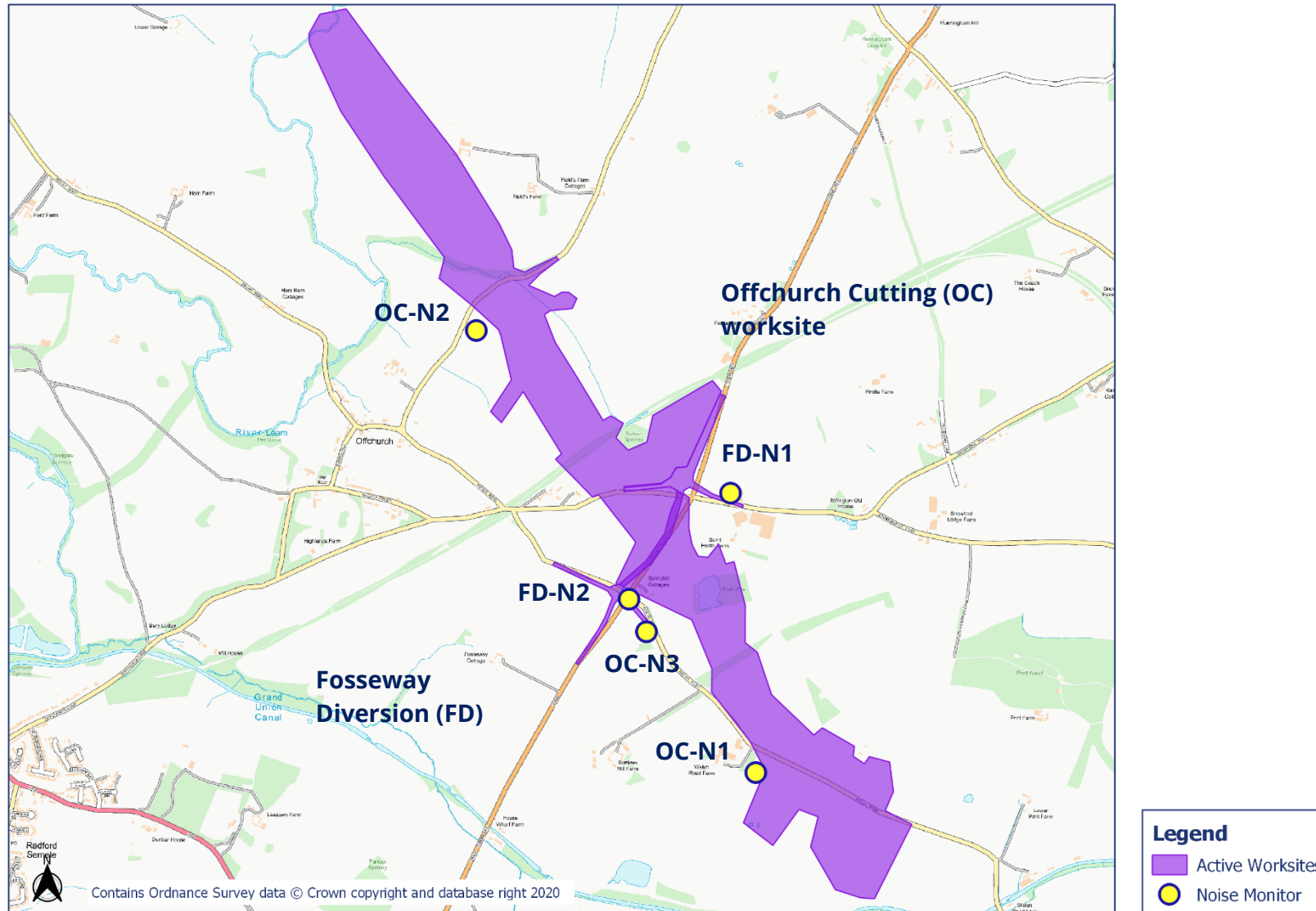










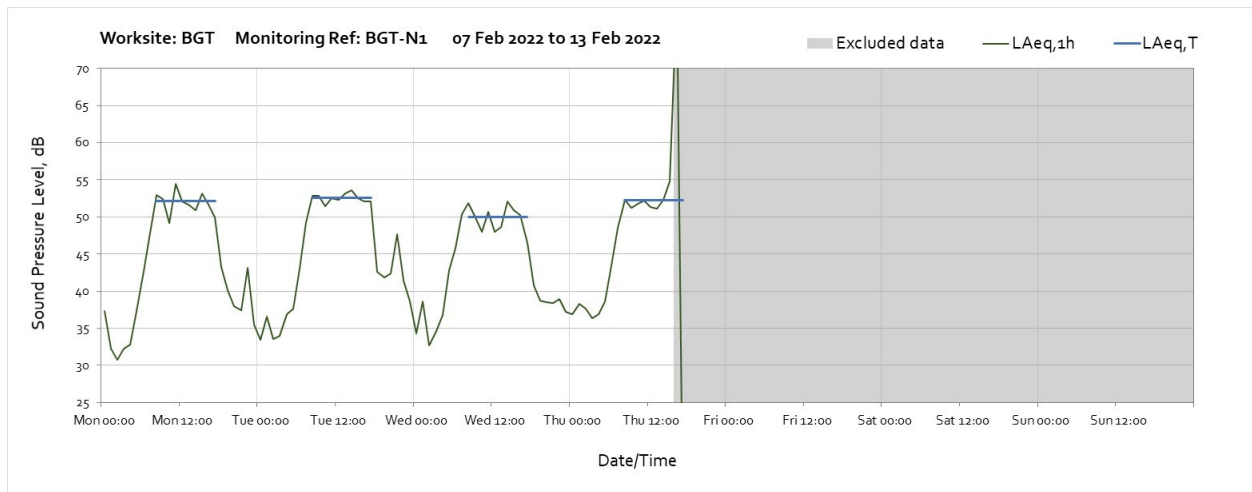
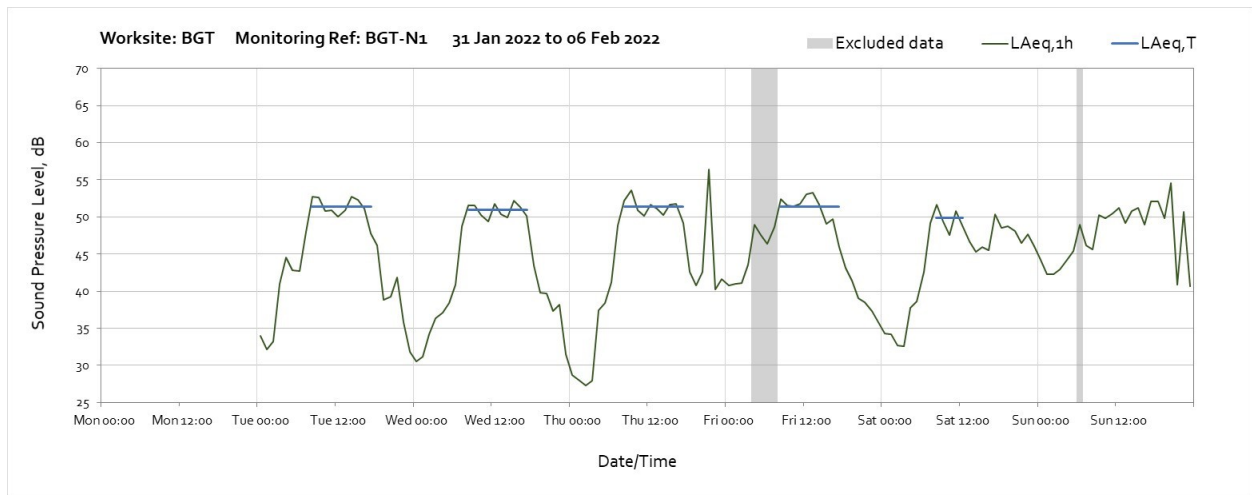


# Appendix C Data

## Noise

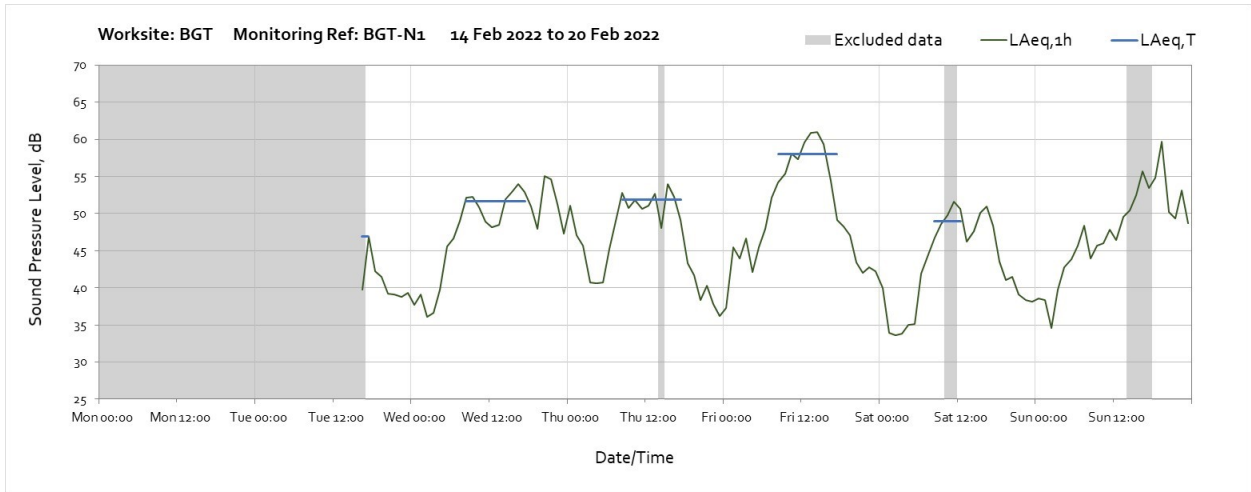
The following graphs show the hourly measured ambient noise level  $L_{Aeq,1h}$  and, where relevant, the averaged noise level  $L_{Aeq,T}$  values, where the time period T is as specified in Table 1 of HS2 Information Paper E23. Periods with adversely weather affected noise levels are greyed out and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

### Worksite: BGT - Monitoring Ref: BGT-N1

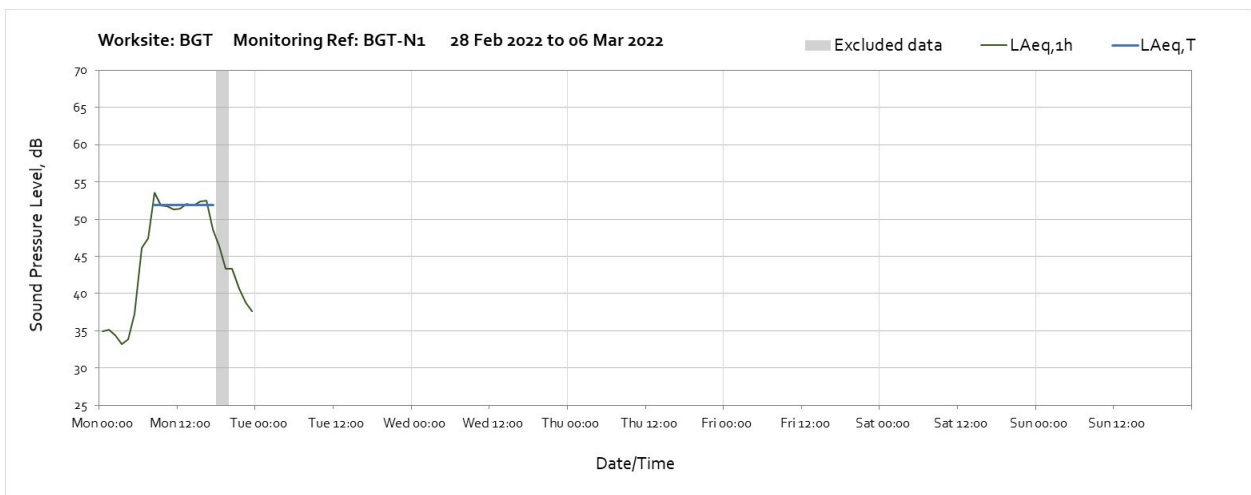
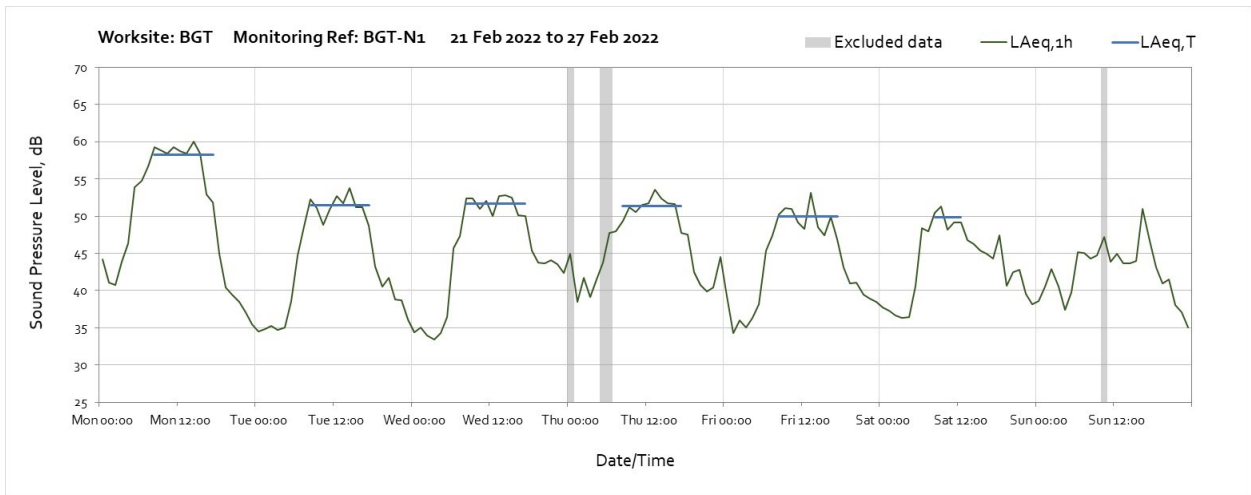


Note: Missing / excluded data between 16:00 on Thursday 10<sup>th</sup> February and 17:00 Tuesday 15<sup>th</sup> February was due to a monitor fault. On-site maintenance to resolve the issue took place during this time.

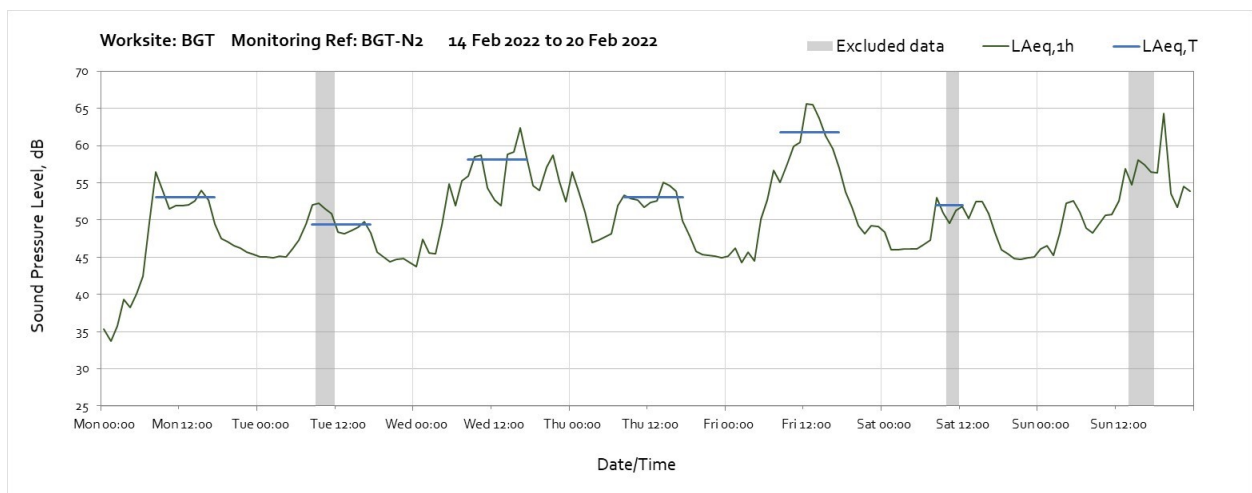
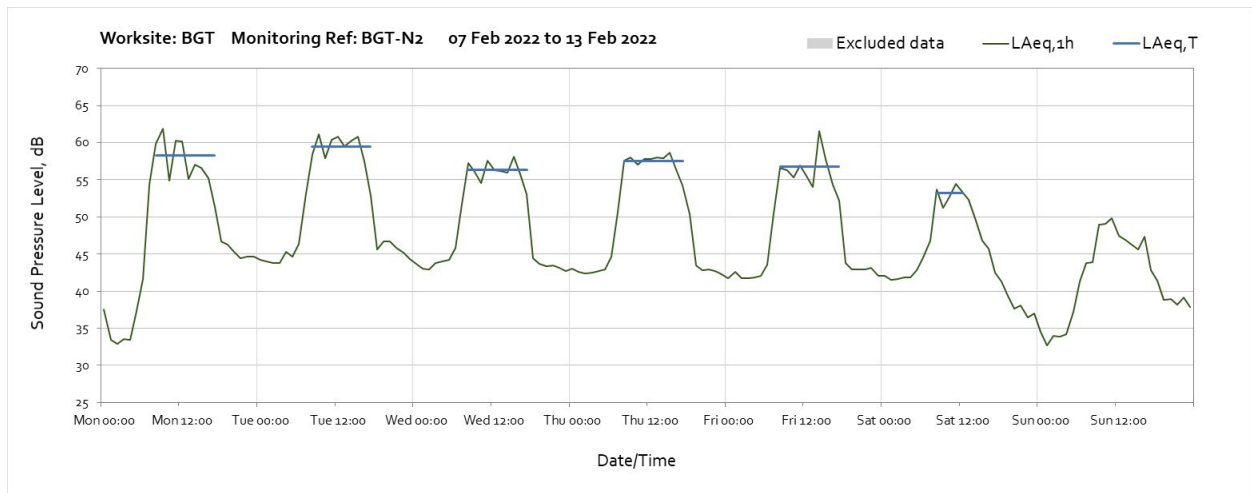
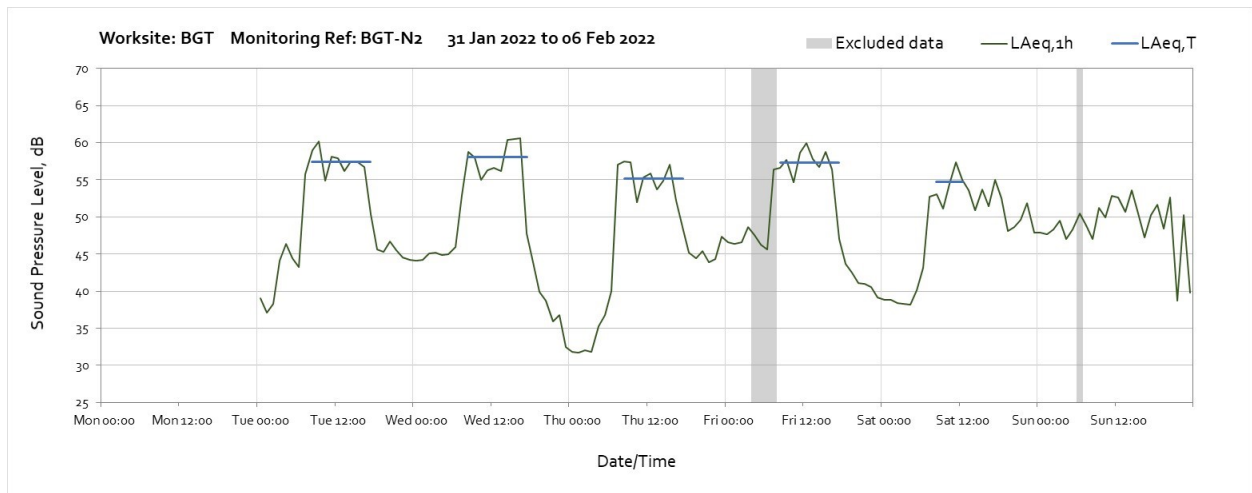




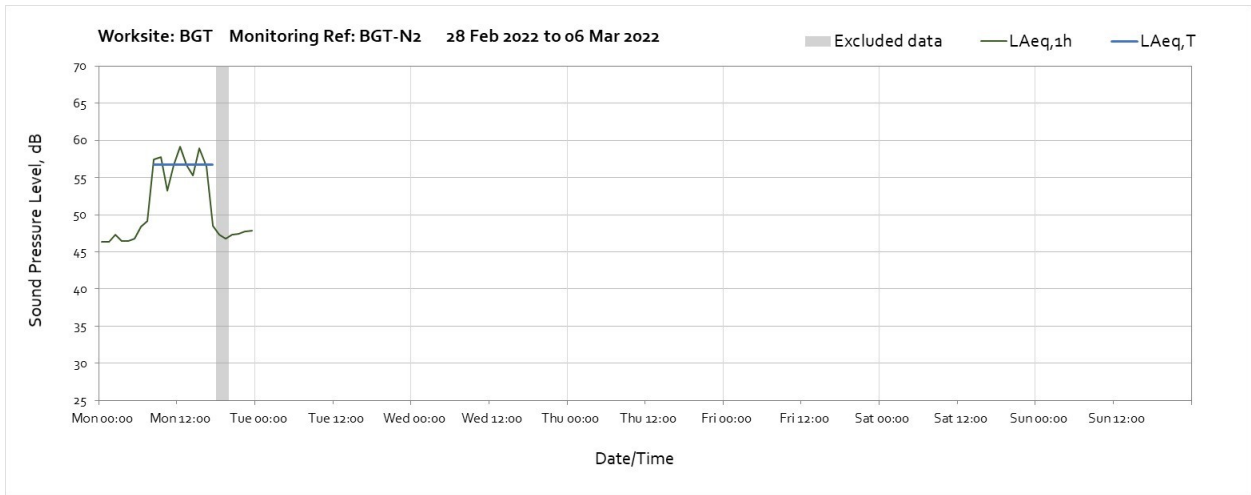
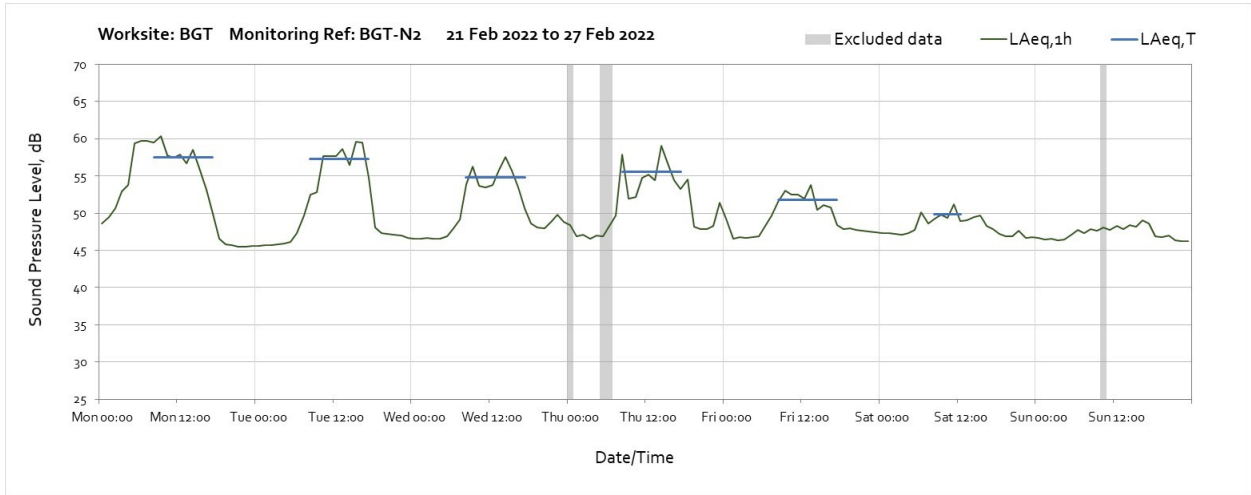
Note: Missing / excluded data between 16:00 on Thursday 10<sup>th</sup> February and 17:00 Tuesday 15<sup>th</sup> February was due to a monitor fault. On-site maintenance to resolve the issue took place during this time.



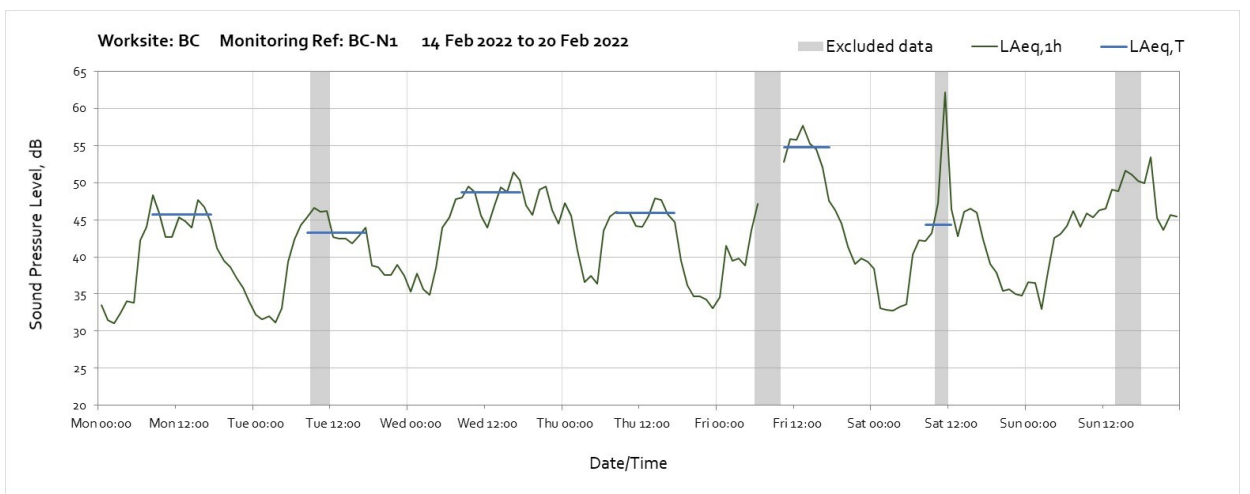
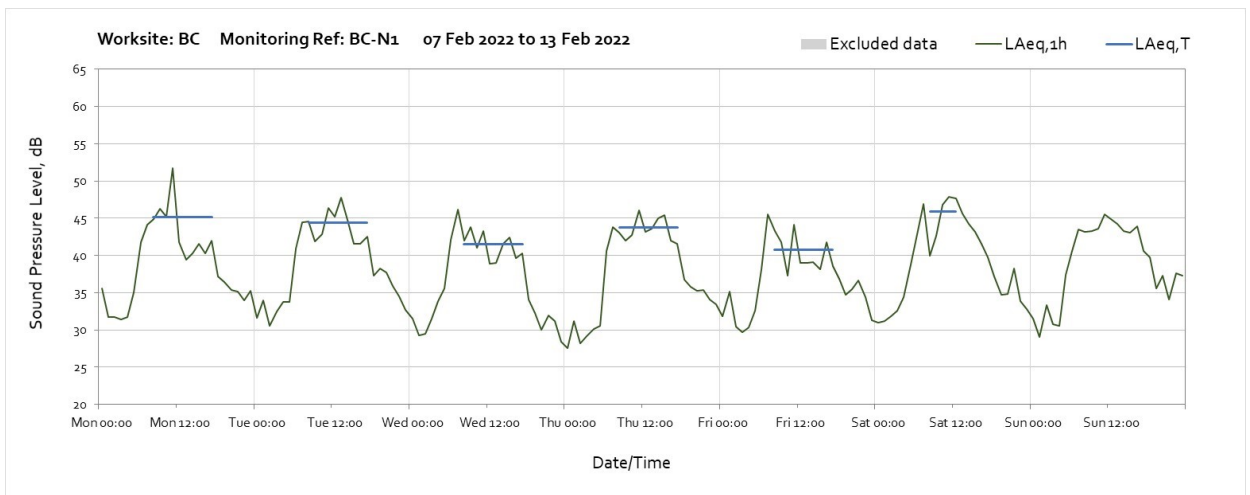
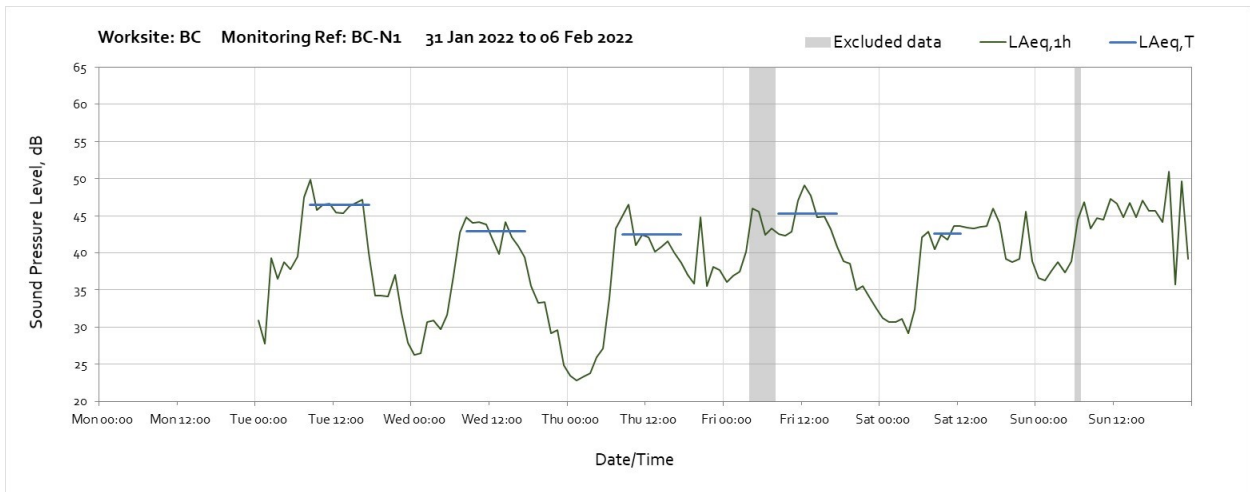
## Worksite: BGT - Monitoring Ref: BGT-N2



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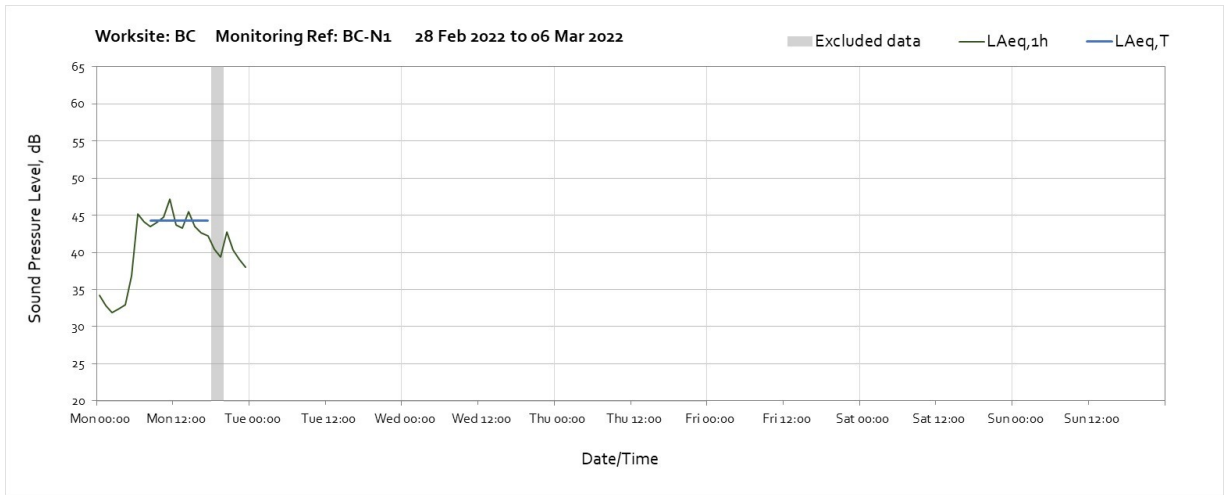
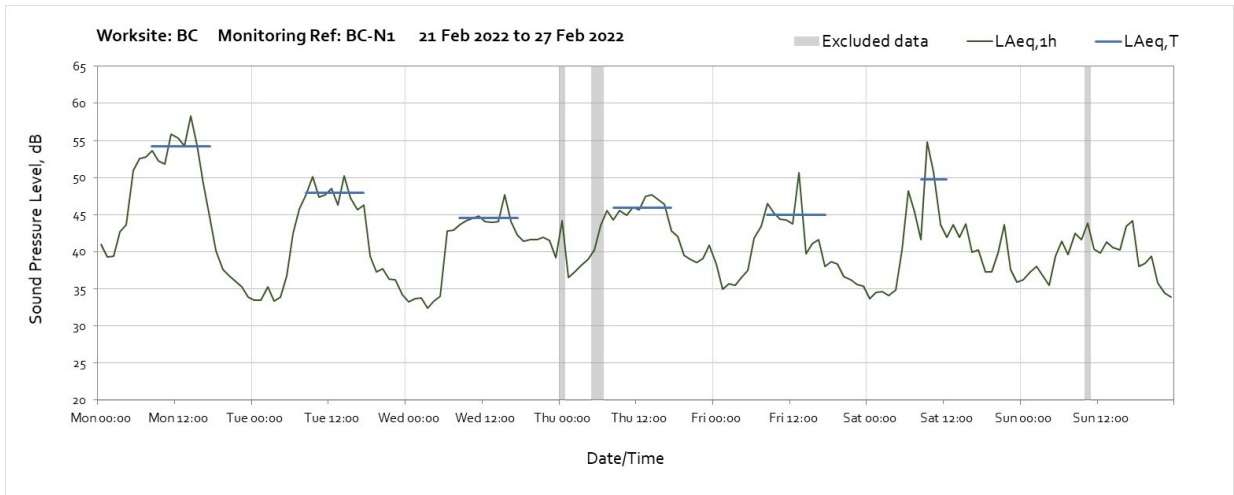


## Worksite: BC – Monitoring Ref: BC-N1

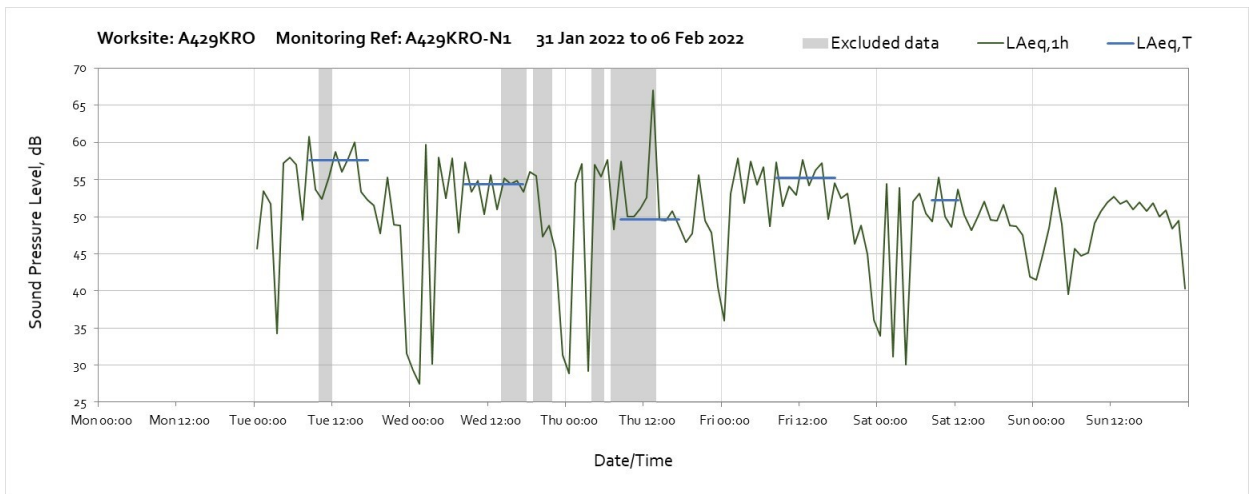


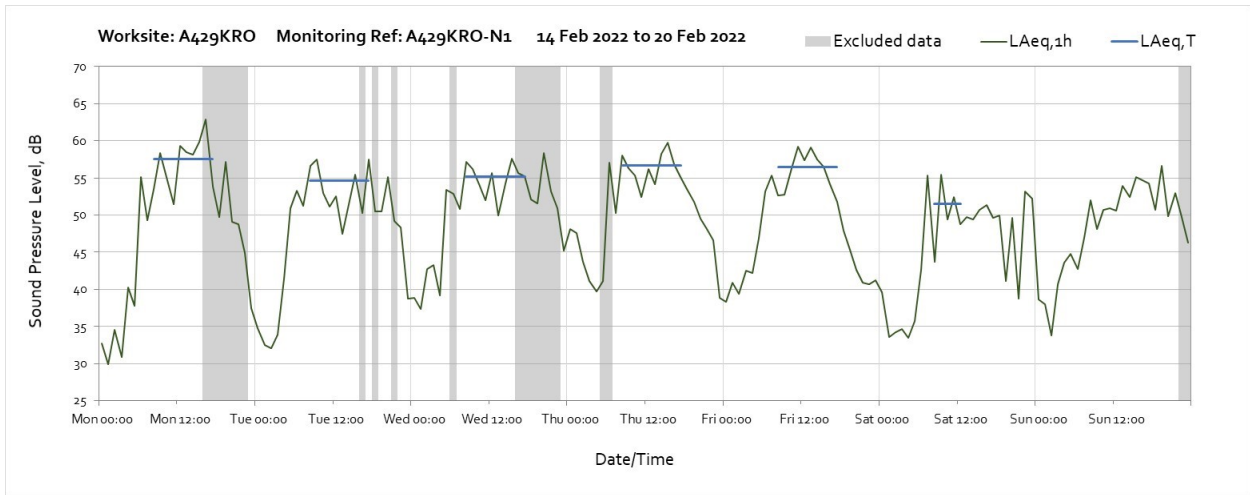
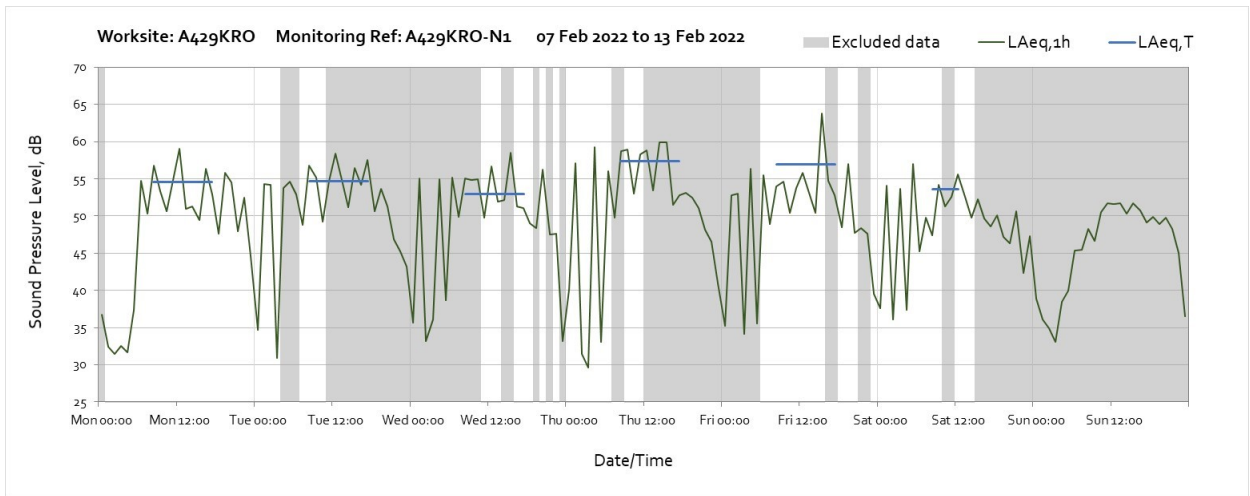
Note: Missing data between 07:00 and 10:00 on Friday 18<sup>th</sup> February was due to a monitor fault that was later resolved.

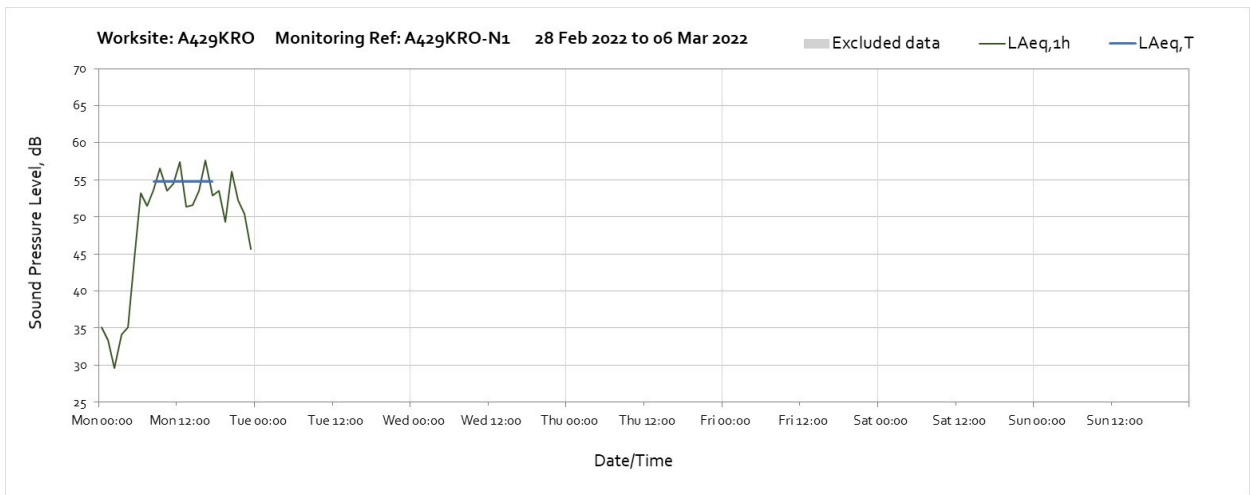
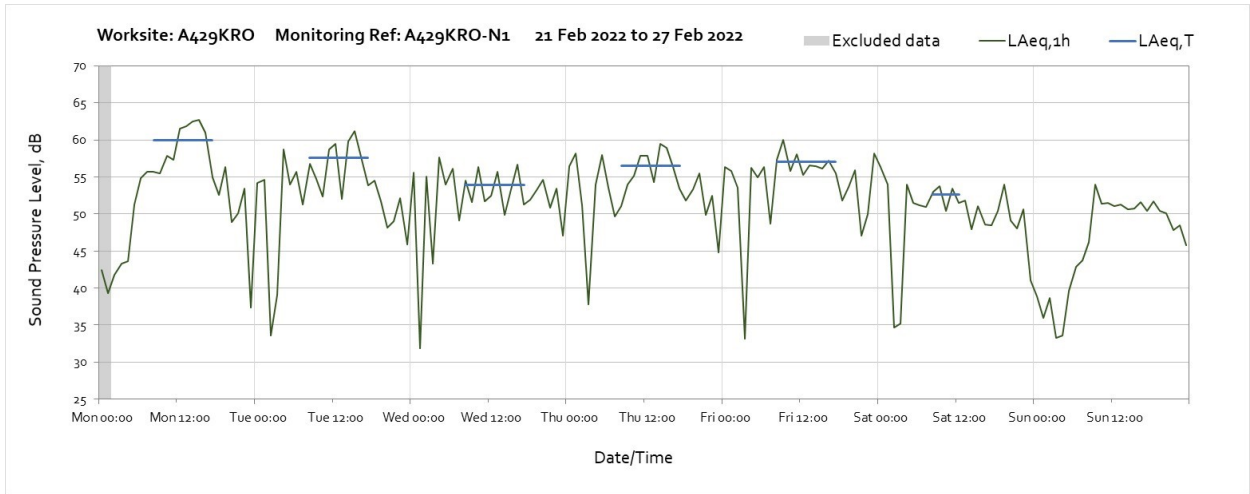
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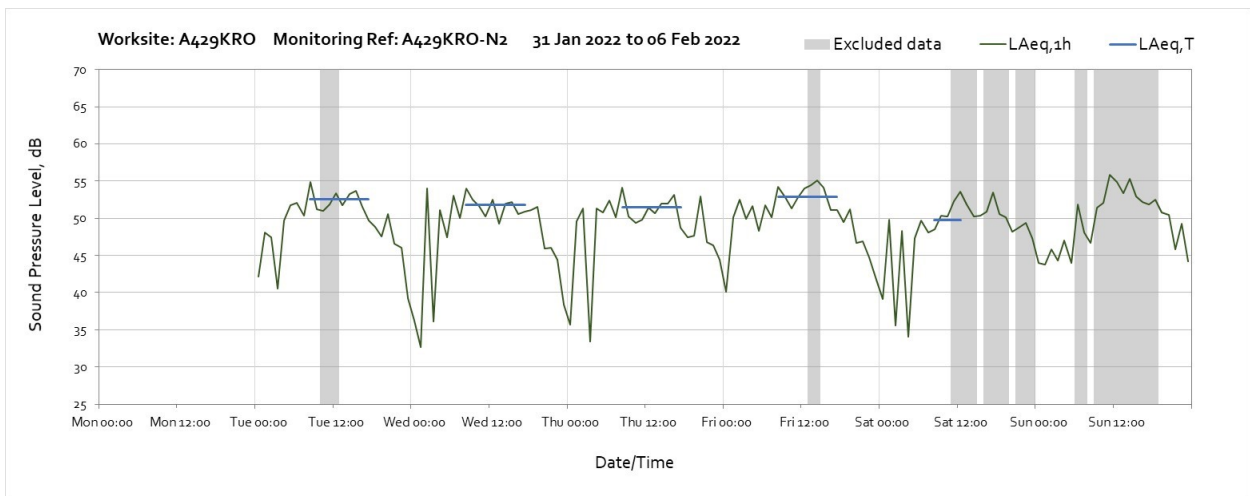
**Worksite: A429KRO - Monitoring Ref: A429KRO-N1**

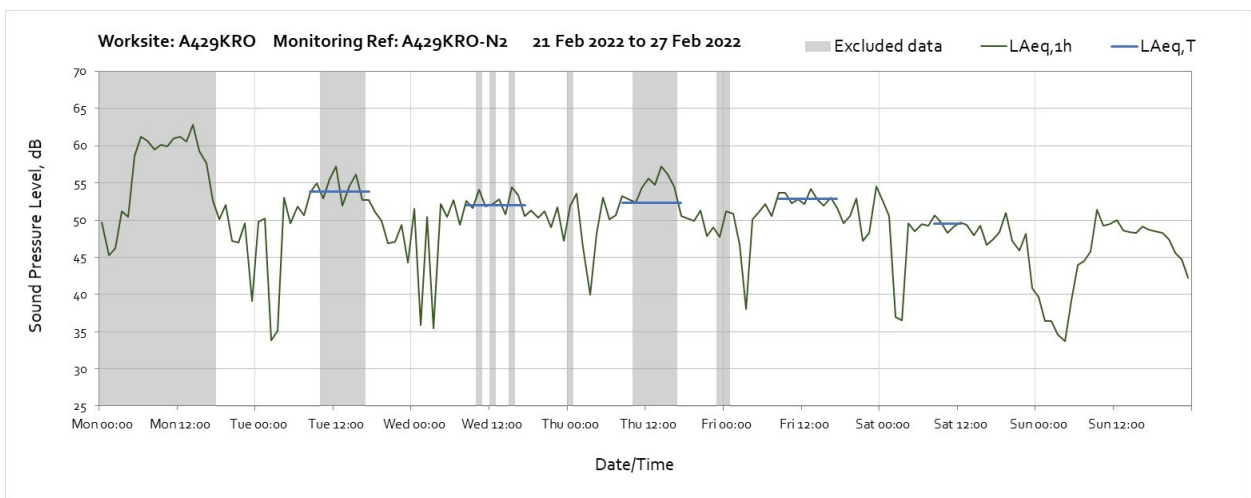
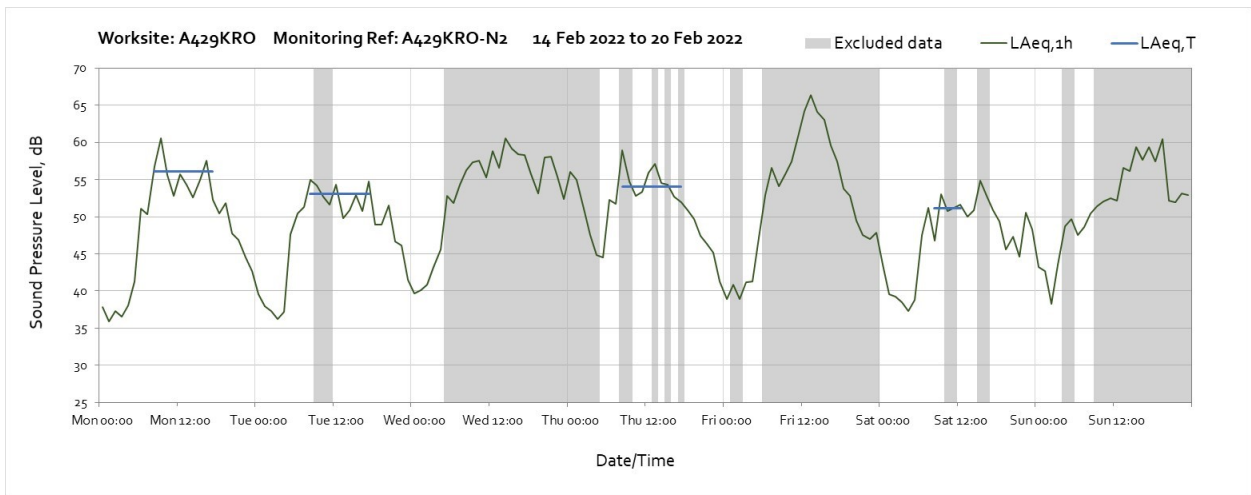
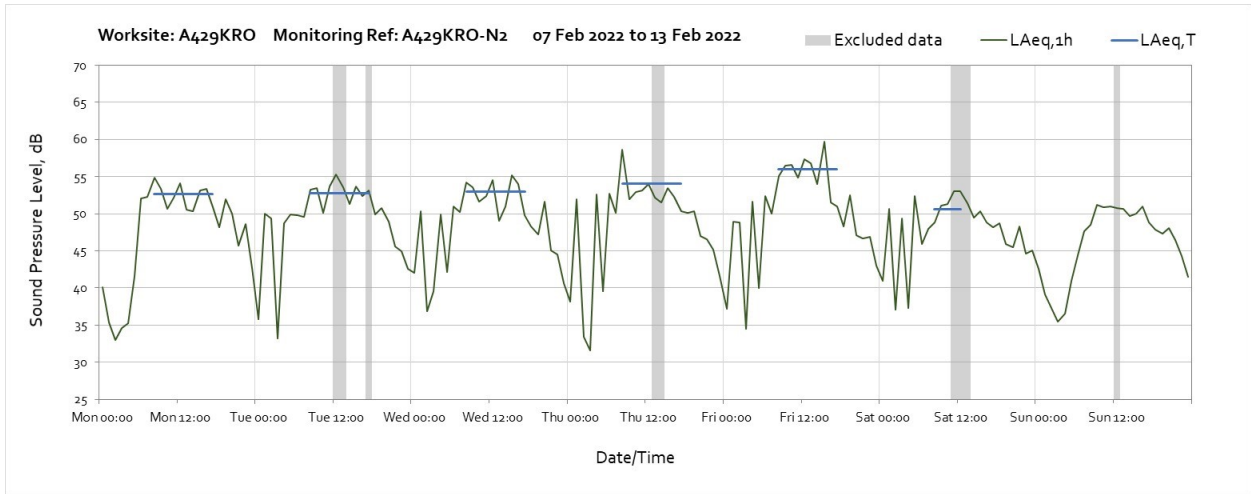




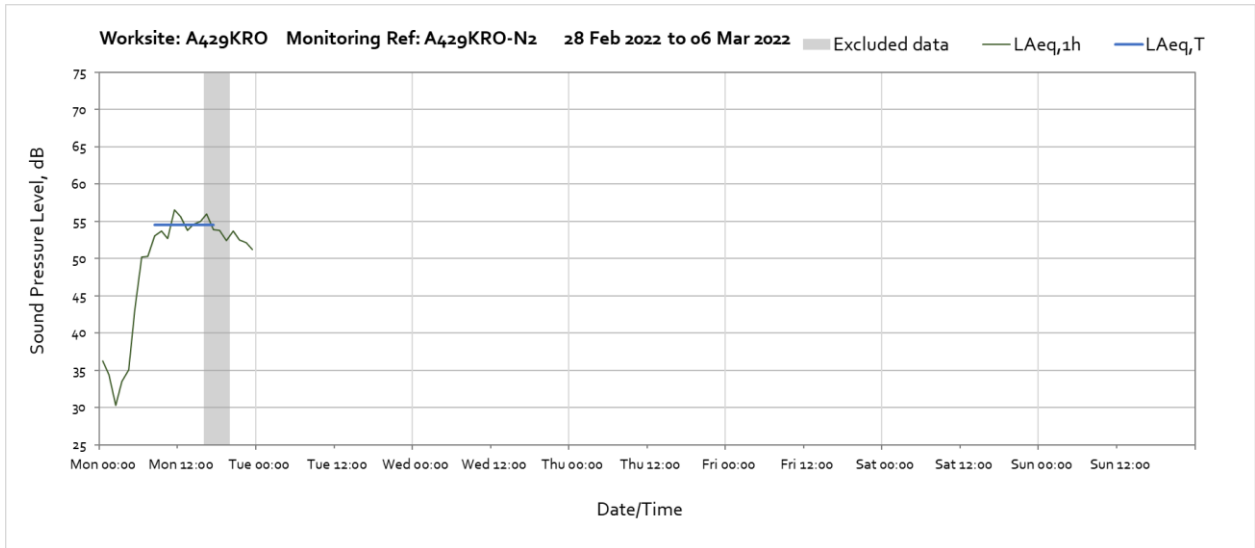


**Worksite: A429KRO - Monitoring Ref: A429KRO-N2**

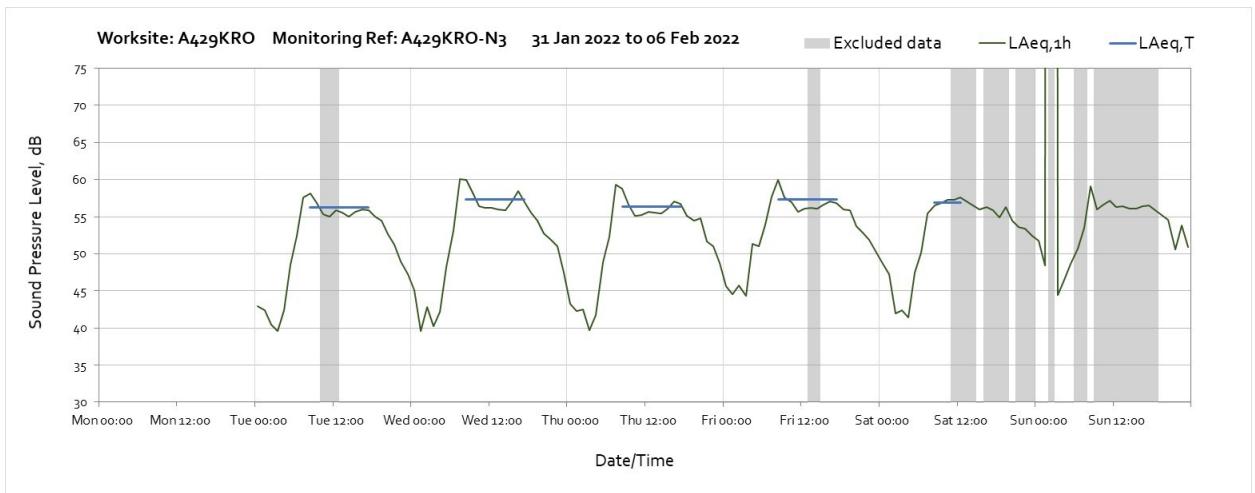




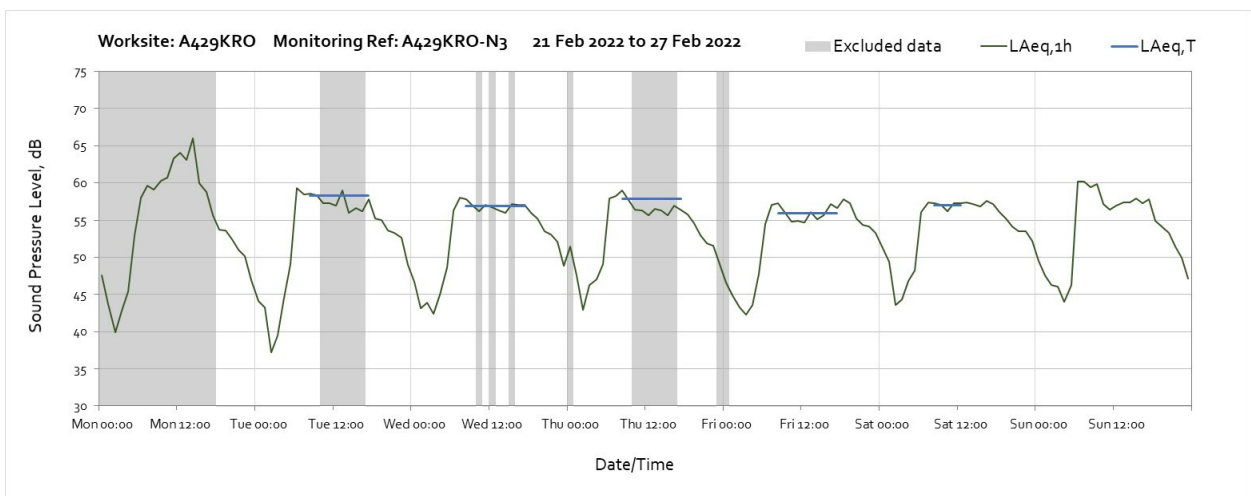
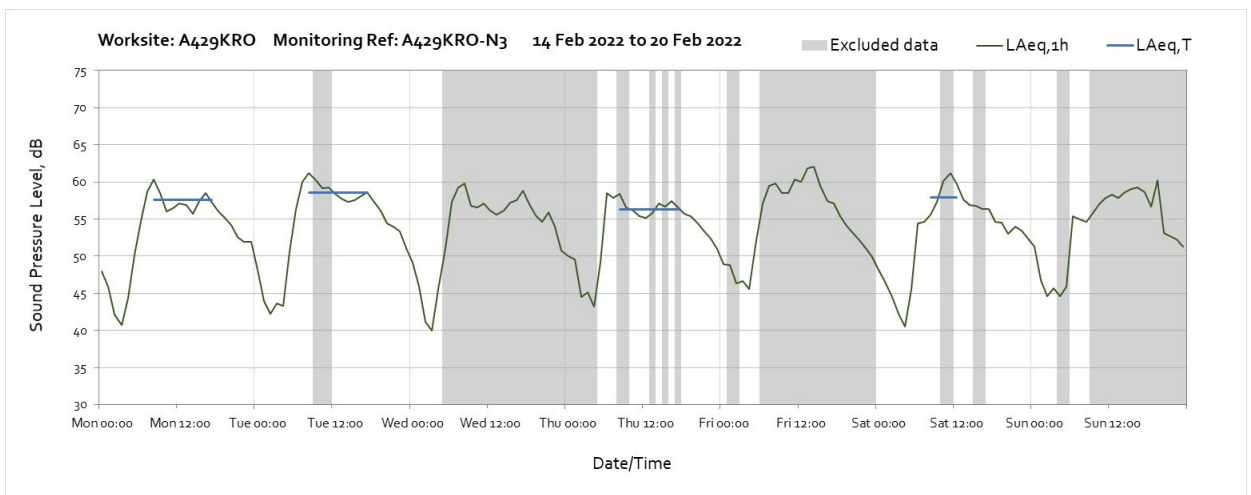
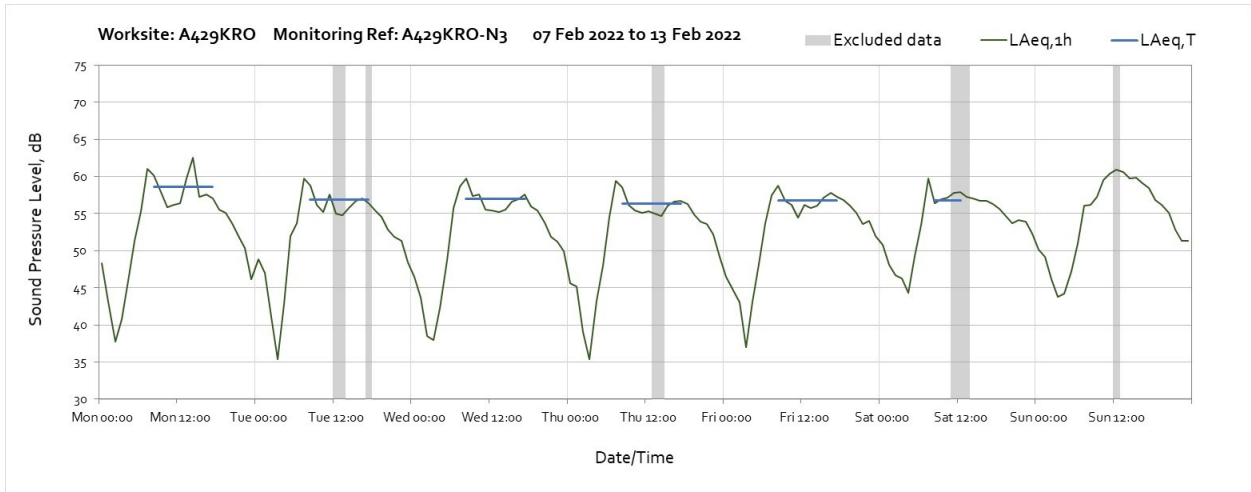


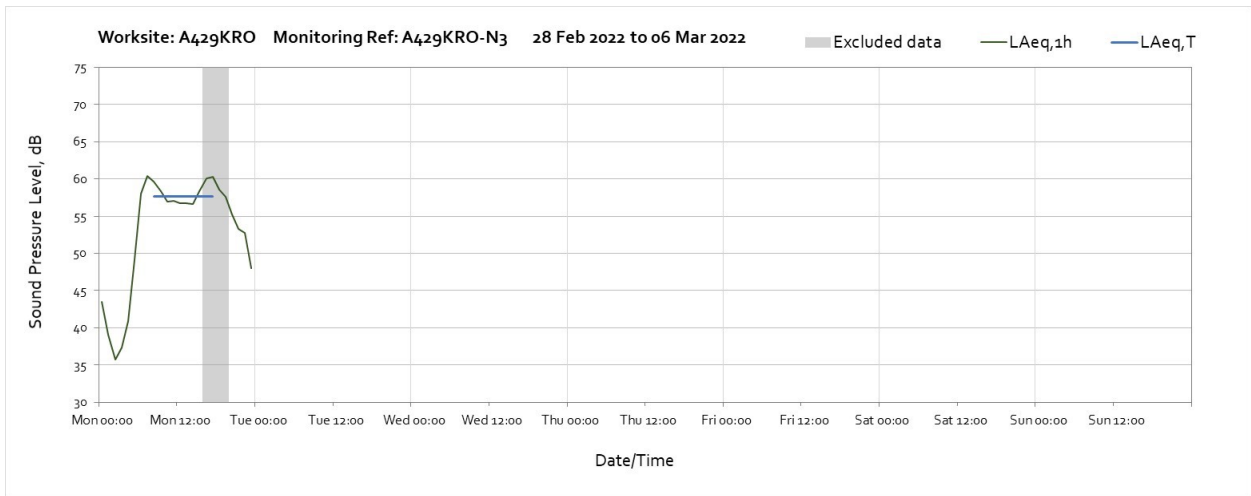


### Worksite: A429KRO – Monitoring Ref: A429KRO-N3

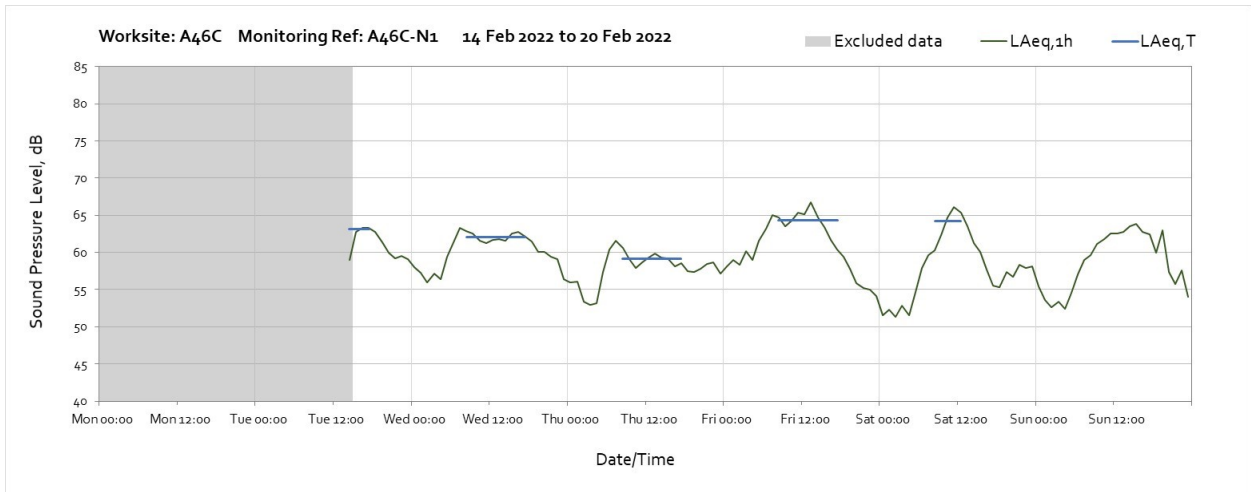


Note: Excluded high noise levels between 02:00 and 03:00 on Sunday 6<sup>th</sup> February were due to local interference with the monitoring equipment.

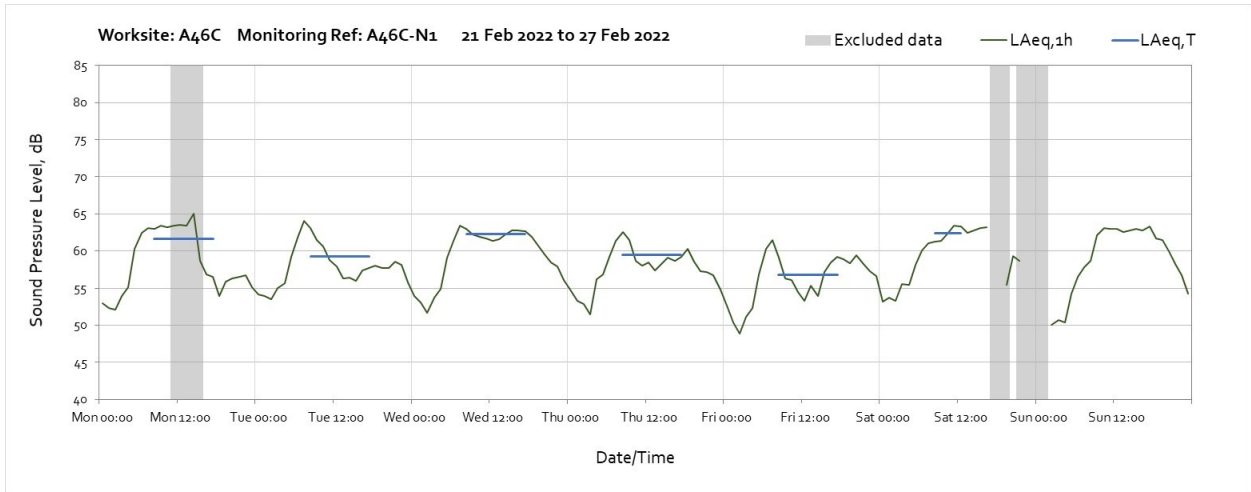




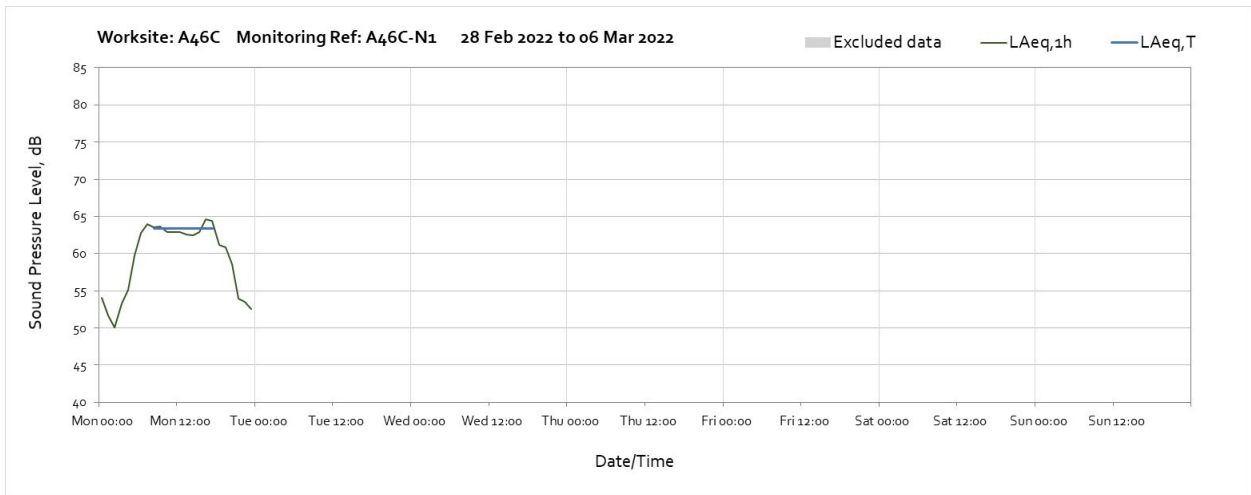
**Worksite: A46C - Monitoring Ref: A46C-N1**



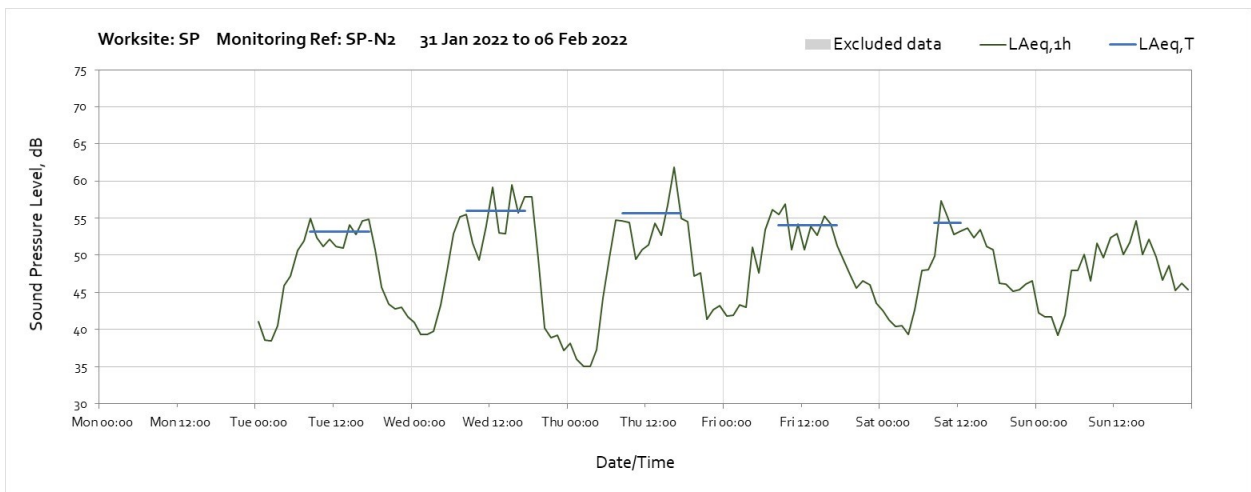
Note: Missing data from the beginning of the month to 15:00 on Tuesday 15<sup>th</sup> February was due to an on-going fault, access restrictions to the monitoring location until this time prevented earlier resolution to the issue.

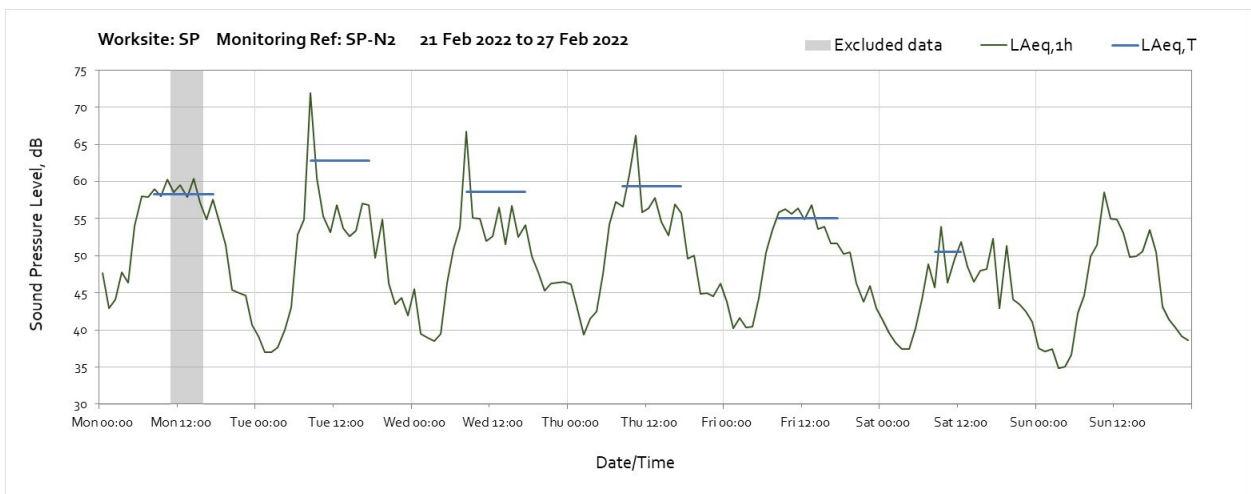
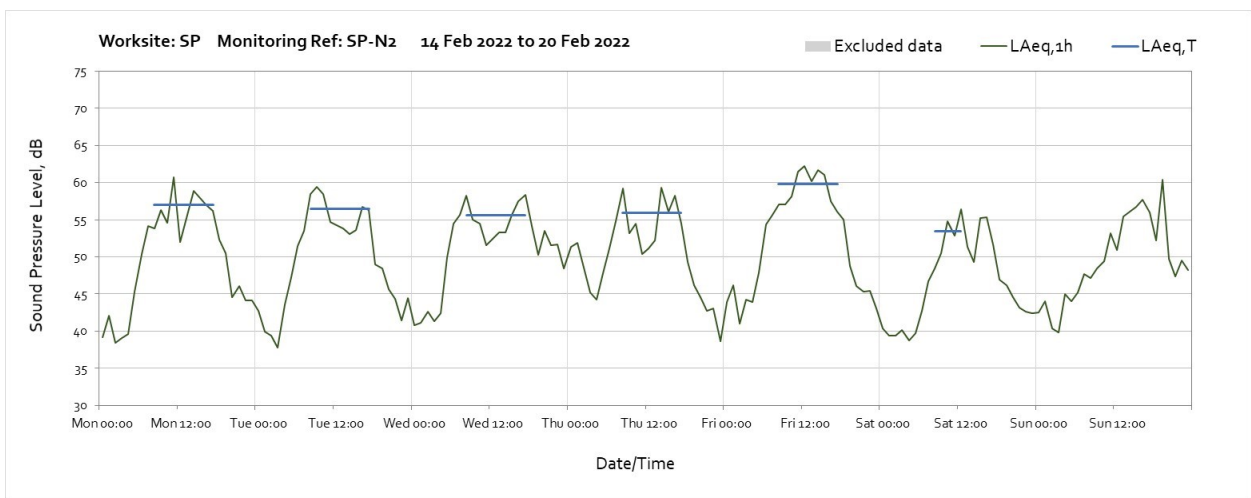
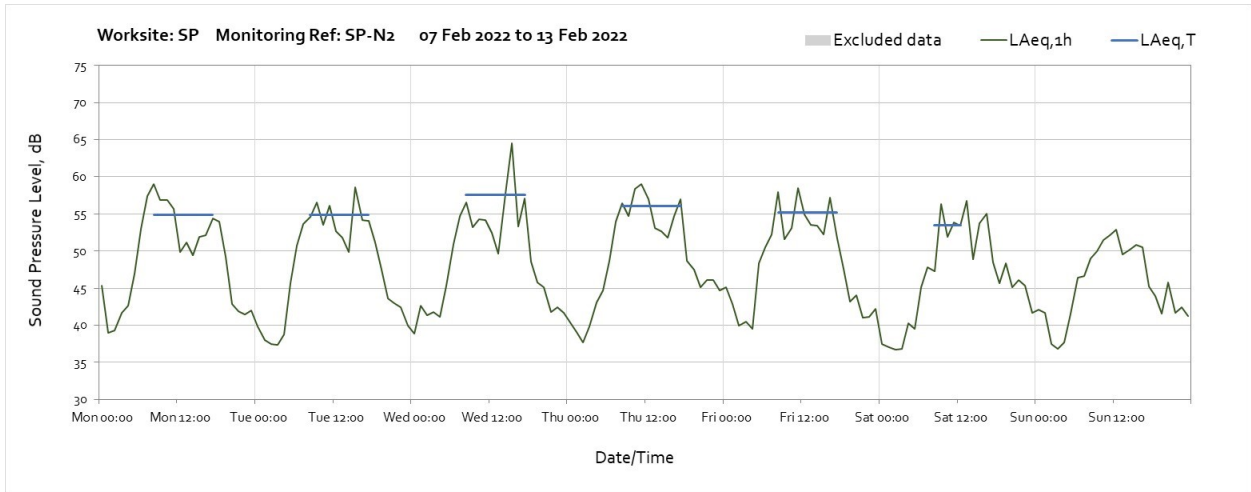


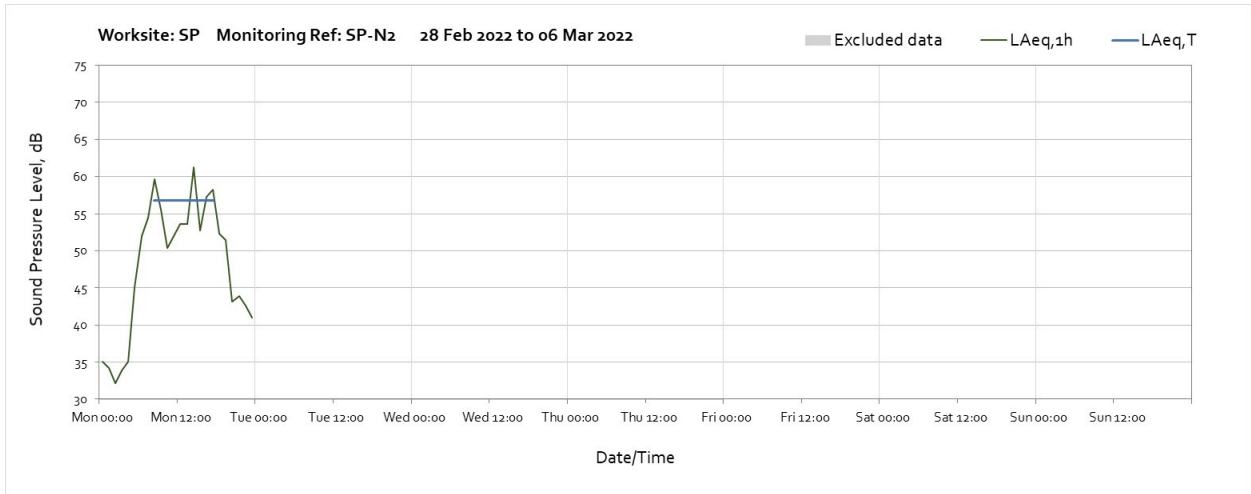
Note: Missing data during the evening / night of Saturday 26<sup>th</sup> February was due to a temporary monitoring fault that was later resolved.



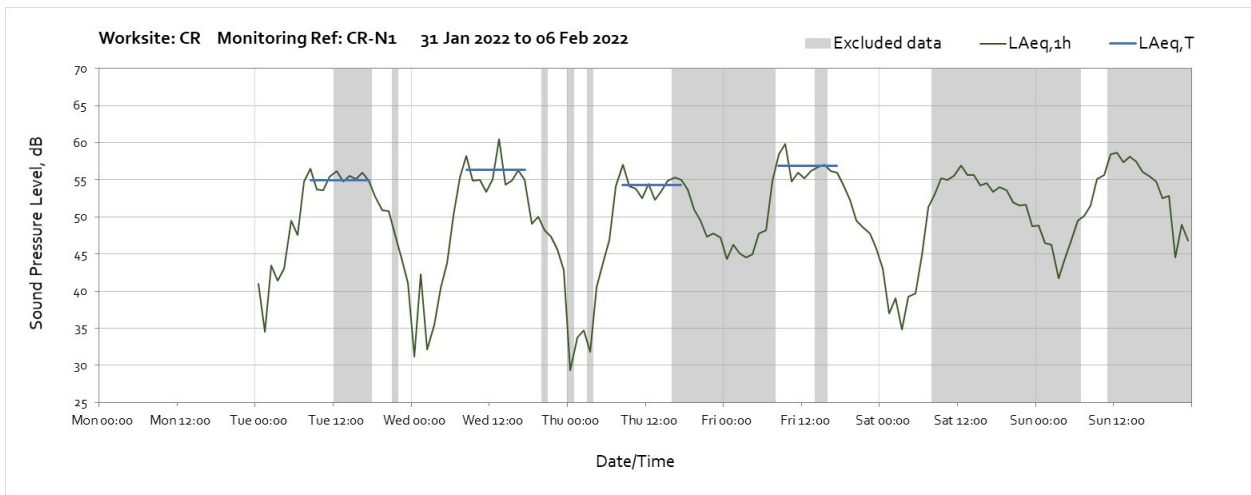
### Worksite: SP – Monitoring Ref: SP-N2

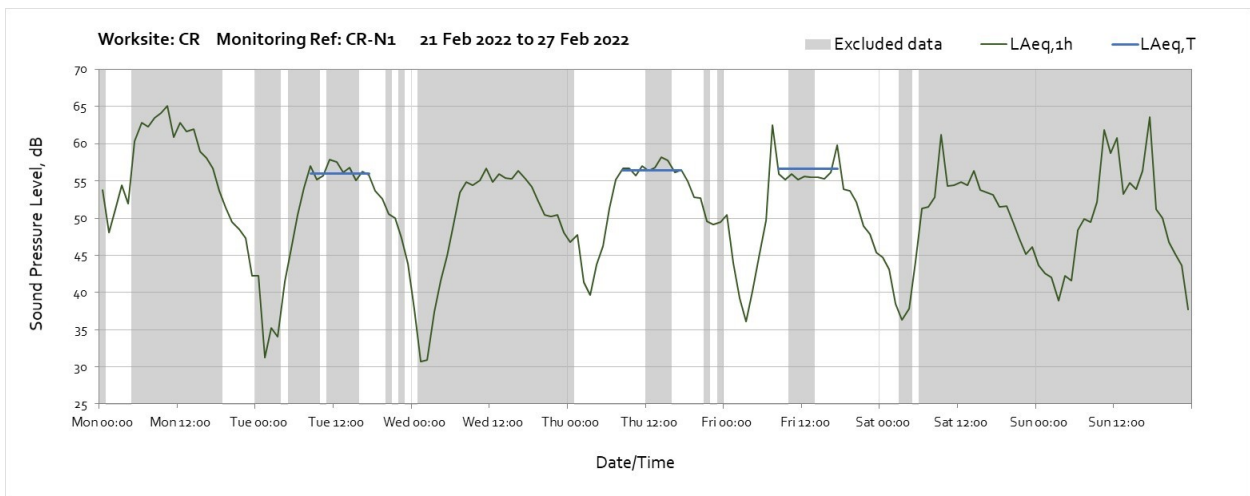
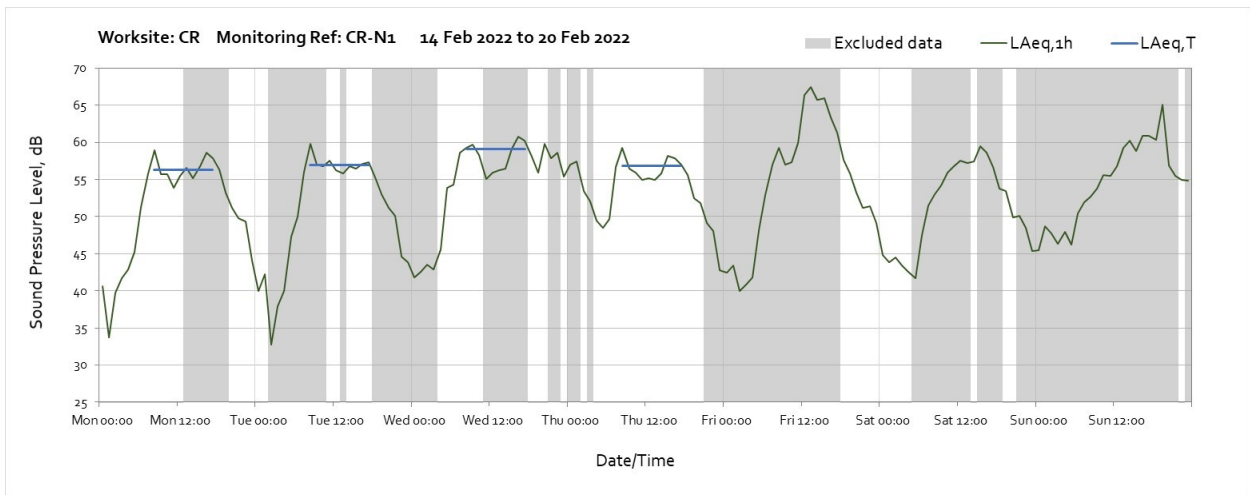
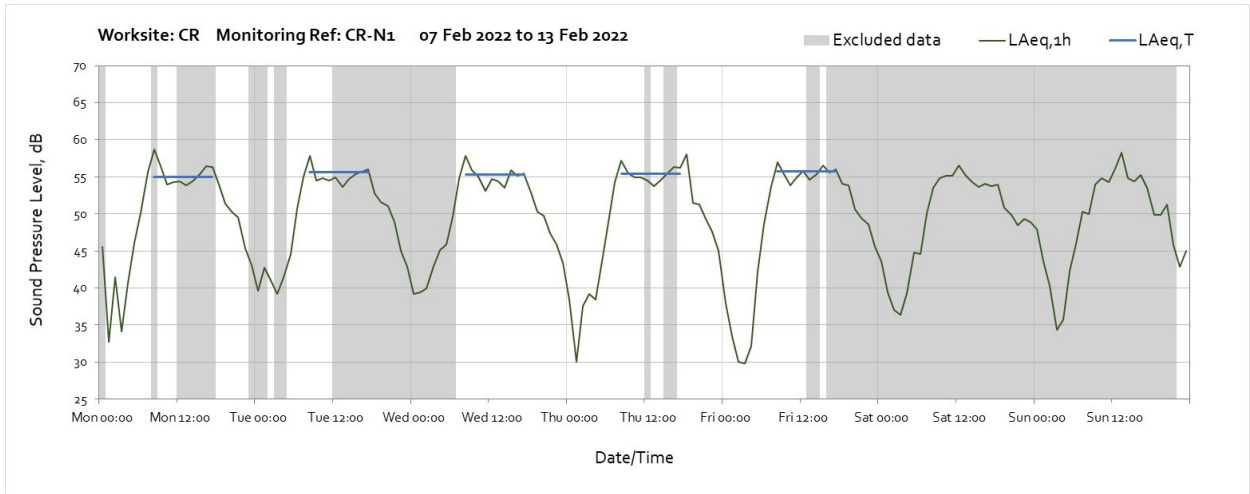






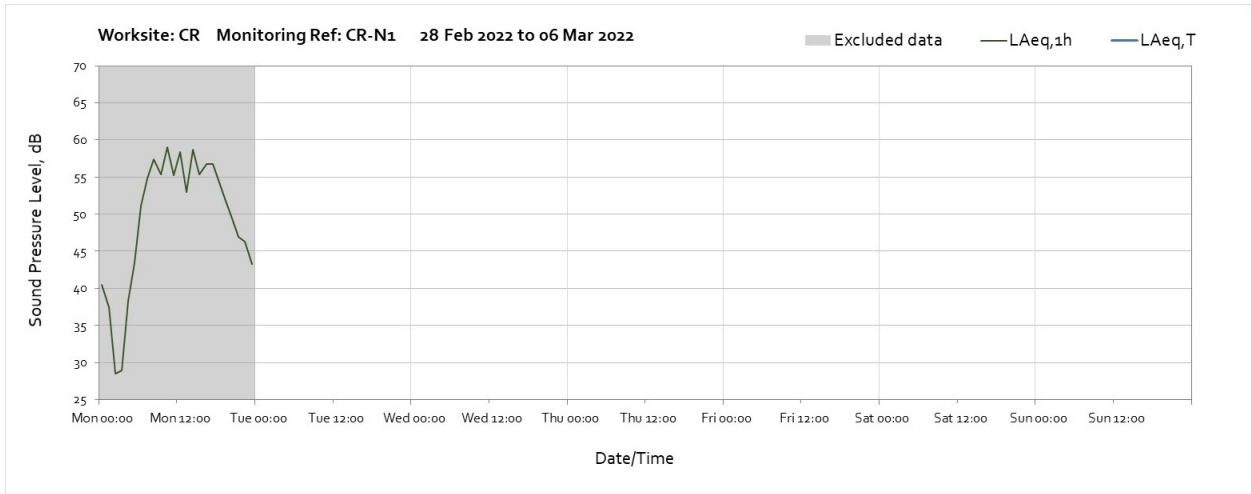
**Worksite: CR – Monitoring Ref: CR-N1**



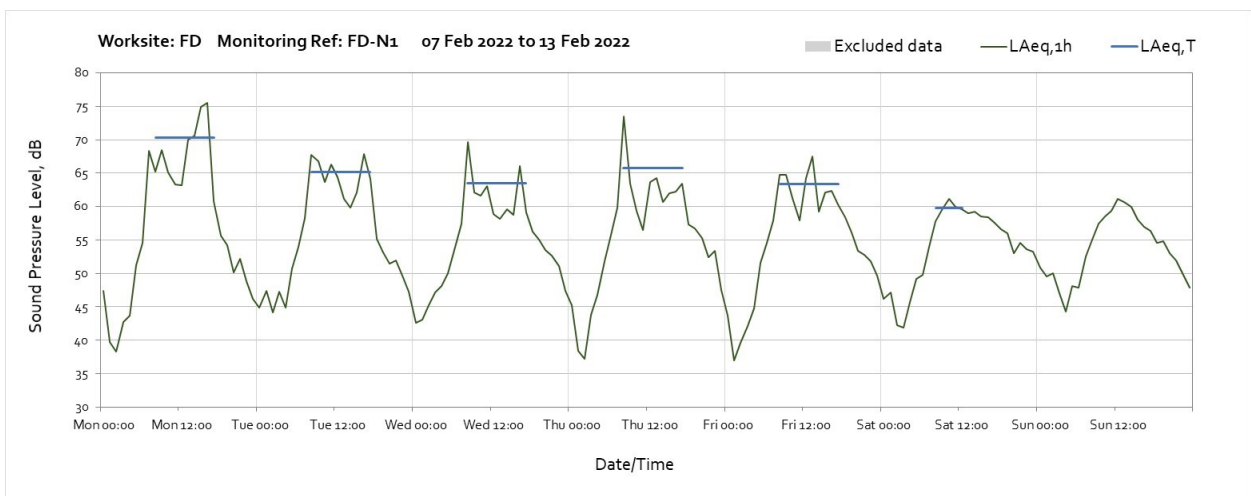
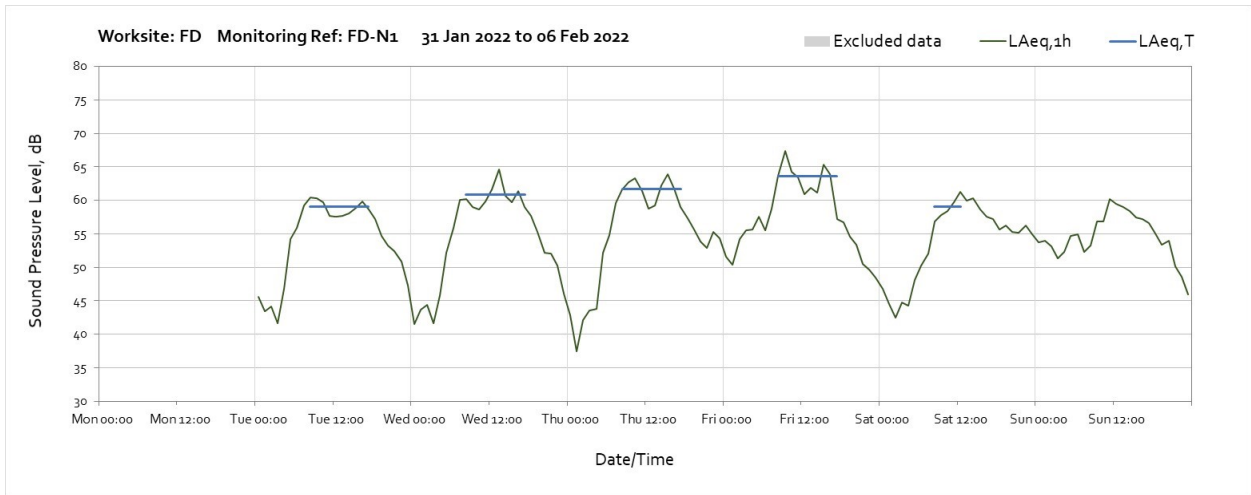


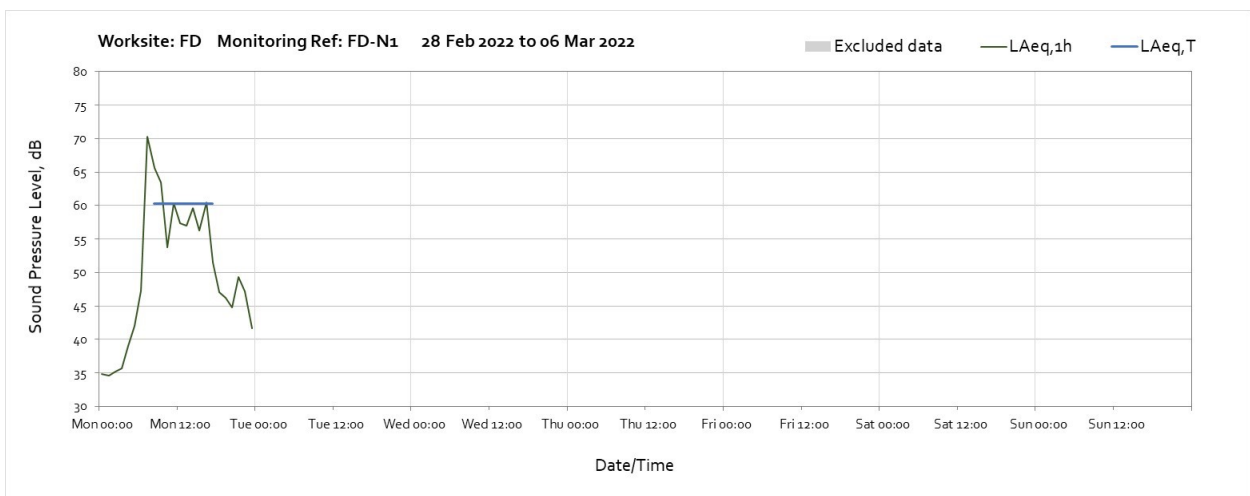
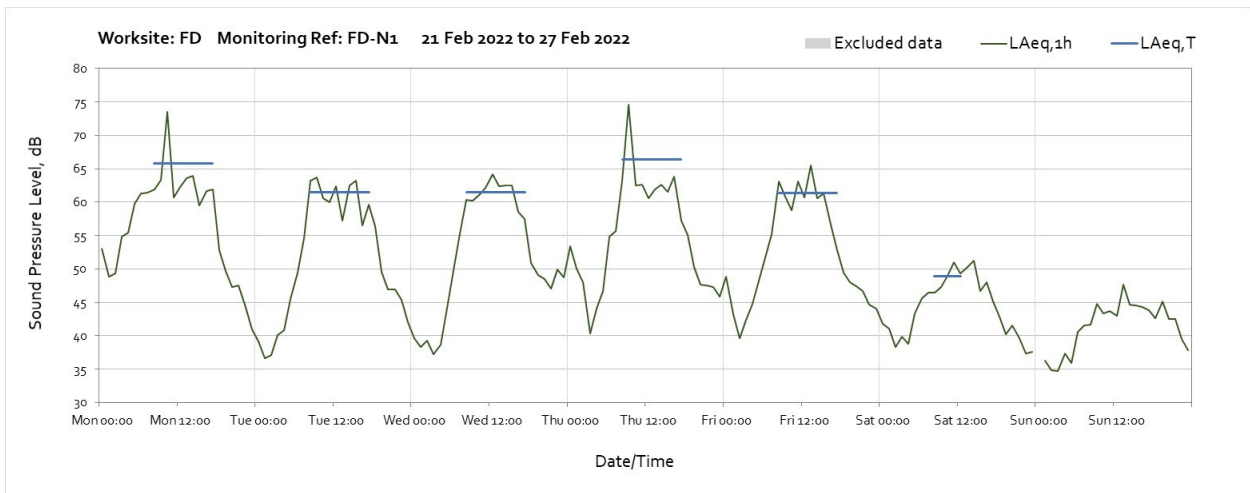
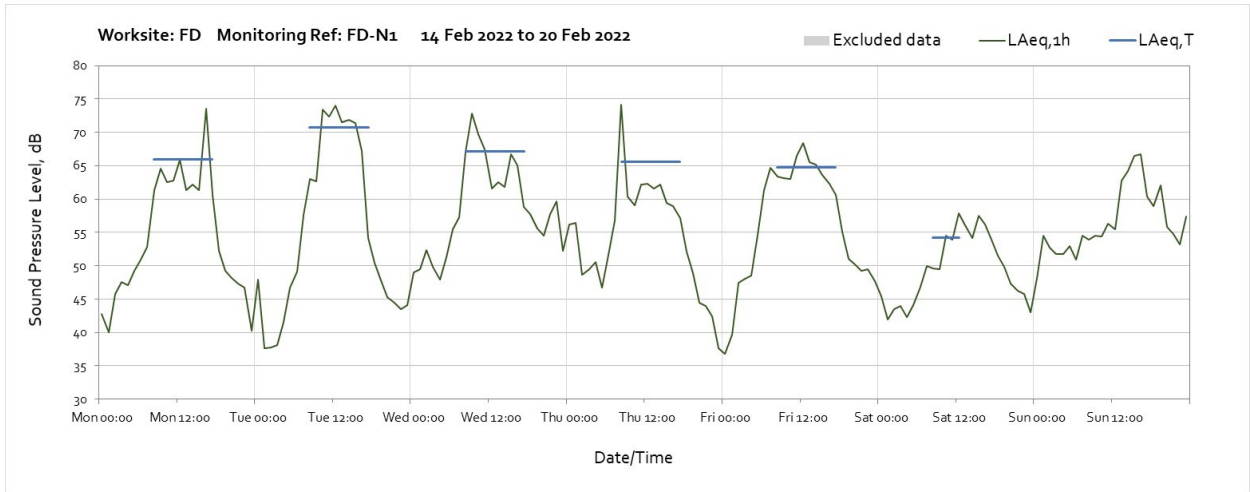
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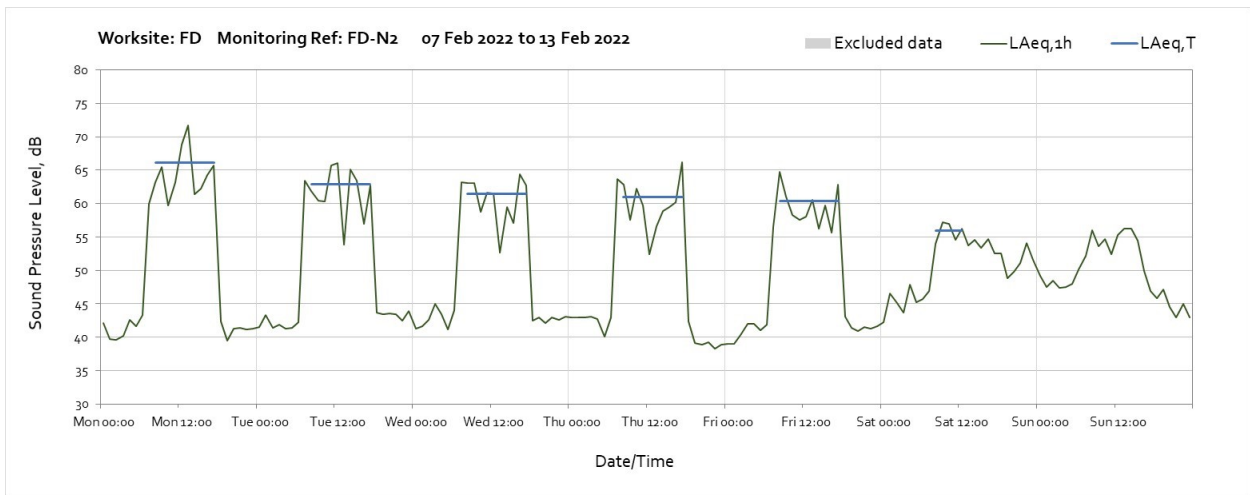
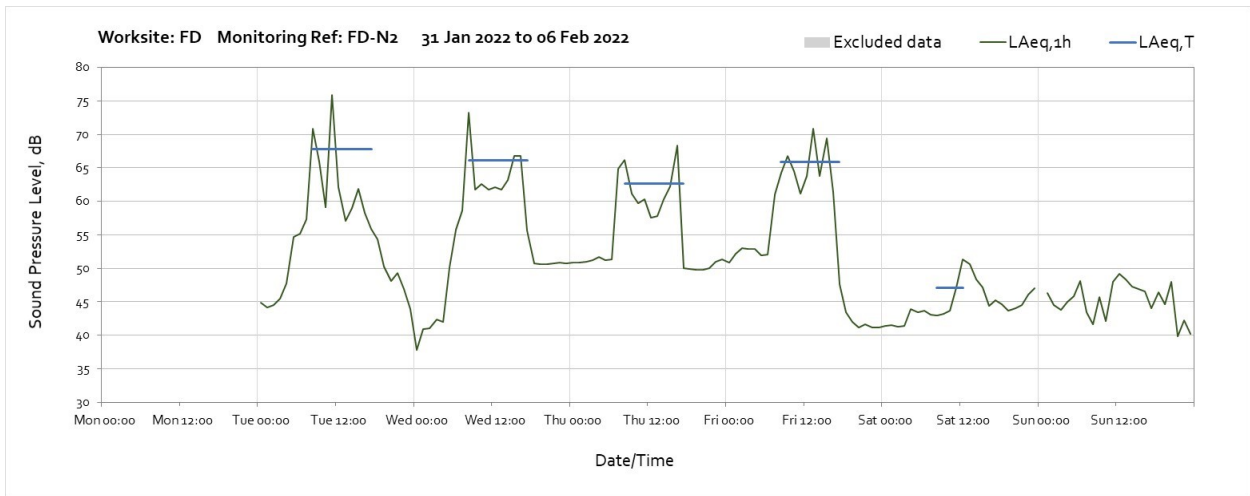


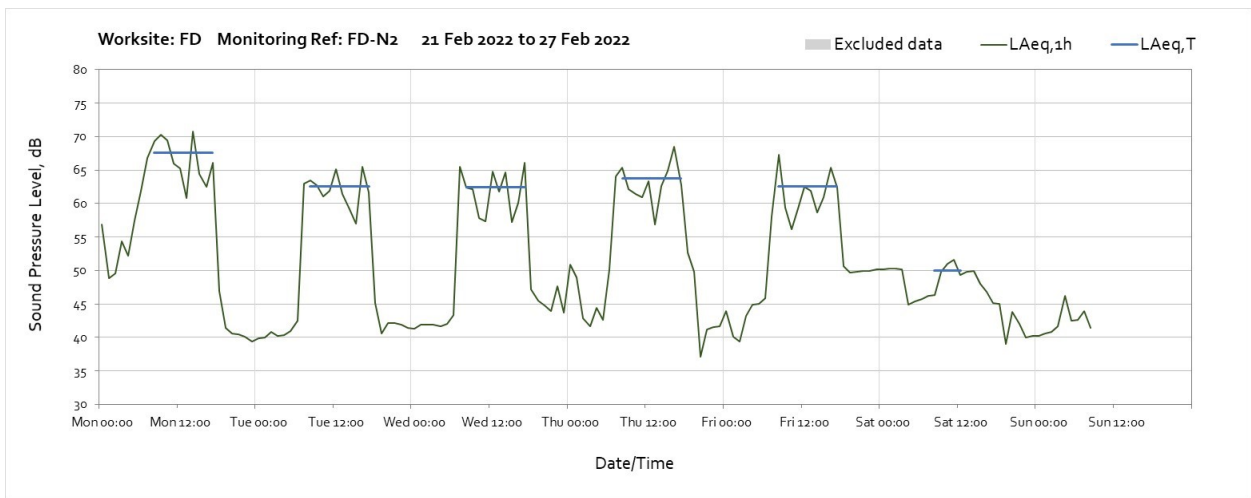
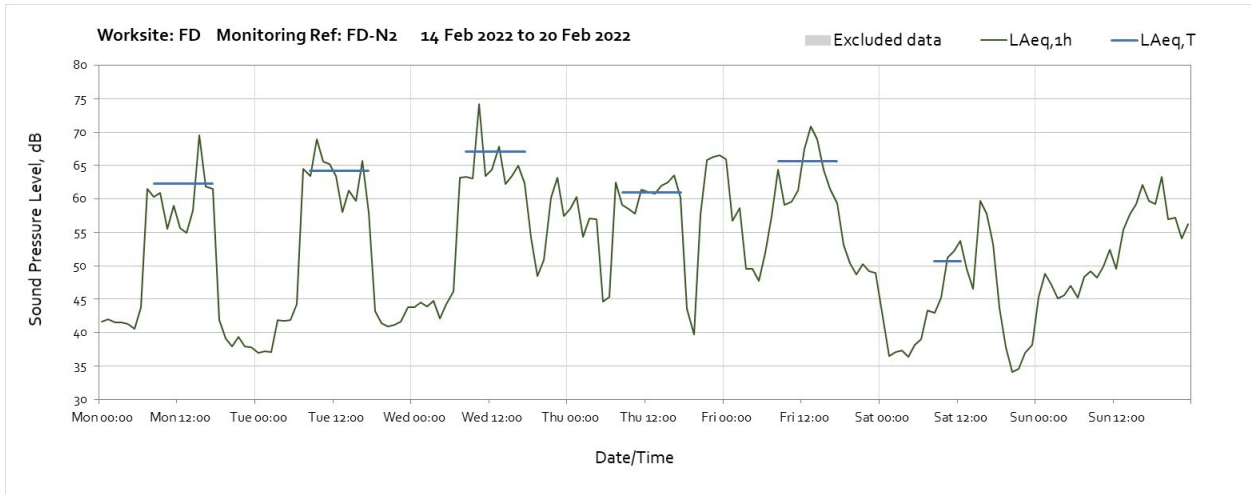
### Worksite: FD - Monitoring Ref: FD-N1





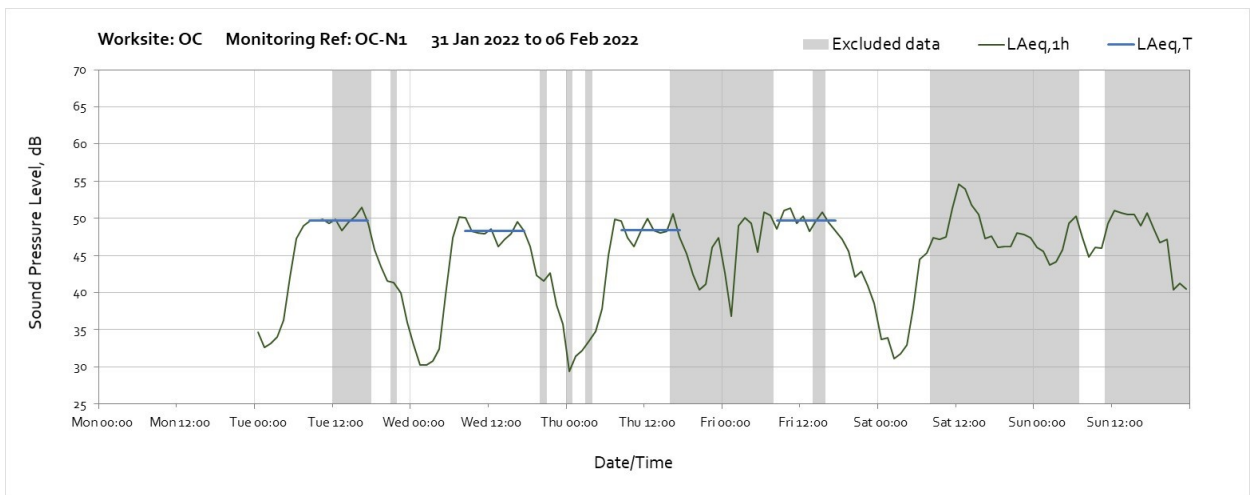
## Worksite: FD – Monitoring Ref: FD-N2

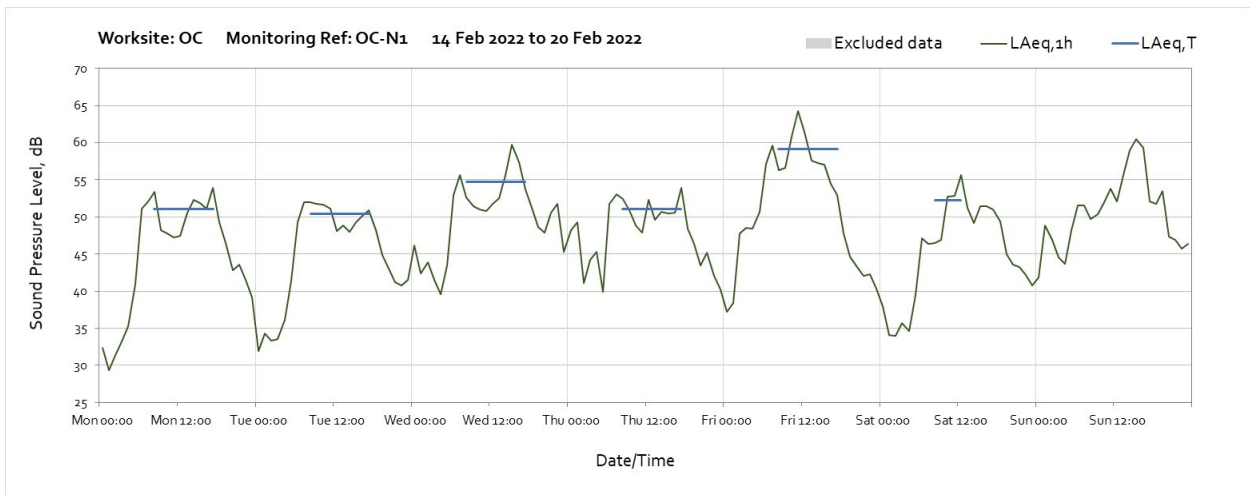
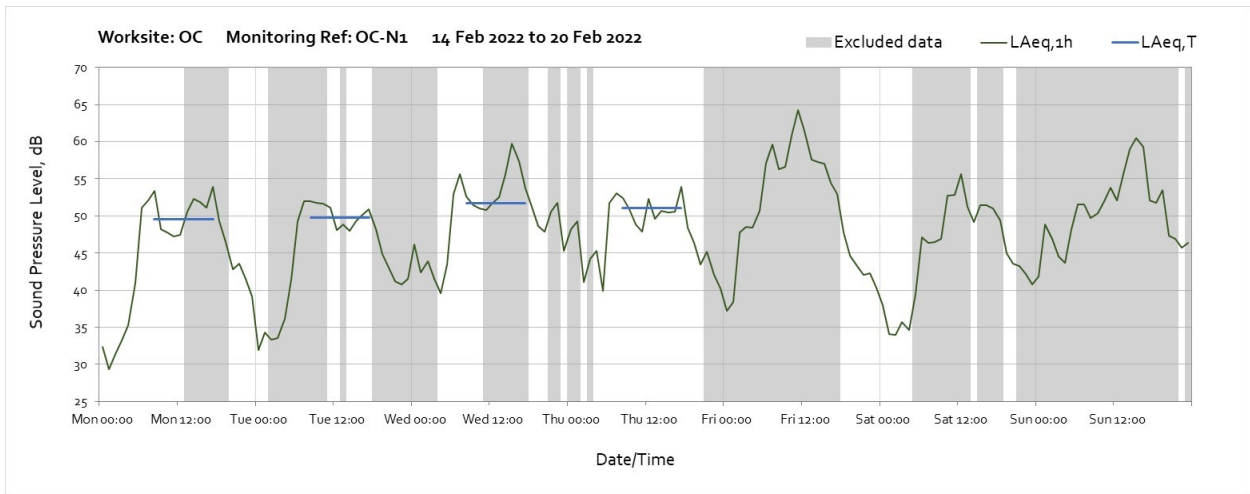
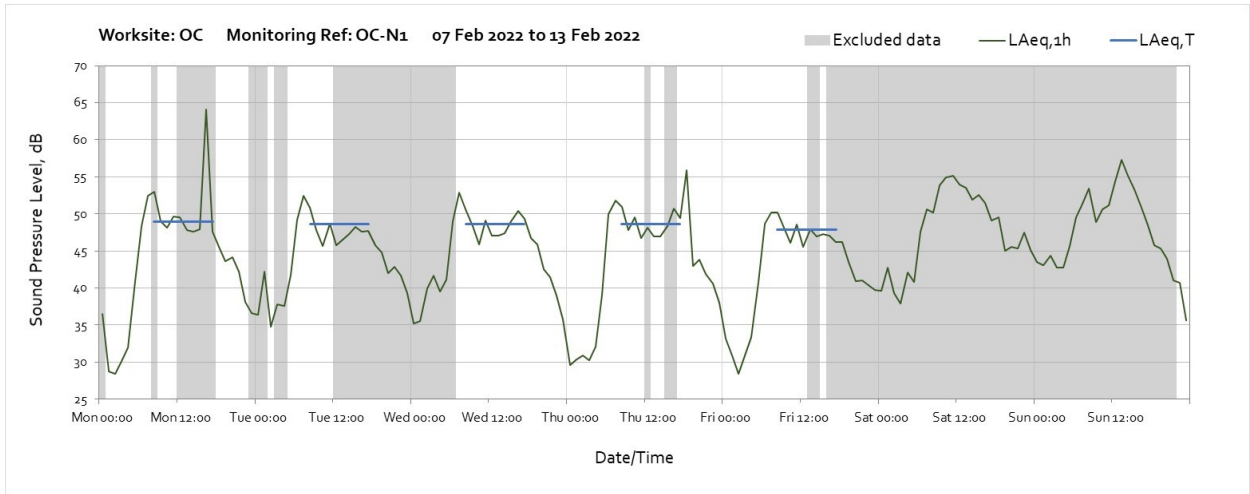


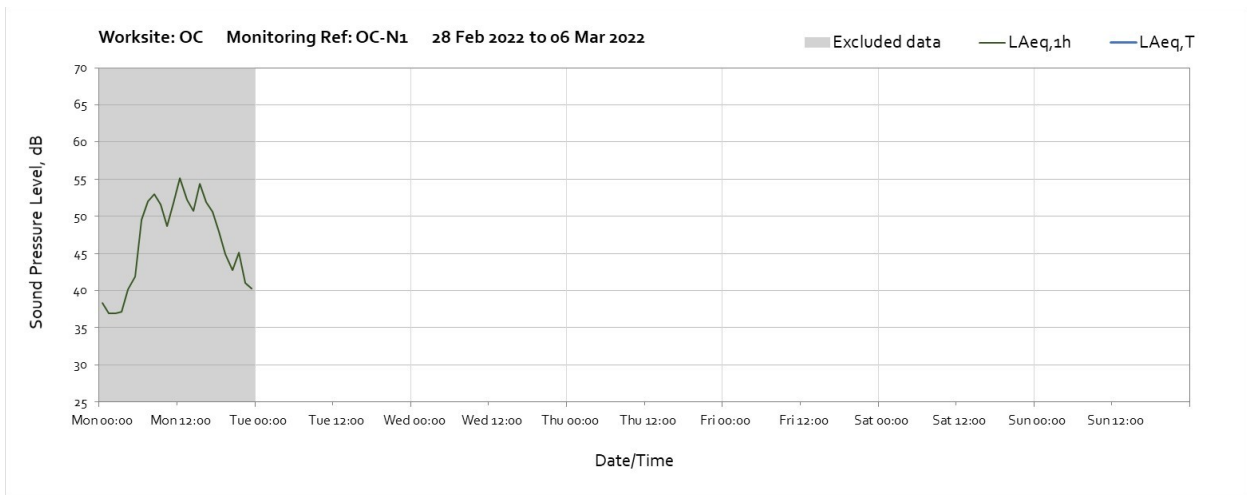
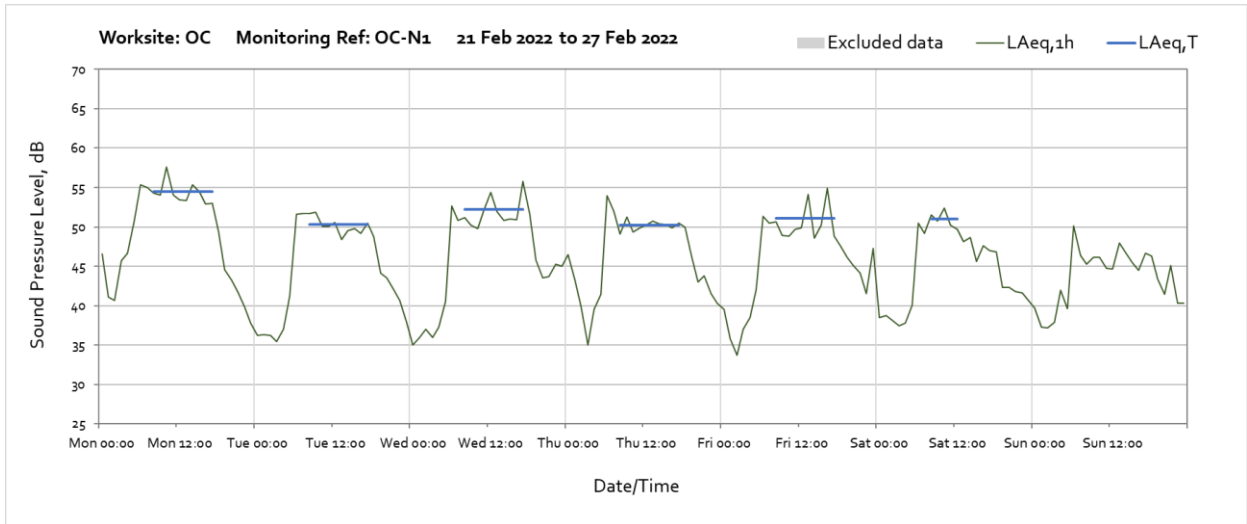


Monitoring at the FD-N2 location was completed on the morning of 27 February.

**Worksite: OC - Monitoring Ref: OC-N1**

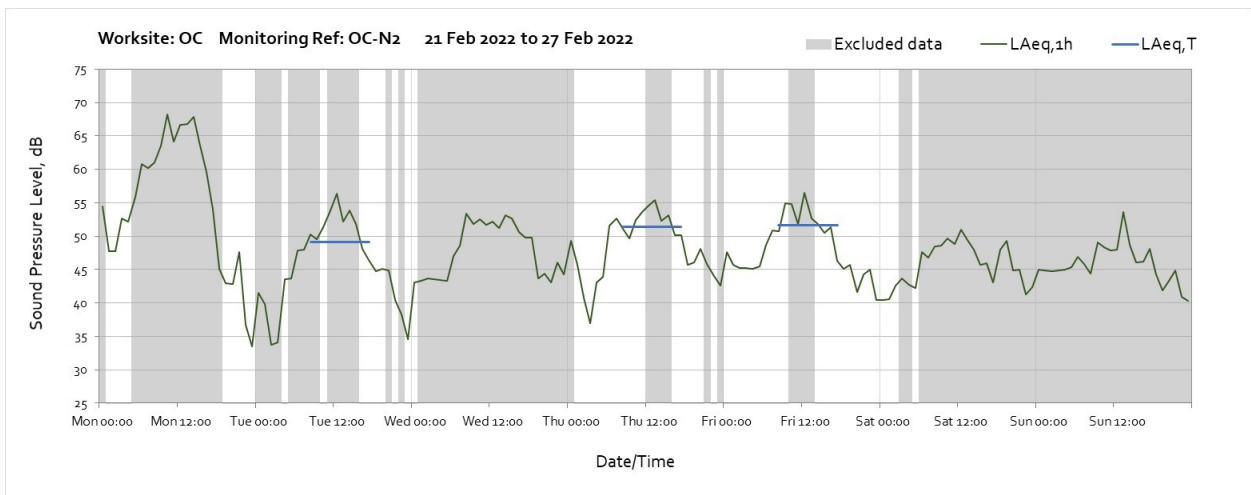
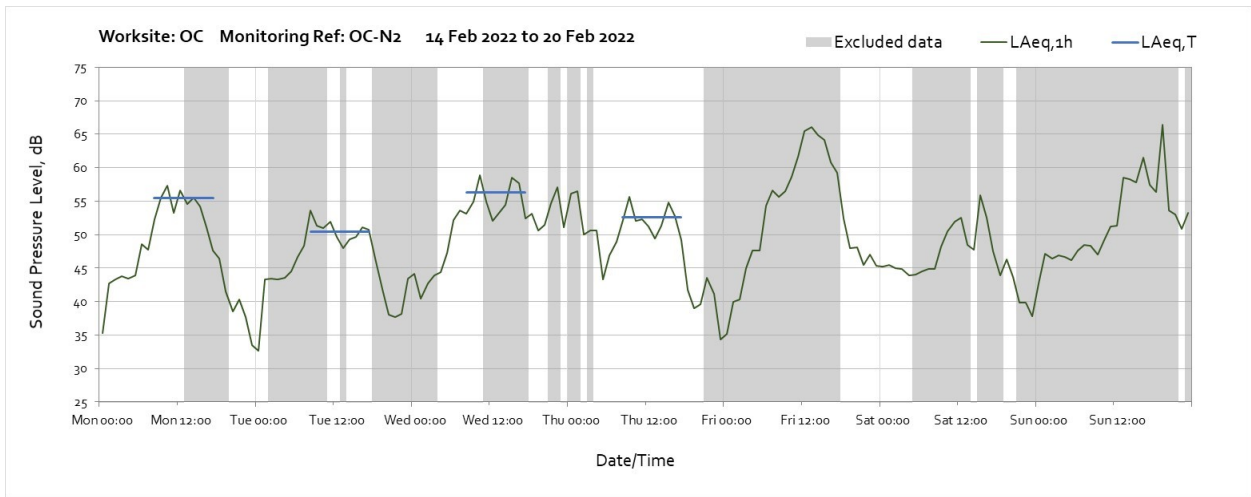
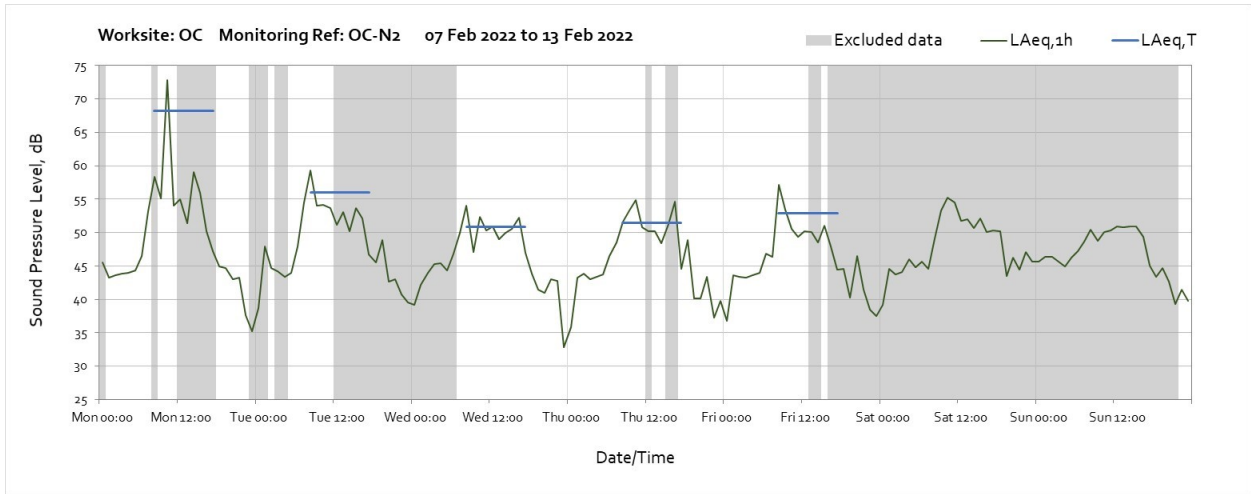




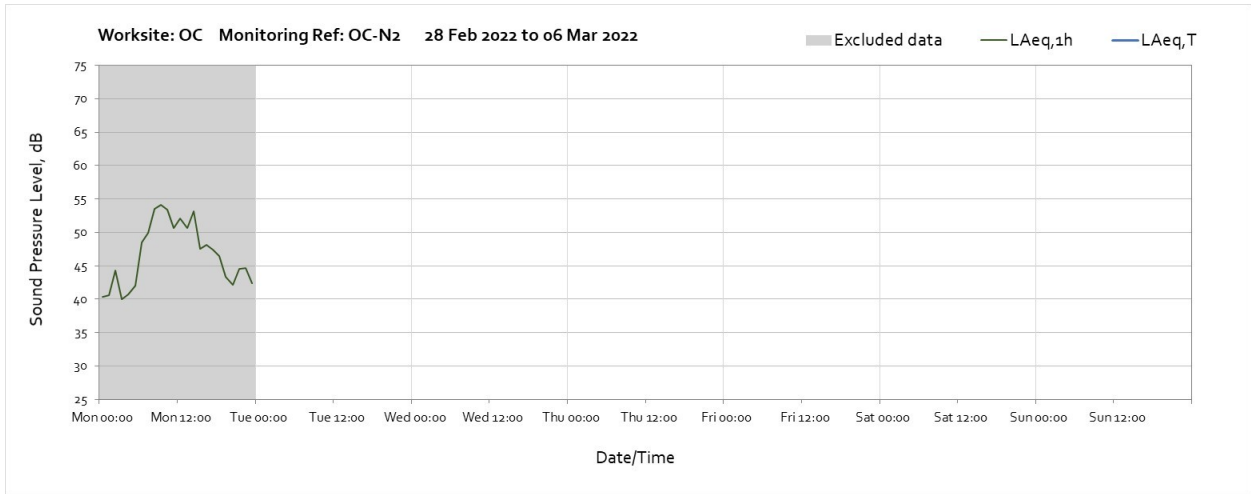


**Worksite: OC - Monitoring Ref: OC-N2**









**Worksite: OC – Monitoring Ref: OC-N3**

