

# HATFIELD AERODROME

## Town and Country Planning Act 1990, Section 78

Application for the establishment of a new quarry on land at the former Hatfield Aerodrome, including a new access onto the A1057, aggregate processing plant, concrete batching plant and other ancillary facilities, together with the importation of inert fill materials for the restoration of the minerals working

Application Ref. 5/0394-16

Appeal against refusal of planning permission by  
Hertfordshire County Council.

Appeal Ref. APP/M1900/W/21/3278097

**BAL5/1 Proof of Evidence (text) of Michelle Dawson**  
BSc MSc, MIOA – Noise

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## 1.0 INTRODUCTION

### Declaration

- 1.1 The evidence that I have prepared and provided within this Proof of Evidence is true and has been prepared and given in accordance with the guidance of my professional institution. I confirm that the opinions expressed are my true and professional opinions.

### Personal History

- 1.2 My name is Michelle Jane Dawson. I am a corporate member of the Institute of Acoustics (MIOA). I hold a Bachelor of Science Degree (BSc) with Honours in Geography awarded by the University of Sheffield, a Master of Science Degree (MSc) awarded by the University of Sheffield and a Diploma in Acoustics and Noise Control studied at the University of Derby and awarded by the Institute of Acoustics.
- 1.3 I am a Technical Director at SLR Consulting Limited (SLR), a multi-disciplinary environmental consultancy. I have been employed by SLR since May 2012. Prior to joining SLR, I was an Environmental Engineer at JMP Consulting Ltd, a position I held from February 2006. Overall, I have fifteen years of experience in the measurement, prediction, assessment and mitigation of noise for a range of industry sectors.

### Planning Application

- 1.4 Planning Application 5/0394-16 was submitted to Hertfordshire County Council on the 22<sup>nd</sup> January 2016 for:

*“The establishment of a new quarry on land at the former Hatfield Aerodrome, including a new access onto the A1057, aggregate processing plant, concrete batching plant and other ancillary facilities, together with the importation of inert fill materials for the restoration of the minerals working”*

- 1.5 Planning permission was refused on the 6<sup>th</sup> of January 2021.

### Structure to Proof of Evidence

- 1.6 The structure of this Proof of Evidence (PoE) is as follows:

- i. In Section 2.0, I discuss the reason for refusal.
- ii. In Section 3.0, I discuss the scope of the Proof.
- iii. In Section 4.0, I present the results of the 2016 Assessment.
- iv. In Section 5.0, I discuss a new noise assessment submitted as part of this Inquiry.
- v. In Section 6.0, I present my conclusions.

1.7 A Glossary of Terminology can be found in Appendix BAL5/2A.

## 2.0 REFUSAL

### Local Authority Refusal

- 2.1 Part 1 of the third reason for refusal is reproduced below:

*“The proposed mineral working would have unacceptable impacts on the local environment related to the additional HGV traffic using the A1057, generating emissions to air (noise and dust), including the transport of minerals within the site and the use of local roads for the transport of minerals and inert fill. The proposal would result in unacceptable impacts on the local environment contrary to the provisions of Minerals Policy 16 (Transport) and Minerals Policy 18 (Operation Criteria for the Control of Mineral Development) of the Hertfordshire Minerals Local Plan Review 2002-2016 (Adopted March 2017) and Policies R18 (Air Quality) and R19 (Noise and Vibration Pollution) of the Welwyn Hatfield District Plan (Adopted 2005). The impacts of concurrent mineral workings would adversely affect the local environment, contrary to Minerals Policy 11 (Cumulative Impact) of the Hertfordshire Minerals.”*

- 2.2 The noise assessment reported in the Environmental Statement, and the Mineral Planning Authority’s (MPA) Review, is summarised in the Appellant’s Statement of Case. With regard to noise it was concluded in the Officer’s 2020 Report<sup>1</sup> that:

*“Subject to the mitigation measures being implemented prior to the extraction and processing of minerals an acceptable noise environment should be maintained. The proposals have demonstrated that no significant noise intrusion will arise from the development. The proposal complies with Policy 18 (Operational criteria for the control of mineral development) of the adopted Hertfordshire Minerals Local Plan”.*

### Ellenbrook Area Residents Association and Smallford Residents Association

- 2.3 The Ellenbrook Area Residents Association and Smallford Residents Association Statement of Case does not mention noise. However, at paragraph 4.4.3.6 of that document the following text is included:

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<sup>1</sup> Core Document Reference Document CD1.7.

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*“We believe that the application for the quarry does not comply with the framework for a number of reasons including the fact that the land is contaminated and the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment”.*

## 3.0 SCOPE OF PROOF

- 3.1 This PoE is limited to those matters that relate to noise. As stated in paragraph 2.2 of this PoE the MPA are satisfied that *“The proposals have demonstrated that no significant noise intrusion will arise from the development”*.
- 3.2 With reference to the above, and the reason for refusal, this PoE will therefore assess the noise impact of the additional HGV traffic using the A1057 only in a ‘New Noise Assessment’.
- 3.3 For information, prior to presenting the New Noise Assessment, the noise results presented within the 2016 Environmental Statement (ES)<sup>2</sup> are presented in Section 4.0.
- 3.4 In preparing this evidence I have reviewed documents pertinent to this case.

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<sup>2</sup> Core Document reference number CD1.2.



## 4.0 2016 Noise ES Chapter Results

4.1 The results of the 2016 Assessment are presented in Table 4-1. The assessment methodology is presented within the 2016 ES<sup>3</sup>.

**Table 4-1<sup>4</sup>**  
**Predicted Appeal Site Noise Levels - dB**

Location	Predicted Noise Level, L <sub>Aeq,1hr</sub>	Derived Noise Limit, L <sub>Aeq,1hr</sub>	Difference
Popefield Farm	54	55	-1
N0.403 St Albans Road West	54	55	-1
The Lodge	55	55	0
No.616 Hatfield Road	53	55	-2
Pasture View	50	55	-5
Radio Nursery	52	55	-3
Walker Grove	42	51	-9
Nimrod Close	43	51	-8
New Development to the West	54	55	-1

4.2 As stated at paragraphs 10.60 and 10.61 of the 2016 ES:

*“Table 10-9 [Table 4-1 above] shows that the worst-case predicted noise levels generated by day-to-day operations would be at or below the derived noise limit adopted for the assessment.*

*It should also be noted that these are worst-case operational noise levels when all operations are taking place simultaneously and at their most exposed elevation or closest approach. For the majority of the life of the development operations would be undertaken at greater distances and/or lower elevations within the void and therefore noise levels are likely to be lower than those shown”.*

4.3 As stated in paragraph 2.2 of this PoE the MPA are satisfied that *“The proposals have demonstrated that no significant noise intrusion will arise from the development”*. It is therefore understood that the MPA are satisfied that noise from within the Appeal Site boundary will not be significant at the nearest Noise Sensitive Receptors to the Appeal Site.

<sup>3</sup> Core Document CD1.2

<sup>4</sup> See Table 10-9 of Core Document CD1.2

## 5.0 NEW NOISE ASSESSMENT

- 5.1 The noise assessment presented in this PoE assesses the noise impact of the additional HGV traffic using the A1057. HGV movements on the A1057 were not included in the 2016 noise assessment as the assessment was limited to noise sources on the Appeal Site (being site preparation, mineral extraction, mineral processing, and internal transportation).

### Study Area

- 5.2 Within the 2016 noise assessment HGV traffic was included on the Access Road of the Appeal Site. At paragraph 10.55 of the 2016 ES<sup>5</sup> it is stated that in a one-hour period there would be 18 HGV movements along the site access road. This assessment will determine the impact of the additional 18 HGV movements per hour (between 0700 and 1800) along the A1057 between the roundabout with Station Road and the roundabout with Ellenbrook Lane.
- 5.3 The Study Area is shown on Figure 5-1.
- 5.4 For information, the Noise Sensitive Receptors (NSRs) referenced in the 2016 ES<sup>6</sup>, that are adjacent to the A1057, have been included in Figure 5-1.

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<sup>5</sup> Core Document CD1.2

<sup>6</sup> Core Document CD1.2

**Figure 5-1**  
**Study Area**



## Baseline Noise Levels

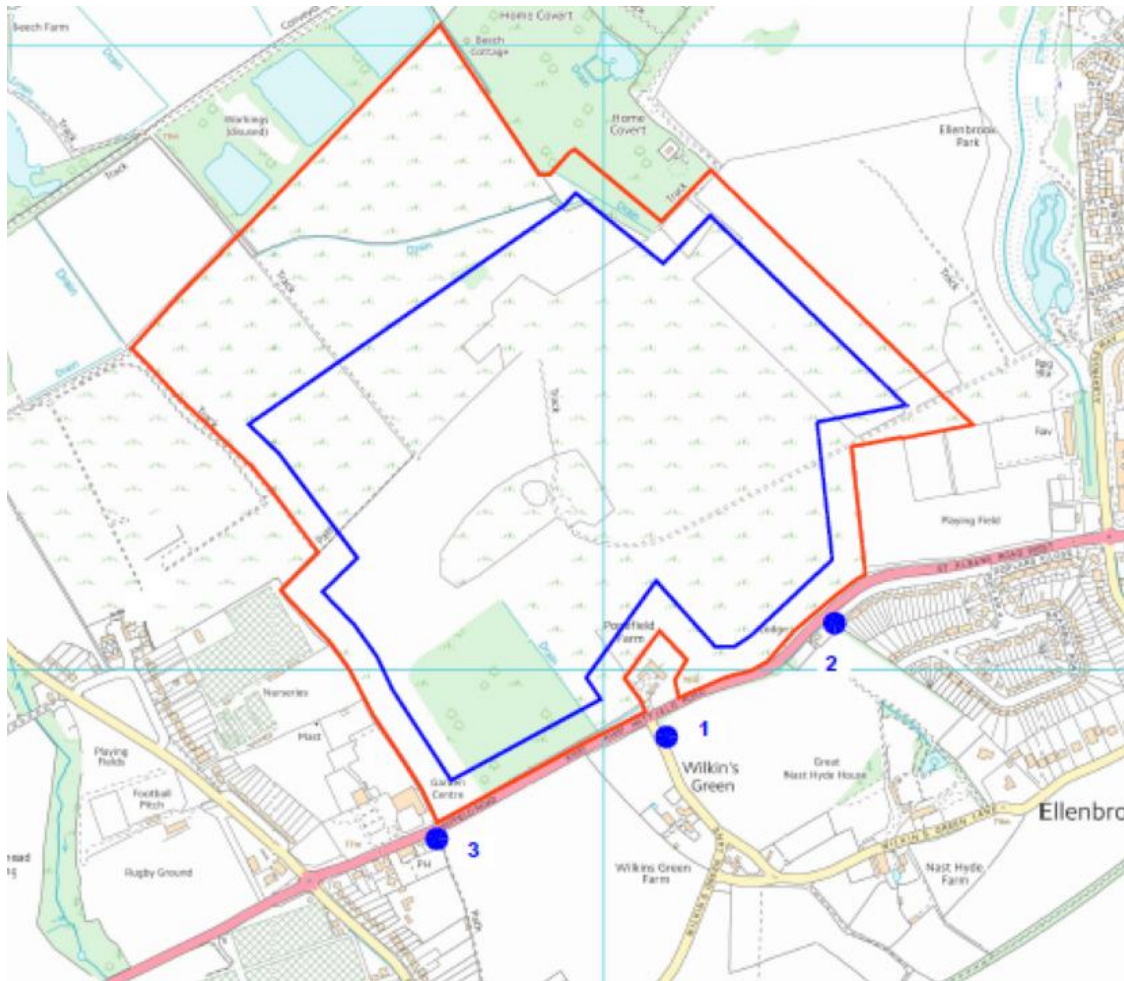
- 5.5 To determine the impact of the additional movements, an understanding of the baseline noise level at NSRs adjacent to the A1057 is required.

### Baseline Data – 2016 ES

- 5.6 Baseline noise levels were measured at five locations around the Appeal Site in 2015. Three of the monitoring locations were close to NSRs that abut the A1057. The three monitoring locations, and the NSR locations they were considered representative of, are listed below:
- Location 1: Popefield Farm.
  - Location 2: The Lodge/No.403 St. Albans Road.
  - Location 3: No.616 Hatfield Road.
- 5.7 The 2015 monitoring positions at the above three locations are shown on Figure 5-2.



**Figure 5-2**  
**2015 Noise Monitoring Locations**



5.8 The measured noise levels at each location are listed in Tables 5-1 to 5-3. <sup>7</sup>

**Table 5-1**  
**Measured Noise Levels Popefield Farm (Representative Location), free-field, dB**

Date	Time	L <sub>Aeq,T</sub>	L <sub>A90</sub>	L <sub>A10</sub>	L <sub>Amax</sub>
23/09/2015	12:00	57.2	51.8	58.8	72.1
	12:15	60.5	50.4	58.2	86.4
	14:15	57.6	50.1	58.1	78.0
	14:30	56.0	51.2	57.6	76.1

<sup>7</sup> The sound level meters used during the baseline noise survey are documented in Table 10-3 of Core Document CD1.2

**Table 5-2**  
**Measured Noise Levels the Lodge/No. 403 St. Albans Road, free-field, dB**

Date	Time	L <sub>Aeq,T</sub>	L <sub>A90</sub>	L <sub>A10</sub>	L <sub>Amax</sub>
23/09/2015	11:15	69.5	54.0	73.5	81.8
	11:30	68.2	49.1	72.7	80.5
	13:30	69.7	54.5	73.7	82.3
	14:00	69.7	54.5	73.5	82.4

**Table 5-3**  
**Measured Noise Levels No. 616 Hatfield Road, free-field, dB**

Date	Time	L <sub>Aeq,T</sub>	L <sub>A90</sub>	L <sub>A10</sub>	L <sub>Amax</sub>
23/09/2015	12:45	65.7	52.9	69.3	77.5
	13:00	66.5	54.9	69.9	83.0
	15:00	66.9	55.0	70.6	80.8
	15:15	68.1	55.1	70.9	88.7

## Baseline Noise Survey – 2021 ES

5.9 In 2021 the noise survey was repeated. The measured noise levels at the three monitoring locations close to NSRs that abut the A1057 are listed in Tables 5-4 to 5-6<sup>8</sup>.

**Table 5-4**  
**Measured Noise Levels Popefield Farm (Representative Location), free-field, dB**

Date	Time	L <sub>Aeq</sub>	L <sub>A90</sub>	L <sub>A10</sub>	L <sub>AFMax</sub>
28/06/2021	13:45	57.7	51.6	60.1	71.2
28/06/2021	14:00	57.3	51.8	60.0	69.8
28/06/2021	14:15	60.5	54.3	62.9	77.3
28/06/2021	14:30	58.3	52.8	60.7	73.9

<sup>8</sup> The meters used during the Survey are documented in Table 10.3 of Core Document CD2.2

**Table 5-5**  
**Measured Noise Levels the Lodge/No. 403 St. Albans Road, free-field, dB**

Date	Time	L <sub>Aeq</sub>	L <sub>A90</sub>	L <sub>A10</sub>	L <sub>AFMax</sub>
27/05/2021	10:45	73.3	56.7	77	86.1
27/05/2021	11:00	73.6	57.9	77.3	88.8
27/05/2021	11:15	73.4	55.3	77.1	86.4
27/05/2021	11:30	73.4	56.8	77.3	88.0

**Table 5-6**  
**Measured Noise Levels No. 616 Hatfield Road, free-field, dB**

Date	Time	L <sub>Aeq</sub>	L <sub>A90</sub>	L <sub>A10</sub>	L <sub>AFMax</sub>
27/05/2021	10:45	72.6	63.0	76.1	83.1
27/05/2021	11:00	72.6	58.3	76.3	86.6
27/05/2021	11:15	71.9	59.5	75.5	83.5
27/05/2021	11:30	71.8	61.7	75.2	87.9

### 2015 – 2021 Comparison of Measured Baseline Noise Levels

- 5.10 For this PoE the relevant parameter for comparison is the L<sub>Aeq,T</sub>.
- 5.11 Whilst the measured 2015 and 2021 L<sub>Aeq,15minute</sub> noise levels are similar at Location 1: Popefield Farm, at Location 2: No. 405 Hatfield Road and Location 3: No. 616 Hatfield Road, the measured L<sub>Aeq,15minute</sub> noise levels were higher in May 2021. Following a review of the data it has been determined that during the May 2021 survey the noise meter was positioned closer to the A1057. This resulted in elevated 2021 L<sub>Aeq,15minute</sub> noise levels compared to 2015.
- 5.12 Whilst not relevant to the assessment presented in this PoE, the elevated 2021 noise levels at Location 2: No. 405 Hatfield Road and Location 3: No. 616 Hatfield Road, did not change the acceptable noise limit in the assessment of noise from operations at the Appeal Site (presented in the 2021 ES). The acceptable L<sub>Aeq, 1 hour</sub> noise limit from operations at the Appeal Site remains at 55dB(A).
- 5.13 Whilst the baseline noise levels obtained for the ES work are informative, to assess the noise impact of the additional HGV traffic using the A1057, a third noise survey has been completed that includes each weekday hour that HGV movements associated with the Appeal Site may operate (the hours between 07:00 and 18:00). The survey has been completed at two long-term monitoring positions that are considered representative of NSRs between the A1057 roundabout with Station Road, and

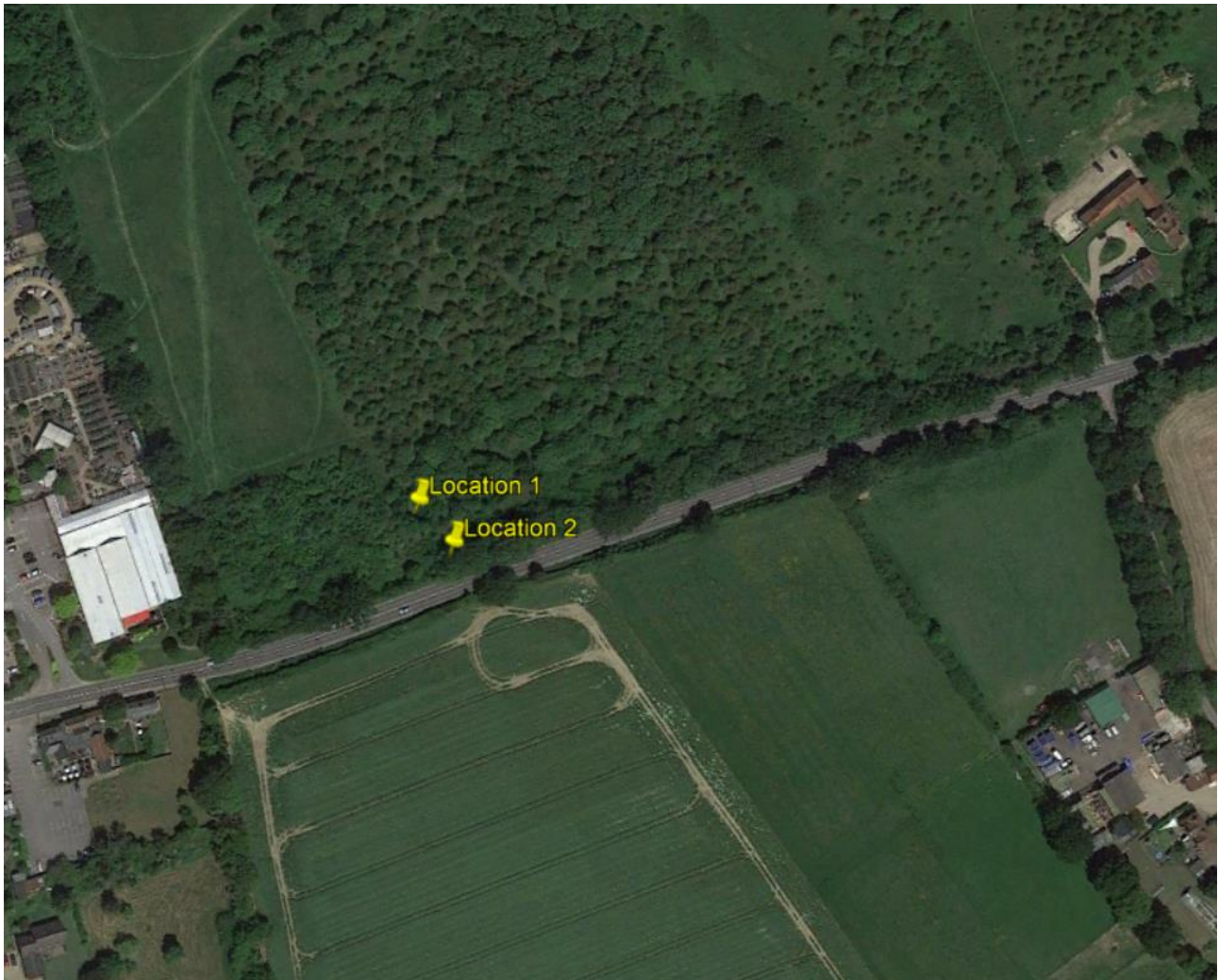
the A1057 roundabout with Ellenbrook Lane. This survey is further detailed below.

## A1057 Baseline Noise Survey

- 5.14 To determine the noise impact of the additional HGV traffic using the A1057 upon NSRs abutting the A1057, a 2021 baseline noise survey at the following two positions has been completed.
- Monitoring Position 1: In a free-field position at approximately 30m from the carriageway edge of the A1057. This monitoring position is considered representative of Popefield Farm.
  - Monitoring Position 2: In a free-field position at approximately 7m from the carriageway edge of the A1057. This monitoring position is considered representative of residents adjacent to the A1057 between the roundabout with Station Road and the roundabout with Ellenbrook Lane.
- 5.15 The monitoring positions were selected as they were in free-field locations with a line of sight to the A1057. The positions are therefore considered representative of NSRs adjacent to the A1057 and near to the Appeal Site.
- 5.16 The monitoring positions can be seen in Figure 5-3.



**Figure 5-3**  
**A1057 Baseline Noise Survey Monitoring Positions**



- 5.17 The noise monitoring equipment used during the survey is detailed in Table 5-7. The sound level meter was field calibrated before and after the surveys and no significant drift in calibration was found to have occurred. The calibration chain is traceable via the United Kingdom Accreditation Service (UKAS) to National Standards held at the National Physical Laboratory (NPL).

**Table 5-7**  
**Noise Monitoring Equipment**

Location	Description of Equipment	Serial Number
1	Rion NL-52 Type 1 Sound Level Meter	976174
	Rion NC-74 Acoustic Calibrator	34478298
2	Cirrus CR:171B Type 1 Sound Level Meter	G302667
	Cirrus CR:515 Acoustic Calibrator	94806

5.18 Weather conditions during the survey were as shown in Table 5-8. To understand the ground conditions (wet/dry) before 07:00 hours on each day, the period between 00:00 and 07:00 has also been included within the Table.

**Table 5-8**  
**Weather Conditions**

Time	Monday 4 <sup>th</sup> October	Tuesday 5 <sup>th</sup> October	Wednesday 6 <sup>th</sup> October	Thursday 7 <sup>th</sup> October	Friday 8 <sup>th</sup> October
00:00 – 07:00	-	Wet	Dry	Dry	Dry
07:00 – 08:00	-	Rain 6m/s	Dry 6m/s	Dry 1m/s	Dry 1m/s
08:00 – 09:00	-	Showers 4m/s	Dry 6m/s	Dry 2m/s	Dry 2m/s
09:00 – 10:00	-	Dry 5m/s	Dry 6m/s	Dry 2m/s	Dry 1m/s
10:00 – 11:00	-	Dry 6m/s	Dry 6m/s	Dry 2m/s	Dry 2m/s
11:00 – 12:00	Rain 5m/s	Dry 6m/s	Rain 7m/s	Dry 2m/s	Dry 3m/s
12:00 – 13:00	Rain 6m/s	Dry 6m/s	Rain 7m/s	Dry 3m/s	-
13:00 – 14:00	Rain 6m/s	Dry 6m/s	Dry 6m/s	Dry 3m/s	-
14:00 – 15:00	Rain 6m/s	Rain 7m/s	Dry 6m/s	Dry 3m/s	-
15:00 – 16:00	Rain 7m/s	Dry 7m/s	Dry 6m/s	Dry 3m/s	-
16:00 – 17:00	Rain 6m/s	Showers 7m/s	Dry 5m/s	Dry 3m/s	-
17:00 – 18:00	Rain 4m/s	Showers 7m/s	Dry 4m/s	Dry 2m/s	-

5.19 The  $L_{Aeq,T}$  results of the survey at each Location are detailed in Tables 5-9 and 5-10. The full survey results can be seen in Appendix BAL5/2B. Data that was obtained during periods of unsuitable weather (due to wet and/or windy (over 5m/s) conditions) has been crossed out and will not be used in the assessment.

**Table 5-9**  
**Monitoring Position 1 – 30m from A1057**

Time	L <sub>Aeq, 1hour</sub> Monday 4 <sup>th</sup> October	L <sub>Aeq, 1hour</sub> Tuesday 5 <sup>th</sup> October	L <sub>Aeq, 1hour</sub> Wednesday 6 <sup>th</sup> October	L <sub>Aeq, 1hour</sub> Thursday 7 <sup>th</sup> October
07:00 – 08:00	No Data	<del>57.8</del>	56.8	56.3
08:00 – 09:00	No Data	<del>57.3</del>	56.9	55.9
09:00 – 10:00	No Data	<del>58.0</del>	57.7	56.8
10:00 – 11:00	No Data	<del>57.5</del>	57.0	55.8
11:00 – 12:00	<del>56.7</del>	<del>57.3</del>	56.5	55.8
12:00 – 13:00	<del>56.8</del>	<del>57.1</del>	56.3	No Data
13:00 – 14:00	<del>56.8</del>	<del>57.5</del>	56.5	No Data
14:00 – 15:00	<del>56.8</del>	<del>57.6</del>	56.1	No Data
15:00 – 16:00	<del>57.1</del>	<del>57.7</del>	56.5	No Data
16:00 – 17:00	<del>59.4</del>	57.7	56.7	No Data
17:00 – 18:00	<del>58.5</del>	57.8	57.9	No Data

**Table 5-10**  
**Monitoring Position 2 – 7m from A1057**

Time	L <sub>Aeq, 1hour</sub> Monday 4 <sup>th</sup> October	L <sub>Aeq, 1hour</sub> Tuesday 5 <sup>th</sup> October	L <sub>Aeq, 1hour</sub> Wednesday 6 <sup>th</sup> October	L <sub>Aeq, 1hour</sub> Thursday 7 <sup>th</sup> October
07:00 – 08:00	No Data	<del>69.7</del>	68.4	68.2
08:00 – 09:00	No Data	<del>68.7</del>	68.1	67.7
09:00 – 10:00	No Data	<del>69.8</del>	69.0	68.9
10:00 – 11:00	No Data	<del>68.7</del>	68.3	67.9
11:00 – 12:00	<del>67.9</del>	<del>68.6</del>	68.3	67.6
12:00 – 13:00	<del>68.1</del>	<del>68.6</del>	68.1	No Data
13:00 – 14:00	<del>68.6</del>	<del>69.0</del>	68.5	No Data
14:00 – 15:00	<del>68.1</del>	<del>68.9</del>	68.2	No Data
15:00 – 16:00	<del>68.6</del>	<del>68.8</del>	68.6	No Data
16:00 – 17:00	<del>70.4</del>	68.9	68.8	No Data
17:00 – 18:00	<del>70.3</del>	69.2	69.2	No Data

## Assessment Guidance

- 5.20 To determine the impact of the additional 18 HGV movements per hour on the noise environment the change in the  $L_{Aeq,T}$  noise levels, and the absolute  $L_{Aeq,T}$  noise level will be determined. The assessment has been completed with reference to the following guidance.

### Change in Noise Level – Significance of Change

- 5.21 Additional HGV movements may change the ambient  $L_{Aeq,T}$  noise level. The impact will be discussed with reference to Table 5-11 which has been informed by Table 3.54a of the Design Manual for Roads and Bridges (DMRB) LAN 111 Noise and Vibration<sup>9</sup>.

**Table 5-11**  
**Change in Noise Level – Noise Impact**

Noise Impact	$L_{Aeq,T}$ dB Noise Change
Negligible	Less than 1
Minor	1.0 – 2.9
Moderate	3.0 – 4.9
Major	5.0 +

### Absolute Noise Level – Environmental Noise Limits

- 5.22 Additional HGV movements may increase the absolute ambient noise level. The World Health Organisation Guidelines for Community Noise (WHO 1999)<sup>10</sup>, and the Environmental Noise Guidelines for the European Region document (WHO, 2018)<sup>11</sup>, recommend guideline noise levels regardless of the current noise environment. The documents suggest suitable noise levels for both indoor and outdoor living areas during daytime and night-time periods, and these levels are set regardless of the noise type or noise source, i.e. ‘benchmark’ levels. It advises on the minimum levels of noise before critical health effects, including annoyance, occur.
- 5.23 Of relevance to this Report the WHO guidelines recommend the following noise limits:
- An external ambient/average daytime noise level in outdoor living areas of  $L_{Aeq,16hr}$  50dB to 55dB.

<sup>9</sup> Core Document Reference CD6.1

<sup>10</sup> Core Document Reference CD6.2

<sup>11</sup> Core Document Reference CD6.3

## Calculations

- 5.24 The noise level of the additional HGV movements will be calculated with reference to the former Department of Transport and Welsh Office memorandum Calculation of Road Traffic Noise (CRTN) published in 1988<sup>12</sup> and BS5228-1:2009+A1:2014 *Code of practice for noise and vibration control on construction and open sites – Part 1: Noise*.<sup>13</sup>

### Calculation of Road Traffic Noise

- 5.25 CRTN sets out the UK standard methods and procedures to predict and measure road traffic noise. These procedures were primarily intended to enable entitlement under the Noise Insulation Regulations 1975 (as amended 1988) to be determined, but they also provide guidance appropriate to the calculation of traffic noise for more general applications.
- 5.26 In the UK road traffic noise is predicted and measured in terms of a statistical measure, equivalent to the 10th percentile. Termed the  $L_{A10}$ , this measure of noise is equivalent to the noise level exceeded for 10% of the measurement period. Most legislation that refers to road traffic noise uses this noise index over an 18-hour period, from 06:00 hours to 00:00 hours.
- 5.27 However, in this assessment the methodology presented in CRTN cannot be used as the guidance states that the calculation algorithms presented within the guidance are not reliable when traffic flows are less than 50 movements per hour (the maximum additional HGV movements associated with the proposed variation are expected to be 18 movements per hour).
- 5.28 Therefore, the haul route methodology presented in BS5228-1:2009+A1:2014 will be used when predicting noise levels from HGVs.

### BS5228-1:2009+A1:2014

- 5.29 BS5228-1:2009+A1:2014 sets out a methodology for predicting noise levels arising from a wide variety of construction and related activities, such as the movement of HGVs on a haul route.
- 5.30 The haul route methodology is detailed in section F.2.5 of the standard. It states at section F.2.5.1 that:

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<sup>12</sup> Core Document Reference CD6.4

<sup>13</sup> Core Document Reference CD6.5

*“The prediction of  $L_{Aeq, T}$  from mobile plant using a regular route can be used when items of mobile plant pass at a known rate per hour”.*

5.31 The general expression for predicting the noise from the HGVs on a haul route is as follows:

- $L_{Aeq, T} = LWA - 33 + 10\log^{10}Q - 10\log^{10}V - 10\log^{10}d$

Where:

- **LWA** is the sound power level of the plant, in decibels (dB);
- **Q** is the number of vehicles per hour;
- **V** is the average vehicle speed, in kilometres per hour (km/h); and
- **d** is the distance of receiving position from the centre of haul road, in metres (m).

## Assessment Methodology

### Predicted HGV Noise Levels

5.32 The sound predictions in this assessment have been undertaken using the calculation algorithm set out in BS5228-1:2009+A1:2014<sup>14</sup> and replicated in paragraph 5.31 of this PoE. The following parameters have been set:

- **LWA:** Within the 2016 Assessment an  $L_{Amax}$  sound power level of 111dB was used for a HGV on the Access Road. This value was taken from BS5228-1:2009+A1:2014. For this assessment this value requires conversion to an  $L_{Aeq}$  value. No HGV passby  $L_{Aeq}$  values are provided in BS5228-1:2009+A1:2014. SLR has therefore referred to SLR's in-house data of HGV passby noise levels. Out of 20 HGV passbys the difference between the measured  $L_{Amax}$  and the  $L_{Aeq}$  ranged from 3.8dB to 10dB, with a median difference of 6.5dB. SLR has therefore applied a 6.5dB reduction to the maximum sound power level of a HGV used in the 2016 Assessment. The  $L_{Aeq}$  LWA sound power level applied to a HGV on the A1057 is therefore 104.5dB.
- **Q:** 18 HGV movements per hour.
- **V:** 64km/hr (40mph is the road speed limit).
- **d:** 7m or 30m.

5.33 The calculated free field sound level of the additional 18 HGV movements at a NSR positioned 7m

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<sup>14</sup> Core Document Reference CD.6.5

from the A1057, and a NSR positioned at 30m (assuming flat, hard ground with no obstructions) from the A5107 are shown in Table 5-12.

**Table 5-12**  
**Calculated Noise Level of Additional HGVs, free-field, dB**

Location	Daytime $L_{Aeq,T}$
30m from the A1057	51.2
7m from the A1057	57.5

## Assessment Results

### Change in the Ambient Noise Level Assessment

- 5.34 In order to determine the increase in the ambient noise level at each NSR, it is necessary to logarithmically add the calculated specific sound level of the additional HGVs to the lowest ambient noise level (to provide a 'worst-case' assessment) measured during the baseline survey. The results of this calculation and the difference between the cumulative ambient noise level and the lowest baseline ambient noise level are shown in Table 5-13.

**Table 5-13**  
**Worst-Case Increase in the Ambient Noise Level, free-field, dB**

Location	Time	Measured $L_{Aeq,T}$ Noise Level	Calculated $L_{Aeq,T}$ of Additional HGVs	Cumulative $L_{Aeq,T}$ Noise Level <sup>15</sup>	Increase in the $L_{Aeq,T}$ Noise Level	Impact
At 30m from the A1057	07:00 – 08:00	56.3	51.2	57.5	1.2	Minor
	08:00 – 09:00	55.9	51.2	57.2	1.3	Minor
	09:00 – 10:00	56.8	51.2	57.9	1.1	Minor
	10:00 – 11:00	55.8	51.2	57.1	1.3	Minor
	11:00 – 12:00	55.8	51.2	57.1	1.3	Minor
	12:00 – 13:00	56.3	51.2	57.5	1.2	Minor
	13:00 – 14:00	56.5	51.2	57.6	1.1	Minor
	14:00 – 15:00	56.1	51.2	57.3	1.2	Minor
	15:00 – 16:00	56.5	51.2	57.6	1.1	Minor
	16:00 – 17:00	56.7	51.2	57.8	1.1	Minor
	17:00 – 18:00	57.8	51.2	58.7	0.9	Negligible
At 7m from the A1057	07:00 – 08:00	68.2	57.5	68.6	0.4	Negligible
	08:00 – 09:00	67.7	57.5	68.1	0.4	Negligible
	09:00 – 10:00	68.9	57.5	69.2	0.3	Negligible
	10:00 – 11:00	67.9	57.5	68.3	0.4	Negligible

<sup>15</sup> This noise level is the baseline ambient noise level (in third column) logarithmically added to the noise level of the HGVs in the fourth column. The noise level of the HGVs is taken from Table 5-12.



Location	Time	Measured $L_{Aeq,T}$ Noise Level	Calculated $L_{Aeq,T}$ of Additional HGVs	Cumulative $L_{Aeq,T}$ Noise Level <sup>15</sup>	Increase in the $L_{Aeq,T}$ Noise Level	Impact
	11:00 – 12:00	67.6	57.5	68.0	0.4	Negligible
	12:00 – 13:00	68.1	57.5	68.5	0.4	Negligible
	13:00 – 14:00	68.5	57.5	68.8	0.3	Negligible
	14:00 – 15:00	68.2	57.5	68.6	0.4	Negligible
	15:00 – 16:00	68.6	57.5	68.9	0.3	Negligible
	16:00 – 17:00	68.8	57.5	69.1	0.3	Negligible
	17:00 – 18:00	69.2	57.5	69.5	0.3	Negligible

- 5.35 It can be seen from Table 5-13 that the worst-case increase in the  $L_{Aeq,1-hour}$  noise level would be 1.3dB(A) at an unshielded Receptor 30m from the A1057. Between the roundabout with Station Road and the roundabout with Ellenbrook Lane unshielded NSRs at this distance are limited to Popefield Farm. At this receptor the worst-case increase in the  $L_{Aeq,1-hour}$  noise level would be 1.3dB(A), which with reference to Table 5.11 of this PoE, equates to a Minor Impact. A Minor Impact is not considered to be significant.
- 5.36 At NSRs closer to the road, the worst case increase in the  $L_{Aeq,1-hour}$  noise level would be 0.4dB(A) at an unshielded receptor 7m from the A1057. With reference to Table 5.11 of this PoE, a change in noise level of this magnitude equates to a Negligible Impact. A Negligible Impact is not considered to be significant.

### Absolute Noise Level

- 5.37 In order to determine the worst-case absolute ambient noise level at NSRs adjacent to the A1057, it is necessary to logarithmically add the calculated ambient sound level of the additional HGVs, to the highest baseline ambient noise level measured during the baseline survey.
- 5.38 The results of this calculation and the difference between the cumulative ambient noise level and the relevant limit are shown in Table 5-14.

**Table 5-14**  
**Absolute Noise Level Assessment**

Location	Time	L <sub>Aeq,T</sub> Noise Level	Calculated L <sub>Aeq,T</sub> of Additional HGVs	Cumulative L <sub>Aeq,T</sub> Noise Level <sup>16</sup>	External L <sub>Aeq,T</sub> Limit	Met/Not Met	Exceedance Caused by Extra Movements
At 30m from the A1057	07:00 – 08:00	56.8	51.2	57.9	50 - 55	Not Met	No
	08:00 – 09:00	56.9	51.2	57.9	50 - 55	Not Met	No
	09:00 – 10:00	57.7	51.2	58.6	50 - 55	Not Met	No
	10:00 – 11:00	57.0	51.2	58.0	50 - 55	Not Met	No
	11:00 – 12:00	56.5	51.2	57.6	50 - 55	Not Met	No
	12:00 – 13:00	56.3	51.2	57.5	50 - 55	Not Met	No
	13:00 – 14:00	56.5	51.2	57.6	50 - 55	Not Met	No
	14:00 – 15:00	56.1	51.2	57.3	50 - 55	Not Met	No
	15:00 – 16:00	56.5	51.2	57.6	50 - 55	Not Met	No
	16:00 – 17:00	57.7	51.2	58.6	50 - 55	Not Met	No
	17:00 – 18:00	57.9	51.2	58.7	50 - 55	Not Met	No
At 9m from the A1057	07:00 – 08:00	68.4	57.5	68.7	50 - 55	Not Met	No
	08:00 – 09:00	68.1	57.5	68.5	50 - 55	Not Met	No
	09:00 – 10:00	69.0	57.5	69.3	50 - 55	Not Met	No
	10:00 – 11:00	68.3	57.5	68.6	50 - 55	Not Met	No

<sup>16</sup> This noise level is the baseline ambient noise level (in third column) logarithmically added to the noise level of the HGVs in the fourth column. The noise level of the HGVs is taken from Table 5-12.

Location	Time	L <sub>Aeq,T</sub> Noise Level	Calculated L <sub>Aeq,T</sub> of Additional HGVs	Cumulative L <sub>Aeq,T</sub> Noise Level <sup>16</sup>	External L <sub>Aeq,T</sub> Limit	Met/Not Met	Exceedance Caused by Extra Movements
	11:00 – 12:00	68.3	57.5	68.6	50 - 55	Not Met	No
	12:00 – 13:00	68.1	57.5	68.5	50 - 55	Not Met	No
	13:00 – 14:00	68.5	57.5	68.8	50 - 55	Not Met	No
	14:00 – 15:00	68.2	57.5	68.6	50 - 55	Not Met	No
	15:00 – 16:00	68.6	57.5	68.9	50 - 55	Not Met	No
	16:00 – 17:00	68.9	57.5	69.2	50 - 55	Not Met	No
	17:00 – 18:00	69.2	57.5	69.5	50 - 55	Not Met	No

- 5.39 The WHO guidelines recommend an external ambient/average daytime noise level in outdoor living areas of  $L_{Aeq,16hr}$  50dB to 55dB. As can be seen from Table 5-14 this limit is exceeded, however the exceedance is not caused by the additional HGV movements; the limit is already exceeded. The addition of the 18 HGV movements per hour is therefore not considered to be significant.

## 6.0 SUMMARY AND CONCLUSION

- 6.1 This Proof of Evidence has been prepared by Michelle Jane Dawson a Technical Director at SLR. I am a corporate member of the Institute of Acoustics (MIOA) and I have fifteen years of experience in the measurement, prediction, assessment and mitigation of noise for a range of industry sectors.
- 6.2 As stated in paragraph 2.2 of this Proof of Evidence, the MPA are satisfied that *“The proposals have demonstrated that no significant noise intrusion will arise from the development”*. It is therefore understood that the MPA are satisfied that noise from within the Appeal Site boundary will not be significant at the nearest Noise Sensitive Receptors to the Site.
- 6.3 With reference to the above, and the reason for refusal, this Proof of Evidence has therefore assessed the noise impact of the additional HGV traffic using the A1057.
- 6.4 HGV movements on the A1057 were not included in the 2016 noise assessment as the assessment was limited to noise sources on the Appeal Site (being site preparation, mineral extraction, mineral processing, and internal transportation).
- 6.5 To inform the assessment a 2021 noise survey was completed that included each weekday hour that HGV movements associated with the Appeal Site may operate (the hours between 07:00 and 18:00). The survey was completed at two long-term monitoring positions that were considered representative of Noise Sensitive Receptors between the A1057 roundabout with Station Road, and the A1057 roundabout with Ellenbrook Lane.
- 6.6 An assessment has then been presented to determine both the change in the  $L_{Aeq,1\text{ hour}}$  noise level, and the absolute  $L_{Aeq,1\text{ hour}}$  noise level, as a result of the additional 18 HGV movements per hour on the A1057.
- 6.7 The assessment has found that:
- The worst-case increase in the  $L_{Aeq,1\text{-hour}}$  noise level would be 1.3dB(A) at an unshielded receptor located at 30m from the A1057. Between the roundabout with Station Road and the roundabout with Ellenbrook Lane, unshielded receptors at this distance are limited to Popefield Farm. At this receptor the worst-case increase in the  $L_{Aeq,1\text{-hour}}$  noise level would be 1.3dB(A), which equates to a Minor Impact. A Minor Impact is not considered to be significant.

- At receptors closer to the road, the worst case increase in the  $L_{Aeq,1\text{-hour}}$  noise level would be 0.4dB(A) at an unshielded receptor 7m from the A1057. A change in noise level of this magnitude equates to a Negligible Impact. A Negligible Impact is not considered to be significant.
- The WHO guidelines recommend an external ambient/average daytime noise level in outdoor living areas of  $L_{Aeq,16hr}$  50dB to 55dB. As can be seen from Table 5-14 this limit is exceeded, however the exceedance is not caused by the additional HGV movements; the limit is already exceeded. The addition of the 18 HGV movements per hour is therefore not considered to be significant.

6.8 To conclude, I consider that the evidence presented within this Proof of Evidence demonstrates that the additional HGV traffic using the A1057 will not result in an unacceptable impact upon the local noise environment.

**BAL5/2**

## BAL5/2A Glossary of Terminology



In order to assist the understanding of acoustic terminology and the relative change in noise, the following background information is provided.

The human ear can detect a very wide range of pressure fluctuations, which are perceived as sound. In order to express these fluctuations in a manageable way, a logarithmic scale called the decibel, or dB scale is used. The decibel scale typically ranges from 0dB (the threshold of hearing) to over 120dB. An indication of the range of sound levels commonly found in the environment is given in the following table.

**Table 1**  
**Sound Levels Commonly Found in the Environment**

Sound Level	Location
0dB(A)	Threshold of hearing
20 to 30dB(A)	Quiet bedroom at night
30 to 40dB(A)	Living room during the day
40 to 50dB(A)	Typical office
50 to 60dB(A)	Inside a car
60 to 70dB(A)	Typical high street
70 to 90dB(A)	Inside factory
100 to 110dB(A)	Burglar alarm at 1m away
110 to 130dB(A)	Jet aircraft on take off
140dB(A)	Threshold of Pain

## Acoustic Terminology

dB (decibel)	The scale on which sound pressure level is expressed. It is defined as 20 times the logarithm of the ratio between the root-mean-square pressure of the sound field and a reference pressure ( $2 \times 10^{-5}$ Pa).
dB(A)	A-weighted decibel. This is a measure of the overall level of sound across the audible spectrum with a frequency weighting (i.e. 'A' weighting) to compensate for the varying sensitivity of the human ear to sound at different frequencies.
$L_{Aeq}$	$L_{Aeq}$ is defined as the notional steady sound level which, over a stated period of time, would contain the same amount of acoustical energy as the A-weighted fluctuating sound measured over that period.
$L_{10}$ & $L_{90}$	If a non-steady noise is to be described it is necessary to know both its level and the degree of fluctuation. The $L_n$ indices are used for this purpose, and the term refers to the level exceeded for n% of the time. Hence $L_{10}$ is the level exceeded for 10% of the time and as such can be regarded as the 'average maximum level'. Similarly, $L_{90}$ is the 'average minimum level' and is often used to describe the background noise. It is common practice to use the $L_{10}$ index to describe traffic noise.

## BAL52/B Noise Survey Results

**Table 1**  
**Survey Results Location 1**

Start Time	LAeq	LA90	LA10	LAmx
04/10/2021 11:00	56.7	51.1	59.3	73.3
04/10/2021 11:15	56.6	49.9	59.4	64.7
04/10/2021 11:30	56.2	51.1	59.0	64.3
04/10/2021 11:45	57.3	51.1	59.7	69.5
04/10/2021 12:00	57.1	51.2	59.7	72.0
04/10/2021 12:15	56.2	51.7	59.0	62.9
04/10/2021 12:30	57.1	52.2	59.6	68.7
04/10/2021 12:45	56.9	52.0	59.4	66.2
04/10/2021 13:00	56.1	50.5	59.1	67.6
04/10/2021 13:15	56.8	51.1	59.4	68.1
04/10/2021 13:30	56.5	51.6	59.3	64.5
04/10/2021 13:45	57.8	51.9	58.9	81.0
04/10/2021 14:00	56.8	52.8	59.2	67.1
04/10/2021 14:15	56.7	51.4	59.4	62.9
04/10/2021 14:30	56.6	52.5	58.9	65.6
04/10/2021 14:45	56.9	52.3	59.3	64.4
04/10/2021 15:00	57.6	52.8	59.8	70.5
04/10/2021 15:15	56.5	52.2	59.1	65.6
04/10/2021 15:30	56.7	52.5	59.0	65.5
04/10/2021 15:45	57.4	52.6	59.8	67.7
04/10/2021 16:00	59.4	55.1	61.4	68.5
04/10/2021 16:15	60.7	55.2	63.4	69.1
04/10/2021 16:30	58.8	55.9	60.9	63.9
04/10/2021 16:45	58.5	54.1	60.9	67.5
04/10/2021 17:00	58.3	54.9	60.4	63.6
04/10/2021 17:15	58.6	55.0	60.8	66.8
04/10/2021 17:30	58.6	54.6	60.8	65.6
04/10/2021 17:45	58.3	54.2	60.5	63.2
04/10/2021 18:00	58.6	54.2	60.8	67.9
04/10/2021 18:15	58.0	53.2	60.4	64.2
04/10/2021 18:30	57.6	52.0	60.2	69.9

Start Time	LAeq	LA90	LA10	LAmix
04/10/2021 18:45	56.3	50.1	59.0	65.6
04/10/2021 19:00	55.4	49.4	58.3	63.3
04/10/2021 19:15	56.1	50.0	58.9	68.2
04/10/2021 19:30	55.8	49.8	58.7	65.4
04/10/2021 19:45	55.5	49.5	58.6	64.0
04/10/2021 20:00	55.1	48.7	58.2	62.5
04/10/2021 20:15	54.7	48.2	57.8	62.2
04/10/2021 20:30	54.1	47.5	57.5	63.4
04/10/2021 20:45	54.2	47.5	57.5	64.7
04/10/2021 21:00	53.9	47.3	57.3	62.8
04/10/2021 21:15	53.8	46.2	57.7	63.5
04/10/2021 21:30	53.5	46.3	57.2	63.0
04/10/2021 21:45	52.8	45.9	56.5	63.6
04/10/2021 22:00	51.8	44.7	55.8	61.9
04/10/2021 22:15	54.0	46.5	57.5	65.3
04/10/2021 22:30	52.3	44.5	56.3	64.3
04/10/2021 22:45	51.7	44.2	55.9	62.0
04/10/2021 23:00	48.3	41.6	52.7	59.1
04/10/2021 23:15	49.9	42.8	54.6	61.6
04/10/2021 23:30	50.7	42.1	55.0	66.1
04/10/2021 23:45	49.0	42.7	53.2	63.0
05/10/2021 00:00	48.6	42.3	52.8	62.6
05/10/2021 00:15	48.6	41.2	52.0	64.0
05/10/2021 00:30	46.0	41.4	47.9	60.4
05/10/2021 00:45	46.3	40.7	50.3	58.4
05/10/2021 01:00	45.1	40.5	45.7	60.8
05/10/2021 01:15	47.2	42.5	49.7	59.1
05/10/2021 01:30	48.4	43.9	50.4	60.0
05/10/2021 01:45	55.9	50.6	57.9	64.6
05/10/2021 02:00	55.1	53.2	56.4	61.1
05/10/2021 02:15	53.6	51.1	55.4	63.8
05/10/2021 02:30	53.6	49.5	55.6	63.5

Start Time	LAeq	LA90	LA10	LAmix
05/10/2021 02:45	52.4	48.6	54.6	60.8
05/10/2021 03:00	55.0	52.5	57.1	61.1
05/10/2021 03:15	55.8	51.6	58.1	66.0
05/10/2021 03:30	54.1	48.3	56.5	65.6
05/10/2021 03:45	61.5	43.3	66.5	72.5
05/10/2021 04:00	46.4	39.8	47.7	63.1
05/10/2021 04:15	50.7	39.5	54.7	64.4
05/10/2021 04:30	48.7	38.6	51.2	65.4
05/10/2021 04:45	48.8	39.0	53.4	62.6
05/10/2021 05:00	49.3	40.4	53.9	64.5
05/10/2021 05:15	50.3	42.1	54.5	62.9
05/10/2021 05:30	50.3	42.5	55.0	62.2
05/10/2021 05:45	53.1	43.6	57.1	69.1
05/10/2021 06:00	53.3	43.9	57.1	63.7
05/10/2021 06:15	55.3	47.5	58.9	65.3
05/10/2021 06:30	55.5	47.7	58.9	67.7
05/10/2021 06:45	56.4	49.4	59.7	65.4
05/10/2021 07:00	56.4	50.5	59.4	65.7
05/10/2021 07:15	57.3	50.2	60.5	64.1
05/10/2021 07:30	58.1	53.3	60.7	65.1
05/10/2021 07:45	59.0	55.8	60.8	68.1
05/10/2021 08:00	56.8	51.7	59.5	66.3
05/10/2021 08:15	56.5	51.7	58.8	67.6
05/10/2021 08:30	57.4	52.2	60.1	71.1
05/10/2021 08:45	58.2	53.3	60.5	70.0
05/10/2021 09:00	58.6	54.8	60.9	67.9
05/10/2021 09:15	58.8	52.7	60.7	74.7
05/10/2021 09:30	57.2	51.0	60.3	65.2
05/10/2021 09:45	57.1	51.8	59.8	66.1
05/10/2021 10:00	58.0	51.5	60.7	72.4
05/10/2021 10:15	57.3	51.7	60.0	66.3
05/10/2021 10:30	57.2	52.2	59.8	67.7

Start Time	LAeq	LA90	LA10	LAmix
05/10/2021 10:45	57.3	52.8	59.8	67.6
05/10/2021 11:00	57.6	52.2	60.2	67.1
05/10/2021 11:15	57.0	51.3	59.8	70.2
05/10/2021 11:30	57.3	52.0	60.1	67.4
05/10/2021 11:45	57.1	52.7	59.5	66.7
05/10/2021 12:00	57.1	52.1	59.7	67.1
05/10/2021 12:15	57.2	52.2	59.7	71.1
05/10/2021 12:30	56.8	52.0	59.4	64.7
05/10/2021 12:45	57.3	52.3	60.0	65.9
05/10/2021 13:00	57.3	52.4	59.9	66.4
05/10/2021 13:15	57.6	53.0	59.9	73.1
05/10/2021 13:30	58.1	53.1	60.2	75.5
05/10/2021 13:45	56.9	52.3	59.3	65.0
05/10/2021 14:00	57.4	52.8	59.9	66.8
05/10/2021 14:15	57.4	53.3	59.7	65.7
05/10/2021 14:30	57.9	54.1	60.3	65.9
05/10/2021 14:45	57.6	53.8	60.1	64.3
05/10/2021 15:00	57.9	53.6	60.6	65.9
05/10/2021 15:15	58.2	54.3	60.4	66.9
05/10/2021 15:30	56.6	52.6	58.9	62.0
05/10/2021 15:45	57.8	53.3	60.2	72.0
05/10/2021 16:00	58.0	54.3	59.9	69.3
05/10/2021 16:15	57.0	53.1	59.2	63.6
05/10/2021 16:30	57.6	53.8	59.8	65.7
05/10/2021 16:45	58.0	54.3	60.1	65.6
05/10/2021 17:00	57.6	54.1	59.6	64.4
05/10/2021 17:15	57.5	54.2	59.4	68.9
05/10/2021 17:30	58.3	54.5	60.4	69.1
05/10/2021 17:45	57.7	53.1	59.7	71.6
05/10/2021 18:00	58.5	54.4	60.6	70.4
05/10/2021 18:15	56.9	52.2	59.3	69.2
05/10/2021 18:30	56.8	51.7	59.2	68.5

Start Time	LAeq	LA90	LA10	LAmix
05/10/2021 18:45	56.9	51.9	59.4	64.1
05/10/2021 19:00	56.3	51.2	58.6	62.7
05/10/2021 19:15	55.9	50.9	58.4	66.4
05/10/2021 19:30	55.1	49.9	57.7	63.0
05/10/2021 19:45	55.8	50.6	58.6	65.7
05/10/2021 20:00	55.0	49.3	57.8	65.1
05/10/2021 20:15	54.7	48.6	57.7	66.0
05/10/2021 20:30	52.9	46.3	56.3	60.8
05/10/2021 20:45	53.9	48.1	57.1	61.3
05/10/2021 21:00	53.9	45.8	57.1	65.5
05/10/2021 21:15	54.4	47.5	57.7	63.7
05/10/2021 21:30	51.8	43.1	55.9	62.5
05/10/2021 21:45	52.5	43.6	56.2	64.4
05/10/2021 22:00	53.8	47.0	57.3	63.1
05/10/2021 22:15	53.4	46.1	57.0	61.9
05/10/2021 22:30	51.8	44.4	55.7	59.9
05/10/2021 22:45	51.0	42.2	54.4	70.1
05/10/2021 23:00	51.3	42.7	55.3	61.5
05/10/2021 23:15	50.2	41.9	54.1	60.4
05/10/2021 23:30	49.9	41.3	53.8	60.4
05/10/2021 23:45	48.5	40.1	53.2	59.0
06/10/2021 00:00	48.5	39.6	52.5	63.7
06/10/2021 00:15	47.7	38.5	51.2	61.8
06/10/2021 00:30	49.4	39.4	53.2	62.7
06/10/2021 00:45	45.5	38.1	49.1	56.2
06/10/2021 01:00	45.8	39.1	49.0	60.2
06/10/2021 01:15	46.2	38.7	50.0	61.9
06/10/2021 01:30	46.3	37.8	50.4	58.9
06/10/2021 01:45	46.8	38.3	49.4	64.2
06/10/2021 02:00	47.1	38.5	50.5	59.8
06/10/2021 02:15	45.1	38.0	48.3	59.3
06/10/2021 02:30	44.7	38.6	47.4	56.2

Start Time	LAeq	LA90	LA10	LAmix
06/10/2021 02:45	44.4	38.9	47.2	58.1
06/10/2021 03:00	49.1	37.8	54.0	64.4
06/10/2021 03:15	47.7	40.6	51.0	62.3
06/10/2021 03:30	48.7	40.4	51.8	63.3
06/10/2021 03:45	47.6	39.5	51.4	60.9
06/10/2021 04:00	48.3	39.7	52.4	60.4
06/10/2021 04:15	50.6	43.1	53.8	63.5
06/10/2021 04:30	49.0	39.8	52.5	62.0
06/10/2021 04:45	48.5	41.3	52.4	61.9
06/10/2021 05:00	48.5	40.5	53.0	58.7
06/10/2021 05:15	49.3	40.3	53.4	60.9
06/10/2021 05:30	52.0	42.2	56.1	63.5
06/10/2021 05:45	53.7	45.3	57.0	67.1
06/10/2021 06:00	52.5	43.7	56.5	64.1
06/10/2021 06:15	54.0	46.1	57.8	65.0
06/10/2021 06:30	55.7	48.9	58.7	64.8
06/10/2021 06:45	56.1	49.3	59.1	64.2
06/10/2021 07:00	56.2	50.1	59.1	63.5
06/10/2021 07:15	57.3	51.2	59.4	74.9
06/10/2021 07:30	57.3	52.7	59.6	68.7
06/10/2021 07:45	56.3	52.6	58.5	63.2
06/10/2021 08:00	56.1	52.0	58.0	68.7
06/10/2021 08:15	55.8	52.6	57.8	63.2
06/10/2021 08:30	57.5	53.7	59.7	66.3
06/10/2021 08:45	57.9	53.8	60.0	70.9
06/10/2021 09:00	58.4	54.8	60.7	69.7
06/10/2021 09:15	58.0	53.9	60.4	67.6
06/10/2021 09:30	56.5	51.4	59.1	65.1
06/10/2021 09:45	57.5	52.0	60.0	72.2
06/10/2021 10:00	57.6	52.6	59.3	77.1
06/10/2021 10:15	56.8	51.5	59.4	66.8
06/10/2021 10:30	56.5	51.5	59.3	65.0



Start Time	LAeq	LA90	LA10	LAmix
06/10/2021 10:45	56.9	52.0	59.5	68.5
06/10/2021 11:00	56.6	50.9	59.1	73.0
06/10/2021 11:15	56.9	52.0	59.6	66.4
06/10/2021 11:30	56.2	50.9	58.7	69.7
06/10/2021 11:45	56.4	52.2	59.0	63.6
06/10/2021 12:00	56.7	51.9	59.2	65.3
06/10/2021 12:15	56.1	52.0	58.4	65.0
06/10/2021 12:30	56.5	52.3	59.0	64.0
06/10/2021 12:45	55.8	50.3	58.7	65.6
06/10/2021 13:00	57.2	51.0	59.8	71.9
06/10/2021 13:15	56.3	52.0	58.9	64.5
06/10/2021 13:30	56.1	50.4	59.0	67.7
06/10/2021 13:45	56.5	52.3	59.0	67.1
06/10/2021 14:00	55.7	50.7	58.2	65.7
06/10/2021 14:15	56.2	51.3	58.6	65.9
06/10/2021 14:30	56.1	50.1	58.8	71.0
06/10/2021 14:45	56.5	52.5	58.5	63.4
06/10/2021 15:00	56.1	51.5	58.4	65.8
06/10/2021 15:15	56.4	50.8	58.9	65.9
06/10/2021 15:30	57.0	51.2	59.4	69.2
06/10/2021 15:45	56.4	51.6	58.9	66.4
06/10/2021 16:00	56.7	52.6	59.0	67.3
06/10/2021 16:15	56.8	53.2	58.9	66.3
06/10/2021 16:30	56.3	52.3	58.6	63.8
06/10/2021 16:45	57.1	53.3	59.3	64.2
06/10/2021 17:00	57.3	52.9	59.2	74.1
06/10/2021 17:15	57.9	54.1	60.2	64.8
06/10/2021 17:30	58.4	54.5	60.7	66.1
06/10/2021 17:45	57.8	54.3	59.8	65.1
06/10/2021 18:00	58.3	54.6	60.5	64.4
06/10/2021 18:15	58.2	54.1	60.3	71.7
06/10/2021 18:30	57.4	54.0	59.5	63.6

Start Time	LAeq	LA90	LA10	LAmix
06/10/2021 18:45	56.7	51.2	59.3	63.8
06/10/2021 19:00	56.9	51.7	59.6	63.0
06/10/2021 19:15	57.4	52.2	59.8	68.6
06/10/2021 19:30	55.9	50.4	58.8	62.6
06/10/2021 19:45	55.6	50.4	58.2	63.1
06/10/2021 20:00	55.6	47.3	58.7	65.1
06/10/2021 20:15	55.8	50.1	58.8	66.7
06/10/2021 20:30	54.3	47.5	57.3	68.3
06/10/2021 20:45	61.1	46.9	58.0	88.2
06/10/2021 21:00	53.9	46.7	57.0	63.3
06/10/2021 21:15	54.4	47.9	57.7	62.1
06/10/2021 21:30	52.9	45.1	56.7	62.9
06/10/2021 21:45	53.0	45.9	56.5	66.2
06/10/2021 22:00	52.5	43.4	56.4	61.2
06/10/2021 22:15	52.3	44.5	56.7	61.5
06/10/2021 22:30	51.6	42.8	56.0	61.1
06/10/2021 22:45	49.5	40.8	54.1	59.3
06/10/2021 23:00	49.9	40.5	54.5	63.6
06/10/2021 23:15	49.0	37.7	54.3	62.2
06/10/2021 23:30	48.4	39.2	52.9	63.6
06/10/2021 23:45	47.9	39.0	52.1	61.9
07/10/2021 00:00	45.0	37.5	48.9	59.4
07/10/2021 00:15	46.5	37.7	48.2	64.6
07/10/2021 00:30	45.1	36.7	49.0	58.8
07/10/2021 00:45	44.4	35.0	47.2	59.4
07/10/2021 01:00	44.9	34.7	48.9	59.1
07/10/2021 01:15	44.1	35.3	44.4	60.4
07/10/2021 01:30	42.9	35.0	43.8	61.9
07/10/2021 01:45	43.9	36.4	45.6	60.9
07/10/2021 02:00	42.2	36.3	42.6	59.1
07/10/2021 02:15	40.7	35.5	38.9	61.5
07/10/2021 02:30	43.6	36.1	43.6	59.8

Start Time	LAeq	LA90	LA10	LAmix
07/10/2021 02:45	42.9	35.9	46.1	56.0
07/10/2021 03:00	38.5	36.6	39.7	50.1
07/10/2021 03:15	44.8	36.0	47.3	60.2
07/10/2021 03:30	44.8	36.6	47.4	59.3
07/10/2021 03:45	47.0	37.2	51.3	61.3
07/10/2021 04:00	45.7	36.5	46.9	64.0
07/10/2021 04:15	49.4	38.4	53.1	67.9
07/10/2021 04:30	48.5	38.5	51.8	64.2
07/10/2021 04:45	47.8	38.6	52.4	63.2
07/10/2021 05:00	48.0	39.7	52.5	60.5
07/10/2021 05:15	49.3	40.3	53.7	61.6
07/10/2021 05:30	49.7	41.8	54.0	62.6
07/10/2021 05:45	52.4	43.5	56.4	69.5
07/10/2021 06:00	52.2	43.3	56.5	63.2
07/10/2021 06:15	53.7	45.4	57.8	65.3
07/10/2021 06:30	54.7	47.2	58.1	62.5
07/10/2021 06:45	55.7	47.6	59.0	66.6
07/10/2021 07:00	55.6	48.5	58.7	69.6
07/10/2021 07:15	56.3	49.0	59.4	65.8
07/10/2021 07:30	56.2	50.7	58.8	63.3
07/10/2021 07:45	57.0	52.8	59.2	64.7
07/10/2021 08:00	56.2	49.9	59.0	65.8
07/10/2021 08:15	54.8	50.4	57.1	62.5
07/10/2021 08:30	54.6	50.3	57.0	64.0
07/10/2021 08:45	57.3	53.4	59.6	65.1
07/10/2021 09:00	56.8	52.5	59.3	64.3
07/10/2021 09:15	56.9	51.2	59.9	66.6
07/10/2021 09:30	57.1	48.6	59.6	75.3
07/10/2021 09:45	56.5	49.6	59.4	65.8
07/10/2021 10:00	56.3	49.9	59.2	66.3
07/10/2021 10:15	55.5	48.1	58.7	67.2
07/10/2021 10:30	55.9	49.1	59.1	64.7

Start Time	LAeq	LA90	LA10	LAmix
07/10/2021 10:45	55.4	48.2	58.4	64.2
07/10/2021 11:00	55.6	48.4	58.7	65.4
07/10/2021 11:15	55.5	49.2	58.5	65.3
07/10/2021 11:30	56.2	49.5	59.1	63.9
07/10/2021 11:45	55.8	48.9	58.6	69.8
07/10/2021 12:00	56.3	51.9	58.8	63.6

**Table 2**  
**Survey Results Location 2**

Time	LAeq	LA90	LA10	LAFMax
04/10/2021 11:00	67.8	52.4	72.2	80.1
04/10/2021 11:15	68.3	50.7	72.5	80.3
04/10/2021 11:30	67.4	52.0	71.9	78.2
04/10/2021 11:45	68.2	52.8	72.3	79.2
04/10/2021 12:00	68.1	53.7	72.6	79.1
04/10/2021 12:15	67.5	53.1	71.8	77.9
04/10/2021 12:30	68.1	53.7	72.2	79.7
04/10/2021 12:45	68.6	54.0	72.6	81.7
04/10/2021 13:00	68.1	52.7	72.1	78.8
04/10/2021 13:15	68.2	52.9	72.4	79.9
04/10/2021 13:30	68.0	53.0	72.1	79.9
04/10/2021 13:45	69.7	53.8	72.3	93.9
04/10/2021 14:00	68.2	55.0	72.1	78.2
04/10/2021 14:15	68.0	53.2	72.1	79.7
04/10/2021 14:30	67.9	54.2	72.0	79.9
04/10/2021 14:45	68.4	53.9	72.5	79.2
04/10/2021 15:00	68.8	55.1	72.5	85.8
04/10/2021 15:15	68.2	54.1	72.2	80.1
04/10/2021 15:30	68.2	54.0	72.2	77.5
04/10/2021 15:45	69.1	54.9	72.8	82.4
04/10/2021 16:00	69.6	57.7	73.2	78.1
04/10/2021 16:15	71.1	58.6	74.5	81.3
04/10/2021 16:30	70.6	60.3	73.9	79.5

Time	LAeq	LA90	LA10	LAFMax
04/10/2021 16:45	70.3	57.3	74.0	81.1
04/10/2021 17:00	70.1	59.1	73.4	78.1
04/10/2021 17:15	70.3	59.6	73.8	79.6
04/10/2021 17:30	70.6	58.5	74.2	80.6
04/10/2021 17:45	70.0	57.4	73.6	79.2
04/10/2021 18:00	70.2	57.2	73.7	80.0
04/10/2021 18:15	69.6	55.5	73.3	80.6
04/10/2021 18:30	68.7	52.9	72.9	82.8
04/10/2021 18:45	67.9	51.2	72.2	77.7
04/10/2021 19:00	67.1	50.3	71.6	77.4
04/10/2021 19:15	67.6	51.6	72.0	78.6
04/10/2021 19:30	67.4	51.3	72.1	79.1
04/10/2021 19:45	67.3	50.6	72.1	81.2
04/10/2021 20:00	66.5	49.4	71.6	78.2
04/10/2021 20:15	66.2	49.0	71.2	79.1
04/10/2021 20:30	65.4	48.4	70.6	80.2
04/10/2021 20:45	65.6	48.3	70.7	79.9
04/10/2021 21:00	65.6	48.4	70.8	78.7
04/10/2021 21:15	65.3	47.0	70.6	78.3
04/10/2021 21:30	64.7	47.0	70.1	79.5
04/10/2021 21:45	63.3	46.9	68.2	78.5
04/10/2021 22:00	62.9	45.5	67.9	77.8
04/10/2021 22:15	64.9	47.2	69.9	79.6
04/10/2021 22:30	63.2	45.6	68.0	78.8
04/10/2021 22:45	62.4	45.2	67.3	77.7
04/10/2021 23:00	58.6	42.5	60.4	76.9
04/10/2021 23:15	60.6	43.9	63.8	77.5
04/10/2021 23:30	61.1	43.8	62.1	80.3
04/10/2021 23:45	59.9	43.8	61.2	80.3
05/10/2021 00:00	59.2	44.1	59.2	79.6
05/10/2021 00:15	59.4	42.6	57.0	78.4
05/10/2021 00:30	55.0	43.1	50.2	76.7

Time	LAeq	LA90	LA10	LAFMax
05/10/2021 00:45	56.7	41.9	56.5	74.1
05/10/2021 01:00	53.9	42.4	52.7	76.7
05/10/2021 01:15	55.5	46.3	56.5	75.4
05/10/2021 01:30	56.2	46.3	57.2	77.6
05/10/2021 01:45	58.3	50.5	57.8	78.4
05/10/2021 02:00	56.8	51.0	56.9	75.9
05/10/2021 02:15	56.5	50.1	56.0	77.8
05/10/2021 02:30	58.8	50.6	58.5	79.2
05/10/2021 02:45	57.4	50.7	59.3	77.1
05/10/2021 03:00	59.6	52.5	62.4	75.8
05/10/2021 03:15	63.2	54.3	65.3	79.2
05/10/2021 03:30	61.2	49.3	63.9	78.4
05/10/2021 03:45	63.3	44.3	67.4	80.4
05/10/2021 04:00	56.3	40.3	49.0	78.4
05/10/2021 04:15	62.1	40.6	62.4	79.8
05/10/2021 04:30	60.1	39.5	55.0	82.6
05/10/2021 04:45	60.8	40.1	62.3	79.2
05/10/2021 05:00	61.0	41.8	61.3	81.7
05/10/2021 05:15	62.1	43.4	65.0	78.7
05/10/2021 05:30	62.2	44.1	65.0	79.2
05/10/2021 05:45	65.1	44.9	70.3	86.4
05/10/2021 06:00	65.1	45.2	69.7	80.4
05/10/2021 06:15	67.2	48.9	72.0	79.8
05/10/2021 06:30	67.2	49.4	72.2	79.0
05/10/2021 06:45	68.4	51.2	72.9	82.5
05/10/2021 07:00	68.2	52.0	72.7	79.1
05/10/2021 07:15	69.2	52.2	73.8	79.4
05/10/2021 07:30	69.9	56.1	73.9	80.5
05/10/2021 07:45	71.1	61.6	74.1	82.5
05/10/2021 08:00	68.1	56.3	72.3	79.5
05/10/2021 08:15	67.8	56.1	71.7	79.7
05/10/2021 08:30	68.7	56.2	72.6	80.3

Time	LAeq	LA90	LA10	LAFMax
05/10/2021 08:45	70.0	56.1	73.8	79.5
05/10/2021 09:00	70.5	59.0	74.1	80.0
05/10/2021 09:15	70.6	54.7	73.8	91.8
05/10/2021 09:30	69.0	52.7	73.2	79.2
05/10/2021 09:45	68.9	53.2	73.1	81.4
05/10/2021 10:00	69.2	52.8	73.4	81.5
05/10/2021 10:15	68.7	53.9	72.9	80.9
05/10/2021 10:30	68.5	52.9	72.8	81.8
05/10/2021 10:45	68.5	54.7	72.6	82.1
05/10/2021 11:00	68.8	53.6	72.8	81.2
05/10/2021 11:15	68.4	52.1	72.5	81.3
05/10/2021 11:30	68.6	53.1	72.7	81.2
05/10/2021 11:45	68.7	54.6	72.7	78.4
05/10/2021 12:00	68.3	53.2	72.4	80.4
05/10/2021 12:15	68.8	54.2	72.6	84.1
05/10/2021 12:30	68.5	54.1	72.4	79.4
05/10/2021 12:45	68.7	54.0	72.7	80.8
05/10/2021 13:00	69.0	54.7	73.2	80.3
05/10/2021 13:15	69.1	55.2	73.0	81.5
05/10/2021 13:30	69.5	54.6	73.1	85.4
05/10/2021 13:45	68.3	54.0	72.4	79.4
05/10/2021 14:00	68.9	55.3	73.0	79.9
05/10/2021 14:15	68.6	55.5	72.7	83.1
05/10/2021 14:30	69.2	56.5	72.9	80.5
05/10/2021 14:45	68.8	55.6	72.8	79.8
05/10/2021 15:00	68.5	56.0	72.4	80.3
05/10/2021 15:15	69.5	57.0	73.1	81.6
05/10/2021 15:30	68.2	54.7	72.2	77.9
05/10/2021 15:45	68.7	55.9	72.5	79.8
05/10/2021 16:00	69.3	57.9	73.0	78.5
05/10/2021 16:15	68.2	55.1	72.1	77.3
05/10/2021 16:30	68.8	56.2	72.2	83.5

Time	LAeq	LA90	LA10	LAFMax
05/10/2021 16:45	69.2	56.5	72.8	81.6
05/10/2021 17:00	69.3	57.2	72.6	79.3
05/10/2021 17:15	68.9	58.4	72.2	83.9
05/10/2021 17:30	69.4	57.8	73.0	78.2
05/10/2021 17:45	69.0	56.2	72.5	79.2
05/10/2021 18:00	69.5	58.3	72.8	88.4
05/10/2021 18:15	68.4	53.6	72.5	78.5
05/10/2021 18:30	68.3	53.4	72.0	77.4
05/10/2021 18:45	68.3	54.3	72.2	78.3
05/10/2021 19:00	67.6	51.7	71.8	80.7
05/10/2021 19:15	67.2	51.9	71.4	80.7
05/10/2021 19:30	66.8	51.4	71.2	79.4
05/10/2021 19:45	67.7	51.7	71.9	82.0
05/10/2021 20:00	66.6	49.7	71.0	80.8
05/10/2021 20:15	66.5	49.1	71.2	82.9
05/10/2021 20:30	64.3	46.5	69.5	76.9
05/10/2021 20:45	65.8	49.0	70.9	78.3
05/10/2021 21:00	65.1	47.4	69.9	80.9
05/10/2021 21:15	65.7	48.7	70.6	82.0
05/10/2021 21:30	64.2	44.3	69.7	76.9
05/10/2021 21:45	64.4	45.1	69.7	81.1
05/10/2021 22:00	65.3	47.9	70.6	80.8
05/10/2021 22:15	64.4	46.8	69.9	76.7
05/10/2021 22:30	63.2	45.2	68.5	75.9
05/10/2021 22:45	61.2	42.9	63.7	81.3
05/10/2021 23:00	62.1	44.1	65.6	79.4
05/10/2021 23:15	61.1	42.8	64.1	76.7
05/10/2021 23:30	60.1	42.5	61.8	77.9
05/10/2021 23:45	58.2	41.1	59.0	77.1
06/10/2021 00:00	57.8	39.9	58.7	76.7
06/10/2021 00:15	57.5	39.8	56.1	78.0
06/10/2021 00:30	58.5	40.5	57.3	80.7



Time	LAeq	LA90	LA10	LAFMax
06/10/2021 00:45	53.8	39.5	51.9	73.7
06/10/2021 01:00	54.8	39.6	51.5	77.0
06/10/2021 01:15	52.7	39.2	53.6	73.9
06/10/2021 01:30	55.0	38.3	54.9	73.9
06/10/2021 01:45	55.9	39.0	52.2	78.4
06/10/2021 02:00	54.7	39.4	53.2	77.1
06/10/2021 02:15	53.6	38.7	52.1	74.9
06/10/2021 02:30	48.3	39.7	50.8	68.0
06/10/2021 02:45	50.7	39.4	49.1	73.8
06/10/2021 03:00	56.9	37.9	56.0	80.0
06/10/2021 03:15	55.7	41.2	54.8	77.5
06/10/2021 03:30	59.6	41.2	55.6	80.1
06/10/2021 03:45	56.6	40.3	54.2	77.4
06/10/2021 04:00	57.3	40.9	55.6	78.5
06/10/2021 04:15	60.9	44.6	61.2	78.8
06/10/2021 04:30	58.8	40.9	56.0	77.7
06/10/2021 04:45	58.7	42.0	59.2	80.0
06/10/2021 05:00	58.3	41.5	59.6	76.6
06/10/2021 05:15	60.5	41.7	63.2	78.8
06/10/2021 05:30	63.5	43.0	67.8	81.9
06/10/2021 05:45	65.5	46.3	70.2	88.8
06/10/2021 06:00	63.8	44.7	68.8	77.7
06/10/2021 06:15	65.6	47.7	70.8	79.9
06/10/2021 06:30	67.2	49.9	71.8	78.8
06/10/2021 06:45	67.9	50.5	72.5	79.1
06/10/2021 07:00	67.9	51.8	72.5	80.3
06/10/2021 07:15	69.4	52.5	72.6	94.3
06/10/2021 07:30	69.0	55.3	72.7	79.4
06/10/2021 07:45	67.1	57.1	71.0	77.2
06/10/2021 08:00	66.5	55.6	70.4	81.8
06/10/2021 08:15	66.8	57.6	70.5	77.5
06/10/2021 08:30	68.9	58.0	72.5	79.9

Time	LAeq	LA90	LA10	LAFMax
06/10/2021 08:45	69.4	56.9	73.1	77.8
06/10/2021 09:00	69.6	58.3	73.1	81.8
06/10/2021 09:15	69.4	56.5	73.1	81.2
06/10/2021 09:30	68.0	53.7	72.1	80.6
06/10/2021 09:45	68.8	54.7	72.8	79.7
06/10/2021 10:00	68.4	55.2	72.2	80.7
06/10/2021 10:15	67.8	54.2	71.9	80.5
06/10/2021 10:30	68.3	53.6	72.5	79.5
06/10/2021 10:45	68.6	54.4	72.6	83.4
06/10/2021 11:00	68.4	53.3	72.2	86.8
06/10/2021 11:15	68.4	54.8	72.3	79.9
06/10/2021 11:30	67.9	53.1	72.0	79.8
06/10/2021 11:45	68.4	54.9	72.3	78.9
06/10/2021 12:00	68.6	55.1	72.3	80.5
06/10/2021 12:15	68.0	53.9	72.0	80.7
06/10/2021 12:30	68.2	53.6	72.1	78.9
06/10/2021 12:45	67.6	52.2	71.7	81.3
06/10/2021 13:00	69.3	53.4	72.8	89.8
06/10/2021 13:15	68.2	53.8	72.2	80.4
06/10/2021 13:30	68.3	52.2	72.1	85.5
06/10/2021 13:45	68.3	54.9	72.2	79.2
06/10/2021 14:00	67.6	52.5	71.6	79.1
06/10/2021 14:15	68.2	53.4	72.0	78.7
06/10/2021 14:30	68.2	52.5	72.2	86.7
06/10/2021 14:45	68.7	56.6	72.3	79.5
06/10/2021 15:00	68.3	54.5	72.0	81.1
06/10/2021 15:15	68.5	53.4	72.2	83.3
06/10/2021 15:30	68.8	53.6	72.5	84.4
06/10/2021 15:45	68.6	54.7	72.2	78.6
06/10/2021 16:00	69.0	56.7	72.5	83.8
06/10/2021 16:15	68.7	58.0	72.2	78.3
06/10/2021 16:30	68.6	55.7	72.2	80.9

Time	LAeq	LA90	LA10	LAFMax
06/10/2021 16:45	68.9	57.1	72.4	79.8
06/10/2021 17:00	69.3	56.3	72.2	93.0
06/10/2021 17:15	69.1	58.2	72.4	78.7
06/10/2021 17:30	69.3	57.9	72.9	78.6
06/10/2021 17:45	68.9	58.0	72.4	80.0
06/10/2021 18:00	69.2	57.8	72.8	78.2
06/10/2021 18:15	68.7	57.0	72.3	77.7
06/10/2021 18:30	68.3	56.5	72.1	77.9
06/10/2021 18:45	67.8	52.3	71.9	79.8
06/10/2021 19:00	67.9	53.4	71.9	78.7
06/10/2021 19:15	68.3	53.4	72.0	81.0
06/10/2021 19:30	67.0	51.1	71.3	77.2
06/10/2021 19:45	66.9	51.4	71.2	79.0
06/10/2021 20:00	66.4	47.6	71.1	81.1
06/10/2021 20:15	66.7	50.4	71.4	82.1
06/10/2021 20:30	65.9	47.9	70.4	81.3
06/10/2021 20:45	72.9	47.8	70.6	102.4
06/10/2021 21:00	65.4	46.9	70.3	79.4
06/10/2021 21:15	65.9	48.9	70.7	77.6
06/10/2021 21:30	64.3	45.4	69.7	79.2
06/10/2021 21:45	64.4	46.5	69.6	79.4
06/10/2021 22:00	63.8	44.4	69.2	77.0
06/10/2021 22:15	64.0	45.2	69.4	76.7
06/10/2021 22:30	63.3	43.4	68.6	77.3
06/10/2021 22:45	60.2	41.6	63.5	75.8
06/10/2021 23:00	61.5	41.0	65.0	79.9
06/10/2021 23:15	59.8	38.3	59.3	77.8
06/10/2021 23:30	60.1	40.1	61.3	79.9
06/10/2021 23:45	59.7	39.7	61.0	78.6
07/10/2021 00:00	56.4	38.3	54.7	76.5
07/10/2021 00:15	57.4	38.1	54.0	78.7
07/10/2021 00:30	56.9	37.3	53.4	76.8

Time	LAeq	LA90	LA10	LAFMax
07/10/2021 00:45	54.5	36.1	49.1	76.3
07/10/2021 01:00	56.6	35.1	53.1	76.3
07/10/2021 01:15	55.9	35.5	46.0	78.3
07/10/2021 01:30	53.9	35.7	45.5	76.0
07/10/2021 01:45	55.0	37.3	47.9	76.5
07/10/2021 02:00	51.2	37.1	44.1	75.1
07/10/2021 02:15	50.2	35.9	40.0	77.1
07/10/2021 02:30	54.5	36.6	44.5	77.7
07/10/2021 02:45	51.7	36.8	47.0	73.7
07/10/2021 03:00	42.3	37.1	40.4	66.8
07/10/2021 03:15	56.0	36.6	49.8	76.9
07/10/2021 03:30	56.2	37.1	50.7	76.7
07/10/2021 03:45	58.8	37.8	57.5	79.5
07/10/2021 04:00	57.3	37.1	47.9	80.4
07/10/2021 04:15	60.6	38.9	61.2	84.8
07/10/2021 04:30	59.8	39.2	57.7	79.9
07/10/2021 04:45	59.7	39.8	60.1	80.2
07/10/2021 05:00	59.3	40.7	60.0	77.1
07/10/2021 05:15	61.2	41.7	65.0	78.3
07/10/2021 05:30	61.3	42.9	63.9	79.8
07/10/2021 05:45	64.0	44.8	68.7	84.8
07/10/2021 06:00	63.5	44.6	68.3	78.4
07/10/2021 06:15	65.6	46.3	70.9	79.2
07/10/2021 06:30	66.5	48.1	71.1	79.1
07/10/2021 06:45	67.5	48.8	72.0	80.8
07/10/2021 07:00	67.2	49.7	71.8	82.7
07/10/2021 07:15	68.1	50.7	72.5	80.4
07/10/2021 07:30	68.2	52.4	72.0	79.1
07/10/2021 07:45	69.2	57.5	72.7	78.6
07/10/2021 08:00	68.1	55.1	71.9	80.6
07/10/2021 08:15	66.5	56.6	70.2	78.3
07/10/2021 08:30	65.7	55.1	69.9	78.3

Time	LAeq	LA90	LA10	LAFMax
07/10/2021 08:45	69.4	60.1	72.7	78.7
07/10/2021 09:00	68.8	58.4	72.3	78.6
07/10/2021 09:15	68.9	53.9	72.8	80.7
07/10/2021 09:30	69.2	50.7	72.3	93.1
07/10/2021 09:45	68.7	51.6	72.5	81.0
07/10/2021 10:00	68.3	52.2	72.2	80.5
07/10/2021 10:15	67.6	49.3	71.9	82.6
07/10/2021 10:30	68.0	51.1	72.3	79.8
07/10/2021 10:45	67.7	50.1	72.0	80.0
07/10/2021 11:00	67.7	49.9	71.9	80.5
07/10/2021 11:15	67.7	51.5	71.8	80.8
07/10/2021 11:30	68.4	52.3	72.2	81.0
07/10/2021 11:45	67.9	50.6	72.0	82.1

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