

REPORT REFERENCE:

SA – 4823 / Plot 45

INTERNAL NOISE ASSESSMENT

CLIENT:

Persimmon Homes
100 Wickham Road
Fareham
Hampshire
PO16 7HT

SITE:

Plot 45
St Georges Keep
St Georges Avenue
Havant
PO9 2RU

SURVEY DATES:

3rd – 4th October 2022

Report Presented By

Mr. B. J. Scrivener MIOA.



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1 INTRODUCTION

Sound Advice Acoustics Ltd have been instructed by Persimmon Homes to undertake a background noise survey to British Standard 8233: 2014 to determine the impact of existing noise sources on the recently built accommodation scheme at Plot 45, St Georges Keep, St Georges Avenue, Havant, PO9 2RU.

Internal noise levels were recorded in the Living Room and the Bedroom of plot 45. The measurements were taken over continuous 1 minute periods and are averaged over the relevant assessment periods as agreed. The following tabulated results have been evaluated from the attached figures 1- 2 for internal measurements. These measurements have demonstrated compliance with the relevant standards.

Therefore, at this stage no further remedial works are required with regards to acoustics.

Planning permission has been granted for the site and the following condition has been imposed:

Plots 37, 41, 42, 43, 44, 45, 46, 47, 48, 49 and 50 as shown on the approved plan, A-02-020-SP Rev F, shall not be occupied unless and until mitigation has been installed and demonstrated through post validation testing to determine compliance with the noise impact assessment as provided by Noise Impact Assessment (SA-4823-5, dated February 2019). This shall be submitted to and agreed in writing by the Local Planning Authority. This report is to confirm the expected noise levels within the proposed dwellings have been achieved and are in line with those levels laid out in BS8233:2014, and recommended for indoor ambient noise levels for dwellings, especially in relation to living rooms and bedrooms i.e. during the day (07:00 to 23:00) 35 dB L Aeq,16 hour and at night (23:00 to 07:00) 30 dB L Aeq,8 hour for bedrooms. the glazing and ventilation strategy mitigation measures outlined in the Noise Impact Assessment (SA-4823-5, dated February 2019), shall be retained at all times, unless otherwise agreed in writing by the Local Planning Authority.

Reason: To ensure the residential amenity of the residents of the properties are not impacted upon by any external noise levels and having due regard to policy CS16 of the Havant Borough Local Plan (Core Strategy) 2011 and the National Planning Policy Framework.

Therefore, this report looks to discharge the above condition.

2 APPARATUS

The equipment was calibrated using a sound pressure level of 114.0 dB at an octave band centre frequency of 1000Hz with reference to $2 \times 10^{-5} \text{ Nm}^{-2}$ before and after the tests and the equipment set to have no inaccuracy greater than 0.2dB.

All the following equipment was calibrated in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service (UKAS) on the following dates. Calibration schedules are implemented within Sound Advice Acoustics Ltd in accordance with UKAS directive LAB 23.

2.1 Norsonic noise meter s/n 1403140 environmental testing

Description	Make	Type	Serial No.	Calibration Intervals	Last Calibrated	Next Due Calibration
Integrated Sound Level Meter	Norsonic	140	1403140	2 YEARS	06.04.2021	06.04.2023
12.5mm Microphone (with windshield)	Norsonic	1225	413206	2 YEARS	17.11.2021	17.11.2023
Microphone Pre – Amplifier	Norsonic	1209	12245	2 YEARS	06.04.2021	06.04.2023

2.2 Norsonic noise meter s/n 1402941 environmental testing

Description	Make	Type	Serial No.	Calibration Intervals	Last Calibrated	Next Due Calibration
Integrated Sound Level Meter	Norsonic	140	1402941	2 YEARS	25.07.2022	25.07.2024
12.5mm Microphone (with windshield)	Norsonic	GRAS 40AF	179711	2 YEARS	25.07.2022	25.07.2024
Microphone Pre – Amplifier	Norsonic	1209	30479	2 YEARS	25.07.2022	25.07.2024

Full calibration certificates are available upon request.

3 INDOOR LIVING AREAS

BS 8233: 2014 set the following parameters as target levels that should be designed to within rooms such as Living Rooms and Bedrooms.

Table 2 Indoor ambient noise levels in spaces when they are unoccupied, and privacy is also important

Objective	Typical situations	Design Range
		$L_{Aeq,t}$ dB
Typical noise levels for acoustic privacy in shared spaces	Restaurant	40 – 55
	Open plan office	45 – 50
	Night club, public house	40 – 45
	Ballroom, banqueting hall	35 – 40
	Living room	35 – 40

NOTE See Noise control in building services [28] and BS EN ISO 3382.

Table 4 Indoor ambient noise levels for dwellings

Activity	Location	07:00 – 23:00	23:00 – 07:00
Resting	Living Room	35 dB L_{Aeq} 16 HOUR	--
Dining	Dining Room / Area	40 dB L_{Aeq} 16 HOUR	--
Sleeping (daytime resting)	Bedroom	35 dB L_{Aeq} 16 HOUR	30 dB L_{Aeq} 8 HOUR

3.1 Summary of Results

Daytime Internal Noise Levels L_{Aeq} 16 HOUR dB

Room	3 rd October 2022
Plot 45 – Living Room	34.4

Night Time Internal Noise Levels L_{Aeq} 8 HOUR dB

Room	3 rd – 4 th October 2022
Plot 45 - Bedroom	24.7

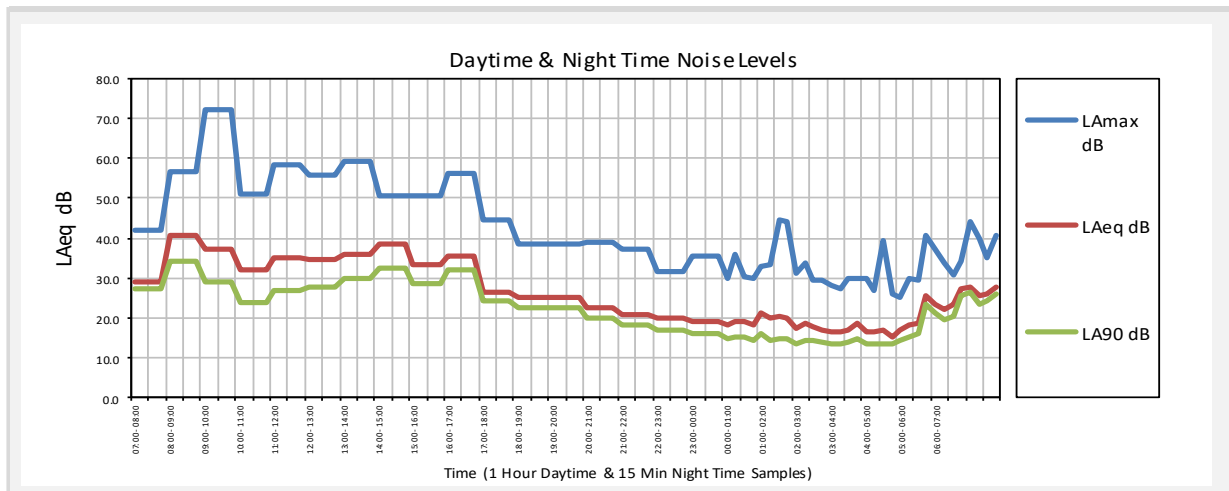
4 APPENDIX A – RESULTS

4.1 Plot 45 – Living Room 3rd – 4th October 2022

NOISE LEVEL SUMMARY ASSESSMENT				Octave Band Centre Frequency (Hz)								
Date / Time	LAeq	LAmx	LA90	63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k
DAYTIME 07:00 - 23:00 LAeq 16 HOUR & Corresponding LAmx 16 HOUR	34.4	72.3	27.0	43.3	42.4	36.0	28.2	29.1	23.4	22.8	13.7	8.2
NIGHT TIME 23:00 - 07:00 LAeq 8 HOUR & Corresponding LAmx 8 HOUR	21.9	44.5	15.0	30.7	27.0	22.7	16.5	18.5	9.7	7.5	7.7	7.7

DAYTIME NOISE LEVELS 07:00 - 23:00 1 HOUR SAMPLES				Octave Band Centre Frequency (Hz)								
Date / Time	LAeq	LAmx	LA90	63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16.0 k
07:00 - 08:00	29.1	22.1	27.4	37.7	33.8	27.7	22.1	27.2	16.6	8.0	7.7	8.1
08:00 - 09:00	40.7	56.7	34.3	47.1	47.7	41.9	35.2	35.5	29.4	30.5	16.4	8.1
09:00 - 10:00	37.0	72.3	29.2	44.8	42.8	36.6	29.8	32.4	28.2	27.4	21.5	12.6
10:00 - 11:00	32.0	51.2	24.0	41.1	41.1	34.6	25.3	25.4	19.6	20.8	11.5	8.3
11:00 - 12:00	35.2	58.5	26.8	44.2	40.3	33.8	30.9	31.8	25.3	21.6	10.1	7.8
12:00 - 13:00	34.9	55.8	27.8	43.9	44.4	37.3	24.9	27.7	23.6	25.8	18.4	7.8
13:00 - 14:00	35.8	59.4	29.7	42.1	43.8	38.0	31.1	30.4	23.4	22.0	11.9	7.6
14:00 - 15:00	38.7	50.8	32.5	47.8	48.3	41.5	32.0	32.2	27.0	25.7	14.0	7.6
15:00 - 16:00	33.5	50.6	28.6	44.9	43.9	36.6	25.3	27.5	20.4	15.5	8.1	7.3
16:00 - 17:00	35.7	56.2	32.1	48.6	44.7	38.3	29.3	28.9	25.1	21.8	9.1	7.3
17:00 - 18:00	26.7	44.5	24.5	37.0	31.1	24.2	18.7	24.8	14.9	7.5	7.6	7.2
18:00 - 19:00	25.0	38.7	22.5	34.8	29.2	22.5	17.1	23.0	13.3	7.7	7.6	7.3
19:00 - 20:00	22.7	38.8	20.1	32.7	26.9	20.2	14.9	20.6	11.2	7.2	7.6	7.2
20:00 - 21:00	21.0	37.2	18.2	31.8	25.7	18.7	13.2	18.4	9.7	6.9	7.7	7.3
21:00 - 22:00	20.0	31.5	17.0	30.2	24.0	17.5	12.1	17.3	9.0	6.9	7.7	7.4
22:00 - 23:00	19.1	35.6	16.0	29.5	24.2	17.6	10.8	15.9	8.1	6.9	7.7	7.5

NIGHT TIME NOISE LEVELS 23:00 - 07:00 15 MINUTE SAMPLES				Octave Band Centre Frequency (Hz)								
Date / Time	LAeq	LAmx	LA90	63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16.0 k
23:00 - 23:15	18.2	30.0	14.7	26.2	21.4	16.2	10.8	15.0	7.6	6.9	7.7	7.6
23:15 - 23:30	19.3	35.9	15.4	30.9	23.8	17.6	12.4	16.0	8.2	6.9	7.7	7.6
23:30 - 23:45	19.0	30.2	15.2	29.2	22.9	16.3	12.0	16.0	7.9	6.9	7.7	7.7
23:45 - 00:00	18.2	29.8	14.4	27.0	21.2	15.1	10.3	15.2	7.8	6.9	7.7	7.6
00:00 - 00:15	21.2	33.1	16.1	28.2	24.2	20.0	14.0	18.9	9.8	6.9	7.6	7.4
00:15 - 00:30	19.8	33.2	14.6	27.4	22.3	16.5	11.7	17.4	9.0	6.9	7.7	7.5
00:30 - 00:45	20.6	44.5	14.8	25.4	28.1	21.1	13.9	16.6	8.4	6.9	7.6	7.5
00:45 - 01:00	19.9	44.3	14.7	28.1	23.5	17.9	15.1	16.9	8.0	7.0	7.6	7.6
01:00 - 01:15	17.2	31.4	13.3	23.2	19.4	12.7	8.5	14.0	7.1	6.9	7.6	7.5
01:15 - 01:30	18.7	34.0	14.4	27.2	22.6	16.7	12.1	15.3	7.7	6.9	7.6	7.5
01:30 - 01:45	17.8	29.3	14.2	26.2	20.8	14.5	11.7	14.4	6.8	6.9	7.7	7.5
01:45 - 02:00	17.0	29.3	14.0	27.1	20.7	14.1	9.7	13.1	6.7	6.9	7.7	7.6
02:00 - 02:15	16.5	28.1	13.6	27.1	20.0	12.8	9.0	12.3	6.2	6.8	7.7	7.8
02:15 - 02:30	16.6	27.4	13.5	23.5	18.3	12.5	8.4	12.9	6.7	6.8	7.6	7.7
02:30 - 02:45	17.1	29.8	13.9	27.6	20.3	13.7	9.6	13.4	6.8	6.9	7.6	7.4
02:45 - 03:00	18.8	30.1	14.6	25.8	21.7	16.1	12.0	15.9	8.0	6.9	7.6	7.5
03:00 - 03:15	16.6	29.7	13.5	26.7	20.6	13.3	9.2	12.5	6.3	6.9	7.6	7.6
03:15 - 03:30	16.7	27.0	13.5	24.0	18.8	12.8	8.5	13.1	6.7	6.9	7.6	7.7
03:30 - 03:45	17.0	39.2	13.7	28.1	21.2	13.9	9.4	12.8	6.8	7.0	7.6	7.7
03:45 - 04:00	15.4	26.0	13.4	23.6	18.4	12.1	7.1	10.5	5.9	6.8	7.7	7.7
04:00 - 04:15	16.9	25.1	14.5	26.9	20.7	14.2	9.4	13.1	6.6	6.9	7.6	7.7
04:15 - 04:30	18.2	30.0	15.1	29.7	23.5	16.6	10.7	14.6	7.2	6.9	7.6	7.7
04:30 - 04:45	18.8	29.3	16.0	29.3	23.8	17.8	11.5	15.5	7.5	6.9	7.6	7.7
04:45 - 05:00	25.6	40.9	23.4	32.2	33.0	29.0	22.4	18.2	12.7	10.7	7.8	7.6
05:00 - 05:15	23.4	37.1	21.5	31.0	29.2	27.0	20.7	17.1	9.9	8.0	7.6	7.5
05:15 - 05:30	22.3	33.9	19.4	33.9	27.7	21.2	15.1	19.6	10.0	6.9	7.6	7.4
05:30 - 05:45	23.6	30.6	20.3	33.2	28.0	21.9	16.6	21.5	11.5	6.9	7.6	7.3
05:45 - 06:00	27.3	34.2	25.5	34.5	33.4	30.3	23.6	22.5	13.5	10.2	8.1	7.8
06:00 - 06:15	27.9	44.2	26.7	36.2	33.6	31.5	24.2	22.9	13.4	9.2	7.8	8.2
06:15 - 06:30	25.6	39.8	23.6	34.9	29.8	23.5	18.2	23.6	13.1	7.8	7.8	8.6
06:30 - 06:45	25.9	35.0	24.3	35.7	31.0	25.1	18.7	23.8	13.3	8.4	7.7	8.1
06:45 - 07:00	27.6	40.6	25.9	36.0	32.0	26.0	20.4	25.7	14.9	8.2	7.8	8.7

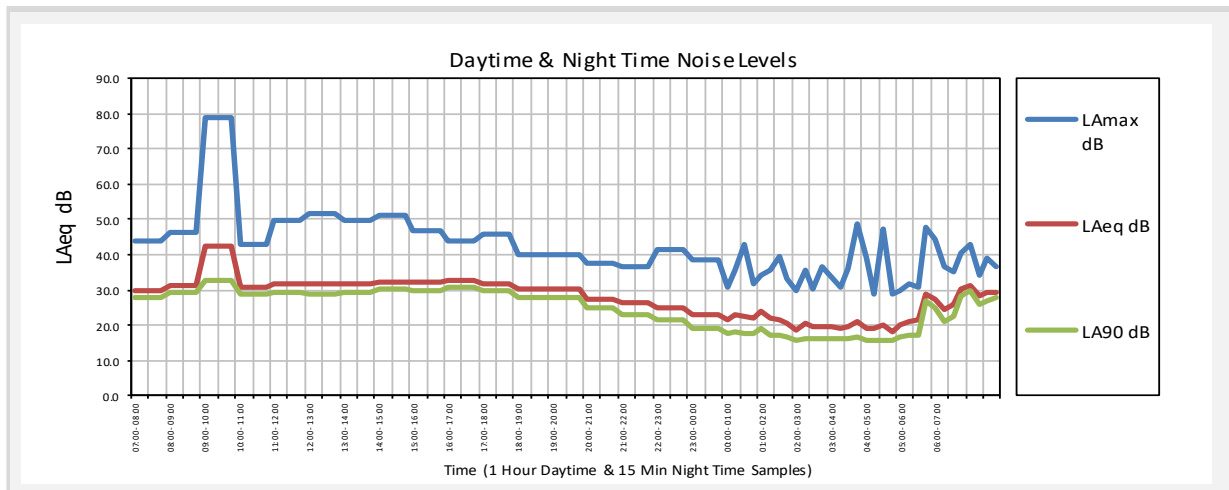


4.2 Plot 45 – Bedroom 3rd – 4th October 2022

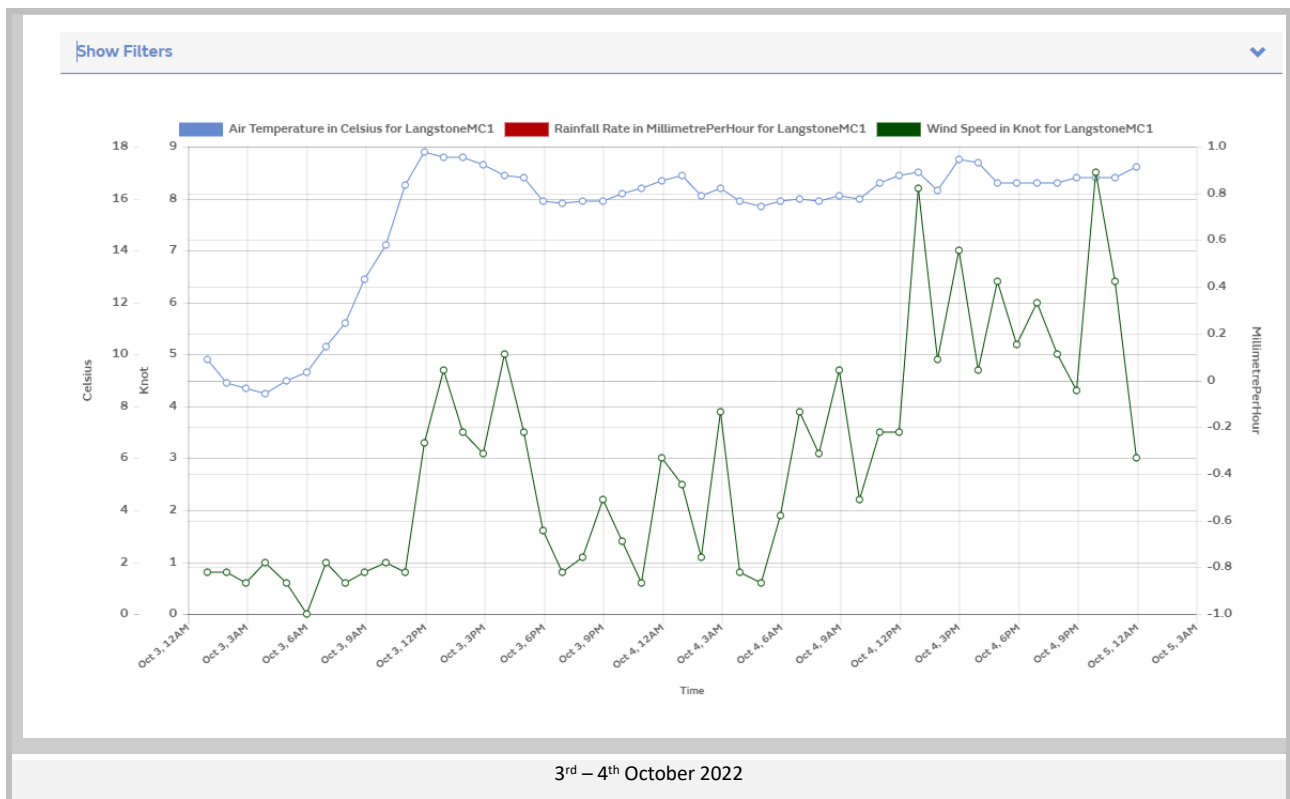
NOISE LEVEL SUMMARY ASSESSMENT				Octave Band Centre Frequency (Hz)								
Date / Time	LAeq	LAmx	LA90	63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k
DAYTIME 07:00 - 23:00 LAeq 16 HOUR & Cor r esponding LAmx 16 HOUR	33.4	78.9	29.0	42.0	35.9	30.6	28.8	29.8	25.3	20.7	16.6	11.9
NIGHT TIME 23:00 - 07:00 LAeq 8 HOUR & Cor r esponding LAmx 8 HOUR	24.7	48.7	16.0	28.7	26.0	25.2	22.3	20.7	11.8	10.8	10.5	9.1

DAYTIME NOISE LEVELS 07:00 - 23:00 1 HOUR SAMPLES												
Date / Time	LAeq	LAmx	LA90	63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16.0 k
07:00 - 08:00	29.8	25.3	27.9	34.8	31.4	27.3	26.7	27.4	16.7	11.3	10.5	9.2
08:00 - 09:00	31.2	46.1	29.3	45.0	37.7	31.9	28.3	27.2	17.8	13.5	10.6	9.2
09:00 - 10:00	42.6	78.9	32.5	43.2	41.7	39.1	36.5	37.7	36.7	32.2	27.5	20.8
10:00 - 11:00	30.9	43.1	28.7	39.1	34.0	28.3	28.0	28.4	17.3	11.6	10.5	9.1
11:00 - 12:00	31.6	49.9	29.4	43.9	34.7	28.5	28.4	29.2	17.9	11.4	10.5	9.2
12:00 - 13:00	31.6	51.4	28.9	43.5	36.7	29.2	28.3	28.9	18.3	14.8	11.2	9.2
13:00 - 14:00	31.5	49.8	29.3	43.1	36.2	29.7	28.2	28.9	17.7	11.7	10.5	9.2
14:00 - 15:00	32.3	51.2	30.1	46.3	39.4	30.5	28.8	29.3	18.8	12.6	10.5	9.2
15:00 - 16:00	32.2	46.7	29.9	43.6	37.7	30.1	29.0	29.5	18.3	11.3	10.5	9.2
16:00 - 17:00	32.4	43.6	30.7	47.0	37.4	30.6	28.5	29.9	19.0	12.3	10.5	9.2
17:00 - 18:00	31.7	45.6	29.9	34.9	33.1	29.2	27.7	29.8	18.7	11.2	10.5	9.2
18:00 - 19:00	30.1	40.0	28.0	33.2	31.0	26.2	26.3	28.1	17.2	13.1	10.6	9.2
19:00 - 20:00	27.5	37.3	24.8	30.9	27.5	23.2	23.9	25.3	14.7	11.7	10.5	9.2
20:00 - 21:00	26.2	36.8	23.1	29.8	26.8	22.4	22.7	23.9	13.5	10.2	10.5	9.2
21:00 - 22:00	25.1	41.3	21.5	28.6	25.6	21.4	21.5	22.8	12.7	10.1	10.5	9.1
22:00 - 23:00	23.2	38.4	19.3	27.3	23.6	19.3	19.8	20.4	11.3	10.0	10.5	9.1

NIGHT TIME NOISE LEVELS 23:00 - 07:00 15 MINUTE SAMPLES												
Date / Time	LAeq	LAmx	LA90	63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16.0 k
23:00 - 23:15	21.6	30.8	17.7	24.2	21.4	17.6	17.6	18.6	10.4	10.0	10.5	9.1
23:15 - 23:30	22.8	35.4	18.2	26.8	23.3	19.1	19.9	19.6	10.8	10.0	10.5	9.1
23:30 - 23:45	22.6	42.7	17.7	28.9	22.5	18.6	19.4	19.4	10.7	10.0	10.5	9.1
23:45 - 00:00	21.8	31.9	17.6	26.4	21.6	17.7	17.9	18.7	10.4	10.0	10.5	9.1
00:00 - 00:15	23.7	34.3	19.0	26.7	26.1	22.6	20.1	20.7	11.8	10.1	10.5	9.1
00:15 - 00:30	21.8	35.7	17.0	25.7	22.4	17.7	17.8	18.8	10.8	9.9	10.5	9.1
00:30 - 00:45	21.4	39.4	17.0	24.9	22.4	17.0	18.4	17.2	9.9	9.9	10.5	9.1
00:45 - 01:00	20.6	33.0	16.7	26.0	20.9	16.2	17.2	16.6	9.4	9.9	10.5	9.1
01:00 - 01:15	18.6	29.7	15.9	19.7	16.7	11.8	12.5	14.5	9.1	9.9	10.5	9.1
01:15 - 01:30	20.5	35.8	16.3	26.1	20.8	16.3	17.4	16.3	9.5	9.9	10.5	9.1
01:30 - 01:45	19.6	30.1	16.0	24.6	20.3	14.7	15.9	15.2	8.9	9.9	10.5	9.1
01:45 - 02:00	19.5	36.5	16.1	25.4	18.8	15.1	15.6	15.0	9.0	9.9	10.5	9.1
02:00 - 02:15	19.5	33.7	16.2	27.2	18.5	13.7	15.3	15.2	8.9	9.9	10.5	9.1
02:15 - 02:30	19.2	30.6	16.0	23.6	17.9	13.7	14.5	14.9	9.1	9.9	10.5	9.1
02:30 - 02:45	19.6	36.0	16.3	25.6	19.2	14.3	15.6	15.4	9.2	9.9	10.5	9.1
02:45 - 03:00	21.0	48.7	16.6	23.9	20.0	16.3	16.5	17.1	11.7	10.4	10.5	9.1
03:00 - 03:15	19.3	38.9	15.8	24.4	19.2	13.8	15.1	14.8	9.0	9.9	10.5	9.1
03:15 - 03:30	19.1	28.8	15.9	23.7	17.9	13.7	14.1	15.0	9.2	9.9	10.5	9.1
03:30 - 03:45	20.1	47.1	15.9	23.1	19.7	15.2	16.2	15.8	10.4	10.1	10.5	9.1
03:45 - 04:00	18.2	28.6	15.7	23.6	17.8	12.8	13.1	12.9	8.6	9.9	10.5	9.1
04:00 - 04:15	20.3	29.6	16.8	26.3	20.5	16.1	16.7	16.2	9.4	9.9	10.5	9.1
04:15 - 04:30	20.9	31.9	16.9	27.0	23.4	17.1	17.4	16.9	9.9	9.9	10.5	9.1
04:30 - 04:45	21.3	30.6	17.2	26.3	22.3	17.2	18.0	17.6	9.9	9.9	10.5	9.1
04:45 - 05:00	28.7	47.6	26.8	30.4	31.4	32.7	27.4	21.3	13.5	10.8	10.5	9.1
05:00 - 05:15	27.4	44.1	24.9	30.9	29.1	31.2	26.0	20.7	12.5	10.4	10.5	9.1
05:15 - 05:30	24.3	36.6	20.8	29.9	27.8	22.1	21.2	21.2	12.0	10.1	10.5	9.2
05:30 - 05:45	25.7	34.9	22.3	31.0	27.5	22.0	22.8	23.0	13.1	10.2	10.5	9.2
05:45 - 06:00	30.3	40.3	28.2	32.3	32.3	33.1	29.4	24.6	14.1	10.5	10.5	9.2
06:00 - 06:15	31.2	42.9	30.0	34.2	32.7	34.7	30.1	25.4	15.0	11.2	10.5	9.2
06:15 - 06:30	28.1	34.3	25.7	32.3	28.3	24.3	25.0	25.8	15.4	10.9	10.5	9.2
06:30 - 06:45	29.4	39.1	26.9	33.4	29.8	26.3	25.9	26.8	16.5	17.3	10.9	9.2
06:45 - 07:00	29.4	36.4	27.6	33.7	30.0	25.8	26.2	27.1	16.4	14.2	10.6	9.2



5 APPENDIX B – WEATHER



END OF REPORT