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Adelaide Brighton Cement Ltd

18 May 2016

PO Box 77

Ref: 50B-16-0007-TPR-799543-2

Port Adelaide, South Australia, 5015, Australia

Attention: Tim Radimissis

1 INTRODUCTION

Vipac Engineers and Scientists were engaged by Adelaide Brighton Cement (ABC) to undertake a routine environmental noise survey. This included continuous unattended noise monitoring over a period of 6 weeks and attended day and night time noise measurements at residential locations within proximity of the ABC Birkenhead plant during typical operations. The survey was conducted between the 9th February and 5th April 2016. During this period a major kiln shutdown occurred during 27 February – 19 March 2016.

2 REFERENCES

- [1] Environment Protection (Noise) Policy 2007, South Australian government
- [2] Guidelines for the use of the Environment Protection (Noise) Policy 2007, June 2009, Environment Protection Authority (EPA)
- [3] Map source – Google Earth, satellite image taken 3rd March 2016
- [4] Port Adelaide Enfield (City) Development Plan, Consolidated 21 April 2016, Development Act 1993

3 EQUIPMENT

Unattended automatic noise logging was undertaken at one location using a 01dB Duo Type 1 environmental noise logger (serial number: 10295 last calibrated on 30 October 2015) equipped with a ½" condenser microphone and approved windshield. The logger was programmed to automatically record L_{Aeq} , L_{A10} and L_{A90} noise levels; in successive 15-minute sample periods.

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The attended noise measurements were conducted during daytime and night-time periods using the following instruments:

- Bruel & Kjaer Type 1 Hand-held Analyser model 2250 Sound Level Meter (Serial No. 3002841, last calibrated on 4th Feb 2016),
- 01dB Duo Type 1 sound level meter (serial number: 10303 last calibrated on 14 October 2014).

Both sound level meters used in attended noise measurements were fitted with approved windshields. All sound level meters used in the attended and unattended measurements were calibrated before and after measurements with an acoustic pistonphone calibrator (LDCA250 serial number: 2815, last calibrated on 5 February 2016) and no or negligible drift was found in the meters.

4 ASSESSMENT CRITERIA

The Environment Protection (Noise) Policy 2007 (EPA) specifies the maximum allowable noise levels based on the time of day and land use, applicable at the most noise sensitive premises. These assessment criteria are determined based on the scheduled maximum noise levels for time of day and land use.

4.1 EXCERPT FROM THE CURRENT EPA POLICY 2007 (REF [2])

Part 1 – Section 5 – Indicative noise levels

(1) ... the indicative noise level for a noise source is to be determined as follows:

(a) where –

- i. the land uses principally promoted by the relevant Development Plan provisions for the noise source fall within a land use category specified in Table 1 in subclause (9); and
- ii. the land uses principally promoted by the relevant Development Plan provisions for the noise-affected premises fall within the same category as those principally promoted by the relevant Development Plan provisions for the noise source,

by reference to indicative noise factors set out in Table 1;

(b) in any other case – by reference to indicative noise factors set out in Table 2 in subclause (9).

(2) When measurements to determine the source noise level (continuous) are taken –

- (a) between 7:00am and 10:00pm on the same day – an indicative noise factor used to determine the indicative noise level for the noise source is found in Table 1 or 2 in the column under the heading "day"; or
- (b) between 10:00pm on one day and 7:00am on the following day – an indicative noise factor used to determine the indicative noise level for the noise source is found in Table 1 or 2 in the column under the heading "Night".

(5) ...if the land uses principally promoted by the relevant Development Plan provisions for the noise source and those principally promoted by the relevant Development Plan provisions for the noise-affected premises do not all fall within a single land use category, the indicative noise level is the average of the indicative noise factors for the land use categories within which those land uses fall.

4.2 INDICATIVE NOISE FACTORS

From the Port Adelaide Enfield Development Plan [4], the residential receivers are located within the zone designated as "Residential", whereas the Adelaide Brighton Cement Birkenhead Plant is located in the zone designated "Industry".

Using the information contained within the excerpts detailed in **Section 4.1**, the indicative noise levels for the residential locations are detailed in Table 4-1. The average of the 'General Industry' and 'Residential' land use category indicative noise levels is presented.

Table 4-1: Indicative Noise Level

	Day	Night
Indicative noise level – dB(A)	59	50

4.3 ADJUSTMENT FOR CHARACTERISTICS

Note that for a noise containing a characteristic (tonal, impulsive, low frequency or modulating), the following adjustments are to be made to the source noise level:

- Noise containing 1 characteristic; a 5dB(A) penalty must be added to the noise level (continuous).
- Noise containing 2 characteristics; and 8dB(A) penalty must be added to the noise level (continuous).
- Noise containing 3 or 4 characteristics, a 10dB(A) penalty must be added to the noise level (continuous).

5 METHODOLOGY

5.1 MEASUREMENT LOCATIONS

Vipac conducted attended daytime and night-time measurements at 16 residential locations in accordance with the Environment Protection (Noise) Policy 2007 [1]. These locations are listed in Table 5-1, labelled R2-R18 (excluding R7) and displayed on Figure 5-1. Additionally, unattended automatic noise logging, labelled NL1, was conducted at the Adelaide Brighton Cement Employees' Social & Sports Club for duration of 6 weeks. During this period a major kiln shutdown occurred during 27 February – 19 March 2016.

Table 5-1 Unattended and Attended Measurement Locations

Measurement Location	Location Address/ Description
NL1	137 Victoria Rd, Birkenhead (Social Club)
R2	Corner of Alfred St and Hargrave St, Peterhead
R3	Adjacent to 145 Hargrave St, Peterhead (facing Fletcher Rd)
R4	Corner of Robert St and Hargrave St, Birkenhead
R5	Adjacent to 23 Levi St, Birkenhead
R6	Adjacent to 19 Craigie St, Birkenhead
R8	Adjacent to 39 Mary St, Peterhead
R9	Corner of Wills St and Whyte St, Peterhead
R10	Corner of Olive St and Victoria Rd, Largs Bay
R11	Adjacent to 158 Fletcher Rd, Largs Bay (facing east along Olive St)
R12	Adjacent to 33 Hilton St, Birkenhead
R13	Adjacent to 28 Whyte St, Peterhead (facing east down Matilda St)

Measurement Location	Location Address/ Description
R14	Adjacent to 15 Waverley St, Largs Bay
R15	Adjacent to 9 Walton St, Peterhead
R16	Adjacent to 77 Victoria Rd, Birkenhead
R17	Corner of Fletcher Rd and Rose St, Birkenhead (adjacent to 53 Fletcher Rd)
R18	Adjacent to 20 Fletcher Rd, Birkenhead (In the park)



Figure 5-1: Attended noise measurement locations near Birkenhead plant [3].

6 NOISE SURVEY

6.1 UNATTENDED NOISE LOGGING

The overall results of the automatic unattended noise logging for both daytime and night-time assessment periods are presented in Table 6-1 and Table 6-2 respectively. The major kiln shutdown period is indicated within each result table. All individual minor plant shutdown activity during the measurement period is indicated in the table contained in Appendix B.

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As described in previous reports, the noise levels at the receiver locations are greatly influenced by extraneous noise, caused by intermittent events, in particular traffic noise. As a result, the L_{Aeq} level is seen to over-estimate the noise contribution from the ABC plant. To capture the noise from the plant only and reduce the effect of intermittent noise sources on the results, the L_{A90} levels have been used in the assessment. We consider that the L_{A90} level, the noise level exceeded for 90% of the measurement period, is representative of the overall noise level. As noise from the ABC Birkenhead plant is observed to be relatively constant during 15 minute measurement periods, and the noise from traffic and other extraneous sources is intermittent and varying overtime, the L_{A90} is an appropriate representation of noise levels for comparison with the environmental noise criteria.

Additionally, statistical noise data was logged for L_{A10} , which relates to the noise level exceeded for 10% of the measurement period.

Table 6-1: Summary of Automatic Noise Logging NL1, 137 Victoria Rd, Birkenhead – Daytime Assessment Period

Date	Assessment Period	Criteria dB(A)	Noise Level dB(A)			Exceedance (dB)	Wind direction significant towards receivers during period?
			L_{Aeq}	L_{A10}	L_{A90}		
09/02/16	7am-10pm	59	70	73	62	3	–
10/02/16	7am-10pm	59	72	75	63	4	–
11/02/16	7am-10pm	59	72	75	63	4	Yes
12/02/16	7am-10pm	59	72	75	63	4	–
13/02/16	7am-10pm	59	68	72	61	2	–
14/02/16	7am-10pm	59	69	72	61	2	–
15/02/16	7am-10pm	59	72	75	63	4	Yes
16/02/16	7am-10pm	59	72	76	64	5	–
17/02/16	7am-10pm	59	72	75	62	3	Yes
18/02/16	7am-10pm	59	72	75	61	2	Yes
19/02/16	7am-10pm	59	72	75	61	2	–
20/02/16	7am-10pm	59	69	72	58	–	–
21/02/16	7am-10pm	59	68	71	56	–	Yes
22/02/16	7am-10pm	59	70	74	59	–	Yes
23/02/16	7am-10pm	59	71	74	61	2	–
24/02/16	7am-10pm	59	71	74	63	4	–
25/02/16	7am-10pm	59	72	75	63	4	–
26/02/16	7am-10pm	59	71	75	62	3	–
Major Kiln Shutdown Commences 27 February 2016							
27/02/16	7am-10pm	59	69	73	62	3	Yes
28/02/16	7am-10pm	59	68	72	59	–	–
29/02/16	7am-10pm	59	71	75	62	3	–
01/03/16	7am-10pm	59	71	75	60	1	–



02/03/16	7am-10pm	59	71	74	59	-	-
03/03/16	7am-10pm	59	71	74	60	1	-
04/03/16	7am-10pm	59	71	75	60	1	-
05/03/16	7am-10pm	59	68	72	57	-	Yes
06/03/16	7am-10pm	59	69	72	57	-	Yes
07/03/16	7am-10pm	59	72	75	60	1	-
08/03/16	7am-10pm	59	71	75	60	1	-
09/03/16	7am-10pm	59	72	75	61	2	-
10/03/16	7am-10pm	59	72	76	62	3	Yes
11/03/16	7am-10pm	59	72	75	61	2	Yes
12/03/16	7am-10pm	59	69	72	57	-	Yes
13/03/16	7am-10pm	59	68	72	56	-	-
14/03/16	7am-10pm	59	68	72	56	-	-
15/03/16	7am-10pm	59	71	75	60	1	Yes
16/03/16	7am-10pm	59	71	75	60	1	-
17/03/16	7am-10pm	59	71	75	61	2	-
18/03/16	7am-10pm	59	72	75	61	2	-
Major Kiln Shutdown Period Ends 19 March 2016							
19/03/16	7am-10pm	59	69	73	59	0	-
20/03/16	7am-10pm	59	69	72	57	-	-
21/03/16	7am-10pm	59	72	75	62	3	-
22/03/16	7am-10pm	59	69	72	58	-	-
23/03/16	7am-10pm	59	72	75	62	3	-
24/03/16	7am-10pm	59	72	75	62	3	-
25/03/16	7am-10pm	59	68	72	60	1	-
26/03/16	7am-10pm	59	69	72	61	2	-
27/03/16	7am-10pm	59	69	72	61	2	-
28/03/16	7am-10pm	59	69	72	60	1	Yes
29/03/16	7am-10pm	59	72	75	62	3	-
30/03/16	7am-10pm	59	72	75	63	4	-
31/03/16	7am-10pm	59	72	75	63	4	-
01/04/16	7am-10pm	59	72	75	63	4	-
02/04/16	7am-10pm	59	69	72	60	1	-
03/04/16	7am-10pm	59	69	72	60	1	-
04/04/16	7am-10pm	59	72	75	62	3	Yes

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05/04/16	7am-10pm	59	72	76	63	4	-
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Table 6-2 Summary of Automatic Noise Logging NL1, 137 Victoria Rd, Birkenhead – Night-time Assessment Period

Date	Assessment Period	Criteria dB(A)	Noise Level dB(A)			Exceedance (dB)	Wind direction significant towards receivers during period?
			L _{Aeq}	L _{A10}	L _{A99}		
09/02/16	10pm-7am	50	67	70	61	11	Yes
10/02/16	10pm-7am	50	68	72	60	10	Yes
11/02/16	10pm-7am	50	68	72	60	10	-
12/02/16	10pm-7am	50	68	72	61	11	Yes
13/02/16	10pm-7am	50	67	70	61	11	-
14/02/16	10pm-7am	50	65	68	61	11	-
15/02/16	10pm-7am	50	68	72	60	10	Yes
16/02/16	10pm-7am	50	69	73	61	11	-
17/02/16	10pm-7am	50	69	73	59	9	-
18/02/16	10pm-7am	50	68	72	55	5	-
19/02/16	10pm-7am	50	67	71	55	5	-
20/02/16	10pm-7am	50	65	70	54	4	Yes
21/02/16	10pm-7am	50	63	67	53	3	Yes
22/02/16	10pm-7am	50	66	71	52	2	Yes
23/02/16	10pm-7am	50	67	71	55	5	-
24/02/16	10pm-7am	50	67	71	59	9	-
25/02/16	10pm-7am	50	68	72	60	10	-
26/02/16	10pm-7am	50	68	72	61	11	-
Major Kiln Shutdown Commences 27 February 2016							
27/02/16	10pm-7am	50	67	70	62	12	Yes
28/02/16	10pm-7am	50	65	68	59	9	Yes
29/02/16	10pm-7am	50	67	71	57	7	Yes
01/03/16	10pm-7am	50	68	72	57	7	-
02/03/16	10pm-7am	50	67	72	49	-	-
03/03/16	10pm-7am	50	67	72	48	-	Yes
04/03/16	10pm-7am	50	67	71	49	-	Yes
05/03/16	10pm-7am	50	66	69	51	1	Yes
06/03/16	10pm-7am	50	65	68	50	-	Yes
07/03/16	10pm-7am	50	67	71	49	-	-
08/03/16	10pm-7am	50	67	72	50	0	-



09/03/16	10pm-7am	50	68	72	52	2	-
10/03/16	10pm-7am	50	69	73	53	3	Yes
11/03/16	10pm-7am	50	67	72	52	2	Yes
12/03/16	10pm-7am	50	66	70	52	2	Yes
13/03/16	10pm-7am	50	65	69	51	1	Yes
14/03/16	10pm-7am	50	65	69	49	-	Yes
15/03/16	10pm-7am	50	67	72	49	-	Yes
16/03/16	10pm-7am	50	67	72	50	0	-
17/03/16	10pm-7am	50	67	71	50	0	-
18/03/16	10pm-7am	50	67	72	52	2	-
Major Kiln Shutdown Period Ends 19 March 2016							
19/03/16	10pm-7am	50	69	72	62	12	-
20/03/16	10pm-7am	50	65	69	56	6	-
21/03/16	10pm-7am	50	68	72	57	7	-
22/03/16	10pm-7am	50	67	72	56	6	-
23/03/16	10pm-7am	50	67	71	57	7	-
24/03/16	10pm-7am	50	68	72	59	9	-
25/03/16	10pm-7am	50	65	69	60	10	Yes
26/03/16	10pm-7am	50	65	69	60	10	Yes
27/03/16	10pm-7am	50	65	68	59	9	Yes
28/03/16	10pm-7am	50	65	68	58	8	Yes
29/03/16	10pm-7am	50	67	71	58	8	Yes
30/03/16	10pm-7am	50	68	72	59	9	-
31/03/16	10pm-7am	50	68	72	58	8	-
01/04/16	10pm-7am	50	68	71	58	8	-
02/04/16	10pm-7am	50	66	69	59	9	-
03/04/16	10pm-7am	50	64	67	59	9	Yes
04/04/16	10pm-7am	50	67	72	59	9	Yes

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Graphs representing results of the automatic noise monitoring for the period are included in Appendix A. The background noise levels measured at NL1 exceeded the criteria during most of the daytime and night-time periods respectively. The maximum exceedance of the daytime criteria was by 5 dB (on 16 February) while the maximum exceedance of the night-time criteria was more significant, by up to 12dB above the 50 dBA value (this occurred on the nights of 27 February and 19 March).

Where significant plant shut down occurred, an assessment was performed to find any significant trends between shutdown periods and changes in daily noise levels. During the period 27 February – 19 March a major shutdown of the plant occurred. During this shutdown measurement there was a relative drop in the night-time noise levels when compared to those levels measured outside of the shutdown period. During the shutdown the noise levels were observed to be within, or exceeding slightly by 1-3 dB, the noise criteria. This can be further seen by a relatively consistent drop in the night-time background levels for most of these dates (see graphs in Appendix A). The levels were exceeded by 7-9 dB during this shutdown period (28 February – 1 March), which may have been due to ABC activities or potentially other extraneous sources near the logger. On other dates outside of the major shutdown period it was noted that generally, no significant change in measured noise levels correlated to listed item shutdown times (when turning off, as well as turning back on). A list of times where plant was offline is provided in Appendix B.

Noise levels set by the criteria were exceeded irrespective of wind direction. Generally when there was an easterly wind (noted as significant in Table 6-1 and Table 6-2 respectively) the exceedance can be at a greater level, however this is not a consistent trend. There are examples of both daytime (21, 22 February; 5, 6, 12 March) and night-time (3, 4, 6, 14, 15 March) periods where the wind was blowing in the direction of the residents and the criteria was not exceeded. Conversely, there were days when exceedance of the criteria is observed and the wind was not blowing towards the residents. While wind may certainly be a factor, it is likely that significantly higher levels are due to traffic noise measured at the site in addition to the plant operations.

All weather data was obtained from the Outer Harbor weather station from the Bureau of Meteorology. It should be noted that the weather station at this location was unable to observe data during the period 17-23 March 2016; hence weather data for this period is unavailable. A copy of a wind rose for the area from the Bureau of Meteorology is available in Appendix C of this report. All other weather data for the 6 weeks of unattended noise measurements is available on request.

6.2 ATTENDED MEASUREMENT SURVEY

A noise survey was undertaken at 16 residential receiver locations, in order to capture the existing noise levels (and identify the dominant noise sources) in the vicinity, as well as to coincide with the continuous noise logging location NL1. During the measurement periods, the ABC plant was at full running capacity. Table 6-3 and Table 6-4 provide a summary of the daytime and night time attended measurements respectively.



6.2.1 DAYTIME MEASUREMENT RESULTS

Table 6-3: Summary of Daytime Attended Measurements at Residential Receivers

Location	Date/Time	Criteria dB(A)	Noise Level (L _{A90}) dB(A)	Noise Level (L _{Aeq}) dB(A)	Exceedance (dBA)	Wind Speed (m/s)	Wind Direction (deg)
R2	25/02/16 15:37	59	55	59	—	2.5	180
R3	25/02/16 14:57	59	42	49	—	2.5	203
R4	25/02/16 14:31	59	40	60	—	3.1	203
R5	25/02/16 15:26	59	48	52	—	2.5	180
R6	25/02/16 14:06	59	36	45	—	1.9	203
R8	25/02/16 16:45	59	46	53	—	4.7	203
R9	25/02/16 16:37	59	41	49	—	4.7	203
R10	25/02/16 17:05	59	58	69	—	5.6	203
R11	25/02/16 17:15	59	44	53	—	5.6	203
R12	25/02/16 15:49	59	53	57	—	2.5	180
R13	25/02/16 16:20	59	42	49	—	4.2	203
R14	25/02/16 16:59	59	41	47	—	5.6	203
R15	25/02/16 16:25	59	52	55	—	4.7	203
R16	25/02/16 15:59	59	63	73	4	4.2	203
R17	25/02/16 14:27	59	41	49	—	3.1	203
R18	25/02/16 14:02	59	41	48	—	1.9	203

It is noted that noise from the ABC plant was audible at the receiver locations in proximity to the plant, including R2, R5, R12, R8, R15 and R10. The daytime measurements show that the relevant environmental noise criteria for the daytime period has been achieved. At locations R4 and R10, the measurements were affected by high density traffic noise from both Hargrave Street and Victoria Rd respectively. However, the background levels as demonstrated by the L_{A90} measurements were below the criteria, indicating that the L_{Aeq} exceedance was due to road traffic activities. At location R16, both the L_{A90} and L_{Aeq} noise levels exceeded the criteria. However the influence of road traffic at this location was deemed to be the dominant source, with ABC activities not audible. Taking into account the effects of extraneous noise on the recent attended measurement survey, we note that the levels measured are generally consistent with the levels observed during the most recent previous surveys.

6.2.2 NIGHT-TIME MEASUREMENT RESULTS

Table 6-4: Summary of Night time Attended Measurements at Residential Receivers

Location	Date/Time	Criteria dB(A)	Noise Level (L _{A90}) dB(A)	Noise Level (L _{Aeq}) dB(A)	Exceedance (dBA)	Wind Speed (m/s)	Wind Direction (deg)
R2	25/02/16 22:51	50	55	58	5	9.2	180
R3	25/02/16 23:00	50	41	45	—	9.2	180
R4	25/02/16 23:20	50	37	44	—	9.2	180
R5	25/02/16 22:35	50	47	51	—	9.2	180
R6	25/02/16 22:20	50	38	41	—	10.3	225
R8	25/02/16 23:23	50	47	51	—	10.3	180
R9	25/02/16 23:57	50	38	42	—	9.7	203
R10	25/02/16 23:38	50	48	56	—	10.3	180
R11	25/02/16 23:54	50	43	51	—	9.7	203
R12	25/02/16 22:16	50	47	51	—	10.3	225
R13	25/02/16 23:38	50	43	48	—	10.3	180
R14	26/02/16 00:13	50	39	41	—	9.7	203
R15	25/02/16 23:07	50	52	56	2	9.2	180
R16	25/02/16 22:00	50	57	69	7	10.3	225
R17	25/02/16 22:39	50	43	47	—	9.2	180
R18	25/02/16 22:01	50	43	47	—	10.3	225

Night time measurements reveal exceedance of the relevant environmental noise criteria at locations R2, R15 and R16 for both the L_{A90} and L_{Aeq} levels. It was noted at these positions that there strong influence on the noise levels from traffic noise and ABC activities, with a mechanical chain noise being the clearest source of the ABC noise. At locations R5, R8, and R12, the L_{Aeq} levels exceeded the criteria, but not the L_{A90} levels. At these locations it was noted that road traffic noise and ABC activities were the main noise sources. At locations R10 and R11 the L_{Aeq} levels were exceeded, but this was noted to be due to road traffic noise; the L_{A90} levels were not exceeded at these receiver locations. The criteria was achieved at the remaining receivers R3, R4, R6, R9, R13, R14, R17 and R18, with these receivers being further away from the ABC plant than those receivers where the criteria was exceeded. Most measurements are approximately similar to previous measurements taken at the same locations in similar wind conditions. The wind direction was predominately north-westerly for the night time measurement period – it is not expected that more noise would have been carried from the ABC site towards the receivers as a result of wind during the measurement period.



6.2.3 ADDITIONAL COMMENTS REGARDING THE ATTENDED MEASUREMENT SURVEY

Inspection of the measurement spectra was also conducted. Analysis of the third octave noise data showed that there were no tones present at the measured locations in the near vicinity of the plant during both the daytime and night-time measurements, where the measured sound level in one third octave band was 5dB higher than the sound level in the adjacent third octave bands.

7 SUMMARY AND DISCUSSION

Unattended continuous logging was conducted at 137 Victoria Rd, Birkenhead (Social Club) over a 6 week period, and an attended measurement survey was conducted at 16 residential locations during both daytime and night-time periods. Exceedance of the relevant environmental noise criteria was observed at location R16 during the daytime period locations R2, R15 and R16 for the night-time period. Traffic noise was taken into account by considering the L_{A90} level in the case where traffic noise was considered to be a major influence. Since the noise from the ABC plant is expected to be constant, this is deemed to be an acceptable assessment.

Generally, for the noise levels at NL1, where an automatic noise logger has been placed, night-time noise levels were 1-12dB over the 50dB(A) criteria. The criteria was met during the night-time periods in some instances, generally during the period of 27 February – 19 March when the major kiln shutdown occurred.

Wind direction is an important influencing factor in the noise impact of the ABC Birkenhead plant to its neighbouring receivers. For the Birkenhead site, predominant wind directions (from BOM weather station data from Outer Harbor from April 2009 to October 2013) are shown to be from the sou'-sou'-west (13%), south (12%) and North East (8%). These directions appear consistent with the weather data that was observed for the unattended logging period for this report. A wind rose of the wind direction data is given in Appendix C.

We trust that the information provided is satisfactory. However, if you have any queries or require further information, please do not hesitate to contact us.

Yours sincerely,

Vipac Engineers & Scientists Ltd

James Tudor

Project Engineer

Attachments:

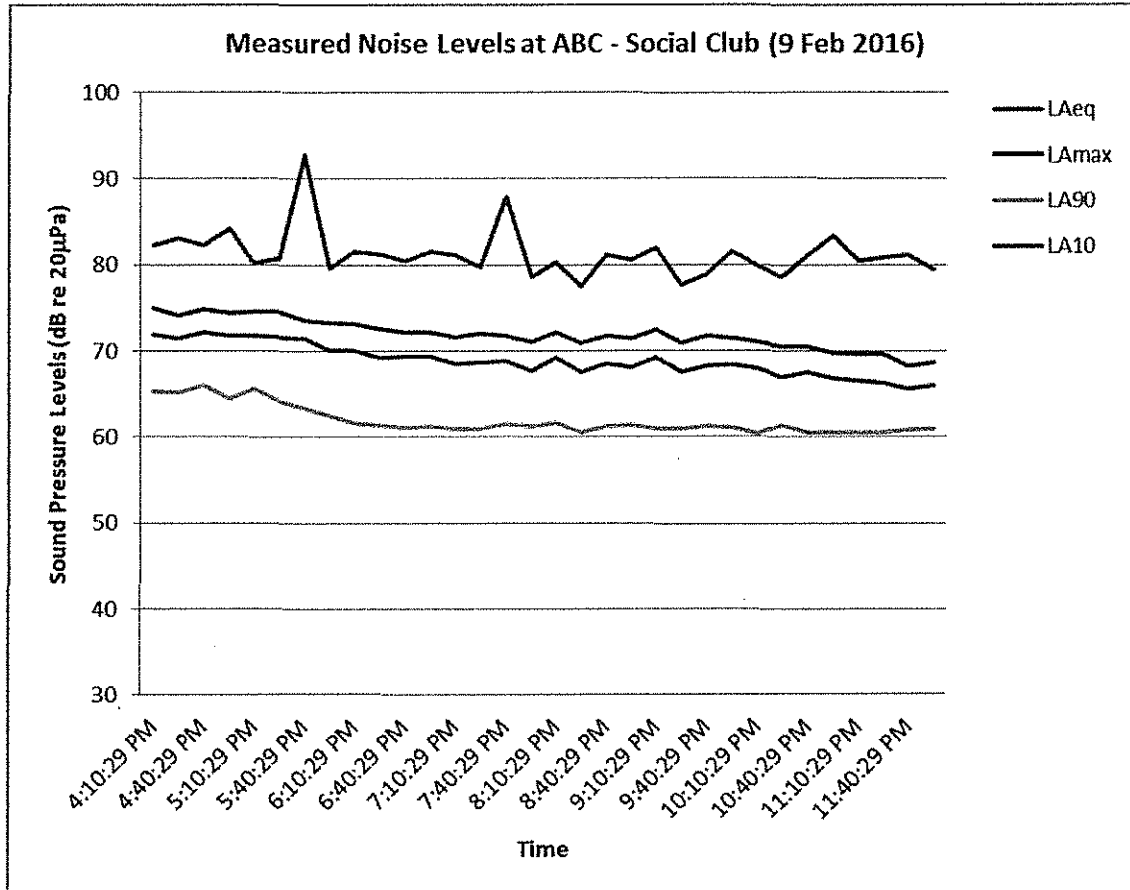
APPENDIX A NOISE MONITORING RESULT GRAPHS

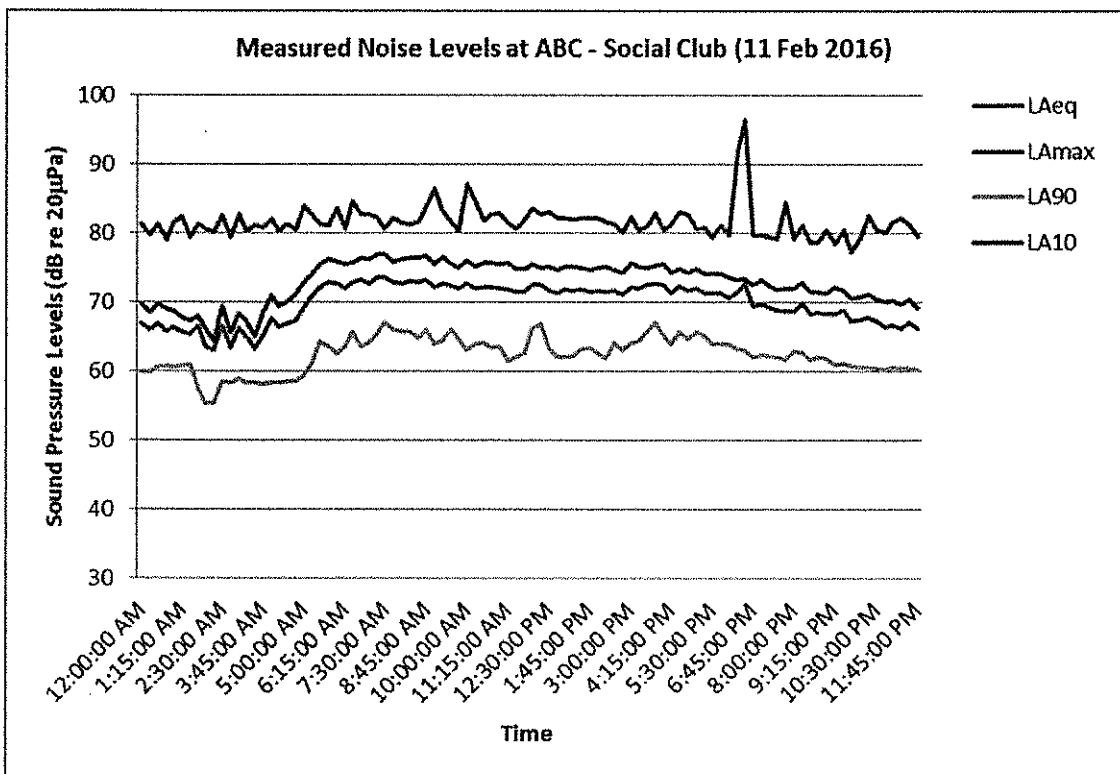
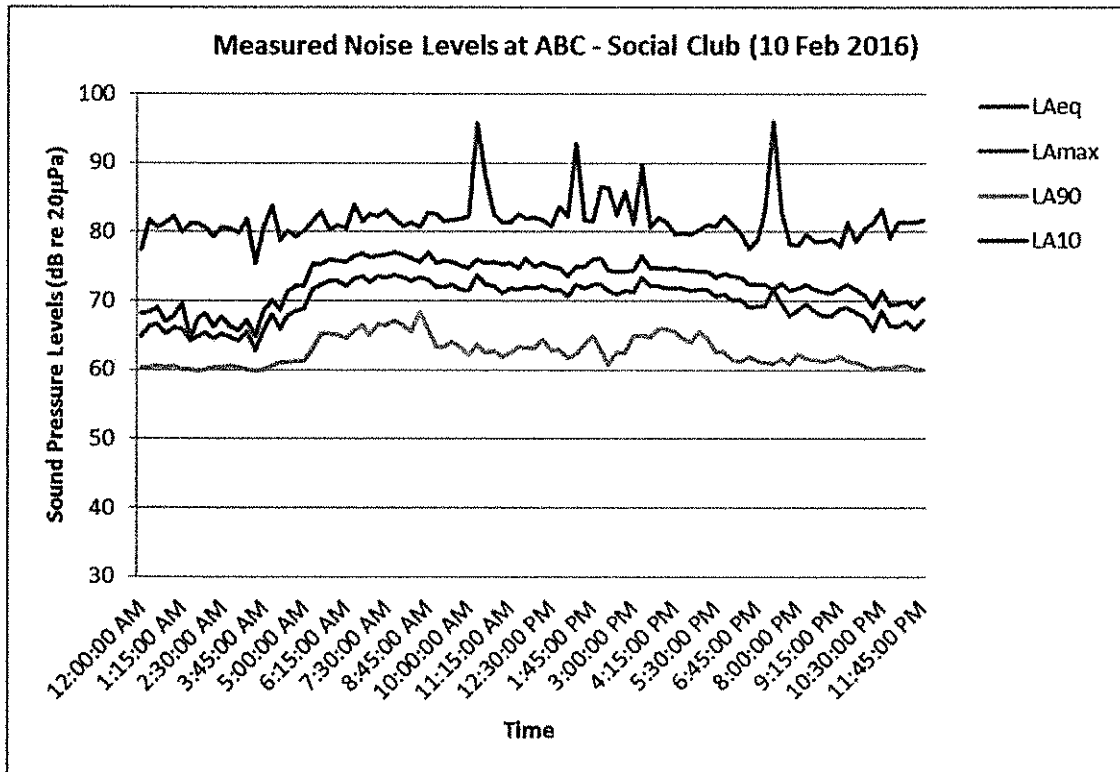
APPENDIX B LIST OF PLANT SHUTDOWN TIMES

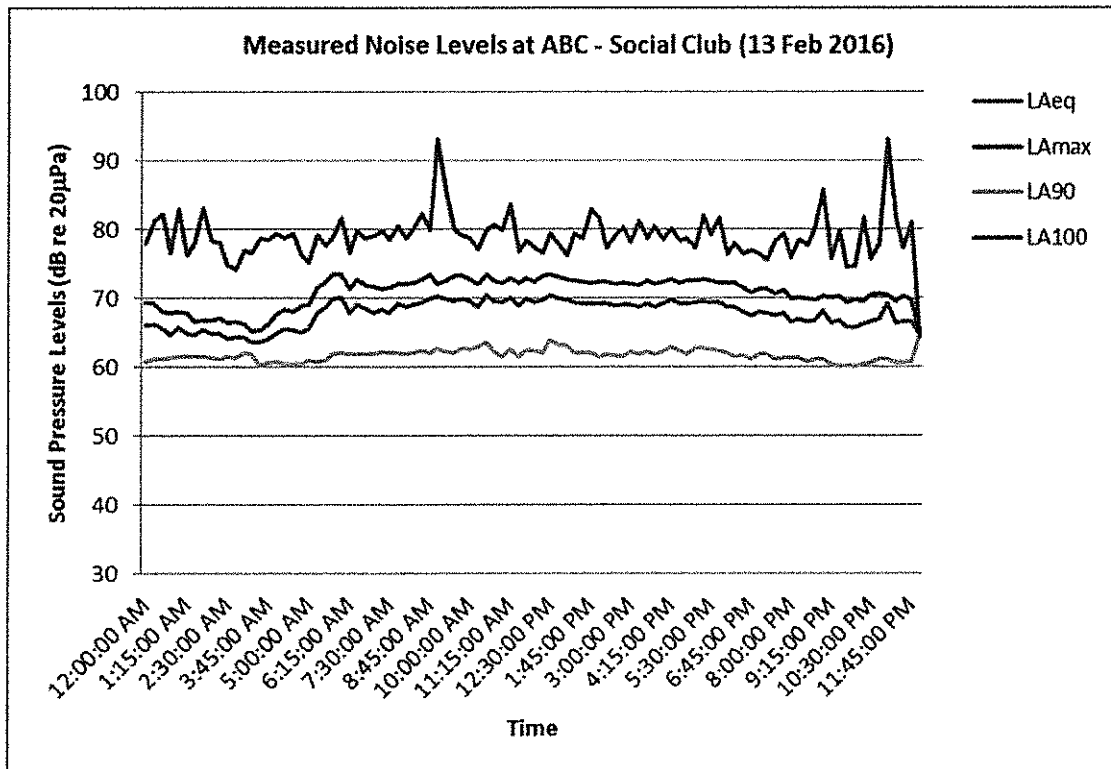
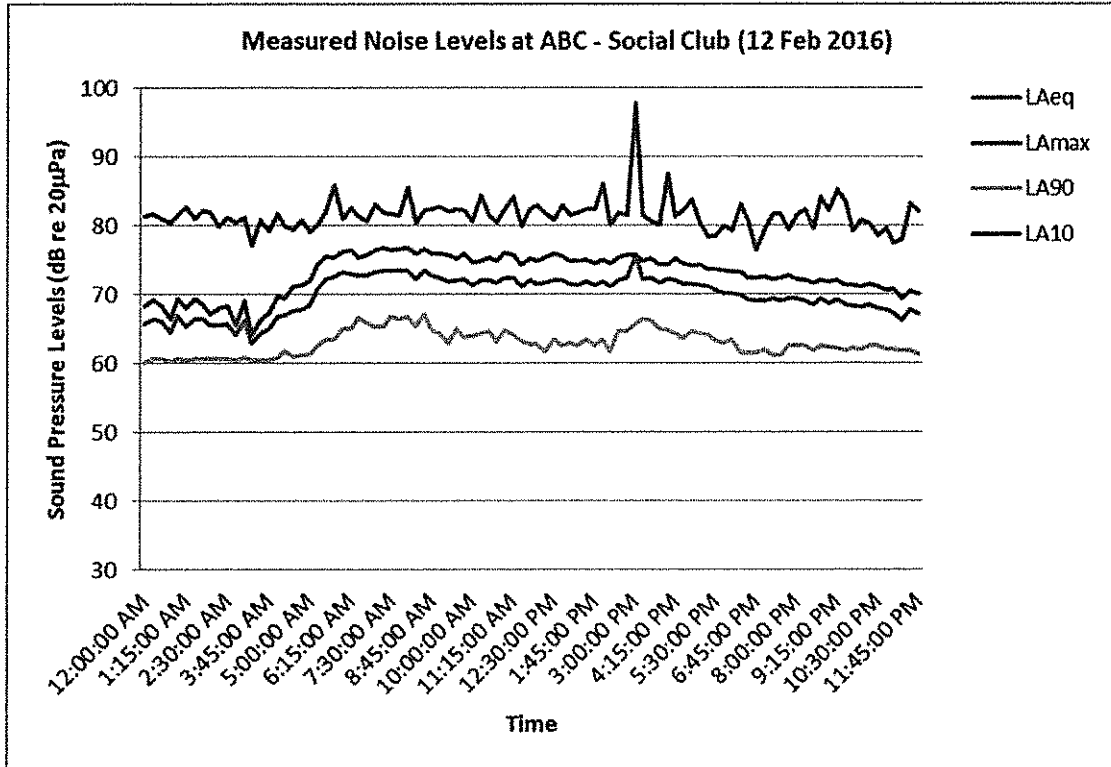
APPENDIX C BUREAU OF METEOROLOGY WIND ROSE

18 May 2016

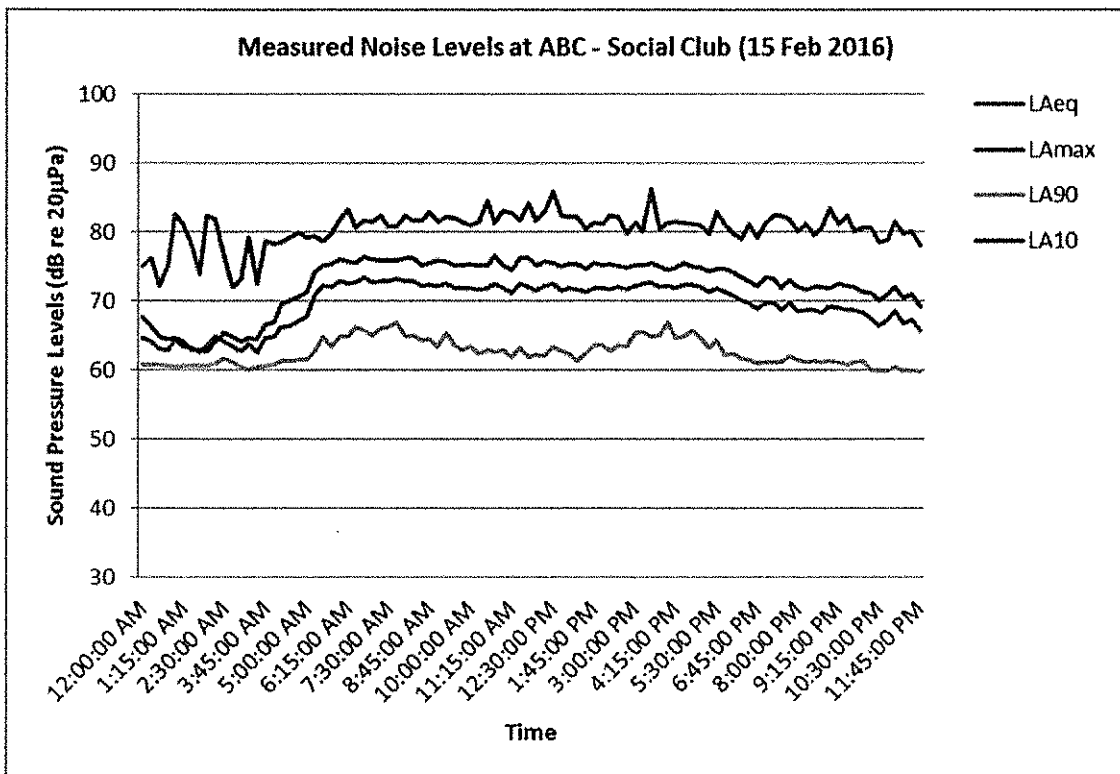
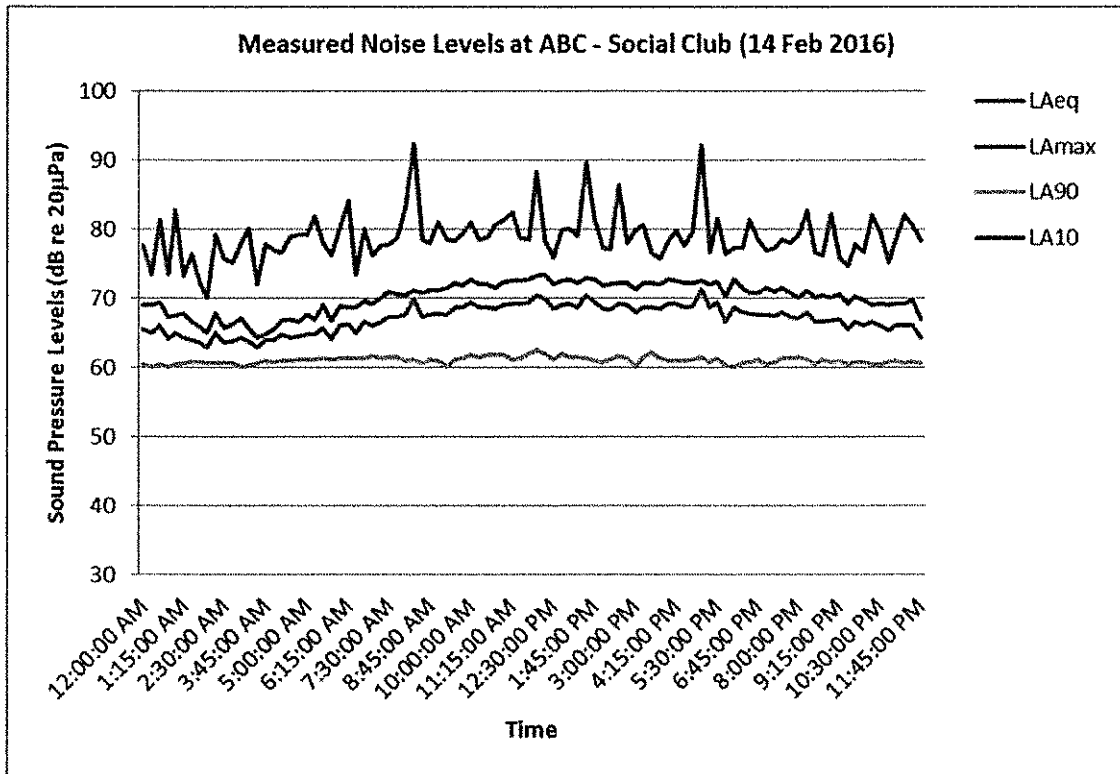
Appendix A NOISE MONITORING RESULT GRAPHS



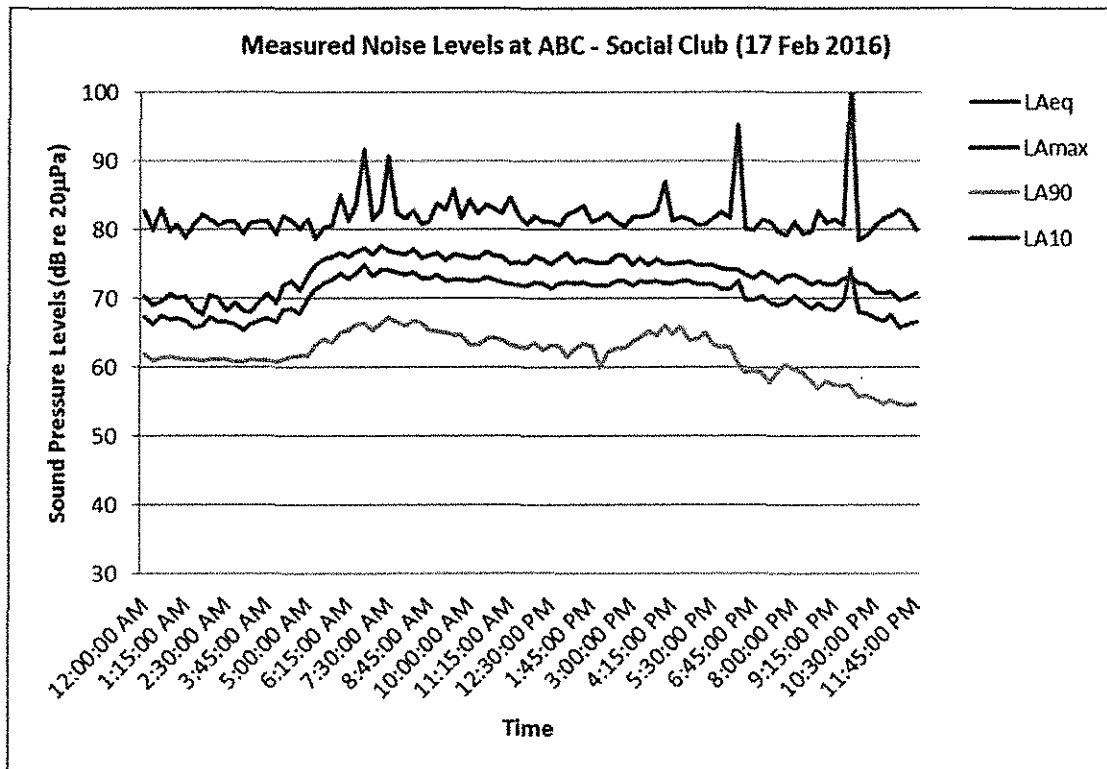
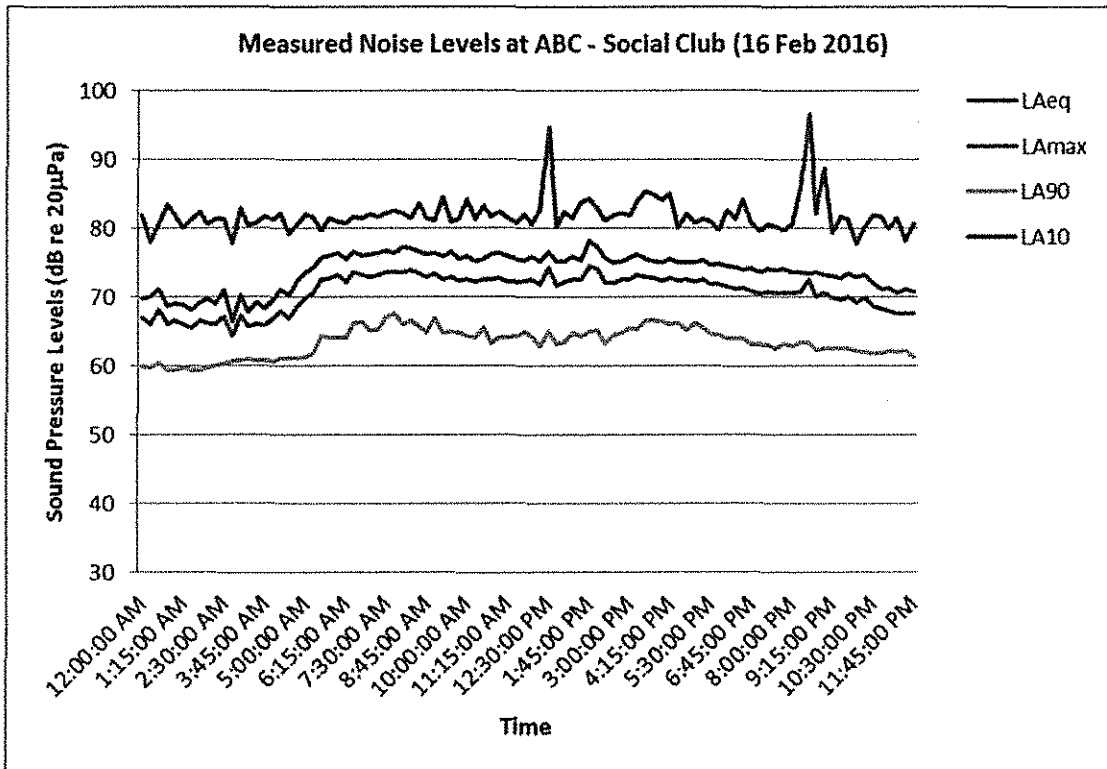




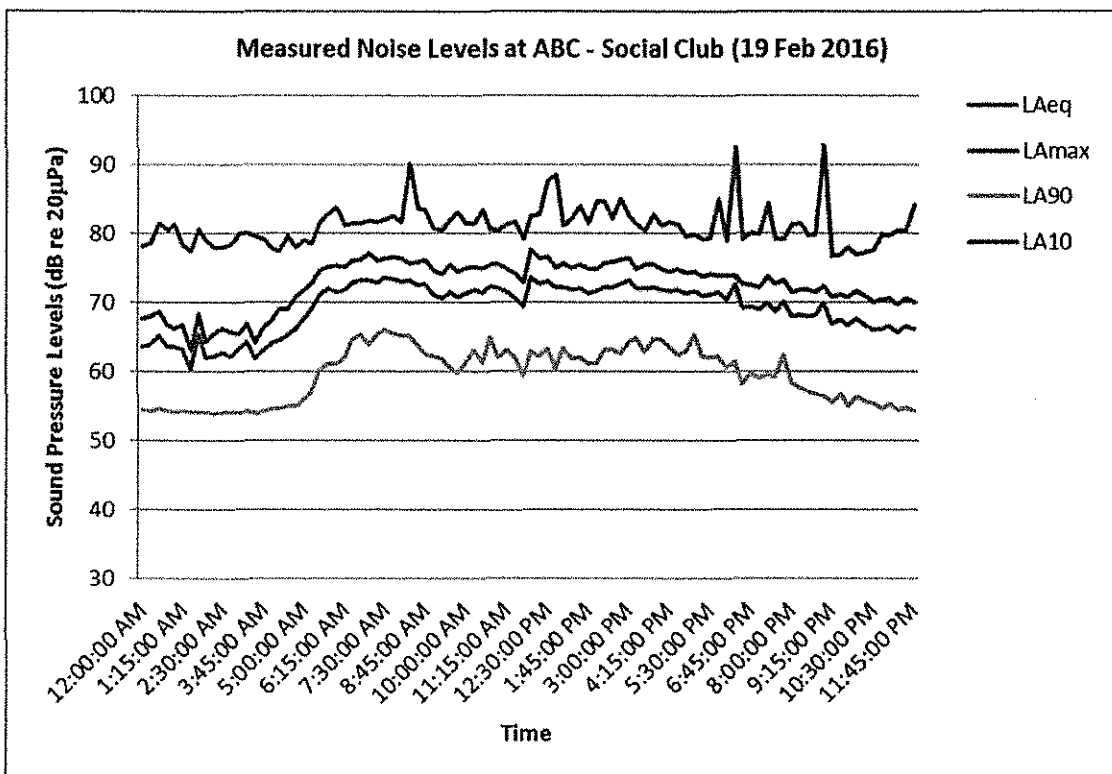
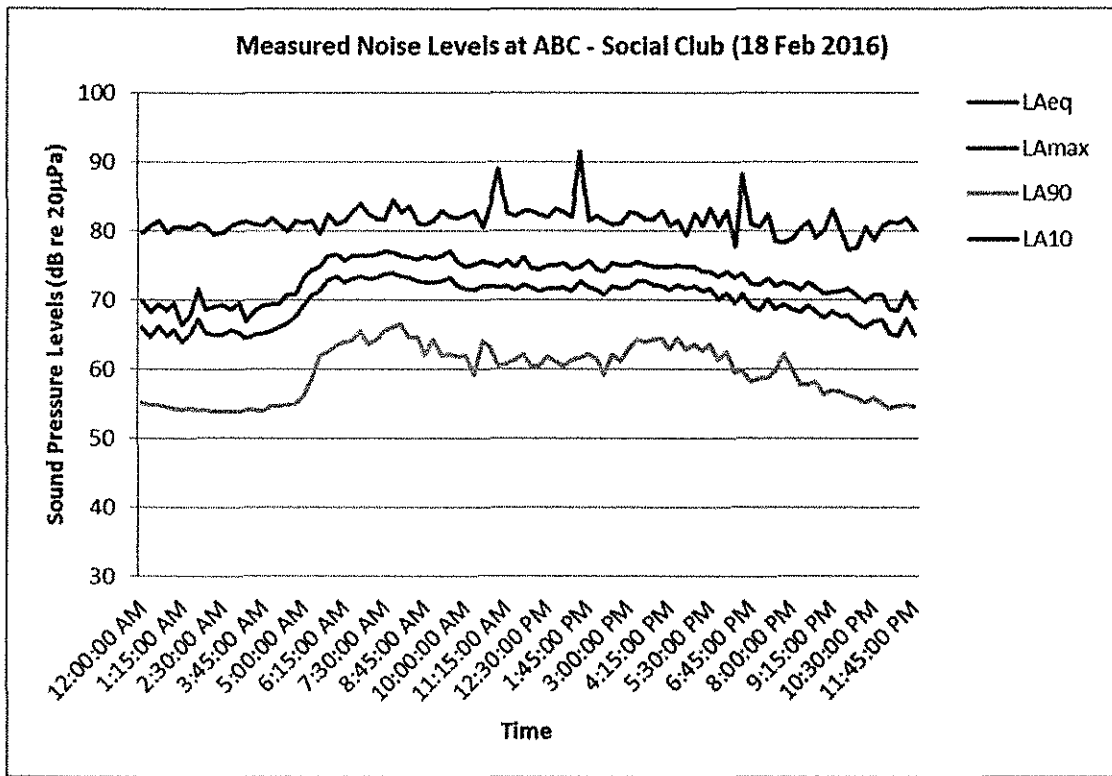
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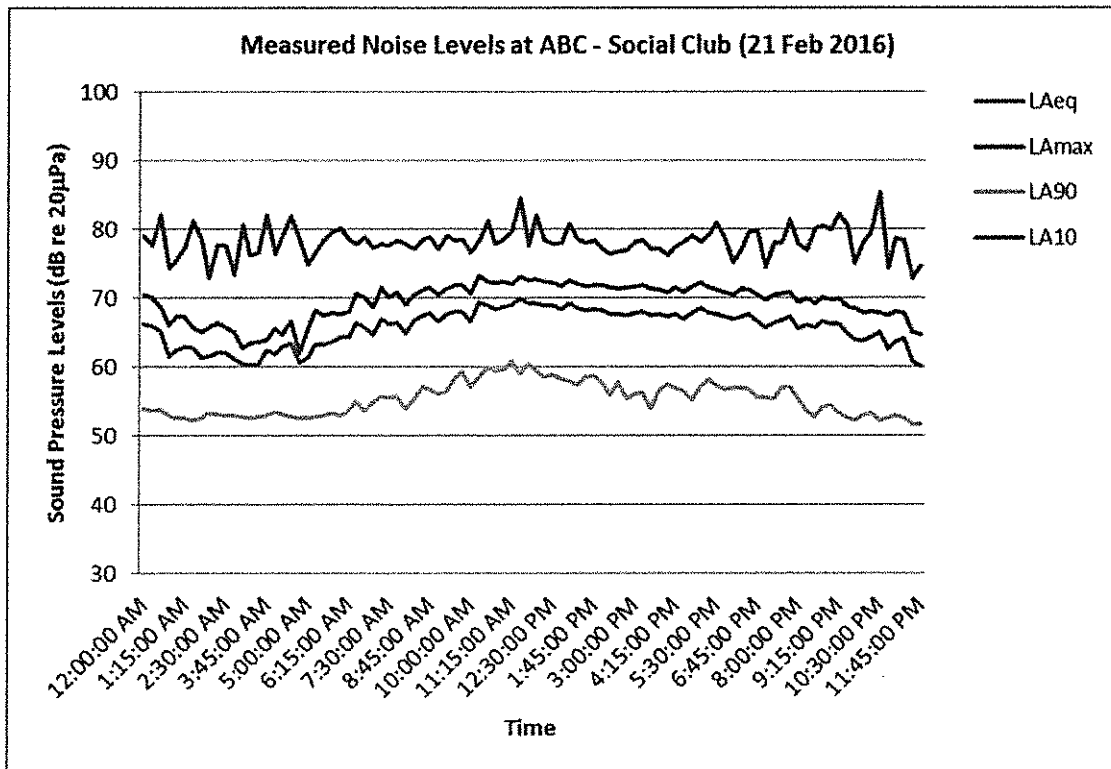
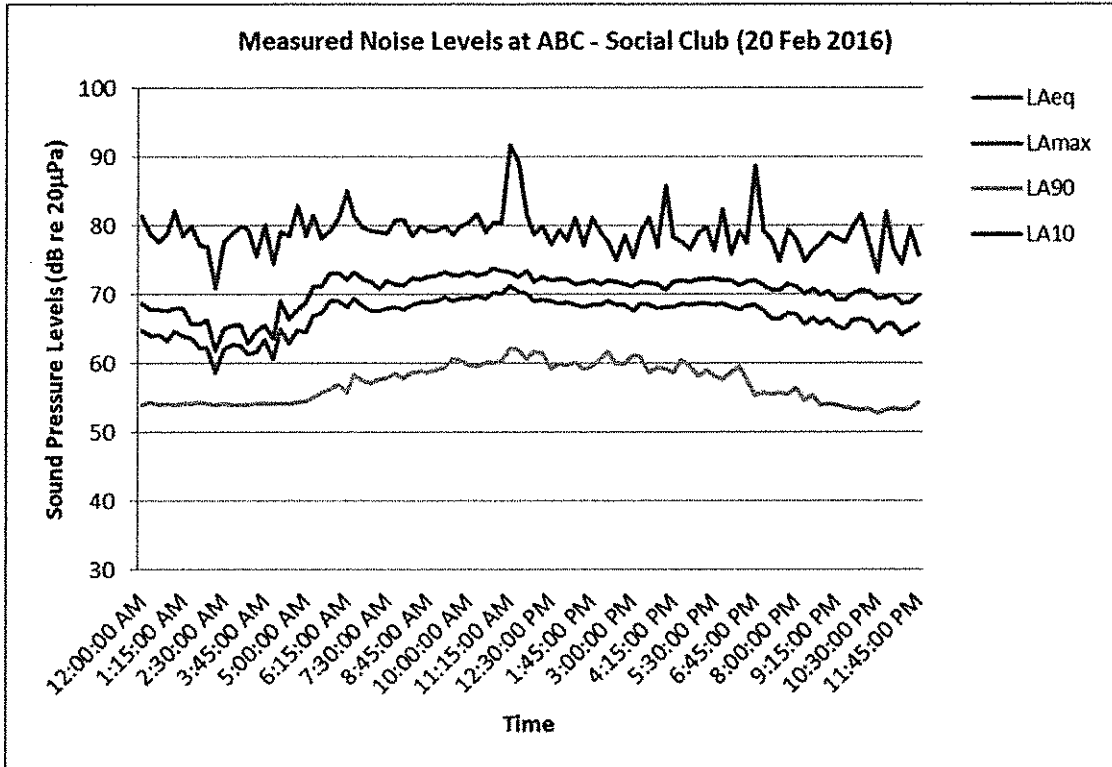
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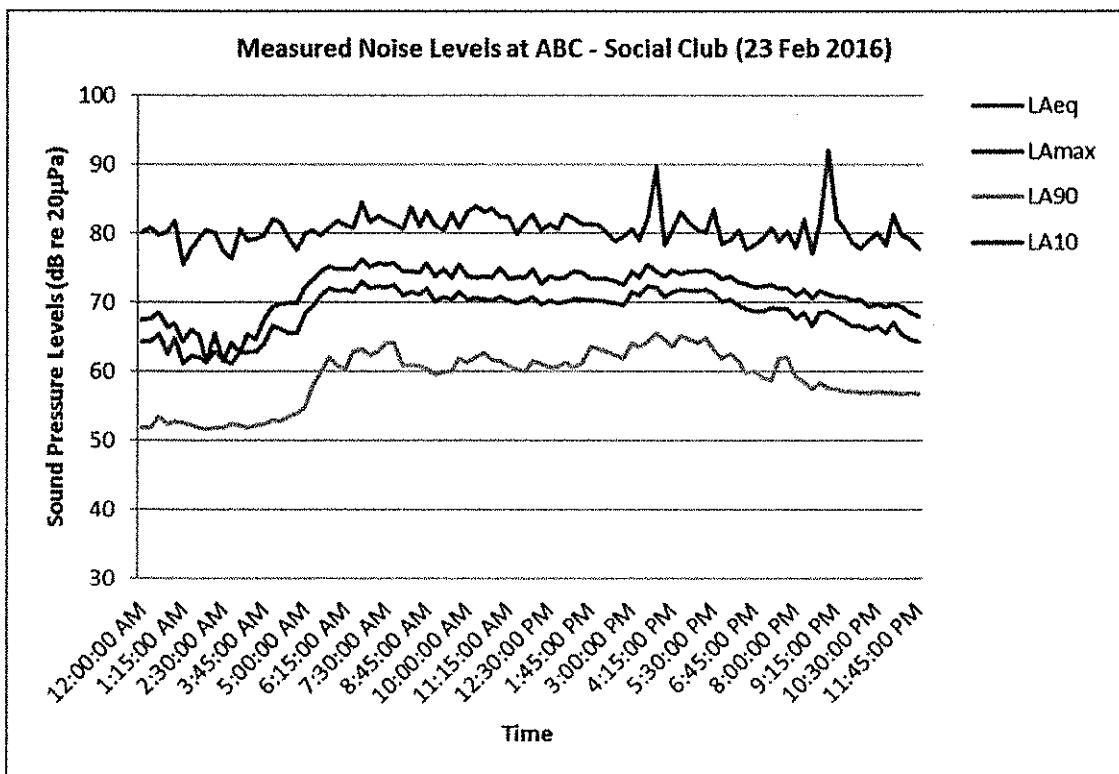
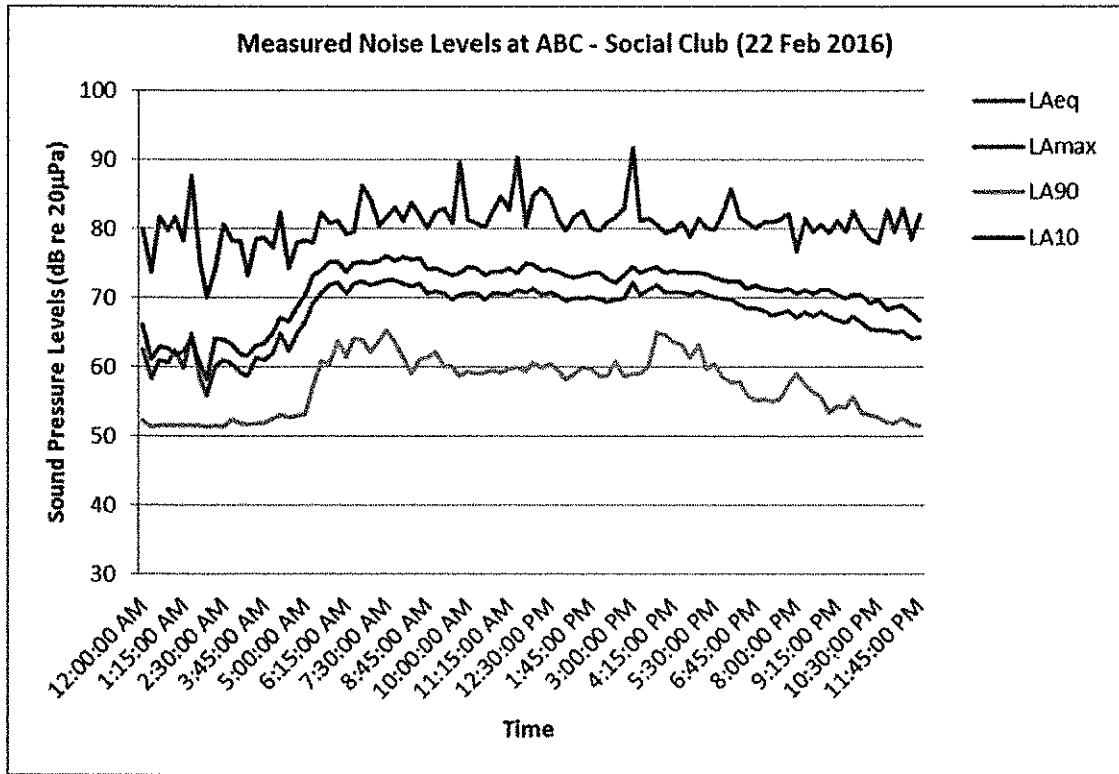
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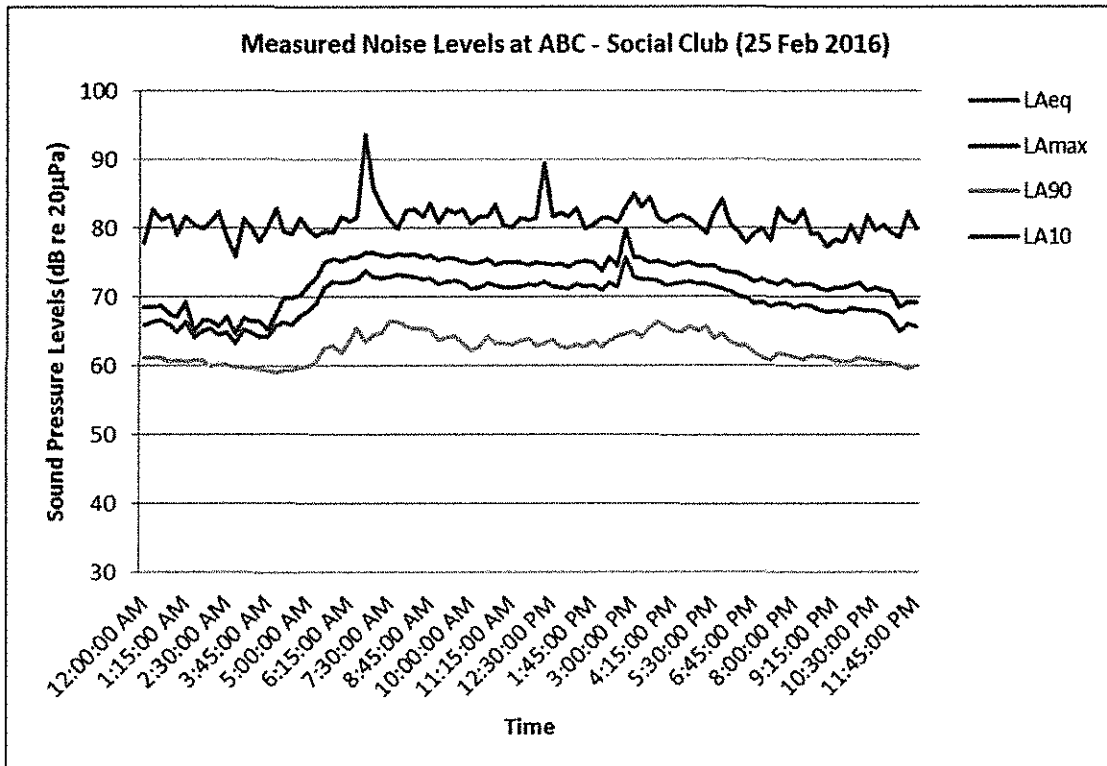
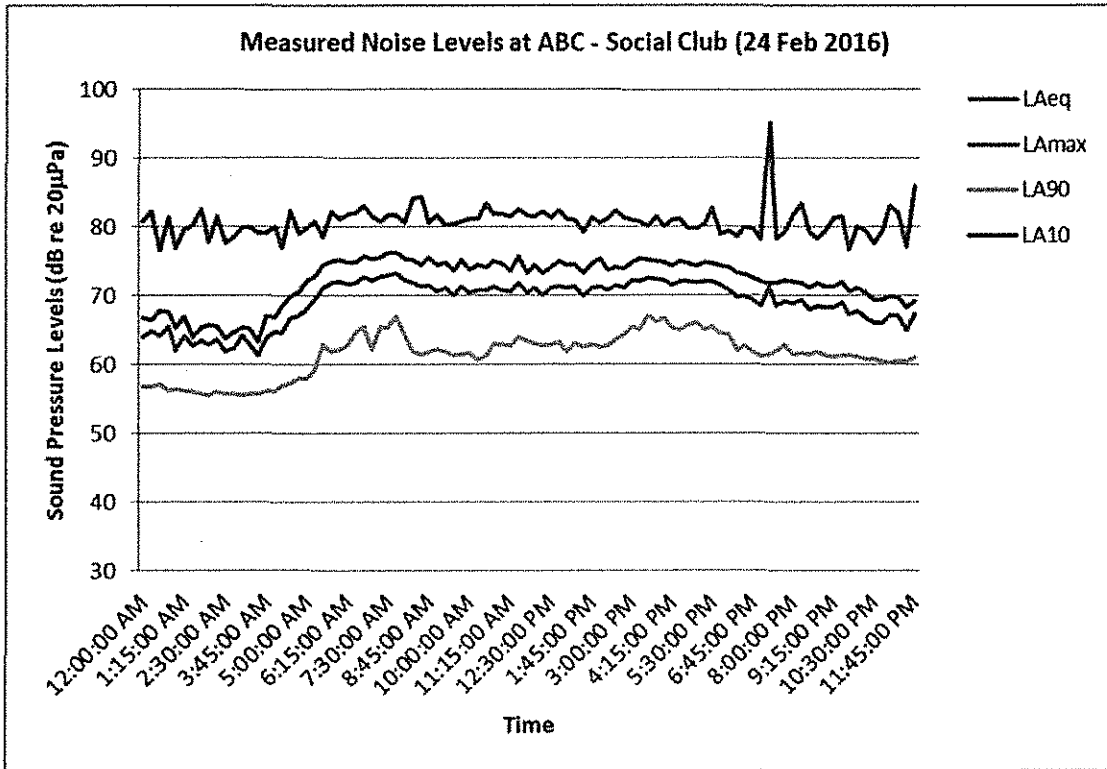


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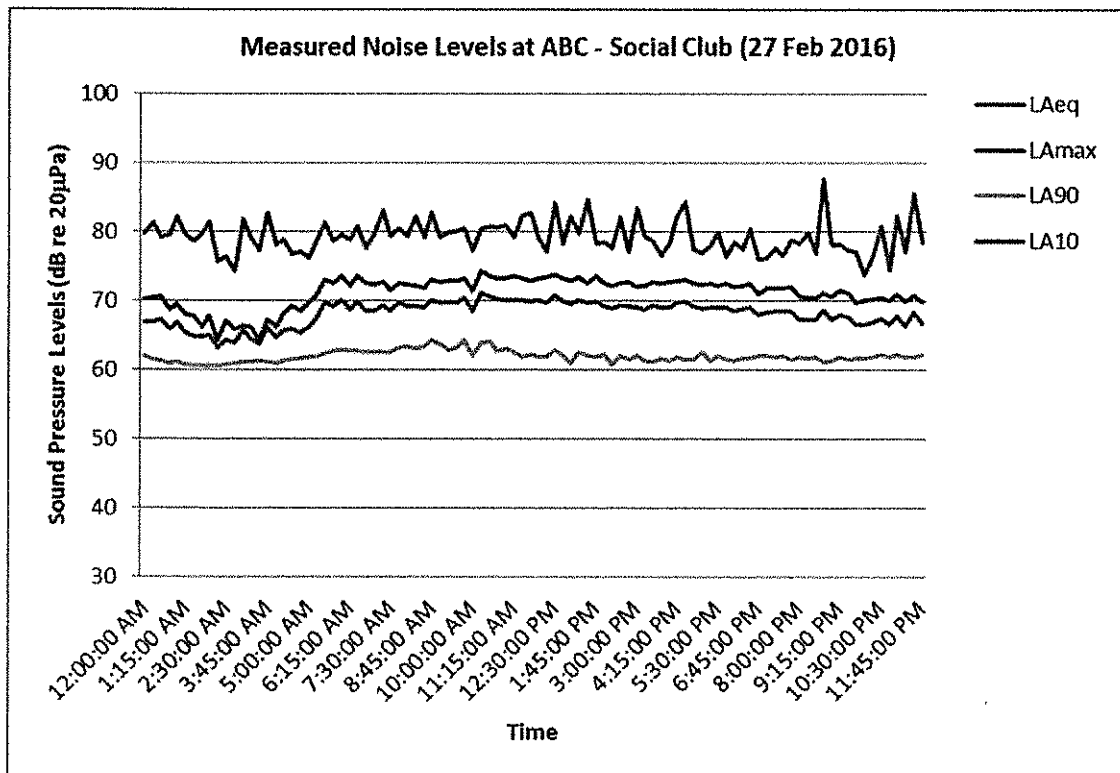
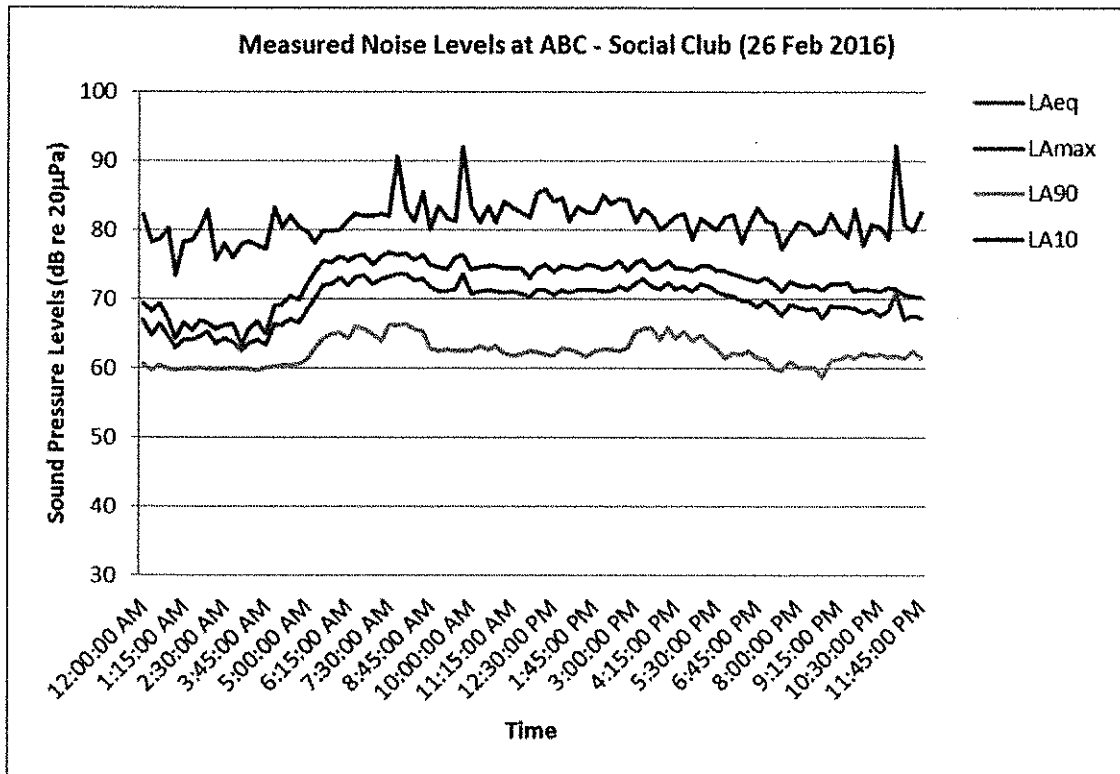


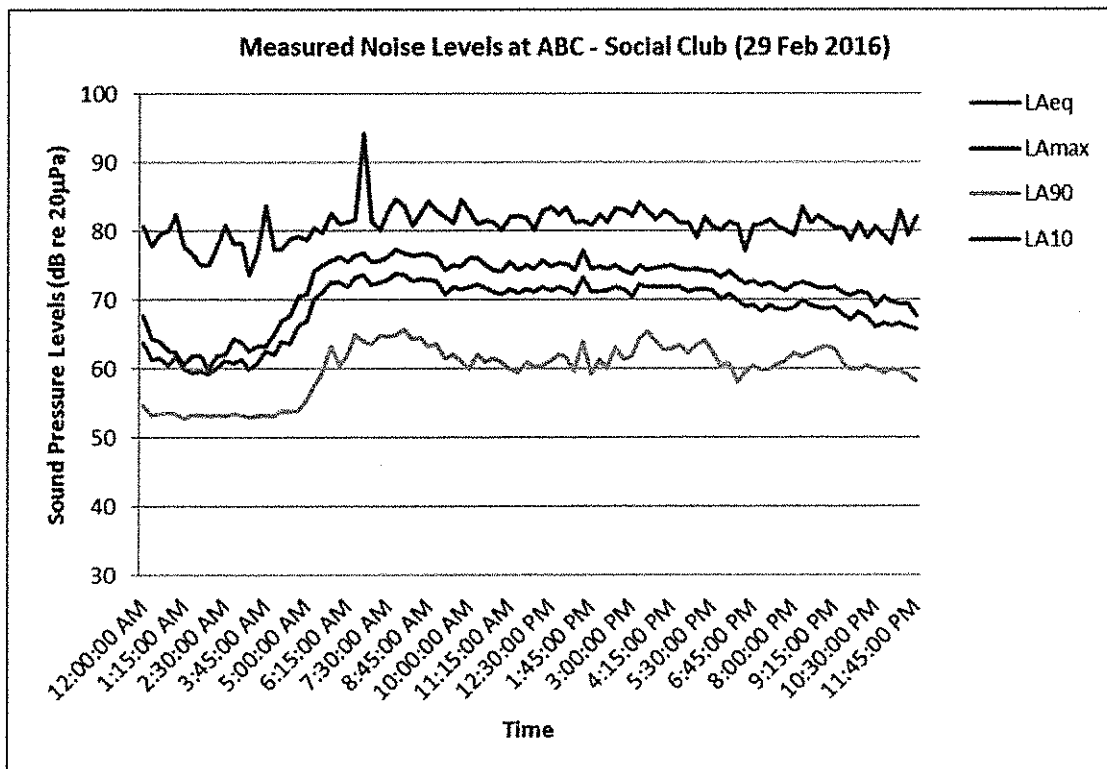
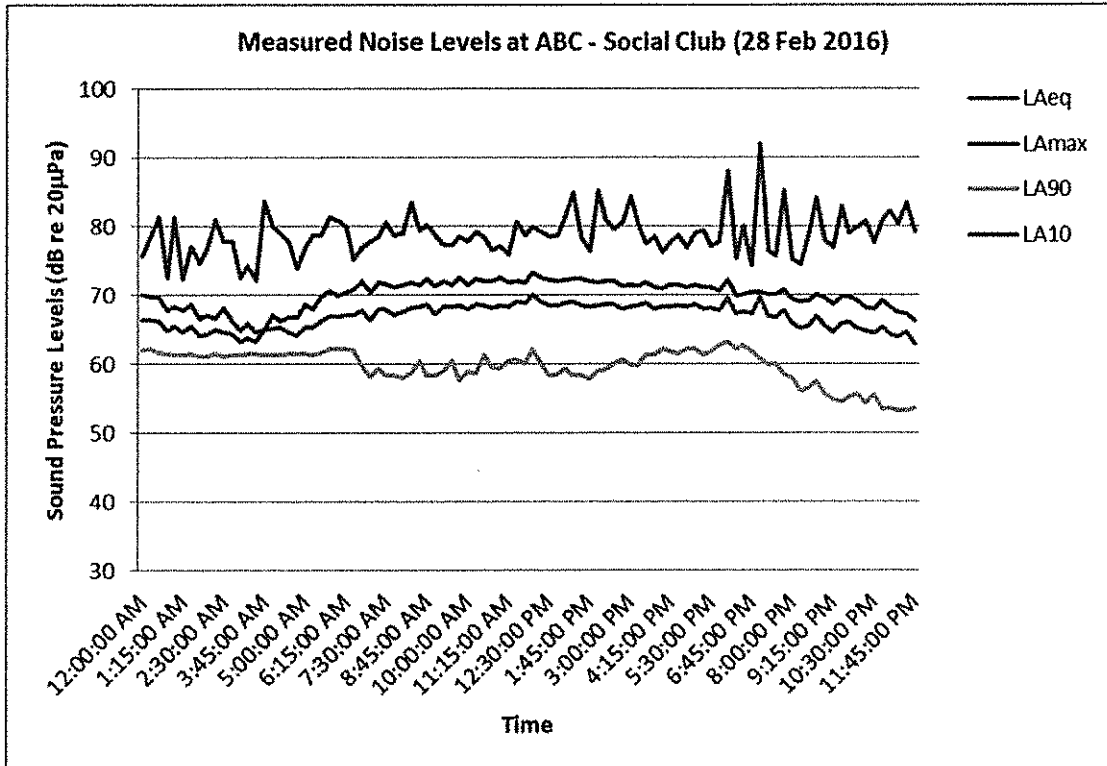
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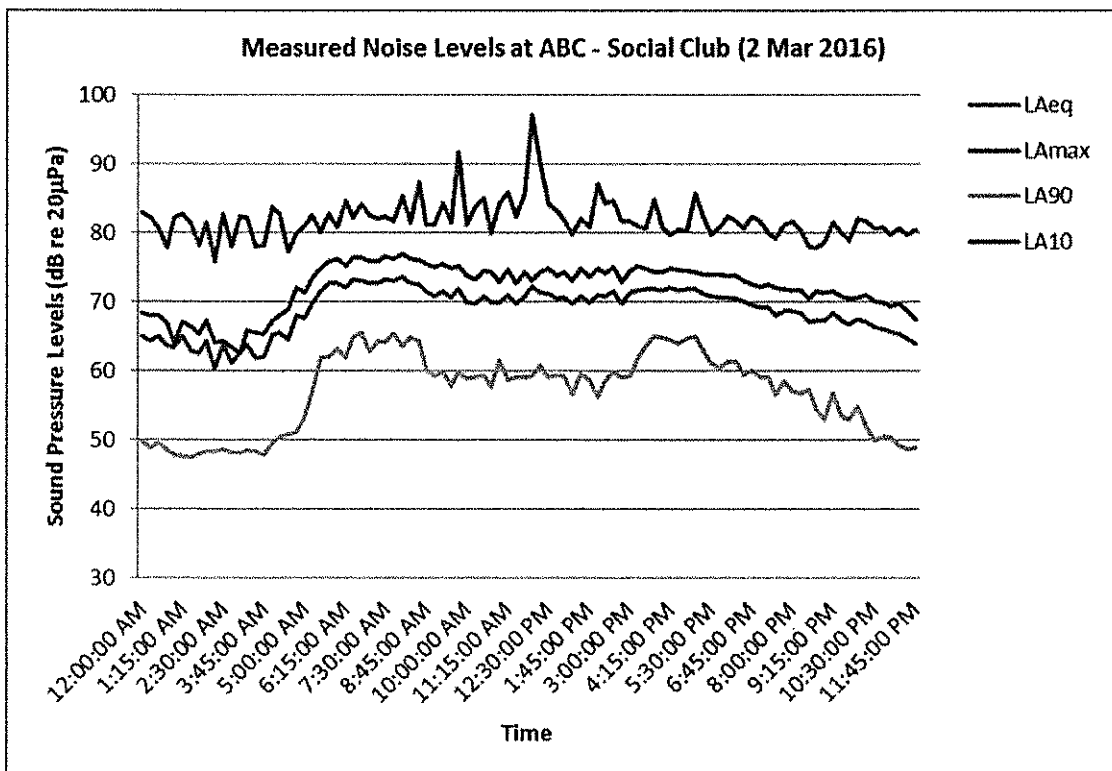
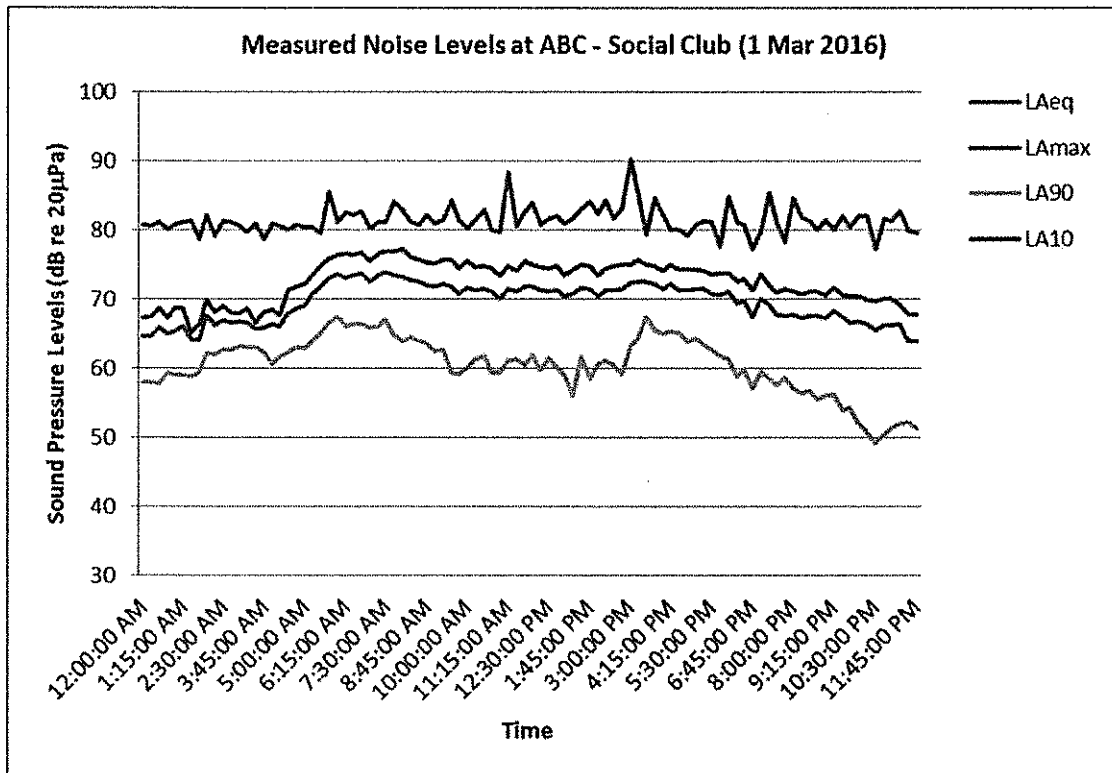


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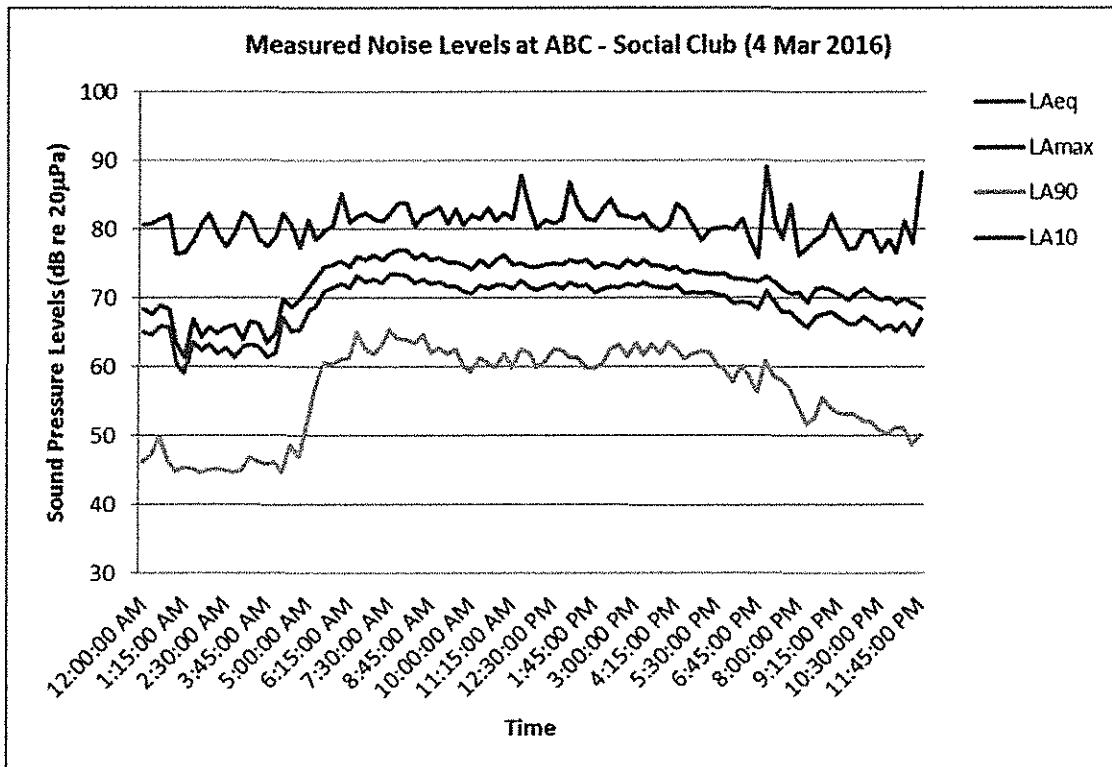
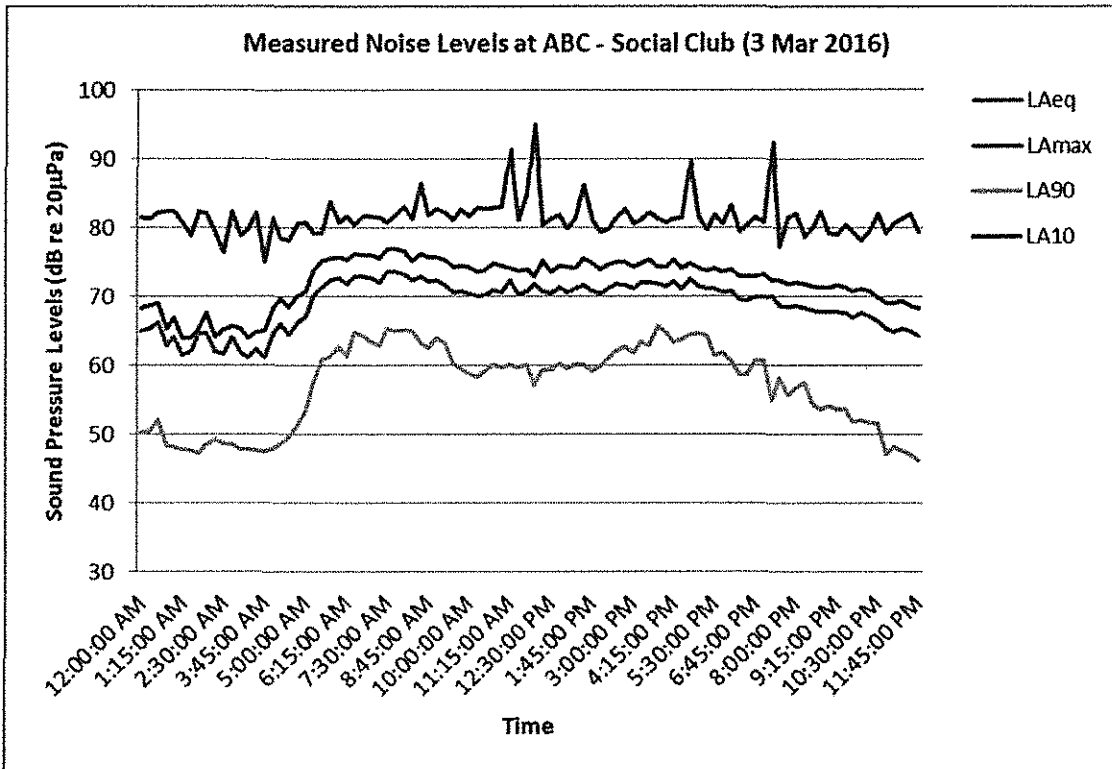


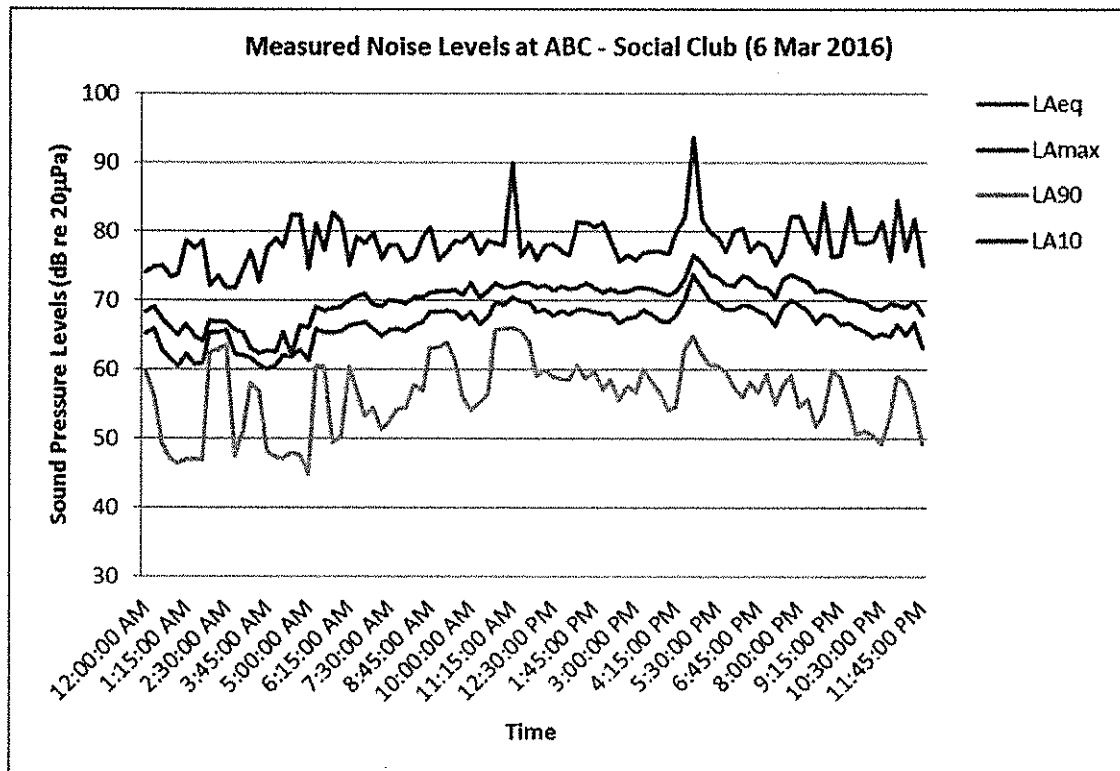
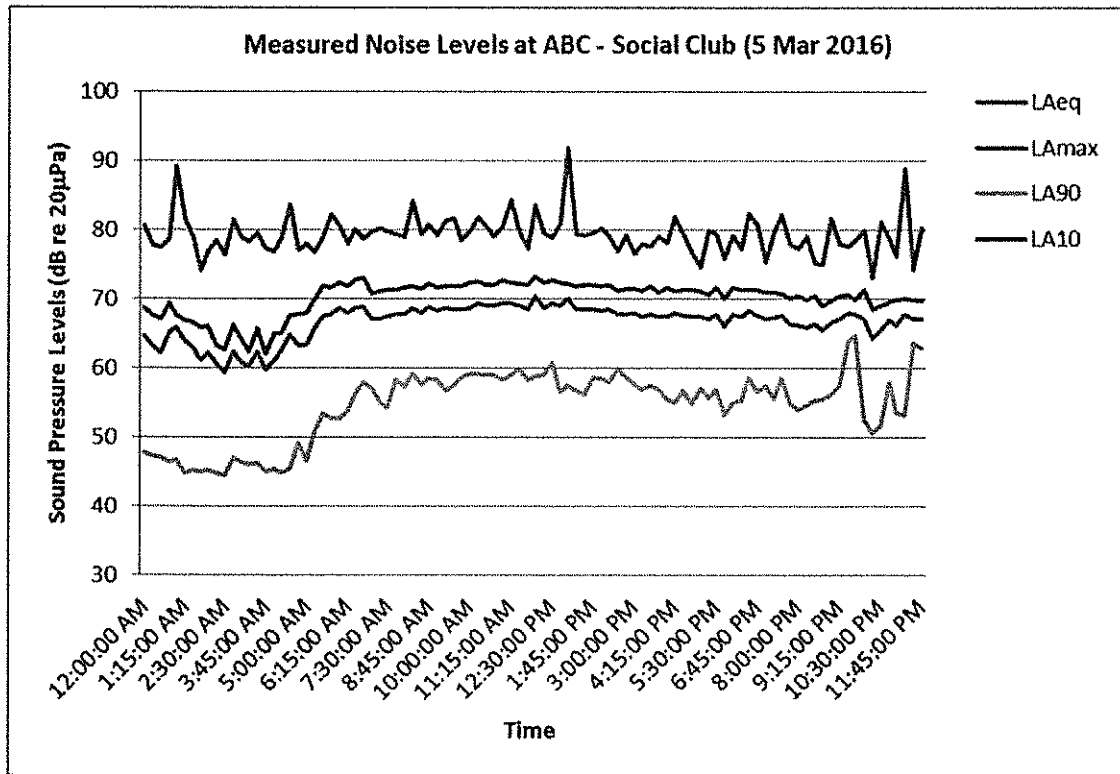


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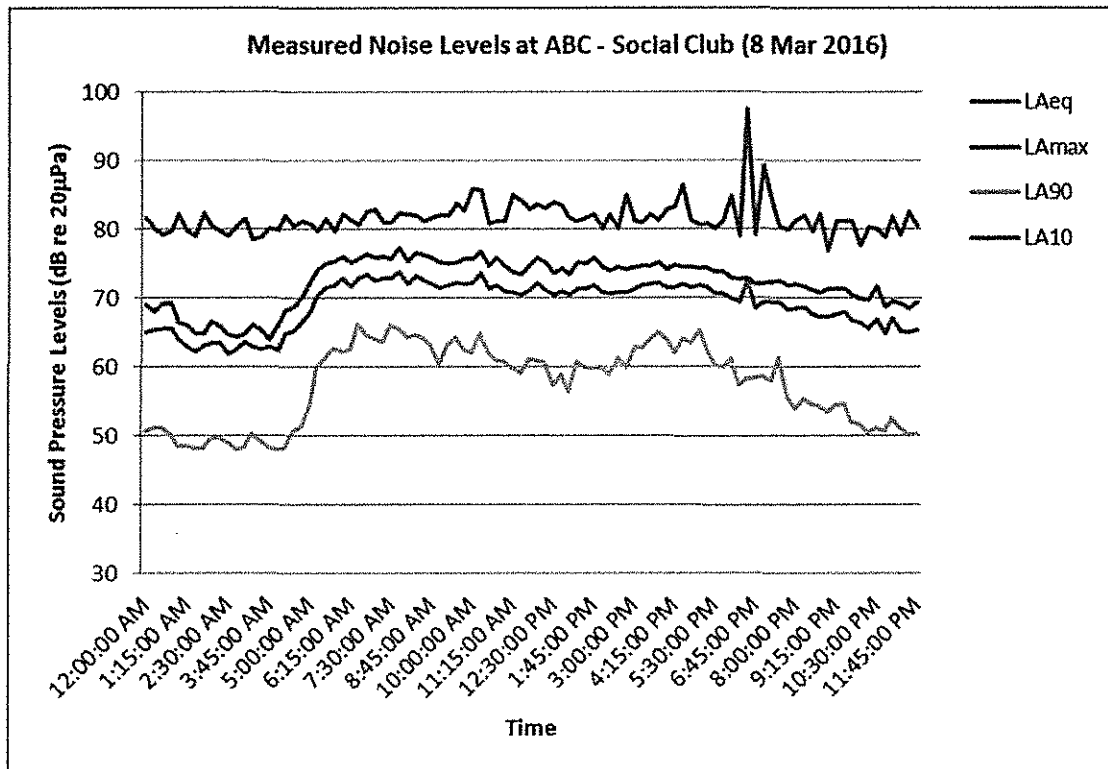
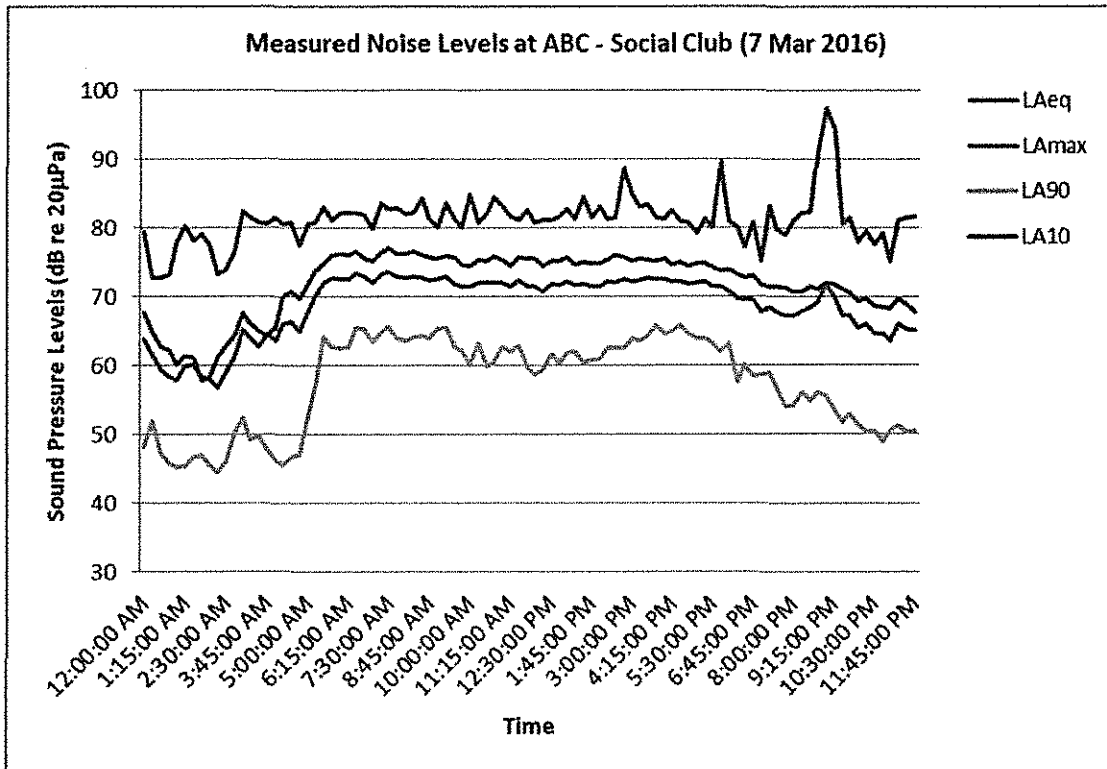


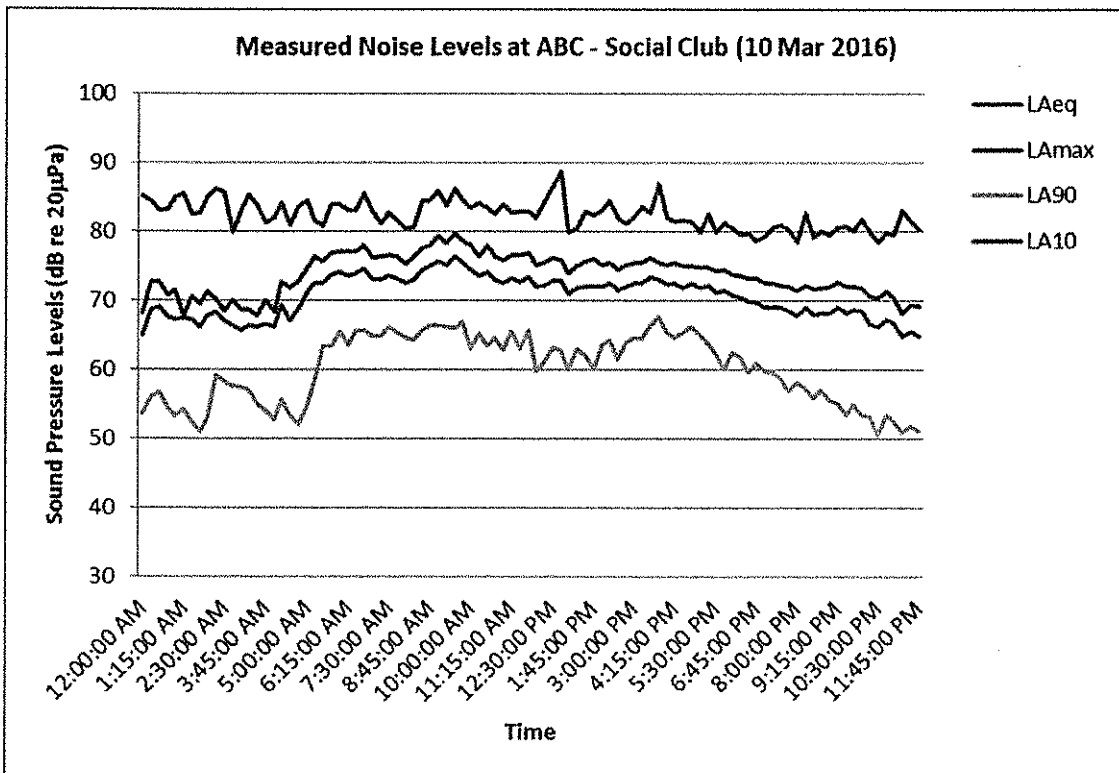
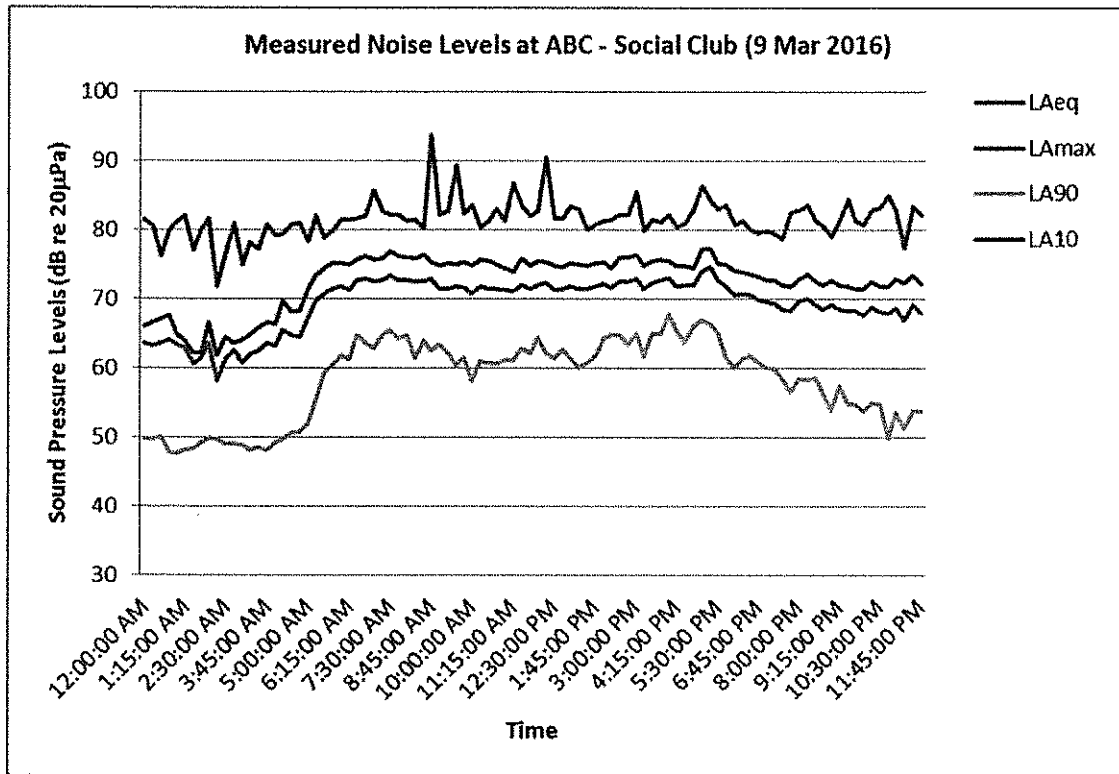
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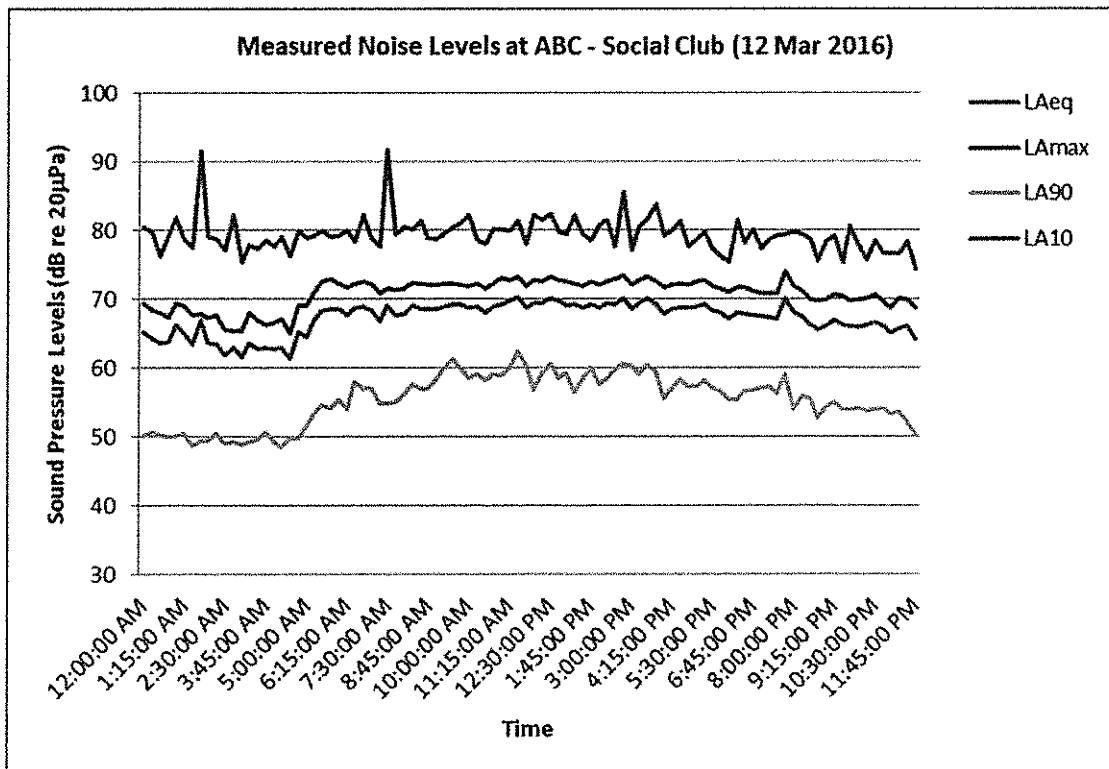
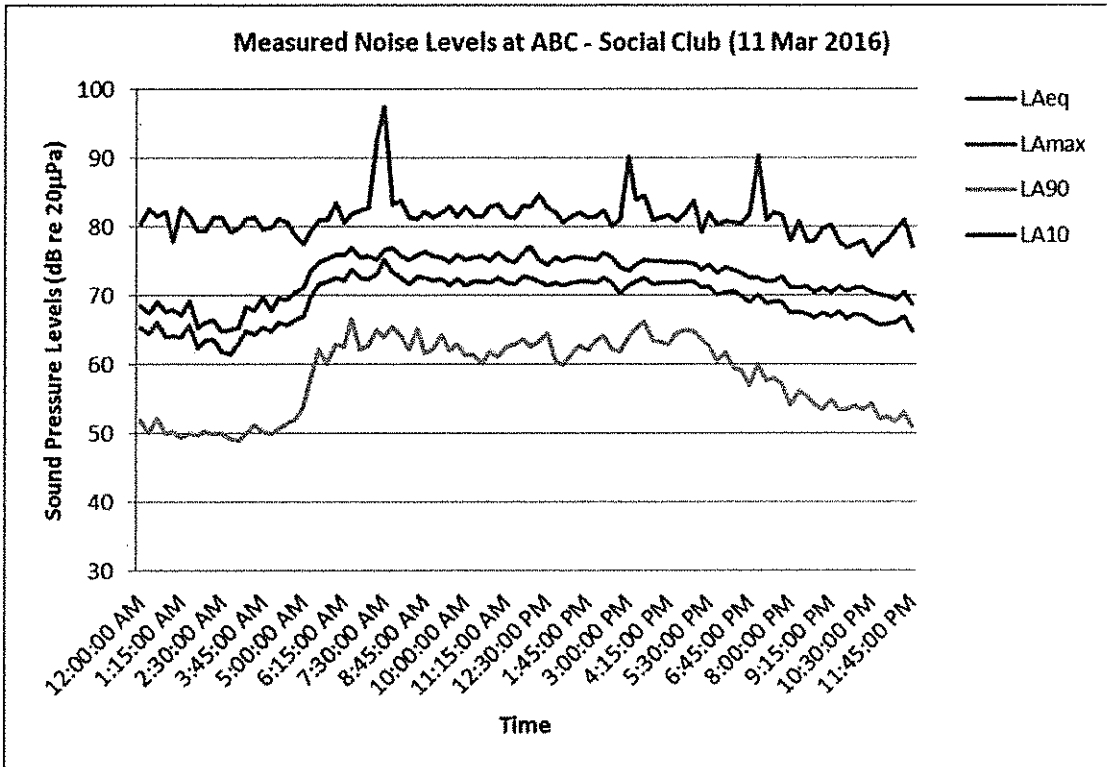




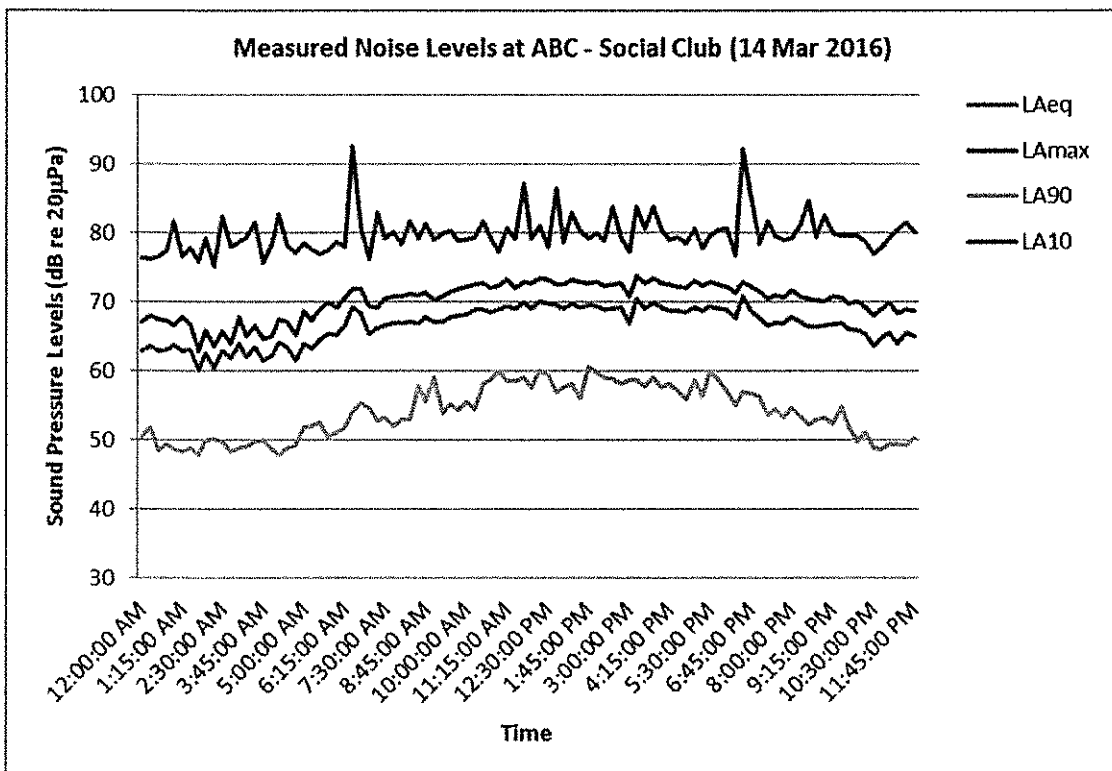
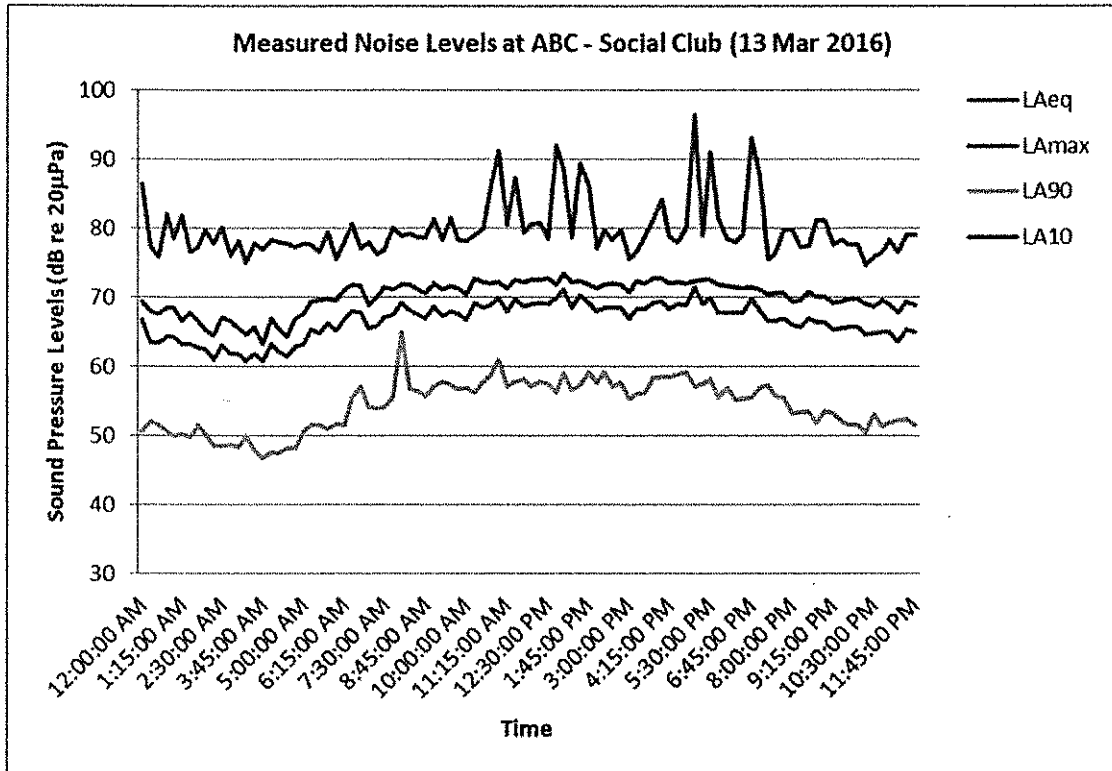
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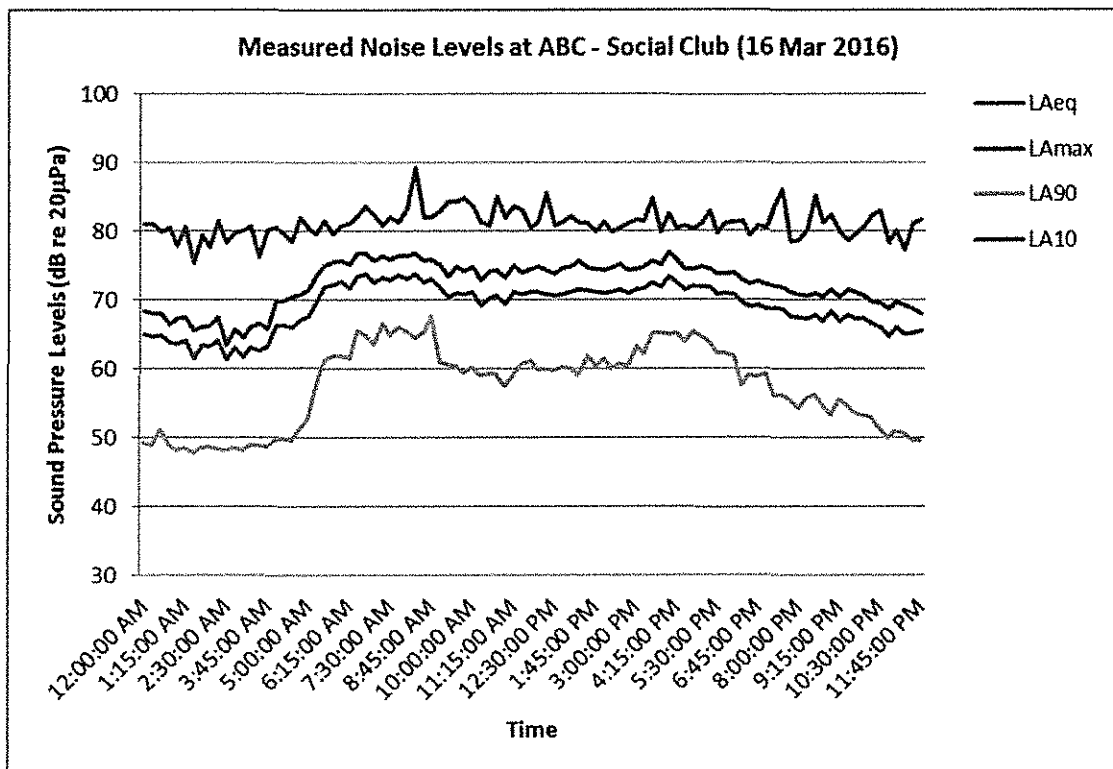
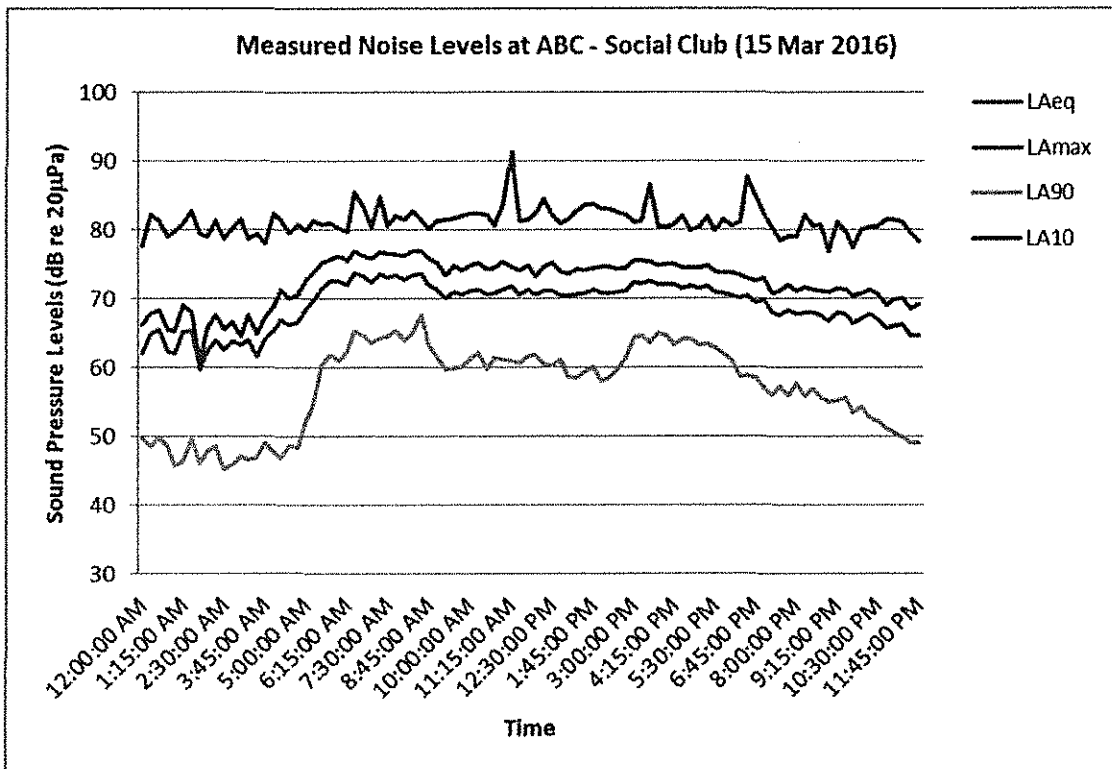


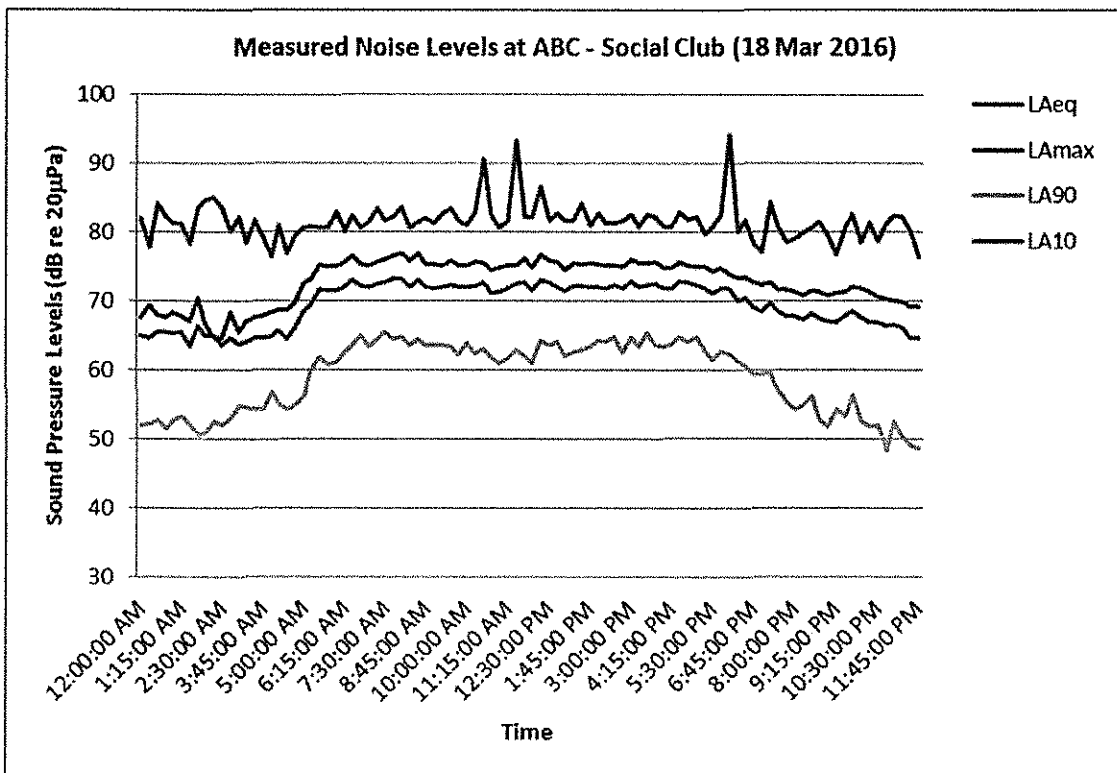
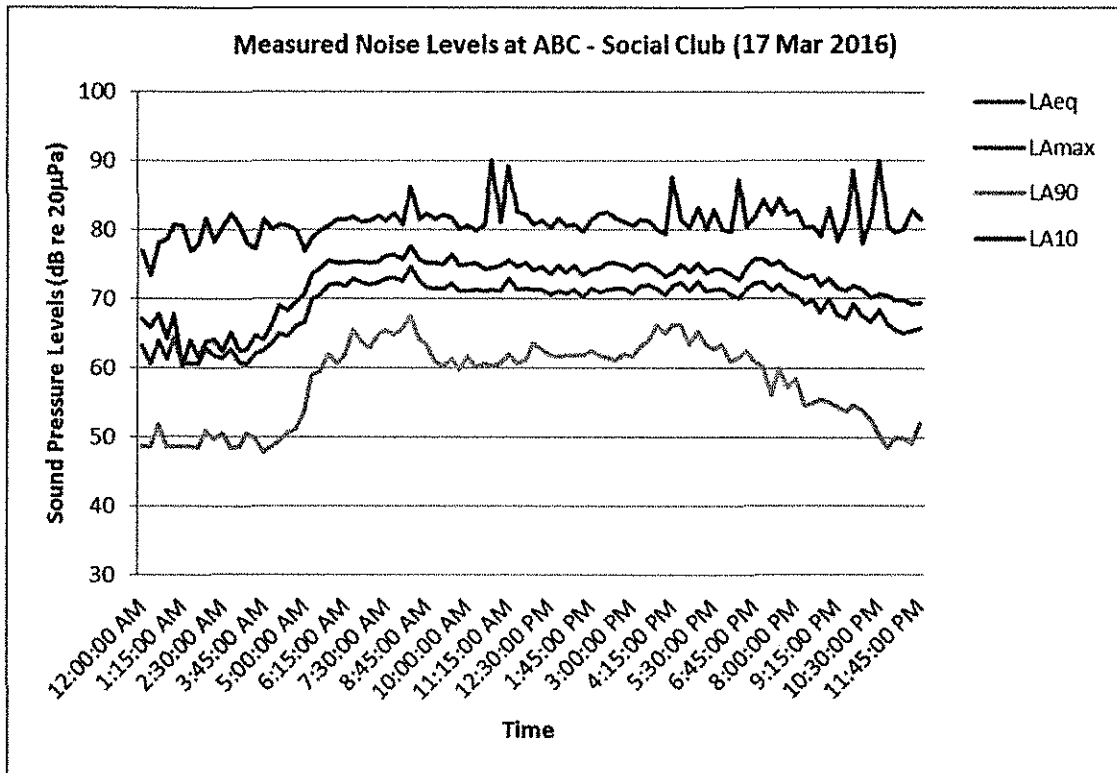


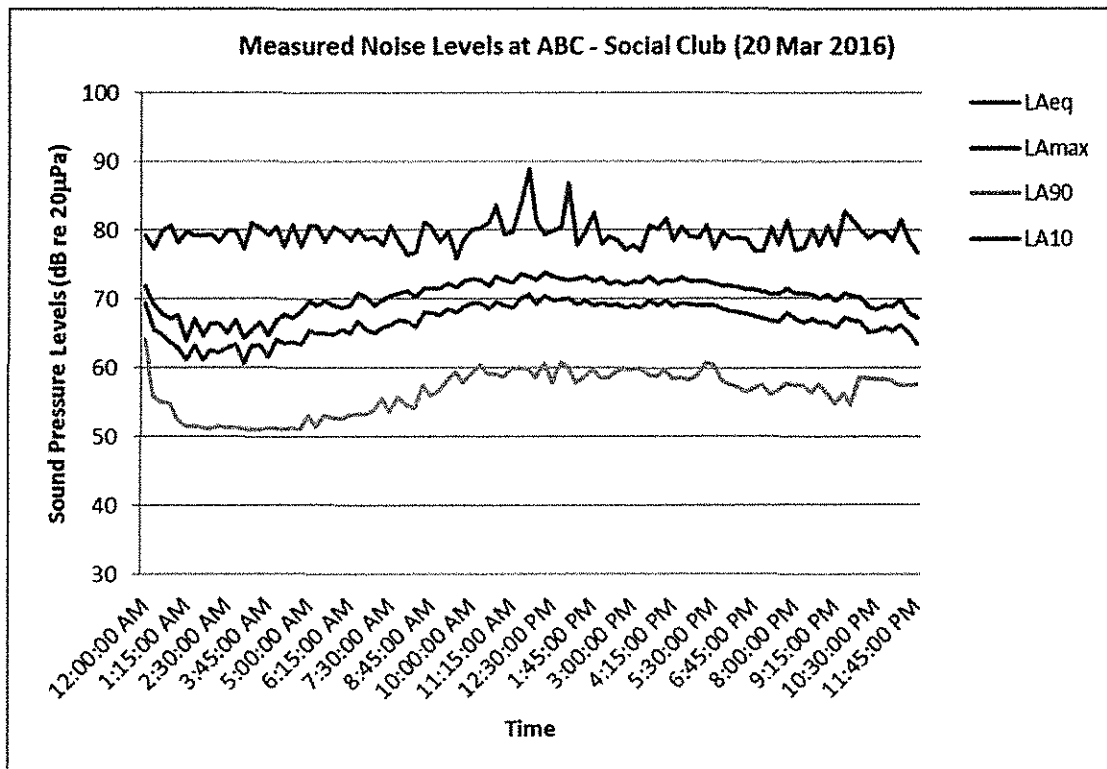
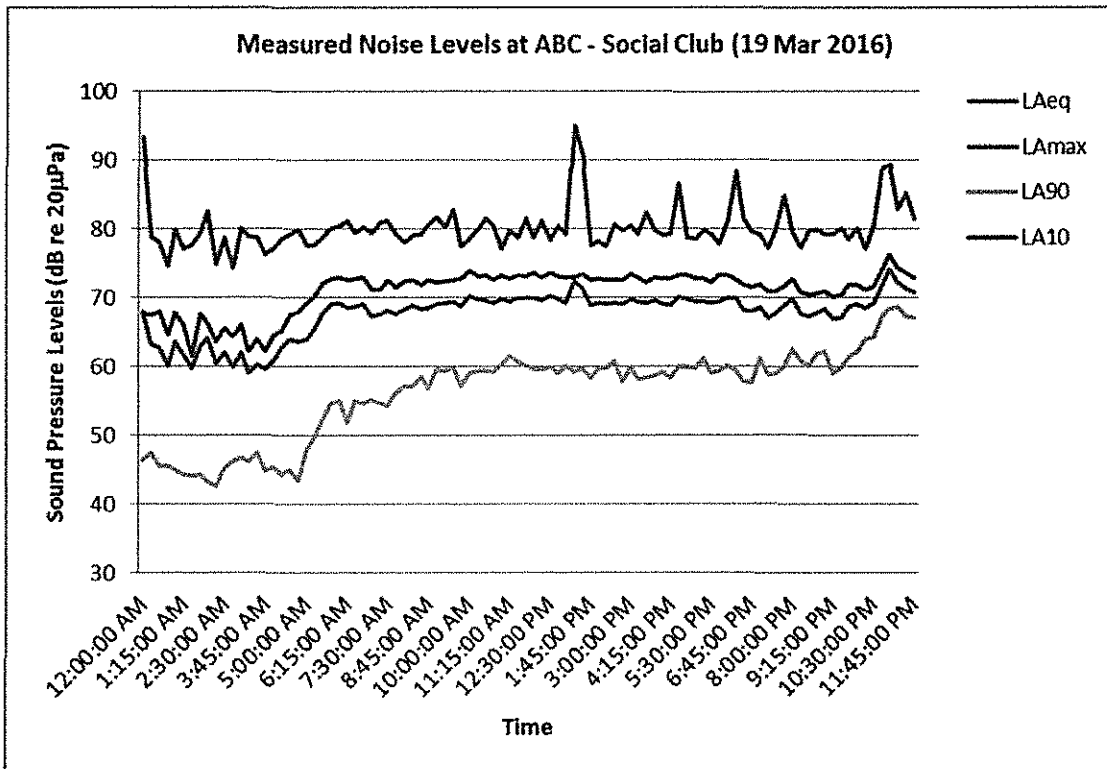
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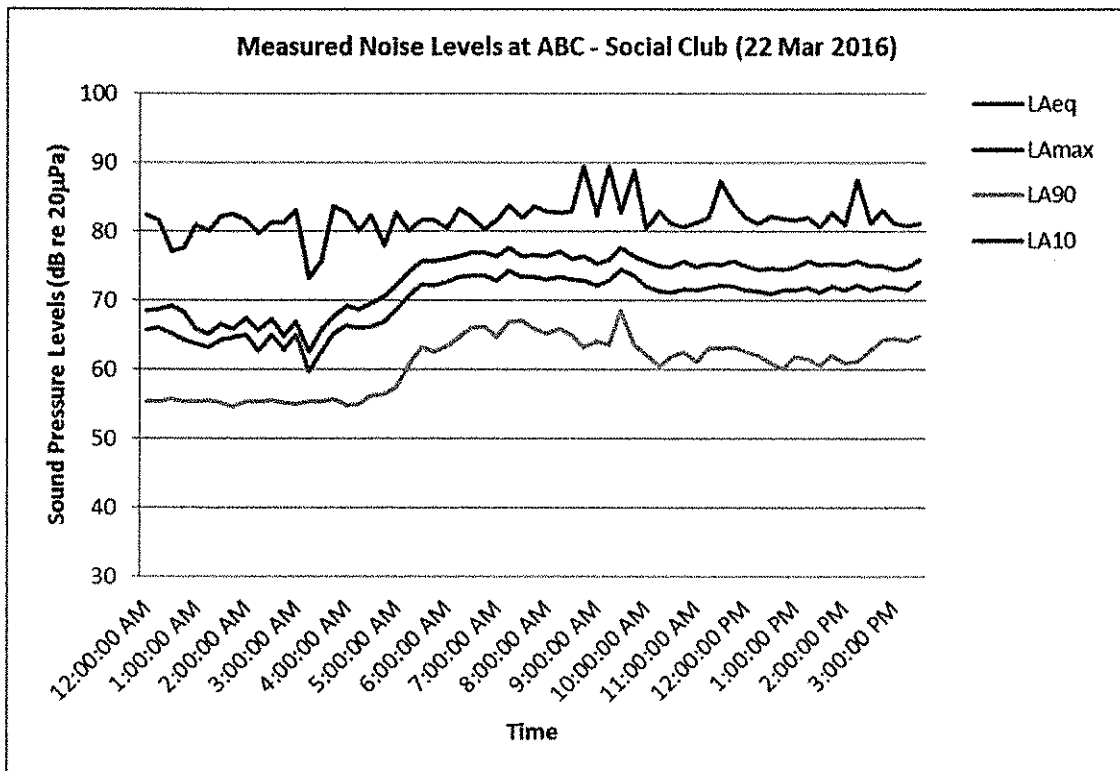
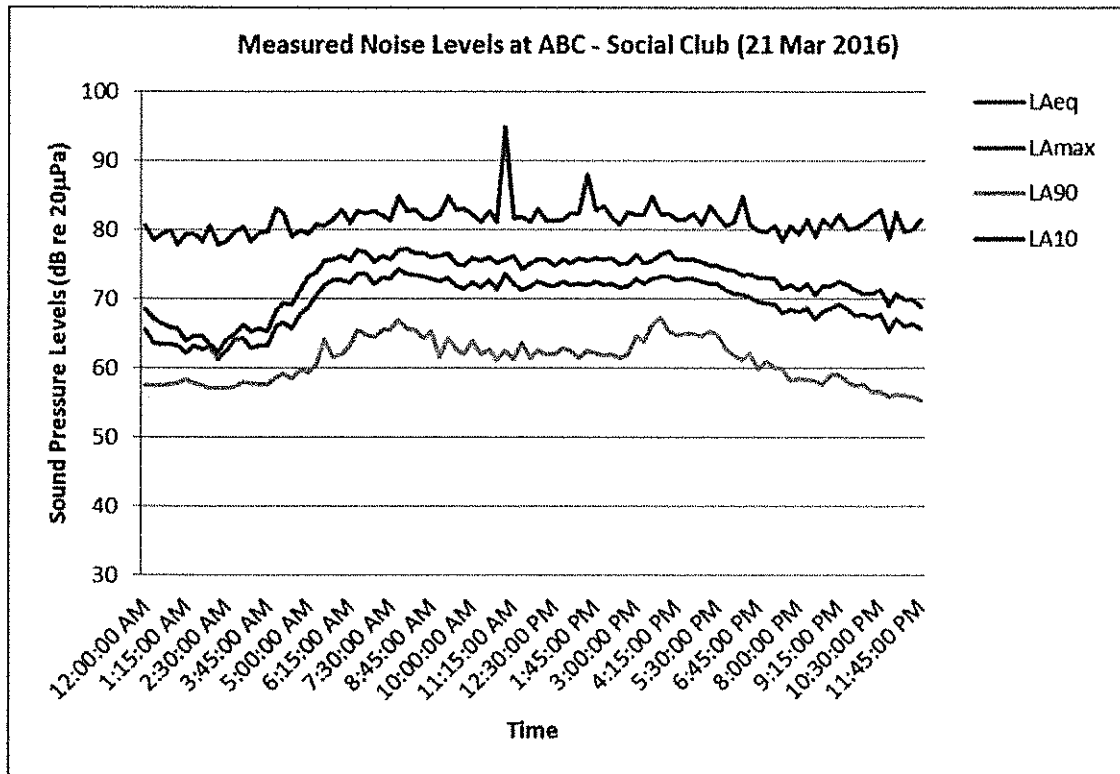
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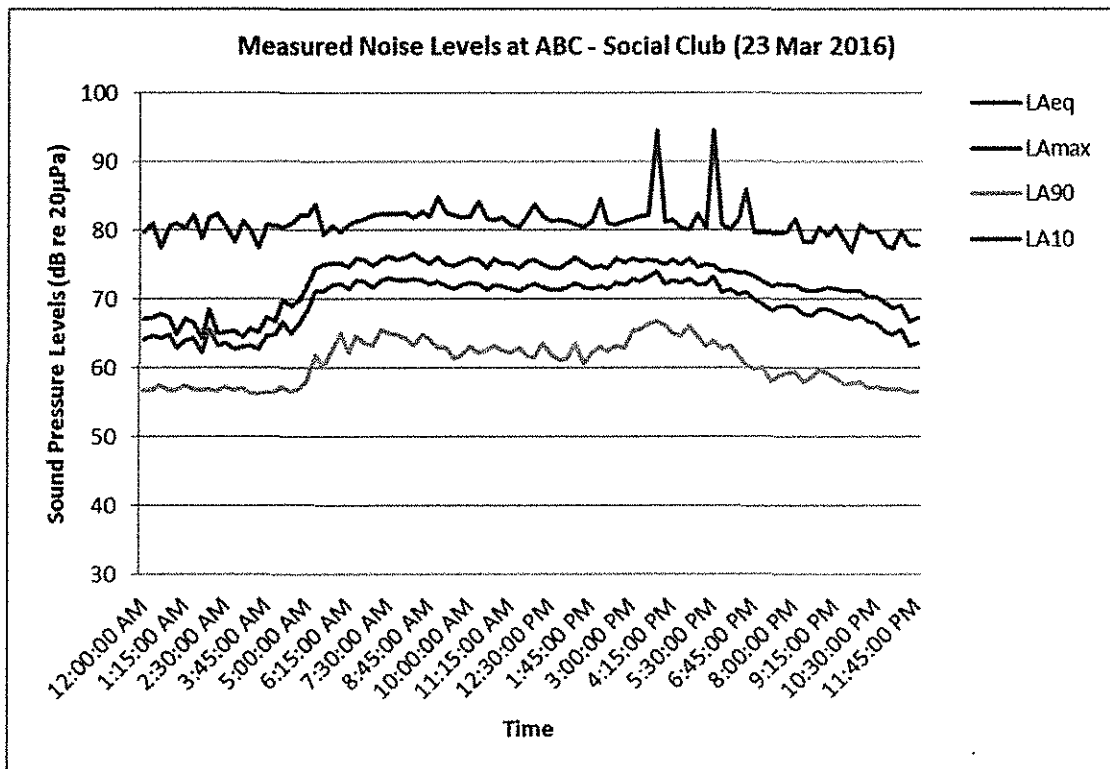
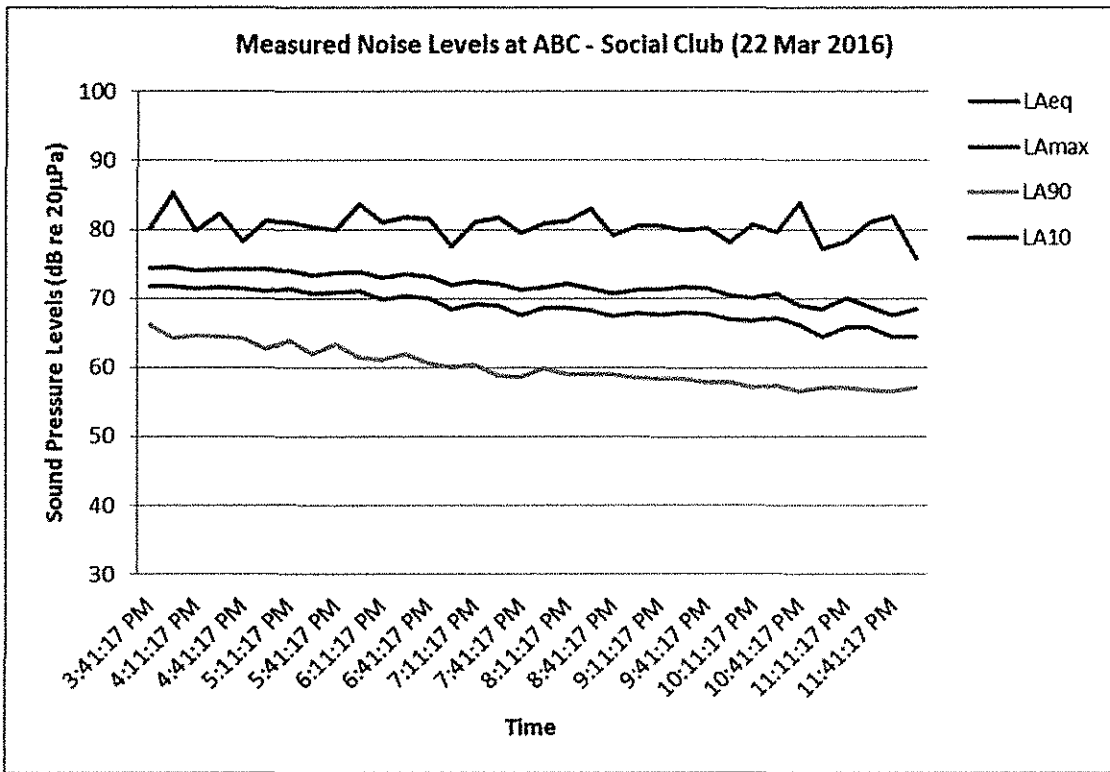


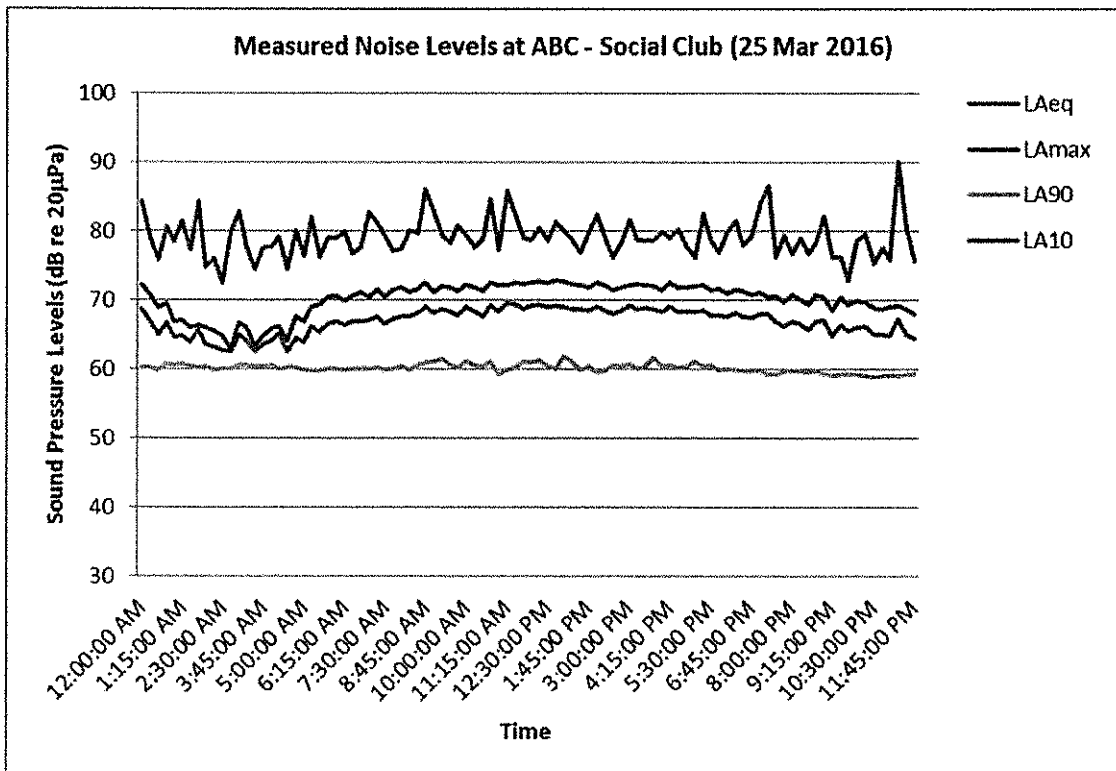
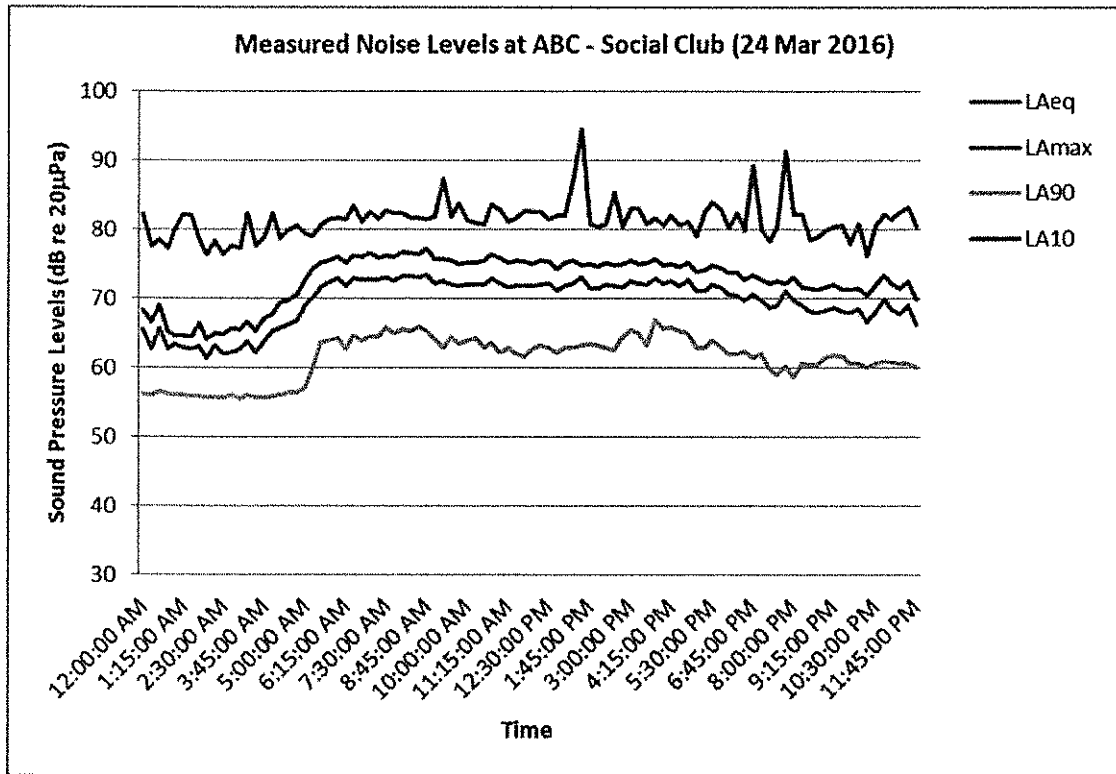


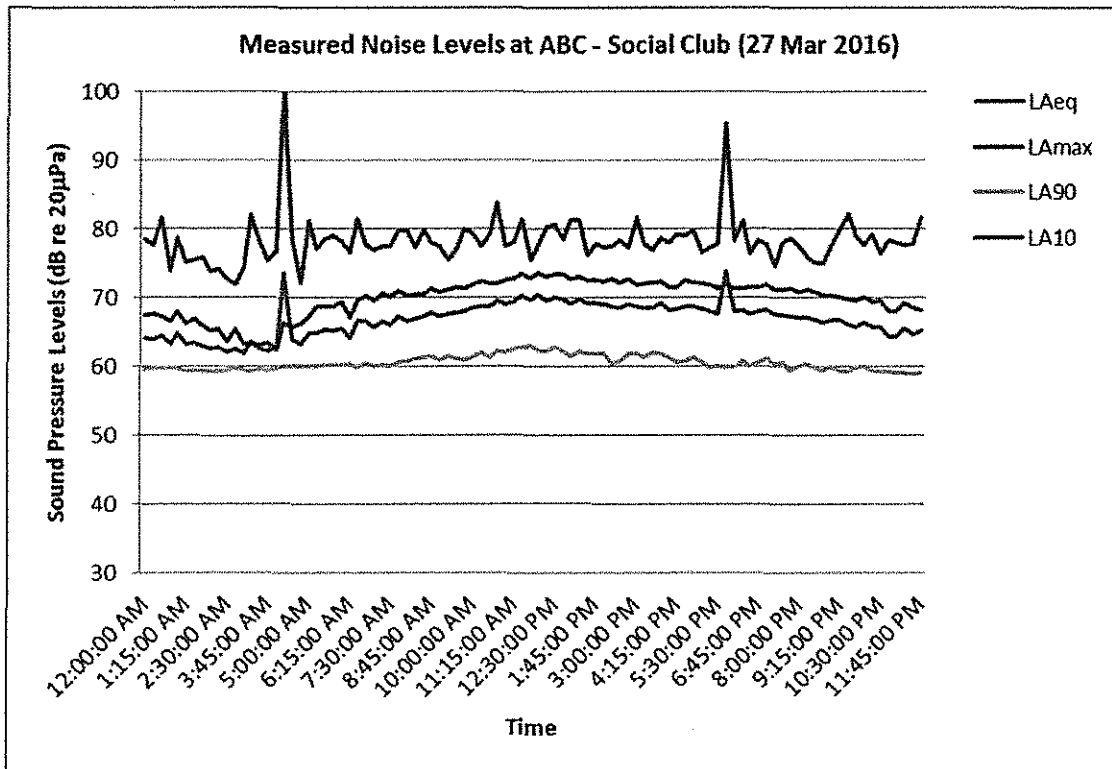
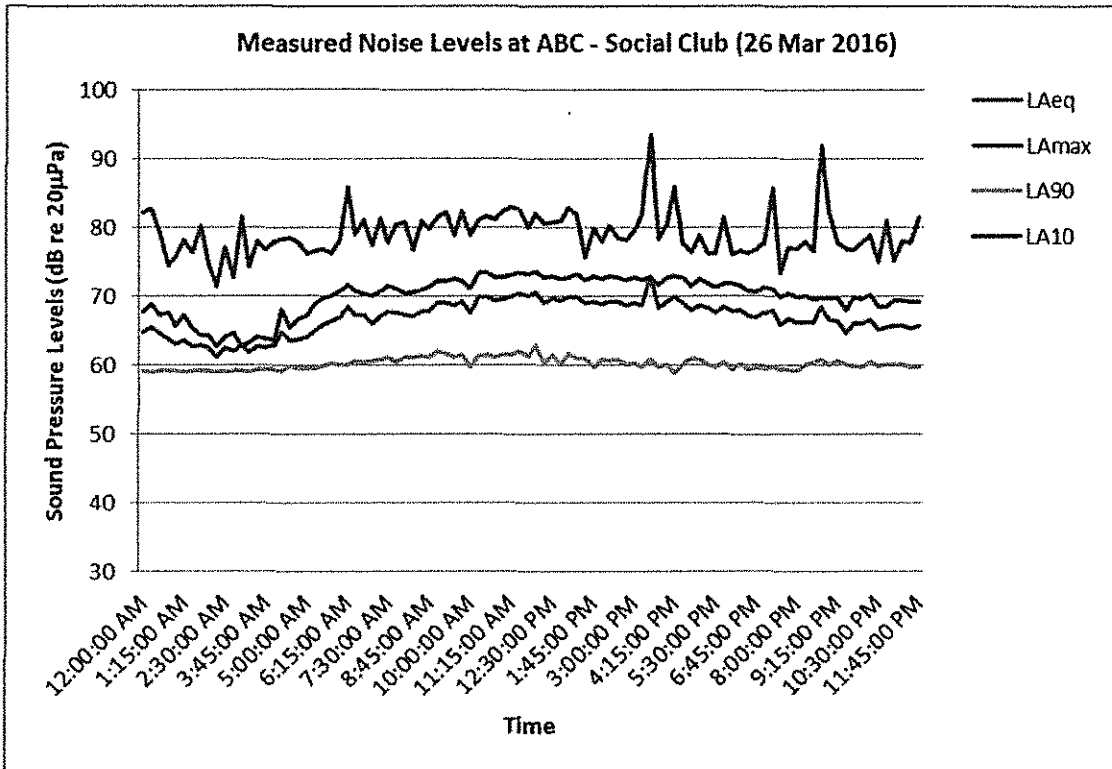


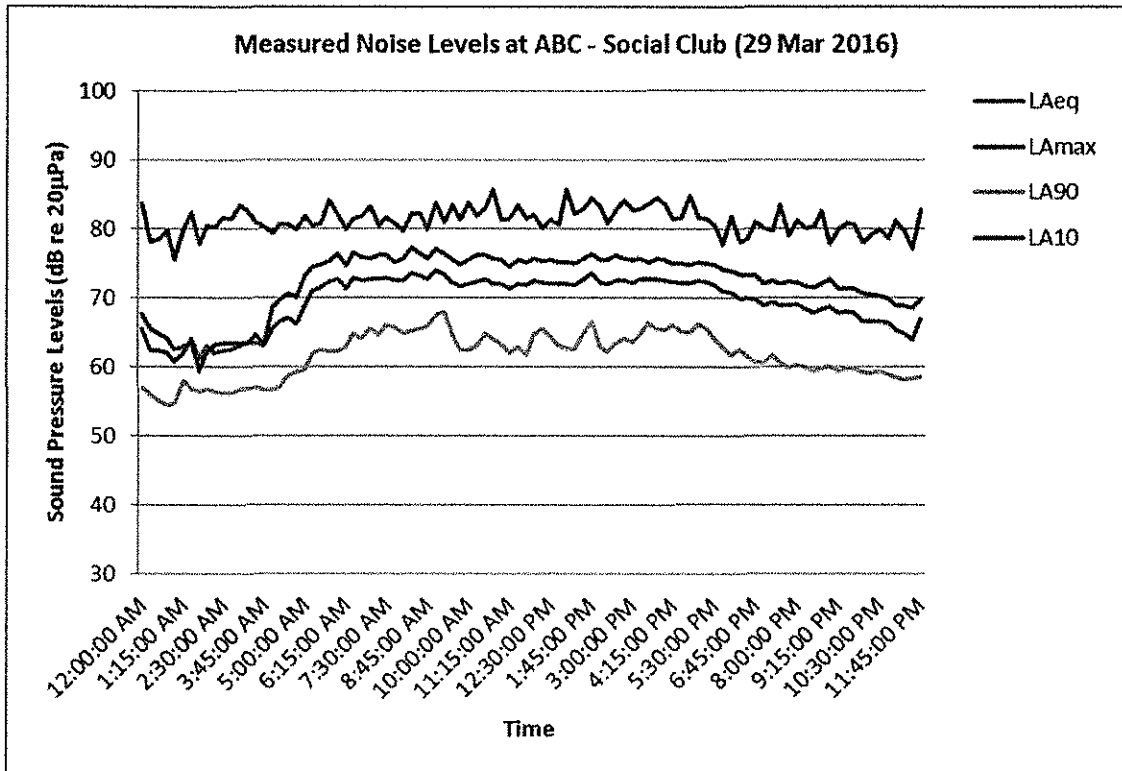
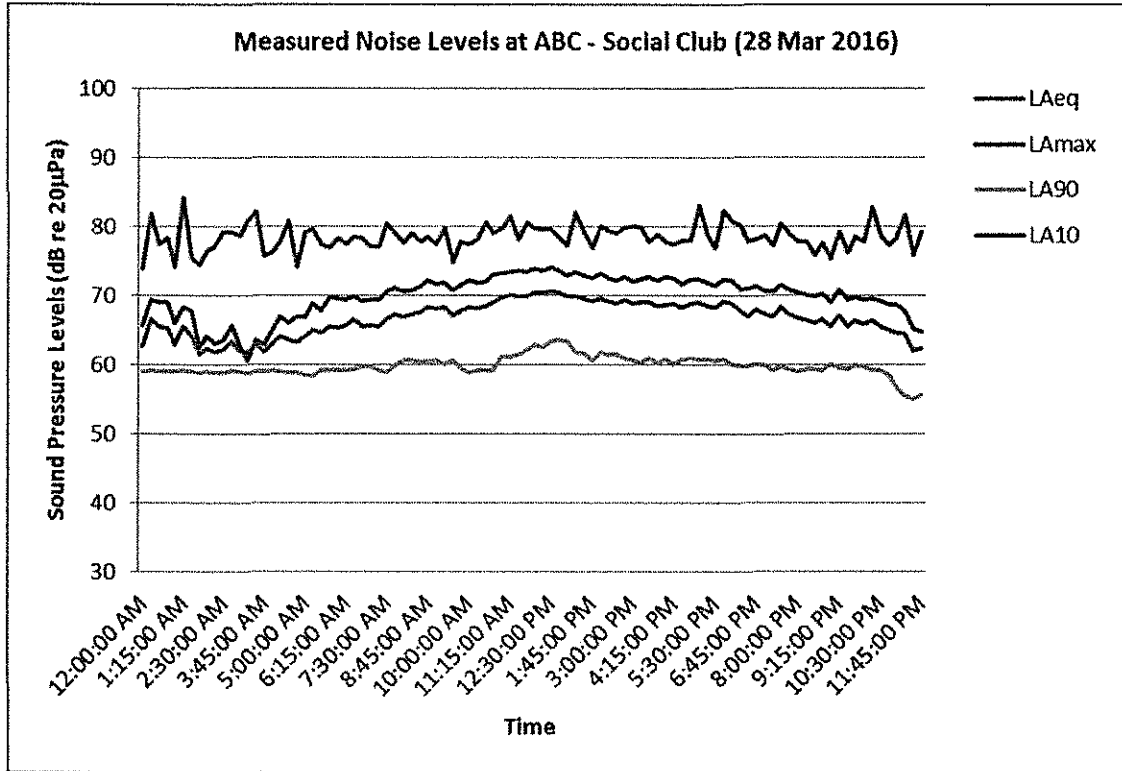
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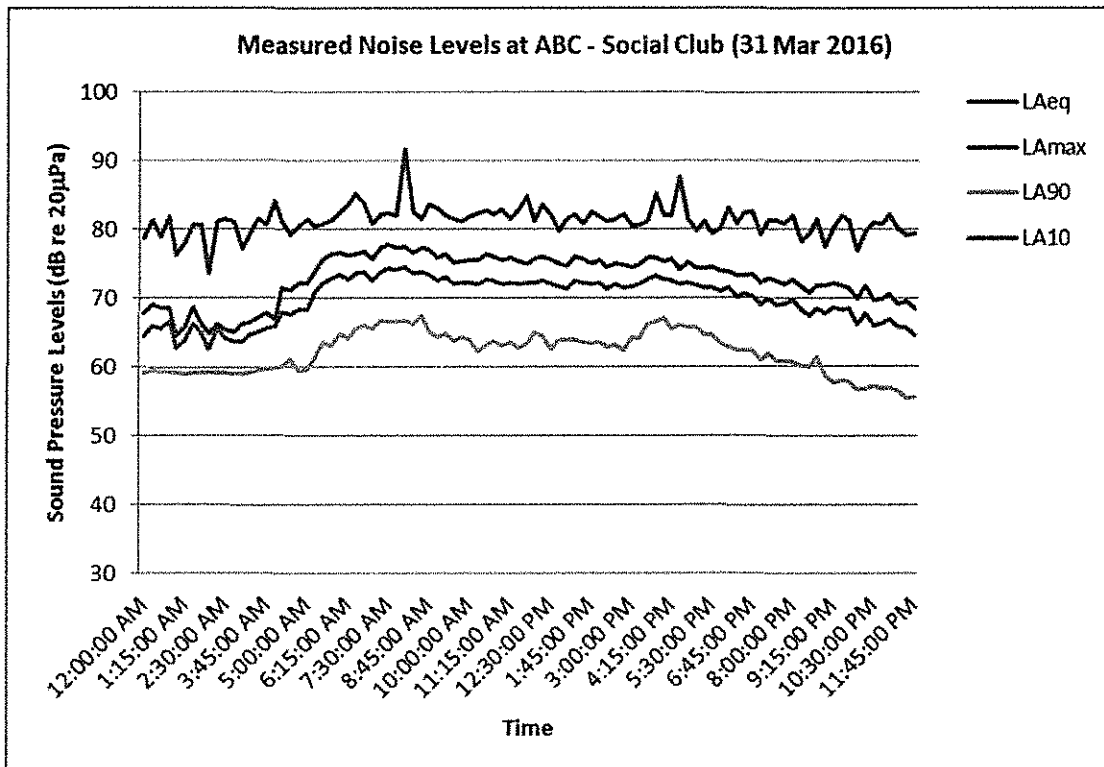
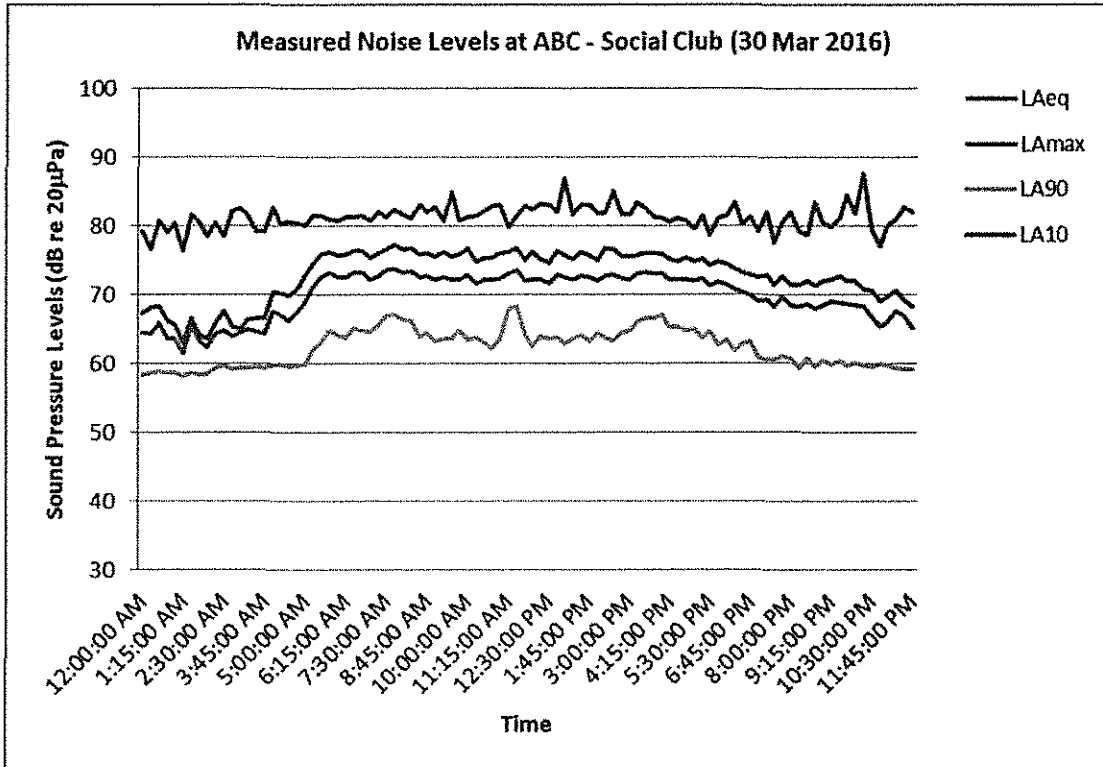


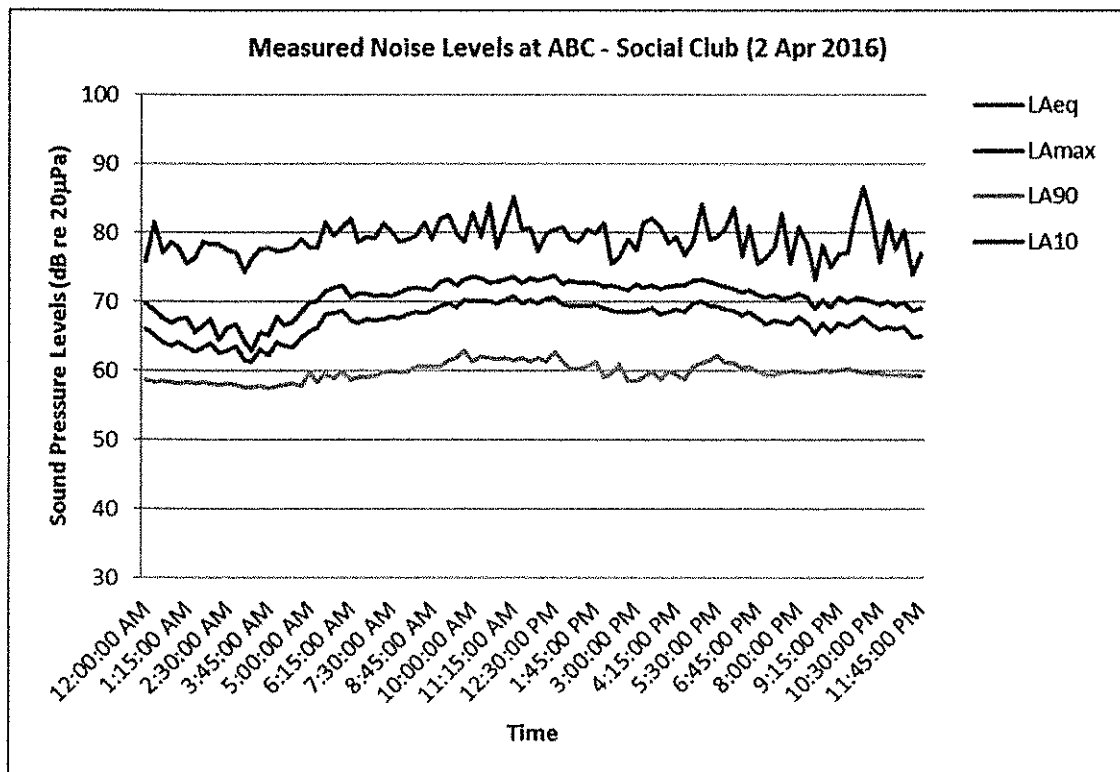
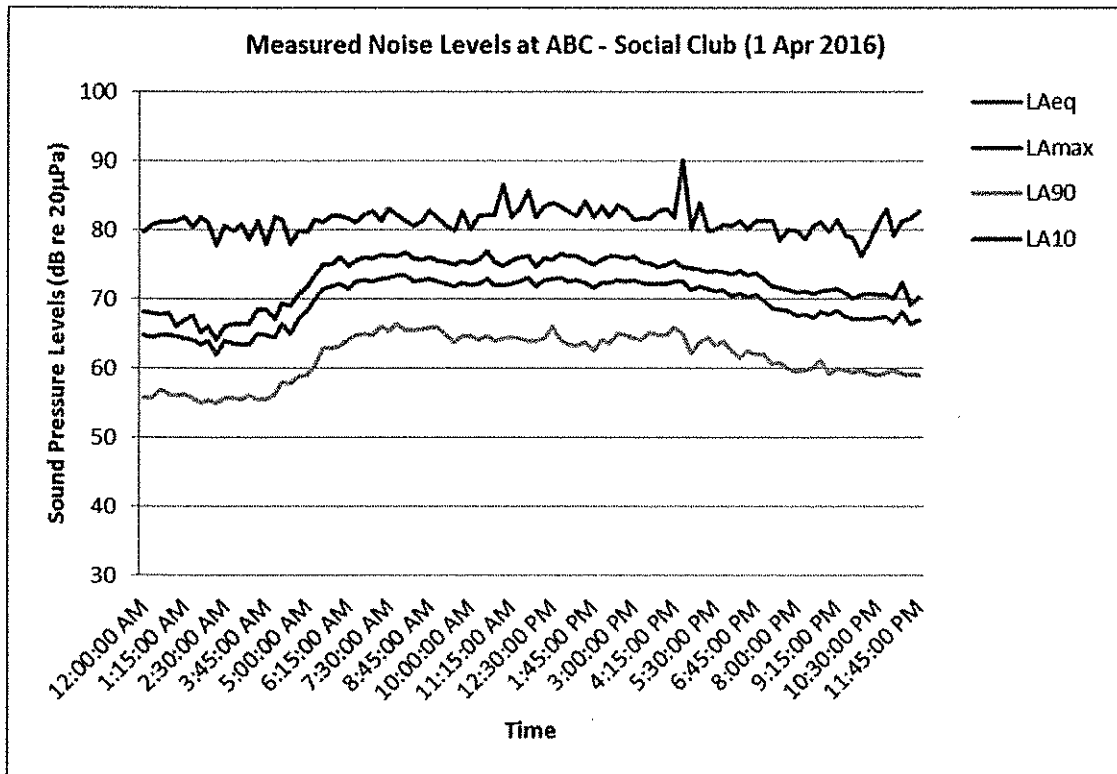




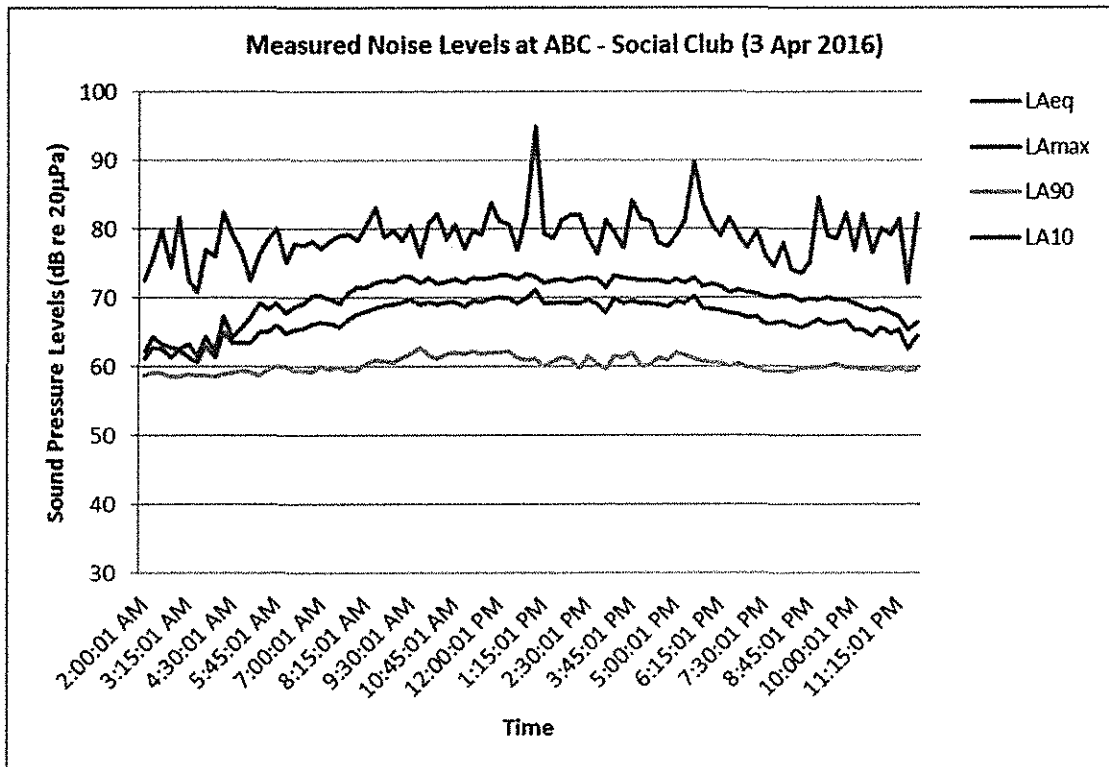
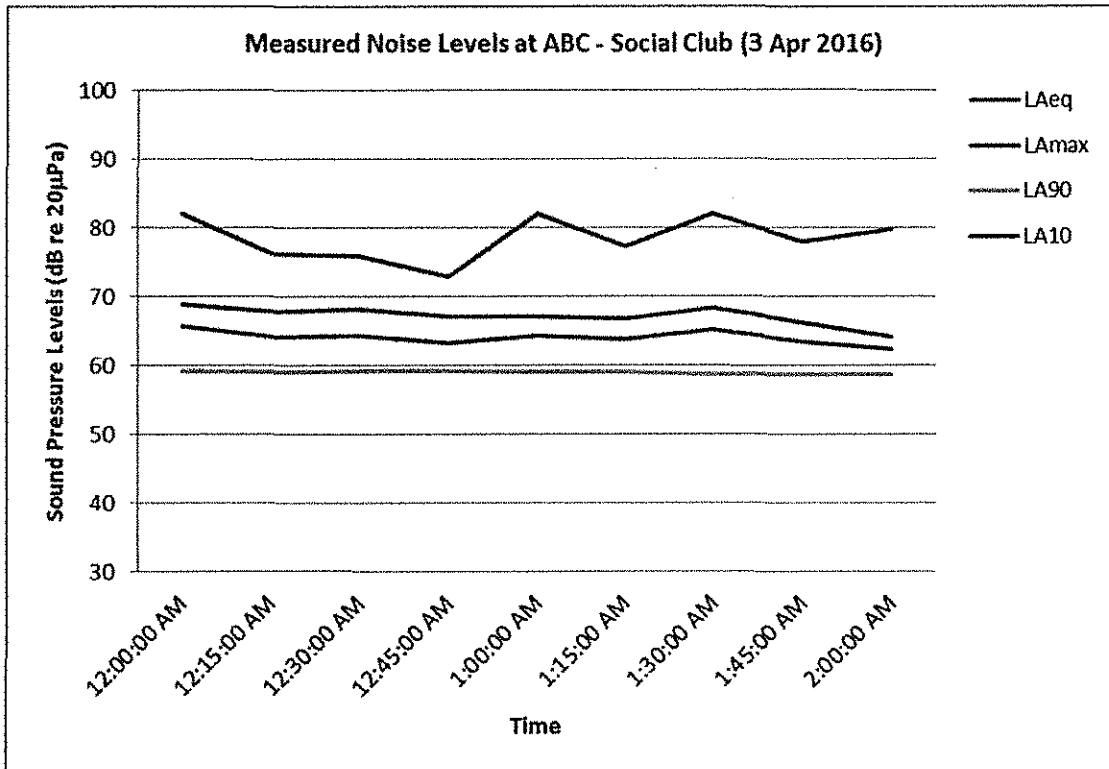




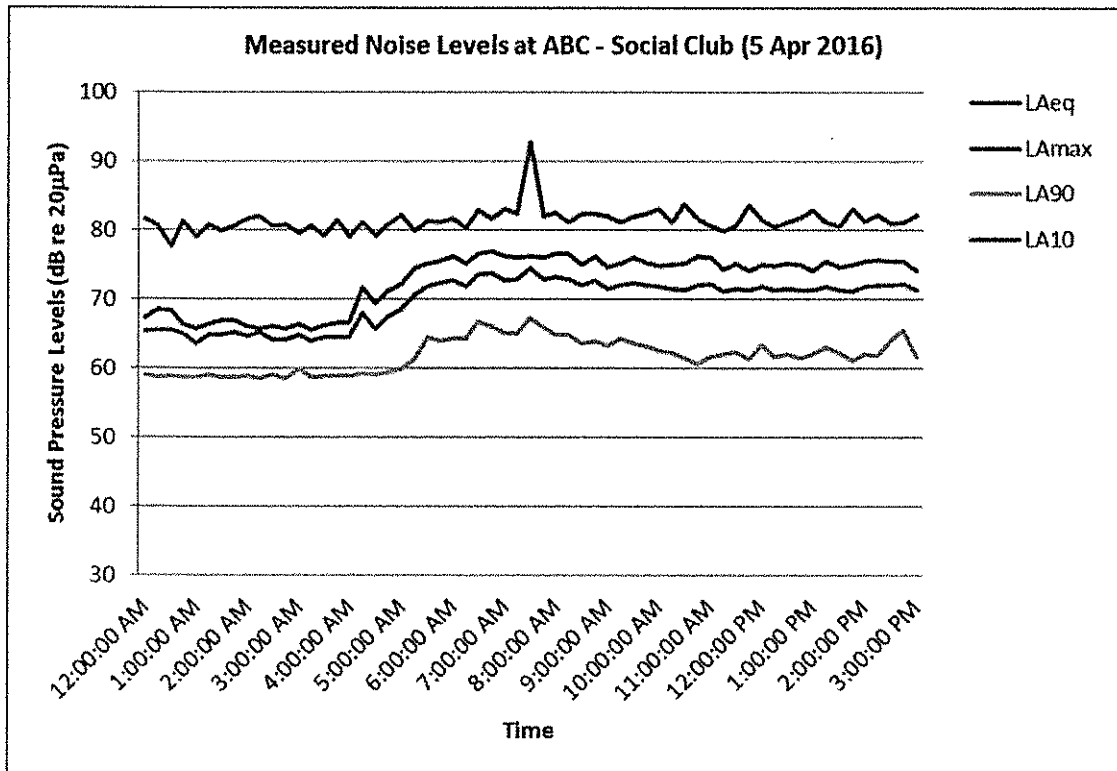
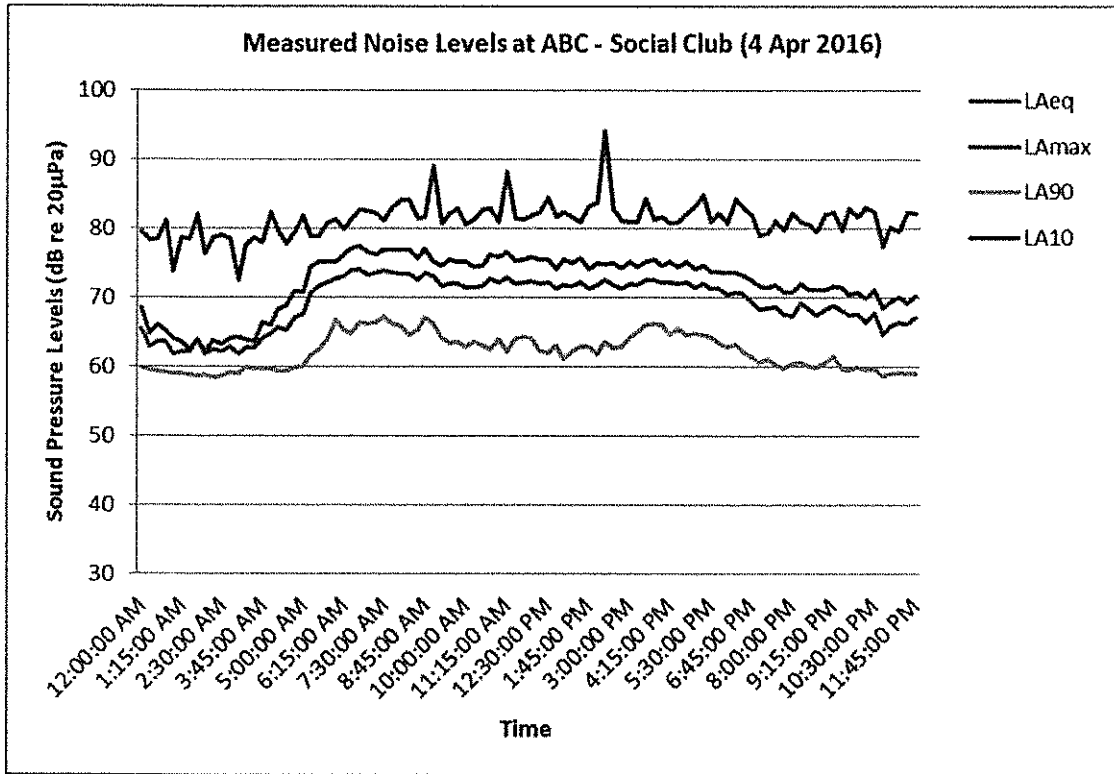




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Appendix B LIST OF PLANT SHUTDOWN TIMES

Unit OP	Start Time	End Time	Duration	Unit OP	Start Time	End Time	Duration
Dry.Wood Chip.Stopped	9/02/2016 0:26	9/02/2016 0:46	0:20:00	Cement Mill 1.Stopped	12/02/2016 11:27	12/02/2016 11:32	0:05:00
Cement Mill 6.Stopped	9/02/2016 3:26	9/02/2016 3:36	0:10:00	Raw Mill 4B.Stopped	12/02/2016 13:07	13/02/2016 3:37	14:30:06
Dry.Wood Chip.Stopped	9/02/2016 7:11	9/02/2016 7:56	0:45:00	Dry.Wood Chip.Stopped	12/02/2016 17:27	12/02/2016 21:52	4:25:02
Cement Mill 6.Stopped	9/02/2016 10:21	9/02/2016 10:26	0:05:00	Accolade II.Stopped	12/02/2016 17:32	13/02/2016 5:57	12:25:06
Raw Mill 4B.Stopped	9/02/2016 11:41	9/02/2016 13:01	1:20:00	Dry.Wood Chip.Stopped	13/02/2016 8:57	13/02/2016 9:42	0:45:01
Cement Mill 6.Stopped	9/02/2016 11:46	9/02/2016 15:51	4:05:01	Cement Mill 7.Stopped	13/02/2016 9:02	13/02/2016 10:22	1:20:01
Raw Mill 4A.Stopped	9/02/2016 16:26	9/02/2016 20:11	3:45:01	Raw Mill 4A.Stopped	13/02/2016 16:52	13/02/2016 17:32	0:40:00
Accolade II.Stopped	9/02/2016 17:21	10/02/2016 2:06	8:45:01	Raw Mill 4B.Stopped	13/02/2016 19:12	13/02/2016 21:07	1:55:00
Cement Mill 6.Stopped	9/02/2016 18:31	9/02/2016 18:46	0:15:00	Cement Mill 6.Stopped	13/02/2016 19:12	13/02/2016 22:42	3:30:01
Cement Mill 6.Stopped	9/02/2016 20:01	9/02/2016 20:21	0:20:00	Accolade II.Stopped	13/02/2016 20:47	14/02/2016 4:37	7:49:59
Cement Mill 6.Stopped	9/02/2016 21:06	9/02/2016 22:26	1:20:00	Dry.Wood Chip.Stopped	13/02/2016 22:32	13/02/2016 22:37	0:05:00
Cement Mill 1.Stopped	10/02/2016 5:01	10/02/2016 16:17	11:15:36	Dry.Wood Chip.Stopped	14/02/2016 3:02	14/02/2016 3:22	0:20:00
Cement Mill 6.Stopped	10/02/2016 9:11	10/02/2016 10:11	1:00:00	Dry.Wood Chip.Stopped	14/02/2016 8:57	14/02/2016 9:57	1:00:00
Cement Mill 6.Stopped	10/02/2016 10:42	10/02/2016 10:52	0:10:00	Raw Mill 4A.Stopped	14/02/2016 11:02	14/02/2016 11:47	0:45:00
Raw Mill 4B.Stopped	10/02/2016 11:02	10/02/2016 14:52	3:50:00	Slag Dryer.Stopped	14/02/2016 11:57	14/02/2016 12:07	0:10:00
Raw Mill 4A.Stopped	10/02/2016 15:32	10/02/2016 17:42	2:10:01	Raw Mill 4A.Stopped	14/02/2016 18:42	14/02/2016 19:17	0:35:00
Cement Mill 1.Stopped	10/02/2016 16:22	10/02/2016 16:27	0:05:00	Raw Mill 4B.Stopped	14/02/2016 19:42	14/02/2016 20:12	0:30:00
Cement Mill 7.Stopped	10/02/2016 17:12	11/02/2016 2:12	9:00:04	Dry.Wood Chip.Stopped	14/02/2016 22:37	14/02/2016 22:47	0:10:00
Dry.Wood Chip.Stopped	10/02/2016 17:52	10/02/2016 18:07	0:15:00	Raw Mill 4B.Stopped	15/02/2016 2:17	15/02/2016 2:57	0:39:59
Accolade II.Stopped	10/02/2016 18:02	12/02/2016 1:52	7:50:12	Dry.Wood Chip.Stopped	15/02/2016 2:17	15/02/2016 2:32	0:15:00
Dry.Wood Chip.Stopped	10/02/2016 21:42	10/02/2016 22:22	0:40:00	Dry.Wood Chip.Stopped	15/02/2016 3:22	15/02/2016 3:42	0:20:00
Cement Mill 1.Stopped	11/02/2016 0:22	11/02/2016 0:32	0:10:00	Dry.Wood Chip.Stopped	15/02/2016 5:58	15/02/2016 12:13	6:15:03
Raw Mill 4B.Stopped	11/02/2016 0:37	11/02/2016 1:57	1:20:00	Cement Mill 6.Stopped	15/02/2016 6:33	15/02/2016 21:48	15:15:04
Dry.Calciner.Stopped	11/02/2016 1:57	11/02/2016 7:42	5:45:02	Cement Mill 7.Stopped	15/02/2016 12:03	15/02/2016 12:08	0:05:00
Cement Mill 1.Stopped	11/02/2016 2:17	11/02/2016 2:22	0:05:00	Raw Mill 4A.Stopped	15/02/2016 13:08	15/02/2016 15:48	2:40:00
Cement Mill 7.Stopped	11/02/2016 2:17	11/02/2016 4:42	2:25:00	Accolade II.Stopped	15/02/2016 17:48	16/02/2016 2:38	8:50:03
Raw Mill 4A.Stopped	11/02/2016 5:57	11/02/2016 6:17	0:20:00	Raw Mill 4B.Stopped	15/02/2016 19:58	15/02/2016 22:18	2:20:02
Cement Mill 7.Stopped	11/02/2016 6:12	11/02/2016 6:57	0:45:00	Cement Mill 7.Stopped	16/02/2016 4:18	16/02/2016 5:03	0:45:01
Cement Mill 6.Stopped	11/02/2016 7:02	11/02/2016 7:42	0:40:00	Cement Mill 7.Stopped	16/02/2016 5:18	16/02/2016 7:38	2:19:59
Dry.Wood Chip.Stopped	11/02/2016 7:42	11/02/2016 10:07	2:25:00	Cement Mill 7.Stopped	16/02/2016 7:58	16/02/2016 8:03	0:05:00
Cement Mill 6.Stopped	11/02/2016 7:52	11/02/2016 8:47	0:55:00	Cement Mill 7.Stopped	16/02/2016 8:08	16/02/2016 8:48	0:40:00
Cement Mill 6.Stopped	11/02/2016 8:52	11/02/2016 16:52	8:00:02	Cement Mill 7.Stopped	16/02/2016 9:53	16/02/2016 10:03	0:10:00
Raw Mill 4B.Stopped	11/02/2016 10:32	11/02/2016 10:37	0:05:00	Cement Mill 7.Stopped	16/02/2016 11:58	16/02/2016 12:23	0:25:01
Raw Mill 4B.Stopped	11/02/2016 10:57	11/02/2016 21:22	10:25:02	Raw Mill 4A.Stopped	16/02/2016 14:33	16/02/2016 16:23	1:49:59
Dry.Wood Chip.Stopped	11/02/2016 11:07	11/02/2016 15:07	4:00:01	Cement Mill 7.Stopped	16/02/2016 14:53	16/02/2016 15:38	0:24:59
Cement Mill 1.Stopped	11/02/2016 16:47	11/02/2016 17:52	1:05:00	Cement Mill 1.Stopped	16/02/2016 15:33	16/02/2016 19:23	3:50:01
Dry.Wood Chip.Stopped	11/02/2016 17:17	11/02/2016 17:32	0:15:00	Accolade II.Stopped	16/02/2016 20:08	18/02/2016 2:13	6:05:09
Slag Dryer.Stopped	11/02/2016 17:27	11/02/2016 17:37	0:10:00	Raw Mill 4B.Stopped	16/02/2016 22:53	16/02/2016 23:53	1:00:00
Slag Dryer.Stopped	11/02/2016 21:02	11/02/2016 21:22	0:20:00	Raw Mill 4A.Stopped	16/02/2016 23:13	17/02/2016 0:33	1:20:02

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Unit OP	Start Time	End Time	Duration	Unit OP	Start Time	End Time	Duration
Dry.Wood Chip.Stopped	17/02/2016 7:03	17/02/2016 7:23	0:20:00	Cement Mill 1.Stopped	24/02/2016 1:04	24/02/2016 1:24	0:20:00
Cement Mill 1.Stopped	17/02/2016 9:03	17/02/2016 9:18	0:15:00	Accolade II.Stopped	24/02/2016 1:24	26/02/2016 5:02	3:38:39
Cement Mill 1.Stopped	17/02/2016 9:28	17/02/2016 10:48	1:20:01	Cement Mill 1.Stopped	24/02/2016 2:29	24/02/2016 3:04	0:35:00
Raw Mill 4A.Stopped	17/02/2016 9:53	17/02/2016 11:13	1:20:01	Cement Mill 1.Stopped	24/02/2016 4:44	24/02/2016 5:04	0:20:00
Cement Mill 7.Stopped	17/02/2016 10:48	17/02/2016 10:58	0:10:00	Dry.Kiln 4.Stopped	24/02/2016 6:19	24/02/2016 7:34	1:15:00
Raw Mill 4B.Stopped	17/02/2016 11:08	17/02/2016 11:38	0:30:00	Cement Mill 1.Stopped	24/02/2016 7:24	24/02/2016 8:04	0:40:01
Cement Mill 1.Stopped	17/02/2016 11:38	17/02/2016 16:58	5:20:02	Raw Mill 4A.Stopped	24/02/2016 7:34	24/02/2016 7:34	0:00:20
Raw Mill 4A.Stopped	17/02/2016 11:48	17/02/2016 12:08	0:20:00	Raw Mill 4A.Stopped	24/02/2016 8:43	24/02/2016 9:04	0:21:20
Raw Mill 4A.Stopped	17/02/2016 13:58	17/02/2016 14:12	0:13:56	Cement Mill 1.Stopped	24/02/2016 9:59	24/02/2016 10:49	0:50:00
Dry.Calciner.Stopped	17/02/2016 14:08	24/02/2016 10:29	20:21:06	Dry.Wood Chip.Stopped	24/02/2016 10:29	24/02/2016 14:29	4:00:02
Dry.Kiln 4.Stopped	17/02/2016 14:13	23/02/2016 19:49	5:35:58	Raw Mill 4B.Stopped	24/02/2016 13:14	24/02/2016 13:59	0:45:01
Cement Mill 7.Stopped	17/02/2016 17:58	17/02/2016 18:28	0:30:00	Raw Mill 4B.Stopped	24/02/2016 14:14	24/02/2016 14:39	0:25:00
Cement Mill 7.Stopped	18/02/2016 4:28	18/02/2016 4:48	0:20:00	Raw Mill 4A.Stopped	24/02/2016 14:19	24/02/2016 15:19	1:00:01
Cement Mill 7.Stopped	18/02/2016 5:23	18/02/2016 5:33	0:10:00	Raw Mill 4B.Stopped	24/02/2016 14:49	24/02/2016 18:14	3:25:02
Cement Mill 7.Stopped	18/02/2016 6:13	18/02/2016 6:28	0:15:00	Cement Mill 1.Stopped	24/02/2016 17:39	24/02/2016 17:49	0:10:00
Accolade II.Stopped	18/02/2016 17:58	19/02/2016 2:28	8:30:03	Cement Mill 7.Stopped	25/02/2016 6:19	25/02/2016 6:29	0:10:00
Cement Mill 7.Stopped	19/02/2016 5:33	19/02/2016 5:38	0:05:00	Raw Mill 4B.Stopped	25/02/2016 17:19	25/02/2016 18:19	1:00:01
Cement Mill 7.Stopped	19/02/2016 6:03	19/02/2016 6:18	0:15:01	Dry.Wood Chip.Stopped	25/02/2016 19:09	25/02/2016 19:44	0:35:00
Cement Mill 7.Stopped	19/02/2016 13:28	19/02/2016 14:13	0:45:01	Cement Mill 6.Stopped	26/02/2016 7:37	26/02/2016 10:22	2:45:01
Accolade II.Stopped	19/02/2016 17:38	20/02/2016 7:38	14:00:05	Dry.Wood Chip.Stopped	26/02/2016 7:47	26/02/2016 11:22	3:35:01
Slag Dryer.Stopped	20/02/2016 7:18	20/02/2016 7:58	0:40:00	Dry.Wood Chip.Stopped	26/02/2016 14:02	26/02/2016 16:17	2:15:01
Cement Mill 7.Stopped	20/02/2016 7:53	20/02/2016 11:23	3:30:01	Raw Mill 4A.Stopped	26/02/2016 14:52	26/02/2016 23:13	8:20:02
Slag Dryer.Stopped	20/02/2016 8:43	20/02/2016 8:53	0:10:01	Raw Mill 4B.Stopped	26/02/2016 14:57	26/02/2016 15:57	1:00:00
Accolade II.Stopped	20/02/2016 22:53	22/02/2016 2:03	3:10:07	Raw Mill 4B.Stopped	26/02/2016 16:02	26/02/2016 16:47	0:45:00
Cement Mill 7.Stopped	21/02/2016 0:08	21/02/2016 2:58	2:50:01	Dry.Wood Chip.Stopped	26/02/2016 16:47	26/02/2016 16:57	0:10:00
Cement Mill 7.Stopped	21/02/2016 9:48	21/02/2016 13:03	3:15:01	Dry.Calciner.Stopped	26/02/2016 17:22	26/02/2016 21:02	3:40:01
Cement Mill 6.Stopped	21/02/2016 16:08	21/02/2016 21:28	5:20:01	Dry.Wood Chip.Stopped	26/02/2016 21:02	26/02/2016 23:53	2:50:01
Cement Mill 6.Stopped	22/02/2016 1:33	22/02/2016 2:28	0:55:00	Accolade II.Stopped	26/02/2016 22:47	29/02/2016 21:58	23:10:19
Cement Mill 7.Stopped	22/02/2016 4:18	22/02/2016 5:53	1:35:01	Raw Mill 4B.Stopped	27/02/2016 0:13	27/02/2016 0:23	0:10:00
Cement Mill 6.Stopped	22/02/2016 6:38	22/02/2016 15:28	8:50:05	Raw Mill 4A.Stopped	27/02/2016 3:28	27/02/2016 3:58	0:30:00
Slag Dryer.Stopped	22/02/2016 13:38	22/02/2016 15:58	2:20:01	Dry.Wood Chip.Stopped	27/02/2016 10:48	27/02/2016 13:23	2:35:00
Cement Mill 1.Stopped	22/02/2016 15:48	22/02/2016 19:44	3:55:03	Raw Mill 4B.Stopped	27/02/2016 23:53	28/02/2016 0:28	0:35:00
Accolade II.Stopped	22/02/2016 17:28	23/02/2016 7:54	14:25:08	Cement Mill 6.Stopped	28/02/2016 3:38	28/02/2016 10:13	6:35:01
Cement Mill 1.Stopped	22/02/2016 20:04	22/02/2016 21:19	1:15:00	Dry.Calciner.Stopped	28/02/2016 6:53	23/03/2016 10:56	24 04:03:12
Cement Mill 7.Stopped	23/02/2016 0:09	23/02/2016 0:34	0:25:00	Raw Mill 4A.Stopped	28/02/2016 7:28	28/02/2016 8:43	1:15:00
Cement Mill 1.Stopped	23/02/2016 6:04	23/02/2016 16:29	10:25:05	Dry.Kiln 4.Stopped	28/02/2016 8:43	22/03/2016 10:51	23 02:08:04
Slag Dryer.Stopped	23/02/2016 7:59	23/02/2016 8:34	0:35:00	Cement Mill 7.Stopped	29/02/2016 1:13	29/02/2016 2:33	1:20:00
Cement Mill 6.Stopped	23/02/2016 11:14	23/02/2016 17:09	5:55:03	Cement Mill 1.Stopped	29/02/2016 13:28	29/02/2016 15:13	1:45:01
Cement Mill 1.Stopped	23/02/2016 17:24	23/02/2016 19:49	2:25:01	Cement Mill 6.Stopped	29/02/2016 20:33	29/02/2016 21:58	1:25:01
Dry.Kiln 4.Stopped	23/02/2016 19:59	24/02/2016 3:49	7:50:04	Cement Mill 1.Stopped	29/02/2016 21:33	29/02/2016 22:53	1:20:00

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Unit OP	Start Time	End Time	Duration	Unit OP	Start Time	End Time	Duration
Accolade II Stopped	29/02/2016 22:43	2/03/2016 13:38	1 14:55:09	Cement Mill 6.Stopped	6/03/2016 13:38	6/03/2016 14:23	0:45:00
Cement Mill 1.Stopped	29/02/2016 23:08	29/02/2016 23:43	0:35:00	Slag Dryer.Stopped	6/03/2016 15:08	6/03/2016 15:33	0:25:00
Slag Dryer.Stopped	1/03/2016 1:03	1/03/2016 2:33	1:30:00	Cement Mill 6.Stopped	6/03/2016 15:28	6/03/2016 16:13	0:45:00
Slag Dryer.Stopped	1/03/2016 3:18	1/03/2016 3:38	0:20:00	Cement Mill 6.Stopped	6/03/2016 16:48	6/03/2016 20:43	3:55:00
Slag Dryer.Stopped	1/03/2016 4:28	1/03/2016 5:13	0:45:01	Cement Mill 7.Stopped	6/03/2016 17:03	6/03/2016 17:28	0:25:00
Slag Dryer.Stopped	1/03/2016 7:18	1/03/2016 7:33	0:14:59	Cement Mill 7.Stopped	6/03/2016 17:33	6/03/2016 17:48	0:15:00
Cement Mill 7.Stopped	1/03/2016 12:03	1/03/2016 12:43	0:40:00	Cement Mill 6.Stopped	7/03/2016 8:38	7/03/2016 19:39	11:00:10
Cement Mill 1.Stopped	1/03/2016 13:23	1/03/2016 13:48	0:25:00	Slag Dryer.Stopped	7/03/2016 17:28	7/03/2016 18:59	1:30:09
Cement Mill 7.Stopped	1/03/2016 13:33	1/03/2016 15:43	2:10:01	Cement Mill 7.Stopped	8/03/2016 4:54	8/03/2016 5:44	0:50:00
Cement Mill 1.Stopped	1/03/2016 13:53	1/03/2016 15:08	1:15:00	Cement Mill 7.Stopped	8/03/2016 5:59	8/03/2016 19:54	13:55:04
Cement Mill 1.Stopped	1/03/2016 15:23	1/03/2016 16:08	0:45:00	Cement Mill 1.Stopped	8/03/2016 6:29	8/03/2016 15:34	9:05:02
Cement Mill 6.Stopped	1/03/2016 15:23	1/03/2016 15:48	0:25:00	Cement Mill 6.Stopped	8/03/2016 7:19	8/03/2016 8:44	1:25:00
Cement Mill 7.Stopped	1/03/2016 17:03	1/03/2016 17:28	0:25:00	Cement Mill 6.Stopped	8/03/2016 10:44	8/03/2016 13:49	3:05:01
Cement Mill 7.Stopped	1/03/2016 17:43	1/03/2016 18:53	1:10:01	Cement Mill 6.Stopped	8/03/2016 14:04	8/03/2016 14:19	0:15:00
Cement Mill 1.Stopped	2/03/2016 5:18	2/03/2016 5:43	0:25:00	Cement Mill 6.Stopped	8/03/2016 14:24	8/03/2016 14:29	0:05:00
Cement Mill 1.Stopped	2/03/2016 6:03	2/03/2016 17:28	11:25:03	Cement Mill 6.Stopped	8/03/2016 14:54	8/03/2016 15:24	0:30:01
Cement Mill 7.Stopped	2/03/2016 7:58	2/03/2016 19:23	11:25:02	Cement Mill 6.Stopped	8/03/2016 15:34	8/03/2016 16:59	1:25:00
Cement Mill 1.Stopped	2/03/2016 18:38	2/03/2016 18:48	0:10:00	Cement Mill 1.Stopped	8/03/2016 16:44	8/03/2016 16:54	0:10:00
Cement Mill 7.Stopped	2/03/2016 19:33	2/03/2016 19:38	0:05:00	Cement Mill 6.Stopped	8/03/2016 17:34	8/03/2016 17:44	0:10:00
Cement Mill 6.Stopped	3/03/2016 3:33	3/03/2016 3:58	0:25:00	Cement Mill 1.Stopped	8/03/2016 17:34	8/03/2016 17:39	0:05:00
Cement Mill 6.Stopped	3/03/2016 4:03	3/03/2016 4:08	0:05:00	Cement Mill 6.Stopped	9/03/2016 8:04	9/03/2016 8:54	0:50:01
Cement Mill 7.Stopped	3/03/2016 10:48	3/03/2016 13:13	2:25:00	Cement Mill 7.Stopped	9/03/2016 9:29	9/03/2016 10:09	0:40:00
Cement Mill 7.Stopped	3/03/2016 18:08	4/03/2016 11:53	17:45:04	Cement Mill 6.Stopped	9/03/2016 12:39	9/03/2016 12:54	0:15:00
Slag Dryer.Stopped	3/03/2016 20:43	3/03/2016 22:53	2:10:00	Cement Mill 6.Stopped	9/03/2016 15:04	9/03/2016 15:19	0:15:00
Cement Mill 6.Stopped	3/03/2016 22:18	3/03/2016 22:53	0:35:00	Cement Mill 6.Stopped	9/03/2016 17:24	9/03/2016 18:24	1:00:00
Cement Mill 6.Stopped	3/03/2016 22:58	3/03/2016 23:03	0:05:00	Cement Mill 1.Stopped	9/03/2016 23:59	10/03/2016 0:14	0:15:00
Slag Dryer.Stopped	3/03/2016 23:43	4/03/2016 2:23	2:40:00	Slag Dryer.Stopped	10/03/2016 2:49	10/03/2016 2:59	0:10:00
Cement Mill 6.Stopped	4/03/2016 0:33	4/03/2016 2:33	2:00:00	Slag Dryer.Stopped	10/03/2016 3:39	10/03/2016 5:04	1:25:01
Cement Mill 1.Stopped	4/03/2016 8:18	4/03/2016 8:38	0:20:00	Cement Mill 1.Stopped	10/03/2016 7:14	10/03/2016 8:44	1:30:00
Cement Mill 1.Stopped	4/03/2016 8:58	4/03/2016 9:23	0:25:01	Cement Mill 6.Stopped	10/03/2016 8:09	10/03/2016 10:24	2:15:01
Cement Mill 1.Stopped	4/03/2016 16:38	4/03/2016 17:58	1:19:59	Cement Mill 1.Stopped	10/03/2016 10:14	10/03/2016 17:14	7:00:02
Cement Mill 1.Stopped	4/03/2016 19:58	4/03/2016 20:23	0:25:00	Cement Mill 7.Stopped	11/03/2016 0:04	11/03/2016 1:34	1:30:04
Cement Mill 1.Stopped	4/03/2016 20:33	4/03/2016 20:43	0:10:00	Cement Mill 1.Stopped	11/03/2016 1:54	11/03/2016 3:34	1:40:00
Cement Mill 1.Stopped	4/03/2016 22:53	5/03/2016 1:58	3:05:01	Cement Mill 7.Stopped	11/03/2016 6:34	11/03/2016 7:54	1:20:01
Cement Mill 1.Stopped	5/03/2016 7:23	5/03/2016 8:43	1:20:00	Cement Mill 1.Stopped	11/03/2016 6:34	11/03/2016 9:39	3:05:02
Cement Mill 7.Stopped	5/03/2016 7:23	5/03/2016 8:33	1:10:00	Slag Dryer.Stopped	11/03/2016 8:24	11/03/2016 8:34	0:10:01
Cement Mill 7.Stopped	5/03/2016 10:08	5/03/2016 14:08	4:00:00	Slag Dryer.Stopped	11/03/2016 10:24	12/03/2016 14:19	1 03:55:09
Cement Mill 1.Stopped	5/03/2016 10:08	5/03/2016 14:43	4:35:00	Cement Mill 6.Stopped	11/03/2016 11:39	11/03/2016 14:09	2:30:00
Cement Mill 6.Stopped	5/03/2016 11:28	5/03/2016 14:08	2:40:03	Cement Mill 7.Stopped	11/03/2016 12:59	11/03/2016 13:29	0:30:00
Cement Mill 1.Stopped	5/03/2016 17:23	5/03/2016 17:58	0:35:00	Cement Mill 1.Stopped	11/03/2016 14:44	11/03/2016 14:59	0:15:00

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Unit OP	Start Time	End Time	Duration	Unit OP	Start Time	End Time	Duration
Cement Mill 7.Stopped	11/03/2016 16:09	11/03/2016 20:59	4:50:01	Cement Mill 7.Stopped	18/03/2016 22:25	18/03/2016 22:50	0:25:00
Cement Mill 6.Stopped	11/03/2016 16:14	11/03/2016 22:49	6:35:02	Cement Mill 7.Stopped	18/03/2016 23:45	19/03/2016 2:20	2:35:02
Cement Mill 1.Stopped	11/03/2016 17:04	11/03/2016 17:49	0:45:00	Cement Mill 7.Stopped	19/03/2016 11:00	19/03/2016 11:45	0:45:00
Cement Mill 1.Stopped	12/03/2016 7:59	12/03/2016 8:09	0:10:00	Cement Mill 7.Stopped	19/03/2016 12:30	19/03/2016 12:45	0:15:00
Cement Mill 6.Stopped	12/03/2016 14:34	12/03/2016 14:54	0:20:00	Cement Mill 1.Stopped	19/03/2016 15:55	19/03/2016 16:05	0:10:00
Cement Mill 6.Stopped	12/03/2016 23:14	13/03/2016 8:54	9:40:05	Cement Mill 7.Stopped	19/03/2016 20:50	19/03/2016 21:25	0:35:00
Slag Dryer.Stopped	13/03/2016 1:14	13/03/2016 1:34	0:20:00	Cement Mill 1.Stopped	20/03/2016 6:25	20/03/2016 7:45	1:20:01
Slag Dryer.Stopped	13/03/2016 1:54	13/03/2016 2:29	0:35:00	Cement Mill 7.Stopped	20/03/2016 6:30	20/03/2016 7:10	0:40:01
Slag Dryer.Stopped	13/03/2016 4:54	13/03/2016 8:39	3:45:01	Cement Mill 1.Stopped	20/03/2016 8:45	20/03/2016 12:45	4:00:01
Slag Dryer.Stopped	14/03/2016 8:30	14/03/2016 8:55	0:25:00	Cement Mill 7.Stopped	20/03/2016 8:45	20/03/2016 12:35	3:50:01
Cement Mill 6.Stopped	14/03/2016 12:05	14/03/2016 13:25	1:20:01	Cement Mill 6.Stopped	20/03/2016 16:15	20/03/2016 16:40	0:25:00
Cement Mill 1.Stopped	15/03/2016 3:05	15/03/2016 7:15	4:10:01	Cement Mill 6.Stopped	20/03/2016 17:25	20/03/2016 17:50	0:25:01
Cement Mill 1.Stopped	15/03/2016 8:30	15/03/2016 10:00	1:30:00	Cement Mill 1.Stopped	20/03/2016 17:50	20/03/2016 18:00	0:10:00
Cement Mill 7.Stopped	15/03/2016 13:40	15/03/2016 15:00	1:20:01	Cement Mill 6.Stopped	20/03/2016 18:45	20/03/2016 19:25	0:40:00
Cement Mill 7.Stopped	15/03/2016 17:05	15/03/2016 17:30	0:25:00	Cement Mill 6.Stopped	20/03/2016 19:30	20/03/2016 19:35	0:05:00
Cement Mill 6.Stopped	15/03/2016 17:15	15/03/2016 17:25	0:10:00	Cement Mill 6.Stopped	21/03/2016 2:50	21/03/2016 12:06	9:15:04
Cement Mill 6.Stopped	15/03/2016 17:30	15/03/2016 17:35	0:05:00	Cement Mill 1.Stopped	21/03/2016 10:11	21/03/2016 10:56	0:45:00
Cement Mill 1.Stopped	16/03/2016 9:10	16/03/2016 12:50	3:40:01	Cement Mill 1.Stopped	21/03/2016 11:26	25/03/2016 3:25	3 15:59:17
Cement Mill 7.Stopped	16/03/2016 15:25	16/03/2016 15:45	0:20:01	Cement Mill 6.Stopped	21/03/2016 12:46	21/03/2016 17:21	4:35:01
Cement Mill 7.Stopped	16/03/2016 16:15	16/03/2016 16:35	0:20:00	Cement Mill 6.Stopped	22/03/2016 4:11	22/03/2016 4:16	0:05:00
Cement Mill 7.Stopped	16/03/2016 16:40	16/03/2016 17:25	0:45:00	Raw Mill 4A.Stopped	22/03/2016 14:49	22/03/2016 15:09	0:19:30
Cement Mill 1.Stopped	16/03/2016 16:50	16/03/2016 16:55	0:05:00	Raw Mill 4A.Stopped	22/03/2016 15:58	22/03/2016 16:16	0:17:32
Cement Mill 1.Stopped	16/03/2016 17:25	16/03/2016 17:50	0:25:00	Raw Mill 4A.Stopped	22/03/2016 21:06	22/03/2016 22:01	0:55:00
Cement Mill 7.Stopped	16/03/2016 17:50	16/03/2016 18:05	0:15:00	Raw Mill 4A.Stopped	23/03/2016 0:26	23/03/2016 1:26	1:00:00
Cement Mill 7.Stopped	16/03/2016 18:10	16/03/2016 19:10	1:00:00	Raw Mill 4A.Stopped	23/03/2016 1:31	23/03/2016 2:16	0:45:01
Cement Mill 1.Stopped	16/03/2016 19:05	16/03/2016 20:30	1:25:01	Raw Mill 4A.Stopped	23/03/2016 3:06	23/03/2016 3:46	0:40:00
Cement Mill 1.Stopped	16/03/2016 20:55	16/03/2016 21:15	0:20:00	Raw Mill 4A.Stopped	23/03/2016 4:36	23/03/2016 5:31	0:55:00
Cement Mill 7.Stopped	16/03/2016 21:50	16/03/2016 22:00	0:10:00	Cement Mill 7.Stopped	23/03/2016 5:31	23/03/2016 20:16	14:45:04
Cement Mill 7.Stopped	16/03/2016 22:20	16/03/2016 22:30	0:10:00	Raw Mill 4A.Stopped	23/03/2016 5:36	23/03/2016 6:51	1:15:01
Cement Mill 7.Stopped	16/03/2016 22:55	16/03/2016 23:45	0:50:00	Dry.Wood Chip.Stopped	23/03/2016 9:46	23/03/2016 9:51	0:05:00
Cement Mill 1.Stopped	17/03/2016 7:30	17/03/2016 7:40	0:10:00	Raw Mill 4B.Stopped	23/03/2016 9:46	23/03/2016 9:51	0:05:00
Cement Mill 1.Stopped	17/03/2016 8:30	17/03/2016 9:35	1:05:00	Raw Mill 4A.Stopped	23/03/2016 10:31	23/03/2016 16:06	5:35:02
Cement Mill 6.Stopped	17/03/2016 10:40	17/03/2016 11:50	1:10:00	Dry.Wood Chip.Stopped	23/03/2016 10:56	23/03/2016 11:36	0:40:00
Cement Mill 1.Stopped	17/03/2016 16:25	17/03/2016 16:30	0:05:00	Dry.Calciner.Stopped	23/03/2016 11:36	24/03/2016 5:15	17:38:50
Cement Mill 7.Stopped	17/03/2016 16:30	18/03/2016 15:20	22:50:00	Raw Mill 4A.Stopped	23/03/2016 16:51	23/03/2016 19:01	2:10:01
Cement Mill 1.Stopped	17/03/2016 16:35	18/03/2016 6:45	14:10:05	Cement Mill 7.Stopped	24/03/2016 1:05	24/03/2016 3:10	2:05:00
Cement Mill 6.Stopped	18/03/2016 1:05	18/03/2016 1:20	0:15:00	Raw Mill 4A.Stopped	24/03/2016 1:40	24/03/2016 10:00	8:20:13
Cement Mill 7.Stopped	18/03/2016 6:30	18/03/2016 14:55	8:25:03	Dry.Wood Chip.Stopped	24/03/2016 5:15	24/03/2016 9:55	4:40:01
Cement Mill 1.Stopped	18/03/2016 20:25	18/03/2016 20:40	0:15:00	Cement Mill 7.Stopped	24/03/2016 8:35	24/03/2016 12:20	3:45:01
Cement Mill 1.Stopped	18/03/2016 21:10	18/03/2016 21:55	0:45:02	Dry.Calciner.Stopped	24/03/2016 9:55	24/03/2016 20:20	10:25:03

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Unit OP	Start Time	End Time	Duration	Unit OP	Start Time	End Time	Duration
Cement Mill 7.Stopped	24/03/2016 8:35	24/03/2016 12:20	3:45:01	Cement Mill 6.Stopped	28/03/2016 13:43	28/03/2016 13:53	0:10:00
Dry.Calciner.Stopped	24/03/2016 9:55	24/03/2016 20:20	10:25:03	Dry.Wood Chip.Stopped	28/03/2016 14:08	28/03/2016 14:28	0:20:00
Dry.Kiln 4.Stopped	24/03/2016 10:05	24/03/2016 16:10	6:05:02	Slag Dryer.Stopped	28/03/2016 14:18	28/03/2016 14:28	0:10:00
Cement Mill 7.Stopped	24/03/2016 13:05	25/03/2016 4:20	15:15:10	Dry.Wood Chip.Stopped	28/03/2016 14:33	28/03/2016 14:38	0:05:00
Raw Mill 4A.Stopped	24/03/2016 17:00	24/03/2016 17:15	0:14:51	Cement Mill 6.Stopped	28/03/2016 14:48	28/03/2016 14:53	0:05:00
Dry.Wood Chip.Stopped	24/03/2016 20:20	25/03/2016 0:50	4:30:07	Cement Mill 1.Stopped	28/03/2016 15:13	28/03/2016 15:23	0:10:00
Raw Mill 4B.Stopped	24/03/2016 22:50	25/03/2016 0:25	1:35:01	Cement Mill 1.Stopped	28/03/2016 15:28	28/03/2016 16:38	1:10:00
Raw Mill 4B.Stopped	25/03/2016 0:40	25/03/2016 5:40	5:00:07	Dry.Wood Chip.Stopped	28/03/2016 19:08	28/03/2016 19:38	0:30:00
Cement Mill 1.Stopped	25/03/2016 3:35	26/03/2016 0:06	20:31:36	Cement Mill 6.Stopped	28/03/2016 22:13	29/03/2016 3:18	5:05:01
Cement Mill 7.Stopped	25/03/2016 5:55	25/03/2016 8:20	2:25:00	Cement Mill 7.Stopped	28/03/2016 22:18	28/03/2016 22:53	0:35:00
Raw Mill 4B.Stopped	25/03/2016 7:20	25/03/2016 9:45	2:25:00	Dry.Calciner.Stopped	28/03/2016 22:58	29/03/2016 4:23	5:25:02
Cement Mill 6.Stopped	25/03/2016 11:50	25/03/2016 12:00	0:10:00	Dry.Wood Chip.Stopped	29/03/2016 4:23	29/03/2016 7:03	2:40:01
Raw Mill 4A.Stopped	25/03/2016 19:05	25/03/2016 19:40	0:35:00	Cement Mill 1.Stopped	29/03/2016 5:23	29/03/2016 6:28	1:05:00
Raw Mill 4A.Stopped	25/03/2016 23:51	26/03/2016 0:21	0:30:00	Cement Mill 6.Stopped	29/03/2016 6:03	29/03/2016 11:28	5:25:01
Cement Mill 1.Stopped	26/03/2016 1:56	26/03/2016 2:36	0:40:00	Cement Mill 1.Stopped	29/03/2016 6:38	29/03/2016 13:03	6:25:02
Raw Mill 4A.Stopped	26/03/2016 5:06	26/03/2016 5:36	0:30:00	Raw Mill 4B.Stopped	29/03/2016 7:48	29/03/2016 11:43	3:55:00
Raw Mill 4B.Stopped	26/03/2016 10:51	26/03/2016 11:57	1:05:59	Raw Mill 4B.Stopped	29/03/2016 12:48	29/03/2016 14:08	1:20:01
Raw Mill 4A.Stopped	26/03/2016 13:17	26/03/2016 13:37	0:20:01	Raw Mill 4A.Stopped	29/03/2016 14:23	29/03/2016 14:38	0:15:00
Cement Mill 1.Stopped	26/03/2016 22:57	27/03/2016 0:22	1:25:00	Cement Mill 1.Stopped	29/03/2016 14:53	29/03/2016 16:08	1:15:00
Cement Mill 1.Stopped	27/03/2016 0:27	27/03/2016 0:37	0:10:00	Raw Mill 4A.Stopped	29/03/2016 20:23	29/03/2016 22:53	2:30:01
Cement Mill 1.Stopped	27/03/2016 0:57	27/03/2016 2:33	1:35:01	Cement Mill 7.Stopped	30/03/2016 6:03	30/03/2016 6:43	0:40:01
Raw Mill 4A.Stopped	27/03/2016 1:12	27/03/2016 1:58	0:45:01	Dry.Wood Chip.Stopped	30/03/2016 7:38	30/03/2016 12:23	4:45:02
Raw Mill 4A.Stopped	27/03/2016 3:18	27/03/2016 3:53	0:35:02	Cement Mill 7.Stopped	30/03/2016 7:48	30/03/2016 8:23	0:35:00
Raw Mill 4B.Stopped	27/03/2016 10:18	27/03/2016 11:03	0:45:01	Cement Mill 1.Stopped	30/03/2016 7:48	30/03/2016 8:13	0:25:00
Cement Mill 7.Stopped	27/03/2016 12:58	27/03/2016 13:13	0:15:00	Cement Mill 6.Stopped	30/03/2016 7:48	30/03/2016 8:08	0:20:00
Raw Mill 4A.Stopped	28/03/2016 3:43	28/03/2016 3:53	0:10:00	Cement Mill 7.Stopped	30/03/2016 10:33	30/03/2016 14:18	3:45:01
Dry.Wood Chip.Stopped	28/03/2016 4:23	28/03/2016 5:28	1:05:01	Raw Mill 4B.Stopped	30/03/2016 13:38	30/03/2016 14:33	0:55:00
Cement Mill 6.Stopped	28/03/2016 4:28	28/03/2016 4:43	0:15:00	Raw Mill 4A.Stopped	31/03/2016 3:58	31/03/2016 4:38	0:40:01
Raw Mill 4A.Stopped	28/03/2016 4:38	28/03/2016 7:18	2:40:02	Raw Mill 4A.Stopped	31/03/2016 7:33	31/03/2016 8:28	0:55:01
Cement Mill 1.Stopped	28/03/2016 7:23	28/03/2016 8:23	1:00:02	Raw Mill 4A.Stopped	31/03/2016 8:33	31/03/2016 8:53	0:20:00
Raw Mill 4B.Stopped	28/03/2016 8:03	28/03/2016 8:48	0:45:00	Cement Mill 7.Stopped	31/03/2016 11:03	31/03/2016 12:48	1:45:01
Cement Mill 1.Stopped	28/03/2016 9:03	28/03/2016 10:28	1:25:01	Dry.Wood Chip.Stopped	31/03/2016 12:38	31/03/2016 13:23	0:45:00
Dry.Wood Chip.Stopped	28/03/2016 9:18	28/03/2016 9:33	0:15:00	Raw Mill 4B.Stopped	31/03/2016 12:38	31/03/2016 14:43	2:05:01
Dry.Calciner.Stopped	28/03/2016 9:53	28/03/2016 11:38	1:45:01	Cement Mill 7.Stopped	31/03/2016 14:18	31/03/2016 14:38	0:20:01
Cement Mill 6.Stopped	28/03/2016 10:43	28/03/2016 11:13	0:30:00	Dry.Wood Chip.Stopped	31/03/2016 14:48	31/03/2016 15:53	1:05:00
Cement Mill 6.Stopped	28/03/2016 11:28	28/03/2016 11:58	0:30:00	Raw Mill 4B.Stopped	31/03/2016 14:48	31/03/2016 15:18	0:30:00
Dry.Wood Chip.Stopped	28/03/2016 11:38	28/03/2016 13:38	2:00:00	Cement Mill 7.Stopped	31/03/2016 16:28	31/03/2016 18:03	1:35:01
Cement Mill 1.Stopped	28/03/2016 12:33	28/03/2016 14:13	1:40:00	Cement Mill 7.Stopped	31/03/2016 18:18	31/03/2016 18:23	0:05:00
Raw Mill 4B.Stopped	28/03/2016 12:48	28/03/2016 13:18	0:30:00	Dry.Wood Chip.Stopped	31/03/2016 20:38	31/03/2016 20:43	0:05:00
Cement Mill 6.Stopped	28/03/2016 13:08	28/03/2016 13:33	0:25:00	Dry.Calciner.Stopped	31/03/2016 20:43	1/04/2016 4:13	7:30:03

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Unit OP	Start Time	End Time	Duration	Unit OP	Start Time	End Time	Duration
Dry.Kiln 4.Stopped	31/03/2016 20:53	1/04/2016 0:28	3:35:01	Cement Mill 6.Stopped	4/04/2016 5:58	4/04/2016 6:48	0:50:00
Raw Mill 4A.Stopped	1/04/2016 1:45	1/04/2016 1:48	0:03:26	Raw Mill 4B.Stopped	4/04/2016 7:33	4/04/2016 18:54	11:20:03
Raw Mill 4A.Stopped	1/04/2016 2:58	1/04/2016 3:18	0:20:01	Cement Mill 7.Stopped	4/04/2016 8:58	4/04/2016 14:14	5:15:01
Raw Mill 4A.Stopped	1/04/2016 3:33	1/04/2016 5:03	1:30:01	Raw Mill 4A.Stopped	4/04/2016 9:23	4/04/2016 18:04	8:40:02
Cement Mill 1.Stopped	1/04/2016 3:48	1/04/2016 6:38	2:50:01	Cement Mill 6.Stopped	4/04/2016 13:59	4/04/2016 14:04	0:05:00
Dry.Wood Chip.Stopped	1/04/2016 4:13	1/04/2016 6:03	1:50:00	Dry.Wood Chip.Stopped	4/04/2016 16:34	4/04/2016 17:49	1:15:00
Raw Mill 4B.Stopped	1/04/2016 6:13	1/04/2016 6:18	0:05:00	Raw Mill 4A.Stopped	4/04/2016 19:19	4/04/2016 21:19	2:00:00
Raw Mill 4B.Stopped	1/04/2016 6:23	1/04/2016 8:03	1:40:01	Raw Mill 4B.Stopped	4/04/2016 22:19	4/04/2016 22:44	0:25:00
Cement Mill 1.Stopped	1/04/2016 6:43	1/04/2016 14:03	7:20:03	Raw Mill 4A.Stopped	5/04/2016 4:54	5/04/2016 5:24	0:30:01
Raw Mill 4B.Stopped	1/04/2016 9:18	1/04/2016 9:38	0:20:00	Cement Mill 6.Stopped	5/04/2016 6:19	5/04/2016 6:24	0:05:00
Raw Mill 4A.Stopped	1/04/2016 10:13	1/04/2016 10:33	0:20:00	Cement Mill 6.Stopped	5/04/2016 6:29	5/04/2016 6:44	0:15:00
Raw Mill 4B.Stopped	1/04/2016 10:53	1/04/2016 11:48	0:55:00	Raw Mill 4B.Stopped	5/04/2016 7:14	5/04/2016 9:19	2:05:00
Dry.Calciner.Stopped	1/04/2016 11:48	1/04/2016 17:48	6:00:02	Raw Mill 4A.Stopped	5/04/2016 7:59	5/04/2016 9:54	1:55:00
Cement Mill 6.Stopped	1/04/2016 12:03	1/04/2016 12:13	0:10:00	Dry.Wood Chip.Stopped	5/04/2016 9:44	5/04/2016 10:04	0:20:01
Raw Mill 4A.Stopped	1/04/2016 14:43	1/04/2016 15:13	0:30:00	Cement Mill 6.Stopped	5/04/2016 10:34	5/04/2016 10:50	0:15:55
Dry.Wood Chip.Stopped	1/04/2016 17:48	1/04/2016 20:18	2:30:01	Raw Mill 4A.Stopped	5/04/2016 10:44	5/04/2016 10:59	0:15:00
Cement Mill 1.Stopped	1/04/2016 18:53	1/04/2016 22:33	3:40:02	Cement Mill 6.Stopped	5/04/2016 10:50	5/04/2016 11:44	0:54:05
Raw Mill 4A.Stopped	1/04/2016 22:33	1/04/2016 22:53	0:20:00	Raw Mill 4A.Stopped	5/04/2016 13:09	5/04/2016 17:24	4:15:02
Raw Mill 4A.Stopped	2/04/2016 0:33	2/04/2016 0:48	0:15:00	Dry.Wood Chip.Stopped	5/04/2016 17:14	6/04/2016 0:14	7:00:01
Raw Mill 4A.Stopped	2/04/2016 2:23	2/04/2016 2:33	0:10:00	Raw Mill 4A.Stopped	5/04/2016 23:44	6/04/2016 0:49	1:04:59
Cement Mill 1.Stopped	2/04/2016 12:48	8/04/2016 16:09	6 04:20:47	Raw Mill 4A.Stopped	6/04/2016 5:14	6/04/2016 5:49	0:35:00
Raw Mill 4A.Stopped	2/04/2016 13:53	2/04/2016 14:18	0:25:00	Raw Mill 4B.Stopped	6/04/2016 10:39	6/04/2016 12:19	1:40:01
Dry.Calciner.Stopped	2/04/2016 13:58	2/04/2016 16:58	3:00:00	Raw Mill 4A.Stopped	6/04/2016 15:39	6/04/2016 16:54	1:15:00
Raw Mill 4A.Stopped	2/04/2016 16:18	2/04/2016 17:08	0:50:00	Cement Mill 6.Stopped	6/04/2016 16:19	6/04/2016 20:09	3:49:59
Dry.Wood Chip.Stopped	2/04/2016 16:58	2/04/2016 19:48	2:50:01	Raw Mill 4A.Stopped	6/04/2016 16:59	6/04/2016 19:39	2:39:59
Cement Mill 6.Stopped	2/04/2016 18:53	2/04/2016 20:13	1:20:01	Dry.Wood Chip.Stopped	7/04/2016 3:24	7/04/2016 8:09	4:45:04
Raw Mill 4A.Stopped	3/04/2016 0:28	3/04/2016 1:08	0:40:00	Cement Mill 6.Stopped	7/04/2016 10:49	7/04/2016 14:54	4:05:00
Cement Mill 6.Stopped	3/04/2016 4:48	3/04/2016 6:08	1:20:00	Raw Mill 4A.Stopped	7/04/2016 11:29	7/04/2016 12:24	0:55:00
Cement Mill 6.Stopped	3/04/2016 6:38	3/04/2016 7:08	0:30:00	Raw Mill 4B.Stopped	7/04/2016 13:49	7/04/2016 14:39	0:50:00
Cement Mill 6.Stopped	3/04/2016 7:53	3/04/2016 8:28	0:35:00	Slag Dryer.Stopped	7/04/2016 17:04	7/04/2016 19:19	2:15:00
Cement Mill 6.Stopped	3/04/2016 8:33	3/04/2016 17:33	9:00:02	Cement Mill 6.Stopped	7/04/2016 18:54	7/04/2016 19:39	0:45:00
Slag Dryer.Stopped	3/04/2016 9:13	4/04/2016 13:24	1 04:10:07	Raw Mill 4A.Stopped	8/04/2016 2:59	8/04/2016 3:39	0:40:00
Cement Mill 7.Stopped	3/04/2016 11:48	3/04/2016 12:23	0:35:00	Cement Mill 7.Stopped	8/04/2016 4:24	8/04/2016 5:54	1:30:00
Raw Mill 4A.Stopped	3/04/2016 11:58	3/04/2016 12:33	0:35:00	Raw Mill 4A.Stopped	8/04/2016 5:24	8/04/2016 5:49	0:25:00
Raw Mill 4B.Stopped	3/04/2016 12:18	3/04/2016 13:13	0:55:00	Raw Mill 4A.Stopped	8/04/2016 8:59	8/04/2016 16:09	7:10:00
Cement Mill 7.Stopped	3/04/2016 12:33	3/04/2016 13:13	0:40:00	Slag Dryer.Stopped	8/04/2016 10:04	8/04/2016 10:49	0:45:00
Raw Mill 4A.Stopped	3/04/2016 17:13	3/04/2016 17:48	0:35:00	Cement Mill 6.Stopped	8/04/2016 15:29	8/04/2016 17:24	1:54:59
Dry.Wood Chip.Stopped	3/04/2016 19:18	3/04/2016 20:43	1:25:01	Cement Mill 1.Stopped	8/04/2016 16:24	8/04/2016 17:34	1:10:00
Cement Mill 6.Stopped	3/04/2016 19:28	3/04/2016 22:23	2:55:01	Dry.Wood Chip.Stopped	8/04/2016 17:24	9/04/2016 2:44	9:20:02
Raw Mill 4A.Stopped	4/04/2016 0:18	4/04/2016 1:23	1:05:00	Cement Mill 1.Stopped	8/04/2016 17:59	8/04/2016 18:34	0:35:00

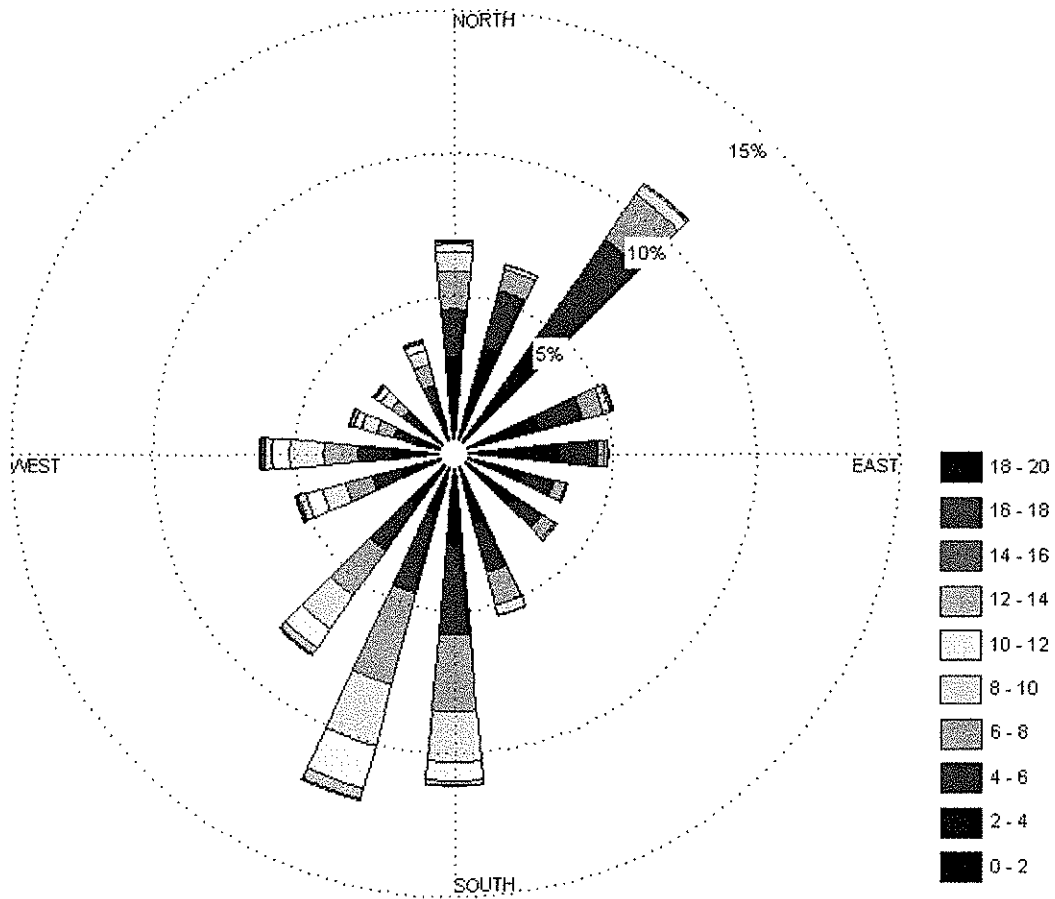
18 May 2016



Unit OP	Start Time	End Time	Duration	Unit OP	Start Time	End Time	Duration
Raw Mill 4A.Stopped	8/04/2016 18:29	8/04/2016 19:04	0:35:00				
Cement Mill 1.Stopped	8/04/2016 18:39	8/04/2016 18:59	0:20:00				
Cement Mill 1.Stopped	8/04/2016 19:39	8/04/2016 20:34	0:55:00				
Raw Mill 4B.Stopped	8/04/2016 19:44	8/04/2016 22:24	2:40:00				
Raw Mill 4A.Stopped	9/04/2016 4:44	9/04/2016 5:24	0:40:00				
Raw Mill 4A.Stopped	9/04/2016 7:24	9/04/2016 7:39	0:15:00				
Raw Mill 4A.Stopped	9/04/2016 9:24	9/04/2016 9:54	0:30:01				
Dry.Wood Chip.Stopped	9/04/2016 12:19	10/04/2016 22:09	11:40:20 (1 09:50:08]				
Raw Mill 4A.Stopped	9/04/2016 12:49	9/04/2016 13:24	0:35:00				
Raw Mill 4A.Stopped	9/04/2016 14:39	9/04/2016 15:29	0:50:00				
Raw Mill 4A.Stopped	9/04/2016 16:49	9/04/2016 17:04	0:15:00				
Raw Mill 4A.Stopped	9/04/2016 17:54	9/04/2016 18:19	0:25:00				
Raw Mill 4A.Stopped	9/04/2016 20:49	9/04/2016 21:39	0:50:00				
Cement Mill 1.Stopped	9/04/2016 21:19	9/04/2016 21:44	0:25:00				
Raw Mill 4B.Stopped	9/04/2016 23:04	9/04/2016 23:59	0:55:00				

Appendix C BUREAU OF METEOROLOGY WIND ROSE

Wind Rose for Outer Harbor 2nd April 2009 - 2nd October 2013



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