

MTR Corporation Limited

**Shatin to Central Link –
Tai Wai to Hung Hom Section**

Baseline Monitoring Report

(Works Contract 1109 - To Kwa Wan and Ma Tau
Wai Stations and Tunnels)

(July 2012)

Verified by:  _____

Position: Independent Environmental Checker

Date: 27 Jul 2012

MTR Corporation Limited

**Shatin to Central Link –
Tai Wai to Hung Hom Section**

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**Works Contract 1109 - To Kwa Wan and Ma
Tau Wai Stations and Tunnels**

(July 2012)

Certified by: _____



Position: Environmental Team Leader

Date: _____

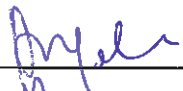
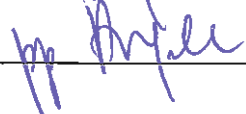
27th July 2012

MTR Corporation Limited

Consultancy Agreement No. NEX/2213

**Shatin to Central Link - Tai Wai to Hung
Hom Section [SCL(TAW-HUH)]****Baseline Monitoring Report****(Works Contract 1109 - To Kwa Wan
and Ma Tau Wai Stations and Tunnels)**

July 2012

	Name	Signature
Prepared & Checked:	Angela Tong	
Reviewed & Approved:	Josh Lam	

Version:	A	Date: 27 July 2012
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AECOM Asia Co. Ltd. 8/F, Grand Central Plaza, Tower 2, 138 Shatin Rural Committee Road, Shatin, NT, Hong Kong Tel: (852) 3922 9000 Fax: (852) 3922 9797 www.aecom.com
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Table of Content

	Page
EXECUTIVE SUMMARY	I
1 INTRODUCTION	1
1.1 Background	1
1.2 Purpose of the Baseline Monitoring Report	1
1.3 Report Structure	1
2 AIR QUALITY MONITORING	2
2.1 Monitoring Requirement	2
2.2 Monitoring Equipment	2
2.3 Monitoring Locations	2
2.4 Monitoring Parameters, Frequency and Duration	3
2.5 Monitoring Methodology	3
2.6 Results and Observations	4
2.7 Action and Limit Levels	4
3 AIRBORNE NOISE MONITORING	6
3.1 Monitoring Requirements	6
3.2 Monitoring Equipment	6
3.3 Monitoring Locations	6
3.4 Monitoring Parameters, Frequency and Duration	7
3.5 Monitoring Methodology	7
3.6 Results and Observations	7
3.7 Action and Limit Levels	9
4 CONCLUSION	11
4.1 Air Quality	11
4.2 Airborne Construction Noise	11

List of Tables

Table 2.1	Air Quality Monitoring Equipments
Table 2.2	Locations of Baseline Air Quality Monitoring Stations
Table 2.3	Air Quality Monitoring Parameters, Frequency and Duration
Table 2.4	Summary of 1-hr TSP Baseline Monitoring Results
Table 2.5	Summary of 24-hr TSP Baseline Monitoring Results
Table 2.6	Derivation of Action and Limit Levels for Air Quality
Table 2.7	Action and Limit Levels for Air Quality
Table 3.1	Noise Monitoring Equipment
Table 3.2	Locations of Baseline Noise Monitoring Stations
Table 3.3	Noise Monitoring Parameters, Frequency and Duration
Table 3.4	Summary of Baseline Daytime Noise Monitoring Results of Normal Weekdays (0700 – 1900 hrs)
Table 3.5	Summary of Baseline Evening Noise Monitoring Results of Normal Weekdays (1900 – 2300 hrs)
Table 3.6	Summary of Baseline Daytime and Evening Noise Monitoring Results of Sunday and Public Holiday (0700 – 2300 hrs)
Table 3.7	Summary of Baseline Night-time Noise Monitoring Results of All Days (2300-0700 hrs)
Table 3.8	Criteria for Action and Limit Levels for Construction Noise

List of Figures

NEX2213/C/361/ACM/M63/001	General Alignment of SCL (Tai Wai to Hung Hom)
NEX2213/C/361/ACM/M63/002	Locations of Off-Site Works Areas
NEX2213/C/361/ACM/M63/011	Locations of Dust Monitoring Stations
NEX2213/C/361/ACM/M63/012	Locations of Dust Monitoring Stations
NEX2213/C/361/ACM/M63/021	Locations of Noise Monitoring Stations (Construction Airborne Noise)
NEX2213/C/361/ACM/M63/022	Locations of Noise Monitoring Stations (Construction Airborne Noise)

List of Appendices

Appendix A	Calibration Certificates of Monitoring Equipments
Appendix B	Baseline Air Quality Monitoring Results
Appendix C	Baseline Noise Monitoring Results

EXECUTIVE SUMMARY

Shatin to Central Link – Tai Wai to Hung Hom Section [SCL(TAW-HUH)] (the Project) is an approximately 11 km long extension of the Ma On Shan Line and connects the West Rail Line at Hung Hom forming a strategic east-west rail corridor. It is a Designated Project under the *Environmental Impact Assessment Ordinance (Cap. 499)* (EIAO) and is currently governed by an Environmental Permit (EP No. EP-438/2012/A) for the construction and operation of the Project.

In accordance with the approved Environmental Monitoring and Audit Manual (EM&A Manual) for the Project, baseline environmental monitoring should be conducted prior to the commencement of construction works. Pursuant to EP Condition 3.3, Baseline Monitoring Report shall be submitted to the Director of Environmental Protection at least 2 weeks before the commencement of construction of the Project. As the construction of To Kwa Wan (TKW) and Ma Tau Wai Stations (MTW) and Tunnels, which are under Works Contract 1109, is tentatively scheduled to commence in September 2012, baseline air quality and airborne noise monitoring was conducted according to the EM&A Manual before the commencement of construction works at To Kwa Wan and Ma Tau Wai.

The baseline monitoring for air quality and airborne noise was carried out between 10 May 2012 and 13 July 2012 at the monitoring locations sited in the vicinity of the works areas at To Kwa Wan and Ma Tau Wai. Background air quality was measured in terms of 1-hr total suspended particulate (TSP) and 24-hr TSP. Continuous baseline noise monitoring for A-weighted levels L_{eq} , L_{10} and L_{90} was conducted in a sample period of 30 minutes for non-restricted hours (0700 – 1900 hrs of normal weekdays) and 5 minutes for restricted hours (1900 – 2300 hrs and 2300 – 0700 hrs of normal weekdays and whole day of Sundays and Public Holidays). Baseline monitoring for air quality and airborne noise was conducted for a period of at least 14 consecutive days and at least two weeks respectively.

The averaged 1-hr TSP levels and 24-hr TSP levels at Air Quality Monitoring Stations at To Kwa Wan and Ma Tau Wai areas (i.e. DMS-6 to DMS-10) are summarized in the following table:

Baseline TSP Monitoring Results	Air Quality Monitoring Locations (Station ID)				
	No. 420 Prince Edward Road West (DMS-6)	Parc 22 (DMS-7)	SKH Good Shepherd Primary School (DMS-8)	Lucky Building (East Façade) (DMS-9)	Chat Ma Mansion (DMS-10)
1-hr TSP					
Average ($\mu\text{g}/\text{m}^3$)	59.7	61.0	76.8	81.6	68.7
Range ($\mu\text{g}/\text{m}^3$)	55.4 - 64.7	48.6 – 81.7	65.6 – 89.6	51.0 – 94.5	55.7 – 82.8
24-hr TSP					
Average ($\mu\text{g}/\text{m}^3$)	41.2	56.4	34.7	47.5	62.1
Range ($\mu\text{g}/\text{m}^3$)	25.9 – 68.1	17.4 – 122.1	17.1 – 64.2	13.9 – 134.0	24.7 – 139.3

The averaged baseline airborne noise levels at Airborne Noise Monitoring Stations at To Kwa Wan and Ma Tau Wai areas (i.e. NMS-CA-6 to NMS-CA-10) are summarized in the following table:

Measured Noise Levels	Noise Monitoring Locations (Station ID)				
	No. 420 Prince Edward Road West (NMS-CA-6)	Skytower Tower 2 (NMS-CA-7)	SKH Good Shepherd Primary School (NMS-CA-8)	Lucky Building (East Façade) (NMS-CA-9)	Chat Ma Mansion (NMS-CA-10)
Averaged baseline noise level during daytime of normal weekdays ($L_{eq,30min}$, dB(A)) ⁽¹⁾	76	70	75	69	77

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To Kwa Wan and Ma Tau Wai Stations and Tunnels

Measured Noise Levels	Noise Monitoring Locations (Station ID)				
	No. 420 Prince Edward Road West (NMS-CA-6)	Skytower Tower 2 (NMS-CA-7)	SKH Good Shepherd Primary School (NMS-CA-8)	Lucky Building (East Façade) (NMS-CA-9)	Chat Ma Mansion (NMS-CA-10)
Averaged baseline noise level during evening time of normal weekdays ($L_{eq, 5min}$, dB(A))	75	68	74	68	76
Averaged baseline noise level during daytime and evening time of General Holiday including Sunday ($L_{eq, 5min}$, dB(A))	76	67	74	68	75
Averaged baseline noise level during night-time ($L_{eq, 5min}$, dB(A))	73	64	70	65	73

Note :

- (1) Numbers in bold and underlined indicate the measured baseline daytime noise levels ($L_{eq, 30min}$) exceed the stipulated EIAO noise limits of 75dB(A) for residential premises or 70dB(A) for educational institutions.

1 INTRODUCTION

1.1 Background

- 1.1.1 Shatin to Central Link – Tai Wai to Hung Hom Section [SCL(TAW-HUH)] (the Project), is an approximately 11 km long extension of the Ma On Shan Line and connects the West Rail Line at Hung Hom forming a strategic east-west rail corridor.
- 1.1.2 The EIA Report (Register No.: AEIAR-167/2012) for the Project was approved on 17 February 2012 under the *Environmental Impact Assessment Ordinance (EIAO)*. Following the approval of the EIA Report, an Environmental Permit (EP) was granted on 22 March 2012 (EP No: EP-438/2012) for the construction and operation of the Project. Variation of Environmental Permit (VEP) was subsequently applied and the latest Environmental Permit (EP No: EP-438/2012/A) was issued by Director of Environmental Protection (DEP) on 12 July 2012.
- 1.1.3 Prior to the commencement of construction works, baseline environmental monitoring should be conducted to review the baseline conditions and establish Action and Limit Levels, according to the EM&A Manual.
- 1.1.4 Given that the construction of To Kwa Wan and Ma Tau Wai Stations and Tunnels (Works Contract 1109) is tentatively scheduled to commence in September 2012, baseline environmental monitoring at the monitoring locations sited in the vicinity of the works areas at To Kwa Wan and Ma Tau Wai had commenced in May 2012 and was completed in July 2012.
- 1.1.5 The overall view of SCL (TAW-HUH) alignment is shown in **Figure NEX2213/C/361/ACM/M63/001** and the tentative locations of off-site works areas (e.g. office, general storage, barging facilities, magazine sites) are shown in **Figure NEX2213/C/361/ACM/M63/002**.

1.2 Purpose of the Baseline Monitoring Report

- 1.2.1 In accordance with the EM&A Manual, environmental baseline monitoring was carried out for air quality and airborne noise at five monitoring stations, which are located in the vicinity of the works areas at To Kwa Wan and Ma Tau Wai Stations and Tunnels (Works Contract 1109). This Baseline Monitoring Report contains baseline findings of these five monitoring stations.
- 1.2.2 The purposes of this Baseline Monitoring Report are to:
- Summarise the findings of baseline air quality and airborne noise monitoring; and
 - Establish the Action and Limit (A/L) levels in accordance with the EM&A Manual for the subsequent impact monitoring during construction stage.

1.3 Report Structure

- 1.3.1 This Baseline Monitoring Report comprises the following sections:
- Section 1 introduces the background of the Project and purpose of this Report;
 - Section 2 presents the baseline monitoring requirements, methodologies and monitoring results of air quality;
 - Section 3 presents the baseline monitoring requirements, methodologies and monitoring results of airborne noise; and
 - Section 4 concludes the findings of baseline monitoring.

2 AIR QUALITY MONITORING

2.1 Monitoring Requirement

2.1.1 In accordance with the EM&A Manual, baseline 1-hr and 24-hr total suspended particulate (TSP) levels should be established by conducting baseline 1-hr and 24-hr TSP monitoring daily for at least 14 consecutive days prior to the commissioning of major construction works.

2.2 Monitoring Equipment

2.2.1 24-hr TSP air quality monitoring at the monitoring stations were performed using High Volume Sampler (HVS), of which their locations and operation satisfy all the requirements stated in the EM&A Manual. Portable direct reading dust meters were used to carry out the 1-hr TSP monitoring. Portable direct reading dust meters used in this baseline monitoring were proven to IEC to be capable of achieving comparable result as that of the HVS and could be used for sampling. Brand and model of the equipments are given in **Table 2.1**.

Table 2.1 Air Quality Monitoring Equipments

Equipments	Brand and Model	Quantity	Serial Number
Portable direct reading dust meter (1-hr TSP)	Sibata Digital Dust Monitor (Model No. LD-3)	4	A.005.11a, A.005.12a, A.005.14a, A.005.15a
High Volume Sampler (24-hr TSP)	Tisch Total Suspended Particulate Mass Flow Controlled High Volume Air Sampler (Model No. TE-5170)	3	A-001-81T, A-001-82T, A-001-83T

2.2.2 The HVS and its accessories were maintained in good working condition, such as replacing motor brushes routinely and checking electrical wiring to ensure a continuous power supply.

2.2.3 Each HVS was calibrated using TE-5025A Calibration Kit prior to the commencement of baseline monitoring. Calibration certificate of the TE-5025A Calibration Kit and the HVSs are provided in **Appendix A**.

2.2.4 The 1-hr TSP meter was calibrated at 1-year interval against a continuous particulate TEOM Monitor, Series 1400ab. Calibration certificates of the Laser Dust Monitors are provided in **Appendix A**.

2.3 Monitoring Locations

2.3.1 Monitoring stations DMS-8, DMS-9 and DMS-10 were set up at the locations in accordance with Section 7 of the EM&A Manual. However, permission of access and setting up the HVS could not be obtained from Prosperity House, and thus DMS-6 was relocated to the roof of No. 420 Prince Edward Road West, which is located opposite to Prosperity House. Also, with no suitable monitoring location identified at the podium level of Skytower Tower 2 and the considerable separation distance between the roof at 58/F and the works areas, monitoring location DMS-7 was relocated to the roof (12/F) of Parc 22, which is located opposite to Skytower Tower 2. Both alternative monitoring locations (DMS-6 & DMS-7) were agreed with IEC prior to monitoring.

2.3.2 Locations of air quality monitoring stations are shown in Figure nos. **NEX2213/C/361/ACM/M63/011** and **012**. **Table 2.2** describes the details of the monitoring stations.

Table 2.2 Locations of Baseline Air Quality Monitoring Stations

Monitoring Station ID	Original Monitoring Location in EM&A Manual	Alternative Monitoring Location	Description	Monitoring Period
DMS-6	Prosperity House	No. 420 Prince Edward Road West	Roof (6/F)	27 Jun – 11 Jul 2012
DMS-7	Skytower Tower 2	Parc 22	Roof (12/F)	15 Jun – 29 Jun 2012
DMS-8	SKH Good Shepherd Primary School	-	Roof (6/F)	10 May – 24 May 2012
DMS-9	Lucky Building (East Façade)	-	Roof (19/F)	06 Jun – 20 Jun 2012
DMS-10	Chat Ma Mansion	-	Roof (9/F)	21 Jun – 05 Jul 2012

2.4 Monitoring Parameters, Frequency and Duration

2.4.1 **Table 2.3** summarizes the monitoring parameters, frequency and duration of baseline TSP monitoring.

Table 2.3 Air Quality Monitoring Parameters, Frequency and Duration

Parameter	Duration	Frequency and
1-hr TSP	14 consecutive days prior to commencement of major construction works	3 times per day
Continuous 24-hr TSP		Daily

2.5 Monitoring Methodology

24-hr TSP Monitoring

- 2.5.1 With the consideration of criteria stated in Section 7.6 of the EM&A Manual, the HVS was installed in the vicinity of the air sensitive receivers.
- 2.5.2 The relevant data including temperature, pressure, weather conditions, elapsed-time meter reading for the start and stop of the sampler, identification and weight of the filter paper, and any special phenomena observed were recorded. The weather information was referenced from Hong Kong Observatory (<http://www.weather.gov.hk/wxinfo/pastwx/extractc.htm>).
- 2.5.3 A HOKLAS accredited laboratory, ALS Technichem (HK) Pty Ltd (HOKLAS no.: 066), with constant temperature and humidity control, and equipped with necessary measuring and conditioning instruments, to handle the 24-hr TSP samples, was employed for sample analysis, and equipment calibration and maintenance.
- 2.5.4 Filter papers of size 8"x10" were labelled before sampling. They were inspected to be clean with no pin holes and conditioned in a humidity controlled chamber for over 24-hr and were pre-weighed before use for the sampling.
- 2.5.5 The 24-hr TSP levels were measured by following the standard high volume sampling method for TSP as set out in the Title 40 of the United States Code of Federal Regulations, Chapter 1 (Part 50), Appendix B. TSP was sampled by drawing air through a conditioned, pre-weighed filter paper inside the HVS at a controlled air flow rate. After 24-hr sampling, the filter papers loaded with dust were kept in a clean and tightly sealed plastic bag, and then returned to the laboratory for reconditioning in the humidity controlled chamber followed by accurate weighing by an electronic balance with a readout down to 0.1 mg.
- 2.5.6 All the collected samples were kept in a good condition for 6 months before disposal.

1-hr TSP Monitoring

- 2.5.7 The 1-hr TSP measurement followed manufacturer's instruction manual. Before initiating a measurement, zeroing the portable dust monitor was carried out to ensure maximum accuracy of concentration measurements.
- 2.5.8 The 1-hr TSP was sampled by drawing air into the portable dust monitor where particular concentrations were measured instantaneously with an in-built silicon detector sensing light scattered by the particulates in the sampled air. Continuous TSP levels were indicated and logged by a built-in data logger compatible with Windows based program to facilitate data collection, analysis and reporting.

2.6 Results and Observations

- 2.6.1 The baseline air quality monitoring was conducted between 10 May and 11 July 2012, during which, the weather was sunny and occasionally unstable. Major dust source affecting the monitoring results was observed as the nearby traffic emissions. Details of influencing factors such as weather conditions and site observation are presented in Appendix B.
- 2.6.2 The baseline monitoring results for 1-hr and 24-hr TSP are summarized in **Tables 2.4** and **2.5** respectively. Detailed air quality monitoring results are presented in **Appendix B**.

Table 2.4 Summary of 1-hr TSP Baseline Monitoring Results

1-hr TSP Levels	No. 420 Prince Edward Road West (DMS-6)	Parc 22 (DMS-7)	SKH Good Shepherd Primary School (DMS-8)	Lucky Building (East Façade) (DMS-9)	Chat Ma Mansion (DMS-10)
Average ($\mu\text{g}/\text{m}^3$)	59.7	61.0	76.8	81.6	68.7
Range ($\mu\text{g}/\text{m}^3$)	55.4 - 64.7	48.6 – 81.7	65.6 – 89.6	51.0 – 94.5	55.7 – 82.8

Table 2.5 Summary of 24-hr TSP Baseline Monitoring Results

24-hr TSP Levels	No. 420 Prince Edward Road West (DMS-6)	Parc 22 (DMS-7)	SKH Good Shepherd Primary School (DMS-8)	Lucky Building (East Façade) (DMS-9)	Chat Ma Mansion (DMS-10)
Average ($\mu\text{g}/\text{m}^3$)	41.2	56.4	34.7	47.5	62.1
Range ($\mu\text{g}/\text{m}^3$)	25.9 – 68.1	17.4 – 122.1	17.1 – 64.2	13.9 – 134.0	24.7 – 139.3

2.7 Action and Limit Levels

- 2.7.1 The air quality monitoring results, in terms of 1-hr TSP and 24-hr TSP, were below the Limit Level set out in the EIAO-TM and Air Quality Objective (AQO) respectively at the monitoring locations. The Action and Limit Levels for air quality impact monitoring were established according to the criteria and methodology in the EM&A Manual as presented in **Table 2.6**.

Table 2.6 Derivation of Action and Limit Levels for Air Quality

Parameter	Action Level	Limit Level
1-hr TSP Level in $\mu\text{g}/\text{m}^3$	For Baseline Level $\leq 384 \mu\text{g}/\text{m}^3$, Action Level = (baseline level *1.3 + Limit level) /2 For Baseline Level $> 384 \mu\text{g}/\text{m}^3$, Action Level = Limit Level	500 $\mu\text{g}/\text{m}^3$
24-hr TSP Level in $\mu\text{g}/\text{m}^3$	For Baseline Level $\leq 200 \mu\text{g}/\text{m}^3$, Action Level = (baseline level *1.3 + Limit level) /2 For Baseline Level $> 200 \mu\text{g}/\text{m}^3$, Action Level = Limit Level	260 $\mu\text{g}/\text{m}^3$

2.7.2 **Table 2.7** shows the derived Action and Limit Levels for air quality impact monitoring for the Project.

Table 2.7 Action and Limit Levels for Air Quality

Parameter	Monitoring Station	Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)
1-hr TSP Level in $\mu\text{g}/\text{m}^3$	DMS-6	288.8	500
	DMS-7	289.7	500
	DMS-8	300.0	500
	DMS-9	303.0	500
	DMS-10	294.7	500
24-hr TSP Level in $\mu\text{g}/\text{m}^3$	DMS-6	156.8	260
	DMS-7	166.7	260
	DMS-8	152.2	260
	DMS-9	160.9	260
	DMS-10	170.4	260

3 AIRBORNE NOISE MONITORING

3.1 Monitoring Requirements

3.1.1 In accordance with the EM&A Manual, baseline noise monitoring should be conducted for at least two weeks to obtain background noise levels prior to the commissioning of major construction works.

3.2 Monitoring Equipment

3.2.1 Noise monitoring was performed using sound level meter at each monitoring station. The sound level meters deployed comply with the International Electrotechnical Commission Publications (IEC) 651:1979 (Type 1) and 804:1985 (Type 1) specifications. Acoustic calibrator was deployed to check the sound level meters at a known sound pressure level. Brand and model of the equipment is given in **Table 3.1**.

Table 3.1 Noise Monitoring Equipment

Equipment	Brand and Model	Quantity	Serial Number
Integrated Sound Level Meter	B&K (Model No. 2238)	4	2255677, 2800927, 2285692, 2255680
Acoustic Calibrator	B&K (Model No. 4231)	2	1790985, 1850426

3.2.2 The sound level meters and acoustic calibrators were verified by the certified laboratory once every two years. Calibration certificates of the sound level meters and acoustic calibrator are provided in **Appendix A**.

3.3 Monitoring Locations

3.3.1 Monitoring stations NMS-CA-7, NMS-CA-8, NMS-CA-9 and NMS-CA-10 were set up at the locations in accordance with EM&A Manual. However, access permission to monitoring station NMS-CA-6 could not be obtained from Prosperity House. With consideration of selection criteria stated in Section 8.5 of EM&A Manual, No. 420 Prince Edward Road West, which is located opposite to NMS-CA-6, has been selected as alternative monitoring location and it was approved by EPD on 6 July 2012. The baseline airborne noise monitoring was conducted between 10 May and 13 July 2012. **NEX2213/C/361/ACM/M63/021** and **022** show the locations of the monitoring stations. **Table 3.2** describes the details of the monitoring stations.

Table 3.2 Locations of Baseline Noise Monitoring Stations

Monitoring Station ID	Original Monitoring Location in EM&A Manual	Alternative Monitoring Location	Description	Monitoring Period
NMS-CA-6	Prosperity House	No. 420 Prince Edward Road West	Roof (6/F)	27 Jun – 29 Jun, 1 Jul – 13 Jul 2012 ⁽²⁾
NMS-CA-7	Skytower Tower 2	-	Podium	20 Jun – 29 Jun, 1 Jul – 06 Jul 2012 ⁽²⁾
NMS-CA-8	SKH Good Shepherd Primary School	-	Roof (6/F)	10 May – 23 May 2012
NMS-CA-9	Lucky Building (East Façade)	-	Roof (19/F)	06 Jun – 15 Jun, 1 Jul – 06 Jul 2012 ⁽¹⁾
NMS-CA-10	Chat Ma Mansion	-	Roof (9/F)	27 Jun – 29 Jun, 1 Jul – 13 Jul 2012 ⁽²⁾

Remark:

(1) Airborne noise monitoring was suspended due to bad weather conditions from 16 to 19 Jun 2012 (Cyclone TALIM).

(2) Airborne noise monitoring was suspended due to bad weather conditions from 29 and 30 Jun 2012 (Cyclone DOKSURI).

3.4 Monitoring Parameters, Frequency and Duration

3.4.1 **Table 3.3** summarizes the monitoring parameters, frequency and duration of baseline noise monitoring.

Table 3.3 Noise Monitoring Parameters, Frequency and Duration

Time Period	Duration, min	Parameters
Daytime: 0700-1900 hrs on normal weekdays	30 ($L_{eq(30-min)}$)	L_{eq} , L_{10} & L_{90}
Evening: 1900-2300 hrs on normal weekdays	15 (average of 3 consecutive $L_{eq(5-min)}$)	
General Holidays and Sundays 0700-2300 hrs Night-time: 2300-0700 hrs on all days		

3.5 Monitoring Methodology

3.5.1 The monitoring procedures are summarised as below:

- (a) Façade measurements were made at all monitoring locations.
- (b) The battery condition was checked to ensure the correct functioning of the meter.
- (c) Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
 - (i) frequency weighting: A
 - (ii) time weighting: Fast
 - (iii) parameters: L_{eq} , L_{10} and L_{90}
 - (iv) time measurement: $L_{eq(30-minutes)}$ during non-restricted hours i.e. 07:00 – 1900 hrs on normal weekdays; $L_{eq(5-minutes)}$ during restricted hours i.e. 19:00 – 23:00 hrs and 23:00 – 07:00 hrs of normal weekdays, whole day of Sundays and Public Holidays
- (d) Prior to and after each noise measurement, the meter was calibrated using the acoustic calibrator for 94dB(A) at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1 dB(A), the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.

3.6 Results and Observations

3.6.1 There was no other major activity influencing the measured noise level during the baseline noise monitoring period. The dominant noise sources were community noise and nearby traffic. Details of influencing factors such as weather conditions and site observation are presented in Appendix C.

3.6.2 Baseline noise monitoring was conducted for at least two weeks to obtain the background noise data. The baseline noise monitoring results are summarized in **Tables 3.4** to **3.6**. Detailed noise monitoring results are presented in **Appendix C**.

Table 3.4 Summary of Baseline Daytime Noise Monitoring Results of Normal Weekdays (0700 – 1900 hrs)

Monitoring Location (Station ID)	30-min Average Noise Levels, dB(A)			Range, dB(A)		
	L_{eq}	L_{10}	L_{90}	L_{eq}	L_{10}	L_{90}
No. 420 Prince Edward Road West (NMS-CA-6)	76	78	73	75 - 77	78 - 79	71 - 74

Monitoring Location (Station ID)	30-min Average Noise Levels, dB(A)			Range, dB(A)		
	L _{eq}	L ₁₀	L ₉₀	L _{eq}	L ₁₀	L ₉₀
Skytower Tower 2 (NMS-CA-7)	70	72	67	68 – 71	70 – 74	64 – 68
SKH Good Shepherd Primary School (NMS-CA-8)	<u>75</u>	78	70	74 - 76	77 - 79	67 - 71
Lucky Building (East Façade) (NMS-CA-9)	69	71	67	69 - 70	70 - 71	66 - 68
Chat Ma Mansion (NMS-CA-10)	<u>77</u>	78	73	76 - 77	77 - 79	72 - 74

Note :

- (2) Numbers in bold and underlined indicate the measured baseline daytime noise levels (L_{eq, 30min}) exceed the stipulated noise limits of 75dB(A) for residential premises or 70dB(A) for educational institutions.

Table 3.5 Summary of Baseline Evening Noise Monitoring Results of Normal Weekdays (1900 – 2300 hrs)

Monitoring Location (Station ID)	5-min Average Noise Levels, dB(A)			Range, dB(A)		
	L _{eq}	L ₁₀	L ₉₀	L _{eq}	L ₁₀	L ₉₀
No. 420 Prince Edward Road West (NMS-CA-6)	75	77	71	74 - 76	76 - 79	69 - 73
Skytower Tower 2 (NMS-CA-7)	68	69	65	67 - 69	68 - 70	64 - 66
SKH Good Shepherd Primary School (NMS-CA-8)	74	77	67	73 - 75	76 - 78	64 - 69
Lucky Building (East Façade) (NMS-CA-9)	68	69	66	68 - 68	69 - 70	65 - 66
Chat Ma Mansion (NMS-CA-10)	76	77	72	76 - 77	77 - 78	72 - 73

Table 3.6 Summary of Baseline Daytime and Evening Noise Monitoring Results of Sunday and Public Holiday (0700 – 2300 hrs)

Monitoring Location (Station ID)	5-min Average Noise Levels, dB(A)			Range, dB(A)		
	L _{eq}	L ₁₀	L ₉₀	L _{eq}	L ₁₀	L ₉₀
No. 420 Prince Edward Road West (NMS-CA-6)	76	78	72	72 - 79	75 - 82	66 - 73
Skytower Tower 2 (NMS-CA-7)	67	69	64	65 - 69	67 - 71	60 - 66
SKH Good Shepherd Primary School (NMS-CA-8)	74	77	67	72 - 80	75 - 80	63 - 71
Lucky Building (East Façade) (NMS-CA-9)	68	70	66	67 - 70	68 - 71	64 - 68
Chat Ma Mansion (NMS-CA-10)	75	77	72	74 - 76	76 - 78	69 - 74

Table 3.7 Summary of Baseline Night-time Noise Monitoring Results of All Days (2300-0700 hrs)

Monitoring Location (Station ID)	5-min Average Noise Levels, dB(A)			Range, dB(A)		
	L _{eq}	L ₁₀	L ₉₀	L _{eq}	L ₁₀	L ₉₀
No. 420 Prince Edward Road West (NMS-CA-6)	73	76	68	70 - 75	74 - 78	64 - 71
Skytower Tower 2 (NMS-CA-7)	64	67	61	62 - 67	64 - 69	57 - 64
SKH Good Shepherd Primary School (NMS-CA-8)	70	74	61	65 - 74	68 - 77	55 - 66
Lucky Building (East Façade) (NMS-CA-9)	65	67	62	62 - 68	64 - 70	58 - 65
Chat Ma Mansion (NMS-CA-10)	73	75	68	71 - 76	73 - 78	63 - 72

3.6.3 Results indicated that the average baseline daytime noise monitoring results at all monitoring locations exceeded the criteria of 75dB(A) for residential premises and 70dB(A) for educational institutions except Skytower Tower 2 (NMS-CA-7) and Lucky Building (NMS-CA-9). The major noise sources affecting the noise background at No. 420 Prince Edward Road West (NMS-CA-6), SKH Good Shepherd Primary School (NMS-CA-8) and Chat Ma Mansion (NMS-CA-10) were observed to be traffic noise from the adjoining Prince Edward Road West, Ma Tau Wai Road, and Chatham Road North respectively.

3.6.4 As identified by baseline monitoring, the ambient noise levels at NMS-CA-6 and NMS-CA-10 exceeded the criteria of 75dB(A) for residential premises and at NMS-CA-8 exceeded both stipulated Limit Levels of 70dB(A) for educational institution and 65dB(A) during examination period.

3.7 Action and Limit Levels

3.7.1 The Limit Levels are only applicable for the monitoring stations where no residual impact is anticipated. In the event that residual impact is predicted in the Construction Noise Mitigation Measures Plan (CNMMP) which would be submitted under EP-438/2012/A Condition 2.9, the residual impact shall be taken into account by comparing the future impact monitoring results with the Predicted Construction Noise Levels in the CNMMP instead of the Limit Level.

3.7.2 During the impact monitoring period, the baseline noise level should be deducted from the future impact monitoring result for comparison with the Limit Level or the Predicted Construction Noise Level in case residual impact is anticipated as predicted in the approved CNMMP.

3.7.3 The Action and Limit Levels of noise monitoring have been set in accordance with the criteria specified in the EM&A Manual as shown in **Table 3.8** below.

Table 3.8 Criteria for Action and Limit Levels for Construction Noise

Time Period ⁽¹⁾	Monitoring Station	Action Level	Limit Level, dB(A)	Predicted Maximum Construction Noise Level ⁽²⁾ , dB(A)
0700-1900 hrs of normal weekdays	No. 420 Prince Edward Road West (NMS-CA-6)	When one documented valid complaint is received	75	80 (at Prosperity House)
	Skytower Tower 2 (NMS-CA-7)		75	76

Time Period ⁽¹⁾	Monitoring Station	Action Level	Limit Level, dB(A)	Predicted Maximum Construction Noise Level ⁽²⁾ , dB(A)
	SKH Good Shepherd Primary School (NMS-CA-8)		70 (during normal school time) 65 (during examination period)	<u>79</u>
	Lucky Building (East Façade) (NMS-CA-9)		75	<u>80</u>
	Chat Ma Mansion (NMS-CA-10)		75	71

Note :

- (1) If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority should be followed.
- (2) Predicted maximum construction noise levels are taken from the approved SCL(TAW-HUH) EIA Report for reference only. Numbers in bold and underlined indicate the predicted maximum construction noise levels exceed the stipulated noise limits of 75dB(A) for residential premises or 70dB(A) for educational institutions. The latest predicted maximum construction noise levels should refer to the findings of the CNMMP.

4 CONCLUSION

4.1 Air Quality

- 4.1.1 Baseline air quality monitoring was carried out between 10 May and 11 July 2012 at 5 monitoring stations at To Kwa Wan and Ma Tau Wai areas. Among these 5 monitoring stations, monitoring stations DMS-6 and DMS-7 as specified in EM&A Manual was inaccessible and inappropriate for monitoring respectively. Details of selection of alternative locations have been discussed, and therefore there is no revision for inclusion in the EM&A Manual.
- 4.1.2 The air quality monitoring results, in terms of 1-hr TSP and 24-hr TSP, were below the Limit Level set out in the EIAO-TM and Air Quality Objective (AQO) respectively at all monitoring locations. Action and Limit Levels for air quality at each location were derived from the baseline monitoring results.

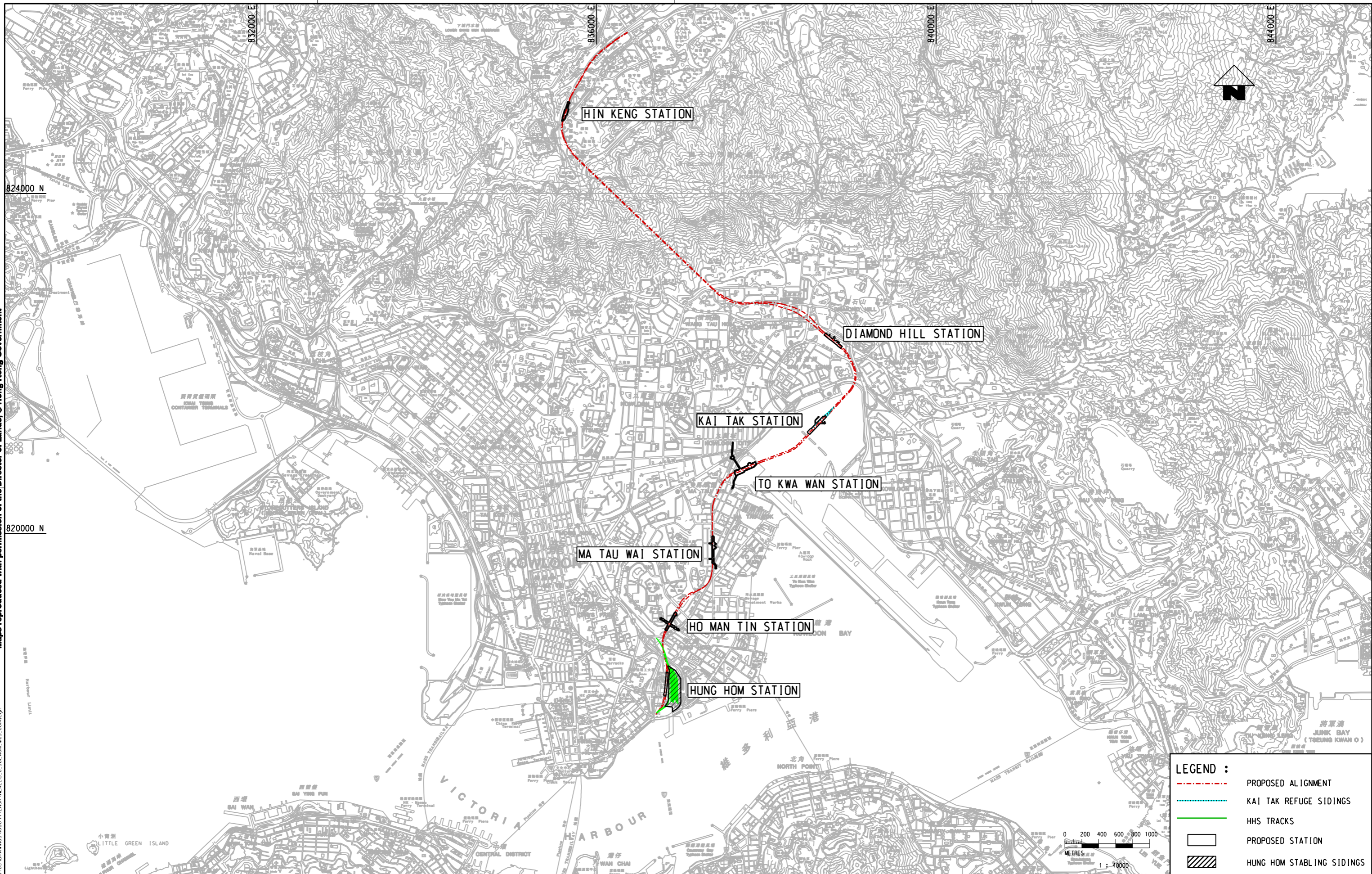
4.2 Airborne Construction Noise

- 4.2.1 Baseline noise monitoring was carried out between 10 May and 13 July 2012 at 5 monitoring stations at To Kwa Wan and Ma Tau Wai areas. Among these 5 monitoring stations, only monitoring station NMS-CA-6 as specified in EM&A Manual was inaccessible and thus it was relocated to other location. Proposal for this alternative location was submitted and approved by EPD, and therefore there is no revision for inclusion in the EM&A Manual.
- 4.2.2 At all monitoring locations, the averaged baseline daytime noise monitoring results exceeded the criteria of 75dB(A) for residential premises and 70dB(A) for educational institutions except Skytower Tower 2 (NMS-CA-7) and Lucky Building (NMS-CA-9). The major noise sources affecting the noise background at No. 420 Prince Edward Road West (NMS-CA-6), SKH Good Shepherd Primary School (NMS-CA-8) and Chat Ma Mansion (NMS-CA-10) were observed to be traffic noise from the adjoining Prince Edward Road West, Ma Tau Wai Road, and Chatham Road North respectively.
- 4.2.3 The Action Level of construction noise is based on documented valid complaints received, while the Limit Level for each monitoring location is set at a specific limit according to EIAO-TM and the EM&A Manual.

Figures

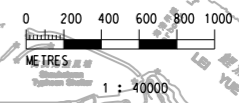
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 FILE NAME:



LEGEND :

- - - PROPOSED ALIGNMENT
- - - KAI TAK REFUGE SIDINGS
- HHS TRACKS
- PROPOSED STATION
- HUNG HOM STABILING SIDINGS



REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED

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DESIGNED	LCLL
CHECKED	LCLL
APPROVED	IMW
DATE	06/JUL/2012

MTR

SHATIN TO CENTRAL LINK

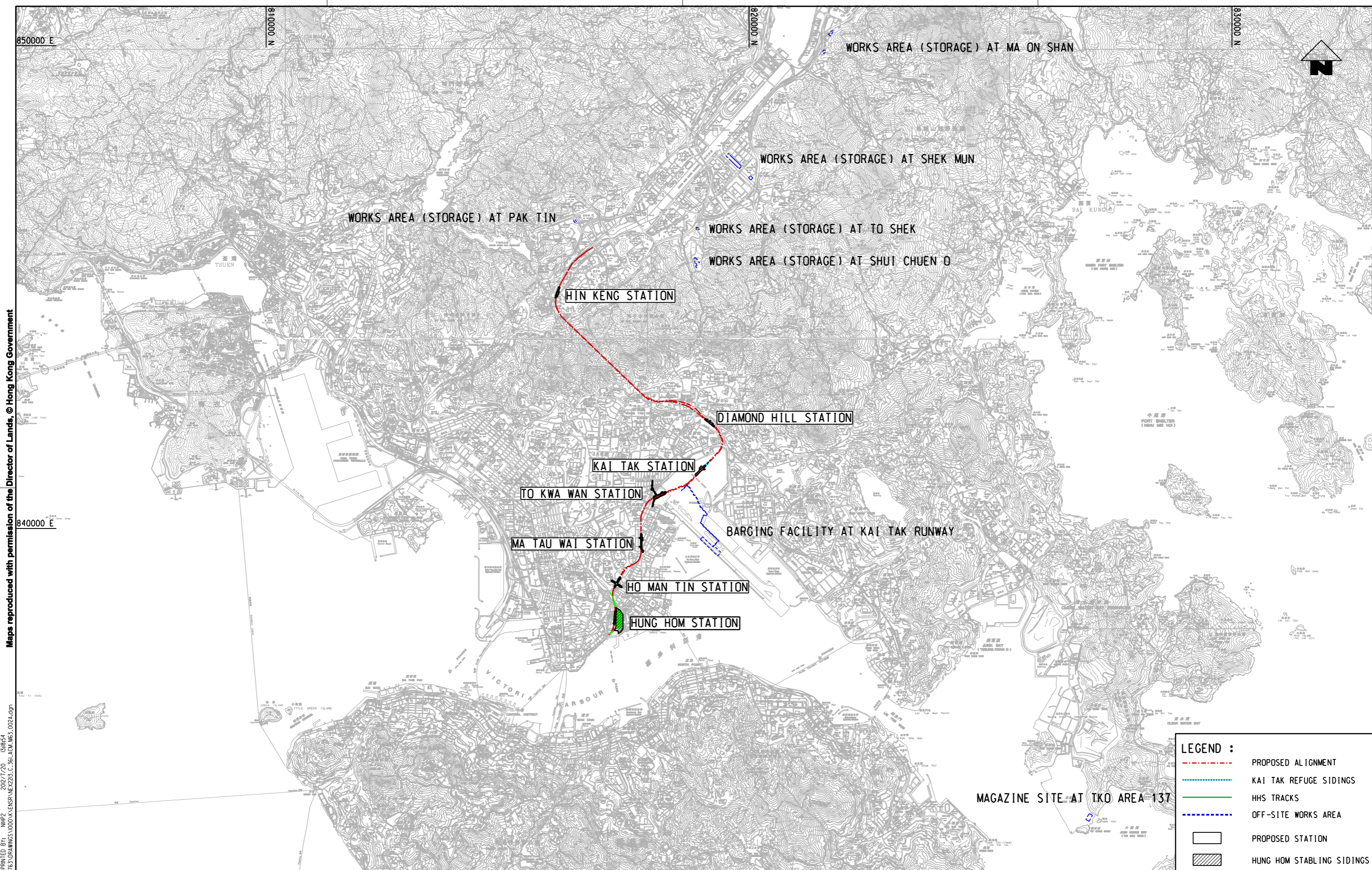
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TITLE		NEX/2213	
SCL (TAW-HUH)		GENERAL ALIGNMENT OF SCL (TAI WAI TO HUNG HOM)	
SCALE	FIGURE NO.	REV.	
1 : 40000 (A3)	NEX2213/C/361/ACM/M63/001	A	

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REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED

DRAWN	NHP
DESIGNED	LCLL
CHECKED	LCLL
APPROVED	IMW
DATE	06/JUL/2012

MTR

SHATIN TO CENTRAL LINK

AECOM

CADD REF. NEX2213_C_361_ACM_M63_002A.dgn

TITLE
NEX/2213
SCL (TAW-HUH)
LOCATIONS OF OFF-SITE WORKS AREAS

SCALE 1 : 70000 (A3)

FIGURE NO. NEX2213/C/361/ACM/M63/002

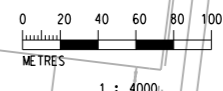
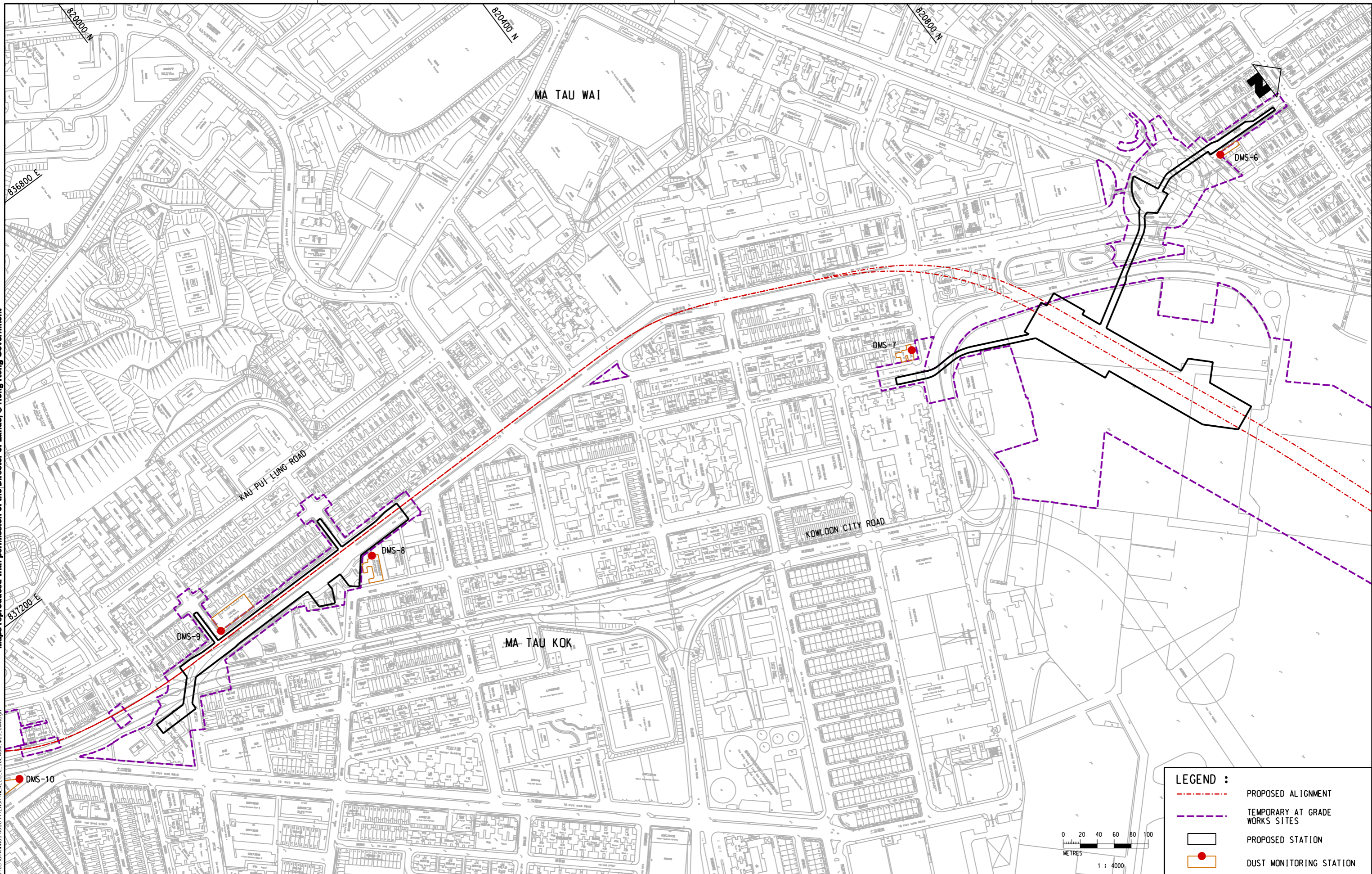
REV. A

LEGEND :

- - - PROPOSED ALIGNMENT
- - - KAI TAK REFUGE SIDINGS
- - - HHS TRACKS
- - - OFF-SITE WORKS AREA
- PROPOSED STATION
- HUNG HOM STABLING SIDINGS

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LEGEND :	
	PROPOSED ALIGNMENT
	TEMPORARY AT GRADE WORKS SITES
	PROPOSED STATION
	DUST MONITORING STATION

REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED

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DESIGNED	LCLL
CHECKED	LCLL
APPROVED	IMW
DATE	04/JUL/2012

MTR

SHATIN TO CENTRAL LINK

AECOM

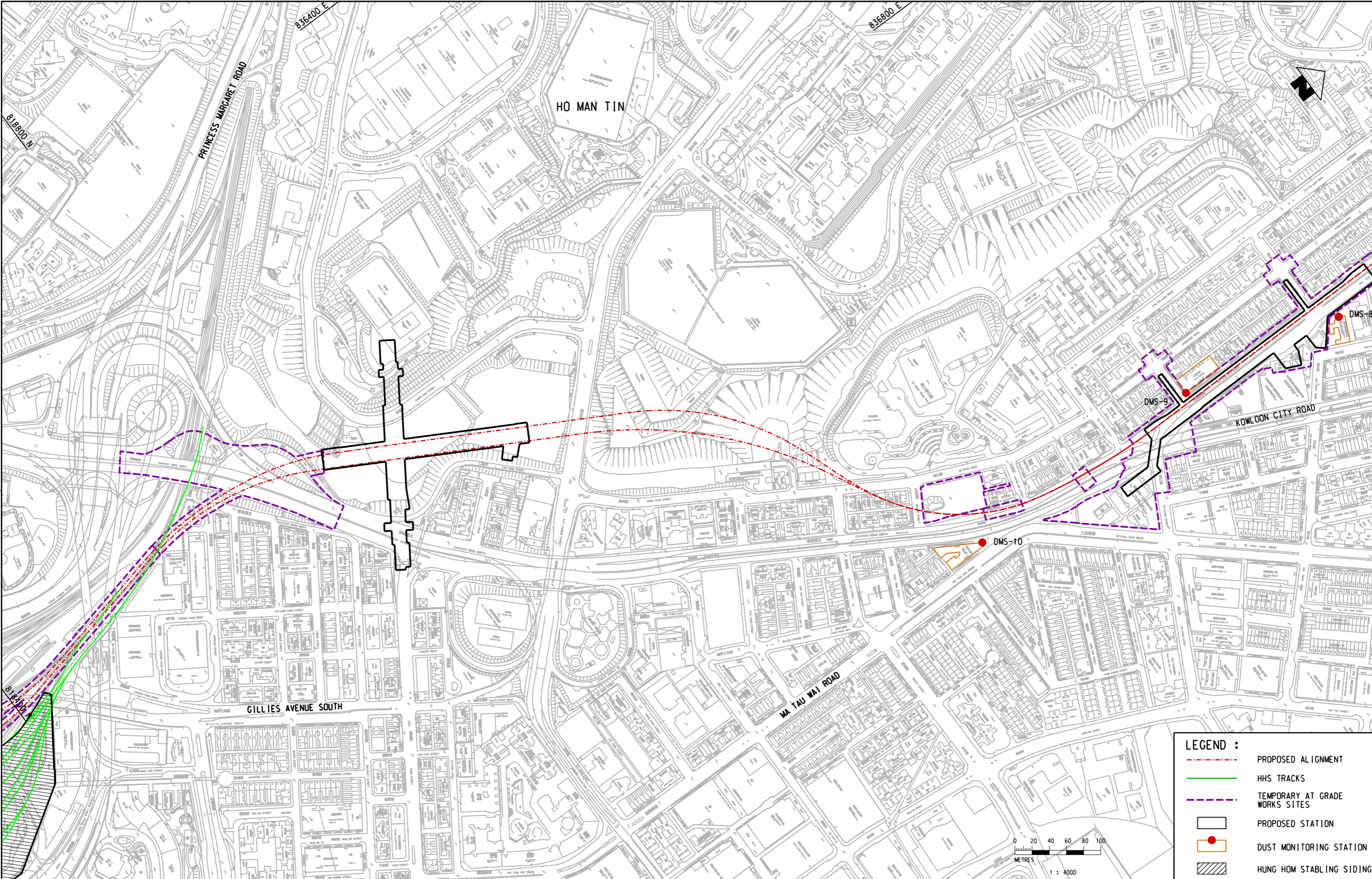
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TITLE	NEX/2213 SCL (TAW-HUH) LOCATIONS OF DUST MONITORING STATIONS (SHEET 1 OF 2)	
SCALE	1 : 4000 (A3)	FIGURE NO. NEX2213/C/361/ACM/M63/011
REV.	A	

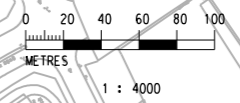
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 FILENAME: M:\PROJECTS\6050763\CAD_ADMIN\PLOTDRIVER\WINDOWS\AS_COLOUR.dpt



LEGEND :

- - - PROPOSED ALIGNMENT
- HHS TRACKS
- - - TEMPORARY AT GRADE WORKS SITES
- PROPOSED STATION
- DUST MONITORING STATION
- HUNG HOM STABILING SIDINGS



REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED

DRAWN	NHP
DESIGNED	LCLL
CHECKED	LCLL
APPROVED	IMW
DATE	06/JUL/2012

MTR

SHATIN TO CENTRAL LINK

AECOM

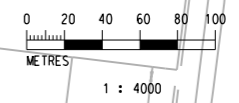
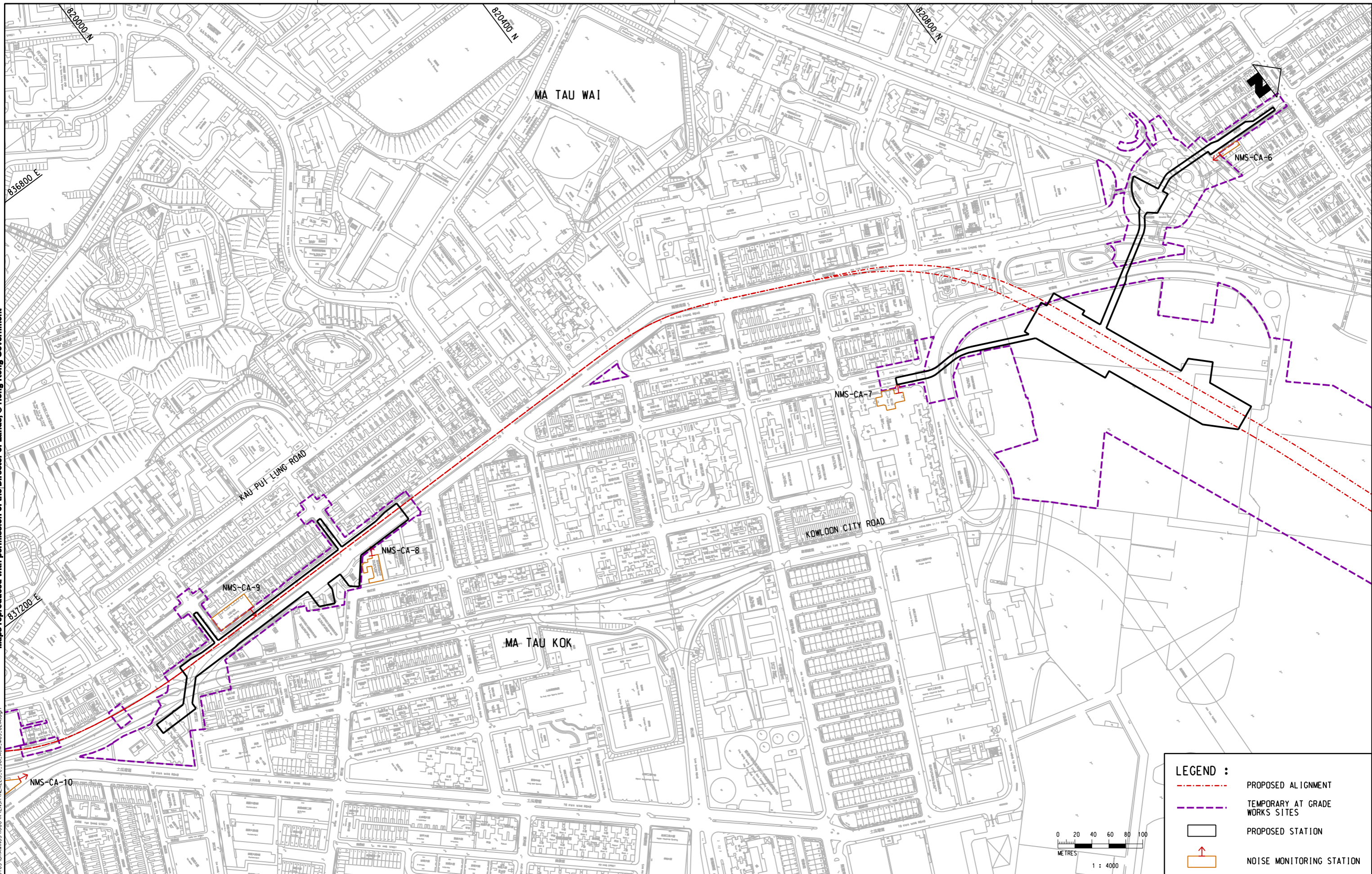
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SCALE	FIGURE NO.	REV.	
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LEGEND :	
	PROPOSED ALIGNMENT
	TEMPORARY AT GRADE WORKS SITES
	PROPOSED STATION
	NOISE MONITORING STATION

REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED

DRAWN	NHP
DESIGNED	LCLL
CHECKED	LCLL
APPROVED	IMW
DATE	04/JUL/2012

MTR

SHATIN TO CENTRAL LINK

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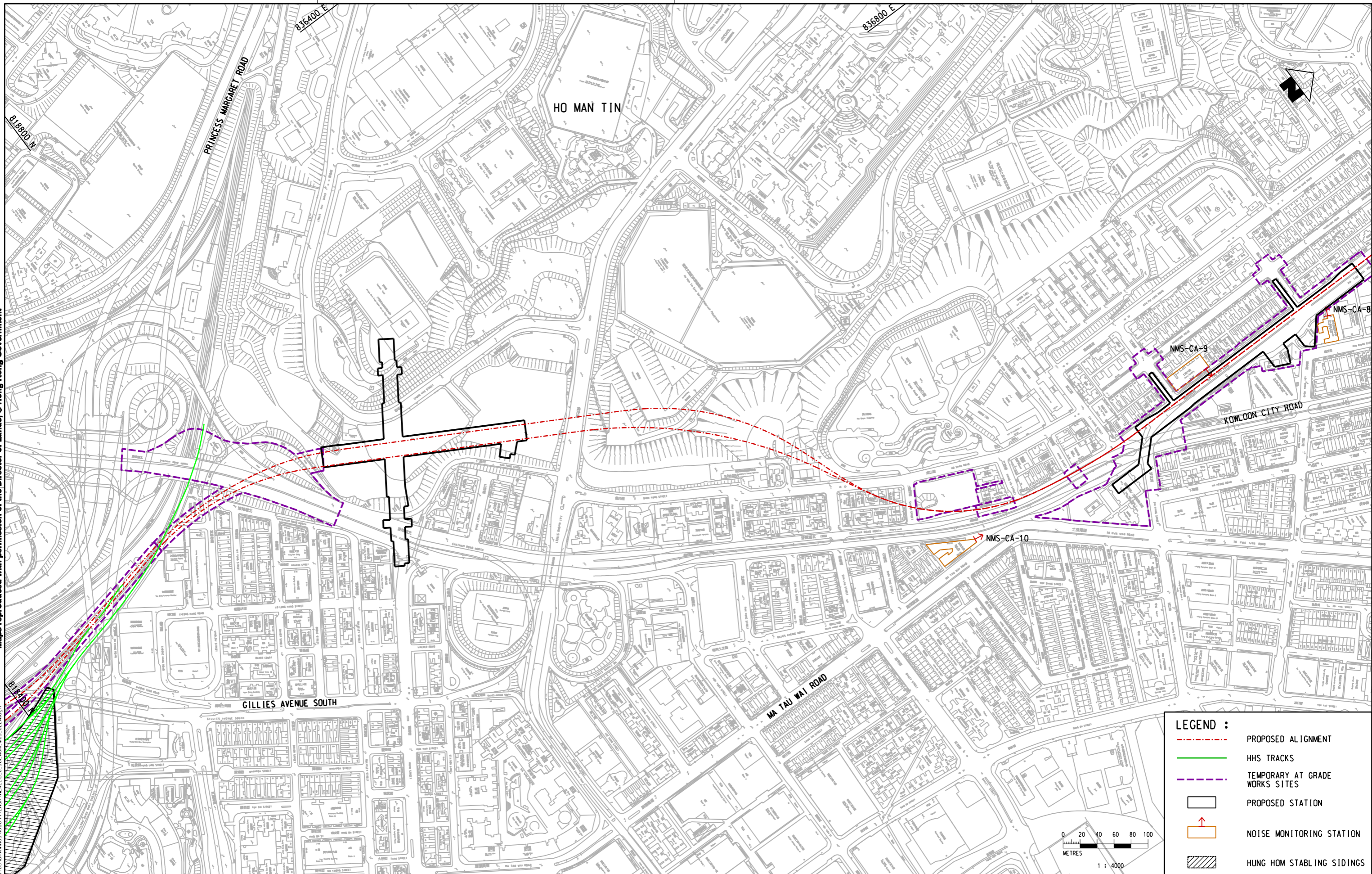
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TITLE	NEX/2213 SCL (TAW-HUH) LOCATIONS OF NOISE MONITORING STATIONS (CONSTRUCTION AIRBORNE NOISE) (SHEET 1 OF 2)		
SCALE	1 : 4000 (A3)	FIGURE NO.	NEX2213/C/361/ACM/M63/021
REV.	A		

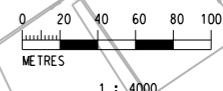
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LEGEND :

- - - PROPOSED ALIGNMENT
- HHS TRACKS
- - - TEMPORARY AT GRADE WORKS SITES
- PROPOSED STATION
- NOISE MONITORING STATION
- HUNG HOM STABILING SIDINGS



REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED

DRAWN	NHP
DESIGNED	LCLL
CHECKED	LCLL
APPROVED	IMW
DATE	06/JUL/2012

MTR

SHATIN TO CENTRAL LINK

AECOM

ORIGINATOR

CADD REF. NEX2213_C_361_ACM_M63_022A.dgn

TITLE	NEX/2213 SCL (TAW-HUH) LOCATIONS OF NOISE MONITORING STATIONS (CONSTRUCTION AIRBORNE NOISE) (SHEET 2 OF 2)		
SCALE	1 : 4000 (A3)	FIGURE NO.	NEX2213/C/361/ACM/M63/022
REV.	A		

APPENDIX A
CALIBRATION CERTIFICATES OF MONITORING
EQUIPMENTS



TISCH ENVIRONMENTAL, INC.
 145 SOUTH MIAMI AVE.
 VILLAGE OF CLEVELAND, OH 45002
 513.467.9000
 877.263.7610 TOLL FREE
 513.467.9009 FAX
 WWW.TISCH-ENV.COM

AIR POLLUTION MONITORING EQUIPMENT

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - May 15, 2012 Rootsmeter S/N 0438320 Ta (K) = 295
 Operator Tisch Orifice I.D. - 0988 Pa (mm) - 751.84

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER	ORFICE
					DIFF Hg (mm)	DIFF H2O (in.)
1	NA	NA	1.00	1.3860	3.2	2.00
2	NA	NA	1.00	0.9700	6.4	4.00
3	NA	NA	1.00	0.8690	7.9	5.00
4	NA	NA	1.00	0.8290	8.8	5.50
5	NA	NA	1.00	0.6840	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
0.9951	0.7179	1.4137	0.9957	0.7184	0.8859
0.9908	1.0215	1.9993	0.9915	1.0222	1.2528
0.9887	1.1378	2.2353	0.9894	1.1385	1.4007
0.9876	1.1913	2.3444	0.9883	1.1921	1.4690
0.9824	1.4363	2.8275	0.9831	1.4372	1.7717
Qstd slope (m) = 1.97048			Qa slope (m) = 1.23388		
intercept (b) = -0.00546			intercept (b) = -0.00342		
coefficient (r) = 0.99991			coefficient (r) = 0.99991		
y axis = SQRT[H2O (Pa/760) (298/Ta)]			y axis = SQRT[H2O (Ta/Pa)]		

CALCULATIONS

Vstd = Diff. Vol [(Pa-Diff. Hg)/760] (298/Ta)
 Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa]
 Qa = Va/Time

For subsequent flow rate calculations:

Qstd = 1/m { [SQRT (H2O (Pa/760) (298/Ta))] - b }
 Qa = 1/m { [SQRT H2O (Ta/Pa)] - b }

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station: 420 Prince Edward Road West; DMS - 6 Operator: Shum Kam Yuen
 Cal. Date: 27-Jun-12 Next Due Date: 26-Aug-12
 Equipment No.: A-001-81T Serial No.: 3454

Station: 420 Prince Edward Road West; DMS - 6
 Cal. Date: 27-Jun-12
 Next Due Date: 26-Aug-12
 Set Point (IC): 41.30

Ambient Condition			
Temperature, Ta (K)	304.5	Pressure, Pa (mmHg)	756.8

Orifice Transfer Standard Information					
Serial No:	843	Slope, mc	2.00834	Intercept, bc	-0.02923
Last Calibration Date:	15-Nov-11	$mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	15-Nov-12	$Qstd = \{ [DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc \} / mc$			

Calibration of TSP Sampler					
Resistance Plate No.	Orifice			HVS Flow Recorder	
	DH (orifice), in. of water	$[DH \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (m ³ /min) X-axis	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) Y-axis
18	7.8	2.76	1.39	44.0	43.44
13	6.4	2.50	1.26	40.0	39.49
10	5.3	2.27	1.15	36.0	35.54
7	3.7	1.90	0.96	30.0	29.62
5	2.3	1.50	0.76	22.0	21.72

By Linear Regression of Y on X
 Slope, mw = 34.4704 Intercept, bw = -4.0387

Correlation Coefficient* = 0.9977

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m³/min

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = IC \times [(Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; IC = $(mw \times Qstd + bw) \times [(760 / Pa) \times (Ta / 298)]^{1/2} =$ 41.30

Remarks: _____

QC Reviewer: Yuen Signature: [Signature] Date: 28 Jun-12

IC (CFM)	Qstd (m ³ /min)
24	0.813
25	0.842
26	0.871
27	0.900
28	0.929
29	0.958
30	0.987
31	1.016
32	1.045
33	1.075
34	1.104
35	1.133
36	1.162
37	1.191
38	1.220
39	1.249
40	1.278
41	1.307
42	1.336
43	1.365
44	1.394
45	1.423
46	1.452
47	1.481
48	1.510
49	1.539
50	1.568
51	1.597
52	1.626
53	1.655
54	1.684
55	1.713
56	1.742
57	1.771
58	1.800
59	1.829
60	1.858
61	1.887
62	1.916
63	1.945
64	1.974
65	2.003

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station PARC 22; DMS - 7 Operator: Shum Kam Yuen
 Cal. Date: 15-Jun-12 Next Due Date: 14-Aug-12
 Equipment No.: A-001-83T Serial No. 3457

Station PARC 22; DMS - 7
 Cal. Date: 15-Jun-12
 Next Due Date: 14-Aug-12
 Set Point (IC) 42.19

Ambient Condition			
Temperature, Ta (K)	302.8	Pressure, Pa (mmHg)	757.0

Orifice Transfer Standard Information					
Serial No:	843	Slope, mc	2.00834	Intercept, bc	-0.02923
Last Calibration Date:	15-Nov-11	$mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	15-Nov-12	$Qstd = \{ [DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc \} / mc$			

Calibration of TSP Sampler					
Resistance Plate No.	Orifice			HVS Flow Recorder	
	DH (orifice), in. of water	$[DH \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (m ³ /min) X-axis	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) Y-axis
18	6.8	2.58	1.30	42.0	41.58
13	5.7	2.36	1.19	38.0	37.62
10	4.8	2.17	1.09	34.0	33.66
7	3.4	1.83	0.92	28.0	27.72
5	2.2	1.47	0.75	20.0	19.80

By Linear Regression of Y on X
 Slope, mw = 38.9334 Intercept, bw = -8.8452
 Correlation Coefficient* = 0.9980
 *If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation
 From the TSP Field Calibration Curve, take Qstd = 1.30m³/min
 From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = IC \times [(Pa/760) \times (298/Ta)]^{1/2}$$
 Therefore, Set Point; IC = $(mw \times Qstd + bw) \times [(760 / Pa) \times (Ta / 298)]^{1/2} =$ 42.19

Remarks: _____
 QC Reviewer: Yan Fung Signature: [Signature] Date: 18-Jun-12

IC (CFM)	Qstd (m ³ /min)
24	0.844
25	0.869
26	0.895
27	0.921
28	0.946
29	0.972
30	0.998
31	1.023
32	1.049
33	1.075
34	1.100
35	1.126
36	1.152
37	1.178
38	1.203
39	1.229
40	1.255
41	1.280
42	1.306
43	1.332
44	1.357
45	1.383
46	1.409
47	1.434
48	1.460
49	1.486
50	1.511
51	1.537
52	1.563
53	1.588
54	1.614
55	1.640
56	1.666
57	1.691
58	1.717
59	1.743
60	1.768
61	1.794
62	1.820
63	1.845
64	1.871
65	1.897

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station: SKH Good Shepherd Primary School; DMS - 8 Operator: Shum Kam Yuen
 Cal. Date: 10-May-12 Next Due Date: 09-Jul-12
 Equipment No.: A-001-81T Serial No.: 3454

Station: SKH Good Shepherd Primary School; DMS - 8

Cal. Date: 10-May-12

Next Due Date: 09-Jul-12

Set Point (IC) 41.47

Ambient Condition			
Temperature, Ta (K)	305.5	Pressure, Pa (mmHg)	760.2

Orifice Transfer Standard Information					
Serial No:	843	Slope, mc	2.00834	Intercept, bc	-0.02923
Last Calibration Date:	15-Nov-11	$mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	15-Nov-12	$Qstd = \{[DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Resistance Plate No.	Orifice			HVS Flow Recorder	
	DH (orifice), in. of water	$[DH \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (m ³ /min) X-axis	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) Y-axis
18	7.7	2.74	1.38	44.0	43.46
13	6.4	2.50	1.26	40.0	39.51
10	5.3	2.27	1.15	36.0	35.56
7	3.6	1.87	0.95	30.0	29.63
5	2.4	1.53	0.78	22.0	21.73

By Linear Regression of Y on X
 Slope, mw = 35.2627 Intercept, bw = -4.8748

Correlation Coefficient* = 0.9936

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m³/min

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = IC \times [(Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; IC = $(mw \times Qstd + bw) \times [(760 / Pa) \times (Ta / 298)]^{1/2} =$ 41.47

Remarks: _____

QC Reviewer: Yu Fung Signature: [Signature] Date: 11-May-12

IC (CFM)	Qstd (m ³ /min)
24	0.819
25	0.847
26	0.876
27	0.904
28	0.932
29	0.961
30	0.989
31	1.017
32	1.046
33	1.074
34	1.102
35	1.131
36	1.159
37	1.188
38	1.216
39	1.244
40	1.273
41	1.301
42	1.329
43	1.358
44	1.386
45	1.414
46	1.443
47	1.471
48	1.499
49	1.528
50	1.556
51	1.585
52	1.613
53	1.641
54	1.670
55	1.698
56	1.726
57	1.755
58	1.783
59	1.811
60	1.840
61	1.868
62	1.896
63	1.925
64	1.953
65	1.982

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station: Lucky Building; DMS - 9 Operator: Shum Kam Yuen
 Cal. Date: 06-Jun-12 Next Due Date: 05-Aug-12
 Equipment No.: A-001-82T Serial No.: 3455

Station: Lucky Building; DMS - 9

Cal. Date: 06-Jun-12

Next Due Date: 05-Aug-12

Set Point (IC) 41.12

Ambient Condition			
Temperature, Ta (K)	304.2	Pressure, Pa (mmHg)	757.5

Orifice Transfer Standard Information					
Serial No:	843	Slope, mc	2.00834	Intercept, bc	-0.02923
Last Calibration Date:	15-Nov-11	$mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	15-Nov-12	$Qstd = \{ [DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc \} / mc$			

Calibration of TSP Sampler					
Resistance Plate No.	Orifice			HVS Flow Recorder	
	DH (orifice), in. of water	$[DH \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (m ³ /min) X-axis	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) Y-axis
18	7.6	2.72	1.37	44.0	43.48
13	6.4	2.50	1.26	40.0	39.53
10	5.2	2.25	1.14	34.0	33.60
7	3.5	1.85	0.94	28.0	27.67
5	2.4	1.53	0.78	22.0	21.74

By Linear Regression of Y on X
 Slope, mw = 36.3556 Intercept, bw = -6.6338

Correlation Coefficient* = 0.9951

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m³/min

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = IC \times [(Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; IC = $(mw \times Qstd + bw) \times [(760 / Pa) \times (Ta / 298)]^{1/2} =$ 41.12

Remarks: _____

QC Reviewer: [Signature] Signature: [Signature] Date: 7-July-12

IC (CFM)	Qstd (m ³ /min)
24	0.843
25	0.870
26	0.898
27	0.925
28	0.953
29	0.980
30	1.008
31	1.035
32	1.063
33	1.090
34	1.118
35	1.145
36	1.173
37	1.200
38	1.228
39	1.255
40	1.283
41	1.310
42	1.338
43	1.365
44	1.393
45	1.420
46	1.448
47	1.475
48	1.503
49	1.530
50	1.558
51	1.585
52	1.613
53	1.640
54	1.668
55	1.695
56	1.723
57	1.750
58	1.778
59	1.805
60	1.833
61	1.860
62	1.888
63	1.915
64	1.943
65	1.970

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station Chat Ma Building; DMS - 10 Operator: Shum Kam Yuen
 Cal. Date: 21-Jun-12 Next Due Date: 20-Aug-12
 Equipment No.: A-001-82T Serial No. 3455

Station Chat Ma Building; DMS - 10

Cal. Date: 21-Jun-12

Next Due Date: 20-Aug-12

Set Point (IC) 41.05

Ambient Condition			
Temperature, Ta (K)	302.6	Pressure, Pa (mmHg)	756.6

Orifice Transfer Standard Information					
Serial No:	843	Slope, mc	2.00834	Intercept, bc	-0.02923
Last Calibration Date:	15-Nov-11	$mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	15-Nov-12	$Qstd = \{[DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Resistance Plate No.	Orifice			HVS Flow Recorder	
	DH (orifice), in. of water	$[DH \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (m ³ /min) X-axis	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) Y-axis
18	7.6	2.73	1.37	44.0	43.57
13	6.3	2.49	1.25	40.0	39.61
10	5.2	2.26	1.14	34.0	33.67
7	3.6	1.88	0.95	28.0	27.72
5	2.3	1.50	0.76	22.0	21.78

By Linear Regression of Y on X
 Slope, mw = 36.0518 Intercept, bw = -6.2207

Correlation Coefficient* = 0.9926

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m³/min

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = IC \times [(Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; IC = $(mw \times Qstd + bw) \times [(760 / Pa) \times (Ta / 298)]^{1/2} =$ 41.05

Remarks: _____

QC Reviewer: Yw Fung Signature: [Signature] Date: 22-Jun-12

IC (CFM)	Qstd (m ³ /min)
24	0.838
25	0.866
26	0.894
27	0.921
28	0.949
29	0.977
30	1.005
31	1.032
32	1.060
33	1.088
34	1.116
35	1.143
36	1.171
37	1.199
38	1.227
39	1.254
40	1.282
41	1.310
42	1.338
43	1.365
44	1.393
45	1.421
46	1.448
47	1.476
48	1.504
49	1.532
50	1.559
51	1.587
52	1.615
53	1.643
54	1.670
55	1.698
56	1.726
57	1.754
58	1.781
59	1.809
60	1.837
61	1.865
62	1.892
63	1.920
64	1.948
65	1.976

EQUIPMENT CALIBRATION RECORD

Type: Laser Dust Monitor
 Manufacturer/Brand: SIBATA
 Model No.: LD-3
 Equipment No.: A.005.11a
 Sensitivity Adjustment Scale Setting: 799 CPM

Operator: Mike Shek (MSKM)

Standard Equipment

Equipment: Rupprecht & Patashnick TEOM®
 Venue: Cyberport (Pui Ying Secondary School)
 Model No.: Series 1400AB
 Serial No: Control: 140AB219899803
 Sensor: 1200C143659803 K₀: 12500
 Last Calibration Date*: 4 June 2011

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): 799 CPM
 Sensitivity Adjustment Scale Setting (After Calibration): 799 CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration ¹ (mg/m ³) Y-axis	Total Count ²	Count/ Minute ³ X-axis
			Temp (°C)	R.H. (%)			
1	02-07-11	09:30 - 10:30	31.1	70	0.04305	1718	28.63
2	02-07-11	10:30 - 11:30	31.1	71	0.04257	1703	28.38
3	02-07-11	11:30 - 12:30	31.2	71	0.04424	1763	29.38
4	02-07-11	12:30 - 13:30	31.2	71	0.04632	1855	30.92

Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
 2. Total Count was logged by Laser Dust Monitor
 3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X

Slope (K-factor): 0.0015
 Correlation coefficient: 0.9961

Validity of Calibration Record: 1 July 2012

Remarks:

QC Reviewer: YW Fung Signature:  Date: 4 July 2011

EQUIPMENT CALIBRATION RECORD

Type: Laser Dust Monitor
 Manufacturer/Brand: SIBATA
 Model No.: LD-3B
 Equipment No.: A.005.12a
 Sensitivity Adjustment Scale Setting: 805 CPM
 Operator: Mike Shek (MSKM)

Standard Equipment

Equipment: Rupprecht & Patashnick TEOM®
 Venue: Cyberport (Pui Ying Secondary School)
 Model No.: Series 1400AB
 Serial No: Control: 140AB219899803
 Sensor: 1200C143659803 K_c: 12500
 Last Calibration Date*: 4 June 2011

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): 805 CPM
 Sensitivity Adjustment Scale Setting (After Calibration): 805 CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration ¹ (mg/m ³) Y-axis	Total Count ²	Count/ Minute ³ X-axis
			Temp (°C)	R.H. (%)			
1	02-07-11	09:30 - 10:30	31.1	70	0.04305	1843	30.72
2	02-07-11	10:30 - 11:30	31.1	71	0.04257	1826	30.43
3	02-07-11	11:30 - 12:30	31.2	71	0.04424	1893	31.55
4	02-07-11	12:30 - 13:30	31.2	71	0.04632	1994	33.23

Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
 2. Total Count was logged by Laser Dust Monitor
 3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X

Slope (K-factor): 0.0014
 Correlation coefficient: 0.9947

Validity of Calibration Record: 1 July 2012

Remarks:

QC Reviewer: YW Fung Signature:  Date: 4 July 2011

EQUIPMENT CALIBRATION RECORD

Type: Laser Dust Monitor
 Manufacturer/Brand: SIBATA
 Model No.: LD-3B
 Equipment No.: A.005.14a
 Sensitivity Adjustment Scale Setting: 786 CPM
 Operator: Mike Shek (MSKM)

Standard Equipment

Equipment: Rupprecht & Patashnick TEOM®
 Venue: Cyberport (Pui Ying Secondary School)
 Model No.: Series 1400AB
 Serial No: Control: 140AB219899803
 Sensor: 1200C143659803 K₀: 12500
 Last Calibration Date*: 5 May 2012

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): 786 CPM
 Sensitivity Adjustment Scale Setting (After Calibration): 786 CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration ¹ (mg/m ³) Y-axis	Total Count ²	Count/ Minute ³ X-axis
			Temp (°C)	R.H. (%)			
1	02-06-12	13:15 - 14:15	27.9	63	0.04073	1746	29.10
2	02-06-12	14:15 - 15:15	27.9	63	0.04154	1778	29.63
3	02-06-12	15:15 - 16:15	28.1	64	0.04269	1830	30.50
4	02-06-12	16:15 - 17:15	28.1	64	0.04136	1769	29.48

Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
 2. Total Count was logged by Laser Dust Monitor
 3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X

Slope (K-factor): 0.0014
 Correlation coefficient: 0.9963

Validity of Calibration Record: 1 June 2013

Remarks:

QC Reviewer: YW Fung Signature:  Date: 4 June 2012

EQUIPMENT CALIBRATION RECORD

Type: Laser Dust Monitor
 Manufacturer/Brand: SIBATA
 Model No.: LD-3B
 Equipment No.: A.005.15a
 Sensitivity Adjustment Scale Setting: 786 CPM

Operator: Mike Shek (MSKM)

Standard Equipment

Equipment: Rupprecht & Patashnick TEOM®
 Venue: Cyberport (Pui Ying Secondary School)
 Model No.: Series 1400AB
 Serial No: Control: 140AB219899803
 Sensor: 1200C143659803 K₀: 12500
 Last Calibration Date*: 5 May 2012

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): 734 CPM
 Sensitivity Adjustment Scale Setting (After Calibration): 734 CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration ¹ (mg/m ³) Y-axis	Total Count ²	Count/ Minute ³ X-axis
			Temp (°C)	R.H. (%)			
1	02-06-12	13:15 - 14:15	27.9	63	0.04073	1748	29.13
2	02-06-12	14:15 - 15:15	27.9	63	0.04154	1780	29.67
3	02-06-12	15:15 - 16:15	28.1	64	0.04269	1826	30.43
4	02-06-12	16:15 - 17:15	28.1	64	0.04136	1773	29.55

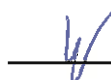
Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
 2. Total Count was logged by Laser Dust Monitor
 3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X

Slope (K-factor): 0.0014
 Correlation coefficient: 0.9949

Validity of Calibration Record: 1 June 2013

Remarks:

QC Reviewer: YW Fung Signature:  Date: 4 June 2012



綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.

G/F, 9/F, 12/F, 13/F. & 20/F, Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong.
香港黃竹坑道37號利達中心地下, 9樓, 12樓, 13樓及20樓
E-mail: smec@cigismec.com Website: www.cigismec.com

Tel : (852) 2873 6860
Fax : (852) 2555 7533



CERTIFICATE OF CALIBRATION

Certificate No.: 11CA0711 01-01 Page 1 of 2

Item tested

Description:	Sound Level Meter (Type 1)	Microphone
Manufacturer:	B & K	B & K
Type/Model No.:	2238	4188
Serial/Equipment No.:	2255677	2250455
Adaptors used:	-	-

Item submitted by

Customer Name: AECOM ASIA CO., LTD.
Address of Customer: -
Request No.: -
Date of receipt: 11-Jul-2011

Date of test: 11-Jul-2011

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	09-May-2012	CIGISMEC
Signal generator	DS 360	33873	30-May-2012	CEPREI
Signal generator	DS 360	61227	30-May-2012	CEPREI

Ambient conditions

Temperature: (22 ± 1) °C
Relative humidity: (55 ± 5) %
Air pressure: (990 ± 5) hPa

Test specifications

- The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.
- The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of ±20%.
- The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure responsiveness of the Sound Level Meter.

Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

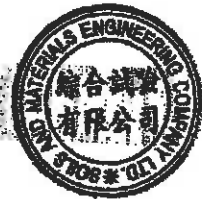
Actual Measurement data are documented on worksheets.

Approved Signatory:

Huang Jian Min / Feng Jun Qi

Date: 11 Jul 2011

Company Chop:



Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.



CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 11CA0711 01-01

Page 2 of 2

1, Electrical Tests

The electrical tests were performed using an equivalent capacitance substituted for the microphone. The results are given in below with test status and the estimated uncertainties. The "Pass" means the result of the test is inside the tolerances stated in the test specifications. The "-" means the result of test is outside these tolerances.

Test:	Subtest:	Status:	Uncertainty (dB) / Coverage Factor
Self-generated noise	A	Pass	0.3
	C	Pass	0.8
	Lin	Pass	1.6
Linearity range for Leq	At reference range, Step 5 dB at 4 kHz	Pass	0.3
	Reference SPL on all other ranges	Pass	0.3
	2 dB below upper limit of each range	Pass	0.3
	2 dB above lower limit of each range	Pass	0.3
Linearity range for SPL	At reference range, Step 5 dB at 4 kHz	Pass	0.3
	Frequency weightings	A	Pass
Time weightings	C	Pass	0.3
	Lin	Pass	0.3
	Single Burst Fast	Pass	0.3
Peak response	Single Burst Slow	Pass	0.3
	Single 100µs rectangular pulse	Pass	0.3
R.M.S. accuracy	Crest factor of 3	Pass	0.3
	Time weighting I	Single burst 5 ms at 2000 Hz	Pass
Time averaging	Repeated at frequency of 100 Hz	Pass	0.3
	1 ms burst duty factor 1/10 ³ at 4kHz	Pass	0.3
	1 ms burst duty factor 1/10 ⁴ at 4kHz	Pass	0.3
Pulse range	Single burst 10 ms at 4 kHz	Pass	0.4
	Sound exposure level	Single burst 10 ms at 4 kHz	Pass
Overload indication	SPL	Pass	0.3
	Leq	Pass	0.4

2, Acoustic tests

The complete sound level meter was calibrated on the reference range using a B&K 4226 acoustic calibrator with 1000Hz and SPL 94 dB. The sensitivity of the sound level meter was adjusted. The test result at 125 Hz and 8000 Hz are given in below with test status and the estimated uncertainties.

Test:	Subtest	Status	Uncertainty (dB) / Coverage Factor
Acoustic response	Weighting A at 125 Hz	Pass	0.3
	Weighting A at 8000 Hz	Pass	0.5

3, Response to associated sound calibrator

N/A

The uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95 %. A coverage factor of 2 is assumed unless explicitly stated.

End

Calibrated by:

Date:

Fung Chi Yin
11-Jul-2011

Checked by:

Date:

Chan Chun Lam
13-Jul-2011

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.



CERTIFICATE OF CALIBRATION

Certificate No.: 11CA0711 01-02 Page 1 of 2

Item tested

Description:	Sound Level Meter (Type 1)	Microphone
Manufacturer:	B & K	B & K
Type/Model No.:	2238	4188
Serial/Equipment No.:	2255680 / N.009.01	2250447
Adaptors used:		

Item submitted by

Customer Name: AECOM ASIA CO., LTD.
Address of Customer: -
Request No.: -
Date of receipt: 11-Jul-2011

Date of test: 12-Jul-2011

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	09-May-2012	CIGISMEC
Signal generator	DS 360	33873	30-May-2012	CEPREI
Signal generator	DS 360	61227	30-May-2012	CEPREI

Ambient conditions

Temperature: (22 ± 1) °C
Relative humidity: (55 ± 5) %
Air pressure: (995 ± 5) hPa

Test specifications

- 1, The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.
- 2, The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of ±20%.
- 3, The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure responsiveness of the Sound Level Meter.


Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheets.

Approved Signatory:


Huang Jun Ming/Feng Jun Qi

Date: 13-Jul-2011

Company Chop:



Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.



CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 11CA0711 01-02

Page 2 of 2

1, Electrical Tests

The electrical tests were performed using an equivalent capacitance substituted for the microphone. The results are given in below with test status and the estimated uncertainties. The "Pass" means the result of the test is inside the tolerances stated in the test specifications. The "-" means the result of test is outside these tolerances.

Test:	Subtest:	Status:	Uncertainty (dB) / Coverage Factor	
Self-generated noise	A	Pass	0.3	
	C	Pass	0.8	2.1
	Lin	Pass	1.6	2.2
Linearity range for Leq	At reference range, Step 5 dB at 4 kHz	Pass	0.3	
	Reference SPL on all other ranges	Pass	0.3	
	2 dB below upper limit of each range	Pass	0.3	
	2 dB above lower limit of each range	Pass	0.3	
Linearity range for SPL	At reference range, Step 5 dB at 4 kHz	Pass	0.3	
	A	Pass	0.3	
	C	Pass	0.3	
Frequency weightings	Lin	Pass	0.3	
	Time weightings	Single Burst Fast	Pass	0.3
	Single Burst Slow	Pass	0.3	
Peak response	Single 100µs rectangular pulse	Pass	0.3	
R.M.S. accuracy	Crest factor of 3	Pass	0.3	
Time weighting I	Single burst 5 ms at 2000 Hz	Pass	0.3	
	Repeated at frequency of 100 Hz	Pass	0.3	
Time averaging	1 ms burst duty factor 1/10 ³ at 4kHz	Pass	0.3	
	1 ms burst duty factor 1/10 ⁴ at 4kHz	Pass	0.3	
Pulse range	Single burst 10 ms at 4 kHz	Pass	0.4	
Sound exposure level	Single burst 10 ms at 4 kHz	Pass	0.4	
Overload indication	SPL	Pass	0.3	
	Leq	Pass	0.4	

2, Acoustic tests

The complete sound level meter was calibrated on the reference range using a B&K 4226 acoustic calibrator with 1000Hz and SPL 94 dB. The sensitivity of the sound level meter was adjusted. The test result at 125 Hz and 8000 Hz are given in below with test status and the estimated uncertainties.

Test:	Subtest	Status	Uncertainty (dB) / Coverage Factor	
Acoustic response	Weighting A at 125 Hz	Pass	0.3	
	Weighting A at 8000 Hz	Pass	0.5	

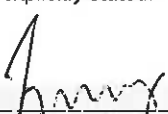
3, Response to associated sound calibrator

N/A

The uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95 %. A coverage factor of 2 is assumed unless explicitly stated.

- End -

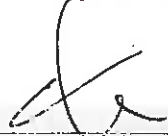
Calibrated by:


Fung Chi Yip

Date:

12-Jul-2011

Checked by:


Chan Chun Lam

Date:

13-Jul-2011

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.



CERTIFICATE OF CALIBRATION

Certificate No. : 2KS12-DEMO

Page 1 of 2

Calibration of :

Description :	Sound Level Meter	,	Microphone
Manufacture :	Brüel & Kjær	,	
Type No. :	2238	,	4188
Serial No. :	2285692	,	2641129

Client :

Spectris China Limited
706 Miramar Tower
132 Nathan Road
TST, Kln.
HK

Calibration Conditions :

Air Temperature :	23	°C
Air Pressure :	101.0	kPa
Relative Humidity :	59	%

Test Specifications :

The Sound Level Meter has been calibrated in accordance with the requirements as specified in IEC 60651 and IEC 60804 type 1, and vendor specific procedures.

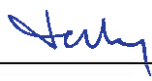
The measurements has been performed with the assistance of :
Brüel & Kjær's Sound Level Meter Calibration System B&K 9600 CAL2238A, Ver.25.10.1999
The standard(s) and instrument(s) used in the calibration are traceable to international standard and are calibrated on a schedule which is adjusted to maintain the required accuracy level.

Test Result :

A list of the performed (sub) tests is stated on page 2 of this certificate. Actual Measurement are documented on worksheet.

Date of Calibration : 22 April, 2012
Calibrated By :

Certificate issued : 22 April, 2012
Approved signatory :



Jacky Leung



Jacky Leung

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CERTIFICATE OF CALIBRATION

Certificate No. : 2KS12-DEMO

Page 2 of 2

Results :

List of performed (sub) test with test status:

“OK” Means the result of the (sub)test is Inside the tolerances stated in the test specifications.

“ - ” Means the result of the (sub)test is Outside these tolerances.

Test :	Subtest :	Status :
Noise	A	-
Noise	C	-
Noise	Lin	-
Acoustic Response	A	OK
Acoustic Response	Lin	OK

Calibration Equipment :

Brüel & Kjær's Sound Level Meter Calibration System B&K 9600 CAL2238A, Ver.25.10.1999

Description :	Make & Model :	Serial No. :	Last Cal. Date :	Traceable to:
Digital Multi-meter	Datron 1281	27361	23 Sept, 2011	HKSL (HOKLAS)
Sine/Noise Generator	B&K 1049	1314978	Test	B&K Conformance
Test Waveform Generator	B&K 5918	1482949	Test	B&K Conformance
Acoustical Calibrator	B&K 4226	1843104	09 Aug, 2011	NPL via B&K (UKAS)

Calibrated By : *[Signature]*
Date : 22 April, 2012

Checked By : *[Signature]*
Date : 22 April, 2012

Sound Level Meter Type 2238 SerialNo. 2285692 Date 22.04.2012
Microphone Type 4188 SerialNo. 2641129

B 20 SELF GENERATED NOISE

=====

The noise test is performed in the most sensitive range of the SLM with the microphone replaced by an equivalent impedance.

Noise level : Calculated mean value of 10 measurements in dB
measured using the DC output of the SLM, or value
directly from indicator.

Noise Level in A Weighting dB
13.5

Noise Level in C Weighting dB
17.5

Noise Level in Lin dB
22.2

A 2 FREQUENCY WEIGHTING

=====

The frequency response of the weighting networks has been tested electrically with reference to 1000 Hz. The test has been performed as an "Inverse curve test". The input to the SLM has been increased by the same amount as the nominal attenuation of the filter.

The test level is FSD - 36 dB in the reference range.

Frequency : Frequency of input sine in Hz
Input Level : Level of input sine in dBuV
Exp. Level : Expected SLM reading in dB
Actual Level : Actual SLM reading in dB
Tolerance : IEC 651 tolerance

Sound Level Meter Type 2238 SerialNo. 2285692 Date 22.04.2012
 Microphone Type 4188 SerialNo. 2641129

A2 ACOUSTICAL RESPONSE
 =====

The acoustic response of the Sound Level Meter and the microphone is tested in the frequency range from 31.5 Hz. to 12.5 kHz. using a B&K type 4226 Multifunction Acoustic Calibrator.

The test can be performed in both linear and A weighting.

Reference frequency : 1 kHz.
 Reference level : 94 dB.
 Tolerance : IEC 651.

Acoustic response A.

Frequency	FF-Corr.	Level		Tolerance		Dev
		Exp.	Actual	Pos.	Neg.	
1000.0	0.2		93.8			
31.5	0.0	54.7	55.0	1.5	1.5	0.3
63.0	0.0	67.9	68.0	1.5	1.5	0.1
125.0	0.0	78.0	77.9	1.0	1.0	-0.1
250.0	0.0	85.4	85.3	1.0	1.0	-0.1
500.0	0.1	90.7	90.6	0.9	0.9	-0.1
2000.0	0.3	94.8	94.7	0.9	0.9	-0.1
4000.0	1.3	93.8	93.9	0.9	0.9	0.1
8000.0	4.0	88.9	89.2	1.3	2.8	0.3
12500.0	7.2	82.5	82.6	2.8	5.8	0.1

Acoustic response Lin.

Frequency	FF-Corr.	Level		Tolerance		Dev
		Exp.	Actual	Pos.	Neg.	
1000.0	0.2		93.8			
31.5	0.0	94.1	94.2	1.5	1.5	0.1
63.0	0.0	94.1	94.1	1.5	1.5	0.0
125.0	0.0	94.1	94.0	1.0	1.0	-0.1
250.0	0.0	94.0	93.9	1.0	1.0	-0.1
500.0	0.1	93.9	93.8	0.9	0.9	-0.1
2000.0	0.3	93.6	93.5	0.9	0.9	-0.1
4000.0	1.3	92.8	92.9	0.9	0.9	0.1
8000.0	4.0	90.0	90.5	1.3	2.8	0.5
12500.0	7.2	86.8	87.2	2.8	5.8	0.4

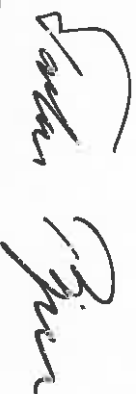
MANUFACTURER'S CERTIFICATE OF CONFORMANCE

We certify that Brüel & Kjær -2238--001 - Serial No. 2800927 has been tested and passed all production tests, confirming compliance with the manufacturer's published specification at the date of the test.

The final test has been performed using calibrated equipment, traceable to National or International Standards or by ratio measurements.

Brüel & Kjær is certified under ISO 9001:2008 assuring that all test data is retained on file and is available for inspection upon request.

Nærum 20-jun-2012



Torben Bjørn
Vice President, Operations

Please note that this document is not a calibration certificate
For information on our calibration services please contact your nearest Brüel & Kjær office

HEADQUARTERS: Brüel & Kjær Sound & Vibration Measurement A/S · DK-2850 Nærum · Denmark
Telephone: +45 7741 2000 · Fax: +45 4580 1405 · www.bkav.com · info@bkav.com
Local representatives and service organisations worldwide

Brüel & Kjær 



CERTIFICATE OF CALIBRATION

Certificate No.: 11CA0711 01-04

Page: 1 of 2

Item tested

Description: Acoustical Calibrator (Class 1)
Manufacturer: B & K
Type/Model No.: BK4231
Serial/Equipment No.: 1790985 / N.004.01
Adaptors used: Yes

Item submitted by

Customer: AECOM ASIA CO. LTD.
Address of Customer: -
Request No.: -
Date of receipt: 11-Jul-2011

Date of test: 11-Jul-2011

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2341427	18-May-2012	SCL
Preamplifier	B&K 2673	2239857	14-Dec-2011	CEPREI
Measuring amplifier	B&K 2810	2346941	15-Dec-2011	CEPREI
Signal generator	DS 360	61227	30-May-2012	CEPREI
Digital multi-meter	34401A	US36087050	09-Dec-2011	CEPREI
Audio analyzer	8903B	GB41300350	27-May-2012	CEPREI
Universal counter	53132A	MY40003662	30-May-2012	CEPREI

Ambient conditions

Temperature: 22 ± 1 °C
Relative humidity: 55 ± 5 %
Air pressure: 990 ± 5 hPa

Test specifications

- 1, The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B and the lab calibration procedure SMTP004-CA-156.
- 2, The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.
- 3, The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes.

Test results

This is to certify that the sound calibrator conforms to the requirements of annex B of IEC 60942: 1997 for the conditions under which the test was performed. This does not imply that the sound calibrator meets IEC 60942 under any other conditions.

Details of the performed measurements are presented on page 2 of this certificate.

Approved Signatory:


Huang Jian Min/Feng Jun Qi

Date: 13-Jul-2011

Company Chop:



Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.



CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 11CA0711 01-04

Page: 2 of 2

1, Measured Sound Pressure Level

The output Sound Pressure Level in the calibrator head was measured at the setting and frequency shown using a calibrated laboratory standard microphone and insert voltage technique. The results are given in below with the estimated uncertainties.

Frequency Shown Hz	Output Sound Pressure Level Setting dB	Measured Output Sound Pressure Level dB	Estimated Uncertainty dB
1000	94.00	94.08	0.10

(Output level in dB re 20 µPa)

2, Sound Pressure Level Stability - Short Term Fluctuations

The Short Term Fluctuations was determined by measuring the maximum and minimum of the fast weighted DC output of the B&K 2610 measuring amplifier over a 20 second time interval as required in the standard. The Short Term Fluctuation was found to be:

At 1000 Hz **STF = 0.002 dB**
Estimated uncertainty 0.005 dB

3, Actual Output Frequency

The determination of actual output frequency was made using a B&K 4180 microphone together with a B&K 2673 preamplifier connected to a B&K 2610 measuring amplifier. The AC output of the B&K 2610 was taken to an universal counter which was used to determine the frequency averaged over 20 second of operation as required by the standard. The actual output frequency at 1 KHz was:

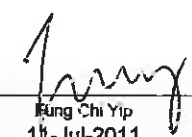
At 1000 Hz **Actual Frequency = 999.8 Hz**
Estimated uncertainty 0.1 Hz Coverage factor k = 2.2

4, Total Noise and Distortion


For the Total Noise and Distortion measurement, the unfiltered AC output of the B&K 2610 measuring amplifier was connected to an Agilent Type 8903 B distortion analyser. The TND result at 1 KHz was:

At 1000 Hz **TND = 0.4%**
Estimated uncertainty 0.7%

The uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95 %. A coverage factor of 2 is assumed unless explicitly stated.

Calibrated by: 
Date: 11-Jul-2011

- End -

Checked by: 
Date: 13-Jul-2011

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.



CERTIFICATE OF CALIBRATION

Certificate No.: 11CA0711 01-03

Page: 1 of 2

Item tested

Description: Acoustical Calibrator (Class 1)
Manufacturer: B & K
Type/Model No.: BK4231
Serial/Equipment No.: 1850426 / N.004.02
Adaptors used: Yes

Item submitted by

Customer: AECOM ASIA CO. LTD.
Address of Customer: -
Request No.: -
Date of receipt: 11-Jul-2011

Date of test: 11-Jul-2011

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2341427	18-May-2012	SCL
Preamplifier	B&K 2673	2239857	14-Dec-2011	CEPREI
Measuring amplifier	B&K 2610	2346941	15-Dec-2011	CEPREI
Signal generator	DS 360	61227	30-May-2012	CEPREI
Digital multi-meter	34401A	US36087050	09-Dec-2011	CEPREI
Audio analyzer	8903B	GB41300350	27-May-2012	CEPREI
Universal counter	53132A	MY40003662	30-May-2012	CEPREI

Ambient conditions

Temperature: 22 ± 1 °C
Relative humidity: 55 ± 5 %
Air pressure: 990 ± 5 hPa

Test specifications

- 1, The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B and the lab calibration procedure SMTP004-CA-156.
- 2, The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.
- 3, The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes.

Test results

This is to certify that the sound calibrator conforms to the requirements of annex B of IEC 60942: 1997 for the conditions under which the test was performed. This does not imply that the sound calibrator meets IEC 60942 under any other conditions.

Details of the performed measurements are presented on page 2 of this certificate.

Approved Signatory:


Huang Jian Min / Feng Jun Qi

Date: 13-Jul-2011

Company Chop:



Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.



CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 11CA0711 01-03

Page: 2 of 2

1, Measured Sound Pressure Level

The output Sound Pressure Level in the calibrator head was measured at the setting and frequency shown using a calibrated laboratory standard microphone and insert voltage technique. The results are given in below with the estimated uncertainties.

Frequency Shown Hz	Output Sound Pressure Level Setting dB	(Output level in dB re 20 µPa)	
		Measured Output Sound Pressure Level dB	Estimated Uncertainty dB
1000	94.00	94.07	0.10

2, Sound Pressure Level Stability - Short Term Fluctuations

The Short Term Fluctuations was determined by measuring the maximum and minimum of the fast weighted DC output of the B&K 2610 measuring amplifier over a 20 second time interval as required in the standard. The Short Term Fluctuation was found to be:

At 1000 Hz STF = 0.002 dB

Estimated uncertainty 0.005 dB

3, Actual Output Frequency

The determination of actual output frequency was made using a B&K 4180 microphone together with a B&K 2673 preamplifier connected to a B&K 2610 measuring amplifier. The AC output of the B&K 2610 was taken to an universal counter which was used to determine the frequency averaged over 20 second of operation as required by the standard. The actual output frequency at 1 KHz was:

At 1000 Hz Actual Frequency = 999.8 Hz

Estimated uncertainty 0.1 Hz Coverage factor k = 2.2

4, Total Noise and Distortion

For the Total Noise and Distortion measurement, the unfiltered AC output of the B&K 2610 measuring amplifier was connected to an Agilent Type 8903 B distortion analyser. The TND result at 1 KHz was:

At 1000 Hz TND = 0.5%

Estimated uncertainty 0.7%

The uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95 %. A coverage factor of 2 is assumed unless explicitly stated.

Calibrated by:

Date:

Fung Chi Yip
11-Jul-2011

End

Checked by:

Date:

Chen Chun Lam
13-Jul-2011

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

APPENDIX B
BASELINE AIR QUALITY MONITORING RESULTS

Appendix B
Baseline Air Quality Monitoring Results
24-hour TSP Monitoring Results

Station ID: DMS-6 (420 Prince Edward Road West)

Site Observation: No construction works were conducted in the vicinity during the monitoring period.

Date	Weather Condition	Air Temp. (°C)	Atmospheric Pressure (hPa)	Flow Rate (m ³ /min.)		Av. flow (m ³ /min)	Total vol. (m ³)	Filter Weight (g)		Particulate weight(g)	Elapse Time		Sampling Time(hrs.)	Conc. (µg/m ³)
				Initial	Final			Initial	Final		Initial	Final		
27-Jun-12	Fine	28.8	1003.6	1.33	1.33	1.33	1915.2	2.8104	2.9193	0.1089	333.81	357.81	24.00	56.9
28-Jun-12	Fine	29.4	1005.1	1.36	1.36	1.36	1955.5	2.8042	2.9135	0.1093	357.81	381.81	24.00	55.9
29-Jun-12	Cloudy	29.4	1005.0	1.42	1.42	1.42	2037.6	2.7683	2.8322	0.0639	381.86	405.81	23.95	31.4
30-Jun-12	Fine	29.4	1000.4	1.36	1.36	1.36	1955.5	2.7517	2.8024	0.0507	405.81	429.81	24.00	25.9
1-Jul-12	Sunny	26.6	1004.6	1.36	1.36	1.36	1955.5	2.6659	2.7990	0.1331	429.81	453.81	24.00	68.1
2-Jul-12	Sunny	27.8	1008.5	1.36	1.36	1.36	1955.5	2.8323	2.9241	0.0918	453.81	477.81	24.00	46.9
3-Jul-12	Sunny	28.3	1007.9	1.36	1.36	1.36	1955.5	2.7564	2.8626	0.1062	477.81	501.81	24.00	54.3
4-Jul-12	Rainy	29.6	1004.8	1.36	1.36	1.36	1955.5	2.7070	2.7888	0.0818	501.81	525.81	24.00	41.8
5-Jul-12	Sunny	27.8	1005.0	1.36	1.36	1.36	1955.5	2.7646	2.8380	0.0734	525.81	549.81	24.00	37.5
6-Jul-12	Sunny	28.5	1006.1	1.39	1.39	1.39	1997.3	2.7371	2.8149	0.0778	549.81	573.81	24.00	39.0
7-Jul-12	Sunny	29.1	1005.9	1.36	1.36	1.36	1955.5	2.7276	2.7972	0.0696	573.81	597.81	24.00	35.6
8-Jul-12	Rainy	29.3	1006.7	1.39	1.39	1.39	1997.3	2.7493	2.8011	0.0518	597.81	621.81	24.00	25.9
9-Jul-12	Sunny	29.8	1007.8	1.39	1.39	1.39	1997.3	2.7359	2.7915	0.0556	621.81	645.81	24.00	27.8
10-Jul-12	Sunny	29.9	1007.2	1.39	1.39	1.39	1997.3	2.7381	2.7963	0.0582	645.81	669.81	24.00	29.1
													Average	41.2
													Min	25.9
													Max	68.1

Station ID: DMS-7 (Parc 22)

Site Observation: No construction works were conducted in the vicinity during the monitoring period.

Date	Weather Condition	Air Temp. (°C)	Atmospheric Pressure(hPa)	Flow Rate (m ³ /min.)		Av. flow (m ³ /min)	Total vol. (m ³)	Filter Weight (g)		Particulate weight(g)	Elapse Time		Sampling Time(hrs.)	Conc. (µg/m ³)
				Initial	Final			Initial	Final		Initial	Final		
15-Jun-12	Fine	28.0	1000.5	1.31	1.31	1.31	1861.1	2.7672	2.8074	0.0402	0.00	23.75	23.75	21.6
16-Jun-12	Fine	26.1	1000.3	1.31	1.31	1.31	1865.0	2.6934	2.7259	0.0325	23.75	47.55	23.80	17.4
17-Jun-12	Cloudy	26.7	1001.3	1.31	1.31	1.31	1868.9	2.7337	2.7823	0.0486	47.55	71.40	23.85	26.0
18-Jun-12	Fine	27.3	998.6	1.31	1.31	1.31	1857.1	2.6804	2.7957	0.1153	71.40	95.10	23.70	62.1
19-Jun-12	Fine	28.2	995.0	1.31	1.31	1.31	1876.7	2.6567	2.8484	0.1917	95.10	119.05	23.95	102.1
20-Jun-12	Sunny	29.9	997.8	1.31	1.31	1.31	1880.6	2.7387	2.8150	0.0763	119.05	143.05	24.00	40.6
21-Jun-12	Fine	28.3	1003.1	1.31	1.31	1.31	1880.6	2.6077	2.7866	0.1789	143.05	167.05	24.00	95.1
22-Jun-12	Cloudy	28.5	1004.2	1.31	1.31	1.31	1880.6	2.7232	2.8028	0.0796	167.05	191.05	24.00	42.3
23-Jun-12	Cloudy	28.8	1003.5	1.31	1.31	1.31	1880.6	2.7710	2.8483	0.0773	191.05	215.05	24.00	41.1
24-Jun-12	Cloudy	28.8	1003.7	1.31	1.31	1.31	1880.6	2.6264	2.8561	0.2297	215.05	239.05	24.00	122.1
25-Jun-12	Fine	28.9	1003.7	1.31	1.31	1.31	1880.6	2.7024	2.8409	0.1385	239.05	263.05	24.00	73.6
26-Jun-12	Fine	28.8	1003.6	1.31	1.31	1.31	1880.6	2.7226	2.8092	0.0866	263.05	287.05	24.00	46.0
27-Jun-12	Fine	29.4	1005.1	1.31	1.31	1.31	1880.6	2.7032	2.7753	0.0721	287.05	311.05	24.00	38.3
28-Jun-12	Fine	29.4	1005.0	1.31	1.31	1.31	1880.6	2.7252	2.8402	0.1150	311.05	335.05	24.00	61.1
													Average	56.4
													Min	17.4
													Max	122.1

Appendix B
Baseline Air Quality Monitoring Results
24-hour TSP Monitoring Results

Station ID: DMS-8 (SKH Good Shepherd Primary School)

Minor works for changing waterpipes were being conducted at Ma Tau Wai Road as observed on 10 and 17 May. Given the works were in small scale and localised, it is anticipated that the baseline monitoring results would not be affected

Site Observation:

Date	Weather Condition	Air Temp. (°C)	Atmospheric Pressure (hPa)	Flow Rate (m ³ /min.)		Av. flow (m ³ /min)	Total vol. (m ³)	Filter Weight (g)		Particulate weight(g)	Elapse Time		Sampling Time(hrs.)	Conc. (µg/m ³)
				Initial	Final			Initial	Final		Initial	Final		
10-May-12	Sunny	32.5	1008.8	1.33	1.33	1.33	1867.3	2.7356	2.8106	0.0750	0.10	23.60	23.50	40.0
11-May-12	Sunny	27.9	1008.4	1.33	1.33	1.33	1860.9	2.7548	2.8753	0.1205	23.60	47.12	23.52	64.2
12-May-12	Cloudy	28.7	1007.0	1.33	1.33	1.33	1884.9	2.7542	2.8115	0.0573	47.12	70.64	23.52	30.5
13-May-12	Cloudy	29.6	1005.3	1.33	1.33	1.33	1915.2	2.7655	2.8006	0.0351	70.64	94.54	23.90	18.4
14-May-12	Cloudy	32.2	1006.9	1.33	1.33	1.33	1915.2	2.7803	2.8286	0.0483	94.54	118.54	24.00	25.2
15-May-12	Fine	30.3	1007.6	1.33	1.33	1.33	1915.2	2.7682	2.8059	0.0377	118.54	142.54	24.00	19.7
16-May-12	Cloudy	29.2	1006.1	1.33	1.33	1.33	1915.2	2.7624	2.7945	0.0321	142.54	166.12	23.58	17.1
17-May-12	Rainy	28.9	1006.5	1.33	1.33	1.33	1915.2	2.7632	2.8004	0.0372	166.12	190.12	24.00	19.4
18-May-12	Rainy	27.2	1008.1	1.33	1.33	1.33	1915.2	2.7577	2.8107	0.0530	190.12	214.12	24.00	27.7
19-May-12	Rainy	30.0	1007.1	1.33	1.33	1.33	1888.9	2.7700	2.8166	0.0466	214.12	237.79	23.67	24.7
20-May-12	Rainy	30.7	1005.6	1.33	1.33	1.33	1915.2	2.8193	2.8927	0.0734	237.79	261.79	24.00	38.3
21-May-12	Sunny	28.1	1007.6	1.33	1.33	1.33	1915.2	2.7649	2.8549	0.0900	261.79	285.79	24.00	47.0
22-May-12	Sunny	27.6	1008.5	1.33	1.33	1.33	1915.2	2.8407	2.9527	0.1120	285.79	309.79	24.00	58.5
23-May-12	Sunny	28.5	1006.6	1.33	1.33	1.33	1915.2	2.8313	2.9376	0.1063	309.79	333.79	24.00	55.5
Average														34.7
Min														17.1
Max														64.2

Station ID: DMS-9 (Lucky Building)

Site Observation: No construction works were conducted in the vicinity during the monitoring period.

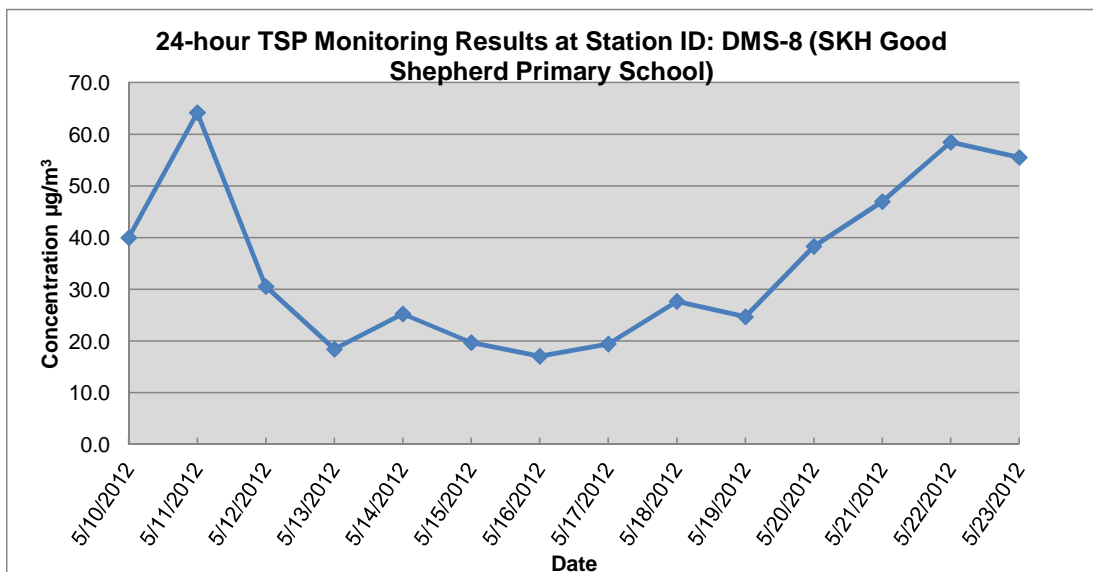
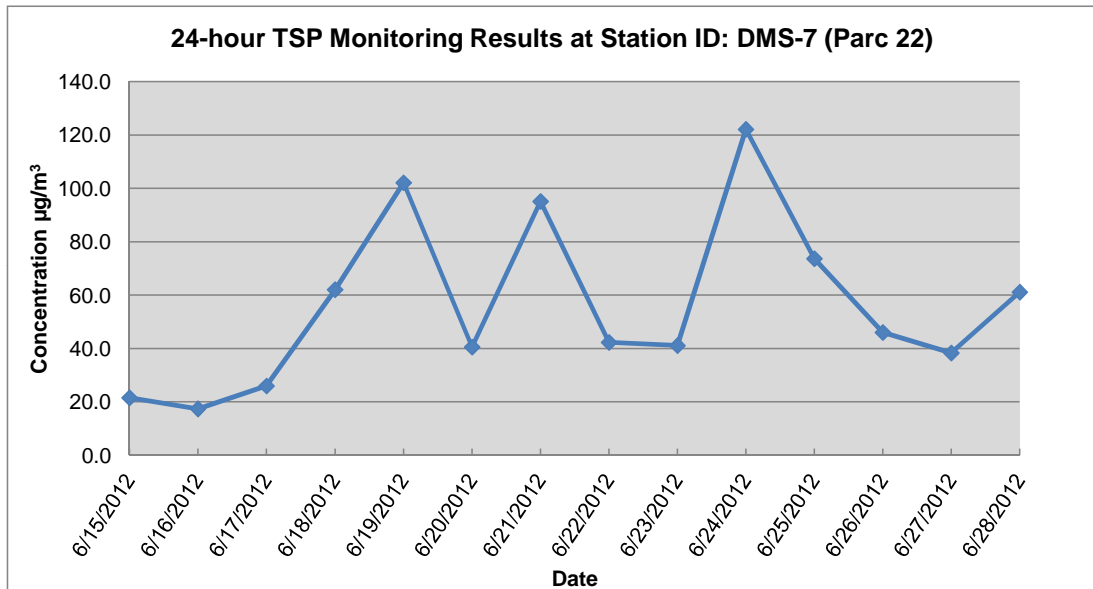
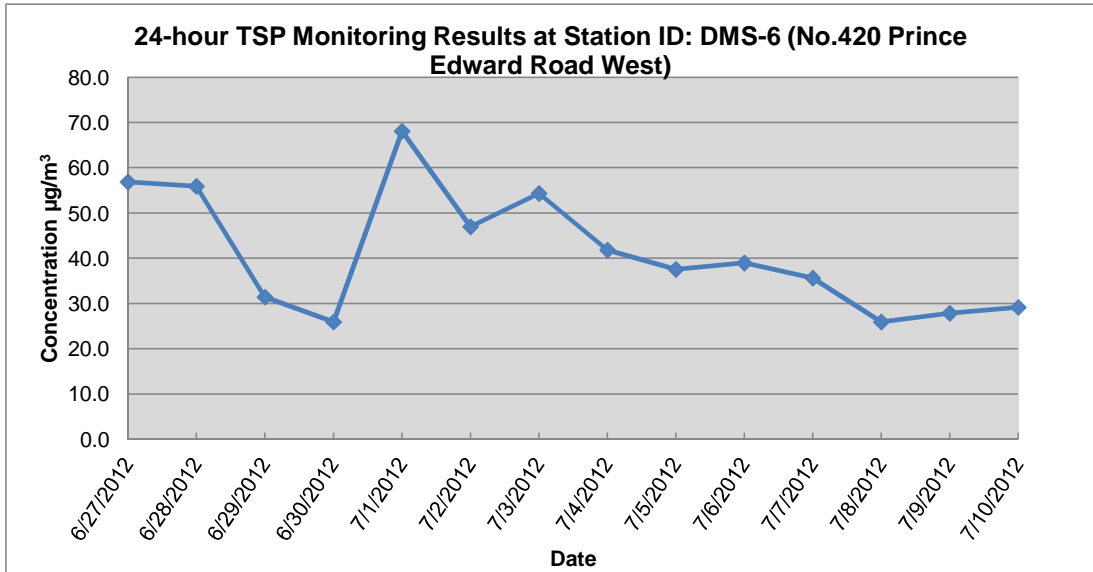
Date	Weather Condition	Air Temp. (°C)	Atmospheric Pressure(hPa)	Flow Rate (m ³ /min.)		Av. flow (m ³ /min)	Total vol. (m ³)	Filter Weight (g)		Particulate weight(g)	Elapse Time		Sampling Time(hrs.)	Conc. (µg/m ³)
				Initial	Final			Initial	Final		Initial	Final		
6-Jun-12	Sunny	28.3	1004.0	1.34	1.34	1.34	1926.7	2.8168	2.8987	0.0819	0.14	24.14	24.00	42.5
7-Jun-12	Sunny	28.5	1004.2	1.34	1.34	1.34	1926.7	2.8203	2.8851	0.0648	24.14	48.14	24.00	33.6
8-Jun-12	Sunny	29.5	1004.5	1.34	1.34	1.34	1926.7	2.8251	2.8722	0.0471	48.14	72.14	24.00	24.4
9-Jun-12	Sunny	29.1	1003.5	1.34	1.34	1.34	1926.7	2.8073	2.8625	0.0552	72.14	96.14	24.00	28.6
10-Jun-12	Sunny	29.0	1001.1	1.34	1.34	1.34	1926.7	2.8076	2.8839	0.0763	96.14	120.14	24.00	39.6
11-Jun-12	Sunny	29.4	999.4	1.34	1.34	1.34	1926.7	2.8013	2.8839	0.0826	120.14	144.14	24.00	42.9
12-Jun-12	Sunny	28.9	999.7	1.34	1.34	1.34	1926.7	2.7493	2.8100	0.0607	144.14	168.14	24.00	31.5
13-Jun-12	Rainy	26.3	1001.0	1.34	1.34	1.34	1926.7	2.8076	2.8839	0.0763	168.14	192.14	24.00	39.6
14-Jun-12	Fine	27.4	1001.2	1.34	1.34	1.34	1926.7	2.7356	2.8457	0.1101	192.14	216.14	24.00	57.1
15-Jun-12	Fine	28.0	1000.5	1.34	1.34	1.34	1926.7	2.7566	2.8082	0.0516	216.14	240.14	24.00	26.8
16-Jun-12	Rainy	26.1	1000.3	1.34	1.34	1.34	1926.7	2.8391	2.8659	0.0268	240.14	264.14	24.00	13.9
17-Jun-12	Rainy	26.7	1001.3	1.34	1.34	1.34	1926.7	2.8273	2.8831	0.0558	264.14	288.14	24.00	29.0
18-Jun-12	Rainy	27.3	998.6	1.34	1.34	1.34	1926.7	2.5863	2.8218	0.2355	288.14	312.14	24.00	122.0
19-Jun-12	Sunny	28.2	995.0	1.34	1.34	1.34	1926.7	2.7392	2.9977	0.2585	312.14	336.14	24.00	134.0
Average														47.5
Min														13.9
Max														134.0

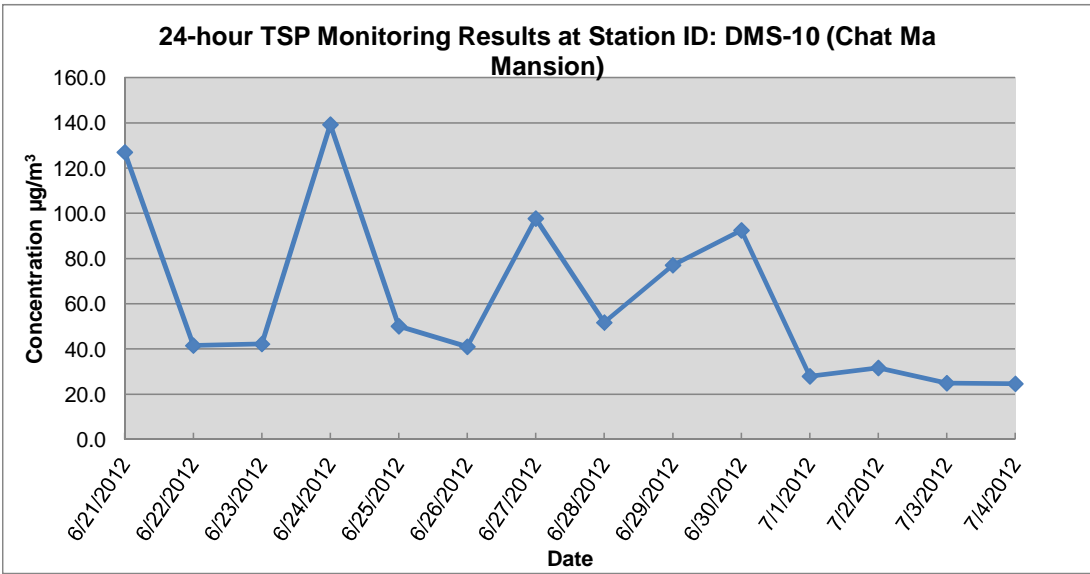
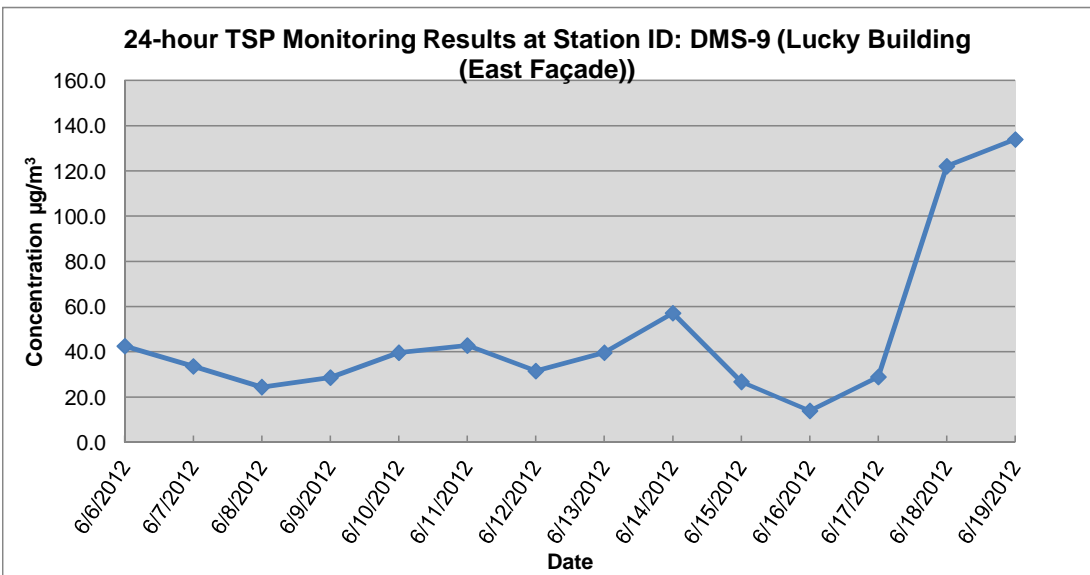
Appendix B
Baseline Air Quality Monitoring Results
24-hour TSP Monitoring Results

Station ID: DMS-10 (Chat Ma Mansion)

Site Observation: No construction works were conducted in the vicinity during the monitoring period.

Date	Weather Condition	Air Temp. (°C)	Atmospheric Pressure (hPa)	Flow Rate (m ³ /min.)		Av. flow (m ³ /min)	Total vol. (m ³)	Filter Weight (g)		Particulate weight(g)	Elapse Time		Sampling Time(hrs.)	Conc. (µg/m ³)
				Initial	Final			Initial	Final		Initial	Final		
21-Jun-12	Fine	28.3	1003.1	1.31	1.31	1.31	1887.8	2.6752	2.9150	0.2398	336.14	360.14	24.00	127.0
22-Jun-12	Cloudy	28.5	1004.2	1.31	1.31	1.31	1887.8	2.8351	2.9135	0.0784	360.14	384.14	24.00	41.5
23-Jun-12	Cloudy	28.8	1003.5	1.31	1.31	1.31	1887.8	2.7184	2.7981	0.0797	384.14	408.14	24.00	42.2
24-Jun-12	Cloudy	28.8	1003.7	1.31	1.31	1.31	1887.8	2.5581	2.8210	0.2629	408.14	432.14	24.00	139.3
25-Jun-12	Fine	28.9	1003.7	1.31	1.31	1.31	1887.8	2.7165	2.8111	0.0946	432.14	456.14	24.00	50.1
26-Jun-12	Fine	28.8	1003.6	1.31	1.31	1.31	1887.8	2.7486	2.8261	0.0775	456.14	480.14	24.00	41.1
27-Jun-12	Fine	29.4	1005.1	1.31	1.31	1.31	1887.8	2.6072	2.7917	0.1845	480.14	504.14	24.00	97.7
28-Jun-12	Fine	29.4	1005.0	1.31	1.31	1.31	1887.8	2.7417	2.8393	0.0976	504.14	528.14	24.00	51.7
29-Jun-12	Fine	29.4	1000.4	1.31	1.31	1.31	1886.4	2.7295	2.8749	0.1454	528.14	552.14	24.00	77.1
30-Jun-12	Fine	26.6	1004.6	1.31	1.31	1.31	1886.4	2.6014	2.7759	0.1745	552.14	576.14	24.00	92.5
1-Jul-12	Fine	27.8	1008.5	1.31	1.31	1.31	1886.4	2.7261	2.7788	0.0527	576.14	600.14	24.00	27.9
2-Jul-12	Sunny	28.3	1007.9	1.31	1.31	1.31	1886.4	2.7658	2.8255	0.0597	600.14	624.14	24.00	31.6
3-Jul-12	Sunny	29.1	1005.3	1.31	1.31	1.31	1886.4	2.7012	2.7483	0.0471	624.14	648.14	24.00	25.0
4-Jul-12	Sunny	29.6	1004.8	1.39	1.39	1.39	2005.9	2.7186	2.7681	0.0495	648.14	672.14	24.00	24.7
													Average	62.1
													Min	24.7
													Max	139.3





Appendix B
Baseline Air Quality Monitoring Results
1-hour TSP Monitoring Results

Station ID: DMS-6 (420 Prince Edward Road West)

Date	Start Time (hh:mm)	1st Hour	2nd Hour	3rd Hour
		Conc. ($\mu\text{g}/\text{m}^3$)	Conc. ($\mu\text{g}/\text{m}^3$)	Conc. ($\mu\text{g}/\text{m}^3$)
27-Jun-12	14:30	58.3	57.2	58.6
28-Jun-12	14:30	62.4	63.1	63.3
29-Jun-12	14:30	58.8	59.8	60.4
30-Jun-12	14:10	60.9	60.0	62.3
1-Jul-12	14:30	59.3	58.1	58.7
2-Jul-12	14:30	59.9	59.1	60.6
3-Jul-12	14:30	64.7	63.8	62.8
4-Jul-12	14:30	58.3	59.1	61.0
5-Jul-12	14:30	55.7	55.4	56.9
6-Jul-12	15:00	59.3	60.5	58.2
7-Jul-12	15:10	61.4	62.6	60.4
8-Jul-12	15:25	58.3	59.2	57.7
9-Jul-12	15:30	57.7	57.3	59.3
10-Jul-12	15:40	57.1	60.3	59.0
Average				59.7
Min				55.4
Max				64.7

Station ID: DMS-7 (Parc 22)

Date	Start Time (hh:mm)	1st Hour	2nd Hour	3rd Hour
		Conc. ($\mu\text{g}/\text{m}^3$)	Conc. ($\mu\text{g}/\text{m}^3$)	Conc. ($\mu\text{g}/\text{m}^3$)
15-Jun-12	16:30	69.9	68.6	67.7
16-Jun-12	15:30	48.6	50.8	49.3
17-Jun-12	15:30	56.8	58.4	59.8
18-Jun-12	15:30	56.5	59.8	57.8
19-Jun-12	15:30	60.2	62.5	65.7
20-Jun-12	15:50	78.3	81.7	80.5
21-Jun-12	16:15	59.8	58.3	59.0
22-Jun-12	15:55	57.3	58.2	56.6
23-Jun-12	15:51	59.9	60.8	59.0
24-Jun-12	15:40	56.5	58.7	59.2
25-Jun-12	15:40	60.5	62.4	61.0
26-Jun-12	15:40	56.2	55.5	57.8
27-Jun-12	15:45	59.5	62.5	63.7
28-Jun-12	15:50	60.6	63.0	62.5
Average				61.0
Min				48.6
Max				81.7

Appendix B
Baseline Air Quality Monitoring Results
1-hour TSP Monitoring Results

Station ID: DMS-8 (SKH Good Shepherd Primary School)

Date	Start Time (hh:mm)	1st Hour	2nd Hour	3rd Hour
		Conc. ($\mu\text{g}/\text{m}^3$)	Conc. ($\mu\text{g}/\text{m}^3$)	Conc. ($\mu\text{g}/\text{m}^3$)
10-May-12	15:10	78.8	79.4	78.2
11-May-12	14:35	79.6	78.0	77.4
12-May-12	14:00	78.8	78.0	79.5
13-May-12	13:40	85.4	86.8	82.9
14-May-12	13:45	87.8	89.6	84.4
15-May-12	13:50	74.4	78.2	72.9
16-May-12	14:00	68.6	69.7	71.1
17-May-12	13:30	71.3	73.5	75.4
18-May-12	15:30	73.2	74.7	76.1
19-May-12	15:40	75.6	73.9	77.3
20-May-12	15:20	65.6	67.8	68.2
21-May-12	15:10	71.3	69.8	72.4
22-May-12	15:20	80.8	78.0	82.2
23-May-12	15:20	81.1	79.0	78.2
Average				76.8
Min				65.6
Max				89.6

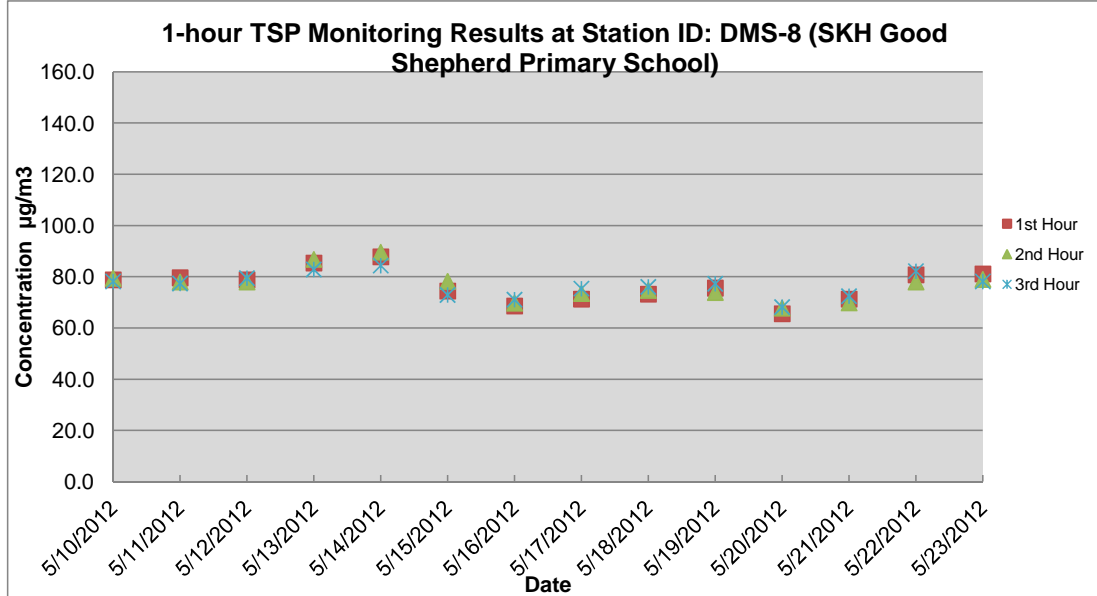
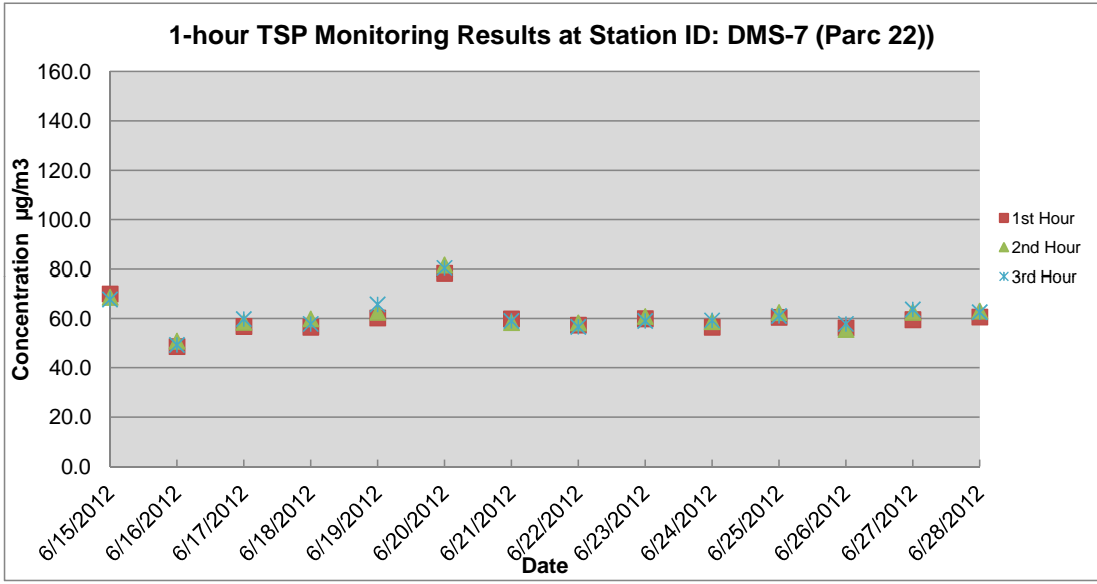
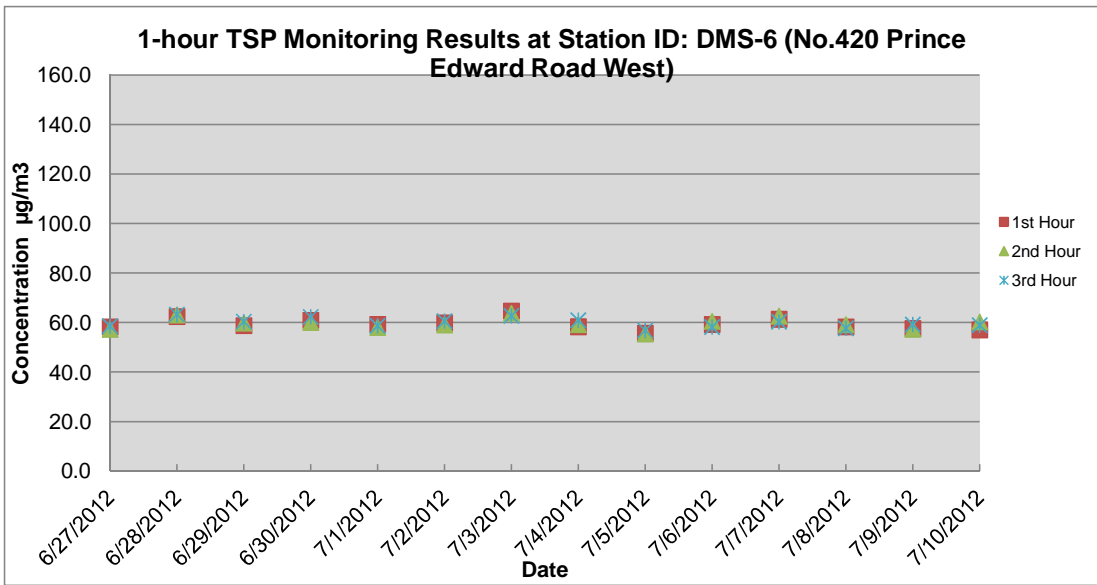
Station ID: DMS-9 (Lucky Building)

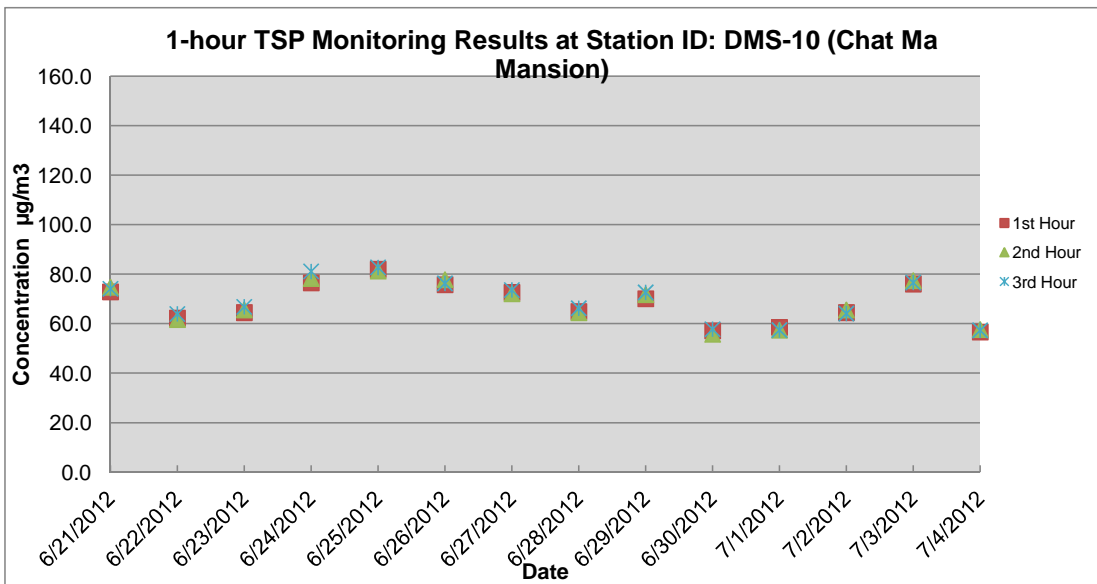
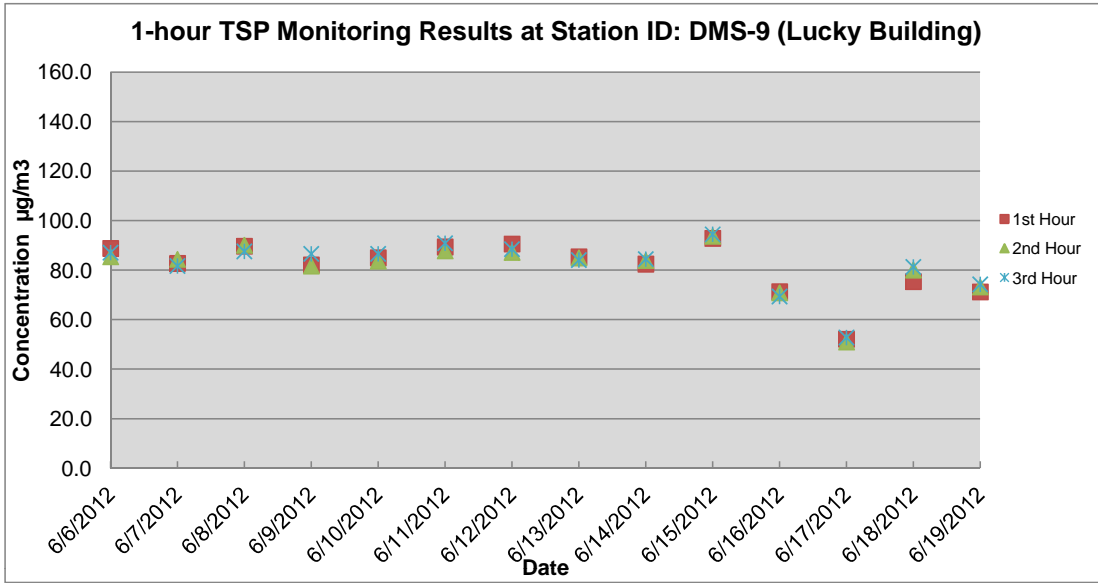
Date	Start Time (hh:mm)	1st Hour	2nd Hour	3rd Hour
		Conc. ($\mu\text{g}/\text{m}^3$)	Conc. ($\mu\text{g}/\text{m}^3$)	Conc. ($\mu\text{g}/\text{m}^3$)
6-Jun-12	15:05	88.8	85.4	87.1
7-Jun-12	15:05	82.8	84.4	81.7
8-Jun-12	15:05	89.7	90.1	87.6
9-Jun-12	15:05	82.1	81.7	86.6
10-Jun-12	15:15	85.0	83.7	86.6
11-Jun-12	15:15	89.4	87.8	90.9
12-Jun-12	15:15	90.6	87.2	88.5
13-Jun-12	15:15	85.4	85.0	84.1
14-Jun-12	15:15	82.5	83.9	84.5
15-Jun-12	15:15	92.9	93.7	94.5
16-Jun-12	15:15	71.3	70.9	69.4
17-Jun-12	15:15	52.1	51.0	52.8
18-Jun-12	15:15	75.4	80.1	81.4
19-Jun-12	15:15	71.2	73.2	74.3
Average				81.6
Min				51.0
Max				94.5

Appendix B
Baseline Air Quality Monitoring Results
1-hour TSP Monitoring Results

Station ID: DMS-10 (Chat Ma Mansion)

Date	Start Time (hh:mm)	1st Hour	2nd Hour	3rd Hour
		Conc. ($\mu\text{g}/\text{m}^3$)	Conc. ($\mu\text{g}/\text{m}^3$)	Conc. ($\mu\text{g}/\text{m}^3$)
21-Jun-12	15:15	72.9	74.8	74.1
22-Jun-12	15:10	62.3	61.7	64.0
23-Jun-12	15:10	64.5	65.6	66.9
24-Jun-12	15:05	76.5	78.3	81.2
25-Jun-12	15:15	82.0	81.3	82.8
26-Jun-12	15:15	75.8	77.8	76.3
27-Jun-12	15:10	72.7	72.1	73.6
28-Jun-12	15:15	64.9	64.4	66.3
29-Jun-12	15:15	70.1	71.8	72.6
30-Jun-12	15:05	57.1	55.7	57.8
1-Jul-12	15:20	58.5	57.4	57.5
2-Jul-12	15:20	64.5	65.6	64.1
3-Jul-12	15:10	76.1	77.4	76.7
4-Jul-12	15:10	56.7	57.7	57.4
Average				68.7
Min				55.7
Max				82.8





APPENDIX C
BASELINE NOISE MONITORING RESULTS

Baseline Noise Monitoring Result

Location: NMS-CA-6 No. 420 Prince Edward Road West

Baseline

monitoring period: 6/27/2012 - 6/29/2012; 7/01/2012 - 7/13/2012

Site Observation: No construction works were conducted in the vicinity during the monitoring period.

Weather condition: Trace rainfall was observed throughout the monitoring period. Amber rainstorm warning signal was hoisted between 0920 and 1020 hrs on 5 July. Given the short period of rainstorm, it is considered that the data collected on 5 Jul remains valid.

Note: Airborne noise monitoring was suspended due to bad weather conditions from 29 to 30 Jun 2012 (Cyclone DOKSURI).

Parameter: Leq

Time Slot Averaged Baselines

1) Weekdays Daytime Noise Level, dB(A)

Time slot	Leq, 30 min	L10	L90
07:00-07:30	75.3	77.6	71.2
07:30-08:00	75.9	78.2	72.3
08:00-08:30	75.9	78.2	72.3
08:30-09:00	75.9	78.1	72.6
09:00-09:30	76.0	78.1	72.6
09:30-10:00	76.0	78.2	72.4
10:00-10:30	76.0	78.2	72.3
10:30-11:00	76.2	78.3	72.8
11:00-11:30	76.2	78.4	72.8
11:30-12:00	76.0	78.2	72.7
12:00-12:30	76.0	78.2	72.6
12:30-13:00	76.2	78.3	72.7
13:00-13:30	76.2	78.3	72.8
13:30-14:00	76.2	78.2	72.8
14:00-14:30	76.2	78.4	72.9
14:30-15:00	76.1	78.2	72.8
15:00-15:30	76.2	78.3	73.1
15:30-16:00	76.4	78.4	73.4
16:00-16:30	76.4	78.4	73.3
16:30-17:00	76.4	78.4	73.4
17:00-17:30	76.5	78.5	73.6
17:30-18:00	76.4	78.4	73.2
18:00-18:30	76.1	78.2	73.0
18:30-19:00	76.0	78.2	72.7
Average	76.1	78.2	72.8
Max	76.5	78.5	73.6
Min	75.3	77.6	71.2

Noise Control Period Averaged Baselines

2) Weekdays Evening Noise Level, dB(A)

Time Slot	Leq, 5min	L10	L90
19:00-19:15	75.5	77.9	71.6
	76.1	78.1	72.1
	75.8	77.8	72.4
19:15-19:30	76.1	78.3	72.6
	74.6	77.1	70.7
	75.4	77.8	71.7
19:30-19:45	75.7	78.0	71.9
	75.9	78.2	72.4
	75.7	77.9	72.5
19:45-20:00	75.2	77.6	71.2
	75.2	77.6	71.4
	75.8	78.1	72.2
20:00-20:15	75.3	77.7	71.5
	75.1	77.4	71.0
	74.7	77.0	70.8
20:15-20:30	74.9	77.2	71.1
	74.8	77.1	70.9
	76.1	79.0	71.2
20:30-20:45	74.7	77.0	69.9
	74.7	77.2	70.5
	74.7	77.0	70.4
20:45-21:00	75.3	77.5	71.5
	74.0	76.6	69.6
	75.6	77.6	71.4
21:00-21:15	74.4	76.7	70.2
	75.0	77.4	70.7
	74.5	77.1	69.6
21:15-21:30	74.0	76.6	69.5
	74.5	77.1	70.4
	75.3	77.4	70.5
21:30-21:45	74.4	76.7	70.0
	75.0	77.5	70.8
	74.9	77.2	71.4
21:45-22:00	74.5	77.0	70.5
	74.6	77.1	70.4
	74.7	77.2	70.5
22:00-22:15	74.5	77.1	70.6
	75.7	78.0	72.0
	75.7	78.0	71.5
22:15-22:30	75.2	77.5	70.8
	75.7	78.0	71.8
	75.0	77.5	70.8
22:30-22:45	75.3	77.7	70.9
	74.1	76.6	69.9
	73.9	76.4	69.8
22:45-23:00	74.4	76.9	69.9
	74.5	77.1	70.0
	74.0	76.5	69.1
Average	75.1	77.4	71.0
Max	76.1	79.0	72.6
Min	73.9	76.4	69.1

3) General Holidays (including Sundays) (0700-2300) Noise Level, dB(A)

Time Slot	Leq, 5min	L10	L90
0700-07:15	74.0	76.7	68.5
	72.3	75.4	65.7
	74.3	77.0	70.1
07:15-07:30	72.7	75.6	66.8
	73.6	76.6	67.6
	72.2	75.4	66.5
07:30-07:45	76.1	78.3	72.3
	72.3	76.0	65.7
	73.8	76.7	68.8
07:45-08:00	73.0	76.1	67.6
	74.3	77.1	69.3
	73.9	76.8	68.3
08:00-08:15	75.0	77.7	70.3
	74.5	77.4	69.6
	74.5	77.3	69.7
08:15-08:30	74.7	77.5	69.4
	74.4	77.0	69.4
	74.6	77.3	68.5
08:30-08:45	74.3	77.0	69.6
	74.2	76.6	70.0
	75.2	77.7	70.0
08:45-09:00	74.9	77.4	70.6
	74.3	77.0	68.9
	74.6	77.1	69.8
09:00-09:15	75.3	77.9	71.0
	75.2	77.6	71.4
	74.8	77.5	69.8
09:15-09:30	74.5	77.5	69.9
	75.4	78.1	70.6
	74.9	77.6	70.5
09:30-09:45	74.8	77.5	69.8
	75.1	77.6	70.9
	75.0	77.5	70.5
09:45-10:00	75.4	77.9	71.4
	75.0	77.3	71.1
	75.3	77.9	70.7
10:00-10:15	74.7	77.2	70.5
	75.1	77.4	71.1
	76.7	78.6	70.7
10:15-10:30	75.3	77.6	71.2
	75.5	77.8	70.9
	75.1	77.5	70.9
10:30-10:45	75.1	77.7	70.6
	75.5	77.9	71.9
	75.5	77.7	71.4
10:45-11:00	74.8	77.3	70.6
	75.2	77.6	71.0
	75.7	77.9	71.6
11:00-11:15	75.0	77.6	70.9
	74.9	77.4	71.2
	76.0	77.5	70.9
11:15-11:30	75.2	77.6	71.5
	75.3	77.8	71.8
	75.1	77.5	71.3
11:30-11:45	75.1	77.4	71.1

	75.0	77.5	71.0
	75.3	77.8	71.5
11:45-12:00	76.0	77.3	71.2
	75.5	77.8	72.0
	75.6	78.1	71.8
12:00-12:15	75.5	77.8	72.0
	76.5	78.4	73.2
	75.5	78.0	71.7
12:15-12:30	75.6	77.7	72.0
	75.6	77.7	72.3
	75.9	78.0	72.5
12:30-12:45	76.0	77.9	72.4
	75.5	77.8	72.2
	75.9	78.3	72.2
12:45-13:00	75.8	78.1	72.4
	75.6	77.9	71.8
	76.0	78.0	72.2
13:00-13:15	76.1	77.9	72.8
	75.4	77.7	71.8
	75.6	77.6	72.1
13:15-13:30	75.5	77.8	72.2
	75.8	77.9	72.6
	76.0	78.3	72.2
13:30-13:45	75.7	78.0	72.4
	75.7	77.9	71.9
	75.6	78.0	71.8
13:45-14:00	75.7	78.0	72.1
	75.4	77.4	72.0
	75.5	77.7	72.7
14:00-14:15	76.1	78.2	72.8
	75.8	77.9	72.9
	75.7	78.2	72.0
14:15-14:30	75.5	78.0	71.5
	75.8	77.9	72.3
	75.4	77.8	71.9
14:30-14:45	75.5	77.7	71.2
	75.8	77.9	72.8
	75.7	77.7	72.6
14:45-15:00	75.5	77.8	72.6
	75.6	77.8	71.9
	75.8	77.9	72.5
15:00-15:15	75.8	78.0	72.3
	75.4	77.5	72.2
	75.6	77.9	71.9
15:15-15:30	76.0	78.2	72.6
	75.7	77.8	72.3
	75.9	78.3	72.1
15:30-15:45	75.6	77.8	71.9
	76.2	78.1	72.7
	75.1	77.4	71.2
15:45-16:00	75.9	78.0	72.5
	75.9	78.3	72.7
	76.2	78.3	72.8
16:00-16:15	76.3	78.4	73.0
	75.9	78.0	72.5
	76.0	78.3	72.9
16:15-16:30	75.9	78.0	72.8
	76.2	78.3	72.4

	75.9	78.0	72.4
16:30-16:45	76.0	78.1	72.7
	75.9	78.0	72.9
	75.7	77.9	72.1
	75.8	77.7	72.4
16:45-17:00	76.1	78.3	72.7
	76.2	78.3	73.0
	76.1	78.3	72.9
17:00-17:15	76.1	78.4	73.1
	76.1	78.1	72.7
	76.1	78.1	73.3
17:15-17:30	75.7	77.9	72.2
	75.9	78.0	72.6
	75.7	77.8	72.2
17:30-17:45	75.9	78.2	72.5
	76.4	78.5	72.9
	76.0	78.2	72.8
17:45-18:00	76.0	78.1	72.4
	76.1	78.3	72.7
	76.1	78.5	72.6
18:00-18:15	76.0	78.3	72.4
	76.1	78.4	72.9
	76.3	78.4	73.4
18:15-18:30	76.0	78.2	71.9
	75.7	77.9	72.4
	76.9	78.5	72.8
18:30-18:45	76.1	78.3	72.4
	76.8	77.8	72.1
	76.3	78.2	72.5
18:45-19:00	76.7	78.3	72.7
	76.4	78.2	72.6
	75.8	78.0	72.6
19:00-19:15	76.5	78.4	73.0
	76.1	78.1	72.5
	75.9	78.0	72.5
19:15-19:30	75.4	77.4	72.5
	75.7	77.9	71.7
	75.6	78.1	72.2
19:30-19:45	76.0	78.4	71.9
	76.2	78.4	72.6
	76.1	78.2	72.7
19:45-20:00	75.9	78.1	71.5
	75.5	77.9	71.3
	76.2	78.6	72.4
20:00-20:15	75.5	77.8	71.5
	75.2	77.4	71.2
	75.1	77.2	70.8
20:15-20:30	75.2	77.3	71.4
	76.8	78.7	71.4
	75.9	78.2	71.6
20:30-20:45	78.9	82.2	72.7
	77.8	77.9	70.6
	75.9	77.8	71.2
20:45-21:00	76.9	79.0	71.2
	75.7	77.7	71.7
	75.3	77.7	71.6
21:00-21:15	74.7	77.3	70.4
	75.5	76.9	70.7

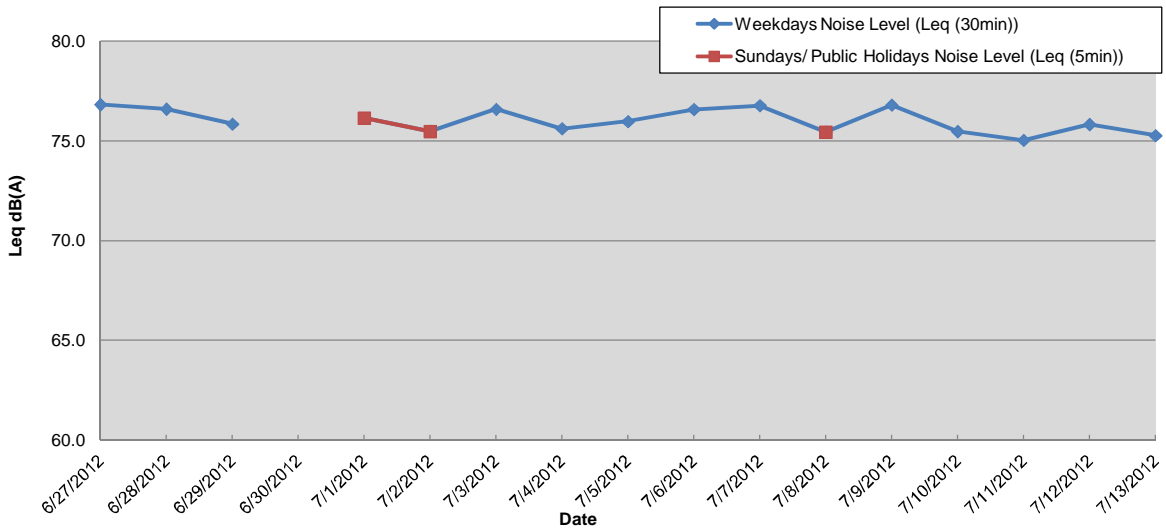
21:15-21:30	75.3	77.8	70.8
	75.2	77.8	70.9
	75.6	78.1	71.5
21:30-21:45	75.0	77.3	70.9
	75.6	78.1	71.7
	75.8	77.9	72.0
21:45-22:00	75.9	78.2	72.2
	76.0	77.5	71.8
	75.3	77.7	71.8
22:00-22:15	75.7	78.0	72.1
	75.7	77.9	71.9
	75.3	77.5	71.9
22:15-22:30	75.7	78.0	72.1
	75.3	77.8	71.3
	75.1	77.4	71.3
22:30-22:45	75.1	77.3	71.3
	75.8	78.0	71.5
	75.3	77.8	71.2
22:45-23:00	75.5	77.9	71.5
	75.5	77.7	71.9
	74.4	77.0	69.0
Average	75.6	77.9	71.8
Max	78.9	82.2	73.4
Min	72.2	75.4	65.7

4) Night-time (for all days) Noise Level, dB(A)

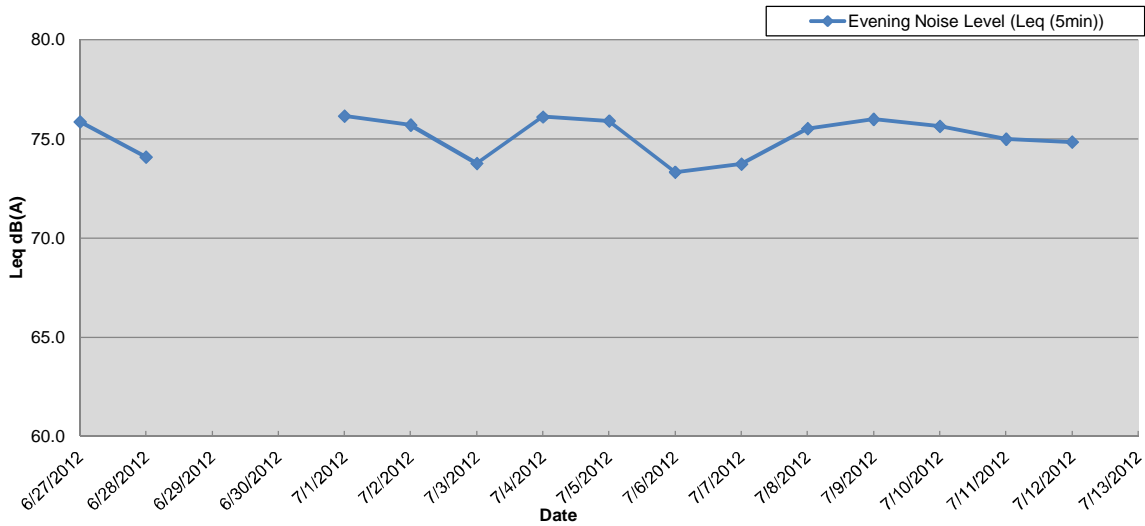
Time Slot	Leq, 5min	L10	L90
23:00-23:15	74.7	77.2	69.8
	74.9	77.4	70.3
	75.4	77.8	70.9
23:15-23:30	75.3	77.7	71.1
	74.6	77.2	70.0
	74.6	77.1	70.3
23:30-23:45	74.3	76.7	69.4
	74.4	77.0	69.2
	74.2	76.8	69.6
23:45-00:00	74.0	76.7	69.4
	74.1	76.7	69.3
	74.1	76.3	68.3
00:00-00:15	73.9	76.5	68.4
	74.1	76.9	68.5
	73.7	76.6	68.9
00:15-00:30	74.7	77.4	70.0
	74.0	76.7	68.9
	74.0	76.8	69.0
00:30-00:45	73.9	76.7	68.6
	73.5	76.4	68.0
	72.7	75.7	67.1
00:45-01:00	72.6	75.6	66.9
	72.1	75.2	66.1
	72.7	75.6	66.8
01:00-01:15	72.5	75.4	67.4
	71.9	75.0	66.3
	73.6	76.1	68.1
01:15-01:30	71.2	74.3	65.2
	73.2	75.9	67.5
	73.0	76.1	67.1
01:30-01:45	72.4	75.4	67.0
	72.6	75.6	67.0
	73.4	75.1	66.5
01:45-02:00	72.1	75.1	66.7
	73.2	75.9	67.6
	72.7	75.6	66.0
02:00-02:15	72.3	75.2	66.9
	73.2	75.7	68.8
	72.2	75.1	66.9
02:15-02:30	71.9	75.0	66.3
	72.4	75.3	66.8
	72.9	75.5	68.2
02:30-02:45	73.3	76.0	68.8
	72.5	75.2	67.8
	72.9	75.5	67.4
02:45-03:00	72.0	74.8	66.1
	72.0	74.8	66.0
	71.9	74.7	66.0
03:00-03:15	73.9	77.3	67.3
	71.2	74.4	65.1
	71.9	74.8	66.8
03:15-03:30	73.0	75.7	68.1
	71.6	74.6	66.6
	72.4	75.0	67.1
03:30-03:45	71.8	74.7	66.0

	70.4	73.7	64.1
	72.1	74.9	66.3
03:45-04:00	72.1	74.9	68.0
	73.7	77.1	67.0
	71.9	74.9	66.3
04:00-04:15	72.4	75.0	67.9
	73.1	75.8	68.5
	71.6	74.6	66.7
04:15-04:30	72.9	75.6	68.4
	72.7	75.4	67.5
	71.2	74.3	65.3
04:30-04:45	72.4	75.4	67.5
	72.2	75.0	66.4
	72.5	75.2	67.3
04:45-05:00	72.0	74.8	66.2
	71.7	74.8	66.3
	73.4	75.1	67.0
05:00-05:15	71.8	75.0	66.3
	72.1	75.1	66.5
	73.0	75.8	68.4
05:15-05:30	73.1	76.0	68.3
	72.9	75.9	67.3
	73.3	76.1	68.7
05:30-05:45	72.4	75.4	67.3
	72.2	75.2	67.2
	73.0	75.7	68.0
05:45-06:00	72.7	75.5	67.3
	72.5	75.5	67.7
	72.7	75.8	66.9
06:00-06:15	72.7	75.7	67.9
	72.4	75.5	66.9
	73.8	76.5	69.1
06:15-06:30	73.2	76.1	68.2
	73.5	76.3	68.3
	74.6	77.9	68.6
06:30-06:45	73.9	76.6	68.9
	73.4	76.3	68.4
	74.6	77.2	70.2
06:45-07:00	75.0	77.5	70.9
	74.2	76.7	69.6
	74.6	77.2	69.8
Average	73.1	75.9	68.0
Max	75.4	77.9	71.1
Min	70.4	73.7	64.1

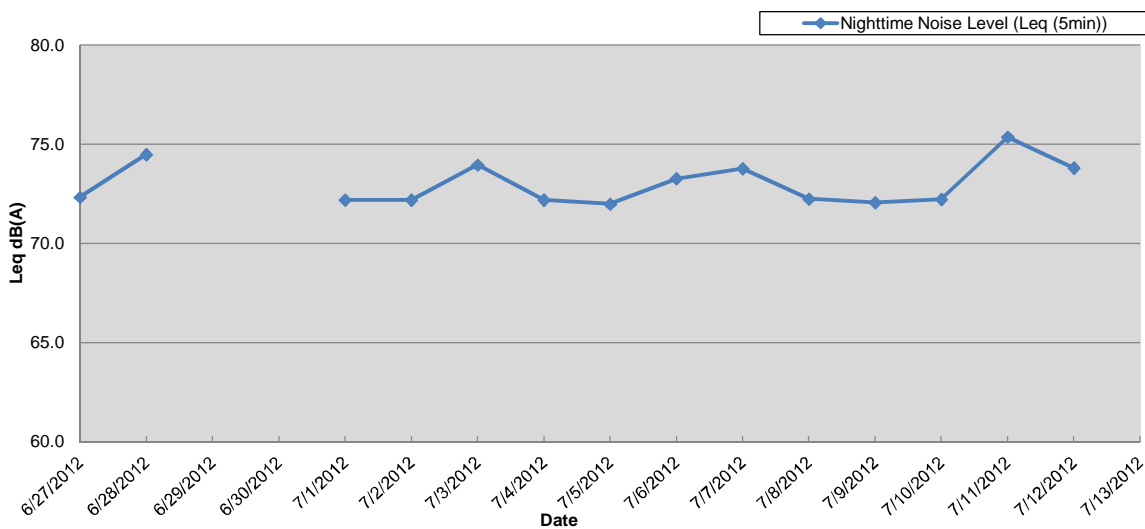
Average Leq (30min) at NMS-CA-6 during Daytime (0700 - 1900)



Average Leq (5 min) at NMS-CA-6 during Evening (1900-2300) for All Days



Average Leq (5 min) at NMS-CA-6 during Nighttime (2300-0700) for All Days



Baseline Noise Monitoring Result

Location: NMS-CA-7 Skytower Tower 2
Baseline monitoring period: 6/20/2012 - 6/29/2012;
7/01/2012 - 7/06/2012
Site Observation: No construction works were conducted in the vicinity during the monitoring period.
Weather condition: Trace rainfall was observed throughout the monitoring period. Amber rainstorm warning signal was hoisted between 0920 and 1020 on 5 July. Given the short period of rainstorm, it is considered that the data collected on 5 Jul remains valid.
Note: Airborne noise monitoring was suspended due to bad weather conditions from 29 to 30 Jun 2012 (Cyclone DOKSURI).

Parameter: Leq

Time Slot Averaged Baselines

1) Weekdays Daytime Noise Level, dB(A)

Time slot	Leq, 30 min	L10	L90
07:00-07:30	67.7	69.6	64.1
07:30-08:00	69.2	70.2	65.1
08:00-08:30	69.3	71.1	66.2
08:30-09:00	70.5	72.6	67.1
09:00-09:30	70.0	72.0	66.8
09:30-10:00	70.1	72.2	66.8
10:00-10:30	70.6	72.8	66.7
10:30-11:00	70.0	72.2	66.5
11:00-11:30	70.2	72.4	66.8
11:30-12:00	69.7	71.6	66.3
12:00-12:30	68.6	70.4	65.5
12:30-13:00	68.6	70.4	65.7
13:00-13:30	69.9	72.0	66.5
13:30-14:00	70.9	73.3	67.0
14:00-14:30	70.6	72.9	66.7
14:30-15:00	70.7	73.1	66.9
15:00-15:30	70.3	72.5	66.5
15:30-16:00	69.6	71.7	66.4
16:00-16:30	71.2	73.6	67.4
16:30-17:00	71.0	73.0	67.5
17:00-17:30	70.8	73.1	67.5
17:30-18:00	70.6	72.9	67.1
18:00-18:30	69.5	71.5	66.4
18:30-19:00	68.3	69.9	65.7
Average	70.0	72.0	66.5
Max	71.2	73.6	67.5
Min	67.7	69.6	64.1

Noise Control Period Averaged Baselines

2) Weekdays Evening Noise Level, dB(A)

Time Slot	Leq, 5min	L10	L90
19:00-19:15	68.1	69.7	65.5
	68.4	70.3	65.5
	68.5	70.2	65.8
19:15-19:30	68.2	69.6	65.6
	68.0	69.6	65.7
	67.9	69.6	65.5
19:30-19:45	68.3	69.8	65.7
	67.8	69.5	65.1
	68.1	69.6	65.4
19:45-20:00	67.9	69.7	65.2
	67.7	69.4	65.3
	67.8	69.6	65.3
20:00-20:15	67.8	69.4	65.1
	67.9	69.6	65.4
	67.7	69.4	65.1
20:15-20:30	67.4	69.1	64.8
	67.4	69.0	65.0
	67.3	69.0	64.9
20:30-20:45	67.6	69.2	65.2
	67.4	69.0	64.8
	67.6	69.1	64.9
20:45-21:00	67.3	69.0	64.8
	67.1	68.7	64.6
	67.4	69.2	64.8
21:00-21:15	68.0	69.0	64.4
	67.2	68.7	64.7
	67.8	69.7	64.7
21:15-21:30	67.7	69.7	64.5
	67.0	68.6	64.3
	67.3	68.9	64.7
21:30-21:45	67.6	69.0	64.6
	67.3	68.6	64.4
	67.2	68.9	64.7
21:45-22:00	66.9	68.4	64.5
	66.8	68.5	64.5
	66.9	68.4	64.7
22:00-22:15	66.9	68.5	64.5
	67.2	68.9	64.6
	67.7	69.1	64.8
22:15-22:30	67.2	68.8	64.6
	67.0	68.6	64.7
	67.2	68.7	64.9
22:30-22:45	67.2	68.8	64.8
	67.1	68.7	64.4
	66.8	68.5	64.4
22:45-23:00	67.0	68.7	64.3
	67.0	68.7	64.4
	67.5	68.7	64.3
Average	67.5	69.1	64.9
Max	68.5	70.3	65.8
Min	66.8	68.4	64.3

3) General Holidays (including Sundays) (0700-2300) Noise Level, dB(A)

Time Slot	Leq, 5min	L10	L90
0700-07:15	65.4	67.9	61.5
	64.5	67.2	60.2
	64.9	67.0	61.4
07:15-07:30	66.3	68.7	62.5
	65.5	67.8	61.5
	65.3	67.7	61.5
07:30-07:45	65.7	68.2	61.2
	65.2	67.3	61.9
	66.3	68.6	62.6
07:45-08:00	65.7	67.8	62.0
	67.0	69.0	63.7
	66.6	68.6	63.1
08:00-08:15	66.4	68.4	63.3
	66.3	68.5	62.9
	65.7	67.8	62.2
08:15-08:30	67.2	69.6	62.8
	67.1	69.4	62.9
	66.7	69.2	62.8
08:30-08:45	67.1	69.0	63.2
	67.0	69.0	63.4
	66.8	69.1	63.6
08:45-09:00	67.6	70.0	64.2
	67.9	70.2	64.3
	67.0	69.0	63.2
09:00-09:15	67.3	69.3	63.7
	66.8	69.0	62.8
	67.7	69.7	63.7
09:15-09:30	66.4	68.5	62.8
	67.7	70.1	63.3
	66.6	68.4	62.5
09:30-09:45	67.4	69.0	63.7
	66.7	68.6	63.3
	67.4	69.0	63.7
09:45-10:00	67.0	68.8	63.8
	66.7	68.7	63.0
	67.3	69.2	63.8
10:00-10:15	66.6	68.5	63.9
	66.8	68.4	63.7
	66.9	69.0	63.7
10:15-10:30	66.8	69.0	63.9
	66.5	68.5	63.5
	67.2	69.2	64.0
10:30-10:45	67.2	69.5	63.8
	67.3	69.6	63.8
	67.5	69.9	64.0
10:45-11:00	67.1	69.2	64.1
	67.5	69.3	64.6
	67.0	68.9	64.3
11:00-11:15	67.6	69.4	64.5
	67.0	69.2	63.7
	67.1	68.5	63.8
11:15-11:30	67.3	69.2	64.3
	67.7	69.3	64.2
	66.7	68.7	63.7
11:30-11:45	66.8	69.0	63.7

	66.4	68.6	63.2
	66.6	68.3	63.7
11:45-12:00	67.0	68.9	64.0
	67.2	69.6	64.0
	67.0	69.0	64.2
12:00-12:15	67.7	70.5	63.4
	67.7	69.9	64.2
	66.8	68.8	63.5
12:15-12:30	67.1	68.7	64.0
	66.9	68.7	64.4
	67.1	68.9	64.3
12:30-12:45	67.5	69.4	64.7
	67.8	69.7	65.0
	67.8	69.3	65.3
12:45-13:00	68.1	69.9	64.8
	68.0	69.9	64.9
	67.6	69.7	64.4
13:00-13:15	67.1	69.2	63.7
	67.2	69.2	64.0
	67.2	69.0	64.1
13:15-13:30	67.8	70.1	64.2
	67.3	69.7	63.7
	67.1	69.2	64.1
13:30-13:45	67.8	69.9	64.5
	68.2	70.2	64.3
	67.1	69.0	63.8
13:45-14:00	66.6	68.5	63.4
	66.9	68.8	64.0
	67.0	69.4	63.8
14:00-14:15	67.1	68.8	64.3
	67.3	69.3	64.5
	67.7	69.5	64.8
14:15-14:30	67.3	68.9	64.9
	67.4	69.3	64.5
	67.6	69.2	65.2
14:30-14:45	69.0	71.3	65.4
	67.1	68.8	63.9
	68.0	70.1	64.0
14:45-15:00	67.8	69.7	64.8
	67.7	69.6	64.9
	68.1	70.1	65.0
15:00-15:15	67.9	69.8	64.6
	68.1	69.4	65.0
	67.8	69.8	64.8
15:15-15:30	68.0	70.1	64.7
	67.3	69.3	64.3
	67.4	69.0	64.8
15:30-15:45	67.9	70.0	64.9
	68.5	70.0	65.3
	67.1	69.0	64.2
15:45-16:00	67.4	69.2	64.6
	68.2	70.0	65.3
	67.7	69.4	64.6
16:00-16:15	67.5	68.8	65.0
	67.5	69.4	64.5
	67.8	69.8	64.9
16:15-16:30	67.4	69.0	64.9
	67.7	69.5	65.1

	67.6	69.5	64.7
16:30-16:45	67.5	69.4	64.8
	67.5	69.3	64.8
	67.9	69.5	65.5
16:45-17:00	68.1	70.1	65.3
	67.8	69.7	64.9
	67.7	69.5	64.9
17:00-17:15	68.1	69.8	64.9
	67.7	69.4	64.8
	67.5	69.0	64.6
17:15-17:30	67.3	69.0	64.5
	67.6	69.4	64.4
	68.0	69.2	64.3
17:30-17:45	67.2	68.7	64.4
	67.8	69.4	65.0
	67.3	68.7	64.8
17:45-18:00	66.9	68.8	64.4
	67.4	69.6	64.5
	67.3	68.9	64.8
18:00-18:15	67.0	68.5	64.5
	67.4	68.8	64.9
	67.8	70.0	64.8
18:15-18:30	67.4	69.1	65.0
	67.1	68.6	64.7
	67.3	68.9	64.9
18:30-18:45	67.4	69.1	64.6
	67.1	68.9	64.8
	66.9	68.4	64.5
18:45-19:00	67.4	69.2	64.3
	66.9	68.5	64.5
	67.0	68.8	64.5
19:00-19:15	67.2	68.5	64.8
	67.2	69.0	64.4
	67.2	69.1	64.8
19:15-19:30	67.4	68.4	64.1
	67.1	68.9	64.6
	66.8	68.4	64.5
19:30-19:45	67.3	69.3	64.7
	67.2	68.8	64.6
	67.0	68.8	64.5
19:45-20:00	67.4	68.8	64.4
	67.1	68.7	64.4
	67.2	69.2	64.6
20:00-20:15	67.3	68.8	64.4
	66.8	68.4	64.4
	66.7	68.5	64.4
20:15-20:30	67.0	68.8	63.9
	67.4	68.9	65.2
	66.7	68.4	64.3
20:30-20:45	66.9	68.6	64.2
	68.1	70.4	64.7
	67.1	68.9	64.4
20:45-21:00	66.6	68.3	64.3
	67.5	69.3	64.2
	67.5	69.3	64.8
21:00-21:15	67.4	69.8	64.5
	67.1	68.6	64.7
	67.1	68.2	64.5

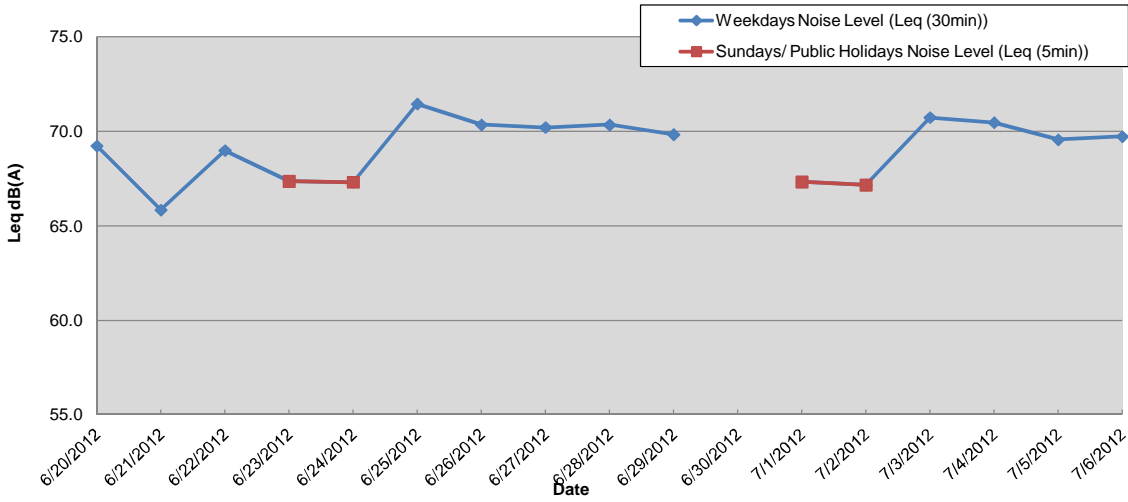
21:15-21:30	67.0	68.7	64.5
	66.4	67.9	64.3
	66.9	68.8	64.5
21:30-21:45	66.7	68.3	64.1
	67.2	68.8	64.9
	66.5	68.3	64.0
21:45-22:00	67.2	68.9	64.1
	66.8	68.4	64.4
	66.9	68.4	64.3
22:00-22:15	66.8	68.4	64.3
	67.0	68.4	64.5
	66.9	68.7	64.4
22:15-22:30	66.7	68.0	64.3
	67.4	68.9	64.6
	67.2	68.9	64.5
22:30-22:45	66.9	68.6	64.4
	67.1	68.5	64.4
	67.0	68.8	64.5
22:45-23:00	66.8	68.5	64.4
	67.1	68.8	64.1
	66.8	68.6	63.8
Average	67.2	69.1	64.3
Max	69.0	71.3	65.5
Min	64.5	67.0	60.2

4) Night-time (for all days) Noise Level, dB(A)

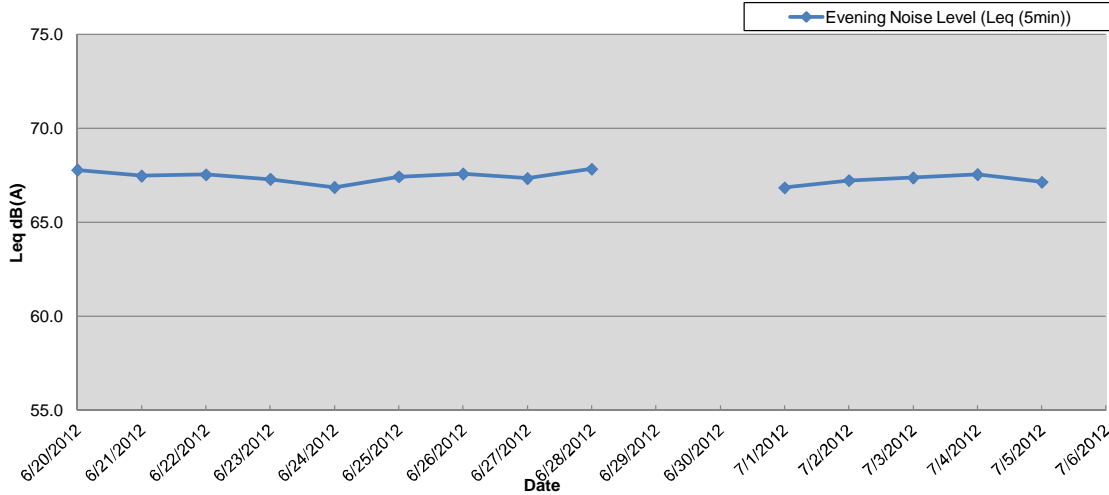
Time Slot	Leq, 5min	L10	L90
23:00-23:15	66.8	68.5	64.2
	67.0	68.7	64.3
	66.6	68.4	64.1
23:15-23:30	66.5	68.3	63.8
	66.9	68.6	64.0
	66.5	68.4	63.7
23:30-23:45	66.5	68.1	63.7
	66.2	67.8	63.4
	66.1	67.8	63.2
23:45-00:00	66.1	68.0	63.2
	66.2	68.1	63.2
	66.0	67.8	63.2
00:00-00:15	65.7	67.4	62.7
	65.6	67.3	62.6
	65.5	67.3	62.8
00:15-00:30	65.4	67.3	62.4
	65.6	67.3	62.3
	65.4	67.2	62.3
00:30-00:45	65.4	67.2	62.1
	65.2	67.0	62.1
	65.6	67.6	62.1
00:45:01:00	65.2	67.1	61.7
	64.5	66.4	61.2
	64.6	66.5	61.4
01:00-01:15	64.3	66.2	61.3
	64.9	66.5	61.4
	65.4	67.3	62.0
01:15-01:30	65.2	67.3	61.7
	64.7	66.7	61.2
	64.4	66.4	61.0
01:30-01:45	64.8	66.9	61.5
	64.7	66.6	61.3
	64.0	66.1	60.6
01:45-02:00	64.0	66.3	60.5
	64.0	66.0	60.6
	64.1	66.4	60.3
02:00-02:15	63.6	65.8	59.9
	63.6	65.7	59.7
	63.4	65.7	59.1
02:15-02:30	63.7	65.9	59.5
	64.1	66.3	60.1
	63.1	65.3	59.6
02:30-02:45	64.1	66.4	59.6
	63.8	65.9	59.8
	63.6	66.2	58.9
02:45-03:00	62.7	65.2	58.4
	62.2	64.6	57.7
	63.1	64.8	57.9
03:00-03:15	62.8	65.0	58.0
	62.6	64.9	57.7
	62.2	64.6	57.7
03:15-03:30	61.7	64.2	57.5
	62.4	64.7	57.4
	62.0	64.5	57.4
03:30-03:45	61.8	64.3	57.0

	61.5	64.2	56.9
	61.9	64.3	57.0
03:45-04:00	62.3	64.6	57.2
	62.0	64.5	57.3
	61.9	64.4	57.1
04:00-04:15	62.0	64.3	57.1
	62.2	64.5	57.0
	61.7	64.2	56.9
04:15-04:30	61.9	64.6	56.8
	62.5	64.9	58.3
	62.4	65.1	58.1
04:30-04:45	62.3	64.9	57.3
	61.9	64.5	57.1
	62.4	64.9	57.6
04:45-05:00	62.3	64.7	57.3
	62.4	64.8	57.8
	62.7	65.0	57.8
05:00-05:15	62.7	65.2	57.8
	62.8	65.5	58.0
	62.5	65.1	57.9
05:15-05:30	62.2	64.8	57.3
	62.6	65.3	57.7
	61.9	64.2	57.7
05:30-05:45	62.5	64.8	58.0
	63.1	65.5	58.6
	63.2	65.7	58.6
05:45-06:00	63.5	65.9	58.9
	64.0	66.4	59.3
	64.1	66.6	59.7
06:00-06:15	64.3	66.6	60.1
	64.5	66.9	60.1
	64.6	67.0	60.3
06:15-06:30	64.8	67.2	60.5
	65.2	67.5	60.9
	65.5	67.8	61.4
06:30-06:45	66.2	68.4	62.2
	66.3	68.2	62.6
	66.6	68.8	62.9
06:45-07:00	66.6	68.8	63.1
	66.6	68.9	62.6
	66.3	68.3	62.7
Average	64.4	66.5	60.7
Max	67.0	68.9	64.3
Min	61.5	64.2	56.8

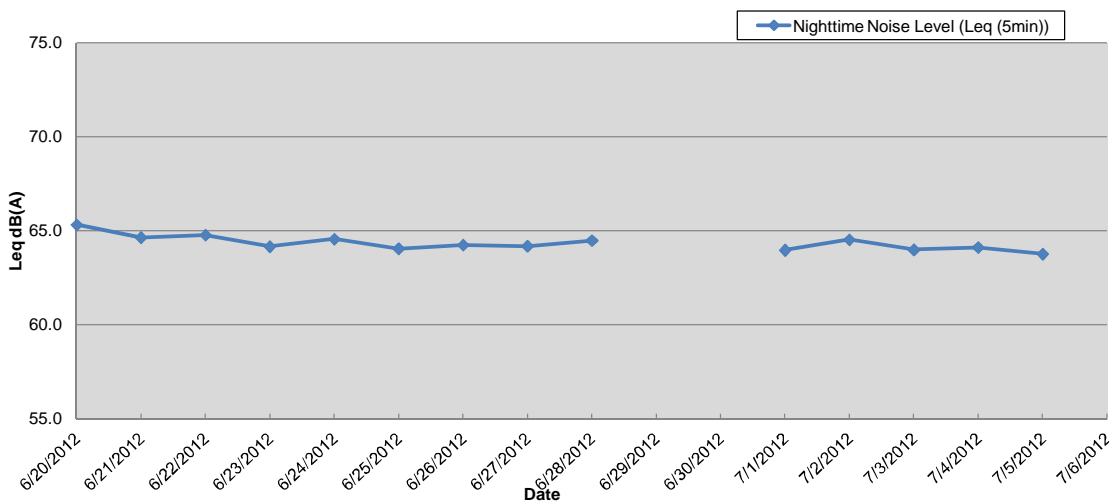
Average Leq (30min) at NMS-CA-7 during Daytime (0700 - 1900)



Average Leq (5 min) at NMS-CA-7 during Evening (1900-2300) for All Days



Average Leq (5 min) at NMS-CA-7 during Nighttime (2300-0700) for All Days



Baseline Noise Monitoring Result

Location: NMS-CA-8 SKH Good Shepherd Primary School
Baseline monitoring period: 5/10/2012 - 5/25/2012

Site Observation: Minor works for changing waterpipes were being conducted at Ma Tau Wai Road as observed on 10 and 17 May. Given the works were in small scale and localised, it is anticipated that the baseline monitoring results would not be affected.

Weather condition: Trace rainfall was observed throughout the monitoring period. Amber rainstorm warning signal was hoisted between 0855 and 1045 hrs on 18 May. Given the short period of rainstorm, it is considered that the data collected on 18 May remains valid .

Note: N/A

Parameter: Leq

Time Slot Averaged Baselines

1) Weekdays Daytime Noise Level, dB(A)

Time slot	Leq, 30 min	L10	L90
07:00-07:30	73.9	77.4	67.4
07:30-08:00	74.7	77.8	68.6
08:00-08:30	75.5	78.4	70.1
08:30-09:00	75.6	78.7	70.1
09:00-09:30	75.5	78.6	69.4
09:30-10:00	75.1	78.3	69.0
10:00-10:30	76.0	78.7	69.4
10:30-11:00	75.7	78.9	68.8
11:00-11:30	75.6	78.4	69.5
11:30-12:00	75.0	77.8	68.9
12:00-12:30	74.8	77.7	68.5
12:30-13:00	75.0	77.8	68.7
13:00-13:30	74.9	77.8	68.7
13:30-14:00	75.2	77.9	69.5
14:00-14:30	75.7	78.2	70.7
14:30-15:00	76.3	79.3	70.8
15:00-15:30	75.4	78.1	70.1
15:30-16:00	75.7	78.3	70.7
16:00-16:30	75.5	78.1	70.3
16:30-17:00	75.7	78.4	70.6
17:00-17:30	75.4	78.2	70.2
17:30-18:00	75.6	78.4	69.9
18:00-18:30	75.4	78.3	69.6
18:30-19:00	75.5	78.7	68.9
Average	75.4	78.4	69.7
Max	76.3	79.3	70.8
Min	73.9	77.4	67.4

Noise Control Period Averaged Baselines

2) Weekdays Evening Noise Level, dB(A)

Time Slot	Leq, 5min	L10	L90
19:00-19:15	74.5	77.4	68.9
	74.6	77.4	69.4
	74.4	77.4	68.8
19:15-19:30	74.7	77.4	68.9
	74.2	77.1	68.2
	74.3	77.2	68.1
19:30-19:45	74.3	77.1	67.9
	74.6	77.5	68.0
	74.4	77.3	68.4
19:45-20:00	74.7	77.5	68.4
	74.6	77.6	68.4
	74.3	77.0	68.2
20:00-20:15	74.2	77.2	67.4
	73.8	77.1	66.8
	73.8	77.2	65.8
20:15-20:30	74.7	77.6	66.3
	74.3	77.7	66.6
	73.5	77.2	66.5
20:30-20:45	73.3	76.9	65.4
	74.1	77.5	67.6
	73.8	77.2	67.1
20:45-21:00	74.0	77.2	67.3
	73.9	77.4	66.5
	73.3	76.8	65.9
21:00-21:15	73.7	77.1	66.7
	73.5	76.9	66.0
	73.4	76.9	65.8
21:15-21:30	73.0	76.7	65.1
	74.7	77.3	65.6
	73.4	76.6	64.7
21:30-21:45	73.1	76.4	65.2
	73.4	76.8	66.4
	73.2	76.8	64.8
21:45-22:00	73.2	76.6	65.7
	72.9	76.6	64.6
	73.3	76.5	66.0
22:00-22:15	73.6	76.4	66.2
	73.3	76.8	65.4
	73.0	76.4	65.5
22:15-22:30	73.4	77.3	64.0
	73.1	76.6	64.9
	73.4	76.8	65.6
22:30-22:45	74.5	76.5	64.9
	73.3	76.9	63.9
	73.8	76.9	65.6
22:45-23:00	73.4	76.9	64.9
	73.5	77.0	65.1
	73.3	76.9	65.3
Average	73.9	77.0	66.7
Max	74.7	77.7	69.4
Min	72.9	76.4	63.9

3) General Holidays (including Sundays) (0700-2300) Noise Level, dB(A)

Time Slot	Leq, 5min	L10	L90
0700-07:15	72.1	75.8	63.3
	72.6	75.6	66.6
	71.9	75.3	64.0
07:15-07:30	71.8	75.3	64.8
	72.7	76.5	64.8
	72.5	76.0	65.6
07:30-07:45	71.5	74.9	64.1
	72.8	76.5	64.3
	71.8	75.5	64.0
07:45-08:00	72.8	76.5	65.4
	71.7	75.6	63.5
	72.4	75.8	65.8
08:00-08:15	73.4	77.1	65.5
	73.5	76.5	67.6
	72.6	76.0	65.8
08:15-08:30	74.3	77.5	65.8
	72.5	76.3	65.3
	73.6	77.0	67.1
08:30-08:45	73.1	76.5	67.0
	73.6	77.3	68.0
	73.7	77.3	66.0
08:45-09:00	74.6	77.8	67.6
	73.6	76.1	65.8
	74.0	77.3	66.9
09:00-09:15	73.9	77.0	67.8
	72.8	76.4	67.5
	73.9	77.8	67.3
09:15-09:30	73.7	77.0	67.1
	73.3	76.5	67.0
	74.9	77.6	68.8
09:30-09:45	72.8	76.3	66.8
	73.7	77.0	67.3
	75.3	78.3	68.5
09:45-10:00	74.5	77.5	67.0
	74.9	77.3	69.3
	73.8	76.3	67.3
10:00-10:15	73.6	77.1	66.9
	72.9	76.0	65.8
	73.8	77.0	66.5
10:15-10:30	74.1	77.0	68.6
	73.3	76.3	65.8
	73.5	76.5	65.5
10:30-10:45	72.9	76.0	65.0
	73.1	76.5	65.8
	74.3	76.8	67.0
10:45-11:00	73.9	76.8	67.6
	73.7	77.3	66.3
	73.1	76.0	66.8
11:00-11:15	73.1	76.3	65.5
	73.7	76.8	67.1
	74.2	76.5	66.6
11:15-11:30	75.0	77.3	66.5
	73.0	76.0	66.3
	74.2	77.5	66.8
11:30-11:45	73.3	76.5	66.8

	74.0	77.3	66.3
	74.4	77.5	66.8
11:45-12:00	74.0	77.0	66.8
	73.6	76.8	65.9
	73.7	76.5	65.8
12:00-12:15	73.8	76.8	66.3
	73.5	76.8	67.1
	73.8	76.5	66.8
12:15-12:30	74.0	77.0	64.0
	73.2	76.3	66.1
	74.3	76.8	69.0
12:30-12:45	76.3	76.6	67.0
	73.8	76.5	66.9
	73.7	76.8	66.3
12:45-13:00	73.7	76.5	66.5
	74.1	77.3	66.9
	74.6	78.1	67.3
13:00-13:15	74.0	76.9	67.0
	74.2	77.3	66.3
	74.5	77.3	67.3
13:15-13:30	74.2	77.5	67.0
	74.0	77.1	67.3
	74.3	77.0	66.8
13:30-13:45	73.9	77.0	66.2
	73.5	76.5	65.8
	74.1	77.3	66.0
13:45-14:00	73.8	76.8	66.5
	74.1	77.5	66.3
	74.3	77.3	68.3
14:00-14:15	73.8	76.8	66.8
	74.1	76.5	69.2
	74.3	77.0	68.3
14:15-14:30	74.1	77.0	68.0
	73.9	76.8	67.4
	74.3	77.3	69.3
14:30-14:45	74.6	77.5	69.0
	73.5	76.5	67.8
	74.3	76.8	67.6
14:45-15:00	74.9	78.0	68.4
	75.7	78.6	69.3
	75.6	78.4	68.9
15:00-15:15	74.9	78.1	67.8
	75.5	78.3	69.1
	75.7	78.6	70.0
15:15-15:30	74.7	77.8	68.3
	74.0	77.3	67.0
	74.9	77.4	68.8
15:30-15:45	75.5	78.5	68.1
	74.6	77.6	69.3
	74.3	77.3	67.1
15:45-16:00	74.9	77.8	67.8
	74.0	77.4	68.1
	73.9	76.8	67.8
16:00-16:15	74.3	77.5	68.3
	73.4	76.5	66.8
	74.5	77.0	70.0
16:15-16:30	74.0	77.0	68.0
	74.0	76.5	69.3

	73.9	76.5	69.1
16:30-16:45	74.5	77.3	67.5
	73.6	76.8	66.3
	74.2	77.3	68.5
16:45-17:00	74.1	77.3	66.9
	74.1	77.3	68.3
	74.0	76.8	66.8
17:00-17:15	74.8	77.5	69.1
	74.2	77.0	67.8
	73.6	76.5	68.0
17:15-17:30	75.6	77.5	69.0
	74.0	77.0	67.8
	74.6	77.6	68.1
17:30-17:45	73.6	76.8	65.8
	74.5	77.3	68.8
	74.4	77.3	68.1
17:45-18:00	74.5	77.6	67.6
	73.6	76.5	66.4
	74.3	77.3	68.3
18:00-18:15	74.1	77.3	67.5
	74.9	77.3	69.8
	74.0	76.8	68.3
18:15-18:30	74.8	77.3	69.8
	73.9	76.5	68.3
	74.2	76.8	67.8
18:30-18:45	74.3	76.8	68.8
	74.7	77.8	68.5
	74.7	77.3	69.1
18:45-19:00	74.3	77.3	67.8
	75.7	78.1	71.3
	75.4	78.3	69.2
19:00-19:15	75.0	77.9	68.0
	74.3	77.3	68.3
	79.7	80.3	68.6
19:15-19:30	74.9	77.3	69.3
	74.5	77.0	67.1
	74.9	77.3	66.0
19:30-19:45	73.3	76.3	65.5
	74.4	77.0	69.5
	73.0	76.0	64.3
19:45-20:00	74.1	76.6	68.5
	73.5	76.3	66.3
	72.7	76.0	65.1
20:00-20:15	74.0	77.0	68.3
	73.6	76.5	66.0
	72.4	76.3	65.3
20:15-20:30	73.6	76.5	67.3
	73.1	76.4	67.3
	72.3	75.8	65.6
20:30-20:45	73.9	77.0	68.0
	73.2	76.5	65.8
	72.4	75.8	66.5
20:45-21:00	72.1	75.5	65.8
	73.0	76.5	66.6
	73.1	76.3	65.5
21:00-21:15	72.6	76.0	66.4
	72.9	76.5	65.8
	73.5	76.6	66.6

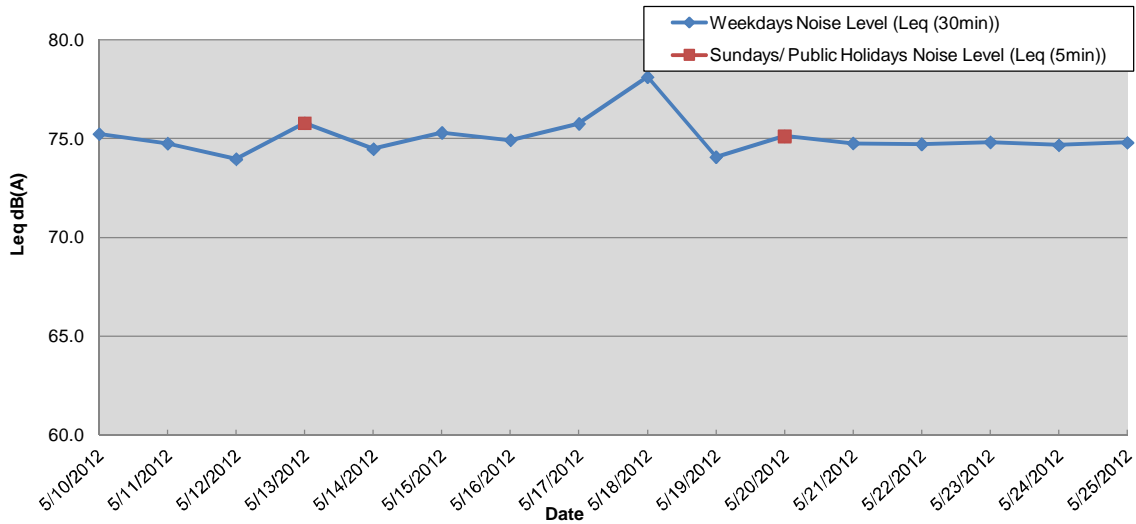
21:15-21:30	73.1	76.5	65.3
	73.5	76.6	67.3
	72.3	75.6	65.6
21:30-21:45	72.3	76.0	65.3
	75.4	78.5	64.1
	72.9	76.0	67.8
21:45-22:00	73.3	77.1	67.3
	72.8	76.5	66.0
	73.3	76.5	67.3
22:00-22:15	73.1	76.3	65.9
	72.8	76.5	65.3
	73.1	76.5	67.5
22:15-22:30	72.9	76.3	64.9
	73.0	76.5	65.0
	72.7	76.6	65.4
22:30-22:45	72.6	76.5	63.8
	73.0	76.3	66.8
	72.6	76.3	64.8
22:45-23:00	72.7	76.1	65.8
	73.1	76.3	65.6
	72.7	76.0	64.8
Average	73.9	76.9	67.2
Max	79.7	80.3	71.3
Min	71.5	74.9	63.3

4) Night-time (for all days) Noise Level, dB(A)

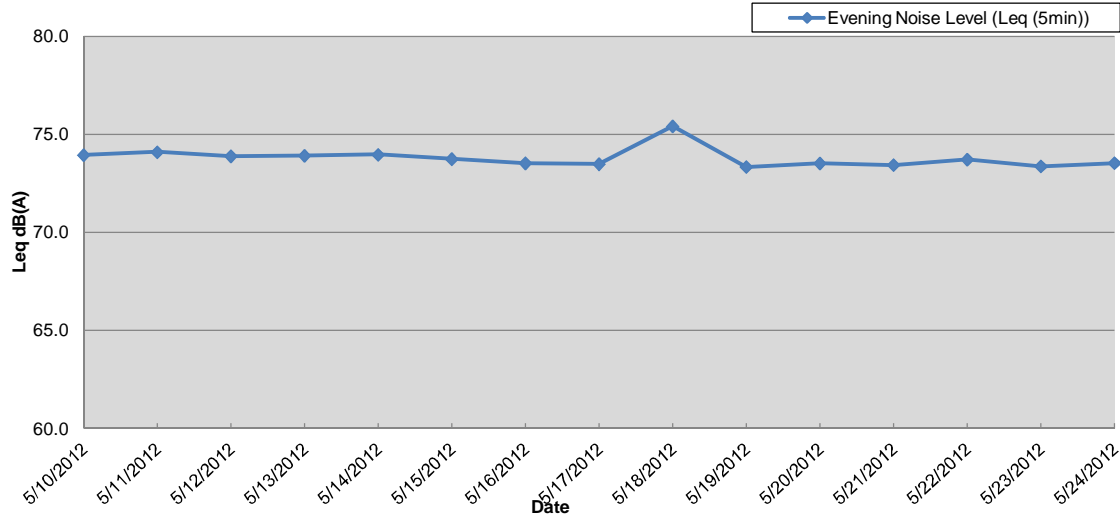
Time Slot	Leq, 5min	L10	L90
23:00-23:15	73.3	76.7	64.6
	73.1	76.8	65.6
	72.9	76.5	65.3
23:15-23:30	72.9	76.6	65.6
	73.2	76.9	65.6
	73.1	76.7	65.4
23:30-23:45	72.9	76.9	65.0
	73.0	76.6	65.1
	72.9	76.7	64.9
23:45-00:00	72.6	76.5	65.1
	72.8	76.6	65.6
	73.0	76.5	64.8
00:00-00:15	72.0	75.7	64.8
	72.0	76.0	63.5
	72.4	76.2	64.4
00:15-00:30	71.9	75.9	64.2
	71.9	75.8	63.5
	71.2	75.0	62.9
00:30-00:45	71.1	75.1	61.8
	71.3	75.2	62.7
	71.0	74.6	62.0
00:45-01:00	71.1	74.7	61.9
	70.8	74.8	61.2
	70.2	74.4	60.5
01:00-01:15	69.9	73.9	60.8
	68.9	72.9	59.7
	68.5	72.7	58.7
01:15-01:30	69.0	73.2	59.4
	68.5	72.5	59.6
	68.3	72.1	58.3
01:30-01:45	68.5	72.5	58.5
	68.1	72.4	58.3
	67.8	71.7	58.2
01:45-02:00	68.7	72.5	58.0
	68.1	72.0	58.1
	69.2	72.0	57.4
02:00-02:15	68.1	71.9	59.0
	67.8	71.9	58.8
	68.6	71.8	59.0
02:15-02:30	67.6	71.5	58.5
	67.4	71.6	57.8
	66.6	70.6	56.8
02:30-02:45	68.6	70.9	57.0
	66.1	69.8	56.6
	66.2	70.2	56.6
02:45-03:00	67.1	70.2	56.2
	65.5	69.3	55.5
	65.9	69.8	56.0
03:00-03:15	65.8	69.7	55.4
	65.8	69.5	55.7
	65.9	69.7	55.8
03:15-03:30	65.7	69.5	55.2
	65.3	69.2	55.3
	65.1	69.0	55.1
03:30-03:45	65.5	69.3	55.0

	64.5	68.6	54.7
	64.7	68.3	55.3
03:45-04:00	65.7	69.9	55.4
	65.4	68.9	55.2
	66.5	70.0	55.8
04:00-04:15	65.8	69.5	55.8
	66.6	70.5	56.1
	65.5	69.0	56.2
04:15-04:30	66.8	69.7	55.5
	65.8	69.6	55.9
	66.1	69.7	56.4
04:30-04:45	66.1	70.1	56.0
	65.8	69.3	56.3
	65.7	69.4	57.0
04:45-05:00	66.2	69.5	57.8
	66.1	69.9	56.6
	67.1	70.6	57.1
05:00-05:15	67.7	71.0	57.4
	67.9	71.7	58.2
	66.9	70.8	57.7
05:15-05:30	67.0	71.0	57.0
	67.0	70.7	57.1
	67.1	71.2	57.3
05:30-05:45	66.7	70.3	57.6
	67.3	71.0	58.3
	68.2	71.9	58.4
05:45-06:00	68.6	72.3	59.3
	68.9	72.7	60.6
	69.4	73.1	61.2
06:00-06:15	69.7	73.1	60.9
	70.0	73.9	61.9
	70.6	74.4	62.9
06:15-06:30	71.1	74.9	63.1
	71.4	74.8	63.4
	71.9	75.3	63.0
06:30-06:45	72.5	76.2	65.0
	72.4	75.7	65.0
	73.0	76.6	66.2
06:45-07:00	73.0	76.6	65.4
	73.5	76.6	66.3
	72.6	76.5	65.6
Average	69.8	73.5	61.3
Max	73.5	76.9	66.3
Min	64.5	68.3	54.7

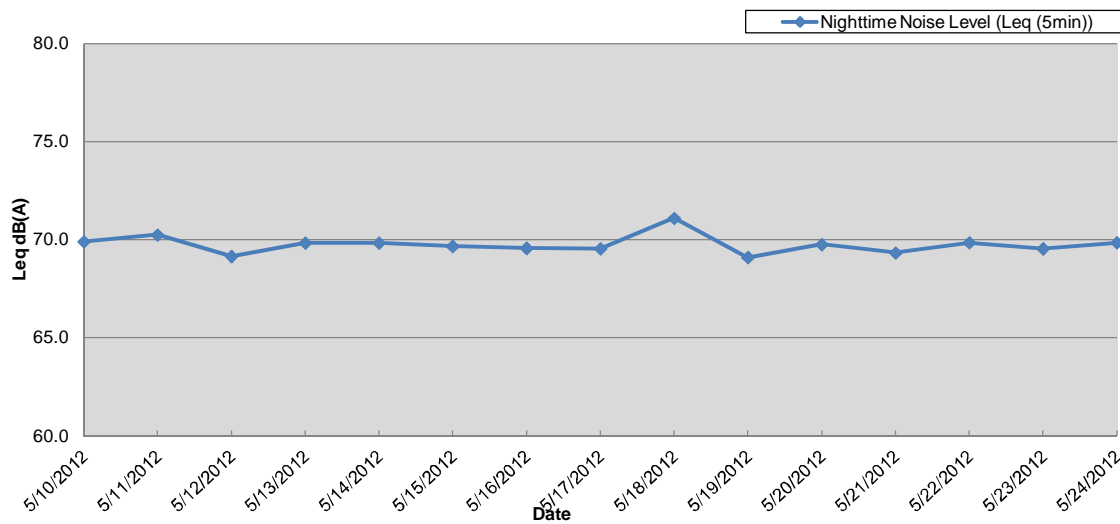
Average Leq (30min) at NMS-CA-8 during Daytime (0700 - 1900)



Average Leq (5 min) at NMS-CA-8 during Evening (1900-2300) for All Days



Average Leq (5 min) at NMS-CA-8 during Nighttime (2300-0700) for All Days



Baseline Noise Monitoring Result

Location: NMS-CA-9 Lucky Building (East Façade)
Baseline monitoring period: 6/6/2012 - 6/15/2012;
 7/1/2012 - 7/6/2012

Site Observation: No construction works were conducted in the vicinity during the monitoring period.

Weather condition: Trace rainfall was observed throughout the monitoring period. Amber rainstorm warning signal was hoisted between 1515 and 1640 hrs on 13 Jun, and between 0920 and 1020 hrs on 5 July. Given the short period of rainstorm, it is considered that the data collected on 13 Jun and 5 Jul remains valid.

Note: Airborne noise monitoring was suspended due to bad weather conditions from 16 to 19 Jun 2012 (Cyclone TALIM).

Parameter: Leq

Time Slot Averaged Baselines

1) Weekdays Daytime Noise Level, dB(A)

Time slot	Leq, 30 min	L10	L90
07:00-07:30	68.7	70.3	66.1
07:30-08:00	69.4	70.7	67.1
08:00-08:30	69.5	70.8	67.5
08:30-09:00	69.1	70.4	67.2
09:00-09:30	69.5	70.8	67.6
09:30-10:00	69.5	70.8	67.4
10:00-10:30	69.4	70.7	67.2
10:30-11:00	69.4	70.8	67.3
11:00-11:30	69.3	70.7	67.2
11:30-12:00	69.3	70.6	67.3
12:00-12:30	69.3	70.6	67.2
12:30-13:00	69.1	70.5	67.0
13:00-13:30	69.1	70.5	67.0
13:30-14:00	69.3	70.7	67.2
14:00-14:30	69.4	70.7	67.3
14:30-15:00	69.0	70.3	67.0
15:00-15:30	69.0	70.3	66.9
15:30-16:00	69.1	70.4	67.0
16:00-16:30	69.1	70.4	67.1
16:30-17:00	68.9	70.3	66.8
17:00-17:30	68.8	70.1	66.7
17:30-18:00	68.8	70.1	66.7
18:00-18:30	68.9	70.2	66.6
18:30-19:00	68.5	69.9	66.3
Average	69.2	70.5	67.0
Max	69.5	70.8	67.6
Min	68.5	69.9	66.1

Noise Control Period Averaged Baselines

2) Weekdays Evening Noise Level, dB(A)

Time Slot	Leq, 5min	L10	L90
19:00-19:15	68.3	69.6	66.2
	68.4	69.7	66.3
	68.2	69.5	66.2
19:15-19:30	68.3	69.6	66.4
	68.1	69.4	66.1
	68.2	69.6	65.9
19:30-19:45	68.2	69.7	65.9
	68.4	69.6	65.9
	68.4	69.7	66.1
19:45-20:00	68.1	69.4	65.9
	67.8	69.2	65.6
	68.0	69.3	65.7
20:00-20:15	68.2	69.6	66.0
	68.1	69.5	65.9
	68.1	69.5	66.0
20:15-20:30	67.9	69.3	65.6
	68.2	69.6	66.0
	68.3	69.6	65.7
20:30-20:45	67.8	69.2	65.6
	68.0	69.4	65.5
	68.1	69.6	65.6
20:45-21:00	67.7	69.2	65.1
	67.8	69.3	65.4
	67.9	69.2	65.5
21:00-21:15	67.9	69.4	65.6
	68.0	69.4	65.5
	67.9	69.1	65.5
21:15-21:30	67.8	69.4	65.3
	68.1	69.5	65.5
	68.0	69.4	65.5
21:30-21:45	67.7	69.2	65.3
	67.8	69.3	65.4
	68.0	69.4	65.5
21:45-22:00	67.8	69.3	65.4
	68.0	69.4	65.7
	68.1	69.5	65.5
22:00-22:15	68.0	69.3	65.6
	68.1	69.5	65.7
	67.9	69.5	65.6
22:15-22:30	67.9	69.4	65.3
	67.8	69.2	65.5
	68.0	69.4	65.5
22:30-22:45	67.7	69.1	65.2
	67.8	69.4	65.2
	68.0	69.3	65.7
22:45-23:00	67.9	69.4	65.2
	67.8	69.3	65.4
	67.9	69.3	65.4
Average	68.0	69.4	65.7
Max	68.4	69.7	66.4
Min	67.7	69.1	65.1

3) General Holidays (including Sundays) (0700-2300) Noise Level, dB(A)

Time Slot	Leq, 5min	L10	L90
07:00-07:15	68.8	70.3	65.4
	67.7	69.6	64.6
	67.9	69.8	65.3
07:15-07:30	67.5	69.1	64.5
	68.1	69.6	65.3
	67.9	69.3	65.6
07:30-07:45	67.5	69.3	64.1
	67.6	69.3	64.3
	67.7	69.5	64.8
07:45-08:00	67.4	69.3	63.8
	67.5	69.3	64.3
	67.6	69.3	64.8
08:00-08:15	67.7	69.8	64.3
	68.1	70.3	65.3
	67.8	69.8	65.3
08:15-08:30	68.1	70.0	65.3
	67.8	69.5	65.0
	68.4	70.0	65.5
08:30-08:45	68.1	69.8	65.5
	68.4	70.3	65.5
	68.2	69.8	65.5
08:45-09:00	68.2	69.8	65.5
	68.1	69.6	65.3
	68.0	69.5	65.5
09:00-09:15	68.4	69.8	66.0
	68.4	70.0	65.5
	68.2	69.5	65.5
09:15-09:30	68.5	70.0	65.5
	68.8	70.3	66.5
	68.3	69.8	66.0
09:30-09:45	67.9	69.5	65.5
	68.6	70.0	66.5
	68.1	69.5	66.3
09:45-10:00	68.5	69.5	66.3
	68.4	69.8	66.3
	68.3	69.5	66.0
10:00-10:15	68.2	69.5	66.3
	68.5	69.8	66.3
	68.2	70.0	65.5
10:15-10:30	68.5	70.0	66.3
	68.2	69.8	66.0
	68.7	70.3	66.0
10:30-10:45	67.9	69.5	65.0
	68.0	69.5	66.0
	68.0	69.5	65.5
10:45-11:00	68.0	69.3	65.5
	67.9	69.3	65.5
	69.2	70.8	66.6
11:00-11:15	69.8	70.9	67.8
	69.7	70.9	67.6
	69.2	70.8	66.6
11:15-11:30	68.8	70.0	66.6
	68.8	70.0	66.3
	68.4	69.8	66.3
11:30-11:45	68.8	70.3	66.3
	68.5	69.8	66.3

	68.4	70.0	66.0
11:45-12:00	68.9	70.0	66.8
	68.6	70.0	66.5
	68.8	70.0	66.3
	68.2	69.5	65.8
12:00-12:15	68.8	70.0	66.5
	68.1	69.8	65.6
	68.3	69.5	66.3
12:15-12:30	68.4	69.5	66.5
	68.5	69.8	66.3
	68.4	69.5	66.5
12:30-12:45	68.6	70.0	66.3
	68.8	70.0	66.5
	68.8	70.0	66.9
12:45-13:00	68.9	70.0	66.5
	68.6	70.0	66.5
	68.7	69.8	66.5
13:00-13:15	68.4	69.8	66.3
	68.4	69.8	66.3
	68.4	69.5	66.3
13:15-13:30	68.3	69.8	66.3
	68.3	69.5	66.3
	68.5	70.0	66.3
13:30-13:45	68.6	70.0	66.0
	68.5	70.0	66.3
	68.6	70.0	66.0
13:45-14:00	68.2	69.5	66.3
	68.5	69.8	66.0
	68.4	69.8	66.0
14:00-14:15	68.5	69.8	66.0
	68.3	69.3	66.3
	68.1	69.8	65.5
14:15-14:30	68.4	69.8	66.0
	68.4	69.8	66.4
	68.3	69.7	66.0
14:30-14:45	68.6	70.2	66.4
	68.5	70.0	66.3
	68.3	70.0	66.0
14:45-15:00	68.0	69.3	66.0
	68.1	69.5	65.5
	68.5	69.8	66.0
15:00-15:15	67.9	69.3	65.5
	68.2	69.8	66.0
	68.1	69.2	65.9
15:15-15:30	68.3	69.7	65.8
	68.1	69.5	66.0
	68.2	69.7	65.7
15:30-15:45	68.0	69.2	66.0
	67.9	69.3	65.7
	68.0	69.5	65.7
15:45-16:00	68.2	69.5	66.2
	68.3	69.5	65.9
	68.5	69.7	66.0
16:00-16:15	68.5	69.7	65.7
	67.9	69.3	65.5
	68.0	69.5	65.7
16:15-16:30	68.0	69.3	65.7
	68.3	69.7	66.2
	68.0	69.5	65.7
16:30-16:45	68.0	69.5	65.7

	68.0	69.3	65.8
	67.8	69.5	65.3
16:45-17:00	68.2	69.5	65.7
	69.0	69.4	65.7
	68.1	69.5	65.8
17:00-17:15	67.9	69.3	65.4
	68.2	69.5	65.5
	68.0	69.7	65.7
17:15-17:30	68.3	69.7	65.8
	67.8	69.2	65.3
	68.2	69.5	66.0
17:30-17:45	68.2	69.3	66.3
	68.0	69.5	65.7
	68.0	69.2	65.8
17:45-18:00	68.3	69.9	65.8
	68.3	69.5	66.2
	68.3	69.5	65.5
18:00-18:15	68.0	69.5	65.4
	68.3	69.5	65.5
	68.2	69.5	66.2
18:15-18:30	68.7	69.5	66.0
	68.3	69.5	66.0
	68.3	69.9	66.0
18:30-18:45	68.0	69.2	65.5
	68.3	69.7	66.2
	67.8	69.2	65.7
18:45-19:00	67.7	69.0	65.7
	67.8	69.2	65.7
	68.2	69.5	65.8
19:00-19:15	68.0	69.5	65.5
	67.4	68.9	65.3
	67.6	69.2	65.2
19:15-19:30	67.9	69.3	65.3
	67.7	69.0	65.5
	67.4	68.7	65.2
19:30-19:45	67.3	68.7	65.2
	67.7	69.2	65.3
	67.3	68.8	65.0
19:45-20:00	67.4	68.7	65.0
	67.6	69.0	64.8
	67.3	68.8	64.9
20:00-20:15	67.2	68.7	64.8
	67.6	69.2	65.3
	66.8	68.3	64.3
20:15-20:30	67.7	69.2	64.9
	67.6	69.3	64.8
	67.6	69.0	65.2
20:30-20:45	67.0	68.5	64.5
	67.3	68.8	65.0
	67.3	68.7	65.0
20:45-21:00	67.5	69.2	65.0
	67.3	68.8	64.7
	67.3	68.7	64.7
21:00-21:15	67.4	69.0	65.4
	67.1	68.4	64.5
	67.3	69.1	64.6
21:15-21:30	67.3	69.0	64.7
	67.4	69.2	64.9
	67.3	68.8	64.7

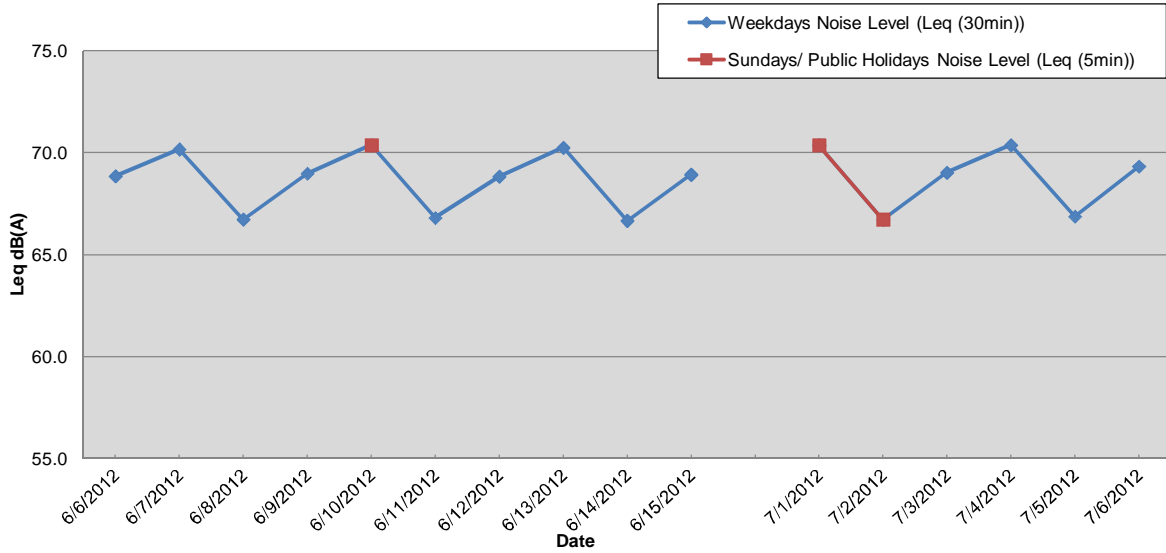
21:30-21:45	67.5	69.2	65.0
	67.5	69.2	65.0
	67.4	68.8	64.9
21:45-22:00	67.4	68.7	65.1
	67.8	69.5	64.7
	67.5	69.0	65.3
22:00-22:15	67.6	69.0	65.3
	67.3	69.0	64.5
	67.6	69.2	64.9
22:15-22:30	67.4	68.7	65.0
	67.9	69.5	65.5
	67.5	69.2	64.9
22:30-22:45	67.4	68.9	64.9
	67.5	69.0	65.0
	67.6	69.2	65.2
22:45-23:00	67.2	68.7	64.5
	67.7	69.4	65.2
	67.5	69.0	64.7
Average	68.0	69.5	65.6
Max	69.8	70.9	67.8
Min	66.8	68.3	63.8

4) Night-time (for all days) Noise Level, dB(A)

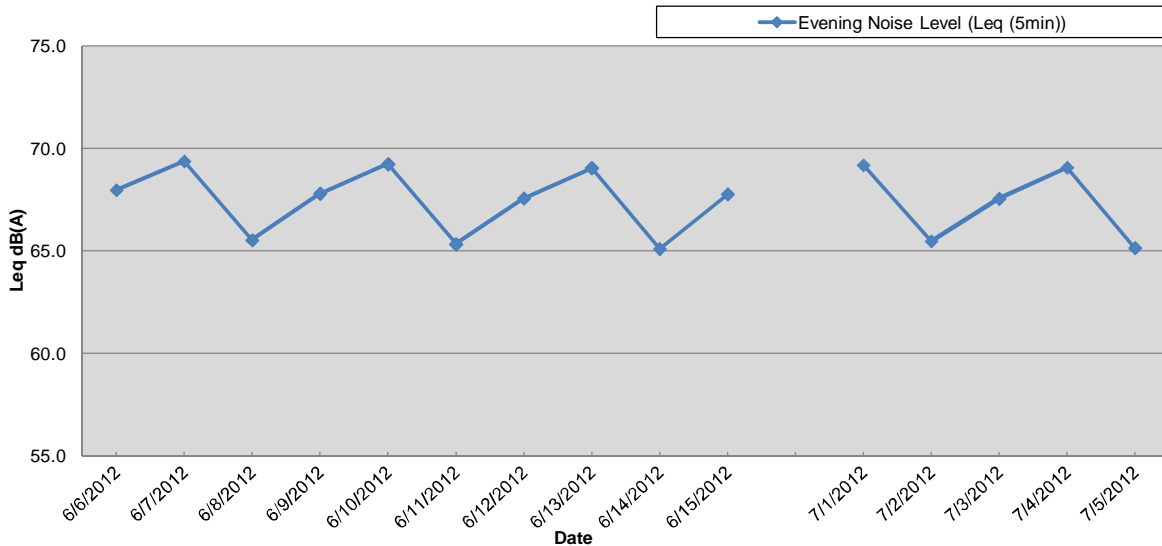
Time Slot	Leq, 5min	L10	L90
23:00-23:15	67.4	68.8	64.8
	67.3	68.8	64.8
	67.5	69.0	64.7
23:15-23:30	67.3	68.8	64.8
	67.4	69.0	64.6
	67.3	68.8	64.6
23:30-23:45	67.2	68.8	64.7
	67.2	68.6	64.8
	67.0	68.5	64.3
23:45-00:00	67.0	68.6	64.2
	67.0	68.8	64.2
	67.1	68.9	64.4
00:00-00:15	66.6	68.4	63.7
	67.1	68.8	64.0
	66.9	68.6	64.0
00:15-00:30	66.8	68.7	63.6
	66.3	68.2	63.0
	66.3	67.9	63.2
00:30-00:45	66.0	67.9	62.6
	65.7	67.5	62.5
	65.8	67.7	62.4
00:45:01:00	65.4	67.4	62.1
	65.3	67.3	61.8
	64.8	66.9	61.2
01:00-01:15	64.3	66.3	60.9
	64.3	66.1	60.9
	64.0	65.9	60.6
01:15-01:30	63.6	65.6	60.3
	64.2	66.1	60.6
	63.7	65.8	60.1
01:30-01:45	63.6	65.6	59.9
	63.4	65.5	59.7
	63.6	65.7	59.7
01:45-02:00	63.6	65.6	59.7
	63.2	65.3	59.4
	63.3	65.3	59.5
02:00-02:15	63.4	65.4	59.6
	63.6	65.7	59.8
	63.4	65.5	59.6
02:15-02:30	63.3	65.4	59.3
	63.2	65.2	59.5
	63.1	65.3	59.5
02:30-02:45	63.0	65.0	59.3
	63.0	65.0	59.2
	63.1	65.2	59.2
02:45-03:00	62.9	65.0	58.9
	62.4	64.7	58.5
	63.2	65.5	58.8
03:00-03:15	63.1	65.3	59.4
	62.8	64.8	58.9
	62.7	64.7	58.8
03:15-03:30	62.5	64.7	58.6
	62.6	64.8	58.6
	62.3	64.5	58.2
03:30-03:45	62.3	64.4	58.3
	62.4	64.7	58.2

	62.1	64.3	58.4
03:45-04:00	62.3	64.7	58.1
	62.3	64.6	58.2
	62.6	64.9	58.5
04:00-04:15	62.6	64.9	58.4
	62.5	64.8	58.3
	63.0	65.3	58.7
04:15-04:30	62.9	65.1	59.0
	62.8	65.2	58.8
	62.6	64.7	58.5
04:30-04:45	62.6	64.9	58.5
	62.6	65.0	58.3
	62.8	65.0	58.7
04:45-05:00	63.0	65.2	59.1
	63.4	65.6	59.3
	63.5	65.7	59.4
05:00-05:15	63.4	65.5	59.4
	63.5	65.9	59.4
	63.4	65.8	59.2
05:15-05:30	63.4	65.6	59.4
	63.8	66.0	59.6
	63.6	65.8	59.6
05:30-05:45	64.0	66.2	59.8
	64.1	66.4	60.2
	64.8	66.9	60.9
05:45-06:00	64.7	66.8	60.9
	64.9	67.1	61.3
	64.8	67.1	61.0
06:00-06:15	65.2	67.4	61.5
	65.9	67.8	62.0
	66.2	68.3	62.6
06:15-06:30	66.3	68.3	62.8
	66.3	68.4	62.8
	66.5	68.5	63.2
06:30-06:45	67.0	68.8	63.7
	67.5	69.5	64.3
	67.5	69.3	64.5
06:45-07:00	67.7	69.4	64.9
	68.0	69.6	65.4
	68.0	69.7	65.1
Average	65.3	67.2	61.9
Max	68.0	69.7	65.4
Min	62.1	64.3	58.1

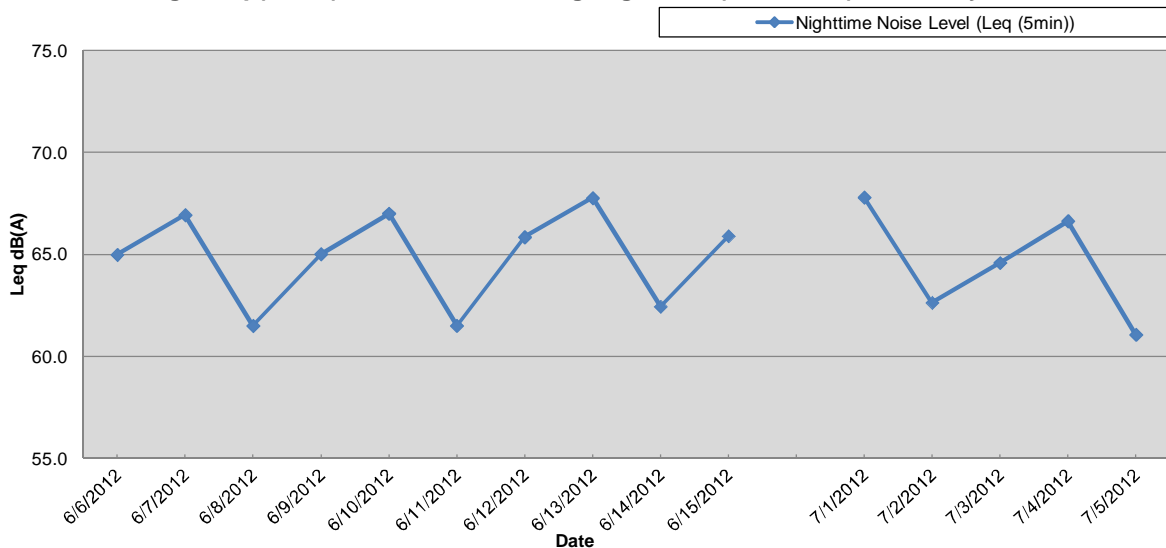
Average Leq at NMS-CA-9 during Daytime (0700 - 1900)



Average Leq (5 min) at NMS-CA-9 during Evening (1900-2300) for all days



Average Leq (5 min) at NMS-CA-9 during Nighttime (2300-0700) for all days



Baseline Noise Monitoring Result

Location: NMS-CA-10 Chat Ma Mansion

Baseline

monitoring period: 6/27/2012 - 6/29/2012;
7/01/2012 - 7/13/2012

Site Observation: No construction works were conducted in the vicinity during the monitoring period.

Weather condition: Trace rainfall was observed throughout the monitoring period. Amber rainstorm warning signal was hoisted between 0920 and 1020 hrs on 5 July. Given the short period of rainstorm, it is considered that the data collected on 5 Jul remains valid.

Note: Airborne noise monitoring was suspended due to bad weather conditions from 29 to 30 Jun 2012 (Cyclone DOKSURI).

Parameter: Leq

Time Slot Averaged Baselines

1) Weekdays Daytime Noise Level, dB(A)

Time slot	Leq, 30 min	L10	L90
07:00-07:30	76.8	78.5	72.9
07:30-08:00	77.1	78.6	73.7
08:00-08:30	77.1	78.3	74.2
08:30-09:00	76.7	78.0	73.8
09:00-09:30	76.9	78.2	74.0
09:30-10:00	77.1	78.4	74.1
10:00-10:30	76.7	78.1	73.6
10:30-11:00	76.9	78.4	73.6
11:00-11:30	76.7	78.2	73.6
11:30-12:00	76.7	78.1	73.4
12:00-12:30	76.9	78.2	73.5
12:30-13:00	76.6	78.1	73.4
13:00-13:30	76.6	78.0	73.3
13:30-14:00	76.5	77.9	73.4
14:00-14:30	76.8	78.2	73.5
14:30-15:00	76.2	77.6	73.1
15:00-15:30	76.2	77.6	72.8
15:30-16:00	76.5	77.9	73.1
16:00-16:30	76.4	77.7	73.1
16:30-17:00	76.4	77.7	73.1
17:00-17:30	76.2	77.6	73.0
17:30-18:00	76.1	77.4	72.9
18:00-18:30	76.1	77.4	73.0
18:30-19:00	75.6	76.8	72.4
Average	76.6	78.0	73.4
Max	77.1	78.6	74.2
Min	75.6	76.8	72.4

Noise Control Period Averaged Baselines

2) Weekdays Evening Noise Level, dB(A)

Time Slot	Leq, 5min	L10	L90
19:00-19:15	75.7	77.1	72.4
	76.0	77.3	72.4
	75.8	77.1	72.6
19:15-19:30	75.7	76.9	72.5
	75.7	77.1	72.5
	76.0	77.3	72.7
19:30-19:45	76.0	77.2	72.8
	76.2	77.4	72.8
	76.0	77.2	72.7
19:45-20:00	76.4	77.5	72.8
	75.8	77.1	72.6
	75.9	77.4	72.5
20:00-20:15	76.3	77.2	72.5
	76.0	77.3	72.4
	76.0	77.4	72.6
20:15-20:30	75.7	77.1	72.8
	76.6	77.4	72.7
	76.0	77.4	72.3
20:30-20:45	76.1	77.5	72.5
	75.8	77.0	72.5
	75.7	77.0	72.3
20:45-21:00	75.9	77.4	72.0
	75.6	77.2	72.0
	75.8	77.0	72.1
21:00-21:15	75.5	77.0	71.6
	75.7	77.1	72.2
	75.8	77.4	72.0
21:15-21:30	75.8	77.2	72.1
	75.6	77.2	72.1
	75.7	77.3	72.0
21:30-21:45	75.7	77.2	72.1
	75.6	77.1	72.1
	76.0	77.2	72.3
21:45-22:00	75.7	77.2	72.0
	75.7	77.1	72.2
	76.0	77.5	72.3
22:00-22:15	76.3	77.6	72.4
	75.7	77.3	72.3
	76.0	77.4	72.2
22:15-22:30	76.0	77.4	72.4
	75.9	77.3	72.3
	76.0	77.4	72.2
22:30-22:45	75.8	77.4	72.2
	75.9	77.4	72.3
	75.6	77.2	71.9
22:45-23:00	75.8	77.2	72.3
	75.9	77.4	72.1
	75.8	77.4	72.1
Average	75.9	77.3	72.3
Max	76.6	77.6	72.8
Min	75.5	76.9	71.6

3) General Holidays (including Sundays) (0700-2300) Noise Level, dB(A)

Time Slot	Leq, 5min	L10	L90
0700-07:15	74.7	77.0	69.5
	75.4	77.3	69.8
	73.9	76.0	69.5
07:15-07:30	74.5	76.5	69.3
	74.6	76.5	69.3
	74.5	76.8	70.3
07:30-07:45	74.3	76.5	69.5
	74.2	76.8	69.5
	74.2	77.0	68.8
07:45-08:00	74.3	76.5	69.8
	74.4	76.8	69.8
	74.6	76.8	70.8
08:00-08:15	74.6	76.5	70.3
	74.6	76.8	70.8
	74.7	76.8	70.5
08:15-08:30	75.2	77.5	70.8
	74.9	76.8	71.5
	75.3	77.5	71.0
08:30-08:45	74.8	77.0	70.5
	75.8	78.0	71.0
	75.1	77.3	70.8
08:45-09:00	75.1	77.0	70.8
	75.3	77.3	71.8
	74.8	76.8	70.5
09:00-09:15	75.0	77.5	70.3
	75.4	77.5	71.8
	75.2	77.5	71.5
09:15-09:30	75.3	77.3	71.5
	75.4	77.3	71.8
	75.7	77.8	71.8
09:30-09:45	75.4	77.5	72.0
	75.4	77.5	71.3
	75.3	77.0	71.8
09:45-10:00	75.5	77.3	72.3
	75.1	76.8	71.3
	75.1	76.8	72.0
10:00-10:15	75.4	77.5	72.3
	75.3	77.0	72.0
	75.8	77.5	71.5
10:15-10:30	75.6	77.5	72.1
	75.0	76.8	71.5
	75.4	77.0	72.3
10:30-10:45	75.1	76.8	71.3
	75.3	77.3	72.0
	74.8	76.8	71.0
10:45-11:00	74.6	76.5	71.8
	74.9	76.8	71.8
	74.6	76.5	70.8
11:00-11:15	75.3	77.0	71.8
	75.1	77.3	71.8
	75.5	77.3	72.3
11:15-11:30	75.2	77.0	71.5
	75.4	77.5	71.5
	75.5	77.3	72.3
11:30-11:45	75.5	77.3	72.3

	75.8	77.5	72.5
	75.3	77.5	71.8
11:45-12:00	75.7	77.5	72.8
	75.4	77.0	72.5
	75.9	77.8	72.5
12:00-12:15	75.3	77.3	71.8
	75.5	77.3	72.3
	75.5	77.5	72.5
12:15-12:30	75.0	77.0	71.5
	75.3	77.0	71.8
	75.1	77.0	71.8
12:30-12:45	75.3	77.0	72.3
	75.4	77.0	72.8
	75.7	77.3	73.5
12:45-13:00	75.5	77.3	72.5
	75.7	77.5	72.5
	75.5	77.0	72.5
13:00-13:15	75.4	77.0	72.3
	75.5	77.8	71.8
	75.8	77.5	72.3
13:15-13:30	75.7	77.5	72.8
	75.5	77.3	72.3
	75.3	77.0	72.0
13:30-13:45	75.6	77.5	72.0
	76.1	77.3	72.5
	75.4	77.3	72.1
13:45-14:00	75.9	77.5	72.5
	75.7	77.5	72.3
	75.8	77.5	72.5
14:00-14:15	75.6	77.5	72.5
	75.3	77.0	72.3
	75.6	77.3	72.5
14:15-14:30	75.3	77.2	72.2
	75.4	77.3	72.2
	75.6	77.5	72.6
14:30-14:45	75.4	77.0	72.9
	75.6	77.3	72.3
	75.8	77.5	71.8
14:45-15:00	76.2	77.5	72.5
	75.3	77.0	72.3
	75.6	77.5	72.8
15:00-15:15	75.2	77.3	71.9
	75.6	77.4	72.2
	74.9	76.8	71.5
15:15-15:30	75.2	76.8	72.3
	75.4	77.7	72.1
	75.3	77.4	71.2
15:30-15:45	75.4	77.0	72.2
	75.2	77.2	71.9
	75.3	77.0	72.2
15:45-16:00	75.4	77.0	71.9
	75.4	77.3	72.0
	75.5	77.4	72.3
16:00-16:15	75.6	77.7	72.5
	75.5	77.2	72.0
	75.0	77.2	71.7
16:15-16:30	75.5	77.5	72.0
	75.2	77.0	71.7

	75.3	77.2	72.0
16:30-16:45	75.1	77.0	71.9
	75.2	77.0	71.8
	75.0	76.8	72.2
	75.4	77.2	72.4
16:45-17:00	75.8	77.2	72.0
	75.3	77.2	72.2
	75.4	76.8	71.9
17:00-17:15	75.2	77.2	71.8
	75.3	77.2	72.3
	75.2	76.8	72.0
17:15-17:30	75.6	77.0	71.7
	75.0	77.0	71.9
	75.1	76.8	72.0
17:30-17:45	75.4	77.2	72.5
	75.3	77.3	71.8
	75.4	77.0	72.6
17:45-18:00	75.7	77.5	73.0
	75.5	77.3	72.5
	75.2	77.0	72.2
18:00-18:15	75.7	77.2	72.2
	75.8	77.3	73.0
	75.8	77.5	72.5
18:15-18:30	75.6	77.4	72.0
	76.0	78.1	72.8
	75.4	77.2	72.5
18:30-18:45	75.3	77.2	72.2
	75.4	77.3	72.5
	75.3	77.0	72.4
18:45-19:00	75.1	76.7	72.0
	75.2	77.2	72.2
	75.4	77.0	72.2
19:00-19:15	75.0	77.0	71.7
	75.1	77.0	71.8
	75.3	76.8	72.2
19:15-19:30	74.9	76.5	72.0
	74.9	76.5	71.4
	74.4	76.3	71.0
19:30-19:45	74.6	76.5	71.3
	74.7	76.7	71.7
	74.6	76.3	71.7
19:45-20:00	74.8	76.5	71.7
	74.4	76.5	70.8
	74.3	76.4	70.8
20:00-20:15	74.3	76.2	70.5
	74.8	76.7	71.5
	74.6	76.3	71.4
20:15-20:30	74.8	76.9	71.3
	74.4	76.4	71.0
	75.1	76.8	71.4
20:30-20:45	74.6	76.3	71.0
	74.6	76.5	71.3
	75.3	76.8	71.8
20:45-21:00	75.1	77.0	71.3
	74.5	76.5	71.4
	74.6	76.3	71.4
21:00-21:15	74.8	76.8	71.4
	75.1	76.6	71.7

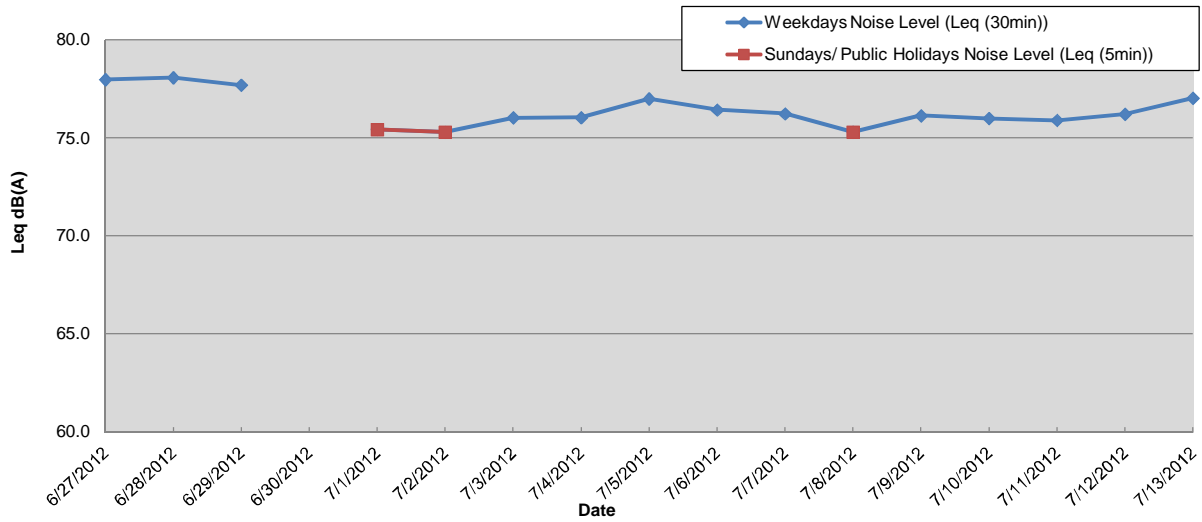
21:15-21:30	74.8	76.7	71.5
	75.0	76.8	72.2
	75.0	76.8	71.9
21:30-21:45	74.8	76.5	72.0
	74.8	76.5	72.0
	75.1	77.0	71.9
21:45-22:00	75.0	76.8	71.8
	74.8	76.3	71.7
	75.0	76.7	72.1
22:00-22:15	74.7	76.8	71.5
	75.0	76.9	72.0
	75.3	77.0	71.8
22:15-22:30	75.1	76.7	72.5
	75.2	77.0	72.4
	75.2	77.0	71.9
22:30-22:45	74.7	76.3	71.7
	75.1	76.7	71.9
	74.9	76.8	71.7
22:45-23:00	74.8	76.8	71.5
	75.1	77.0	71.7
	75.3	77.0	72.1
Average	75.2	77.0	71.9
Max	76.2	78.1	73.5
Min	73.9	76.0	68.8

4) Night-time (for all days) Noise Level, dB(A)

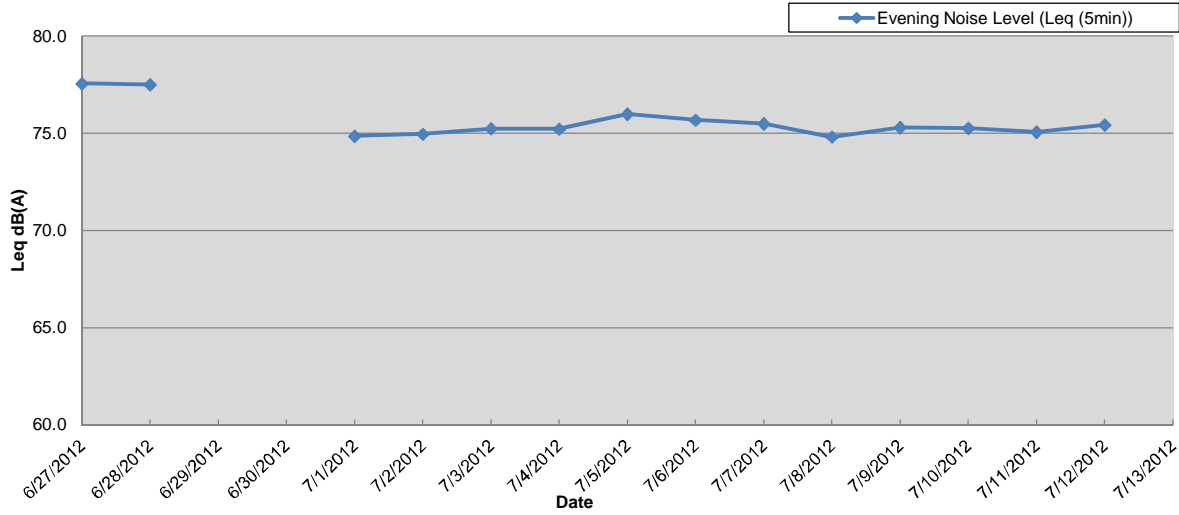
Time Slot	Leq, 5min	L10	L90
23:00-23:15	75.6	77.2	71.9
	75.5	77.1	71.9
	75.6	77.2	71.9
23:15-23:30	75.4	77.0	71.8
	75.6	77.0	71.8
	75.4	77.1	71.5
23:30-23:45	75.5	77.0	71.6
	75.0	76.8	71.0
	75.2	76.8	71.3
23:45-00:00	75.3	76.9	71.4
	75.2	76.9	70.9
	75.3	77.0	71.3
00:00-00:15	74.8	76.7	70.8
	74.9	76.6	70.6
	75.1	76.8	70.7
00:15-00:30	74.8	76.6	70.3
	74.5	76.4	70.0
	74.5	76.3	69.7
00:30-00:45	74.4	76.3	69.6
	74.3	76.2	69.3
	73.8	75.7	68.6
00:45:01:00	74.1	75.9	68.7
	73.6	75.6	68.6
	73.0	75.1	67.7
01:00-01:15	73.1	75.1	67.6
	73.3	75.1	68.2
	73.0	75.1	67.8
01:15-01:30	73.3	75.2	68.4
	73.1	75.0	68.5
	73.0	74.9	68.2
01:30-01:45	72.3	74.6	66.6
	72.7	74.5	66.6
	71.9	74.1	66.3
01:45-02:00	72.3	74.4	66.4
	72.2	74.2	66.4
	72.0	73.9	66.1
02:00-02:15	71.9	74.0	65.5
	71.9	74.0	66.1
	71.8	74.0	65.7
02:15-02:30	72.3	73.8	65.4
	71.8	73.9	65.1
	71.8	73.9	65.8
02:30-02:45	72.2	73.7	64.8
	71.8	73.8	65.3
	71.6	73.7	65.5
02:45-03:00	71.5	73.9	65.1
	71.4	73.3	64.6
	71.5	73.4	64.5
03:00-03:15	71.7	73.8	64.4
	71.2	73.6	64.7
	71.2	73.3	64.4
03:15-03:30	70.7	73.3	63.8
	70.8	73.2	63.2
	71.0	73.3	62.9
03:30-03:45	70.6	72.9	63.8

	70.7	73.2	63.0
	70.5	73.1	63.2
03:45-04:00	70.7	73.1	63.5
	70.9	73.4	63.5
	70.6	73.0	63.1
04:00-04:15	70.6	73.2	63.1
	70.6	73.2	62.7
	70.6	73.1	62.9
04:15-04:30	71.1	73.6	63.9
	71.7	73.5	63.8
	71.3	73.7	63.8
04:30-04:45	71.2	73.8	64.5
	71.1	73.4	63.7
	71.2	73.5	64.0
04:45-05:00	71.8	74.0	64.1
	71.5	74.0	63.8
	71.7	74.0	64.7
05:00-05:15	71.9	74.1	64.3
	71.4	74.0	64.1
	71.7	74.1	64.5
05:15-05:30	71.6	74.1	64.5
	71.7	74.0	64.3
	72.2	74.5	65.2
05:30-05:45	72.2	74.4	65.3
	72.5	74.7	66.1
	72.6	74.8	66.0
05:45-06:00	72.9	75.2	65.9
	73.1	75.3	66.2
	73.1	75.5	67.0
06:00-06:15	73.0	75.3	66.6
	73.8	75.7	67.9
	74.0	76.2	67.9
06:15-06:30	74.3	76.4	68.7
	74.2	76.5	68.6
	74.7	76.7	69.2
06:30-06:45	75.1	76.9	69.2
	75.2	77.3	70.4
	76.1	77.9	71.2
06:45-07:00	76.0	77.8	71.4
	76.1	77.9	71.6
	76.2	77.9	72.0
Average	73.3	75.2	68.0
Max	76.2	77.9	72.0
Min	70.5	72.9	62.7

Average Leq (30min) at NMS-CA-10 during Daytime (0700 - 1900)



Average Leq (5 min) at NMS-CA-10 during Evening (1900-2300) for All Days



Average Leq (5 min) at NMS-CA-10 during Nighttime (2300-0700) for All Days

